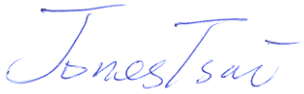
FCC RF Test Report

APPLICANT	:	**HTC Corporation**
EQUIPMENT	:	**Smartphone**
MODEL NAME	:	**2PZF100**
FCC ID	:	**NM82PZF100**
STANDARD	:	**FCC Part 15 Subpart C §15.247**
CLASSIFICATION	:	**(DTS) Digital Transmission System**

The product was received on Nov. 25, 2016 and testing was completed on Dec. 28, 2016. 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
FR6N2506-02C	Rev. 01	Initial issue of report	Jan. 25, 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 2.85 dB at 2389.905 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 9.80 dB at 13.558 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

HTC Corporation
1F, 6-3 Baoqiang Rd., Xindian District, New Taipei City, Taiwan 231

1.2 Manufacturer

HTC Corporation
1F, 6-3 Baoqiang Rd., Xindian District, New Taipei City, Taiwan 231

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smartphone
Model Name	2PZF100
FCC ID	NM82PZF100
Sample 1	EUT with battery 1 and memory 1
Sample 2	EUT with battery 2 and memory 2
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/NFC WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
EUT Stage	Production Unit

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. All test item are performed on sample 1.

1.4 Product Specification of Equipment Under Test

<table>
<tr><th colspan="2">Standards-related Product Specification</th></tr>
<tr><td>Tx/Rx Channel Frequency Range</td><td>2412 MHz ~ 2462 MHz</td></tr>
<tr><td>Maximum (Peak) Output Power to antenna</td><td><Ant. 1>
802.11b : 21.45 dBm (0.1396 W)
802.11g : 24.12 dBm (0.2582 W)
802.11n HT20 : 23.75 dBm (0.2371 W)
802.11n HT40 : 23.90 dBm (0.2455 W)
<Ant. 2>
802.11b : 20.50 dBm (0.1122 W)
802.11g : 23.60 dBm (0.2291 W)
802.11n HT20 : 23.45 dBm (0.2213 W)
802.11n HT40 : 23.53 dBm (0.2254 W)
MIMO <Ant. 1 + 2>
802.11n HT20 : 26.39 dBm (0.4355 W)
802.11n HT40 : 26.55 dBm (0.4519 W)</td></tr>
<tr><td>99% Occupied Bandwidth</td><td>802.11b : 11.40MHz
802.11g : 18.20MHz
802.11n HT20 : 19.25MHz
802.11n HT40 : 37.10MHz</td></tr>
<tr><td>Antenna Type / Gain</td><td><Ant 1>
PIFA Antenna type with gain -0.30 dBi
<Ant 2>
PIFA Antenna type with gain -4.30 dBi</td></tr>
<tr><td>Type of Modulation</td><td>802.11b : DSSS (DBPSK / DQPSK / CCK)
802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)</td></tr>
<tr><td>Antenna Function for Transmitter</td><td><table><tr><td></td><td>Ant. 1</td><td>Ant. 2</td></tr><tr><td>802.11 b/g/n</td><td>V</td><td>V</td></tr><tr><td>802.11 n MIMO</td><td>V</td><td>V</td></tr></table></td></tr>
</table>

Note: MIMO Ant. 1+2 is a calculated result from sum of the power MIMO Ant. 1 and MIMO Ant. 2.

1.5 Modification of EUT

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

1.6 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 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.

1.7 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 v03r05
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- 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.

Single Antenna

Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0

MIMO Antenna

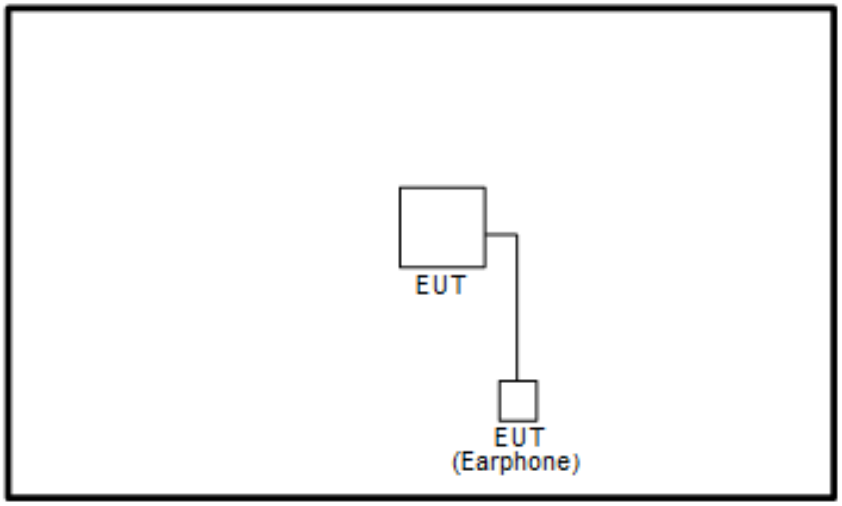
Modulation	Data Rate
802.11n HT20	MCS0
802.11n HT40	MCS0

Test Cases	
AC Conducted Emission	Mode 1 :GSM850 Idle + Bluetooth Link + WLAN (2.4GHz) Link + NFC On + USB Cable 1 (Charging from Adapter 1) + SIM 1 for Sample 1
Remark: All the radiated test cases were performance with adapter 1, USB cable 1, and Sample 1.	

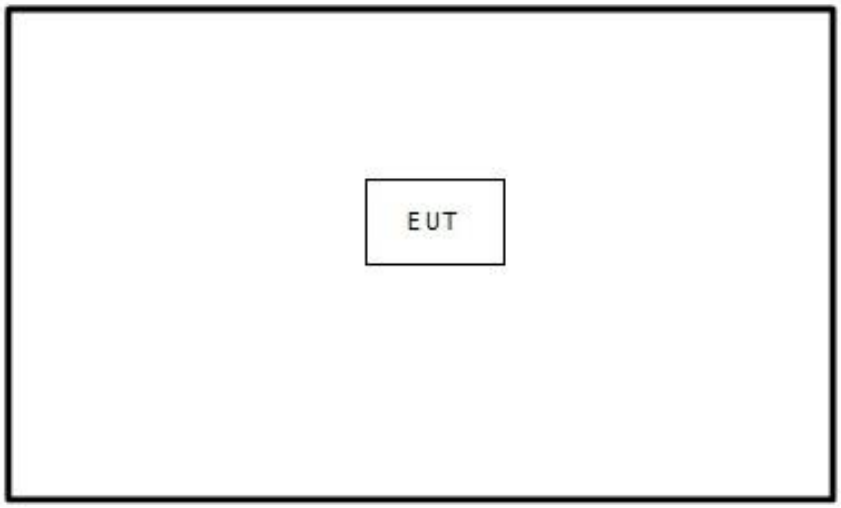
2.3 Connection Diagram of Test System

<WLAN Tx Mode>

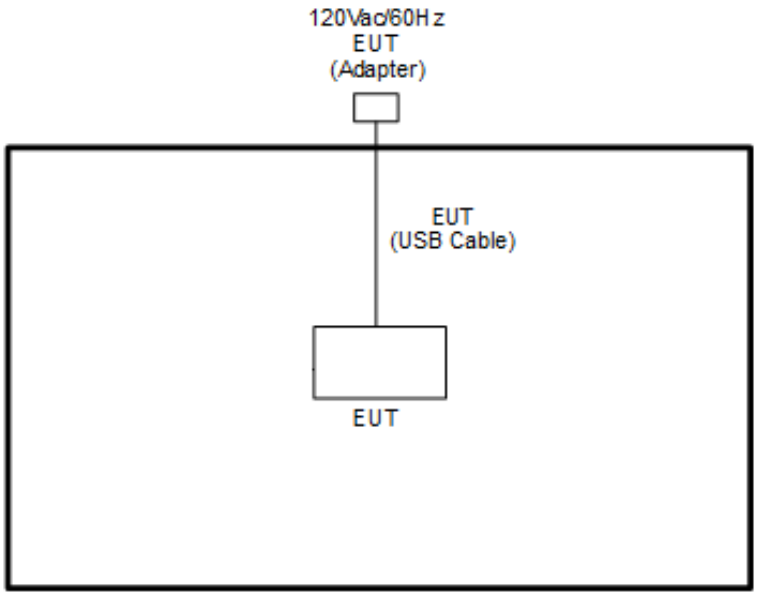
Ant. 1



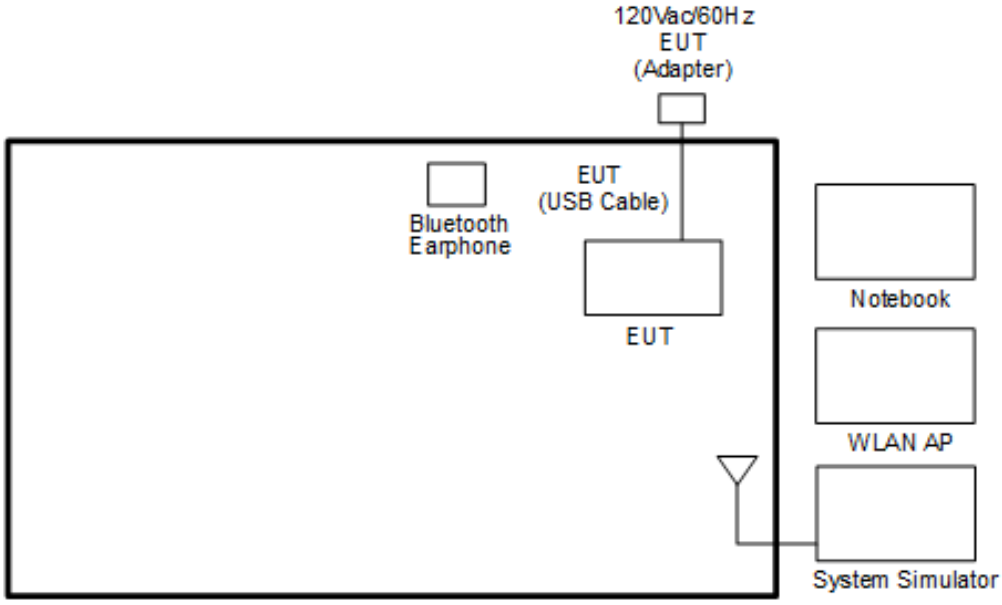
Ant. 2



MIMO Ant. 1+2



<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.	NoteBook-41	Lenovo	G480	PPD-AR5B95	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
2.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
4.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
5.	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
6.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.5 EUT Operation Test Setup

For WLAN function, programmed RF utility, “ADB” installed in the notebook make the EUT provide functions like channel selection and power level for continuous transmitting and receiving 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.

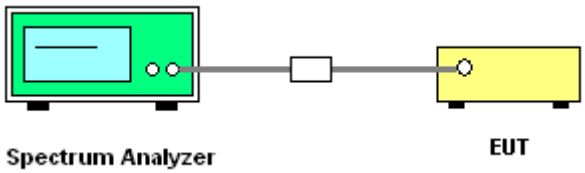
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

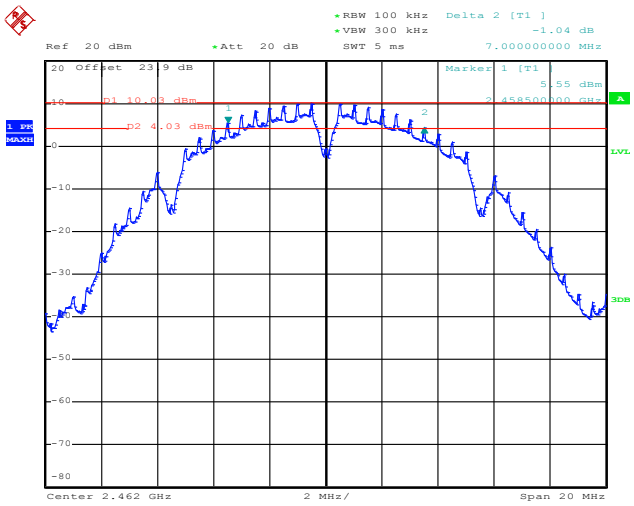
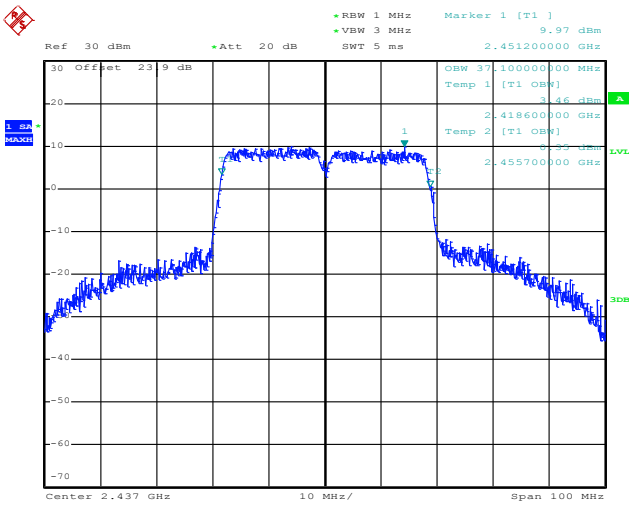
1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v03r05.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit 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
	
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Note : The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Peak Output Power Measurement

3.2.1 Limit of Peak Output Power

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

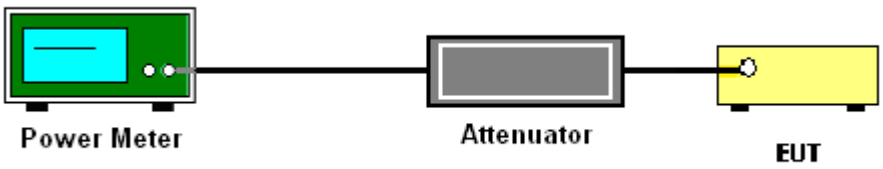
3.2.2 Measuring Instruments

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 v03r05 section 9.1.2 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.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

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 v03r05.
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.
7. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

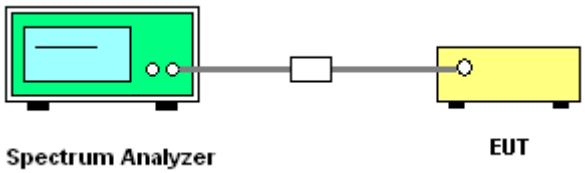
   If measurements performed using method (2) plus 10 log (N) exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

   Method (1): Measure and sum the spectra across the outputs.

   The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

   Method (2): Measure and add 10 log (N) dB, where N is the number of outputs. (N=2)

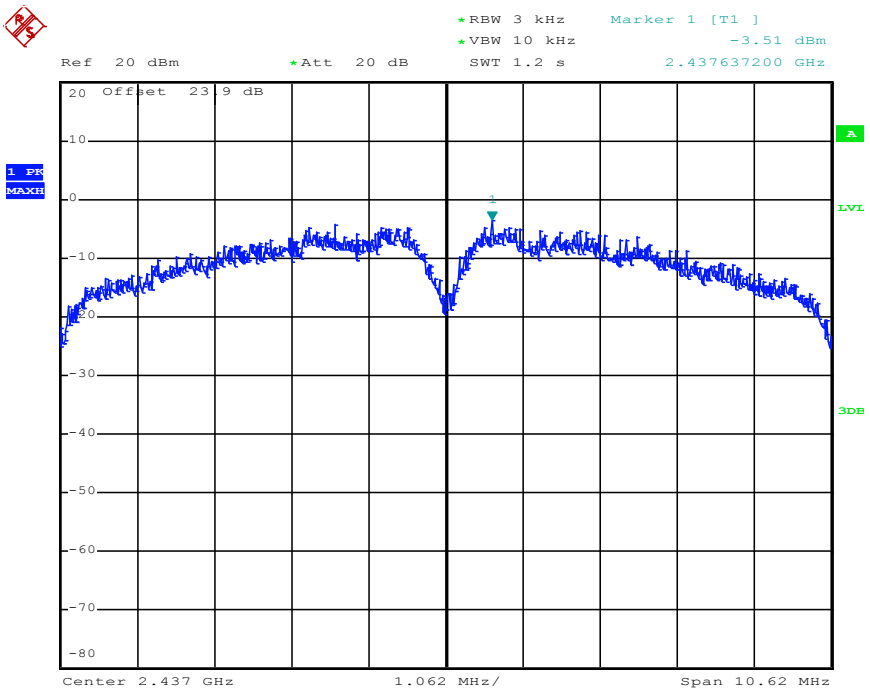
3.3.4 Test Setup



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 and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

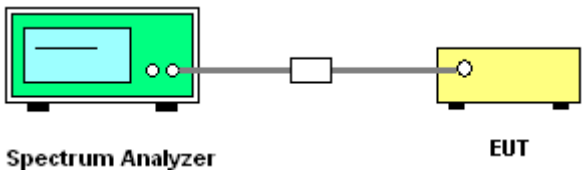
3.4.2 Measuring Instruments

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 v03r05.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup



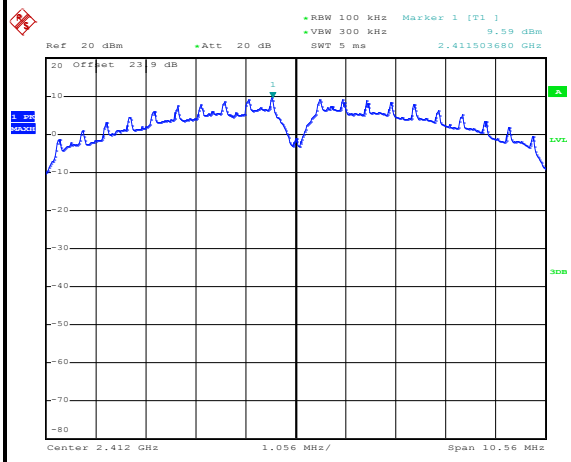
3.4.5 Test Result of Conducted Band Edges and Spurious Emission

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

Number of TX	1	**Ant. :**	1
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Tommy Lee and Aking Chang

WLAN 802.11b Channel 01

100kHz PSD reference Level



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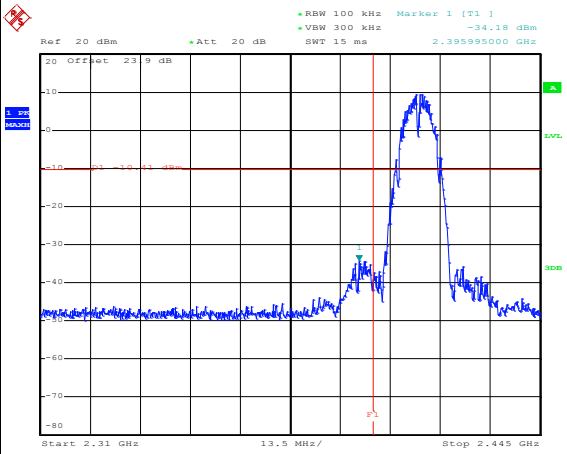
Low Channel Plot



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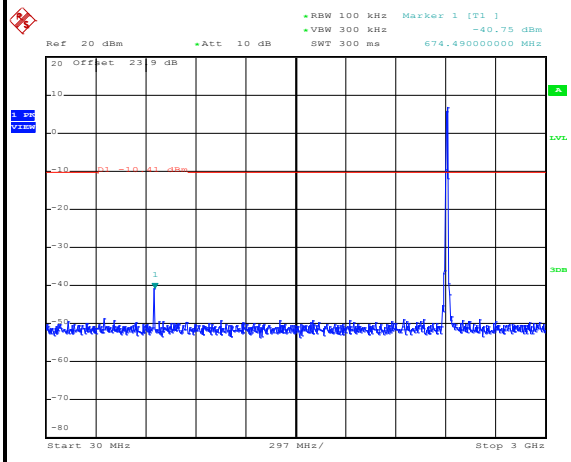
Spurious Emission 30MHz~3GHz



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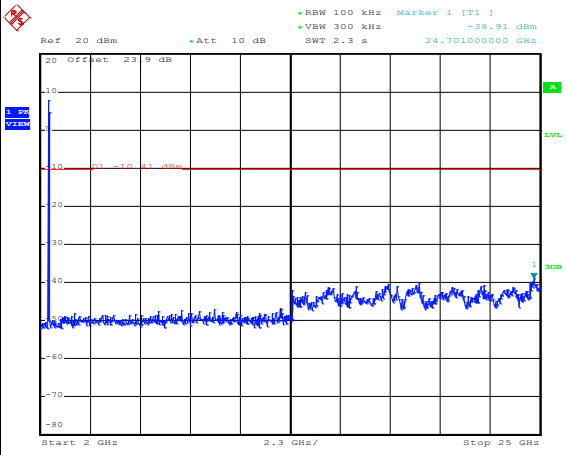
Spurious Emission 2GHz~25GHz



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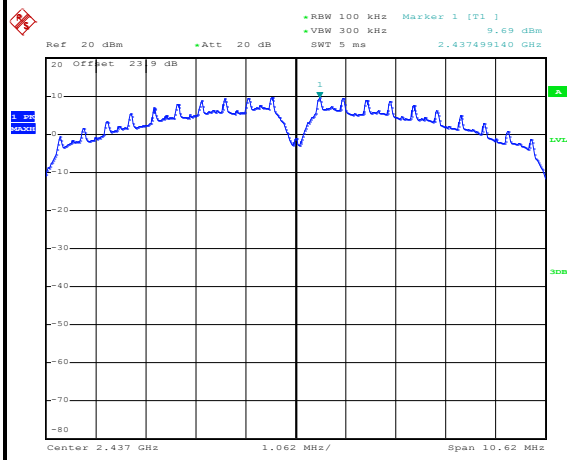
Number of TX :	1	**Ant. :**	1
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Tommy Lee and Aking Chang

WLAN 802.11b Channel 06

100kHz PSD reference Level



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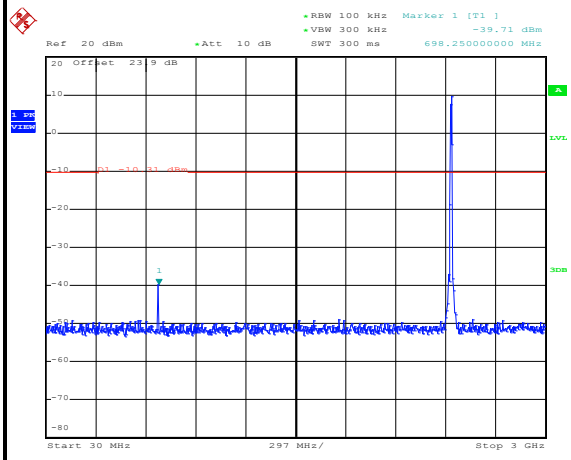
Spurious Emission 30MHz~3GHz



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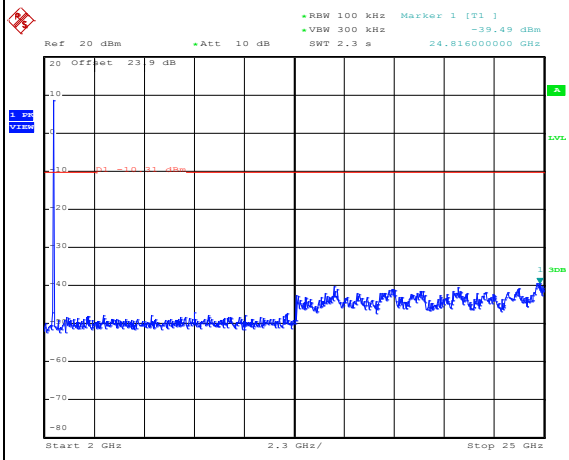
Spurious Emission 2GHz~25GHz



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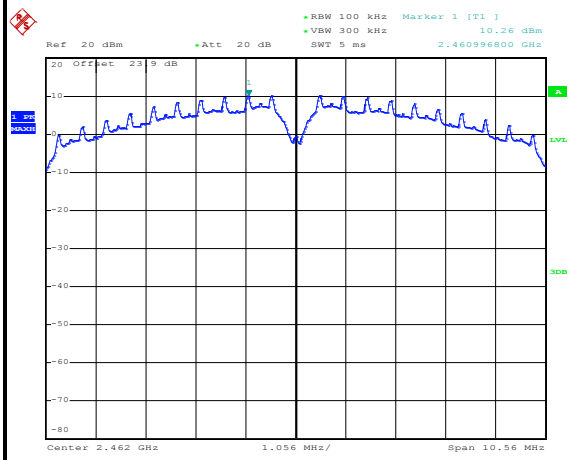
Number of TX :	1	**Ant. :**	1
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Tommy Lee and Aking Chang

WLAN 802.11b Channel 11

100kHz PSD reference Level



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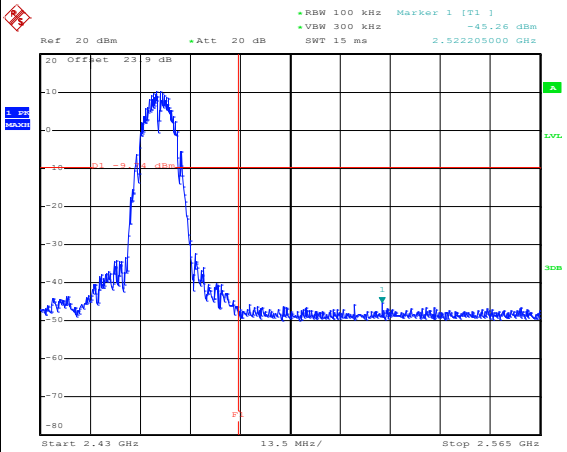
High Channel Plot



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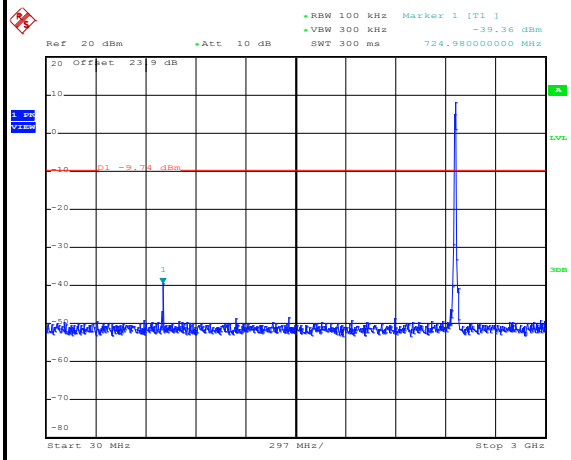
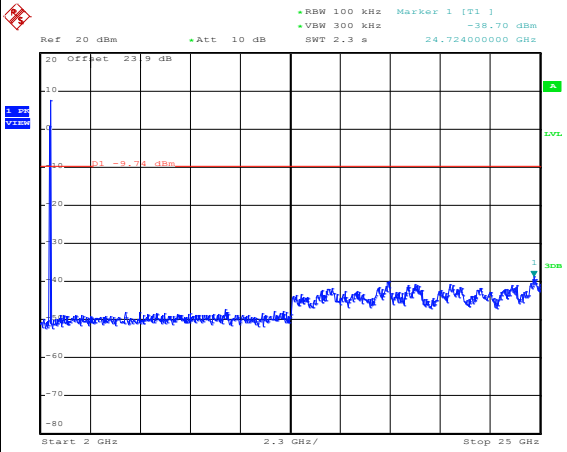
Spurious Emission 30MHz~3GHz



Date: 16.DEC.2016 16:19:08

Spurious Emission 2GHz~25GHz

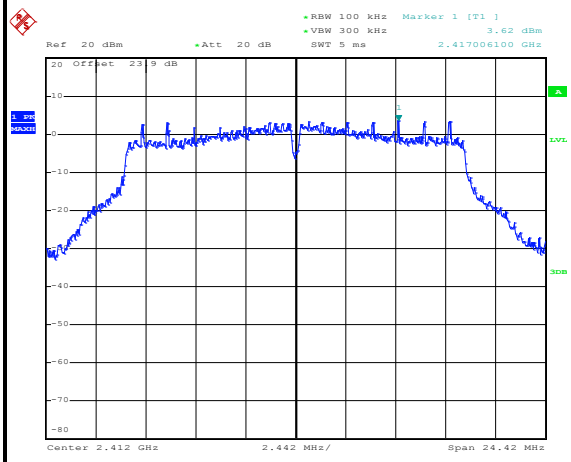


Date: 16.DEC.2016 16:19:17

Number of TX :	1	**Ant. :**	1
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Tommy Lee and Aking Chang

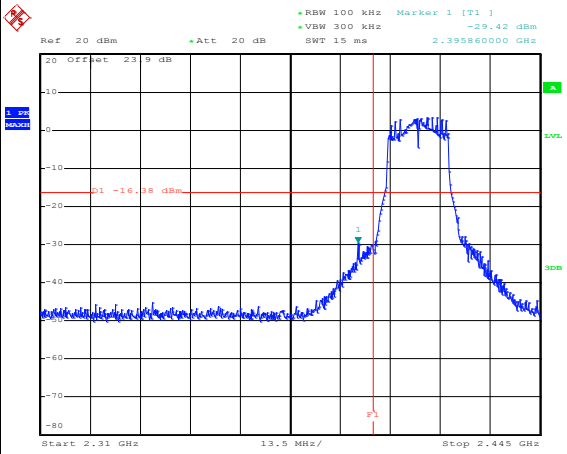
WLAN 802.11g Channel 01

100kHz PSD reference Level



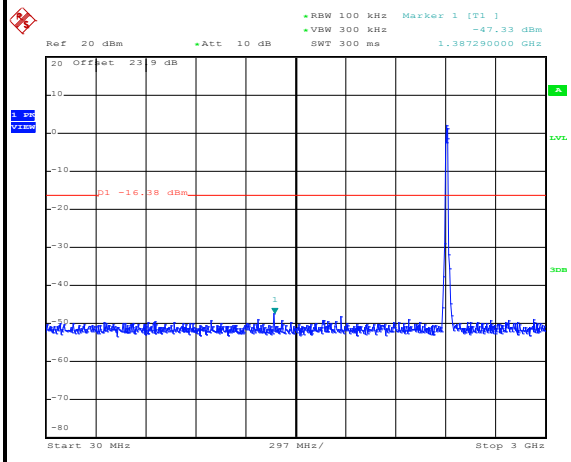
Date: 16.DEC.2016 16:52:55

Low Channel Plot



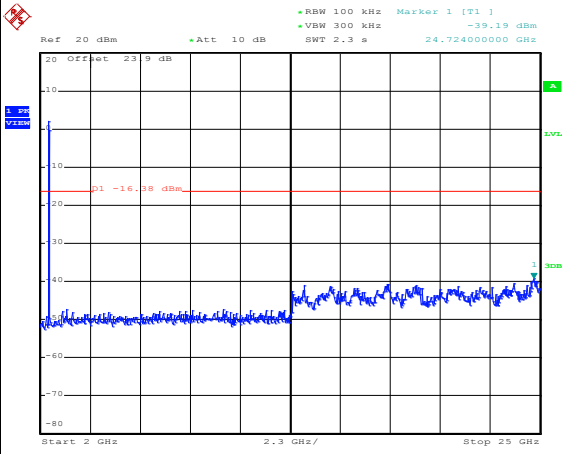
Date: 16.DEC.2016 16:53:52

Spurious Emission 30MHz~3GHz



Date: 16.DEC.2016 16:54:14

Spurious Emission 2GHz~25GHz

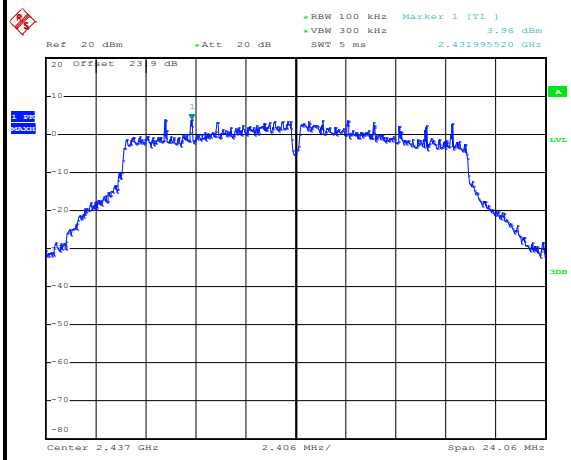


Date: 16.DEC.2016 16:54:22

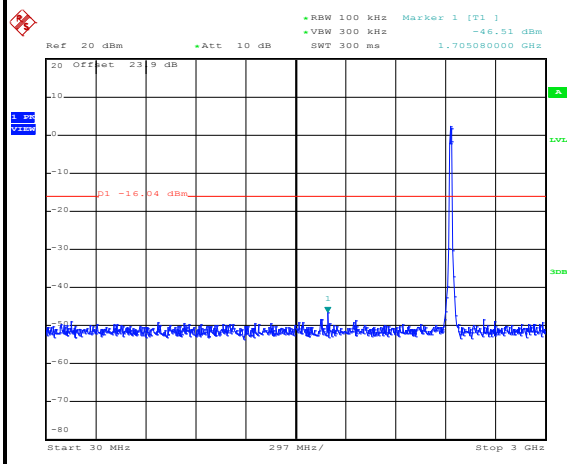
Number of TX :	1	**Ant. :**	1
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Tommy Lee and Aking Chang

WLAN 802.11g Channel 06

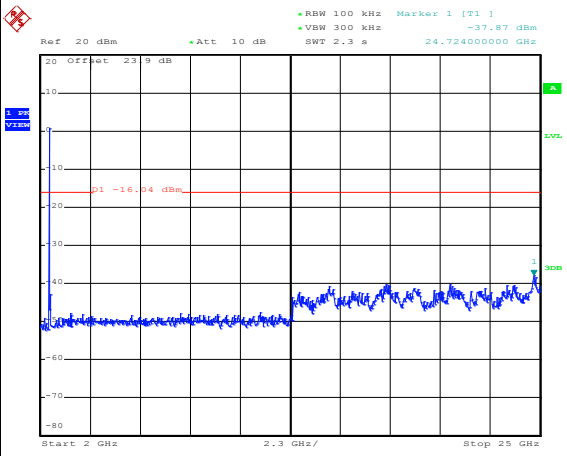
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz



