

TEST REPORT

REPORT NUMBER: B17W00112-WLAN_2.4GHz_Rev2

ON

Type of Equipment: 4G TLE mobile phone
Model Name: A1-901
Manufacturer: SHENZHEN FUTAIHONG PRECISION
INDUSTRY CO.,LTD

ACCORDING TO

FCC Part 15, Subpart C, 2015:

15.205 Restricted bands of operation,

15.209 Radiated emission limits; general requirements,

15.247 Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz

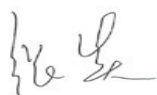
**ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed
Wireless Devices**

Chongqing Institute of Telecommunications

Month date, year

Jun, 2 2017

Signature



Zhang Yan
Director

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of Chongqing Institute of Telecommunications.

FCC ID: 2AK9KA1

Report Date: 2017-06-02

Test Firm Name: Chongqing Institute of Telecommunications

FCC Registration Number: 428018

Statement

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC Parts 15, subpart C. The sample tested was found to comply with the requirements defined in the applied rules.

CONTENTS

1 GENERAL INFORMATION	4
1.1 NOTES.....	4
1.2 TESTERS	5
1.3 TESTING LABORATORY INFORMATION.....	6
1.4 DETAILS OF APPLICANT OR MANUFACTURER.....	7
2 TEST ITEM.....	8
2.1 GENERAL INFORMATION	8
2.2 OUTLINE OF EQUIPMENT UNDER TEST	8
2.3 MODIFICATIONS INCORPORATED IN EUT	8
2.4 EQUIPMENT CONFIGURATION	8
2.5 OTHER INFORMATION.....	9
3 SUMMARY OF TEST RESULTS	9
4 TEST EQUIPMENTS AND ANCILLARIES USED FOR TESTS	10
5 TEST RESULTS	11
5.1 MAXIMUM PEAK OUTPUT POWER	11
5.2 PEAK POWER SPECTRAL DENSITY	13
5.3 6DB OCCUPIED BANDWIDTH	33
5.4 BAND EDGES COMPLIANCE.....	47
5.5 TRANSMITTER SPURIOUS EMISSION-CONDUCTED.....	61
5.6 TRANSMITTER SPURIOUS EMISSION-RADIATED	101
5.7 POWER LINE CONDUCTED EMISSIONS.....	108
ANNEX A EUT PHOTOS.....	111
ANNEX B DEVIATIONS FROM PRESCRIBED TEST METHODS	112

1 General Information

1.1 Notes

All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC Parts 15, subpart C and ANSI C63.10-2013 and FCC DA 00-705.

The test results of this test report relate exclusively to the item(s) tested as specified in section 2.

The following deviation from, additions to, or exclusions from the test specifications have been made. See Annex C.

Chongqing Institute of Telecommunications authorizes the applicant or manufacturer (see section 1.4) to reproduce this report provided, and the test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of director of Mr. Zhang Yan.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Chongqing Institute of Telecommunications accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

1.2 Testers

Name: Li Xu
Position: Engineer
Department: Department of RF test
Date: 2017-02-21 to 2017-06-02
Signature: 

Editor of this test report:

Name: Zhou Jin
Position: Engineer
Department: Department of RF test
Date: 2017-06-02
Signature: 

Technical responsibility for area of testing:

Name: Zhang Yan
Position: Manager
Department: Director of the laboratory
Date: 2017-06-02
Signature: 

1.3 Testing Laboratory information

1.3.1 Location

Name: Chongqing Institute of Telecommunications
Address: No. 8, Yuma Road, Chayuan New City, Nan'an District
Chongqing
P. R. CHINA, 401336
Tel: 0086 23 88069965
Fax: 0086 23 88608777
Email: songweiwei@chinattl.com

1.3.2 Details of accreditation status

Accredited by: -----
Registration number: -----
Standard: -----

1.3.3 Test location, where different from section 1.3.1

Name: -----
Street: -----
City: -----
Country: -----
Telephone: -----
Fax: -----
Postcode: -----

1.4 Details of applicant or manufacturer

1.4.1 Applicant

Name: Cloud Minds(Shenzhen) Holdings Co. Ltd
Address: Room 201 Building A No.1 Qian hai shengang Corporation
Zone Qian hai Road 1st Shenzhen (Stay by Shenzhen
Qianhai Commerce Secretariat Co., Ltd)
Country: China
Telephone: 0086 13426155325
Fax: -----
Contact: andy.xu
Email: andy.xu@cloudminds.com

1.4.2 Manufacturer (if different from applicant in section 1.4.1)

Name: SHENZHEN FUTAIHONG PRECISION INDUSTRY
CO.,LTD
Address: Office Address Floor 2.Building 3. Zone K1. Foxcon
Technology park, 2ND DONGHUA RD NO.2.LONGHUA
Agency. LONGHUA NEW DISTRICT SHENZHEN
Country: China
Telephone: -----
Fax: -----
Contact: -----
Email: -----

2 Test Item

2.1 General Information

Manufacturer: SHENZHEN FUTAIHONG PRECISION INDUSTRY CO.,LTD
 Type of Equipment: 4G TLE mobile phone
 Model Name: A1-901
 Serial Number: S7/18: 862851030000163/862851030020161
 S15/18: 862851030000175/862851030020177
 Production Status: Product
 Receipt date of test item: 2017-02-21

2.2 Outline of Equipment under Test

The A1-901, referred to as “EUT” hereafter, is a 4G TLE mobile phone operating on the GSM/UMTS/LTE networks. The table below shows the supported bands for the EUT.

Technology	Band	UL Freq.(MHz)	DL Freq.(MHz)	Note
GSM	GSM850	824 - 849	869 - 894	--
	PCS1900	1850 - 1910	1930 - 1990	--
WCDMA	B2	1850 - 1910	1930 - 1990	--
	B5	824 - 849	869 - 894	--
CDMA/EVDO	BC0	824 - 849	869 - 894	--
	BC1	1850 - 1910	1930 - 1990	--
LTE	B7	2500 - 2570	2620 - 2690	--
	B41	2496 - 2690	2496 - 2690	--

2.3 Modifications Incorporated in EUT

The EUT has not been modified from what is described by the brand name and unique type identification stated above.

2.4 Equipment Configuration

Equipment configuration list:

Item	Generic Description	Manufacturer	Type	Serial No.	Remarks
A	Adaptor	None	None	--	None

2.5 Other Information

Test Mode	Test Modes Description
802.11b	IEEE 802.11b with data rate of 1 Mbps using SISO mode.
802.11g	IEEE 802.11g with data rate of 6 Mbps using SISO mode.
802.11n20	IEEE 802.11n with data rate of MCS0 and bandwidth of 20MHz using SISO mode.
802.11n40	IEEE 802.11n with data rate of MCS0 and bandwidth of 40MHz using SISO mode.
802.11n20m	IEEE 802.11n with data rate of MCS0 and bandwidth of 20MHz using MIMO mode.
802.11n40m	IEEE 802.11n with data rate of MCS0 and bandwidth of 40MHz using MIMO mode.

Note: Worst cases for IEEE 802.11 mode are selected to perform tests.

3 Summary of Test Results

A brief summary of the tests carried out is shown as following.

FCC Rules	Name of Test	Result
15.247(b)	Maximum Peak Output Power	Pass
15.247(e)	Peak Power Spectral Density	Pass
15.247(a)	6dB Occupied Bandwidth	Pass
15.247(d)	Band Edges Compliance	Pass
15.247 (d)	Transmitter Spurious Emission-Conducted	Pass
15.247, 15.205, 15.209	Transmitter Spurious Emission-Radiated	Pass
ANSI C63.4 voltage mains test	Power line Conducted Emissions	Pass

4 Test Equipments and Ancillaries Used For Tests

The test equipments and ancillaries used are as follows.

No.	Equipment	Model	SN	Manufacture	Cal. Due Date
1	EMI Test Receiver	ESU26	100367	R&S	2018-03-03
2	Trilog super broadband test antenna	VULB 9163	9163-544	R&S	2017-12-01
3	Double-Ridged Horn Antenna	HF907	100356	R&S	2017-12-01
4	Fully-Anechoic Chamber	11.8m×6.5m×6.3m	--	ETS	2017-08-19
5	Universal Radio Communication Tester	CMW500	128181	R&S	2018-03-03
6	Signal Generator	SMU200A	104517	R&S	2018-03-03
7	spectrum analyzer	FSQ 26	201137/026	R&S	2018-03-03
8	spectrum analyzer	N9020A	MY50200376	Agilent	2018-03-03
9	Universal Radio Communication Tester	CMU200	112012	R&S	2018-03-03
10	Climate chamber	SH-241	92010759	ESPEC	2018-03-03
11	DC Power Supply	N6705B	MY50000919	Agilent	2017-12-06

5 Test Results

5.1 Maximum Peak Output Power

Specifications:	FCC Part 15.247(b)
DUT Serial Number:	S15/18: 862851030000175/862851030020177
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

The maximum peak output power of the intentional radiator shall not exceed the following:

1. For systems using digital modulation in the bands of 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz: 1 watt.
2. Except as shown in paragraphs (b)(3) (i), (ii) and (iii) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Method:

The measurement is according to ANSI C63.10 clause 11.2

1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Enable EUT transmitter maximum power continuously.
3. Set RBW $\geq$ OBW, Set the appropriate VBW
4. Detector : Peak.
5. Trace mode: Max Hold

Note: --

Measurement Results:

Mode	Antenna	Teat Result(dBm)			Conclusion
		Ch1	Ch6	Ch11	
802.11b	1	15.77	15.82	15.28	Pass
802.11g		18.18	18.30	17.46	Pass
802.11n20		18.34	17.92	17.34	Pass
802.11n40		18.67	18.09	18.68	Pass
802.11n20m		19.15	18.41	18.67	Pass
802.11n40m		18.37	18.25	18.78	Pass

Mode	Antenna	Teat Result(dBm)			Conclusion
		Ch1	Ch6	Ch11	
802.11b	2	12.38	12.36	12.41	Pass
802.11g		15.83	15.58	15.28	Pass
802.11n20		15.63	15.44	15.12	Pass
802.11n40		16.10	16.25	15.94	Pass
802.11n20m		15.91	15.63	15.35	Pass
802.11n40m		15.70	15.67	15.60	Pass

Conclusion: PASS

5.2 Peak Power Spectral Density

Specifications:	FCC CFR Part 15.247(e)
DUT Serial Number:	S15/18: 862851030000175/862851030020177
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	--

Limit Level Construction:

Standard	Limit
FCC CFR Part 15.247(e)	< 8dBm/3 kHz

Test procedure:

The measurement is according to ANSI C63.10 clause 11.10.

1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Enable EUT transmitter maximum power continuously.
3. Set analyzer center frequency to DTS channel center frequency.
4. Set the span to 1.5 times the DTS bandwidth.
5. Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
6. Set the VBW $\geq [3 \times \text{RBW}]$.
7. Detector = peak.
8. Sweep time = auto couple.
9. Trace mode = max hold.
10. Allow trace to fully stabilize.
11. Use the peak marker function to determine the maximum amplitude level within the RBW.
12. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

Note: --

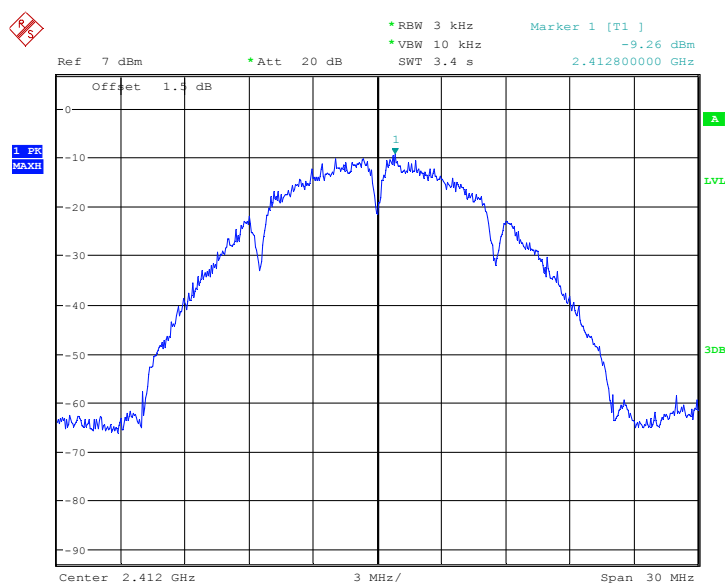
Test Results:

802.11b/g/n mode

Mode	Antenna	Power Spectral Density(dBm/3kHz)			Conclusion
		Ch1	Ch6	Ch11	
802.11b	1	-9.26	-10.55	-9.83	Pass
802.11g		-14.49	-12.49	-14.50	Pass
802.11n20		-14.07	-13.43	-15.16	Pass
802.11n40		-16.34	-16.85	-14.78	Pass
802.11n20m		-13.76	-13.70	-12.94	Pass
802.11n40m		-16.16	-16.31	-16.68	Pass

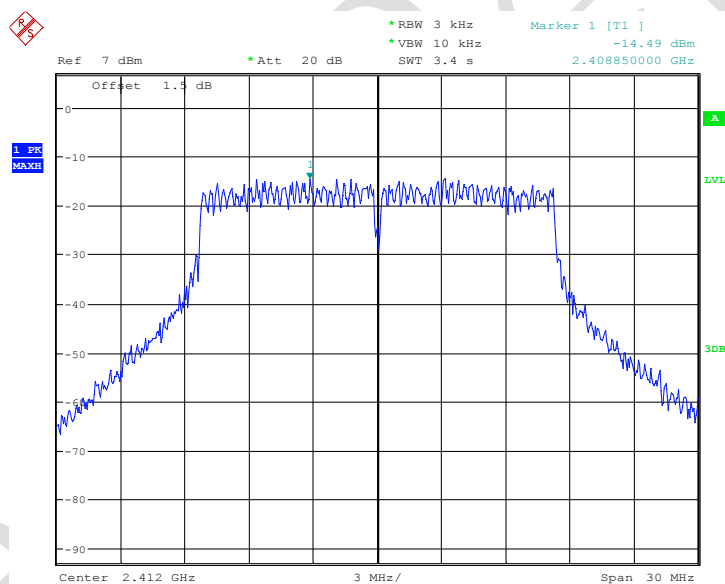
Mode	Antenna	Power Spectral Density(dBm/3kHz)			Conclusion
		Ch1	Ch6	Ch11	
802.11b	2	-12.20	-13.74	-12.35	Pass
802.11g		-14.84	-16.52	-16.55	Pass
802.11n20		-15.07	-14.48	-17.08	Pass
802.11n40		-18.93	-15.30	-18.62	Pass
802.11n20m		-16.44	-15.69	-16.92	Pass
802.11n40m		-16.53	-17.79	-17.63	Pass

Test figure as below:



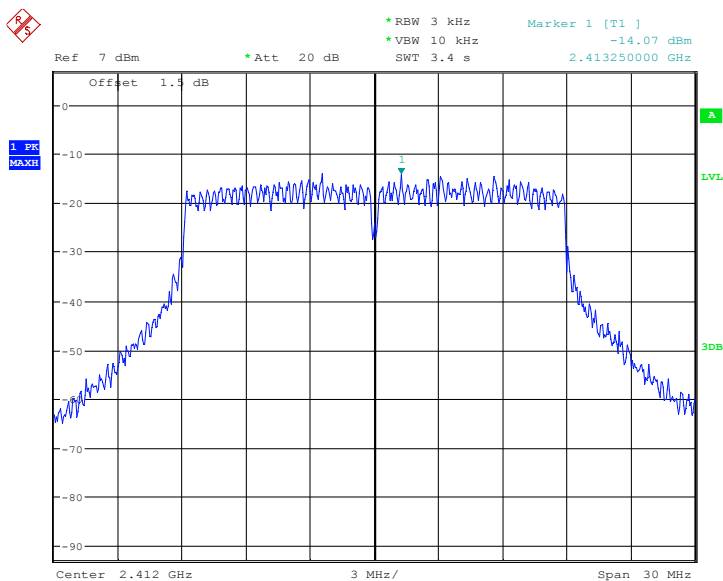
Date: 14.MAR.2017 02:28:14

Fig.1 Power spectral density: CH1,11b(Antenna 1)



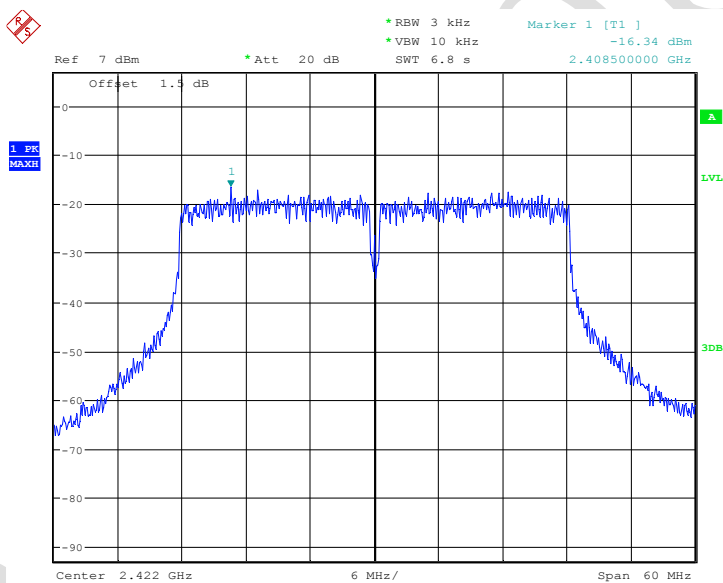
Date: 14.MAR.2017 02:28:52

Fig.2 Power spectral density: CH1,11g(Antenna 1)



Date: 14.MAR.2017 02:29:30

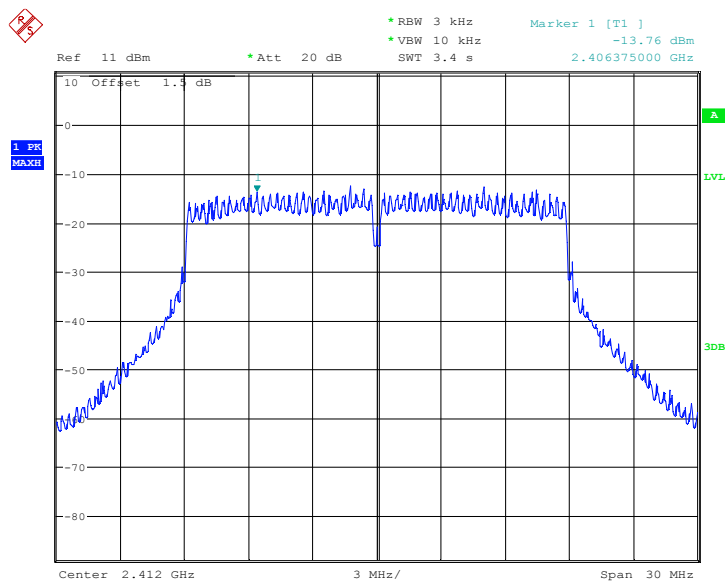
Fig.3 Power spectral density: CH1,11n(20M) (Antenna 1)



Date: 14.MAR.2017 02:30:14

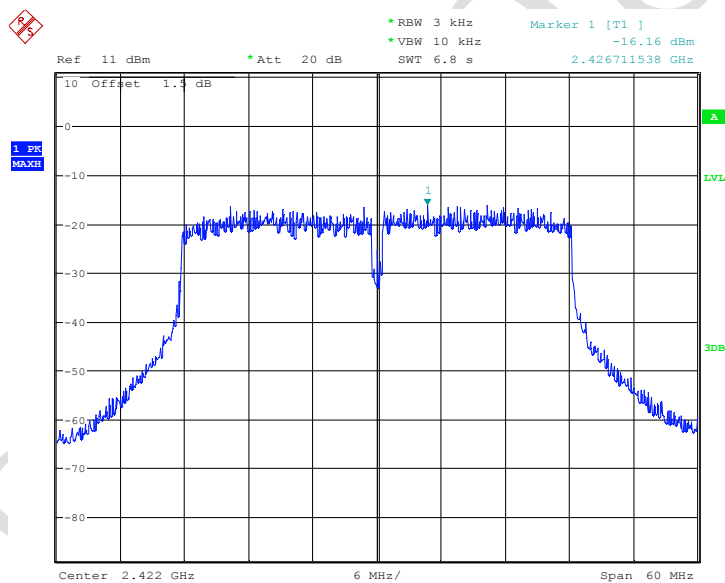
Fig.4 Power spectral density: CH1,11n(40M) (Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



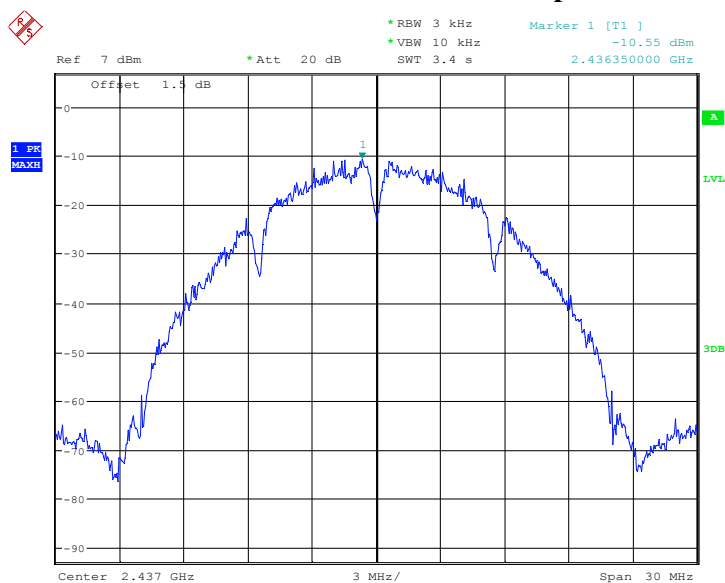
Date: 16.MAR.2017 01:17:30

Fig.5 Power spectral density: CH1,11N20m (Antenna 1)



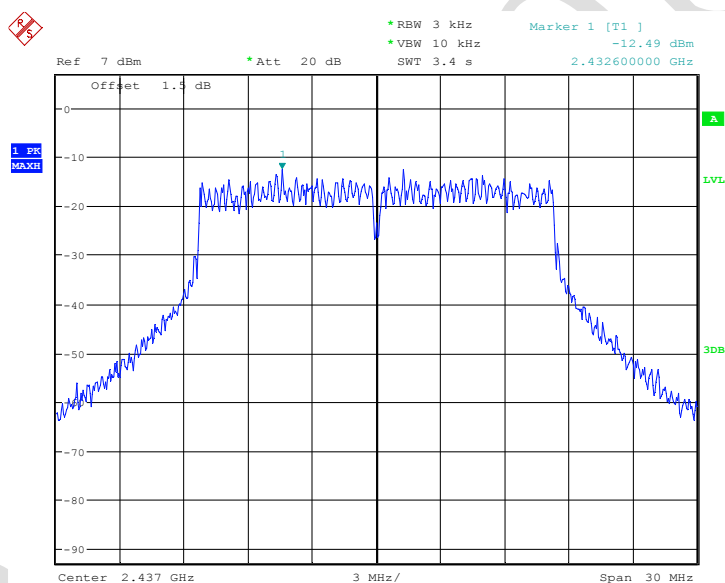
Date: 16.MAR.2017 01:21:59

Fig.6 power spectral density: CH1,11N40m (Antenna 1)



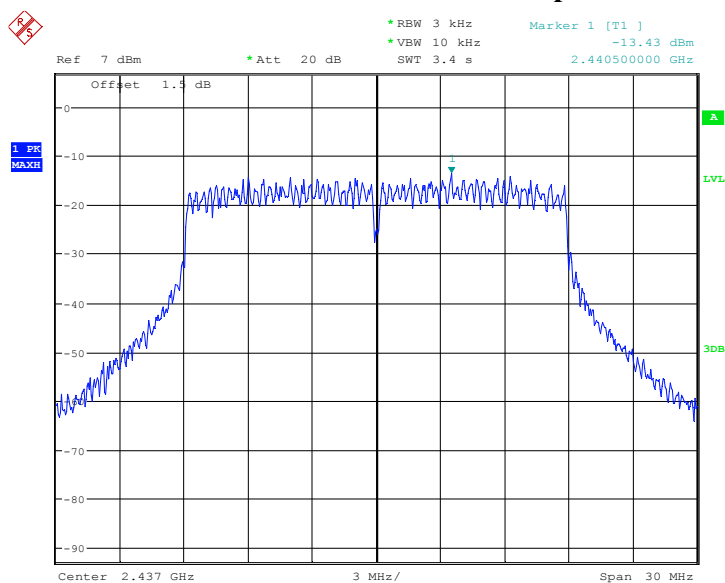
Date: 14.MAR.2017 02:31:05

Fig.7 Power spectral density: CH6,11b(Antenna 1)



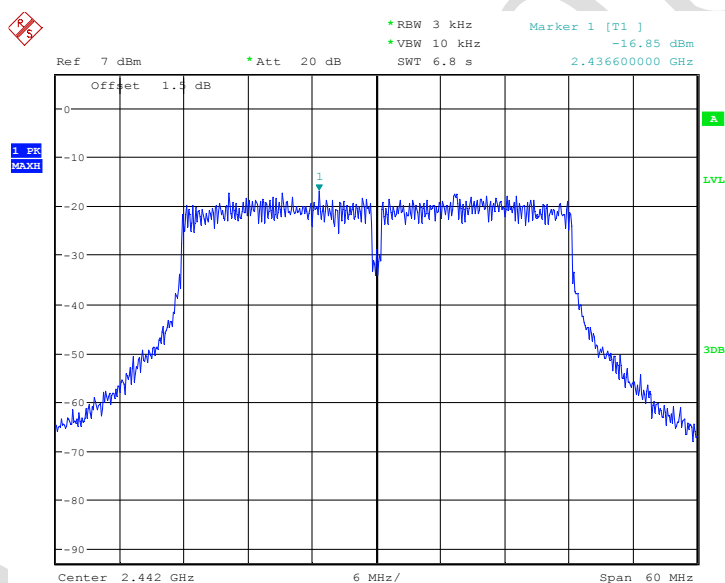
Date: 14.MAR.2017 02:31:51

Fig.8 Fig.66 Power spectral density: CH6,11g(Antenna 1)



Date: 14.MAR.2017 02:32:33

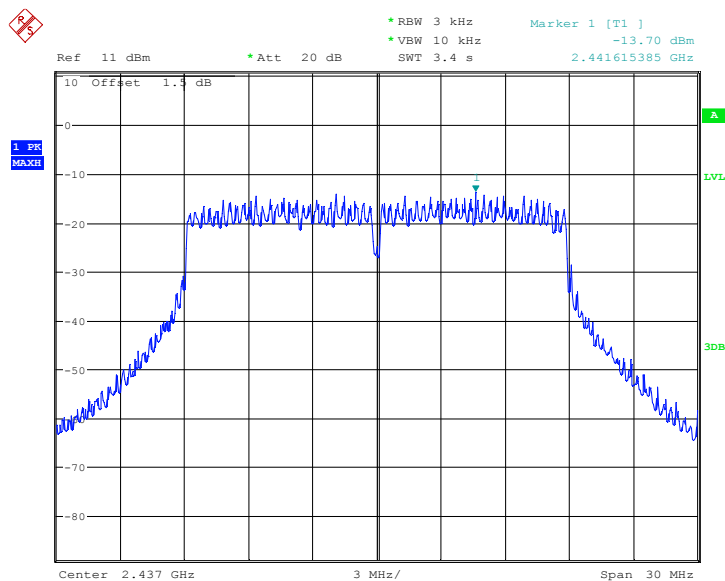
Fig.9 Power spectral density: CH6,11n(20M) (Antenna 1)



Date: 14.MAR.2017 02:33:26

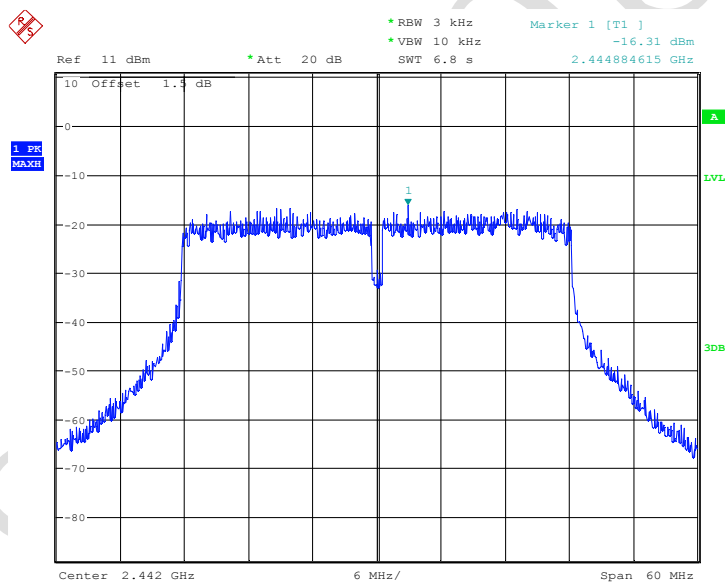
Fig.10 Power spectral density: CH6,11n(40M) (Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



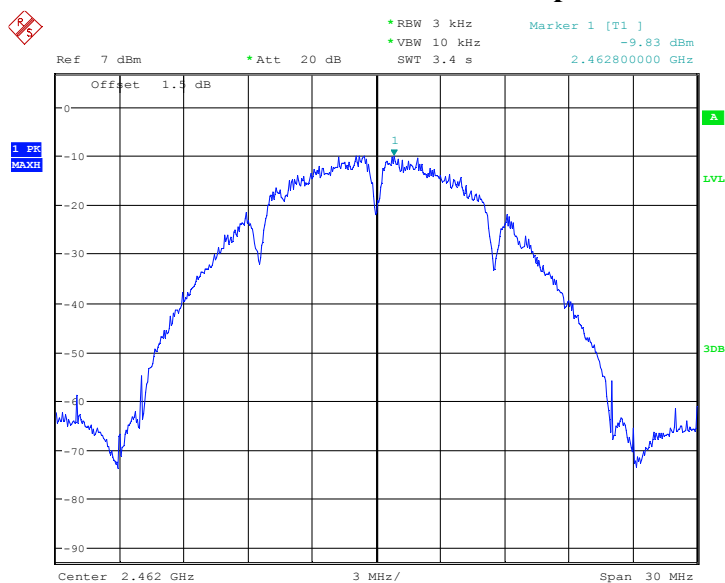
Date: 16.MAR.2017 01:18:19

Fig.11 power spectral density: CH6,11N20m (Antenna 1)



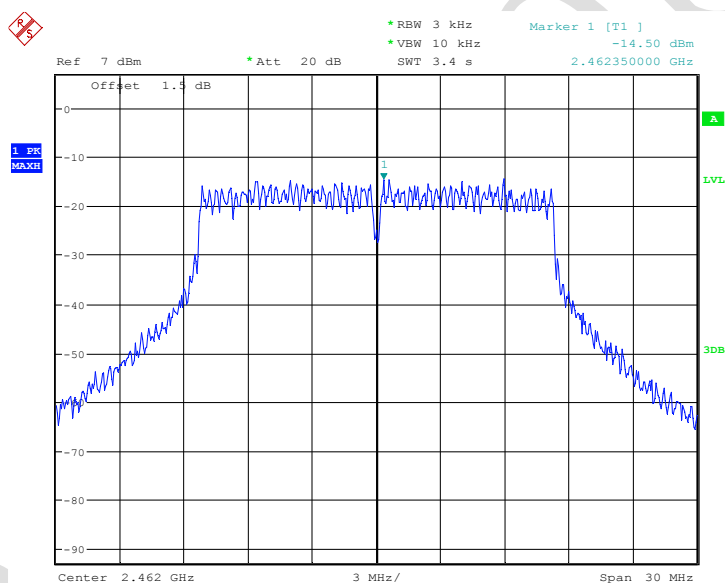
Date: 16.MAR.2017 01:22:46

Fig.12 power spectral density: CH6,11N40m (Antenna 1)



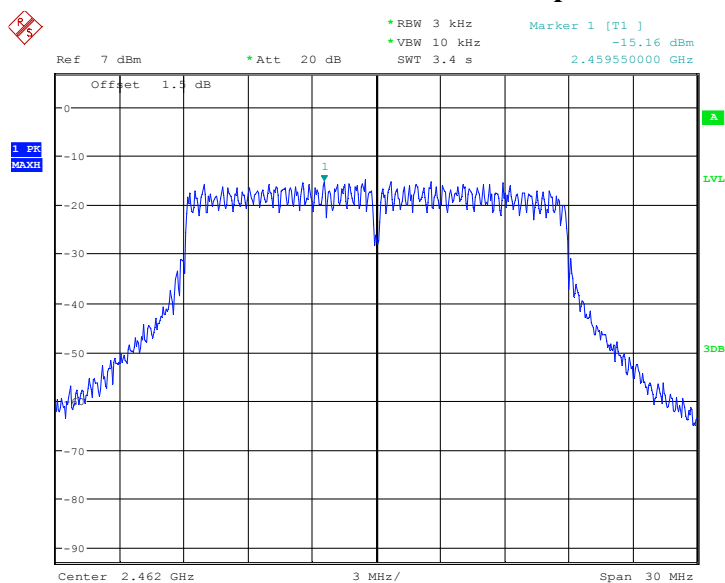
Date: 14.MAR.2017 02:40:36

Fig.13 Power spectral density: CH11,11b(Antenna 1)



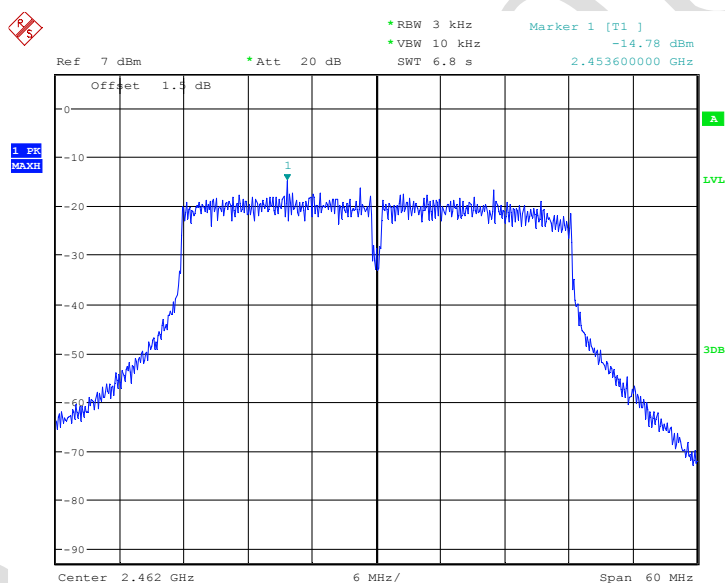
Date: 14.MAR.2017 02:44:02

Fig.14 Power spectral density: CH11,11g(Antenna 1)



Date: 14.MAR.2017 02:44:29

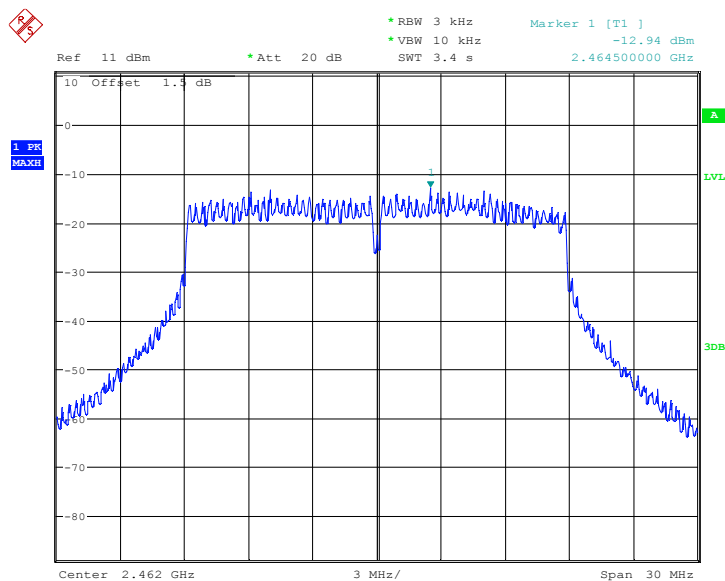
Fig.15 Power spectral density: CH11,11n(20M) (Antenna 1)



