TEST REPORT

No.I16D00008-WLA

For

Client : LENOVO (SHANGHAI) ELECTRONICS TECHNOLOGY CO LTD

Production : Portable Tablet Computer

Brand Name : Lenovo

Model Name : Lenovo TB3-730F

FCC ID: O57TB3730F

IC ID 10407A-TB3730F

Standard: FCC Part15 / ANSI C63.10

RSS-247

Issued date: 2016-03-16

Note:

Hardware and software version see page 8

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 ECIT Shanghai.

Test Laboratory:

ECIT Shanghai, East China Institute of Telecommunications

Add: 7-8F, G Area, No.668, Beijing East Road, Huangpu District, Shanghai, P. R. China

Tel: (+86)-021-63843300, E-Mail: welcome@ecit.org.cn

About EUT

EUT Description	Portable Tablet Computer
Model name	Lenovo TB3-730F
Bluetooth Frequency	2402MHz-2480MHz
BLE Frequency	2402MHz-2480MHz
WLAN Frequency	2412MHz-2462MHz
GPS Frequency Band	1575.42MHz(L1)
Nominal Voltage	3.8V
Extreme High Voltage	4.35V
Extreme Low Voltage	3.4V

Revision Version

Report Number	Revision	Date	Memo
I16D00008-WLA	00	2016-03-07	Initial creation of test report
I16D00008-WLA	01	2016-03-15	Second creation of test report
I16D00008-WLA	02	2016-03-16	Third creation of test report

CONTENTS

1. Test Laboratory

1.1. Testing Location

Company Name:	ECIT Shanghai, East China Institute of Telecommunications
Address:	7-8F, G Area, No. 668, Beijing East Road, Huangpu District, Shanghai, P. R. China
Postal Code:	200001
Telephone:	(+86)-021-63843300
Fax:	(+86)-021-63843301

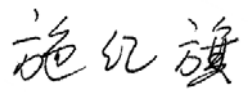
1.2. Testing Environment

Normal Temperature:	15-35℃
Extreme Temperature:	-10/+55℃
Relative Humidity:	20-75%

1.3. Project data

Project Leader:	Wang Yaqiong
Testing Start Date:	2016-01-19
Testing End Date:	2016-03-05

1.4. Signature



Shi Hongqi
(Prepared this test report)

Liu Jianquan
(Reviewed this test report)

Zheng Zhongbin
Director of the laboratory
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	LENOVO (SHANGHAI) ELECTRONICS TECHNOLOGY CO LTD
Address:	NO 68 BUILDING 199 FENJU RD, CHINA (SHANGHAI) PILOT FREE TRADE ZONE, SHANGHAI, 200131CHINA
Telephone:	+86 186 1669 0577
Postcode:	200131

2.2. Manufacturer Information

Company Name:	Lenovo PC HK Limited
Address:	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong
Telephone:	+86 186 1669 0577
Postcode:	N/A

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

EUT Description	Tablet
Model name	Lenovo TB3-730F
WLAN Frequency	2412MHz-2462MHz
WLAN Channel	Channel1-Channel11
WLAN type of modulation	802.11b:DSSS 802.11g/n: OFDM
Extreme Temperature	-10/+55℃
Nominal Voltage	3.8V
Extreme High Voltage	4.35V
Extreme Low Voltage	3.4V

Note: Photographs of EUT are shown in ANNEX A of this test report.

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N02 (Main Supply)	N/A	98999_1_13M14	TB3-730F_S009_160120_ROW	2016-01-19
N06 (Main Supply)	HZC2KG25	98999_1_13M14	TB3-730F_S009_160120_ROW	2016-01-19
N16 (Secondary Supply)	HZC2M754	98999_1_13M14	TB3-730F_S009_160120_ROW	2016-01-19

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

AE ID*	Description	SN
AE1	RF cable	---
AE2	---	---

*AE ID: is used to identify the test sample in the lab internally.

3.4. The difference between two provide EUT

Main Supply

Part Name	Model Name	supplier	Remark
LCD	TV070WSM-TL1-38P0	BOE TECHNOLOGY GROUP CO.LTD	7”color TFT-LCD
Flash	KMQ820013M-B	SAMSUNG	eMMC+DDR3;16GB

	419		yte+16Gb;B221;11.5*13*1mm
Speaker	XHB181331B08-09-B-RH	JiaShan Haosheng Electronic CO.,LTD	P98999AA1 SPEAKER BOX module
Front Camera	BLX2508W	Brodsands Electronice(ShenZhen)Co.,Ltd.	200WFF,GC2355C CSP,6.5*6.5*4.37,82°wide viewing angles
Back Camera	L545A00	NanChang O-Film TECH CO.,LTD	500WAF, SENSOR HI-545，8.5*8.5*5.1mm，67
Vibrator	HZF1027A-P02L 12	ShenZhen Hongzhifa Machinery&Electronic CO.,LTD	Cylindrical motor, diameter 4, size 4.7*4.7*11.4, lead wire, swing hammer radius
Back cover	P98999AA1	ShenZhen Lianmao Plastic CO.,LTD	
Battery	L13D1P31	Sunwoda Electronic CO.,LTD	3450mAh
USB Cable	XJ-007056	SHIN AN WIRE&CABLE CO.,LTD	MIC USB，1m，black/REACH
Charger	EU：C-P57 US：C-P56	Acbel Electronic (Dongguan) CO., LTD	OUTPUT: 5V1A

Secondary Supply

Part Name	Model Name	supplier	Remark
LCD	P070ACB-DB6	Innolux corporation	7''color TFT-LCD
Flash	H9TQ17ABJTM CUR-KUM	Hynix	eMMC+DDR3;16GByte+16Gb;B221;11.5*13*1mm
Speaker	DS1813DO-01-ASM4-FPC	Jiangsu Midi Acoustics Technology CO.,LTD	P98999AA1 SPEAKER BOX module
Front Camera	GV5968A1D	Shenzhen E-welly Electronic Co., LTD	200W FF,SP2508,6.5*6.5*4.35MM,3Plens, wide angle of view
Back Camera	FH545AB	Q Technology Limited	500WAF, SENSOR HI-545，8.5*8.5*5.1mm，67
Vibrator	Y0408L-400930072-4423	ChongQing LingLong Electronic CO.,LTD	Cylindrical motor, diameter 4, size

			4.7*4.7*11.4, lead wire, swing hammer radius
Back cover	P98999AA1	Wingtech Mobile Communications Co.,Ltd	
Battery	L13D1P31	Scud(Fujian)Electronic CO.,LTD	3450mAh
USB Cable	SWT-A039A	SAIBO ELECTRON TECHNOLOGY（HK）CO.,LTD	MIC USB，1m，black/REACH
Charger	EU：C-P57 US：C-P56	ShenZhen Huntkey Electric CO., LTD	OUTPUT: 5V1A

4. Reference Documents

4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15,Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz.	2014
ANSI 63.10	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9KHz to 40GHz	2013
RSS-247	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices	2015

5. Summary of Test Results

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

Measurement Items	Sub-clause of Part15C	Sub-clause of IC	Verdict
Maximum Peak Output Power	15.247(b)	RSS-247 5.4	P
Peak Power Spectral Density	15.247(e)	RSS-247 5.2	P
Occupied 6dB Bandwidth	15.247(c)	RSS-247 5.2	P
Band Edges Compliance	15.247(d)	RSS-247 5.5	P
Transmitter Spurious Emission-Conducted	15.247	RSS-247 5.5	P
Transmitter Spurious Emission-Radiated	15.247,15.209,	RSS-247 5.5	P
AC Powerline Conducted Emission	15.107,15.207	RSS-247 Gen 3.2	P

Please refer to part 5 for detail.

The measurements are according to ANSI C63.10

Terms used in Verdict column

P	Pass, the EUT complies with the essential requirements in the standard.
NP	Not Perform, the test was not performed by ECIT.
NA	Not Applicable, the test was not applicable.
F	Fail, the EUT does not comply with the essential requirements in the standard.

Test Conditions

Tnom	Normal temperature
Tmin	Low Temperature
Tmax	High Temperature
Vnom	Normal Voltage
Vmin	Low Voltage

Vmax	High Voltage
Hnom	Norm Humidity
Anom	Norm Air Pressure

For this report, all the test case listed above are tested under Normal Temperature and Normal Voltage, and also under norm humidity, the specific conditions as following:

Temperature	Tnom	22℃
Voltage	Vnom	3.8V
Humidity	Hnom	32%
Air Pressure	Anom	1010hPa

5.1. Notes

All reported tests were carried out on a sample equipment to demonstrate limited compliance with section 3.

The test results of this test report relate exclusively to the item(s) tested as specified in section 5.

The following deviation from, additions to, or exclusions from the test specifications have been made. See section 3.

5.2. Statements

The product name Lenovo TB3-730F, supporting /WLAN/BT/BLE/GPS, manufactured by Lenovo PC HK Limited, is a new product for testing.

ECIT has verified that the compliance of the tested device specified in section 5 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 5 of this test report.

6. Test result

6.1. Maximum Output Power

6.1.1 Measurement Limit and method:

Standard	Limit(dBm)
FCC CRF 15.247(b)	< 30

6.1.2 Test procedure

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 ≥ OBW, VBW ≥ 3RBW.
4. Detector : Peak.
5. Trace mode: Max Hold

6.1.3 Measurement Uncertainty:

Measurement Uncertainty	±0.75dB

6.1.4 Maximum Peak Output Power-conducted

Measurement Results:

802.11b/g mode

Mode	Data Rate(Mbps)	Teat Result(dBm)		
		2412MHz(Ch1)	2437MHz(Ch6)	2462MHz(Ch11)
802.11b	1	12.56	/	/
	2	12.76	12.92	12.44
	5.5	12.16	/	/
	11	12.23	/	/
802.11g	6	16.75	/	/
	9	17.74	17.88	16.98
	12	17.65	/	/
	18	15.79	/	/

	24	16.02	/	/
	36	16.52	/	/
	48	17.02	/	/
	54	17.40	/	/

The data rate 2Mbps and 9Mbps are selected as worse condition, and the following cases are performed with this condition.

802.11n mode

Mode	Data Rate(Index)	Teat Result(dBm)		
		2412MHz(Ch1)	2437MHz(Ch6)	2462MHz(Ch11)
802.11n(20MHz)	MCS0	16.87	/	/
	MCS1	16.23	/	/
	MCS2	15.83	/	/
	MCS3	16.05	/	/
	MCS4	15.87	/	/
	MCS5	16.70	/	/
	MCS6	18.43	18.11	17.88
	MCS7	18.02	/	/
802.11n(40MHz)	MCS0	17.02	/	/
	MCS1	16.44	/	/
	MCS2	16.34	/	/
	MCS3	15.99	/	/
	MCS4	17.43	/	/
	MCS5	16.34	/	/
	MCS6	18.44	18.12	18.28
	MCS7	17.98	/	/

The data rate MCS6 is selected as worse condition, and the following case are performed with this condition.

