FCC RADIO TEST REPORT

FCC ID	:	**2AP7S-6784**
Equipment	:	**Tablet**
Model Name	:	**M8S26G**
Applicant	:	**First Stride LLC** **6385 Old Shady Oak Rd., Ste 250** **Eden Prairie** **Minnesota** **55344**
Standard	:	**FCC Part 15 Subpart C §15.247**

The test was completed on Oct. 21, 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.)

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Appendix B. AC Conducted Emission Test Result

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Appendix E. Duty Cycle Plots

History of this test report

Report No.	Version	Description	Issued Date
FR872106-01C	01	Initial issue of report	Oct. 29, 2018

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

Reviewed by: Wii Chang

Report Producer: Maggie Chiang

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Tablet
Model Name	M8S26G
FCC ID	2AP7S-6784
EUT supports Radios application	WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 Bluetooth BR/EDR/LE

1.2 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Channel Frequency Range	2412 MHz ~ 2472 MHz
Maximum (Peak) Output Power to antenna	802.11b : 18.63 dBm (0.0729 W) 802.11g : 24.35 dBm (0.2723 W) 802.11n HT20 : 24.13 dBm (0.2588 W)
99% Occupied Bandwidth	802.11b : 12.30 MHz 802.11g : 17.10 MHz 802.11n HT20 : 17.85 MHz
Antenna Type / Gain	Fixed Internal Antenna type with gain 1.00 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.3 Modification of EUT

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

1.4 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	CO05-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.**
	03CH16-HY

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

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 v05
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- ANSI C63.10-2013

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Configuration of Equipment Under Test

a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X 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

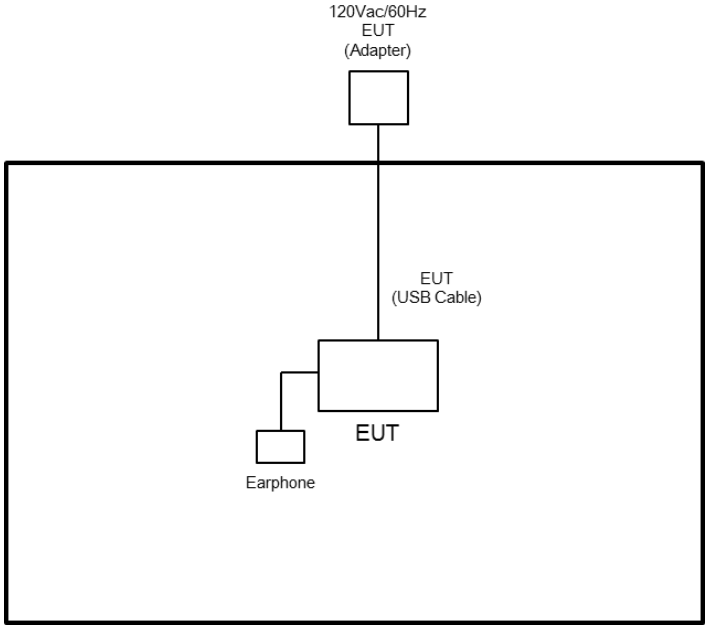
Final test modes are considering the modulation and worse data rates as below table.

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

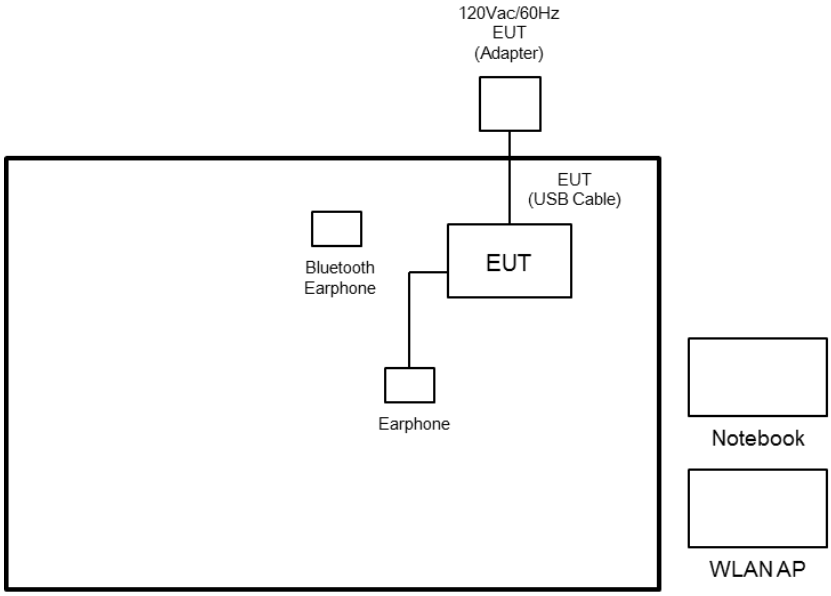
Test Cases	
AC Conducted Emission	Mode 1: WLAN (2.4GHz) Link + Bluetooth Link + Camera (Front) + Earphone + MicroSD Card + USB Cable (Charging from Adapter)

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade 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.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
4.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	Earphone	Sony	MH755	N/A	N/A	N/A
6.	Earphone	N/A	N/A	Verification	Unshielded, 1.15m	N/A

2.5 EUT Operation Test Setup

The RF test items, utility “CMD” 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.

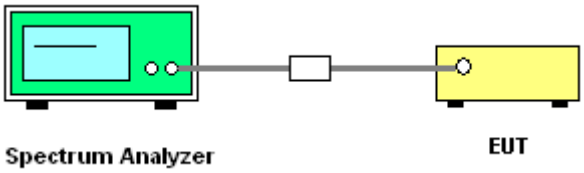
3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

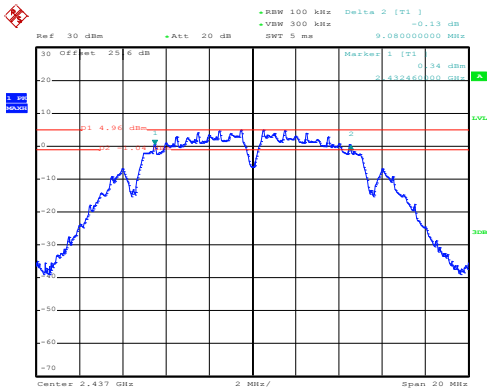
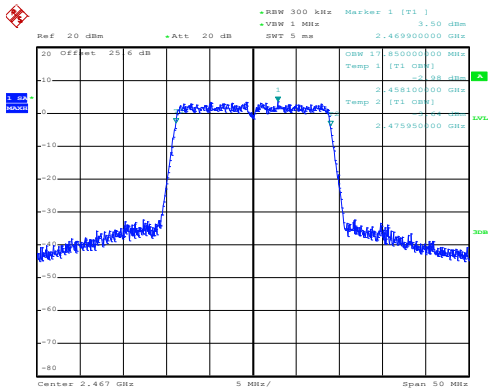
1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v05.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit 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) ≥ 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
	
Date: 15.OCT.2018 21:13:33	Date: 15.OCT.2018 23:38:48

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.

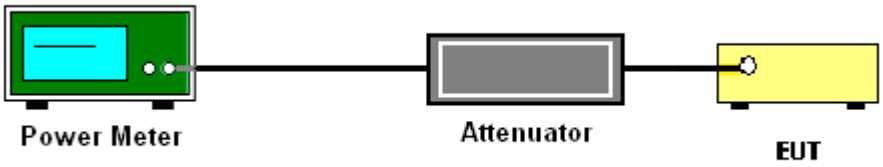
3.2.2 Measuring Instruments

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.

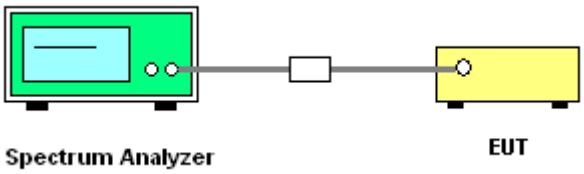
3.3.2 Measuring Instruments

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.

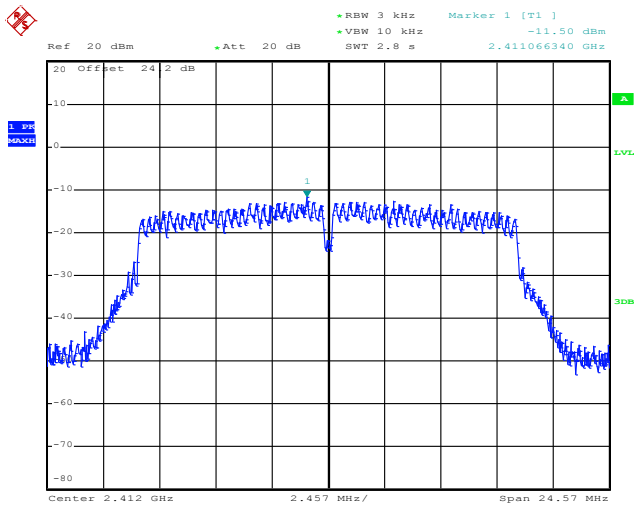
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

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.

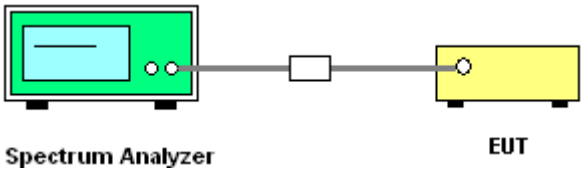
3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

3.4.3 Test Procedures

1. The testing follows 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



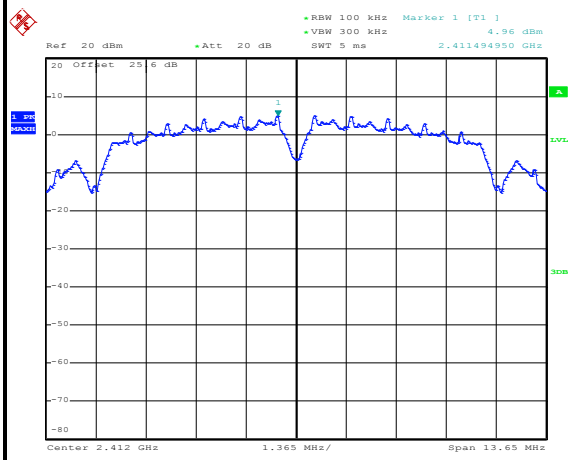
3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Engineer :	Shiming Liu and AnAn Wu	**Temperature :**	21~25℃
		Relative Humidity :	51~54%

Test Mode :	802.11b	**Test Channel :**	01

WLAN 802.11b Channel 01

100kHz PSD reference Level



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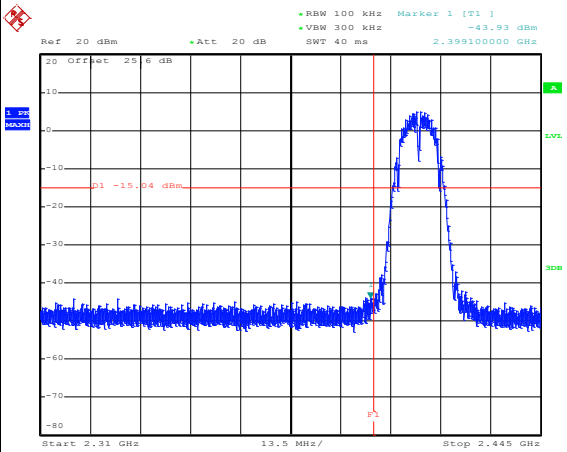
Low Channel Plot



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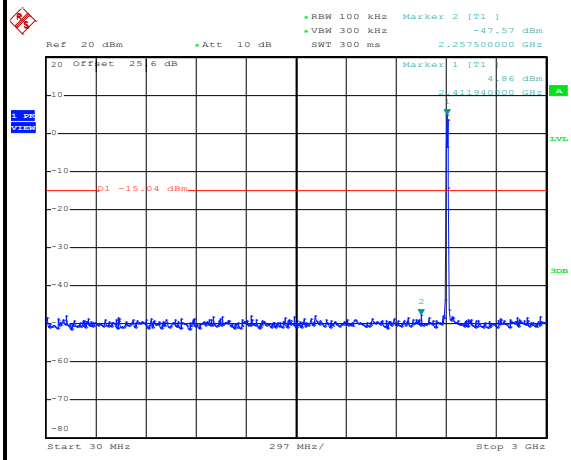
Spurious Emission 30MHz~3GHz



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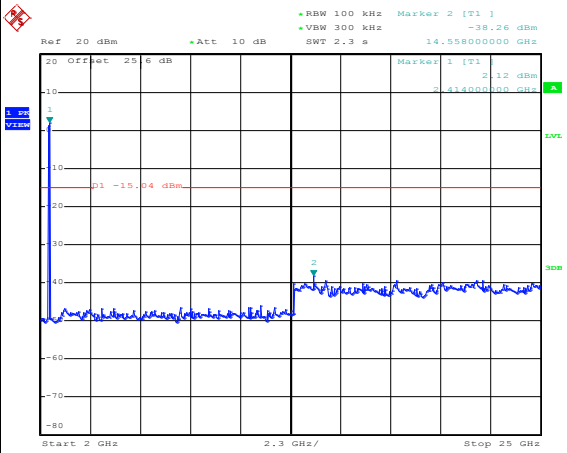
Spurious Emission 2GHz~25GHz



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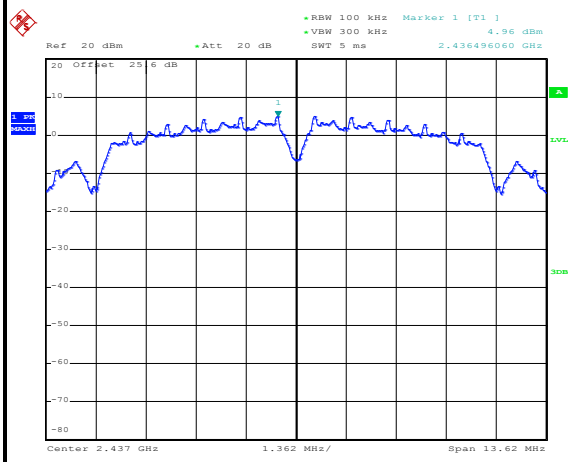
Test Mode :	802.11b	Test Channel :	06

WLAN 802.11b Channel 06

100kHz PSD reference Level



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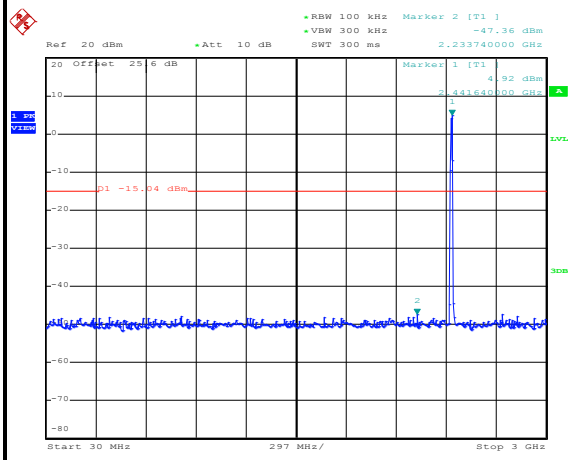
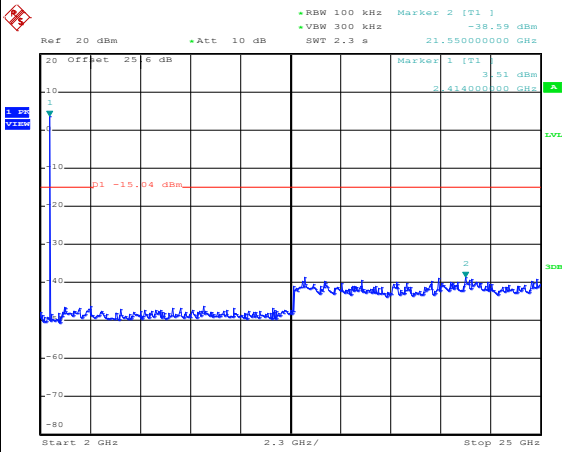
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 15.OCT.2018 21:15:10

Spurious Emission 2GHz~25GHz



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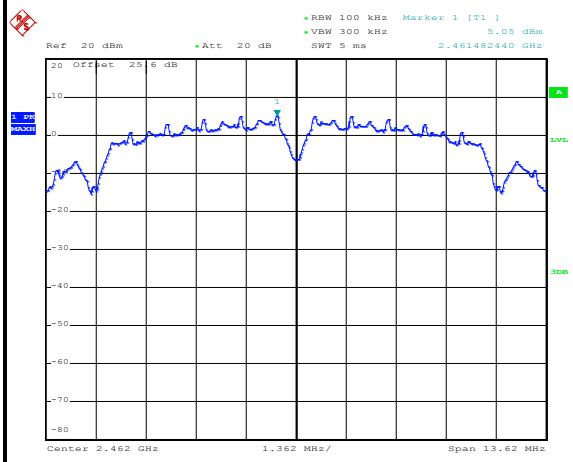
Test Mode :	802.11b	Test Channel :	11

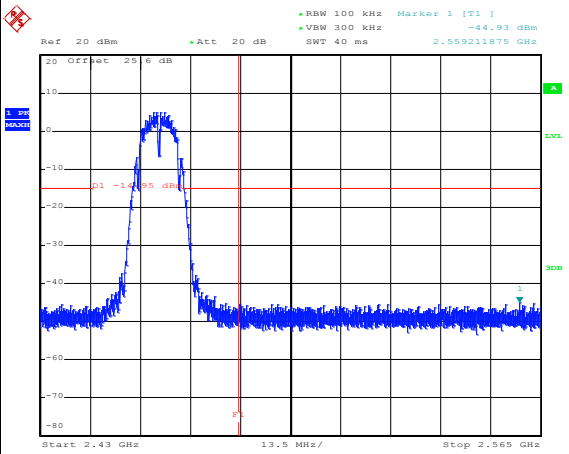
WLAN 802.11b Channel 11

100kHz PSD reference Level



Date: 15.OCT.2018 21:18:29

High Channel Plot



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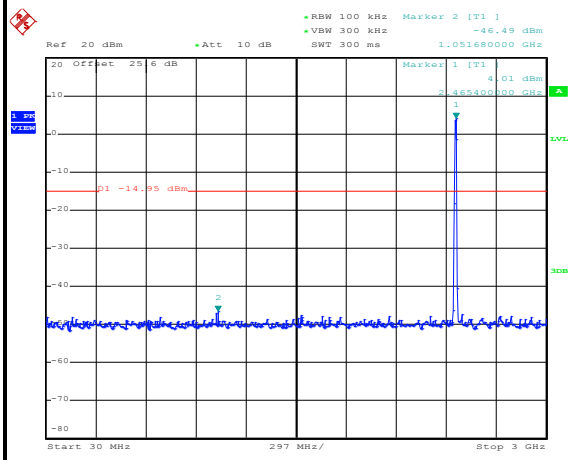
Spurious Emission 30MHz~3GHz



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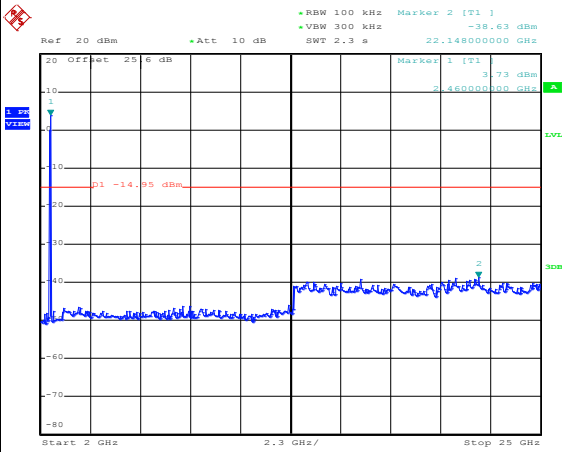
Spurious Emission 2GHz~25GHz



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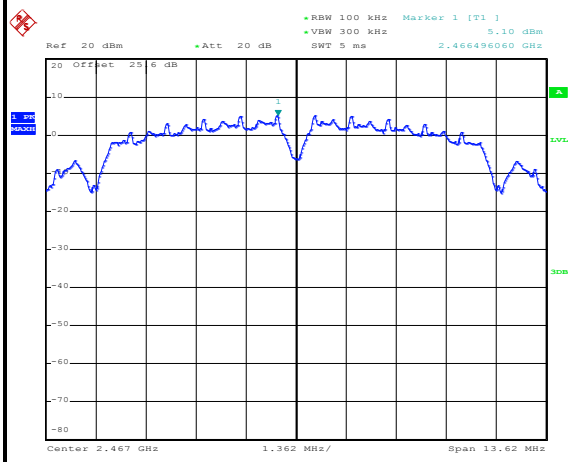
Test Mode :	802.11b	Test Channel :	12

WLAN 802.11b Channel 12

100kHz PSD reference Level



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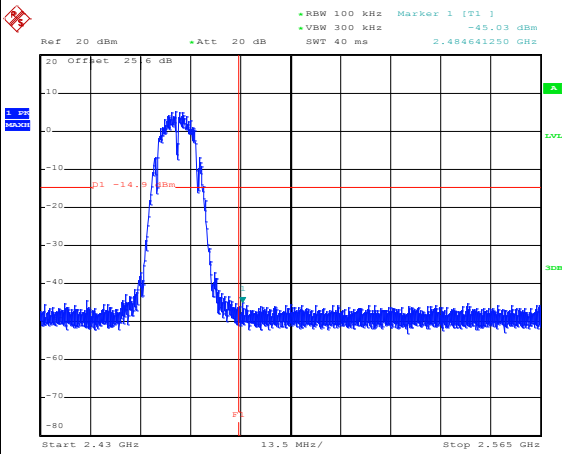
High Channel Plot



