FCC RF Test Report

APPLICANT	:	Sony Mobile Communications Inc.
EQUIPMENT	:	GSM/WCDMA/LTE Phone+Bluetooth, DTS/UNII a/b/g/n and NFC
BRAND NAME	:	Sony
FCC ID	:	PY7-02885J
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	(DTS) Digital Transmission System

The product was received on Apr. 28, 2017 and testing was completed on Jun. 03, 2017. 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 test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR742206-01C	Rev. 01	Initial issue of report	Jun. 27, 2017
FR742206-01C	Rev. 02	Revising hygrometer calibration date in section 4.	Jul. 10, 2017

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.1	-	99% Bandwidth	-	Pass	-
3.2	15.247(b)	Power Output Measurement	≤ 30dBm	Pass	-
3.3	15.247(e)	Power Spectral Density	≤ 8dBm/3kHz	Pass	-
3.4	15.247(d)	Conducted Band Edges	≤ 20dBc	Pass	-
		Conducted Spurious Emission		Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 4.41 dB at 2390.000 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 12.80 dB at 0.606 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Sony Mobile Communications Inc.
4-12-3 Higashi-Shinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan

1.2 Manufacturer

Sony Mobile Communications Inc.
4-12-3 Higashi-Shinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan

1.3 Product Feature of Equipment Under Test

GSM/WCDMA/LTE, Bluetooth, DTS/UNII, a/b/g/n, NFC, and GPS

Standards-related Product Specification	
Antenna Type / Gain	PIFA Antenna type with gain -2.2 dBi

EUT Information List			
HW Version	SW Version	S/N	Performed Test Item
A	0.32	RQ3004QXCU	RF conducted measurement
		RQ3004QXE8	Radiated Spurious Emission
		RQ3004R9RH	Conducted Emission

Accessory List	
AC Adapter 1	Model No. : UCH20
	S/N : 1215W48600059 (for radiated spurious emission) 1215W48600011 (for conducted emission)
Earphone 1	Model No. : MH410c
	S/N: 1632A86600000E0
USB Cable	Model No. : UCB20
	S/N : 1625A9110003BFA (for radiated spurious emission) 1625A9100003A98 (for conducted emission)

Note:

1. Above EUT list and accessory list used are electrically identical per declared by manufacturer.
2. Above the accessories list are used to exercise the EUT during test.
3. For other wireless features of this EUT, test report will be issued separately.

1.4 Modification of EUT

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

1.5 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. 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, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan 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.**
	03CH13-HY

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

1.6 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 v04
- ANSI C63.10-2013

Remark:

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

2 Test Configuration of Equipment Under Test

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

2.1 Carrier Frequency and Channel

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

2.2 Test Mode

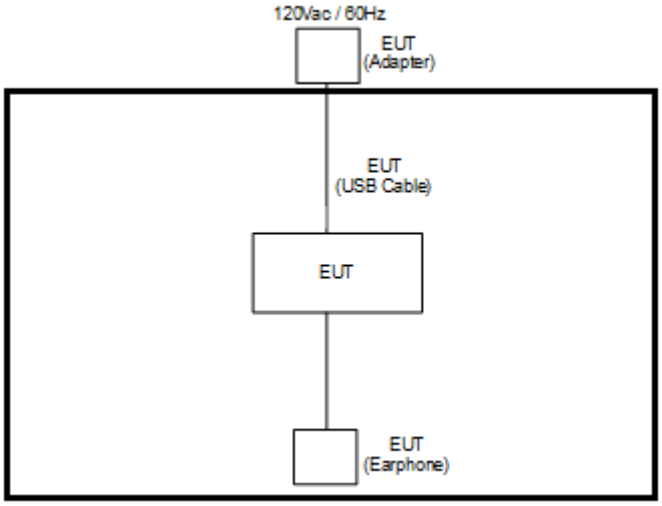
Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.

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

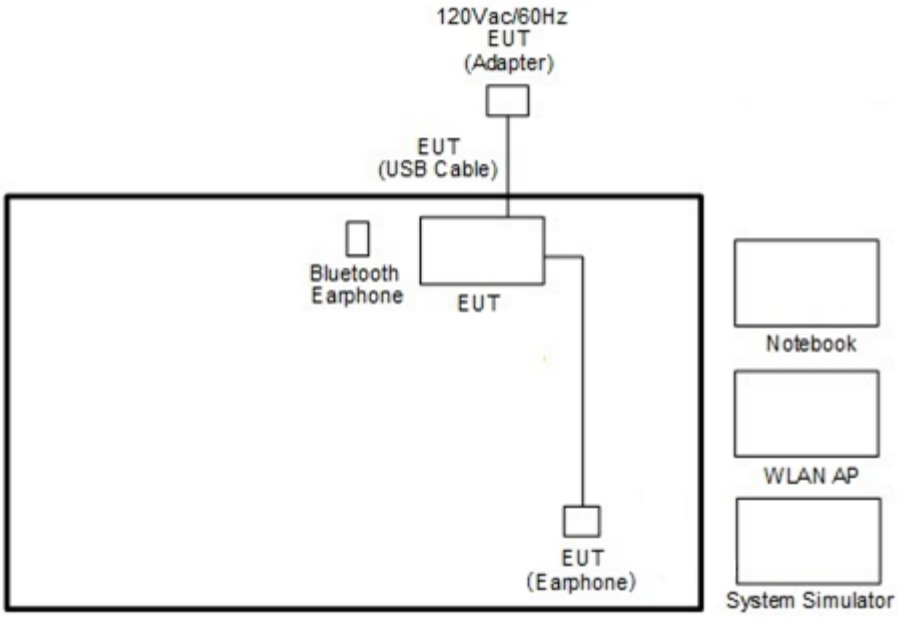
Test Cases	
AC Conducted Emission	Mode 1 : GSM1900 Idle + Bluetooth Link + WLAN (2.4GHz) Link + MP3 + Earphone 1 + Battery + USB Cable (Charging from Adapter 1)

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.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded,1.8m
3.	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
4.	Bluetooth Earphone	Sony	SBH20	PY7-RD0010	N/A	N/A
5.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.5 EUT Operation Test Setup

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

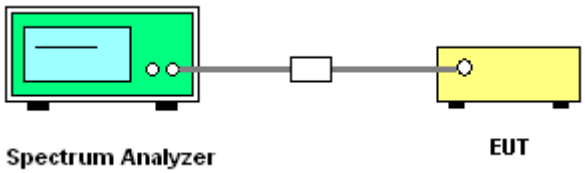
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

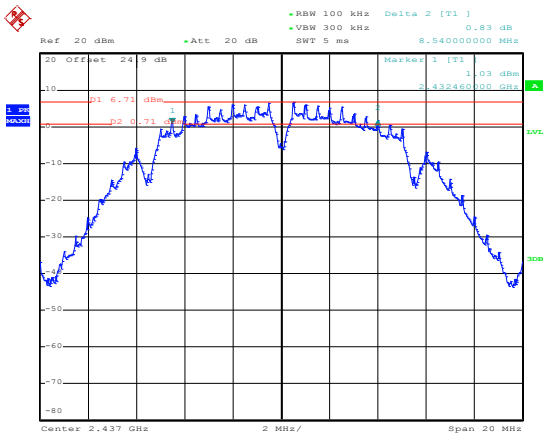
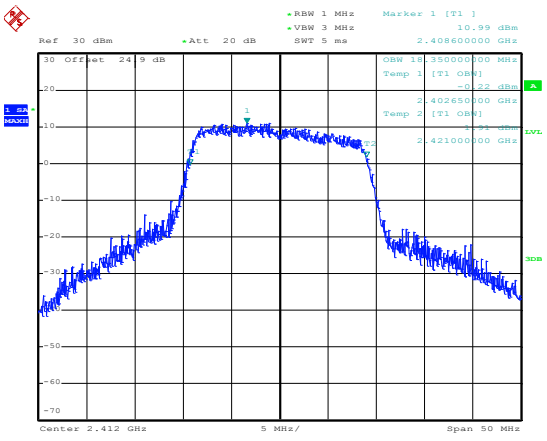
1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v04.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit 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) = 1MHz and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.

Minimum 6dB Bandwidth	Maximum 99% Occupied Bandwidth
	

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

3.2 Output Power Measurement

3.2.1 Limit of Output Power

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

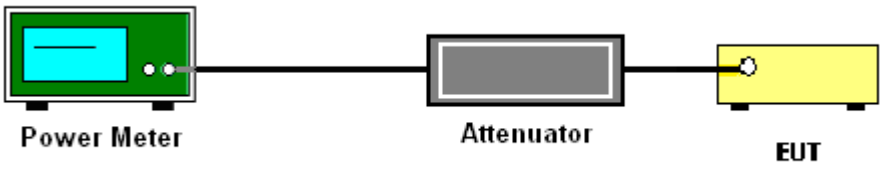
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04 section 9.1.3 PKPM1 Peak power meter method.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Please refer to Appendix A.

3.2.6 Test Result of Average output Power (Reporting Only)

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

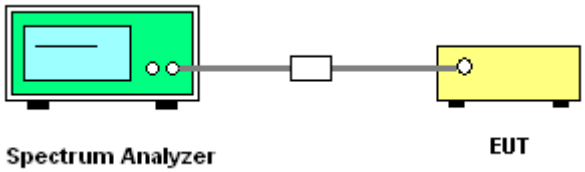
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

1. The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04
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.

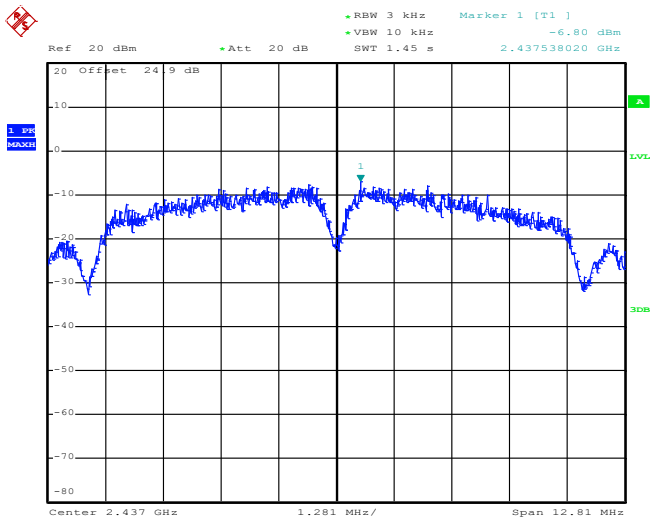
3.3.4 Test Setup



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.

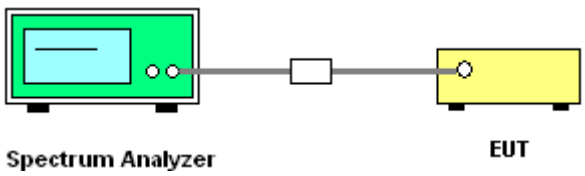
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
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.
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup

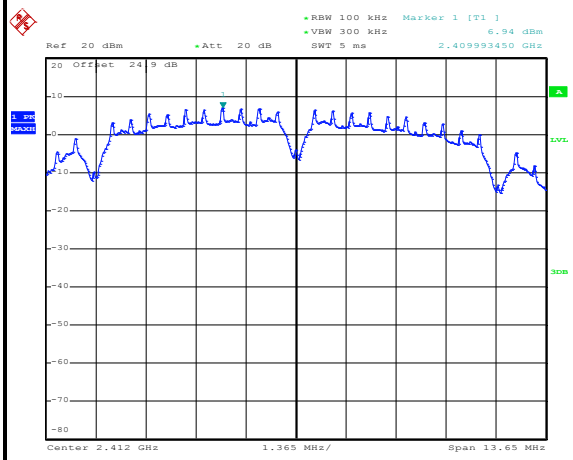


3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Mode :	802.11b	**Temperature :**	21~25°C
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Kai Liao and Aking Chang

WLAN 802.11b Channel 01

100kHz PSD reference Level



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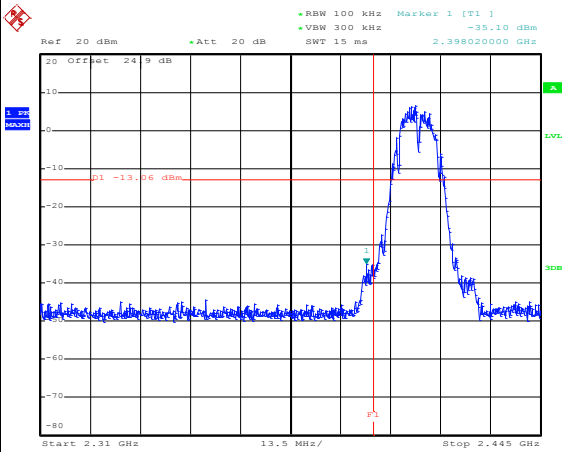
Low Channel Plot



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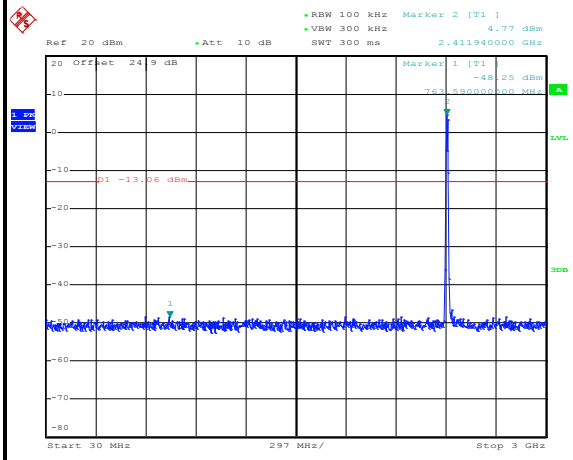
Spurious Emission 30MHz~3GHz



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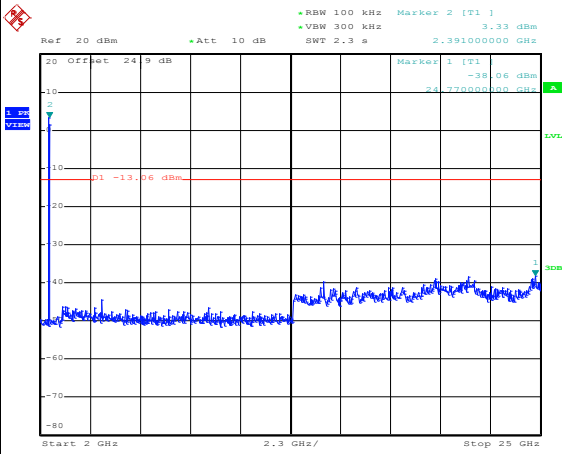
Spurious Emission 2GHz~25GHz



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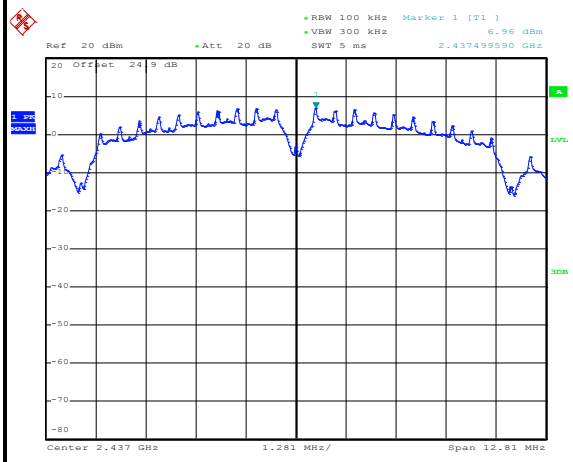
Test Mode :	802.11b	Temperature :	21~25
Test Band :	2.4GHz Mid	Relative Humidity :	51~54
Test Channel :	06	Test Engineer :	Kai Liao and Aking Chang