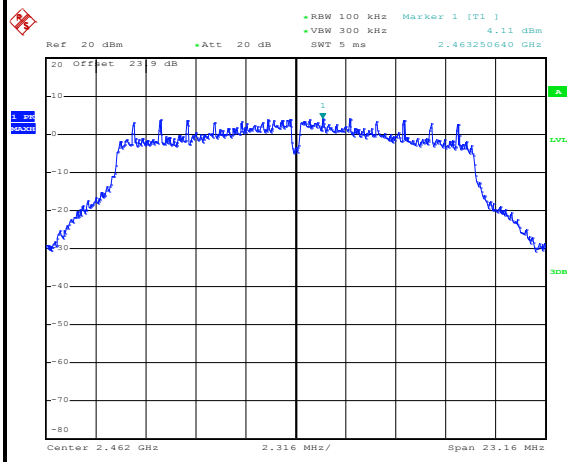
Spurious Emission 2GHz~25GHz



Number of TX :	1	**Ant. :**	1
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Tommy Lee and Aking Chang

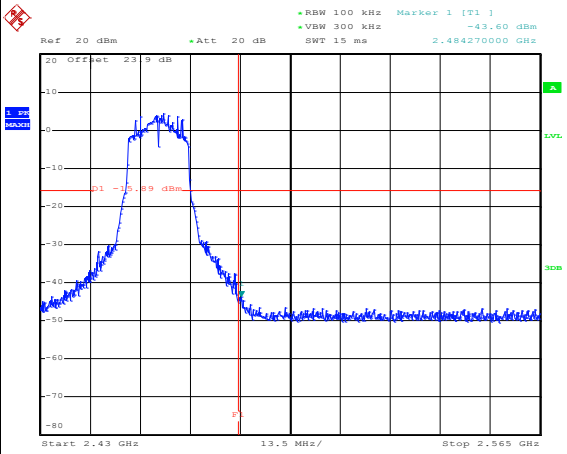
WLAN 802.11g Channel 11

100kHz PSD reference Level



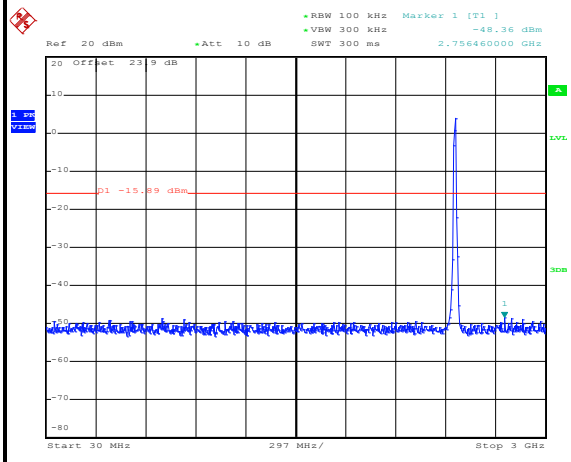
Date: 16.DEC.2016 17:19:32

High Channel Plot



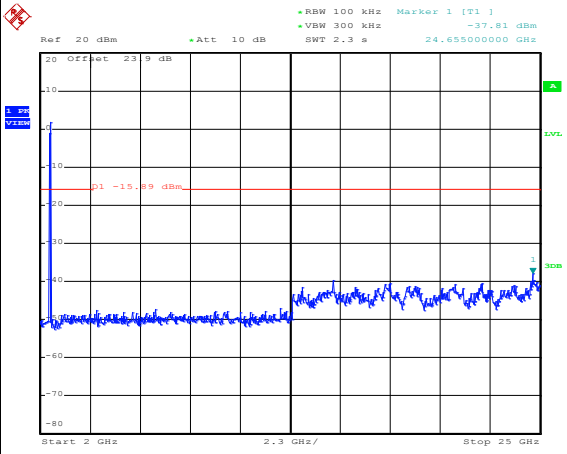
Date: 16.DEC.2016 17:20:29

Spurious Emission 30MHz~3GHz



Date: 16.DEC.2016 17:20:50

Spurious Emission 2GHz~25GHz



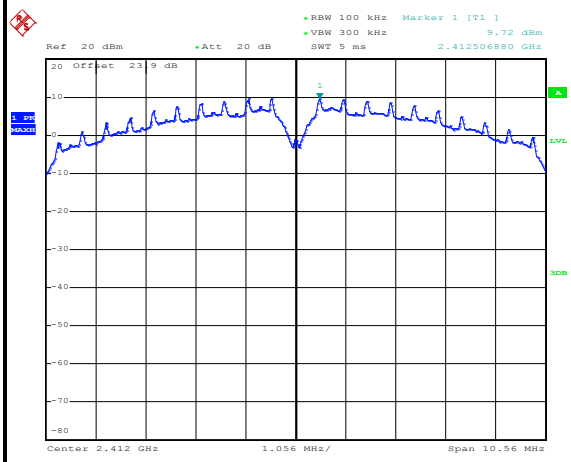
Date: 16.DEC.2016 17:20:58

Number of TX = 1, Ant. 2 (Measured)

Number of TX :	1	**Ant. :**	2
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Tommy Lee and Aking Chang

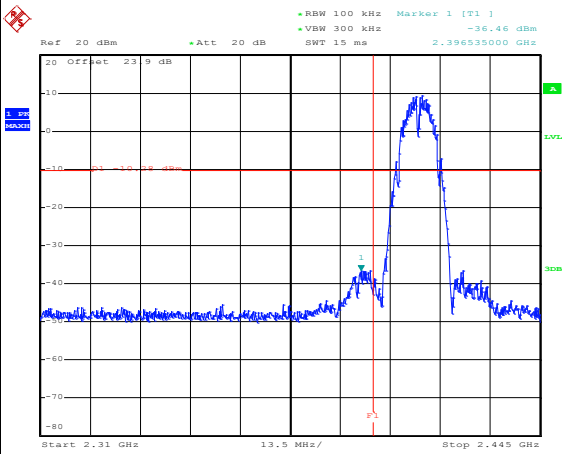
WLAN 802.11b Channel 01

100kHz PSD reference Level



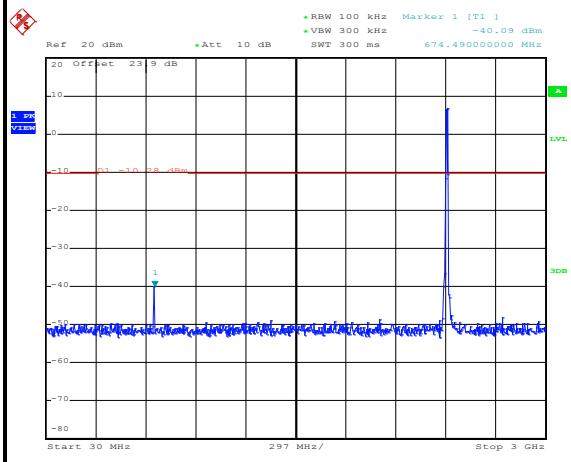
Date: 16.DEC.2016 16:29:22

Low Channel Plot



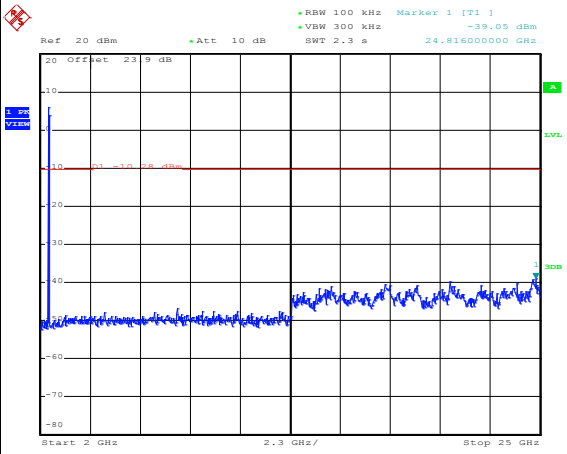
Date: 16.DEC.2016 16:30:51

Spurious Emission 30MHz~3GHz



Date: 16.DEC.2016 16:31:09

Spurious Emission 2GHz~25GHz

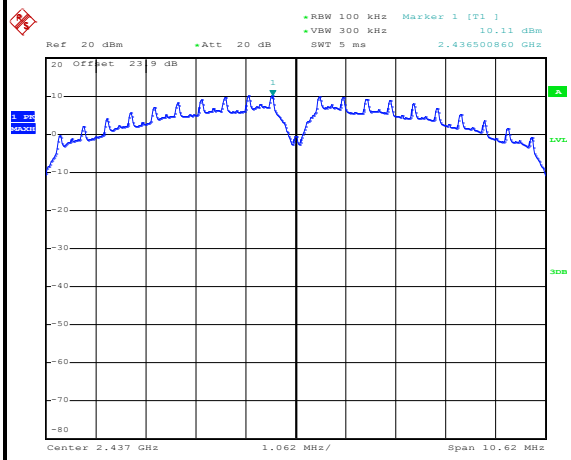


Date: 16.DEC.2016 16:31:17

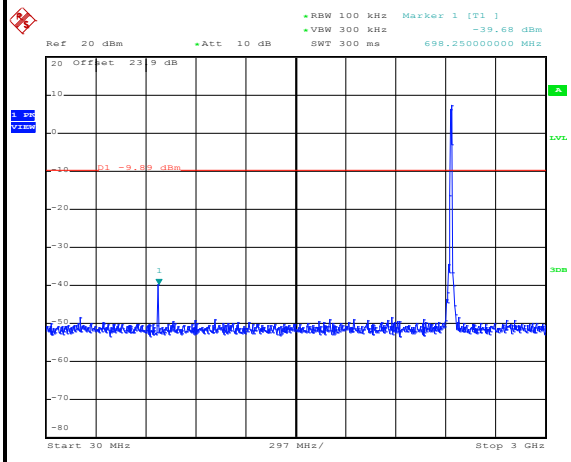
Number of TX :	1	**Ant. :**	2
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Tommy Lee and Aking Chang

WLAN 802.11b Channel 06

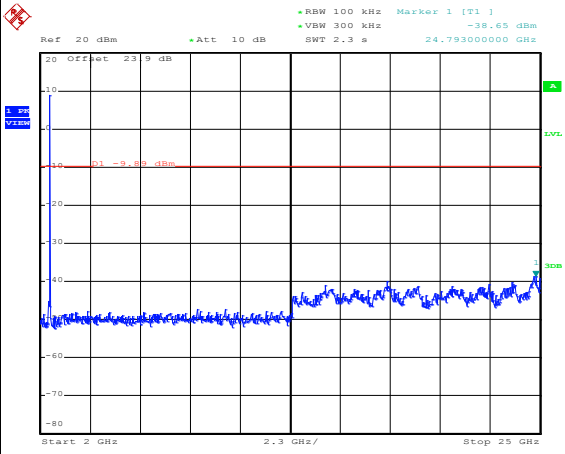
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz



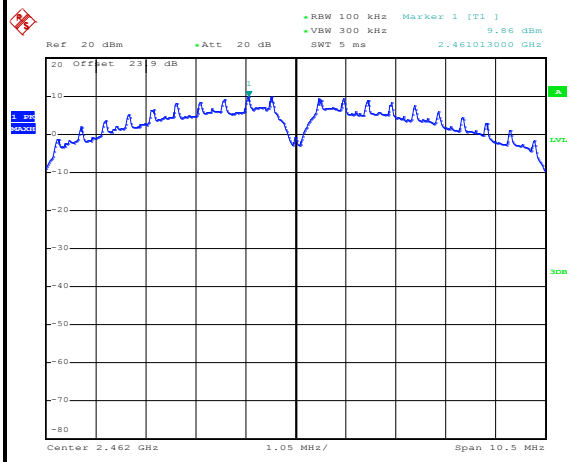
Spurious Emission 2GHz~25GHz



Number of TX :	1	**Ant. :**	2
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Tommy Lee and Aking Chang

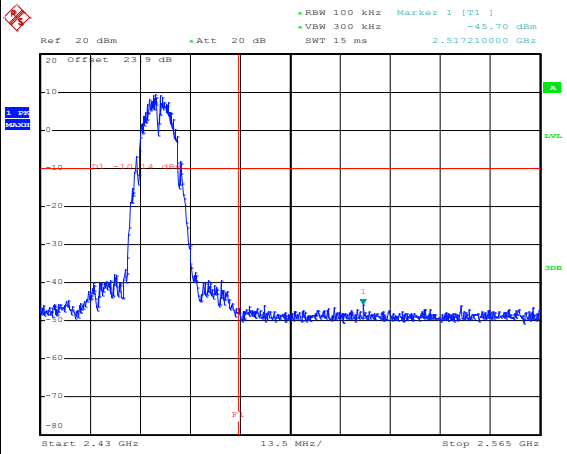
WLAN 802.11b Channel 11

100kHz PSD reference Level



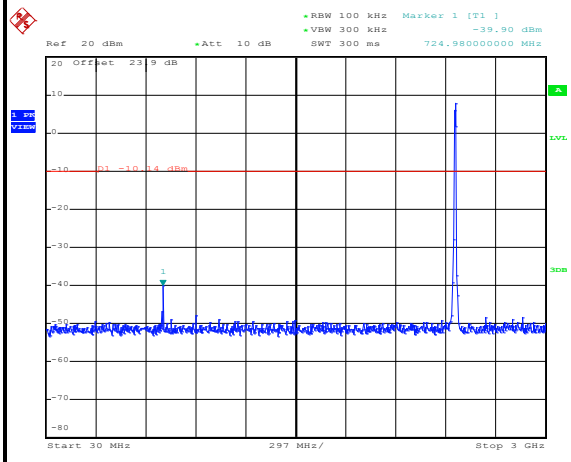
Date: 16.DEC.2016 16:44:35

High Channel Plot



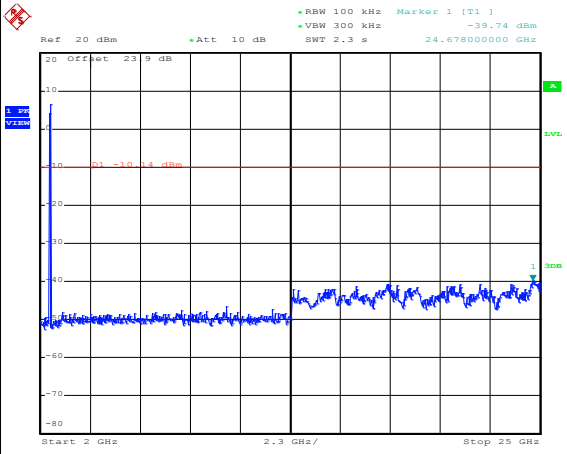
Date: 16.DEC.2016 16:44:58

Spurious Emission 30MHz~3GHz



Date: 16.DEC.2016 16:45:12

Spurious Emission 2GHz~25GHz

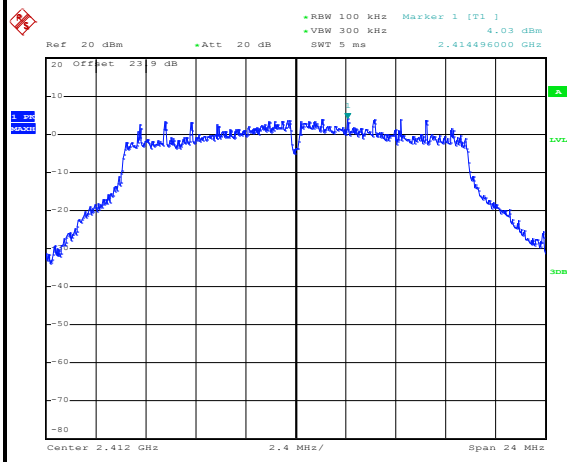


Date: 16.DEC.2016 16:45:21

Number of TX :	1	Ant. :	2
Test Mode :	802.11g	Temperature :	21~25℃
Test Band :	2.4GHz Low	Relative Humidity :	51~54%
Test Channel :	01	Test Engineer :	Tommy Lee and Aking Chang

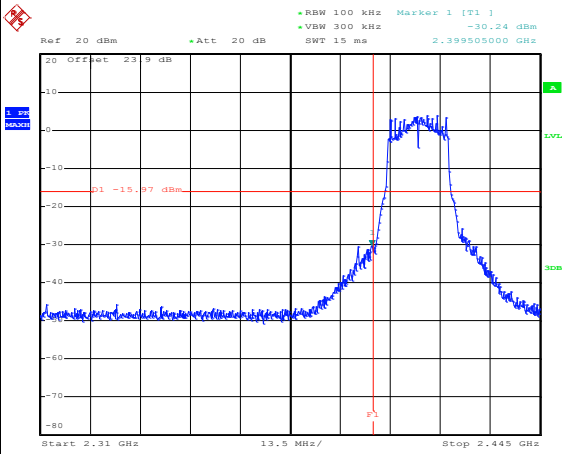
WLAN 802.11g Channel 01

100kHz PSD reference Level



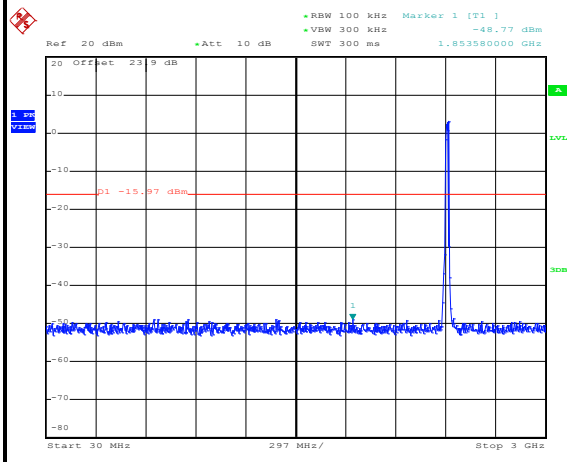
Date: 16.DEC.2016 18:12:08

Low Channel Plot



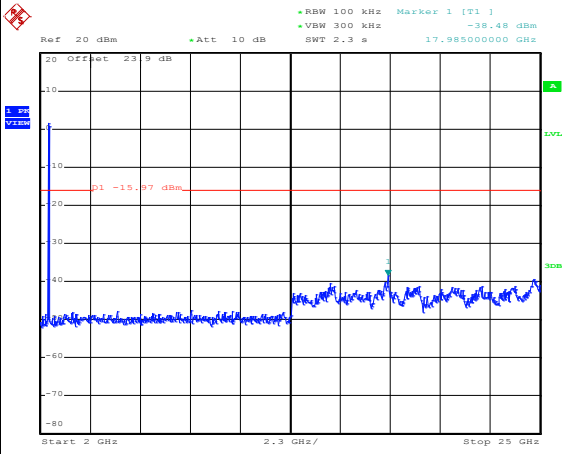
Date: 16.DEC.2016 18:13:00

Spurious Emission 30MHz~3GHz



Date: 16.DEC.2016 18:13:43

Spurious Emission 2GHz~25GHz

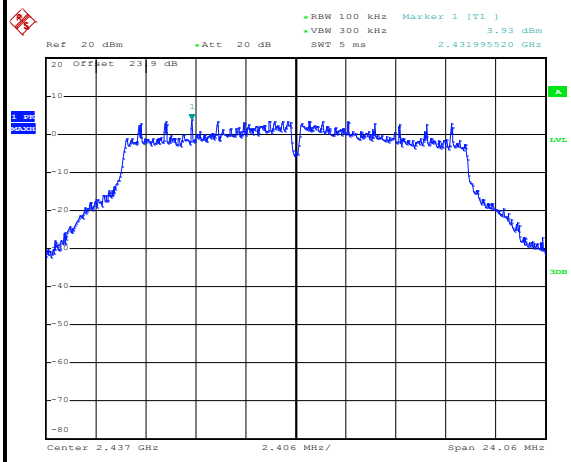


Date: 16.DEC.2016 18:13:51

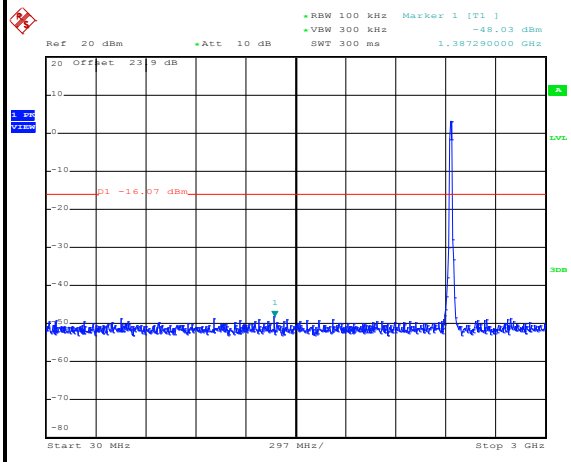
Number of TX :	1	**Ant. :**	2
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Tommy Lee and Aking Chang

WLAN 802.11g Channel 06

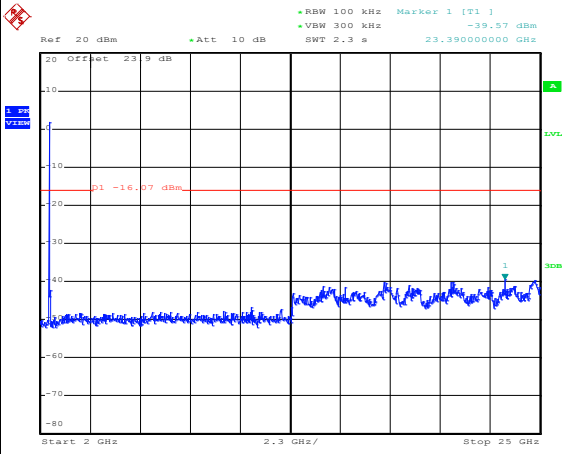
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz



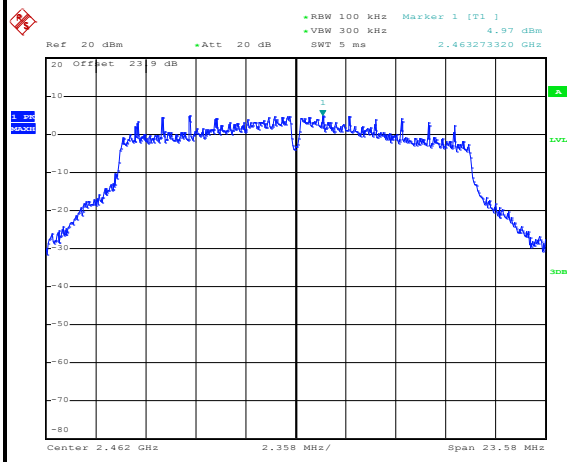
Spurious Emission 2GHz~25GHz



Number of TX :	1	Ant. :	2
Test Mode :	802.11g	Temperature :	21~25℃
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	11	Test Engineer :	Tommy Lee and Aking Chang

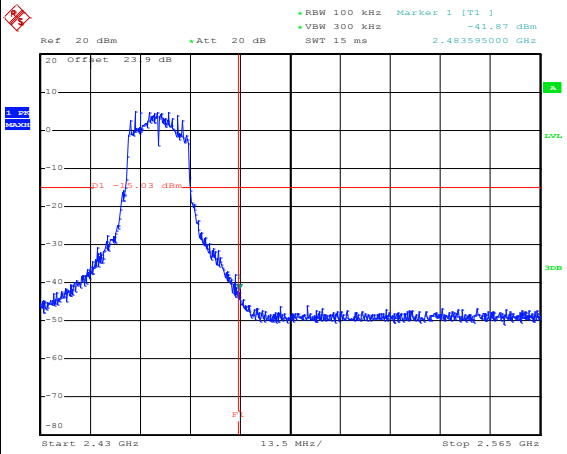
WLAN 802.11g Channel 11

100kHz PSD reference Level



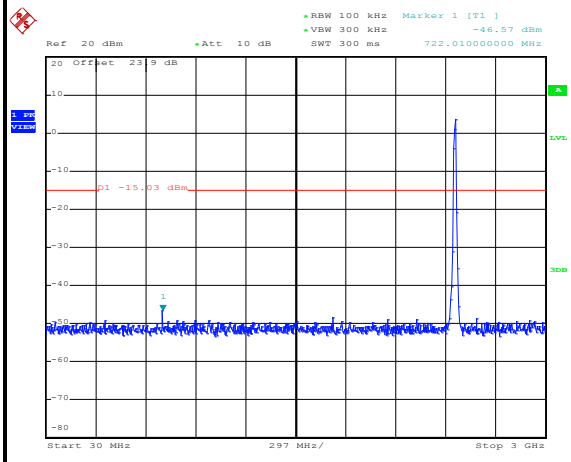
Date: 16.DEC.2016 19:01:02

High Channel Plot



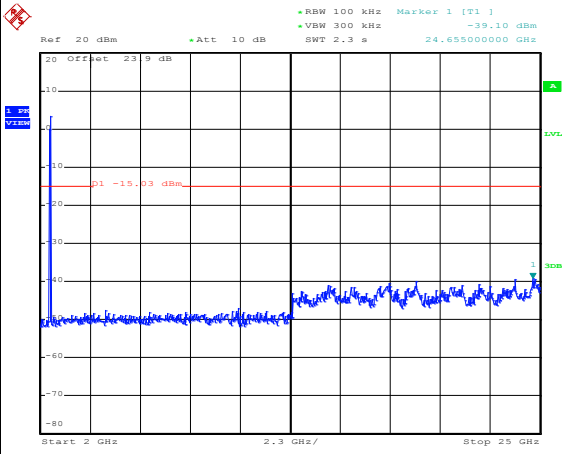
Date: 16.DEC.2016 19:02:05

Spurious Emission 30MHz~3GHz



Date: 16.DEC.2016 19:02:17

Spurious Emission 2GHz~25GHz



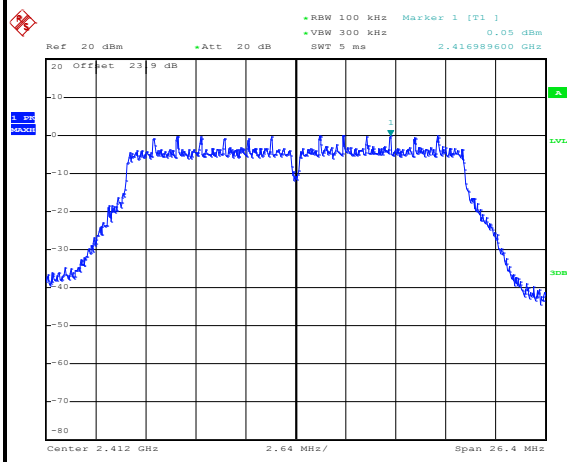
Date: 16.DEC.2016 19:02:26

Number of TX = 2, Ant. 1 (Measured)

Number of TX :	2	**Ant. :**	1
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Tommy Lee and Aking Chang

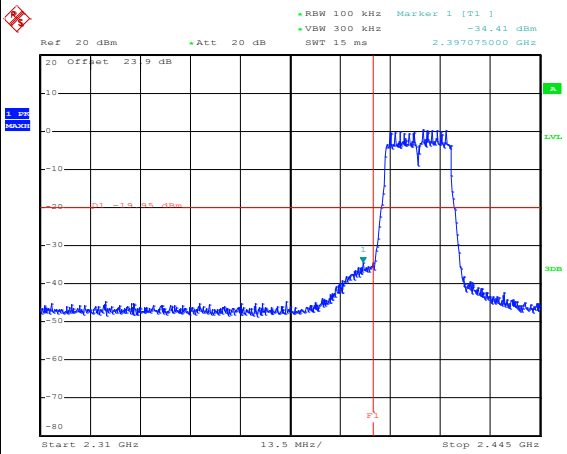
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



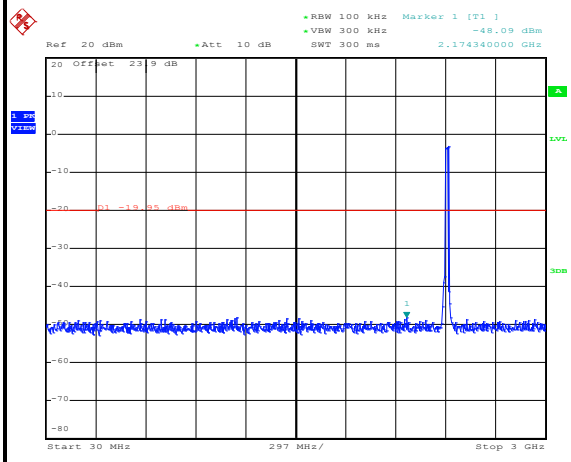
Date: 27.DEC.2016 02:42:28

Low Channel Plot



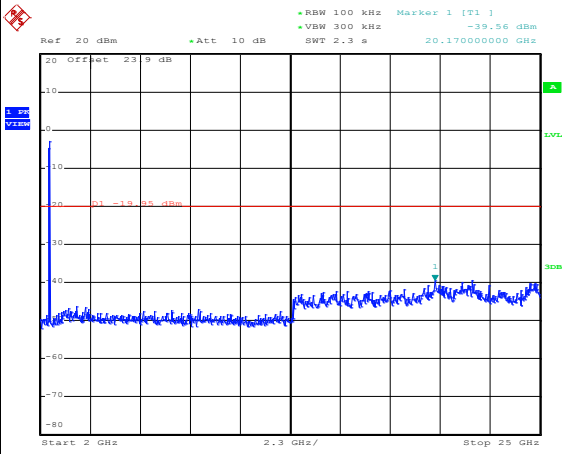
Date: 27.DEC.2016 02:43:21

Spurious Emission 30MHz~3GHz



Date: 27.DEC.2016 02:43:33

Spurious Emission 2GHz~25GHz

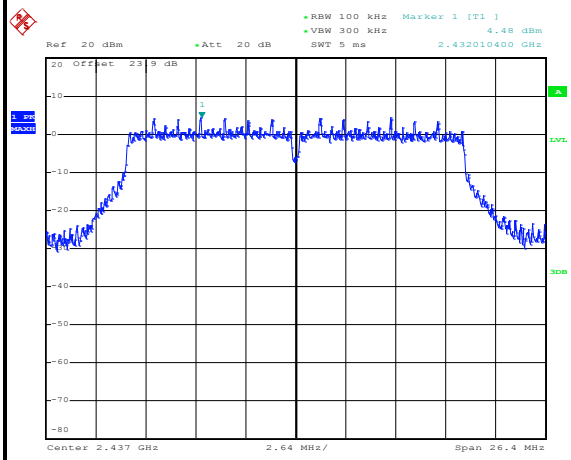


Date: 27.DEC.2016 02:43:42

Number of TX :	2	**Ant. :**	1
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Tommy Lee and Aking Chang

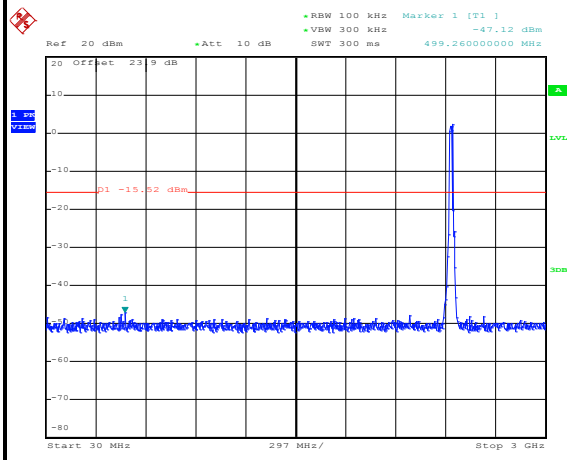
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



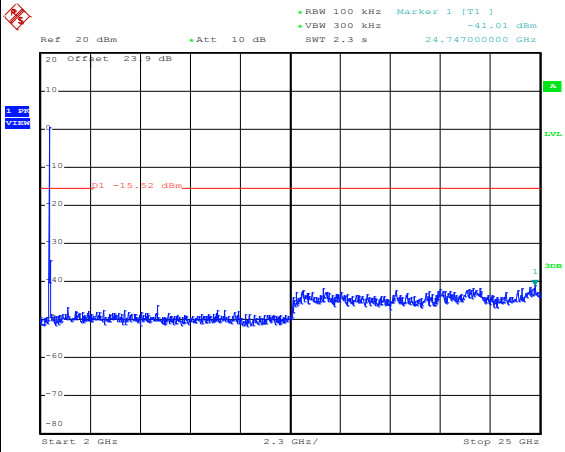
Date: 18.DEC.2016 09:47:20

Spurious Emission 30MHz~3GHz



Date: 18.DEC.2016 09:47:36

Spurious Emission 2GHz~25GHz

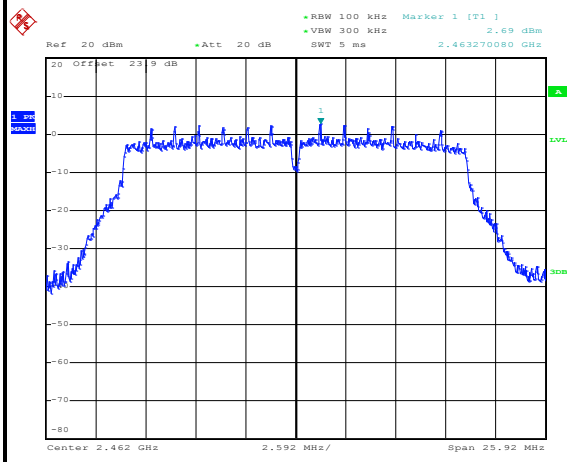


Date: 18.DEC.2016 09:47:45

Number of TX :	2	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25℃
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	11	Test Engineer :	Tommy Lee and Aking Chang