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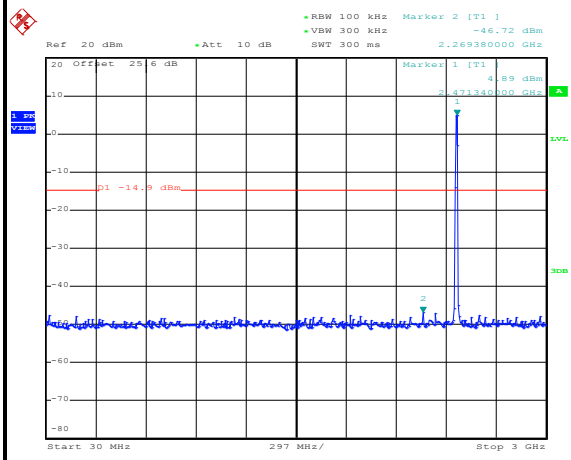
Spurious Emission 30MHz~3GHz



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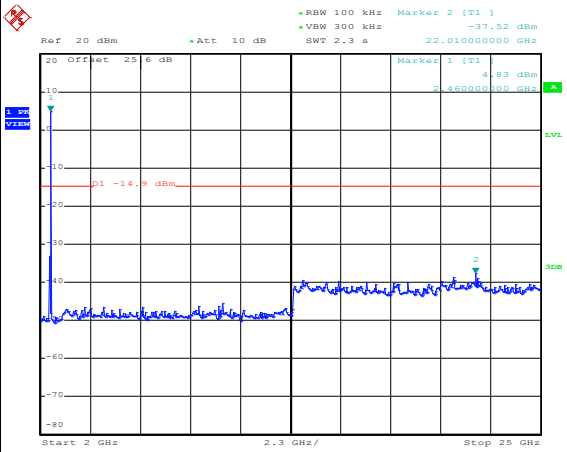
Spurious Emission 2GHz~25GHz



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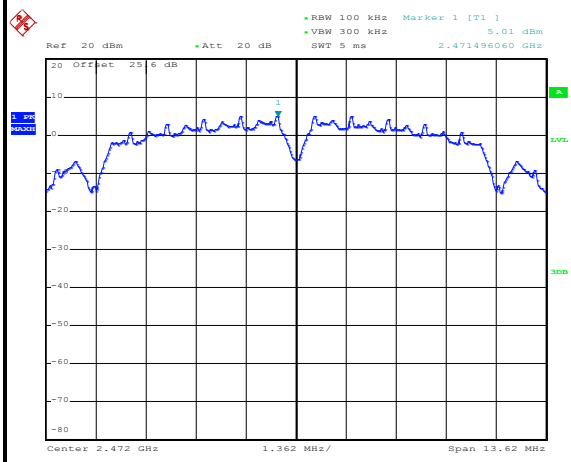
Test Mode :	802.11b	Test Channel :	13

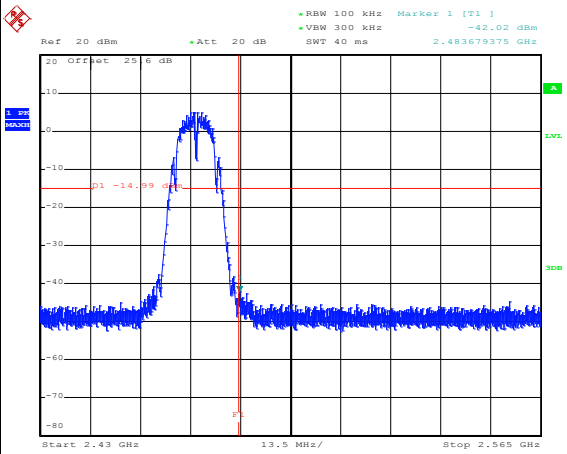
WLAN 802.11b Channel 13

100kHz PSD reference Level



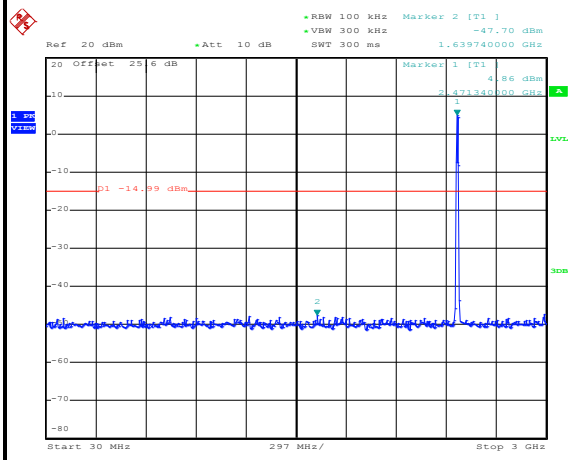
Date: 15.OCT.2018 22:25:02

High Channel Plot



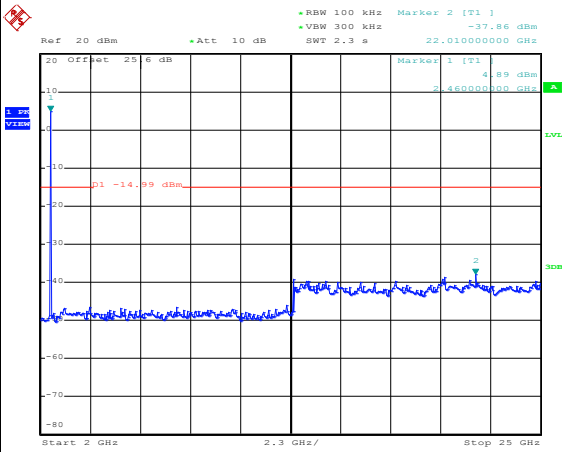
Date: 15.OCT.2018 22:25:32

Spurious Emission 30MHz~3GHz



Date: 15.OCT.2018 22:26:05

Spurious Emission 2GHz~25GHz

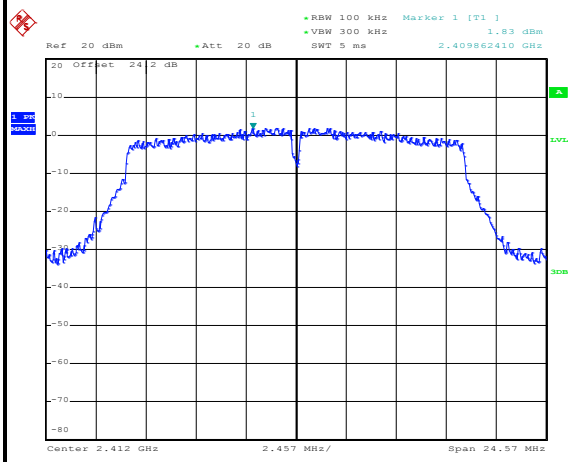


Date: 15.OCT.2018 22:26:19

Test Mode :	802.11g	Test Channel :	01

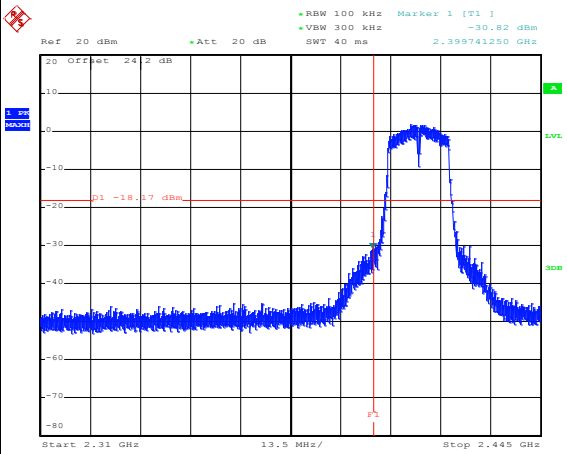
WLAN 802.11g Channel 01

100kHz PSD reference Level



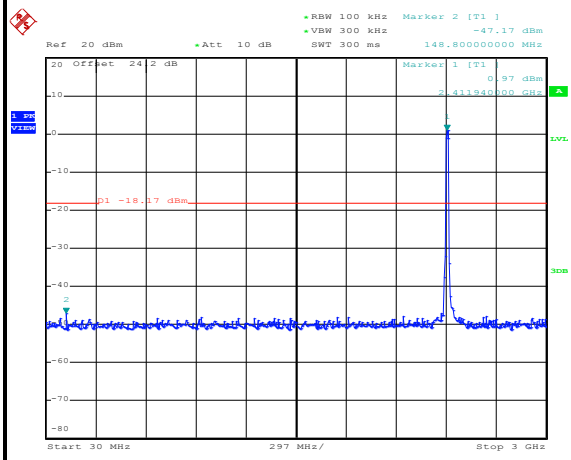
Date: 18.OCT.2018 20:33:16

Low Channel Plot



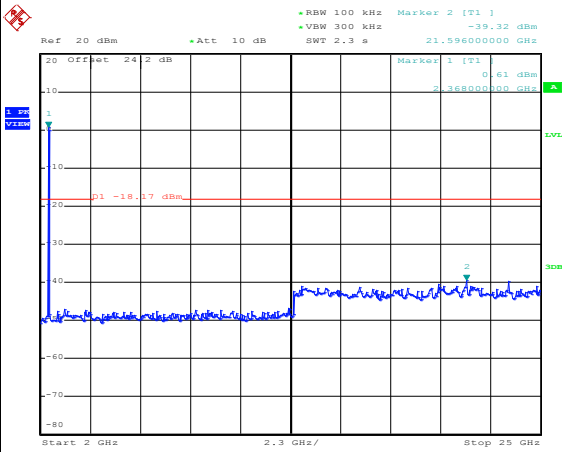
Date: 18.OCT.2018 20:33:49

Spurious Emission 30MHz~3GHz



Date: 18.OCT.2018 19:31:46

Spurious Emission 2GHz~25GHz

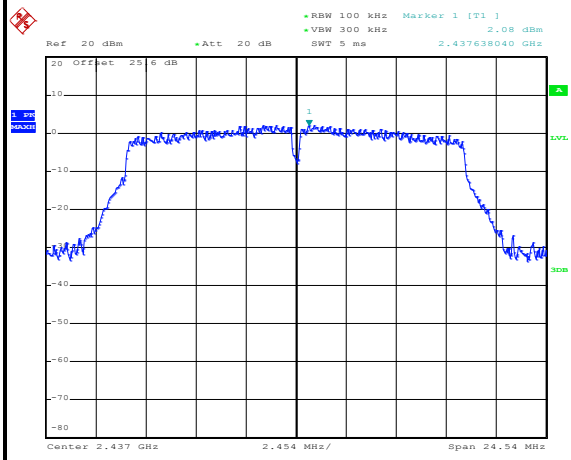


Date: 18.OCT.2018 19:32:00

Test Mode :	802.11g	Test Channel :	06

WLAN 802.11g Channel 06

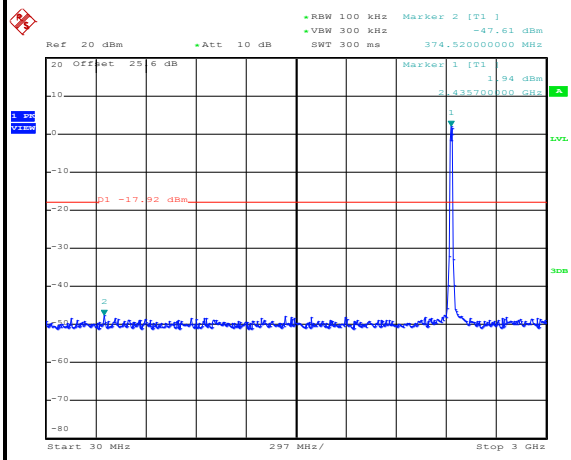
100kHz PSD reference Level



Date: 15.OCT.2018 21:29:41

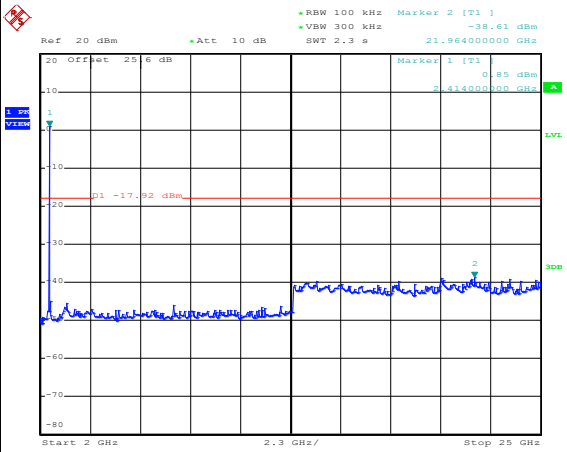
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 15.OCT.2018 21:30:08