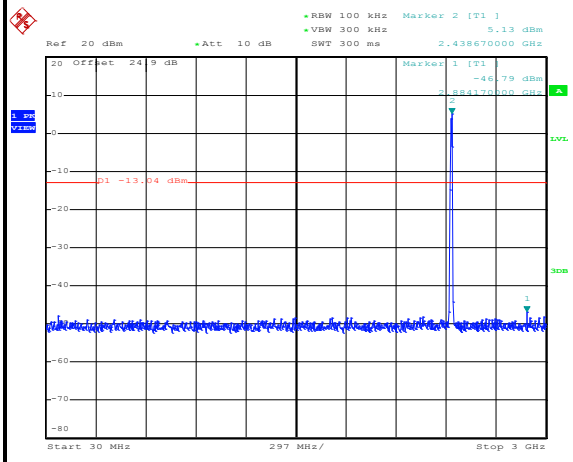
WLAN 802.11b Channel 06

100kHz PSD reference Level

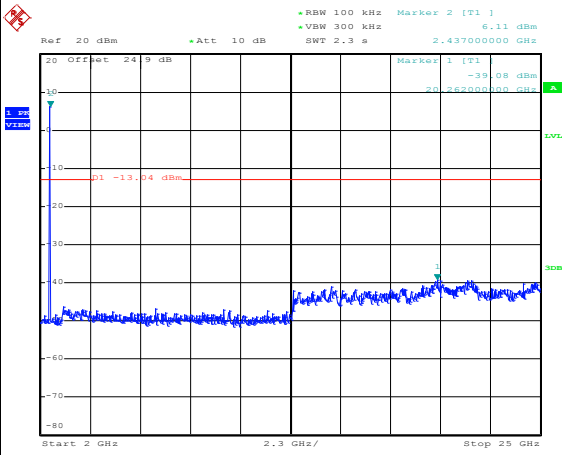


Mid Channel Plot

Spurious Emission 30MHz~3GHz



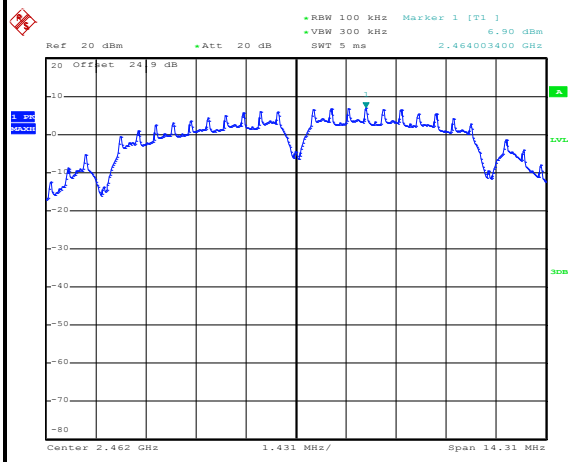
Spurious Emission 2GHz~25GHz



Test Mode :	802.11b	**Temperature :**	21~25
Test Band :	2.4GHz High	**Relative Humidity :**	51~54
Test Channel :	11	**Test Engineer :**	Kai Liao and Aking Chang

WLAN 802.11b Channel 11

100kHz PSD reference Level



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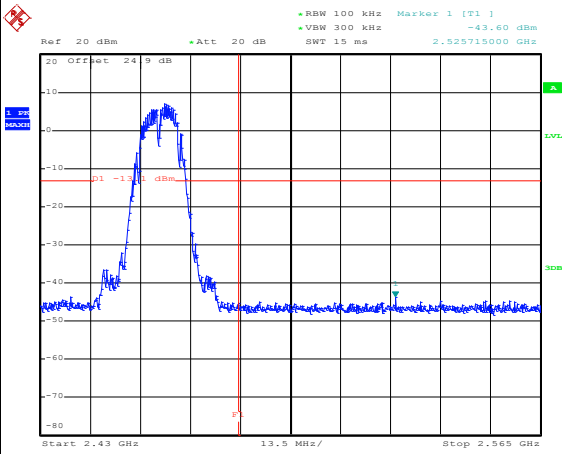
High Channel Plot



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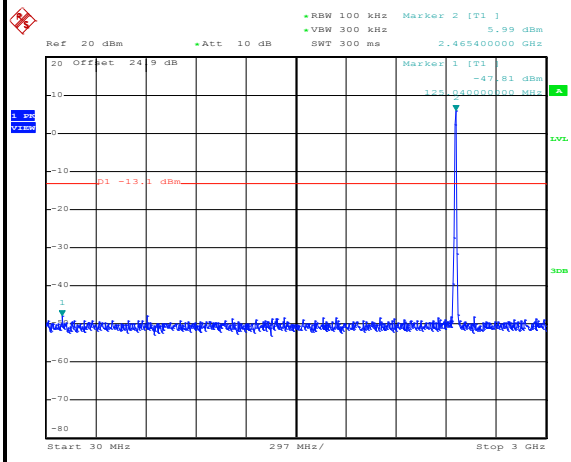
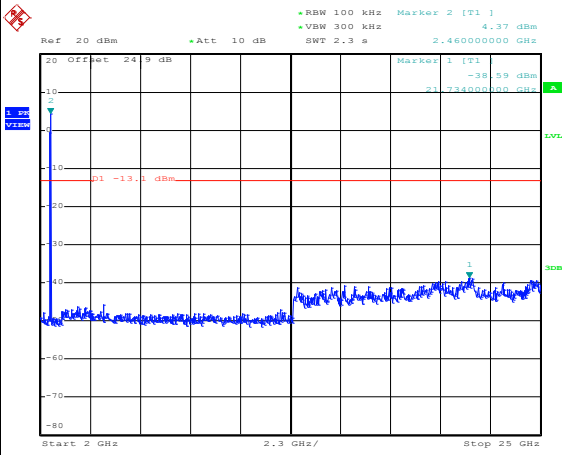
Spurious Emission 30MHz~3GHz



Date: 3.JUN.2017 04:41:00

Spurious Emission 2GHz~25GHz

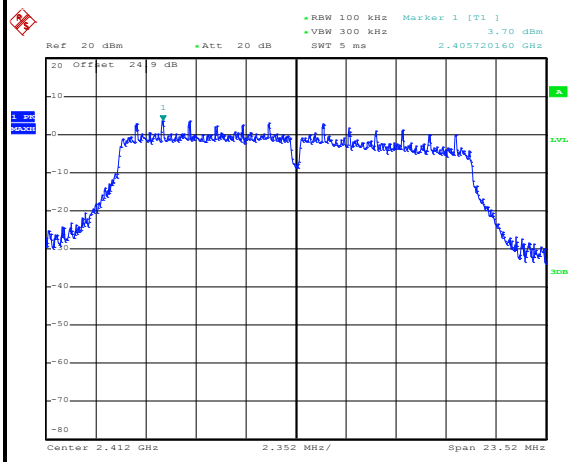


Date: 3.JUN.2017 04:41:09

Test Mode :	802.11g	**Temperature :**	21~25
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54
Test Channel :	01	**Test Engineer :**	Kai Liao and Aking Chang

WLAN 802.11g Channel 01

100kHz PSD reference Level



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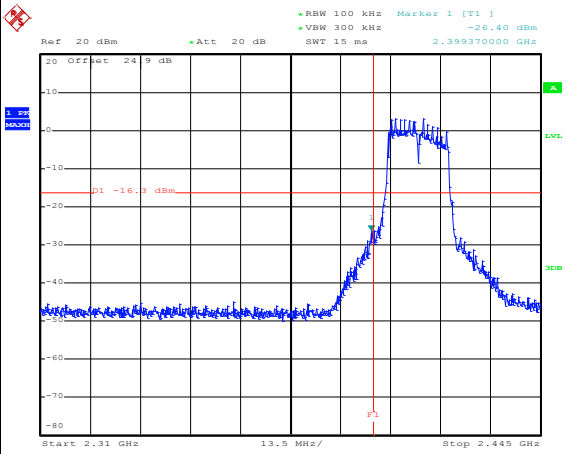
Low Channel Plot



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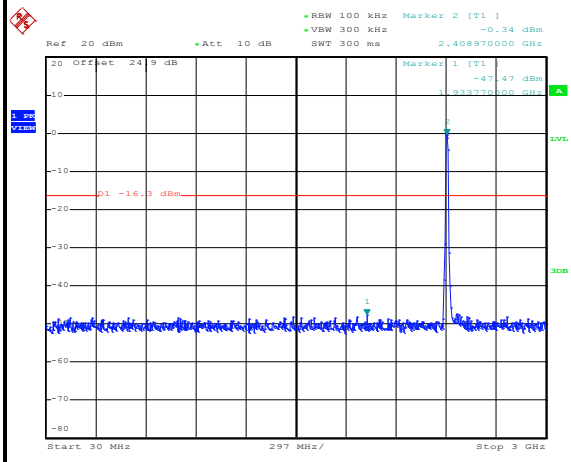
Spurious Emission 30MHz~3GHz



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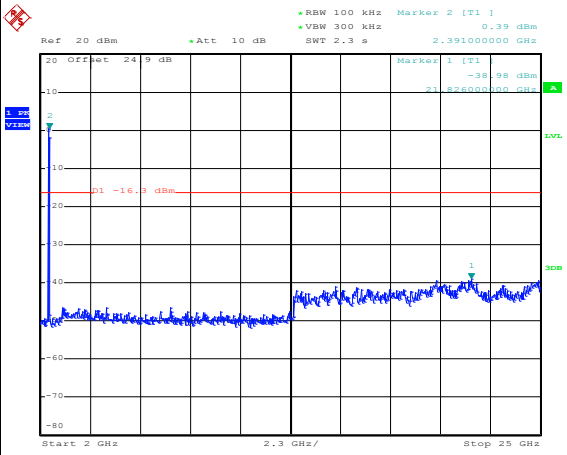
Spurious Emission 2GHz~25GHz



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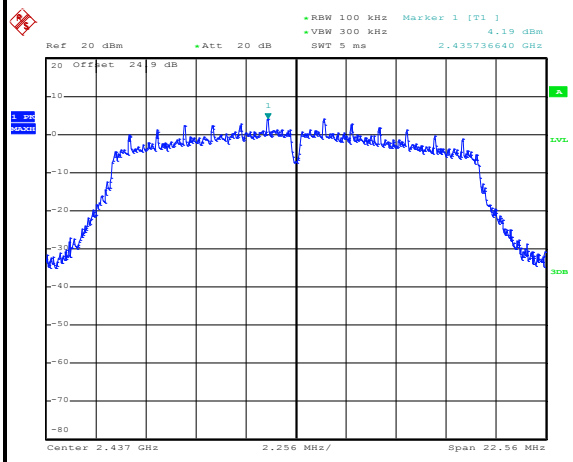
Test Mode :	802.11g	Temperature :	21~25
Test Band :	2.4GHz Mid	Relative Humidity :	51~54
Test Channel :	06	Test Engineer :	Kai Liao and Aking Chang

WLAN 802.11g Channel 06

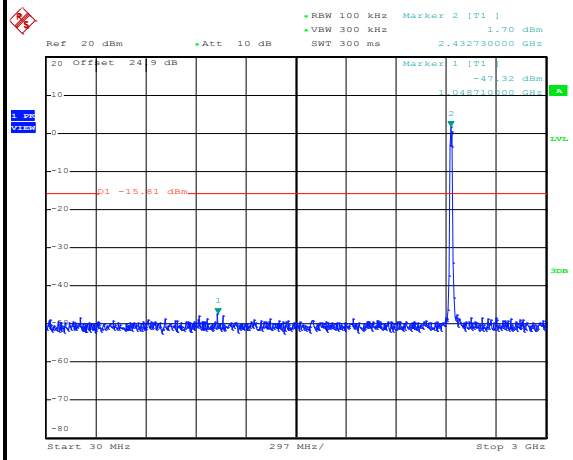
100kHz PSD reference Level



Date: 3.JUN.2017 04:49:44

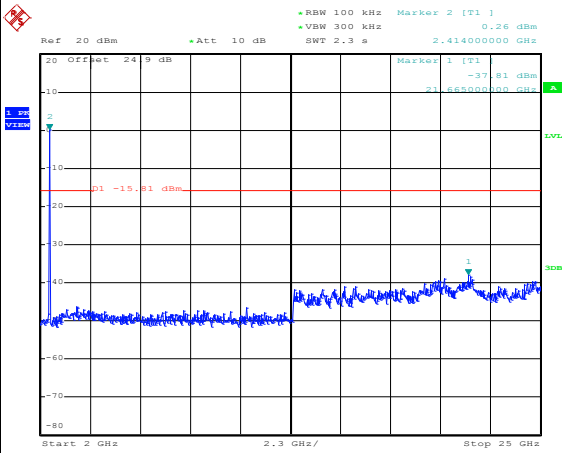
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 3.JUN.2017 04:50:05

Spurious Emission 2GHz~25GHz

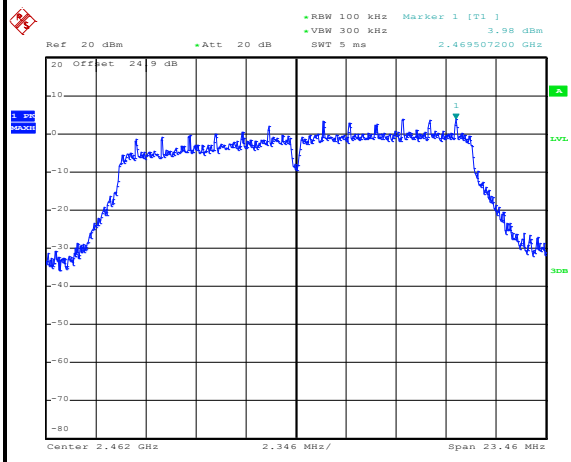


Date: 3.JUN.2017 04:50:14

Test Mode :	802.11g	Temperature :	21~25
Test Band :	2.4GHz High	Relative Humidity :	51~54
Test Channel :	11	Test Engineer :	Kai Liao and Aking Chang

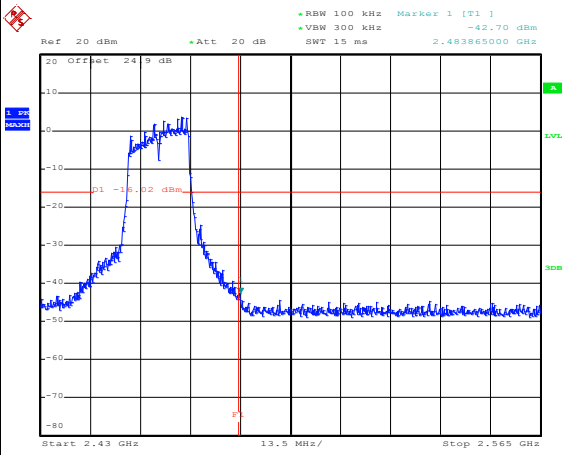
WLAN 802.11g Channel 11

100kHz PSD reference Level



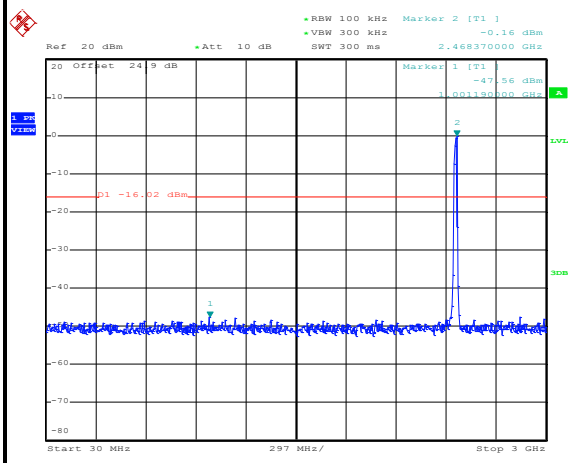
Date: 3.JUN.2017 04:52:09

High Channel Plot



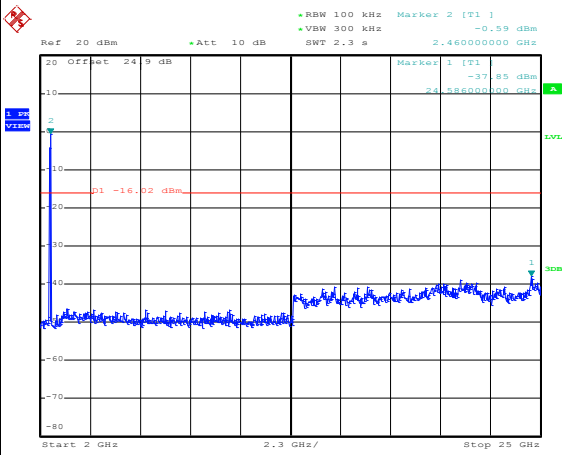
Date: 3.JUN.2017 04:52:27

Spurious Emission 30MHz~3GHz



Date: 3.JUN.2017 04:56:29

Spurious Emission 2GHz~25GHz

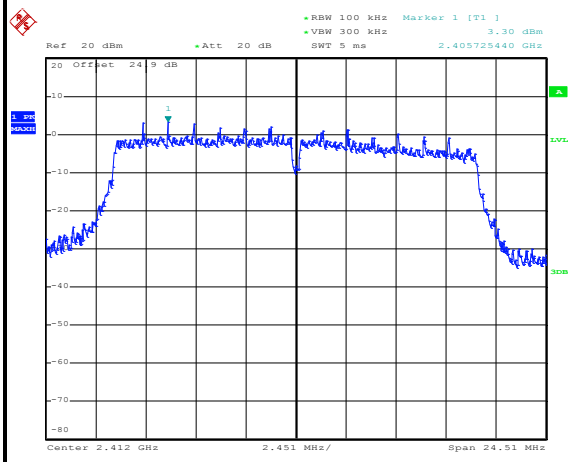


Date: 3.JUN.2017 04:56:38

Test Mode :	802.11n HT20	Temperature :	21~25
Test Band :	2.4GHz Low	Relative Humidity :	51~54
Test Channel :	01	Test Engineer :	Kai Liao and Aking Chang