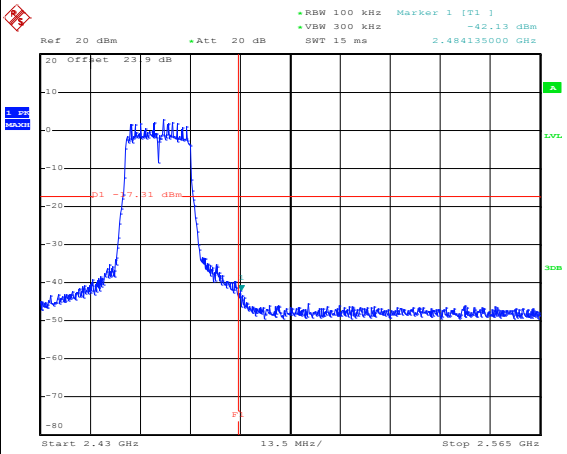
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



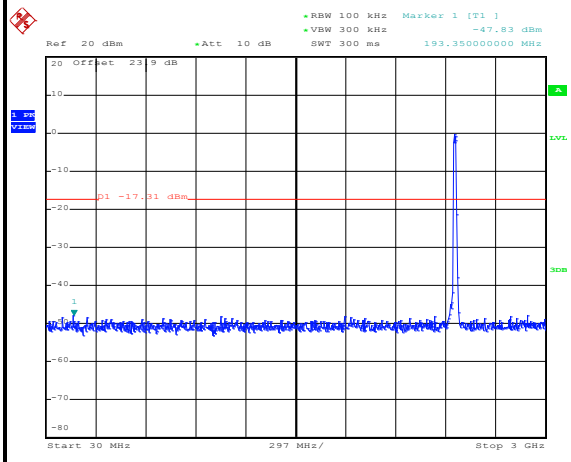
Date: 27.DEC.2016 03:06:50

High Channel Plot



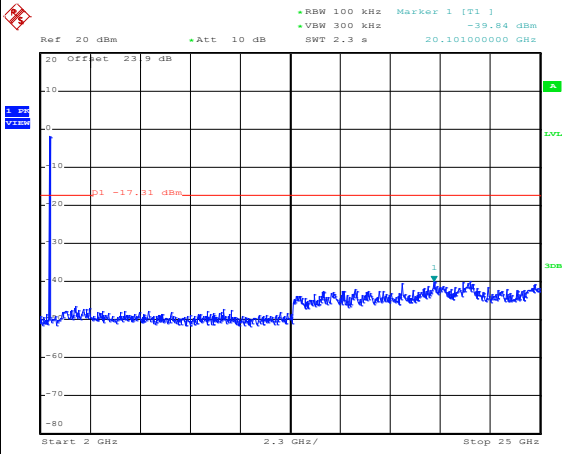
Date: 27.DEC.2016 03:07:08

Spurious Emission 30MHz~3GHz



Date: 27.DEC.2016 03:07:21

Spurious Emission 2GHz~25GHz

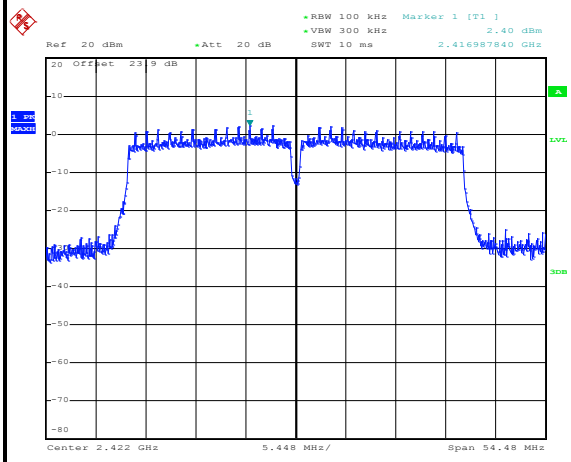


Date: 27.DEC.2016 03:07:29

Number of TX :	2	**Ant. :**	1
Test Mode :	802.11n HT40	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	03	**Test Engineer :**	Tommy Lee and Aking Chang

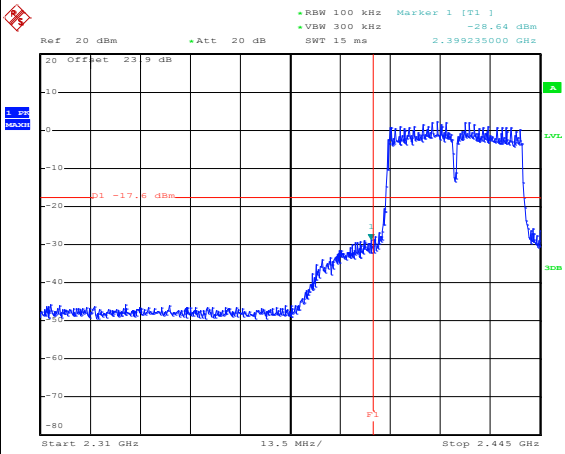
WLAN 802.11n HT40 Channel 03

100kHz PSD reference Level



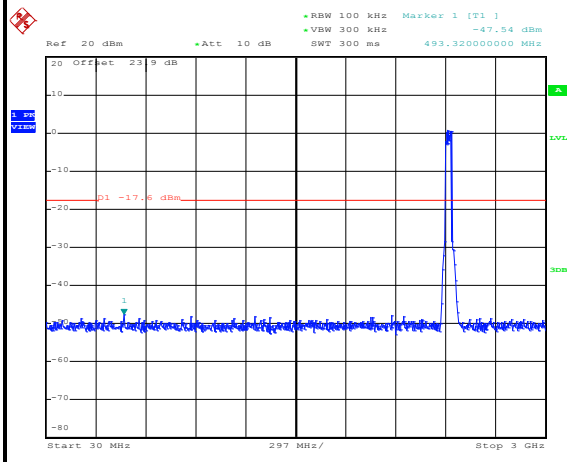
Date: 18.DEC.2016 10:28:51

Low Channel Plot



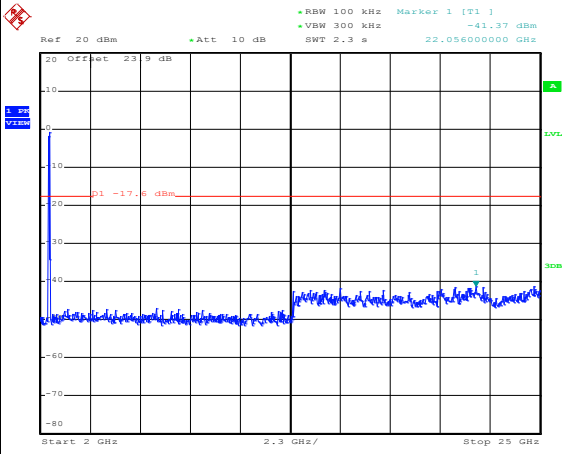
Date: 18.DEC.2016 10:29:22

Spurious Emission 30MHz~3GHz



Date: 18.DEC.2016 10:29:42

Spurious Emission 2GHz~25GHz

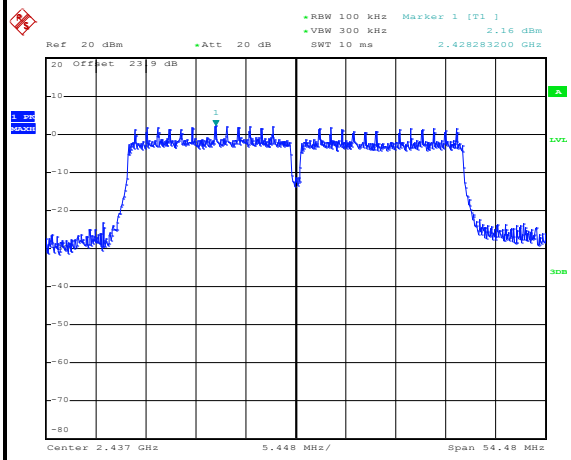


Date: 18.DEC.2016 10:29:51

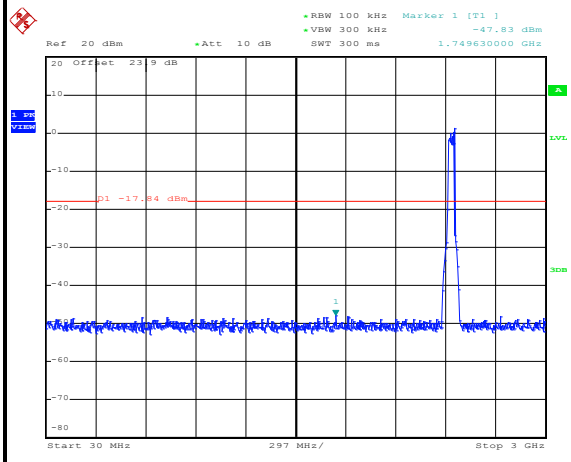
Number of TX :	2	**Ant. :**	1
Test Mode :	802.11n HT40	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Tommy Lee and Aking Chang

WLAN 802.11n HT40 Channel 06

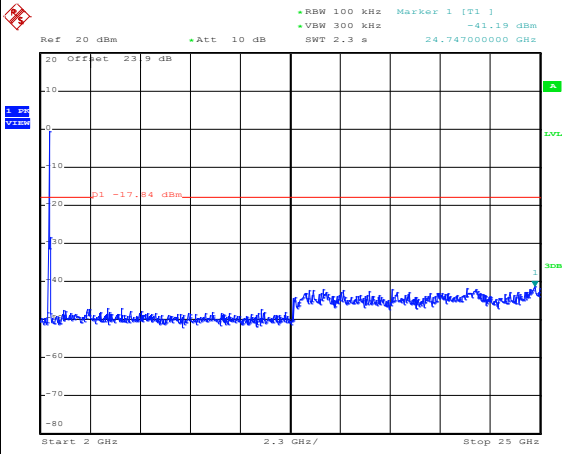
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz



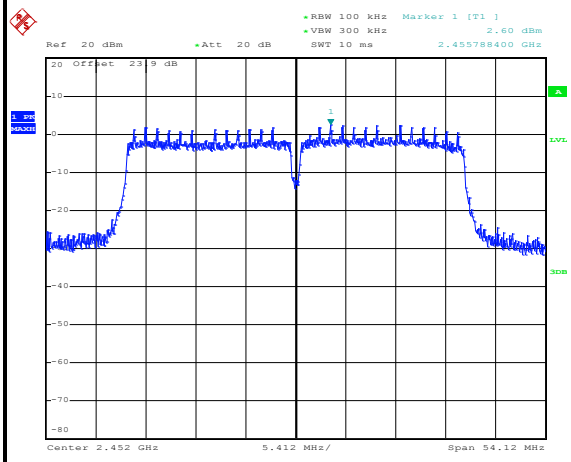
Spurious Emission 2GHz~25GHz



Number of TX :	2	**Ant. :**	1
Test Mode :	802.11n HT40	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	09	**Test Engineer :**	Tommy Lee and Aking Chang

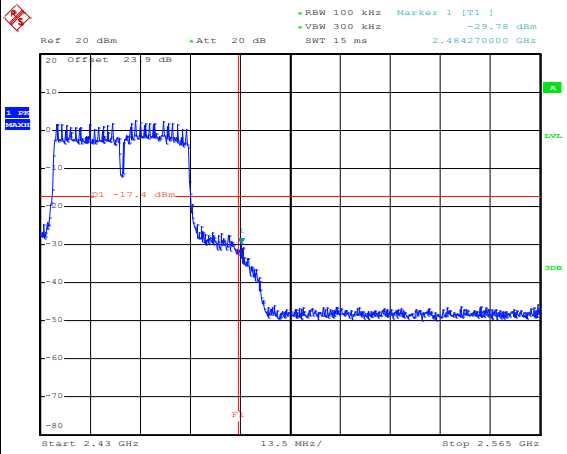
WLAN 802.11n HT40 Channel 09

100kHz PSD reference Level



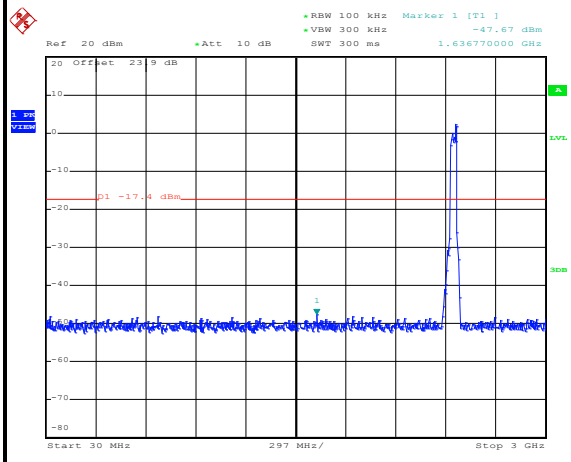
Date: 18.DEC.2016 10:52:20

High Channel Plot



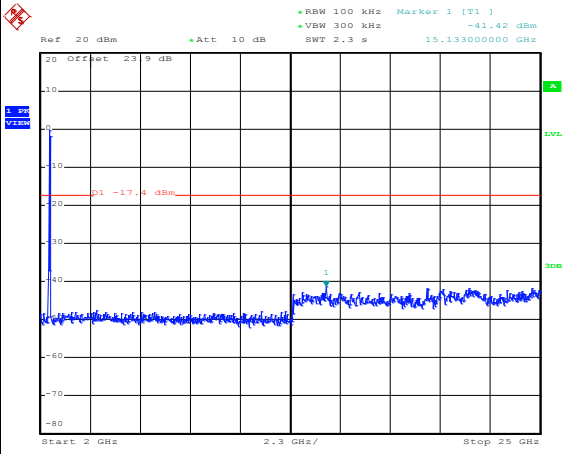
Date: 18.DEC.2016 10:52:49

Spurious Emission 30MHz~3GHz



Date: 18.DEC.2016 10:53:22

Spurious Emission 2GHz~25GHz



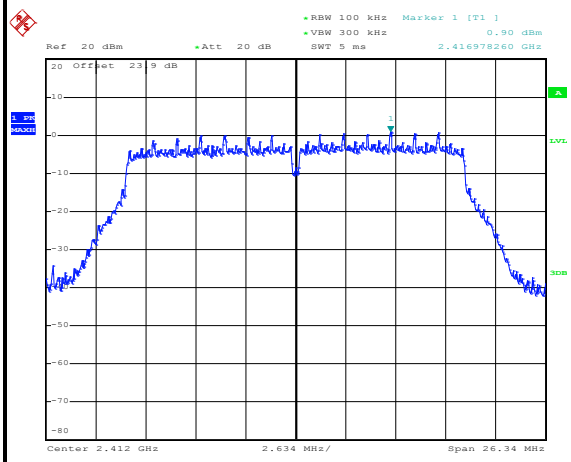
Date: 18.DEC.2016 10:53:31

Number of TX = 2, Ant. 2 (Measured)

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Tommy Lee and Aking Chang

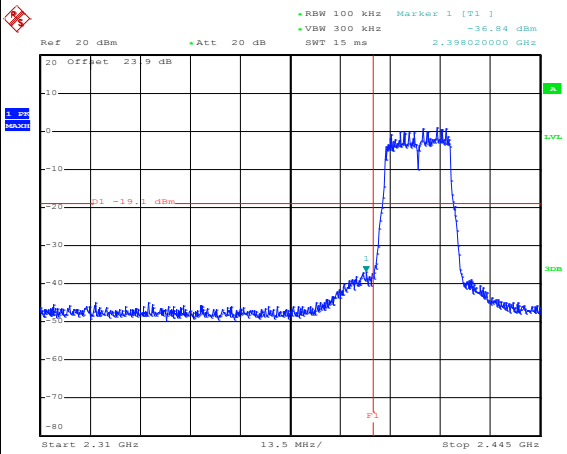
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



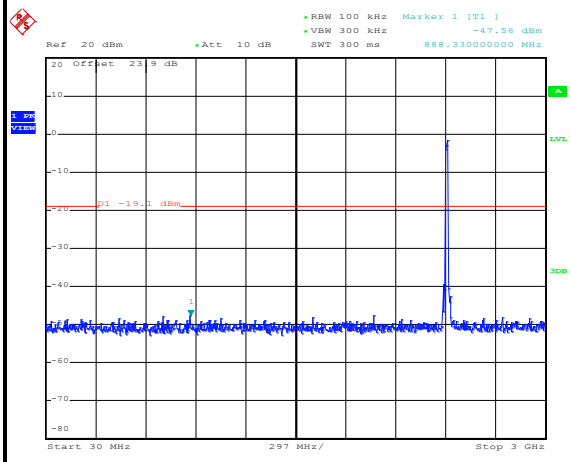
Date: 27.DEC.2016 02:58:10

Low Channel Plot



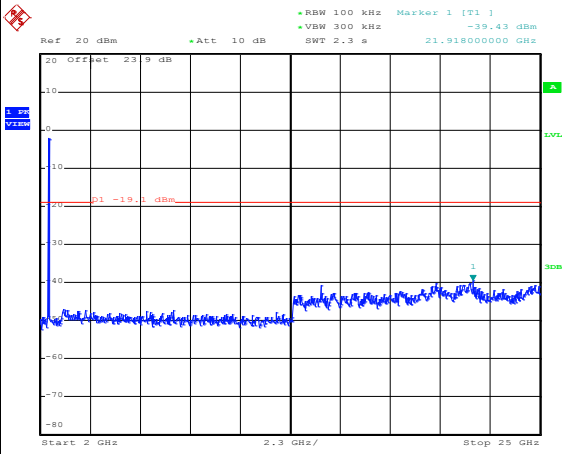
Date: 27.DEC.2016 02:58:31

Spurious Emission 30MHz~3GHz



Date: 27.DEC.2016 02:58:42

Spurious Emission 2GHz~25GHz

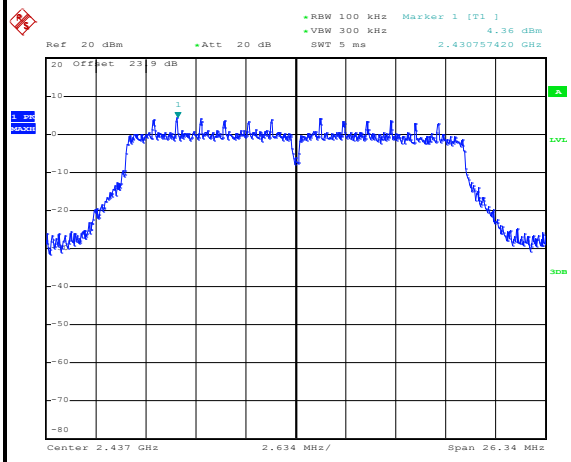


Date: 27.DEC.2016 02:58:51

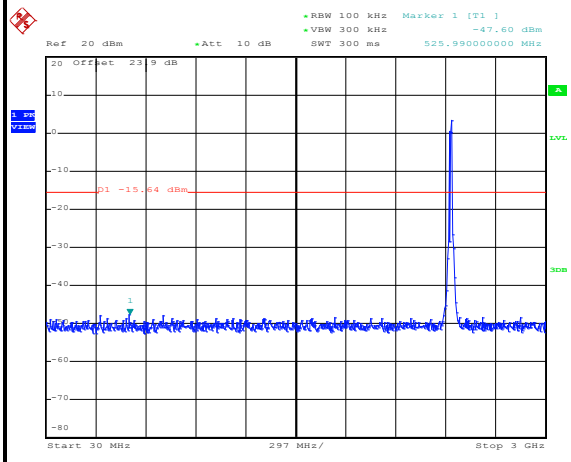
Number of TX :	2	**Ant. :**	2
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Tommy Lee and Aking Chang

WLAN 802.11n HT20 Channel 06

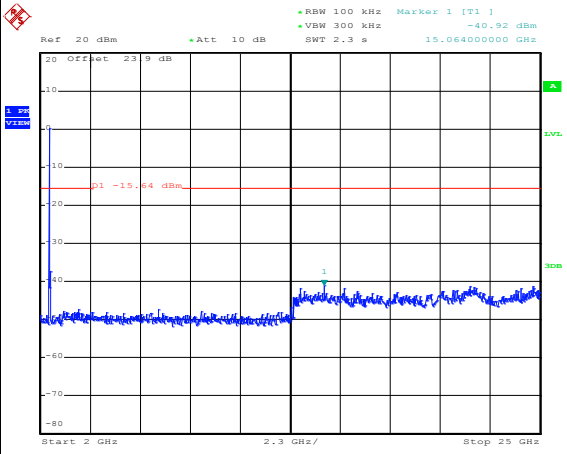
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz



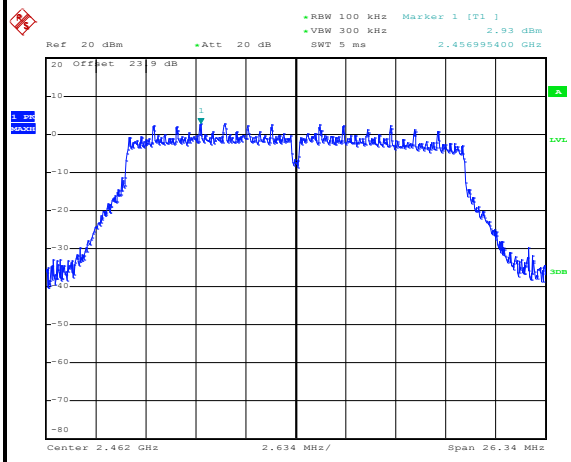
Spurious Emission 2GHz~25GHz



Number of TX :	2	**Ant. :**	2
Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Tommy Lee and Aking Chang

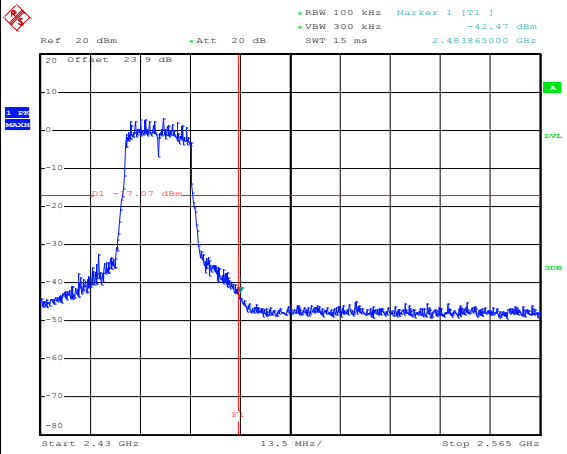
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



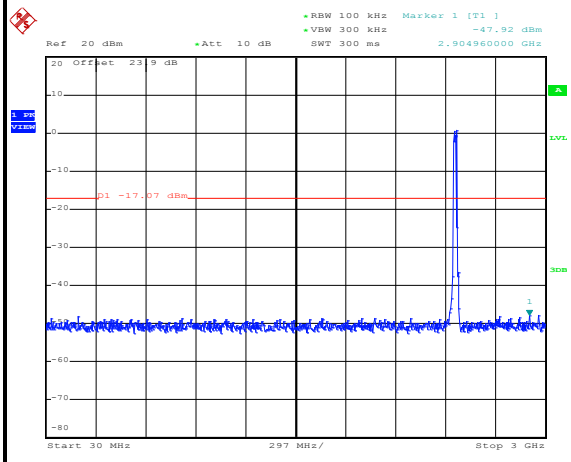
Date: 27.DEC.2016 03:09:47

High Channel Plot



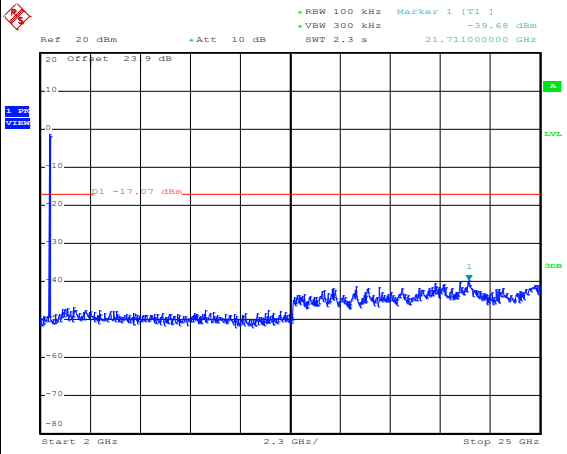
Date: 27.DEC.2016 03:10:09

Spurious Emission 30MHz~3GHz



Date: 27.DEC.2016 03:10:24

Spurious Emission 2GHz~25GHz

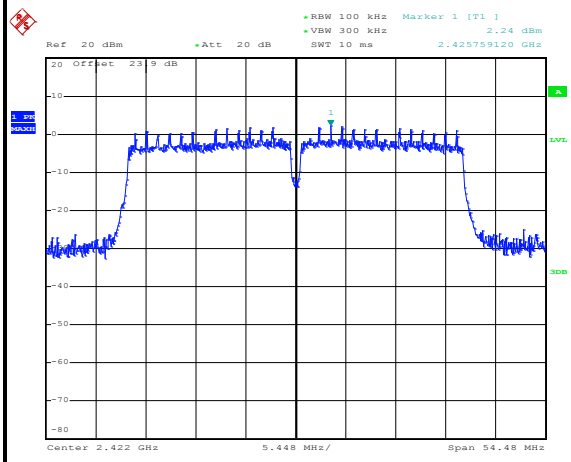


Date: 27.DEC.2016 03:10:33

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11n HT40	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	03	**Test Engineer :**	Tommy Lee and Aking Chang

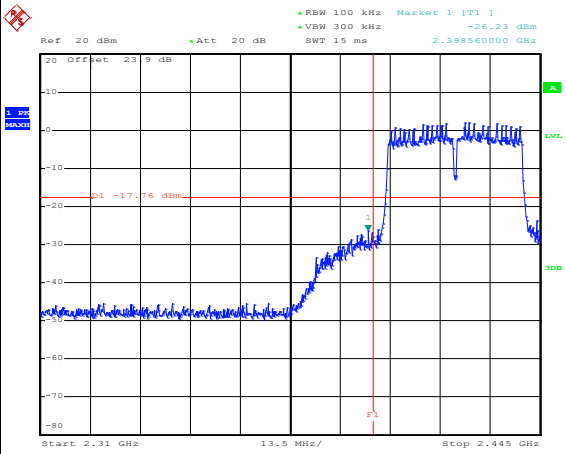
WLAN 802.11n HT40 Channel 03

100kHz PSD reference Level



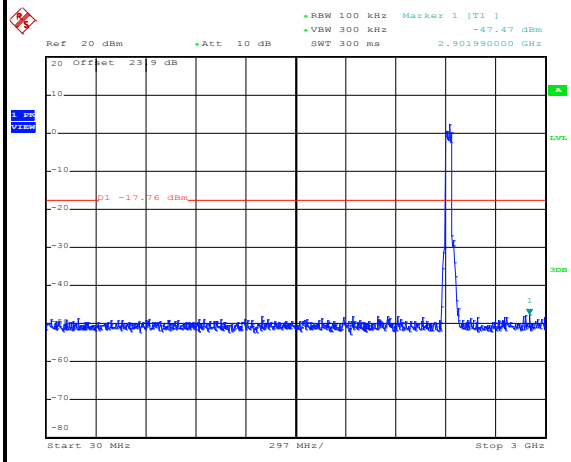
Date: 18.DEC.2016 10:19:22

Low Channel Plot



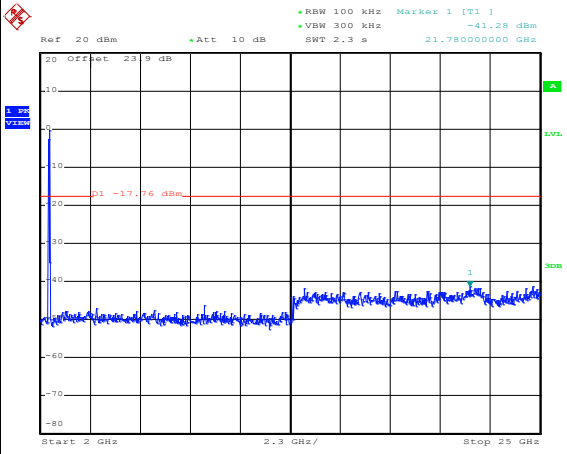
Date: 18.DEC.2016 10:19:46

Spurious Emission 30MHz~3GHz



Date: 18.DEC.2016 10:20:05

Spurious Emission 2GHz~25GHz

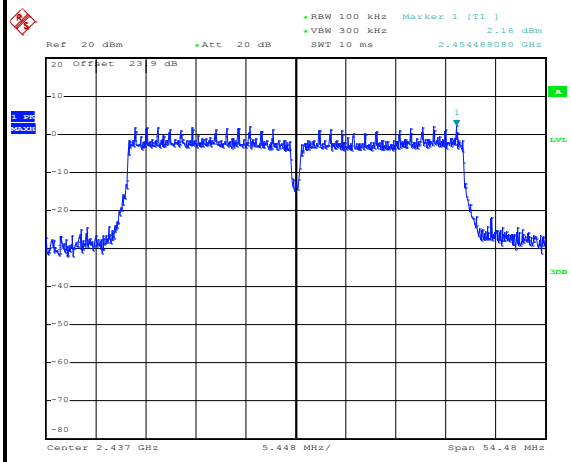


Date: 18.DEC.2016 10:20:14

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11n HT40	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Tommy Lee and Aking Chang

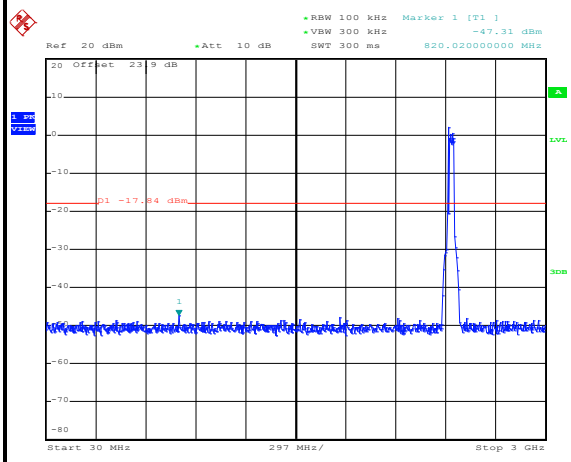
WLAN 802.11n HT40 Channel 06

100kHz PSD reference Level



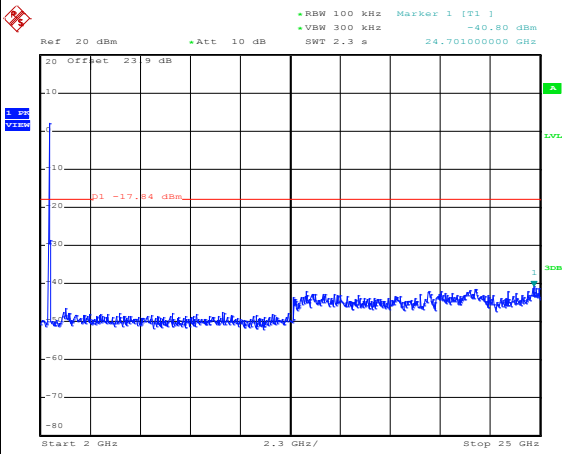
Date: 18.DEC.2016 10:44:17

Spurious Emission 30MHz~3GHz



Date: 18.DEC.2016 10:46:12

Spurious Emission 2GHz~25GHz

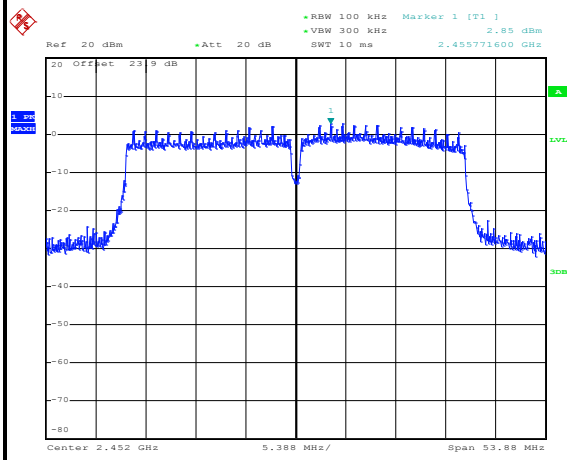


Date: 18.DEC.2016 10:46:21

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11n HT40	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	09	**Test Engineer :**	Tommy Lee and Aking Chang

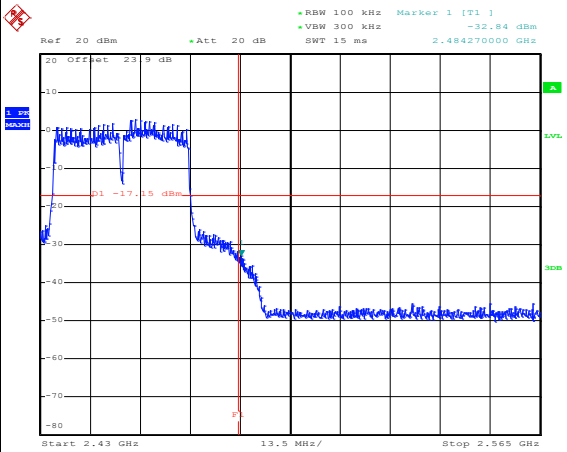
WLAN 802.11n HT40 Channel 09

100kHz PSD reference Level



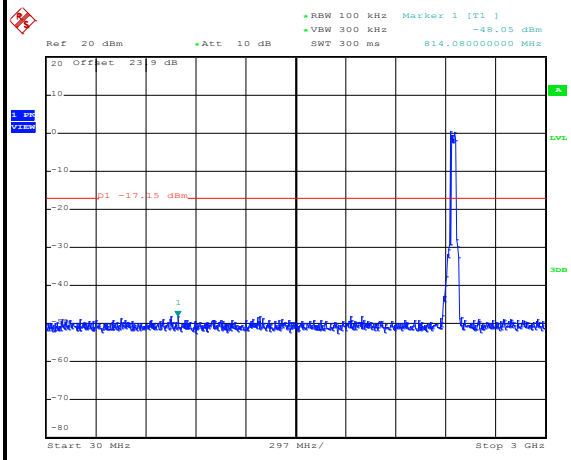
Date: 18.DEC.2016 10:58:19

High Channel Plot



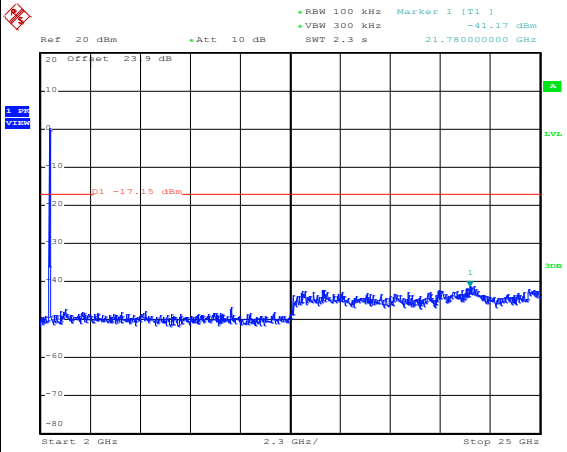
Date: 18.DEC.2016 10:58:42

Spurious Emission 30MHz~3GHz



Date: 18.DEC.2016 10:59:57

Spurious Emission 2GHz~25GHz



Date: 18.DEC.2016 11:00:06

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 FCC section 15.209 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

