

FCC RF Test Report

APPLICANT : mixi, Inc.
EQUIPMENT : Mobile Phone
BRAND NAME : RATEL
MODEL NAME : CELL
MODEL NUMBER : R1020
FCC ID : 2AN7THST-101-1
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Dec. 08, 2017 and testing was completed on Mar. 14, 2018. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The 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.

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FCC ID: 2AN7THST-101-1

Page Number : 1 of 50

Report Issued Date : Mar. 20, 2018

Report Version : Rev. 01

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR7D0829C	Rev. 01	Initial issue of report	Mar. 20, 2018



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.1	-	99% Bandwidth	-	Pass	-
3.2	15.247(b)	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	Conducted Band Edges	$\leq 20\text{dBc}$	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 1.53 dB at 2389.520 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 20.50 dB at 13.558 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

mixi, Inc.

Sumitomo Fudosan Shibuya First Tower 7F, 1-2-20 Higashi, Shibuya-ku, Tokyo, 150-0011, Japan

1.2 Manufacturer

Wistron Corporation

21F, No. 88, Sec. 1, Hsin Tai Wu Rd., Hsichih Dist, New Taipei City 221, Taiwan R.O.C.

1.3 Product Feature of Equipment Under Test

GSM/WCDMA/LTE, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n/ac, NFC, and GNSS.

Product Specification subjective to this standard	
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna GPS / Glonass: PIFA Antenna NFC: Coil Antenna

1.4 Modification of EUT

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

1.5 Testing Location

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

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st 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.	
	03CH10-HY	

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

1.6 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04
- ♦ 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

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

2.1 Carrier Frequency and Channel

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

2.2 Test Mode

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

Single Antenna

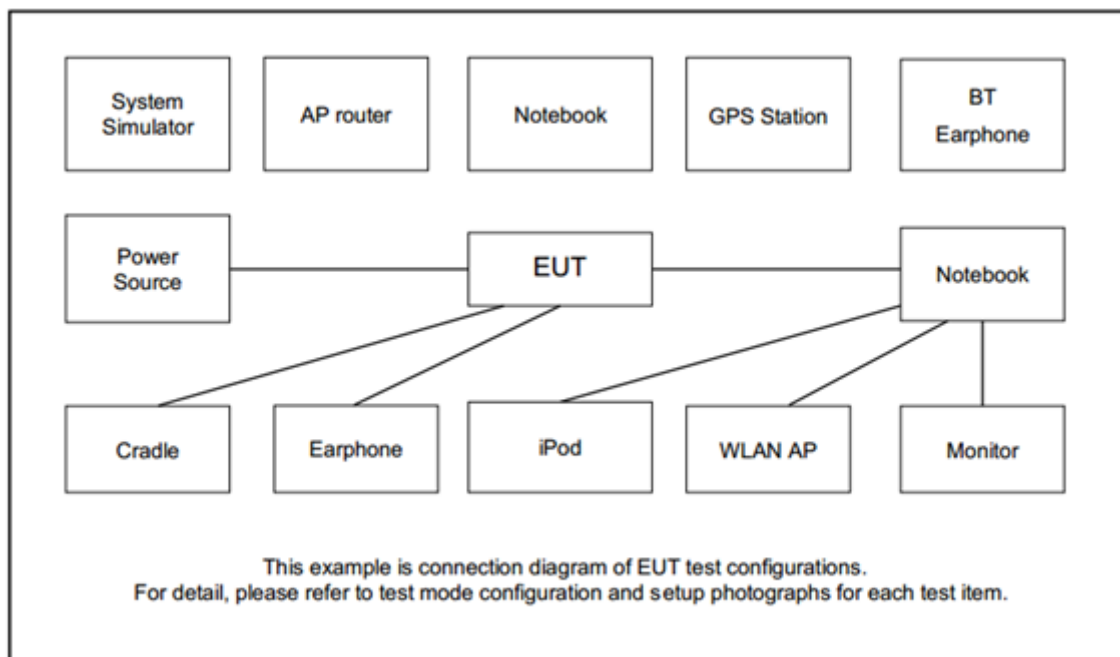
Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0

MIMO Antenna

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

Test Cases	
AC Conducted Emission	Mode 1 :GSM850 Idle + WLAN (2.4GHz) Link + USB cable Type C to Type C (EUT charging from Adapter) + Bluetooth Link + NFC on

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A



2.5 EUT Operation Test Setup

The RF test items, utility “QRCT” was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

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

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

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

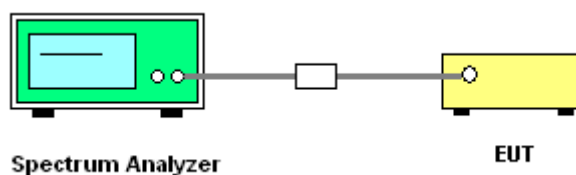
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v04.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1MHz and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

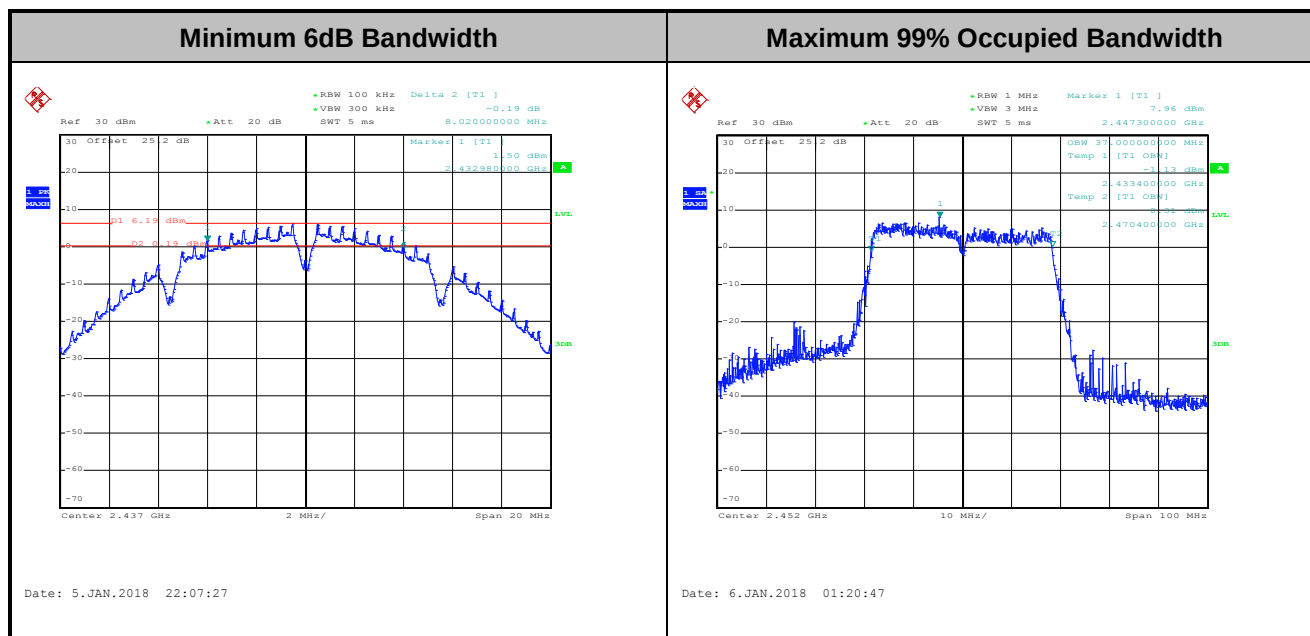
3.1.4 Test Setup





3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.



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

3.2 Output Power Measurement

3.2.1 Limit of Output Power

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

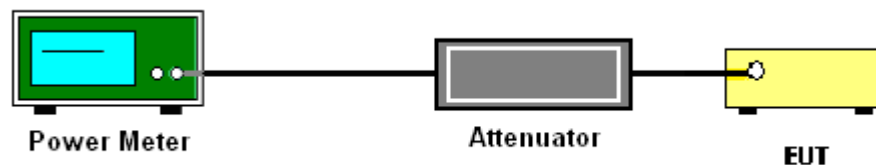
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04 section 9.1.3 PKPM1 Peak power meter method.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.
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 v04
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.
7. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

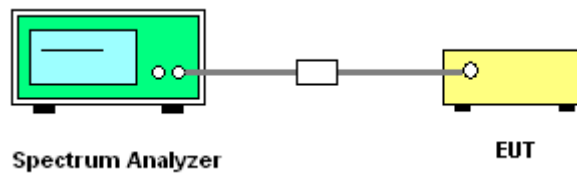
If measurements performed using method (2) plus $10 \log(N)$ exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

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)

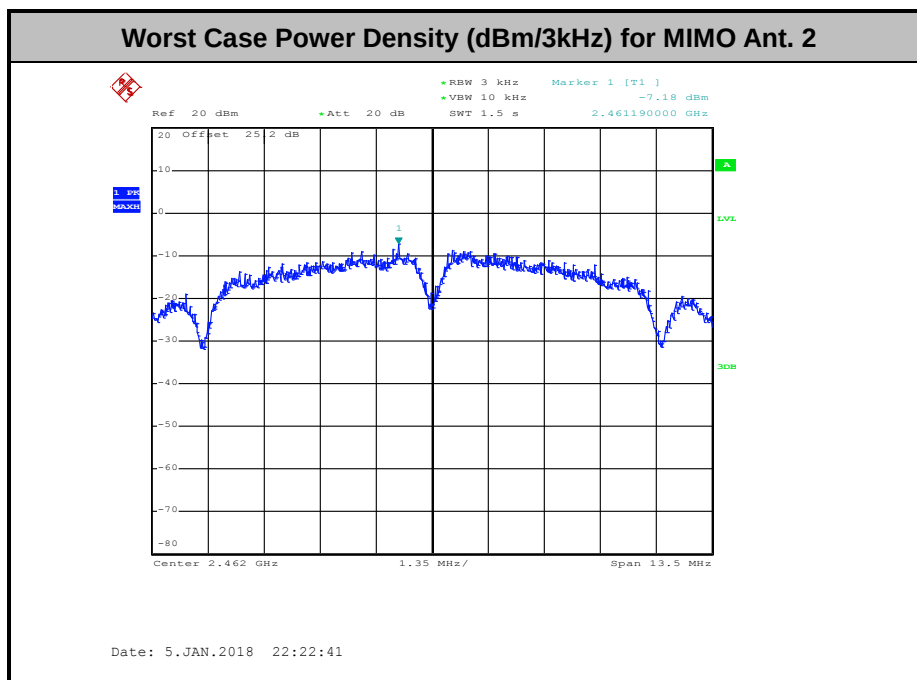
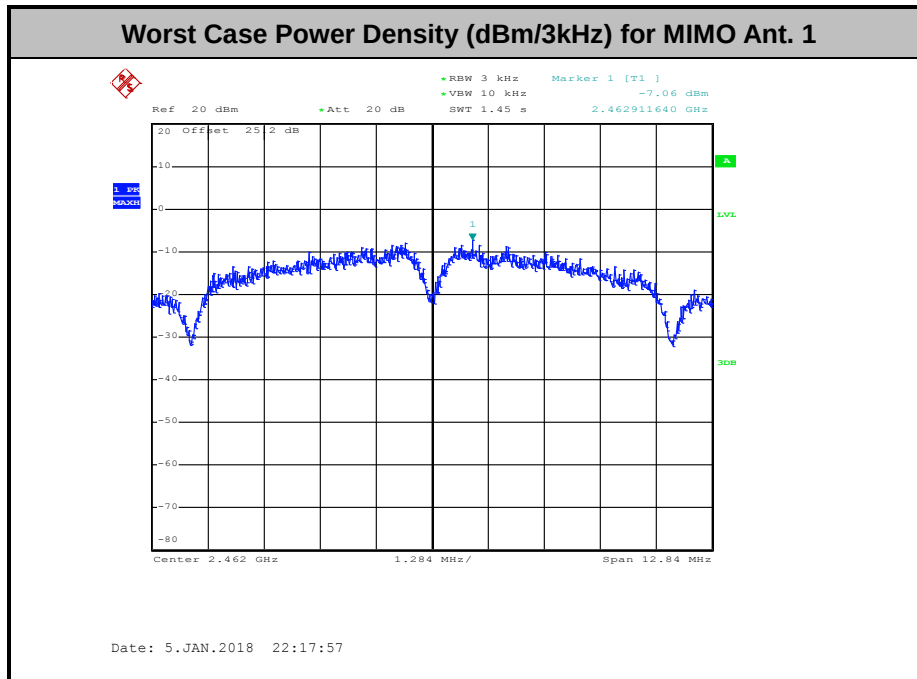
3.3.4 Test Setup





3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

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

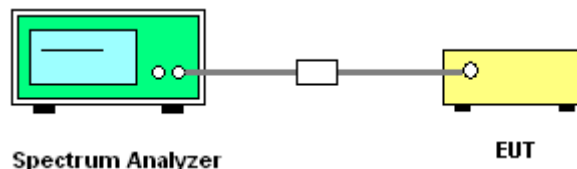
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup



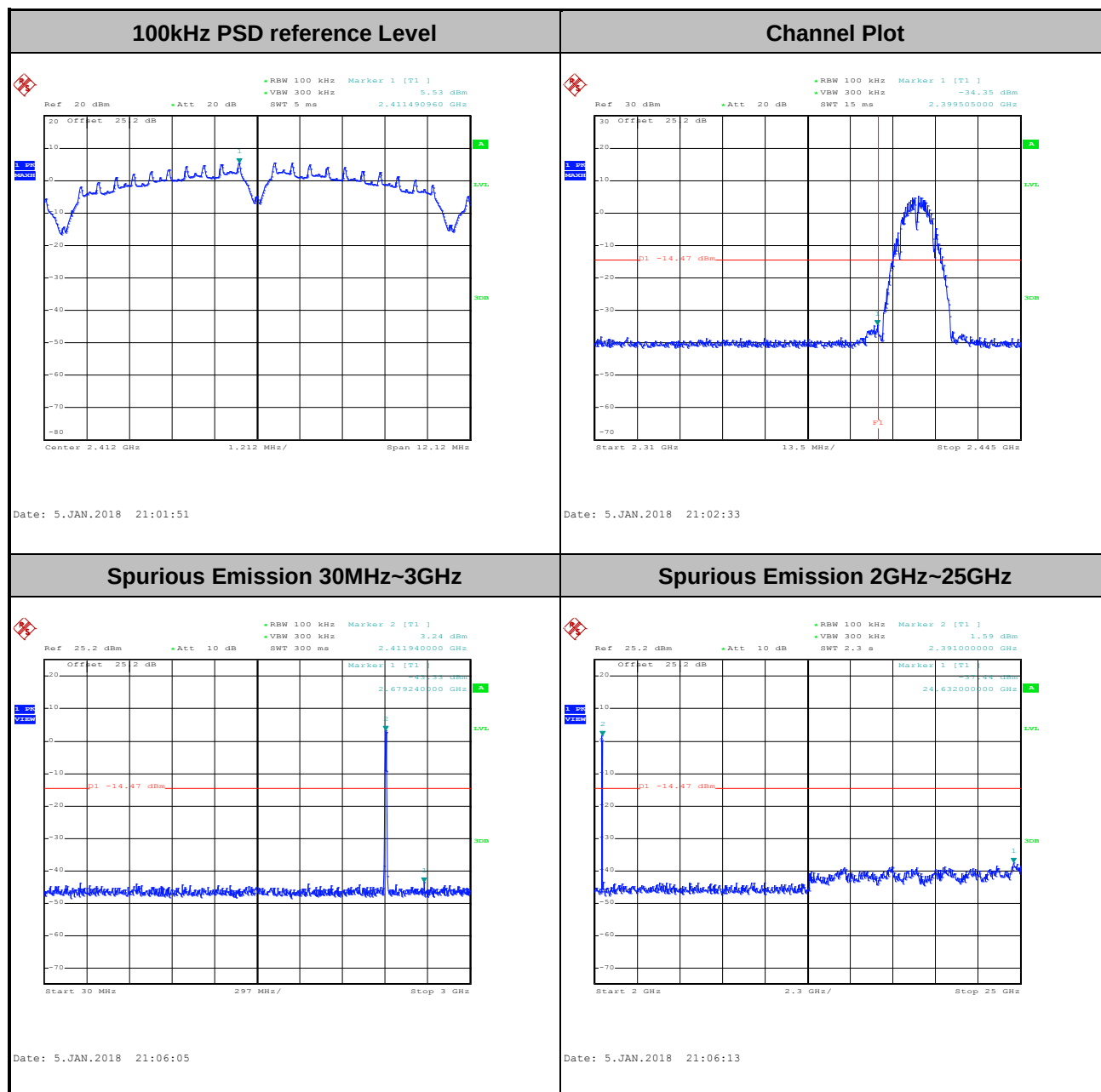


3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Engineer :	Kai Liao and Reece Lin	Temperature :	21~25°C
		Relative Humidity :	51~54%

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

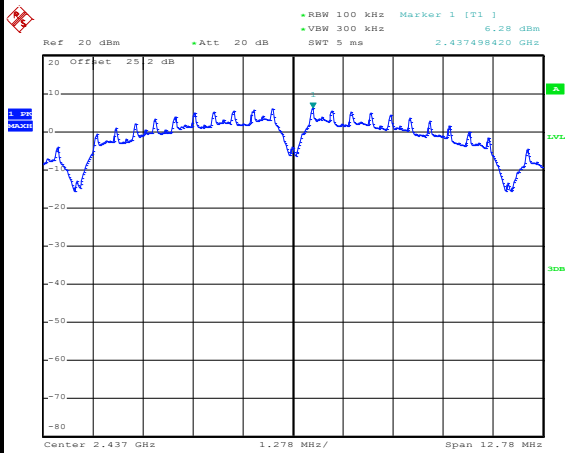
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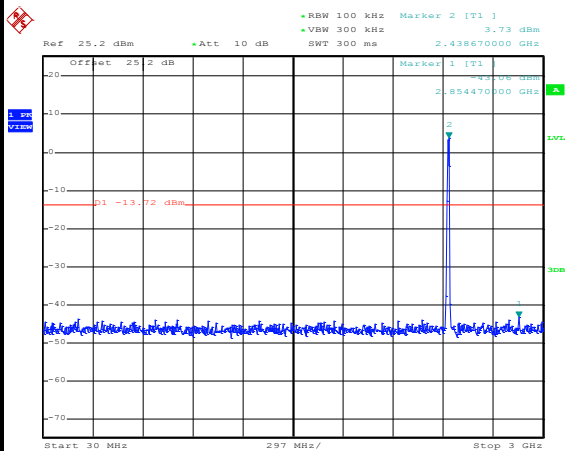
Test Mode :	802.11b	Test Channel :	06
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100kHz PSD reference Level

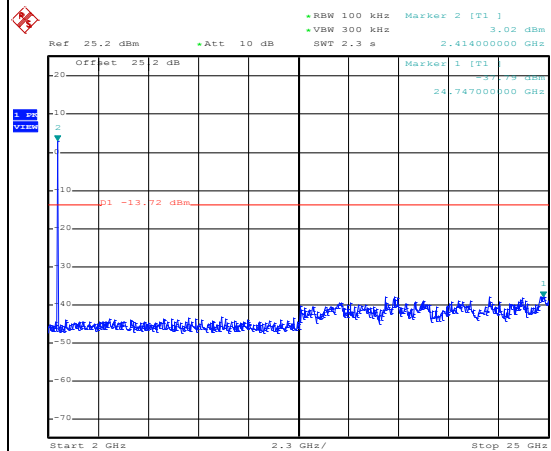


Channel Plot

Spurious Emission 30MHz~3GHz

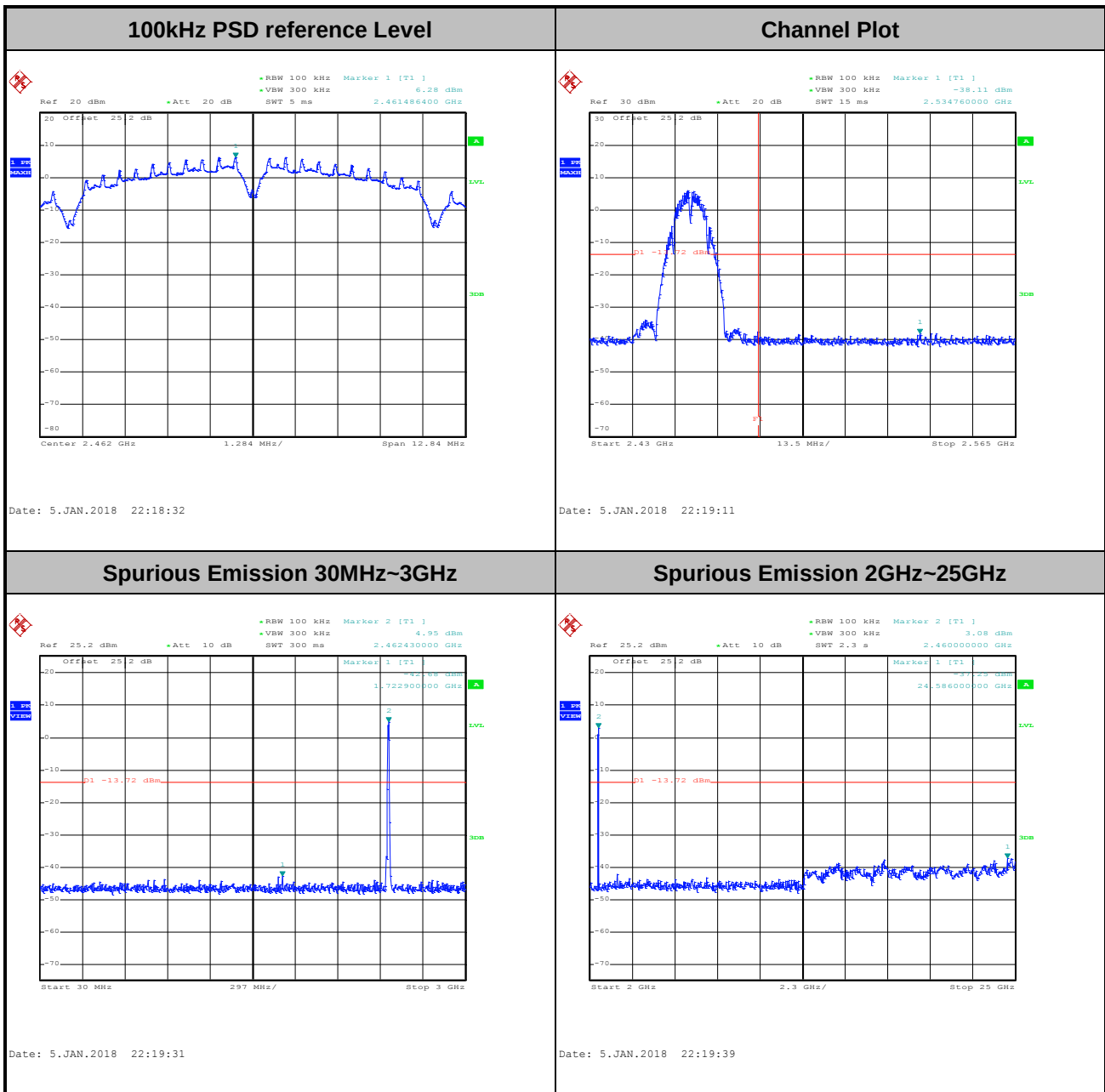


Spurious Emission 2GHz~25GHz





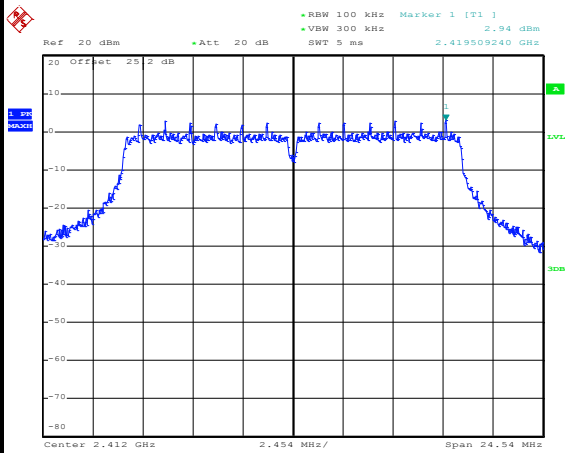
Test Mode :	802.11b	Test Channel :	11
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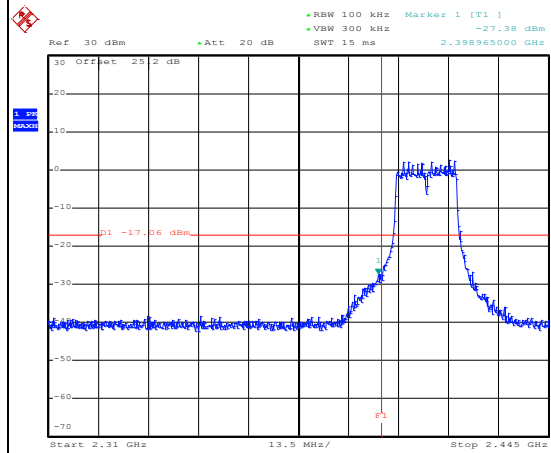
Test Mode :	802.11g	Test Channel :	01
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100kHz PSD reference Level