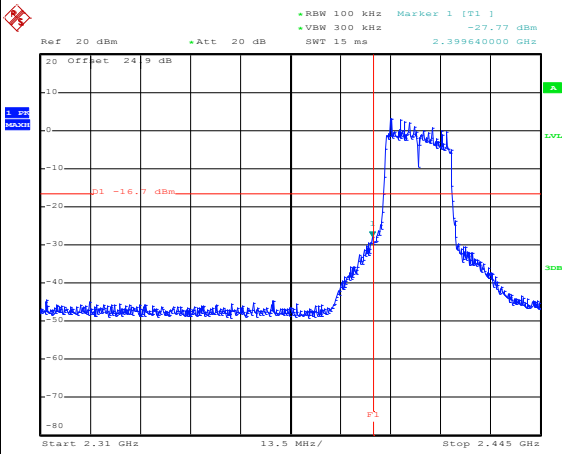
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



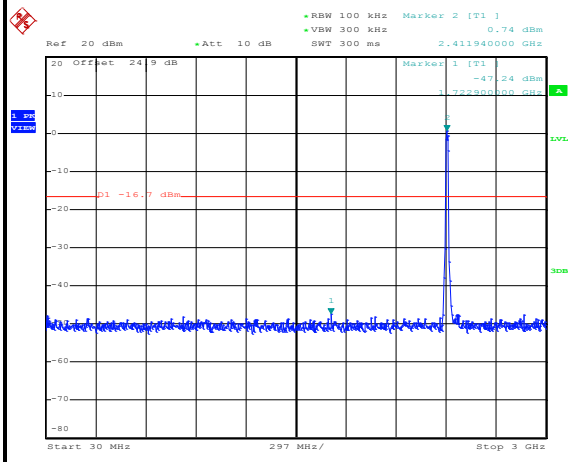
Date: 3.JUN.2017 04:58:49

Low Channel Plot



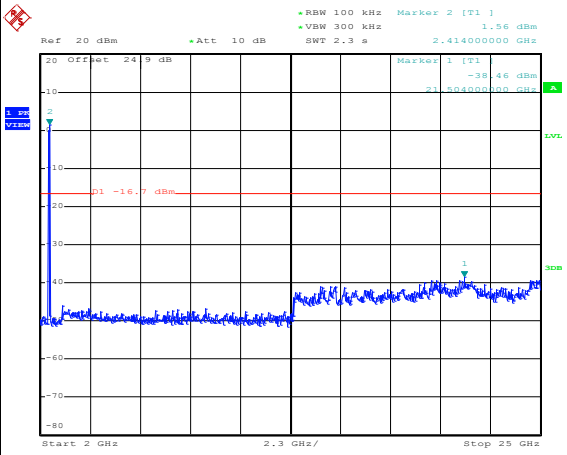
Date: 3.JUN.2017 04:59:03

Spurious Emission 30MHz~3GHz



Date: 3.JUN.2017 04:59:15

Spurious Emission 2GHz~25GHz

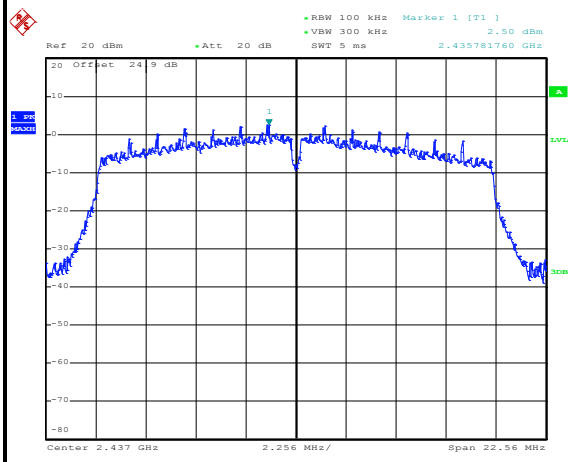


Date: 3.JUN.2017 04:59:23

Test Mode :	802.11n HT20	**Temperature :**	21~25
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54
Test Channel :	06	**Test Engineer :**	Kai Liao and Aking Chang

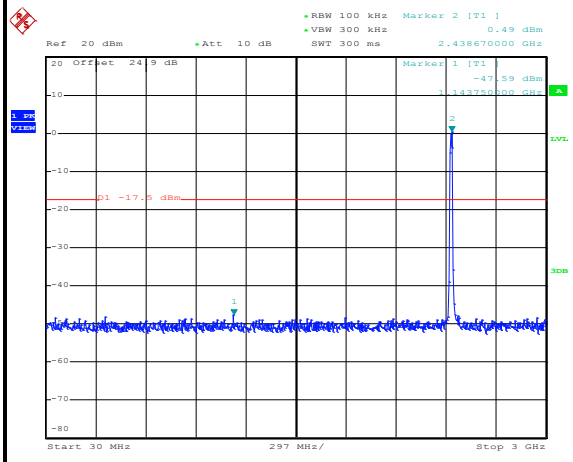
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level

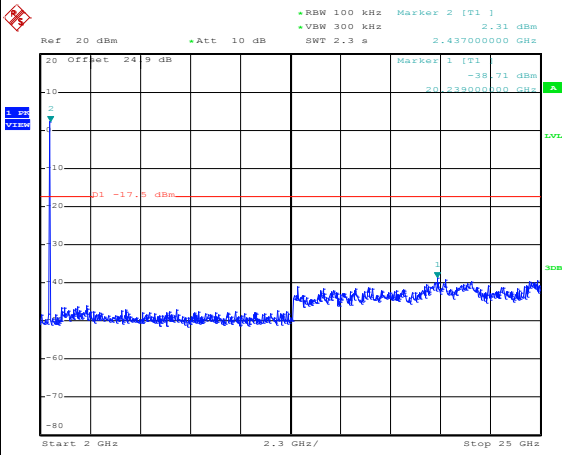


Mid Channel Plot

Spurious Emission 30MHz~3GHz



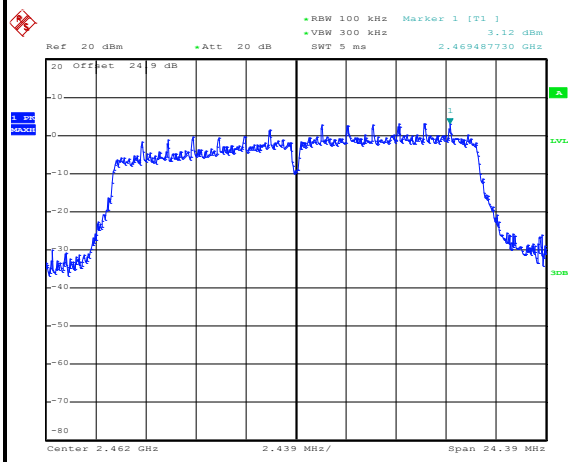
Spurious Emission 2GHz~25GHz



Test Mode :	802.11n HT20	**Temperature :**	21~25
Test Band :	2.4GHz High	**Relative Humidity :**	51~54
Test Channel :	11	**Test Engineer :**	Kai Liao and Aking Chang

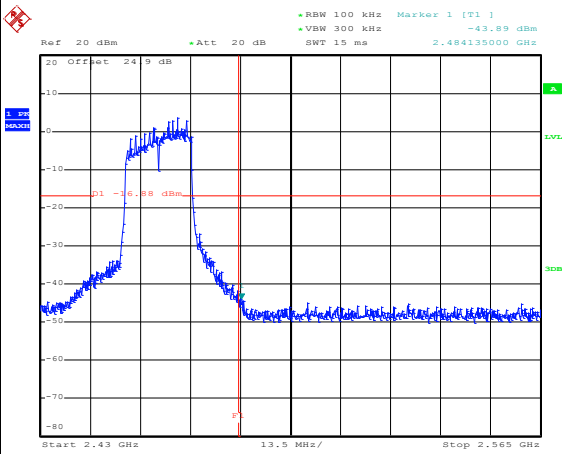
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



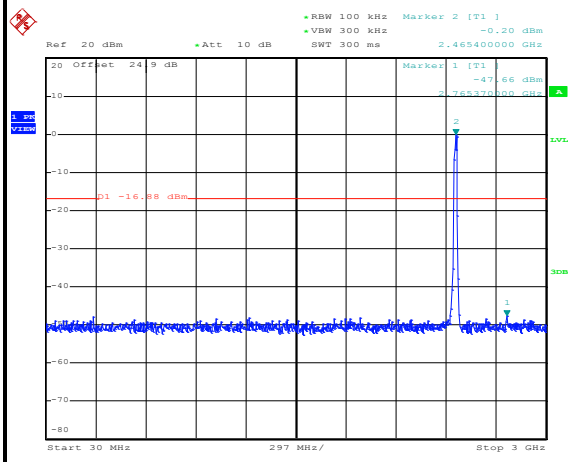
Date: 3.JUN.2017 05:04:27

High Channel Plot



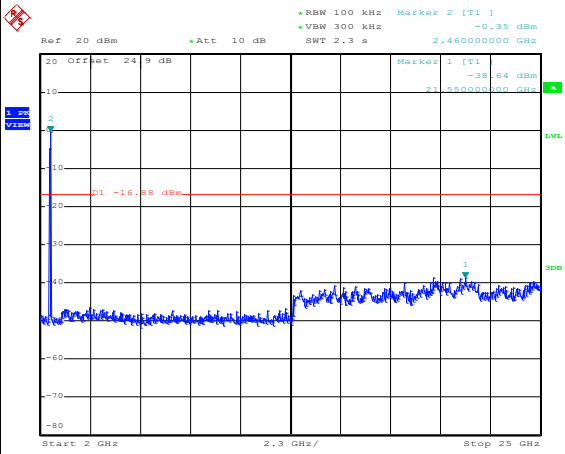
Date: 3.JUN.2017 05:04:36

Spurious Emission 30MHz~3GHz



Date: 3.JUN.2017 05:04:51

Spurious Emission 2GHz~25GHz



Date: 3.JUN.2017 05:04:59

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

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

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

3.5.2 Measuring Instruments

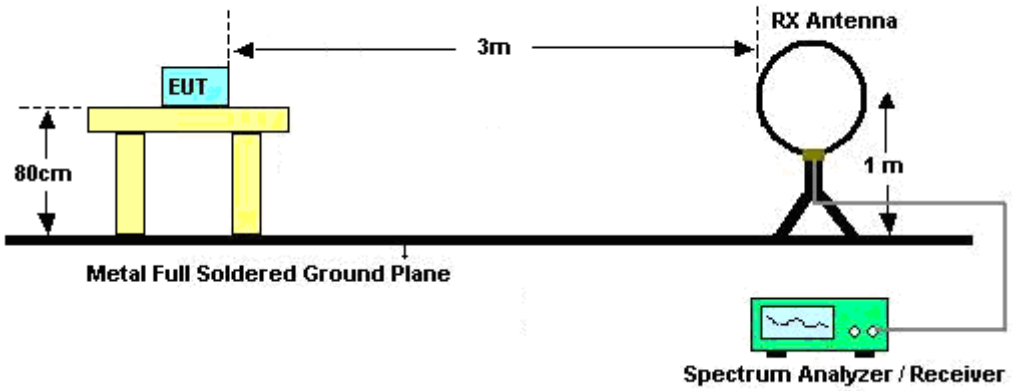
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

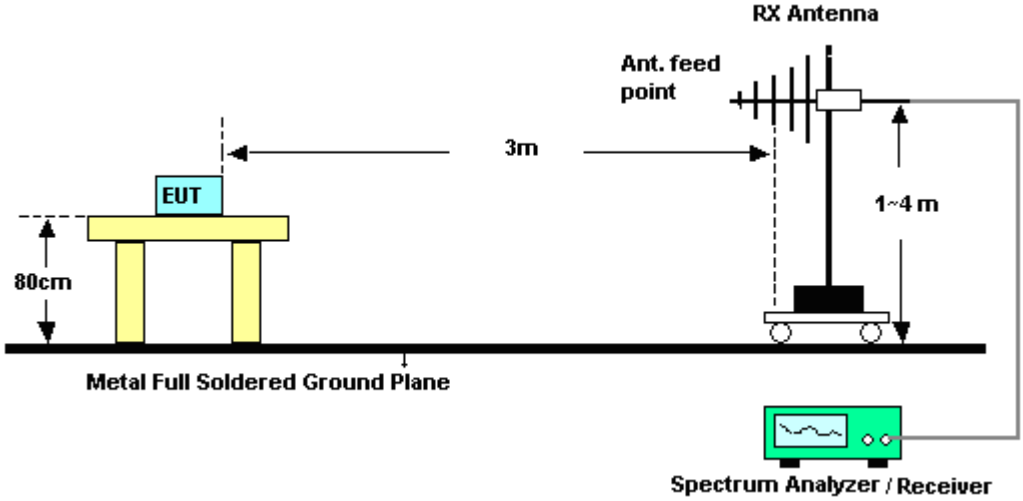
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test 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

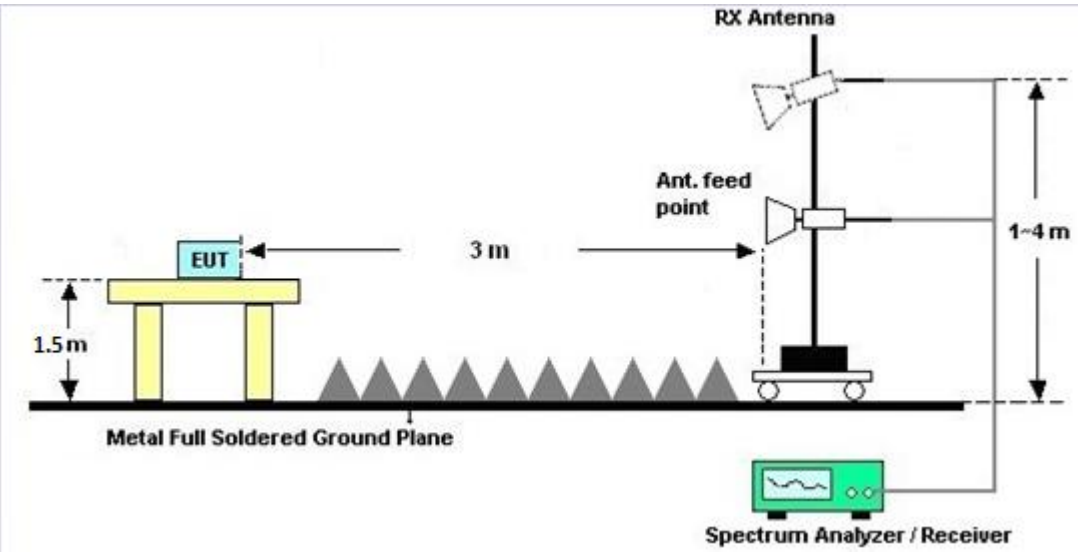
For radiated emissions below 30MHz



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 semi-Anechoic chamber, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B and C.

3.5.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix B and C.

3.6 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.