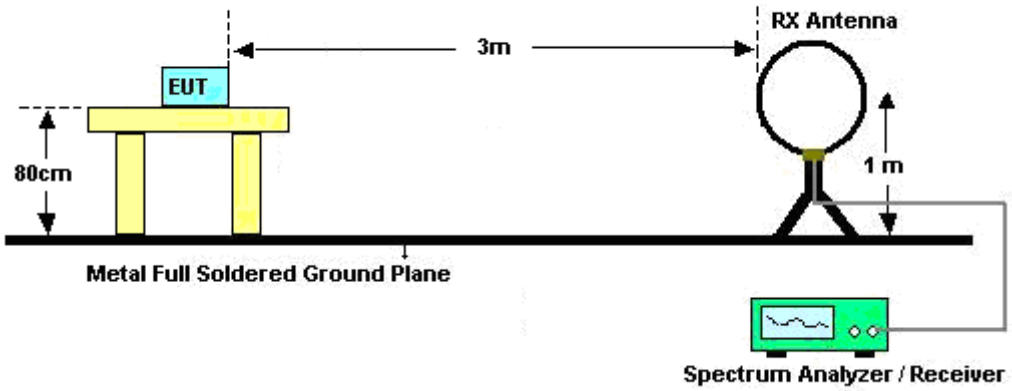
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

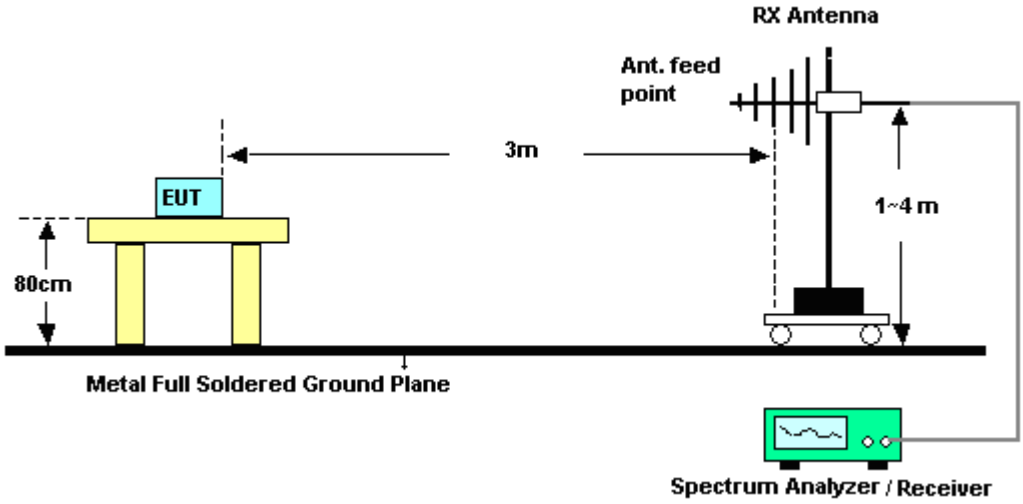
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the 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 measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. 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

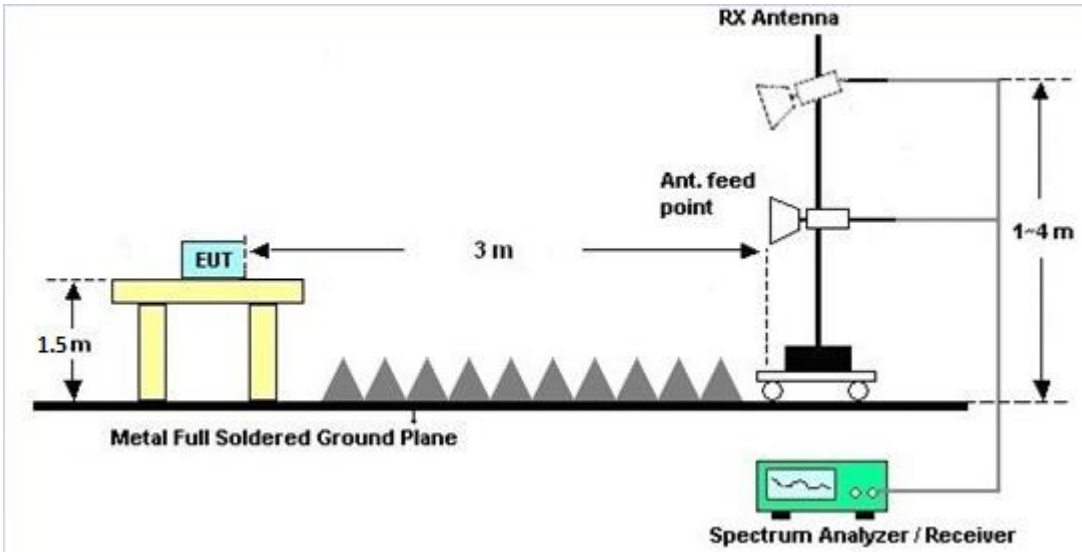
For radiated emissions below 30MHz



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 per 15.31(o) was not reported.

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.

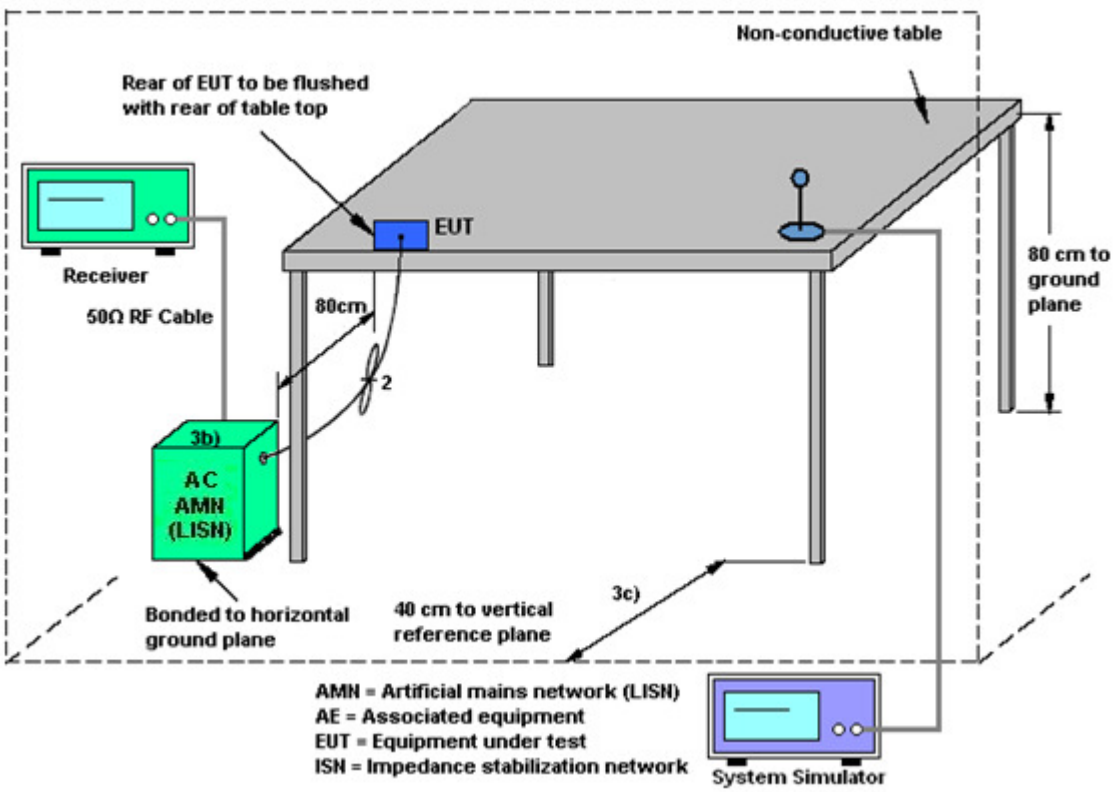
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

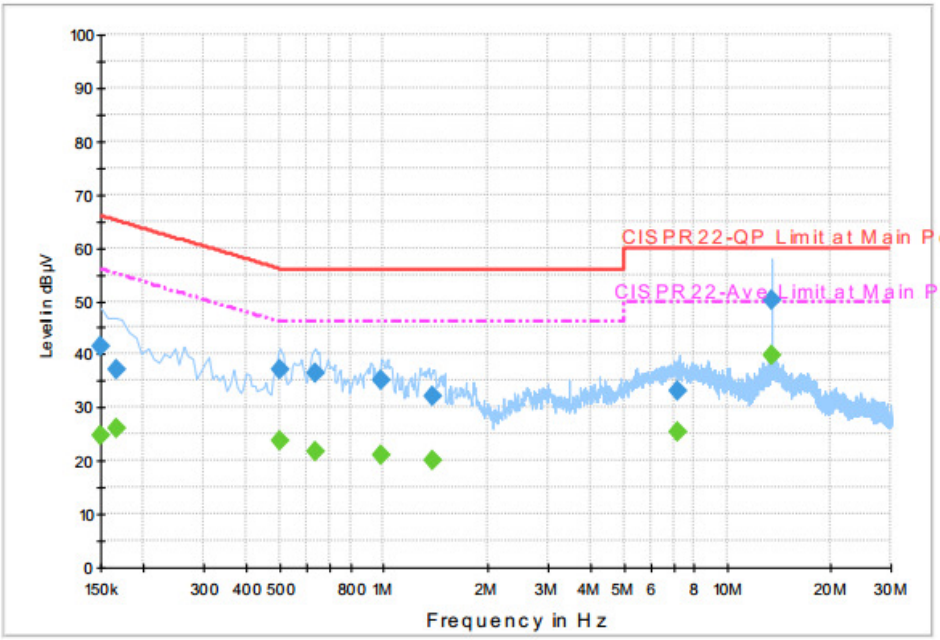
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other 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 :	21~23℃
Test Engineer :	Arthur Hsieh	Relative Humidity :	51~53%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (2.4GHz) Link + NFC On + USB Cable 1 (Charging from Adapter 1) + SIM 1 for Sample 1		



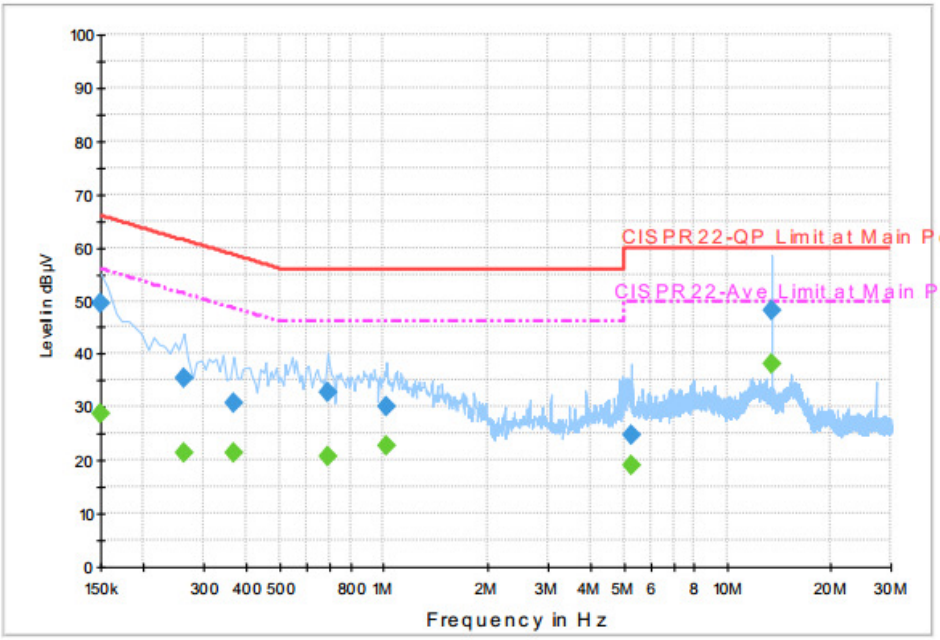
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	41.4	Off	L1	19.6	24.6	66.0
0.166000	37.2	Off	L1	19.6	28.0	65.2
0.502000	37.0	Off	L1	19.5	19.0	56.0
0.630000	36.3	Off	L1	19.6	19.7	56.0
0.990000	35.1	Off	L1	19.6	20.9	56.0
1.390000	31.9	Off	L1	19.6	24.1	56.0
7.166000	33.1	Off	L1	19.9	26.9	60.0
13.558000	50.2	Off	L1	20.2	9.8	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	24.8	Off	L1	19.6	31.2	56.0
0.166000	26.2	Off	L1	19.6	29.0	55.2
0.502000	23.9	Off	L1	19.5	22.1	46.0
0.630000	21.7	Off	L1	19.6	24.3	46.0
0.990000	21.1	Off	L1	19.6	24.9	46.0
1.390000	20.2	Off	L1	19.6	25.8	46.0
7.166000	25.5	Off	L1	19.9	24.5	50.0
13.558000	39.8	Off	L1	20.2	10.2	50.0

Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Arthur Hsieh	Relative Humidity :	51~53%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (2.4GHz) Link + NFC On + USB Cable 1 (Charging from Adapter 1) + SIM 1 for Sample 1		



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	49.3	Off	N	19.5	16.7	66.0
0.262000	35.3	Off	N	19.5	26.1	61.4
0.366000	30.8	Off	N	19.5	27.8	58.6
0.686000	32.8	Off	N	19.5	23.2	56.0
1.022000	30.2	Off	N	19.5	25.8	56.0
5.294000	24.9	Off	N	19.8	35.1	60.0
13.558000	48.0	Off	N	20.2	12.0	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	28.9	Off	N	19.5	27.1	56.0
0.262000	21.3	Off	N	19.5	30.1	51.4
0.366000	21.4	Off	N	19.5	27.2	48.6
0.686000	20.9	Off	N	19.5	25.1	46.0
1.022000	22.6	Off	N	19.5	23.4	46.0
5.294000	18.9	Off	N	19.8	31.1	50.0
13.558000	38.1	Off	N	20.2	11.9	50.0

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 FCC rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log(N_{ANT}/N_{SS}=1) dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain “DG” is calculated as following table.

	Ant. 1 (dBi)	Ant. 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
2.4 GHz	-0.30	-4.30	-0.30	0.94	0.00	0.00

Power Limit Reduction = DG(Power) – 6dBi, (min = 0)

PSD Limit Reduction = DG(PSD) – 6dBi, (min = 0)

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Anritsu	ML2495A	1240001	300MHz~40GHz	Sep. 07, 2016	Dec. 08, 2016 ~ Dec. 27, 2016	Sep. 06, 2017	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1207349	300MHz~40GHz	Sep. 07, 2016	Dec. 08, 2016 ~ Dec. 27, 2016	Sep. 06, 2017	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Nov. 25, 2016	Dec. 08, 2016 ~ Dec. 27, 2016	Nov. 24, 2017	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890094	1V~20V 0.5A~5A	Oct. 11, 2016	Dec. 08, 2016 ~ Dec. 27, 2016	Oct. 10, 2017	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Dec. 28, 2016	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2016	Dec. 28, 2016	Aug. 29, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 29, 2016	Dec. 28, 2016	Nov. 28, 2017	Conduction (CO05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Oct. 20, 2016	Dec. 19, 2016 ~ Dec. 23, 2016	Oct. 19, 2018	Radiation (03CH13-HY)
Preamplifier	MITEQ	TTA0204	1872107	2GHz~40GHz	Feb. 15, 2016	Dec. 19, 2016 ~ Dec. 23, 2016	Feb. 14, 2017	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	40103&04	30MHz to 1GHz	Jan. 13, 2016	Dec. 19, 2016 ~ Dec. 23, 2016	Jan. 12, 2017	Radiation (03CH13-HY)
EMI Test Receiver	Keysight	N9038A (MXE)	MY55420170	N/A	Mar. 10, 2016	Dec. 19, 2016 ~ Dec. 23, 2016	Mar. 09, 2017	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1241	1GHz ~ 18GHz	Apr. 25, 2016	Dec. 19, 2016 ~ Dec. 23, 2016	Apr. 24, 2017	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	1590074	1GHz~18GHz	Jun. 27, 2016	Dec. 19, 2016 ~ Dec. 23, 2016	Jun. 26, 2017	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	N/A	Mar. 14, 2016	Dec. 19, 2016 ~ Dec. 23, 2016	Mar. 13, 2017	Radiation (03CH13-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60SS	SN2	3G High Pass	Sep. 20, 2016	Dec. 19, 2016 ~ Dec. 23, 2016	Sep. 19, 2017	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Dec. 19, 2016 ~ Dec. 23, 2016	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Dec. 19, 2016 ~ Dec. 23, 2016	N/A	Radiation (03CH13-HY)
Amplifier	SONOMA	310N	187231	9kHz~1GHz	Jan. 11, 2016	Dec. 19, 2016 ~ Dec. 23, 2016	Jan. 10, 2017	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 08, 2016	Dec. 19, 2016 ~ Dec. 23, 2016	Nov. 07, 2017	Radiation (03CH13-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.7**

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

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

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

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

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

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

Appendix A. Conducted Test Results

Test Engineer:	Tommy Lee and Aking Chang	Temperature:	21~25	°C
Test Date:	2016/12/08~2016/12/27	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2		
11b	1Mbps	1	1	2412	11.40	11.35	7.04	7.04	0.50	Pass
11b	1Mbps	1	6	2437	11.30	11.35	7.08	7.08	0.50	Pass
11b	1Mbps	1	11	2462	11.35	11.25	7.04	7.00	0.50	Pass
11g	6Mbps	1	1	2412	18.20	18.10	16.28	16.00	0.50	Pass
11g	6Mbps	1	6	2437	18.05	18.10	16.04	16.04	0.50	Pass
11g	6Mbps	1	11	2462	17.65	17.60	15.44	15.72	0.50	Pass
HT20	MCS8	2	1	2412	19.05	18.95	17.60	17.56	0.50	Pass
HT20	MCS8	2	6	2437	19.25	19.15	17.60	17.56	0.50	Pass
HT20	MCS8	2	11	2462	19.00	18.75	17.28	17.56	0.50	Pass
HT40	MCS8	2	3	2422	36.80	37.00	36.32	36.32	0.50	Pass
HT40	MCS8	2	6	2437	37.10	37.10	36.32	36.32	0.50	Pass
HT40	MCS8	2	9	2452	36.80	36.60	36.08	35.92	0.50	Pass

Report Number : FR6N2506-02C

TEST RESULTS DATA
Peak Output Power

2.4GHz Band																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	21.45	20.45		30.00	30.00	-0.30	-4.30	21.15	16.15	36.00	36.00	Pass
11b	1Mbps	1	6	2437	21.26	20.50		30.00	30.00	-0.30	-4.30	20.96	16.20	36.00	36.00	Pass
11b	1Mbps	1	11	2462	21.11	20.31		30.00	30.00	-0.30	-4.30	20.81	16.01	36.00	36.00	Pass
11g	6Mbps	1	1	2412	23.80	23.45		30.00	30.00	-0.30	-4.30	23.50	19.15	36.00	36.00	Pass
11g	6Mbps	1	6	2437	24.12	23.54		30.00	30.00	-0.30	-4.30	23.82	19.24	36.00	36.00	Pass
11g	6Mbps	1	11	2462	23.48	23.60		30.00	30.00	-0.30	-4.30	23.18	19.30	36.00	36.00	Pass
HT20	MCS0	1	1	2412	21.28	21.30		30.00	30.00	-0.30	-4.30	20.98	17.00	36.00	36.00	Pass
HT20	MCS0	1	6	2437	23.75	23.45		30.00	30.00	-0.30	-4.30	23.45	19.15	36.00	36.00	Pass
HT20	MCS0	1	11	2462	22.45	22.49		30.00	30.00	-0.30	-4.30	22.15	18.19	36.00	36.00	Pass
HT40	MCS0	1	3	2422	23.90	23.53		30.00	30.00	-0.30	-4.30	23.60	19.23	36.00	36.00	Pass
HT40	MCS0	1	6	2437	23.80	23.50		30.00	30.00	-0.30	-4.30	23.50	19.20	36.00	36.00	Pass
HT40	MCS0	1	9	2452	23.75	23.45		30.00	30.00	-0.30	-4.30	23.45	19.15	36.00	36.00	Pass
HT20	MCS8	2	1	2412	21.45	21.88	24.68	30.00		-0.30		24.38		36.00		Pass
HT20	MCS8	2	6	2437	23.55	23.21	26.39	30.00		-0.30		26.09		36.00		Pass
HT20	MCS8	2	11	2462	22.39	22.90	25.66	30.00		-0.30		25.36		36.00		Pass
HT40	MCS8	2	3	2422	23.67	23.40	26.55	30.00		-0.30		26.25		36.00		Pass
HT40	MCS8	2	6	2437	23.61	23.35	26.49	30.00		-0.30		26.19		36.00		Pass
HT40	MCS8	2	9	2452	23.50	23.32	26.42	30.00		-0.30		26.12		36.00		Pass

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

TEST RESULTS DATA
Average Output Power

2.4GHz Band									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)		
					Ant 1	Ant 2	Ant 1	Ant 2	SUM
11b	1Mbps	1	1	2412	0.06	0.06	17.96	17.51	
11b	1Mbps	1	6	2437	0.06	0.06	17.91	17.53	
11b	1Mbps	1	11	2462	0.06	0.06	17.89	17.50	
11g	6Mbps	1	1	2412	0.25	0.29	15.95	15.55	
11g	6Mbps	1	6	2437	0.25	0.29	15.99	15.64	
11g	6Mbps	1	11	2462	0.25	0.29	15.90	15.79	
HT20	MCS0	1	1	2412	0.22	0.26	11.22	11.28	
HT20	MCS0	1	6	2437	0.22	0.26	15.67	15.58	
HT20	MCS0	1	11	2462	0.22	0.26	13.57	13.56	
HT40	MCS0	1	3	2422	0.09	0.18	15.87	15.83	
HT40	MCS0	1	6	2437	0.09	0.18	15.61	15.81	
HT40	MCS0	1	9	2452	0.09	0.18	15.58	15.78	
HT20	MCS8	2	1	2412	0.46	0.46	11.44	11.51	14.49
HT20	MCS8	2	6	2437	0.46	0.46	15.96	15.36	18.68
HT20	MCS8	2	11	2462	0.46	0.46	13.54	13.72	16.64
HT40	MCS8	2	3	2422	0.24	0.17	15.99	15.77	18.89
HT40	MCS8	2	6	2437	0.24	0.17	15.84	15.87	18.87
HT40	MCS8	2	9	2452	0.24	0.17	15.87	15.82	18.86

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

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant 1	Ant 2	Worse + 3.01	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	-4.69	-3.59	-	-0.30	-4.30	8.00	8.00	Pass
11b	1Mbps	1	6	2437	-4.23	-3.51		-0.30	-4.30	8.00	8.00	Pass
11b	1Mbps	1	11	2462	-3.94	-3.59		-0.30	-4.30	8.00	8.00	Pass
11g	6Mbps	1	1	2412	-8.02	-7.93		-0.30	-4.30	8.00	8.00	Pass
11g	6Mbps	1	6	2437	-7.46	-7.60		-0.30	-4.30	8.00	8.00	Pass
11g	6Mbps	1	11	2462	-8.22	-6.88		-0.30	-4.30	8.00	8.00	Pass
HT20	MCS8	2	1	2412	-13.74	-12.18	-9.17	0.94		8.00		Pass
HT20	MCS8	2	6	2437	-10.24	-11.02	-7.23	0.94		8.00		Pass
HT20	MCS8	2	11	2462	-11.64	-11.53	-8.52	0.94		8.00		Pass
HT40	MCS8	2	3	2422	-11.52	-12.94	-8.51	0.94		8.00		Pass
HT40	MCS8	2	6	2437	-12.23	-11.87	-8.86	0.94		8.00		Pass
HT40	MCS8	2	9	2452	-11.65	-12.67	-8.64	0.94		8.00		Pass

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

Appendix B. Radiated Spurious Emission

Test Engineer :	Bill Chang, Wilson Wu, and Alex Jeng	Temperature :	24~26°C
		Relative Humidity :	42~46%

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		2386.44	54.35	-19.65	74	51.5	27.15	6.98	31.28	189	204	P	H
		2387.28	46.92	-7.08	54	44.07	27.15	6.98	31.28	189	204	A	H
	*	2412	106.83	-	-	103.91	27.19	7	31.27	189	204	P	H
	*	2412	103.72	-	-	100.8	27.19	7	31.27	189	204	A	H
													H
													H
		2387.385	54.81	-19.19	74	51.96	27.15	6.98	31.28	385	271	P	V
		2387.28	47.22	-6.78	54	44.37	27.15	6.98	31.28	385	271	A	V
	*	2412	105.59	-	-	102.67	27.19	7	31.27	385	271	P	V
	*	2412	102.37	-	-	99.45	27.19	7	31.27	385	271	A	V
													V
													V
802.11b CH 06 2437MHz		2352.28	53.37	-20.63	74	50.66	27.07	6.93	31.29	185	204	P	H
		2389.94	41.85	-12.15	54	38.99	27.15	6.98	31.27	185	204	A	H
	*	2437	106.04	-	-	102.99	27.28	7.03	31.26	185	204	P	H
	*	2437	102.94	-	-	99.89	27.28	7.03	31.26	185	204	A	H
		2496.99	53	-21	74	49.75	27.4	7.09	31.24	185	204	P	H
		2483.5	42.05	-11.95	54	38.87	27.36	7.07	31.25	185	204	A	H
		2354.94	53.07	-20.93	74	50.36	27.07	6.93	31.29	400	285	P	V
		2389.94	41.61	-12.39	54	38.75	27.15	6.98	31.27	400	285	A	V
	*	2437	105.02	-	-	101.97	27.28	7.03	31.26	400	285	P	V
	*	2437	102.08	-	-	99.03	27.28	7.03	31.26	400	285	A	V
		2486.84	53.06	-20.94	74	49.88	27.36	7.07	31.25	400	285	P	V
		2483.76	41.89	-12.11	54	38.71	27.36	7.07	31.25	400	285	A	V

802.11b CH 11 2462MHz	*	2462	106.06	-	-	102.95	27.32	7.05	31.26	178	212	P	H
	*	2462	102.94	-	-	99.83	27.32	7.05	31.26	178	212	A	H
		2488.64	53.48	-20.52	74	50.24	27.4	7.09	31.25	178	212	P	H
		2483.52	43.86	-10.14	54	40.68	27.36	7.07	31.25	178	212	A	H
													H
													H
	*	2462	104.76	-	-	101.65	27.32	7.05	31.26	400	272	P	V
	*	2462	101.69	-	-	98.58	27.32	7.05	31.26	400	272	A	V
		2486.48	53.95	-20.05	74	50.77	27.36	7.07	31.25	400	272	P	V
		2483.52	45.23	-8.77	54	42.05	27.36	7.07	31.25	400	272	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	35.36	-38.64	74	45.25	31.22	10.07	51.18	100	0	P	H
													H
													H
													H
		4824	34.04	-39.96	74	43.93	31.22	10.07	51.18	100	0	P	V
													V
													V
													V
802.11b CH 06 2437MHz		4874	31.11	-42.89	74	40.84	31.31	10.11	51.15	100	0	P	H
		7311	37.14	-36.86	74	39.14	36.27	12.53	50.8	100	0	P	H
													H
													H
		4874	31.01	-42.99	74	40.74	31.31	10.11	51.15	100	0	P	V
		7311	36.03	-37.97	74	38.03	36.27	12.53	50.8	100	0	P	V
													V
													V
802.11b CH 11 2462MHz		4924	33.14	-40.86	74	42.74	31.39	10.14	51.13	100	0	P	H
		7386	37.87	-36.13	74	39.43	36.51	12.73	50.8	100	0	P	H
													H
													H
		4924	32.44	-41.56	74	42.04	31.39	10.14	51.13	100	0	P	V
		7386	36.64	-37.36	74	38.2	36.51	12.73	50.8	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		2390	64.09	-9.91	74	61.23	27.15	6.98	31.27	169	216	P	H
		2390	50.97	-3.03	54	48.11	27.15	6.98	31.27	169	216	A	H
	*	2412	105.38	-	-	102.46	27.19	7	31.27	169	216	P	H
	*	2412	98.55	-	-	95.63	27.19	7	31.27	169	216	A	H
													H
													H
		2389.695	61.73	-12.27	74	58.88	27.15	6.98	31.28	396	281	P	V
		2389.905	48.7	-5.3	54	45.84	27.15	6.98	31.27	396	281	A	V
	*	2412	104.62	-	-	101.7	27.19	7	31.27	396	281	P	V
	*	2412	96.6	-	-	93.68	27.19	7	31.27	396	281	A	V
													V
													V
802.11g CH 06 2437MHz		2383.78	53.12	-20.88	74	50.33	27.11	6.96	31.28	183	213	P	H
		2389.94	42.28	-11.72	54	39.42	27.15	6.98	31.27	183	213	A	H
	*	2437	105.7	-	-	102.65	27.28	7.03	31.26	183	213	P	H
	*	2437	98.17	-	-	95.12	27.28	7.03	31.26	183	213	A	H
		2492.58	53.11	-20.89	74	49.86	27.4	7.09	31.24	183	213	P	H
		2487.89	42.68	-11.32	54	39.44	27.4	7.09	31.25	183	213	A	H
		2389.52	53.27	-20.73	74	50.42	27.15	6.98	31.28	400	270	P	V
		2388.4	42.17	-11.83	54	39.32	27.15	6.98	31.28	400	270	A	V
	*	2437	105.2	-	-	102.15	27.28	7.03	31.26	400	270	P	V
	*	2437	97.44	-	-	94.39	27.28	7.03	31.26	400	270	A	V
		2499.58	52.97	-21.03	74	49.72	27.4	7.09	31.24	400	270	P	V
		2488.66	42.66	-11.34	54	39.42	27.4	7.09	31.25	400	270	A	V

802.11g CH 11 2462MHz	*	2462	106.66	-	-	103.55	27.32	7.05	31.26	173	219	P	H
	*	2462	98.57	-	-	95.46	27.32	7.05	31.26	173	219	A	H
		2483.6	59.05	-14.95	74	55.87	27.36	7.07	31.25	173	219	P	H
		2483.56	46.92	-7.08	54	43.74	27.36	7.07	31.25	173	219	A	H
													H
													H
	*	2462	106.37	-	-	103.26	27.32	7.05	31.26	400	287	P	V
	*	2462	98.43	-	-	95.32	27.32	7.05	31.26	400	287	A	V
		2483.56	60.28	-13.72	74	57.1	27.36	7.07	31.25	400	287	P	V
		2483.52	48.86	-5.14	54	45.68	27.36	7.07	31.25	400	287	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	30.19	-43.81	74	40.08	31.22	10.07	51.18	100	0	P	H
													H
													H
													H
		4824	29.85	-44.15	74	39.74	31.22	10.07	51.18	100	0	P	V
													V
													V
													V
802.11g CH 06 2437MHz		4874	30.61	-43.39	74	40.34	31.31	10.11	51.15	100	0	P	H
		7311	35.43	-38.57	74	37.43	36.27	12.53	50.8	100	0	P	H
													H
													H
		4874	29.81	-44.19	74	39.54	31.31	10.11	51.15	100	0	P	V
		7311	35.23	-38.77	74	37.23	36.27	12.53	50.8	100	0	P	V
													V
													V
802.11g CH 11 2462MHz		4924	30.74	-43.26	74	40.34	31.39	10.14	51.13	100	0	P	H
		7386	35.9	-38.1	74	37.46	36.51	12.73	50.8	100	0	P	H
													H
													H
		4924	30.66	-43.34	74	40.26	31.39	10.14	51.13	100	0	P	V
		7386	37.85	-36.15	74	39.41	36.51	12.73	50.8	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 802.11g (LF)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11g LF		30.27	23.3	-16.7	40	28.66	25.9	0.69	31.95	-	-	P	H
		90.21	30.75	-12.75	43.5	46.83	14.8	1.02	31.9	100	0	P	H
		143.94	19.39	-24.11	43.5	32.29	17.69	1.26	31.85	-	-	P	H
		332.2	25.16	-20.84	46	34.49	20.48	1.94	31.75	-	-	P	H
		541.5	24.95	-21.05	46	29.96	24.25	2.64	31.9	-	-	P	H
		847.4	30.16	-15.84	46	30.18	28.28	3.44	31.74	-	-	P	H
													H
													H
													H
													H
													H
													H
		36.75	28.52	-11.48	40	37.89	21.94	0.63	31.94	100	10	P	V
		90.48	25.78	-17.72	43.5	41.86	14.8	1.02	31.9	-	-	P	V
		133.68	18.35	-25.15	43.5	31.25	17.74	1.22	31.86	-	-	P	V
		591.2	26.78	-19.22	46	30.83	25.13	2.76	31.94	-	-	P	V
		759.9	28.75	-17.25	46	30.08	27.48	3.15	31.96	-	-	P	V
		911.8	30.96	-15.04	46	29.78	29.18	3.44	31.44	-	-	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".