Spurious Emission 2GHz~25GHz

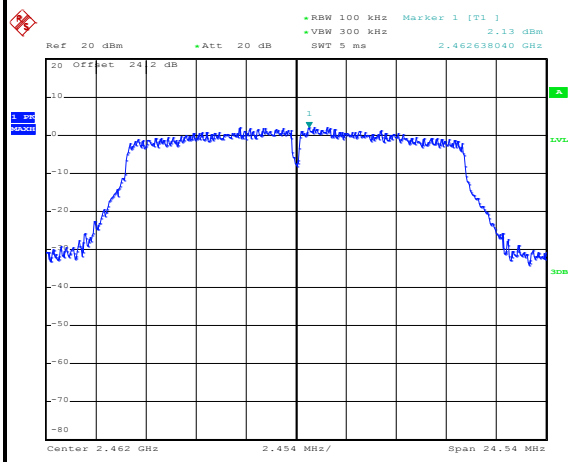


Date: 15.OCT.2018 21:30:21

Test Mode :	802.11g	Test Channel :	11

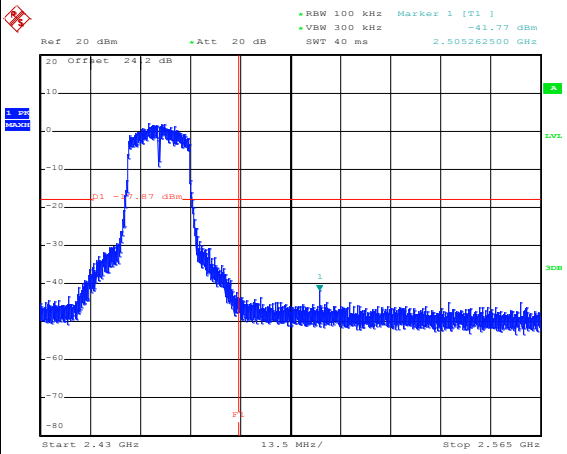
WLAN 802.11g Channel 11

100kHz PSD reference Level



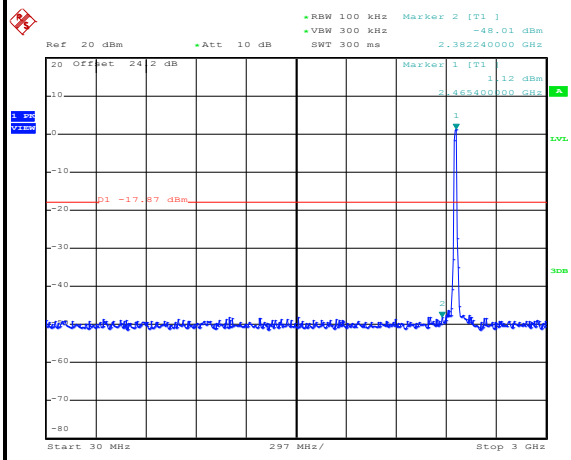
Date: 18.OCT.2018 19:36:45

High Channel Plot



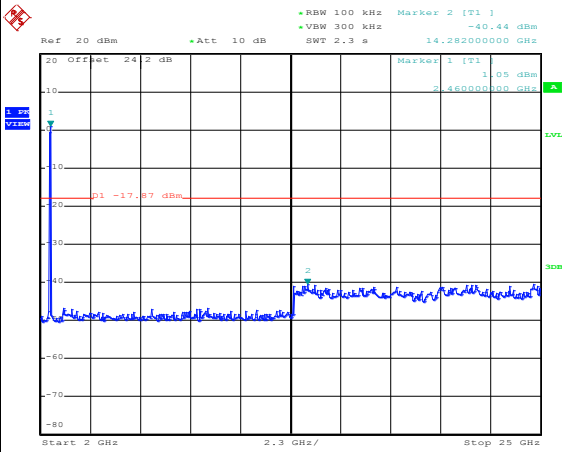
Date: 18.OCT.2018 19:37:06

Spurious Emission 30MHz~3GHz



Date: 18.OCT.2018 19:37:26

Spurious Emission 2GHz~25GHz

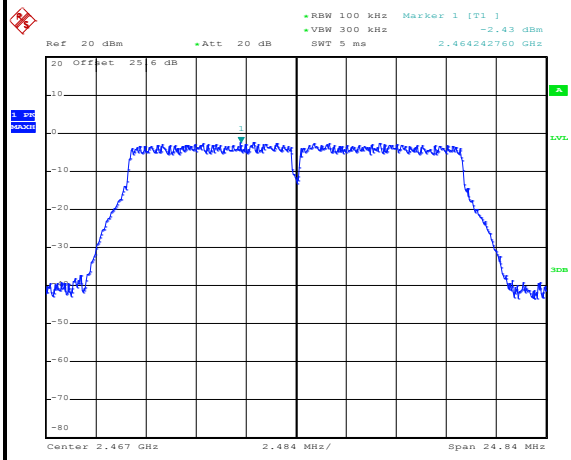


Date: 18.OCT.2018 19:37:43

Test Mode :	802.11g	Test Channel :	12

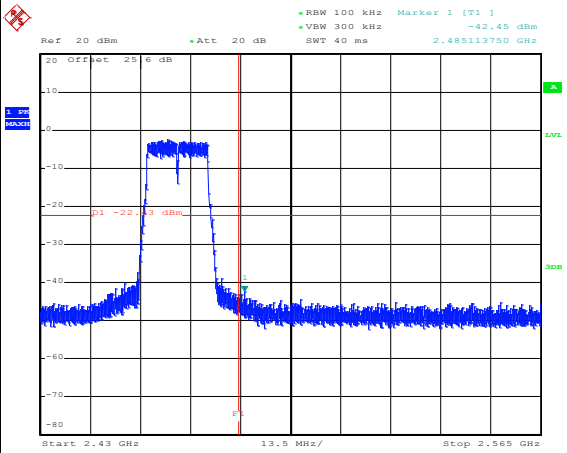
WLAN 802.11g Channel 12

100kHz PSD reference Level



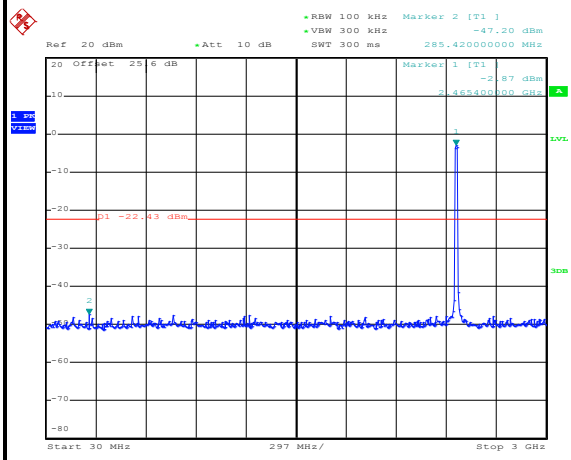
Date: 15.OCT.2018 22:57:31

High Channel Plot



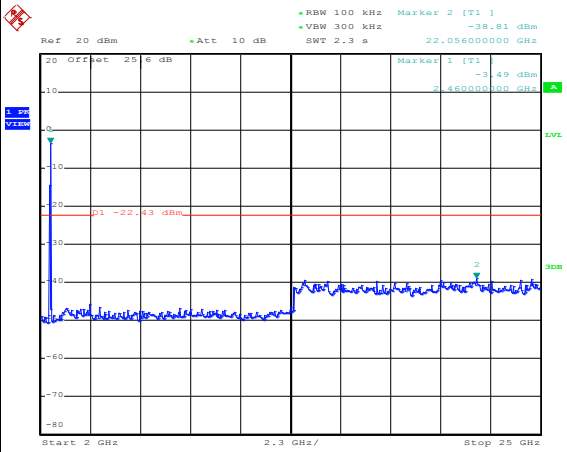
Date: 15.OCT.2018 22:58:53

Spurious Emission 30MHz~3GHz



Date: 15.OCT.2018 22:59:21

Spurious Emission 2GHz~25GHz

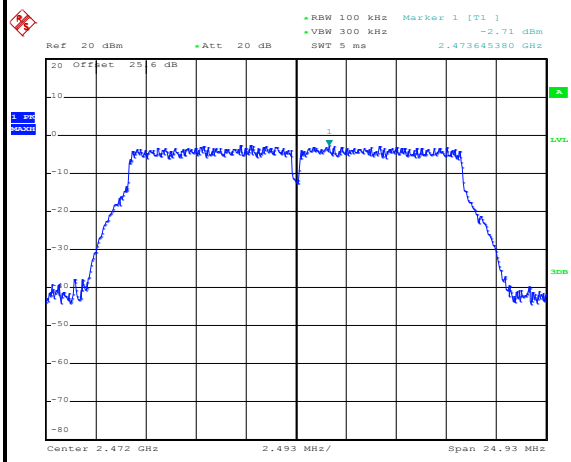


Date: 15.OCT.2018 22:59:42

Test Mode :	802.11g	Test Channel :	13

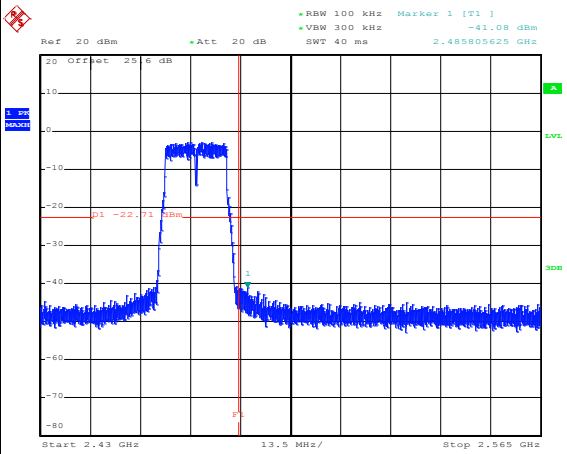
WLAN 802.11g Channel 13

100kHz PSD reference Level



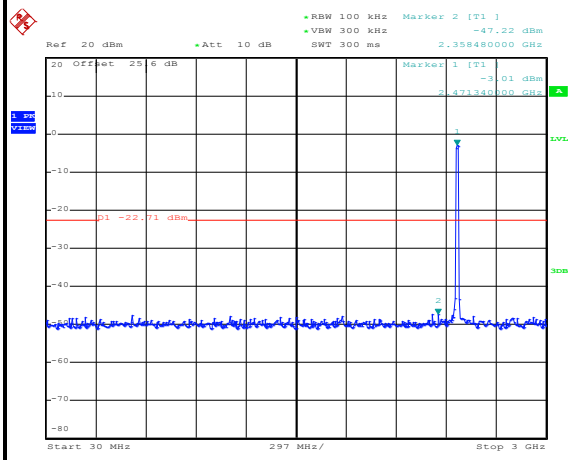
Date: 15.OCT.2018 23:05:25

High Channel Plot



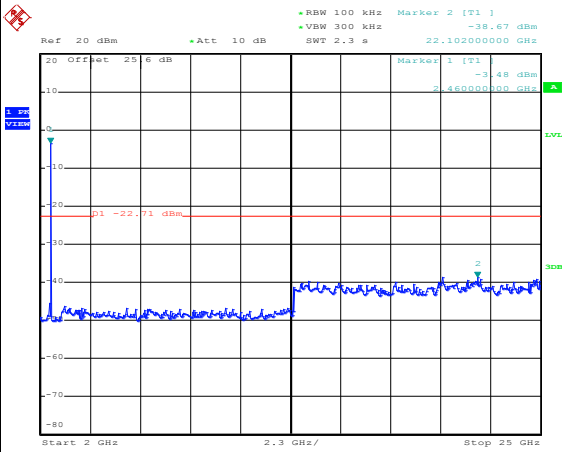
Date: 15.OCT.2018 23:06:14

Spurious Emission 30MHz~3GHz



Date: 15.OCT.2018 23:06:44

Spurious Emission 2GHz~25GHz

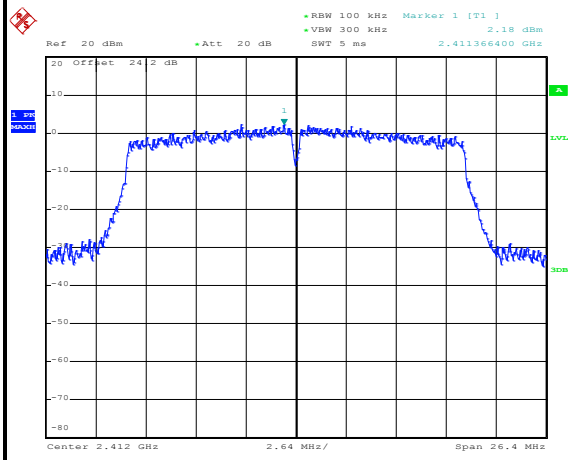


Date: 15.OCT.2018 23:06:57

Test Mode :	802.11n HT20	Test Channel :	01

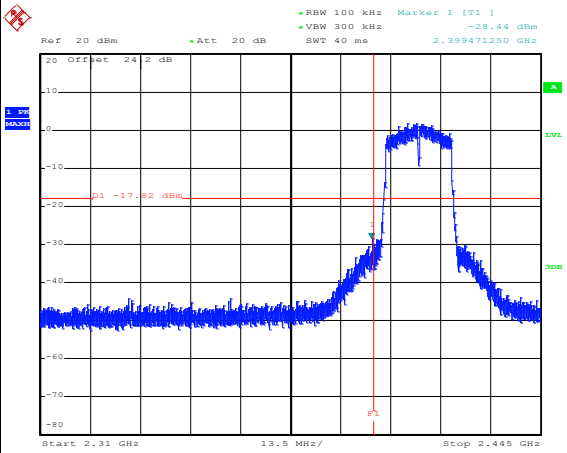
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



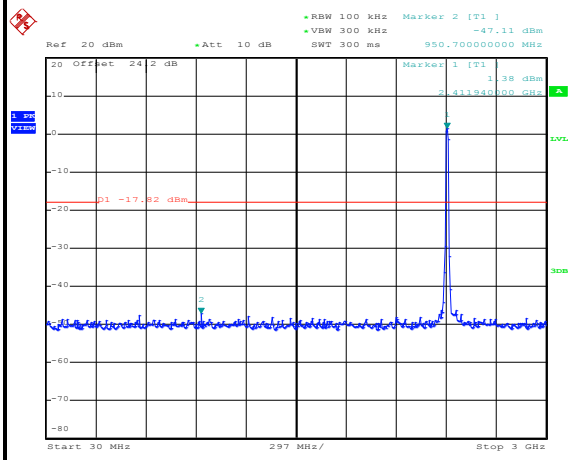
Date: 18.OCT.2018 19:43:39

Low Channel Plot



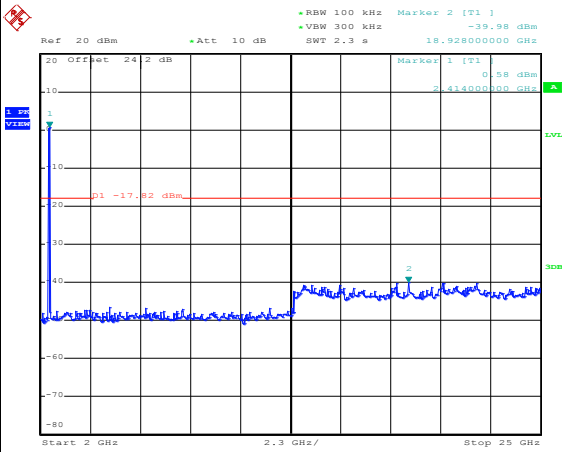
Date: 18.OCT.2018 19:44:01

Spurious Emission 30MHz~3GHz



Date: 18.OCT.2018 19:44:44

Spurious Emission 2GHz~25GHz

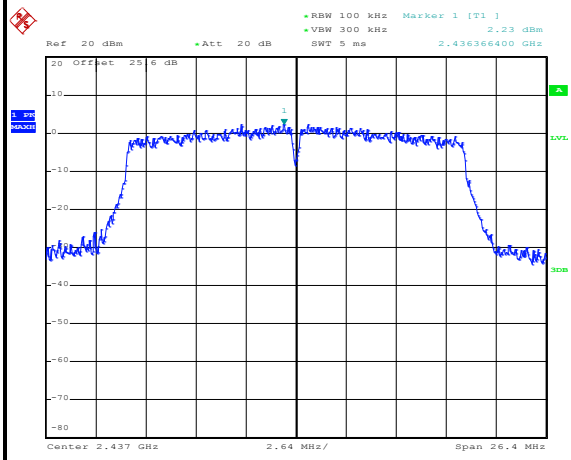


Date: 18.OCT.2018 19:45:25

Test Mode :	802.11n HT20	Test Channel :	06

WLAN 802.11n HT20 Channel 06

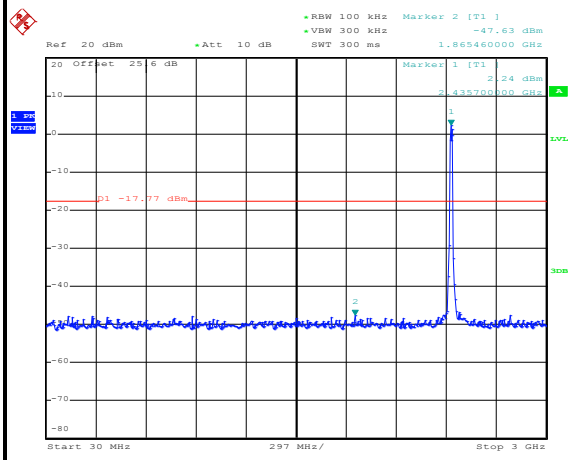
100kHz PSD reference Level



Date: 15.OCT.2018 21:54:54

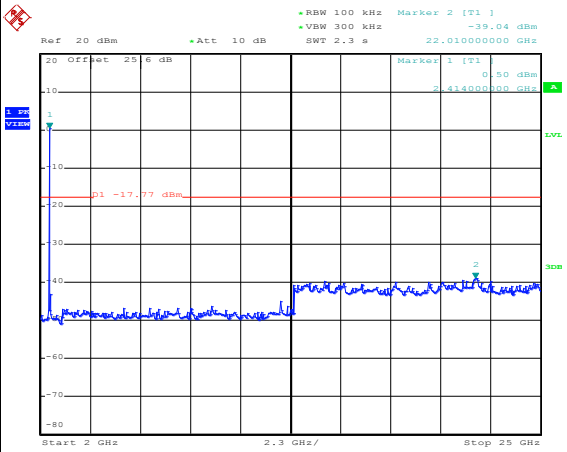
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 15.OCT.2018 21:55:42

Spurious Emission 2GHz~25GHz



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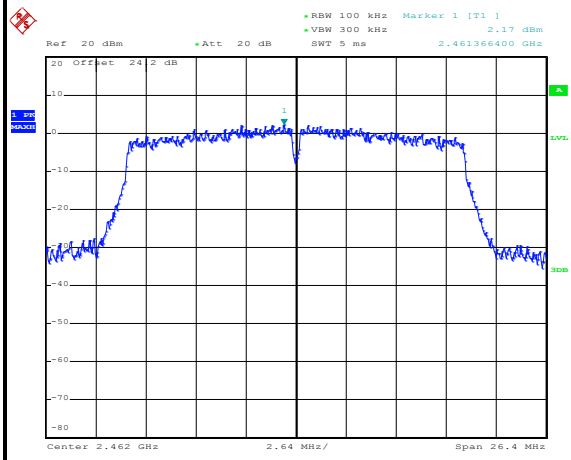
Test Mode :	802.11n HT20	Test Channel :	11

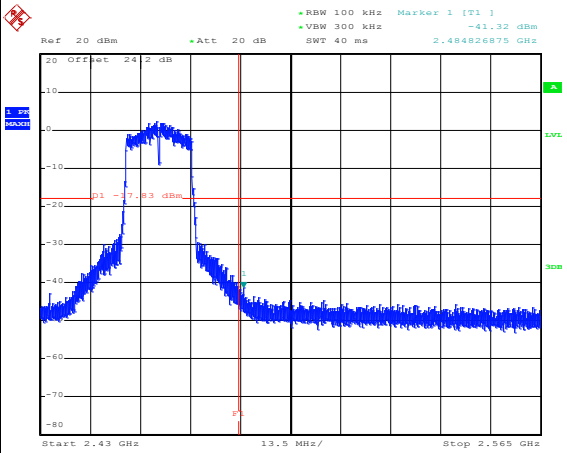
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



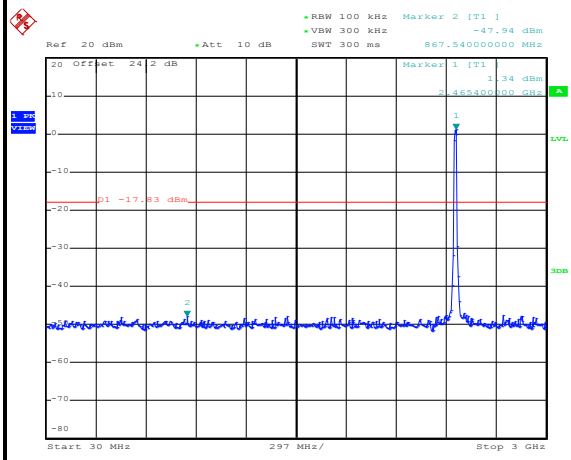
Date: 18.OCT.2018 19:50:33

High Channel Plot



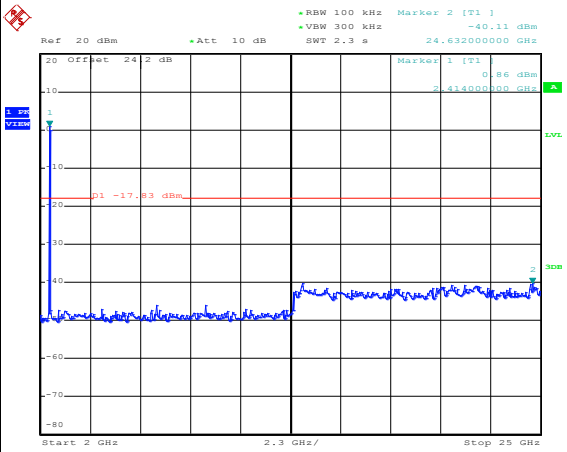
Date: 18.OCT.2018 19:50:51

Spurious Emission 30MHz~3GHz



Date: 18.OCT.2018 19:51:28

Spurious Emission 2GHz~25GHz

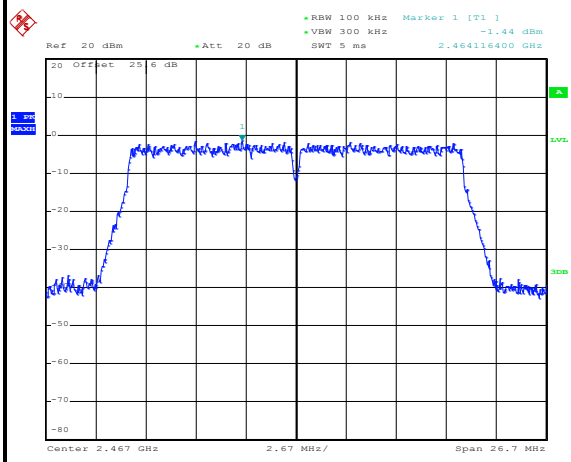


Date: 18.OCT.2018 19:51:44

Test Mode :	802.11n HT20	Test Channel :	12

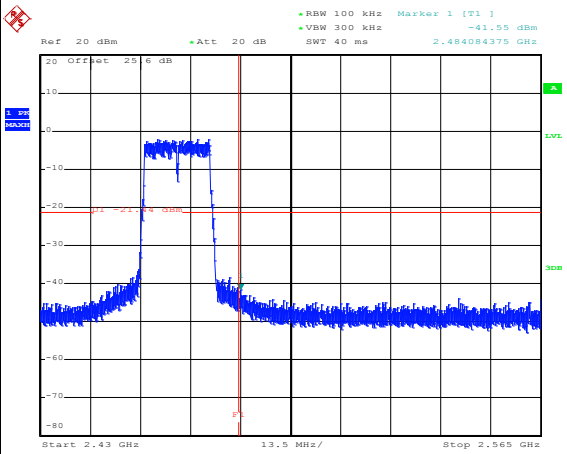
WLAN 802.11n HT20 Channel 12

100kHz PSD reference Level



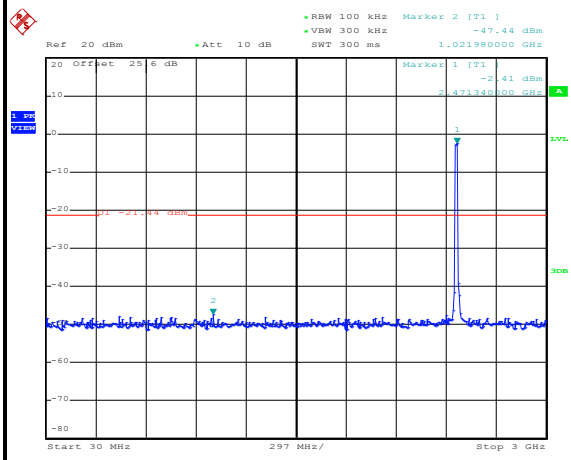
Date: 15.OCT.2018 23:36:44

High Channel Plot



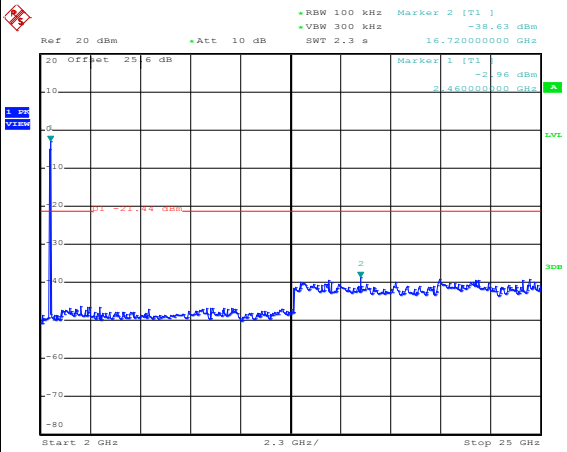
Date: 15.OCT.2018 23:37:08

Spurious Emission 30MHz~3GHz



Date: 15.OCT.2018 23:37:44

Spurious Emission 2GHz~25GHz



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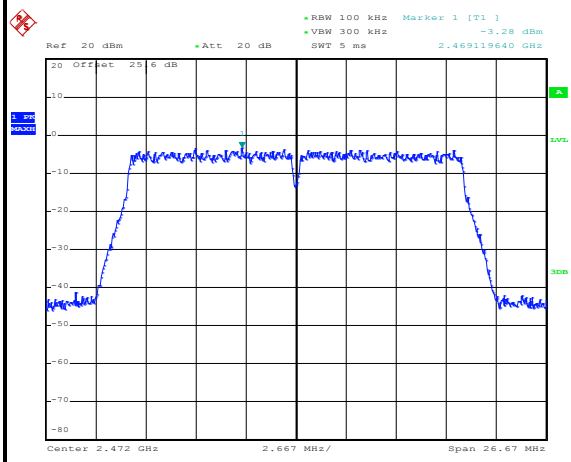
Test Mode :	802.11n HT20	Test Channel :	13

WLAN 802.11n HT20 Channel 13

100kHz PSD reference Level



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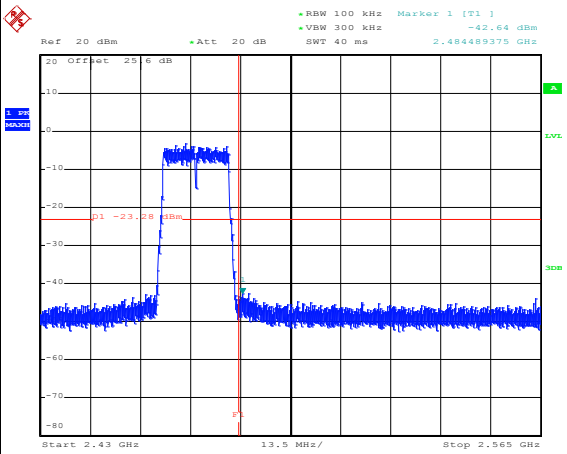
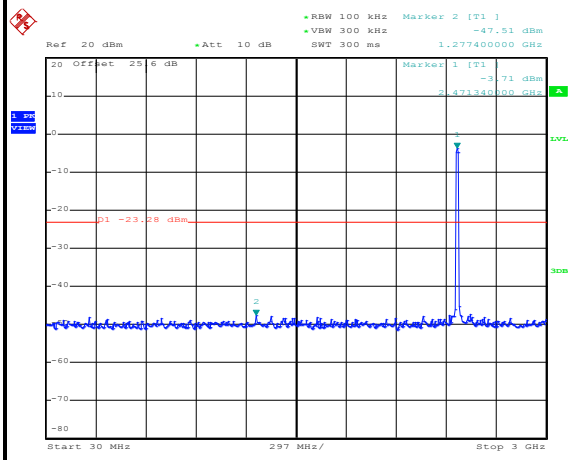
High Channel Plot



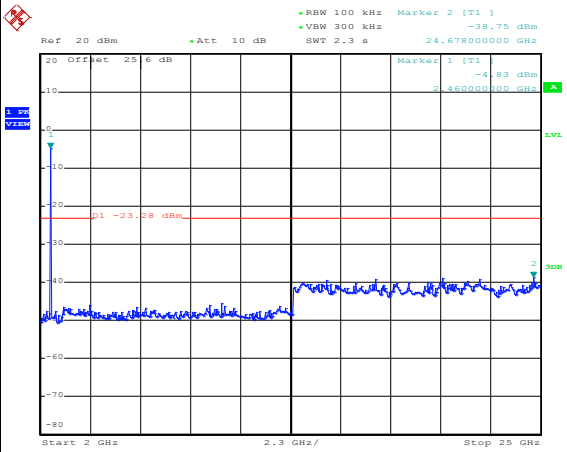
Date: 15.OCT.2018 23:46:14

Spurious Emission 30MHz~3GHz



Date: 15.OCT.2018 23:46:38

Spurious Emission 2GHz~25GHz



Date: 15.OCT.2018 23:46:52

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

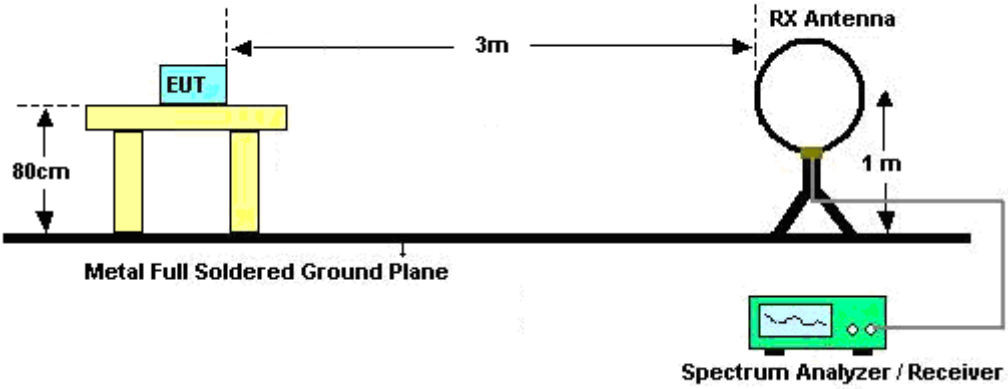
See list of measuring equipment of this test report.