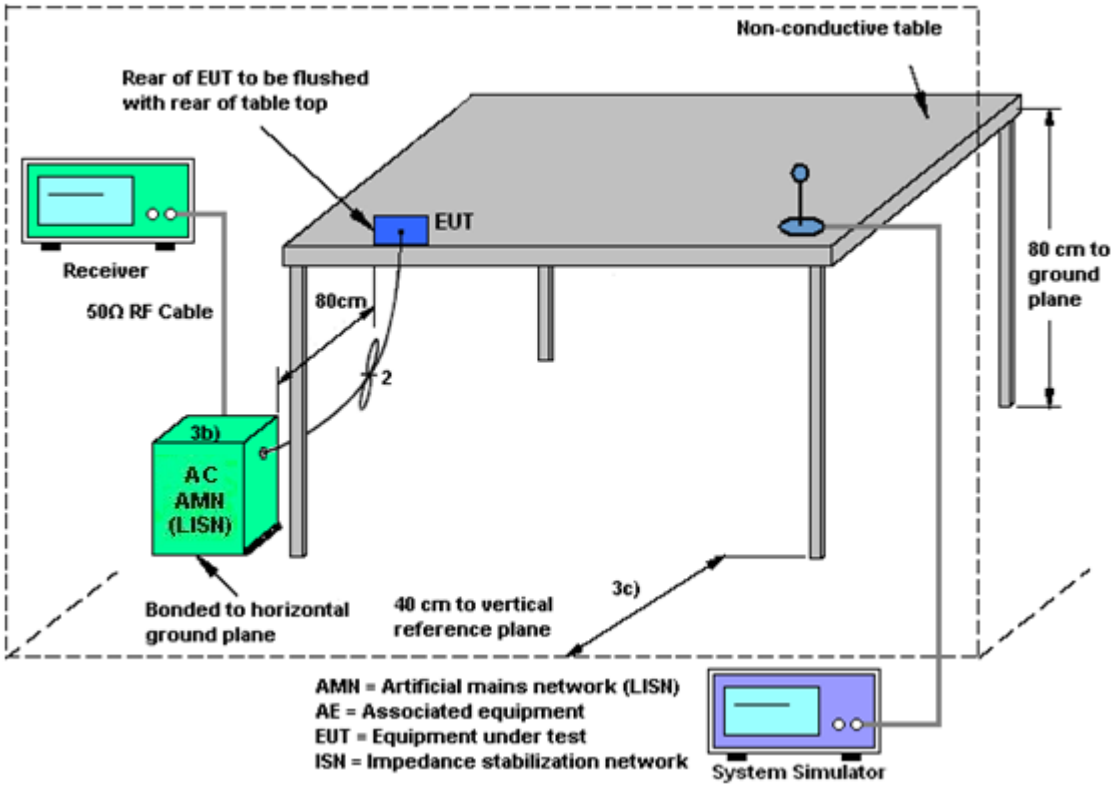
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

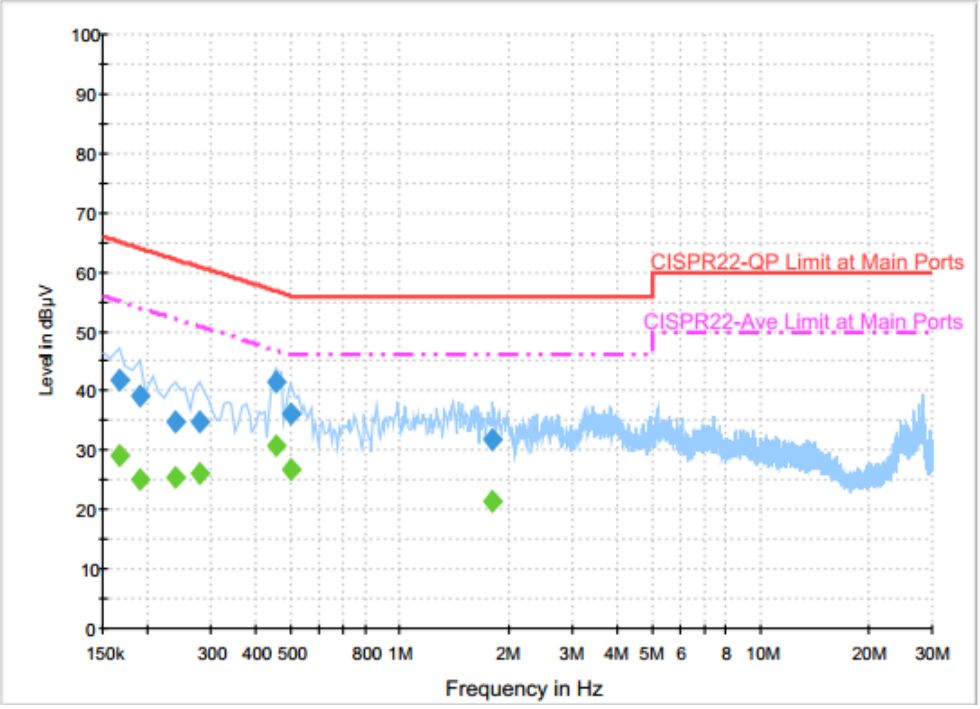
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other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

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	**Temperature :**	22~25℃
Test Engineer :	Arthur Hsieh	**Relative Humidity :**	51~55%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM1900 Idle + Bluetooth Link + WLAN (2.4GHz) Link + MP3 + Earphone 1 + Battery + USB Cable (Charging from Adapter 1)		



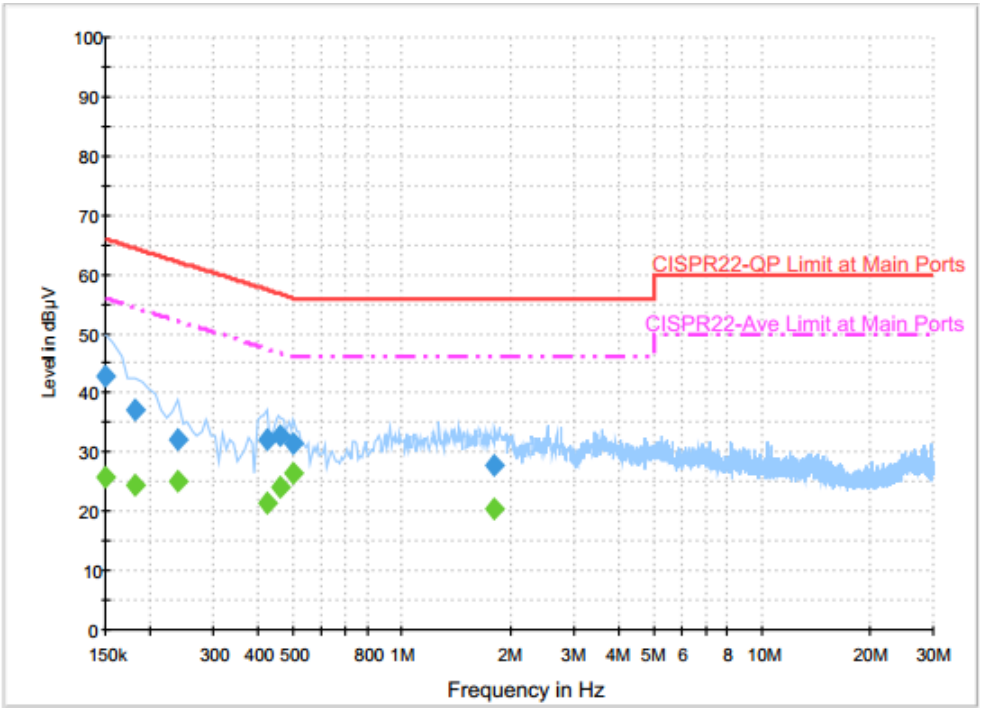
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	41.9	Off	L1	19.6	23.3	65.2
0.190000	39.2	Off	L1	19.6	24.8	64.0
0.238000	34.7	Off	L1	19.6	27.5	62.2
0.278000	34.9	Off	L1	19.6	26.0	60.9
0.454000	41.6	Off	L1	19.6	15.2	56.8
0.502000	36.1	Off	L1	19.6	19.9	56.0
1.814000	31.9	Off	L1	19.6	24.1	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	29.2	Off	L1	19.6	26.0	55.2
0.190000	25.0	Off	L1	19.6	29.0	54.0
0.238000	25.5	Off	L1	19.6	26.7	52.2
0.278000	26.0	Off	L1	19.6	24.9	50.9
0.454000	30.7	Off	L1	19.6	16.1	46.8
0.502000	26.7	Off	L1	19.6	19.3	46.0
1.814000	21.3	Off	L1	19.6	24.7	46.0

Test Mode :	Mode 1	Temperature :	22~25℃
Test Engineer :	Arthur Hsieh	Relative Humidity :	51~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM1900 Idle + Bluetooth Link + WLAN (2.4GHz) Link + MP3 + Earphone 1 + Battery + USB Cable (Charging from Adapter 1)		



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	42.9	Off	N	19.5	23.1	66.0
0.182000	37.0	Off	N	19.5	27.4	64.4
0.238000	32.2	Off	N	19.5	30.0	62.2
0.422000	32.2	Off	N	19.5	25.2	57.4
0.462000	32.7	Off	N	19.5	24.0	56.7
0.502000	31.3	Off	N	19.5	24.7	56.0
1.814000	27.9	Off	N	19.6	28.1	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	25.8	Off	N	19.5	30.2	56.0
0.182000	24.6	Off	N	19.5	29.8	54.4
0.238000	25.0	Off	N	19.5	27.2	52.2
0.422000	21.6	Off	N	19.5	25.8	47.4
0.462000	24.1	Off	N	19.5	22.6	46.7
0.502000	26.5	Off	N	19.5	19.5	46.0
1.814000	20.4	Off	N	19.6	25.6	46.0

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. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

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

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz-40GHz	Jul. 17, 2016	May 16. 2017~ Jun. 03. 2017	Jul. 16, 2017	Conducted (TH05-HY)
Power Meter	Agilent	E4416A	GB41292344	300MHz~40GHz	Dec. 26, 2016	May 16. 2017~ Jun. 03. 2017	Dec. 25, 2017	Conducted (TH05-HY)
Power Sensor	Agilent	E9327A	US40441548	300MHz~40GHz	Dec. 26, 2016	May 16. 2017~ Jun. 03. 2017	Dec. 25, 2017	Conducted (TH05-HY)
Hygrometer	Testo	608-H2	41410069	N/A	Aug. 28, 2016	May 16. 2017~ Jun. 03. 2017	Aug. 27, 2017	Conducted (TH05-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY84209521	1GHz~26GHz	Dec. 02, 2016	May 16, 2017~ Jun. 03, 2017	Dec. 01, 2017	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	May 14, 2017	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2016	May 14, 2017	Aug. 29, 2017	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	May 02, 2017	May 14, 2017	May 01, 2018	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 29, 2016	May 14, 2017	Nov. 28, 2017	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 05, 2017	May 14, 2017	Jan. 04, 2018	Conduction (CO05-HY)
Test Software	N/A	EMC32	8.40.0	N/A	N/A	May 14, 2017	N/A	Conduction (CO05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	May 15, 2017	May 19, 2017~ May 31, 2017	May 14, 2019	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	40103&04	30MHz to 1GHz	Jan. 07, 2017	May 19, 2017~ May 31, 2017	Jan. 06, 2018	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1522	1GHz ~ 18GHz	May 17, 2017	May 19, 2017~ May 31, 2017	May 16, 2018	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 08, 2016	May 19, 2017~ May 31, 2017	Nov. 07, 2017	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	N/A	Mar. 15, 2017	May 19, 2017~ May 31, 2017	Mar. 14, 2018	Radiation (03CH13-HY)
Amplifier	Sonoma-Instrument	310 N	187282	9KHz~1GHz	Dec. 21, 2016	May 19, 2017~ May 31, 2017	Dec. 20, 2017	Radiation (03CH13-HY)
Preamplifier	MITEQ	JS44-18004000-33-8P	1840917	18GHz ~ 40GHz	Jun. 14, 2016	May 19, 2017~ May 31, 2017	Jun. 13, 2017	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	1590074	1GHz~18GHz	Jun. 27, 2016	May 19, 2017~ May 31, 2017	Jun. 26, 2017	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY53270147	1GHz~26.5GHz	Jan. 09, 2017	May 19, 2017~ May 31, 2017	Jan. 08, 2018	Radiation (03CH13-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	TECPEL	DTM-303B	TP140349	N/A	Nov. 14, 2016	May 19, 2017~ May 31, 2017	Nov. 13, 2017	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY335041/4MY9840/4MY9838/4	26G~40GHz	Mar. 27, 2017	May 19, 2017~ May 31, 2017	Mar. 26, 2018	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY335041/4MY9840/4MY9838/4	1G~26GHz	Jan. 27, 2017	May 19, 2017~ May 31, 2017	Jan. 26, 2017	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY335041/4MY9840/4MY9838/4	30M~1GHz	Jan. 27, 2017	May 19, 2017~ May 31, 2017	Jan. 26, 2018	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24958/4,MY28653/4,MY9839/4PE	9K~30MHz	Jan. 10, 2017	May 19, 2017~ May 31, 2017	Jan. 09, 2018	Radiation (03CH13-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	May 19, 2017~ May 31, 2017	N/A	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	May 19, 2017~ May 31, 2017	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	May 19, 2017~ May 31, 2017	N/A	Radiation (03CH13-HY)
Test Software	Audix	E3	6.2009-8-24c	N/A	N/A	May 19, 2017~ May 31, 2017	N/A	Radiation (03CH13-HY)
Filter	Wainwright	WLKS1200-12SS	SN2	1.2G Low Pass	Sep. 19, 2016	May 19, 2017~ May 31, 2017	Sep. 18, 2017	Radiation (03CH13-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60SS	SN2	3G High Pass	Sep. 20, 2016	May 19, 2017~ May 31, 2017	Sep. 19, 2017	Radiation (03CH13-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.70**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.90**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.40**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.30**

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Kai Liao / Aking chang	Temperature:	21~25	°C
Test Date:	2017/05/16 ~ 2017/06/03	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
11b	1Mbps	1	1	2412	12.95	9.10	0.50	Pass
11b	1Mbps	1	6	2437	12.05	8.54	0.50	Pass
11b	1Mbps	1	11	2462	12.80	9.54	0.50	Pass
11g	6Mbps	1	1	2412	17.85	15.68	0.50	Pass
11g	6Mbps	1	6	2437	16.85	15.04	0.50	Pass
11g	6Mbps	1	11	2462	17.75	15.64	0.50	Pass
HT20	MCS0	1	1	2412	18.35	16.34	0.50	Pass
HT20	MCS0	1	6	2437	17.80	15.04	0.50	Pass
HT20	MCS0	1	11	2462	18.25	16.26	0.50	Pass

TEST RESULTS DATA
Peak Power Table

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
11b	1Mbps	1	1	2412	18.52	30.00	-2.20	16.32	36.00	Pass
11b	1Mbps	1	6	2437	18.48	30.00	-2.20	16.28	36.00	Pass
11b	1Mbps	1	11	2462	18.14	30.00	-2.20	15.94	36.00	Pass
11g	6Mbps	1	1	2412	21.93	30.00	-2.20	19.73	36.00	Pass
11g	6Mbps	1	6	2437	22.31	30.00	-2.20	20.11	36.00	Pass
11g	6Mbps	1	11	2462	22.28	30.00	-2.20	20.08	36.00	Pass
HT20	MCS0	1	1	2412	21.97	30.00	-2.20	19.77	36.00	Pass
HT20	MCS0	1	6	2437	22.17	30.00	-2.20	19.97	36.00	Pass
HT20	MCS0	1	11	2462	21.95	30.00	-2.20	19.75	36.00	Pass

TEST RESULTS DATA
Average Power Table
(Reporting Only)

2.4GHz Band						
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
11b	1Mbps	1	1	2412	0.00	15.49
11b	1Mbps	1	6	2437	0.00	15.45
11b	1Mbps	1	11	2462	0.00	15.20
11g	6Mbps	1	1	2412	0.12	13.78
11g	6Mbps	1	6	2437	0.12	13.90
11g	6Mbps	1	11	2462	0.12	13.82
HT20	MCS0	1	1	2412	0.13	13.30
HT20	MCS0	1	6	2437	0.13	13.33
HT20	MCS0	1	11	2462	0.13	13.32

TEST RESULTS DATA
Peak Power Density

2.4GHz Band								
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
11b	1Mbps	1	1	2412	-7.91	-2.20	8.00	Pass
11b	1Mbps	1	6	2437	-6.80	-2.20	8.00	Pass
11b	1Mbps	1	11	2462	-9.19	-2.20	8.00	Pass
11g	6Mbps	1	1	2412	-10.50	-2.20	8.00	Pass
11g	6Mbps	1	6	2437	-10.71	-2.20	8.00	Pass
11g	6Mbps	1	11	2462	-10.51	-2.20	8.00	Pass
HT20	MCS0	1	1	2412	-12.25	-2.20	8.00	Pass
HT20	MCS0	1	6	2437	-10.97	-2.20	8.00	Pass
HT20	MCS0	1	11	2462	-12.14	-2.20	8.00	Pass