Date: 14.MAR.2017 02:46:34

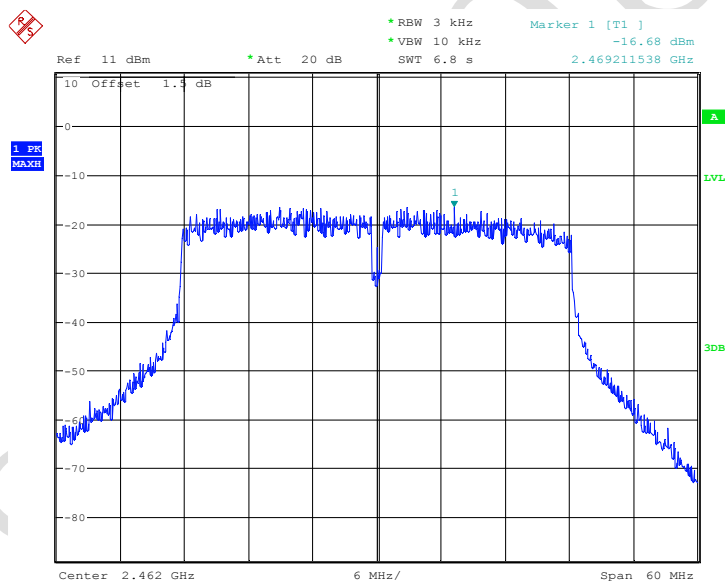
Fig.16 Power spectral density: CH11,11n(40M) (Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 01:20:23

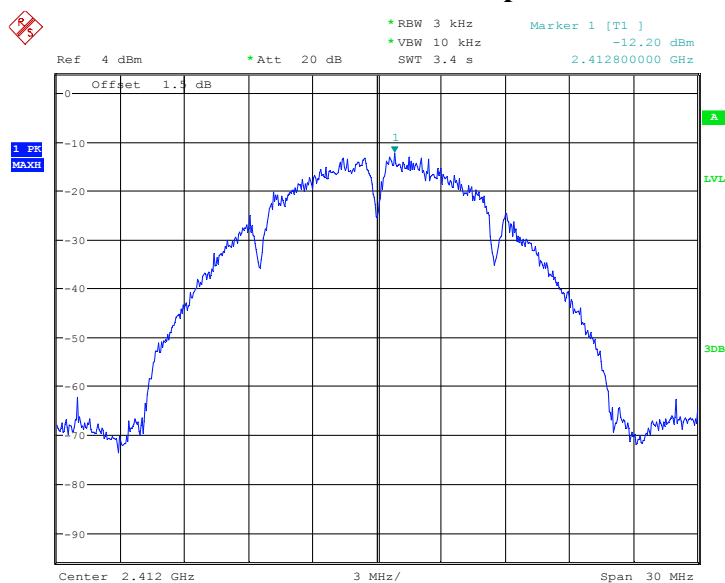
Fig.17 power spectral density: CH11,11N20m (Antenna 1)



Date: 16.MAR.2017 01:24:34

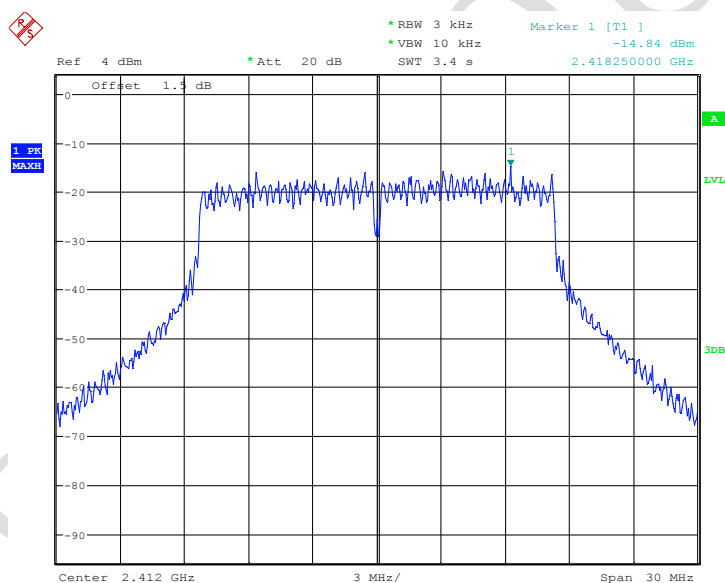
Fig.18 power spectral density: CH11,11N40m (Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 14.MAR.2017 05:02:40

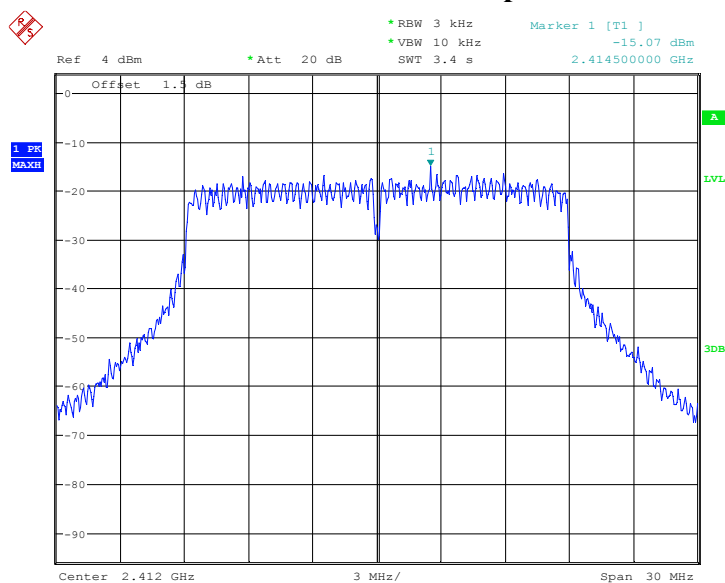
Fig.19 power spectral density: CH1,11b(Antenna 2)



Date: 14.MAR.2017 05:03:33

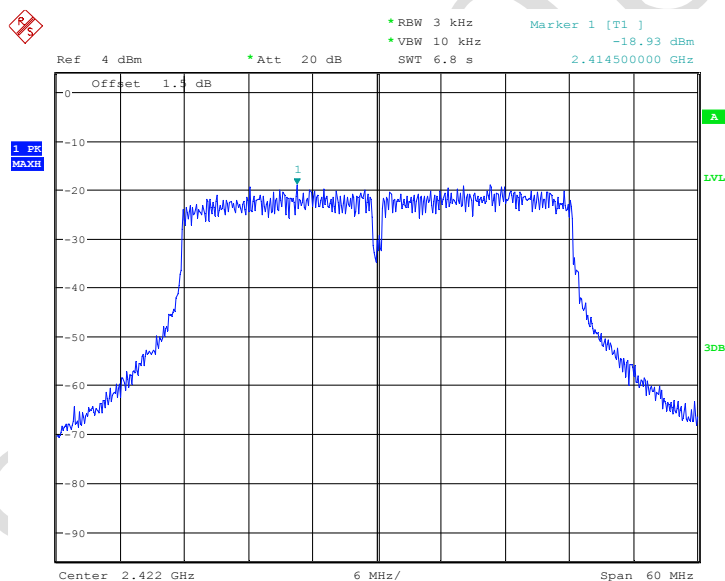
Fig.20 power spectral density: CH1,11g(Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 14.MAR.2017 05:05:51

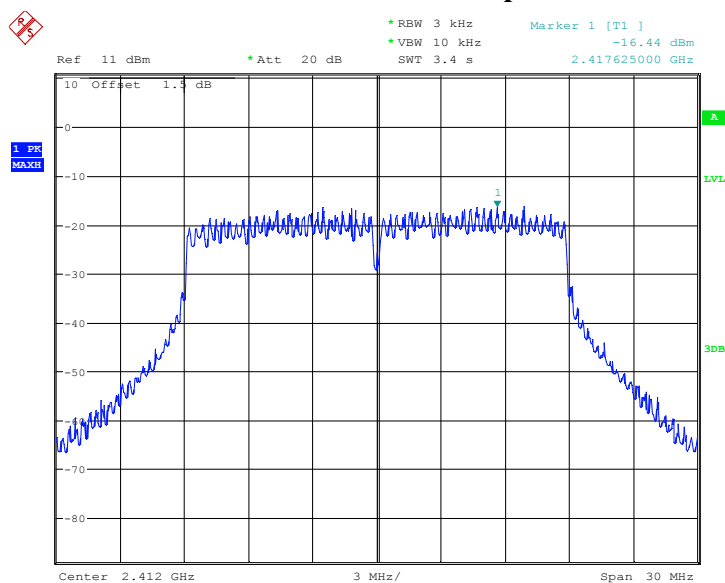
Fig.21 power spectral density: CH1,11n(20M) (Antenna 2)



Date: 14.MAR.2017 05:14:52

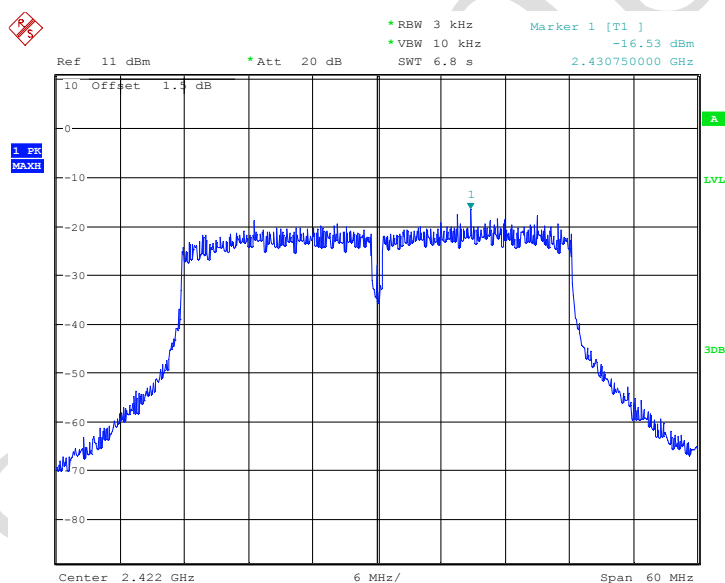
Fig.22 power spectral density: CH1,11n(40M)(Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 01:50:02

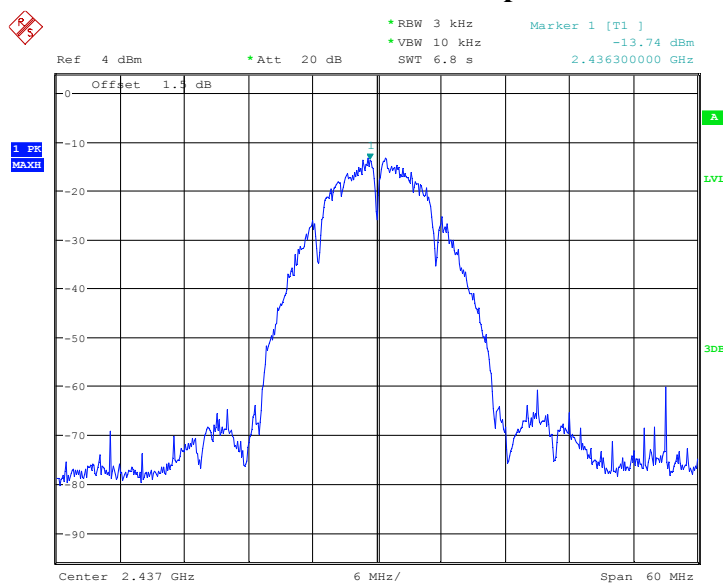
Fig.23 power spectral density: CH1,11N20m(Antenna 2)



Date: 16.MAR.2017 01:54:06

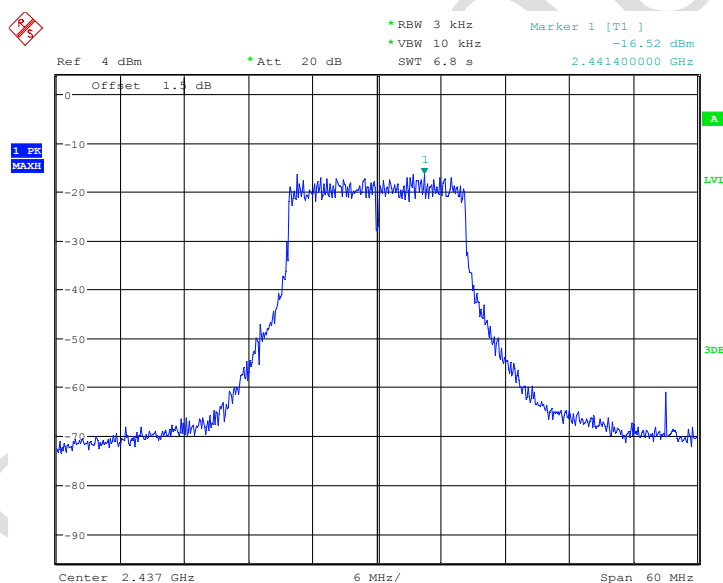
Fig.24 power spectral density: CH1,11N40m(Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 14.MAR.2017 05:08:39

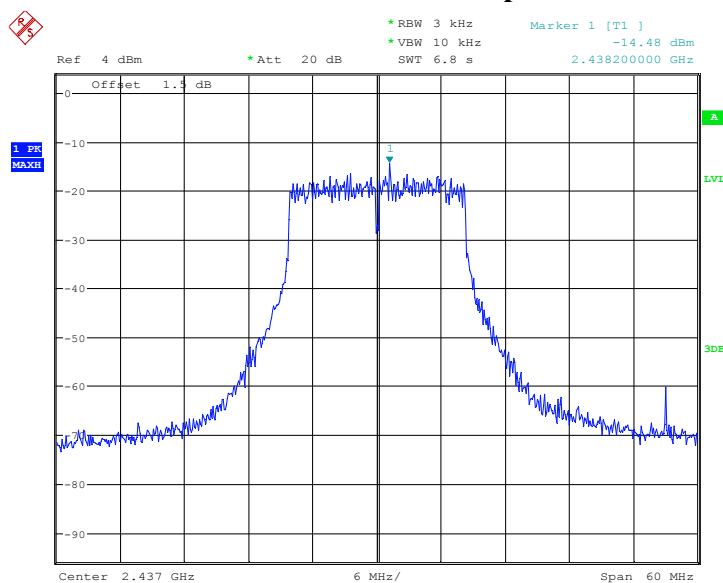
Fig.25 power spectral density: CH6,11b(Antenna 2)



Date: 14.MAR.2017 05:09:54

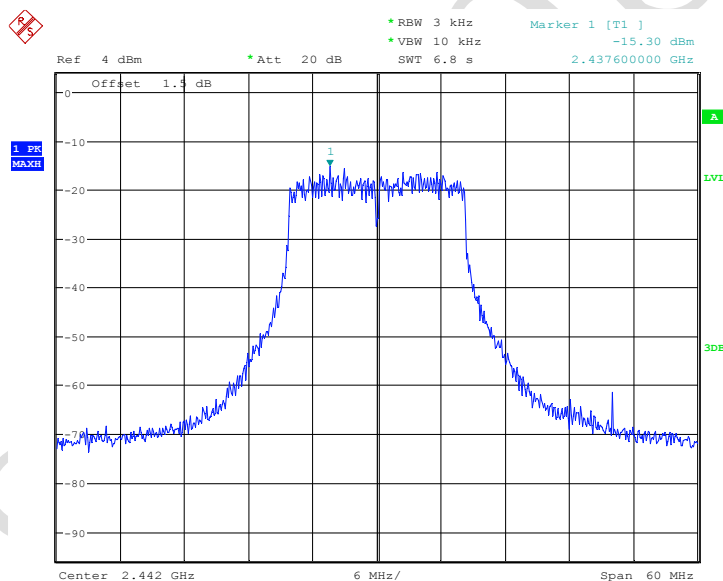
Fig.26 power spectral density: CH6,11g(Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 14.MAR.2017 05:10:59

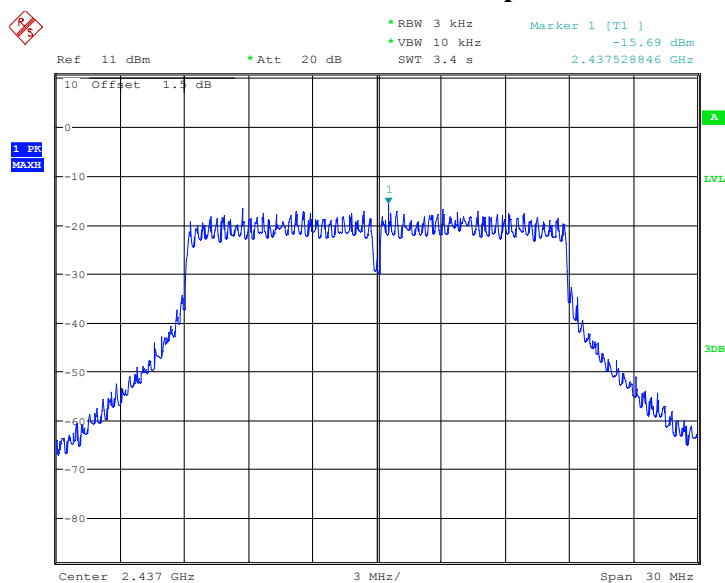
Fig.27 power spectral density: CH6,11n(20M) (Antenna 2)



Date: 14.MAR.2017 05:13:07

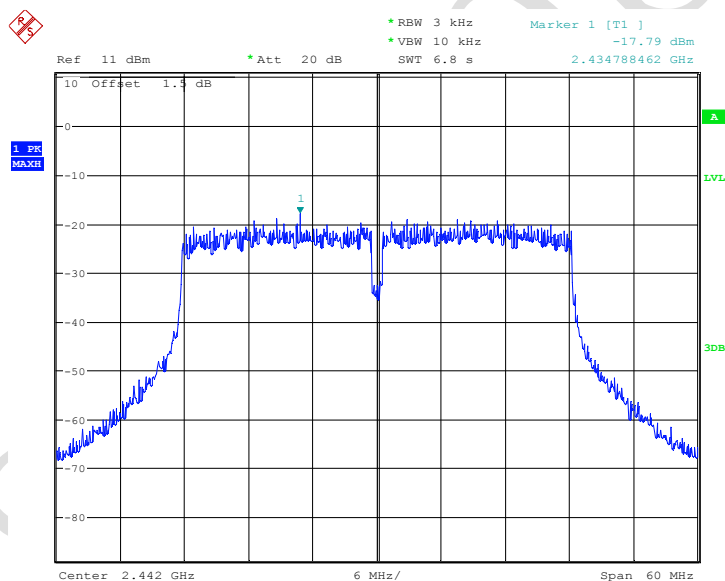
Fig.28 power spectral density: CH6,11n(40M)(Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 01:51:25

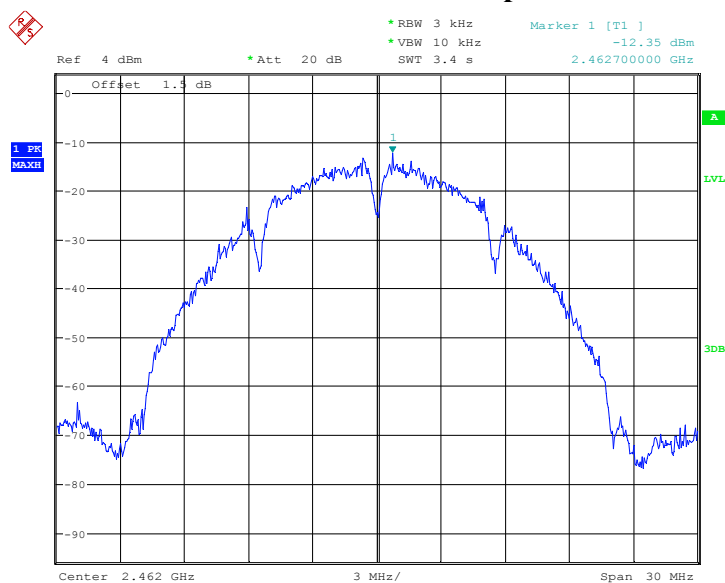
Fig.29 power spectral density: CH6,11N20m(Antenna 2)



Date: 16.MAR.2017 01:55:29

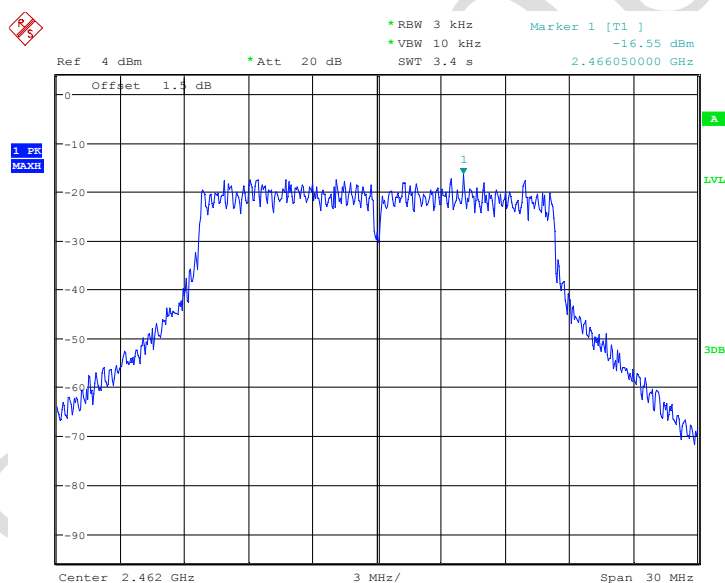
Fig.30 power spectral density: CH6,11N40m(Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 14.MAR.2017 05:15:45

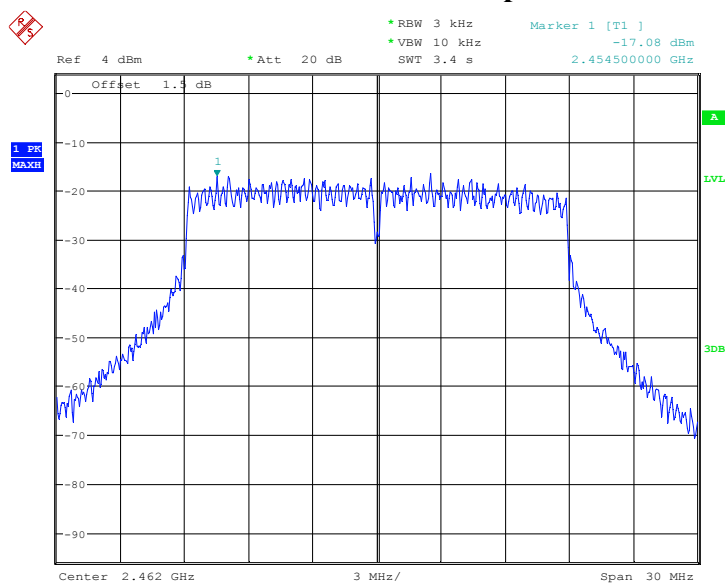
Fig.31 power spectral density: CH11,11b(Antenna 2)



Date: 14.MAR.2017 05:16:20

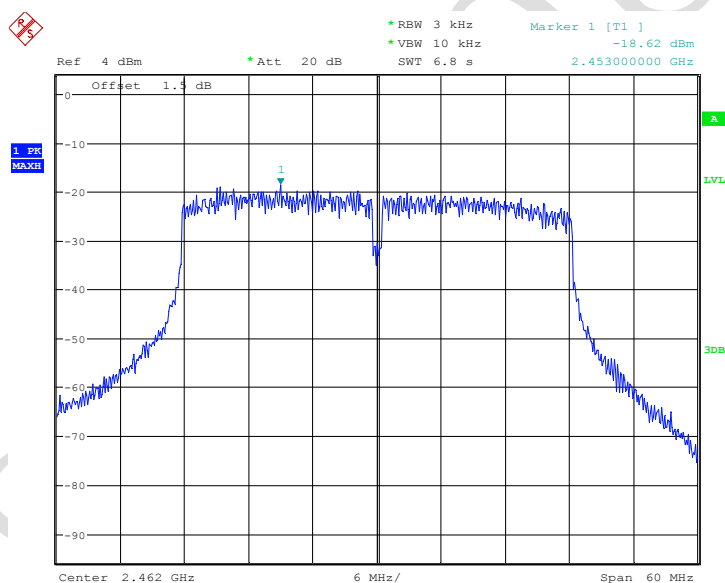
Fig.32 power spectral density: CH11,11g(Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 14.MAR.2017 05:17:15

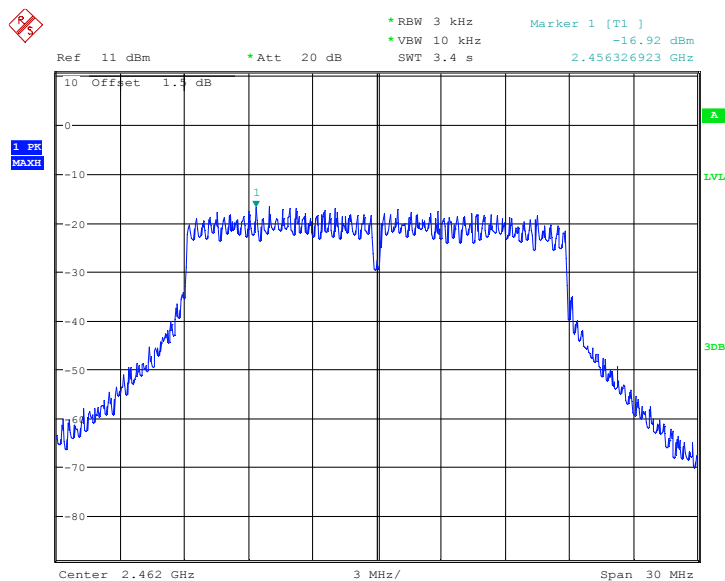
Fig.33 power spectral density: CH11,11n(20M) (Antenna 2)



Date: 14.MAR.2017 05:18:45

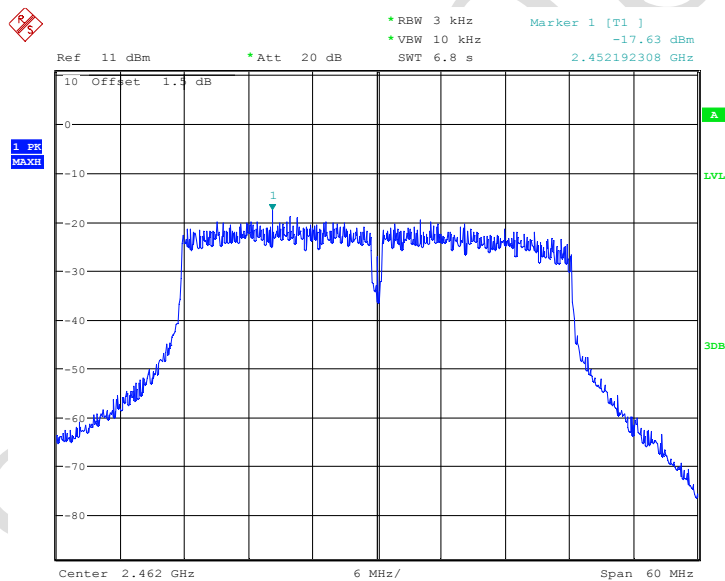
Fig.34 power spectral density: CH11,11n(40M)(Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 01:52:59

Fig.35 power spectral density: CH11,11N20m(Antenna 2)



Date: 16.MAR.2017 01:56:50

Fig.36 power spectral density: CH11,11N40m(Antenna 2)

5.3 6dB Occupied Bandwidth

Specifications:	FCC 47 CFR Part 15.247(a)
DUT Serial Number:	S15/18: 862851030000175/862851030020177
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	--

Limit Level Construction:

Standard	Limit(kHz)
FCC 47 CFR Part 15.247(a)	≥500

Test Procedure

The measurement is according to ANSI C63.10 clause 11.8.

1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Enable EUT transmitter maximum power continuously.
3. Set RBW = 100 kHz.
4. Set the VBW $\geq [3 \times \text{RBW}]$.
5. Detector = peak.
6. Trace mode = max hold.
7. Sweep = auto couple.
8. Allow the trace to stabilize.
9. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Note: --

Test Result:

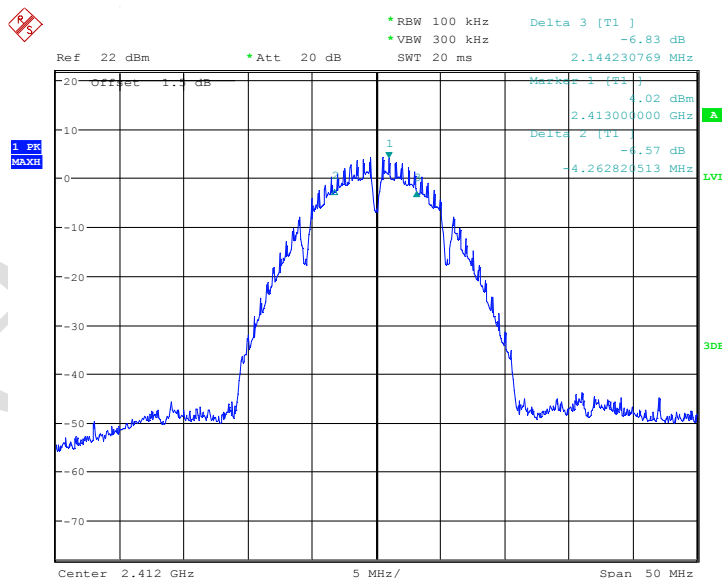
802.11b/g/n mode

Mode	Antenna	Occupied 6dB Bandwidth(MHz)			Conclusion
		Ch1	Ch6	Ch11	
802.11b	1	6.407	6.699	6.218	Pass
802.11g		16.423	15.673	16.234	Pass
802.11n20		16.692	15.673	16.234	Pass
802.11n40		36.244	34.903	30.016	Pass

Mode	Antenna	Occupied 6dB Bandwidth(MHz)			Conclusion
		Ch1	Ch6	Ch11	
802.11b	2	6.544	6.234	6.282	Pass
802.11g		16.320	16.100	16.218	Pass
802.11n20		16.490	17.212	16.619	Pass
802.11n40		33.718	36.122	33.606	Pass

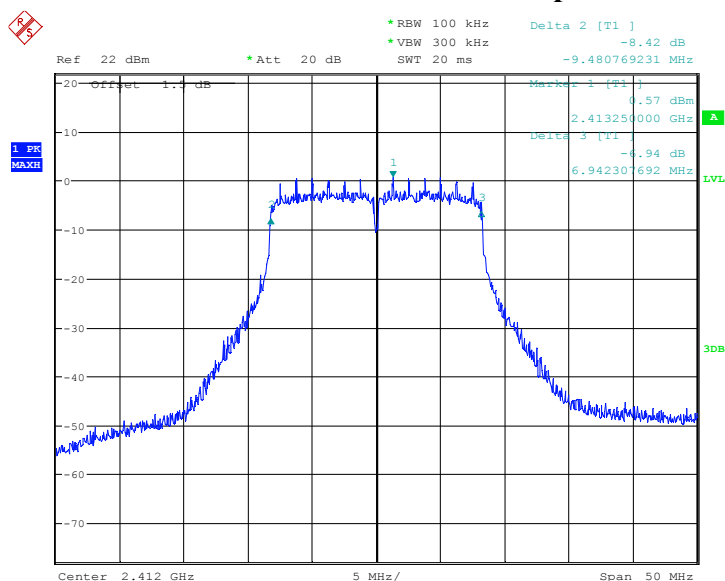
Conclusion: PASS

Test figure as below:



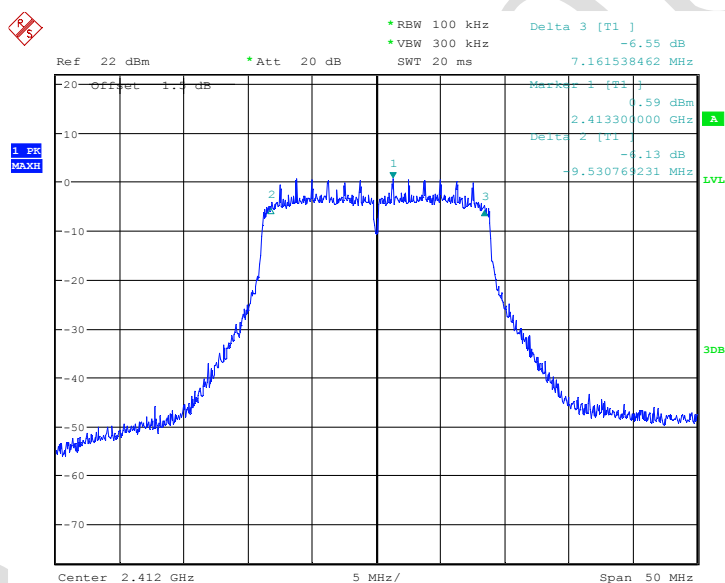
Date: 13.MAR.2017 23:21:00

Fig.37 6dB Bandwidth: Ch1,11b(Antenna 1)



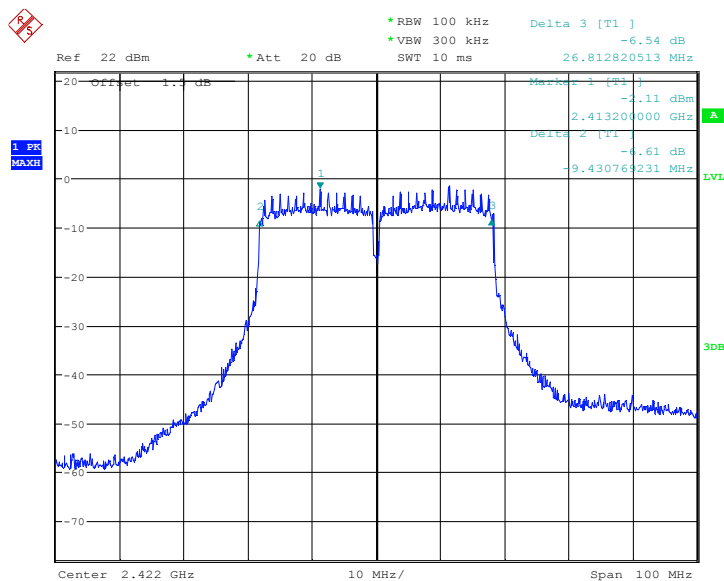
Date: 13.MAR.2017 23:22:43

Fig.38 6dB Bandwidth: Ch1,11g(Antenna 1)



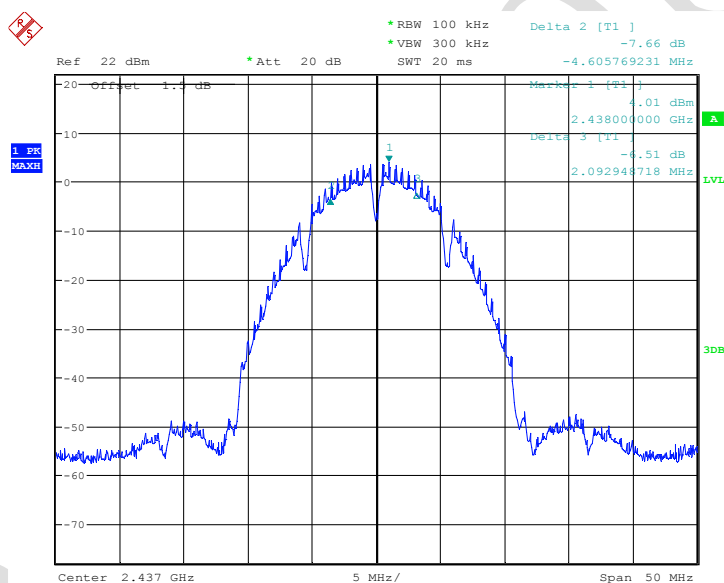
Date: 13.MAR.2017 23:24:04

Fig.39 6dB Bandwidth: Ch1,11n(Antenna 1)



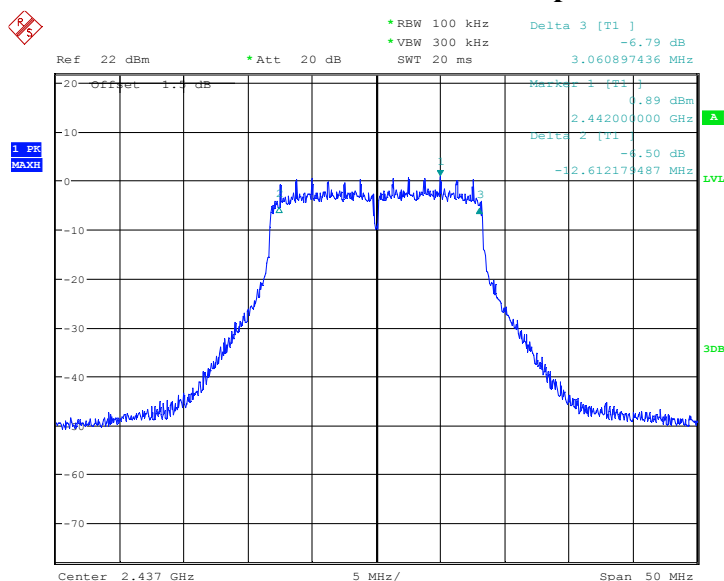
Date: 13.MAR.2017 23:25:11

Fig.40 6dB Bandwidth: Ch1,11n(40M) (Antenna 1)