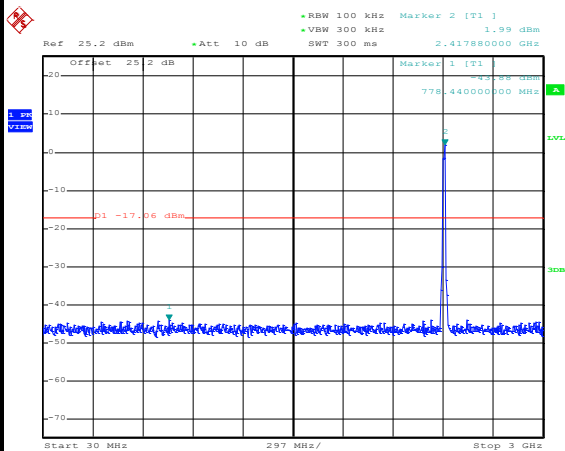
Date: 5.JAN.2018 22:56:45

Channel Plot



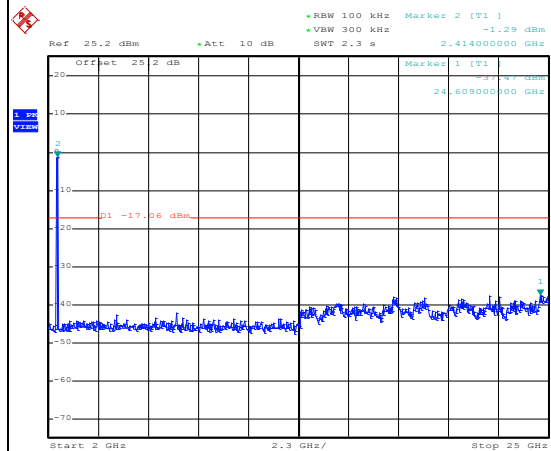
Date: 5.JAN.2018 22:57:43

Spurious Emission 30MHz~3GHz



Date: 5.JAN.2018 22:57:55

Spurious Emission 2GHz~25GHz

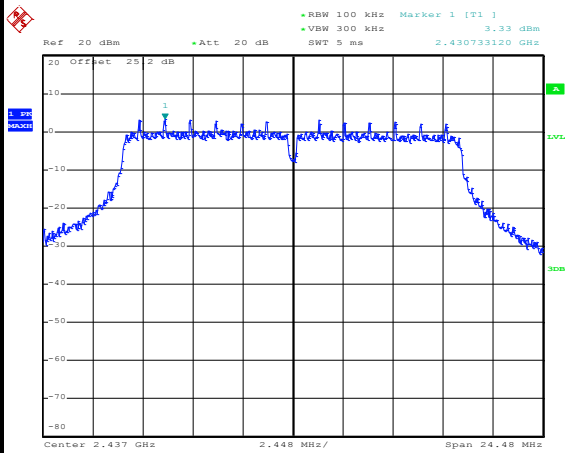


Date: 5.JAN.2018 22:58:04



Test Mode :	802.11g	Test Channel :	06
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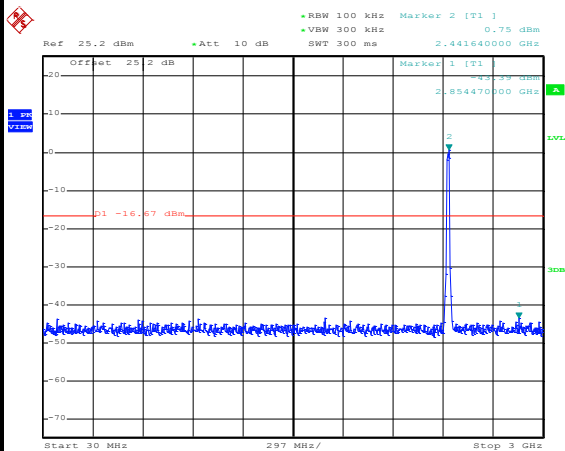
100kHz PSD reference Level



Date: 5.JAN.2018 23:24:07

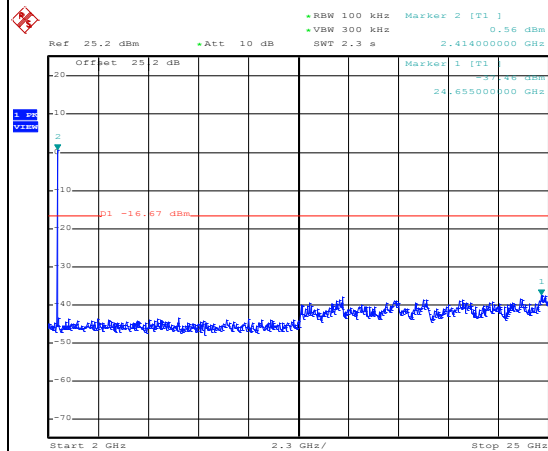
Channel Plot

Spurious Emission 30MHz~3GHz



Date: 5.JAN.2018 23:24:22

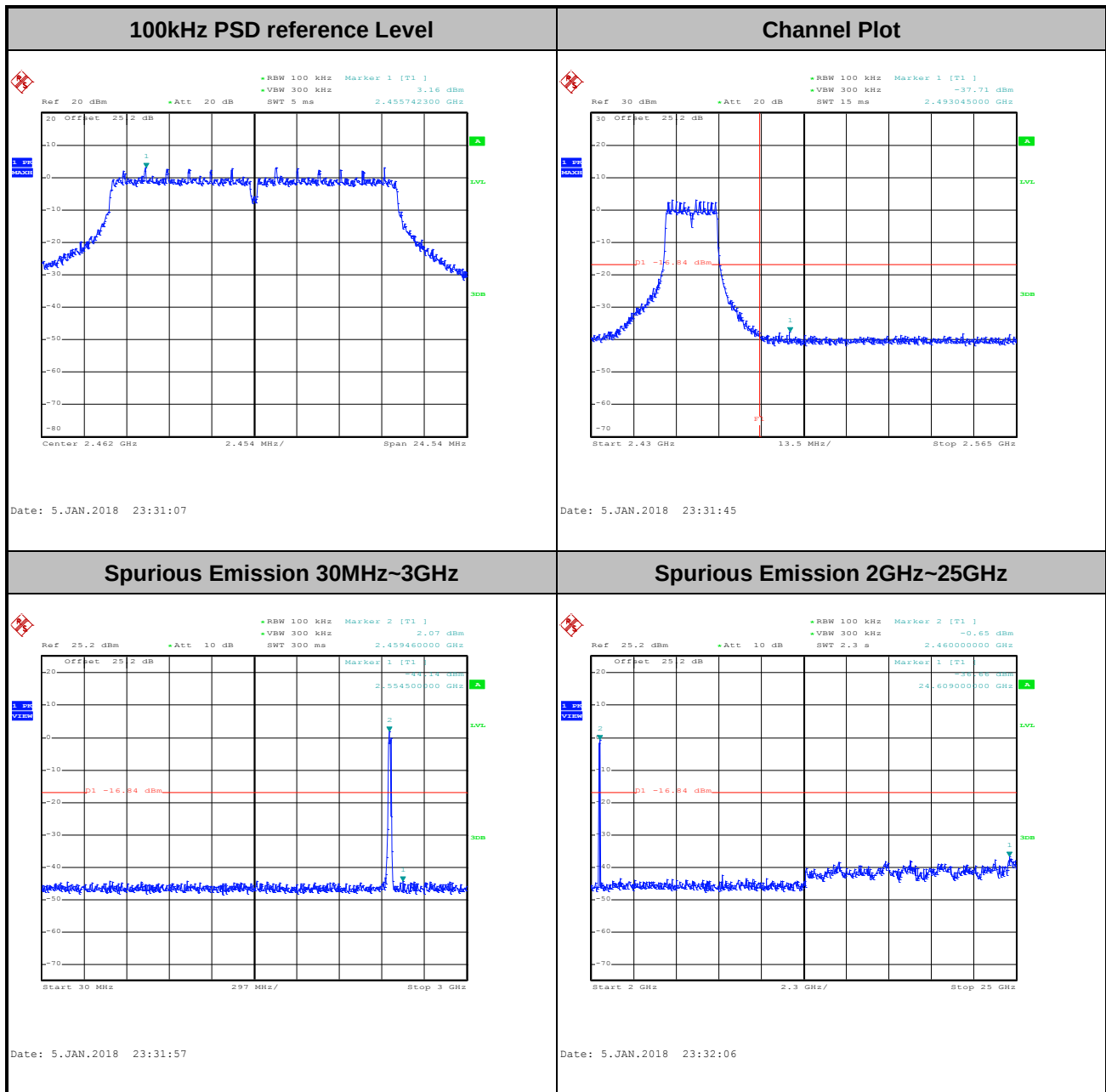
Spurious Emission 2GHz~25GHz

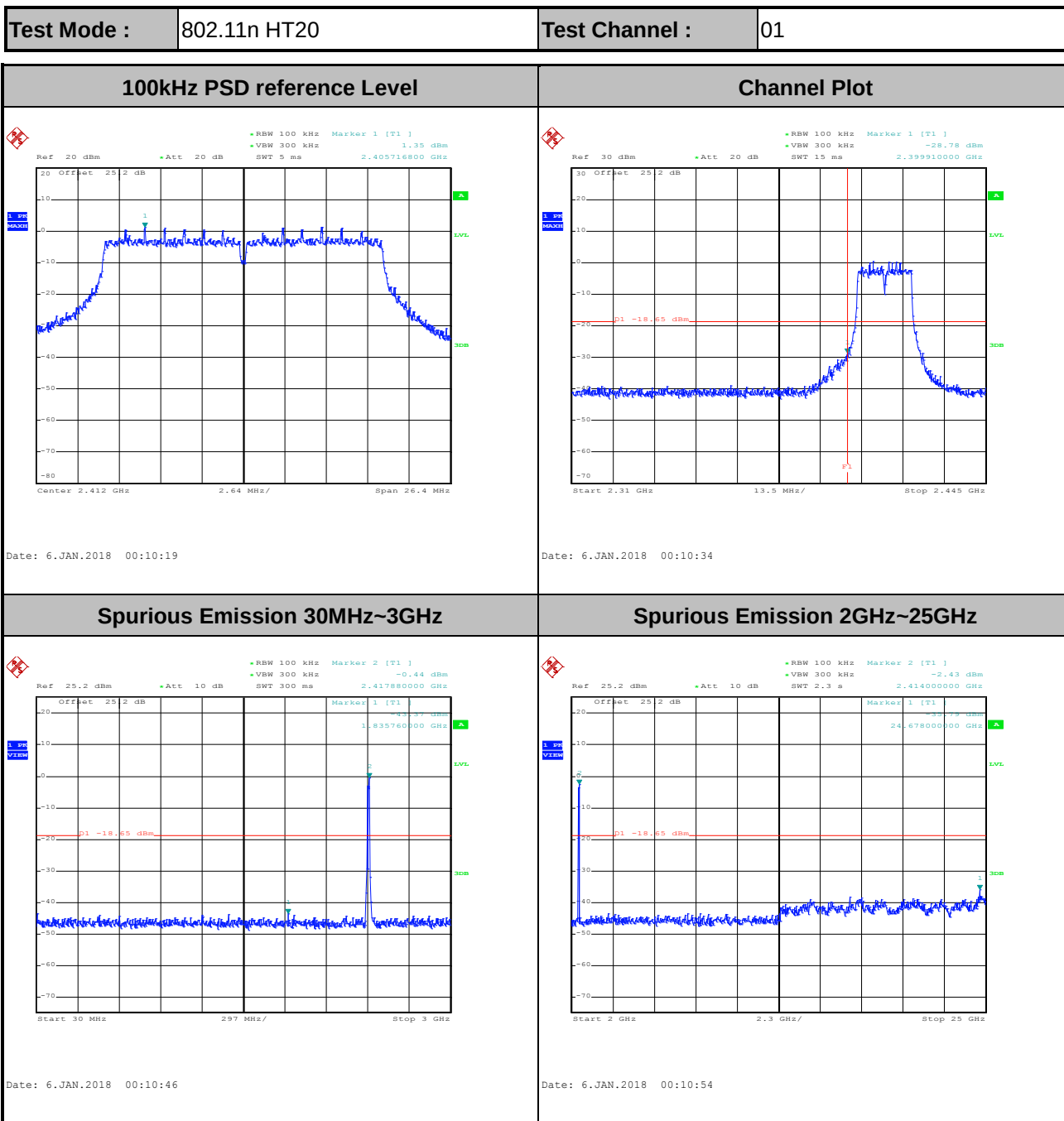


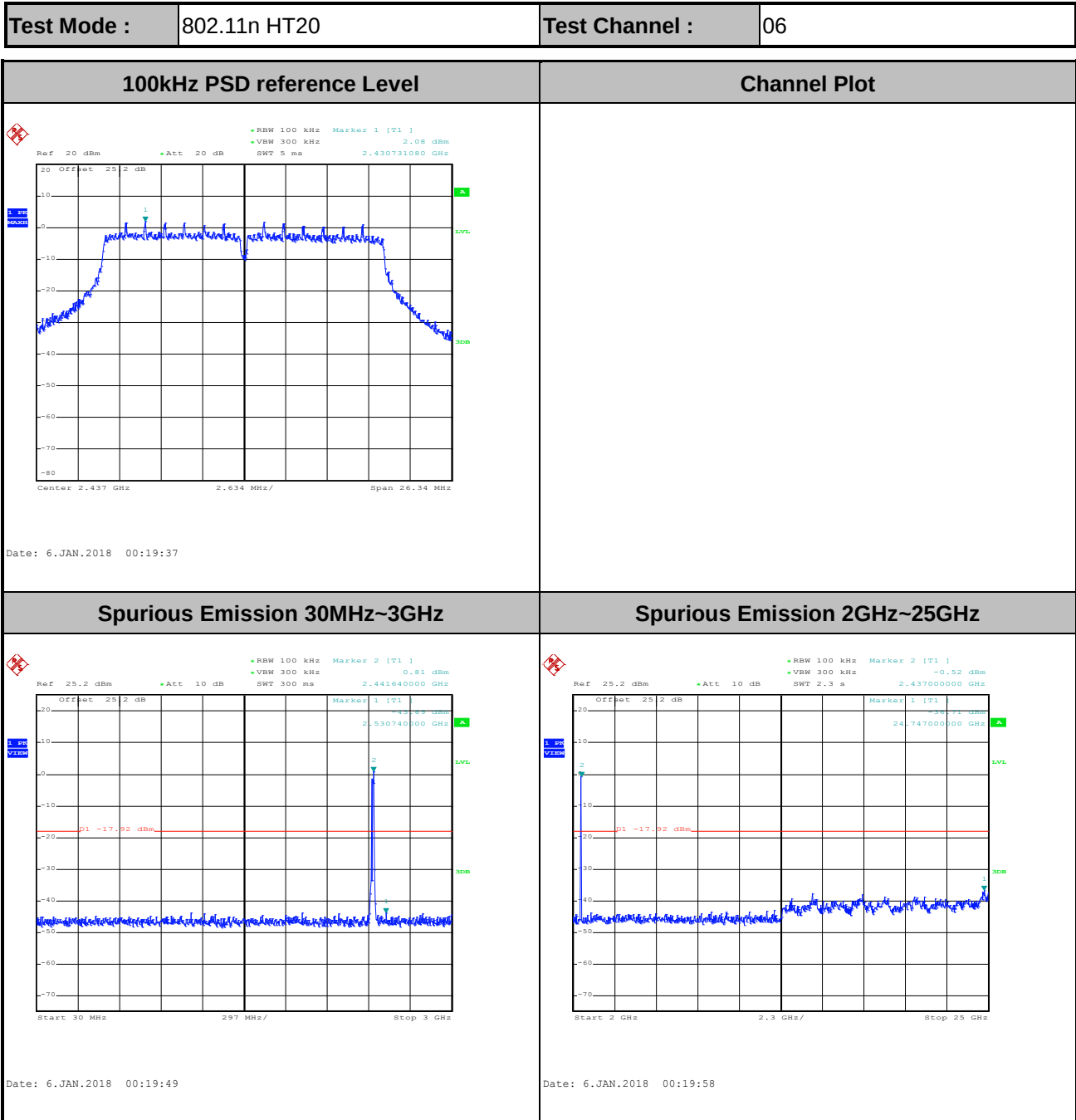
Date: 5.JAN.2018 23:24:30



Test Mode :	802.11g	Test Channel :	11
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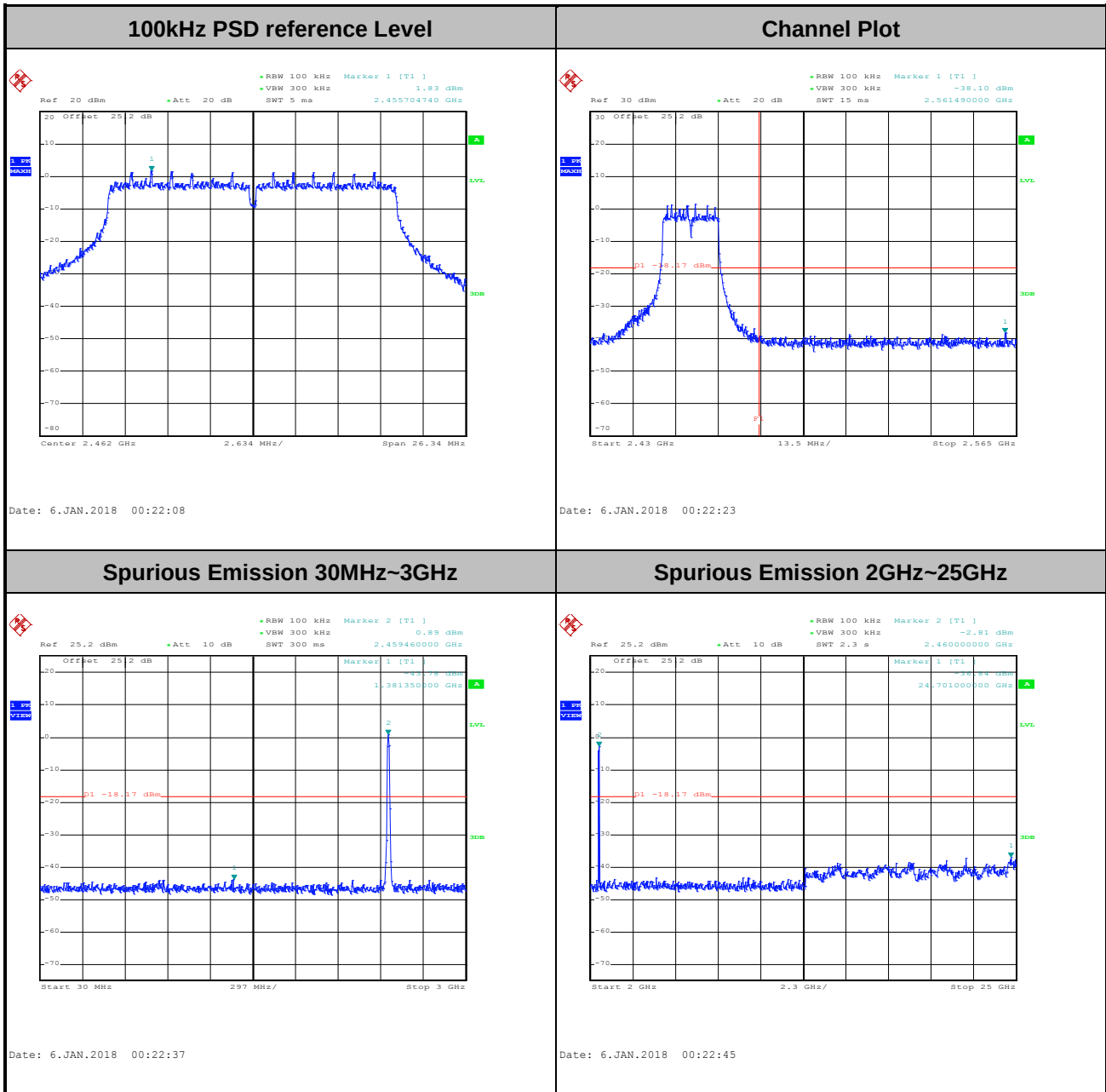








Test Mode :	802.11n HT20	Test Channel :	11
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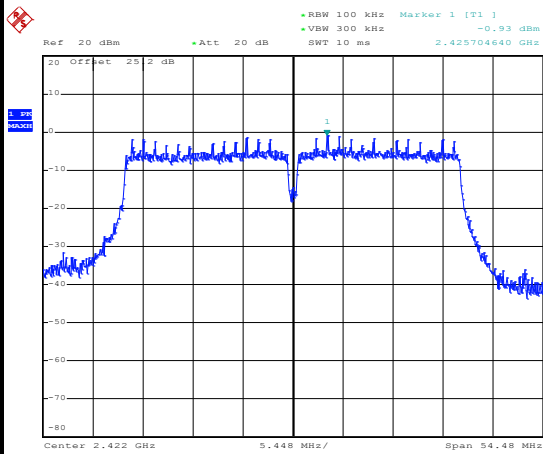