Appendix B. Radiated Spurious Emission

Test Engineer :	Alex Jheng, Bill Chang, and Wilson Wu	Temperature :	24.5~24.6°C
		Relative Humidity :	55~57%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		2348.85	52.25	-21.75	74	41.34	27.2	4.78	31	141	185	P	H
		2388.96	41.69	-12.31	54	30.55	27.37	4.83	30.99	141	185	A	H
	*	2412	101.11	-	-	89.88	27.42	4.87	30.99	141	185	P	H
	*	2412	97.95	-	-	86.72	27.42	4.87	30.99	141	185	A	H
													H
													H
		2388.75	52.26	-21.74	74	41.12	27.37	4.83	30.99	387	313	P	V
		2389.065	41.32	-12.68	54	30.18	27.37	4.83	30.99	387	313	A	V
	*	2412	98.69	-	-	87.46	27.42	4.87	30.99	387	313	P	V
	*	2412	95.6	-	-	84.37	27.42	4.87	30.99	387	313	A	V
													V
													V
802.11b CH 06 2437MHz		2354.52	51.54	-22.46	74	40.57	27.26	4.78	31	188	193	P	H
		2389.52	41.22	-12.78	54	30.08	27.37	4.83	30.99	188	193	A	H
	*	2437	101.02	-	-	89.66	27.53	4.88	30.98	188	193	P	H
	*	2437	97.91	-	-	86.55	27.53	4.88	30.98	188	193	A	H
		2493.35	51.81	-22.19	74	40.21	27.7	4.93	30.96	188	193	P	H
		2487.12	41.71	-12.29	54	30.18	27.64	4.93	30.97	188	193	A	H
		2379.86	52.53	-21.47	74	41.45	27.31	4.83	30.99	245	311	P	V
		2389.24	41.2	-12.8	54	30.06	27.37	4.83	30.99	245	311	A	V
	*	2437	99.71	-	-	88.35	27.53	4.88	30.98	245	311	P	V
	*	2437	96.69	-	-	85.33	27.53	4.88	30.98	245	311	A	V
		2492.93	52.36	-21.64	74	40.76	27.7	4.93	30.96	245	311	P	V
		2496.99	41.68	-12.32	54	30.08	27.7	4.93	30.96	245	311	A	V

802.11b CH 11 2462MHz	*	2462	102.28	-	-	90.83	27.59	4.9	30.97	396	193	P	H
	*	2462	99.43	-	-	87.98	27.59	4.9	30.97	396	193	A	H
		2497.32	53.14	-20.86	74	41.54	27.7	4.93	30.96	396	193	P	H
		2483.6	41.69	-12.31	54	30.16	27.64	4.93	30.97	396	193	A	H
													H
													H
	*	2462	98.91	-	-	87.46	27.59	4.9	30.97	370	281	P	V
	*	2462	96.02	-	-	84.57	27.59	4.9	30.97	370	281	A	V
		2498.84	52.87	-21.13	74	41.27	27.7	4.93	30.96	370	281	P	V
		2499.32	41.54	-12.46	54	29.94	27.7	4.93	30.96	370	281	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		4824	49.17	-24.83	74	73.92	31.79	7.69	64.74	100	0	P	H
													H
													H
													H
		4824	47.49	-26.51	74	72.24	31.79	7.69	64.74	100	0	P	V
													V
													V
													V
802.11b CH 06 2437MHz		4874	44.05	-29.95	74	68.55	31.88	7.82	64.7	100	0	P	H
		7311	44.4	-29.6	74	61.93	37.17	9.66	64.82	100	0	P	H
													H
													H
		4874	41.11	-32.89	74	65.61	31.88	7.82	64.7	100	0	P	V
		7311	44.12	-29.88	74	61.65	37.17	9.66	64.82	100	0	P	V
													V
													V
802.11b CH 11 2462MHz		4924	46.72	-27.28	74	71	31.98	7.9	64.66	100	0	P	H
		7386	44.83	-29.17	74	62.11	37.41	9.73	64.86	100	0	P	H
													H
													H
		4924	44.73	-29.27	74	69.01	31.98	7.9	64.66	100	0	P	V
		7386	47.09	-26.91	74	64.37	37.41	9.73	64.86	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2389.905	57.95	-16.05	74	46.81	27.37	4.83	30.99	392	357	P	H
		2390	46.4	-7.6	54	35.26	27.37	4.83	30.99	392	357	A	H
	*	2412	101.81	-	-	90.58	27.42	4.87	30.99	392	357	P	H
	*	2412	94.41	-	-	83.18	27.42	4.87	30.99	392	357	A	H
													H
													H
		2389.905	55.16	-18.84	74	44.02	27.37	4.83	30.99	249	276	P	V
		2390	45.11	-8.89	54	33.97	27.37	4.83	30.99	249	276	A	V
	*	2412	100.2	-	-	88.97	27.42	4.87	30.99	249	276	P	V
	*	2412	92.81	-	-	81.58	27.42	4.87	30.99	249	276	A	V
													V
													V
802.11g CH 06 2437MHz		2327.64	51.72	-22.28	74	40.89	27.15	4.76	31.01	400	215	P	H
		2380.7	41.93	-12.07	54	30.85	27.31	4.83	30.99	400	215	A	H
	*	2437	101.67	-	-	90.31	27.53	4.88	30.98	400	215	P	H
	*	2437	94.22	-	-	82.86	27.53	4.88	30.98	400	215	A	H
		2493.42	52.86	-21.14	74	41.26	27.7	4.93	30.96	400	215	P	H
		2484.74	42.64	-11.36	54	31.11	27.64	4.93	30.97	400	215	A	H
		2367.82	52.06	-21.94	74	41.06	27.26	4.8	30.99	273	318	P	V
		2384.34	42.07	-11.93	54	30.99	27.31	4.83	30.99	273	318	A	V
	*	2437	100.81	-	-	89.45	27.53	4.88	30.98	273	318	P	V
	*	2437	93.43	-	-	82.07	27.53	4.88	30.98	273	318	A	V
		2492.02	53.35	-20.65	74	41.75	27.7	4.93	30.96	273	318	P	V
		2485.51	42.45	-11.55	54	30.92	27.64	4.93	30.97	273	318	A	V

802.11g CH 11 2462MHz	*	2462	104.3	-	-	92.85	27.59	4.9	30.97	396	201	P	H
	*	2462	96.74	-	-	85.29	27.59	4.9	30.97	396	201	A	H
		2483.68	56.92	-17.08	74	45.39	27.64	4.93	30.97	396	201	P	H
		2483.52	45.41	-8.59	54	33.88	27.64	4.93	30.97	396	201	A	H
													H
													H
	*	2462	102.61	-	-	91.16	27.59	4.9	30.97	298	297	P	V
	*	2462	94.78	-	-	83.33	27.59	4.9	30.97	298	297	A	V
		2484.44	57	-17	74	45.47	27.64	4.93	30.97	298	297	P	V
		2483.52	45.06	-8.94	54	33.53	27.64	4.93	30.97	298	297	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	45.36	-28.64	74	70.11	31.79	7.69	64.74	100	0	P	H
													H
													H
													H
		4824	44.5	-29.5	74	69.25	31.79	7.69	64.74	100	0	P	V
													V
													V
													V
802.11g CH 06 2437MHz		4874	40.54	-33.46	74	65.04	31.88	7.82	64.7	100	0	P	H
		7311	45.47	-28.53	74	63	37.17	9.66	64.82	100	0	P	H
													H
													H
		4874	40.55	-33.45	74	65.05	31.88	7.82	64.7	100	0	P	V
		7311	45.12	-28.88	74	62.65	37.17	9.66	64.82	100	0	P	V
													V
													V
802.11g CH 11 2462MHz		4924	42.8	-31.2	74	67.08	31.98	7.9	64.66	100	0	P	H
		7386	45.06	-28.94	74	62.34	37.41	9.73	64.86	100	0	P	H
													H
													H
		4924	42.71	-31.29	74	66.99	31.98	7.9	64.66	100	0	P	V
		7386	44.87	-29.13	74	62.15	37.41	9.73	64.86	100	0	P	V
													V
													V

Remark

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

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		2389.8	63.25	-10.75	74	52.11	27.37	4.83	30.99	392	350	P	H
		2390	49.59	-4.41	54	38.45	27.37	4.83	30.99	392	350	A	H
	*	2412	102.75	-	-	91.52	27.42	4.87	30.99	392	350	P	H
	*	2412	95.08	-	-	83.85	27.42	4.87	30.99	392	350	A	H
802.11n													H
HT20													H
CH 01		2389.275	61.13	-12.87	74	49.99	27.37	4.83	30.99	310	297	P	V
2412MHz		2390	47.67	-6.33	54	36.53	27.37	4.83	30.99	310	297	A	V
	*	2412	100.12	-	-	88.89	27.42	4.87	30.99	310	297	P	V
	*	2412	92.51	-	-	81.28	27.42	4.87	30.99	310	297	A	V
													V
													V
		2386.86	51.83	-22.17	74	40.69	27.37	4.83	30.99	377	350	P	H
		2388.82	41.94	-12.06	54	30.8	27.37	4.83	30.99	377	350	A	H
	*	2437	102.73	-	-	91.37	27.53	4.88	30.98	377	350	P	H
	*	2437	95.14	-	-	83.78	27.53	4.88	30.98	377	350	A	H
802.11n		2496.78	52.25	-21.75	74	40.65	27.7	4.93	30.96	377	350	P	H
HT20		2484.32	42.48	-11.52	54	30.95	27.64	4.93	30.97	377	350	A	H
CH 06		2388.4	51.67	-22.33	74	40.53	27.37	4.83	30.99	302	298	P	V
2437MHz		2381.4	41.85	-12.15	54	30.77	27.31	4.83	30.99	302	298	A	V
	*	2437	100.4	-	-	89.04	27.53	4.88	30.98	302	298	P	V
	*	2437	92.93	-	-	81.57	27.53	4.88	30.98	302	298	A	V
		2486.91	52.74	-21.26	74	41.21	27.64	4.93	30.97	302	298	P	V
		2493.63	42.43	-11.57	54	30.83	27.7	4.93	30.96	302	298	A	V

	*	2462	100.84	-	-	89.39	27.59	4.9	30.97	204	193	P	H
	*	2462	93.46	-	-	82.01	27.59	4.9	30.97	204	193	A	H
		2483.52	56.1	-17.9	74	44.57	27.64	4.93	30.97	204	193	P	H
		2483.56	44.75	-9.25	54	33.22	27.64	4.93	30.97	204	193	A	H
802.11n													H
HT20													H
CH 11	*	2462	100.94	-	-	89.49	27.59	4.9	30.97	295	298	P	V
2462MHz	*	2462	93.48	-	-	82.03	27.59	4.9	30.97	295	298	A	V
		2483.92	60.86	-13.14	74	49.33	27.64	4.93	30.97	295	298	P	V
		2483.56	45.01	-8.99	54	33.48	27.64	4.93	30.97	295	298	A	V
													V
													V

Remark

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

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4824	47.11	-26.89	74	64.72	31.79	7.33	57.24	100	0	P	H
													H
802.11n													H
HT20													H
CH 01		4824	45.1	-28.9	74	62.71	31.79	7.33	57.24	100	0	P	V
2412MHz													V
													V
													V
		4874	41.73	-32.27	74	59.08	31.88	7.44	57.17	100	0	P	H
		7311	45.3	-28.7	74	55.81	37.17	9.13	57.27	100	0	P	H
802.11n													H
HT20													H
CH 06		4874	40.2	-33.8	74	57.55	31.88	7.44	57.17	100	0	P	V
2437MHz		7311	45.31	-28.69	74	55.82	37.17	9.13	57.27	100	0	P	V
													V
													V
		4924	45.88	-28.12	74	62.98	31.98	7.52	57.1	100	0	P	H
		7386	45.68	-28.32	74	56.03	37.41	9.18	57.38	100	0	P	H
802.11n													H
HT20													H
CH 11		4924	43.05	-30.95	74	60.15	31.98	7.52	57.1	100	0	P	V
2462MHz		7386	45.67	-28.33	74	56.02	37.41	9.18	57.38	100	0	P	V
													V
													V

Remark

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

2.4GHz 2400~2483.5MHz

Emission below 1GHz

2.4GHz WIFI 802.11b (LF)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
2.4GHz 802.11b LF		30.27	20.59	-19.41	40	29.73	22.63	0.59	32.34			P	H
		142.05	27.06	-16.44	43.5	43.39	14.72	1.19	32.28			P	H
		229.26	28.64	-17.36	46	46.64	12.62	1.53	32.23			P	H
		537.3	22.72	-23.28	46	31.21	21.32	2.29	32.2			P	H
		742.4	26.89	-19.11	46	31.29	24.91	2.68	32.09			P	H
		953.8	30.76	-15.24	46	30.44	28.14	3.06	31.02	100	0	P	H
													H
													H
													H
													H
													H
													H
		30.54	28.69	-11.31	40	38.66	21.8	0.59	32.34	100	0	P	V
		101.01	24.2	-19.3	43.5	42.29	13.06	1	32.29			P	V
		227.91	26.14	-19.86	46	44.21	12.55	1.53	32.23			P	V
		561.8	23.49	-22.51	46	30.46	22.78	2.36	32.21			P	V
		745.2	26.75	-19.25	46	31.1	24.96	2.68	32.09			P	V
		958.7	30.58	-15.42	46	29.88	28.46	3.07	30.97			P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11g LF		30.54	22.62	-17.38	40	32.59	21.8	0.59	32.34			P	H
		142.32	32.68	-10.82	43.5	49.01	14.72	1.19	32.28	100	0	P	H
		229.53	31.2	-14.8	46	49.13	12.69	1.53	32.23			P	H
		552.7	23.54	-22.46	46	30.97	22.35	2.33	32.21			P	H
		752.9	26.78	-19.22	46	30.98	25.09	2.68	32.07			P	H
		954.5	30.14	-15.86	46	29.75	28.21	3.06	31.02			P	H
													H
													H
													H
													H
													H
													H
		31.08	30.7	-9.3	40	40.67	21.8	0.59	32.34			P	V
		102.36	26.21	-17.29	43.5	43.81	13.55	1	32.29			P	V
		227.91	26.8	-19.2	46	44.87	12.55	1.53	32.23			P	V
		428.8	21.35	-24.65	46	31.98	19.42	2.03	32.16			P	V
		804.7	27.79	-18.21	46	31.83	25.03	2.78	31.97			P	V
		900.6	39.19	-6.81	46	41.16	26.48	2.94	31.5	100	0	P	V
													V
													V
													V
													V
													V
													V

Remark

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

Emission below 1GHz

2.4GHz WIFI 802.11n HT20 (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		30.54	21.64	-18.36	40	31.61	21.8	0.59	32.34			P	H
		140.7	31.66	-11.84	43.5	48.1	14.61	1.19	32.28	100	0	P	H
		225.21	30.75	-15.25	46	49.03	12.35	1.53	32.24			P	H
		307.7	23.18	-22.82	46	37.72	15.81	1.72	32.13			P	H
		629.7	24.9	-21.1	46	31.39	23.15	2.45	32.2			P	H
		956.6	30.71	-15.29	46	30.16	28.33	3.07	30.99			P	H
													H
													H
													H
													H
2.4GHz													H
802.11n													H
HT20		85.35	29.76	-10.24	40	50.99	10.08	0.95	32.3	100	0	P	V
LF		99.39	25.84	-17.66	43.5	44.19	12.81	1	32.29			P	V
		227.91	28.92	-17.08	46	46.99	12.55	1.53	32.23			P	V
		430.9	22.49	-23.51	46	33.12	19.43	2.03	32.17			P	V
		716.5	26.49	-19.51	46	31.65	24.24	2.64	32.14			P	V
		958.7	31.02	-14.98	46	30.32	28.46	3.07	30.97			P	V
													V
													V
													V
													V
													V
													V

Remark

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

Note symbol

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

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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
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. Level(dBμV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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