6.1.5 Maximum Average Output Power-conducted

Test procedure

The measurement is according to ANSI C63.10 clause 8.5

a) Detector: Average.

b) Resolution bandwidth (RBW): 120 kHz.

c) Video bandwidth (VBW): 300 kHz.

d) Reference level: 10 dB above the peak emission (to provide sufficient dynamic range to the measurement system noise floor).

e) Span: Wide enough to capture the entire emission in the display screen and narrow enough to provide adequate measurement resolution of the peak.

Measurement Results:

802.11b/g mode

Mode	Test Result(dBm)		
	2412MHz(Ch1)	2437MHz(Ch6)	2462MHz(Ch11)
802.11b	11.40	11.37	11.30
802.11g	11.07	11.23	10.08

802.11n mode

Mode	Test Result(dBm)		
	2412MHz(Ch1)	2437MHz(Ch6)	2462MHz(Ch11)
802.11n(20MHz)	10.51	10.98	10.54
802.11n(40MHz)	10.55	10.99	10.35

Conclusion: PASS

6.2. Peak Power Spectral Density

6.2.1 Measurement Limit:

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

6.2.2 Test procedures

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 kHz ≤ RBW ≤ 100 kHz.
6. Set the VBW ≥ [3 × 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.

6.2.3 Measurement Uncertainty:

Measurement Uncertainty	0.75dB

6.2.4 Measurement Results:

802.11b/g mode

Mode	Channel	Power Spectral Density(dBm/3kHz)		Conclusion
802.11b	1	Fig.1	-5.266	P
	6	Fig.2	-4.224	P
	11	Fig.3	-4.443	P
802.11g	1	Fig.4	-13.382	P
	6	Fig.5	-11.016	P
	11	Fig.6	-10.016	P

802.11n mode

Mode	Channel	Power Spectral Density(dBm/3kHz)		Conclusion
802.11n(20MHz)	1	Fig.7	-11.016	P
	6	Fig.8	-10.692	P
	11	Fig.9	-9.901	P
802.11g(40MHz)	3	Fig.10	-14.176	P

	6	Fig.11	-14.199	P
	11	Fig.12	-14.035	P

Conclusion: PASS

Test graphs as below:

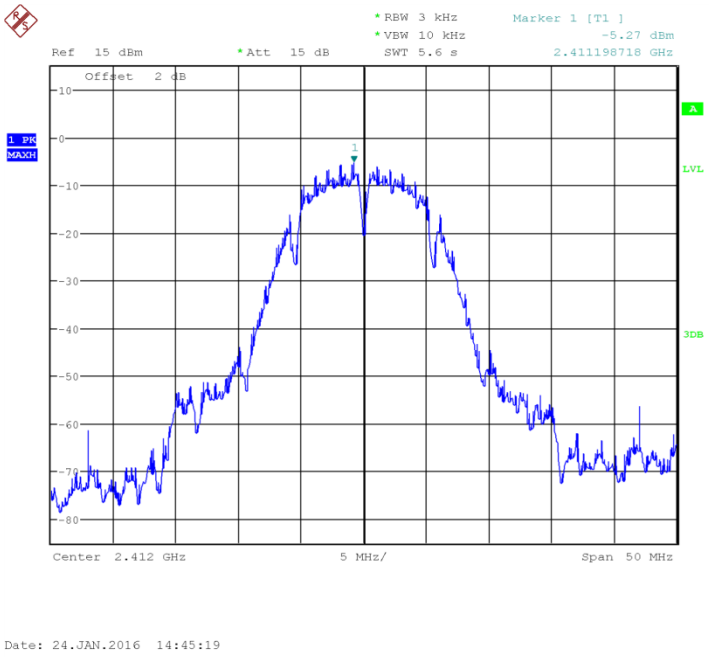


Fig.1 Power Spectral Density (802.1b,Ch1)

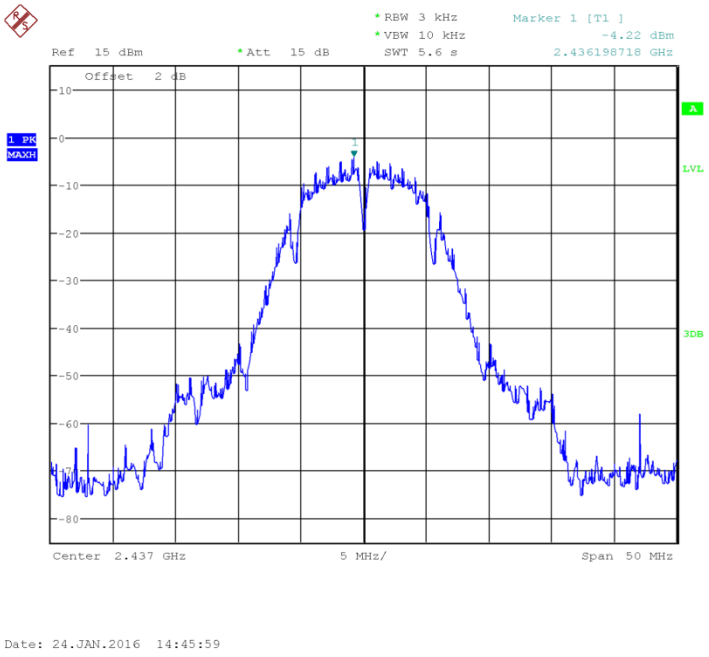


Fig.2 Power Spectral Density (802.1b,Ch6)

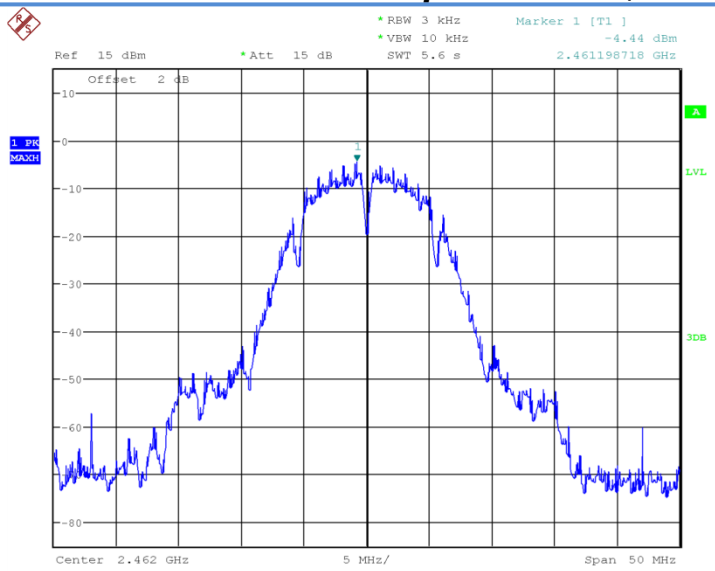


Fig.3 Power Spectral Density (802.1b,Ch11)

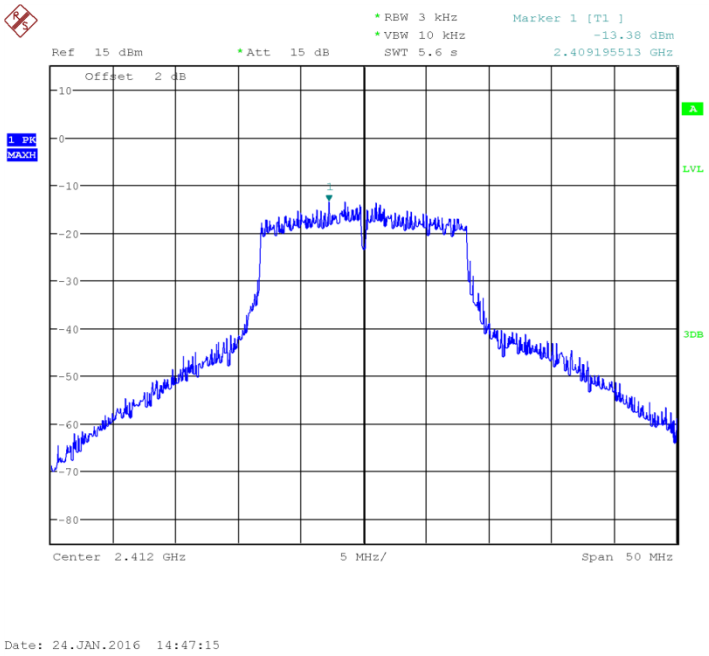


Fig.4 Power Spectral Density (802.1g,Ch1)

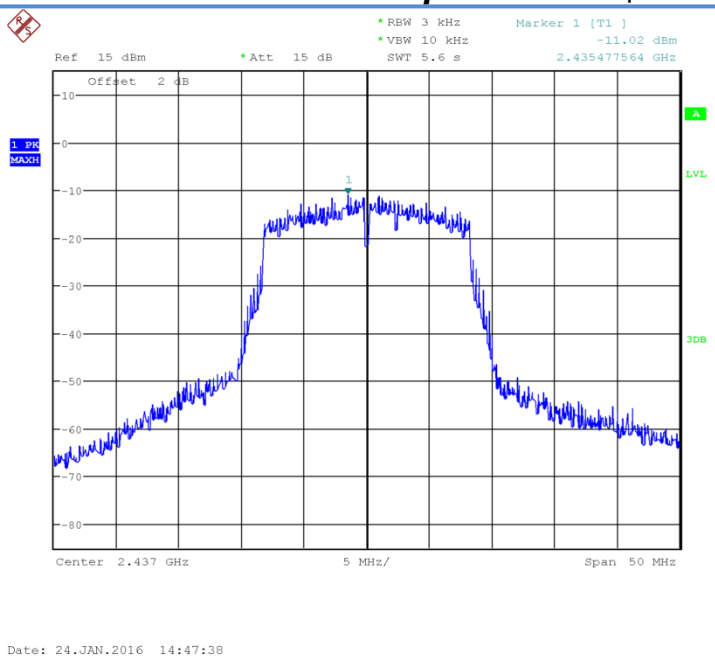


Fig.5 Power Spectral Density (802.1g,Ch6)