3.5.3 Test Procedures

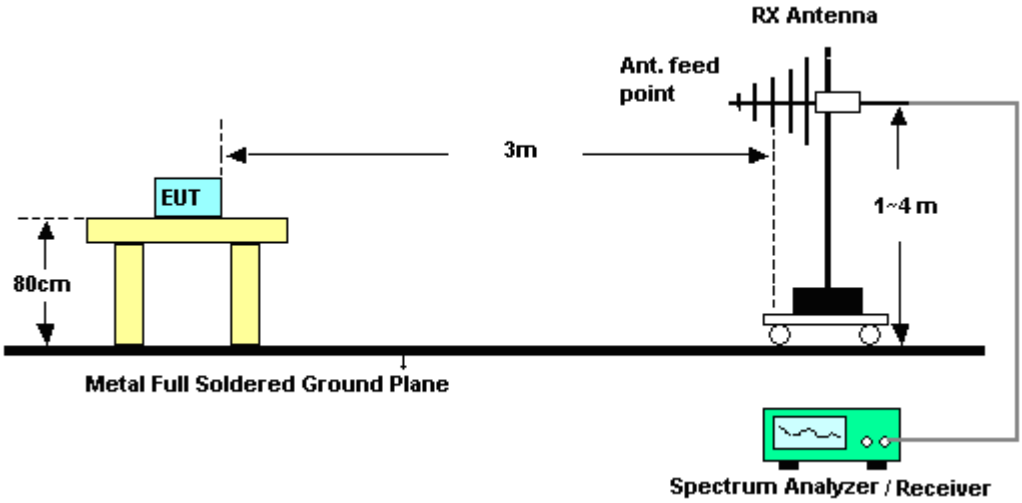
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test 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 ≥ 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

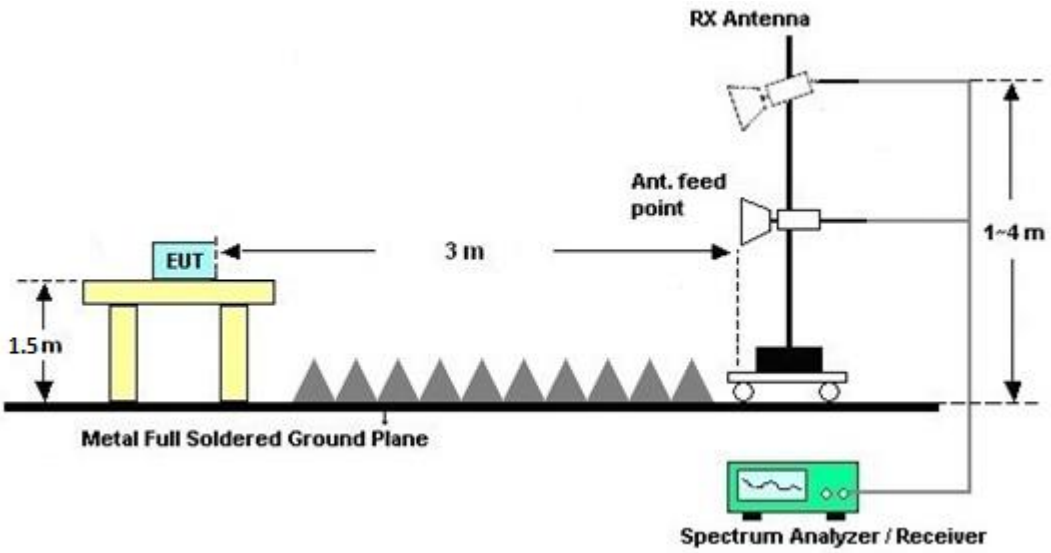
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated 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 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.

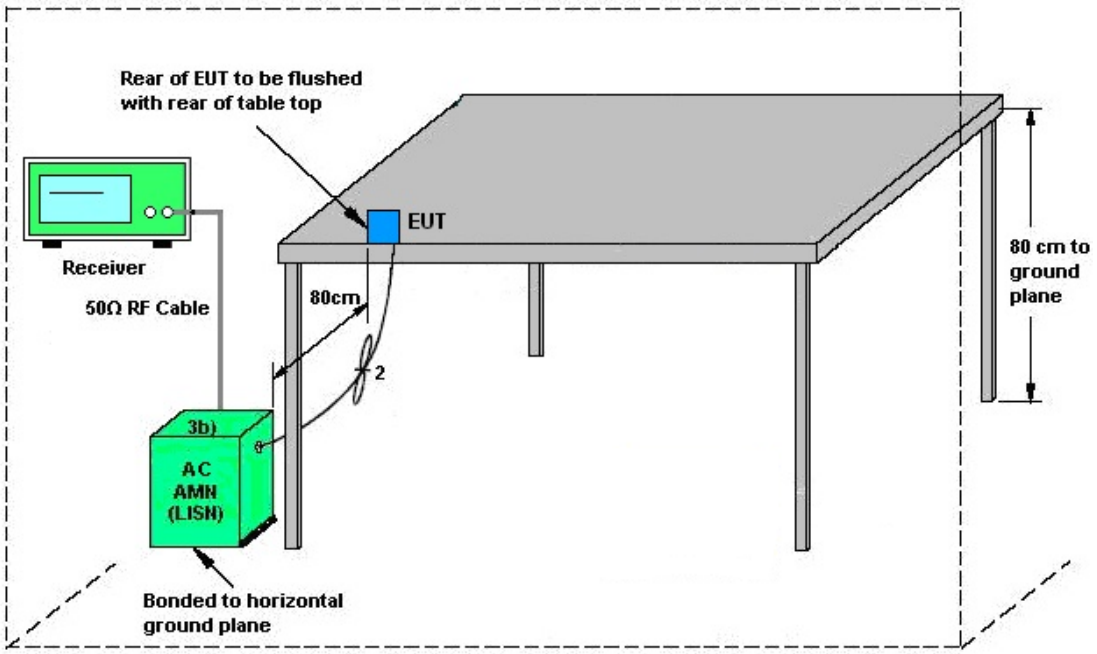
3.6.2 Measuring Instruments

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	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Anritsu	ML2495A	1132003	N/A	Aug. 16, 2018	Sep. 28, 2018~ Oct. 18, 2018	Aug. 15, 2019	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1126017	300MHz~ 40GHz	Aug. 16, 2018	Sep. 28, 2018~ Oct. 18, 2018	Aug. 15, 2019	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9kHz ~ 30GHz	Nov. 13, 2017	Sep. 28, 2018~ Oct. 18, 2018	Nov. 12, 2018	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC1300484	N/A	Mar. 01, 2018	Sep. 28, 2018~ Oct. 18, 2018	Feb. 28, 2019	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Oct. 21, 2018	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9KHz~3.6GHz	Dec. 08, 2017	Oct. 21, 2018	Dec. 07, 2018	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 30, 2017	Oct. 21, 2018	Nov. 29, 2018	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Oct. 21, 2018	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 03, 2018	Oct. 21, 2018	Jan. 02, 2019	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 03, 2018	Oct. 21, 2018	Jan. 02, 2019	Conduction (CO05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Nov. 23, 2017	Oct. 04, 2018~ Oct. 18, 2018	Nov. 22, 2018	Radiation (03CH16-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Jan. 16, 2018	Oct. 04, 2018~ Oct. 18, 2018	Jan. 15, 2019	Radiation (03CH16-HY)
Bilog Antenna	TESEQ	CBL6111D&008 02N1D01N-06	47020&06	30MHz to 1GHz	Nov. 20, 2017	Oct. 04, 2018~ Oct. 18, 2018	Nov. 19, 2018	Radiation (03CH16-HY)
EMI Test Receiver	Keysight	N9038A (MXE)	MY57290111	3Hz~26.5GHz	Nov. 02, 2017	Oct. 04, 2018~ Oct. 18, 2018	Nov. 01, 2018	Radiation (03CH16-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Mar. 27, 2018	Oct. 04, 2018~ Oct. 18, 2018	Mar. 26, 2019	Radiation (03CH16-HY)
Preamplifier	Jet-Power	JPA0118-55-303	171000180005 4001	1GHz~18GHz	Apr. 16, 2018	Oct. 04, 2018~ Oct. 18, 2018	Apr. 15, 2019	Radiation (03CH16-HY)
Preamplifier	Keysight	83017A	MY53270264	1GHz ~ 26.5GHz	Dec. 05, 2017	Oct. 04, 2018~ Oct. 18, 2018	Dec. 04, 2018	Radiation (03CH16-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1522	1G~18GHz	May 10, 2018	Oct. 04, 2018~ Oct. 18, 2018	May 09, 2019	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz-30MHz	Mar. 14, 2018	Oct. 04, 2018~ Oct. 18, 2018	Mar. 13, 2019	Radiation (03CH16-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA9170576	18GHz ~ 40GHz	Nov. 27,2017	Oct. 04, 2018~ Oct. 18, 2018	Nov. 26, 2018	Radiation (03CH16-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 05, 2017	Oct. 04, 2018~ Oct. 18, 2018	Dec. 04, 2018	Radiation (03CH16-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Oct. 04, 2018~ Oct. 18, 2018	N/A	Radiation (03CH16-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Oct. 04, 2018~ Oct. 18, 2018	N/A	Radiation (03CH16-HY)
Software	AUDIX	E3 6.2009-8-24	RK001136	N/A	N/A	Oct. 04, 2018~ Oct. 18, 2018	N/A	Radiation (03CH16-HY)
Filter	Woken	WHKX8-5872.5 -6750-18000-4 0ST	SN3	6.75GHz High Pass	Sep.18, 2018	Oct. 04, 2018~ Oct. 18, 2018	Sep.17, 2019	Radiation (03CH16-HY)
Filter	Wainwright	WHKX12-2700- 3000-18000-60 SS	SN2	3G High Pass	Sep.18, 2018	Oct. 04, 2018~ Oct. 18, 2018	Sep.17, 2019	Radiation (03CH16-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.2

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))	5.8

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.9

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Shiming Liu / AnAn Wu	Temperature:	21~25	°C
Test Date:	2018/9/28~2018/10/18	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band										
Mod.	Data Rate	NTX	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	12.30	-	9.10	-	0.50	Pass
11b	1Mbps	1	6	2437	12.30	-	9.08	-	0.50	Pass
11b	1Mbps	1	11	2462	12.30	-	9.08	-	0.50	Pass
11b	1Mbps	1	12	2467	12.30	-	9.08	-	0.50	Pass
11b	1Mbps	1	13	2472	12.30	-	9.08	-	0.50	Pass
11g	6Mbps	1	1	2412	16.75	-	16.38	-	0.50	Pass
11g	6Mbps	1	6	2437	16.75	-	16.36	-	0.50	Pass
11g	6Mbps	1	11	2462	16.80	-	16.36	-	0.50	Pass
11g	6Mbps	1	12	2467	16.95	-	16.56	-	0.50	Pass
11g	6Mbps	1	13	2472	17.10	-	16.62	-	0.50	Pass
HT20	MCS0	1	1	2412	17.70	-	17.60	-	0.50	Pass
HT20	MCS0	1	6	2437	17.70	-	17.60	-	0.50	Pass
HT20	MCS0	1	11	2462	17.70	-	17.60	-	0.50	Pass
HT20	MCS0	1	12	2467	17.85	-	17.80	-	0.50	Pass
HT20	MCS0	1	13	2472	17.80	-	17.78	-	0.50	Pass

Report Number : FR872106-01C

TEST RESULTS DATA
Peak Output Power

2.4GHz Band																
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
					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	18.60	-	-	30.00	-	1.00	-	19.60	-	36.00	-	Pass
11b	1Mbps	1	6	2437	18.63	-	-	30.00	-	1.00	-	19.63	-	36.00	-	Pass
11b	1Mbps	1	11	2462	18.42	-	-	30.00	-	1.00	-	19.42	-	36.00	-	Pass
11b	1Mbps	1	12	2467	18.32	-	-	30.00	-	1.00	-	19.32	-	36.00	-	Pass
11b	1Mbps	1	13	2472	18.36	-	-	30.00	-	1.00	-	19.36	-	36.00	-	Pass
11g	6Mbps	1	1	2412	23.80	-	-	30.00	-	1.00	-	24.80	-	36.00	-	Pass
11g	6Mbps	1	6	2437	24.30	-	-	30.00	-	1.00	-	25.30	-	36.00	-	Pass
11g	6Mbps	1	11	2462	24.35	-	-	30.00	-	1.00	-	25.35	-	36.00	-	Pass
11g	6Mbps	1	12	2467	21.26	-	-	30.00	-	1.00	-	22.26	-	36.00	-	Pass
11g	6Mbps	1	13	2472	20.77	-	-	30.00	-	1.00	-	21.77	-	36.00	-	Pass
HT20	MCS0	1	1	2412	24.13	-	-	30.00	-	1.00	-	25.13	-	36.00	-	Pass
HT20	MCS0	1	6	2437	23.42	-	-	30.00	-	1.00	-	24.42	-	36.00	-	Pass
HT20	MCS0	1	11	2462	23.53	-	-	30.00	-	1.00	-	24.53	-	36.00	-	Pass
HT20	MCS0	1	12	2467	21.70	-	-	30.00	-	1.00	-	22.70	-	36.00	-	Pass
HT20	MCS0	1	13	2472	19.35	-	-	30.00	-	1.00	-	20.35	-	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	-	15.38	-	-
11b	1Mbps	1	6	2437	0.00	-	15.42	-	
11b	1Mbps	1	11	2462	0.00	-	15.21	-	
11b	1Mbps	1	12	2467	0.00	-	15.11	-	
11b	1Mbps	1	13	2472	0.00	-	15.15	-	
11g	6Mbps	1	1	2412	0.00	-	15.42	-	
11g	6Mbps	1	6	2437	0.00	-	15.48	-	
11g	6Mbps	1	11	2462	0.00	-	15.49	-	
11g	6Mbps	1	12	2467	0.00	-	11.85	-	
11g	6Mbps	1	13	2472	0.00	-	11.77	-	
HT20	MCS0	1	1	2412	0.00	-	15.49	-	
HT20	MCS0	1	6	2437	0.00	-	15.45	-	
HT20	MCS0	1	11	2462	0.00	-	15.48	-	
HT20	MCS0	1	12	2467	0.00	-	12.68	-	
HT20	MCS0	1	13	2472	0.00	-	10.72	-	

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

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band												
Mod.	Data Rate	NTX	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	-13.20	-	-	1.00	-	8.00	-	Pass
11b	1Mbps	1	6	2437	-13.24	-	-	1.00	-	8.00	-	Pass
11b	1Mbps	1	11	2462	-13.14	-	-	1.00	-	8.00	-	Pass
11b	1Mbps	1	12	2467	-12.98	-	-	1.00	-	8.00	-	Pass
11b	1Mbps	1	13	2472	-13.11	-	-	1.00	-	8.00	-	Pass
11g	6Mbps	1	1	2412	-11.50	-	-	1.00	-	8.00	-	Pass
11g	6Mbps	1	6	2437	-11.55	-	-	1.00	-	8.00	-	Pass
11g	6Mbps	1	11	2462	-11.82	-	-	1.00	-	8.00	-	Pass
11g	6Mbps	1	12	2467	-16.68	-	-	1.00	-	8.00	-	Pass
11g	6Mbps	1	13	2472	-16.69	-	-	1.00	-	8.00	-	Pass
HT20	MCS0	1	1	2412	-11.66	-	-	1.00	-	8.00	-	Pass
HT20	MCS0	1	6	2437	-11.75	-	-	1.00	-	8.00	-	Pass
HT20	MCS0	1	11	2462	-11.74	-	-	1.00	-	8.00	-	Pass
HT20	MCS0	1	12	2467	-14.95	-	-	1.00	-	8.00	-	Pass
HT20	MCS0	1	13	2472	-17.39	-	-	1.00	-	8.00	-	Pass

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

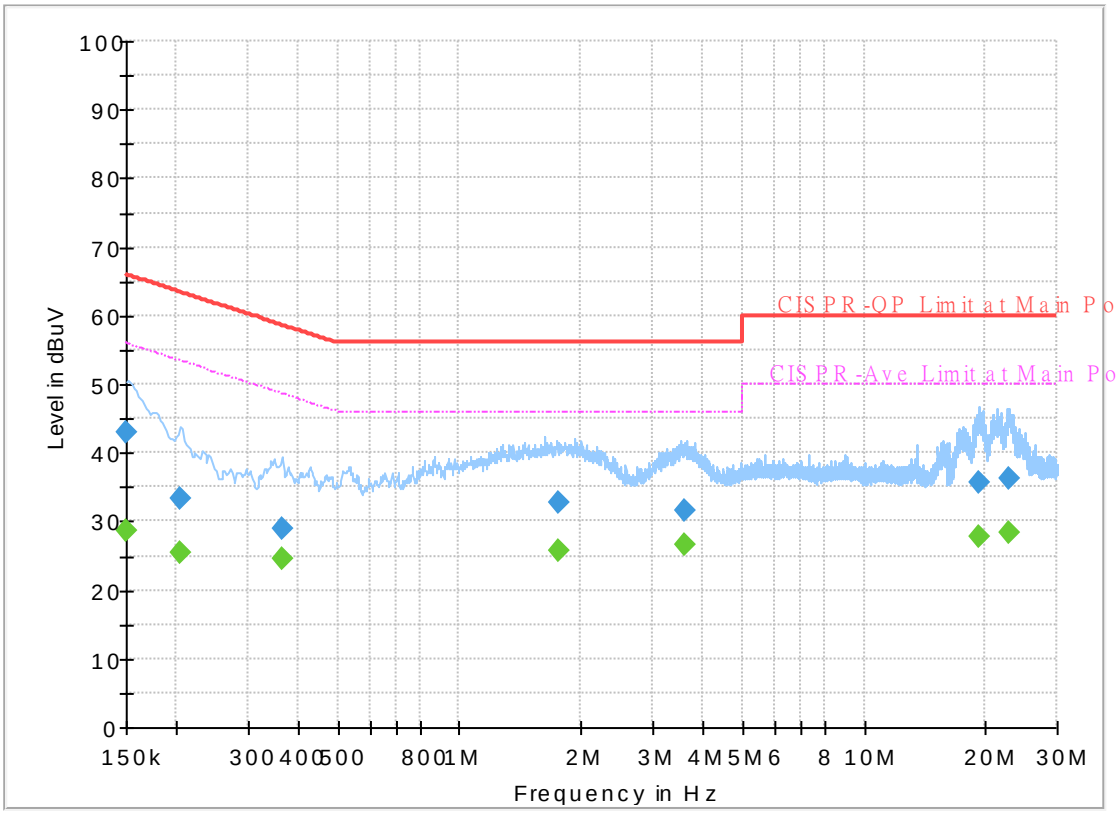
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Rick Lin	**Temperature :**	21~24℃
		Relative Humidity :	51~53%