Appendix C. Radiated Spurious Emission Plots

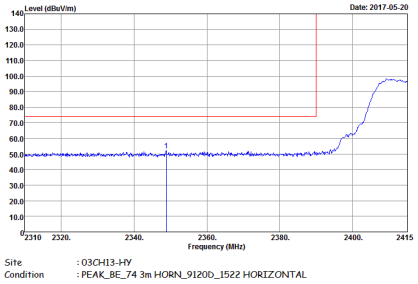
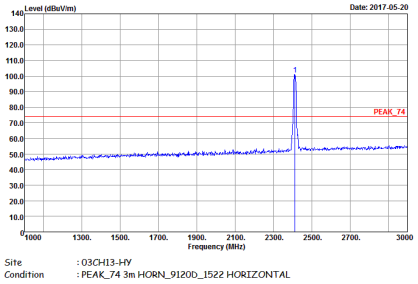
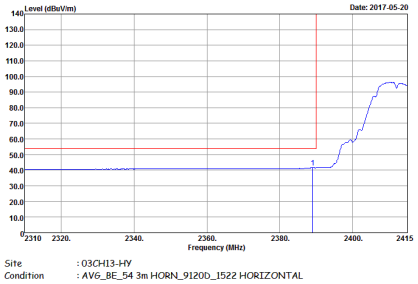
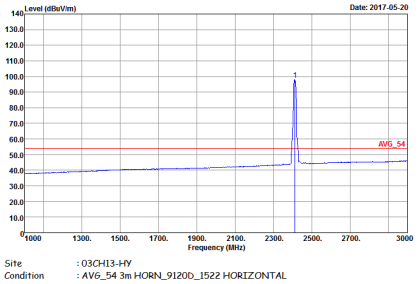
Test Engineer :	Alex Jheng, Bill Chang, and Wilson Wu	**Temperature :**	24.5~24.6°C
		Relative Humidity :	55~57%

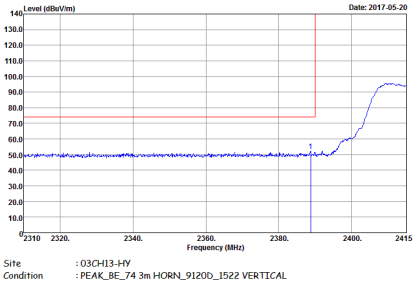
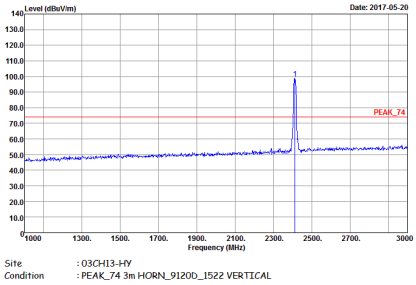
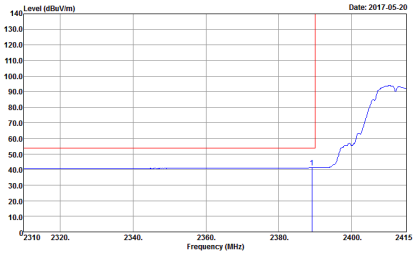
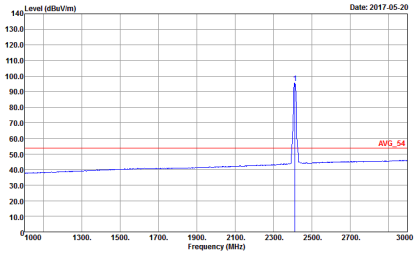
Note symbol

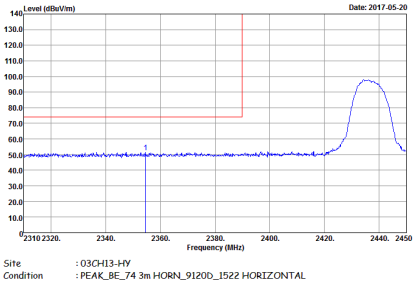
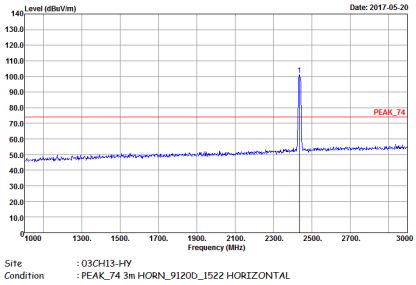
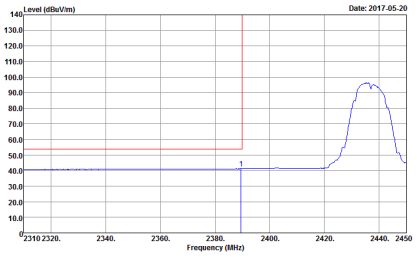
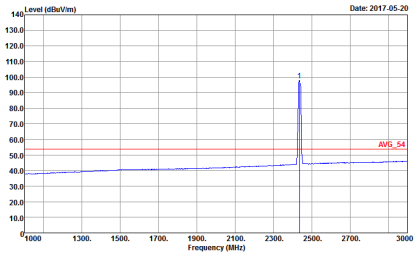
-L	**Low channel location**
-R	**High channel location**

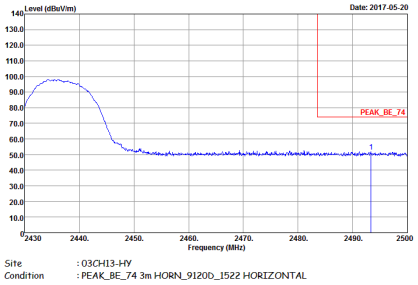
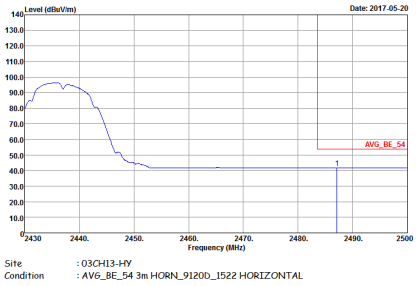
2.4GHz 2400~2483.5MHz

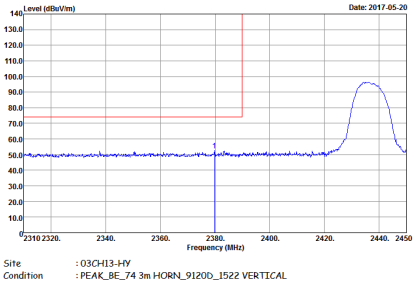
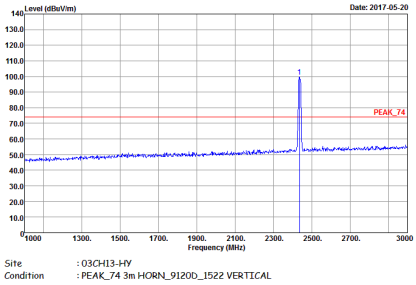
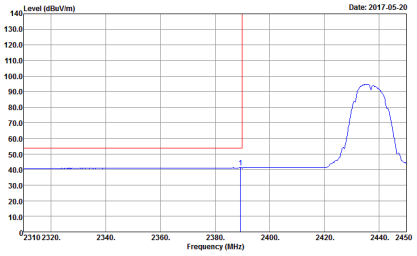
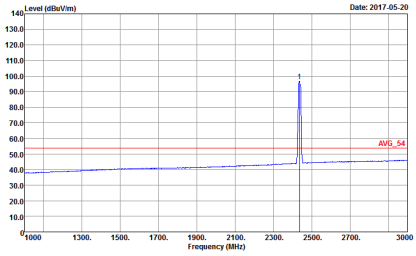
WIFI 802.11b (Band Edge @ 3m)

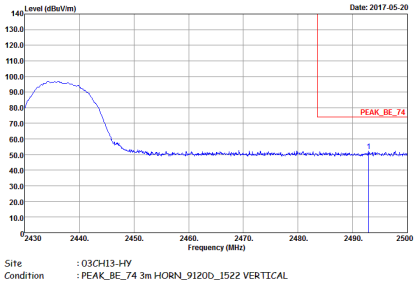
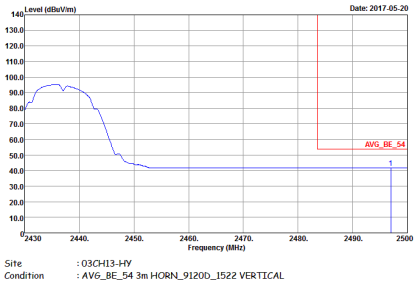
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

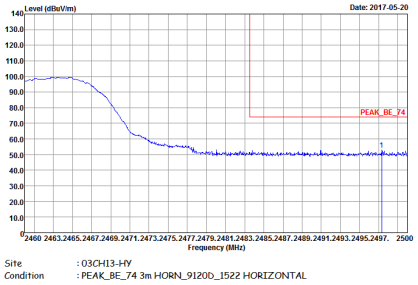
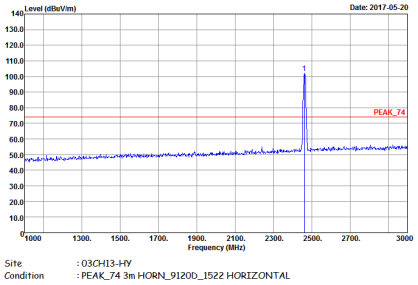
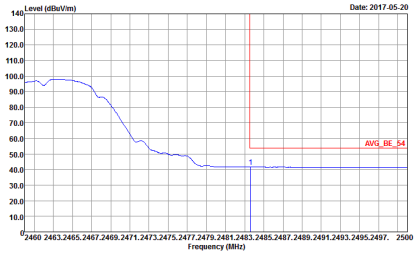
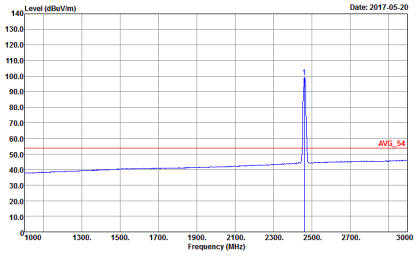
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 VERTICAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 VERTICAL

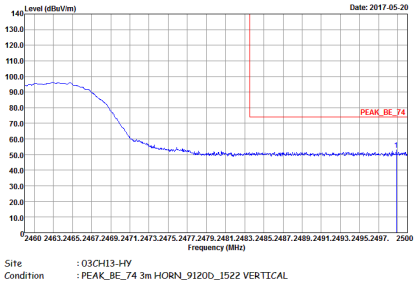
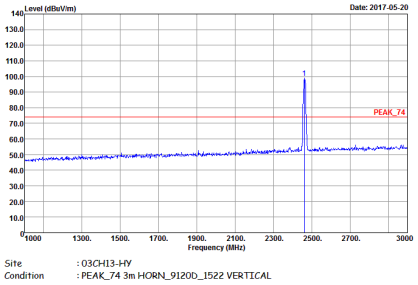
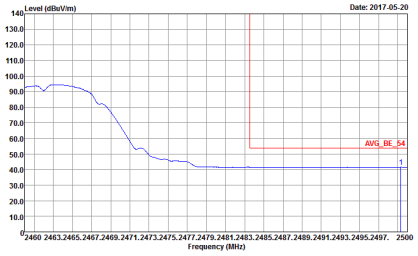
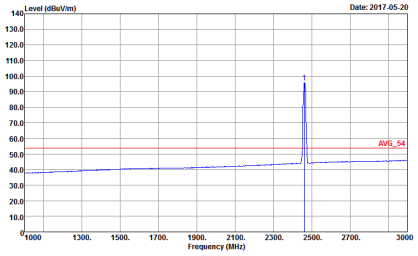
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 HORIZONTAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 HORIZONTAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 HORIZONTAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 HORIZONTAL

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

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 VERTICAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 VERTICAL

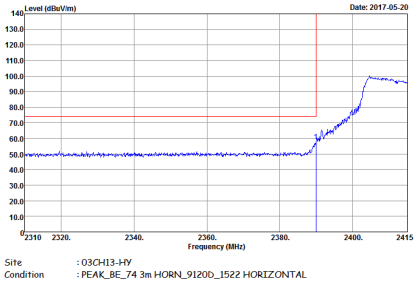
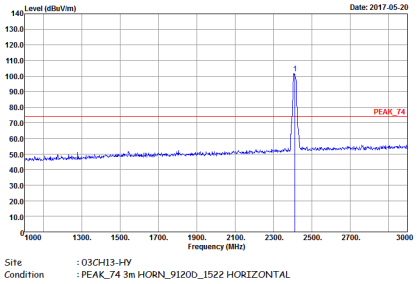
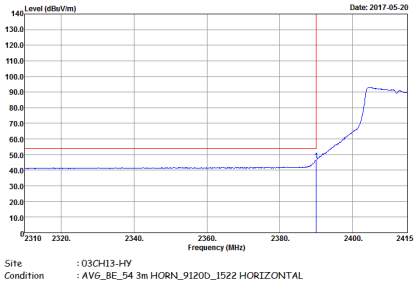
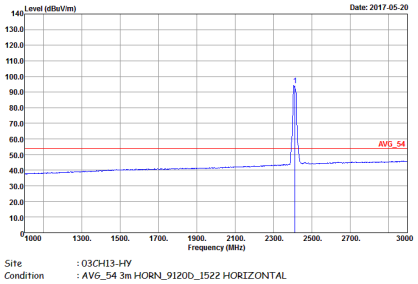
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

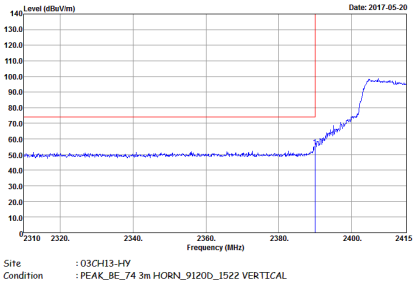
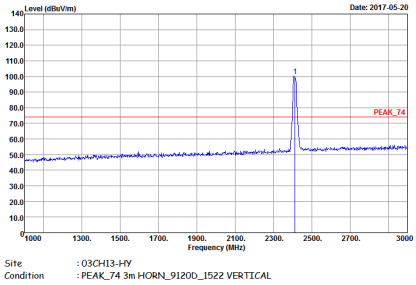
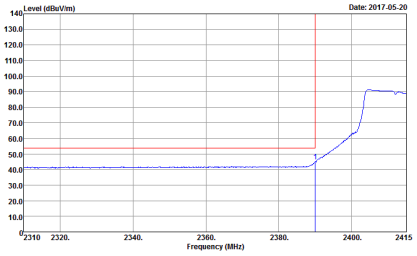
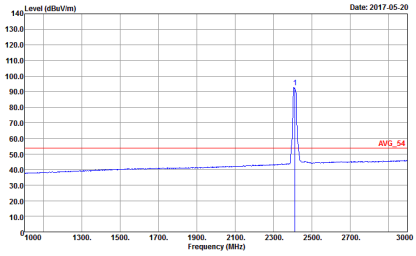
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 HORIZONTAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 HORIZONTAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 HORIZONTAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 HORIZONTAL

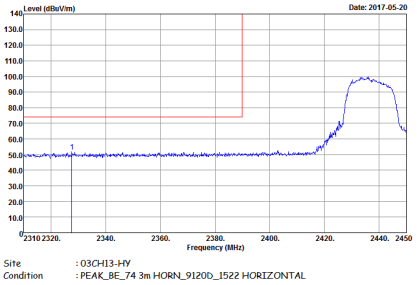
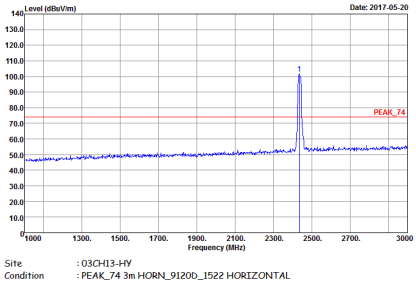
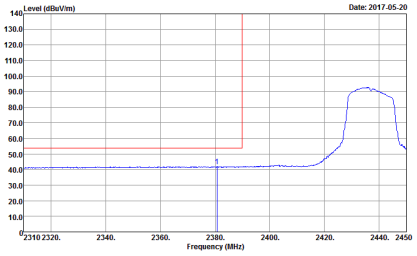
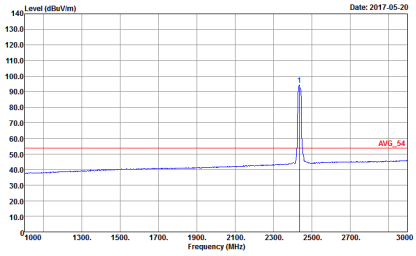
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 VERTICAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 VERTICAL