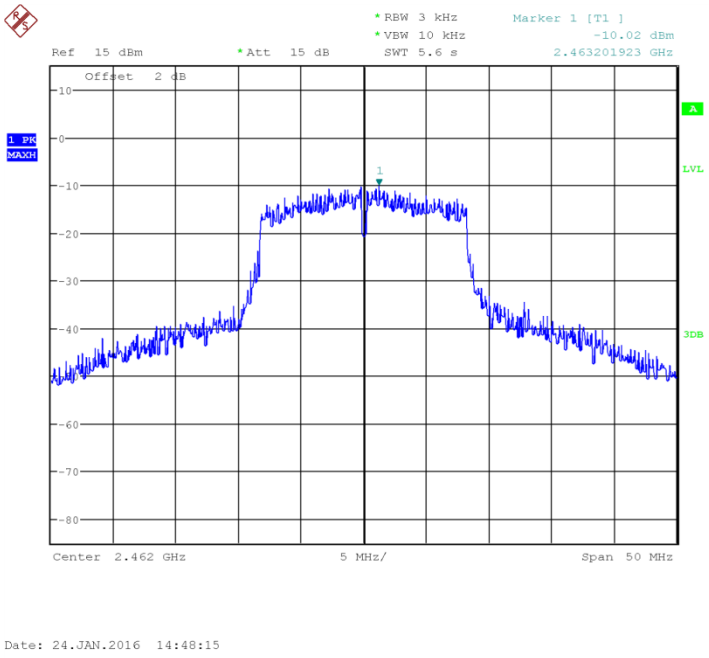


Fig.6 Power Spectral Density (802.1g,Ch11)

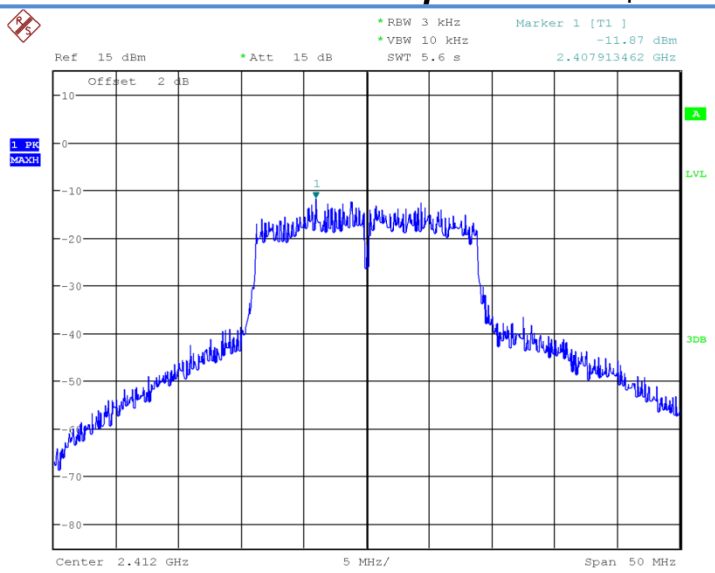


Fig.7 Power Spectral Density (802.1n-20MHz,Ch1)

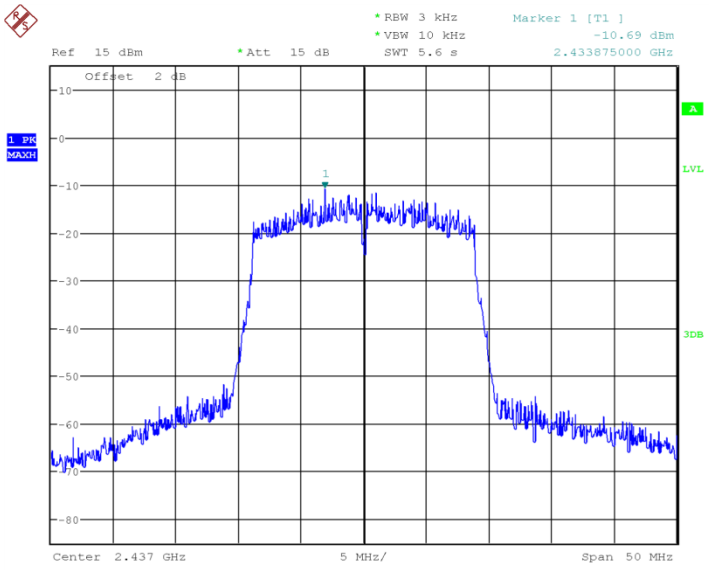


Fig.8 Power Spectral Density (802.1n-20MHz,Ch6)

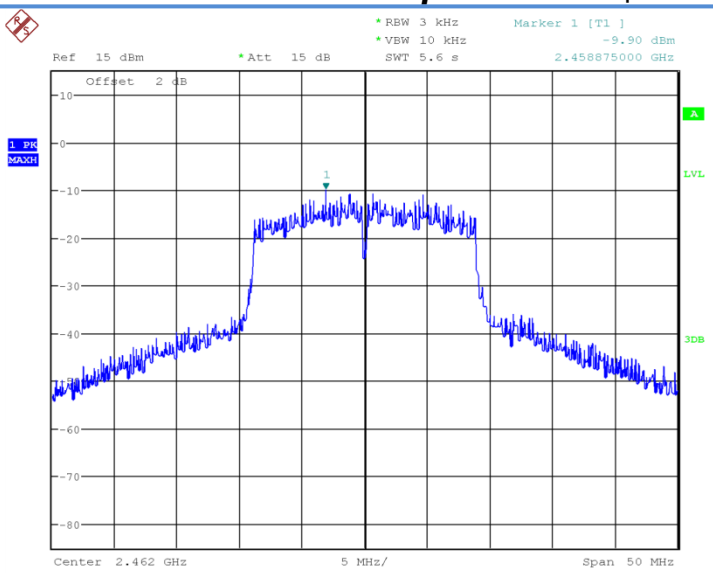


Fig.9 Power Spectral Density (802.1n-20MHz,Ch11)

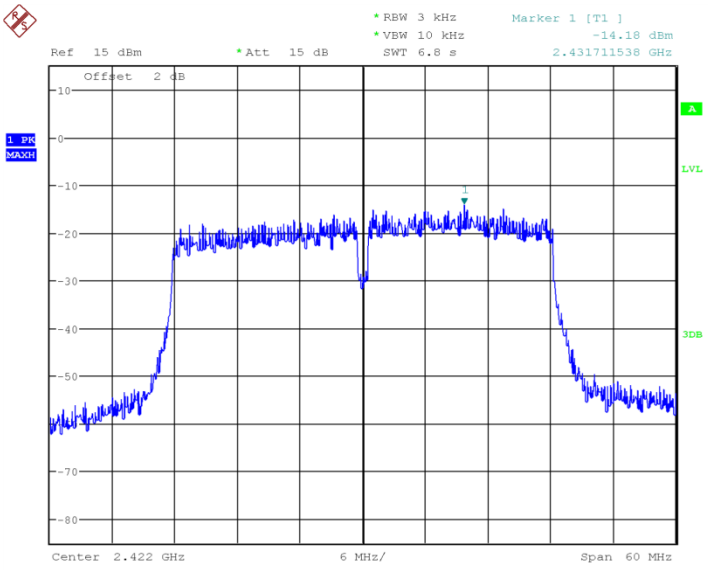


Fig.10 Power Spectral Density (802.1n-40MHz,Ch3)

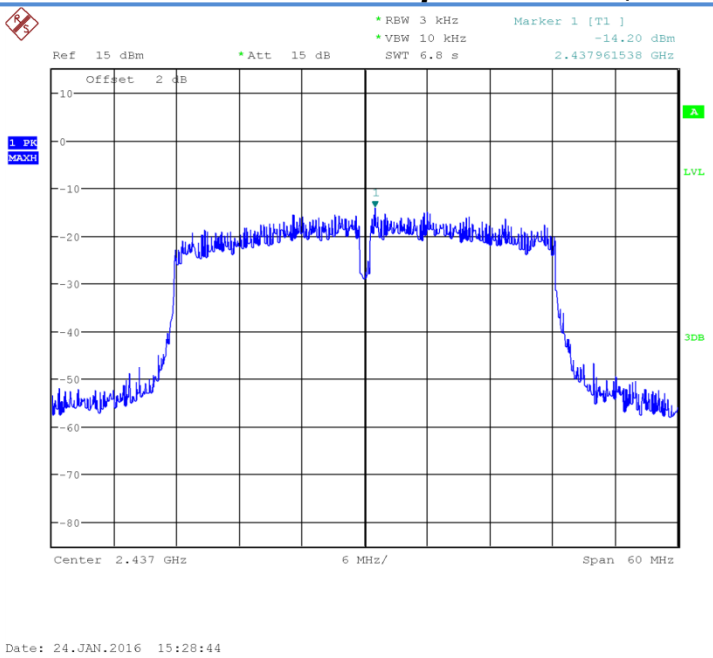


Fig.11 Power Spectral Density (802.1n-40MHz,Ch6)

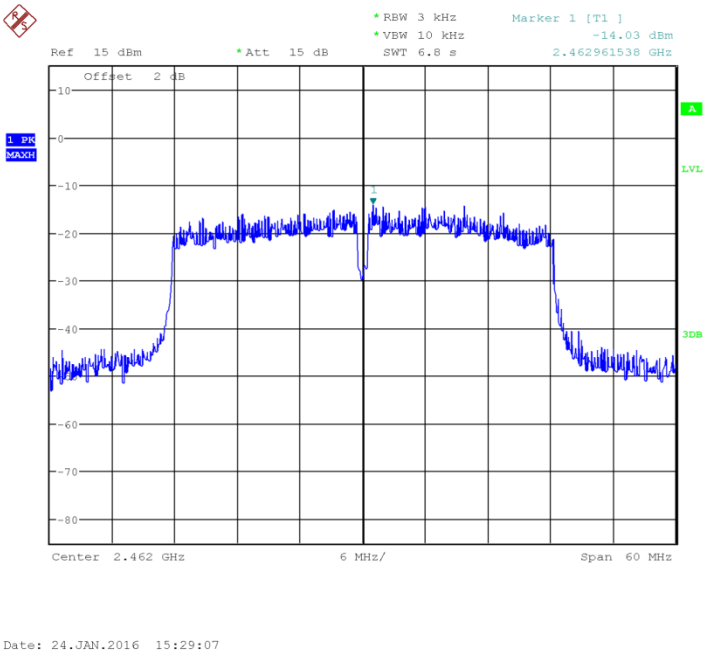


Fig.12 Power Spectral Density (802.1n-40MHz,Ch11)

6.3. Occupied 6dB Bandwidth

6.3.1 Measurement Limit:

Standard	Limit(KHz)
FCC 47 CFR Part 15.247(c)	≥500

6.3.2 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 ≥ [3 × 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.