EUT Information

Report NO :	872106-01
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Line

Full Spectrum

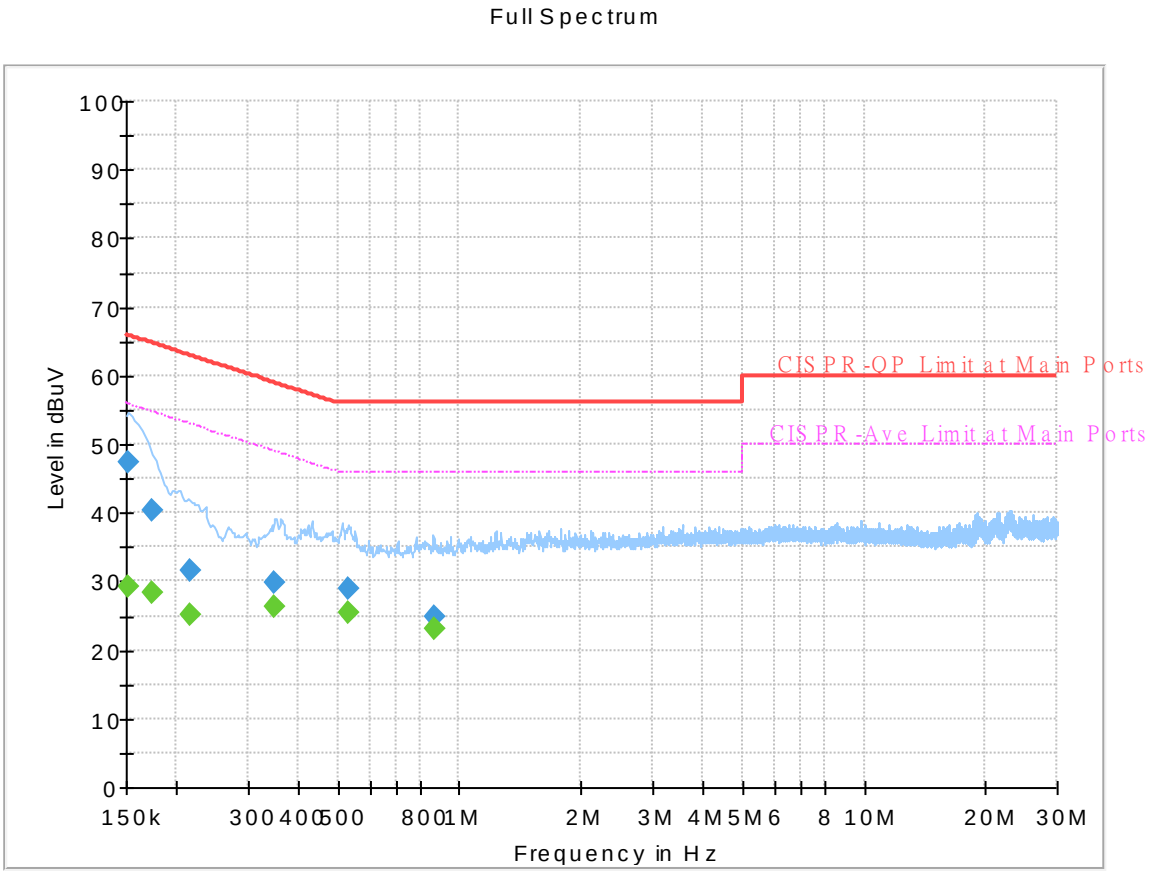


Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.150000	---	28.62	56.00	27.38	L1	OFF	19.5
0.150000	43.01	---	66.00	22.99	L1	OFF	19.5
0.204000	---	25.57	53.45	27.88	L1	OFF	19.5
0.204000	33.20	---	63.45	30.25	L1	OFF	19.5
0.363750	---	24.53	48.64	24.11	L1	OFF	19.5
0.363750	28.81	---	58.64	29.83	L1	OFF	19.5
1.767750	---	25.76	46.00	20.24	L1	OFF	19.6
1.767750	32.72	---	56.00	23.28	L1	OFF	19.6
3.606000	---	26.49	46.00	19.51	L1	OFF	19.7
3.606000	31.46	---	56.00	24.54	L1	OFF	19.7
19.176000	---	27.75	50.00	22.25	L1	OFF	20.2
19.176000	35.77	---	60.00	24.23	L1	OFF	20.2
22.787250	---	28.37	50.00	21.63	L1	OFF	20.3
22.787250	36.23	---	60.00	23.77	L1	OFF	20.3

EUT Information

Report NO :	872106-01
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Neutral



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	29.27	55.88	26.61	N	OFF	19.5
0.152250	47.49	---	65.88	18.39	N	OFF	19.5
0.174750	---	28.45	54.73	26.28	N	OFF	19.5
0.174750	40.25	---	64.73	24.48	N	OFF	19.5
0.215250	---	25.23	53.00	27.77	N	OFF	19.5
0.215250	31.45	---	63.00	31.55	N	OFF	19.5
0.350250	---	26.31	48.96	22.65	N	OFF	19.5
0.350250	29.90	---	58.96	29.06	N	OFF	19.5
0.530250	---	25.44	46.00	20.56	N	OFF	19.5
0.530250	28.91	---	56.00	27.09	N	OFF	19.5
0.863250	---	22.97	46.00	23.03	N	OFF	19.6
0.863250	24.74	---	56.00	31.26	N	OFF	19.6

Appendix C. Radiated Spurious Emission

Test Engineer :	Yun Huang, J.C. Liang, CR Liao, and Andy Yang	Temperature :	22~25°C
		Relative Humidity :	50~54%

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.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2334.57	56.74	-17.26	74	41.51	27	18.24	30.01	110	236	P	H
		2374.05	44.73	-9.27	54	29.33	27.1	18.29	29.99	110	236	A	H
	*	2412	108.6	-	-	93.06	27.19	18.34	29.99	110	236	P	H
	*	2412	105.55	-	-	90.01	27.19	18.34	29.99	110	236	A	H
		2331.84	56.85	-17.15	74	41.63	27	18.23	30.01	323	268	P	V
		2370.795	43.94	-10.06	54	28.55	27.09	18.29	29.99	323	268	A	V
	*	2412	105.27	-	-	89.73	27.19	18.34	29.99	323	268	P	V
	*	2412	102.2	-	-	86.66	27.19	18.34	29.99	323	268	A	V
802.11b CH 06 2437MHz		2332.96	57.24	-16.76	74	42.02	27	18.23	30.01	100	237	P	H
		2382.8	44.51	-9.49	54	29.07	27.12	18.31	29.99	100	237	A	H
	*	2437	109.01	-	-	93.39	27.25	18.35	29.98	100	237	P	H
	*	2437	105.86	-	-	90.24	27.25	18.35	29.98	100	237	A	H
		2497.2	57.34	-16.66	74	41.52	27.39	18.39	29.96	100	237	P	H
		2490.83	44.99	-9.01	54	29.2	27.38	18.38	29.97	100	237	A	H
		2357.32	56.23	-17.77	74	40.9	27.06	18.27	30	355	276	P	V
		2389.8	43.9	-10.1	54	28.43	27.14	18.32	29.99	355	276	A	V
	*	2437	105.55	-	-	89.93	27.25	18.35	29.98	355	276	P	V
	*	2437	102.48	-	-	86.86	27.25	18.35	29.98	355	276	A	V
		2487.75	56.91	-17.09	74	41.13	27.37	18.38	29.97	355	276	P	V
		2490.34	44.46	-9.54	54	28.67	27.38	18.38	29.97	355	276	A	V

802.11b CH 11 2462MHz	*	2462	108.6	-	-	92.89	27.31	18.37	29.97	100	239	P	H
	*	2462	105.47	-	-	89.76	27.31	18.37	29.97	100	239	A	H
		2490.04	57.97	-16.03	74	42.18	27.38	18.38	29.97	100	239	P	H
		2487.64	46.12	-7.88	54	30.34	27.37	18.38	29.97	100	239	A	H
	*	2462	105.68	-	-	89.97	27.31	18.37	29.97	346	280	P	V
	*	2462	102.56	-	-	86.85	27.31	18.37	29.97	346	280	A	V
		2487	57.31	-16.69	74	41.53	27.37	18.38	29.97	346	280	P	V
		2487.56	45.21	-8.79	54	29.43	27.37	18.38	29.97	346	280	A	V
802.11b CH 12 2467MHz	*	2467	108.71	-	-	92.99	27.32	18.37	29.97	100	245	P	H
	*	2467	105.55	-	-	89.83	27.32	18.37	29.97	100	245	A	H
		2493.56	56.69	-17.31	74	40.88	27.38	18.39	29.96	100	245	P	H
		2483.52	46.4	-7.6	54	30.63	27.36	18.38	29.97	100	245	A	H
	*	2467	105.23	-	-	89.51	27.32	18.37	29.97	397	259	P	V
	*	2467	102.1	-	-	86.38	27.32	18.37	29.97	397	259	A	V
		2490.36	56.69	-17.31	74	40.9	27.38	18.38	29.97	397	259	P	V
		2483.52	44.88	-9.12	54	29.11	27.36	18.38	29.97	397	259	A	V
802.11b CH 13 2472MHz	*	2472	108.66	-	-	92.93	27.33	18.37	29.97	100	247	P	H
	*	2472	105.49	-	-	89.76	27.33	18.37	29.97	100	247	A	H
		2484.16	60.21	-13.79	74	44.44	27.36	18.38	29.97	100	247	P	H
		2483.52	53.27	-0.73	54	37.5	27.36	18.38	29.97	100	247	A	H
	*	2472	104.84	-	-	89.11	27.33	18.37	29.97	389	260	P	V
	*	2472	101.69	-	-	85.96	27.33	18.37	29.97	389	260	A	V
		2483.52	59.17	-14.83	74	43.4	27.36	18.38	29.97	389	260	P	V
		2483.52	49.43	-4.57	54	33.66	27.36	18.38	29.97	389	260	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	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	44.27	-29.73	74	57.87	31.18	13.76	58.54	100	0	P	H
		4824	44.25	-29.75	74	57.85	31.18	13.76	58.54	100	0	P	V
802.11b CH 06 2437MHz		4874	45.84	-28.16	74	59.26	31.27	13.84	58.53	100	0	P	H
		7311	43.43	-30.57	74	51.07	36.11	15.22	58.97	100	0	P	H
		4874	46.3	-27.7	74	59.72	31.27	13.84	58.53	100	0	P	V
		7311	43.84	-30.16	74	51.48	36.11	15.22	58.97	100	0	P	V
802.11b CH 11 2462MHz		4924	45.79	-28.21	74	59.03	31.36	13.92	58.52	100	0	P	H
		7386	43.68	-30.32	74	51.13	36.3	15.15	58.9	100	0	P	H
		4924	45.32	-28.68	74	58.56	31.36	13.92	58.52	100	0	P	V
		7386	43.7	-30.3	74	51.15	36.3	15.15	58.9	100	0	P	V
802.11b CH 12 2467MHz		4934	45.87	-28.13	74	59.07	31.38	13.93	58.51	100	0	P	H
		7401	43.18	-30.82	74	50.59	36.34	15.14	58.89	100	0	P	H
		4934	46.51	-27.49	74	59.71	31.38	13.93	58.51	100	0	P	V
		7401	42.53	-31.47	74	49.94	36.34	15.14	58.89	100	0	P	V
802.11b CH 13 2472MHz		4944	45.91	-28.09	74	59.07	31.4	13.95	58.51	100	0	P	H
		7416	43.08	-30.92	74	50.38	36.38	15.2	58.88	100	0	P	H
		4944	46.41	-27.59	74	59.57	31.4	13.95	58.51	100	0	P	V
		7416	43.03	-30.97	74	50.33	36.38	15.2	58.88	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	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2389.59	65.82	-8.18	74	50.36	27.14	18.31	29.99	106	243	P	H
		2390	52.75	-1.25	54	37.28	27.14	18.32	29.99	106	243	A	H
	*	2412	112.94	-	-	97.4	27.19	18.34	29.99	106	243	P	H
	*	2412	105.24	-	-	89.7	27.19	18.34	29.99	106	243	A	H
		2389.695	59.9	-14.1	74	44.43	27.14	18.32	29.99	360	272	P	V
		2390	48.21	-5.79	54	32.74	27.14	18.32	29.99	360	272	A	V
	*	2412	107.75	-	-	92.21	27.19	18.34	29.99	360	272	P	V
	*	2412	100.07	-	-	84.53	27.19	18.34	29.99	360	272	A	V
802.11g CH 06 2437MHz		2388.82	58.25	-15.75	74	42.8	27.13	18.31	29.99	100	245	P	H
		2389.94	47.15	-6.85	54	31.68	27.14	18.32	29.99	100	245	A	H
	*	2437	112.02	-	-	96.4	27.25	18.35	29.98	100	245	P	H
	*	2437	104.46	-	-	88.84	27.25	18.35	29.98	100	245	A	H
		2485.93	58.86	-15.14	74	43.08	27.37	18.38	29.97	100	245	P	H
		2484.6	47.7	-6.3	54	31.93	27.36	18.38	29.97	100	245	A	H
		2385.04	56.3	-17.7	74	40.86	27.12	18.31	29.99	400	268	P	V
		2387.7	44.76	-9.24	54	29.31	27.13	18.31	29.99	400	268	A	V
	*	2437	107.18	-	-	91.56	27.25	18.35	29.98	400	268	P	V
	*	2437	99.94	-	-	84.32	27.25	18.35	29.98	400	268	A	V
		2493.77	56.62	-17.38	74	40.8	27.39	18.39	29.96	400	268	P	V
		2484.95	45.51	-8.49	54	29.74	27.36	18.38	29.97	400	268	A	V

802.11g CH 11 2462MHz	*	2462	111.19	-	-	95.48	27.31	18.37	29.97	100	245	P	H
	*	2462	103.84	-	-	88.13	27.31	18.37	29.97	100	245	A	H
		2483.64	63.39	-10.61	74	47.62	27.36	18.38	29.97	100	245	P	H
		2483.52	52.03	-1.97	54	36.26	27.36	18.38	29.97	100	245	A	H
	*	2462	107.91	-	-	92.2	27.31	18.37	29.97	395	260	P	V
	*	2462	100.41	-	-	84.7	27.31	18.37	29.97	395	260	A	V
		2483.64	58.59	-15.41	74	42.82	27.36	18.38	29.97	395	260	P	V
		2483.52	48.06	-5.94	54	32.29	27.36	18.38	29.97	395	260	A	V
802.11g CH 12 2467MHz	*	2467	106.64	-	-	90.92	27.32	18.37	29.97	100	243	P	H
	*	2467	98.93	-	-	83.21	27.32	18.37	29.97	100	243	A	H
		2483.76	63.05	-10.95	74	47.28	27.36	18.38	29.97	100	243	P	H
		2483.52	50.92	-3.08	54	35.15	27.36	18.38	29.97	100	243	A	H
	*	2467	103.79	-	-	88.07	27.32	18.37	29.97	395	262	P	V
	*	2467	96.14	-	-	80.42	27.32	18.37	29.97	395	262	A	V
		2483.76	59.57	-14.43	74	43.8	27.36	18.38	29.97	395	262	P	V
		2483.52	47.59	-6.41	54	31.82	27.36	18.38	29.97	395	262	A	V
802.11g CH 13 2472MHz	*	2472	106.47	-	-	90.74	27.33	18.37	29.97	100	244	P	H
	*	2472	98.8	-	-	83.07	27.33	18.37	29.97	100	244	A	H
		2484.84	68.11	-5.89	74	52.34	27.36	18.38	29.97	100	244	P	H
		2484	53.37	-0.63	54	37.6	27.36	18.38	29.97	100	244	A	H
	*	2472	104.22	-	-	88.49	27.33	18.37	29.97	396	260	P	V
	*	2472	96.59	-	-	80.86	27.33	18.37	29.97	396	260	A	V
		2484.36	66.22	-7.78	74	50.45	27.36	18.38	29.97	396	260	P	V
		2484.28	52.22	-1.78	54	36.45	27.36	18.38	29.97	396	260	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	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	43.59	-30.41	74	57.19	31.18	13.76	58.54	100	0	P	H
		4824	45.09	-28.91	74	58.69	31.18	13.76	58.54	100	0	P	V
802.11g CH 06 2437MHz		4874	45.18	-28.82	74	58.6	31.27	13.84	58.53	100	0	P	H
		7311	43.33	-30.67	74	50.97	36.11	15.22	58.97	100	0	P	H
		4874	43.46	-30.54	74	56.88	31.27	13.84	58.53	100	0	P	V
		7311	43.33	-30.67	74	50.97	36.11	15.22	58.97	100	0	P	V
802.11g CH 11 2462MHz		4924	42.23	-31.77	74	55.47	31.36	13.92	58.52	100	0	P	H
		7386	43.38	-30.62	74	50.83	36.3	15.15	58.9	100	0	P	H
		4924	42.96	-31.04	74	56.2	31.36	13.92	58.52	100	0	P	V
		7386	43.18	-30.82	74	50.63	36.3	15.15	58.9	100	0	P	V
802.11g CH 12 2467MHz		4934	39.93	-34.07	74	53.13	31.38	13.93	58.51	100	0	P	H
		7401	42.64	-31.36	74	50.05	36.34	15.14	58.89	100	0	P	H
		4934	39.67	-34.33	74	52.87	31.38	13.93	58.51	100	0	P	V
		7401	42.64	-31.36	74	50.05	36.34	15.14	58.89	100	0	P	V
802.11g CH 13 2472MHz		4944	40.59	-33.41	74	53.75	31.4	13.95	58.51	100	0	P	H
		7416	43.97	-30.03	74	51.27	36.38	15.2	58.88	100	0	P	H
		4944	39.48	-34.52	74	52.64	31.4	13.95	58.51	100	0	P	V
		7416	44.25	-29.75	74	51.55	36.38	15.2	58.88	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	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		2389.695	67.71	-6.29	74	52.24	27.14	18.32	29.99	113	234	P	H
		2390	52.99	-1.01	54	37.52	27.14	18.32	29.99	113	234	A	H
	*	2412	110.96	-	-	95.42	27.19	18.34	29.99	113	234	P	H
	*	2412	103.64	-	-	88.1	27.19	18.34	29.99	113	234	A	H
		2389.59	63.81	-10.19	74	48.35	27.14	18.31	29.99	358	277	P	V
		2390	50.29	-3.71	54	34.82	27.14	18.32	29.99	358	277	A	V
	*	2412	107.9	-	-	92.36	27.19	18.34	29.99	358	277	P	V
	*	2412	100.71	-	-	85.17	27.19	18.34	29.99	358	277	A	V
802.11n HT20 CH 06 2437MHz		2389.1	57.63	-16.37	74	42.18	27.13	18.31	29.99	108	233	P	H
		2389.94	46.57	-7.43	54	31.1	27.14	18.32	29.99	108	233	A	H
	*	2437	111	-	-	95.38	27.25	18.35	29.98	108	233	P	H
	*	2437	103.55	-	-	87.93	27.25	18.35	29.98	108	233	A	H
		2484.25	57.94	-16.06	74	42.17	27.36	18.38	29.97	108	233	P	H
		2483.55	47.18	-6.82	54	31.41	27.36	18.38	29.97	108	233	A	H
		2376.22	56.86	-17.14	74	41.45	27.1	18.3	29.99	366	279	P	V
		2389.52	45.35	-8.65	54	29.9	27.13	18.31	29.99	366	279	A	V
	*	2437	108.37	-	-	92.75	27.25	18.35	29.98	366	279	P	V
	*	2437	100.88	-	-	85.26	27.25	18.35	29.98	366	279	A	V
		2486.42	56.9	-17.1	74	41.12	27.37	18.38	29.97	366	279	P	V
		2483.83	45.57	-8.43	54	29.8	27.36	18.38	29.97	366	279	A	V