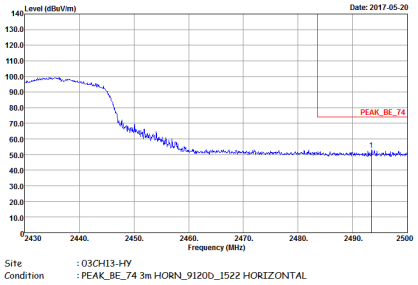
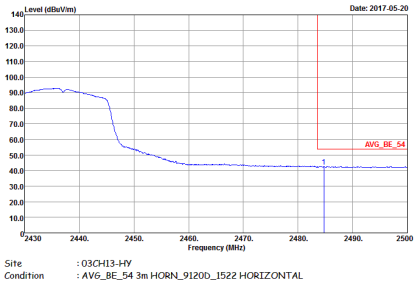
2.4GHz 2400~2483.5MHz

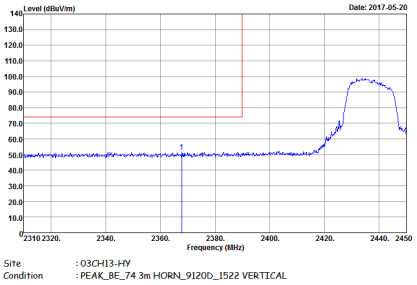
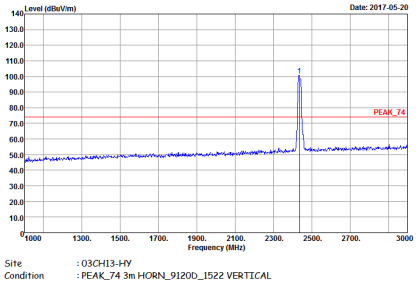
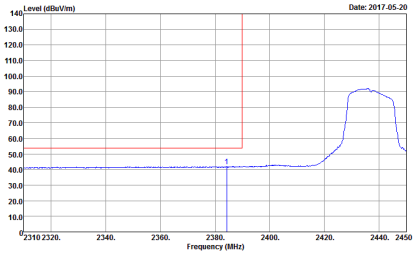
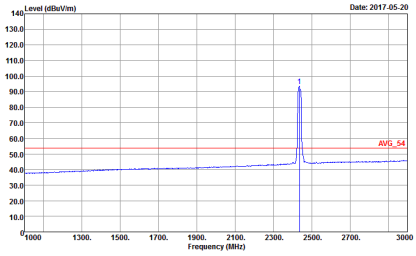
WIFI 802.11g (Band Edge @ 3m)

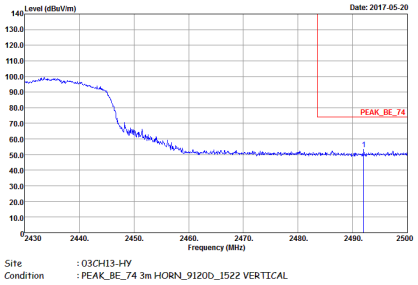
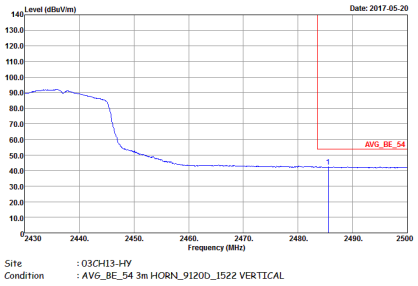
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

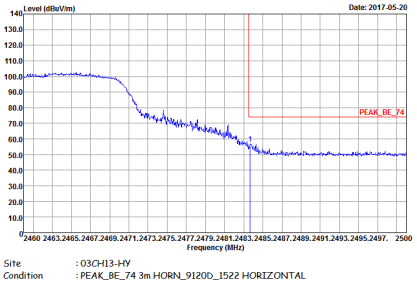
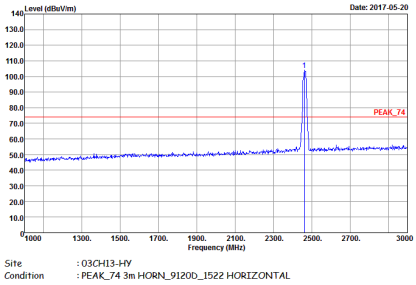
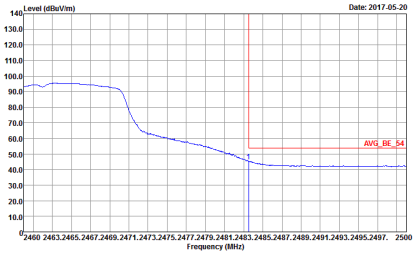
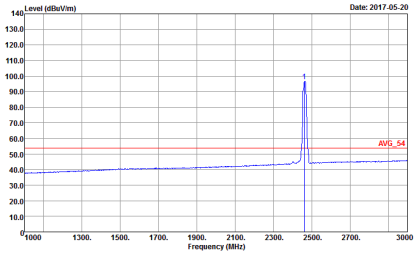
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 VERTICAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 VERTICAL

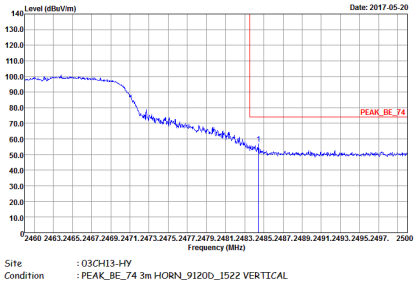
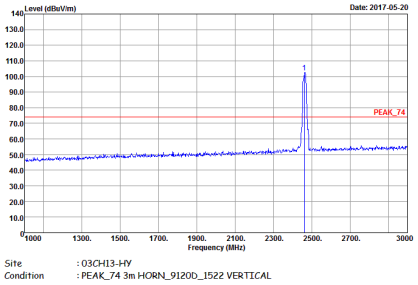
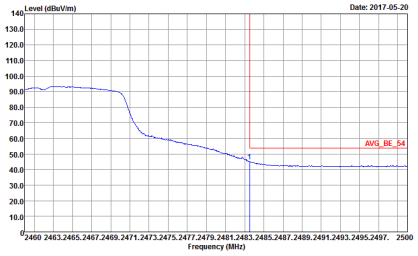
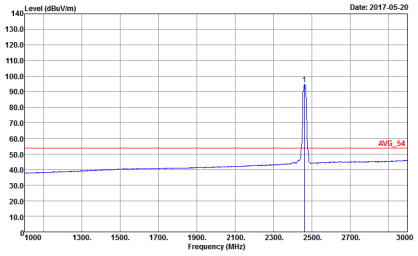
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 HORIZONTAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 HORIZONTAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 HORIZONTAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 HORIZONTAL

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

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 VERTICAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 VERTICAL

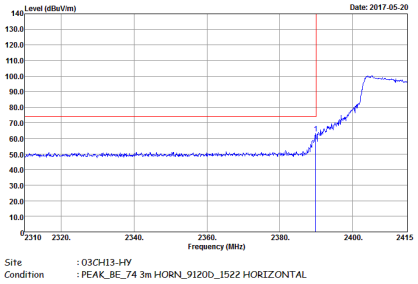
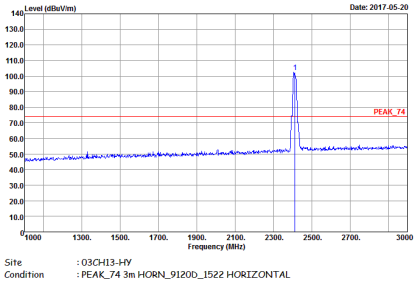
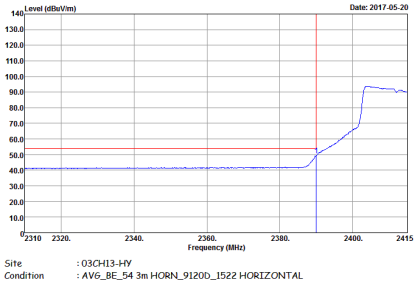
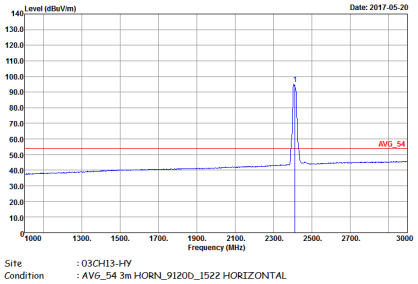
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

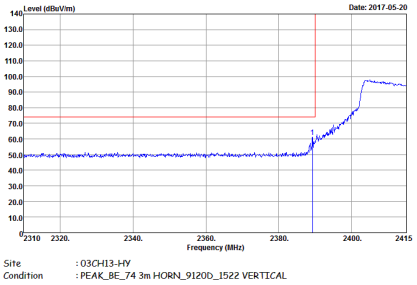
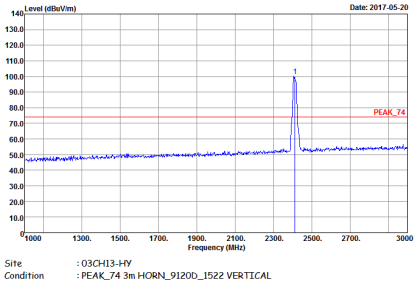
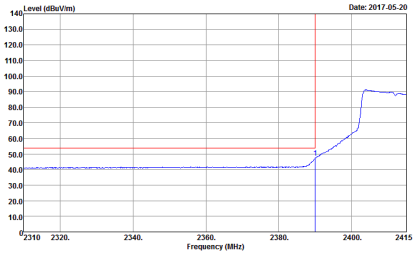
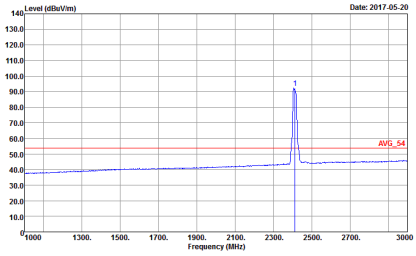
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 HORIZONTAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 HORIZONTAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 HORIZONTAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 HORIZONTAL

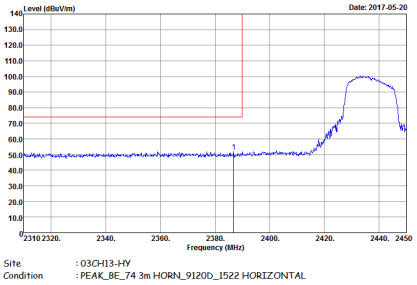
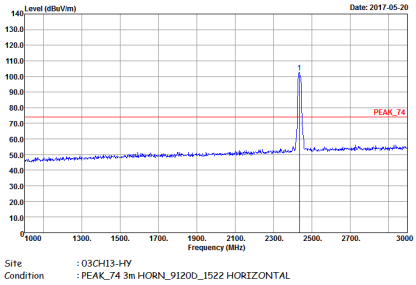
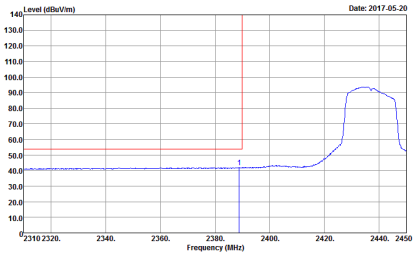
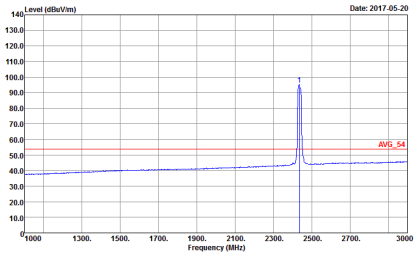
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 VERTICAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 VERTICAL

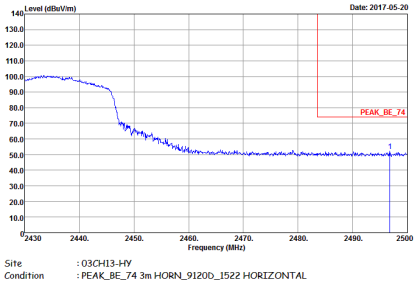
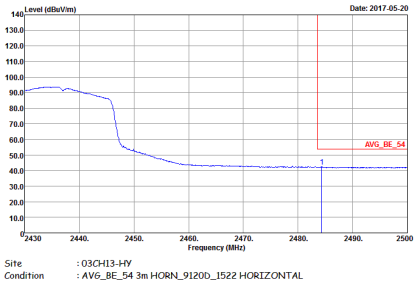
2.4GHz 2400~2483.5MHz

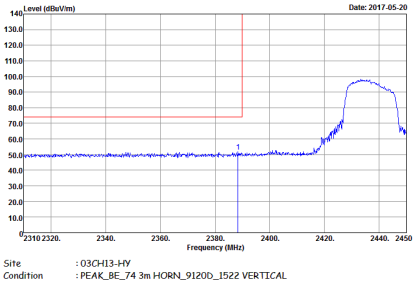
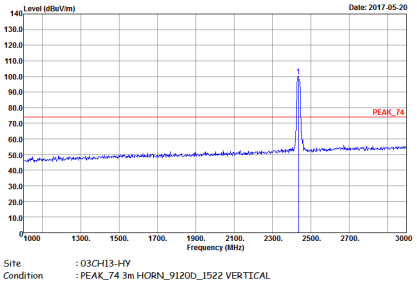
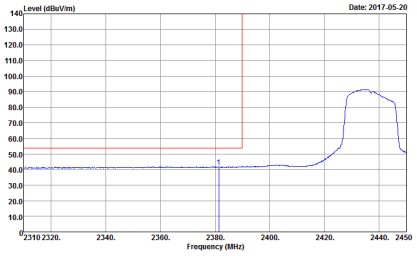
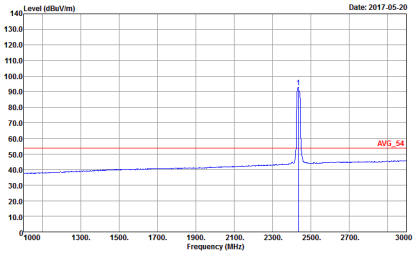
WIFI 802.11n HT20 (Band Edge @ 3m)

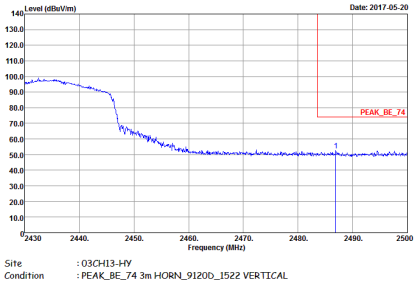
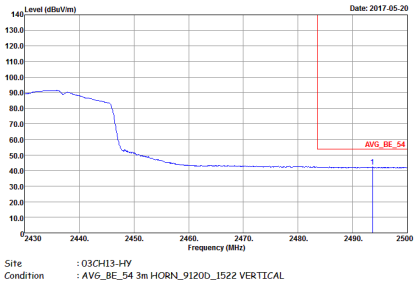
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

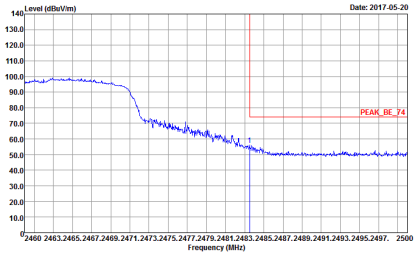
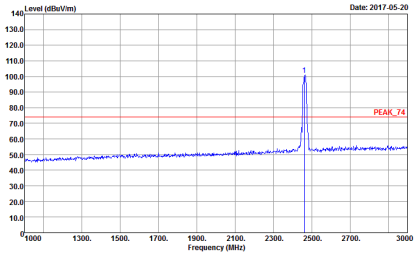
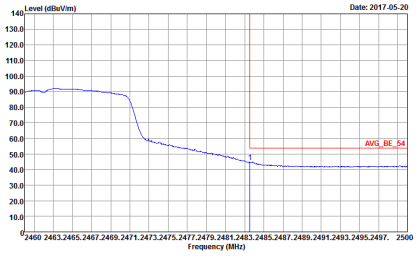
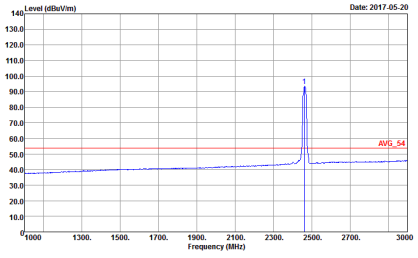
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 VERTICAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 VERTICAL