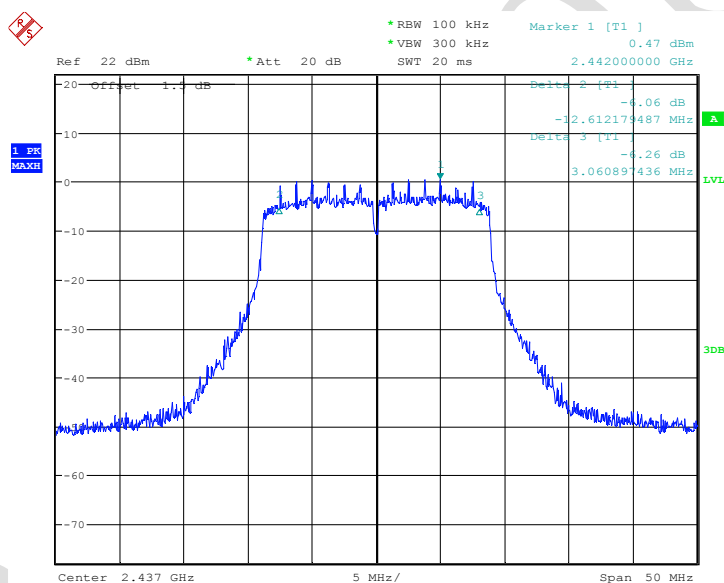
Date: 13.MAR.2017 23:29:11

Fig.41 6dB Bandwidth: Ch6,11b(Antenna 1)



Date: 13.MAR.2017 23:31:35

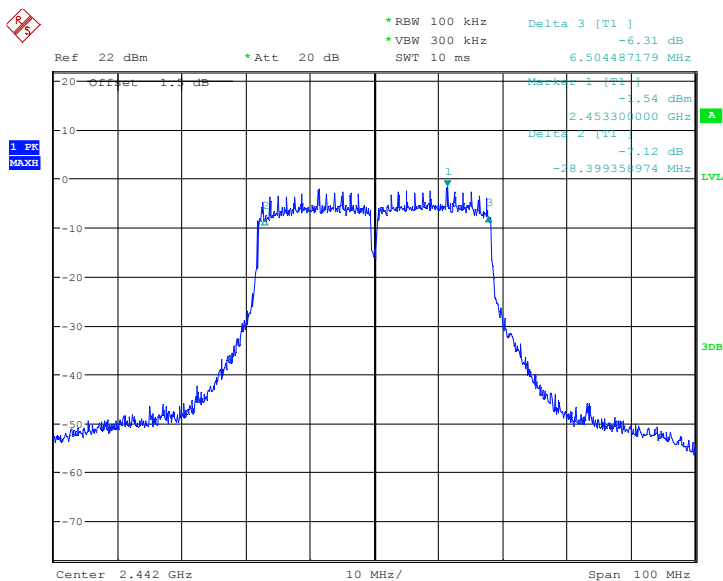
Fig.42 6dB Bandwidth: Ch6,11g(Antenna 1)



Date: 13.MAR.2017 23:32:07

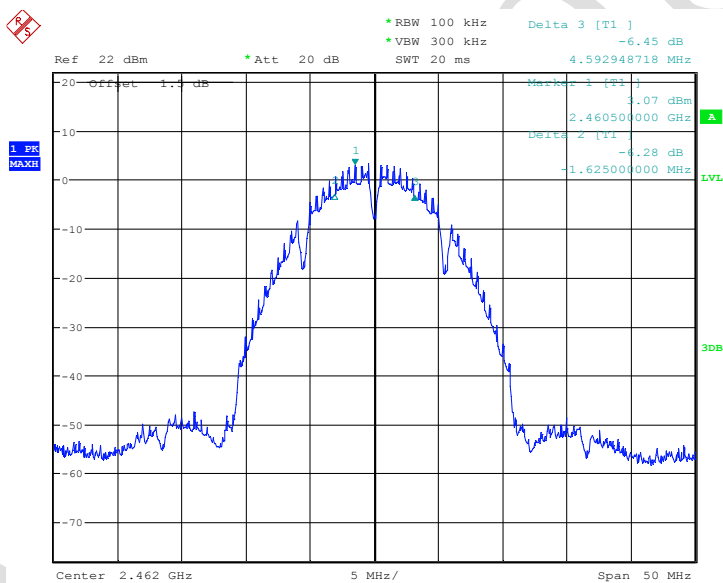
Fig.43 6dB Bandwidth: Ch6,11n(Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 13.MAR.2017 23:36:16

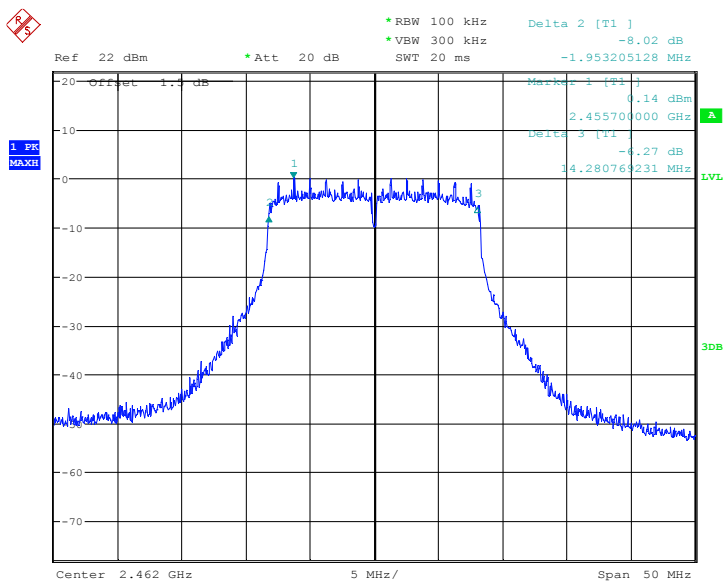
Fig.44 6dB Bandwidth: Ch6,11n(40M) (Antenna 1)



Date: 13.MAR.2017 23:37:16

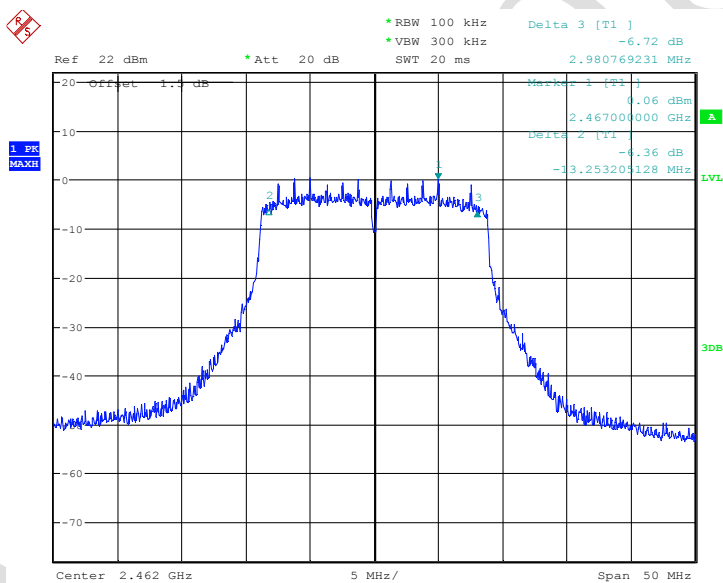
Fig.45 6dB Bandwidth: Ch11,11b(Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 13.MAR.2017 23:38:27

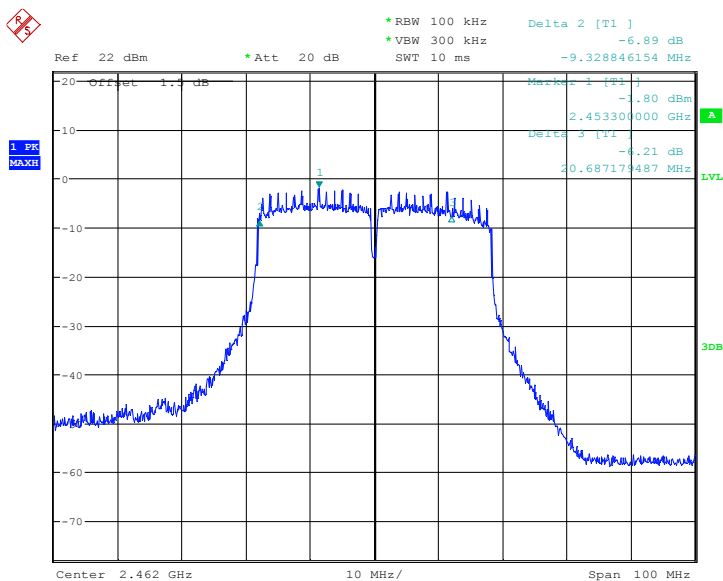
Fig.46 6dB Bandwidth: Ch11,11g(Antenna 1)



Date: 13.MAR.2017 23:39:03

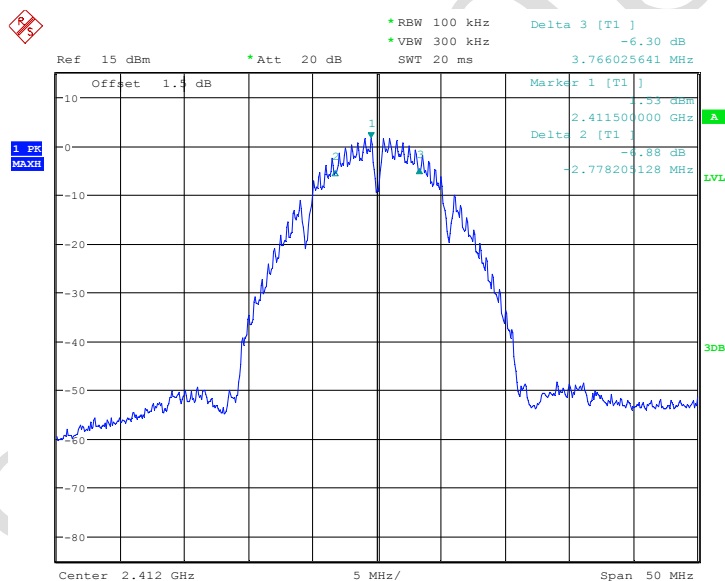
Fig.47 6dB Bandwidth: Ch11,11n(Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 13.MAR.2017 23:40:46

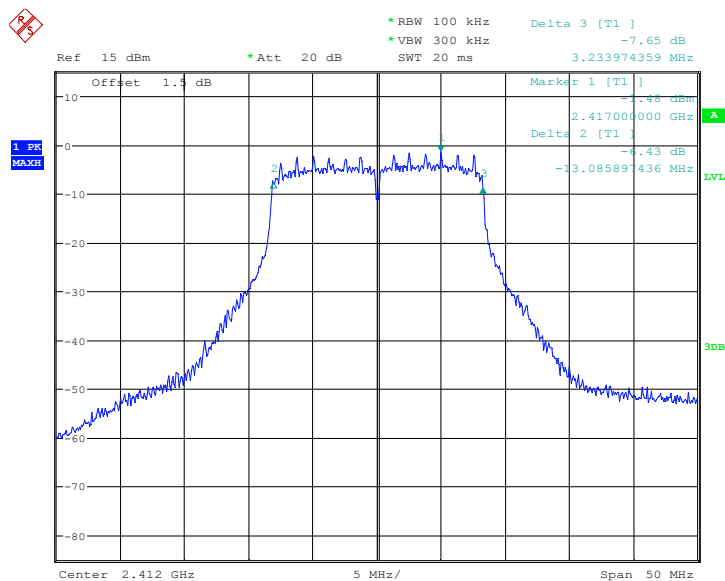
Fig.48 6dB Bandwidth: Ch11,11n(40M) (Antenna 1)



Date: 14.MAR.2017 05:44:17

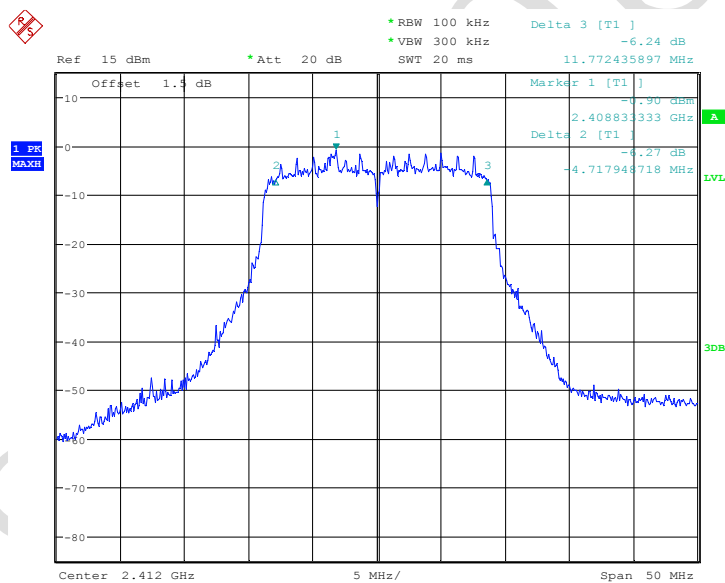
Fig.49 6dB Bandwidth: Ch1,11b(Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 14.MAR.2017 06:12:22

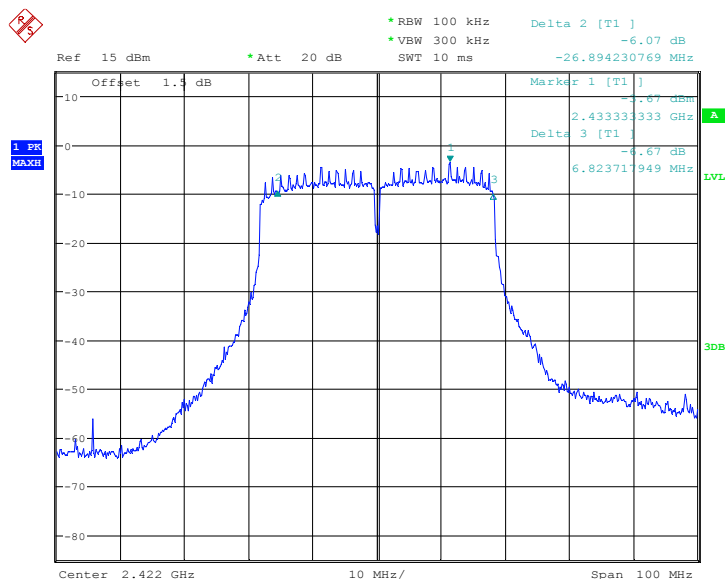
Fig.50 6dB Bandwidth: Ch1,11g(Antenna 2)



Date: 14.MAR.2017 21:19:41

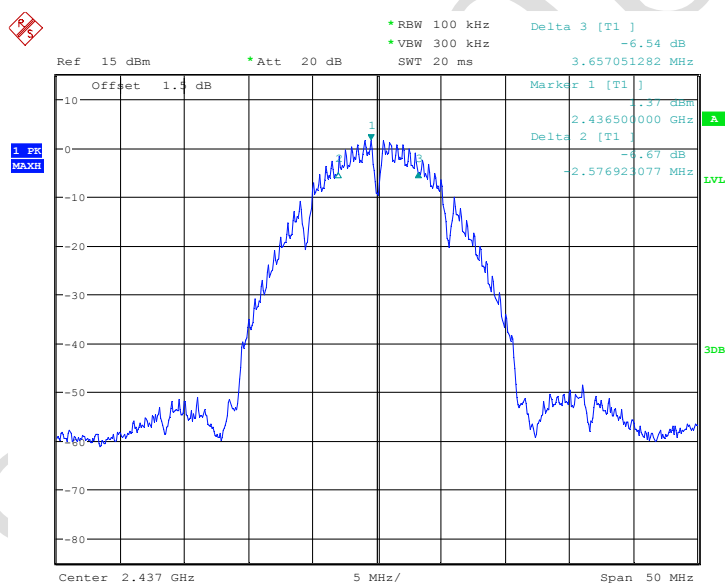
Fig.51 6dB Bandwidth: Ch1,11n(Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 14.MAR.2017 21:41:26

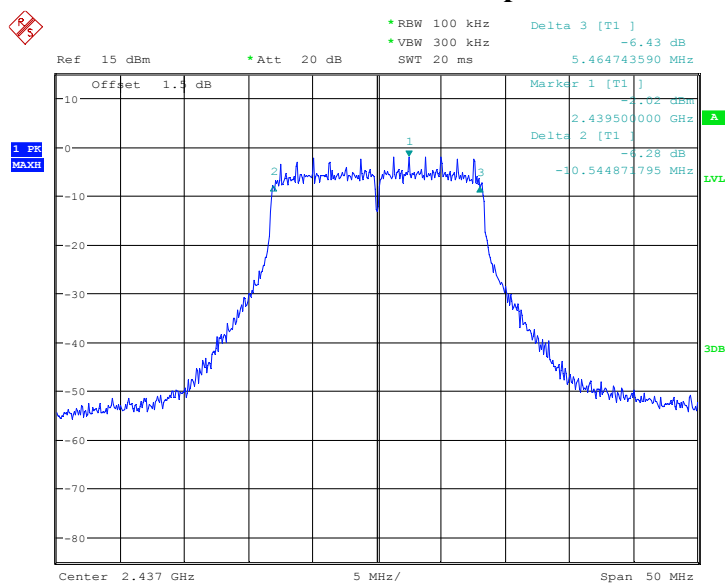
Fig.52 6dB Bandwidth: Ch1,11n(40M)(Antenna 2)



Date: 14.MAR.2017 21:26:14

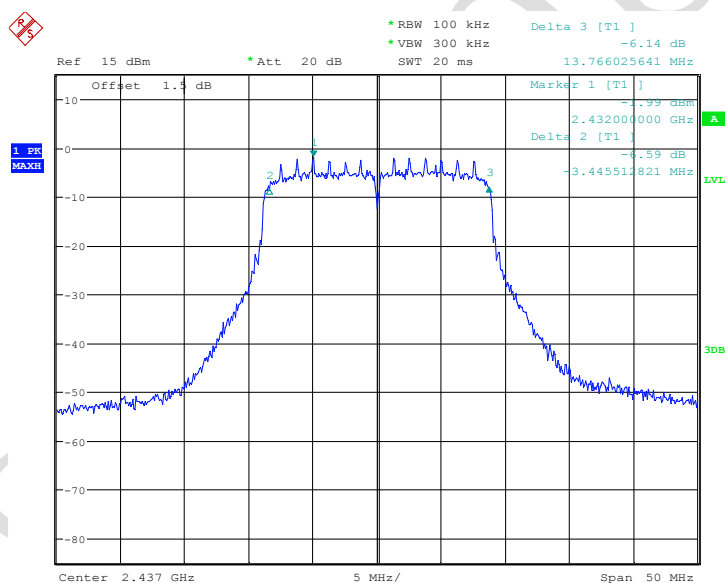
Fig.53 6dB Bandwidth: Ch6,11b(Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 14.MAR.2017 21:26:58

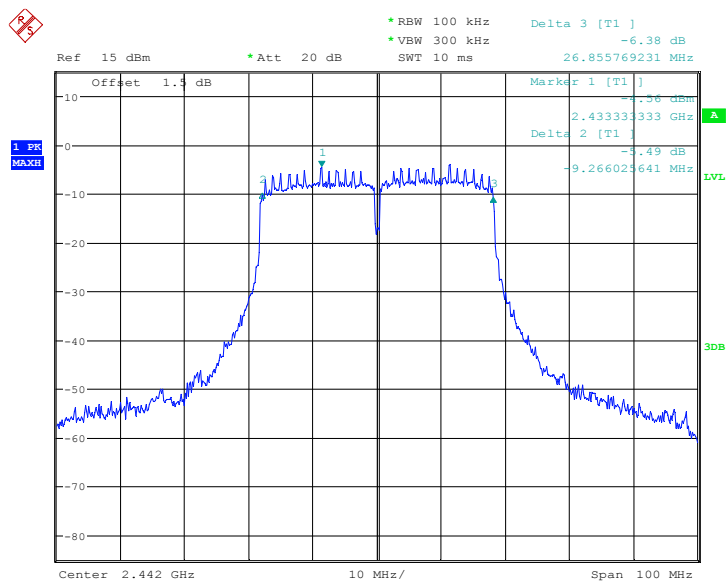
Fig.54 6dB Bandwidth: Ch6,11g(Antenna 2)



Date: 14.MAR.2017 21:28:59

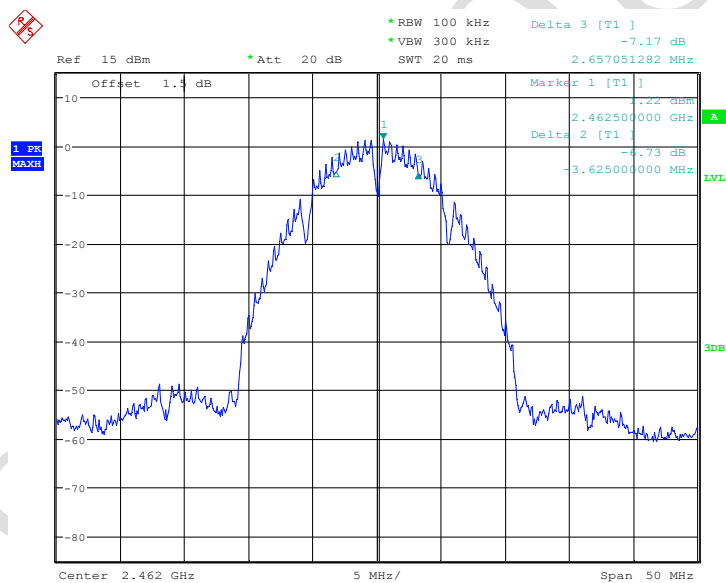
Fig.55 6dB Bandwidth: Ch6,11n(Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 14.MAR.2017 21:30:10

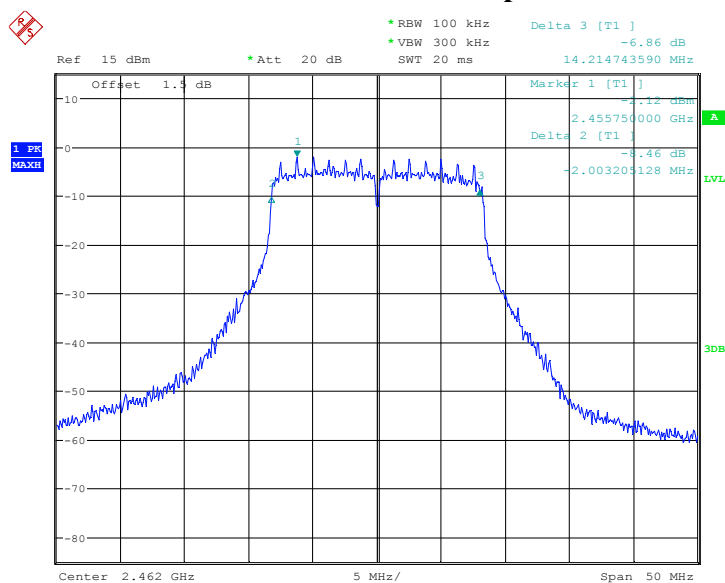
Fig.56 6dB Bandwidth: Ch6,11n(40M)(Antenna 2)



Date: 14.MAR.2017 21:44:11

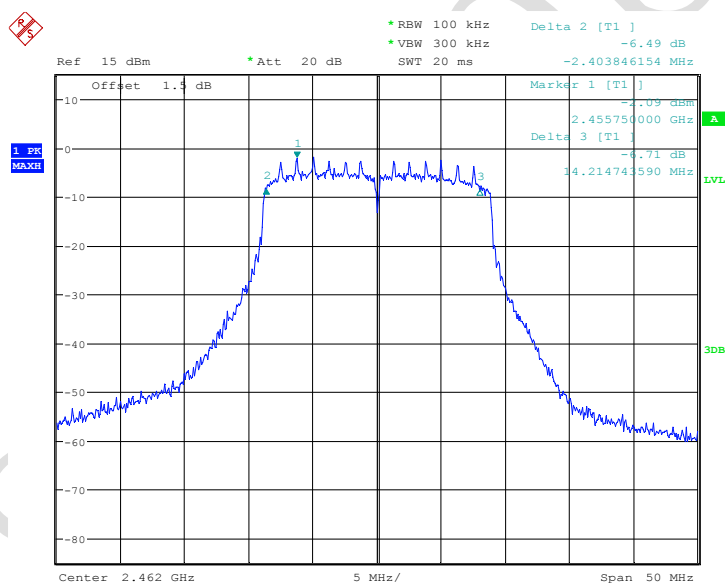
Fig.57 6dB Bandwidth: Ch11,11b(Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



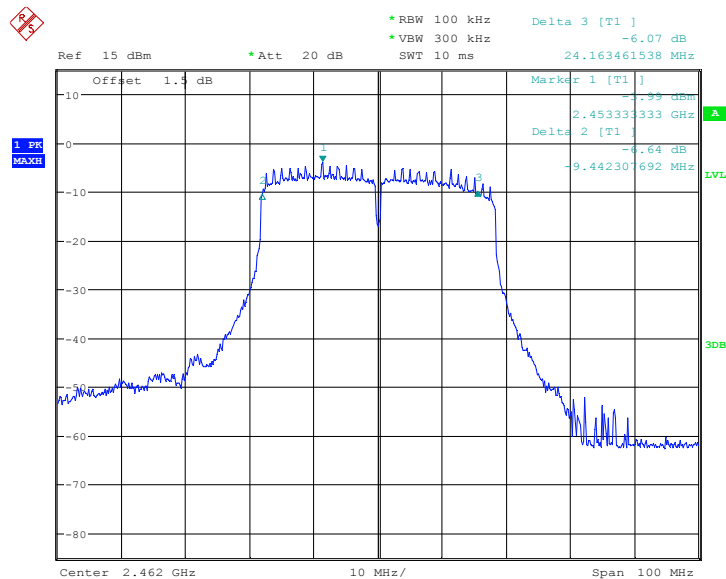
Date: 14.MAR.2017 21:58:46

Fig.58 6dB Bandwidth: Ch11,11g(Antenna 2)



Date: 14.MAR.2017 21:59:59

Fig.59 6dB Bandwidth: Ch11,11n(Antenna 2)



Date: 14.MAR.2017 22:08:52

Fig.60 6dB Bandwidth: Ch11,11n(40M)(Antenna 2)

5.4 Band Edges Compliance

Specifications:	FCC 47 CFR Part 15.247(d)
DUT Serial Number:	S7/18: 862851030000163/862851030020161
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	--

Limit Level Construction:

Standard	Limited(dBuV/m)	
FCC 47 CFR Part 15.247(d)	Peak	74
	Average	54

Test Procedure

The measurement is according to ANSI C63.10 clause11.13.

1. Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation.
2. Reference level offset: Corrected for gains and losses of test antenna factor, preamp gain and cable loss, so as to indicate field strength, in units of dBμV/m at 3 m, directly on the instrument display. Alternatively, the reference level offset may be set to zero and calculations shall be provided showing the conversion of raw measured data to the field strength in dBμV/m at 3 m.
3. Reference level: As required to keep the signal from exceeding the maximum spectrum analyzer input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.5.2..
4. Attenuation: Auto (at least 10 dB preferred).
5. Sweep time: Coupled.
6. Resolution bandwidth: Above 1 GHz: 1 MHz
7. Video bandwidth: VBW for Peak, Quasi-peak, or Average Detector Function: $3 \times RBW$
8. Detector (unless specified otherwise): Peak and average above 1 GHz
9. Trace: Max hold for final measurement; a combination of two traces, clear-write and max hold, is recommended for maximizing the emission.

Note: --

Test Result:

802.11b/g mode ANT1

mode	Channel	Test Results(dBuV/m)			Conclusion
802.11b	1	Peak	2390.000MHz	44.968	Pass
		Average	2390.000MHz	34.471	
		Fig.109			
	11	Peak	2483.500MHz	45.540	Pass
		Average	2483.500MHz	35.011	
		Fig.110			
802.11g	1	Peak	2390.000MHz	45.110	Pass
		Average	2390.000MHz	34.147	
		Fig.111			
	11	Peak	2483.500MHz	47.207	Pass
		Average	2483.500MHz	35.547	
		Fig.112			

802.11n mode ANT 1

mode	Channel	Test Results(dBuV/m)			Conclusion
802.11n (20MHz)	1	Peak	2390.000MHz	44.815	Pass
		Average	2390.000MHz	34.558	
		Fig.113			
	11	Peak	2483.500MHz	46.111	Pass
		Average	2483.500MHz	35.713	
		Fig.114			
802.11n (40MHz)	3	Peak	2390.000MHz	45.439	Pass
		Average	2390.000MHz	35.033	
		Fig.115			
	9	Peak	2485.200MHz	50.455	Pass
		Average	2483.500MHz	35.874	
		Fig.116			

802.11b/g mode ANT 2

mode	Channel	Test Results(dBuV/m)			Conclusion
802.11b	1	Peak	2390.000MHz	43.893	Pass
		Average	2390.000MHz	33.895	
		Fig.117			
	11	Peak	2483.500MHz	45.155	Pass
		Average	2483.500MHz	34.847	
		Fig.118			
802.11g	1	Peak	2390.000MHz	43.762	Pass
		Average	2390.000MHz	34.865	
		Fig.119			
	11	Peak	2483.500MHz	45.276	Pass
		Average	2483.500MHz	35.162	
		Fig.120			

802.11n mode ANT 2

mode	Channel	Test Results(dBuV/m)			Conclusion
802.11n (20MHz)	1	Peak	2390.000MHz	45.689	Pass
		Average	2390.000MHz	35.250	
		Fig.121			
	11	Peak	2483.500MHz	45.820	Pass
		Average	2483.500MHz	35.465	
		Fig.122			
802.11n (40MHz)	3	Peak	2389.400MHz	50.885	Pass
		Average	2390.000MHz	35.423	
		Fig.123			
	9	Peak	2483.500MHz	45.588	Pass
		Average	2483.500MHz	35.446	
		Fig.124			

MIMO mode

mode	Channel	Test Results(dBuV/m)			Conclusion
802.11n (20MHz)	1	Peak	2390.000MHz	46.033	Pass
		Average	2390.000MHz	35.876	
		Fig.125			
	11	Peak	2483.500MHz	46.585	Pass
		Average	2483.500MHz	36.649	
		Fig.126			
802.11n (40MHz)	3	Peak	2389.200MHz	52.521	Pass
		Average	2390.000MHz	36.451	
		Fig.127			
	9	Peak	2485.200MHz	54.822	Pass
		Average	2483.500MHz	37.274	
		Fig.128			

Conclusion: PASS

Test figure as below:

RE 1GHz-3GHz

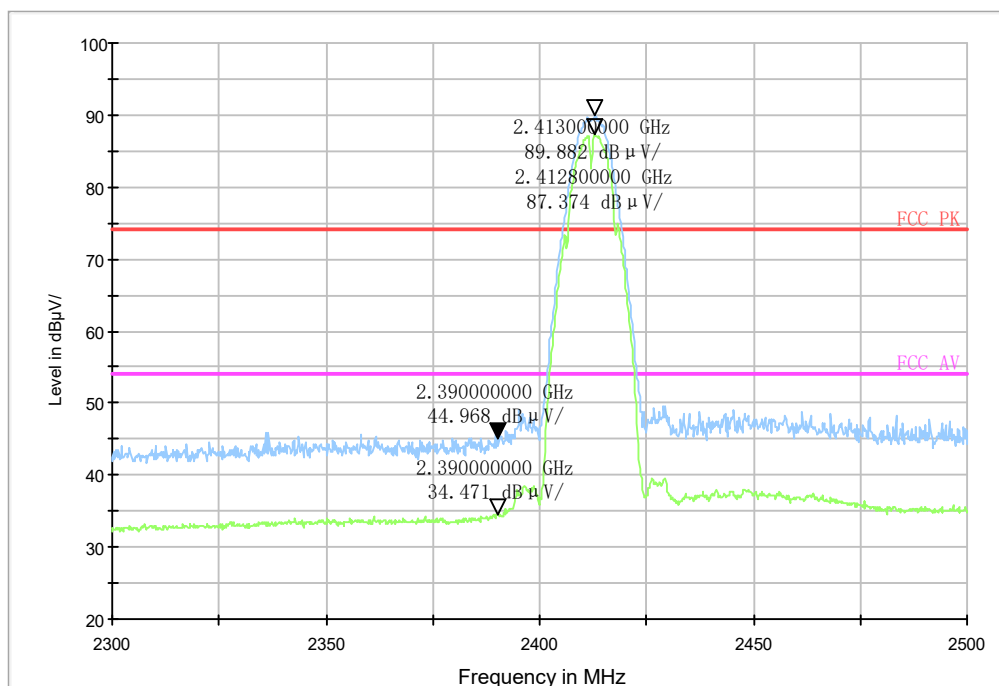


Fig.61 Frequency Band Edge: Ch1,11b ANT1

RE 1GHz-3GHz

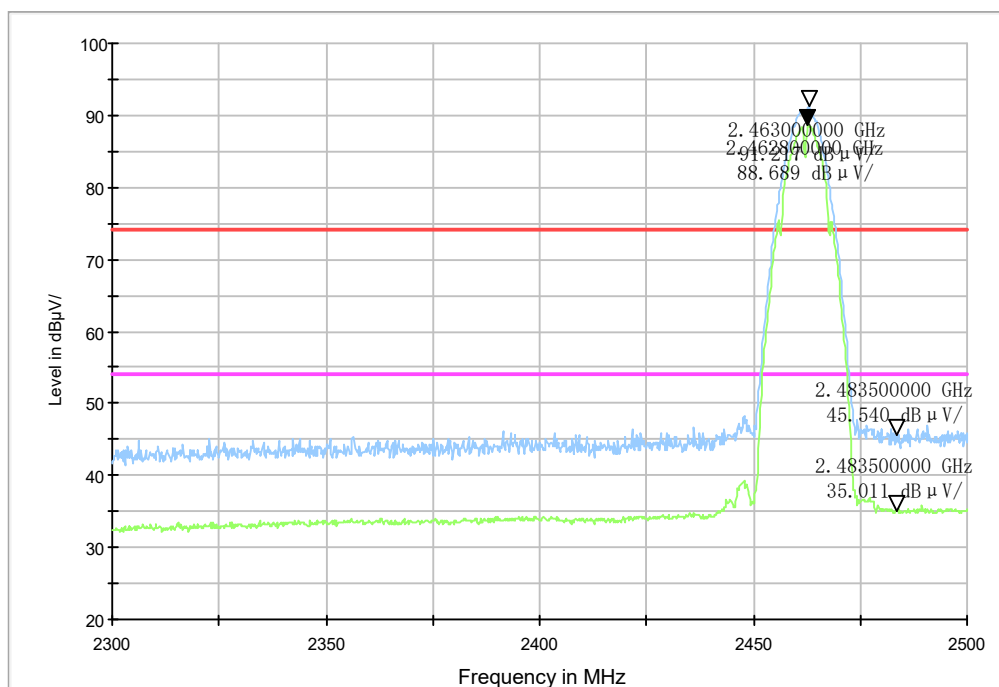


Fig.62 Frequency Band Edge: Ch1,11b ANT1

RE 1GHz-3GHz

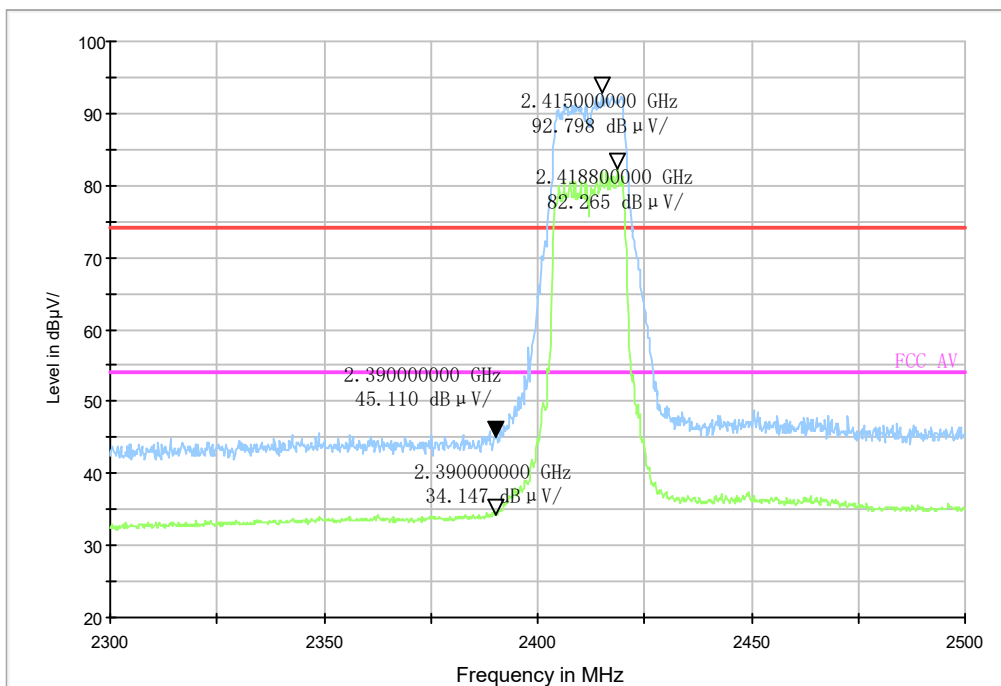


Fig.63 Frequency Band Edge: Ch1,11g ANT1

RE 1GHz-3GHz

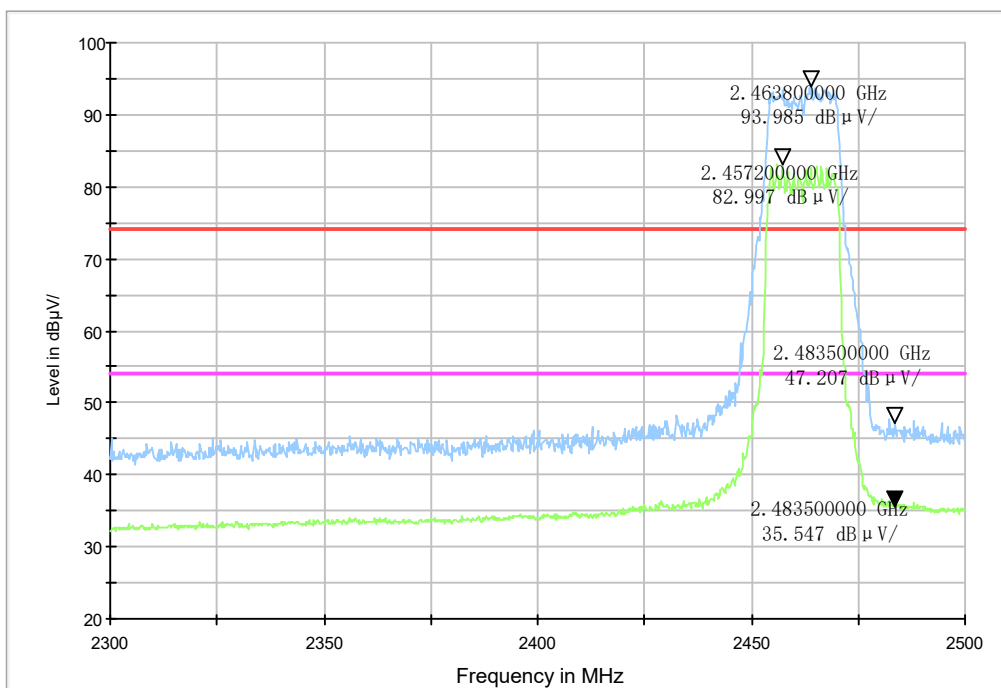


Fig.64 Frequency Band Edge: Ch1,11g ANT1

RE 1GHz-3GHz

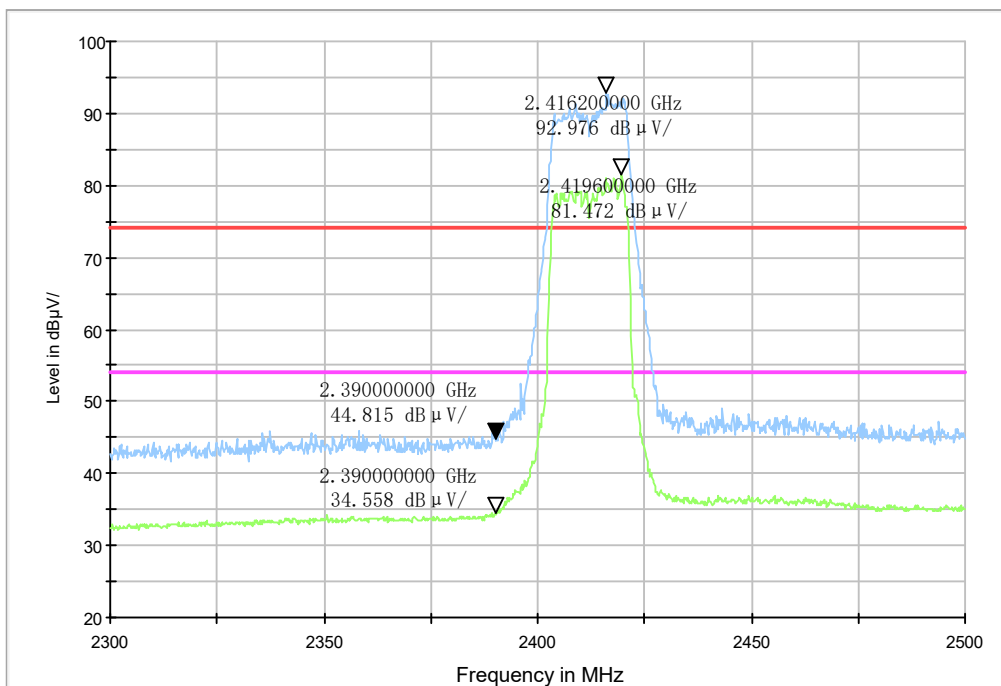


Fig.65 Frequency Band Edge: Ch1,11n(20MHz) ANT1

RE 1GHz-3GHz

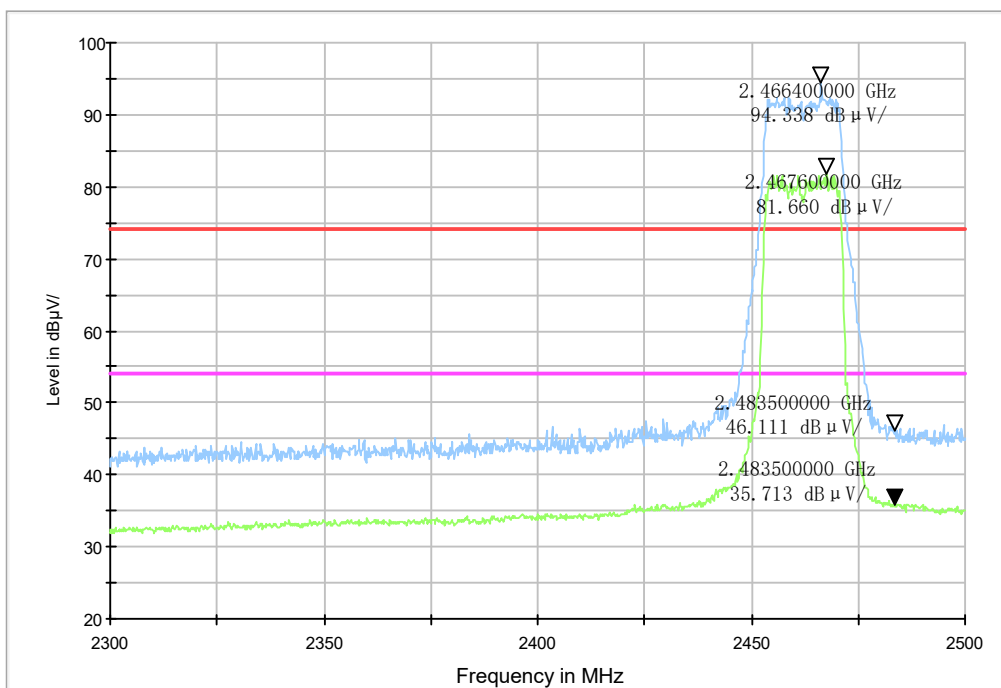


Fig.66 Frequency Band Edge: Ch1,11n(20MHz) ANT1

RE 1GHz-3GHz

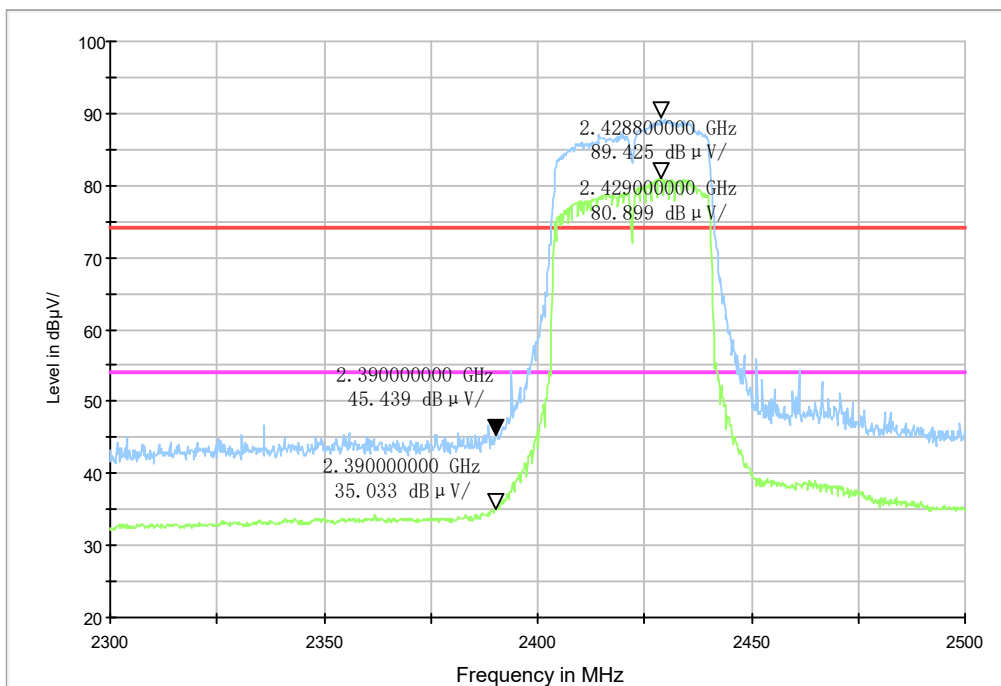


Fig.67 Frequency Band Edge: Ch3,11n(40M) ANT

RE 1GHz-3GHz

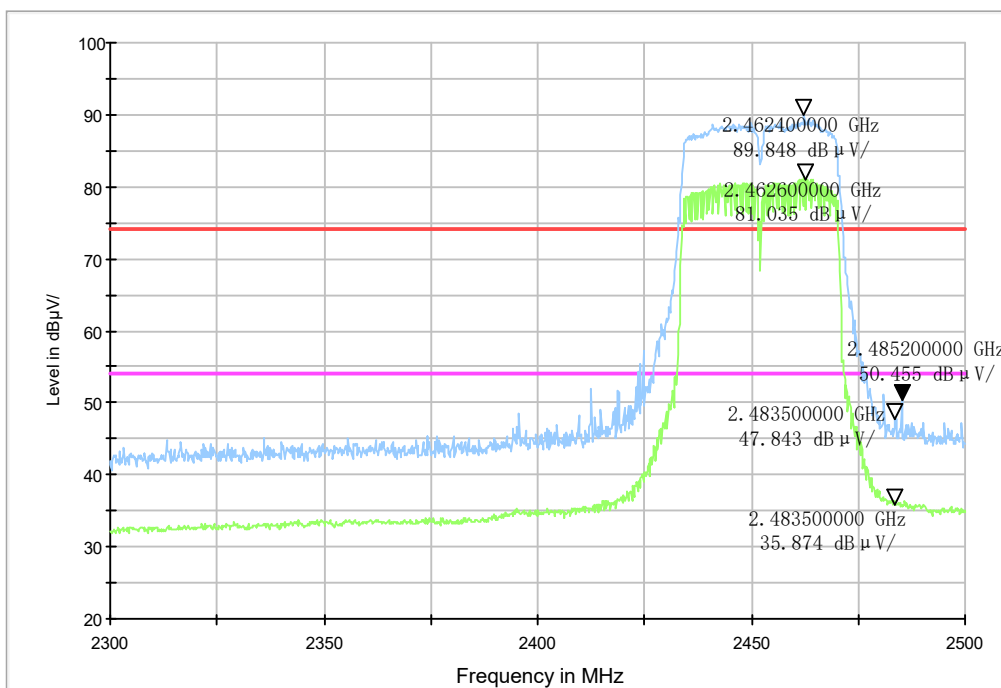


Fig.68 Frequency Band Edge: Ch11,11n(40M) ANT1

RE 1GHz-3GHz

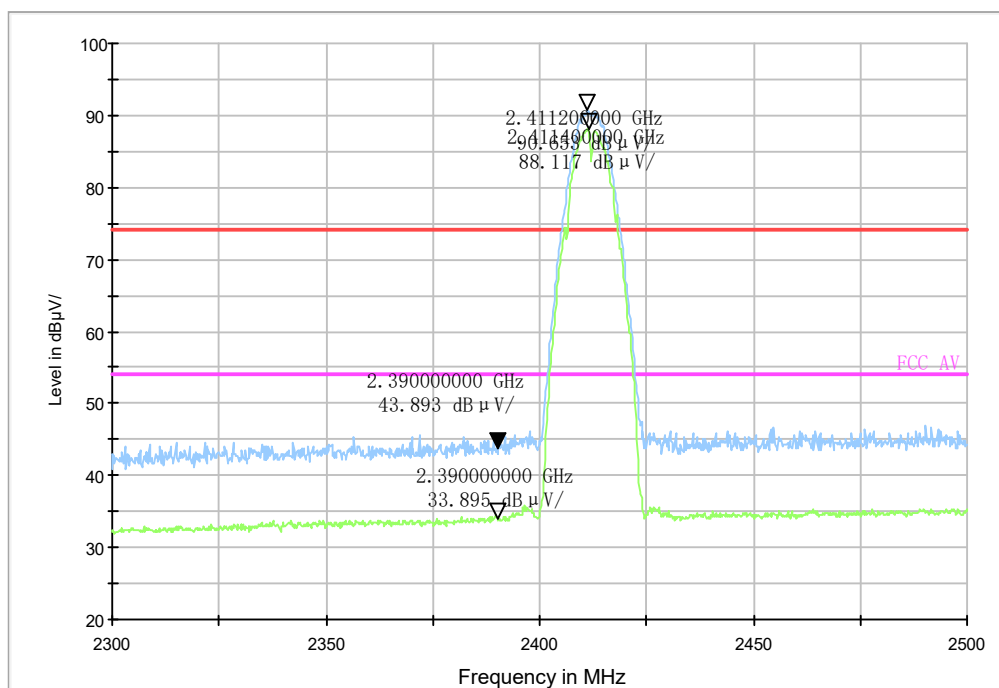


Fig.69 Frequency Band Edge: Ch1,11b ANT2

RE 1GHz-3GHz

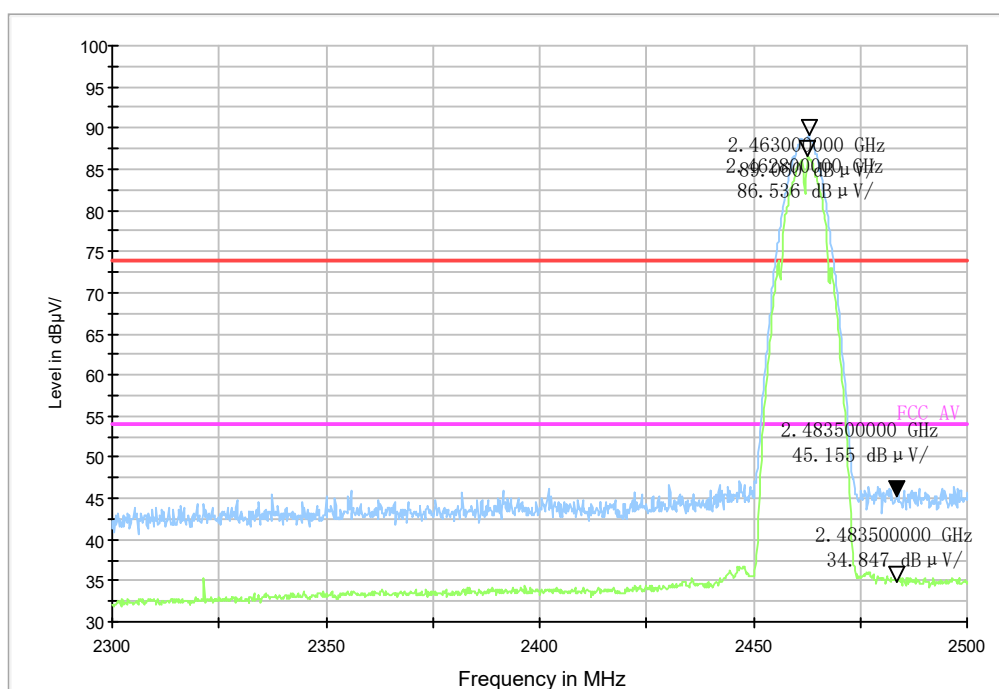


Fig.70 Frequency Band Edge: Ch1,11b ANT2

RE 1GHz-3GHz

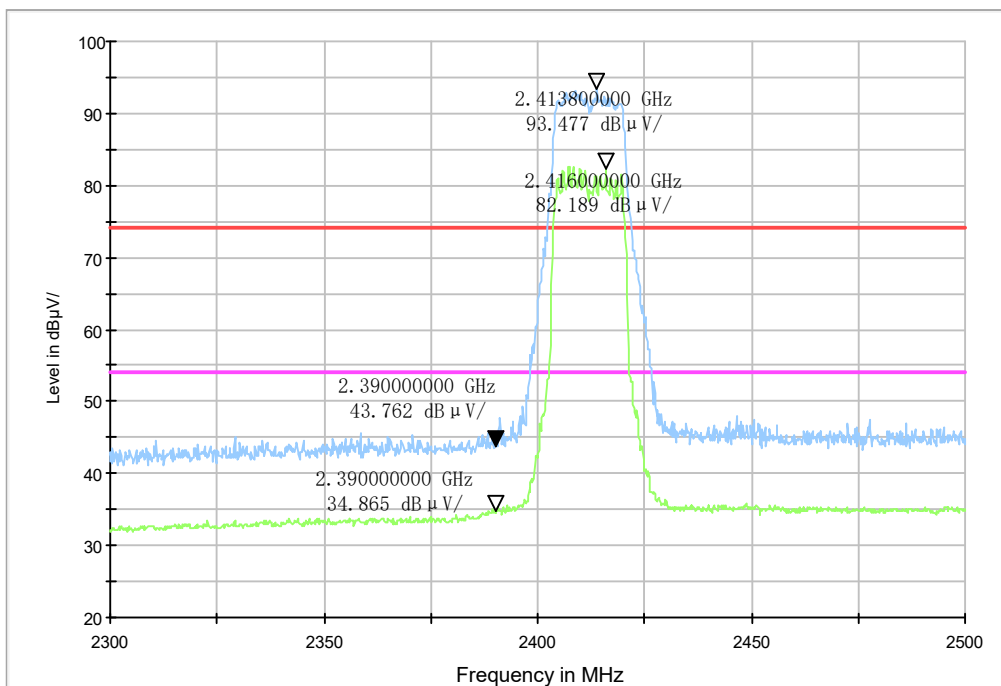


Fig.71 Frequency Band Edge: Ch1,11g ANT2

RE 1GHz-3GHz

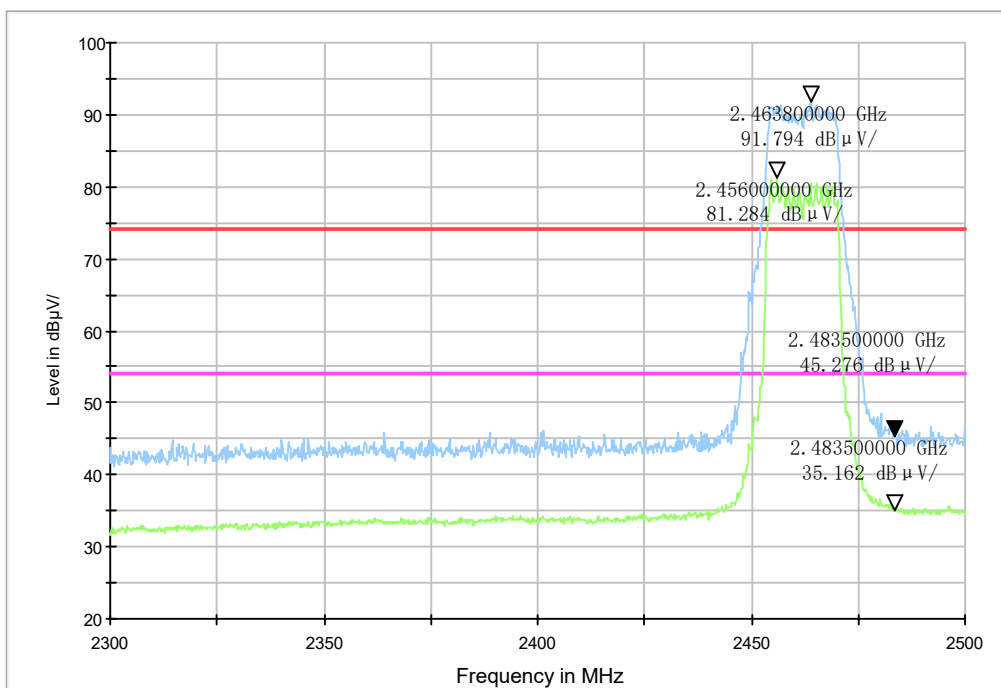


Fig.72 Frequency Band Edge: Ch1,11g ANT2

RE 1GHz-3GHz

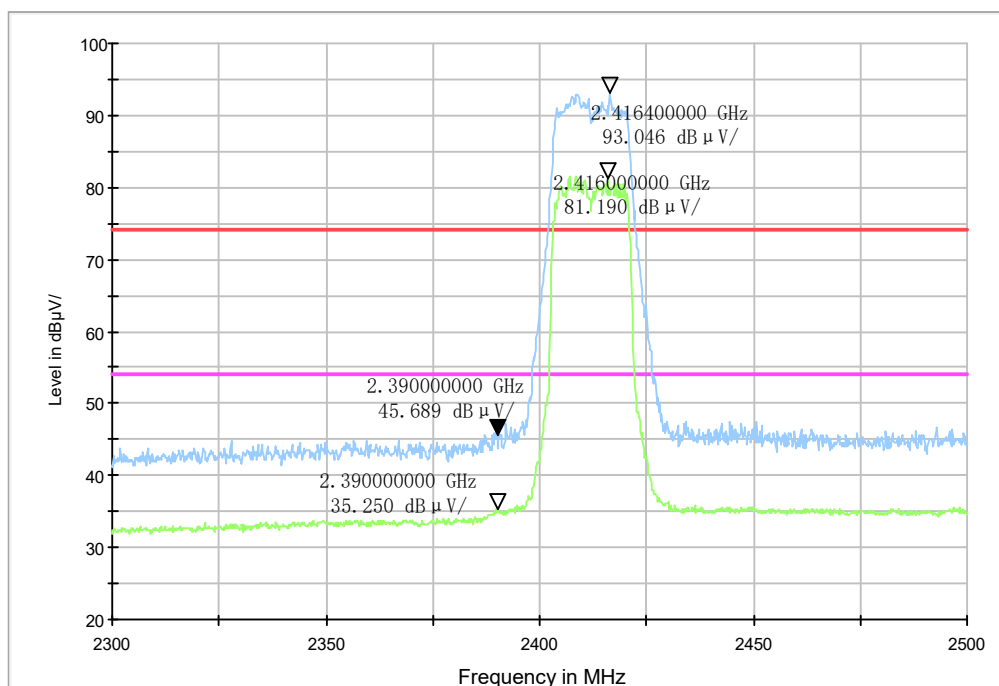


Fig.73 Frequency Band Edge: Ch1,11n(20MHz) ANT2

RE 1GHz-3GHz

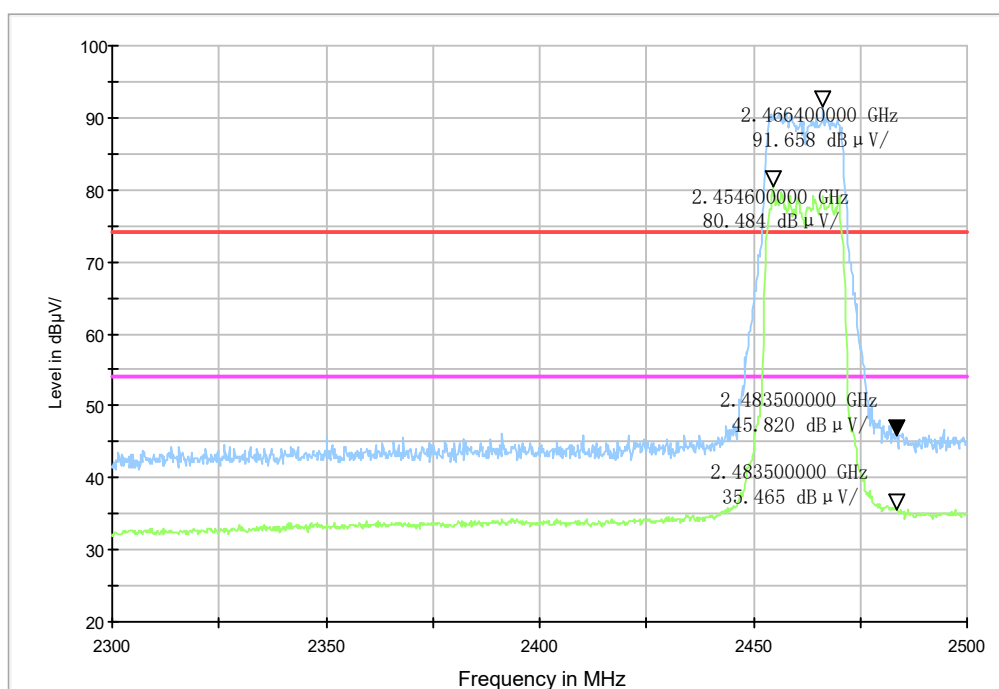


Fig.74 Frequency Band Edge: Ch11,11n(20MHz) ANT2

RE 1GHz-3GHz

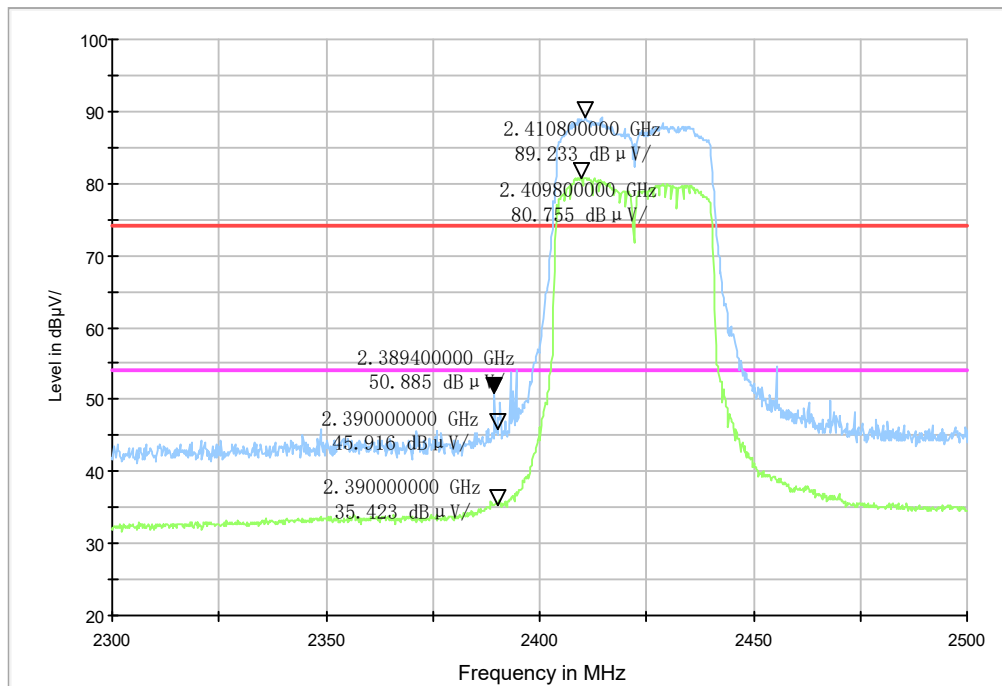


Fig.75 Frequency Band Edge: Ch3,11n(40M) ANT2

RE 1GHz-3GHz

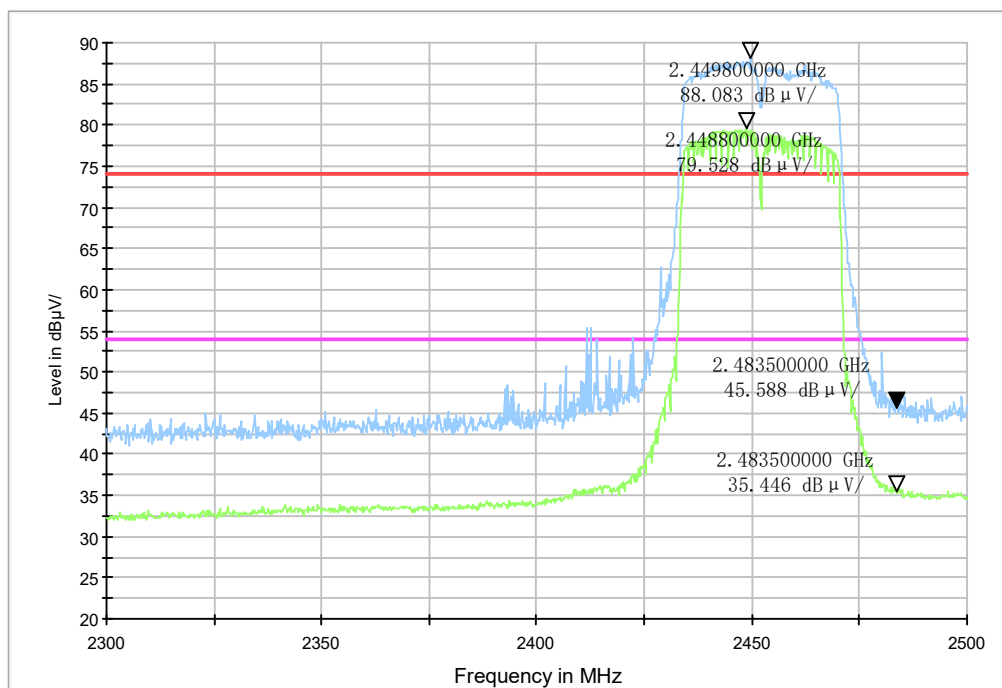


Fig.76 Frequency Band Edge: Ch11,11n(40M) ANT2

RE 1GHz-3GHz

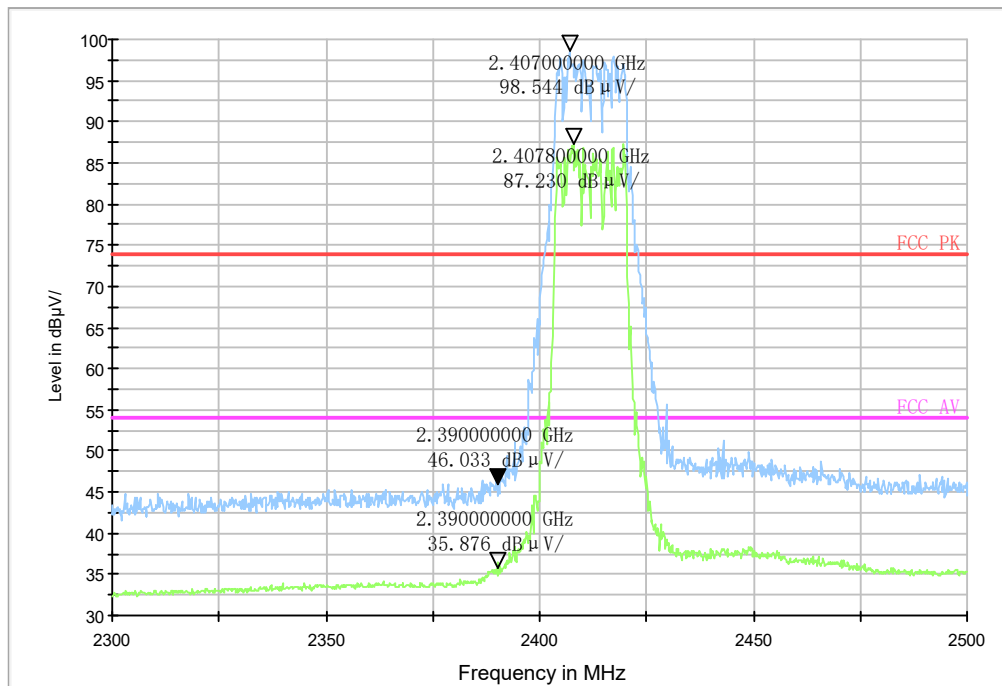


Fig.77 Frequency Band Edge: Ch1,11n(20MHz) MIMO

RE 1GHz-3GHz

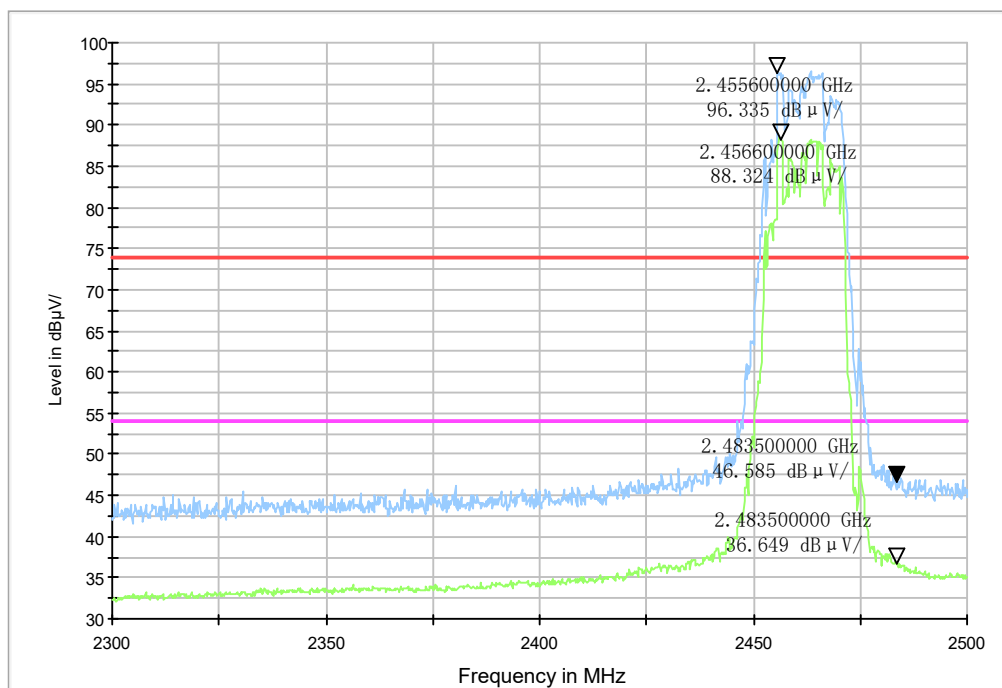


Fig.78 Frequency Band Edge: Ch11,11n(20MHz) MIMO

RE 1GHz-3GHz

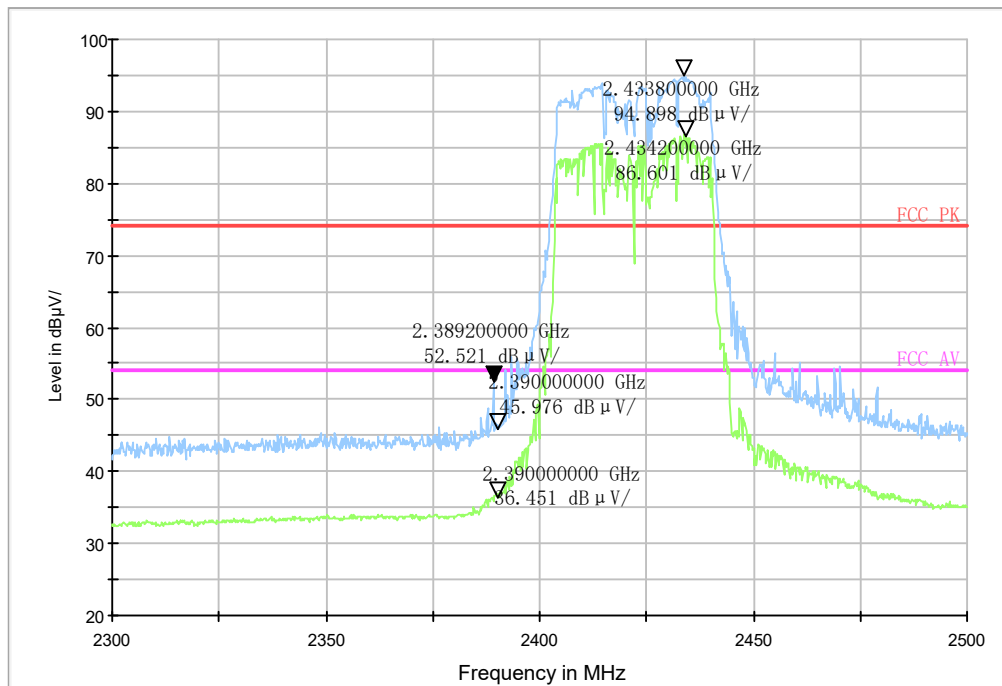


Fig.79 Frequency Band Edge: Ch3,11n(40M) MIMO

RE 1GHz-3GHz

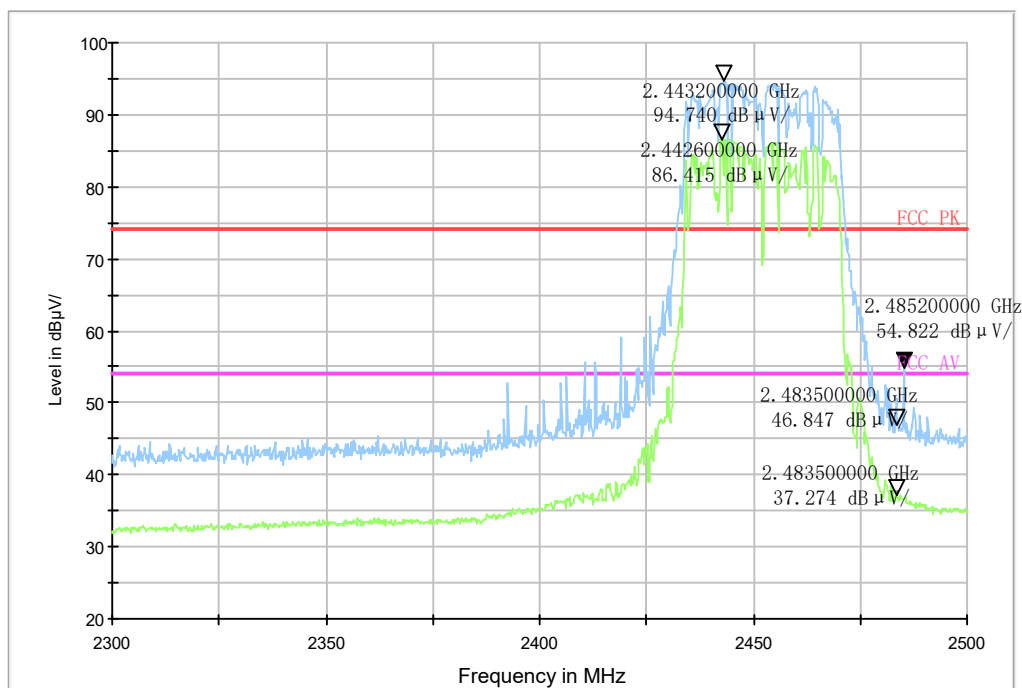


Fig.80 Frequency Band Edge: Ch11,11n(40M) MIMO

5.5 Transmitter Spurious Emission-Conducted

Specifications:	FCC 47 CFR Part15.247 (d)
DUT Serial Number:	S15/18: 862851030000175/862851030020177
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	--

Limit

Standard	Limit
FCC 47 CFR Part15.247 (d)	20dB below peak output power in 100kHz bandwidth

Test Procedure

This measurement is according to ANSI C63.10 clause 11.11.