802.11n HT20 CH 11 2462MHz	*	2462	110.77	-	-	95.06	27.31	18.37	29.97	100	238	P	H
	*	2462	103.26	-	-	87.55	27.31	18.37	29.97	100	238	A	H
		2483.96	66.1	-7.9	74	50.33	27.36	18.38	29.97	100	238	P	H
		2483.52	53.37	-0.63	54	37.6	27.36	18.38	29.97	100	238	A	H
	*	2462	108.19	-	-	92.48	27.31	18.37	29.97	390	269	P	V
	*	2462	100.61	-	-	84.9	27.31	18.37	29.97	390	269	A	V
		2483.96	62.94	-11.06	74	47.17	27.36	18.38	29.97	390	269	P	V
		2483.52	50.83	-3.17	54	35.06	27.36	18.38	29.97	390	269	A	V
802.11n HT20 CH 12 2467MHz	*	2467	106.87	-	-	91.15	27.32	18.37	29.97	100	235	P	H
	*	2467	99.05	-	-	83.33	27.32	18.37	29.97	100	235	A	H
		2484.56	65.54	-8.46	74	49.77	27.36	18.38	29.97	100	235	P	H
		2483.52	52.34	-1.66	54	36.57	27.36	18.38	29.97	100	235	A	H
	*	2467	104.14	-	-	88.42	27.32	18.37	29.97	399	266	P	V
	*	2467	96.42	-	-	80.7	27.32	18.37	29.97	399	266	A	V
		2485	63.62	-10.38	74	47.85	27.36	18.38	29.97	399	266	P	V
		2483.52	49.67	-4.33	54	33.9	27.36	18.38	29.97	399	266	A	V
802.11n HT20 CH 13 2472MHz	*	2472	104.55	-	-	88.82	27.33	18.37	29.97	100	238	P	H
	*	2472	96.74	-	-	81.01	27.33	18.37	29.97	100	238	A	H
		2483.6	63.16	-10.84	74	47.39	27.36	18.38	29.97	100	238	P	H
		2483.52	50.46	-3.54	54	34.69	27.36	18.38	29.97	100	238	A	H
	*	2472	101.84	-	-	86.11	27.33	18.37	29.97	378	286	P	V
	*	2472	94.07	-	-	78.34	27.33	18.37	29.97	378	286	A	V
		2484.08	61.46	-12.54	74	45.69	27.36	18.38	29.97	378	286	P	V
		2483.52	48.64	-5.36	54	32.87	27.36	18.38	29.97	378	286	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	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	43.14	-30.86	74	56.74	31.18	13.76	58.54	100	0	P	H
		4824	43.41	-30.59	74	57.01	31.18	13.76	58.54	100	0	P	V
802.11n HT20 CH 06 2437MHz		4874	42.99	-31.01	74	56.41	31.27	13.84	58.53	100	0	P	H
		7311	43.03	-30.97	74	50.67	36.11	15.22	58.97	100	0	P	H
		4874	44.42	-29.58	74	57.84	31.27	13.84	58.53	100	0	P	V
		7311	42.87	-31.13	74	50.51	36.11	15.22	58.97	100	0	P	V
802.11n HT20 CH 11 2462MHz		4924	44	-30	74	57.24	31.36	13.92	58.52	100	0	P	H
		7386	43.19	-30.81	74	50.64	36.3	15.15	58.9	100	0	P	H
		4924	43.22	-30.78	74	56.46	31.36	13.92	58.52	100	0	P	V
		7386	42.15	-31.85	74	49.6	36.3	15.15	58.9	100	0	P	V
802.11n HT20 CH 12 2467MHz		4934	39.99	-34.01	74	53.19	31.38	13.93	58.51	100	0	P	H
		7401	43.02	-30.98	74	50.43	36.34	15.14	58.89	100	0	P	H
		4934	39.34	-34.66	74	52.54	31.38	13.93	58.51	100	0	P	V
		7401	43.11	-30.89	74	50.52	36.34	15.14	58.89	100	0	P	V
802.11n HT20 CH 13 2472MHz		4944	39.22	-34.78	74	52.38	31.4	13.95	58.51	100	0	P	H
		7416	43.19	-30.81	74	50.49	36.38	15.2	58.88	100	0	P	H
		4944	39.06	-34.94	74	52.22	31.4	13.95	58.51	100	0	P	V
		7416	43.42	-30.58	74	50.72	36.38	15.2	58.88	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

WIFI	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)
2.4GHz 802.11g LF		30.27	21.9	-18.1	40	27.84	26.2	0.32	32.46	-	-	P	H
		96.69	23.88	-19.62	43.5	39.46	15.81	1.04	32.43	-	-	P	H
		145.83	24.9	-18.6	43.5	37.92	17.94	1.46	32.42	-	-	P	H
		659.1	28.34	-17.66	46	30.75	26.2	4.08	32.69	-	-	P	H
		836.9	30.84	-15.16	46	29.94	28.55	4.57	32.22	-	-	P	H
		913.2	32.35	-13.65	46	30.16	29.3	4.64	31.75	100	0	P	H
		30.54	26.38	-13.62	40	32.92	25.62	0.3	32.46	100	0	P	V
		39.18	25.31	-14.69	40	36.33	20.98	0.45	32.45	-	-	P	V
		51.33	23.4	-16.6	40	40.17	14.79	0.89	32.45	-	-	P	V
		580	28.57	-17.43	46	32.26	25.28	3.73	32.7	-	-	P	V
		781.6	30.41	-15.59	46	30.51	27.95	4.41	32.46	-	-	P	V
		946.8	32.3	-13.7	46	29.09	30.04	4.61	31.44	-	-	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

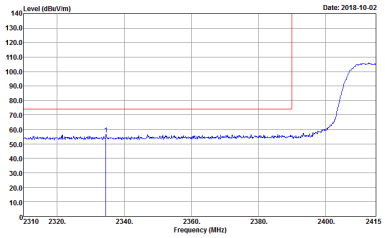
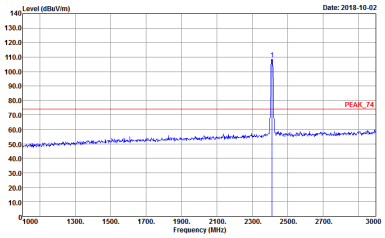
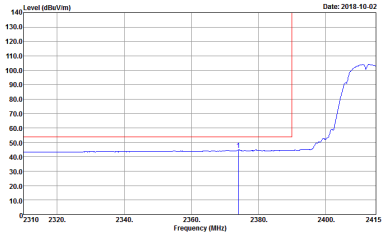
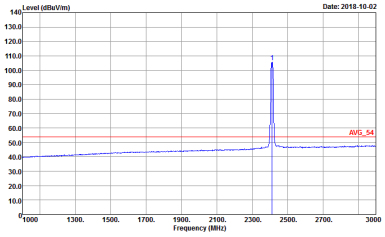
Test Engineer :	Yun Huang, J.C. Liang, CR Liao, and Andy Yang	**Temperature :**	22~25°C
		Relative Humidity :	50~54%

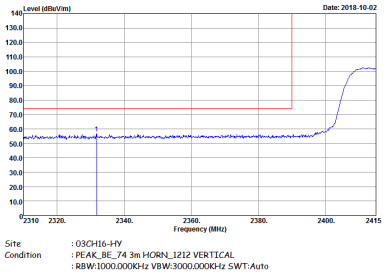
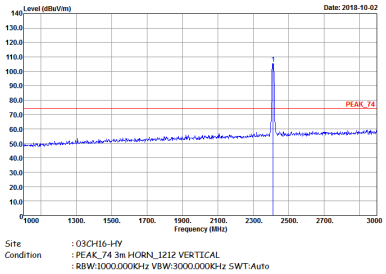
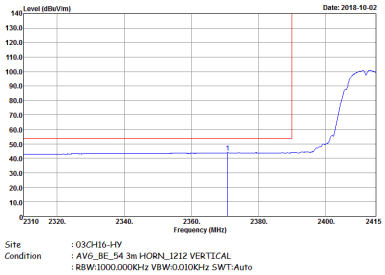
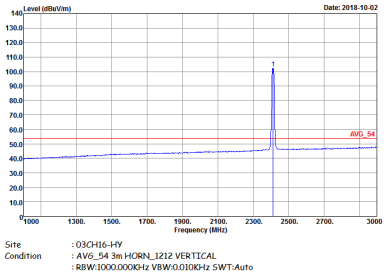
Note symbol

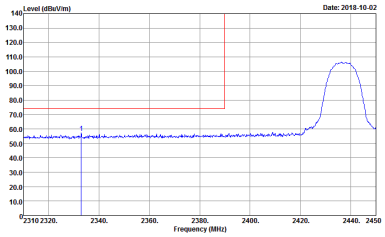
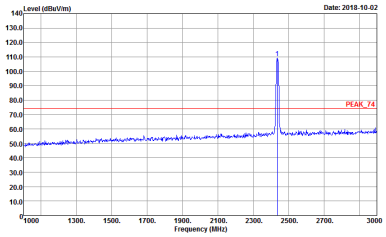
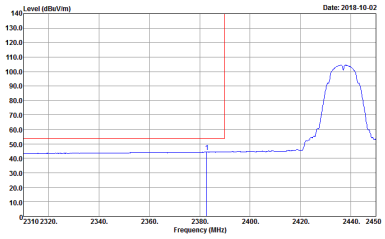
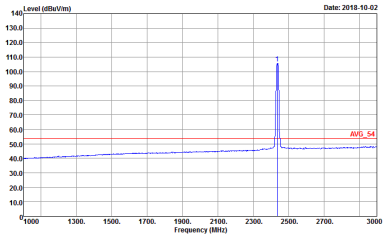
-L	**Low channel location**
-R	**High channel location**

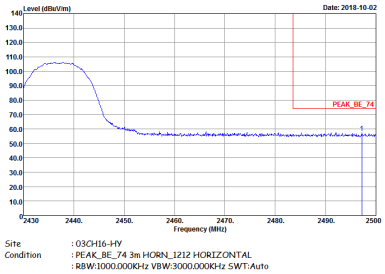
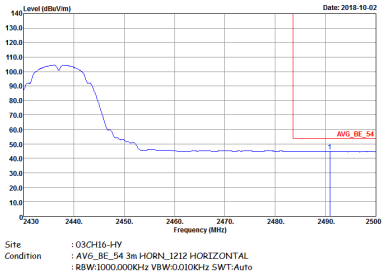
2.4GHz 2400~2483.5MHz

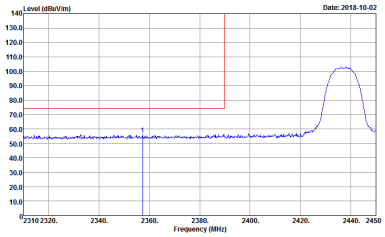
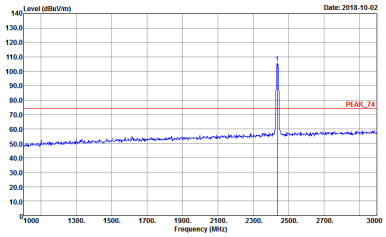
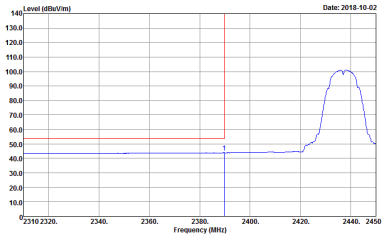
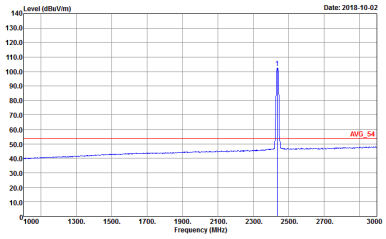
WIFI 802.11b (Band Edge @ 3m)

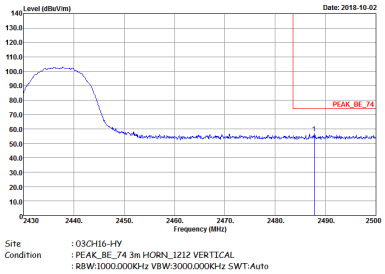
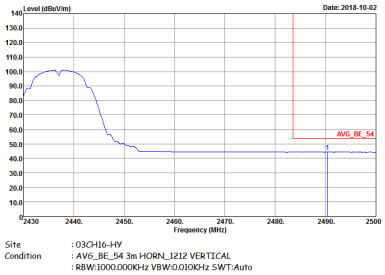
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH01 2412MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

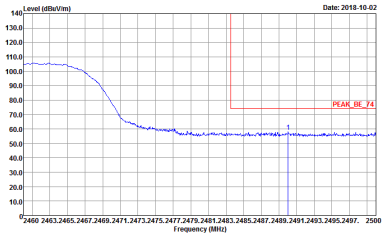
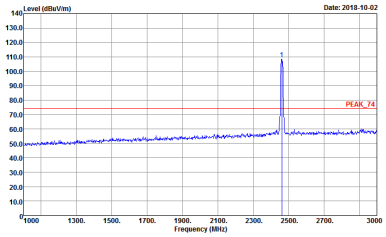
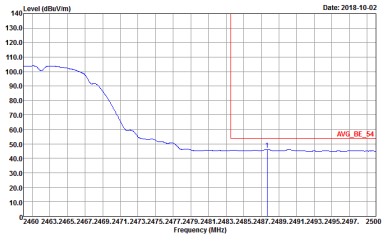
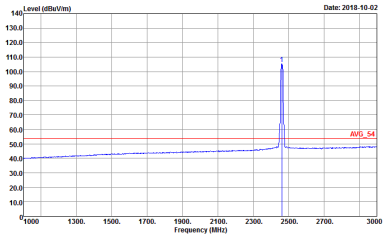
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH01 2412MHz	
	Vertical	Fundamental
Peak		
Avg.		

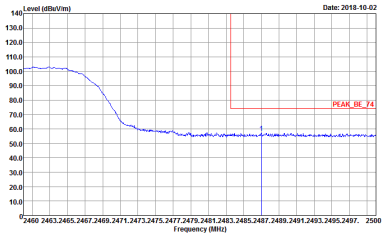
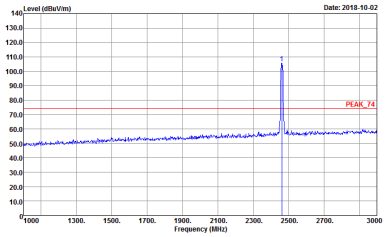
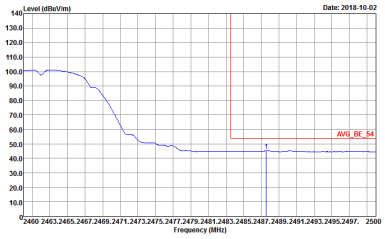
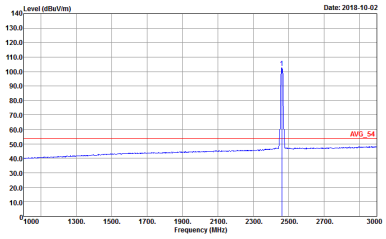
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH06 2437MHz - L	
	Horizontal	Fundamental
Peak		
Avg.		

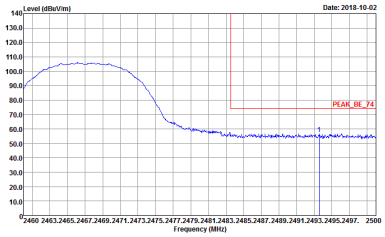
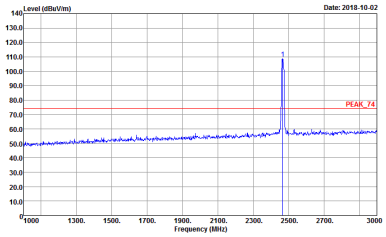
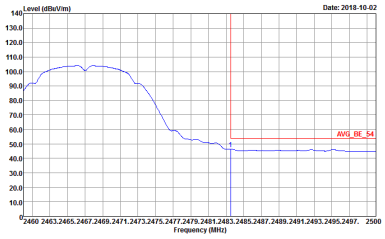
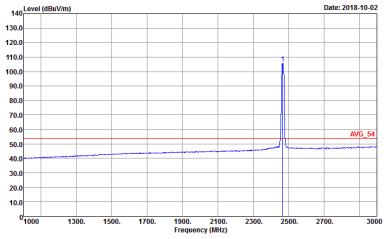
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH06 2437MHz - R	
	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

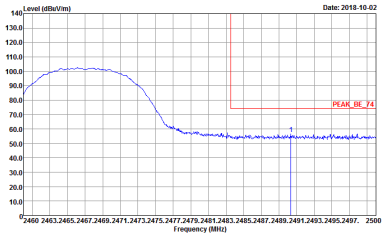
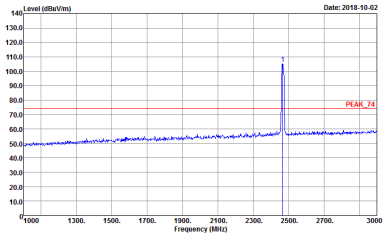
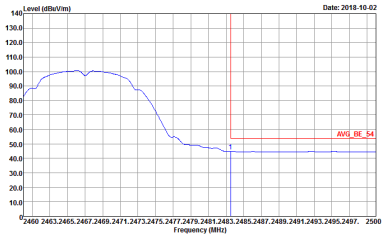
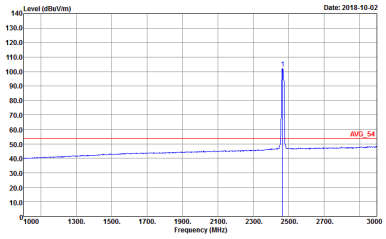
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH06 2437MHz - L	
	Vertical	Fundamental
Peak		
Avg.		

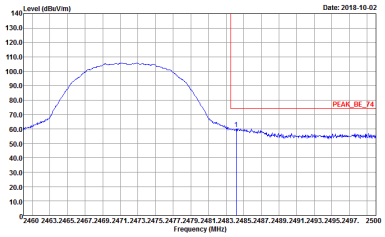
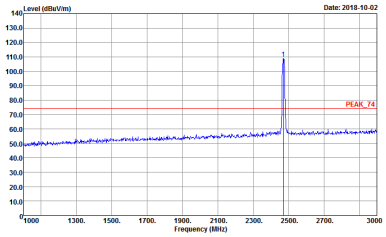
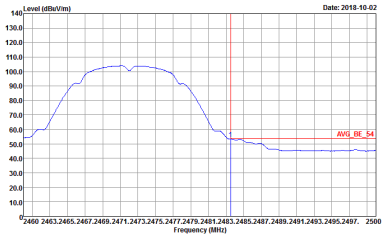
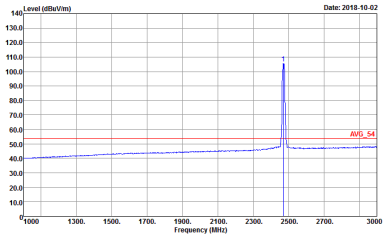
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH06 2437MHz - R	
	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

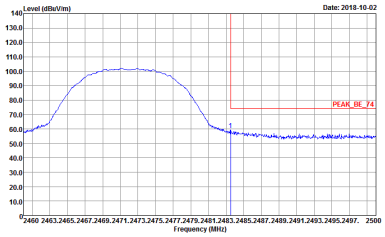
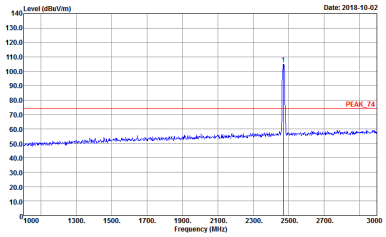
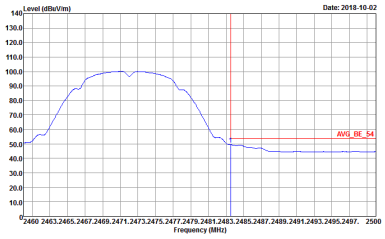
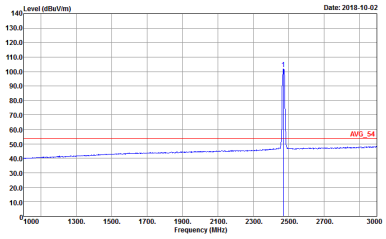
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH11 2462MHz	
	Horizontal	Fundamental
Peak		
Avg.		

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

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

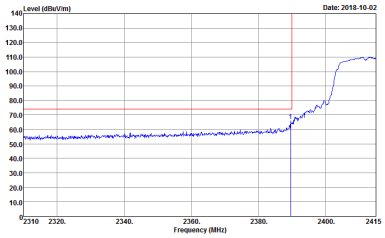
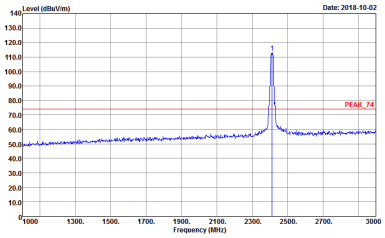
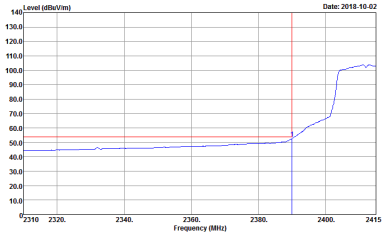
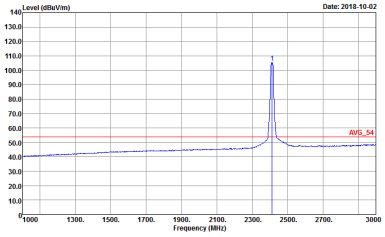
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH12 2467MHz	
	Vertical	Fundamental
Peak		
Avg.		

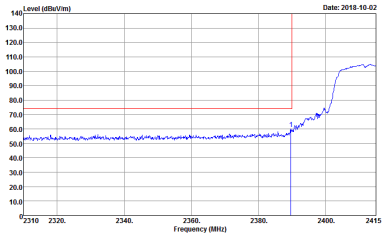
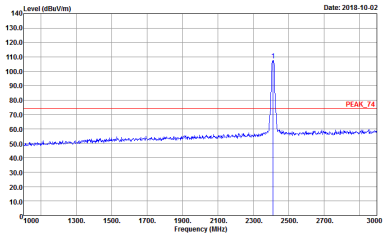
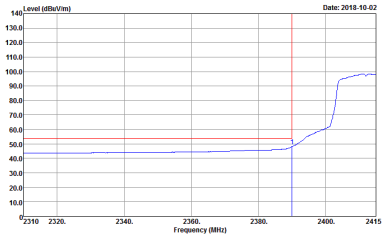
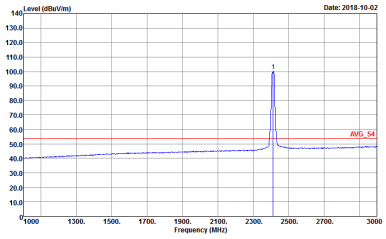
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH13 2472MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

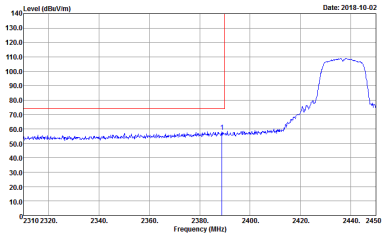
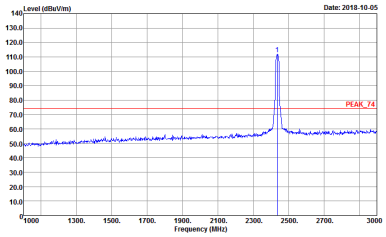
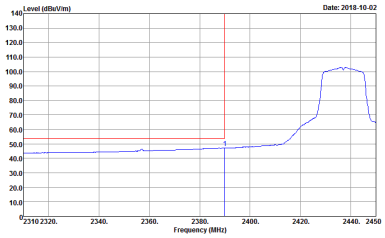
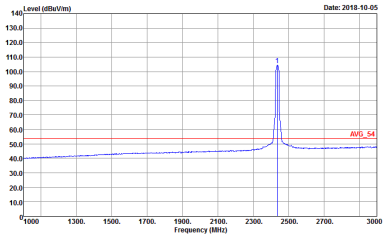
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11b CH13 2472MHz	
	Vertical	Fundamental
Peak		
Avg.		