6.3.4 Measurement Uncertainty:

Measurement Uncertainty	60.80Hz

6.3.5 Measurement Result:

802.11b/g mode

Mode	Channel	Occupied 6dB Bandwidth(MHz)		Conclusion
802.11b	1	Fig.13	9.856	P
	6	Fig.14	9.856	P
	11	Fig.15	9.856	P
802.11g	1	Fig.16	16.506	P
	6	Fig.17	16.506	P
	11	Fig.18	16.426	P

802.11n mode

Mode	Channel	Occupied 6dB Bandwidth(MHz)		Conclusion
802.11n(20MHz)	1	Fig.19	17.708	P
	6	Fig.20	17.708	P
	11	Fig.21	17.708	P
802.11n(40MHz)	3	Fig.22	35.192	P

	6	Fig.23	35.192	P
	11	Fig.24	35.154	P

Conclusion: PASS

Test graphs as below:

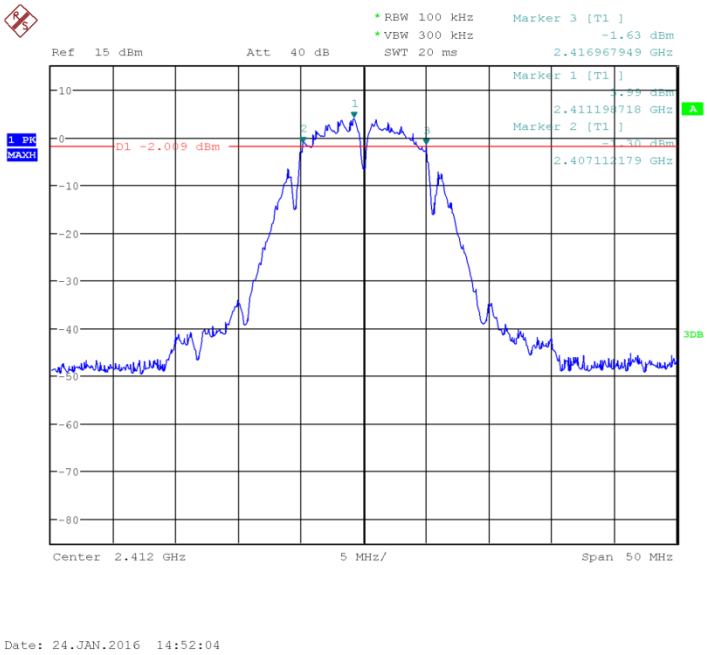


Fig.13 Occupied 6dB Bandwidth (802.11b, Ch1)

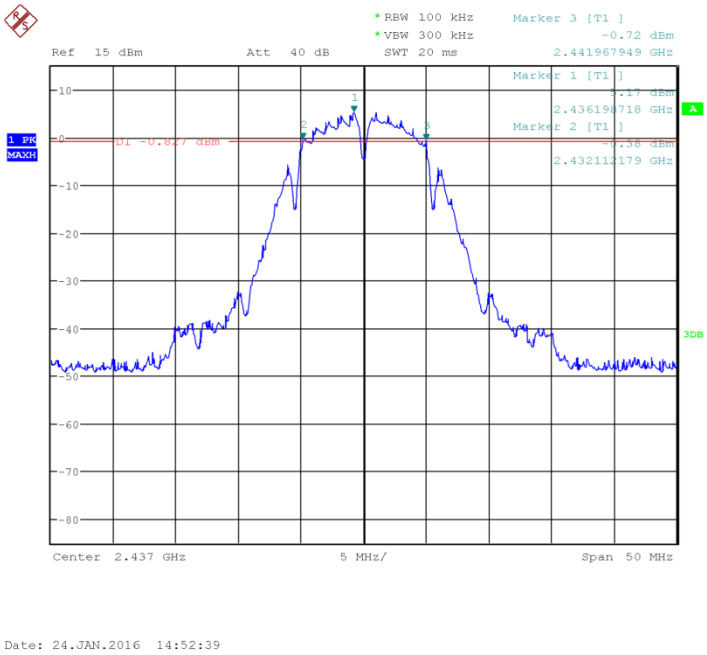


Fig.14 Occupied 6dB Bandwidth (802.11b, Ch6)

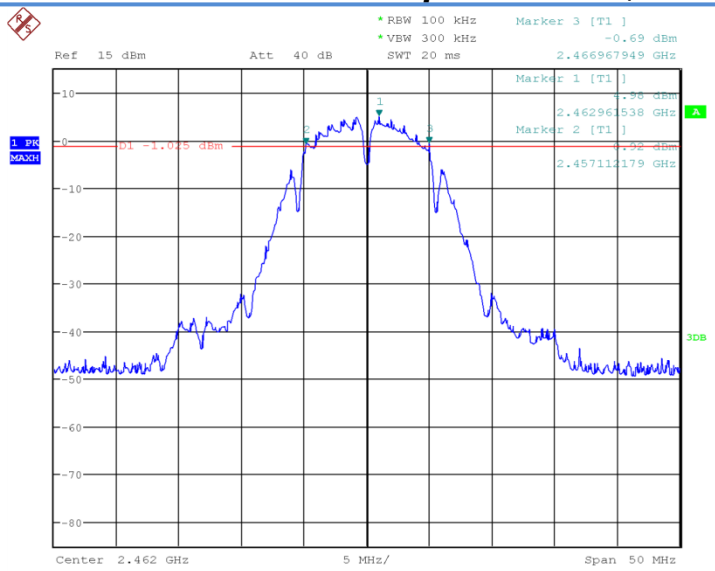


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Fig.15 Occupied 6dB Bandwidth (802.11b, Ch11)

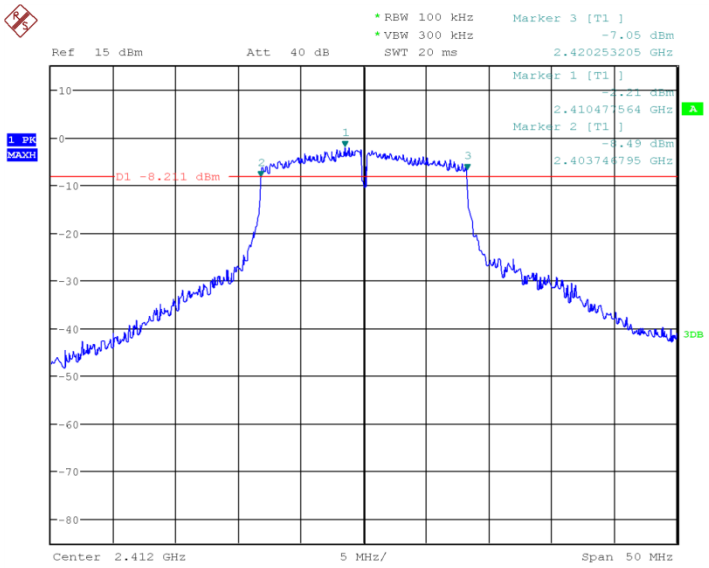

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Fig.16 Occupied 6dB Bandwidth (802.11g, Ch1)

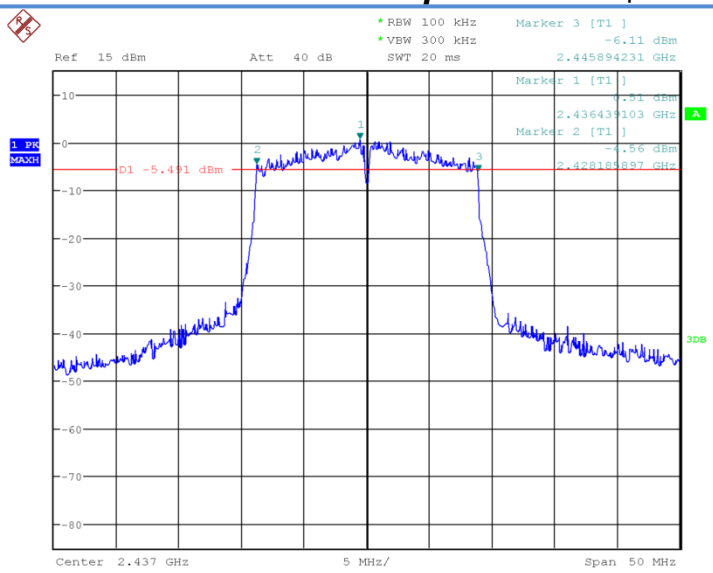


Fig.17 Occupied 6dB Bandwidth (802.11g, Ch6)

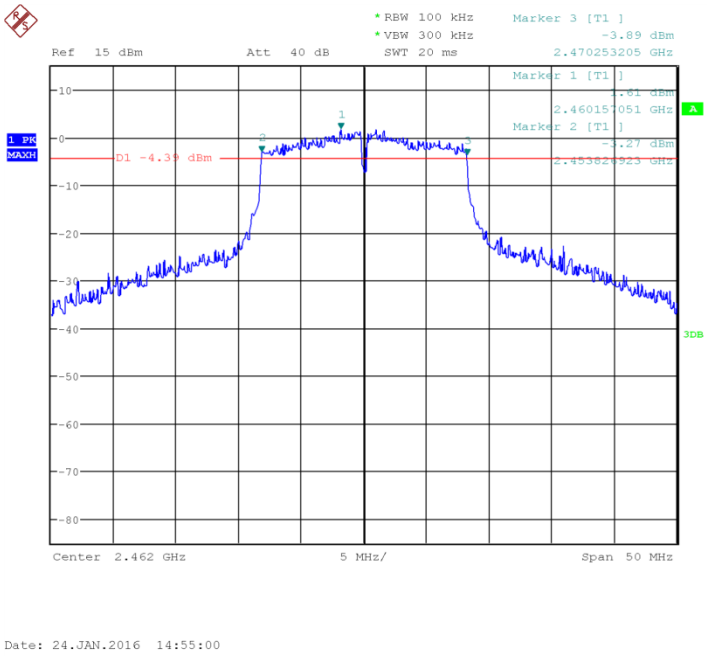


Fig.18 Occupied 6dB Bandwidth (802.11g, Ch11)

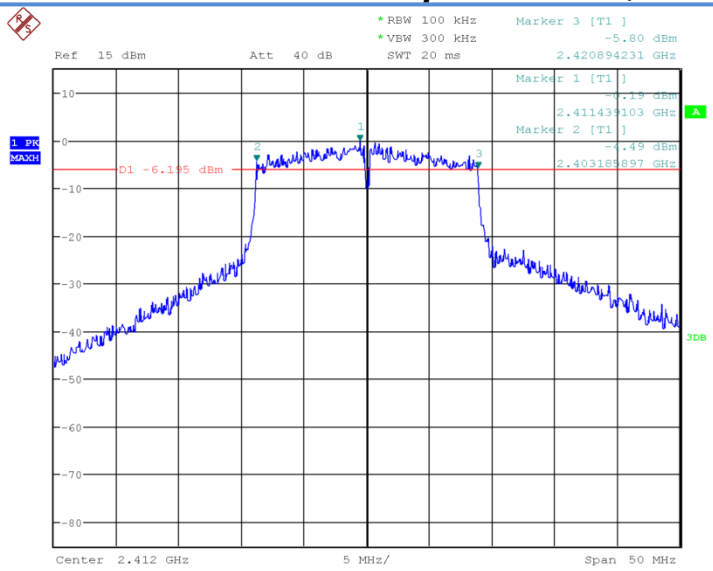


Fig.19 Occupied 6dB Bandwidth (802.11n-20MHz, Ch1)