- The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
- Enable EUT transmitter maximum power continuously.

Reference level measurement

- Set instrument center frequency to DTS channel center frequency.
- Set the span to ≥ 1.5 times the DTS bandwidth.
- Set the RBW = 100 kHz.
- Set the VBW $\geq [3 \times \text{RBW}]$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum PSD level.

Emission level measurement

- Set the center frequency and span to encompass frequency range to be measured.
- Set the RBW = 100 kHz.
- Set the VBW $\geq [3 \times \text{RBW}]$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level.

Test Result:

802.11b/g mode

Mode	Antenna	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	1	2.412GHz	Fig. 81	Pass
			30MHz~26GHz	Fig. 82	Pass
		6	2.437GHz	Fig. 83	Pass
			30MHz~26GHz	Fig. 84	Pass
		11	2.462GHz	Fig. 85	Pass
			30MHz~26GHz	Fig. 86	Pass
802.11g		1	2.412GHz	Fig. 87	Pass
			30MHz~26GHz	Fig. 88	Pass
		6	2.437GHz	Fig. 89	Pass
			30MHz~26GHz	Fig. 90	Pass
		11	2.462GHz	Fig. 91	Pass
			30MHz~26GHz	Fig. 92	Pass

802.11n mode

Mode	Antenna	Channel	Frequency Range	Test Results	Conclusion
802.11n20	1	1	2.412GHz	Fig. 93	Pass
			30MHz~26GHz	Fig. 94	Pass
		6	2.437GHz	Fig. 95	Pass
			30MHz~26GHz	Fig. 96	Pass
		11	2.462GHz	Fig. 97	Pass
			30MHz~26GHz	Fig. 98	Pass
802.11n40		1	2.422GHz	Fig. 99	Pass
			30MHz~26GHz	Fig. 100	Pass
		6	2.442GHz	Fig. 101	Pass
			30MHz~26GHz	Fig. 102	Pass
		11	2.462GHz	Fig. 103	Pass
			30MHz~26GHz	Fig. 104	Pass

802.11n mode

Mode	Antenna	Channel	Frequency Range	Test Results	Conclusion
802.11n20m	1	1	2.412GHz	Fig. 105	Pass
			30MHz~26GHz	Fig. 106	Pass
		6	2.437GHz	Fig. 107	Pass
			30MHz~26GHz	Fig. 108	Pass
		11	2.462GHz	Fig. 109	Pass
			30MHz~26GHz	Fig. 110	Pass
802.11n40m		1	2.422GHz	Fig. 111	Pass
			30MHz~26GHz	Fig. 112	Pass
		6	2.442GHz	Fig. 113	Pass
			30MHz~26GHz	Fig. 114	Pass
		11	2.462GHz	Fig. 115	Pass
			30MHz~26GHz	Fig. 116	Pass

802.11b/g mode

Mode	Antenna	Channel	Frequency Range	Test Results	Conclusion
802.11b	2	1	2.412GHz	Fig. 117	Pass
			30MHz~26GHz	Fig. 118	Pass
		6	2.437GHz	Fig. 119	Pass
			30MHz~26GHz	Fig. 120	Pass
		11	2.462GHz	Fig. 121	Pass
			30MHz~26GHz	Fig. 122	Pass
802.11g		1	2.412GHz	Fig. 123	Pass
			30MHz~26GHz	Fig. 124	Pass
		6	2.437GHz	Fig. 125	Pass
			30MHz~26GHz	Fig. 126	Pass
		11	2.462GHz	Fig. 127	Pass
			30MHz~26GHz	Fig. 128	Pass

802.11n mode

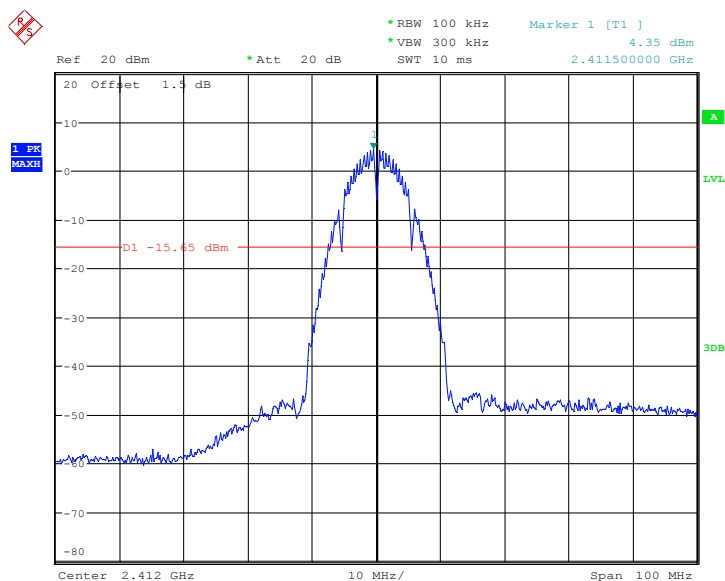
Mode	Antenna	Channel	Frequency Range	Test Results	Conclusion
802.11n20	2	1	2.412GHz	Fig. 129	Pass
			30MHz~26GHz	Fig. 130	Pass
		6	2.437GHz	Fig. 131	Pass
			30MHz~26GHz	Fig. 132	Pass
		11	2.462GHz	Fig. 133	Pass
			30MHz~26GHz	Fig. 134	Pass
802.11n40		1	2.422GHz	Fig. 135	Pass
			30MHz~26GHz	Fig. 136	Pass
		6	2.442GHz	Fig. 137	Pass
			30MHz~26GHz	Fig. 138	Pass
		11	2.462GHz	Fig. 139	Pass
			30MHz~26GHz	Fig. 140	Pass

802.11n mode

Mode	Antenna	Channel	Frequency Range	Test Results	Conclusion
802.11n20m	2	1	2.412GHz	Fig. 141	Pass
			30MHz~26GHz	Fig. 142	Pass
		6	2.437GHz	Fig. 143	Pass
			30MHz~26GHz	Fig. 144	Pass
		11	2.462GHz	Fig. 145	Pass
			30MHz~26GHz	Fig. 146	Pass
802.11n40m		1	2.422GHz	Fig. 147	Pass
			30MHz~26GHz	Fig. 148	Pass
		6	2.442GHz	Fig. 149	Pass
			30MHz~26GHz	Fig. 150	Pass
		11	2.462GHz	Fig. 151	Pass
			30MHz~26GHz	Fig. 152	Pass

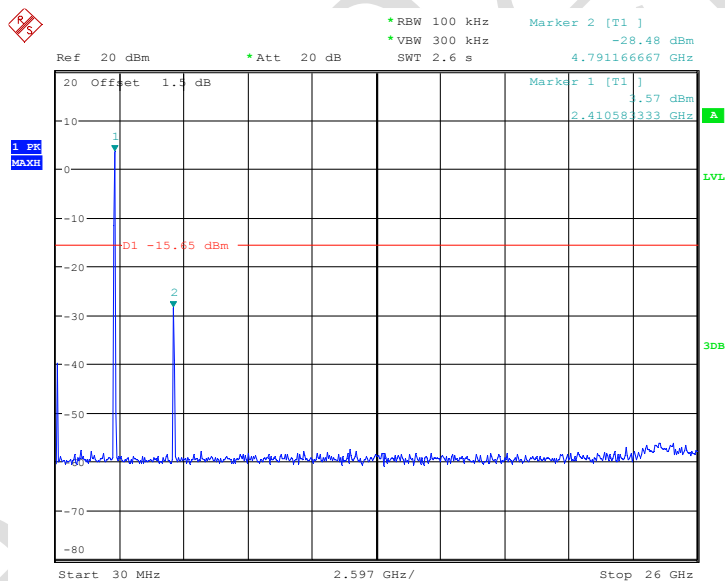
Conclusion: PASS

Test figure as below:



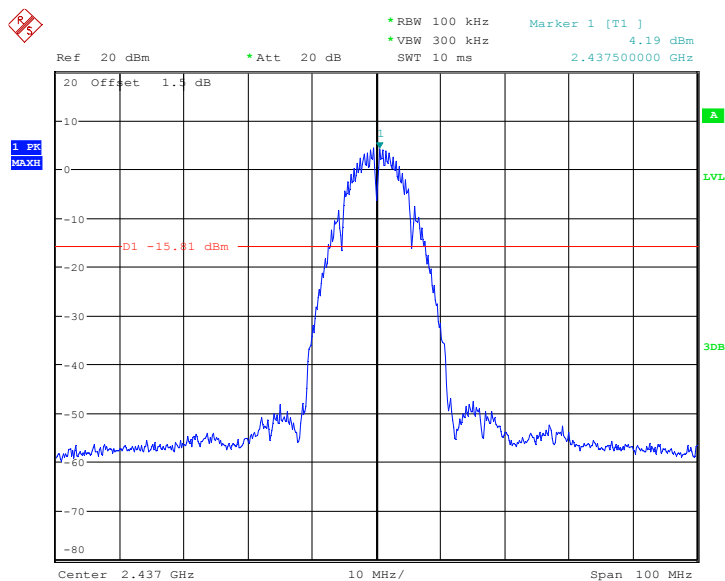
Date: 14.MAR.2017 02:57:16

Fig.81 Conducted spurious emission: Ch1,11b,2412MHz(Antenna 1)



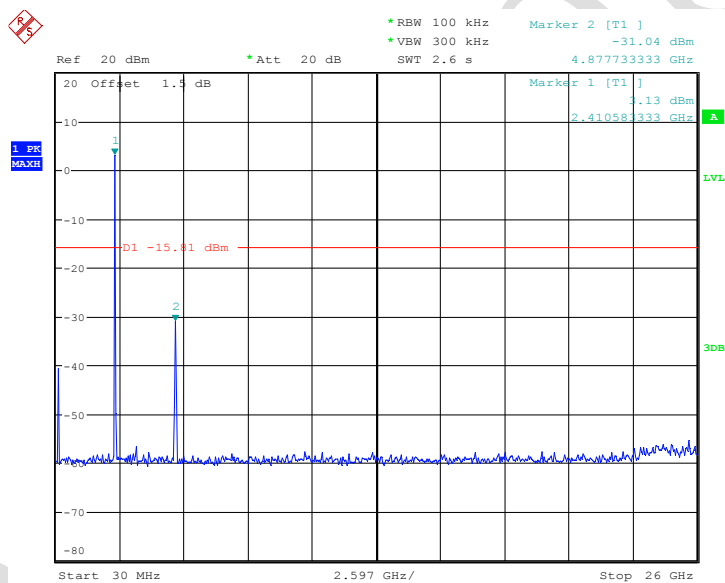
Date: 14.MAR.2017 03:02:21

Fig.82 Conducted spurious emission: Ch1,11b,30MHz~26GHz(Antenna 1)



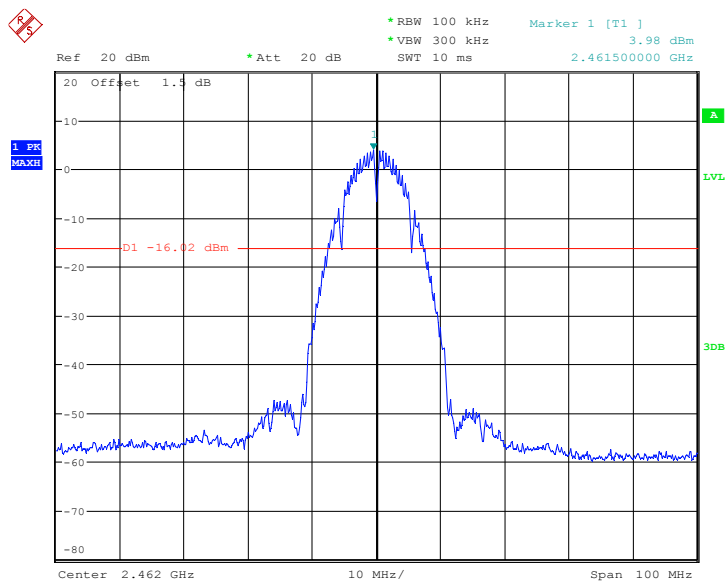
Date: 14.MAR.2017 03:05:20

Fig.83 Conducted spurious emission: Ch6,11b,2437MHz(Antenna 1)



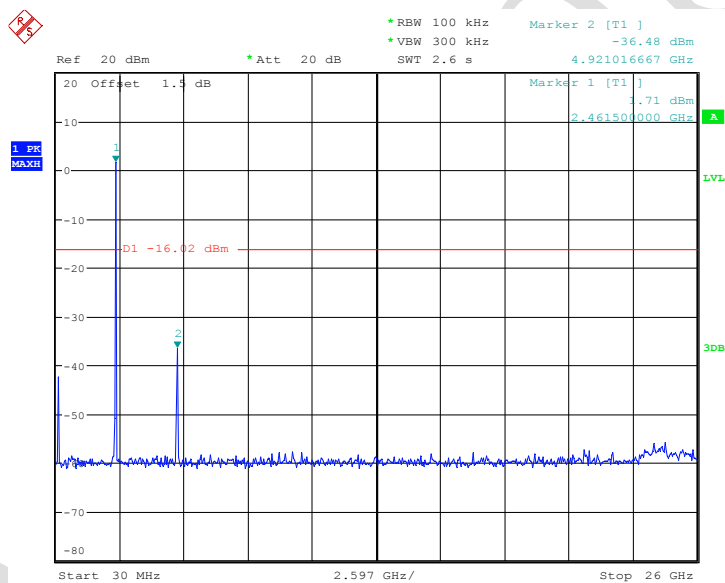
Date: 14.MAR.2017 03:06:08

Fig.84 Conducted spurious emission: Ch6,11b,30MHz~26GHz(Antenna 1)



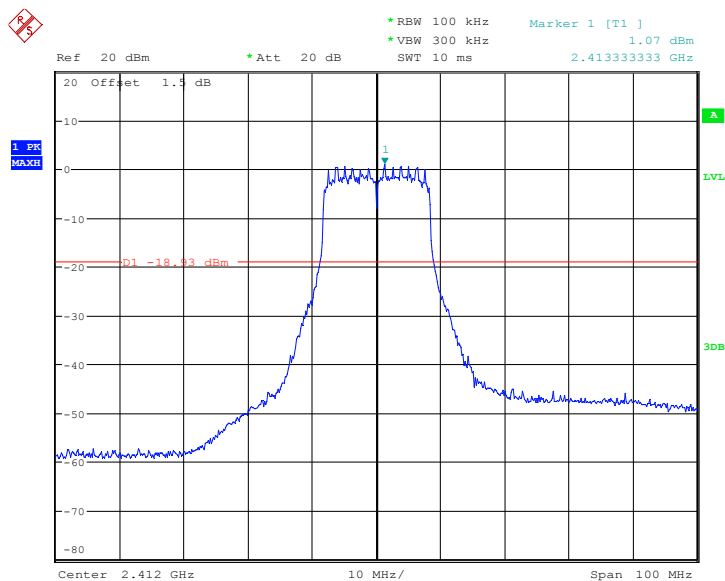
Date: 14.MAR.2017 03:08:59

Fig.85 Conducted spurious emission: Ch11,11b,2462MHz(Antenna 1)



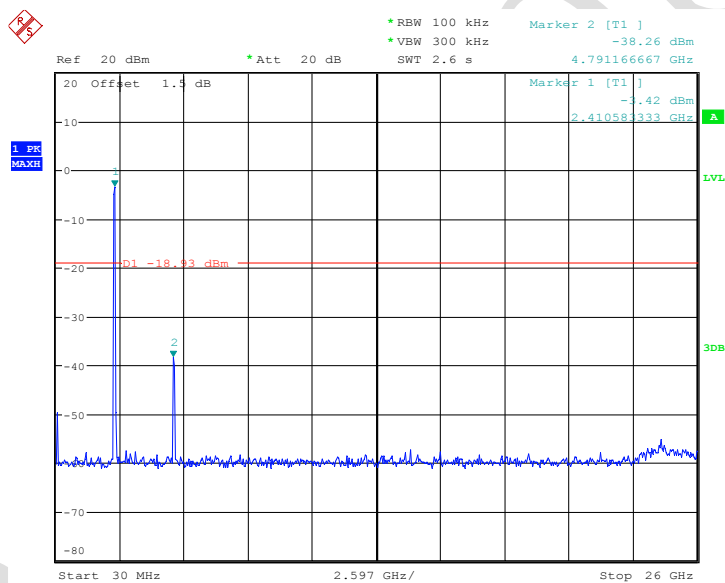
Date: 14.MAR.2017 03:09:21

Fig.86 Conducted spurious emission: Ch11,11b,30MHz~26GHz(Antenna 1)



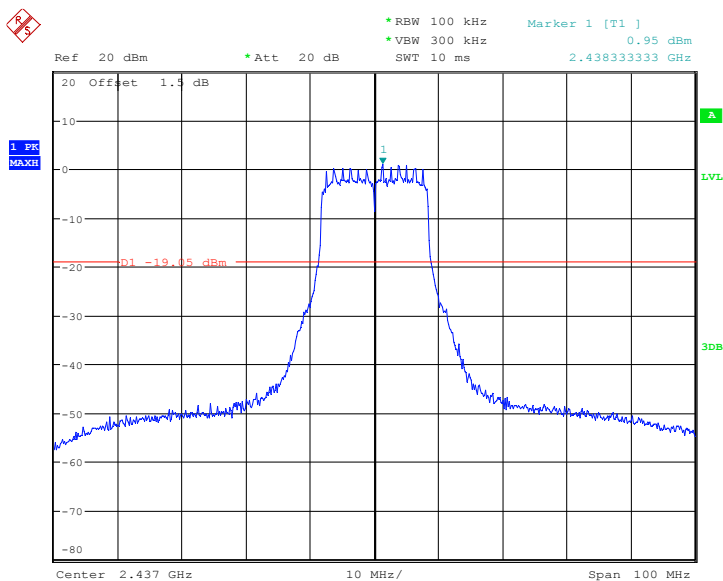
Date: 14.MAR.2017 03:42:06

Fig.87 Conducted spurious emission: Ch1,11g,2412MHz(Antenna 1)



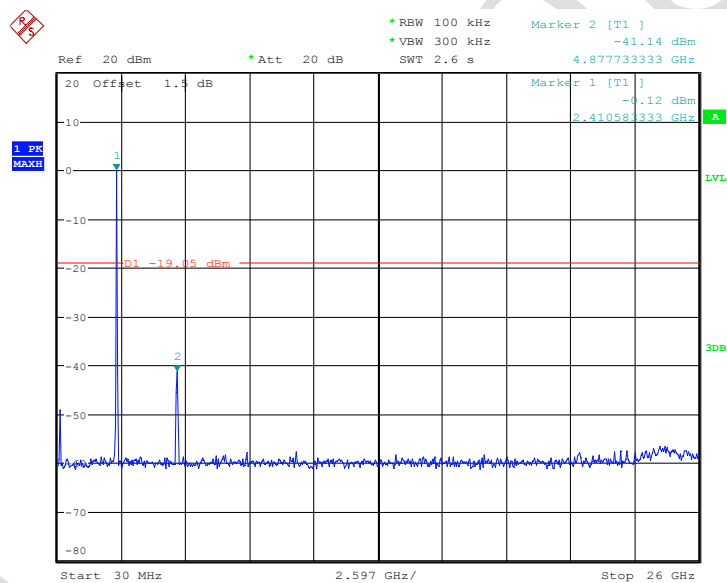
Date: 14.MAR.2017 03:42:26

Fig.88 Conducted spurious emission: Ch1,11g,30MHz~26GHz(Antenna 1)



Date: 14.MAR.2017 03:47:04

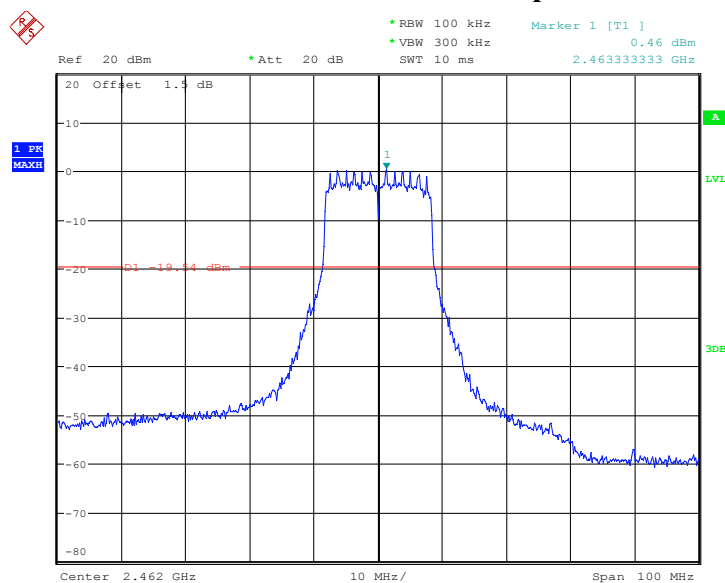
Fig.89 Conducted spurious emission: Ch6,11g,2437MHz(Antenna 1)



Date: 14.MAR.2017 03:47:32

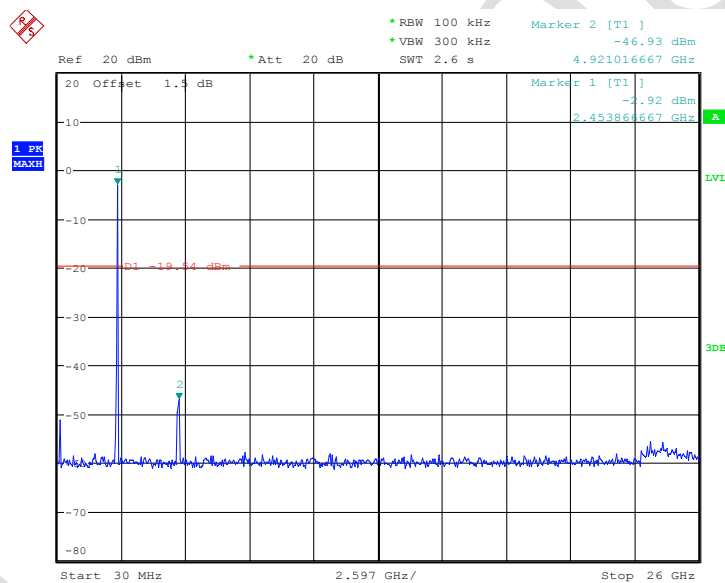
Fig.90 Conducted spurious emission: Ch6,11g,30MHz~26GHz(Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



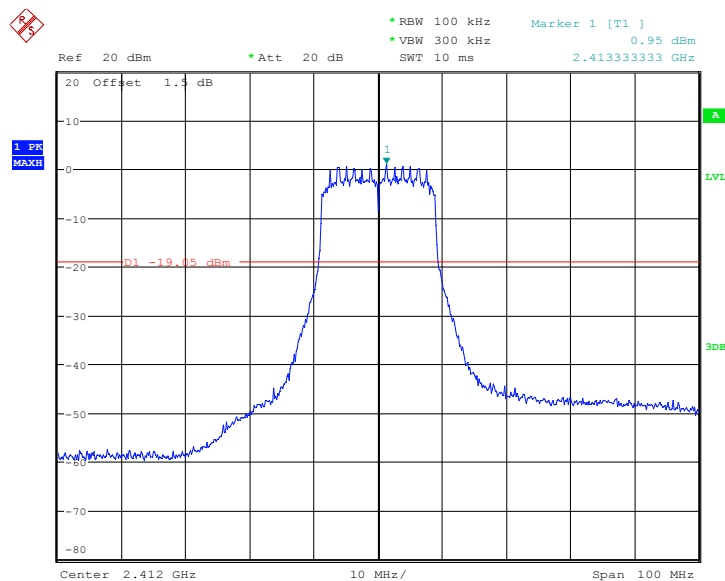
Date: 14.MAR.2017 03:48:46

Fig.91 Conducted spurious emission: Ch11,11g,2462MHz(Antenna 1)



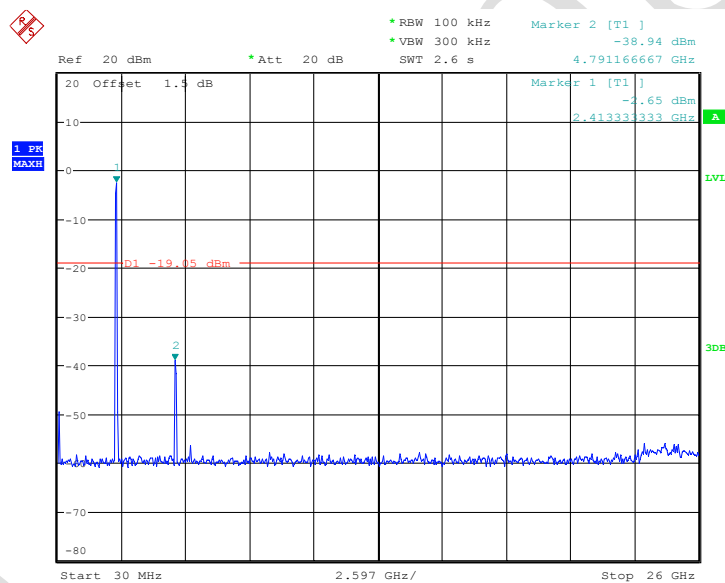
Date: 14.MAR.2017 03:49:03

Fig.92 Conducted spurious emission: Ch11,11g,30MHz~26GHz(Antenna 1)



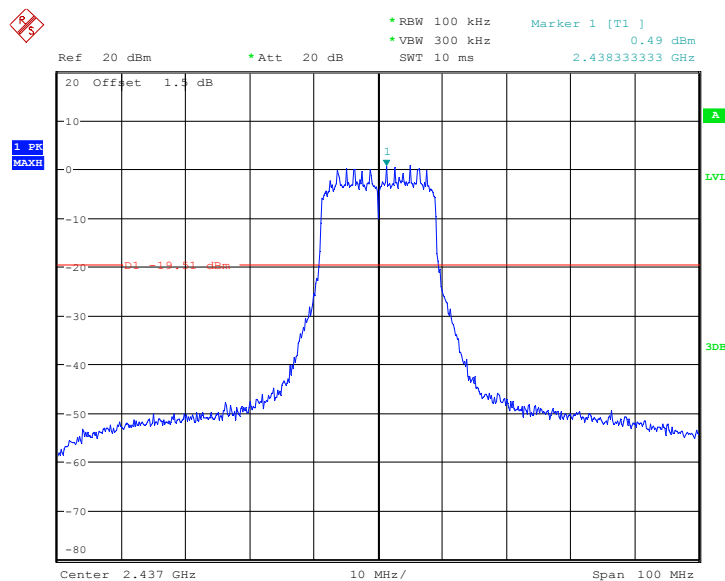
Date: 14.MAR.2017 03:57:31

Fig.93 Conducted spurious emission: Ch1,11n,2412MHz(Antenna 1)



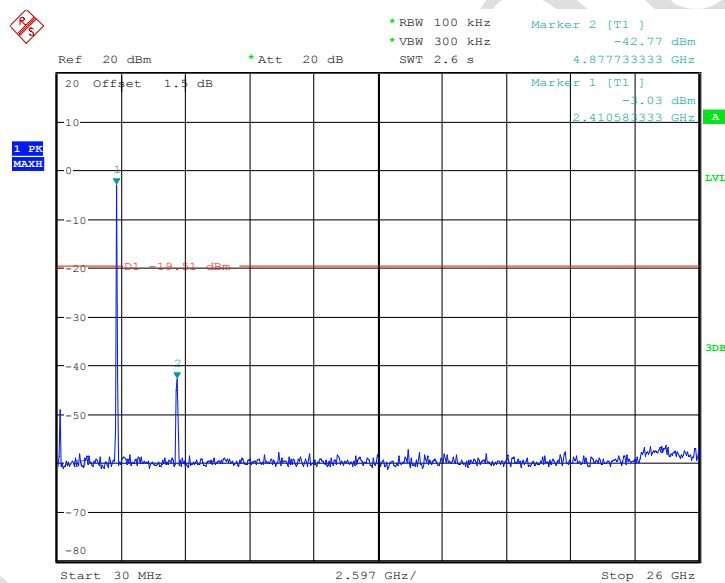
Date: 14.MAR.2017 03:57:59

Fig.94 Conducted spurious emission: Ch1,11n,30MHz~26GHz(Antenna 1)



Date: 14.MAR.2017 03:58:42

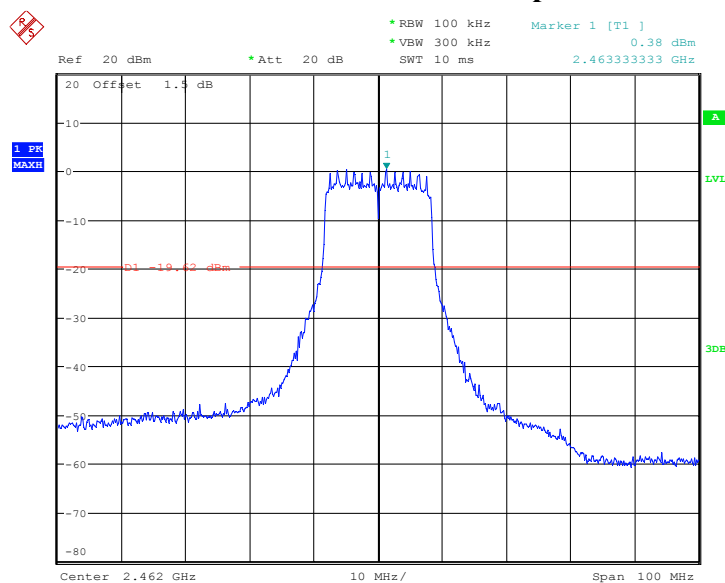
Fig.95 Conducted spurious emission: Ch6,11n,2437MHz(Antenna 1)



Date: 14.MAR.2017 03:59:04

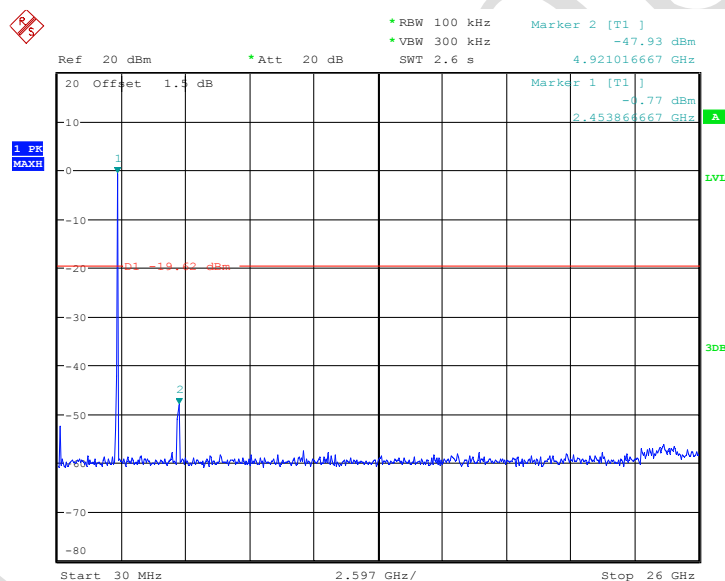
Fig.96 Conducted spurious emission: Ch6,11n,30MHz~26GHz(Antenna 1)

Report No.: B17W00112-WLAN 2.4GHz Rev2



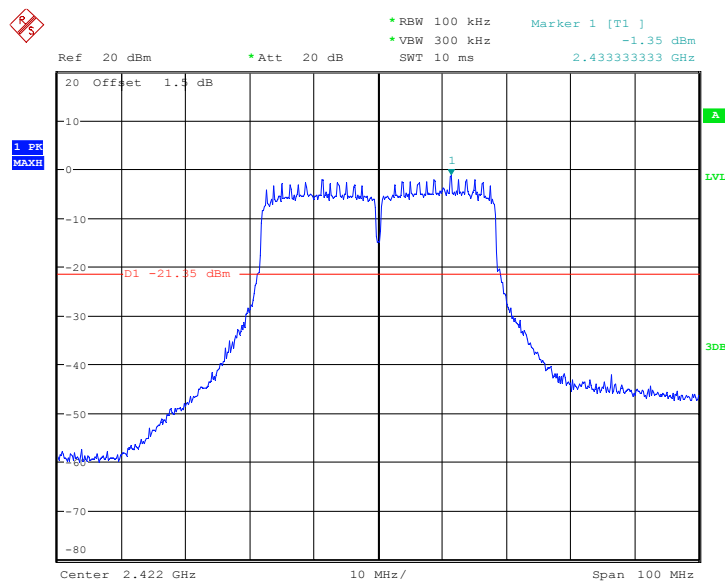
Date: 14.MAR.2017 03:59:56

Fig.97 Conducted spurious emission: Ch11,11n,2462MHz(Antenna 1)