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2385.6	55.12	-18.88	74	52.27	27.15	6.98	31.28	198	319	P	H
		2390	46	-8	54	43.14	27.15	6.98	31.27	198	319	A	H
	*	2412	106.53	-	-	103.61	27.19	7	31.27	198	319	P	H
	*	2412	103.44	-	-	100.52	27.19	7	31.27	198	319	A	H
													H
													H
		2384.445	53.14	-20.86	74	50.35	27.11	6.96	31.28	196	265	P	V
		2385.39	43.33	-10.67	54	40.54	27.11	6.96	31.28	196	265	A	V
	*	2412	99.04	-	-	96.12	27.19	7	31.27	196	265	P	V
	*	2412	96.07	-	-	93.15	27.19	7	31.27	196	265	A	V
													V
													V
802.11b CH 06 2437MHz		2377.9	52.95	-21.05	74	50.16	27.11	6.96	31.28	210	315	P	H
		2389.94	41.66	-12.34	54	38.8	27.15	6.98	31.27	210	315	A	H
	*	2437	105.24	-	-	102.19	27.28	7.03	31.26	210	315	P	H
	*	2437	100.85	-	-	97.8	27.28	7.03	31.26	210	315	A	H
		2487.75	54.1	-19.9	74	50.86	27.4	7.09	31.25	210	315	P	H
		2483.76	42.09	-11.91	54	38.91	27.36	7.07	31.25	210	315	A	H
		2356.2	53.6	-20.4	74	50.89	27.07	6.93	31.29	165	266	P	V
		2389.66	41.6	-12.4	54	38.75	27.15	6.98	31.28	165	266	A	V
	*	2437	100.84	-	-	97.79	27.28	7.03	31.26	165	266	P	V
	*	2437	97.87	-	-	94.82	27.28	7.03	31.26	165	266	A	V
		2486.84	53.5	-20.5	74	50.32	27.36	7.07	31.25	165	266	P	V
		2489.08	42.01	-11.99	54	38.77	27.4	7.09	31.25	165	266	A	V

802.11b CH 11 2462MHz	*	2462	105.7	-	-	102.59	27.32	7.05	31.26	163	218	P	H
	*	2462	102.54	-	-	99.43	27.32	7.05	31.26	163	218	A	H
		2485.76	53.89	-20.11	74	50.71	27.36	7.07	31.25	163	218	P	H
		2483.52	43.98	-10.02	54	40.8	27.36	7.07	31.25	163	218	A	H
													H
													H
	*	2462	101.36	-	-	98.25	27.32	7.05	31.26	167	167	P	V
	*	2462	98.24	-	-	95.13	27.32	7.05	31.26	167	167	A	V
		2491.64	53.71	-20.29	74	50.47	27.4	7.09	31.25	167	167	P	V
		2483.52	42.48	-11.52	54	39.3	27.36	7.07	31.25	167	167	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. 2	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	32.3	-41.7	74	42.19	31.22	10.07	51.18	100	0	P	H
													H
													H
													H
		4824	31.87	-42.13	74	41.76	31.22	10.07	51.18	100	0	P	V
													V
													V
													V
802.11b CH 06 2437MHz		4874	34.1	-39.9	74	43.83	31.31	10.11	51.15	100	0	P	H
		7311	39.23	-34.77	74	41.23	36.27	12.53	50.8	100	0	P	H
													H
													H
		4874	32.4	-41.6	74	42.13	31.31	10.11	51.15	100	0	P	V
		7311	37.06	-36.94	74	39.06	36.27	12.53	50.8	100	0	P	V
													V
													V
802.11b CH 11 2462MHz		4924	31.12	-42.88	74	40.72	31.39	10.14	51.13	100	0	P	H
		7386	38.8	-35.2	74	40.36	36.51	12.73	50.8	100	0	P	H
													H
													H
		4924	30.63	-43.37	74	40.23	31.39	10.14	51.13	100	0	P	V
		7386	37.29	-36.71	74	38.85	36.51	12.73	50.8	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. 2	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		2389.8	62.56	-11.44	74	59.7	27.15	6.98	31.27	165	215	P	H
		2389.905	50.37	-3.63	54	47.51	27.15	6.98	31.27	165	215	A	H
	*	2412	105.13	-	-	102.21	27.19	7	31.27	165	215	P	H
	*	2412	97.34	-	-	94.42	27.19	7	31.27	165	215	A	H
													H
													H
		2389.275	55.17	-18.83	74	52.32	27.15	6.98	31.28	177	360	P	V
		2390	44.26	-9.74	54	41.4	27.15	6.98	31.27	177	360	A	V
	*	2412	98.22	-	-	95.3	27.19	7	31.27	177	360	P	V
	*	2412	90.28	-	-	87.36	27.19	7	31.27	177	360	A	V
													V
													V
802.11g CH 06 2437MHz		2329.32	52.98	-21.02	74	50.4	26.99	6.89	31.3	195	324	P	H
		2389.8	42.7	-11.3	54	39.84	27.15	6.98	31.27	195	324	A	H
	*	2437	104.42	-	-	101.37	27.28	7.03	31.26	195	324	P	H
	*	2437	96.82	-	-	93.77	27.28	7.03	31.26	195	324	A	H
		2495.66	53.34	-20.66	74	50.09	27.4	7.09	31.24	195	324	P	H
		2497.97	43.11	-10.89	54	39.86	27.4	7.09	31.24	195	324	A	H
		2352.28	52.64	-21.36	74	49.93	27.07	6.93	31.29	400	272	P	V
		2385.32	42.28	-11.72	54	39.49	27.11	6.96	31.28	400	272	A	V
	*	2437	98.08	-	-	95.03	27.28	7.03	31.26	400	272	P	V
	*	2437	90.53	-	-	87.48	27.28	7.03	31.26	400	272	A	V
		2493.91	53.75	-20.25	74	50.5	27.4	7.09	31.24	400	272	P	V
		2492.3	42.76	-11.24	54	39.51	27.4	7.09	31.24	400	272	A	V

802.11g CH 11 2462MHz	*	2462	103.83	-	-	100.72	27.32	7.05	31.26	207	313	P	H
	*	2462	95.71	-	-	92.6	27.32	7.05	31.26	207	313	A	H
		2484.4	55.47	-18.53	74	52.29	27.36	7.07	31.25	207	313	P	H
		2483.76	44.36	-9.64	54	41.18	27.36	7.07	31.25	207	313	A	H
													H
													H
	*	2462	99.29	-	-	96.18	27.32	7.05	31.26	400	272	P	V
	*	2462	91.92	-	-	88.81	27.32	7.05	31.26	400	272	A	V
		2484.44	54.64	-19.36	74	51.46	27.36	7.07	31.25	400	272	P	V
		2483.76	43.9	-10.1	54	40.72	27.36	7.07	31.25	400	272	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. 2	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	30.7	-43.3	74	40.59	31.22	10.07	51.18	100	0	P	H
													H
													H
													H
		4824	29.88	-44.12	74	39.77	31.22	10.07	51.18	100	0	P	V
													V
													V
													V
802.11g CH 06 2437MHz		4874	29.89	-44.11	74	39.62	31.31	10.11	51.15	100	0	P	H
		7311	35.8	-38.2	74	37.8	36.27	12.53	50.8	100	0	P	H
													H
													H
		4874	29.96	-44.04	74	39.69	31.31	10.11	51.15	100	0	P	V
		7311	36.86	-37.14	74	38.86	36.27	12.53	50.8	100	0	P	V
													V
													V
802.11g CH 11 2462MHz		4924	29.62	-44.38	74	39.22	31.39	10.14	51.13	100	0	P	H
		7386	35.79	-38.21	74	37.35	36.51	12.73	50.8	100	0	P	H
													H
													H
		4924	30.26	-43.74	74	39.86	31.39	10.14	51.13	100	0	P	V
		7386	36.95	-37.05	74	38.51	36.51	12.73	50.8	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 802.11g (LF)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11g LF		38.91	28.35	-11.65	40	38.89	20.78	0.62	31.94	100	0	P	H
		59.97	20.61	-19.39	40	39.88	11.8	0.84	31.91	-	-	P	H
		82.11	19.27	-20.73	40	36.31	13.92	0.94	31.9	-	-	P	H
		451.2	22.72	-23.28	46	29.25	22.92	2.36	31.81	-	-	P	H
		605.2	26.11	-19.89	46	29.93	25.34	2.79	31.95	-	-	P	H
		824.3	34.34	-11.66	46	34.76	28.05	3.36	31.83	-	-	P	H
													H
													H
													H
													H
													H
													H
		31.89	22.68	-17.32	40	29.18	24.78	0.67	31.95	-	-	P	V
		86.7	15.98	-24.02	40	32.53	14.36	0.99	31.9	-	-	P	V
		146.37	19.07	-24.43	43.5	32.04	17.61	1.27	31.85	-	-	P	V
		517	24.31	-21.69	46	29.54	24.1	2.55	31.88	-	-	P	V
		684.3	26.81	-19.19	46	29.88	25.98	2.97	32.02	-	-	P	V
		869.8	30.28	-15.72	46	29.94	28.54	3.45	31.65	100	10	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.	
2		(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".

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		2389.695	61.49	-12.51	74	58.64	27.15	6.98	31.28	217	318	P	H
		2389.905	51.15	-2.85	54	48.29	27.15	6.98	31.27	217	318	A	H
	*	2412	105.03	-	-	102.11	27.19	7	31.27	217	318	P	H
	*	2412	96.37	-	-	93.45	27.19	7	31.27	217	318	A	H
802.11n													H
HT20													H
CH 01		2389.695	57.02	-16.98	74	54.17	27.15	6.98	31.28	379	261	P	V
2412MHz		2390	49.24	-4.76	54	46.38	27.15	6.98	31.27	379	261	A	V
	*	2412	100.96	-	-	98.04	27.19	7	31.27	379	261	P	V
	*	2412	93.49	-	-	90.57	27.19	7	31.27	379	261	A	V
													V
													V
		2387.7	53.11	-20.89	74	50.26	27.15	6.98	31.28	229	318	P	H
		2389.38	44.43	-9.57	54	41.58	27.15	6.98	31.28	229	318	A	H
	*	2437	107.27	-	-	104.22	27.28	7.03	31.26	229	318	P	H
	*	2437	96.99	-	-	93.94	27.28	7.03	31.26	229	318	A	H
802.11n		2490.27	53.37	-20.63	74	50.13	27.4	7.09	31.25	229	318	P	H
HT20		2484.11	43.96	-10.04	54	40.78	27.36	7.07	31.25	229	318	A	H
CH 06		2384.76	53.18	-20.82	74	50.39	27.11	6.96	31.28	367	265	P	V
2437MHz		2389.52	43.69	-10.31	54	40.84	27.15	6.98	31.28	367	265	A	V
	*	2437	104.42	-	-	101.37	27.28	7.03	31.26	367	265	P	V
	*	2437	96.1	-	-	93.05	27.28	7.03	31.26	367	265	A	V
		2498.25	53.01	-20.99	74	49.76	27.4	7.09	31.24	367	265	P	V
		2485.58	43.81	-10.19	54	40.63	27.36	7.07	31.25	367	265	A	V

	*	2462	106.23	32.23	-	-	27.32	7.05	31.26	232	315	P	H
	*	2462	97.41	43.41	-	-	27.32	7.05	31.26	232	315	A	H
		2483.96	64.48	-9.52	74	61.3	27.36	7.07	31.25	232	315	P	H
		2483.64	51.1	-2.9	54	47.92	27.36	7.07	31.25	232	315	A	H
802.11n													H
HT20													H
CH 11	*	2462	104.13	30.13	-	-	27.32	7.05	31.26	400	264	P	V
2462MHz	*	2462	94.68	40.68	-	-	27.32	7.05	31.26	400	264	A	V
		2483.96	60.22	-13.78	74	57.04	27.36	7.07	31.25	400	264	P	V
		2483.52	47.76	-6.24	54	44.58	27.36	7.07	31.25	400	264	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+2	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	29.87	-44.13	74	39.76	31.22	10.07	51.18	100	0	P	H
													H
802.11n													H
HT20													H
CH 01		4824	30.3	-43.7	74	40.19	31.22	10.07	51.18	100	0	P	V
2412MHz													V
													V
													V
		4874	30.48	-43.52	74	40.21	31.31	10.11	51.15	100	0	P	H
		7311	37.31	-36.69	74	39.31	36.27	12.53	50.8	100	0	P	H
802.11n													H
HT20													H
CH 06		4874	30.4	-43.6	74	40.13	31.31	10.11	51.15	100	0	P	V
2437MHz		7311	37.17	-36.83	74	39.17	36.27	12.53	50.8	100	0	P	V
													V
													V
		4924	30.62	-43.38	74	40.22	31.39	10.14	51.13	100	0	P	H
		7386	36.78	-37.22	74	38.34	36.51	12.73	50.8	100	0	P	H
802.11n													H
HT20													H
CH 11		4924	30.51	-43.49	74	40.11	31.39	10.14	51.13	100	0	P	V
2462MHz		7386	36.35	-37.65	74	37.91	36.51	12.73	50.8	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 HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	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)
		2389.1	59.7	-14.3	74	56.85	27.15	6.98	31.28	217	309	P	H
		2389.8	50.06	-3.94	54	47.2	27.15	6.98	31.27	217	309	A	H
	*	2422	108.88	-	-	105.89	27.23	7.02	31.26	217	309	P	H
	*	2422	99.73	-	-	96.74	27.23	7.02	31.26	217	309	A	H
802.11n		2486.42	53.81	-20.19	74	50.63	27.36	7.07	31.25	217	309	P	H
HT40		2489.15	43.94	-10.06	54	40.7	27.4	7.09	31.25	217	309	A	H
CH 03		2389.8	57.58	-16.42	74	54.72	27.15	6.98	31.27	387	271	P	V
2422MHz		2389.94	48.29	-5.71	54	45.43	27.15	6.98	31.27	387	271	A	V
	*	2422	107.03	-	-	104.04	27.23	7.02	31.26	387	271	P	V
	*	2422	98.04	-	-	95.05	27.23	7.02	31.26	387	271	A	V
		2491.04	53.94	-20.06	74	50.7	27.4	7.09	31.25	387	271	P	V
		2497.69	44.02	-9.98	54	40.77	27.4	7.09	31.24	387	271	A	V
		2389.8	55.34	-18.66	74	52.48	27.15	6.98	31.27	238	310	P	H
		2389.66	44.71	-9.29	54	41.86	27.15	6.98	31.28	238	310	A	H
	*	2437	108.61	-	-	105.56	27.28	7.03	31.26	238	310	P	H
	*	2437	99.55	-	-	96.5	27.28	7.03	31.26	238	310	A	H
802.11n		2484.39	53.3	-20.7	74	50.12	27.36	7.07	31.25	238	310	P	H
HT40		2484.39	44	-10	54	40.82	27.36	7.07	31.25	238	310	A	H
CH 06		2388.12	53.88	-20.12	74	51.03	27.15	6.98	31.28	399	285	P	V
2437MHz		2389.94	44.37	-9.63	54	41.51	27.15	6.98	31.27	399	285	A	V
	*	2437	105.47	-	-	102.42	27.28	7.03	31.26	399	285	P	V
	*	2437	96.92	-	-	93.87	27.28	7.03	31.26	399	285	A	V
		2484.95	53.12	-20.88	74	49.94	27.36	7.07	31.25	399	285	P	V
		2484.74	43.89	-10.11	54	40.71	27.36	7.07	31.25	399	285	A	V

		2389.94	52.87	-21.13	74	50.01	27.15	6.98	31.27	213	319	P	H
		2389.94	43.42	-10.58	54	40.56	27.15	6.98	31.27	213	319	A	H
	*	2452	108.88	-	-	105.83	27.28	7.03	31.26	213	319	P	H
	*	2452	100.09	-	-	97.04	27.28	7.03	31.26	213	319	A	H
802.11n		2484.25	54.95	-19.05	74	51.77	27.36	7.07	31.25	213	319	P	H
HT40		2483.76	46.19	-7.81	54	43.01	27.36	7.07	31.25	213	319	A	H
CH 09		2319.52	52.92	-21.08	74	50.34	26.99	6.89	31.3	373	248	P	V
2452MHz		2384.34	43.26	-10.74	54	40.47	27.11	6.96	31.28	373	248	A	V
	*	2452	106.44	-	-	103.39	27.28	7.03	31.26	373	248	P	V
	*	2452	98.11	-	-	95.06	27.28	7.03	31.26	373	248	A	V
		2484.32	54.29	-19.71	74	51.11	27.36	7.07	31.25	373	248	P	V
		2483.69	45.08	-8.92	54	41.9	27.36	7.07	31.25	373	248	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2	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)
		4844	29.65	-44.35	74	39.48	31.25	10.08	51.16	100	0	P	H
		7266	37.69	-36.31	74	39.86	36.17	12.46	50.8	100	0	P	H
802.11n													H
HT40													H
CH 03		4844	30.09	-43.91	74	39.92	31.25	10.08	51.16	100	0	P	V
2422MHz		7266	37.72	-36.28	74	39.89	36.17	12.46	50.8	100	0	P	V
													V
													V
		4874	30.31	-43.69	74	40.04	31.31	10.11	51.15	100	0	P	H
		7311	40.03	-33.97	74	42.03	36.27	12.53	50.8	100	0	P	H
802.11n													H
HT40													H
CH 06		4874	30.2	-43.8	74	39.93	31.31	10.11	51.15	100	0	P	V
2437MHz		7311	37.47	-36.53	74	39.47	36.27	12.53	50.8	100	0	P	V
													V
													V
		4904	30.21	-43.79	74	39.87	31.36	10.13	51.15	100	0	P	H
		7356	38.53	-35.47	74	40.27	36.41	12.65	50.8	100	0	P	H
802.11n													H
HT40													H
CH 09		4904	30.08	-43.92	74	39.74	31.36	10.13	51.15	100	0	P	V
2452MHz		7356	38.63	-35.37	74	40.37	36.41	12.65	50.8	100	0	P	V
													V
													V

Remark

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

Emission below 1GHz

2.4GHz WIFI 802.11g(n20) (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+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11g(n20) LF		39.45	36.44	-3.56	40	47.57	20.2	0.61	31.94	100	0	P	H
		105.06	28.91	-14.59	43.5	43.15	16.6	1.05	31.89	-	-	P	H
		154.74	34.26	-9.24	43.5	47.65	17.15	1.31	31.85	-	-	P	H
		608.7	25.66	-20.34	46	29.45	25.37	2.8	31.96	-	-	P	H
		772.5	28.79	-17.21	46	29.97	27.58	3.19	31.95	-	-	P	H
		892.2	31.09	-14.91	46	30.41	28.81	3.44	31.57	-	-	P	H
													H
													H
													H
													H
													H
													H
		90.75	30.87	-12.63	43.5	46.82	14.93	1.02	31.9	-	-	P	V
		121.26	30.1	-13.4	43.5	43.29	17.52	1.16	31.87	-	-	P	V
		159.06	39.91	-3.59	43.5	53.55	16.87	1.33	31.84	100	0	P	V
		505.1	23.58	-22.42	46	28.9	24.03	2.51	31.86	-	-	P	V
		718.6	27.08	-18.92	46	29.47	26.58	3.04	32.01	-	-	P	V
		948.2	31.95	-14.05	46	29.57	30.08	3.44	31.14	-	-	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+2		(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

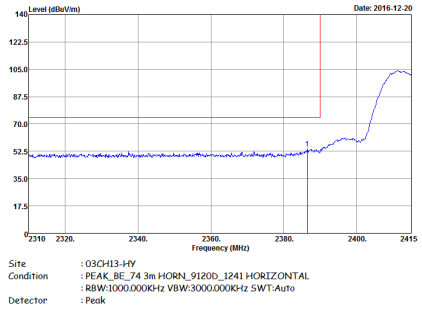
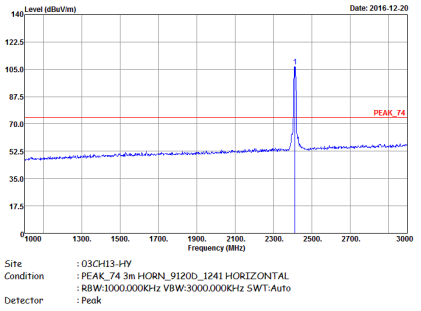
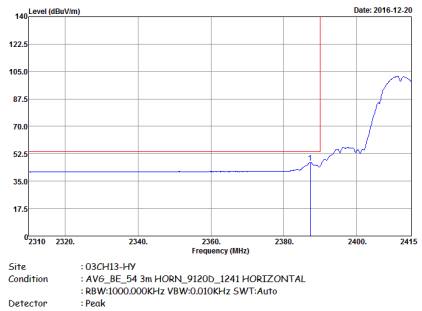
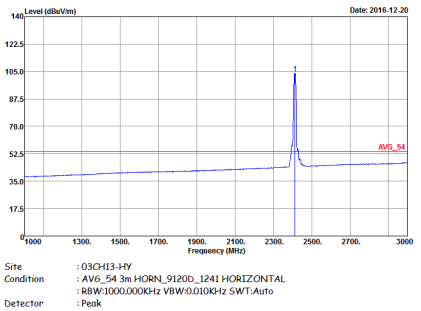
Test Engineer :	Bill Chang, Wilson Wu, and Alex Jeng	**Temperature :**	24~26°C
		Relative Humidity :	42~46%

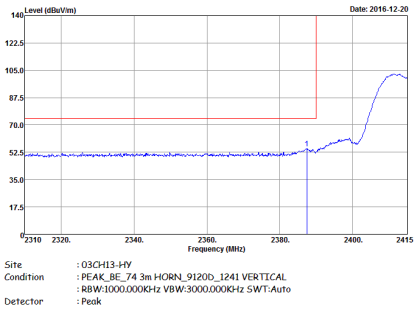
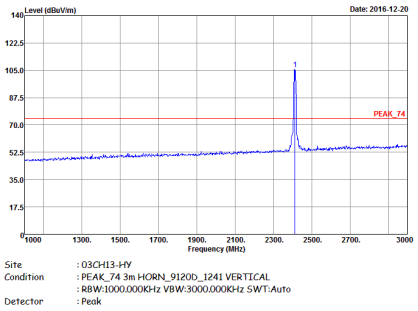
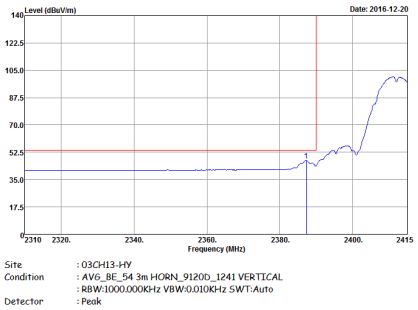
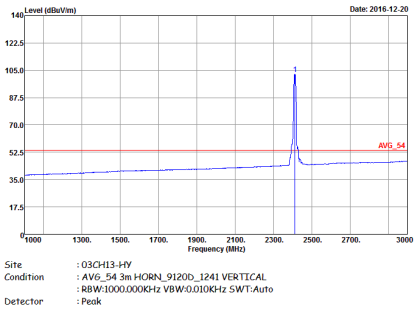
Note symbol

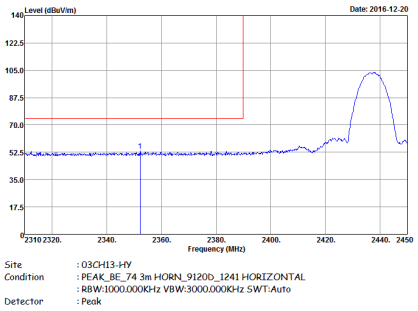
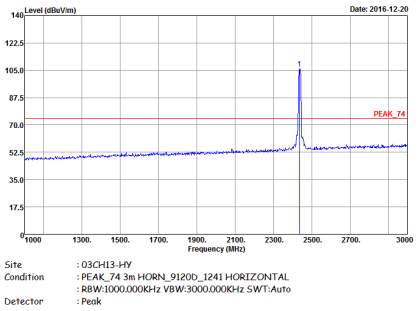
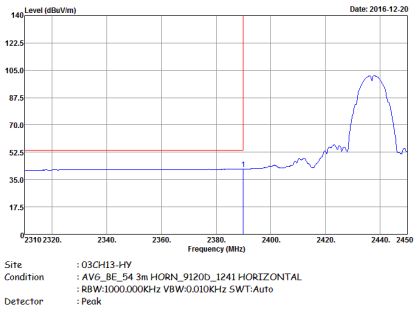
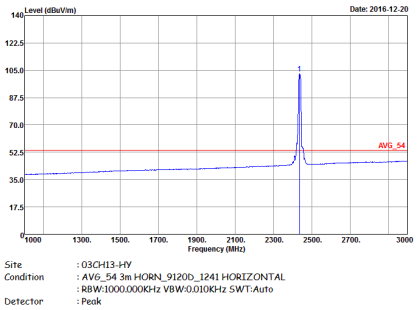
-L	**Low channel location**
-R	**High channel location**

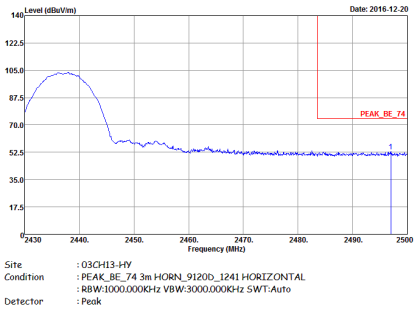
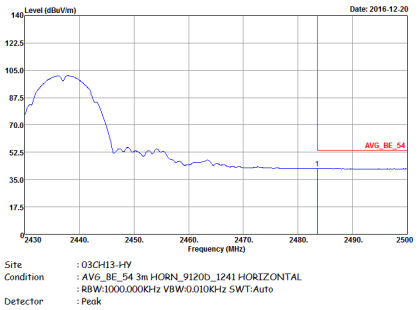
2.4GHz 2400~2483.5MHz

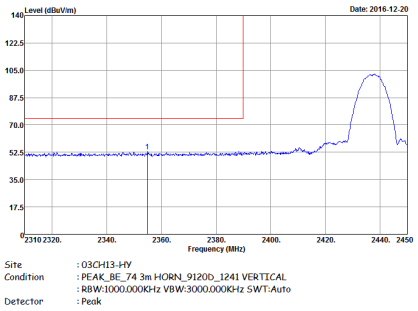
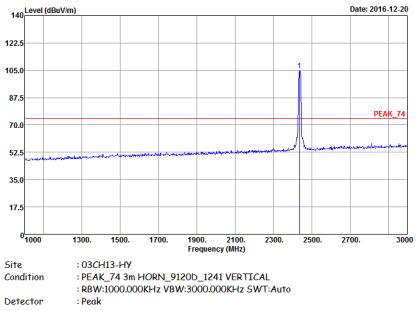
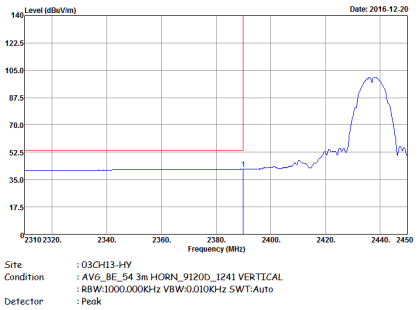
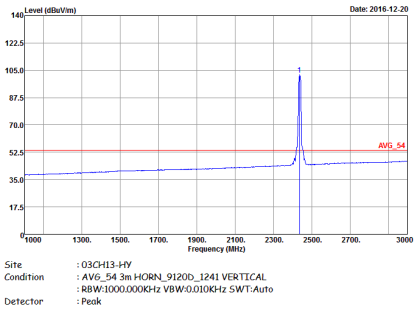
WIFI 802.11b (Band Edge @ 3m)

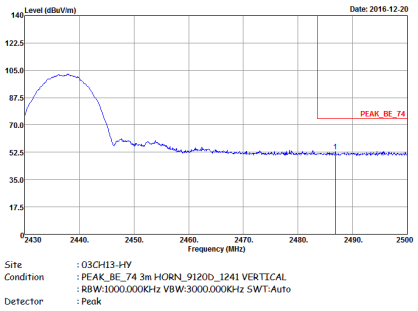
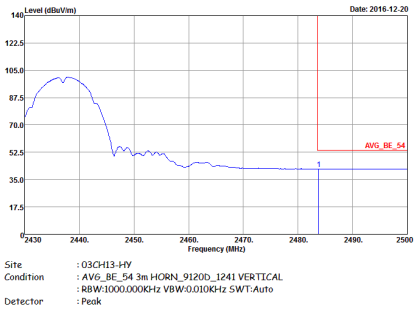
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

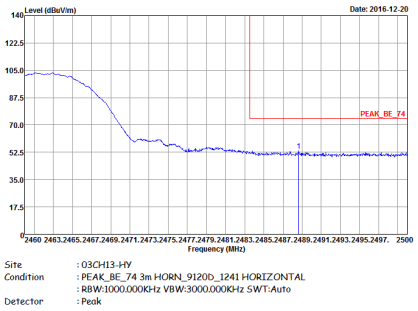
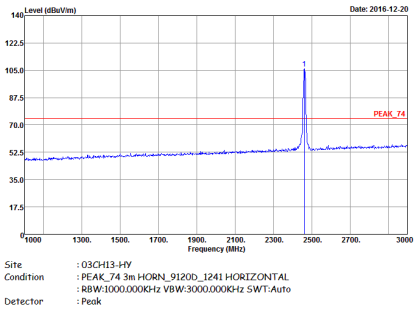
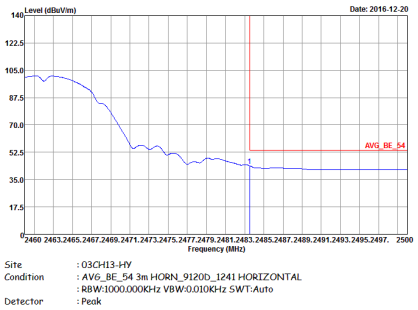
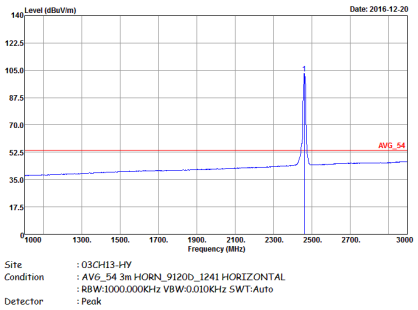
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Vertical	Fundamental
Peak		
Avg.		