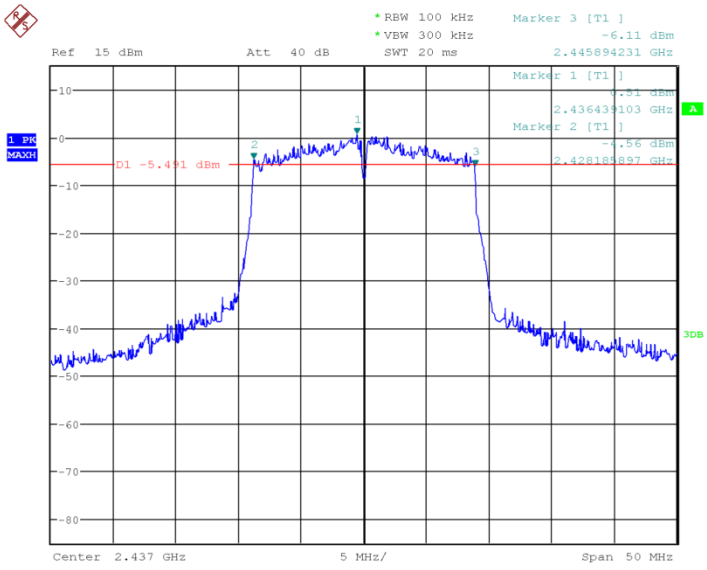


Fig.20 Occupied 6dB Bandwidth (802.11n-20MHz, Ch6)

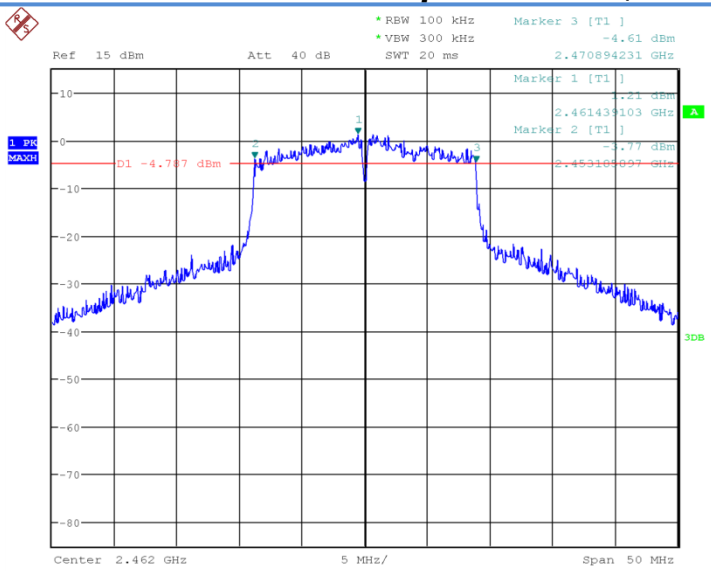


Fig.21 Occupied 6dB Bandwidth (802.11n-20MHz, Ch11)

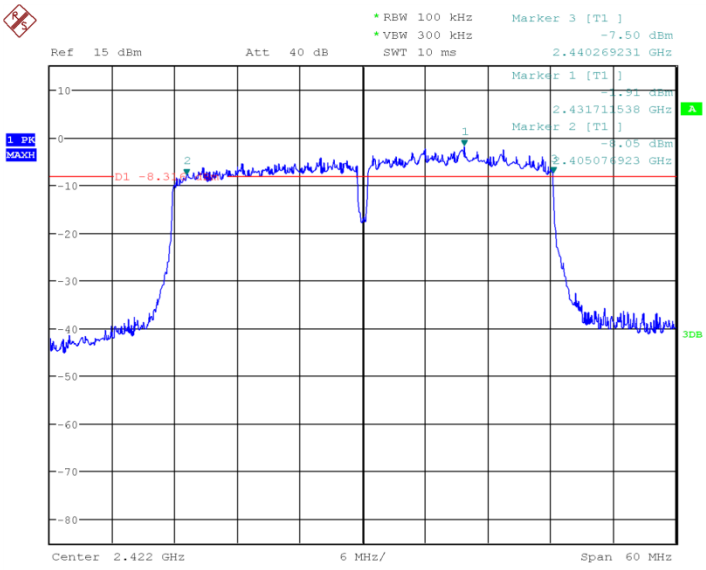


Fig.22 Occupied 6dB Bandwidth (802.11n-40MHz, Ch3)

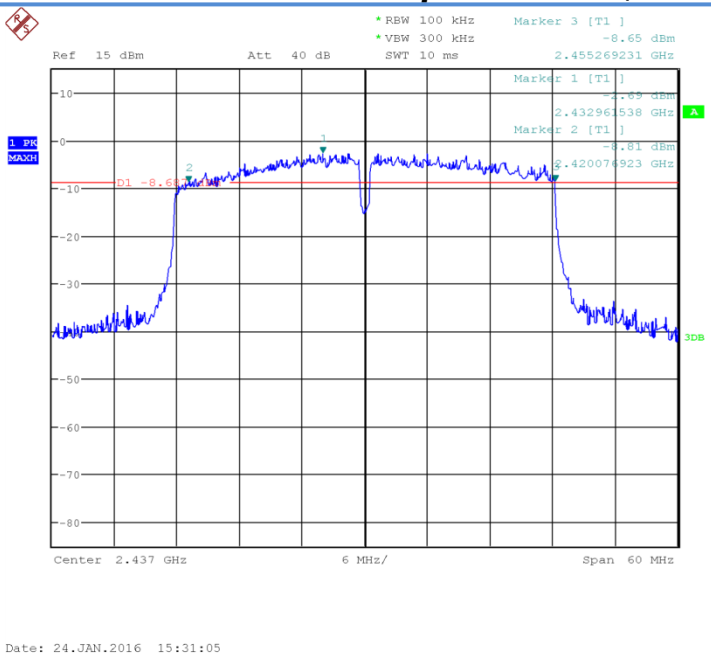


Fig.23 Occupied 6dB Bandwidth (802.11n-40MHz, Ch6)

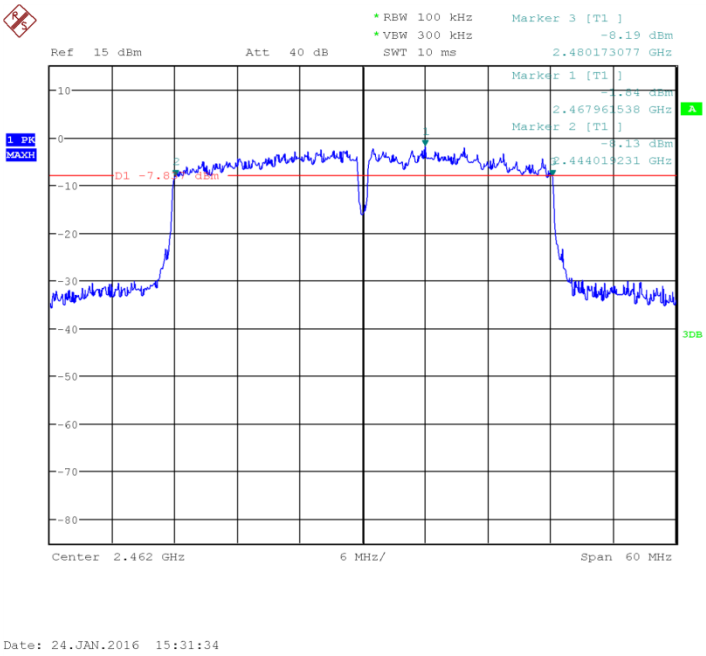


Fig.24 Occupied 6dB Bandwidth (802.11n-40MHz, Ch11)

6.4. Band Edges Compliance

6.4.1 Measurement Limit:

Standard	Limited(dBc)
FCC 47 CFR Part 15.247(d)	>20

6.4.2 Test procedures

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

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 instrument center frequency to the frequency of the emission to be measured (must be within 2MHz of the authorized band edge).
4. Set span to 2 MHz.
5. RBW = 100 kHz.
6. VBW ≥ [3 × RBW].
7. Detector = peak.
8. Sweep time = auto.
9. Trace mode = max hold.
10. Allow sweep to continue until the trace stabilizes

6.4.3 Measurement Uncertainty:

Measurement Uncertainty	0.75dB

6.4.4 Measurement results

802.11b/g mode

Mode	Channel	Test Results	Conclusion
802.11b	1	Fig.25	P
	11	Fig.26	P
802.11g	1	Fig.27	P
	11	Fig.28	P

802.11n mode

Mode	Channel	Test Results	Conclusion
802.11n(20MHz)	1	Fig.29	P
	11	Fig.30	P
802.11(40MHz)	3	Fig.31	P
	11	Fig.32	P

Conclusion: PASS

Test graphs as blew:

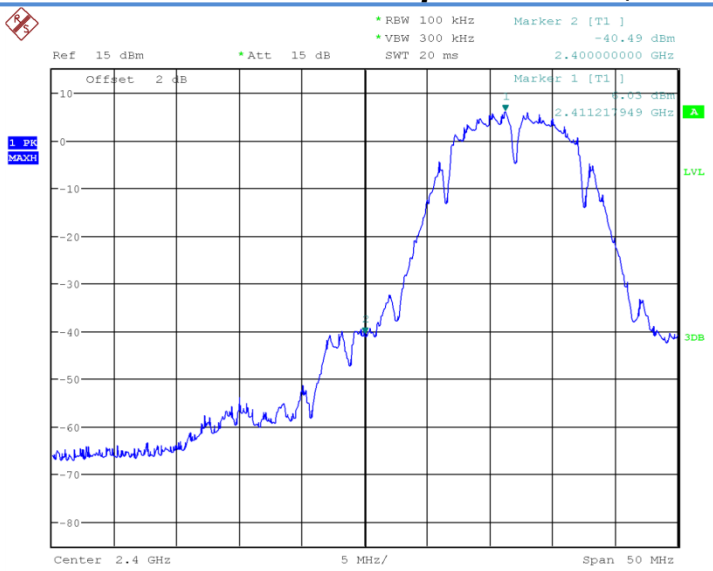


Fig.25 Band Edges (802.11b, Ch1)