Test Mode : 802.11n HT40

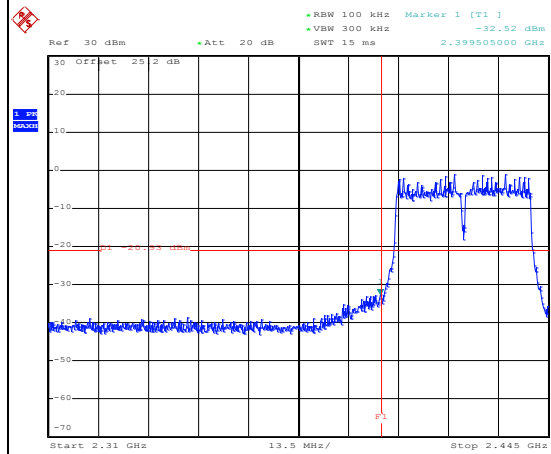
Test Channel : 03

100kHz PSD reference Level



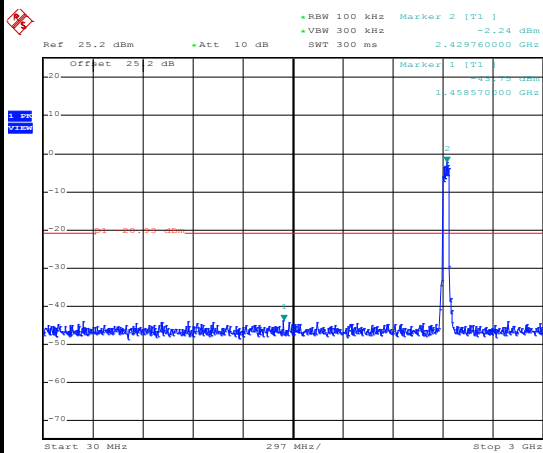
Date: 6.JAN.2018 00:57:42

Channel Plot



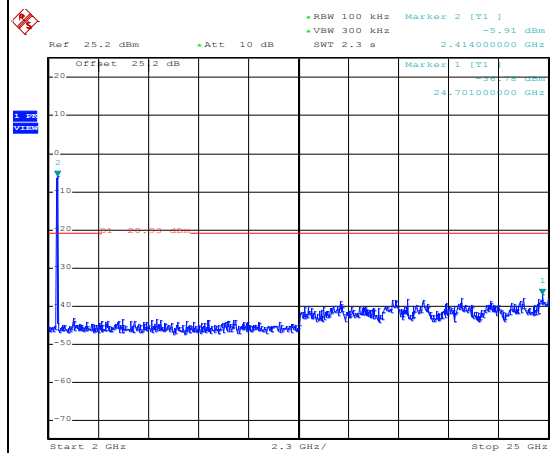
Date: 6.JAN.2018 00:57:55

Spurious Emission 30MHz~3GHz

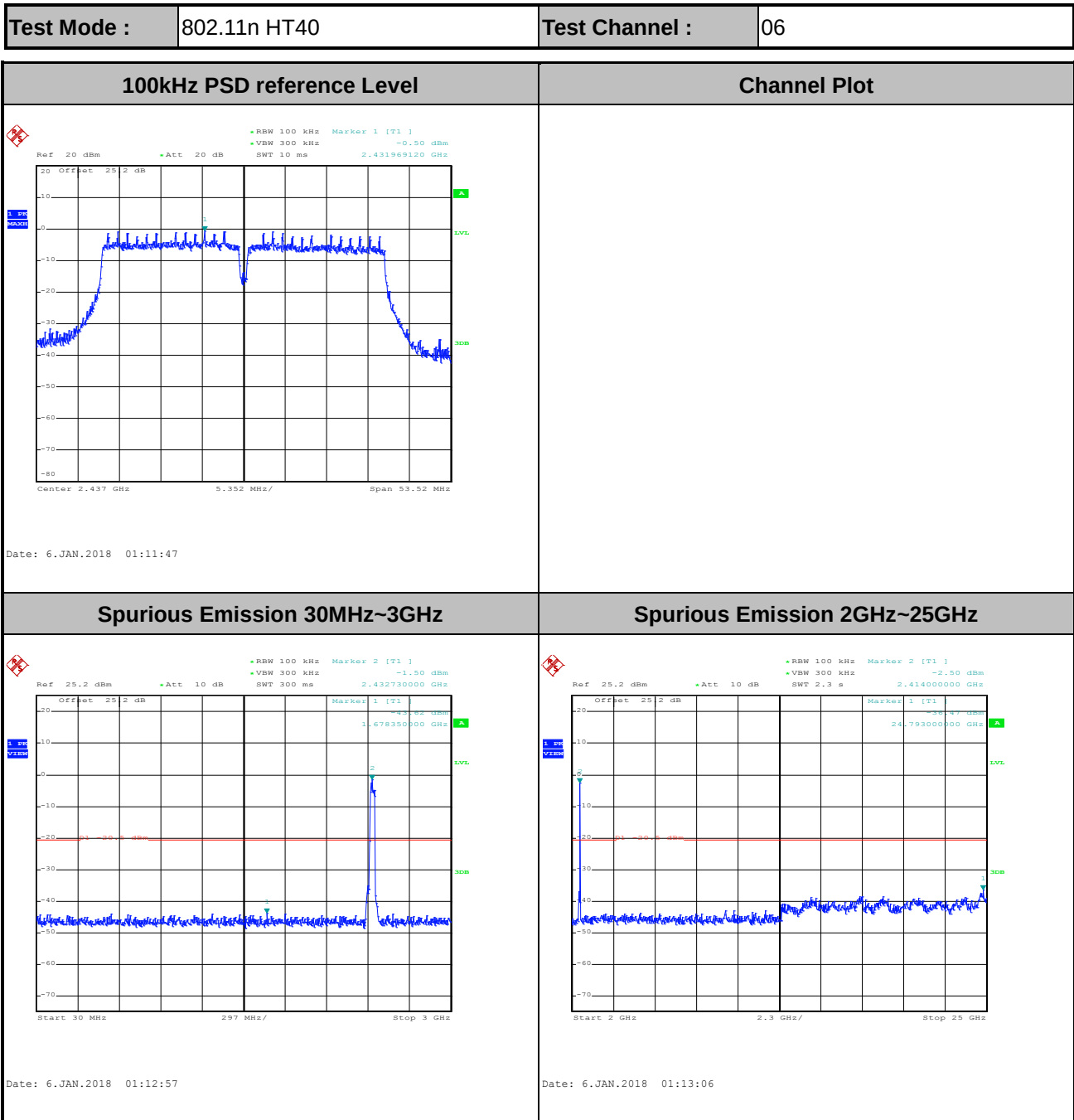


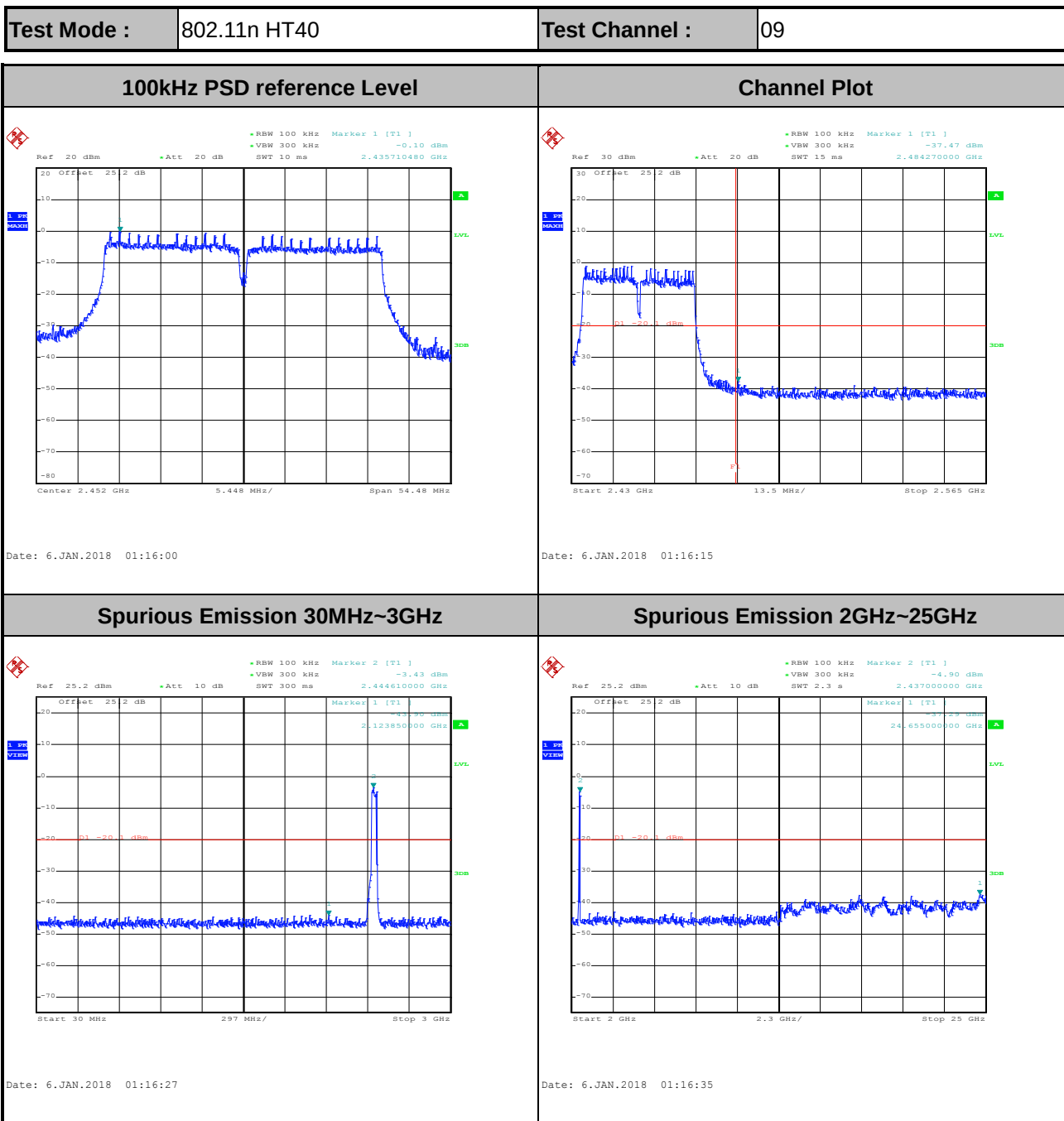
Date: 6.JAN.2018 00:58:07

Spurious Emission 2GHz~25GHz



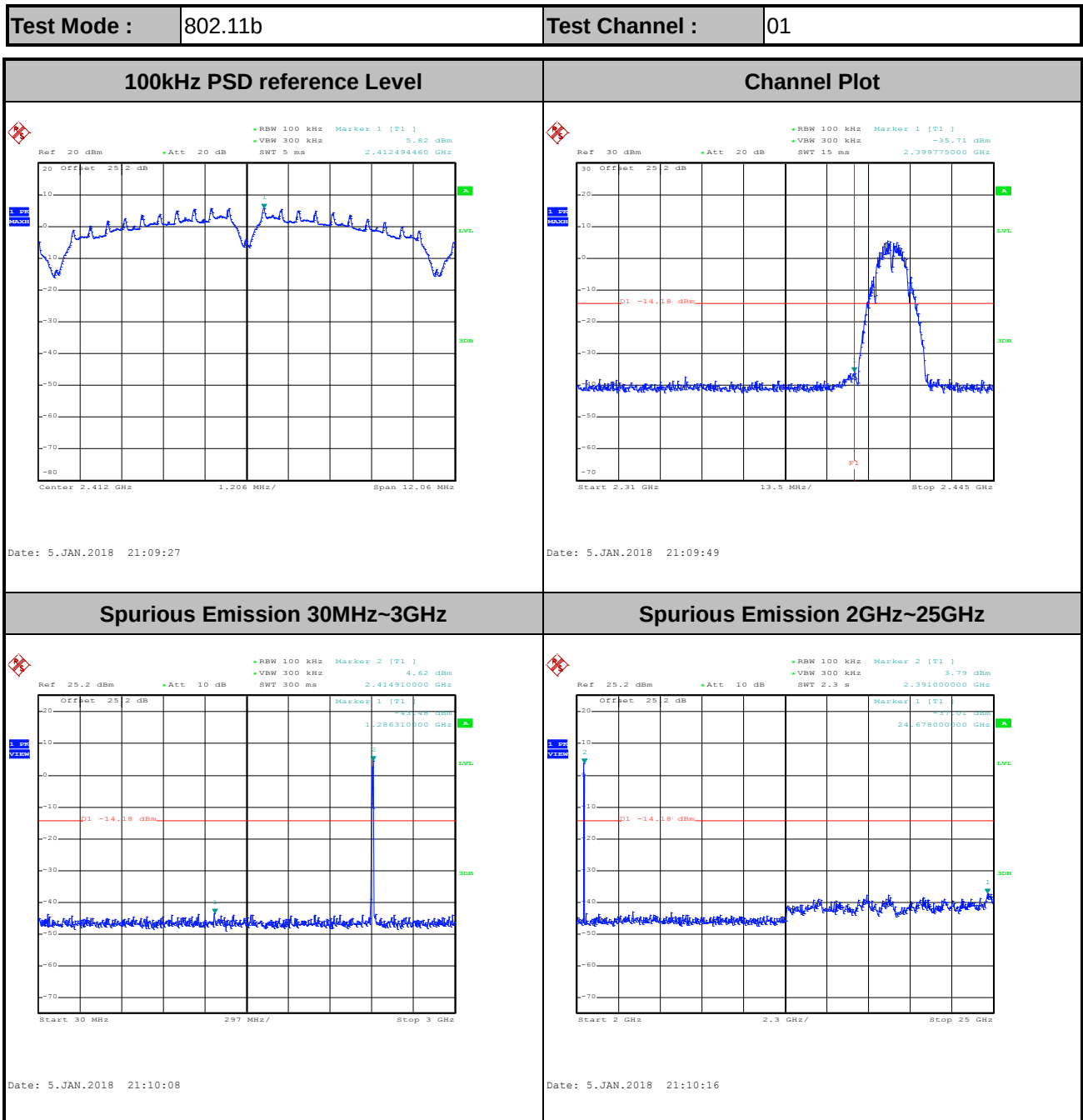
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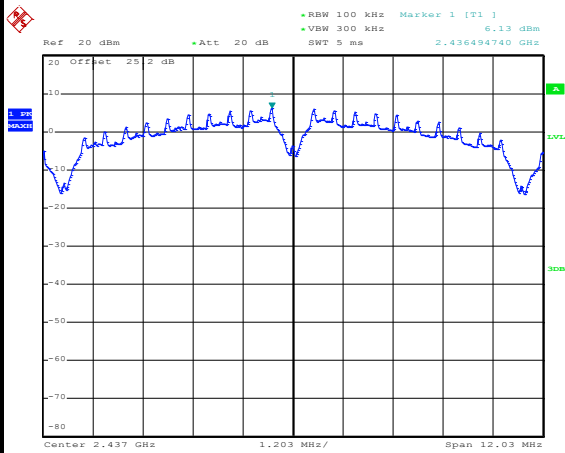
Number of TX = 2, Ant. 2 (Measured)





Test Mode :	802.11b	Test Channel :	06
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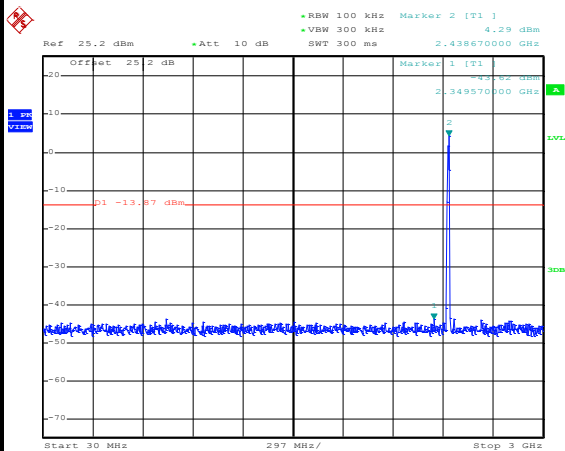
100kHz PSD reference Level



Date: 5.JAN.2018 22:10:08

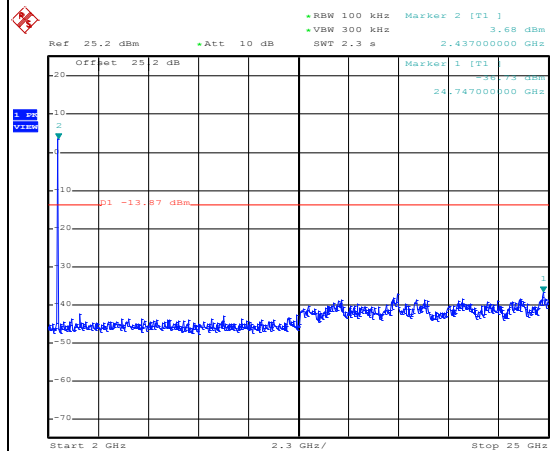
Channel Plot

Spurious Emission 30MHz~3GHz



Date: 5.JAN.2018 22:10:26

Spurious Emission 2GHz~25GHz

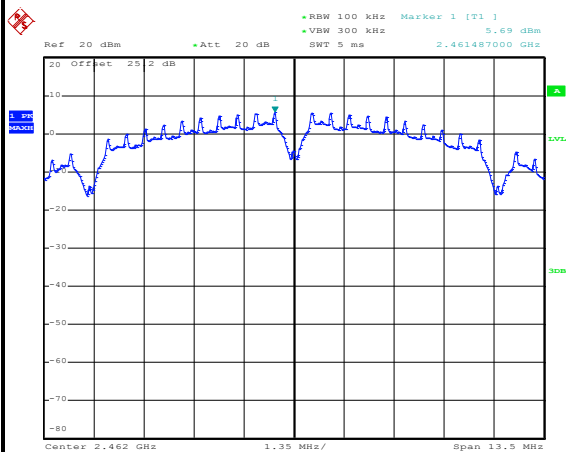


Date: 5.JAN.2018 22:10:34



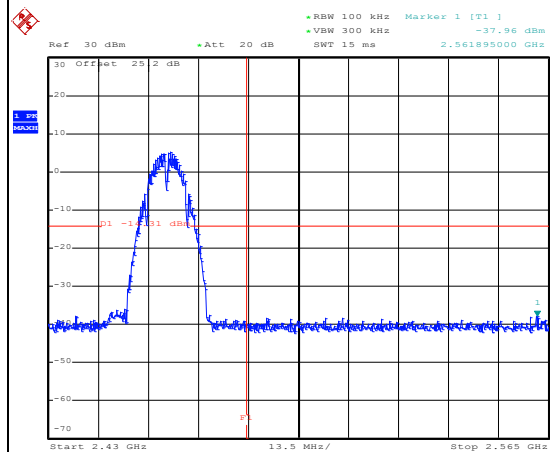
Test Mode :	802.11b	Test Channel :	11
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100kHz PSD reference Level



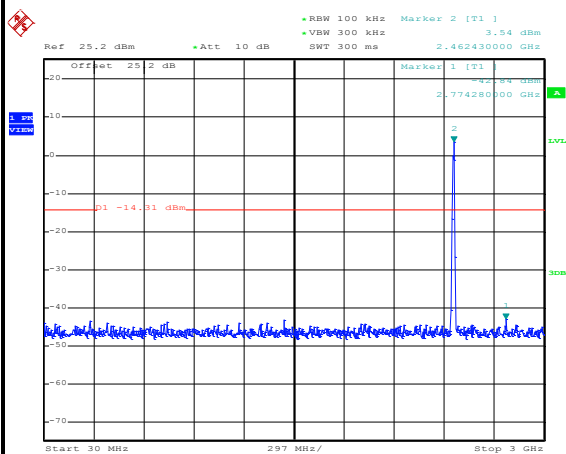
Date: 5.JAN.2018 22:24:17

Channel Plot



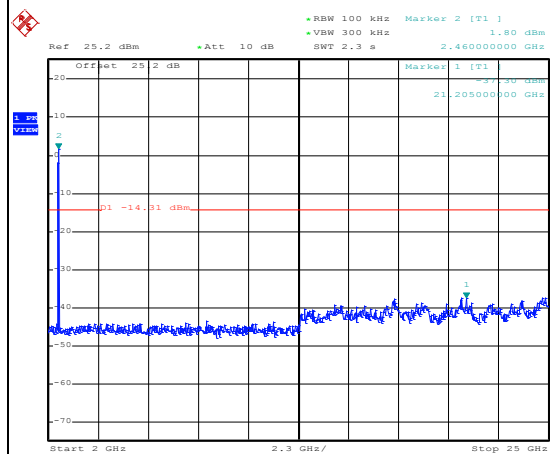
Date: 5.JAN.2018 22:25:00

Spurious Emission 30MHz~3GHz



Date: 5.JAN.2018 22:25:14

Spurious Emission 2GHz~25GHz

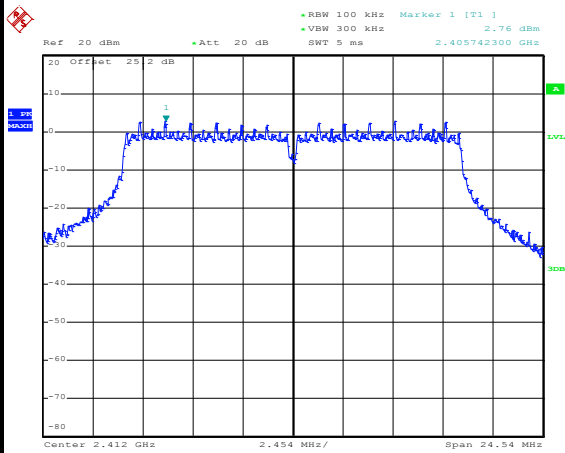


Date: 5.JAN.2018 22:25:22



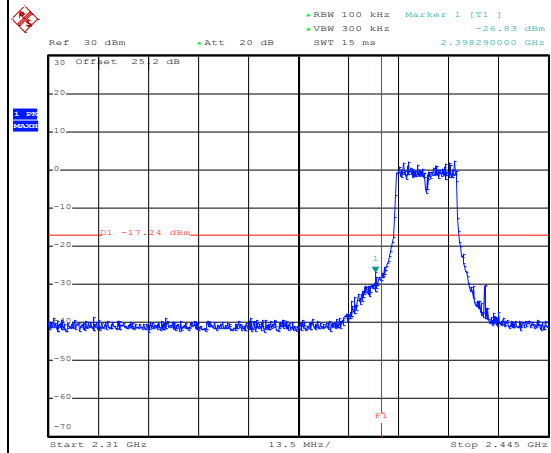
Test Mode :	802.11g	Test Channel :	01
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100kHz PSD reference Level



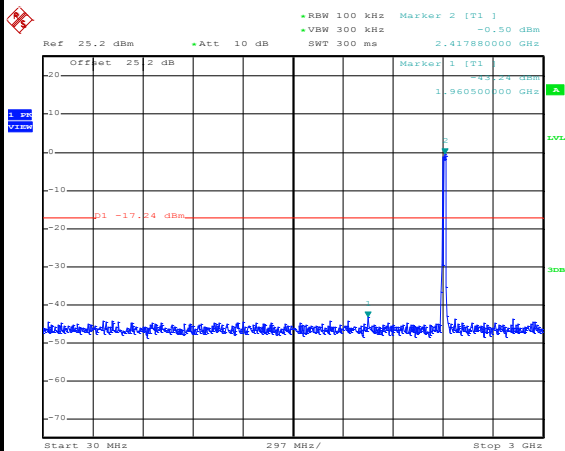
Date: 5.JAN.2018 23:02:26

Channel Plot



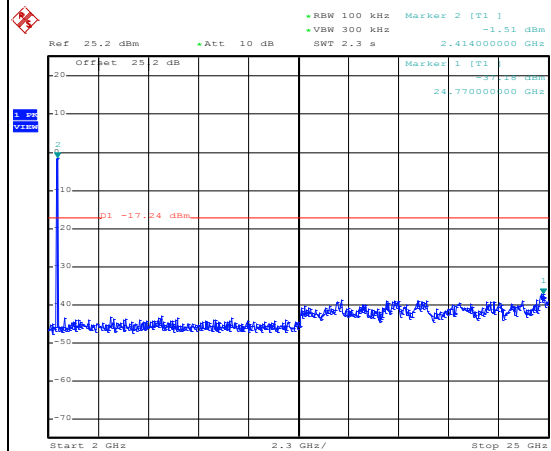
Date: 5.JAN.2018 23:02:49

Spurious Emission 30MHz~3GHz



Date: 5.JAN.2018 23:03:01

Spurious Emission 2GHz~25GHz

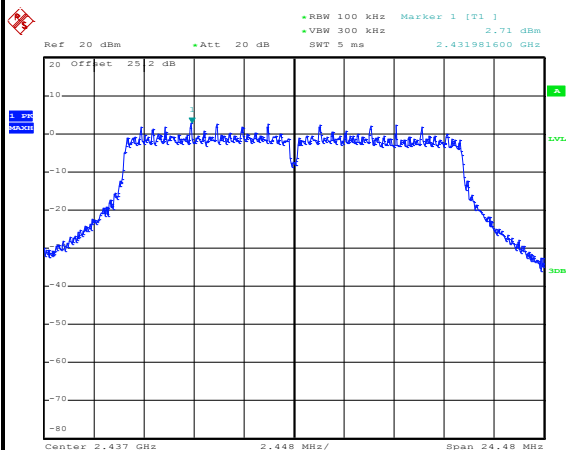


Date: 5.JAN.2018 23:03:10



Test Mode :	802.11g	Test Channel :	06
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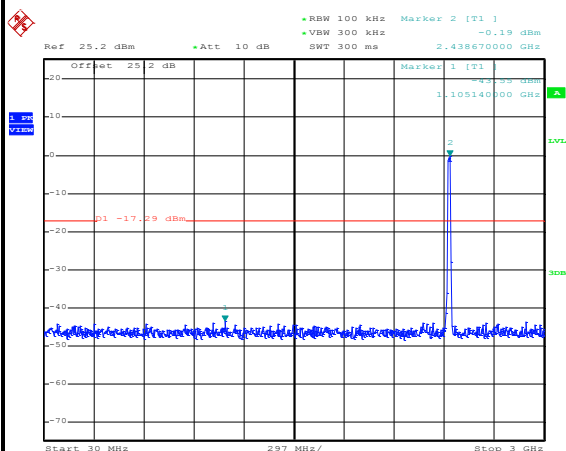
100kHz PSD reference Level



Date: 5.JAN.2018 23:21:09

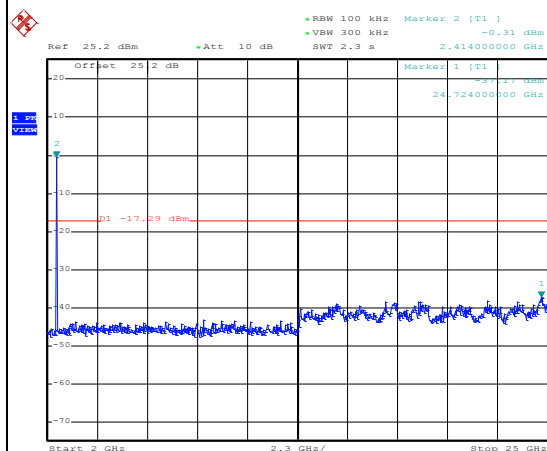
Channel Plot

Spurious Emission 30MHz~3GHz



Date: 5.JAN.2018 23:21:31

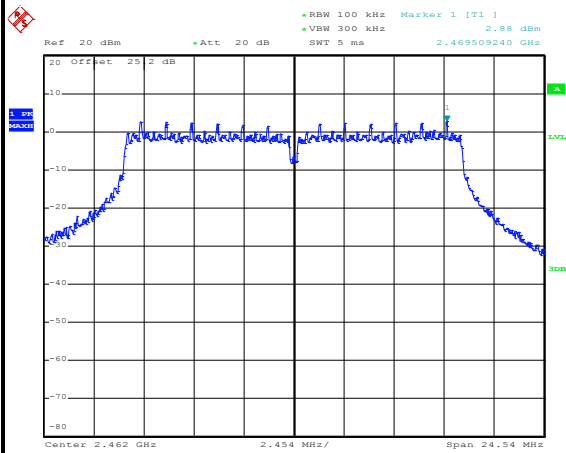
Spurious Emission 2GHz~25GHz



Date: 5.JAN.2018 23:21:40

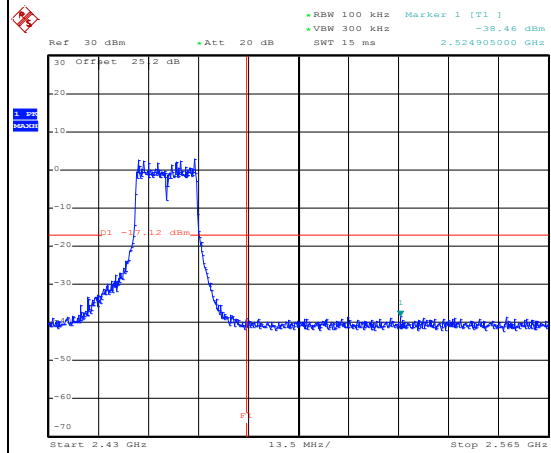
Test Mode :	802.11g	Test Channel :	11
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100kHz PSD reference Level