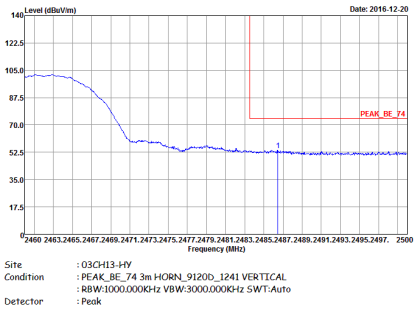
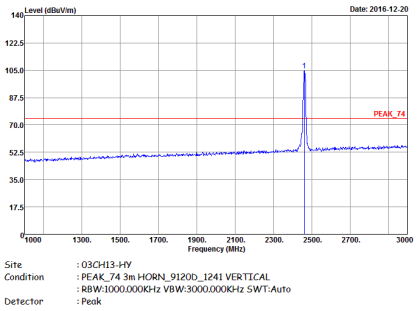
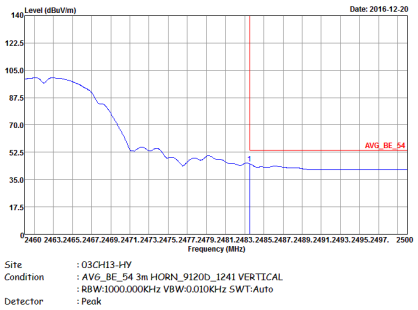
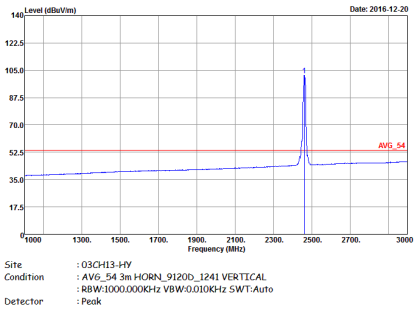
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

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

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

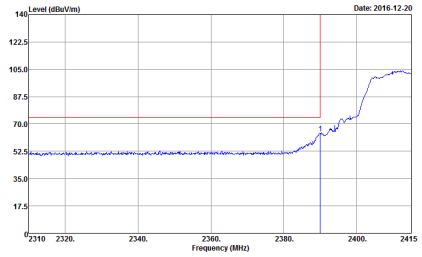
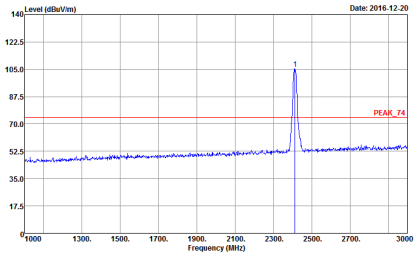
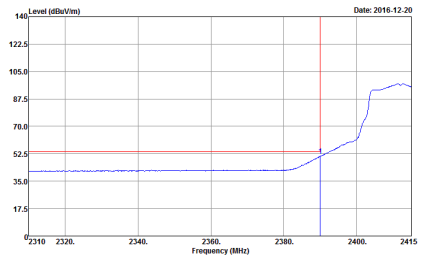
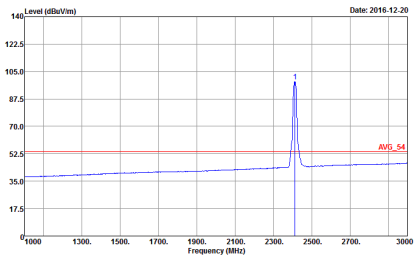
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

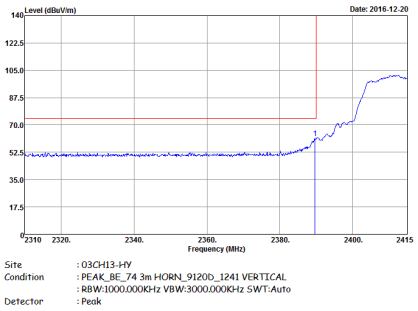
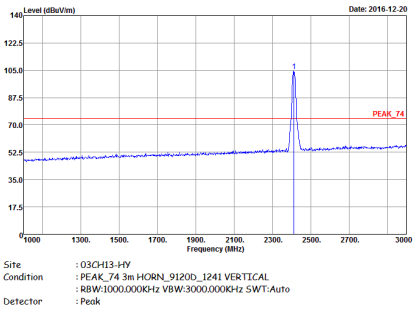
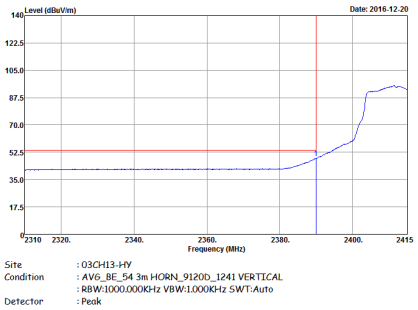
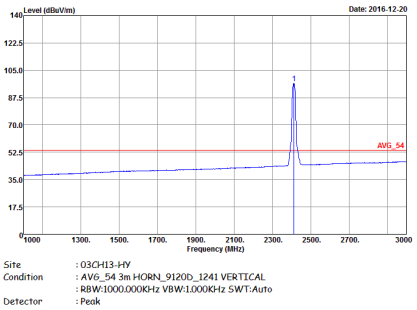
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

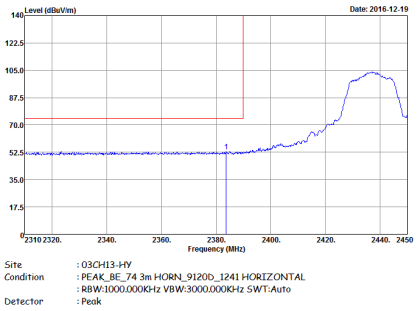
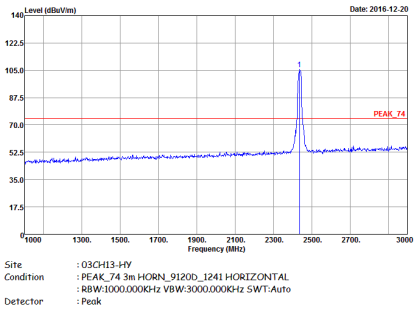
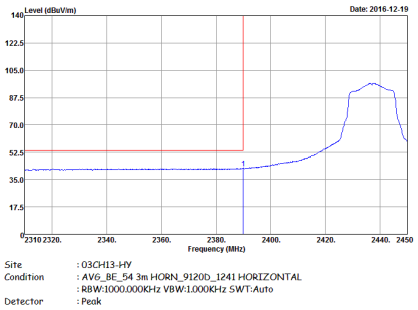
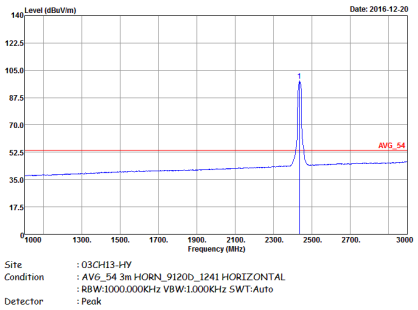
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

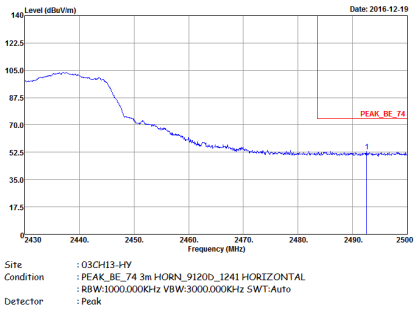
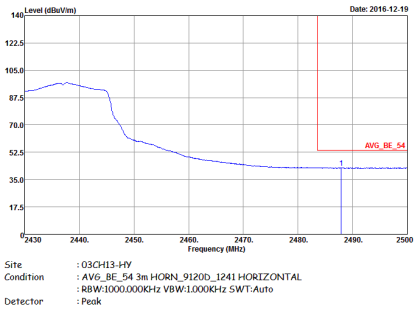
2.4GHz 2400~2483.5MHz

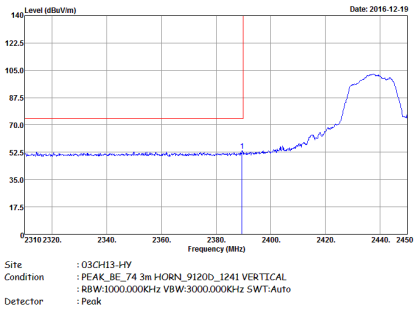
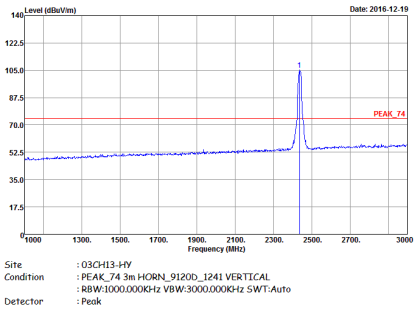
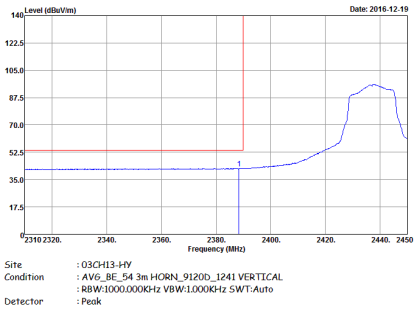
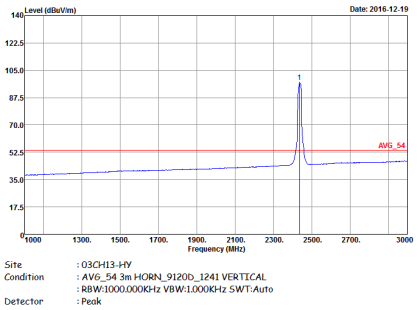
WIFI 802.11g (Band Edge @ 3m)

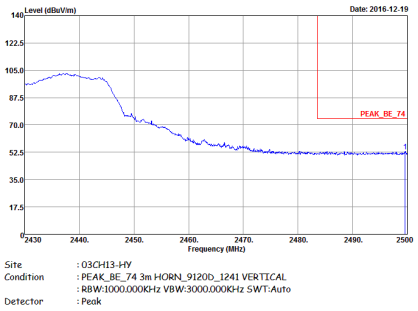
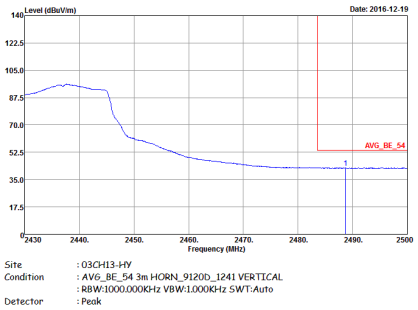
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak

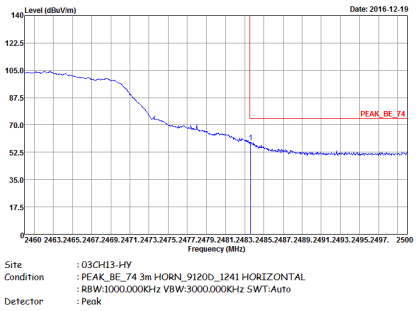
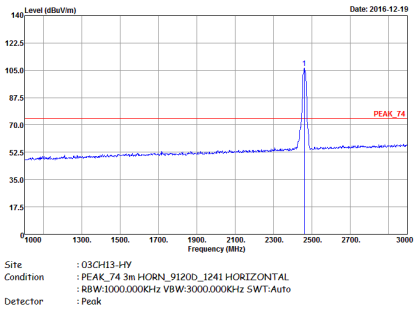
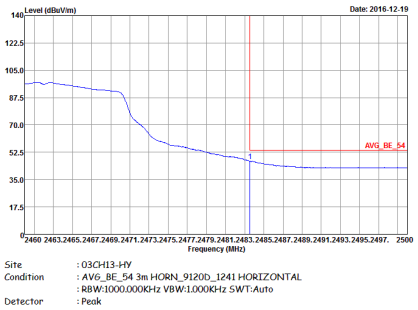
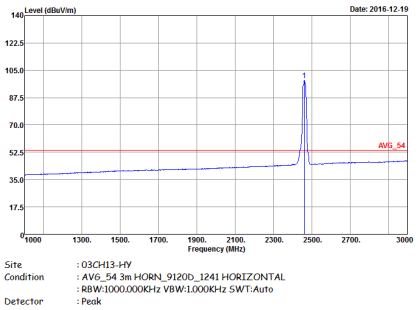
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Vertical	Fundamental
Peak		
Avg.		

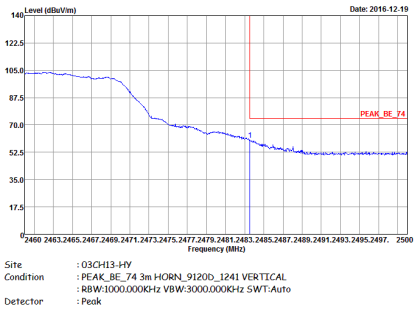
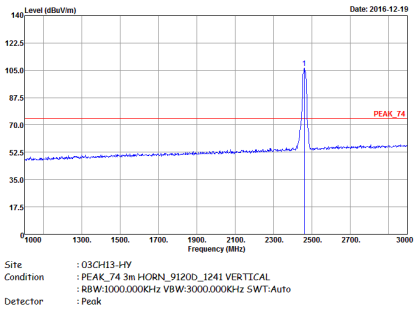
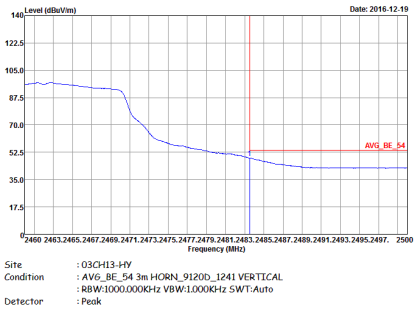
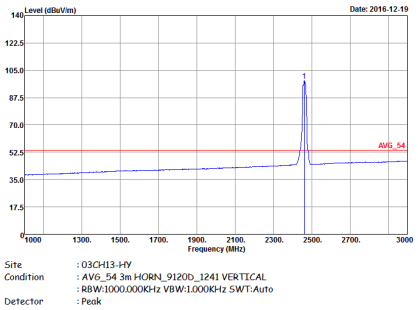
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

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

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

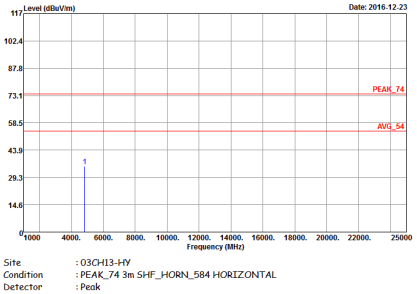
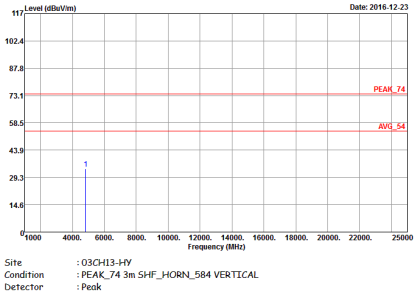
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

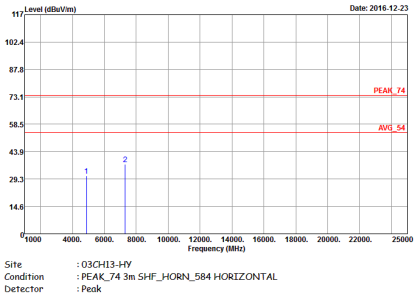
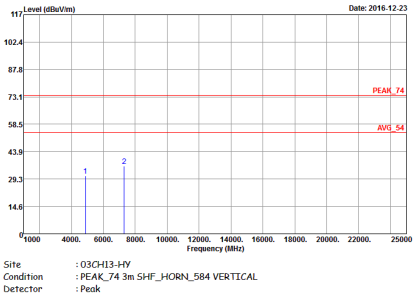
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak

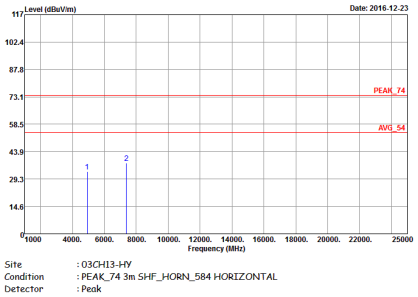
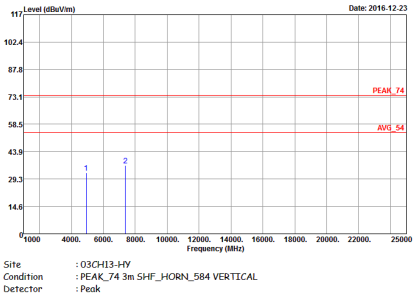
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

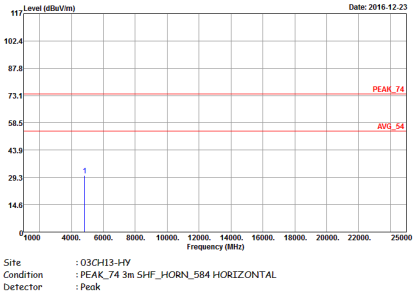
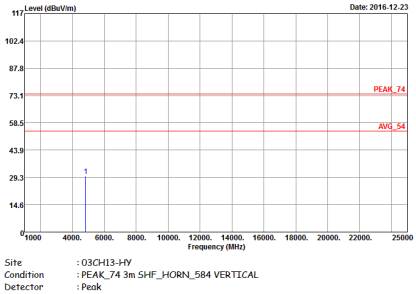
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

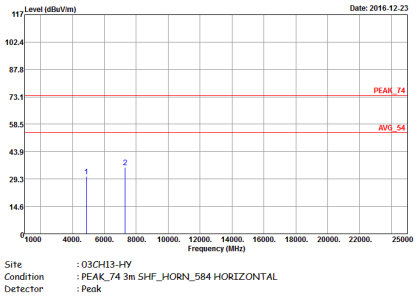
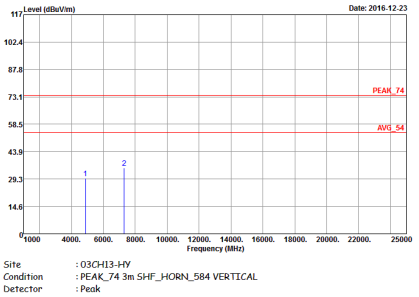
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

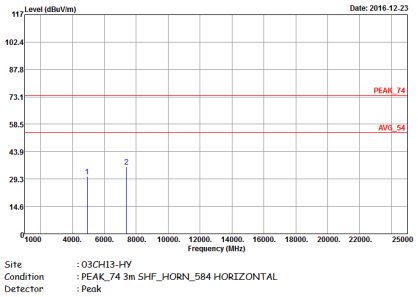
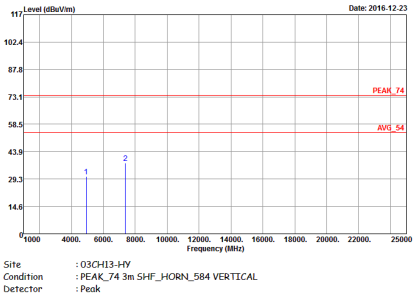
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

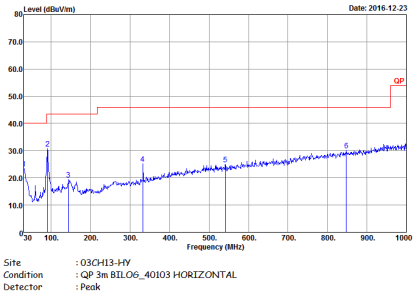
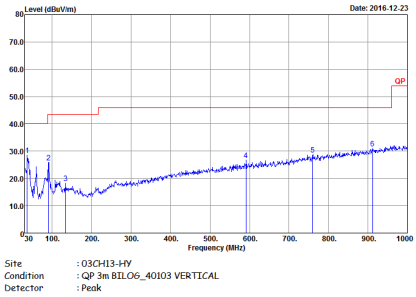
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

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.		

Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

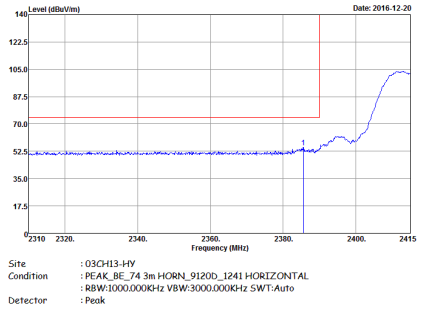
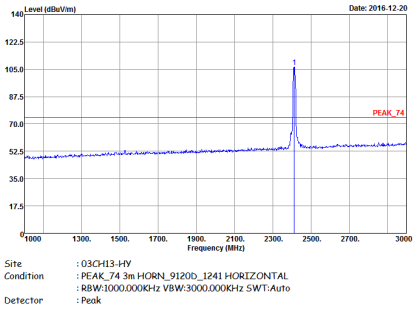
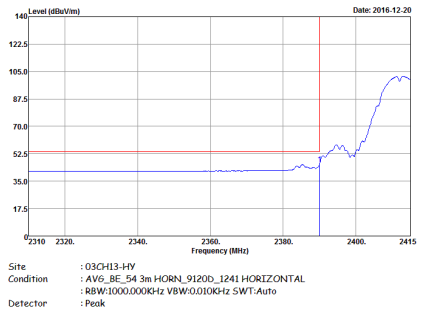
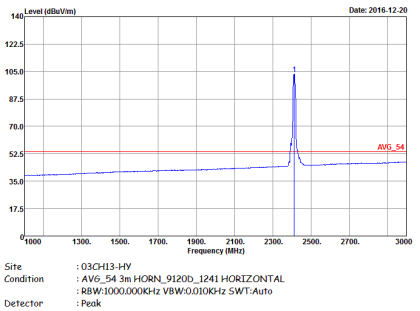
WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11g LF	
1	Horizontal	Vertical
QP / Peak		

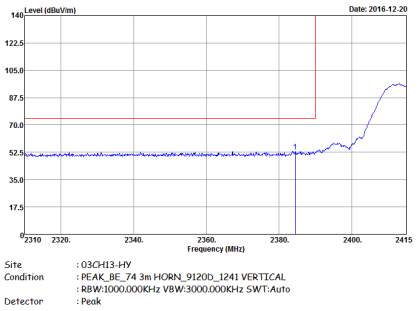
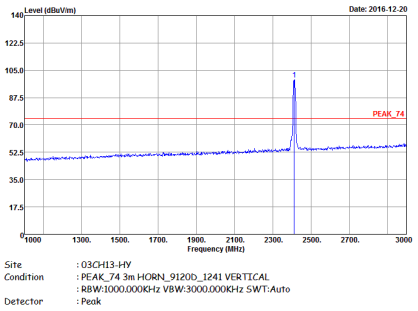
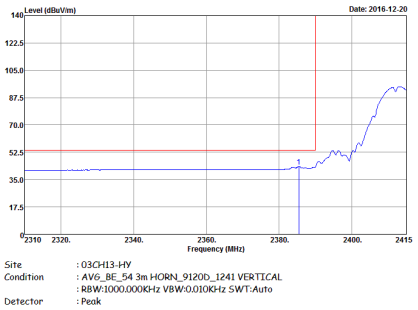
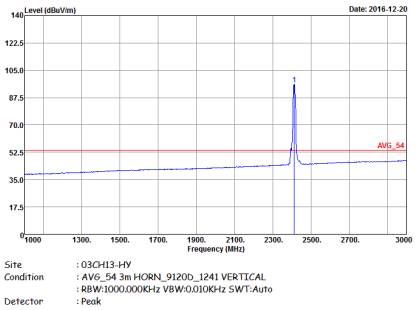
Note symbol

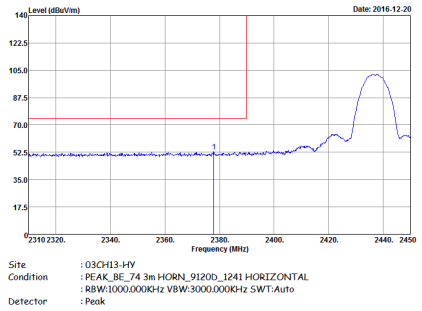
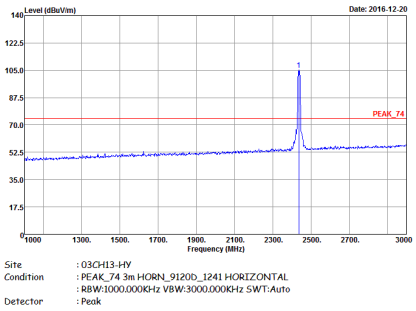
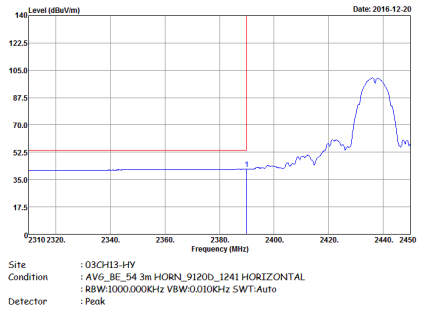
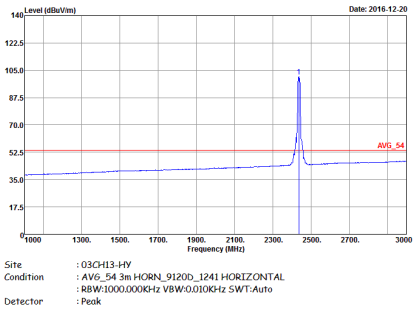
-L	**Low channel location**
-R	**High channel location**

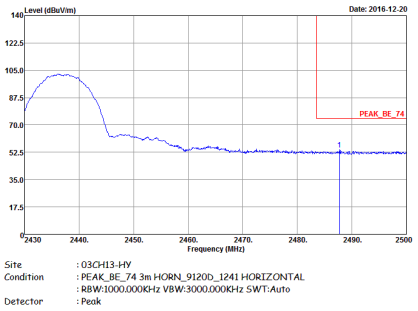
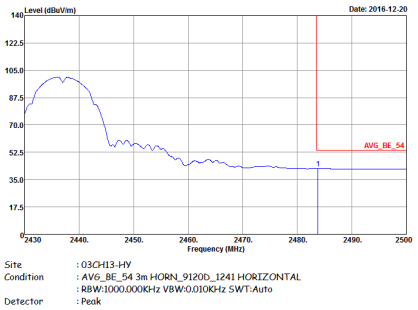
2.4GHz 2400~2483.5MHz

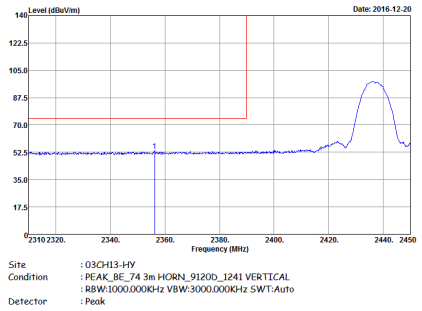
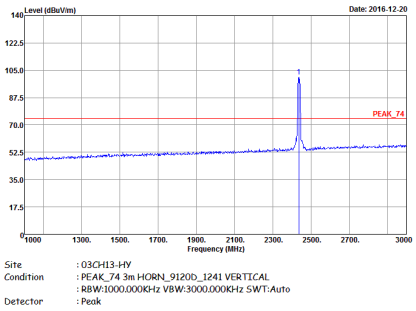
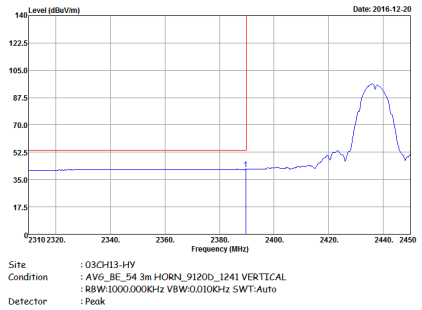
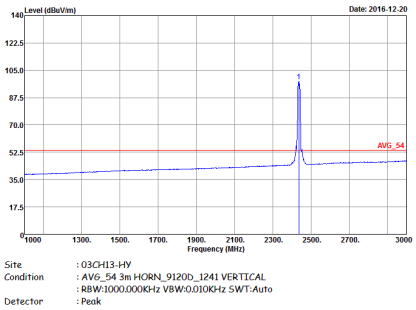
WIFI 802.11b (Band Edge @ 3m)

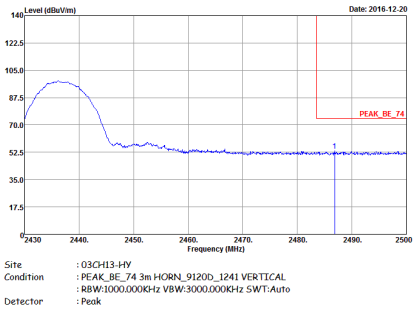
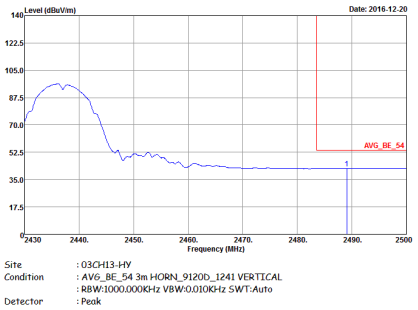
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
2	Horizontal	Fundamental
Peak		
Avg.		

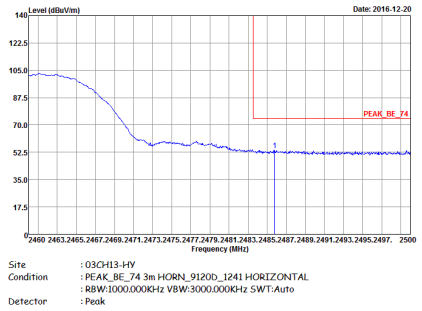
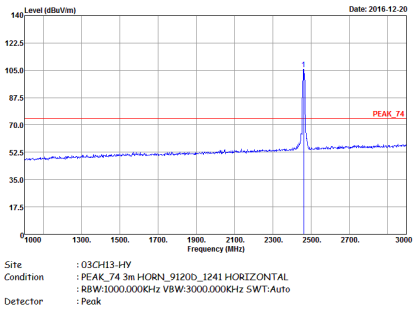
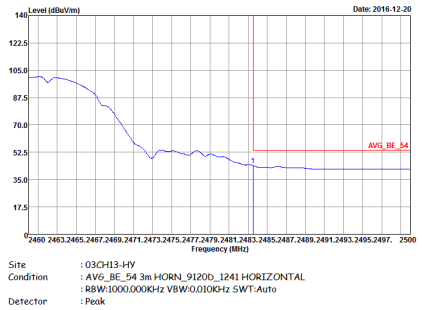
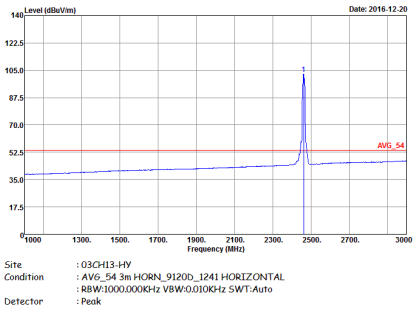
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

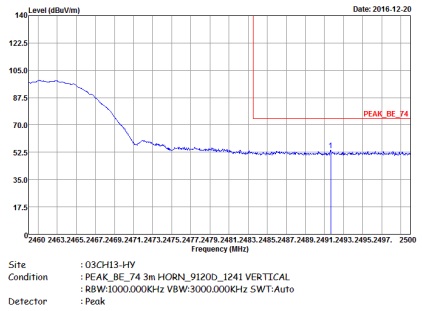
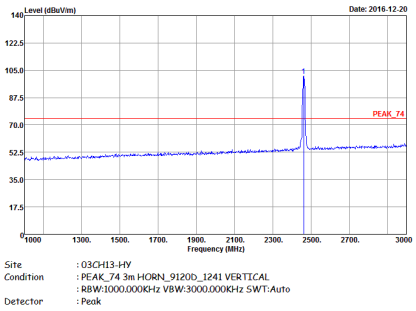
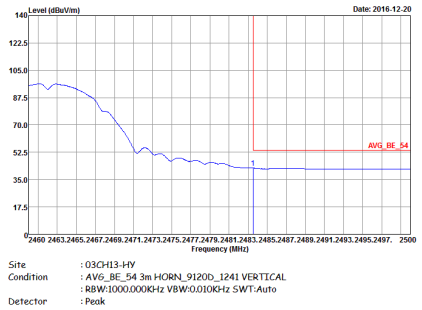
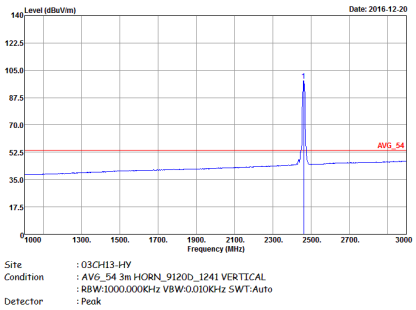
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
2	Horizontal	Fundamental
Peak		
Avg.		