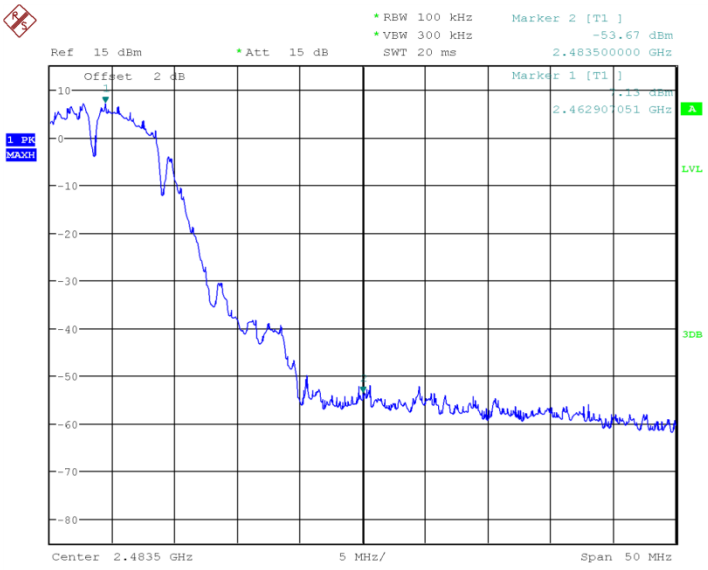


Fig.26 Band Edges (802.11b, Ch11)

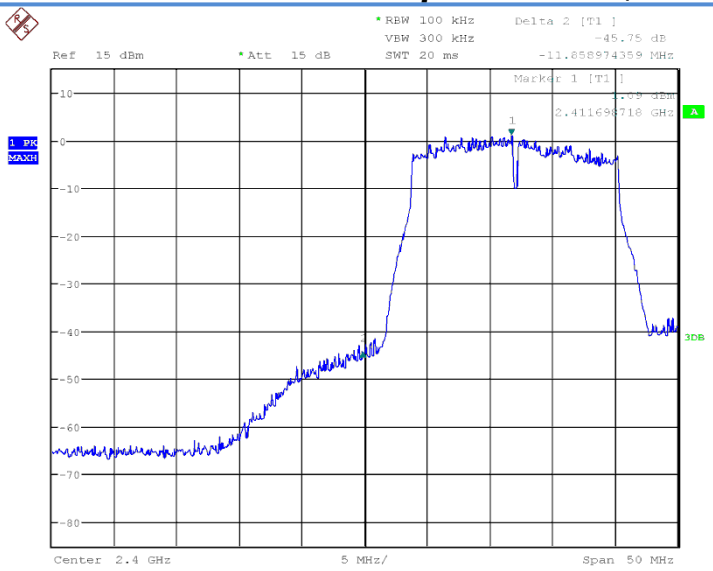


Fig.27 Band Edges (802.11g, Ch1)

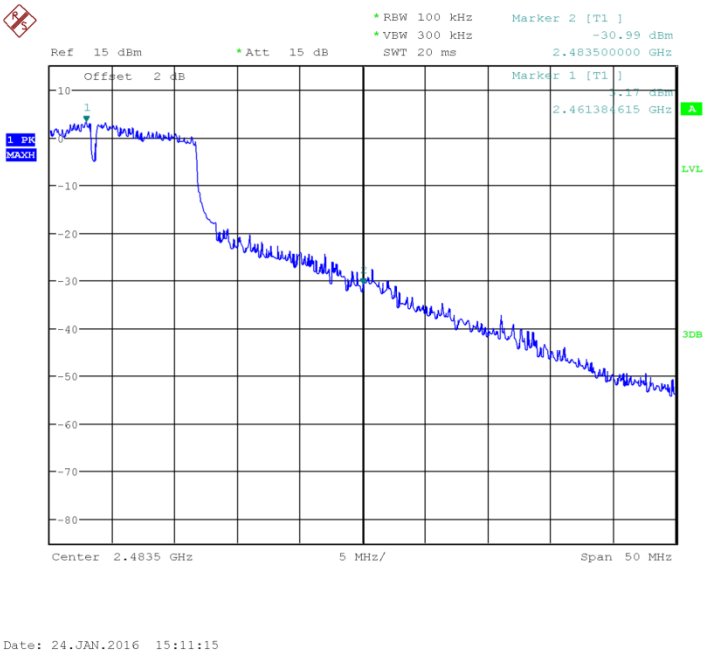


Fig.28 Band Edges (802.11g, Ch11)

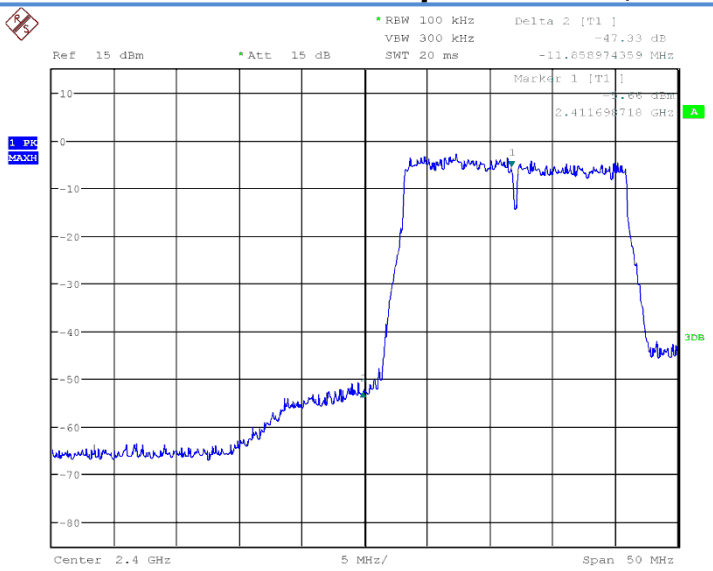


Fig.29 Band Edges (802.11n-20MHz, Ch1)

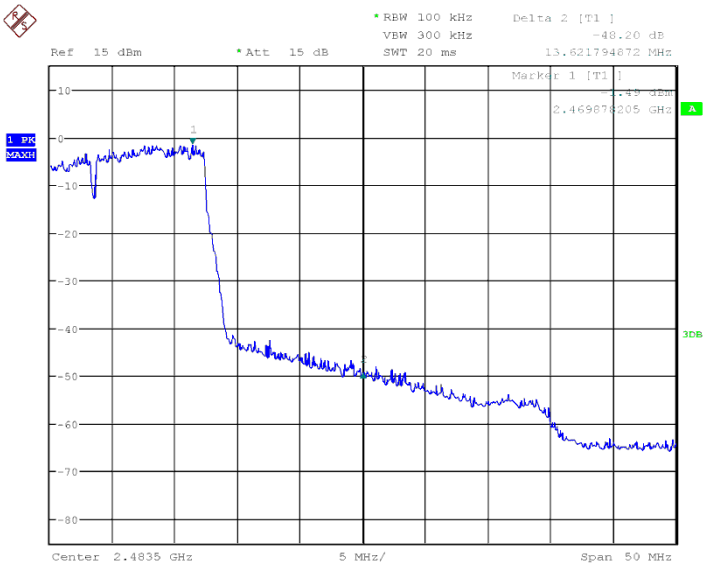


Fig.30 Band Edges (802.11n-20MHz, Ch11)

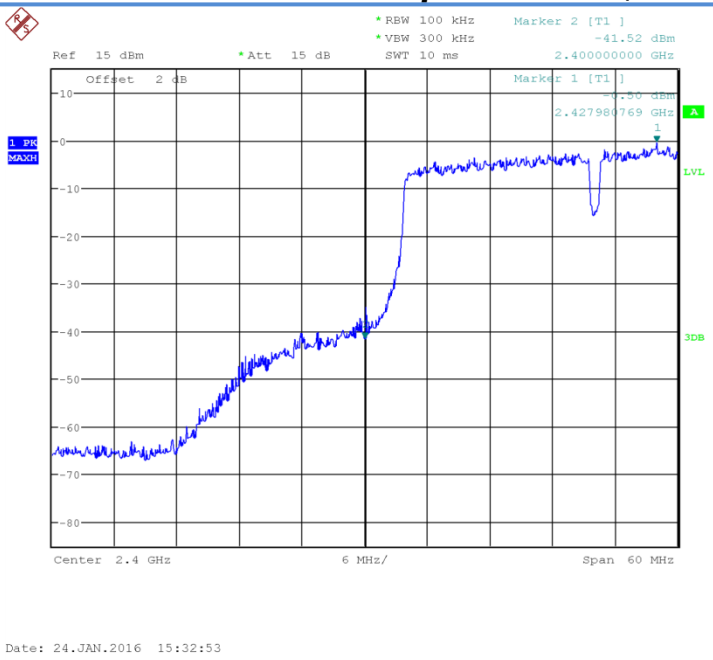


Fig.31 Band Edges (802.11n-40MHz, Ch3)

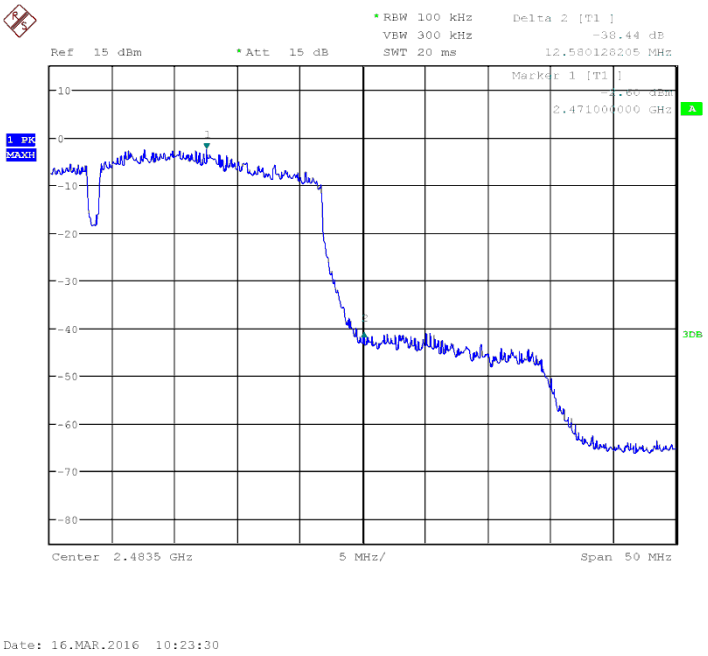


Fig.32 Band Edges (802.11n-40MHz, Ch11)

6.5. Transmitter Spurious Emission-conducted

6.5.1 Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(d)	20dB below peak output power in 100KHz bandwidth

6.5.2 Test procedures

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

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.

Reference level measurement

3. Set instrument center frequency to DTS channel center frequency.
4. Set the span to ≥ 1.5 times the DTS bandwidth.
5. Set the RBW = 100 kHz.
6. Set the VBW ≥ [3 × 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 PSD level.