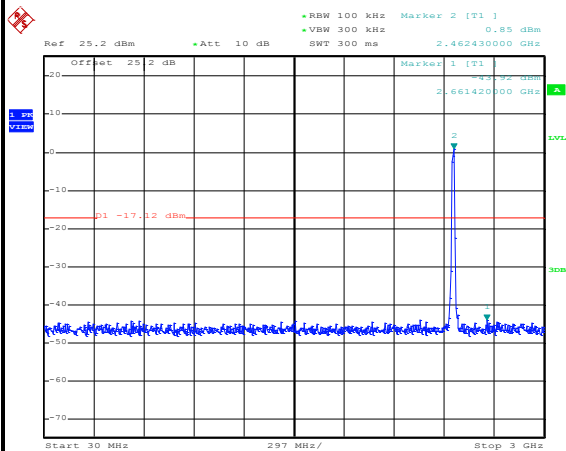
Date: 5.JAN.2018 23:36:05

Channel Plot



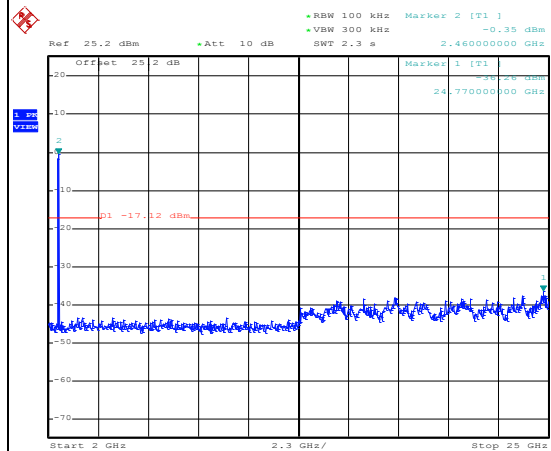
Date: 5.JAN.2018 23:36:31

Spurious Emission 30MHz~3GHz



Date: 5.JAN.2018 23:36:43

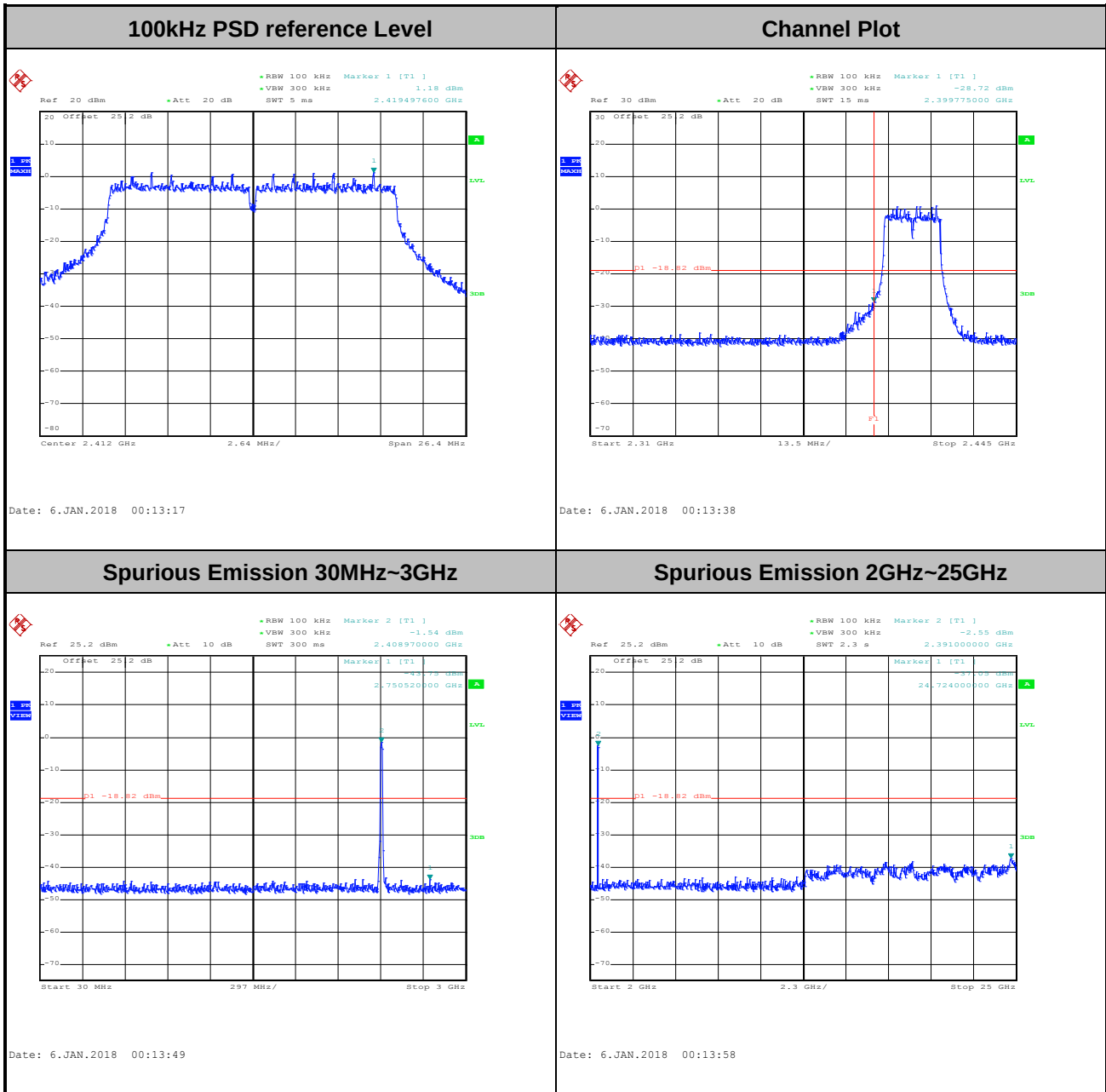
Spurious Emission 2GHz~25GHz



Date: 5.JAN.2018 23:36:51



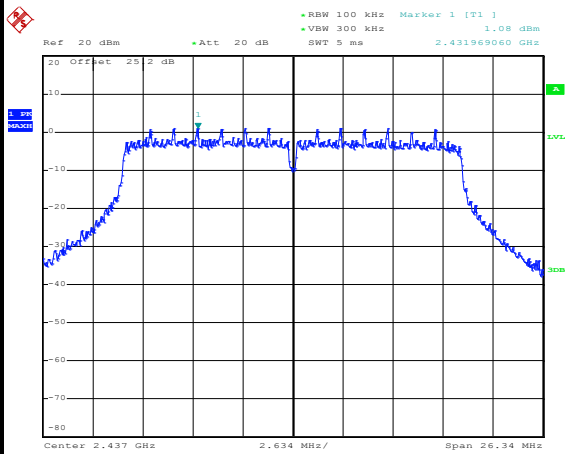
Test Mode :	802.11n HT20	Test Channel :	01
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Test Mode :	802.11n HT20	Test Channel :	06
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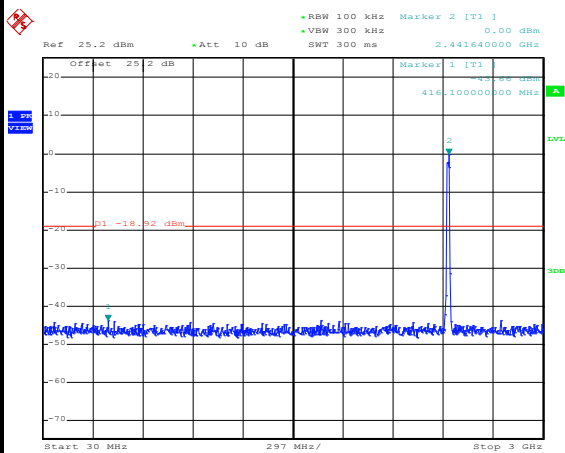
100kHz PSD reference Level



Date: 6.JAN.2018 00:16:46

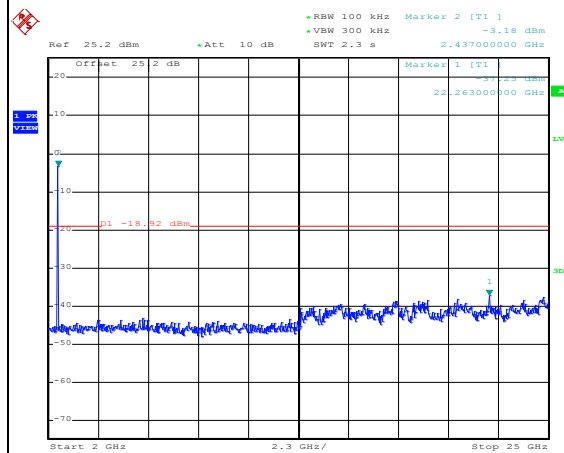
Channel Plot

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2018 00:16:57

Spurious Emission 2GHz~25GHz



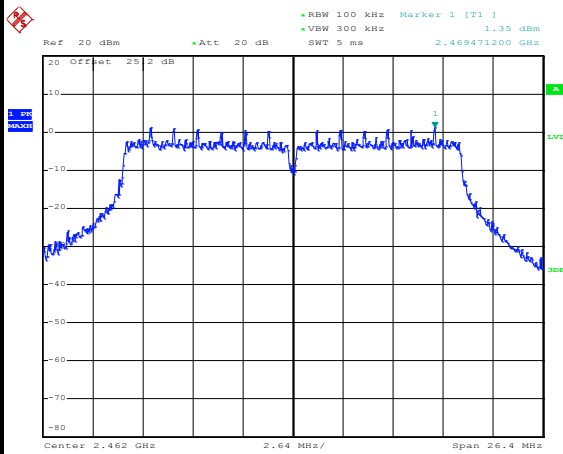
Date: 6.JAN.2018 00:17:06



Test Mode : 802.11n HT20

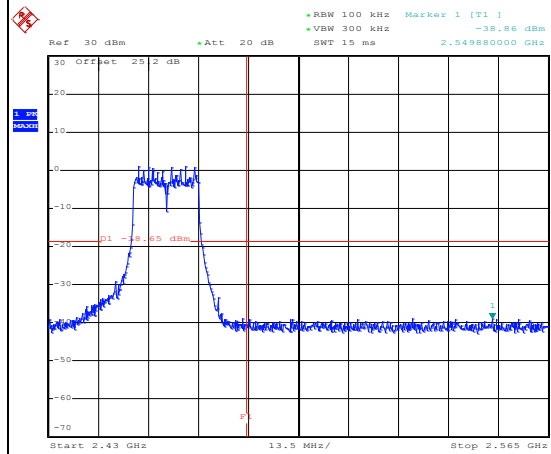
Test Channel : 11

100kHz PSD reference Level



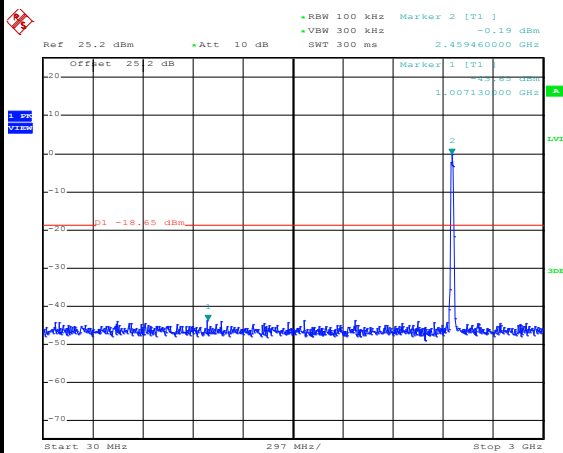
Date: 6.JAN.2018 00:25:01

Channel Plot



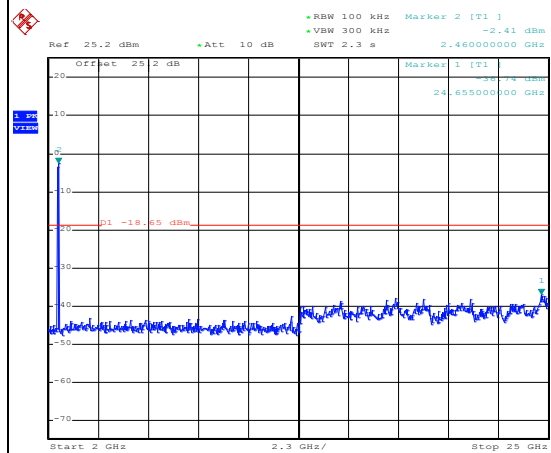
Date: 6.JAN.2018 00:25:21

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2018 00:25:37

Spurious Emission 2GHz~25GHz



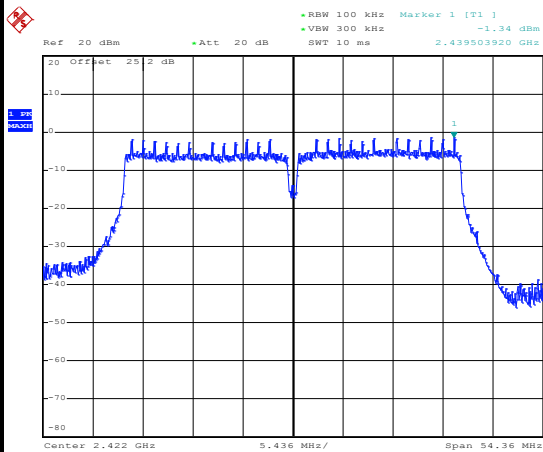
Date: 6.JAN.2018 00:25:45



Test Mode : 802.11n HT40

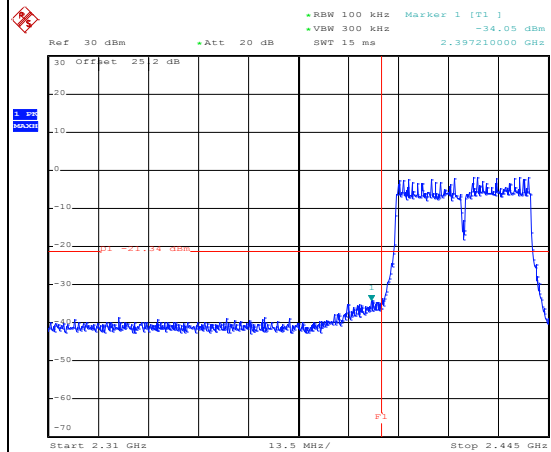
Test Channel : 03

100kHz PSD reference Level



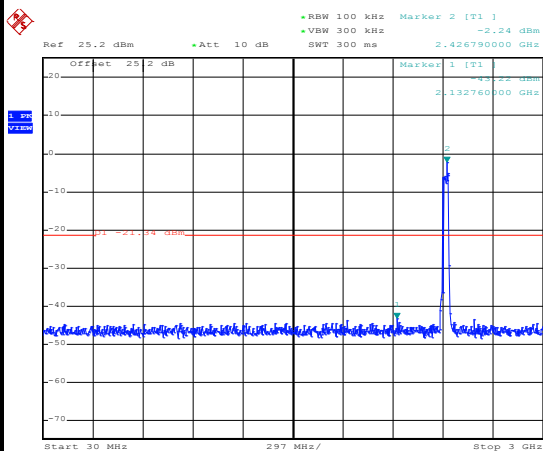
Date: 6.JAN.2018 01:00:22

Channel Plot



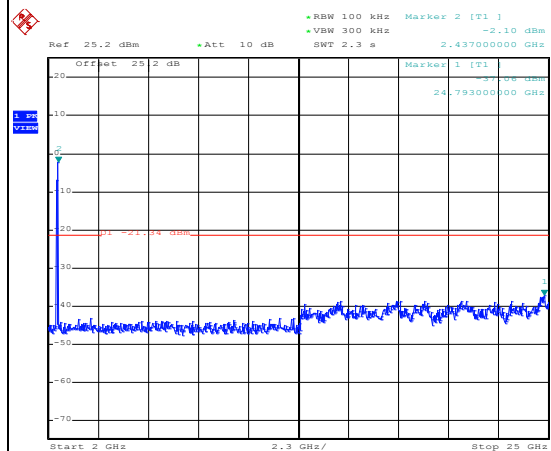
Date: 6.JAN.2018 01:00:36

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2018 01:01:09

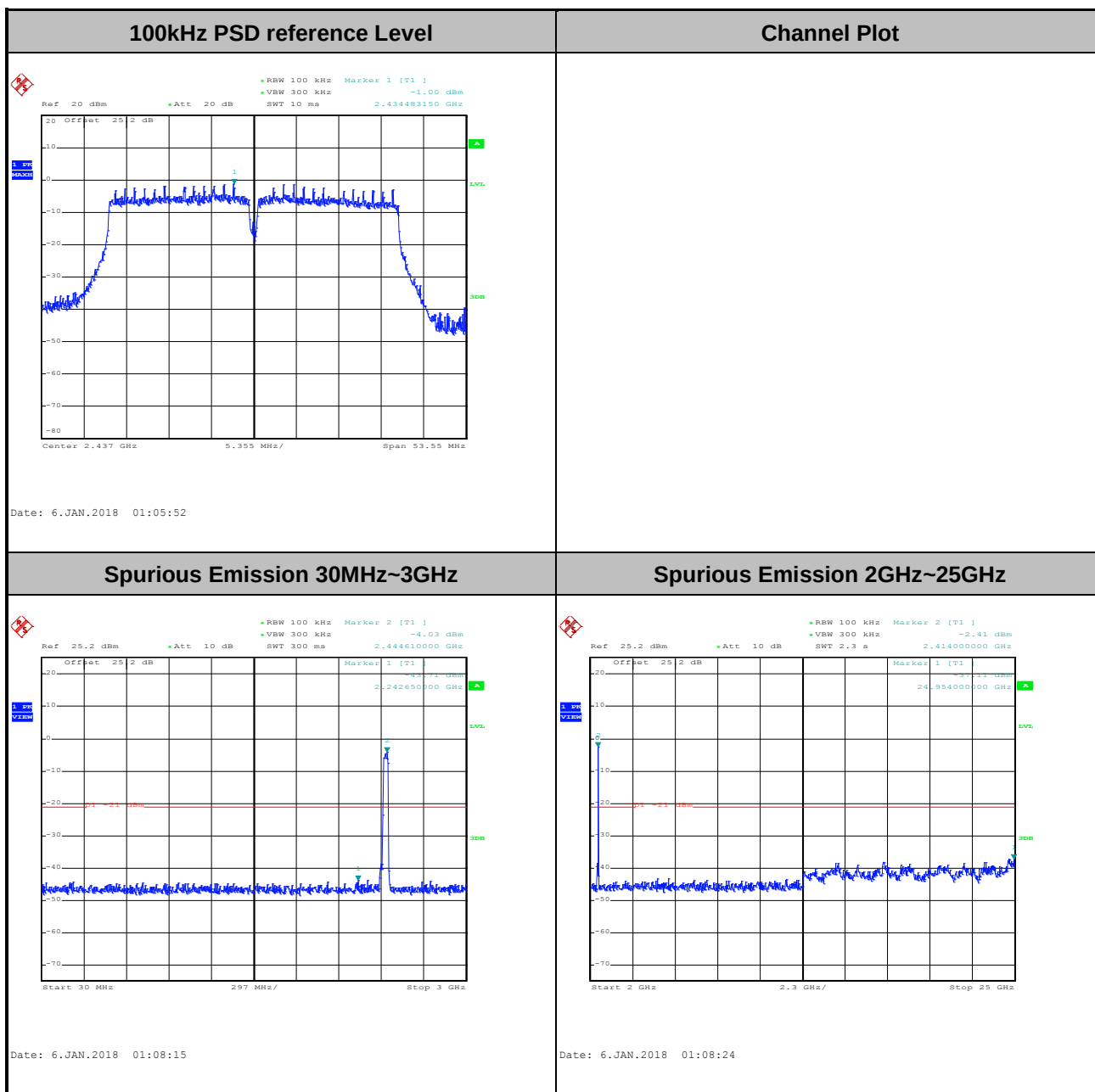
Spurious Emission 2GHz~25GHz

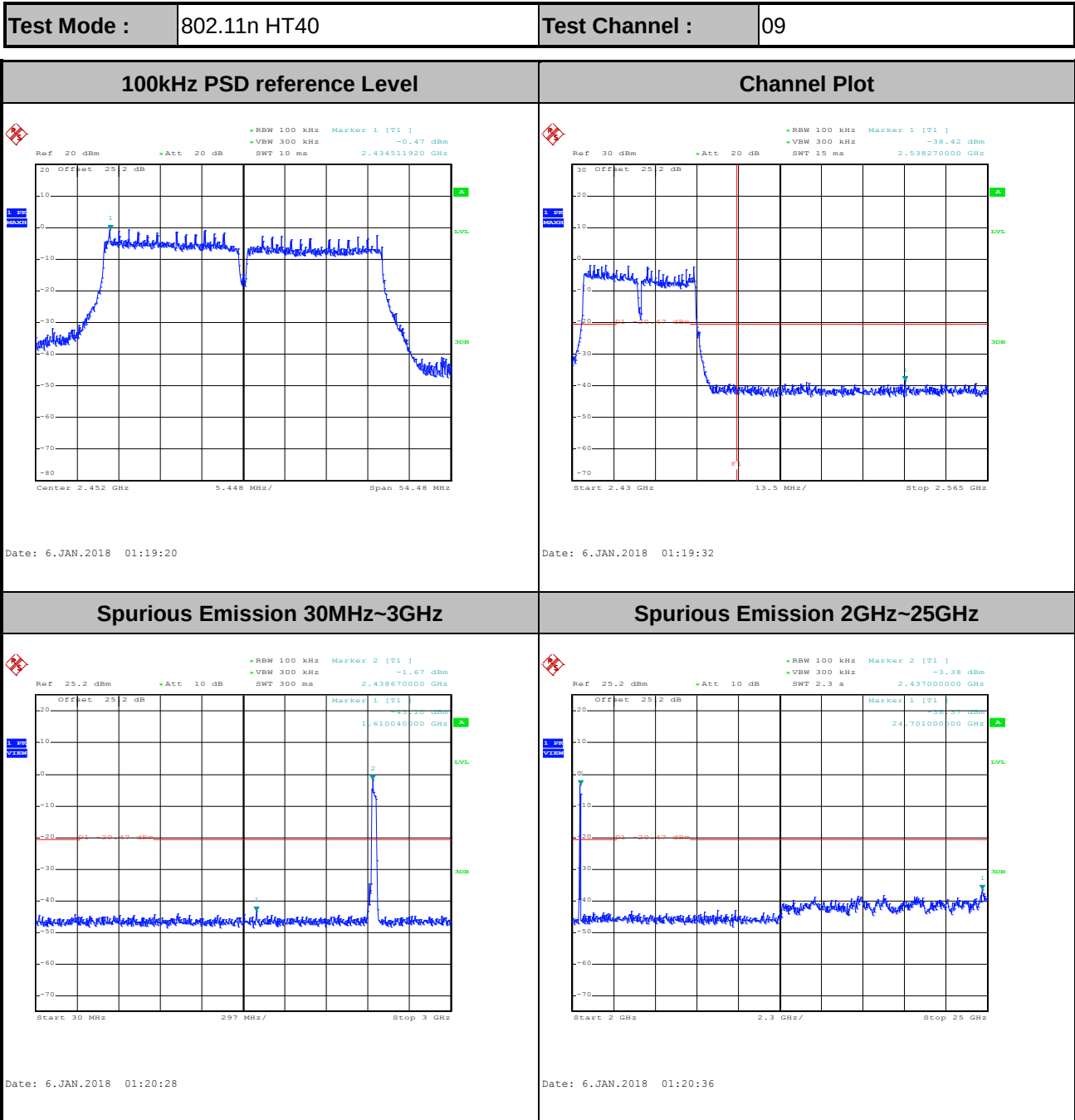


Date: 6.JAN.2018 01:01:17



Test Mode :	802.11n HT40	Test Channel :	06
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3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

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

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

3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

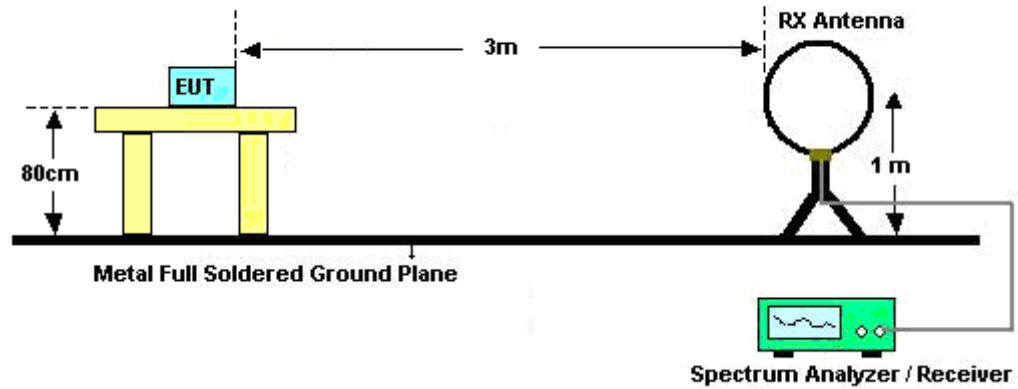
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

For average measurement:

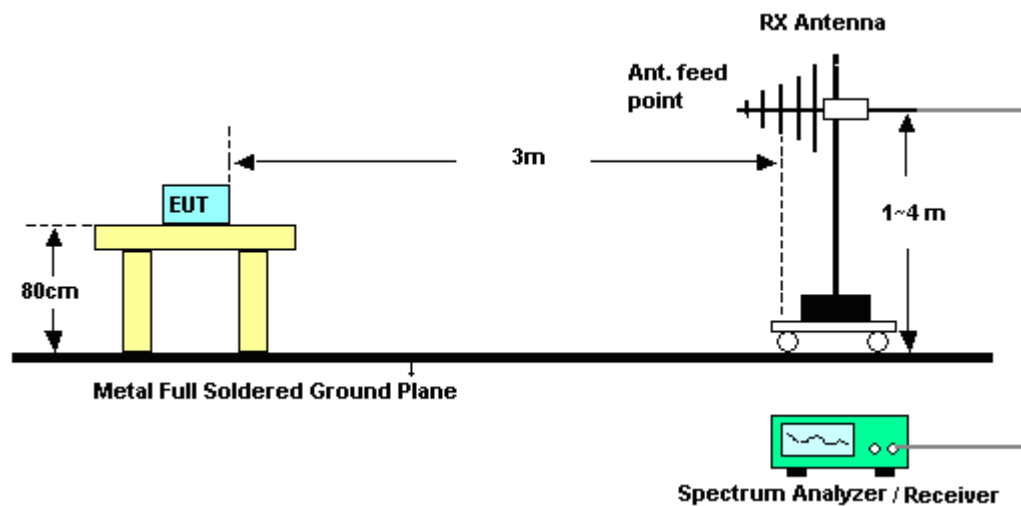
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

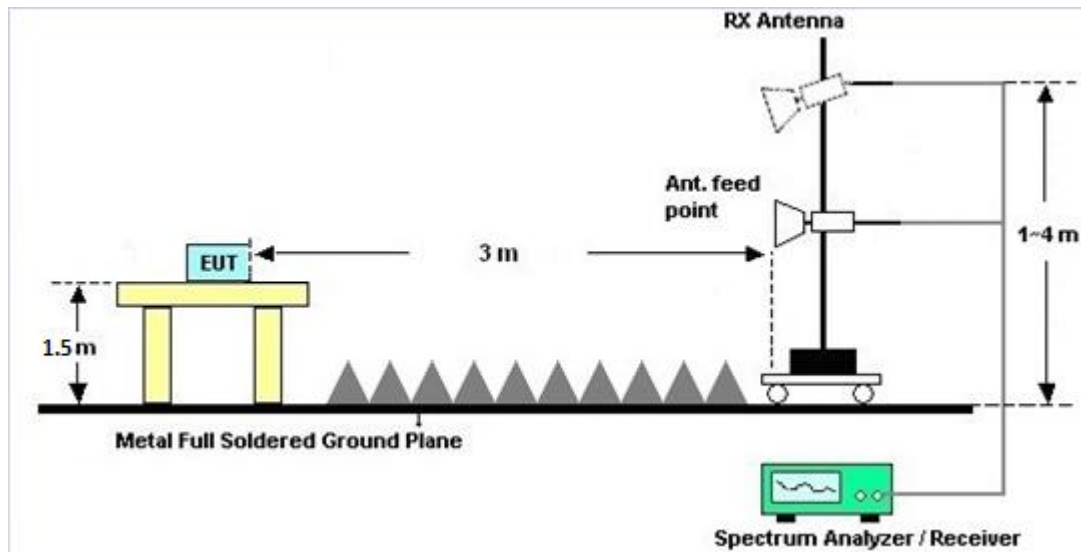
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	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.