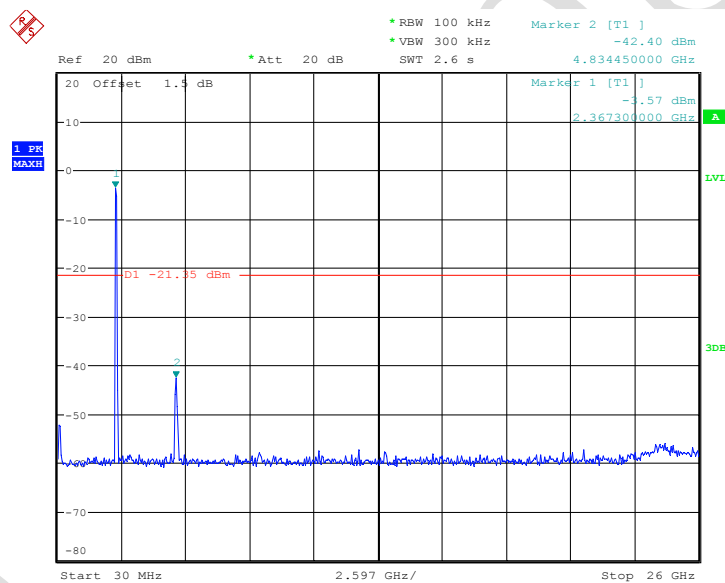
Date: 14.MAR.2017 04:00:21

Fig.98 Conducted spurious emission: Ch11,11n,30MHz~26GHz(Antenna 1)



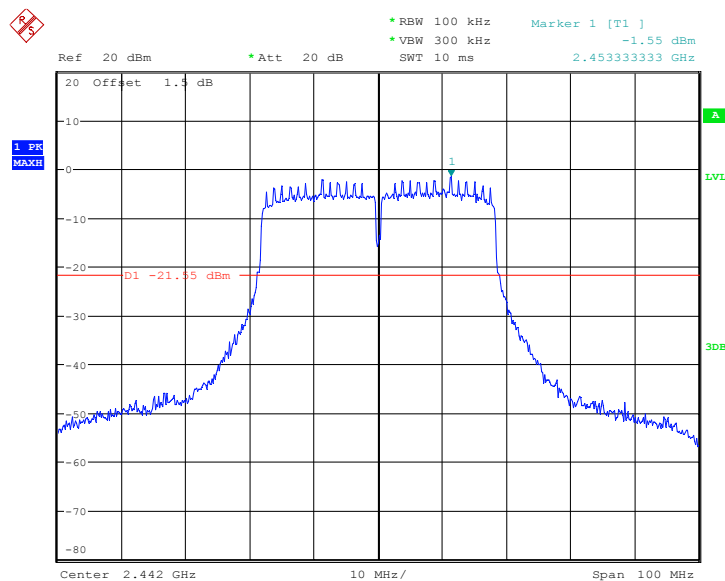
Date: 14.MAR.2017 04:11:44

Fig.99 Conducted spurious emission: Ch1,11n(40M),2422MHz(Antenna 1)



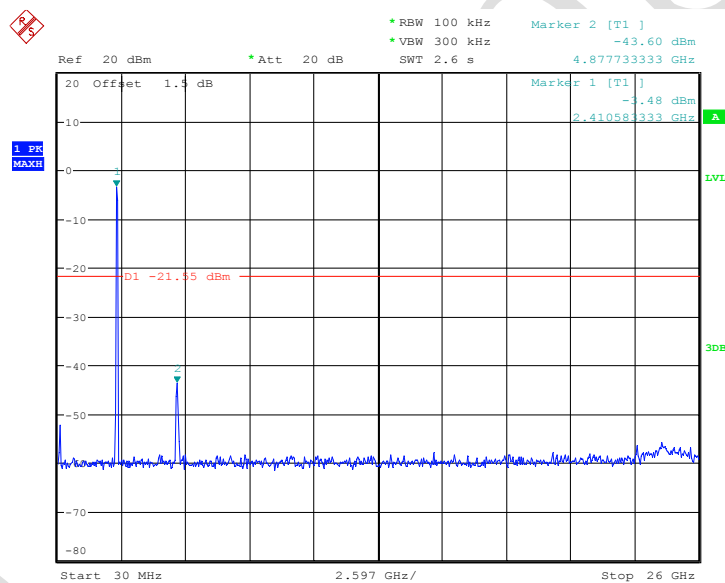
Date: 14.MAR.2017 04:12:12

Fig.100 Conducted spurious emission: Ch1,11n(40M),30MHz~26GHz(Antenna 1)



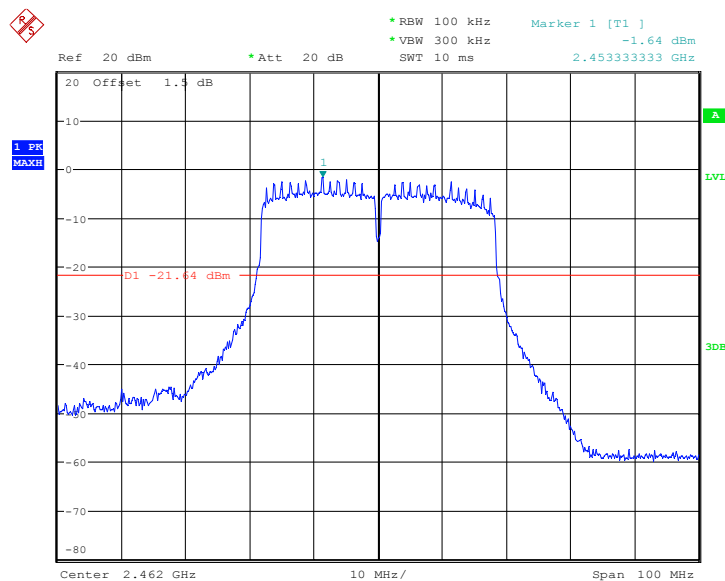
Date: 14.MAR.2017 04:13:48

Fig.101 Conducted spurious emission: Ch6,11n(40M),2442MHz(Antenna 1)



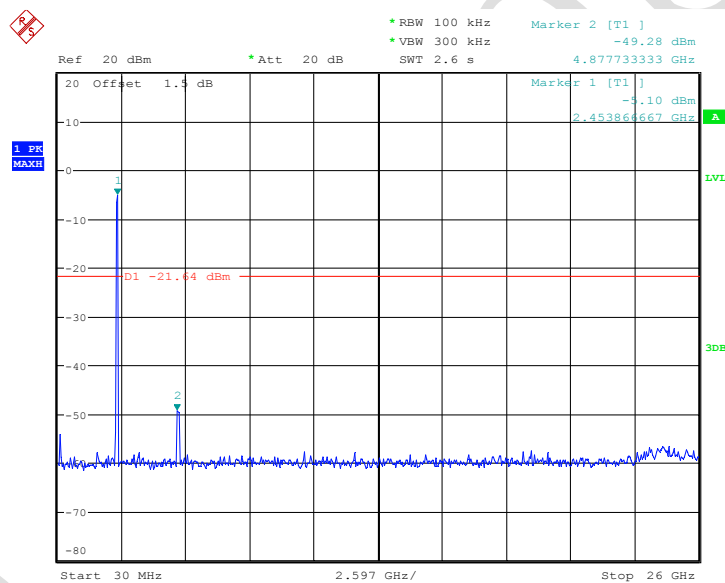
Date: 14.MAR.2017 04:14:07

Fig.102 Conducted spurious emission: Ch6,11n(40M),30MHz~26GHz(Antenna 1)



Date: 14.MAR.2017 04:17:42

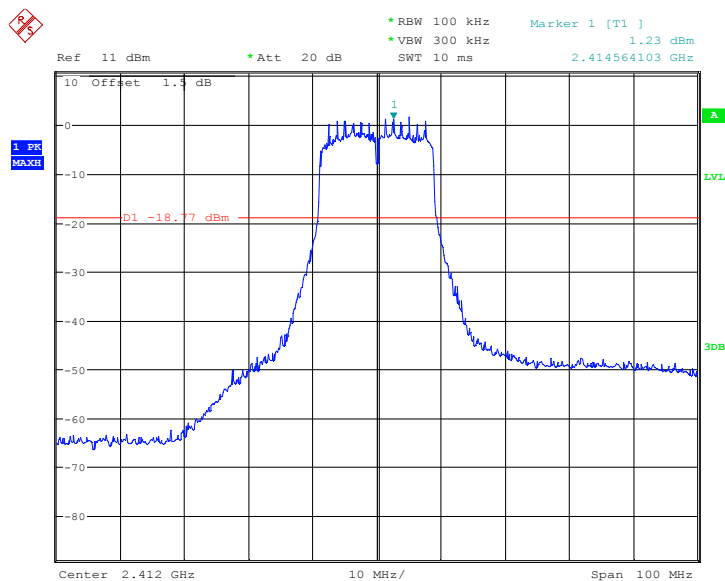
Fig.103 Conducted spurious emission: Ch11,11n(40M),2462MHz(Antenna 1)



Date: 14.MAR.2017 04:18:00

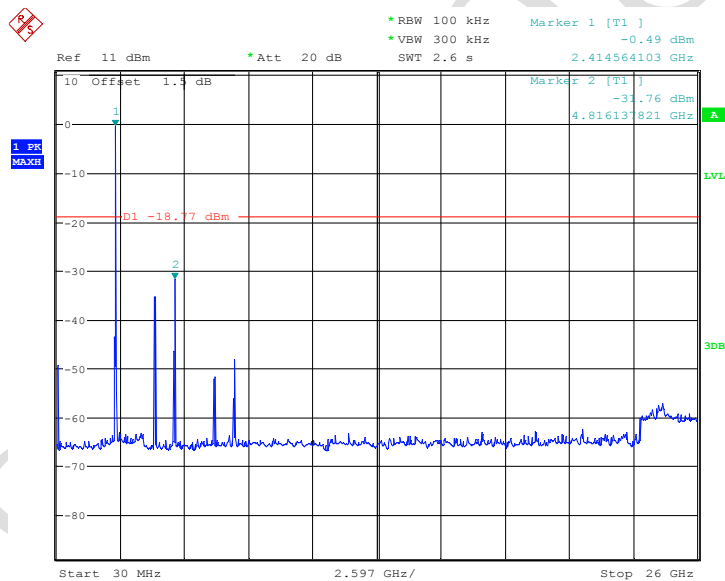
Fig.104 Conducted spurious emission: Ch11,11n(40M),30MHz~26GHz(Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 01:37:35

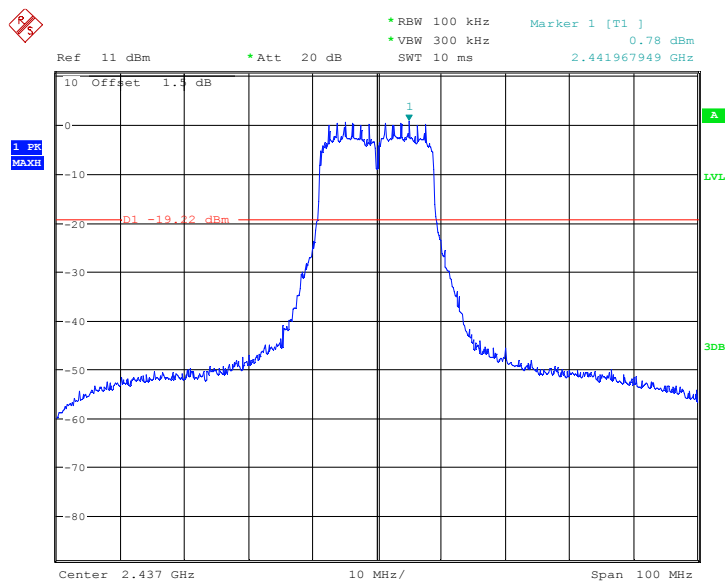
Fig.105 Conducted spurious emission: Ch1,11N20m,2412MHz(Antenna 1)



Date: 16.MAR.2017 01:38:30

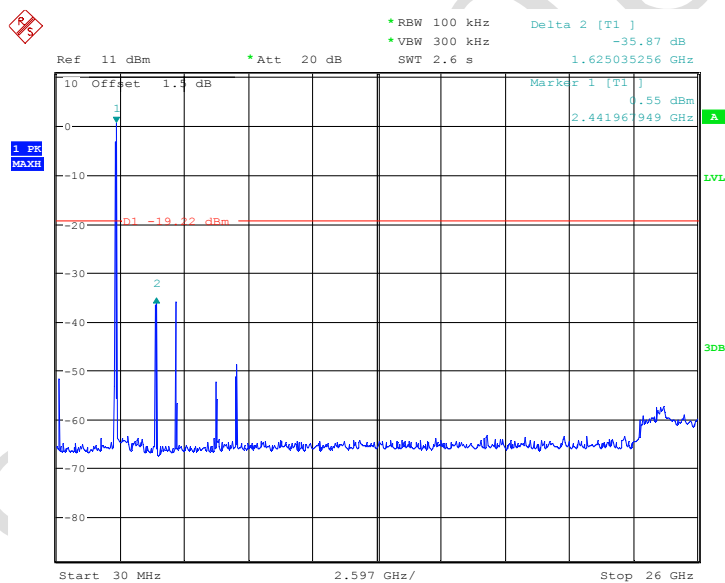
Fig.106 Conducted spurious emission: Ch1,11N20m, 30MHz~26GHz (Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 01:39:51

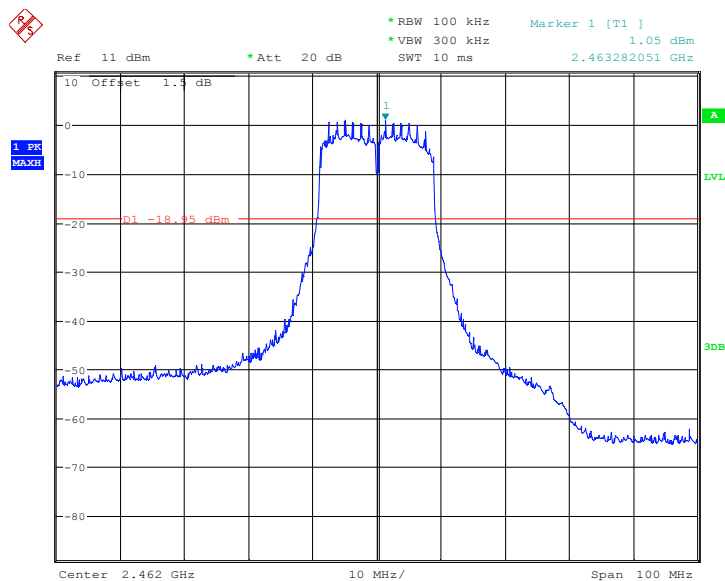
Fig.107 Conducted spurious emission: Ch6,11N20m,2437MHz(Antenna 1)



Date: 16.MAR.2017 01:41:04

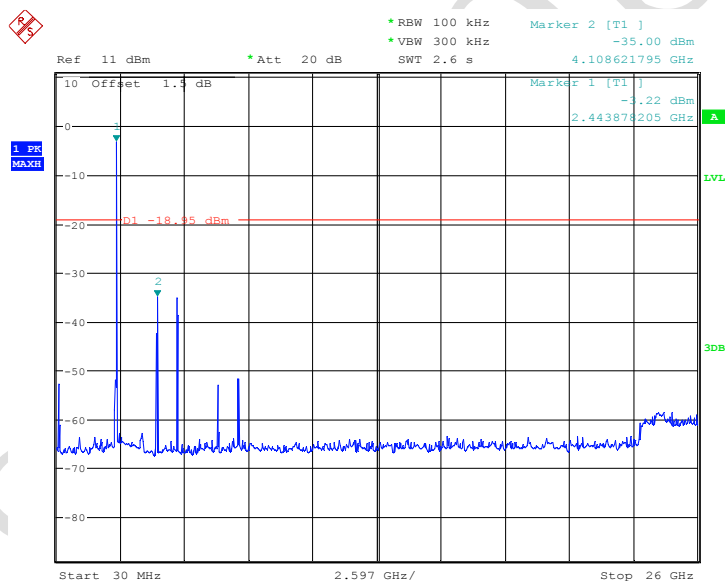
Fig.108 Conducted spurious emission: Ch6,11N20m, 30MHz~26GHz (Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 01:42:19

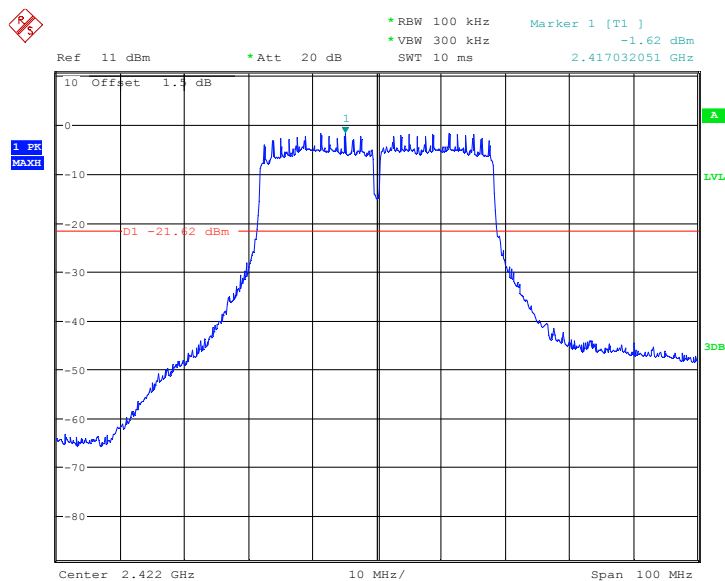
Fig.109 Conducted spurious emission: Ch11,11N20m,2462MHz(Antenna 1)



Date: 16.MAR.2017 01:42:40

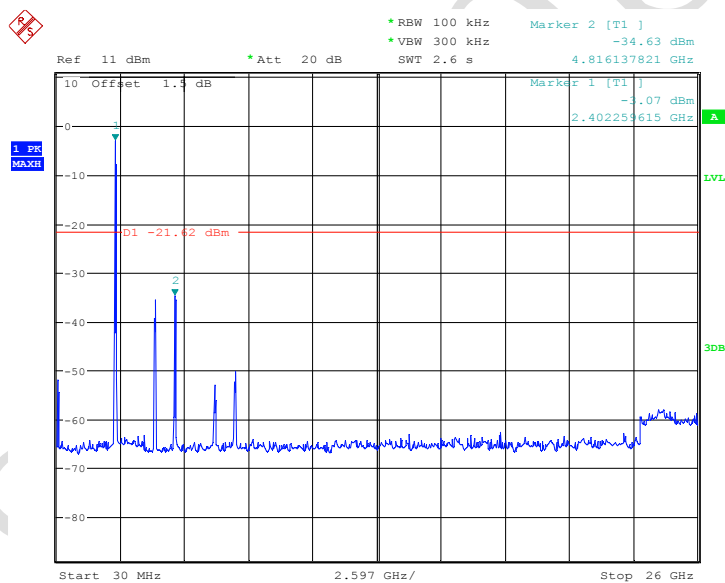
Fig.110 Conducted spurious emission: Ch11,11N20m, 30MHz~26GHz (Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 01:43:59

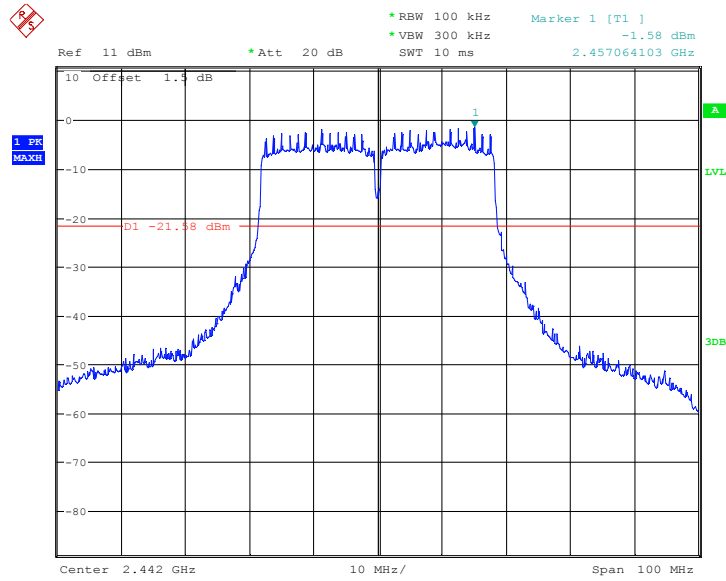
Fig.111 Conducted spurious emission: Ch1,11N40m,2412MHz(Antenna 1)



Date: 16.MAR.2017 01:44:29

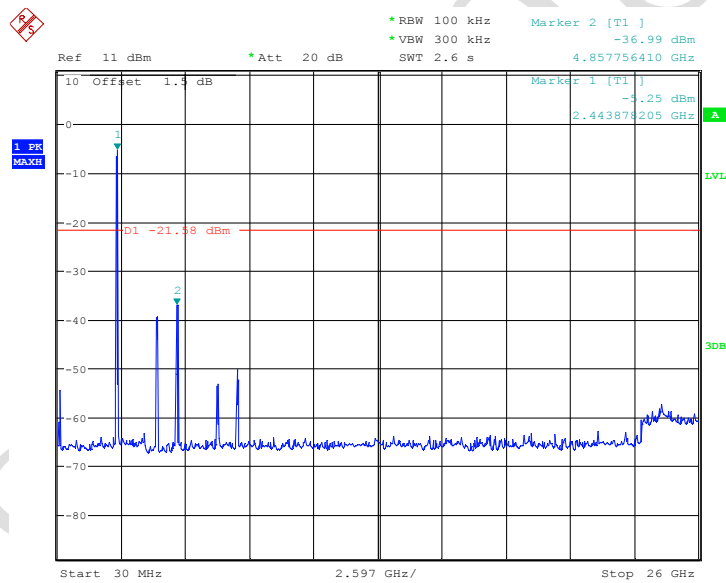
Fig.112 Conducted spurious emission: Ch1,11N40m, 30MHz~26GHz (Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 01:45:34

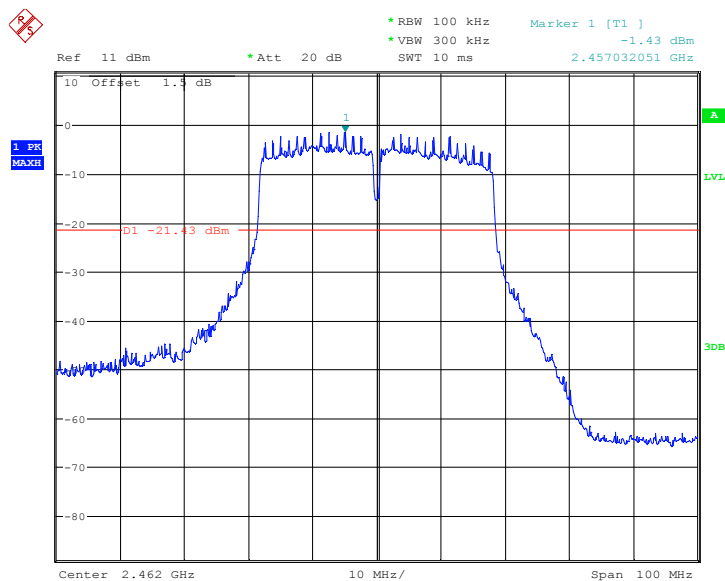
Fig.113 Conducted spurious emission: Ch6,11N40m, 2437MHz (Antenna 1)



Date: 16.MAR.2017 01:45:53

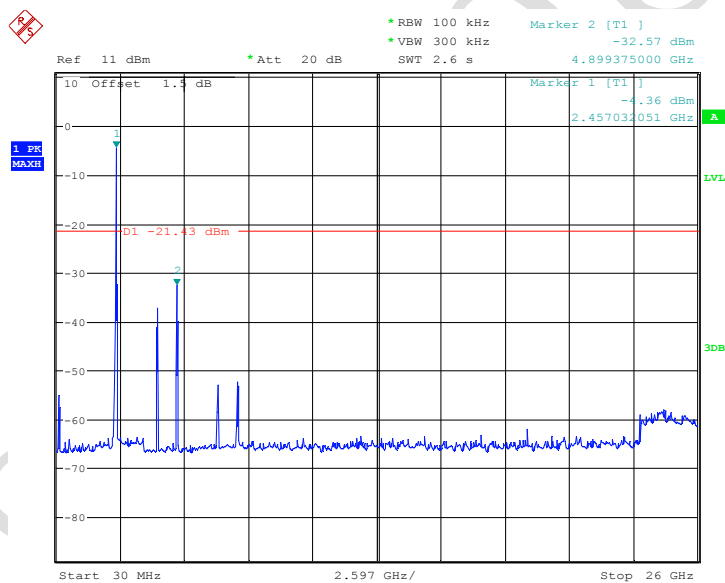
Fig.114 Conducted spurious emission: Ch6,11N40m, 30MHz~26GHz (Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 01:47:00

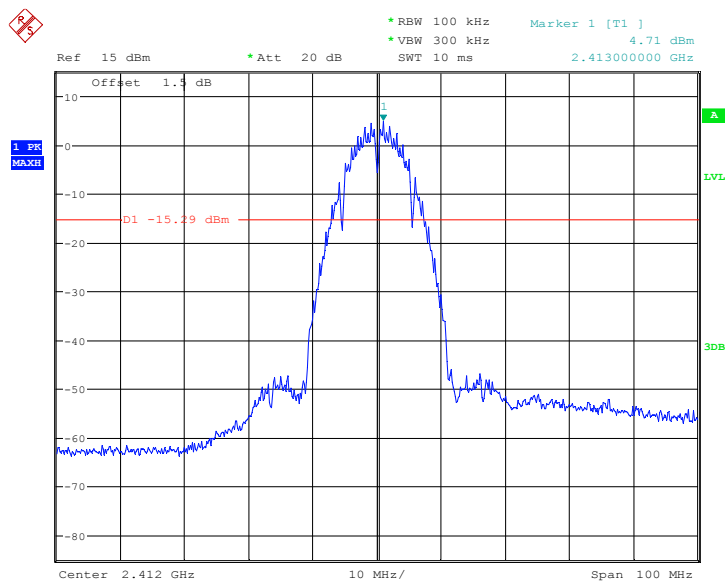
Fig.115 Conducted spurious emission: Ch11,11N40m, 2462MHz (Antenna 1)



Date: 16.MAR.2017 01:47:26

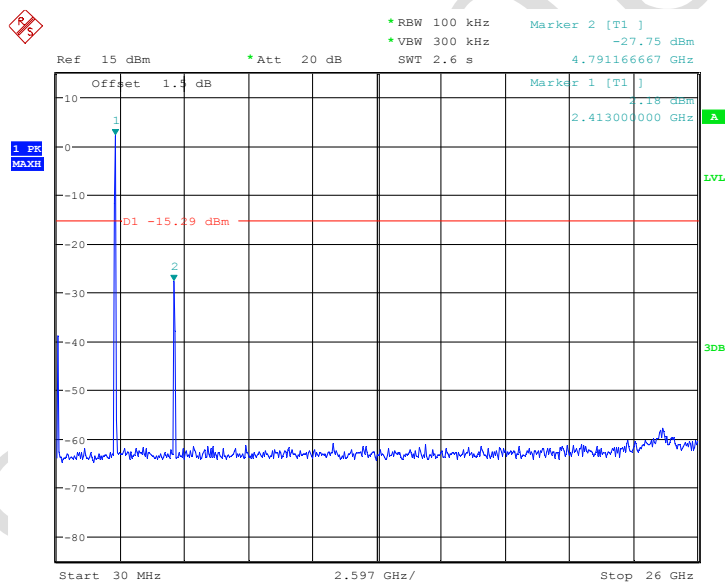
Fig.116 Conducted spurious emission: Ch11,11N40m, 30MHz~26GHz (Antenna 1)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 15.MAR.2017 01:30:26

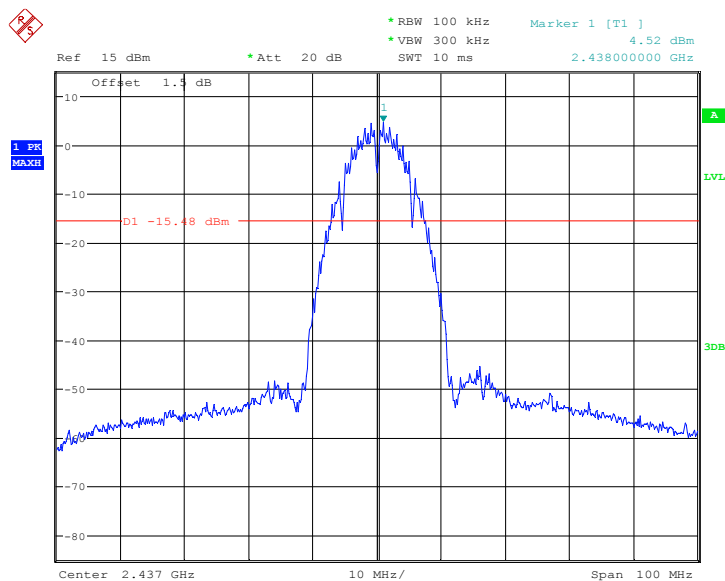
Fig.117 Conducted spurious emission: Ch1,11b,2412MHz(Antenna 2)



Date: 15.MAR.2017 01:30:55

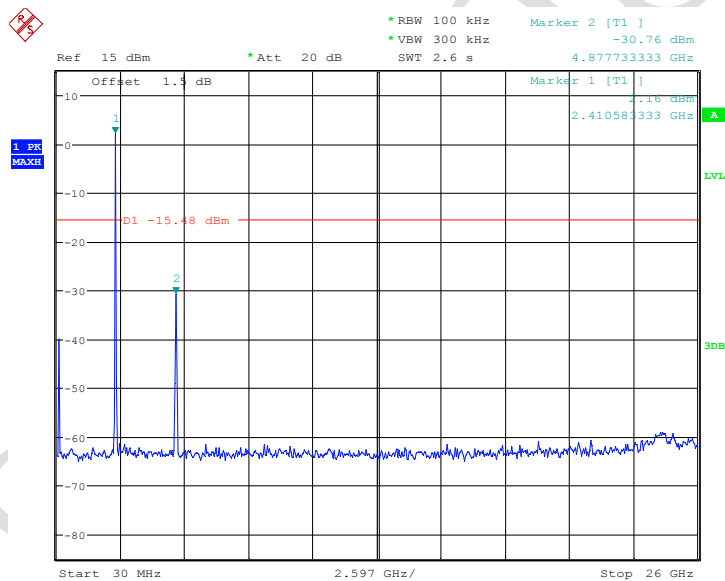
Fig.118 Conducted spurious emission: Ch1,11b, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 15.MAR.2017 02:35:57

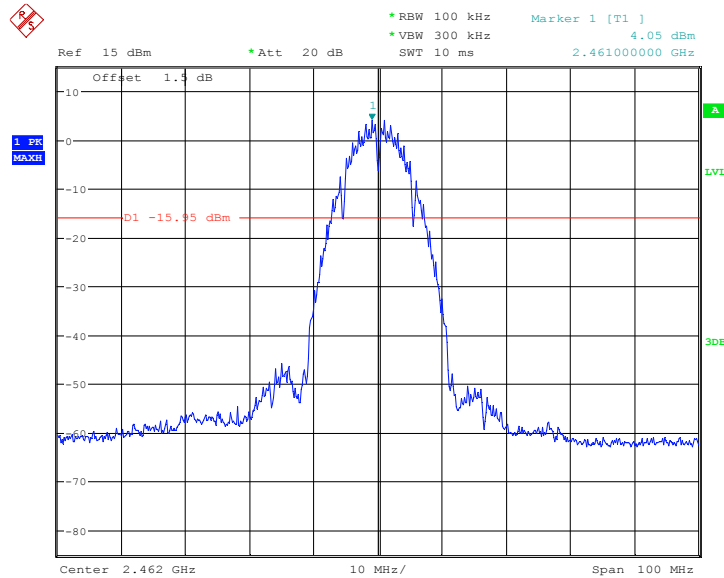
Fig.119 Conducted spurious emission: Ch6,11b,2437MHz(Antenna 2)



Date: 15.MAR.2017 02:36:55

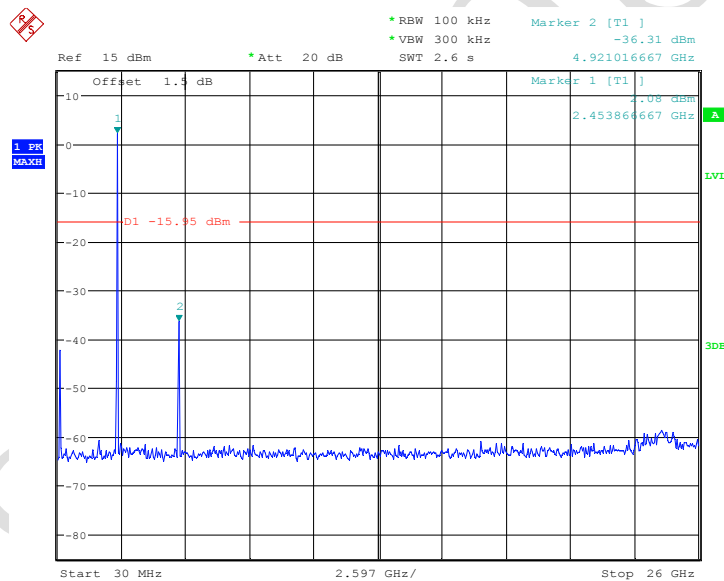
Fig.120 Conducted spurious emission: Ch6,11b, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 15.MAR.2017 02:50:44

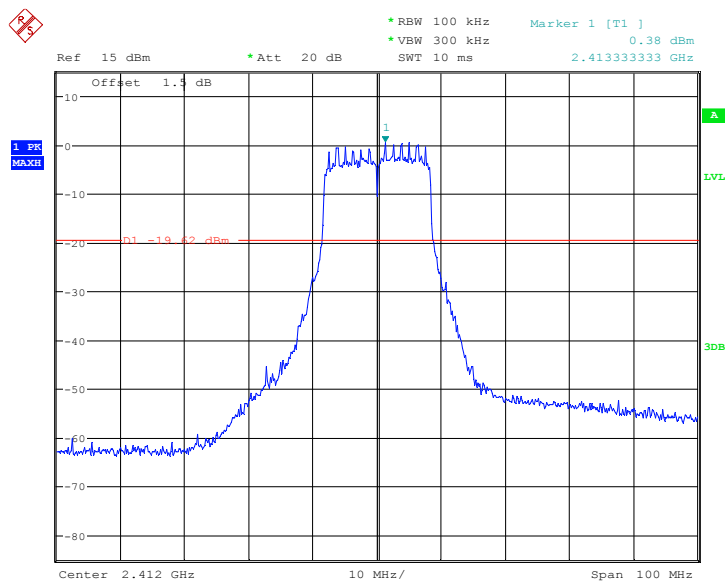
Fig.121 Conducted spurious emission: Ch11,11b,2462MHz(Antenna 2)



Date: 15.MAR.2017 02:51:02

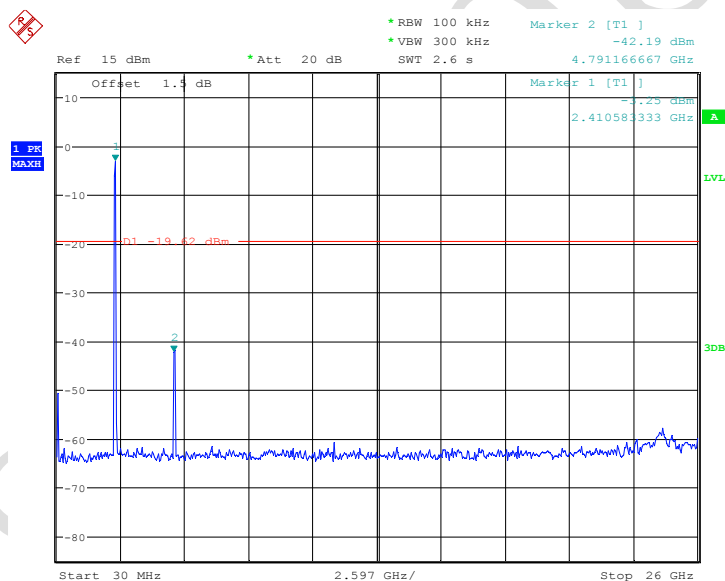
Fig.122 Conducted spurious emission: Ch11,11b, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 15.MAR.2017 02:05:19