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

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

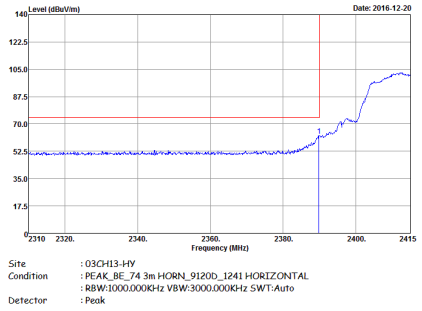
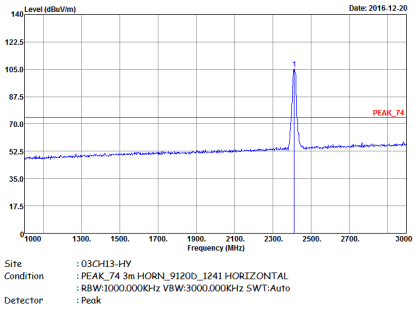
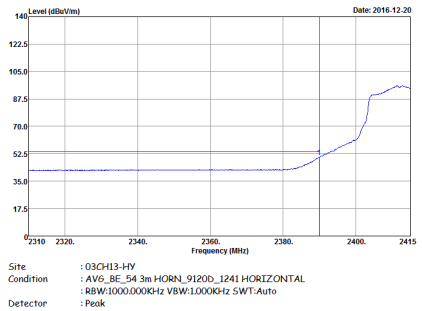
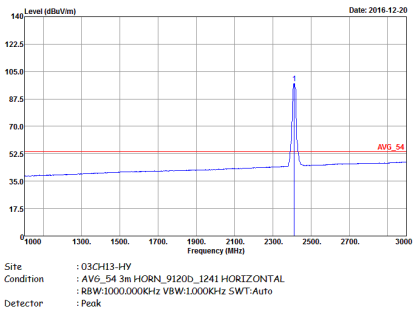
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
2	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

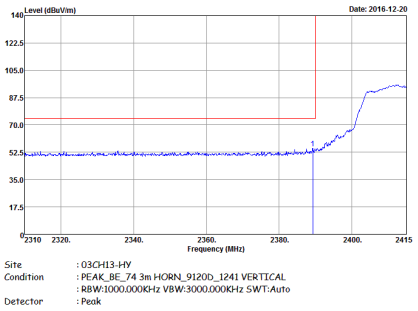
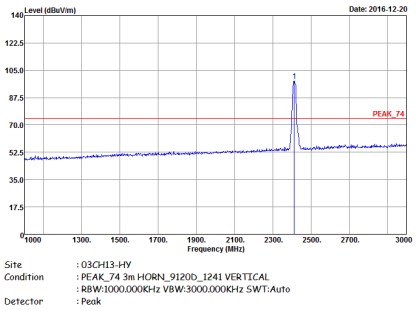
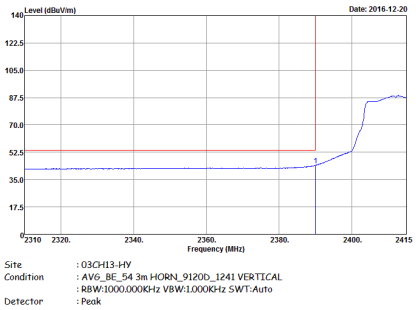
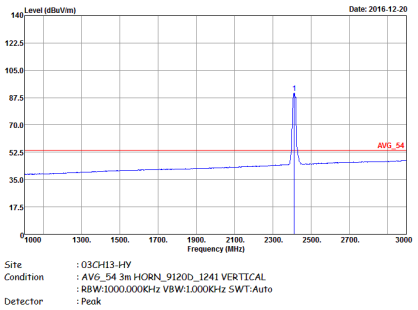
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

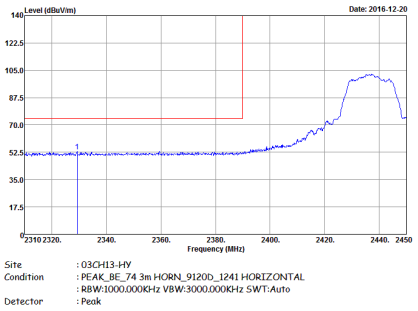
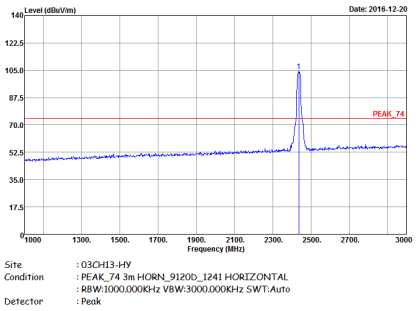
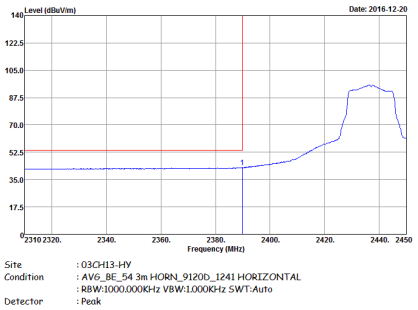
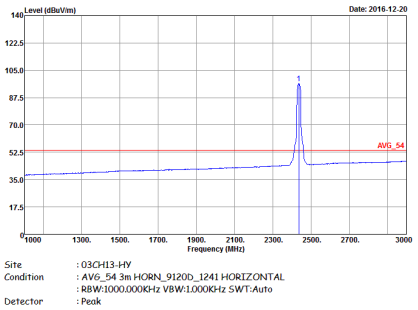
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

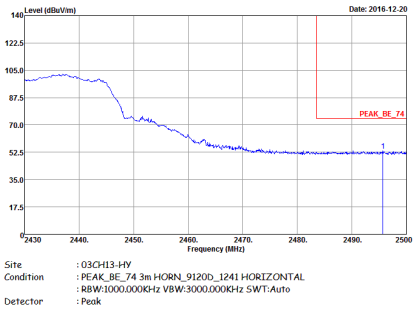
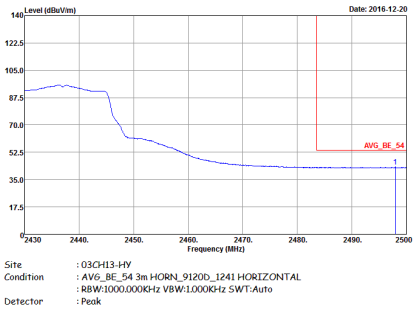
2.4GHz 2400~2483.5MHz

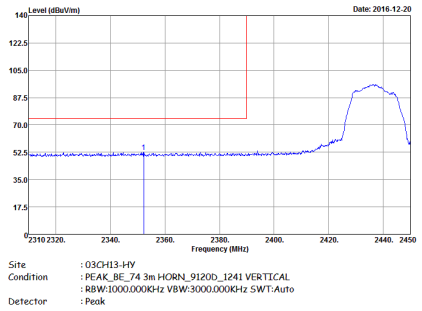
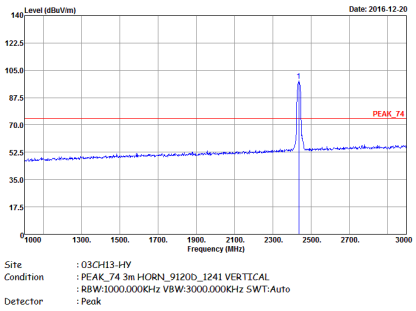
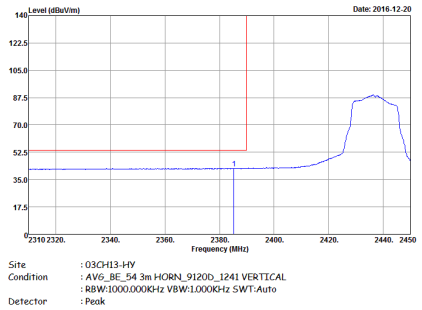
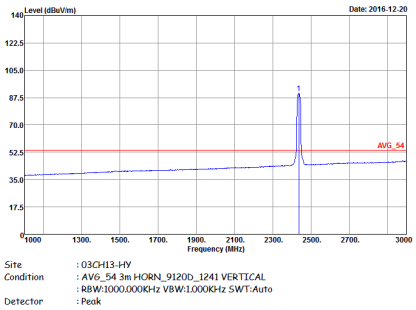
WIFI 802.11g (Band Edge @ 3m)

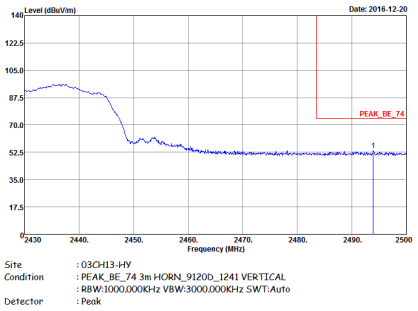
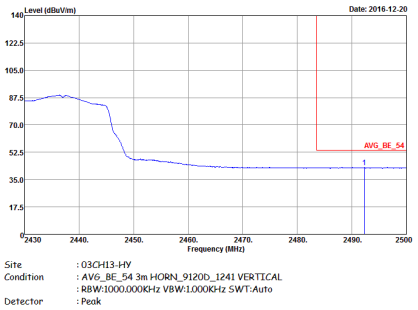
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
2	Horizontal	Fundamental
Peak		
Avg.		

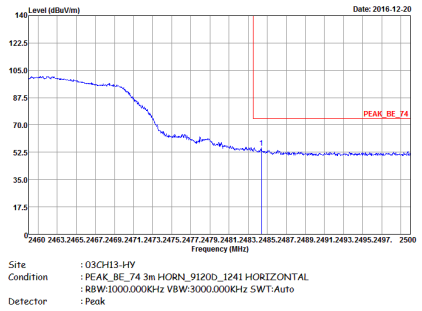
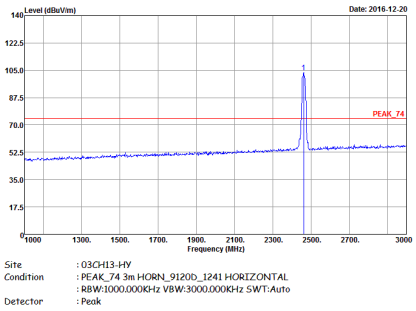
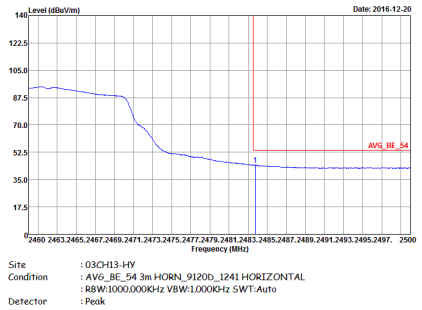
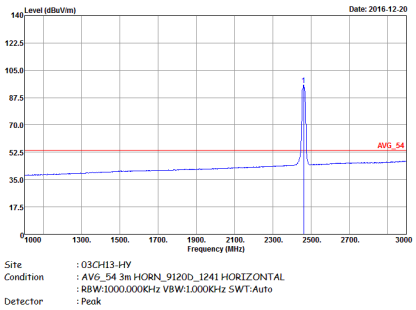
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
2	Vertical	Fundamental
Peak		
Avg.		

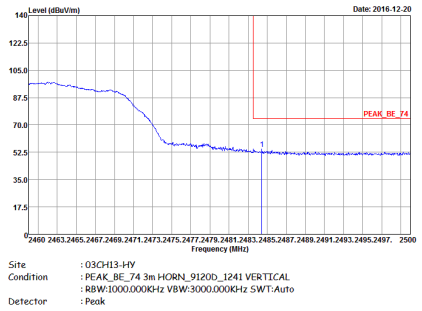
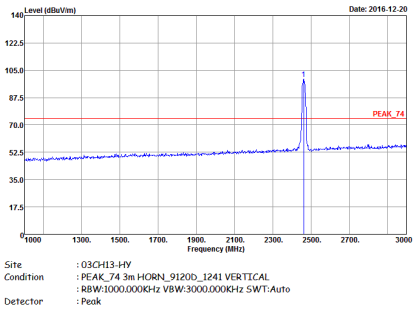
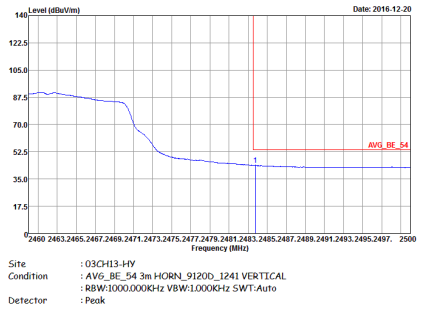
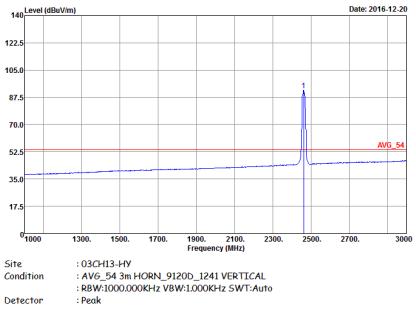
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak

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

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak

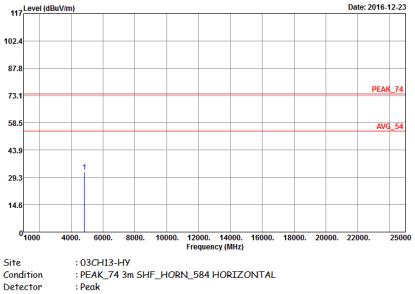
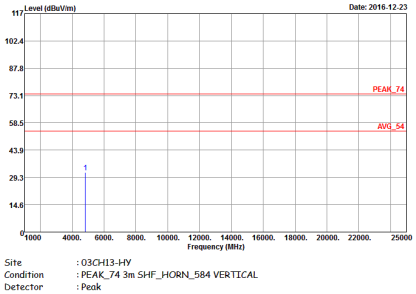
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
2	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

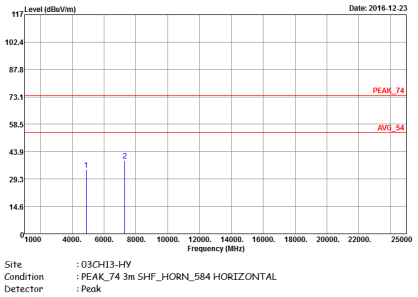
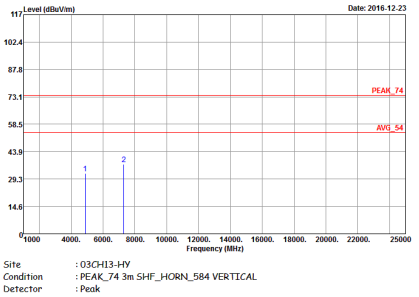
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak

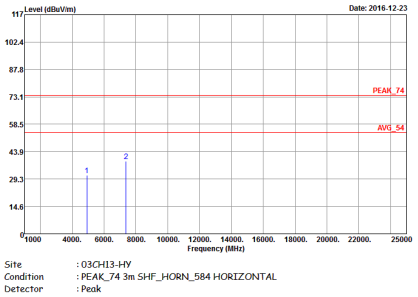
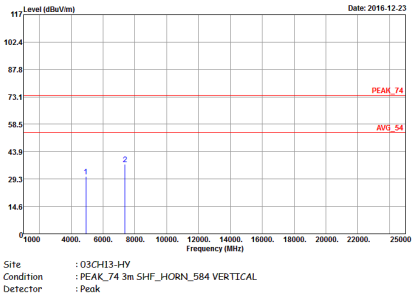
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

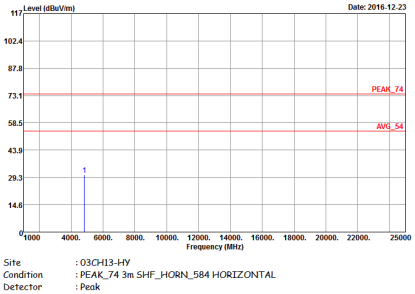
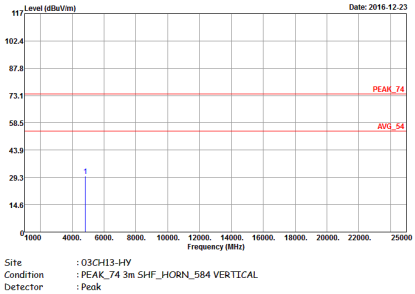
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
2	Horizontal	Vertical
Peak Avg.		

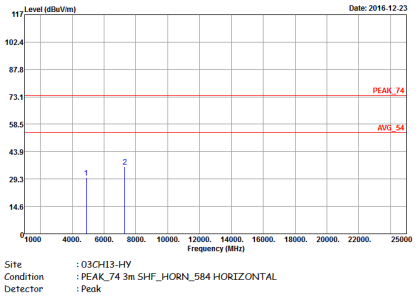
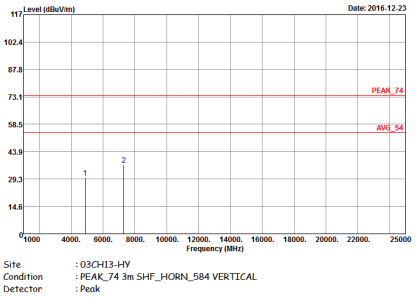
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
2	Horizontal	Vertical
Peak Avg.		

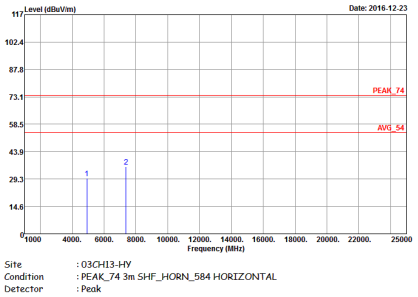
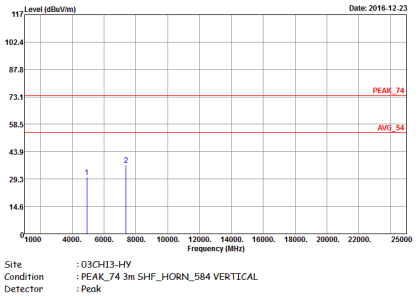
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
2	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

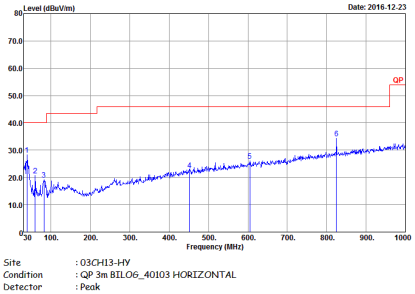
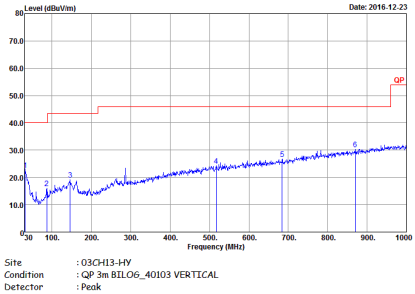
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
2	Horizontal	Vertical
Peak Avg.		

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

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

Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

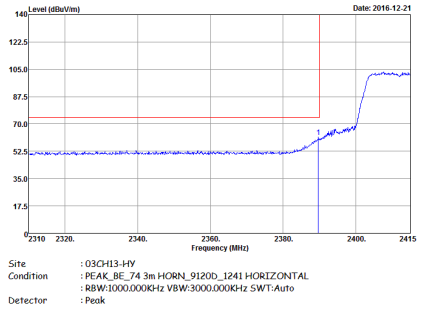
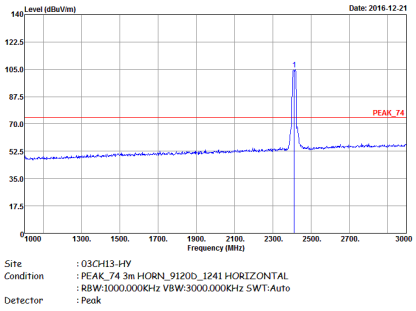
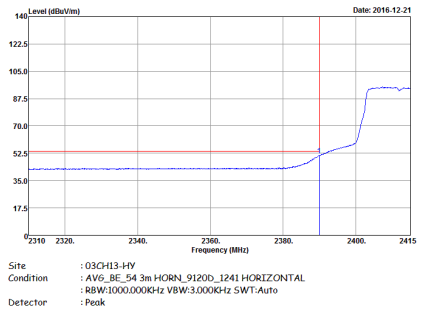
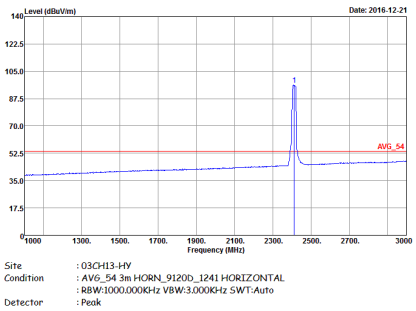
WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11g LF	
2	Horizontal	Vertical
QP / Peak		

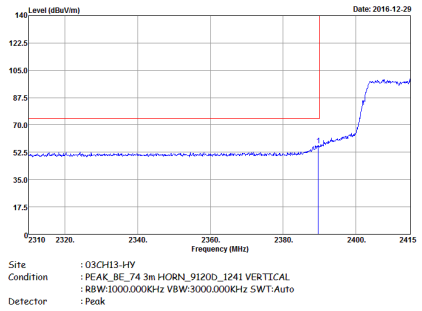
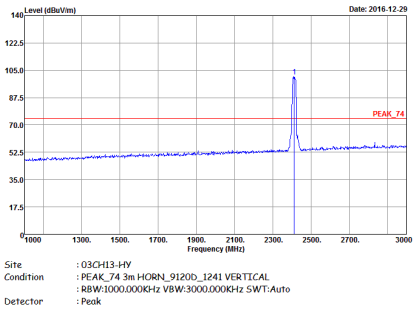
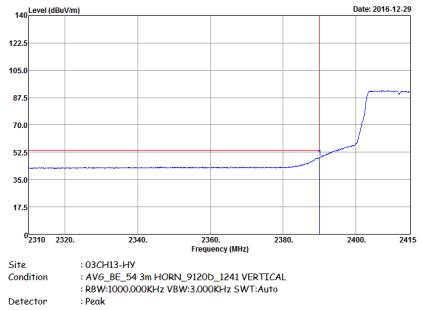
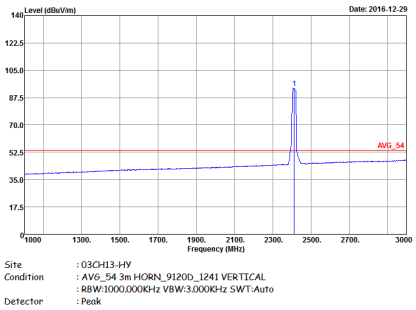
Note symbol

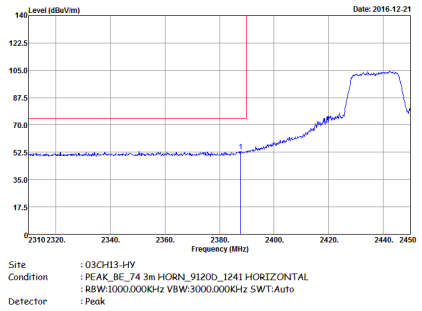
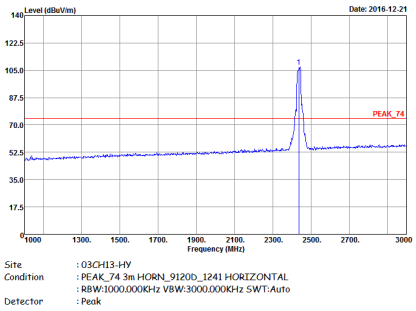
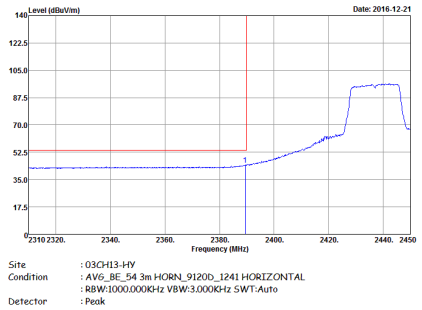
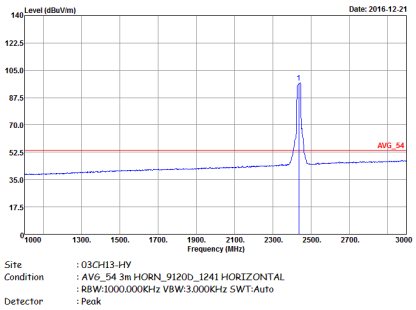
-L	**Low channel location**
-R	**High channel location**

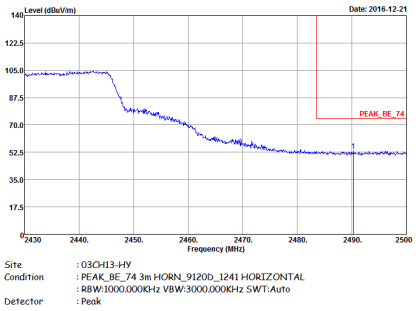
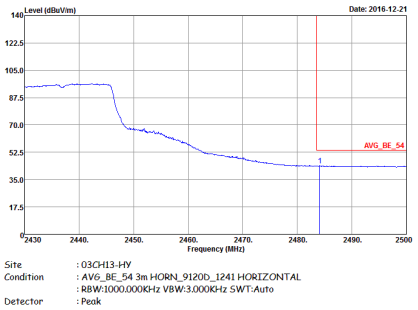
2.4GHz 2400~2483.5MHz

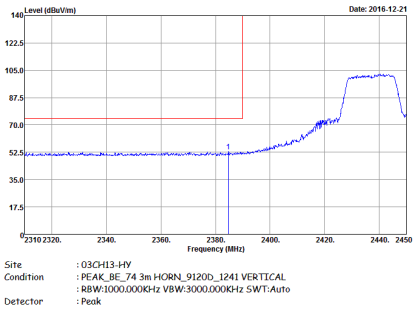
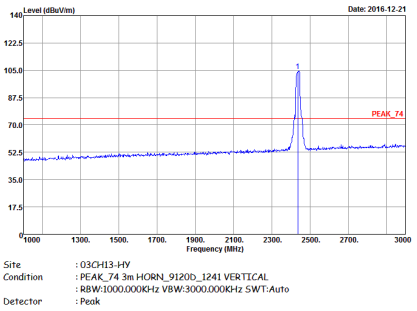
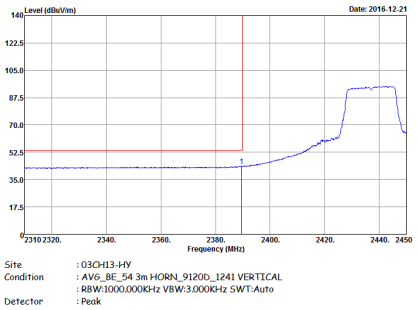
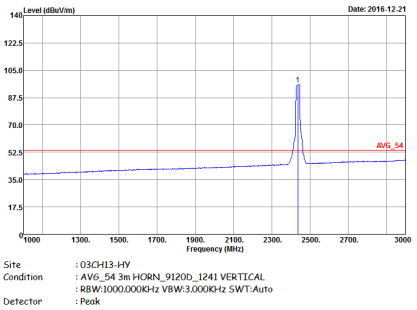
WIFI 802.11n HT20 (Band Edge @ 3m)

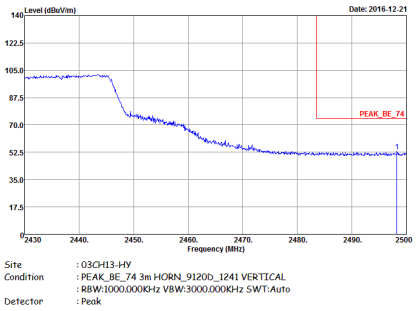
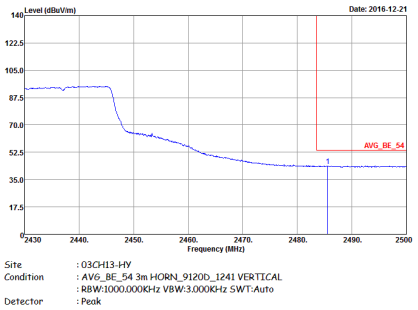
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Horizontal	Fundamental
Peak		
Avg.		

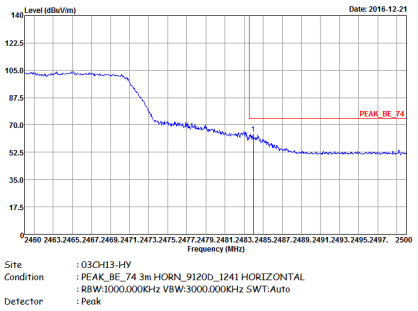
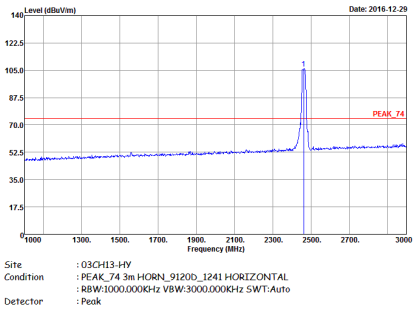
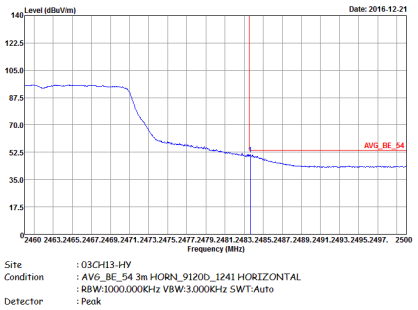
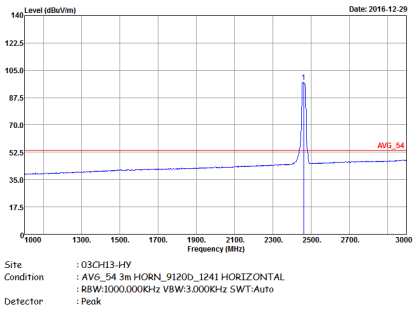
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak

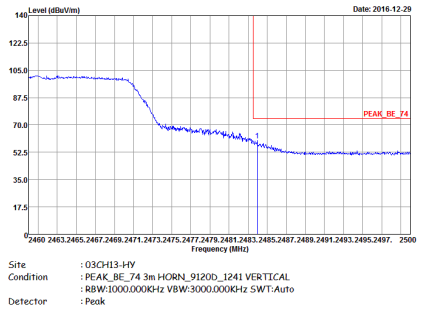
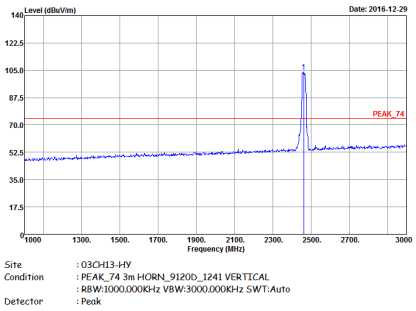
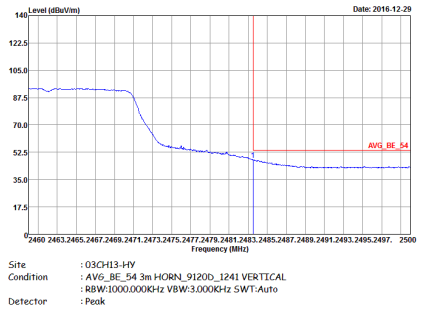
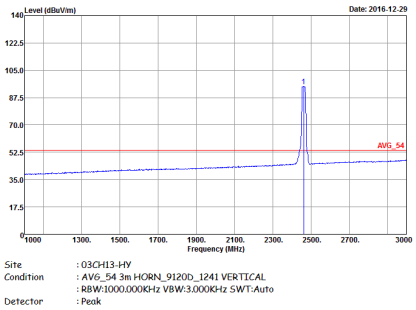
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1+2	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+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak

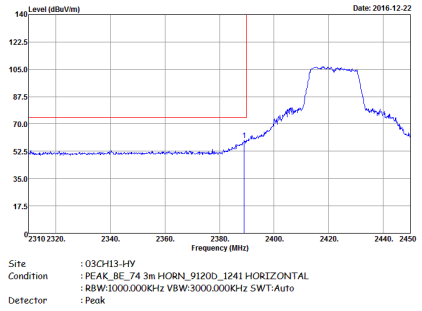
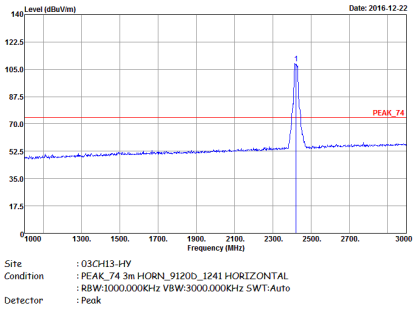
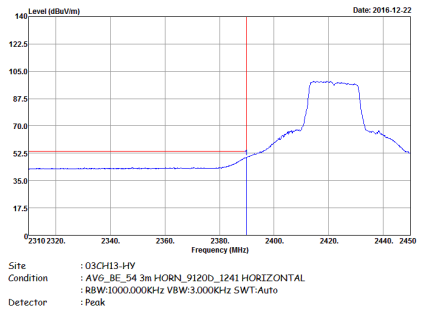
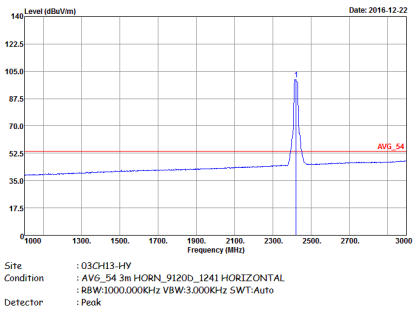
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

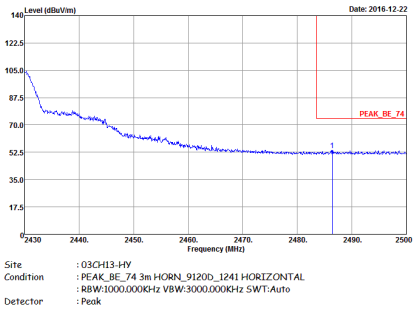
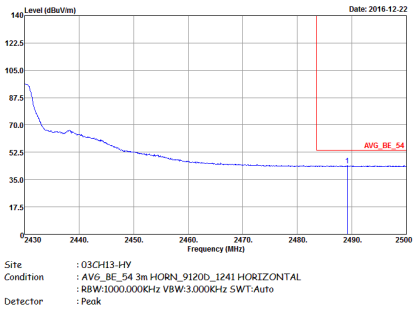
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak

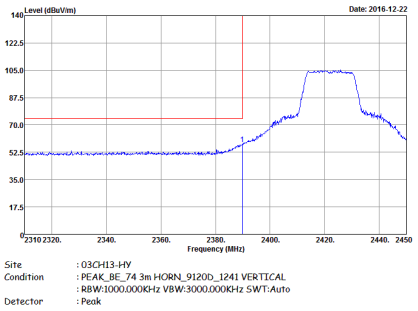
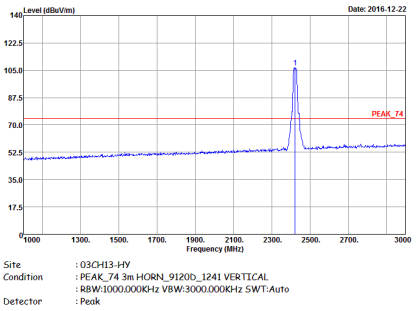
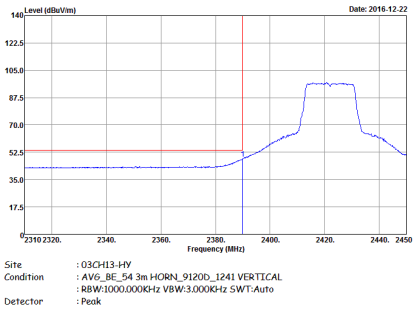
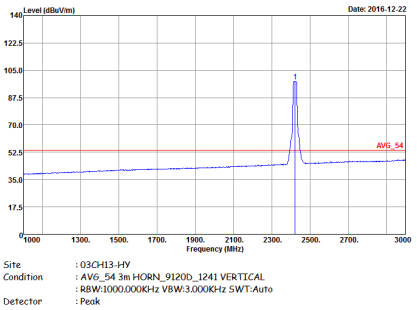
WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak

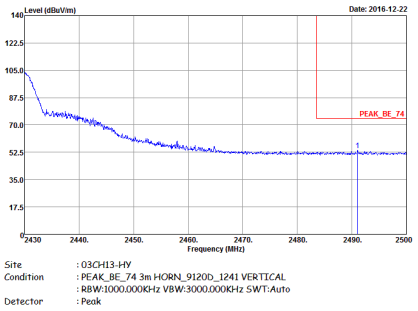
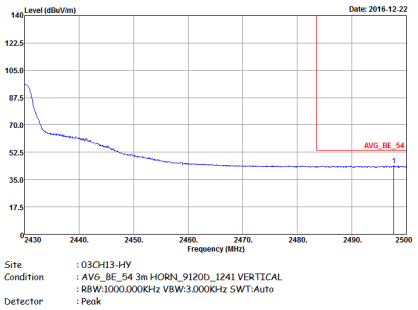
2.4GHz 2400~2483.5MHz

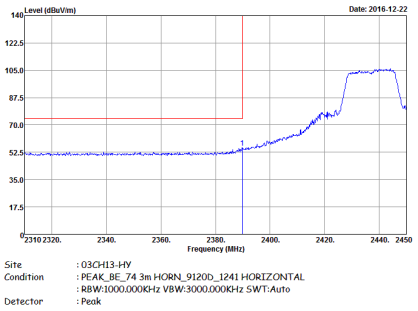
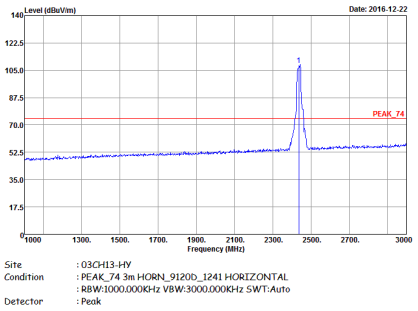
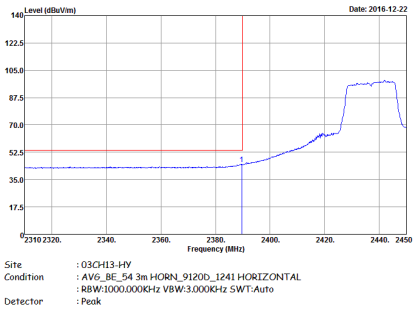
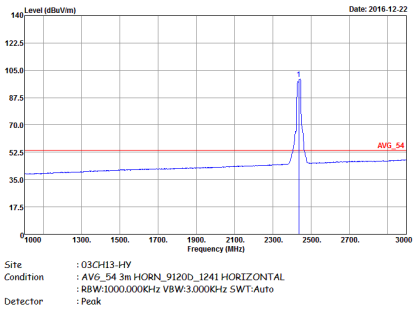
WIFI 802.11n HT40 (Band Edge @ 3m)

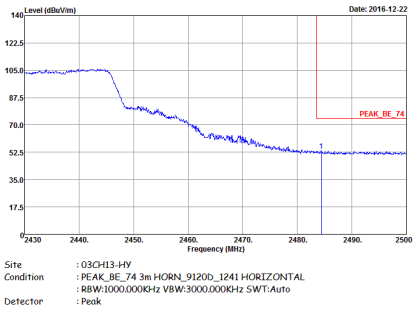
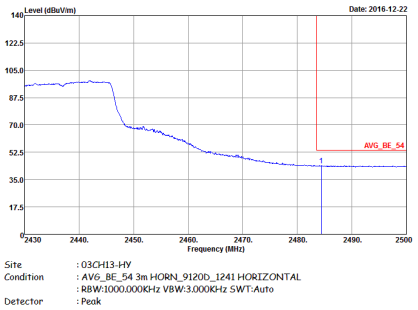
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1+2	Horizontal	Fundamental
Peak		
Avg.		