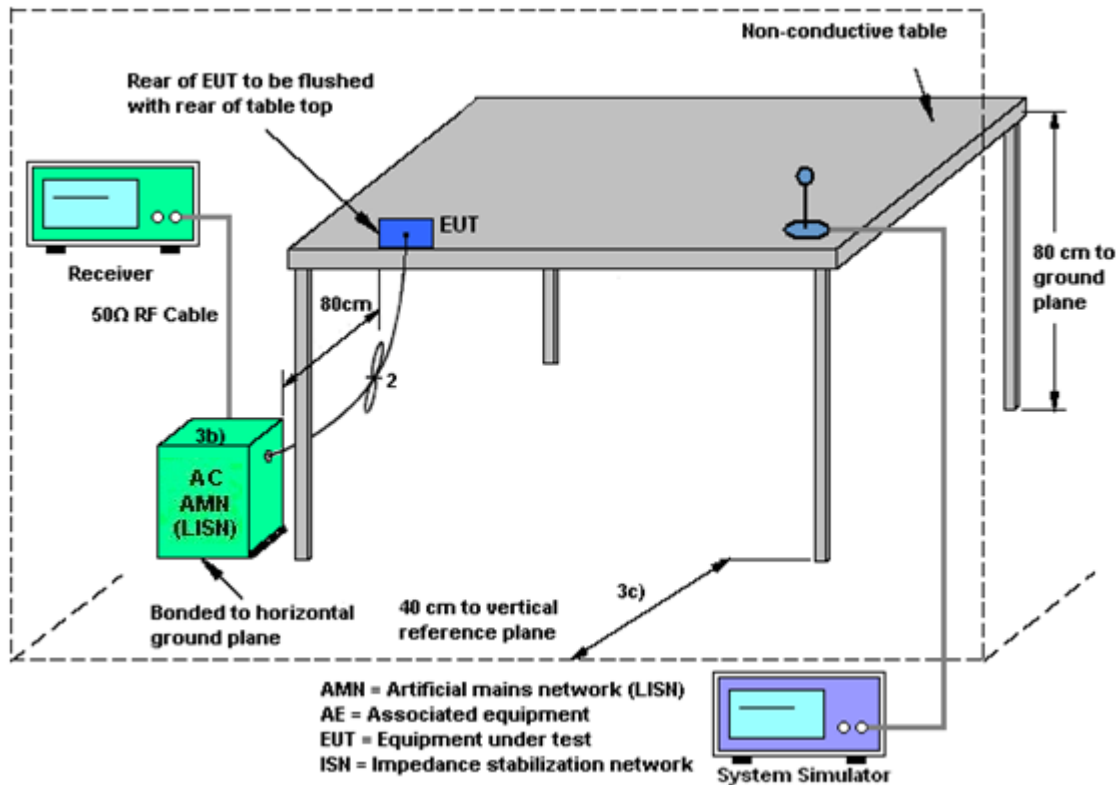
3.6.2 Measuring Instruments

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

Please refer to Appendix B.

3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached Antenna or of an Antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

<CDD Modes >

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.

<CDD Modes>						
			DG	DG	Power	PSD
			for	for	Limit	Limit
	Ant. 1	Ant. 2	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
2.4 GHz	0.00	0.60	0.60	3.32	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	N/A	Sep. 07, 2017	Dec.27.2017~ Mar.12,2018	Sep. 06, 2018	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1207349	300MHz~40GHz z	Sep. 07, 2017	Dec.27.2017~ Mar.12,2018	Sep. 06, 2018	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 20, 2017	Dec.27.2017~ Mar.12,2018	Jun. 19, 2018	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jan. 02, 2018	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Sep. 20, 2017	Jan. 02, 2018	Sep. 19, 2018	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 30, 2017	Jan. 02, 2018	Nov. 29, 2018	Conduction (CO05-HY)
Amplifier	SONOMA	310N	187311	9kHz~1GHz	Oct. 19, 2017	Mar. 03, 2018~ Mar. 14, 2018	Oct. 18, 2018	Radiation (03CH10-HY)
Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz, VSWR : 2.5:1 max	Jul. 18, 2017	Mar. 03, 2018~ Mar. 14, 2018	Jul. 17, 2018	Radiation (03CH10-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	35413&02	30MHz~1GHz	Dec. 18, 2017	Mar. 03, 2018~ Mar. 14, 2018	Dec. 17, 2018	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-132 5	1GHz ~ 18GHz	Sep. 27, 2017	Mar. 03, 2018~ Mar. 14, 2018	Sep. 26, 2018	Radiation (03CH10-HY)
Preamplifier	Keysight	83017A	MY532700 78	1GHz~26.5GHz	Oct. 25, 2017	Mar. 03, 2018~ Mar. 14, 2018	Oct. 24, 2018	Radiation (03CH10-HY)
Preamplifier	Jet-Power	JAP00101800 -30-10P	160118550 004	1GHz~18GHz	Apr. 13, 2017	Mar. 03, 2018~ Mar. 14, 2018	Apr. 12, 2018	Radiation (03CH10-HY)
Spectrum Analyzer	Keysight	N9010A	MY542004 85	10Hz ~ 44GHz	Oct. 31, 2017	Mar. 03, 2018~ Mar. 14, 2018	Oct. 30, 2018	Radiation (03CH10-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Mar. 03, 2018~ Mar. 14, 2018	N/A	Radiation (03CH10-HY)
Turn Table	EMEC	TT 2200	N/A	0~360 Degree	N/A	Mar. 03, 2018~ Mar. 14, 2018	N/A	Radiation (03CH10-HY)
Software	Audix	E3 6.2009-8-24	RK-00104 2	N/A	N/A	Mar. 03, 2018~ Mar. 14, 2018	N/A	Radiation (03CH10-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Nov. 23, 2017	Mar. 03, 2018~ Mar. 14, 2018	Nov. 22, 2019	Radiation (03CH10-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY532900 53	20Hz to 26.5GHz	Jan. 16, 2018	Mar. 03, 2018~ Mar. 14, 2018	Jan. 15, 2019	Radiation (03CH10-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170 584	18GHz- 40GHz	Nov. 27, 2017	Mar. 03, 2018~ Mar. 14, 2018	Nov. 26, 2018	Radiation (03CH10-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.70
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.60
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.90
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.20
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Kai Liao/Reece Lin	Temperature:	21~25	°C
Test Date:	2017/12/27~2018/03/12	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	2	1	2412	14.10	14.00	8.08	8.04	0.50	Pass
11b	1Mbps	2	6	2437	14.00	13.80	8.52	8.02	0.50	Pass
11b	1Mbps	2	11	2462	14.10	14.05	8.56	9.00	0.50	Pass
11g	6Mbps	2	1	2412	18.45	18.10	16.36	16.36	0.50	Pass
11g	6Mbps	2	6	2437	18.10	17.80	16.32	16.32	0.50	Pass
11g	6Mbps	2	11	2462	18.30	18.10	16.36	16.36	0.50	Pass
HT20	MCS0	2	1	2412	19.35	19.20	17.60	17.60	0.50	Pass
HT20	MCS0	2	6	2437	19.05	18.95	17.56	17.56	0.50	Pass
HT20	MCS0	2	11	2462	19.25	19.30	17.56	17.60	0.50	Pass
HT40	MCS0	2	3	2422	37.00	37.00	36.32	36.24	0.50	Pass
HT40	MCS0	2	6	2437	37.00	36.70	35.68	35.70	0.50	Pass
HT40	MCS0	2	9	2452	37.00	37.00	36.32	36.32	0.50	Pass

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	16.68	16.72		30.00	30.00	0.00	0.60	16.68	17.32	36.00	36.00	Pass
11b	1Mbps	1	6	2437	16.83	16.67		30.00	30.00	0.00	0.60	16.83	17.27	36.00	36.00	Pass
11b	1Mbps	1	11	2462	16.69	16.45		30.00	30.00	0.00	0.60	16.69	17.05	36.00	36.00	Pass
11g	6Mbps	1	1	2412	22.78	23.85		30.00	30.00	0.00	0.60	22.78	24.45	36.00	36.00	Pass
11g	6Mbps	1	6	2437	23.33	24.03		30.00	30.00	0.00	0.60	23.33	24.63	36.00	36.00	Pass
11g	6Mbps	1	11	2462	22.94	23.56		30.00	30.00	0.00	0.60	22.94	24.16	36.00	36.00	Pass
HT20	MCS0	1	1	2412	22.04	22.55		30.00	30.00	0.00	0.60	22.04	23.15	36.00	36.00	Pass
HT20	MCS0	1	6	2437	22.50	22.74		30.00	30.00	0.00	0.60	22.50	23.34	36.00	36.00	Pass
HT20	MCS0	1	11	2462	22.13	22.50		30.00	30.00	0.00	0.60	22.13	23.10	36.00	36.00	Pass
HT40	MCS0	1	3	2422	22.03	22.59		30.00	30.00	0.00	0.60	22.03	23.19	36.00	36.00	Pass
HT40	MCS0	1	6	2437	22.39	22.84		30.00	30.00	0.00	0.60	22.39	23.44	36.00	36.00	Pass
HT40	MCS0	1	9	2452	22.41	22.78		30.00	30.00	0.00	0.60	22.41	23.38	36.00	36.00	Pass
11b	1Mbps	2	1	2412	16.77	16.81	19.80	30.00		0.60		20.40		36.00		Pass
11b	1Mbps	2	6	2437	16.92	16.76	19.85	30.00		0.60		20.45		36.00		Pass
11b	1Mbps	2	11	2462	16.78	16.54	19.67	30.00		0.60		20.27		36.00		Pass
11g	6Mbps	2	1	2412	22.87	23.94	26.45	30.00		0.60		27.05		36.00		Pass
11g	6Mbps	2	6	2437	23.42	24.12	26.79	30.00		0.60		27.39		36.00		Pass
11g	6Mbps	2	11	2462	23.03	23.65	26.36	30.00		0.60		26.96		36.00		Pass
HT20	MCS0	2	1	2412	22.04	22.55	25.31	30.00		0.60		25.91		36.00		Pass
HT20	MCS0	2	6	2437	22.50	22.74	25.63	30.00		0.60		26.23		36.00		Pass
HT20	MCS0	2	11	2462	22.13	22.50	25.33	30.00		0.60		25.93		36.00		Pass
HT40	MCS0	2	3	2422	22.12	22.68	25.42	30.00		0.60		26.02		36.00		Pass
HT40	MCS0	2	6	2437	22.48	22.93	25.72	30.00		0.60		26.32		36.00		Pass
HT40	MCS0	2	9	2452	22.50	22.87	25.70	30.00		0.60		26.30		36.00		Pass

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	14.03	13.94	
11b	1Mbps	1	6	2437	0.06	0.06	14.06	13.91	
11b	1Mbps	1	11	2462	0.06	0.06	13.98	13.76	
11g	6Mbps	1	1	2412	0.32	0.32	14.12	14.03	
11g	6Mbps	1	6	2437	0.32	0.32	13.41	13.90	
11g	6Mbps	1	11	2462	0.32	0.32	14.10	13.72	
HT20	MCS0	1	1	2412	0.35	0.35	12.78	12.46	
HT20	MCS0	1	6	2437	0.35	0.35	12.98	12.26	
HT20	MCS0	1	11	2462	0.35	0.35	12.88	12.09	
HT40	MCS0	1	3	2422	0.60	0.60	12.74	12.50	
HT40	MCS0	1	6	2437	0.60	0.60	12.86	12.64	
HT40	MCS0	1	9	2452	0.60	0.60	12.80	12.38	
11b	1Mbps	2	1	2412	0.06	0.06	14.49	14.47	17.49
11b	1Mbps	2	6	2437	0.06	0.06	14.44	14.12	17.30
11b	1Mbps	2	11	2462	0.06	0.06	14.31	14.01	17.18
11g	6Mbps	2	1	2412	0.32	0.32	14.33	14.40	17.38
11g	6Mbps	2	6	2437	0.32	0.32	14.49	14.45	17.49
11g	6Mbps	2	11	2462	0.32	0.32	14.46	13.98	17.24
HT20	MCS0	2	1	2412	0.35	0.35	12.92	12.99	15.96
HT20	MCS0	2	6	2437	0.35	0.35	12.99	12.95	15.98
HT20	MCS0	2	11	2462	0.35	0.35	12.99	12.72	15.87
HT40	MCS0	2	3	2422	0.60	0.61	12.94	12.84	15.90
HT40	MCS0	2	6	2437	0.60	0.61	12.99	12.96	15.99
HT40	MCS0	2	9	2452	0.60	0.61	12.98	12.88	15.94

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	2	1	2412	-8.28	-8.13	-5.12	3.32		8.00		Pass
11b	1Mbps	2	6	2437	-7.63	-7.87	-4.62	3.32		8.00		Pass
11b	1Mbps	2	11	2462	-7.06	-7.18	-4.05	3.32		8.00		Pass
11g	6Mbps	2	1	2412	-10.64	-10.61	-7.60	3.32		8.00		Pass
11g	6Mbps	2	6	2437	-11.29	-11.54	-8.28	3.32		8.00		Pass
11g	6Mbps	2	11	2462	-11.68	-11.84	-8.67	3.32		8.00		Pass
HT20	MCS0	2	1	2412	-13.48	-13.36	-10.35	3.32		8.00		Pass
HT20	MCS0	2	6	2437	-13.59	-13.57	-10.56	3.32		8.00		Pass
HT20	MCS0	2	11	2462	-13.72	-13.63	-10.62	3.32		8.00		Pass
HT40	MCS0	2	3	2422	-16.80	-16.53	-13.52	3.32		8.00		Pass
HT40	MCS0	2	6	2437	-16.26	-16.75	-13.25	3.32		8.00		Pass
HT40	MCS0	2	9	2452	-16.30	-16.34	-13.29	3.32		8.00		Pass

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



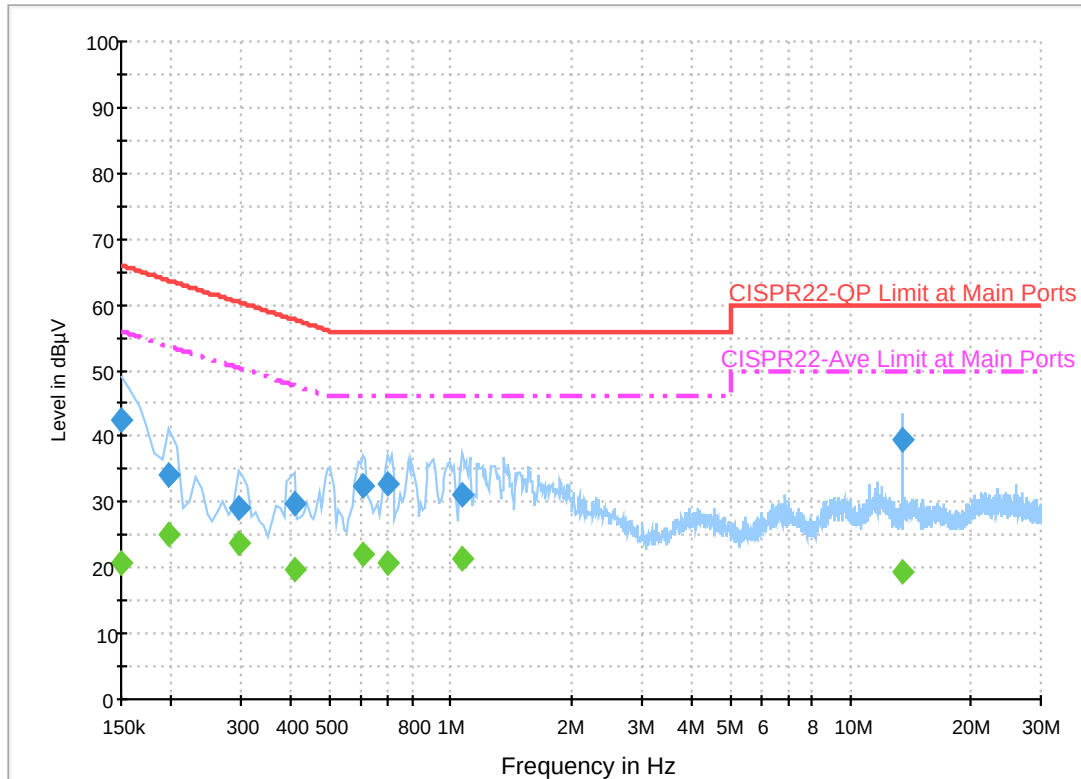
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Shareef Yu	Temperature :	24~25℃
		Relative Humidity :	53~56%

EUT Information

Report NO : 7D0829
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Line

ENV216 Auto Test FCC Power Bar - L



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	42.3	Off	L1	19.5	23.7	66.0
0.198000	34.1	Off	L1	19.5	29.6	63.7
0.294000	29.2	Off	L1	19.5	31.2	60.4
0.406000	29.8	Off	L1	19.5	27.9	57.7
0.606000	32.3	Off	L1	19.5	23.7	56.0
0.694000	32.7	Off	L1	19.5	23.3	56.0
1.070000	31.0	Off	L1	19.5	25.0	56.0
13.558000	39.5	Off	L1	19.7	20.5	60.0

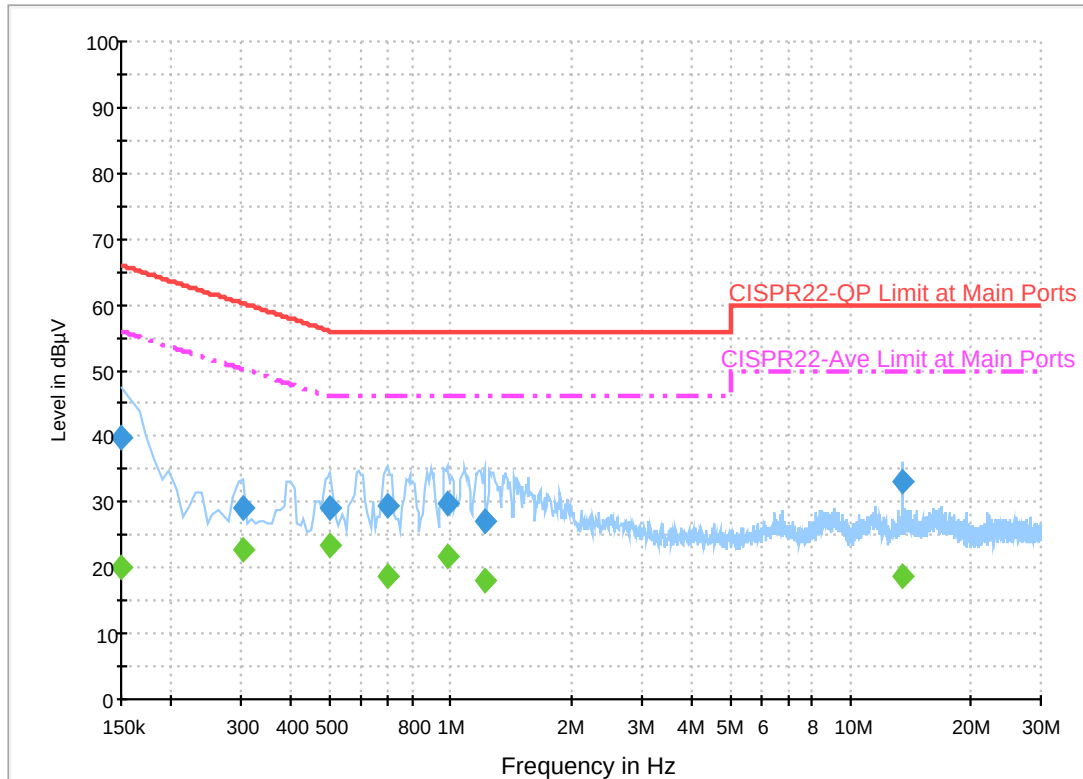
Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	20.6	Off	L1	19.5	35.4	56.0
0.198000	24.9	Off	L1	19.5	28.8	53.7
0.294000	23.6	Off	L1	19.5	26.8	50.4
0.406000	19.9	Off	L1	19.5	27.8	47.7
0.606000	22.1	Off	L1	19.5	23.9	46.0
0.694000	20.7	Off	L1	19.5	25.3	46.0
1.070000	21.3	Off	L1	19.5	24.7	46.0
13.558000	19.2	Off	L1	19.7	30.8	50.0

EUT Information

Report NO : 7D0829
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Neutral

ENV216 Auto Test FCC Power Bar - N



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	39.9	Off	N	19.5	26.1	66.0
0.302000	29.2	Off	N	19.5	31.0	60.2
0.502000	28.9	Off	N	19.5	27.1	56.0
0.694000	29.5	Off	N	19.5	26.5	56.0
0.982000	29.7	Off	N	19.5	26.3	56.0
1.214000	27.0	Off	N	19.5	29.0	56.0
13.558000	33.0	Off	N	19.8	27.0	60.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	20.0	Off	N	19.5	36.0	56.0
0.302000	22.6	Off	N	19.5	27.6	50.2
0.502000	23.4	Off	N	19.5	22.6	46.0
0.694000	18.6	Off	N	19.5	27.4	46.0
0.982000	21.8	Off	N	19.5	24.2	46.0
1.214000	17.9	Off	N	19.5	28.1	46.0
13.558000	18.8	Off	N	19.8	31.2	50.0



Appendix C. Radiated Spurious Emission

Test Engineer :	Daniel Lee, Master Huang, and JC Liang	Temperature :	18~22°C
		Relative Humidity :	48~53%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2355.78	52.19	-21.81	74	43.03	27.01	15.32	33.17	139	33	P	H
		2387.49	41.61	-12.39	54	32.29	27.11	15.37	33.16	139	33	A	H
	*	2412	103.56	-	-	94.14	27.16	15.41	33.15	139	33	P	H
	*	2412	100.57	-	-	91.15	27.16	15.41	33.15	139	33	A	H
													H
													H
		2336.67	52.62	-21.38	74	43.53	26.97	15.3	33.18	339	266	P	V
		2386.65	41.38	-12.62	54	32.06	27.11	15.37	33.16	339	266	A	V
	*	2412	99.49	-	-	90.07	27.16	15.41	33.15	339	266	P	V
	*	2412	96.27	-	-	86.87	27.16	15.39	33.15	339	266	A	V
													V
													V
802.11b CH 06 2437MHz		2319.8	51.9	-22.1	74	42.89	26.92	15.27	33.18	140	33	P	H
		2388.96	41.02	-12.98	54	31.7	27.11	15.37	33.16	140	33	A	H
	*	2437	104.98	-	-	95.43	27.26	15.43	33.14	140	33	P	H
	*	2437	101.69	-	-	92.14	27.26	15.43	33.14	140	33	A	H
		2496.57	52.31	-21.69	74	42.53	27.4	15.48	33.1	140	33	P	H
		2484.39	41.46	-12.54	54	31.74	27.35	15.48	33.11	140	33	A	H
		2388.4	51.5	-22.5	74	42.18	27.11	15.37	33.16	381	270	P	V
		2389.8	40.91	-13.09	54	31.58	27.11	15.37	33.15	381	270	A	V
	*	2437	100.88	-	-	91.33	27.26	15.43	33.14	381	270	P	V
	*	2437	97.45	-	-	87.9	27.26	15.43	33.14	381	270	A	V
		2490.62	52.25	-21.75	74	42.48	27.4	15.48	33.11	381	270	P	V
		2487.89	41.3	-12.7	54	31.53	27.4	15.48	33.11	381	270	A	V