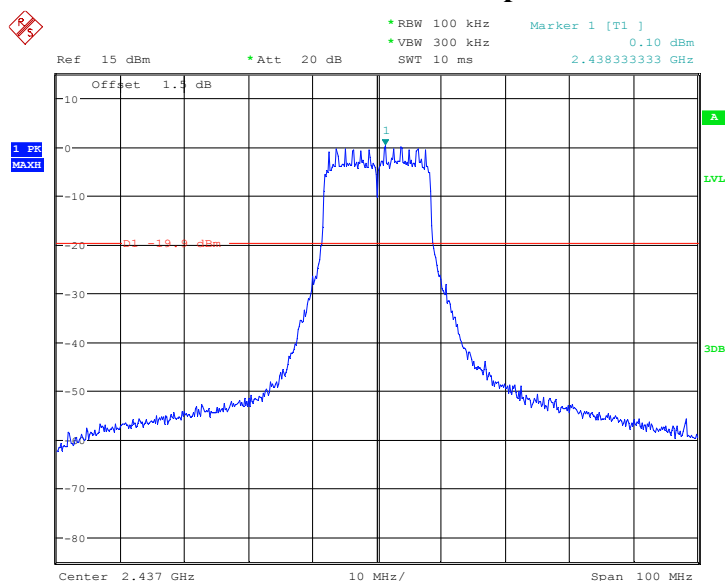
Fig.123 Conducted spurious emission: Ch1,11g,2412MHz(Antenna 2)



Date: 15.MAR.2017 02:06:24

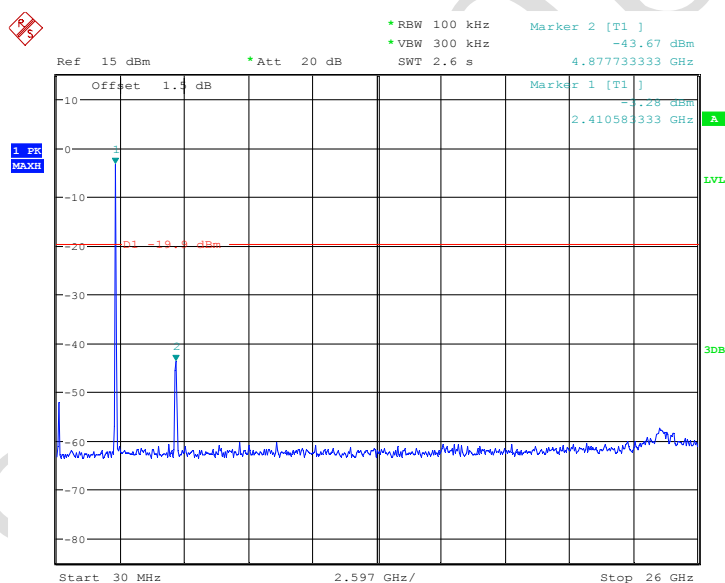
Fig.124 Conducted spurious emission: Ch1,11g, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 15.MAR.2017 02:38:40

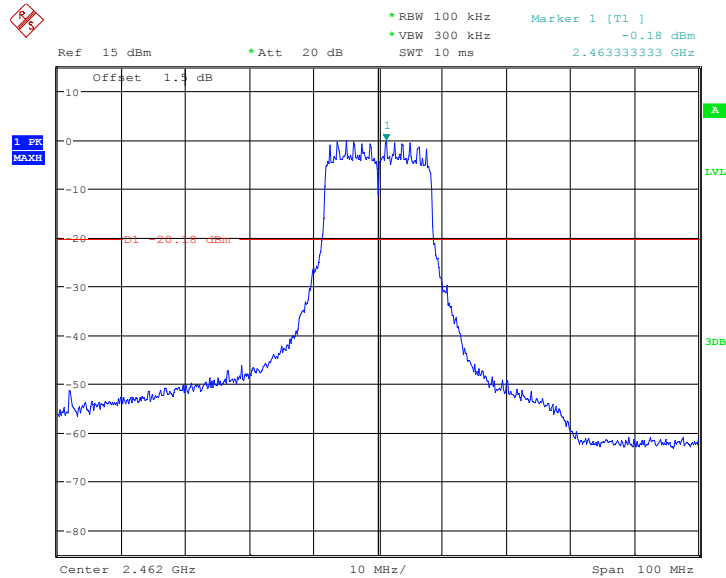
Fig.125 Conducted spurious emission: Ch6,11g,2437MHz(Antenna 2)



Date: 15.MAR.2017 02:40:55

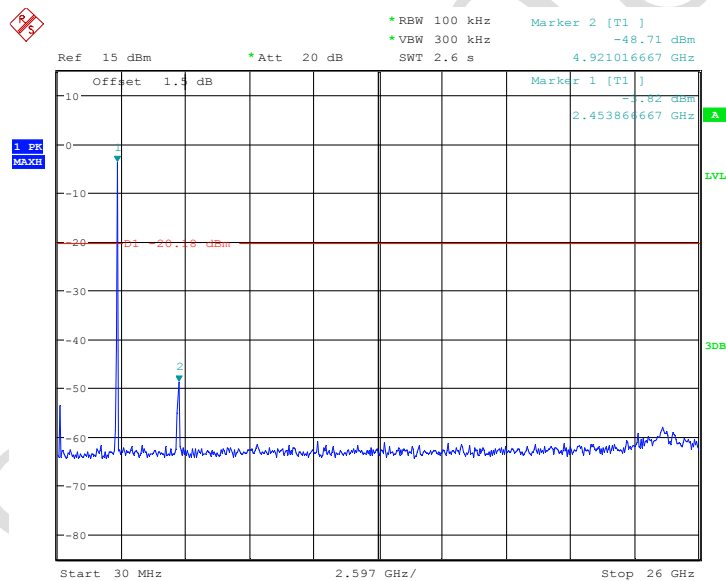
Fig.126 Conducted spurious emission: Ch6,11g, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 15.MAR.2017 02:53:52

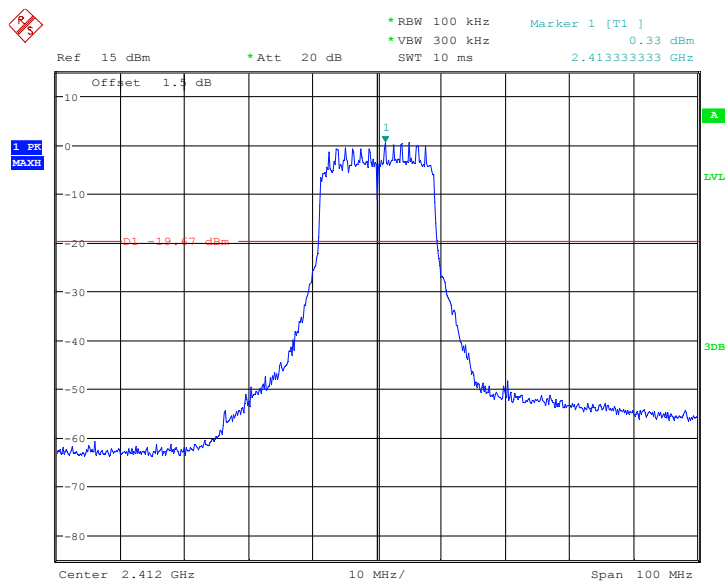
Fig.127 Conducted spurious emission: Ch11,11g,2462MHz(Antenna 2)



Date: 15.MAR.2017 02:54:20

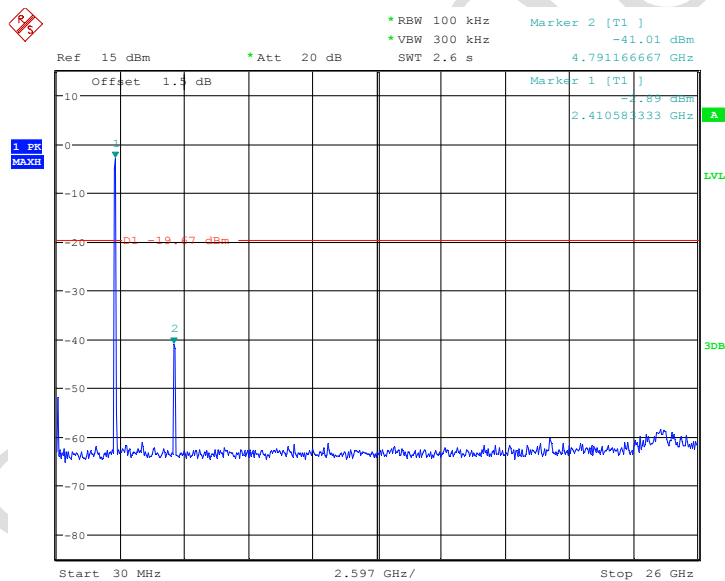
Fig.128 Conducted spurious emission: Ch11,11g, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 15.MAR.2017 02:08:11

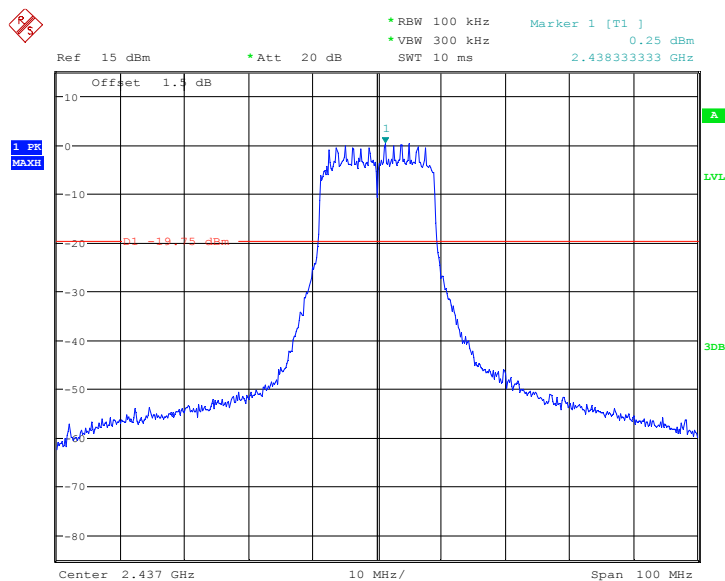
Fig.129 Conducted spurious emission: Ch1,11n,2412MHz(Antenna 2)



Date: 15.MAR.2017 02:08:35

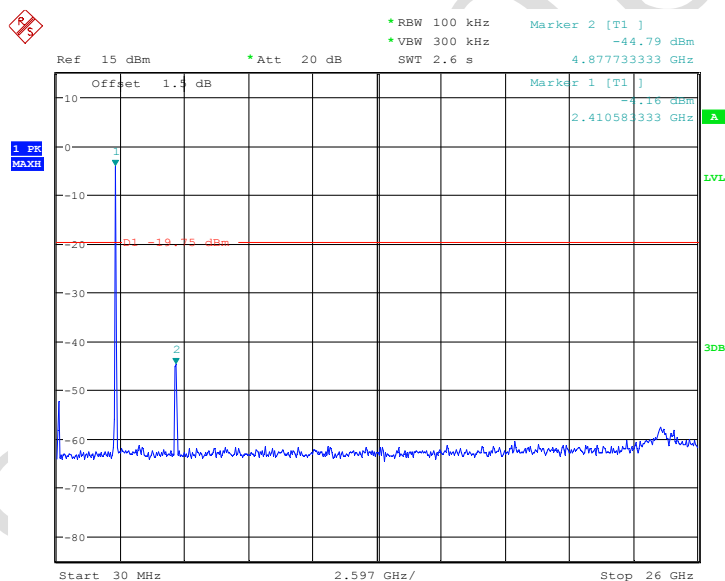
Fig.130 Conducted spurious emission: Ch1,11n, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 15.MAR.2017 02:43:45

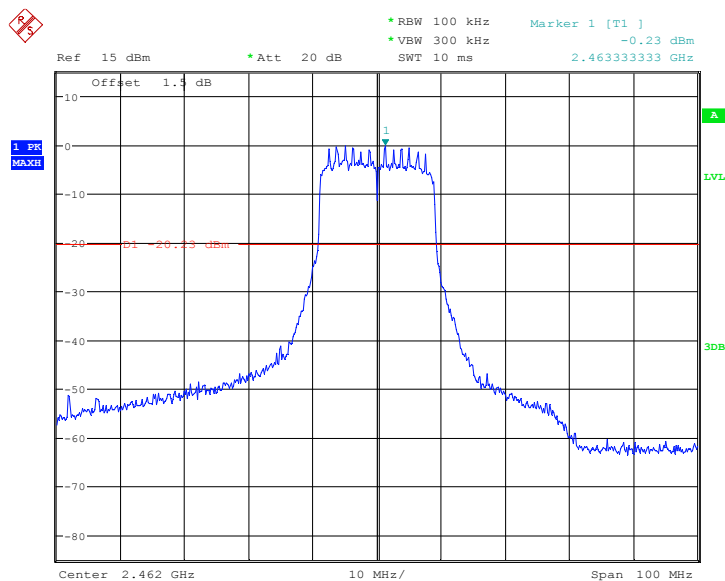
Fig.131 Conducted spurious emission: Ch6,11n,2437MHz(Antenna 2)



Date: 15.MAR.2017 02:44:28

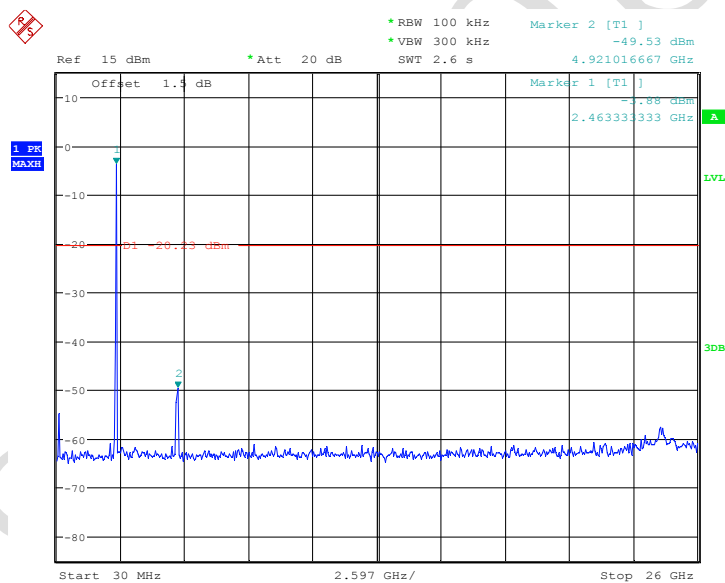
Fig.132 Conducted spurious emission: Ch6,11n, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 15.MAR.2017 02:56:40

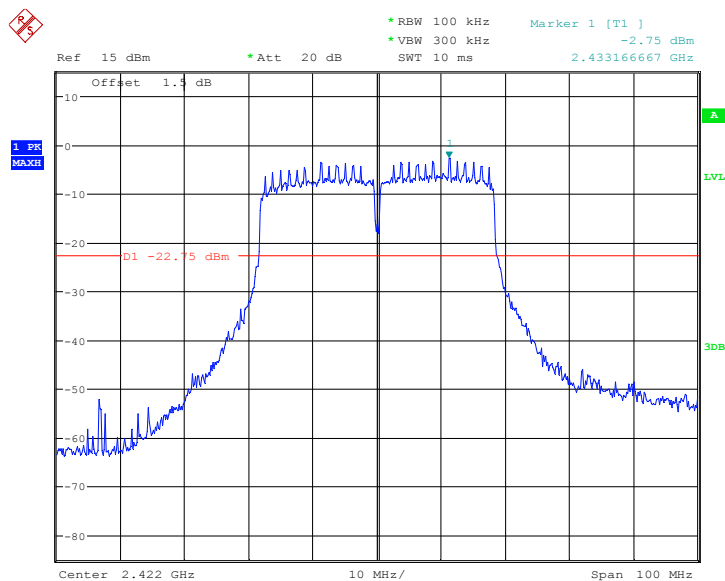
Fig.133 Conducted spurious emission: Ch11,11n,2462MHz(Antenna 2)



Date: 15.MAR.2017 02:57:06

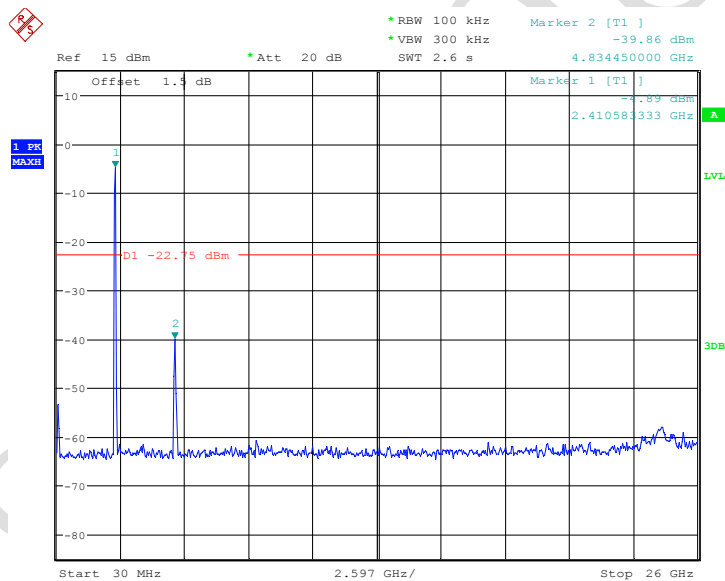
Fig.134 Conducted spurious emission: Ch11,11n, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 15.MAR.2017 02:10:36

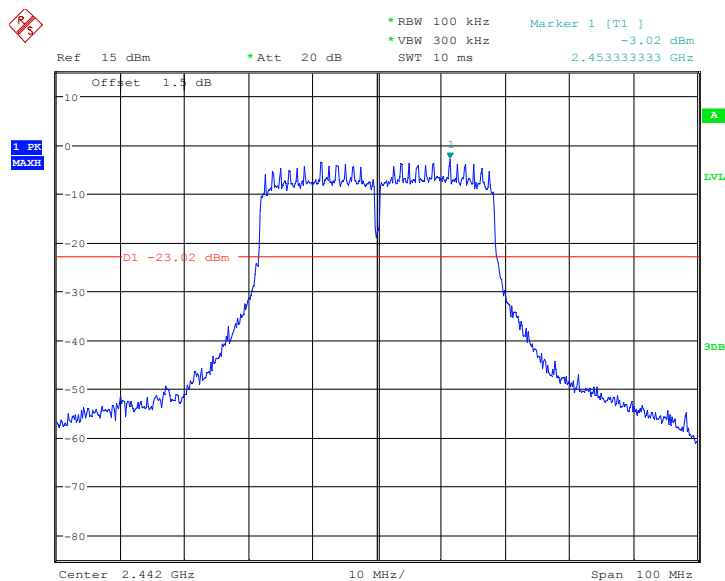
Fig.135 Conducted spurious emission: Ch1,11n(40M),2412MHz(Antenna 2)



Date: 15.MAR.2017 02:11:03

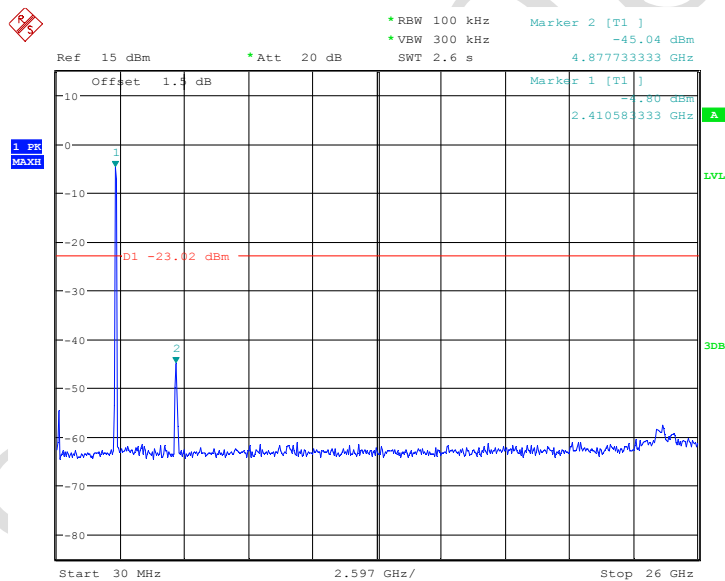
Fig.136 Conducted spurious emission: Ch1,11n(40M), 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 15.MAR.2017 02:46:39

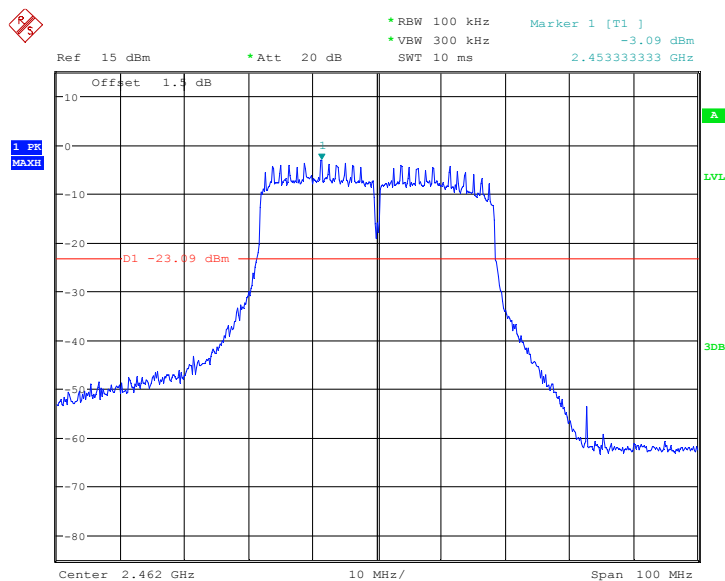
Fig.137 Conducted spurious emission: Ch6,11n(40M),2437MHz(Antenna 2)



Date: 15.MAR.2017 02:47:09

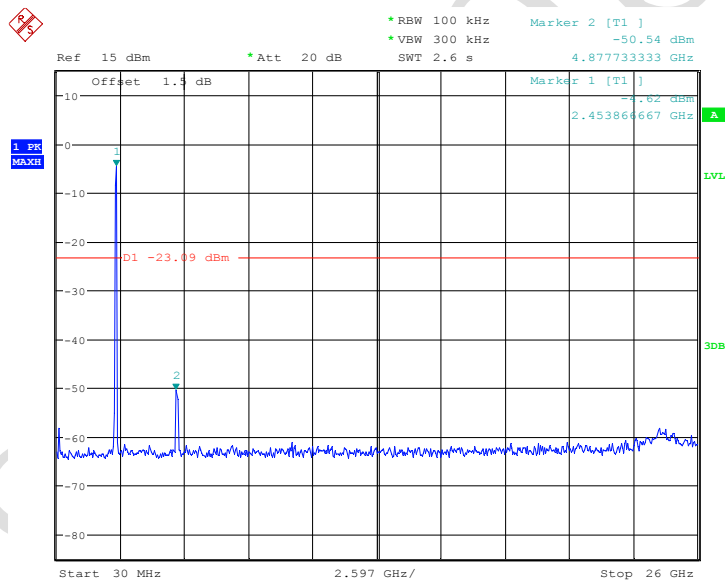
Fig.138 Conducted spurious emission: Ch6,11n(40M), 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 15.MAR.2017 03:00:01

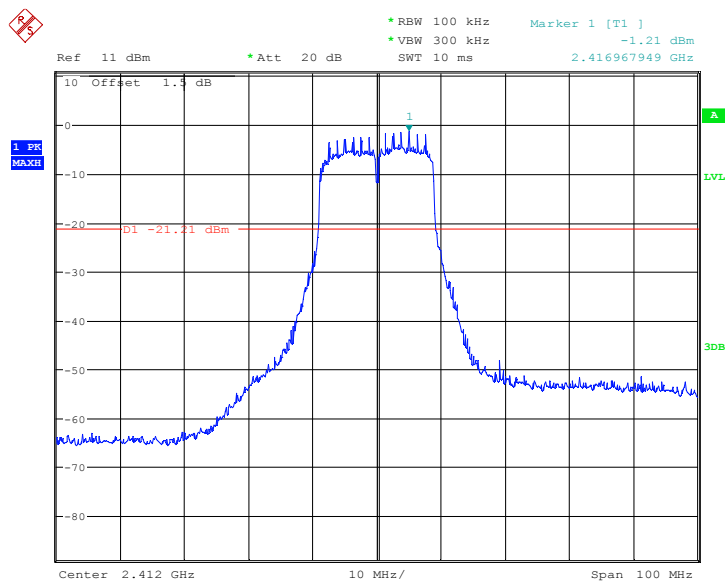
Fig.139 Conducted spurious emission: Ch11,11n(40M),2462MHz(Antenna 2)



Date: 15.MAR.2017 03:00:29

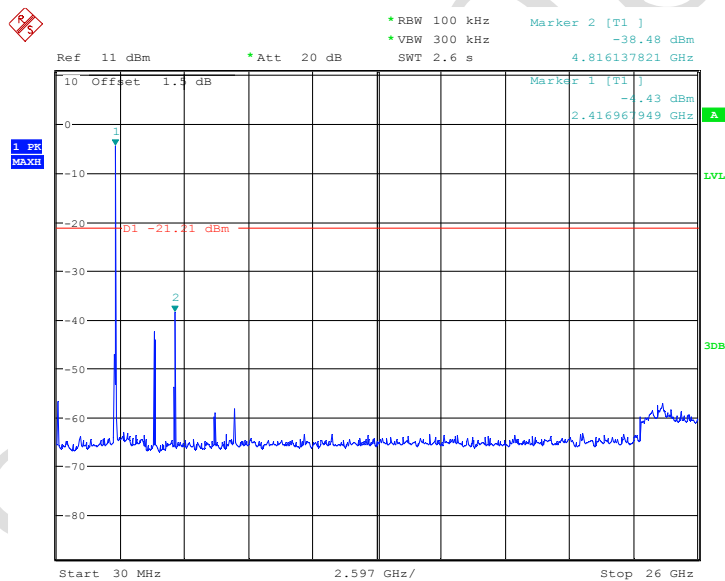
Fig.140 Conducted spurious emission: Ch11,11n(40M), 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 02:18:29

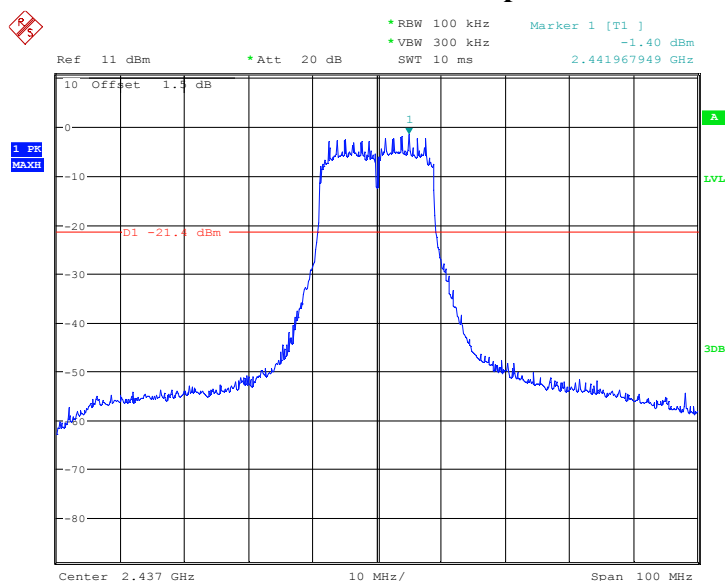
Fig.141 Conducted spurious emission: Ch1,11N20m,2412MHz(Antenna 2)



Date: 16.MAR.2017 02:19:01

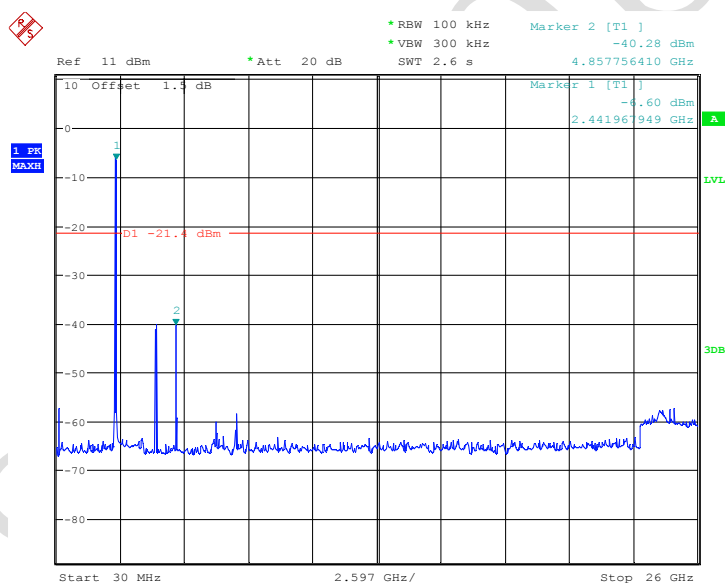
Fig.142 Conducted spurious emission: Ch1,11N20m, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 02:20:07

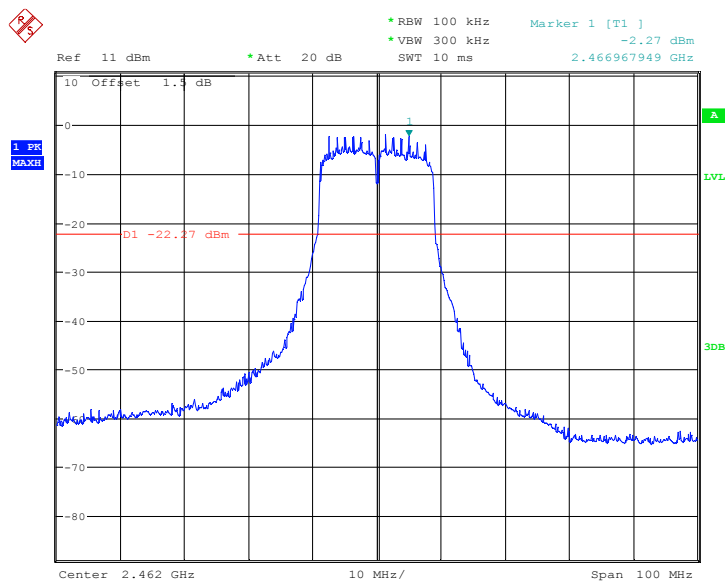
Fig.143 Conducted spurious emission: Ch6,11N20m,2437MHz(Antenna 2)



Date: 16.MAR.2017 02:20:34

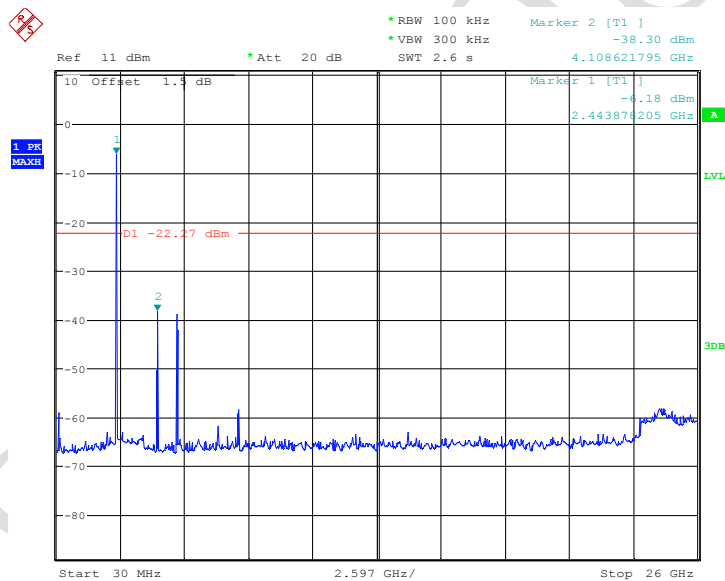
Fig.144 Conducted spurious emission: Ch6,11N20m, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 02:21:43

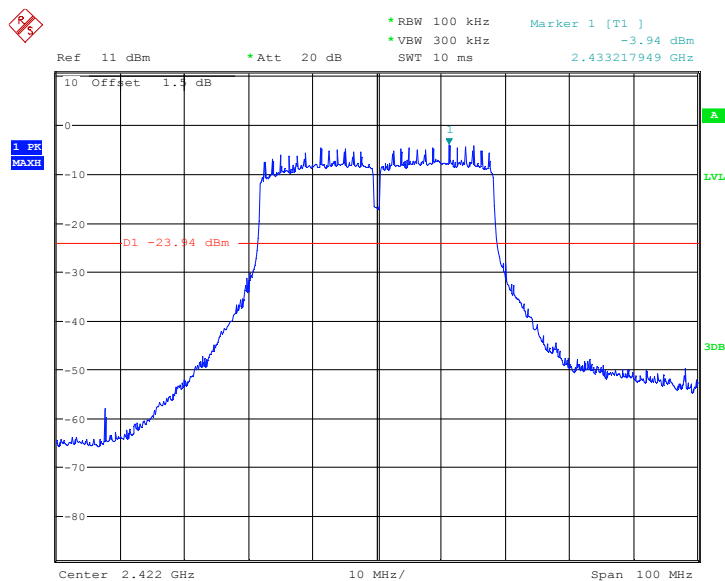
Fig.145 Conducted spurious emission: Ch11,11N20m,2462MHz(Antenna 2)



Date: 16.MAR.2017 02:22:02

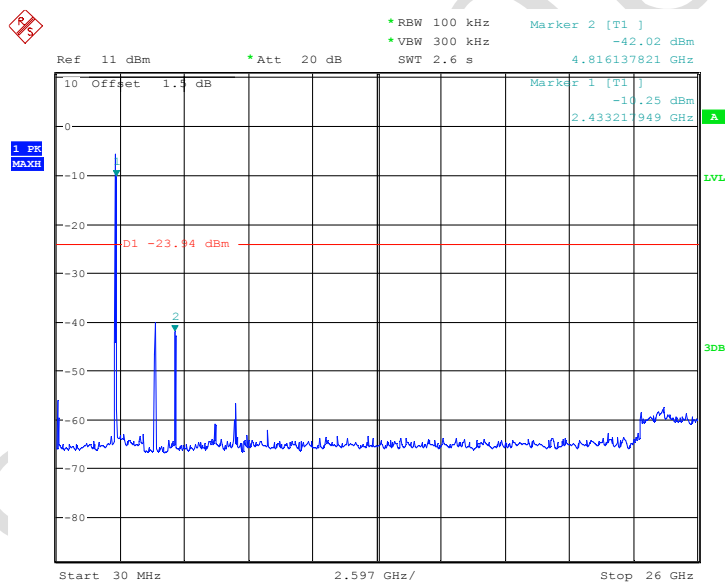
Fig.146 Conducted spurious emission: Ch11,11N20m, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 02:23:29

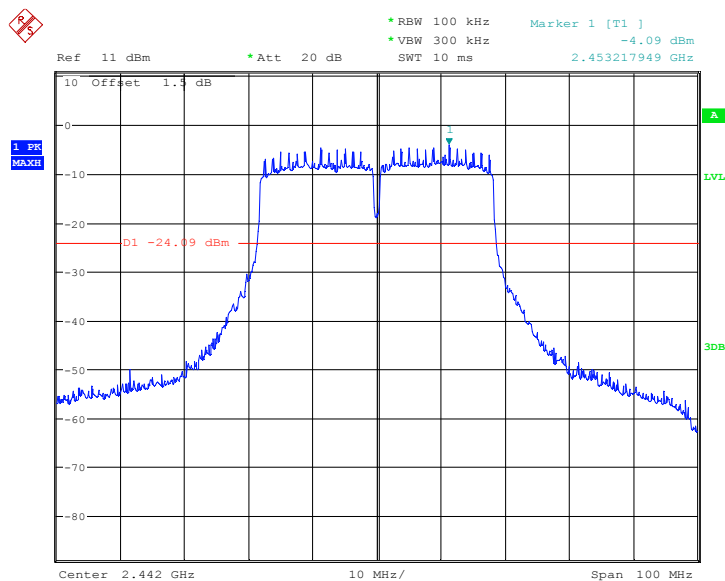
Fig.147 Conducted spurious emission: Ch1,11N40m,2412MHz(Antenna 2)