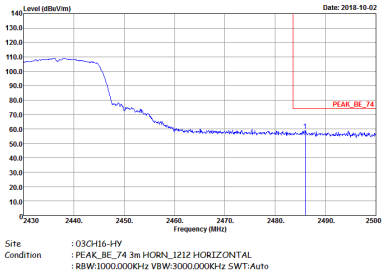
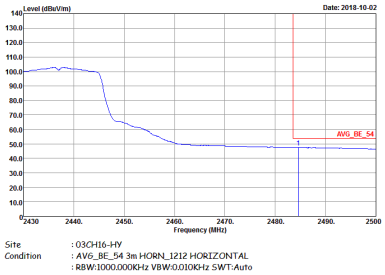
2.4GHz 2400~2483.5MHz

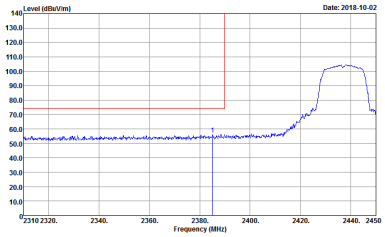
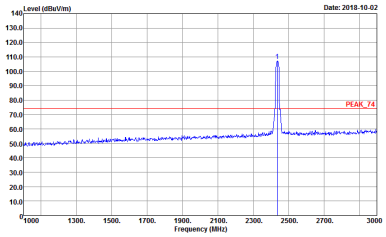
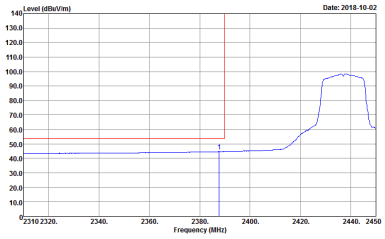
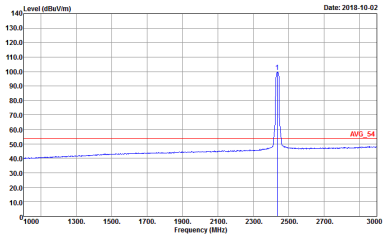
WIFI 802.11g (Band Edge @ 3m)

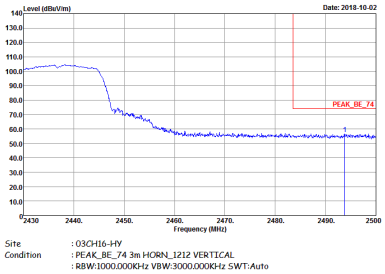
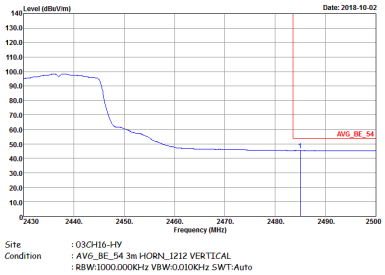
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH01 2412MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

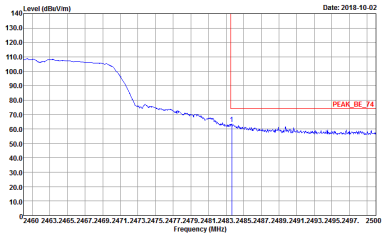
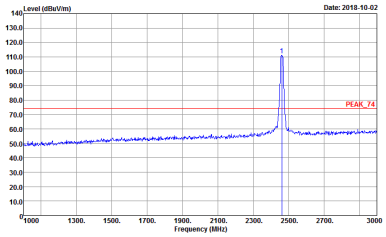
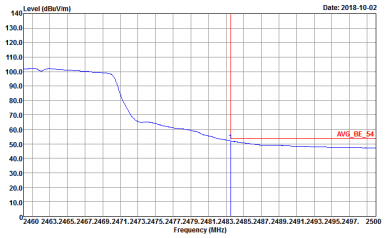
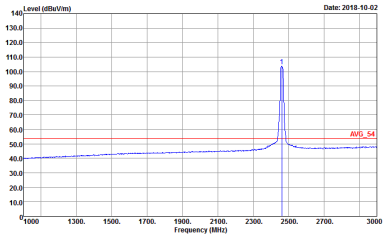
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH01 2412MHz	
	Vertical	Fundamental
Peak		
Avg.		

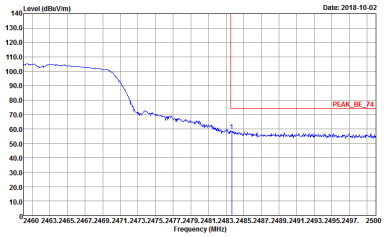
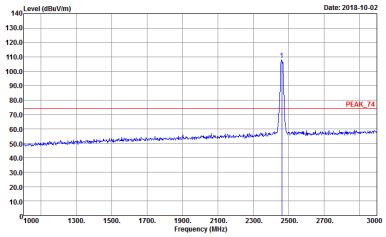
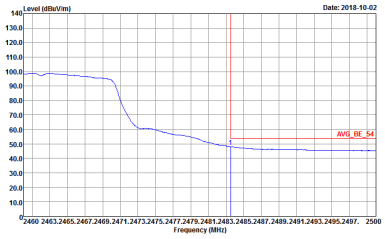
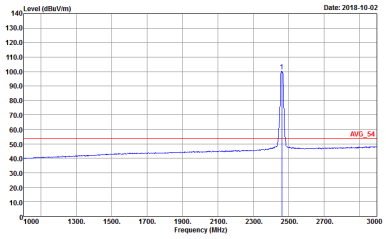
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH06 2437MHz - L	
	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

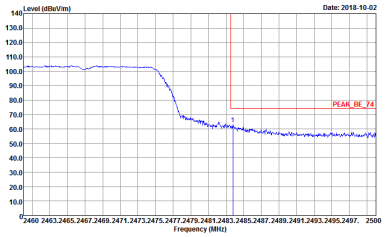
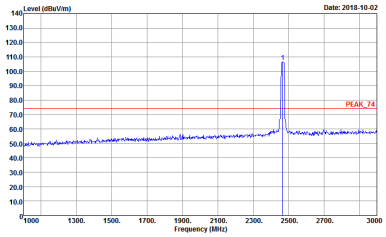
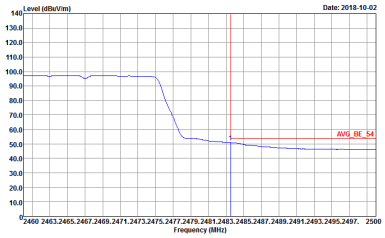
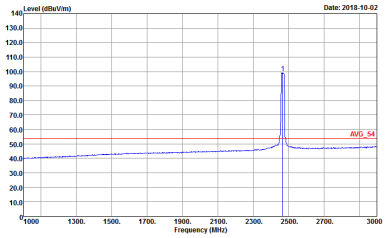
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH06 2437MHz - R	
	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

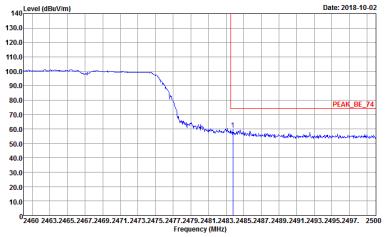
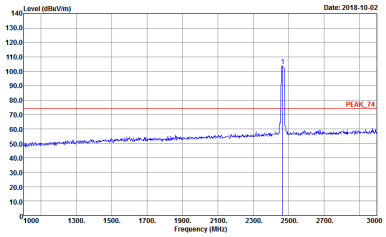
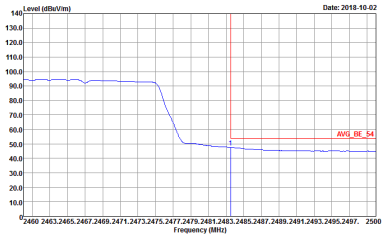
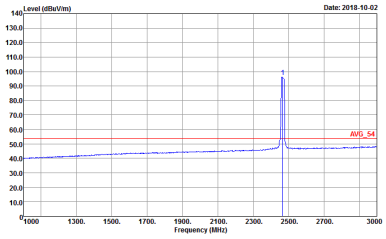
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH06 2437MHz - L	
	Vertical	Fundamental
Peak		
Avg.		

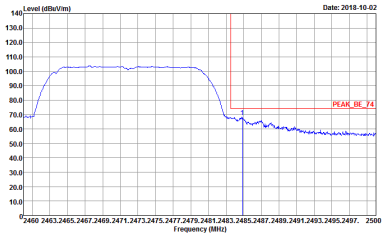
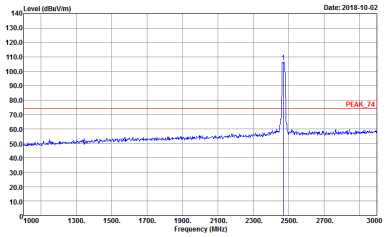
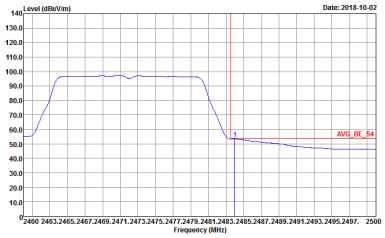
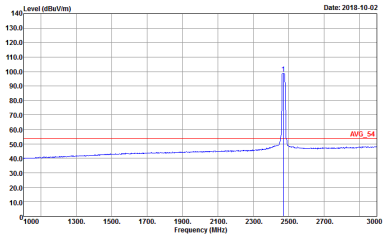
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH06 2437MHz - R	
	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

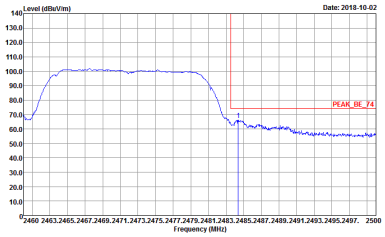
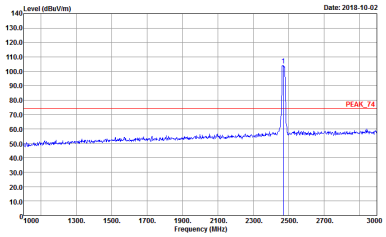
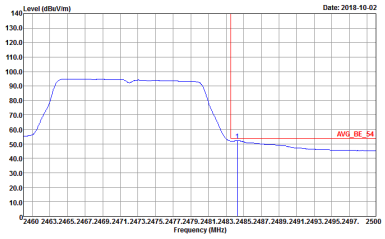
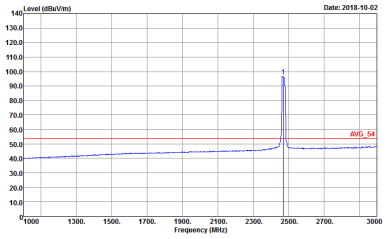
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH11 2462MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH11 2462MHz	
	Vertical	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH12 2467MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

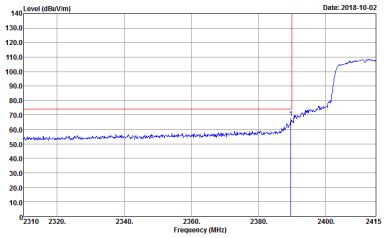
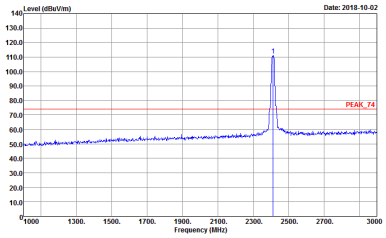
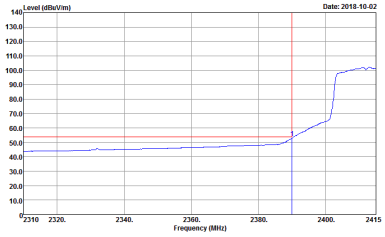
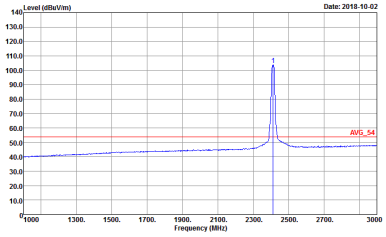
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH12 2467MHz	
	Vertical	Fundamental
Peak		
Avg.		

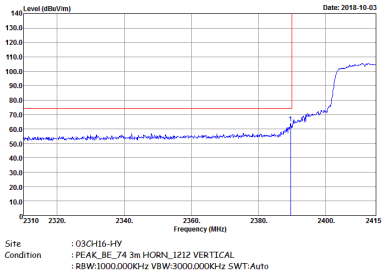
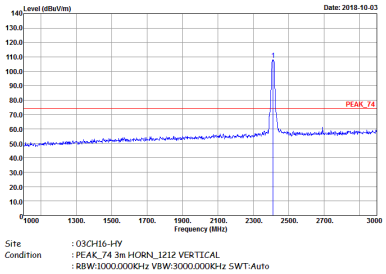
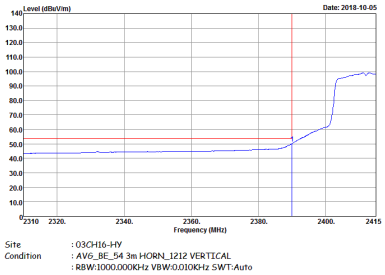
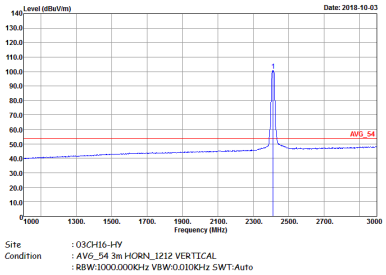
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH13 2472MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

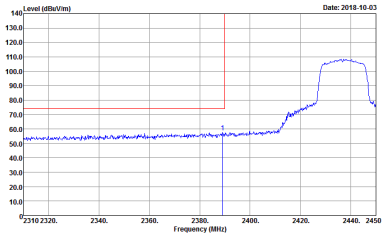
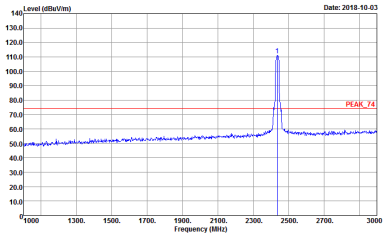
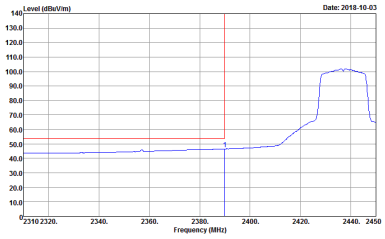
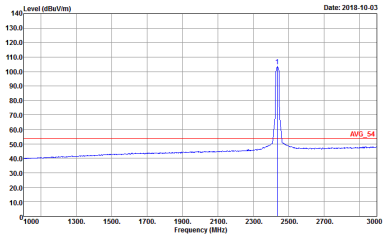
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11g CH13 2472MHz	
	Vertical	Fundamental
Peak		
Avg.		

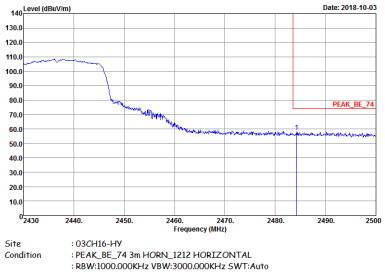
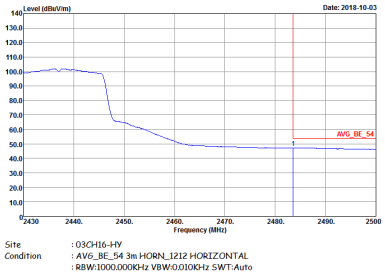
2.4GHz 2400~2483.5MHz

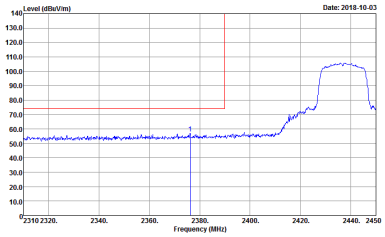
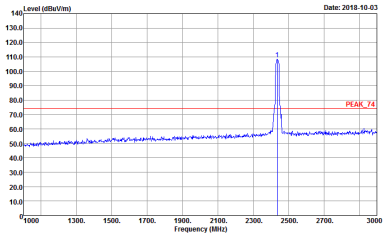
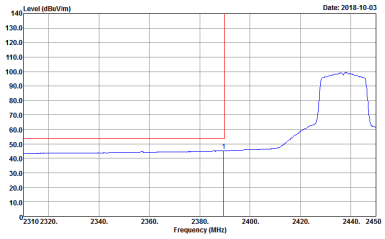
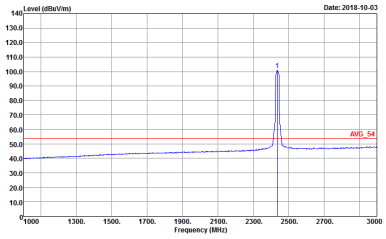
WIFI 802.11n HT20 (Band Edge @ 3m)

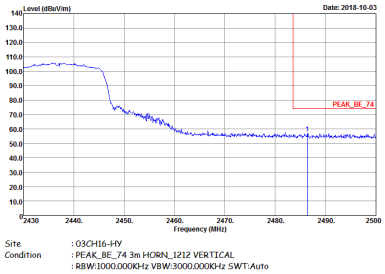
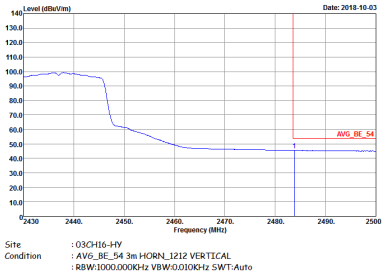
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH01 2412MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

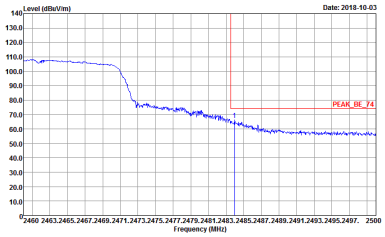
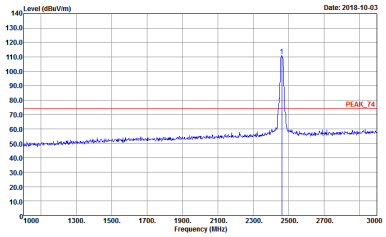
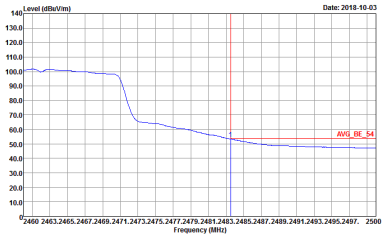
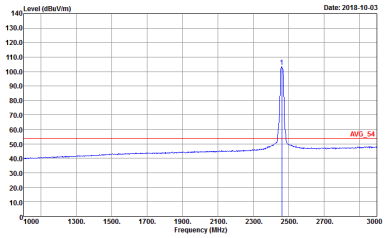
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH01 2412MHz	
	Vertical	Fundamental
Peak		
Avg.		