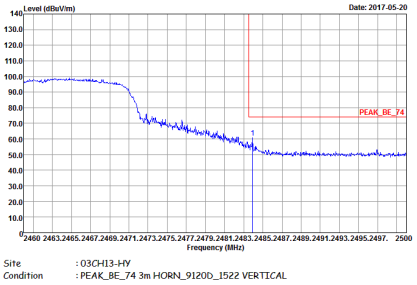
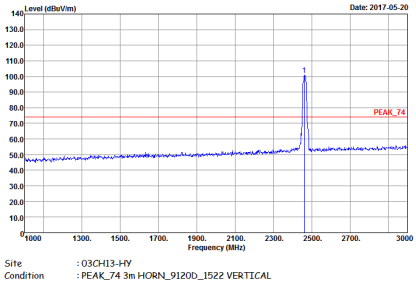
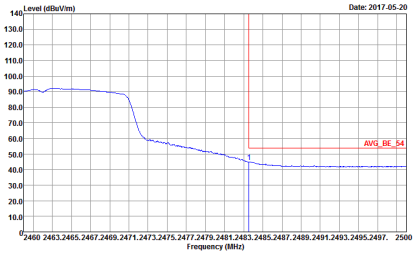
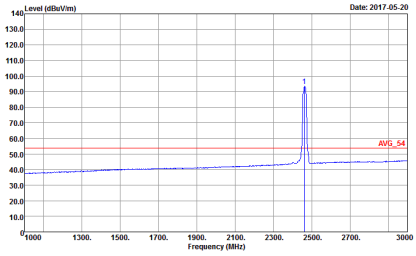
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 HORIZONTAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 HORIZONTAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 HORIZONTAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 HORIZONTAL

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

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 VERTICAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 VERTICAL

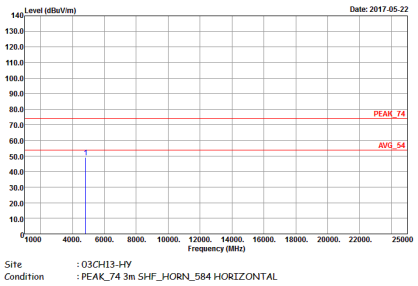
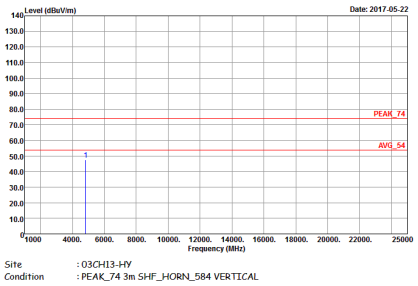
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

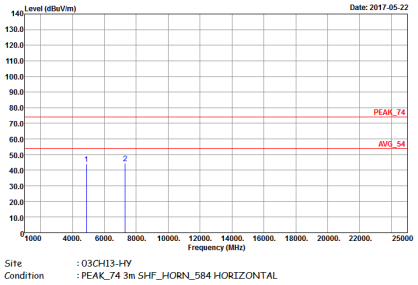
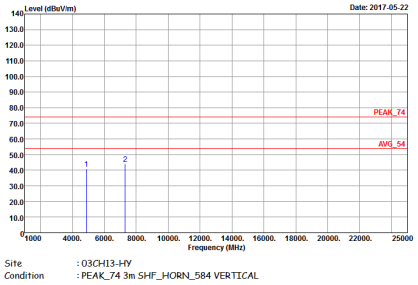
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 HORIZONTAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 HORIZONTAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 HORIZONTAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 HORIZONTAL

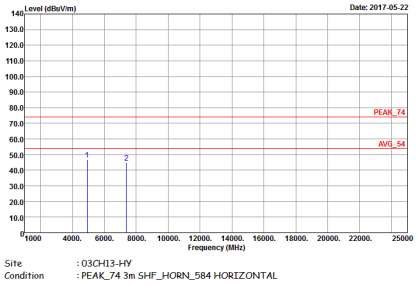
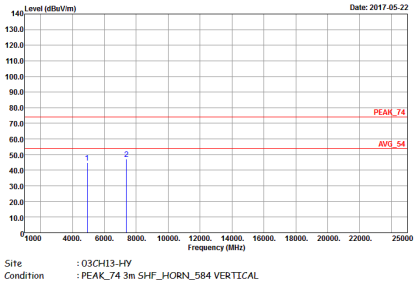
WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1522 VERTICAL
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1522 VERTICAL	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1522 VERTICAL

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

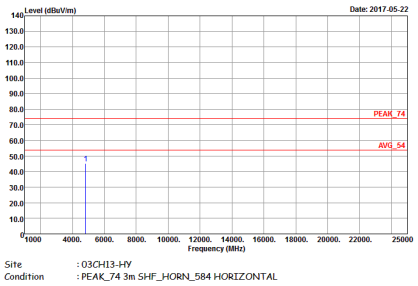
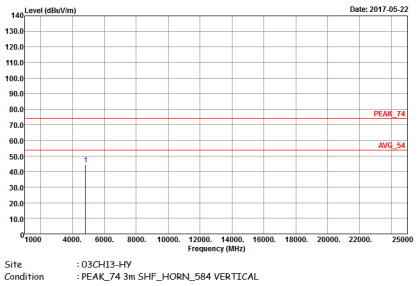
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

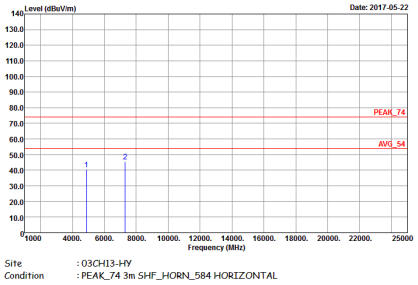
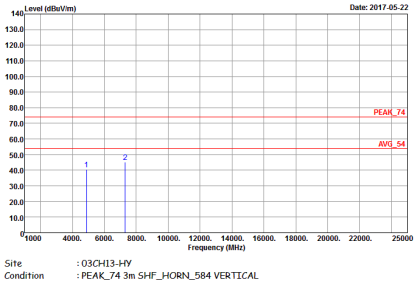
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

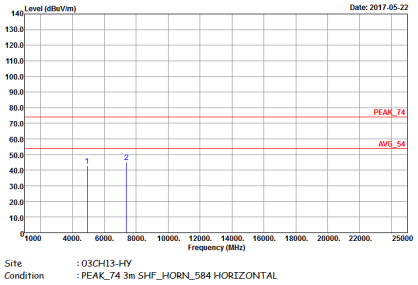
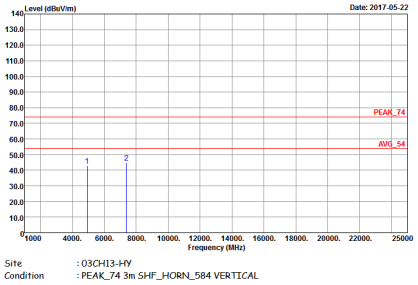
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

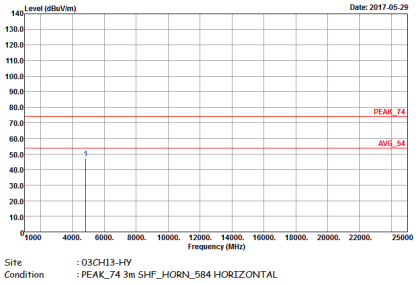
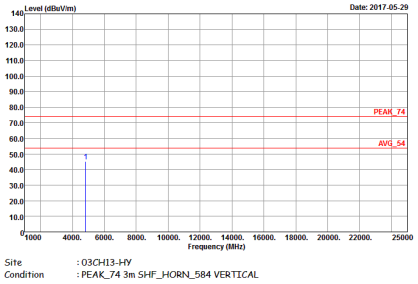
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

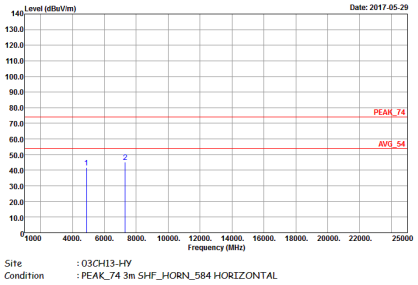
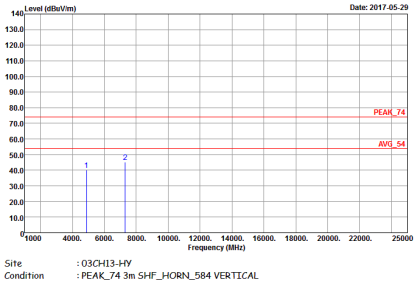
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

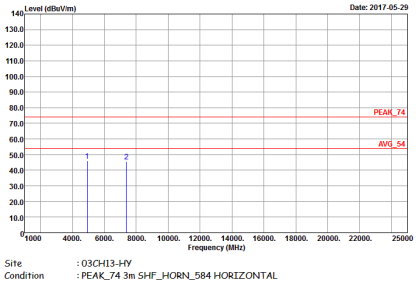
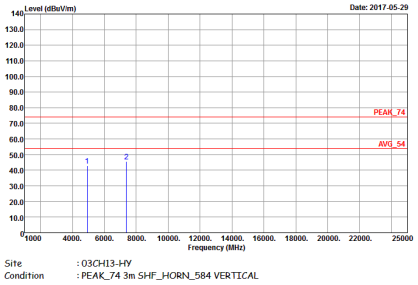
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

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

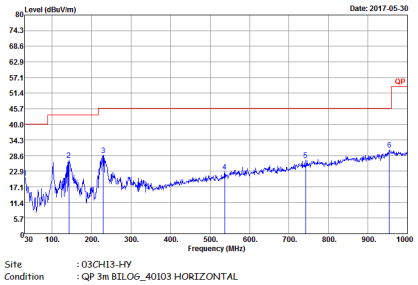
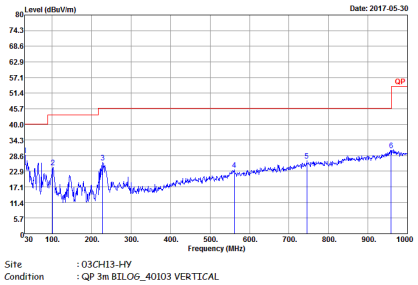
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

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

2.4GHz 2400~2483.5MHz

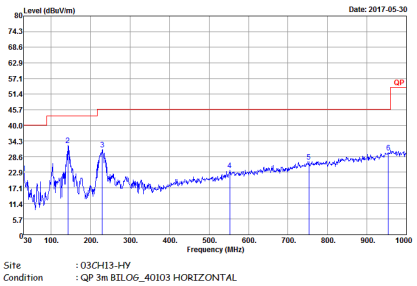
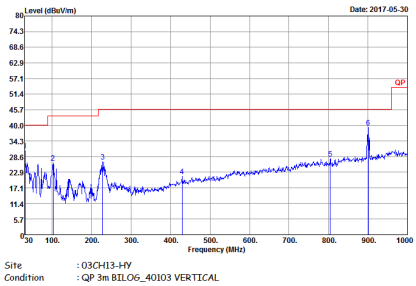
Emission below 1GHz

2.4GHz WIFI 802.11b (LF)

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

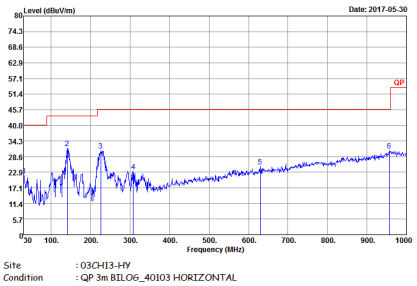
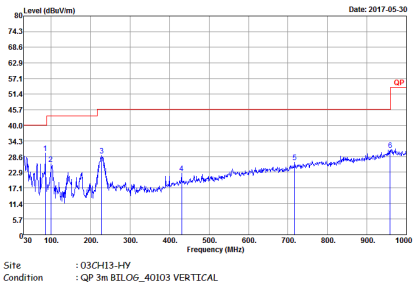
Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

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

Emission below 1GHz

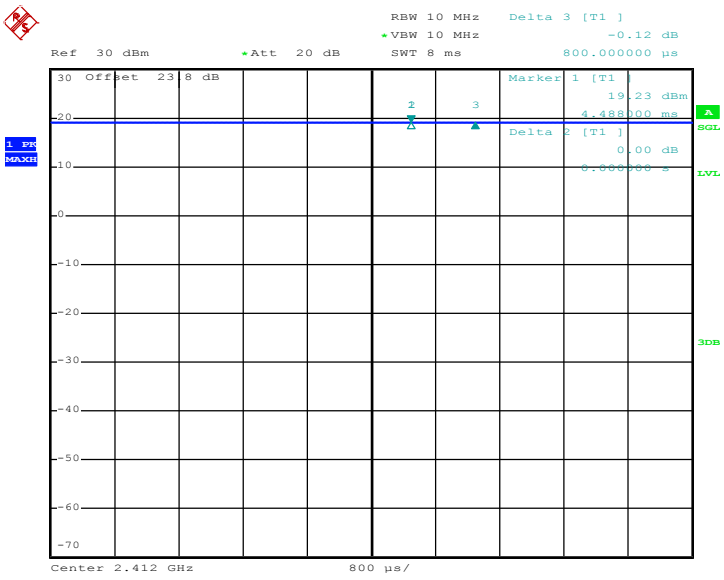
2.4GHz WIFI 802.11n HT20 (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11n HT20 LF	
1	Horizontal	Vertical
QP / Peak		

Appendix D. Duty Cycle Plots

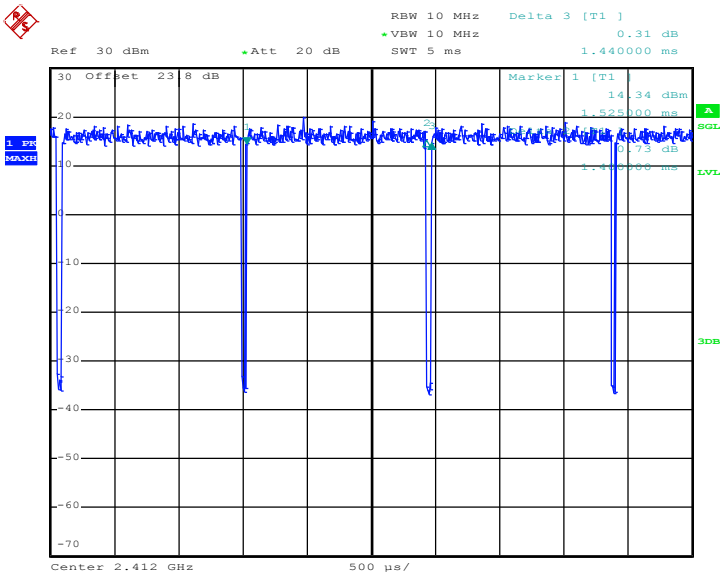
Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11b	100	-	-	10Hz
802.11g	97.22	1400	0.71	1kHz
2.4GHz 802.11n HT20	97.02	1300	0.77	1kHz

802.11b



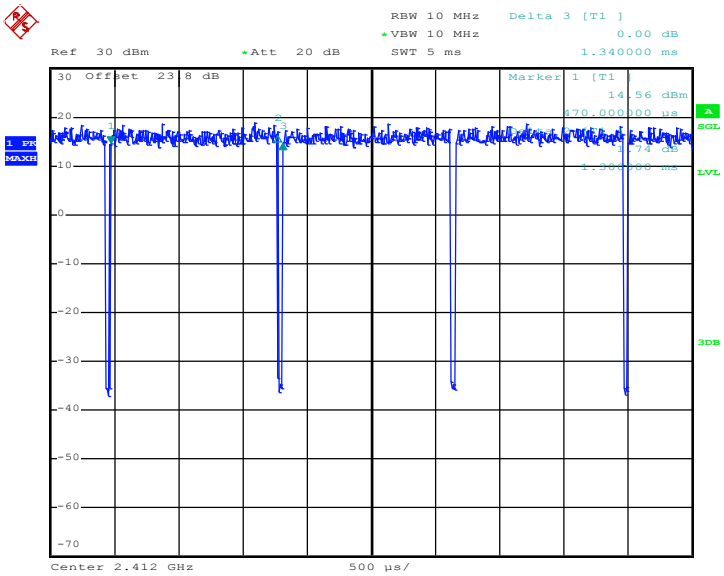
Date: 17.MAY.2017 00:29:38

802.11g



Date: 17.MAY.2017 00:30:32

2.4GHz 802.11n HT20



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