802.11b CH 11 2462MHz	*	2462	103.41	-	-	93.79	27.3	15.44	33.12	135	33	P	H
	*	2462	100.14	-	-	90.52	27.3	15.44	33.12	135	33	A	H
		2490	52.48	-21.52	74	42.71	27.4	15.48	33.11	135	33	P	H
		2487.08	42.31	-11.69	54	32.59	27.35	15.48	33.11	135	33	A	H
													H
													H
	*	2462	102.62	-	-	93	27.3	15.44	33.12	366	265	P	V
	*	2462	99.65	-	-	90.03	27.3	15.44	33.12	366	265	A	V
		2490.72	52.21	-21.79	74	42.44	27.4	15.48	33.11	366	265	P	V
		2486.96	42.39	-11.61	54	32.67	27.35	15.48	33.11	366	265	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+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		4824	40.02	-33.98	74	64.29	31.19	8.9	64.36	100	0	P	H
													H
													H
													H
		4824	39.74	-34.26	74	64.01	31.19	8.9	64.36	100	0	P	V
													V
													V
													V
802.11b CH 06 2437MHz		4874	38.74	-35.26	74	63	31.28	8.86	64.4	100	0	P	H
		7311	43.4	-30.6	74	62.25	36.18	10.52	65.55	100	0	P	H
													H
													H
		4874	38.94	-35.06	74	63.2	31.28	8.86	64.4	100	0	P	V
		7311	42.29	-31.71	74	61.14	36.18	10.52	65.55	100	0	P	V
													V
													V
802.11b CH 11 2462MHz		4924	39.04	-34.96	74	63.26	31.38	8.84	64.44	100	0	P	H
		7386	45.6	-28.4	74	64.41	36.37	10.44	65.62	100	0	P	H
													H
													H
		4924	43.76	-30.24	74	67.98	31.38	8.84	64.44	100	0	P	V
		7386	44.79	-29.21	74	63.6	36.37	10.44	65.62	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+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2389.275	56.24	-17.76	74	46.92	27.11	15.37	33.16	100	306	P	H
		2389.905	46.35	-7.65	54	37.02	27.11	15.37	33.15	100	306	A	H
	*	2412	104.74	-	-	95.32	27.16	15.41	33.15	100	306	P	H
	*	2412	97.09	-	-	87.67	27.16	15.41	33.15	100	306	P	H
													H
													H
		2389.275	56.58	-17.42	74	47.26	27.11	15.37	33.16	386	279	P	V
		2389.905	43.97	-10.03	54	34.64	27.11	15.37	33.15	386	279	A	V
	*	2412	102.77	-	-	93.35	27.16	15.41	33.15	386	279	P	V
	*	2412	94.14	-	-	84.72	27.16	15.41	33.15	386	279	A	V
													V
													V
802.11g CH 06 2437MHz		2343.46	52.04	-21.96	74	42.92	26.97	15.32	33.17	110	311	P	H
		2389.52	42.39	-11.61	54	33.07	27.11	15.37	33.16	110	311	A	H
	*	2437	104.67	-	-	95.12	27.26	15.43	33.14	110	311	P	H
	*	2437	97.59	-	-	88.04	27.26	15.43	33.14	110	311	P	H
		2485.23	52.62	-21.38	74	42.9	27.35	15.48	33.11	110	311	P	H
		2483.55	43.12	-10.88	54	33.4	27.35	15.48	33.11	110	311	A	H
		2370.06	52.22	-21.78	74	42.98	27.06	15.34	33.16	375	264	P	V
		2379.86	42.02	-11.98	54	32.75	27.06	15.37	33.16	375	264	A	V
	*	2437	104.05	-	-	94.5	27.26	15.43	33.14	375	264	P	V
	*	2437	96.32	-	-	86.77	27.26	15.43	33.14	375	264	A	V
		2485.37	52.73	-21.27	74	43.01	27.35	15.48	33.11	375	264	P	V
		2486.42	42.94	-11.06	54	33.22	27.35	15.48	33.11	375	264	A	V



802.11g CH 11 2462MHz	*	2462	105.44	-	-	95.82	27.3	15.44	33.12	118	306	P	H
	*	2462	98	-	-	88.38	27.3	15.44	33.12	118	306	A	H
		2484.84	63.68	-10.32	74	53.96	27.35	15.48	33.11	118	306	P	H
		2485.16	47.98	-6.02	54	38.26	27.35	15.48	33.11	118	306	A	H
													H
													H
	*	2462	104.1	-	-	94.48	27.3	15.44	33.12	368	264	P	V
	*	2462	96.44	-	-	86.82	27.3	15.44	33.12	368	264	A	V
		2486.4	63.26	-10.74	74	53.54	27.35	15.48	33.11	368	264	P	V
		2484.2	47.35	-6.65	54	37.63	27.35	15.48	33.11	368	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 802.11g (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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	38.92	-35.08	74	63.19	31.19	8.9	64.36	100	0	P	H
													H
													H
													H
		4824	39.6	-34.4	74	63.87	31.19	8.9	64.36	100	0	P	V
													V
													V
													V
802.11g CH 06 2437MHz		4874	39.01	-34.99	74	63.27	31.28	8.86	64.4	100	0	P	H
		7311	45.58	-28.42	74	64.43	36.18	10.52	65.55	100	0	P	H
													H
													H
		4874	39.44	-34.56	74	63.7	31.28	8.86	64.4	100	0	P	V
		7311	47.34	-26.66	74	66.19	36.18	10.52	65.55	100	0	P	V
													V
													V
802.11g CH 11 2462MHz		4924	39.43	-34.57	74	63.65	31.38	8.84	64.44	100	0	P	H
		7386	43.62	-30.38	74	62.43	36.37	10.44	65.62	100	0	P	H
													H
													H
		4924	39.41	-34.59	74	63.63	31.38	8.84	64.44	100	0	P	V
		7386	46.23	-27.77	74	65.04	36.37	10.44	65.62	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		2389.905	57.98	-16.02	74	48.65	27.11	15.37	33.15	100	307	P	H
		2390	47.34	-6.66	54	38.01	27.11	15.37	33.15	100	307	A	H
	*	2412	101.81	-	-	92.39	27.16	15.41	33.15	100	307	P	H
	*	2412	94.27	-	-	84.85	27.16	15.41	33.15	100	307	A	H
													H
													H
		2389.905	53.35	-20.65	74	44.02	27.11	15.37	33.15	341	273	P	V
		2389.905	43.82	-10.18	54	34.49	27.11	15.37	33.15	341	273	A	V
	*	2412	99.45	-	-	90.03	27.16	15.41	33.15	341	273	P	V
	*	2412	91.75	-	-	82.33	27.16	15.41	33.15	341	273	A	V
													V
													V
802.11n HT20 CH 06 2437MHz		2368.38	52.14	-21.86	74	42.95	27.01	15.34	33.16	100	306	P	H
		2388.4	42.21	-11.79	54	32.89	27.11	15.37	33.16	100	306	A	H
	*	2437	102.52	-	-	92.97	27.26	15.43	33.14	100	306	P	H
	*	2437	94.78	-	-	85.23	27.26	15.43	33.14	100	306	A	H
		2486.49	51.77	-22.23	74	42.05	27.35	15.48	33.11	100	306	P	H
		2485.02	43.03	-10.97	54	33.31	27.35	15.48	33.11	100	306	A	H
		2349.62	51.4	-22.6	74	42.28	26.97	15.32	33.17	381	273	P	V
		2388.4	41.91	-12.09	54	32.59	27.11	15.37	33.16	381	273	A	V
	*	2437	101.56	-	-	92.01	27.26	15.43	33.14	381	273	P	V
	*	2437	93.8	-	-	84.25	27.26	15.43	33.14	381	273	A	V
		2495.73	51.56	-22.44	74	41.78	27.4	15.48	33.1	381	273	P	V
		2483.76	42.41	-11.59	54	32.69	27.35	15.48	33.11	381	273	A	V



802.11n HT20 CH 11 2462MHz	*	2462	102.38	-	-	92.76	27.3	15.44	33.12	124	309	P	H
	*	2462	95.19	-	-	85.57	27.3	15.44	33.12	124	309	A	H
		2484.6	58.08	-15.92	74	48.36	27.35	15.48	33.11	124	309	P	H
		2483.56	47.2	-6.8	54	37.48	27.35	15.48	33.11	124	309	A	H
													H
													H
	*	2462	102.23	-	-	92.61	27.3	15.44	33.12	368	269	P	V
	*	2462	94.87	-	-	85.25	27.3	15.44	33.12	368	269	A	V
		2483.52	58.52	-15.48	74	48.8	27.35	15.48	33.11	368	269	P	V
		2483.52	46.83	-7.17	54	37.11	27.35	15.48	33.11	368	269	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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		4824	40.24	-33.76	74	64.51	31.19	8.9	64.36	100	0	P	H
													H
													H
													H
		4824	39.77	-34.23	74	64.04	31.19	8.9	64.36	100	0	P	V
													V
													V
													V
802.11n HT20 CH 06 2437MHz		4874	39.02	-34.98	74	63.28	31.28	8.86	64.4	100	0	P	H
		7311	44	-30	74	62.85	36.18	10.52	65.55	100	0	P	H
													H
													H
		4874	40.08	-33.92	74	64.34	31.28	8.86	64.4	100	0	P	V
		7311	45.13	-28.87	74	63.98	36.18	10.52	65.55	100	0	P	V
													V
													V
802.11n HT20 CH 11 2462MHz		4924	39.33	-34.67	74	63.55	31.38	8.84	64.44	100	0	P	H
		7386	47.25	-26.75	74	66.06	36.37	10.44	65.62	100	0	P	H
													H
													H
		4924	41.59	-32.41	74	65.81	31.38	8.84	64.44	100	0	P	V
		7386	46.66	-27.34	74	65.47	36.37	10.44	65.62	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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 03 2422MHz		2389.24	59.04	-14.96	74	49.72	27.11	15.37	33.16	109	135	P	H
		2389.38	51.04	-2.96	54	41.72	27.11	15.37	33.16	109	135	A	H
	*	2422	99.8	-	-	90.32	27.21	15.41	33.14	109	135	P	H
	*	2422	92.17	-	-	82.69	27.21	15.41	33.14	109	135	A	H
		2494.12	53.14	-20.86	74	43.36	27.4	15.48	33.1	109	135	P	H
		2488.59	44.15	-9.85	54	34.38	27.4	15.48	33.11	109	135	A	H
		2389.94	54.7	-19.3	74	45.37	27.11	15.37	33.15	379	273	P	V
		2389.24	45.91	-8.09	54	36.59	27.11	15.37	33.16	379	273	A	V
	*	2422	97.69	-	-	88.21	27.21	15.41	33.14	379	273	P	V
	*	2422	90.34	-	-	80.86	27.21	15.41	33.14	379	273	A	V
		2489.92	52.41	-21.59	74	42.64	27.4	15.48	33.11	379	273	P	V
		2486.56	43.78	-10.22	54	34.06	27.35	15.48	33.11	379	273	A	V
802.11n HT40 CH 06 2437MHz		2387.14	53.39	-20.61	74	44.07	27.11	15.37	33.16	119	135	P	H
		2389.66	45.47	-8.53	54	36.15	27.11	15.37	33.16	119	135	A	H
	*	2437	99.47	-	-	89.92	27.26	15.43	33.14	119	135	P	H
	*	2437	91.88	-	-	82.33	27.26	15.43	33.14	119	135	A	H
		2483.5	54.44	-19.56	74	44.72	27.35	15.48	33.11	119	135	P	H
		2483.55	46.37	-7.63	54	36.65	27.35	15.48	33.11	119	135	A	H
		2354.94	51.7	-22.3	74	42.54	27.01	15.32	33.17	379	269	P	V
		2388.96	43.23	-10.77	54	33.91	27.11	15.37	33.16	379	269	A	V
	*	2437	98.98	-	-	89.43	27.26	15.43	33.14	379	269	P	V
	*	2437	91.48	-	-	81.93	27.26	15.43	33.14	379	269	A	V
		2483.69	52.17	-21.83	74	42.45	27.35	15.48	33.11	379	269	P	V
		2483.5	44.23	-9.77	54	34.51	27.35	15.48	33.11	379	269	A	V



802.11n HT40 CH 09 2452MHz		2339.26	51.53	-22.47	74	42.41	26.97	15.32	33.17	121	134	P	H
		2389.66	43.2	-10.8	54	33.88	27.11	15.37	33.16	121	134	A	H
	*	2452	99.8	-	-	90.22	27.26	15.44	33.12	121	134	P	H
	*	2452	92.27	-	-	82.69	27.26	15.44	33.12	121	134	A	H
		2487.75	58.84	-15.16	74	49.07	27.4	15.48	33.11	121	134	P	H
		2485.79	49.01	-4.99	54	39.29	27.35	15.48	33.11	121	134	A	H
		2388.82	51.53	-22.47	74	42.21	27.11	15.37	33.16	380	270	P	V
		2371.46	42.79	-11.21	54	33.55	27.06	15.34	33.16	380	270	A	V
	*	2452	98.72	-	-	89.14	27.26	15.44	33.12	380	270	P	V
	*	2452	91.37	-	-	81.79	27.26	15.44	33.12	380	270	A	V
		2489.64	55.88	-18.12	74	46.11	27.4	15.48	33.11	380	270	P	V
		2488.38	47.52	-6.48	54	37.75	27.4	15.48	33.11	380	270	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



EUT connect to Battery backpack

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)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 03 2422MHz		2389.94	61.14	-12.86	74	51.81	27.11	5.39	33.15	100	300	P	H
		2389.52	52.47	-1.53	54	43.15	27.11	5.39	33.16	100	300	A	H
	*	2422	100.65	-	-	91.17	27.21	5.43	33.14	100	300	P	H
	*	2422	93.18	-	-	83.7	27.21	5.43	33.14	100	300	A	H
		2484.74	52.5	-21.5	74	42.78	27.35	5.5	33.11	100	300	P	H
		2484.6	43.89	-10.11	54	34.17	27.35	5.5	33.11	100	300	A	H
		2389.52	57.75	-16.25	74	48.43	27.11	5.39	33.16	382	79	P	V
		2389.52	49.43	-4.57	54	40.11	27.11	5.39	33.16	382	79	A	V
	*	2422	97.28	-	-	87.8	27.21	5.43	33.14	382	79	P	V
	*	2422	89.98	-	-	80.5	27.21	5.43	33.14	382	79	A	V
		2484.81	51.82	-22.18	74	42.1	27.35	5.5	33.11	382	79	P	V
		2486.14	43.53	-10.47	54	33.81	27.35	5.5	33.11	382	79	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11n HT40 (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 LF		92.64	25.68	-17.82	43.5	42.03	15.13	1.24	32.72	-	-	P	H
		162.84	29.88	-13.62	43.5	44.44	16.36	1.75	32.67	100	0	P	H
		193.62	27.69	-15.81	43.5	43.56	14.88	1.89	32.64	-	-	P	H
		451.9	24.92	-21.08	46	31.76	23.09	2.69	32.62	-	-	P	H
		717.9	27.86	-18.14	46	30.09	27.11	3.42	32.76	-	-	P	H
		872.6	31.88	-14.12	46	31.15	29.13	3.84	32.24	-	-	P	H
													H
													H
													H
													H
													H
													H
		46.2	30.7	-9.3	40	46.52	16.03	0.91	32.76	100	0	P	V
		79.68	25.16	-14.84	40	43.4	13.3	1.19	32.73	-	-	P	V
		164.46	27.07	-16.43	43.5	41.83	16.16	1.75	32.67	-	-	P	V
		477.8	24.18	-21.82	46	30.49	23.53	2.79	32.63	-	-	P	V
		706.7	28.64	-17.36	46	31.19	26.81	3.41	32.77	-	-	P	V
		827.1	31.18	-14.82	46	31.61	28.38	3.69	32.5	-	-	P	V
													V
													V
												V	
												V	
												V	
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

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



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)

2. Level(dBμV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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



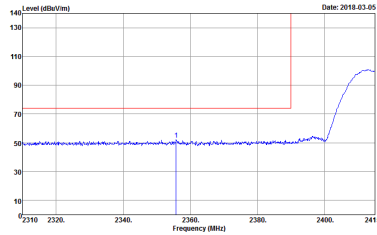
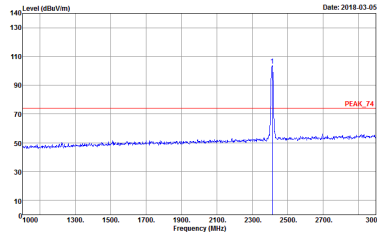
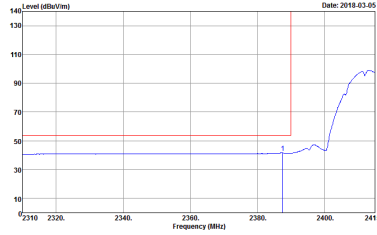
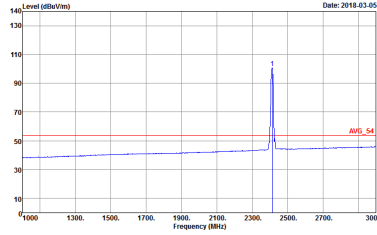
Appendix D. Radiated Spurious Emission Plots

Test Engineer :	Daniel Lee, Master Huang, and JC Liang	Temperature :	18~22°C
		Relative Humidity :	48~53%

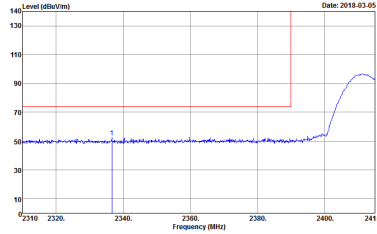
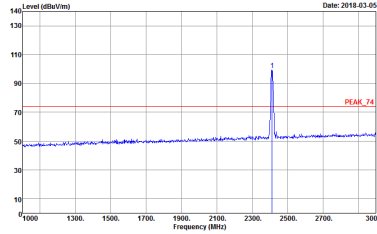
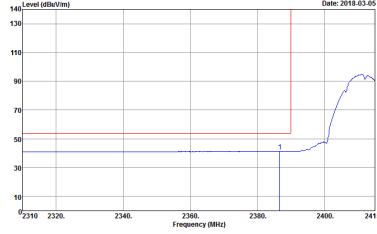
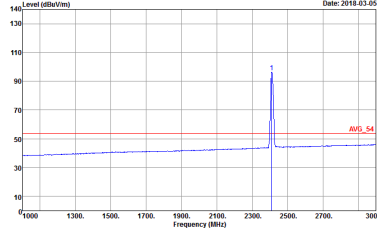
Note symbol

-L	Low channel location
-R	High channel location

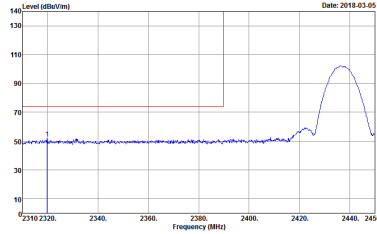
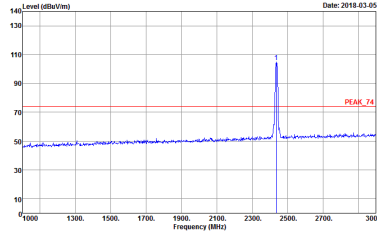
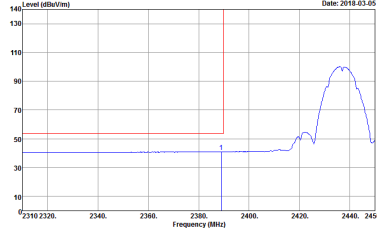
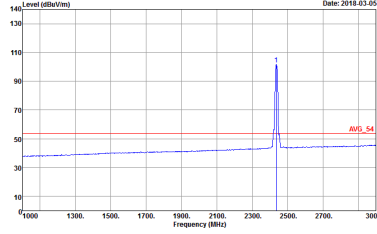
2.4GHz 2400~2483.5MHz
WIFI 802.11b (Band Edge @ 3m)

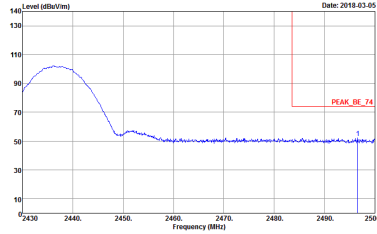
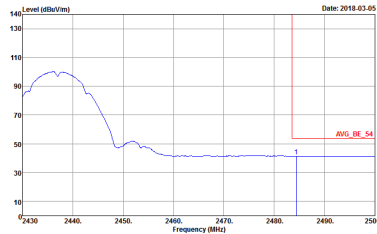
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 11	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 11
	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 11	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 11

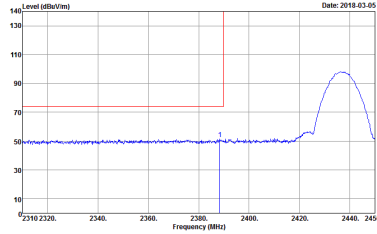
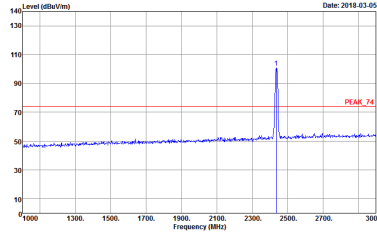
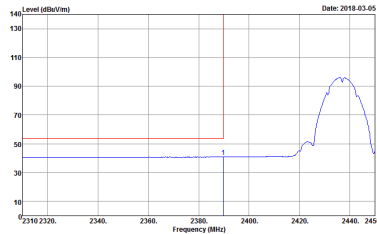
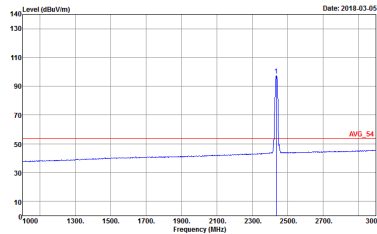


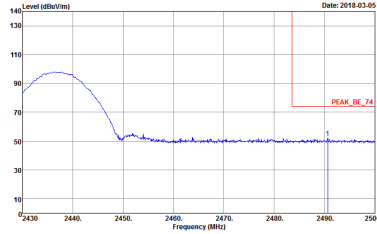
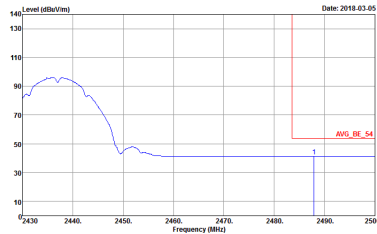
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 11	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 11
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 11	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 11



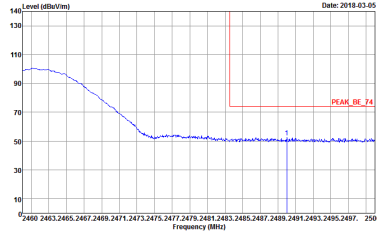
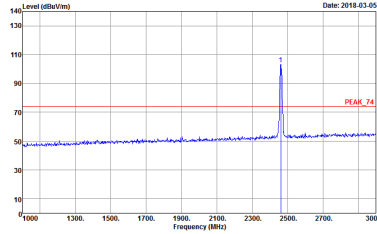
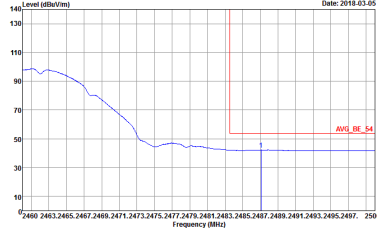
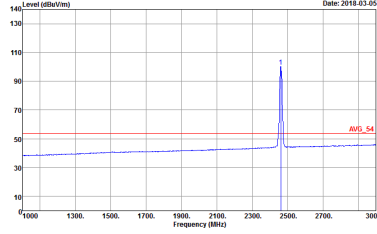
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 12	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 12
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 12	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 12

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 12	Left blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 12	Left blank