Emission level measurement

12. Set the center frequency and span to encompass frequency range to be measured.
13. Set the RBW = 100 kHz.
14. Set the VBW ≥ [3 × RBW].
15. Detector = peak.
16. Sweep time = auto couple.
17. Trace mode = max hold.
18. Allow trace to fully stabilize.
19. Use the peak marker function to determine the maximum amplitude level.

6.5.3 Measurement Uncertainty:

Frequency Range	Uncertainty
30MHz≤ f ≤2GHz	0.63
2GHz≤ f ≤3.6GHz	0.82
3.6GHz≤ f ≤8GHz	1.55
8GHz≤ f ≤20GHz	1.86
20GHz≤ f ≤22GHz	1.90
22GHz≤ f ≤26GHz	2.20

6.5.4 Measurement Result:

802.11b/g mode

Mode	Channel	Frequency Range	Test Results	Conclusion

802.11b	1	2.412GHz	Fig.33	P
		30MHz~26GHz	Fig.34	P
	6	2.437GHz	Fig.35	P
		30MHz~26GHz	Fig.36	P
	11	2.472GHz	Fig.37	P
		30MHz~26GHz	Fig.38	P
802.11g	1	2.412GHz	Fig.39	P
		30MHz~26GHz	Fig.40	P
	6	2.437GHz	Fig.41	P
		30MHz~26GHz	Fig.42	P
	11	2.472GHz	Fig.43	P
		30MHz~26GHz	Fig.44	P

802.11n mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n(20MHz)	1	2.412GHz	Fig.45	P
		30MHz~26GHz	Fig.46	P
	6	2.437GHz	Fig.47	P
		30MHz~26GHz	Fig.48	P
	11	2.472GHz	Fig.49	P
		30MHz~26GHz	Fig.50	P

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n(40MHz)	3	2.422GHz	Fig.51	P
		30MHz~26GHz	Fig.52	P
	6	2.437GHz	Fig.53	P
		30MHz~26GHz	Fig.54	P

	11	2.472GHz	Fig.55	P
		30MHz~26GHz	Fig.56	P

Conclusion: PASS

Test graphs as below:

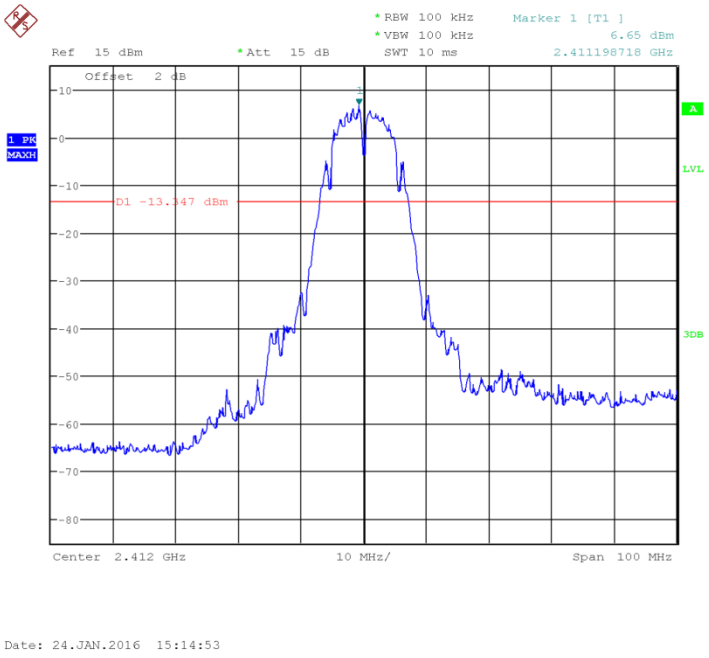


Fig 33. Conducted Spurious Emission (802.11b, Ch1)

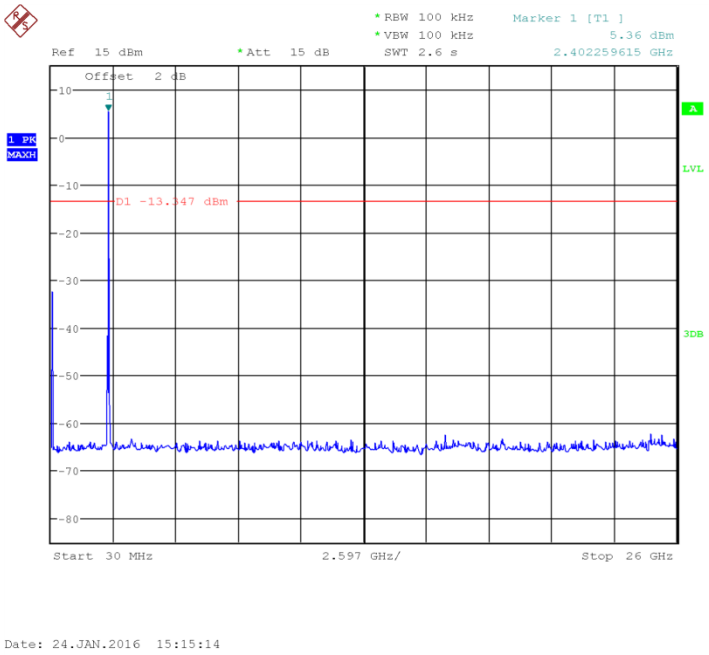


Fig 34. Conducted Spurious Emission (802.11b, Ch1, 30MHz~26GHz)

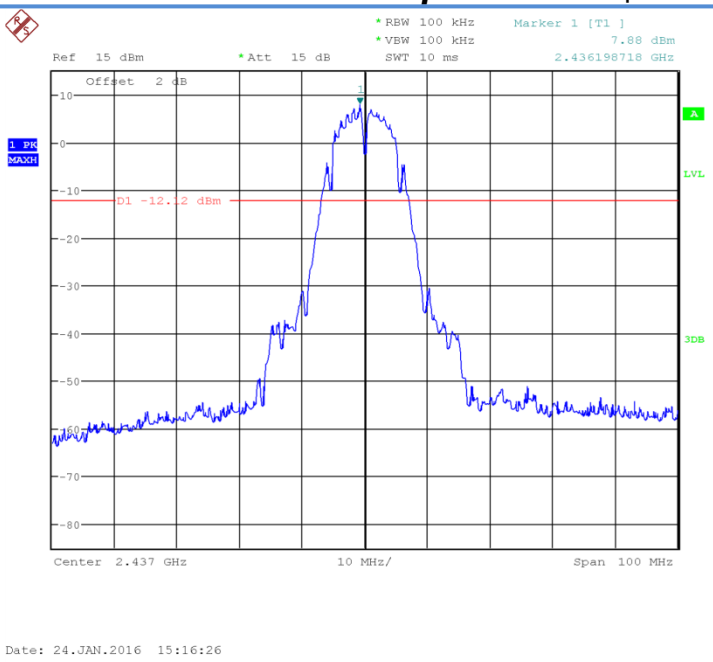


Fig 35. Conducted Spurious Emission (802.11b, Ch6)

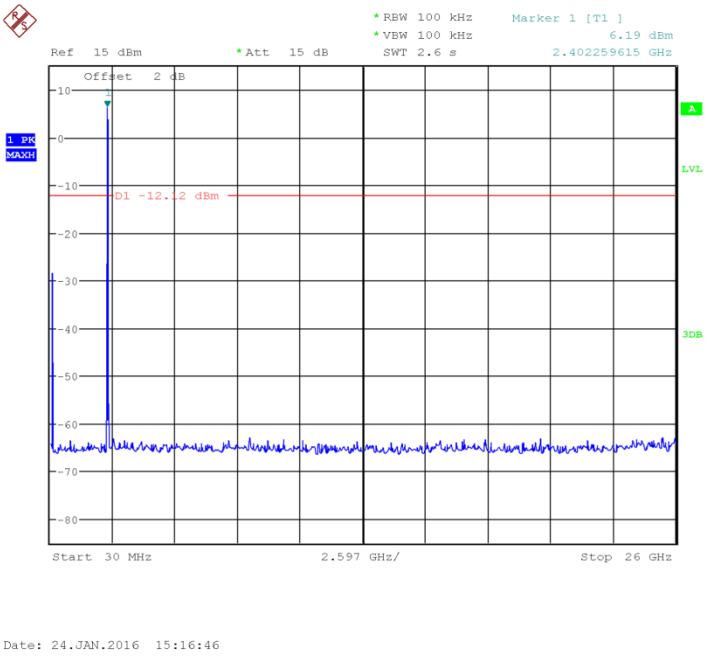


Fig 36. Conducted Spurious Emission (802.11b, Ch6, 30MHz~26GHz)

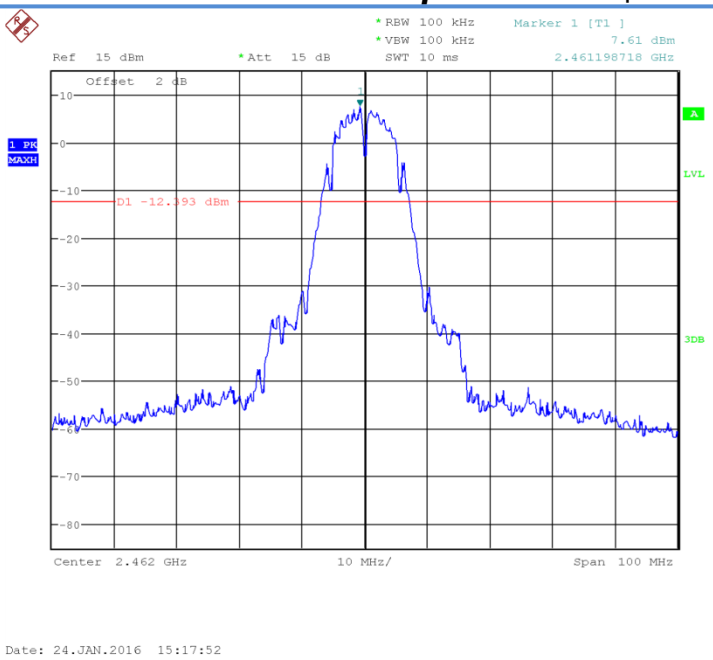


Fig 37. Conducted Spurious Emission (802.11b, Ch11)