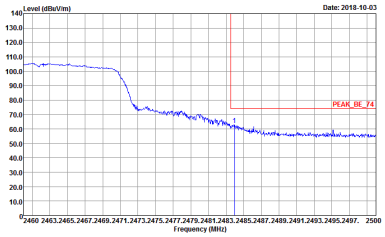
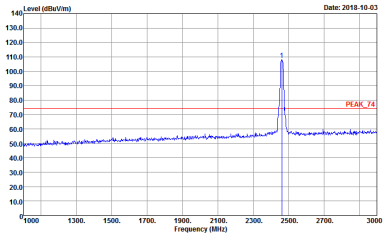
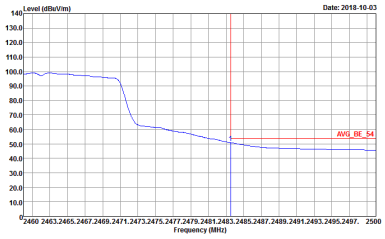
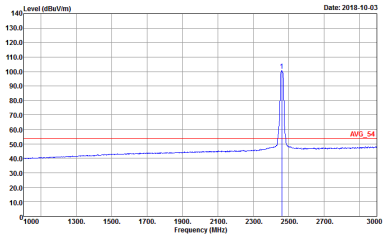
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH06 2437MHz - L	
	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

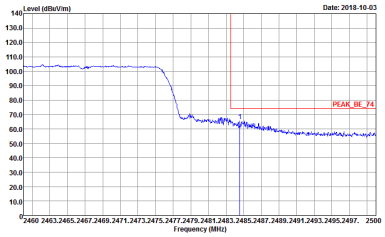
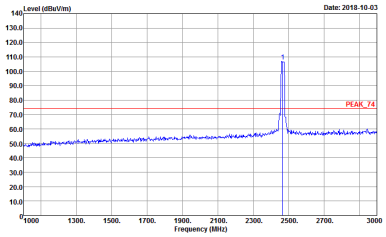
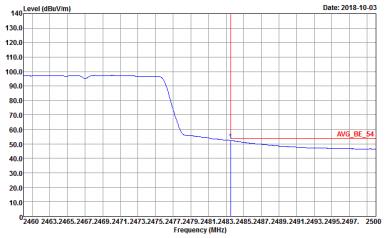
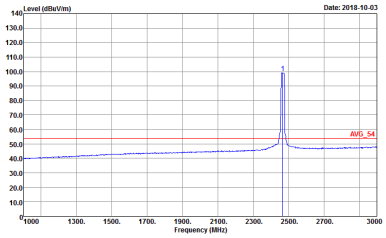
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH06 2437MHz - R	
	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

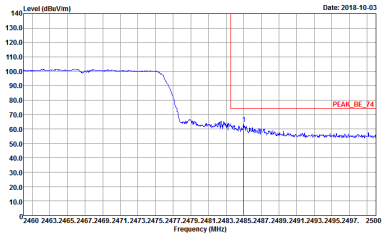
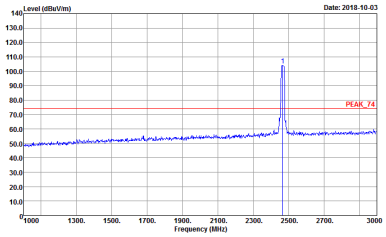
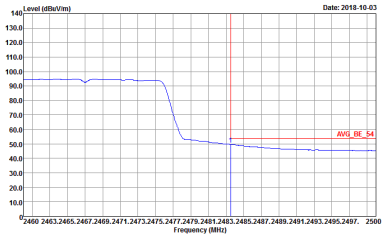
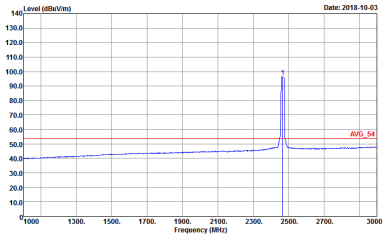
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH06 2437MHz - L	
	Vertical	Fundamental
Peak		
Avg.		

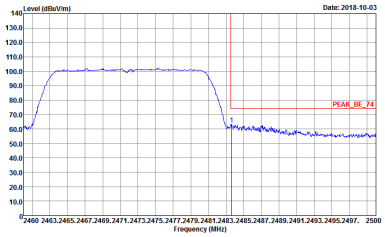
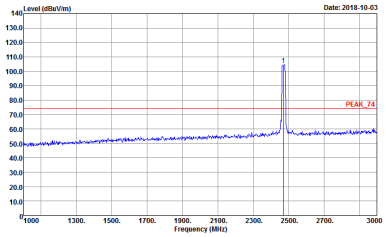
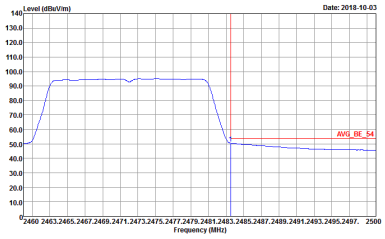
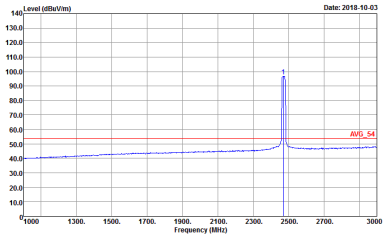
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH06 2437MHz - R	
	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

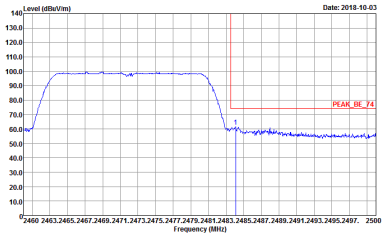
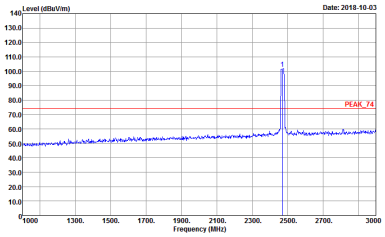
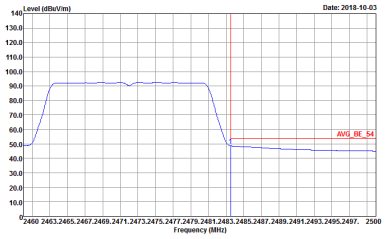
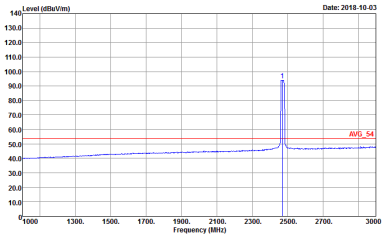
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH11 2462MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
	802.11n HT20 CH11 2462MHz	
	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m HORN_1212 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m HORN_1212 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m HORN_1212 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH12 2467MHz	
	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m HORN_1212 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

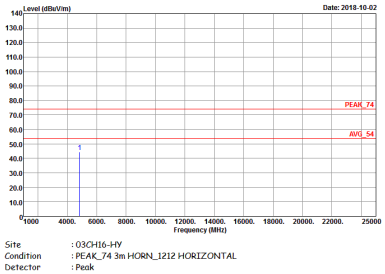
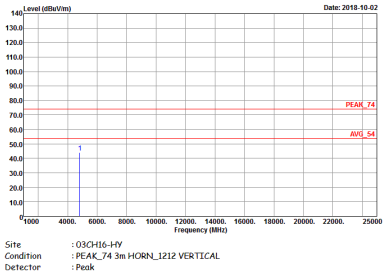
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH12 2467MHz	
	Vertical	Fundamental
Peak		
Avg.		

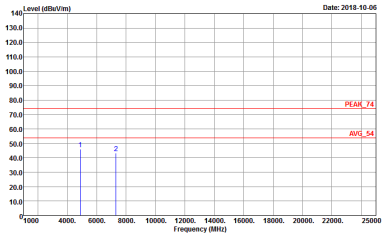
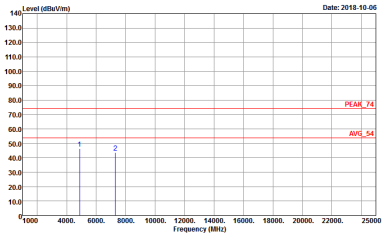
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH13 2472MHz	
	Horizontal	Fundamental
Peak		
Avg.		

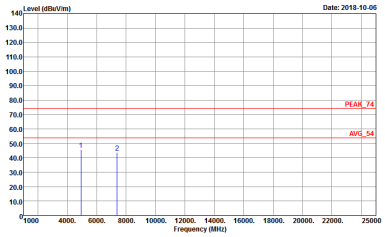
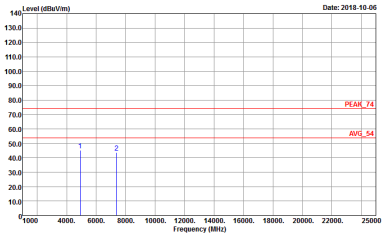
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
	802.11n HT20 CH13 2472MHz	
	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m HORN_1212 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m HORN_1212 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m HORN_1212 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

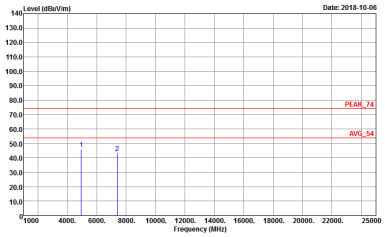
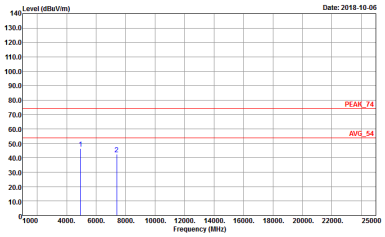
2.4GHz 2400~2483.5MHz

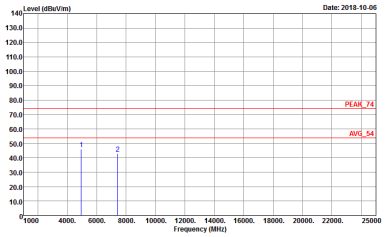
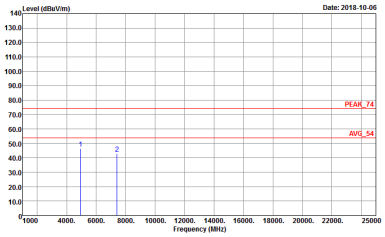
WIFI 802.11b (Harmonic @ 3m)

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

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11b CH06 2437MHz	
	Horizontal	Vertical
Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL Detector : Peak

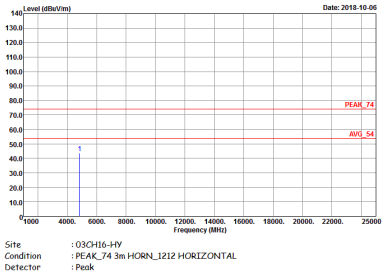
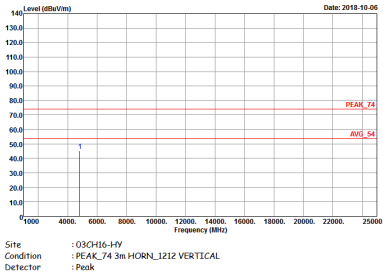
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11b CH11 2462MHz	
	Horizontal	Vertical
Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL Detector : Peak

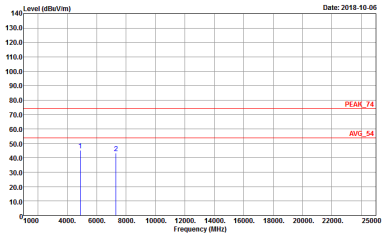
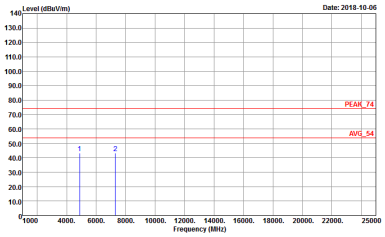
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11b CH12 2467MHz	
	Horizontal	Vertical
Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL Detector : Peak

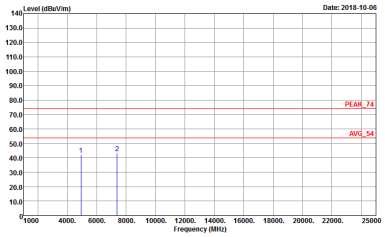
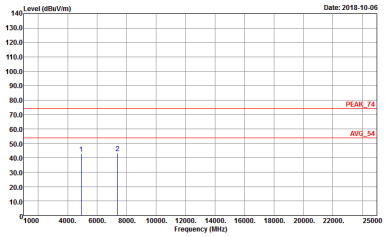
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11b CH13 2472MHz	
	Horizontal	Vertical
Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL Detector : Peak

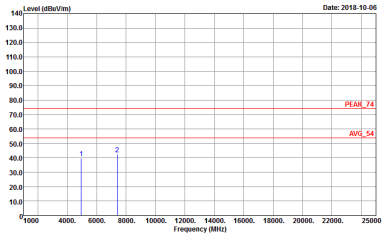
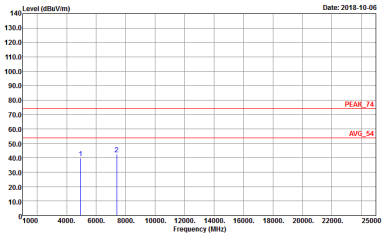
2.4GHz 2400~2483.5MHz

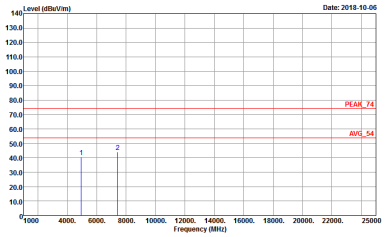
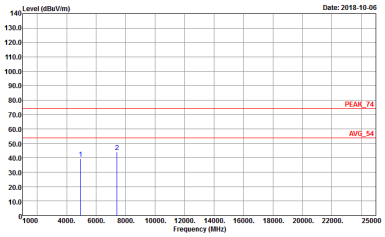
WIFI 802.11g (Harmonic @ 3m)

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

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11g CH06 2437MHz	
	Horizontal	Vertical
Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL Detector : Peak

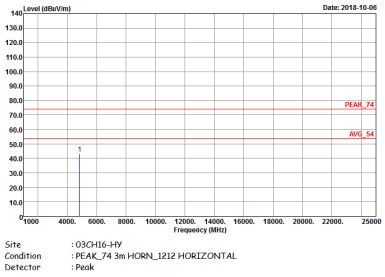
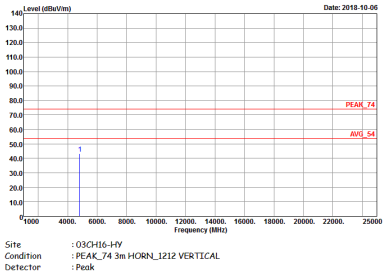
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11g CH11 2462MHz	
	Horizontal	Vertical
Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL Detector : Peak

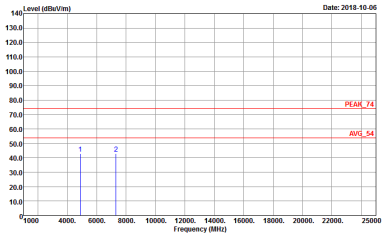
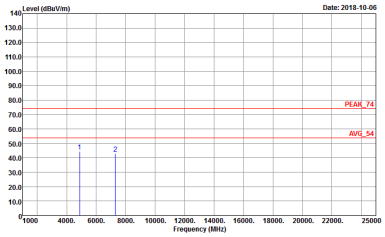
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11g CH12 2467MHz	
	Horizontal	Vertical
Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL Detector : Peak

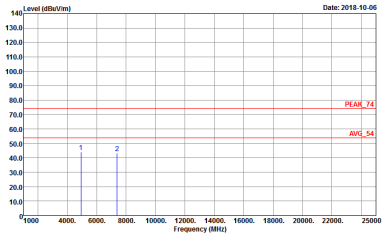
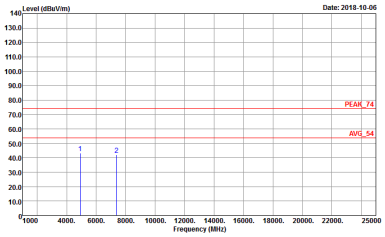
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11g CH13 2472MHz	
	Horizontal	Vertical
Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL Detector : Peak

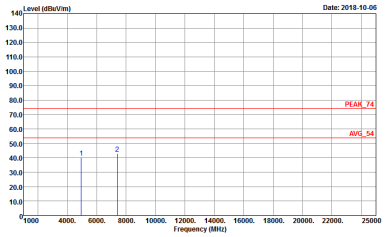
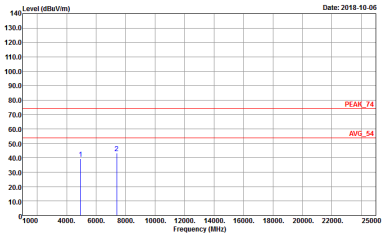
2.4GHz 2400~2483.5MHz

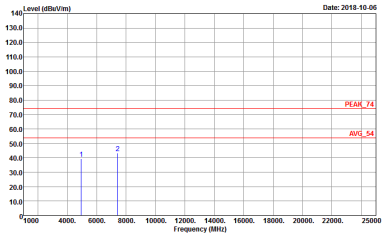
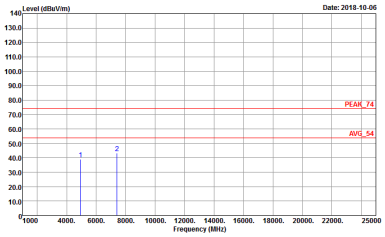
WIFI 802.11n HT20 (Harmonic @ 3m)

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

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11n HT20 CH06 2437MHz	
	Horizontal	Vertical
Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL Detector : Peak

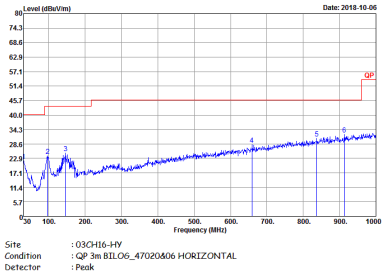
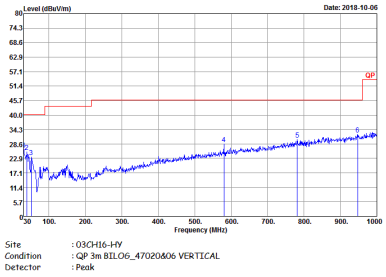
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11n HT20 CH11 2462MHz	
	Horizontal	Vertical
Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL Detector : Peak

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11n HT20 CH12 2462MHz	
	Horizontal	Vertical
Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL Detector : Peak

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
	802.11n HT20 CH13 2472MHz	
	Horizontal	Vertical
Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m HORN_1212 VERTICAL Detector : Peak

Emission below 1GHz

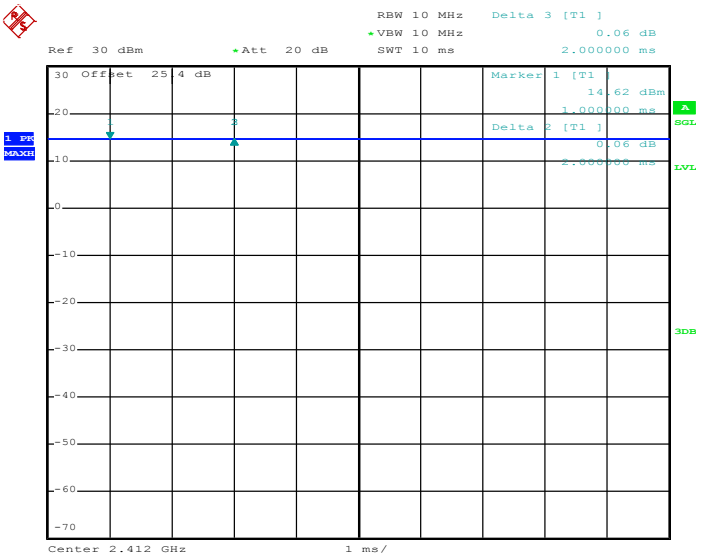
2.4GHz WIFI 802.11g (LF)

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

Appendix E. Duty Cycle Plots

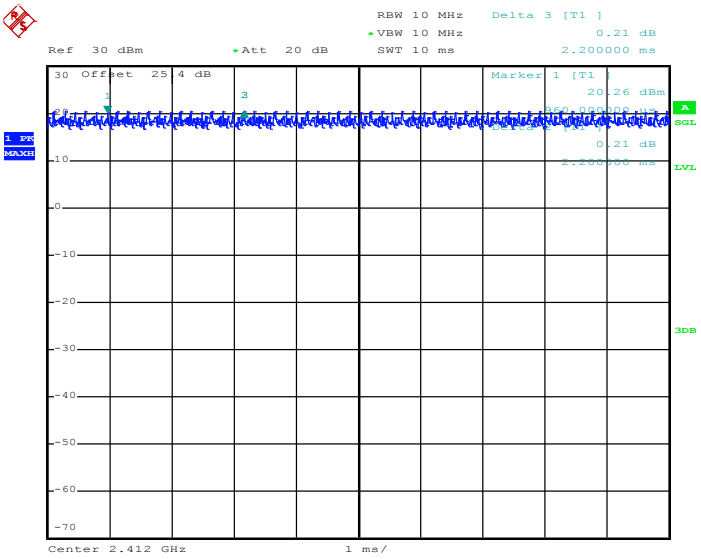
Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
802.11b	100.00	-	-	10Hz	0.00
802.11g	100.00	-	-	10Hz	0.00
2.4GHz 802.11n HT20	100.00	-	-	10Hz	0.00

802.11b



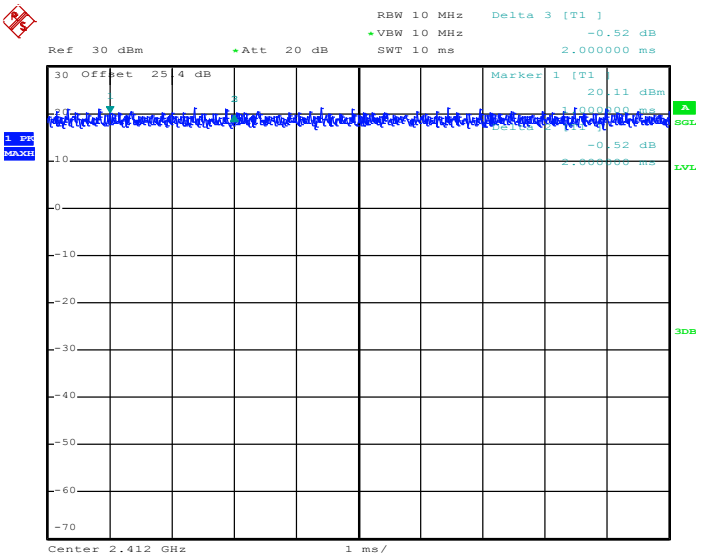
Date: 28.SEP.2018 05:08:23

802.11g



Date: 28.SEP.2018 05:19:09

802.11n HT20



Date: 28.SEP.2018 05:27:39

———THE END———