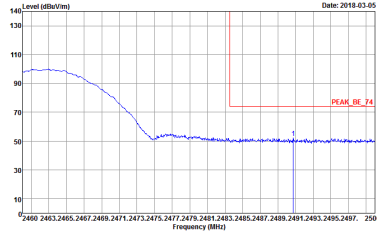
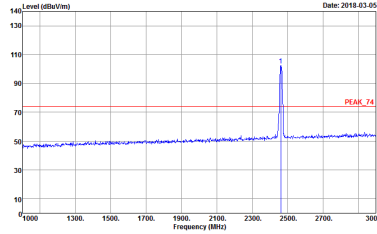
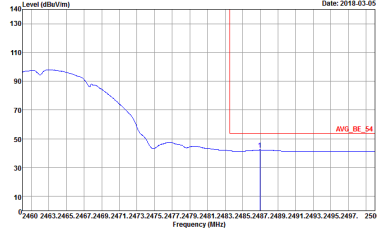
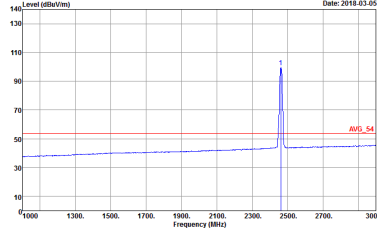
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 12	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 12
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 12	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 12

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 12	Left blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 12	Left blank

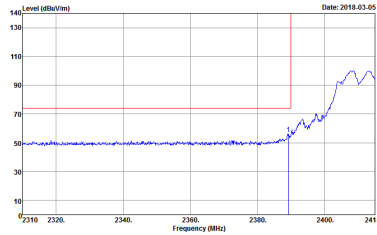
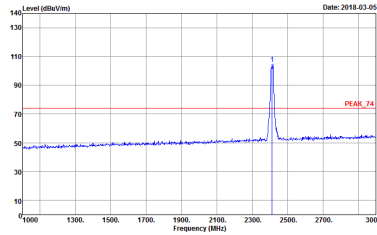
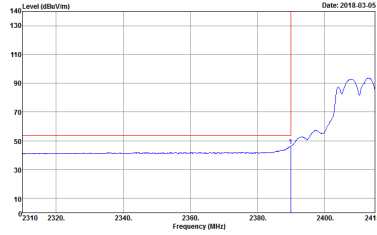
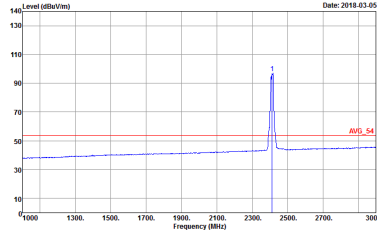


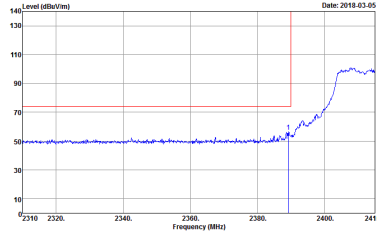
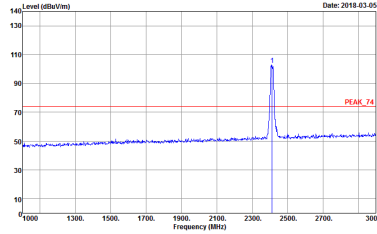
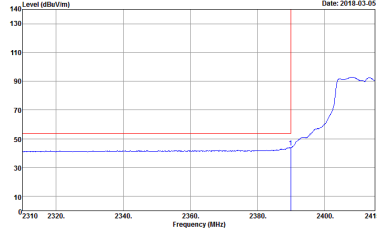
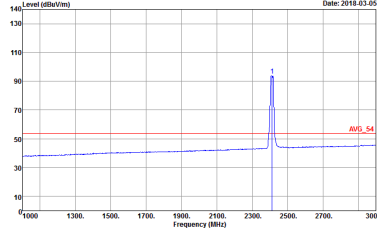
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 13	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 13
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 13	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 13

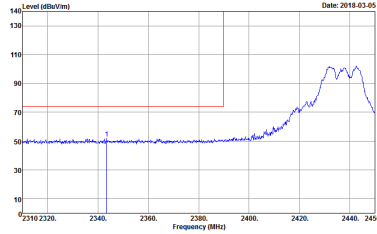
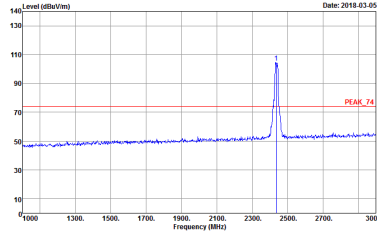
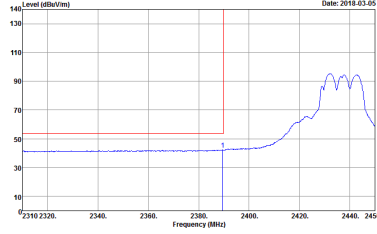
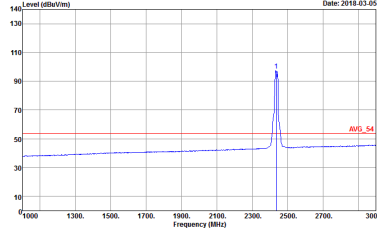


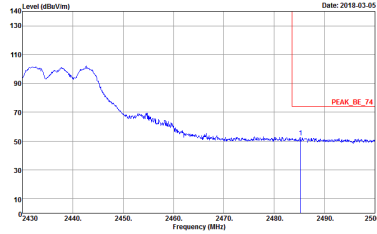
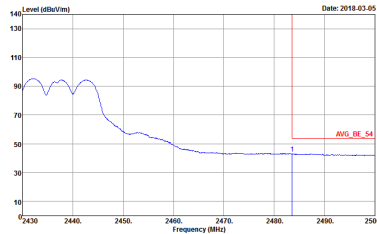
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 13	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 13
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 13	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 13

2.4GHz 2400~2483.5MHz
WIFI 802.11g (Band Edge @ 3m)

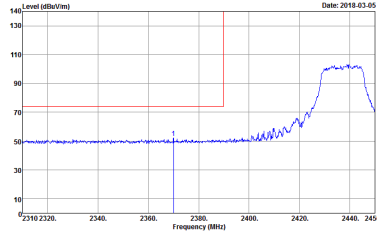
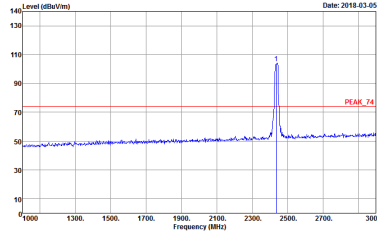
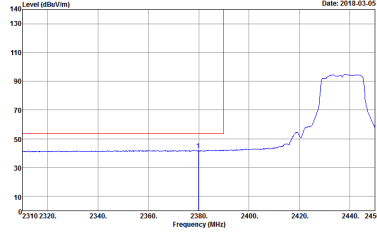
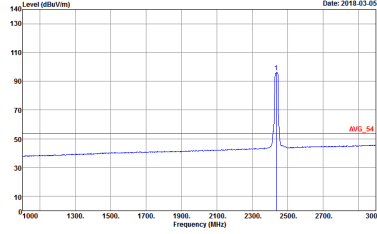
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 7D0829 Mode : 16	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 7D0829 Mode : 16
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL Detector : RBW:1000.000KHz VBW:1000KHz SWT:Auto Project : 7D0829 Mode : 16	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF HORIZONTAL Detector : RBW:1000.000KHz VBW:1000KHz SWT:Auto Project : 7D0829 Mode : 16

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 16	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 16
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 16	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 16

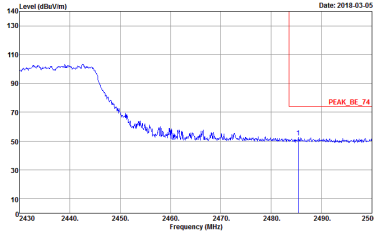
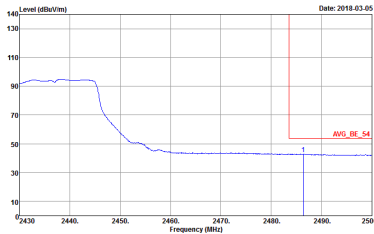
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 17	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 17
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 17	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 17

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 17	Left blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 17	Left blank

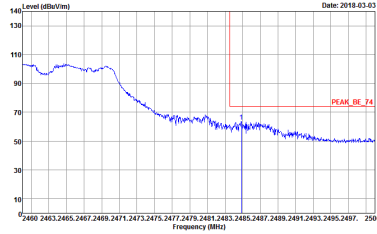
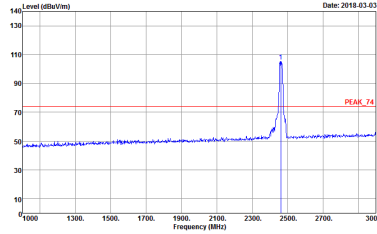
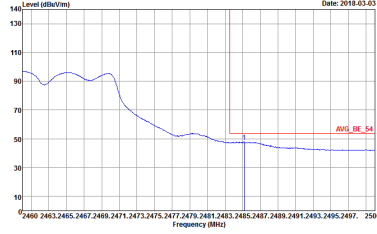
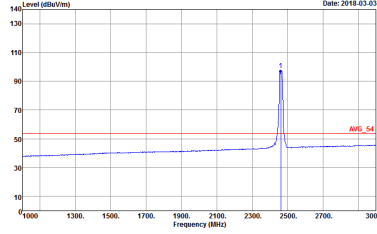


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 17	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 17
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 17	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 17

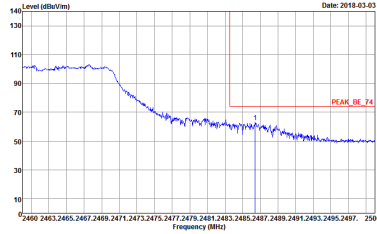
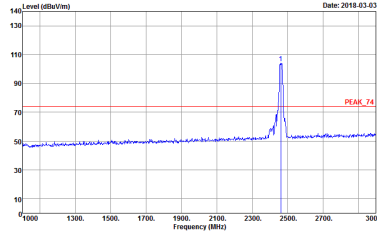
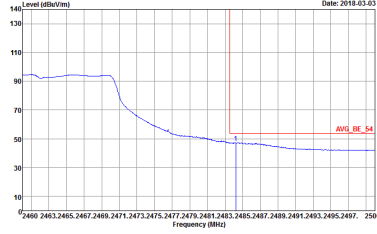
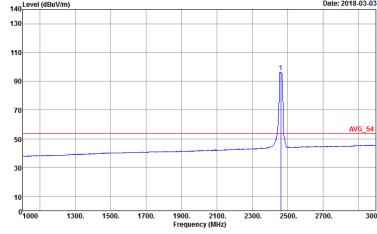


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 17	Left Blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 17	Left Blank

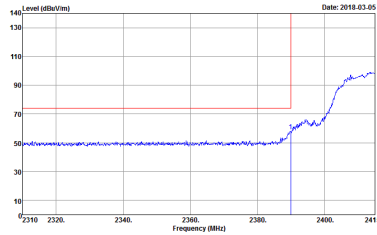
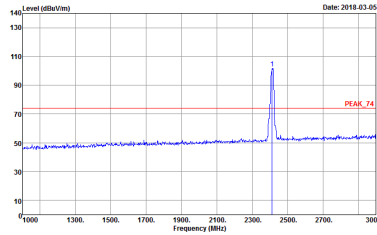
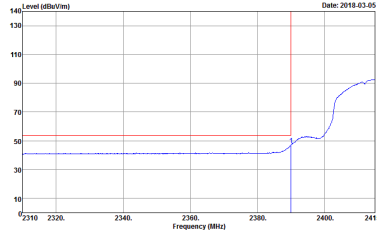
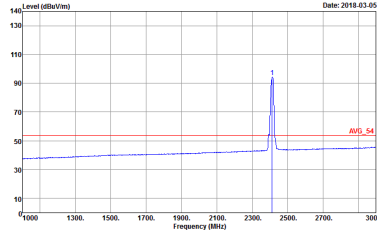


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 18	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 18
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 18	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 18

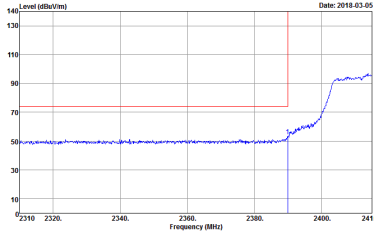
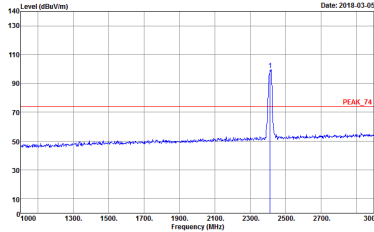
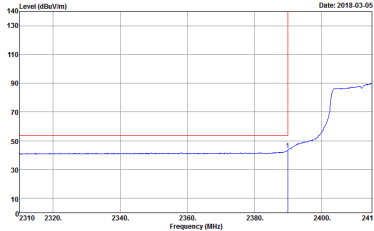
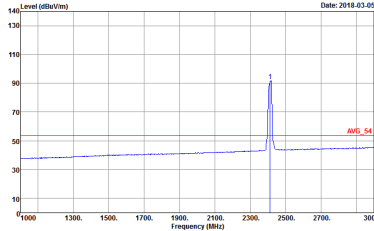


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 18	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 18
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 18	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 18

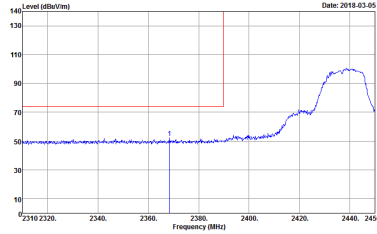
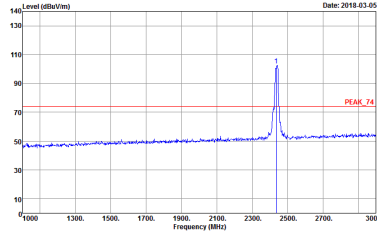
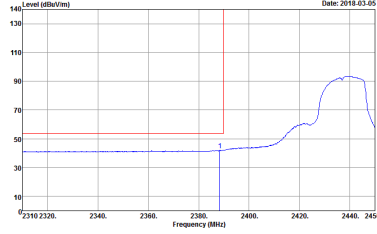
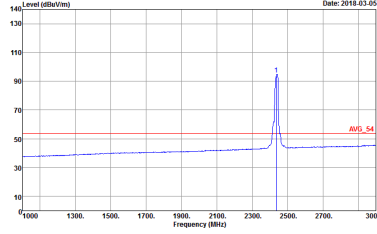
2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

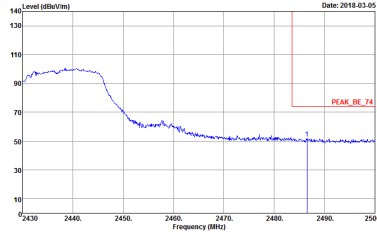
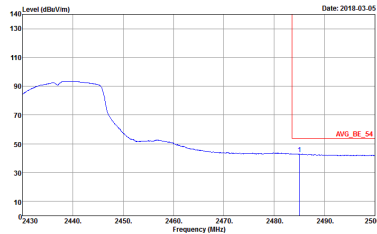
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 7D0829 Mode : Z1	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 7D0829 Mode : Z1
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL Detector : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Project : 7D0829 Mode : Z1	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF HORIZONTAL Detector : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Project : 7D0829 Mode : Z1



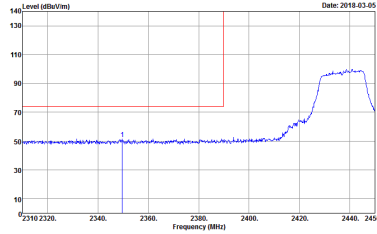
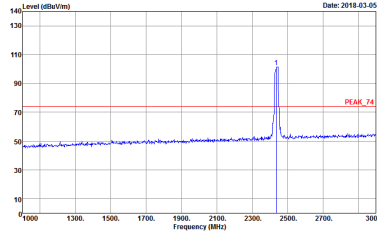
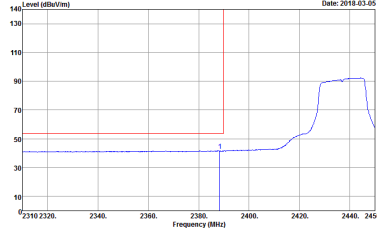
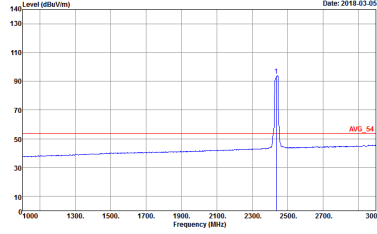
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : Z1	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : Z1
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : Z1	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : Z1



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 22	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 22
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 22	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 22

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 22	Left blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 22	Left blank

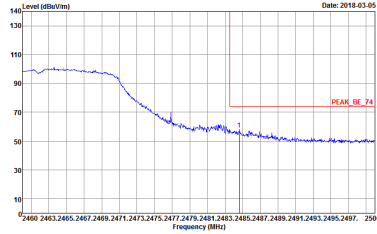
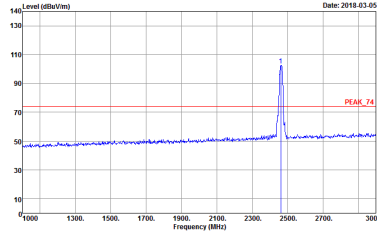
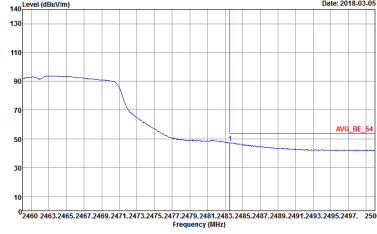
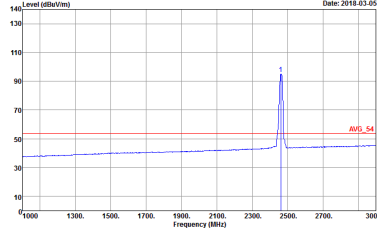


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 22	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 22
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 22	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 22



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak	Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 22	Left Blank
Avg.	Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 22	Left Blank

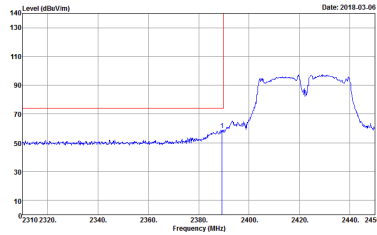
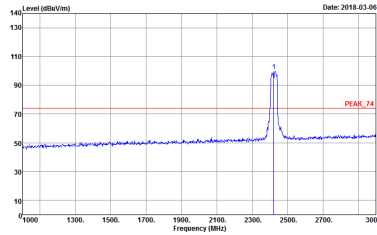
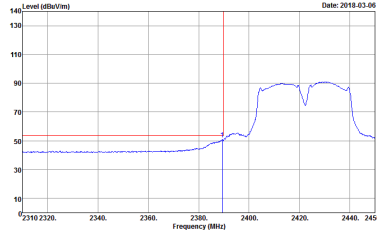
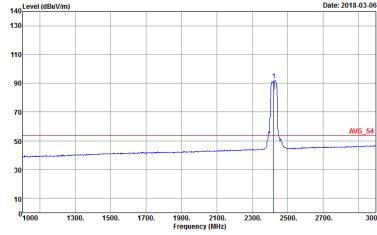


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 23	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 23
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 23	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 23

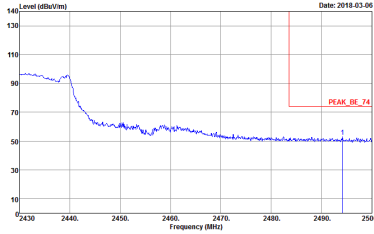
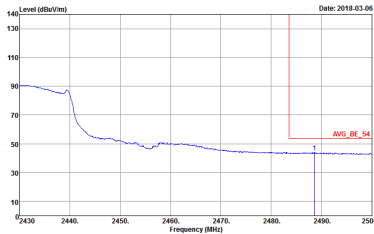


WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Vertical	Fundamental
Peak	Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 23	Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 23
Avg.	Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 23	Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:1000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 23

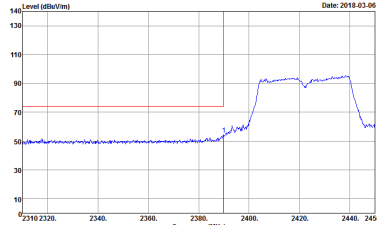
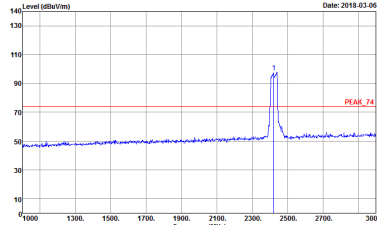
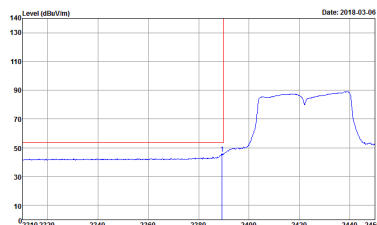
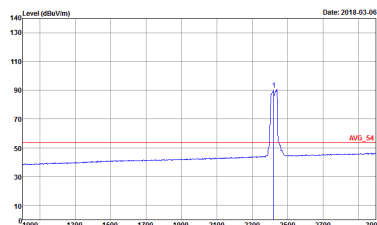
2.4GHz 2400~2483.5MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : Z6	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : Z6
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : Z6	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : Z6

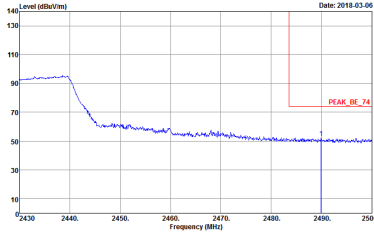
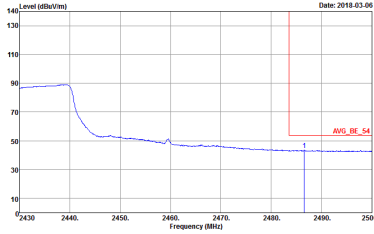


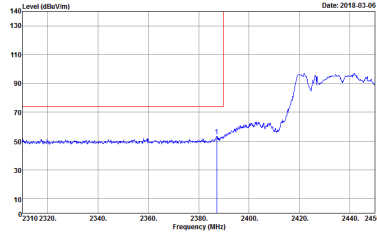
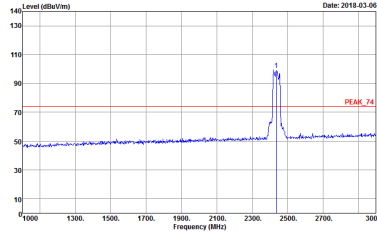
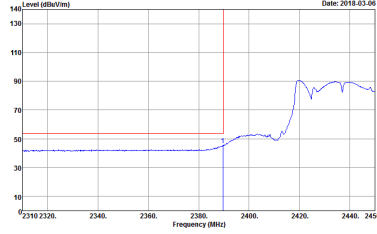
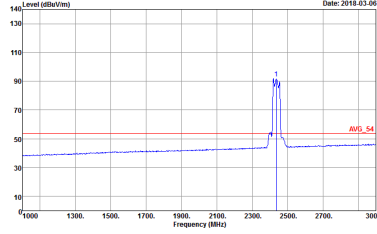
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 26	Left Blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 26	Left Blank

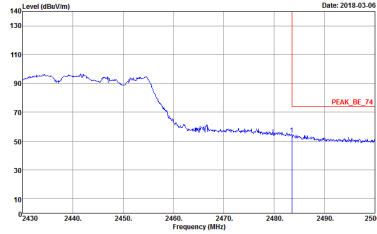
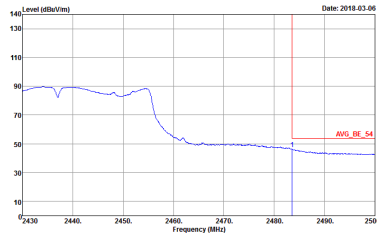


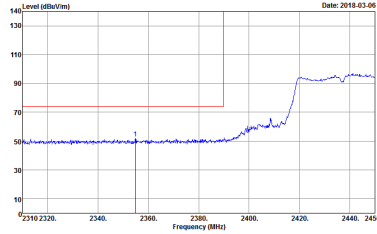
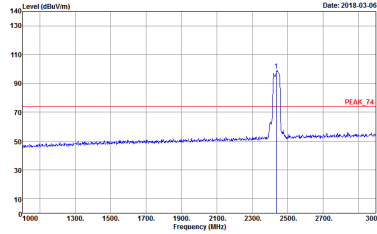
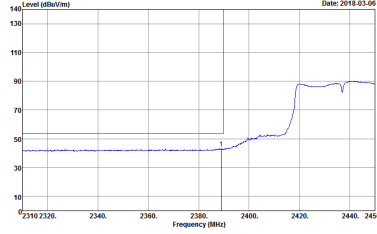
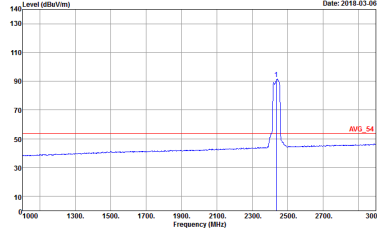
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 26	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 26
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 26	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 26

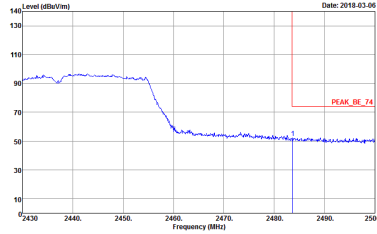
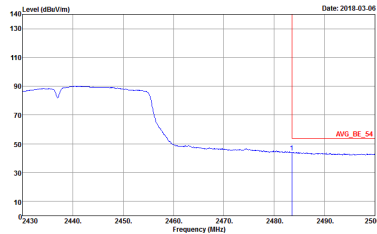