Date: 16.MAR.2017 02:24:09

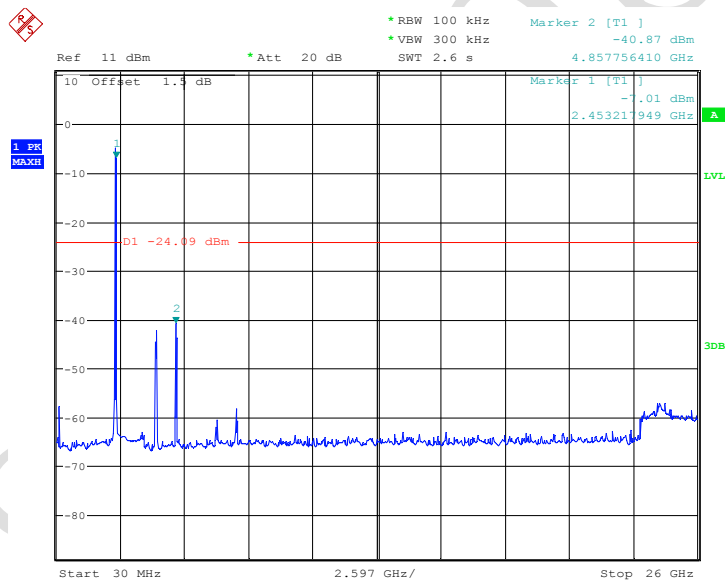
Fig.148 Conducted spurious emission: Ch1,11N40m, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 02:25:11

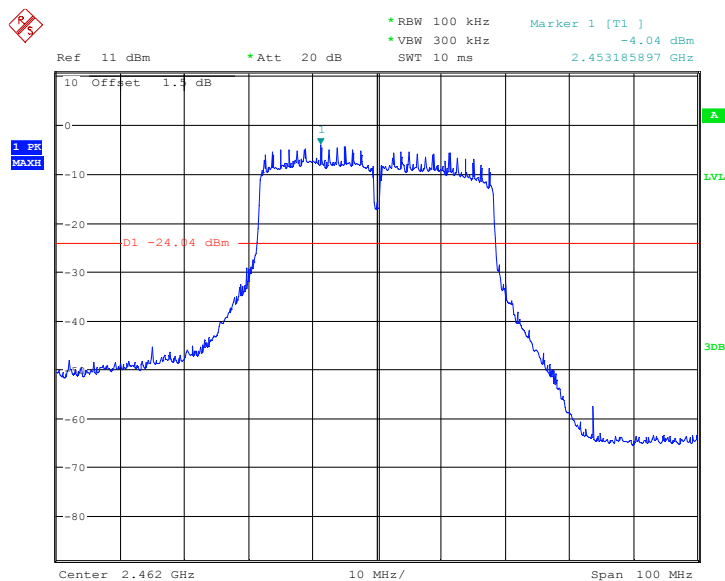
Fig.149 Conducted spurious emission: Ch6,11N40m,2437MHz(Antenna 2)



Date: 16.MAR.2017 02:26:05

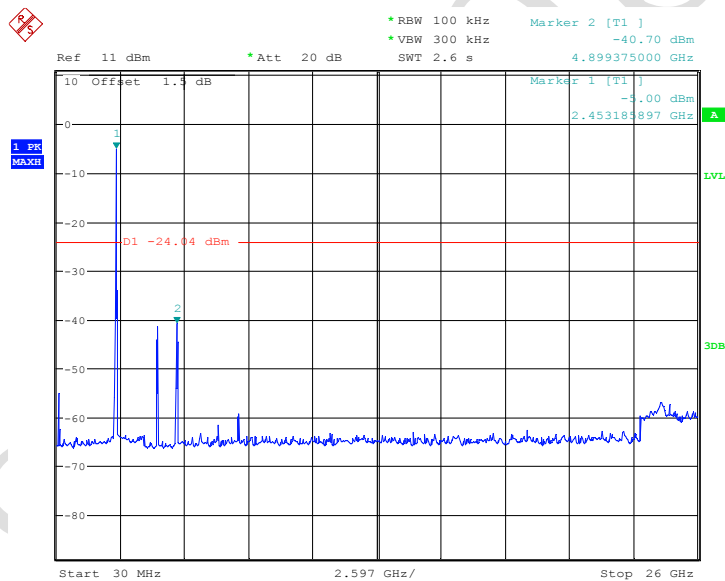
Fig.150 Conducted spurious emission: Ch6,11N40m, 30MHz~26GHz (Antenna 2)

Report No.: B17W00112-WLAN_2.4GHz_Rev2



Date: 16.MAR.2017 02:27:01

Fig.151 Conducted spurious emission: Ch11,11N40m,2462MHz(Antenna 2)



Date: 16.MAR.2017 02:28:27

Fig.152 Conducted spurious emission: Ch11,11N40m, 30MHz~26GHz (Antenna 2)

5.6 Transmitter Spurious Emission-Radiated

Specifications:	FCC 47 CFR Part 15.247, 15.205, 15.209
DUT Serial Number:	S7/18: 862851030000163/862851030020161
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	--

Limit

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output power

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

Limit in restricted band:

Frequency of emission (MHz)	Field strength (uV/m)	Field strength (dBuV/m)
30~88	100	40
88~216	150	43.5
216~960	200	46
Above 960	500	54

Test Procedure

Portable, small, lightweight, or modular devices that may be handheld, worn on the body, or placed on a table during operation shall be positioned on a non-conducting platform, the top of which is 80 cm above the reference ground plane. The preferred area occupied by the EUT arrangement is 1 m by 1.5 m, but it may be larger or smaller to accommodate various sized EUTs. For testing purposes, ceiling- and wall-mounted devices also shall be positioned on a tabletop (see also ANSI C63.10-2013 section 6.3.4 and 6.3.5). In making any tests involving handheld, body-worn, or ceiling-mounted equipment, it is essential to recognize that the measured levels may be dependent on the orientation (attitude) of the three orthogonal axes of the EUT. Thus, exploratory tests as specified in 8.3.1 shall be carried out for various axes orientations to determine the attitude having maximum or near-maximum emission level.

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time (s)
30~1000	100kHz/300kHz	5
1000~4000	1MHz/1MHz	15
4000~18000	1MHz/1MHz	40
18000~26500	1MHz/1MHz	20

Test Result:

A “reference path loss” is established and AR_{pi} is the attenuation of “reference path loss”, and including the gain of receive antenna , the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

AR_{pi}= Cable loss + Antenna Gain-Preamplifier gain

Result=PM_{ea} + AR_{pi}

Channel	Frequency Range	Test Results	Conclusion
Ch1	30MH-1GHz	Fig.153	Pass
	1GHz-3GHz	Fig.154	Pass
	3GHz-18GHz	Fig.155	Pass

Channel	Frequency Range	Test Results	Conclusion
Ch6	30MH-1GHz	Fig.156	Pass
	1GHz-3GHz	Fig.157	Pass
	3GHz-18GHz	Fig.158	Pass

Channel	Frequency Range	Test Results	Conclusion
Ch11	30MH-1GHz	Fig.159	Pass
	1GHz-3GHz	Fig.160	Pass
	3GHz-18GHz	Fig.161	Pass
All channels	18GHz-26GHz	Fig.162	Pass

Note: all the test data shown was peak detected.

Conclusion: PASS

Test graphs as below:

RE 30MHz-1GHz

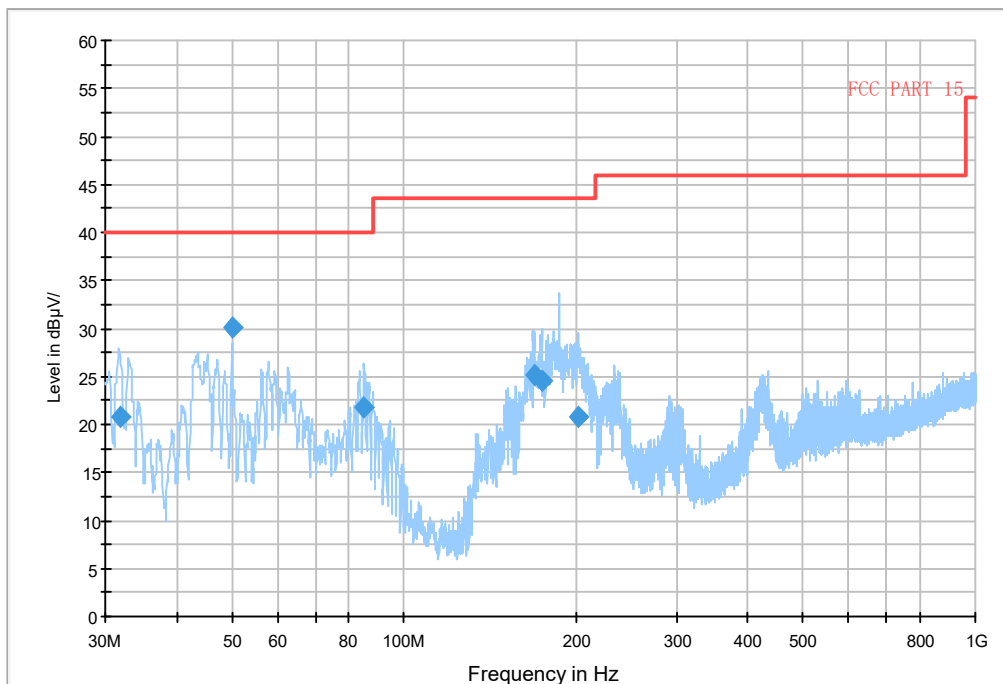


Fig.153 Radiated emission: Ch1, 30MHz-1GHz

RE 1GHz-3GHz

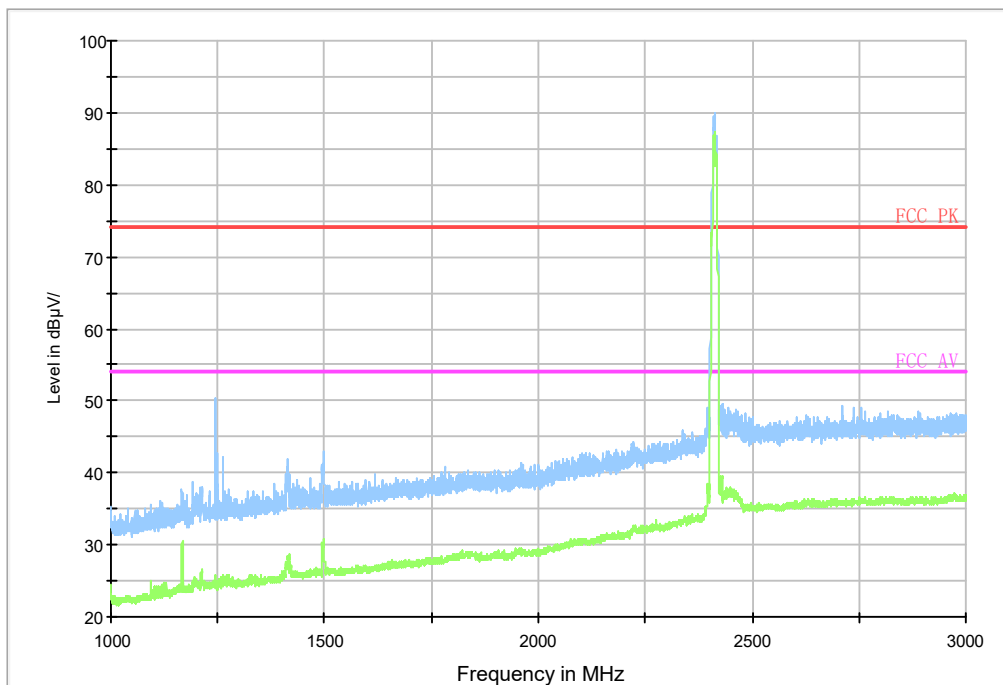


Fig.154 Radiated emission: Ch1, 1GHz-3GHz

RE 3GHz-18GHz

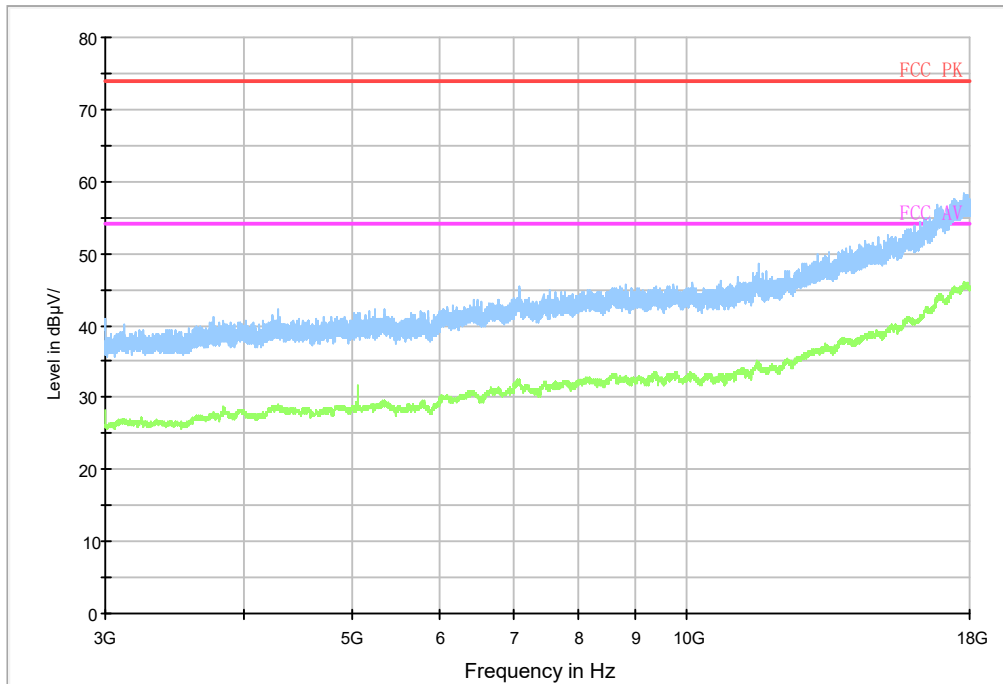


Fig.155 Radiated emission: Ch1, 3GHz-18GHz

RE 30MHz-1GHz

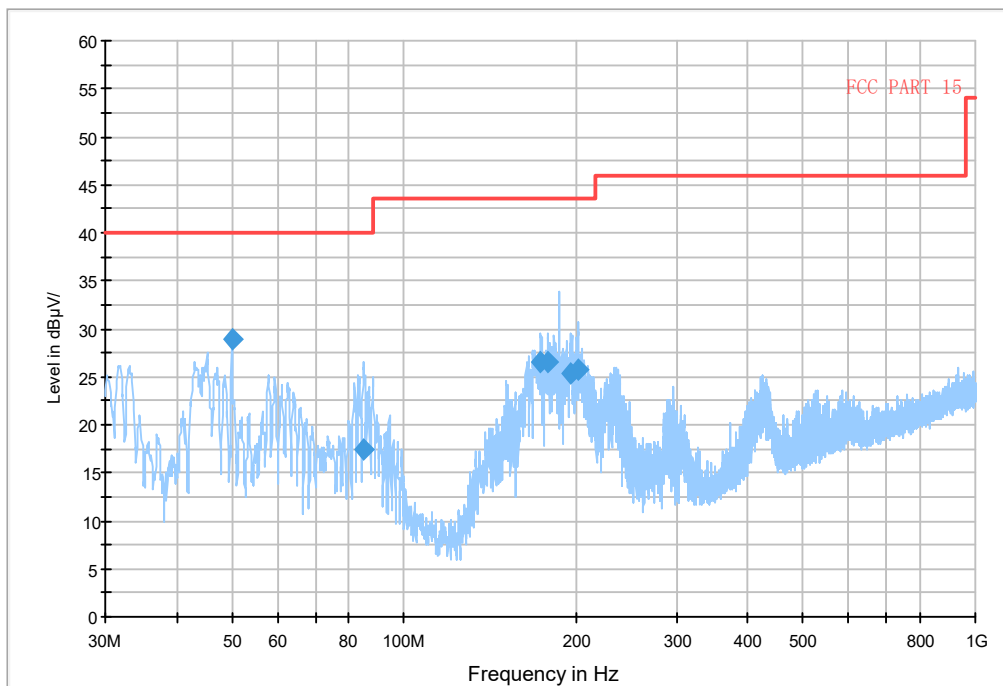


Fig.156 Radiated emission:Ch6, 30MHz-1GHz

RE 1GHz-3GHz

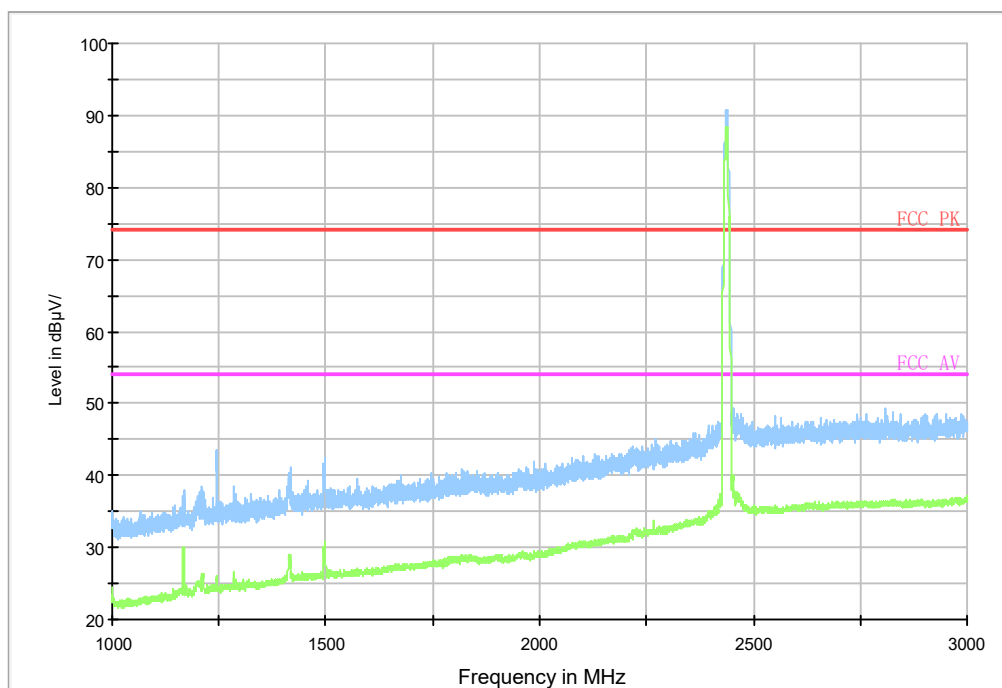


Fig.157 Radiated emission: Ch6, 1GHz-3GHz

RE 3GHz-18GHz

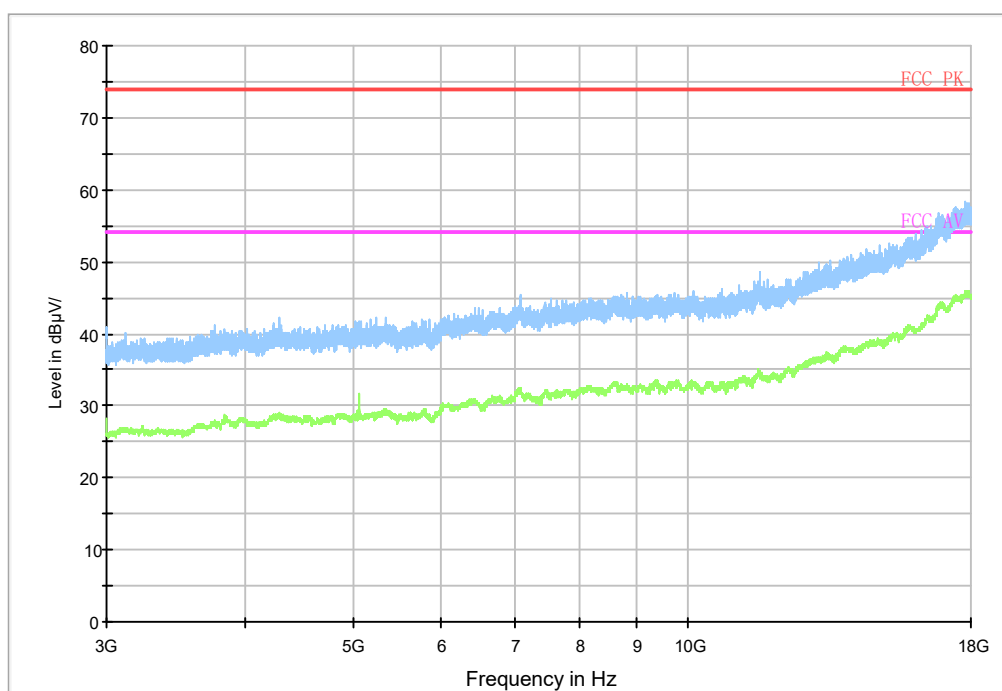


Fig.158 Radiated emission: Ch6, 3GHz-18GHz

RE 30MHz-1GHz

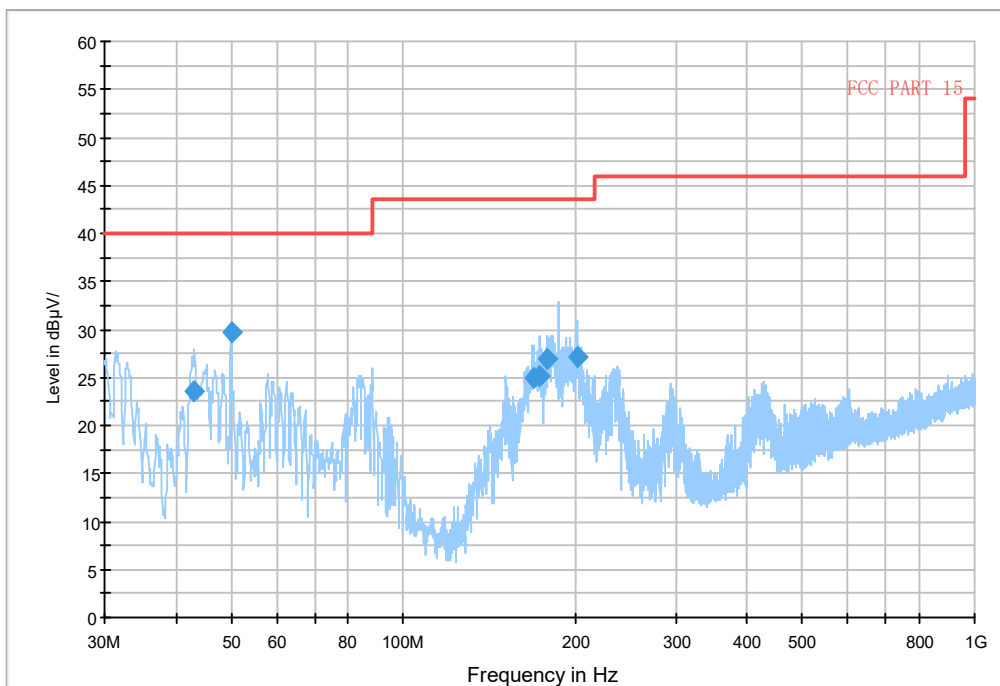


Fig.159 Radiated emission: Ch11, 30MHz-1GHz

RE 1GHz-3GHz

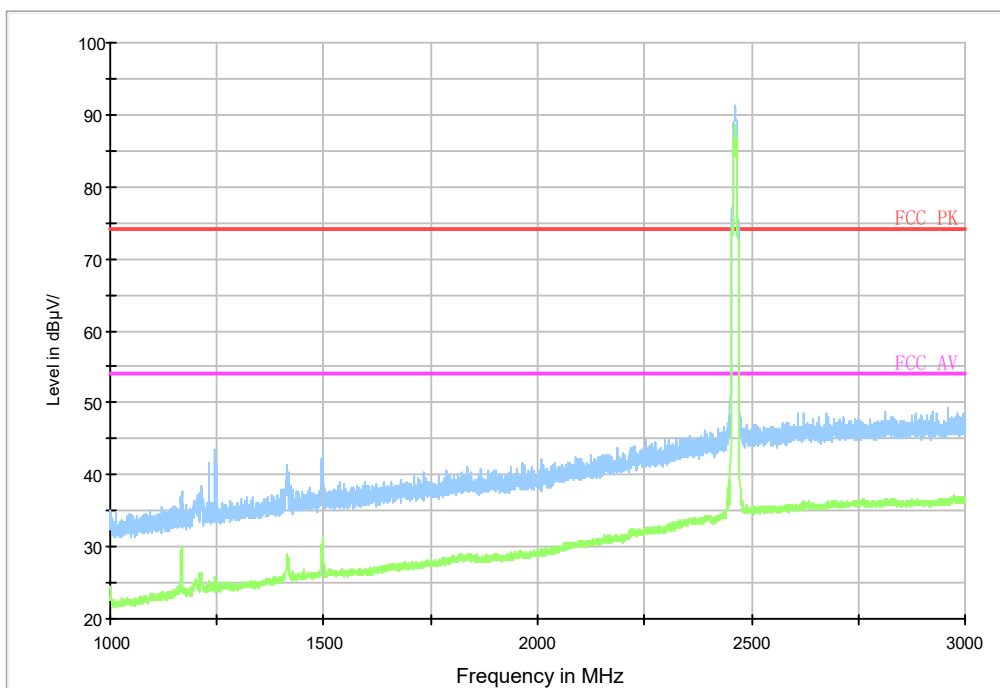


Fig.160 Radiated emission: Ch11, 1GHz-3GHz

RE 3GHz-18GHz

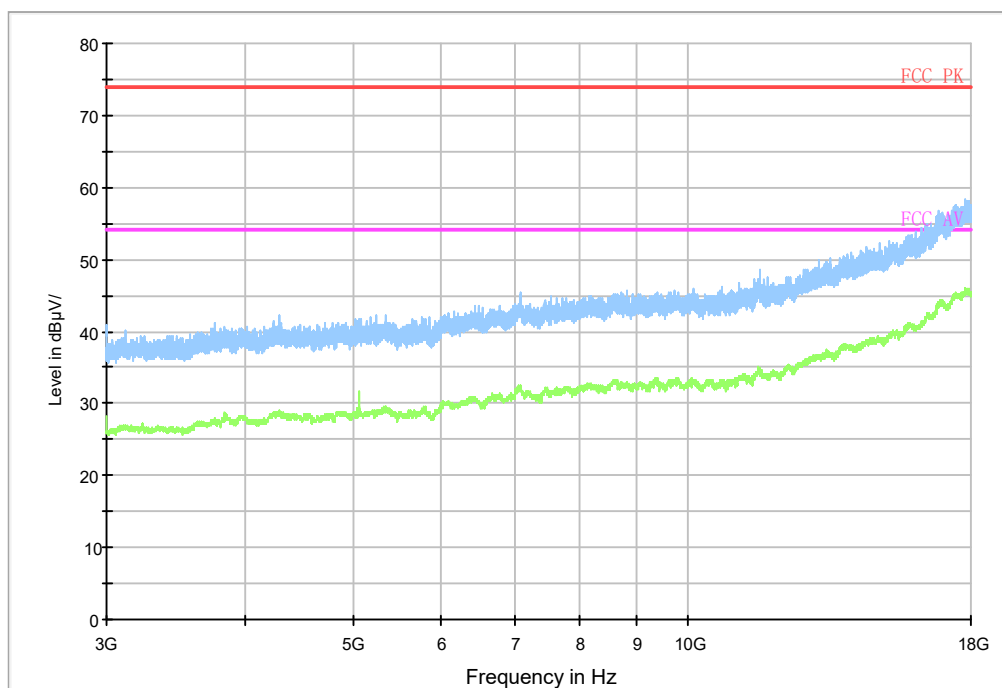


Fig.161 Radiated emission: Ch11, 3GHz-18GHz

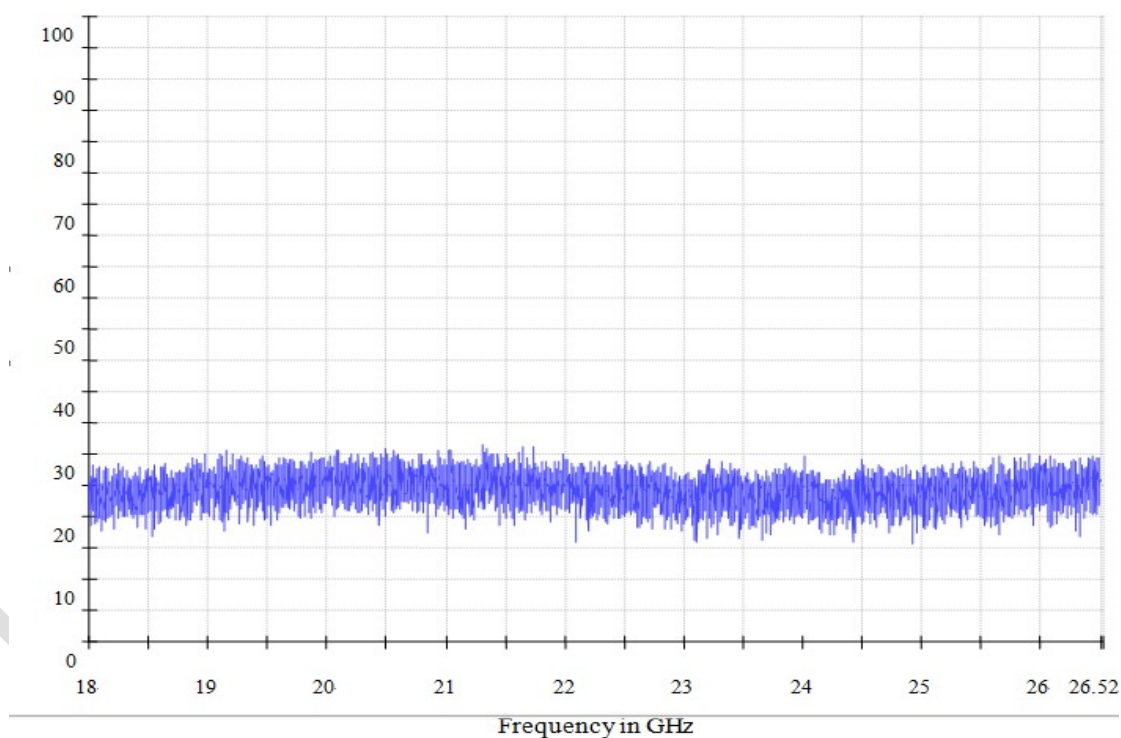


Fig.162 Radiated emission: 18 GHz - 26 GHz

Test photo

See the Pic1- Pic 6 in document" A1-901_Wifi_BT Test Setup Photos".

5.7 Power line Conducted Emissions

Specifications:	ANSI C63.4 voltage mains test
DUT Serial Number:	S7/18: 862851030000163/862851030020161
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	--

Limit

The EUT meets the requirement of having a peak to average ratio of less than 13dB.

For an intentional radiator which 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 250 microvolt (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range are listed as follows:

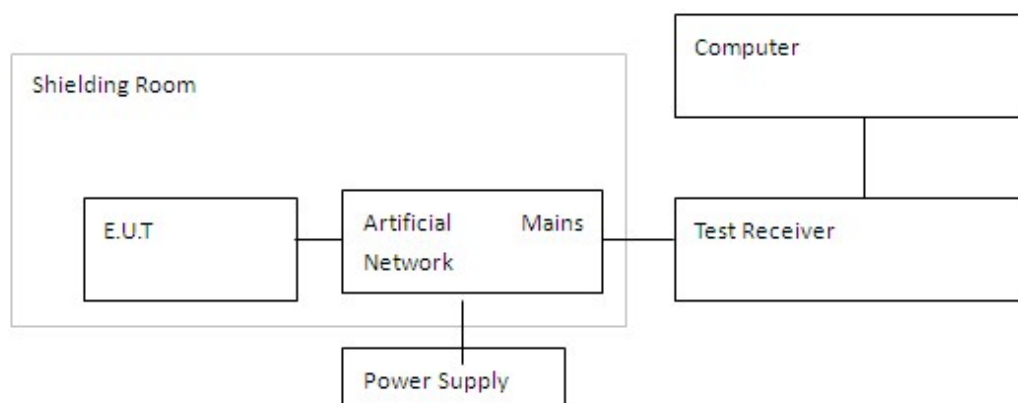
Limits of the conducted disturbance at the AC mains ports:

Frequency range	Limit(Quasi-peak)	Limit(Average)
0.15 MHz to 0.5 MHz	66 dB μ V – 56 dB μ V	56 dB μ V – 46 dB μ V
>0.5 MHz to 5MHz	56 dB μ V	46 dB μ V
>5 MHz to 30 MHz	60 dB μ V	50 dB μ V
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Setup

The EUT was placed in a shielding room. The WLAN TESTER was used to set the TX channel and power level. The ac adapter output is connected to Receiver through an AMN (Artificial Mains Network).



Test Procedure

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.

The measurement is made according to Public notice FCC Public Notice DA 00-705, March 2000, and ANSI C63.4-2014.

Test Result:

Line L&N					
Detector (QP)	Frequency (MHz)	Level (dBμV)	Limit (dBμV)	Line	PE
QP	0.150000	30.9	66.0	N	FLO
QP	0.154000	29.4	65.8	N	FLO
QP	0.176206	31.3	64.7	N	FLO
QP	0.205519	27.1	63.4	L1	FLO
QP	0.235638	26.1	62.2	N	FLO
QP	0.245672	26.1	62.2	N	FLO

Line L&N					
Detector (AV)	Frequency (MHz)	Level (dBμV)	Limit (dBμV)	Line	PE
AV	0.194000	14.7	53.9	N	FLO
AV	0.195938	12.9	53.8	L1	FLO
AV	0.213519	12.7	53.1	L1	FLO
AV	0.258000	12.4	51.5	L1	FLO
AV	0.286000	15.7	50.6	L1	FLO
AV	0.311906	10.7	49.9	L1	FLO

Conclusion: PASS

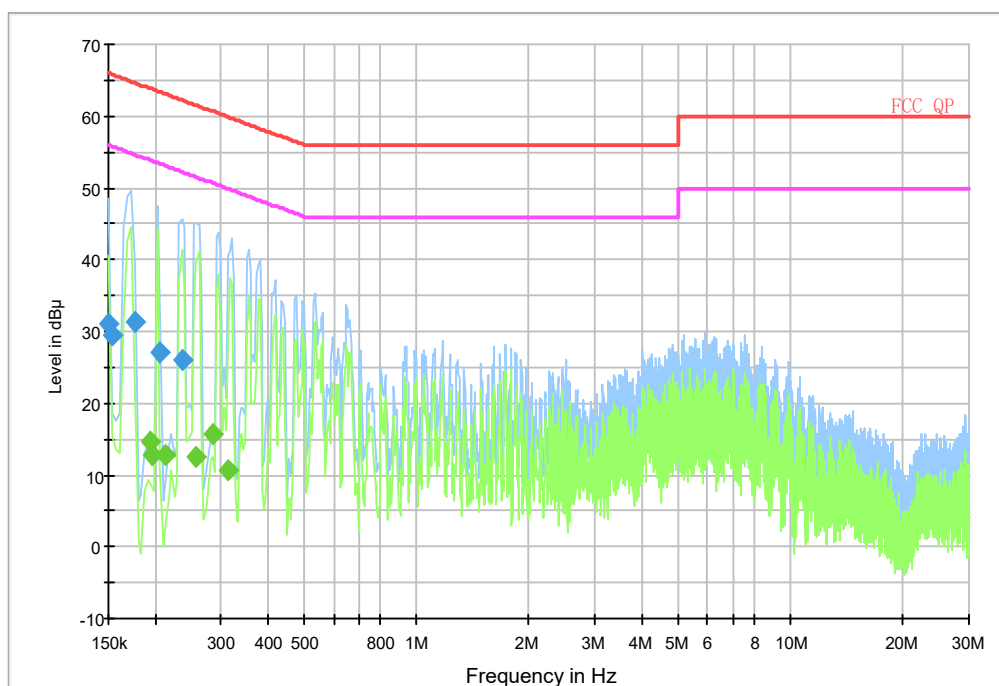


Fig.163 Line L &Line N

Test photo

See the Pic7 in document” A1-901 _Wifi_BT_Test Setup Photos”.

Annex A EUT Photos

See the document "A1-901-External Photos".

See the document "A1-901-Internal Photos".

Test Report

ANNEX B Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

End Of Report

Test Report