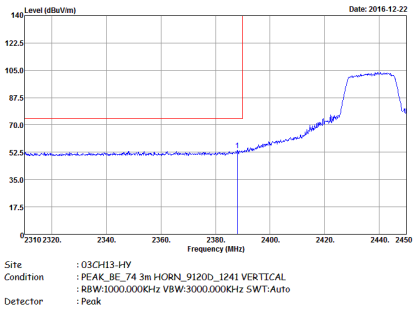
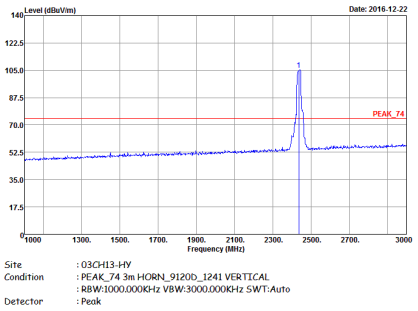
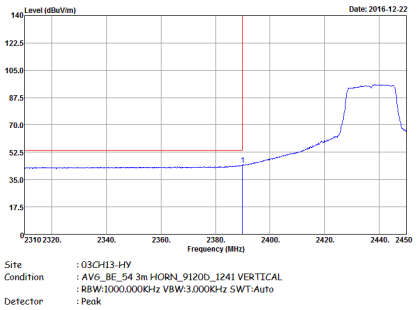
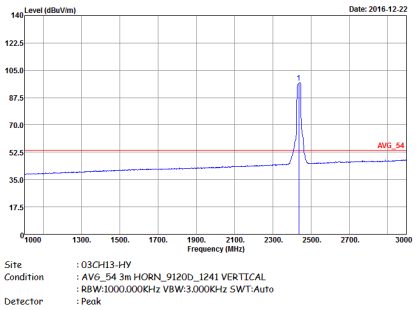
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1+2	Horizontal	Fundamental
Peak		Left Blank
Avg.		Left Blank

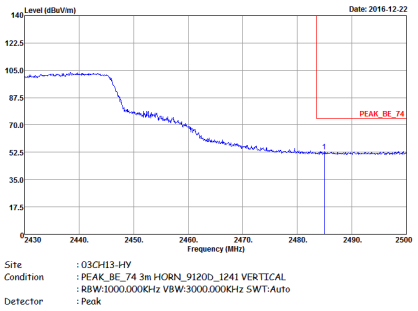
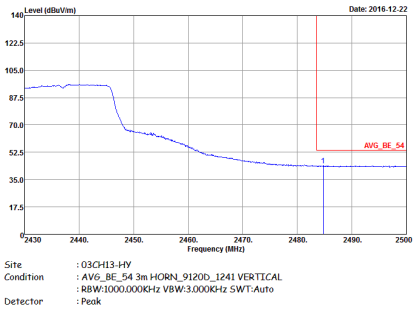
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak

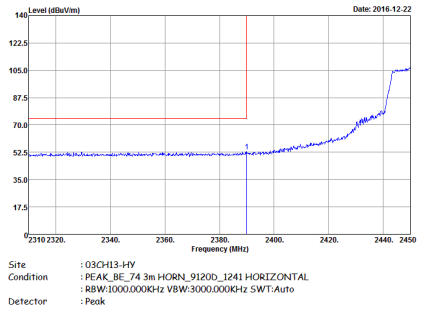
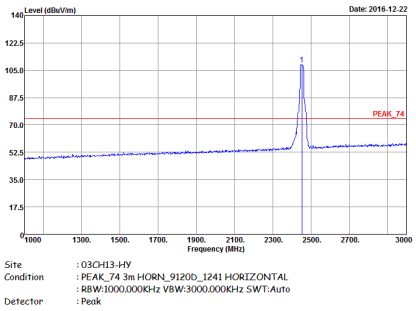
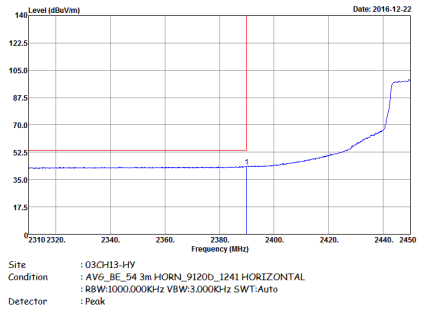
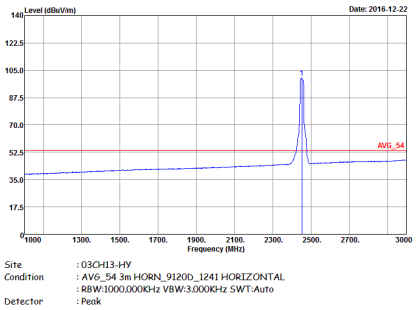
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1+2	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

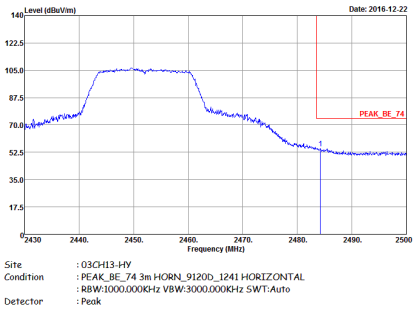
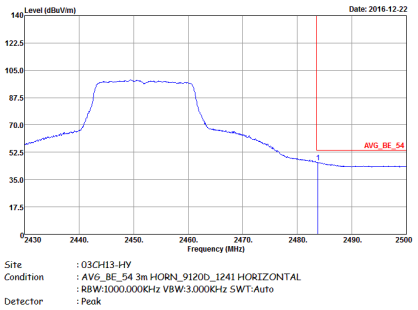
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak		
Avg.		

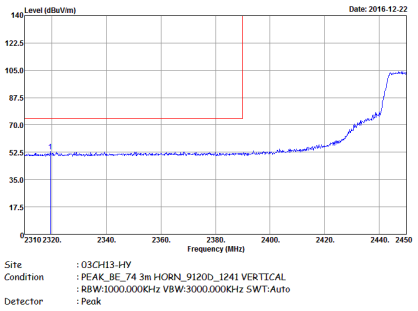
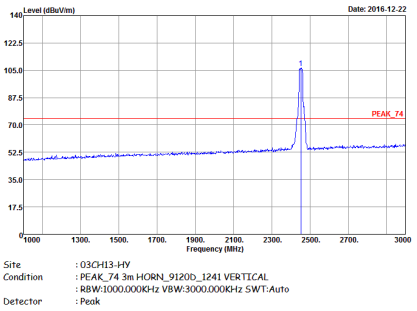
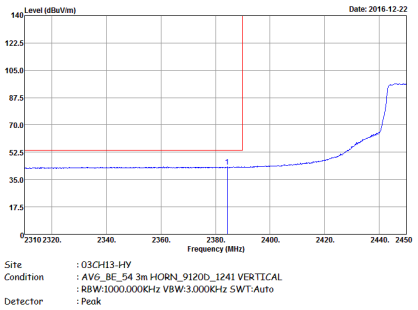
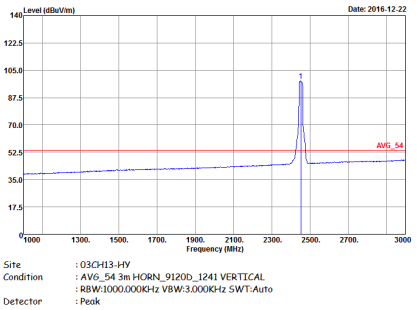
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

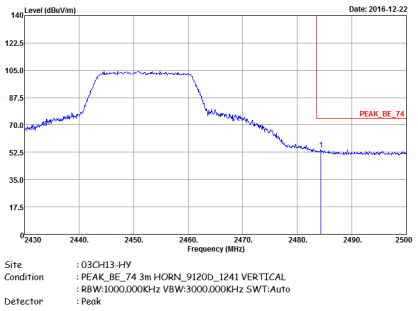
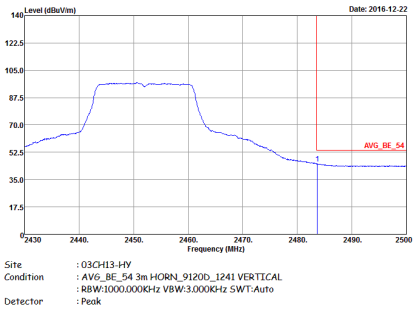
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1+2	Horizontal	Fundamental
Peak		
Avg.		

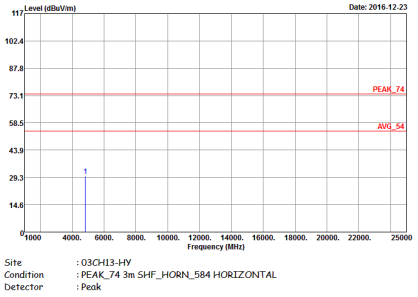
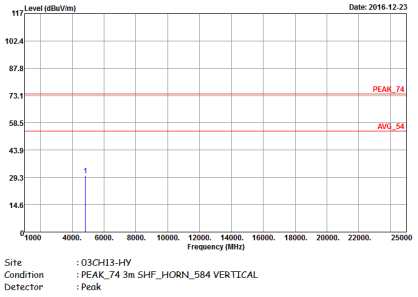
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1+2	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

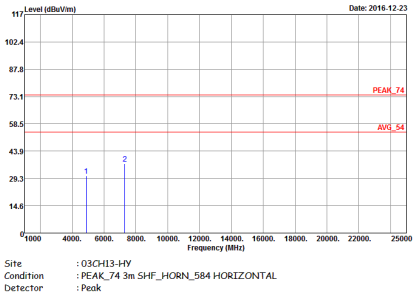
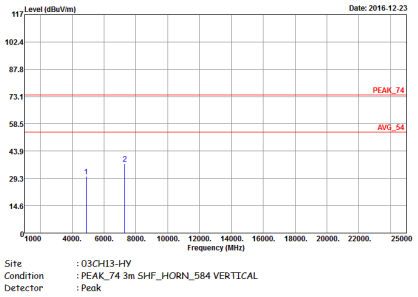
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak	 Site : 03CH13-HY Condition : AVG_54 3m HORN_9120D_1241 VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak

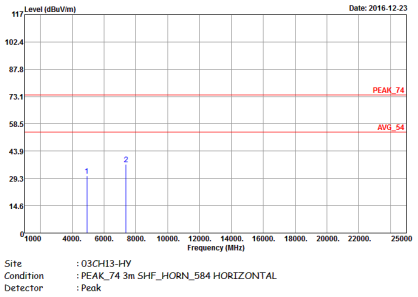
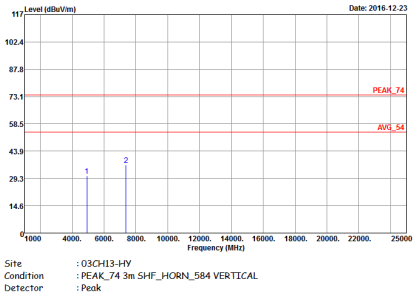
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1+2	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

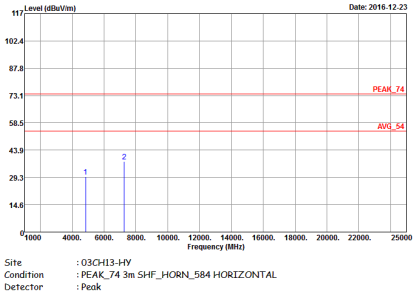
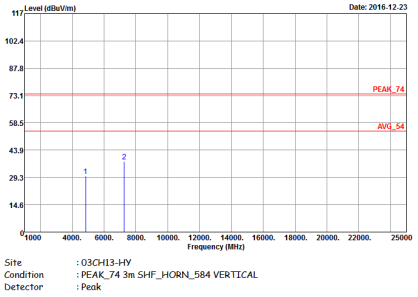
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.		

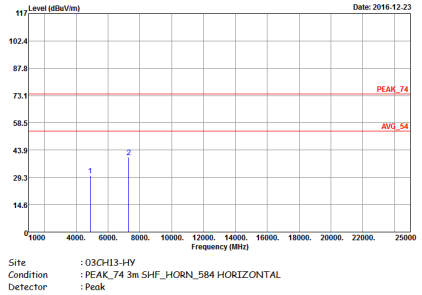
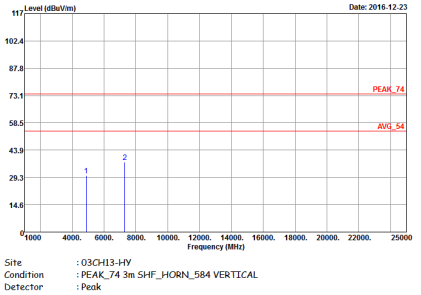
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.		

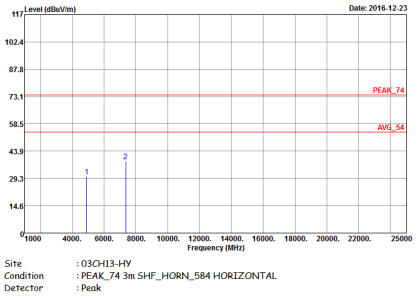
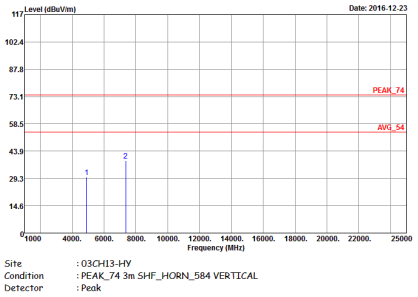
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

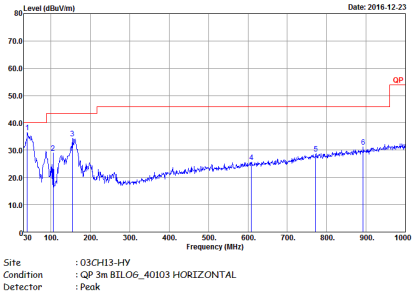
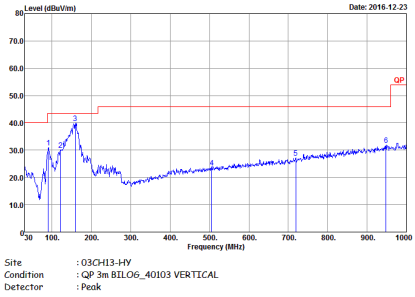
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH03 2422MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH09 2452MHz	
1+2	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

2.4GHz WIFI 802.11g(n20) (LF)

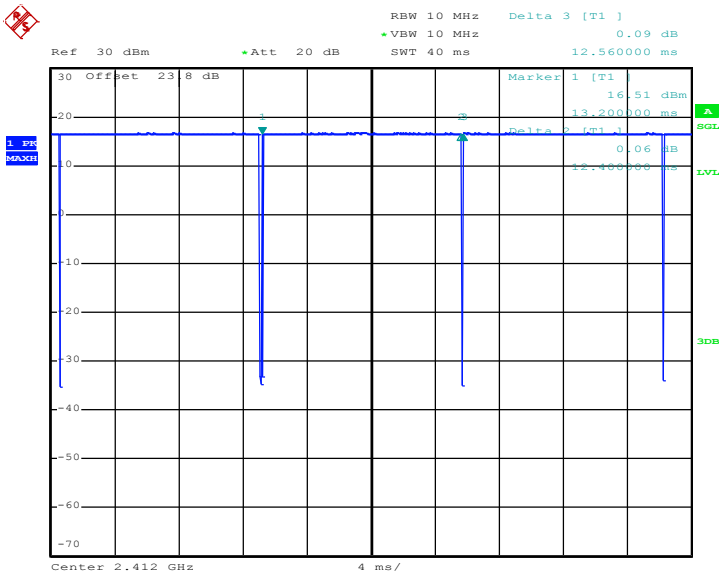
WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11g(n20) LF	
1+2	Horizontal	Vertical
QP / Peak		

Appendix D. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
1	802.11b	98.726	-	-	10Hz
1	802.11g	94.495	2060	0.49	1kHz
1	2.4GHz 802.11n HT20	95.05	1920	0.52	1kHz
1	2.4GHz 802.11n HT40	97.938	950	1.05	3kHz
2	802.11b	98.722	-	-	10Hz
2	802.11g	93.578	2040	0.49	1kHz
2	2.4GHz 802.11n HT20	94.118	1920	0.52	1kHz
2	2.4GHz 802.11n HT40	95.918	940	1.06	3kHz
1+2	2.4GHz 802.11n HT20 for Ant. 1	90	990	1.01	3kHz
1+2	2.4GHz 802.11n HT40 for Ant. 1	94.615	492	2.03	3kHz
1+2	2.4GHz 802.11n HT20 for Ant. 2	89.908	980	1.02	3kHz
1+2	2.4GHz 802.11n HT40 for Ant. 2	96.124	496	2.02	3kHz

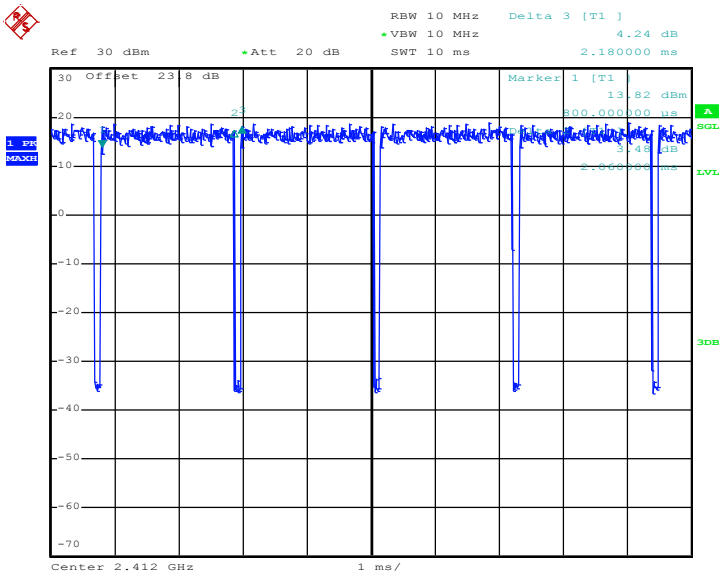
<Ant. 1>

802.11b



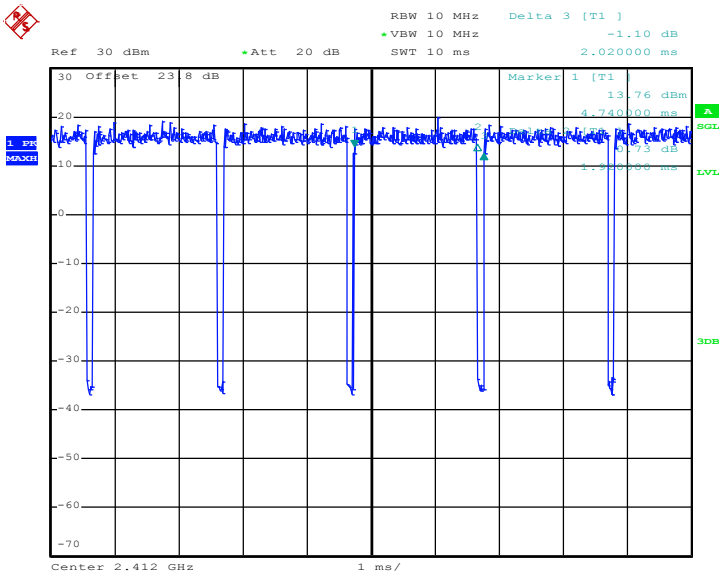
Date: 8.DEC.2016 21:25:15

802.11g



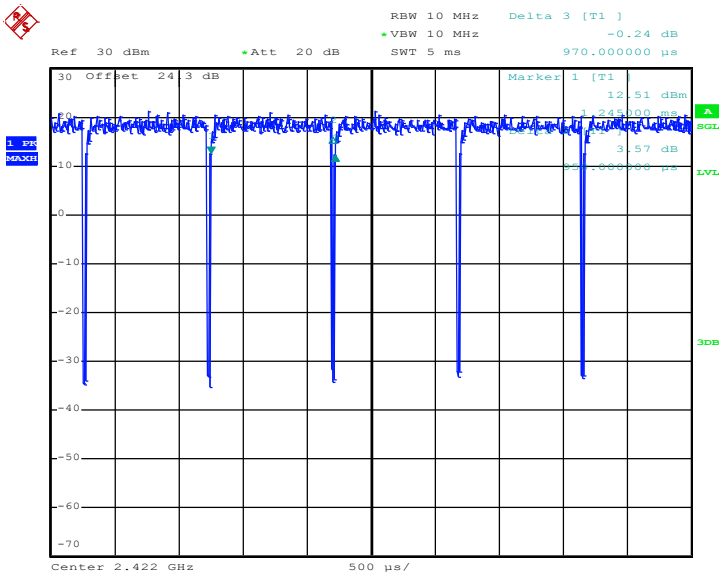
Date: 8.DEC.2016 21:41:38

802.11n HT20



Date: 8.DEC.2016 21:50:32

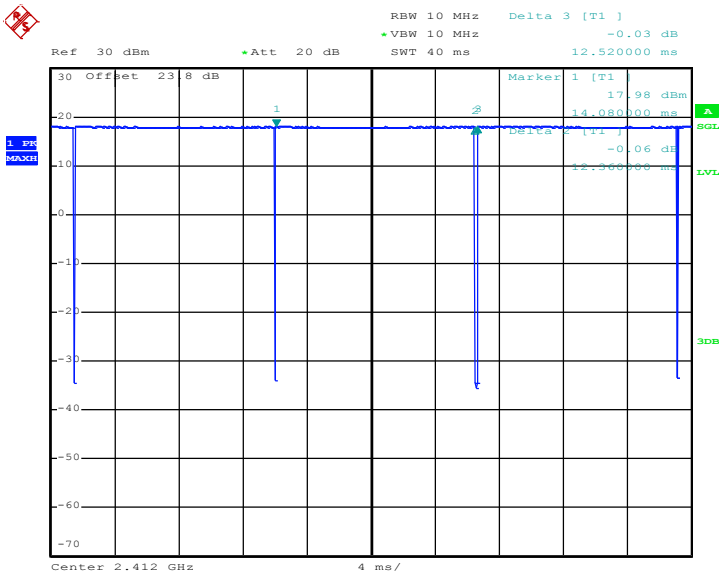
802.11n HT40



Date: 14.DEC.2016 02:31:16

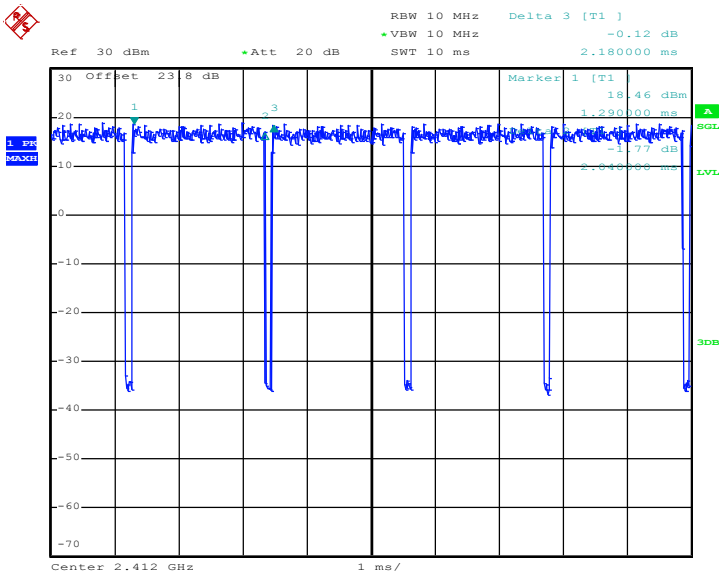
<Ant. 2>

802.11b



Date: 8.DEC.2016 21:30:44

802.11g



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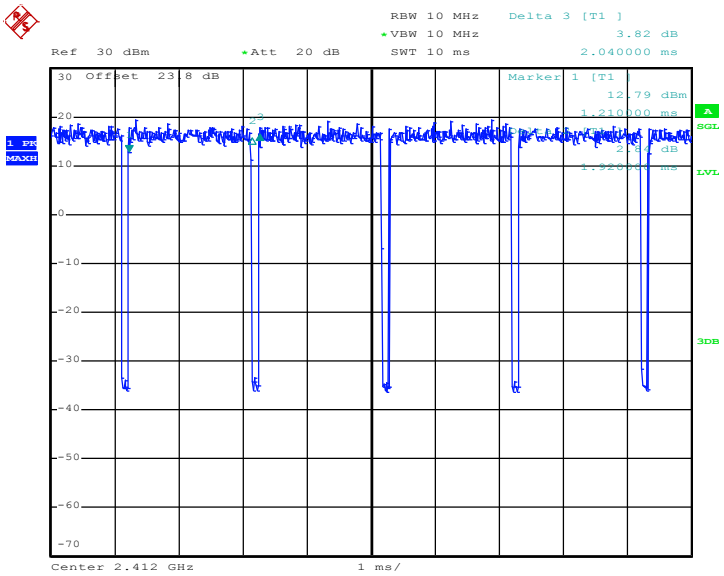
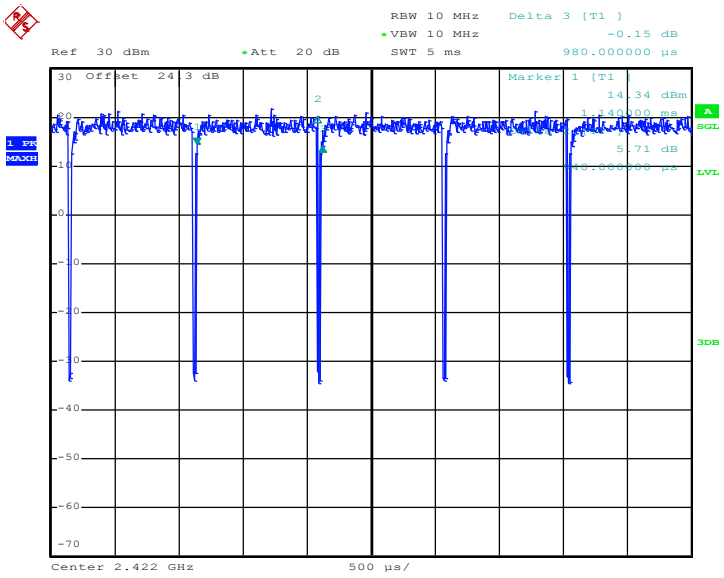
802.11n HT20



Date: 8.DEC.2016 21:54:52

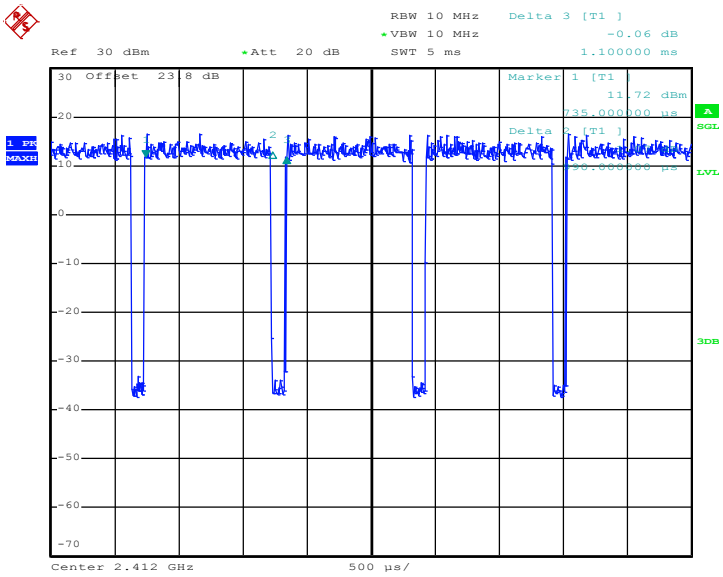
802.11n HT40



Date: 14.DEC.2016 02:32:11

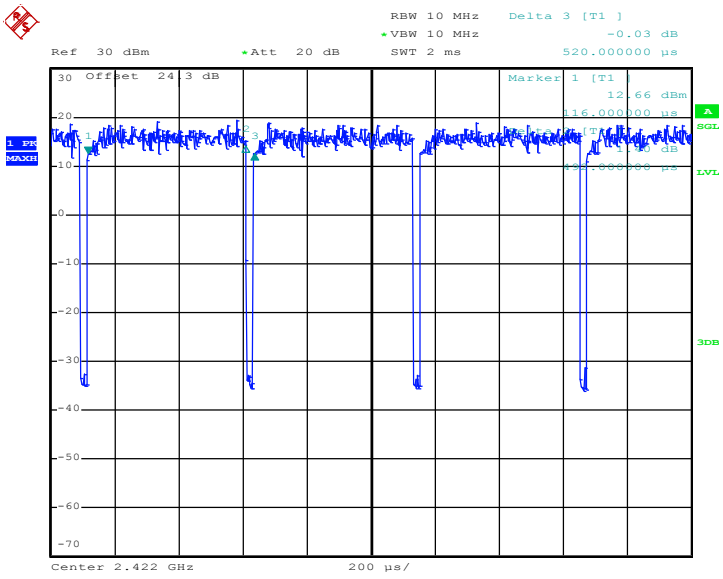
<MIMO Ant. 1>

802.11n HT20



Date: 8.DEC.2016 21:58:26

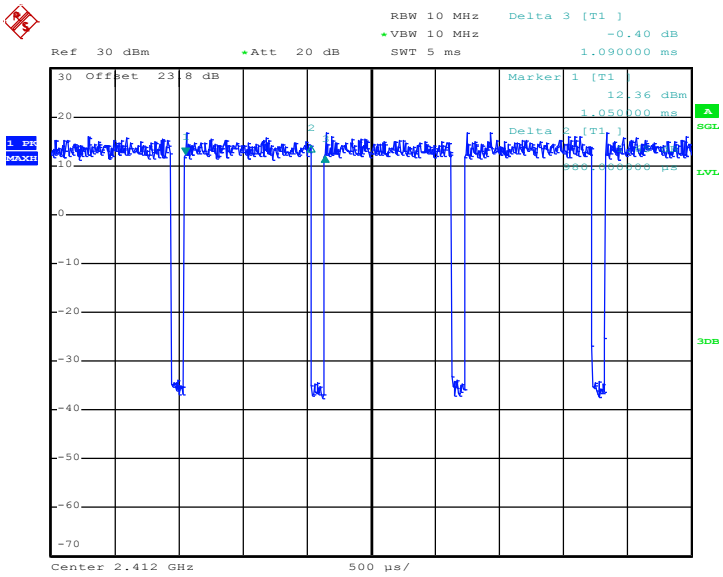
802.11n HT40



Date: 14.DEC.2016 02:33:56

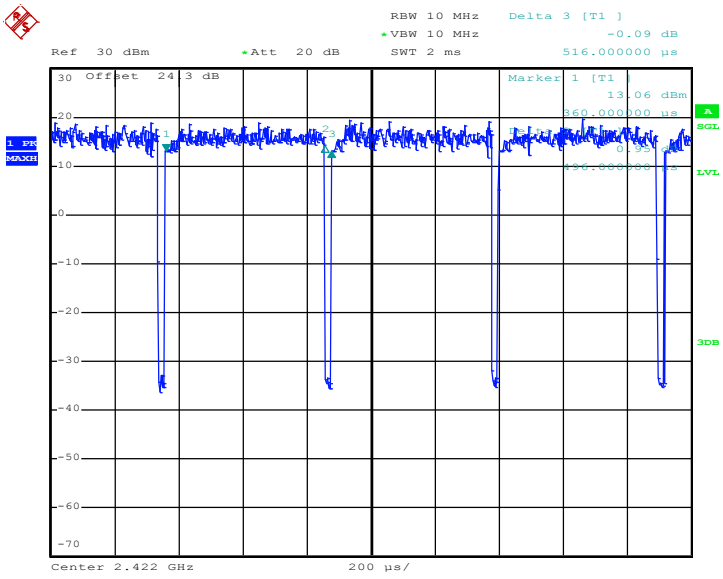
<MIMO Ant. 2>

802.11n HT20



Date: 8.DEC.2016 21:58:55

802.11n HT40



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