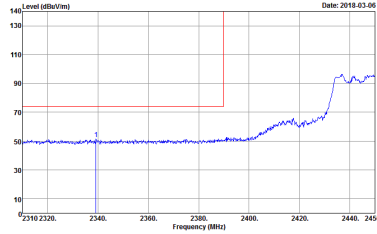
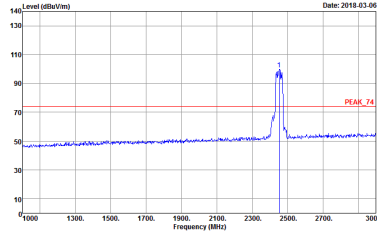
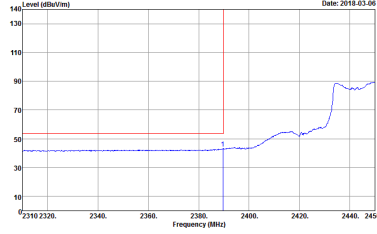
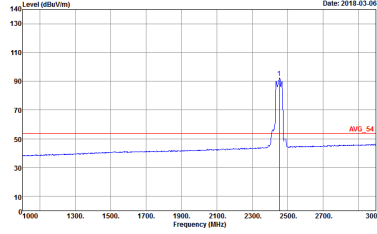
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 26	Left blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 26	Left blank

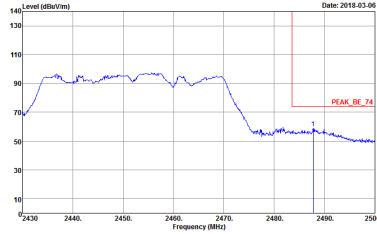
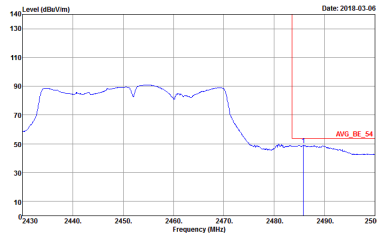
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 27	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 27
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 27	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 27

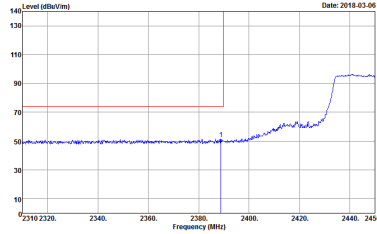
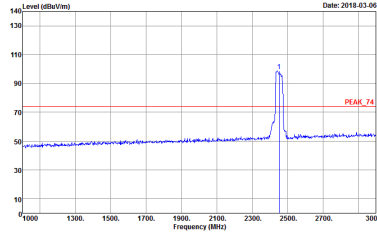
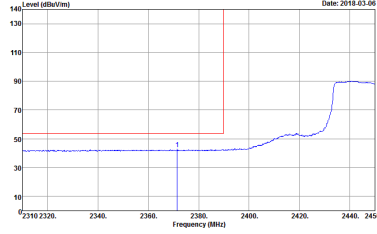
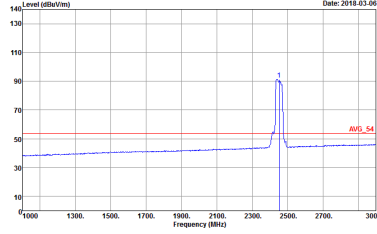
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : Z7	Left blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : Z7	Left blank

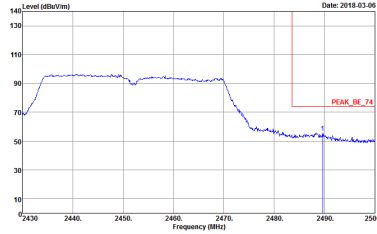
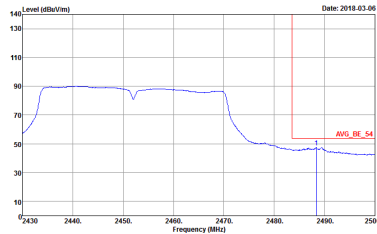
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 27	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 27
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 27	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 27

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : Z7	Left blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : Z7	Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 28	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 28
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 28	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 28

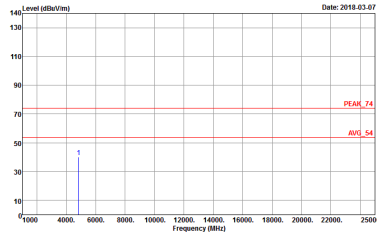
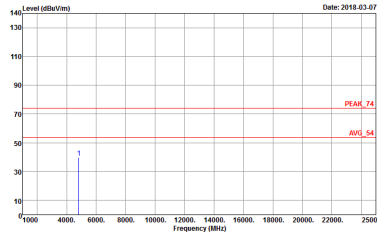
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 28	Left blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 28	Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 28	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 28
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 28	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 28

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 28	Left blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 28	Left blank



2.4GHz 2400~2483.5MHz
WIFI 802.11b (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-1F Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 11	 Site : 03CH10-1F Condition : PEAK_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 11

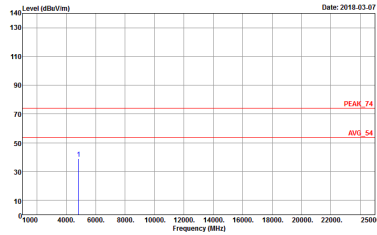
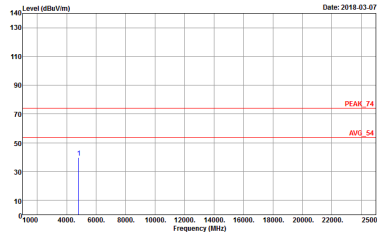


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	Site : 03CH10-IHV Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 12	Site : 03CH10-IHV Condition : PEAK_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 12



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.	Site : 03CH10-IHV Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 13	Site : 03CH10-IHV Condition : PEAK_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 13

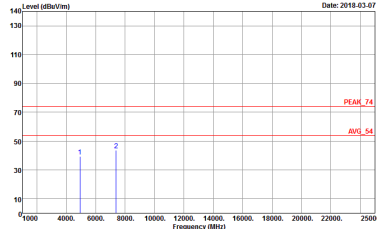
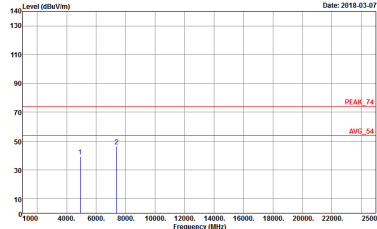
2.4GHz 2400~2483.5MHz
WIFI 802.11g (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 16	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 16

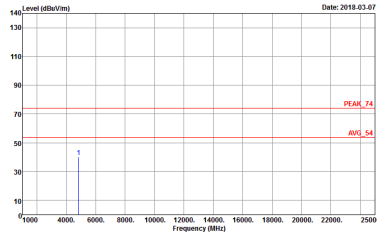
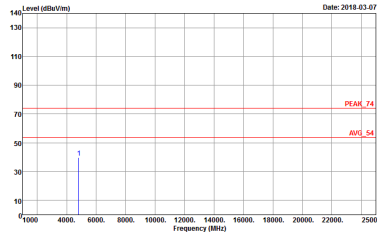


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	Site : 03CH10-IHV Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 17	Site : 03CH10-IHV Condition : PEAK_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 17

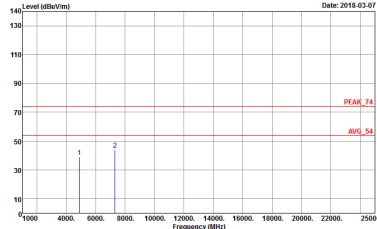
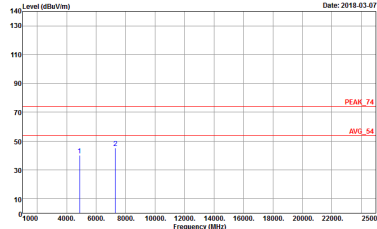


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-IHV Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 1B	 Site : 03CH10-IHV Condition : PEAK_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 1B

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.	 Site : 03CH10-1F Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 21	 Site : 03CH10-1F Condition : PEAK_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 21

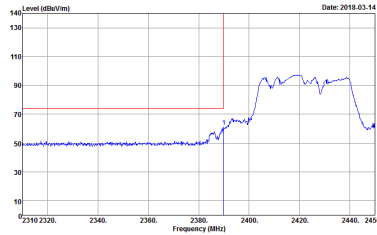
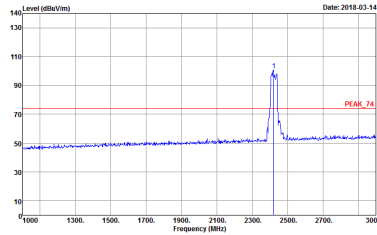
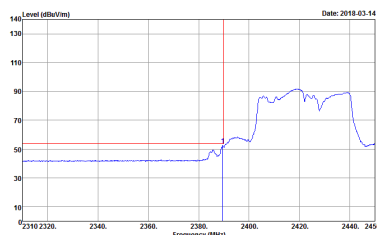
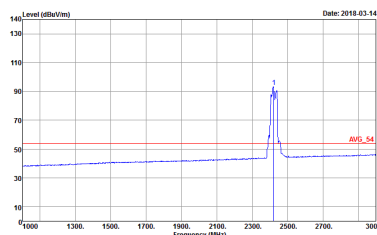


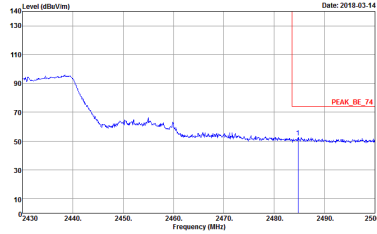
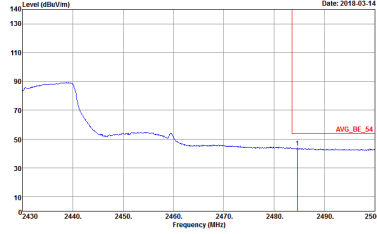
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HV Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 22	 Site : 03CH10-HV Condition : PEAK_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 22



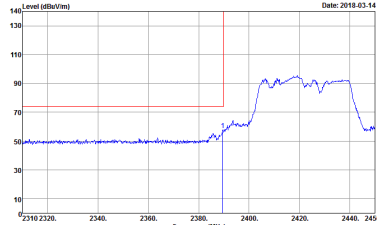
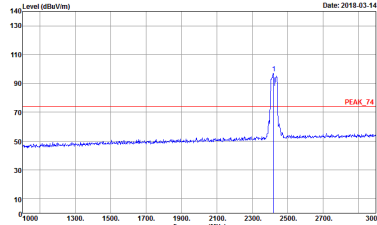
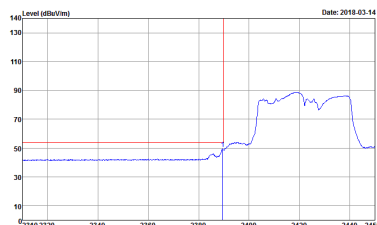
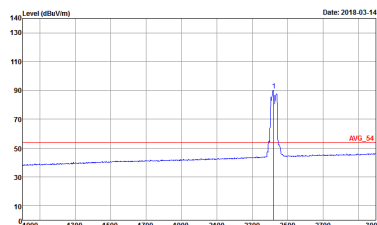
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.	Site : 03CH10-IHV Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 23	Site : 03CH10-IHV Condition : PEAK_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 23

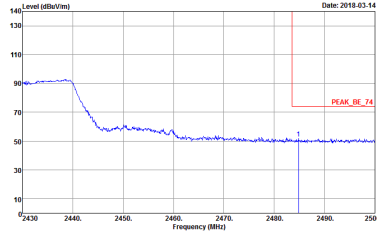
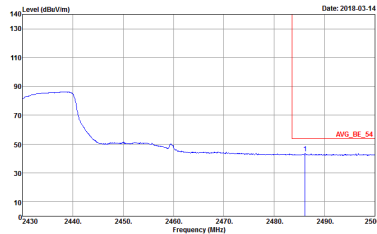
EUT connect to Battery backpack
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 31 : connect battery backpack	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 31 : connect battery backpack
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 31 : connect battery backpack	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 31 : connect battery backpack

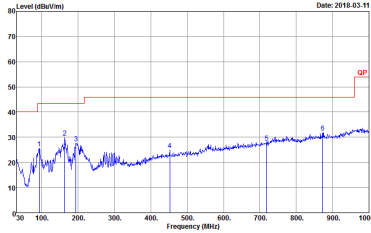
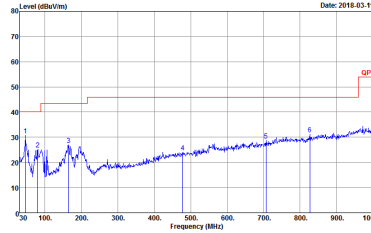
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 31 : connect battery backpack	Left Blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 31 : connect battery backpack	Left Blank



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 31 : connect battery backpack	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 31 : connect battery backpack
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 31 : connect battery backpack	 Site : 03CH10-HY Condition : AVG_54 3m HORN 91200-HF VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 7D0829 Mode : 31 : connect battery backpack

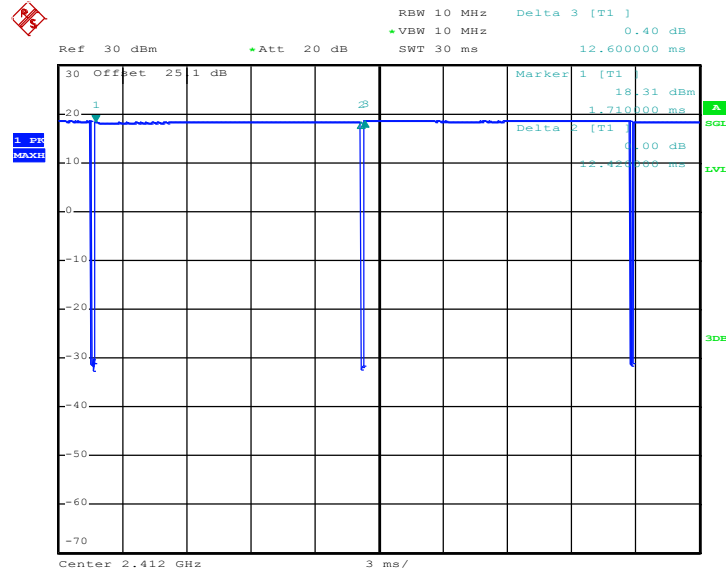
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1+2	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 31 : connect battery backpack	Left blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 91200-HF VERTICAL Detector : Peak Project : 7D0829 Mode : 31 : connect battery backpack	Left blank

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

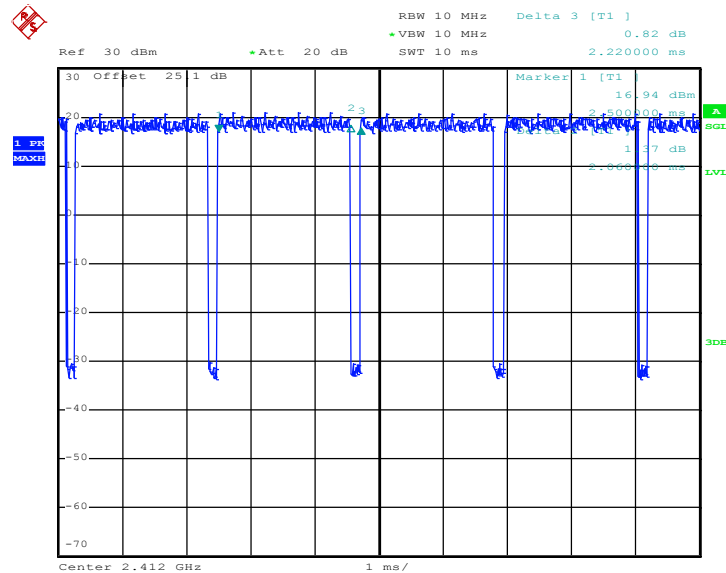
WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11g LF	
1+2	Horizontal	Vertical
QP / Peak	 Site : 03CH10-HY Condition : QP 3m BT-LOG 6111D-LF HORIZONTAL Detector : Peak Project : 7D0829 Mode : 32	 Site : 03CH10-HY Condition : QP 3m BT-LOG 6111D-LF VERTICAL Detector : Peak Project : 7D0829 Mode : 32

Appendix E. Duty Cycle Plots

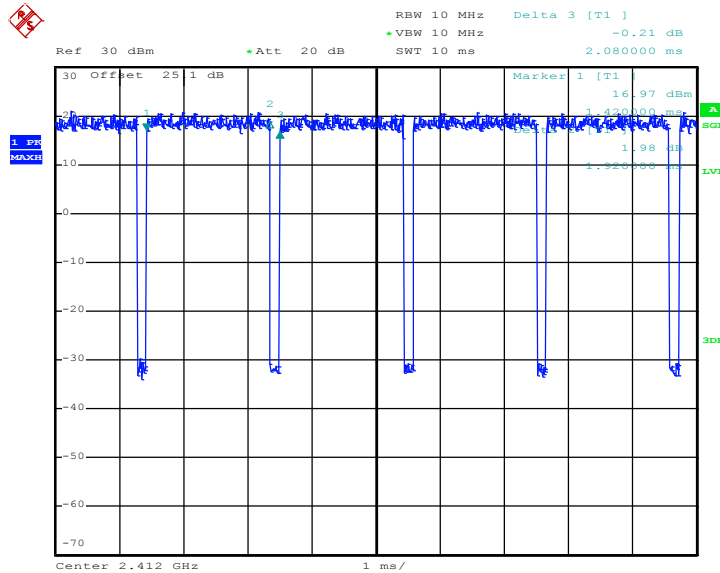
Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
1+2	802.11b for Ant. 1	98.57	-	-	10Hz	0.06
1+2	802.11b for Ant. 2	98.57	-	-	10Hz	0.06
1+2	802.11g for Ant. 1	92.79	2060	0.49	1kHz	0.32
1+2	802.11g for Ant. 2	92.79	2060	0.49	1kHz	0.32
1+2	2.4GHz 802.11n HT20 for Ant. 1	92.31	1920	0.52	1kHz	0.35
1+2	2.4GHz 802.11n HT20 for Ant. 2	92.31	1920	0.52	1kHz	0.35
1+2	2.4GHz 802.11n HT40 for Ant. 1	87.04	940	1.06	3kHz	0.60
1+2	2.4GHz 802.11n HT40 for Ant. 2	86.92	930	1.08	3kHz	0.61

MIMO<Ant. 1>
802.11b


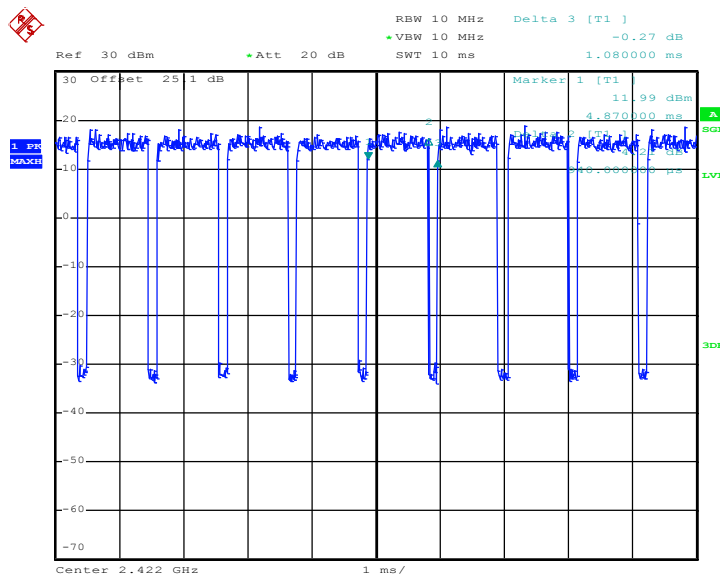
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802.11g


Date: 27.DEC.2017 20:10:19

802.11n HT20


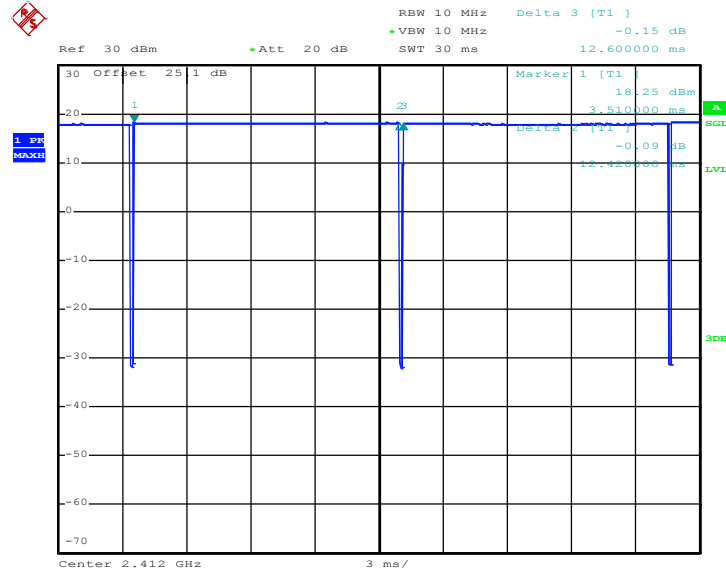
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802.11n HT40


Date: 27.DEC.2017 20:24:44

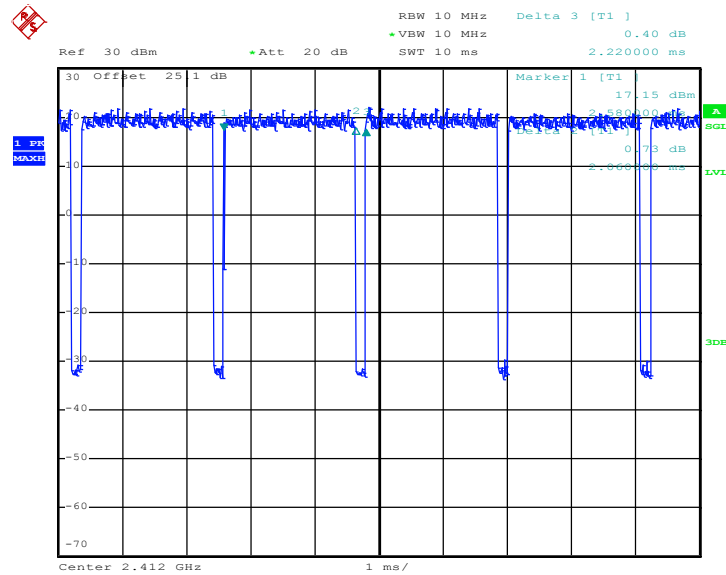
MIMO<Ant. 2>

802.11b



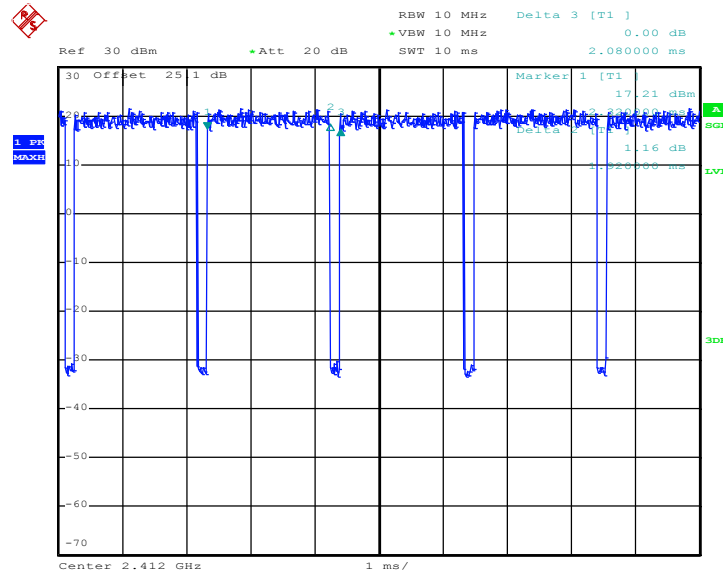
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802.11g



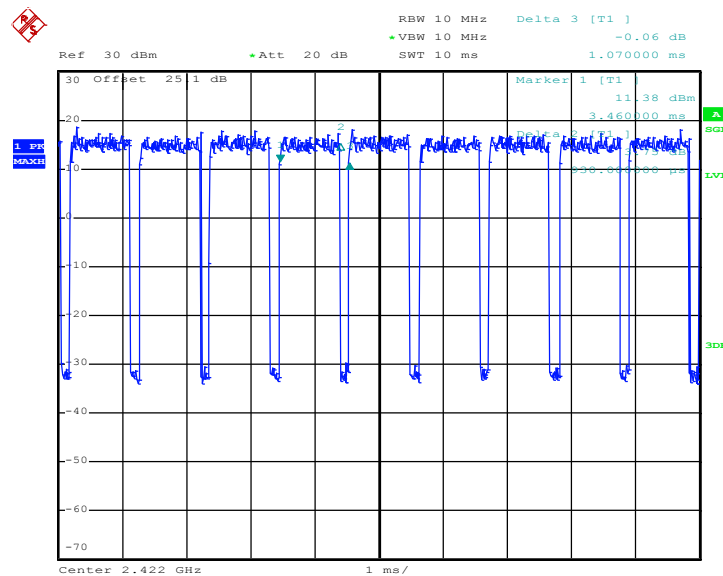
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802.11n HT20



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802.11n HT40



Date: 27.DEC.2017 20:25:19