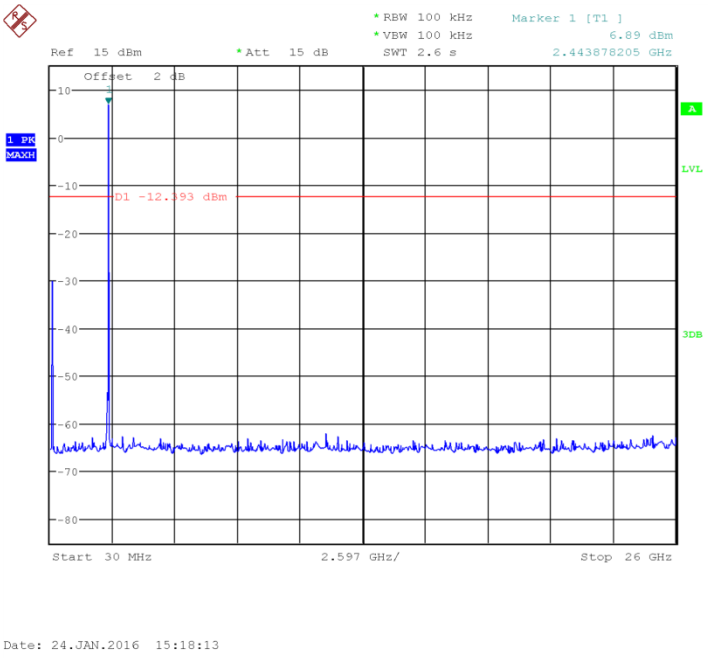


Fig 38. Conducted Spurious Emission (802.11b, Ch11, 30MHz~26GHz)

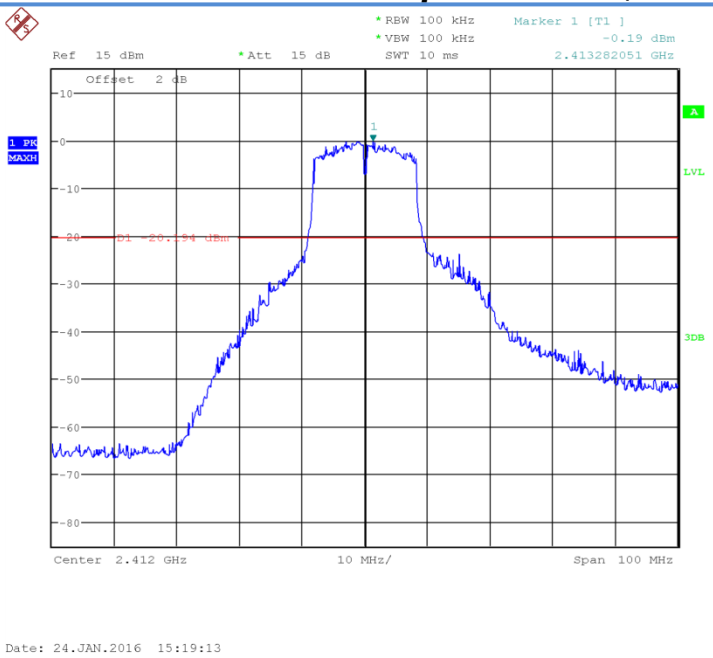


Fig 39. Conducted Spurious Emission (802.11g, Ch1)

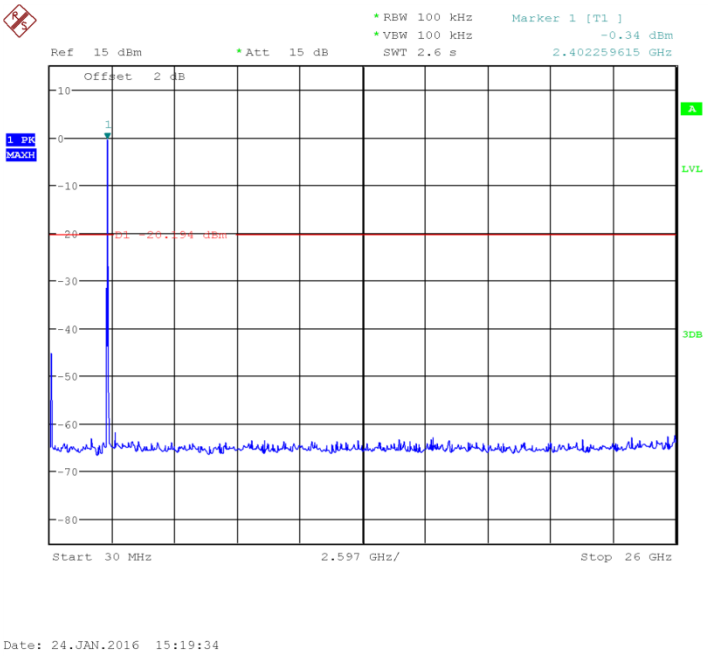


Fig 40. Conducted Spurious Emission (802.11g, Ch1, 30MHz~26GHz)

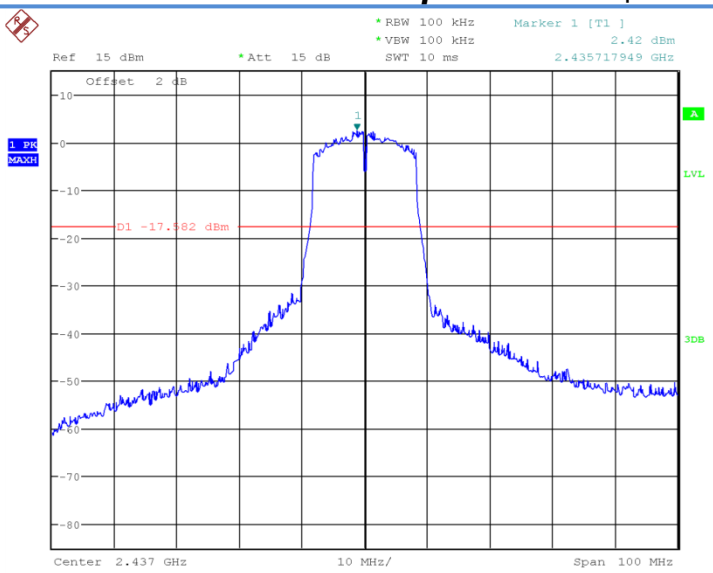


Fig 41. Conducted Spurious Emission (802.11g, Ch6)

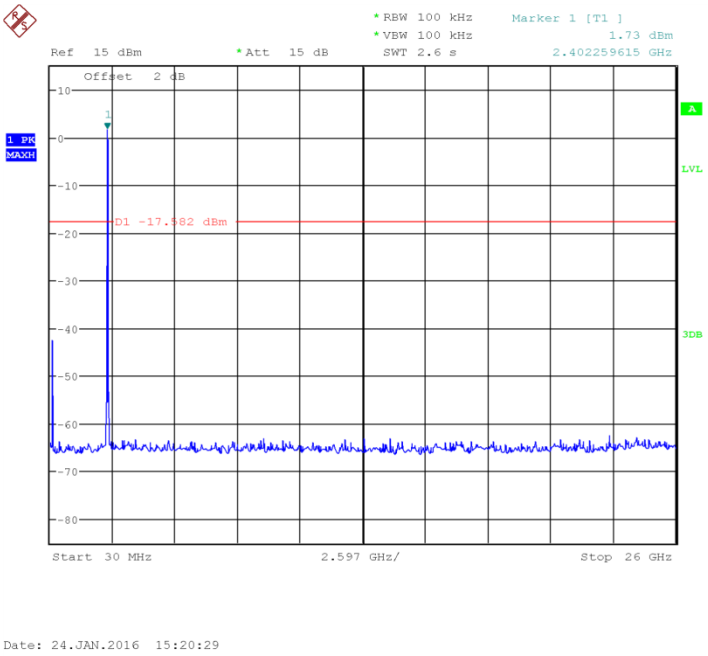


Fig 42. Conducted Spurious Emission (802.11g, Ch6, 30MHz~26GHz)

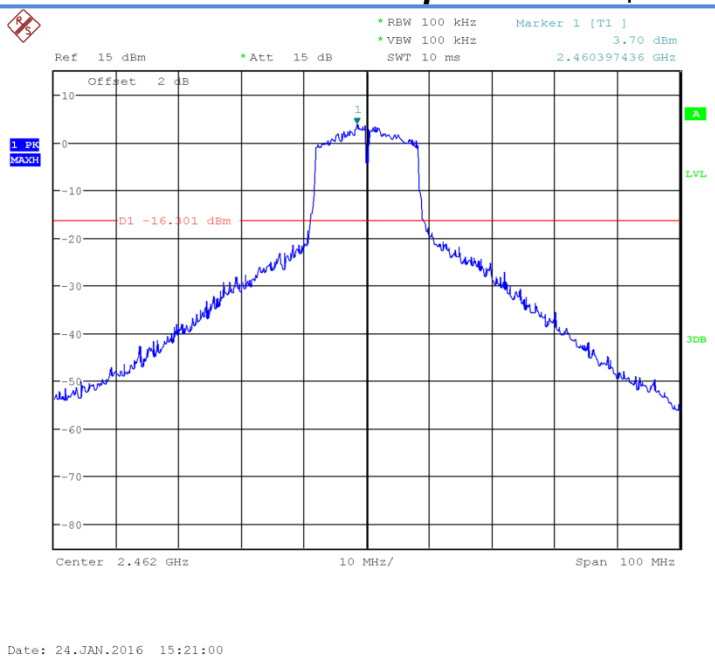


Fig 43. Conducted Spurious Emission (802.11g, Ch11)

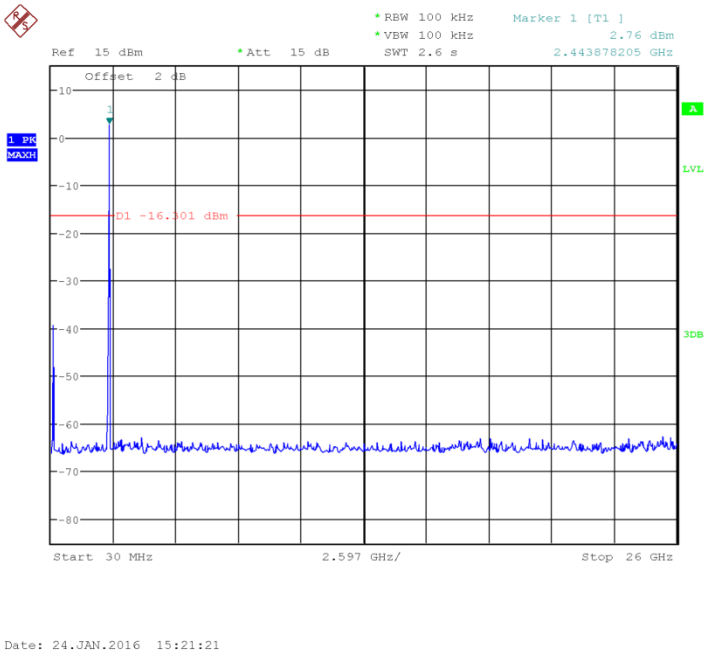


Fig 44. Conducted Spurious Emission (802.11g, Ch11, 30MHz~26GHz)

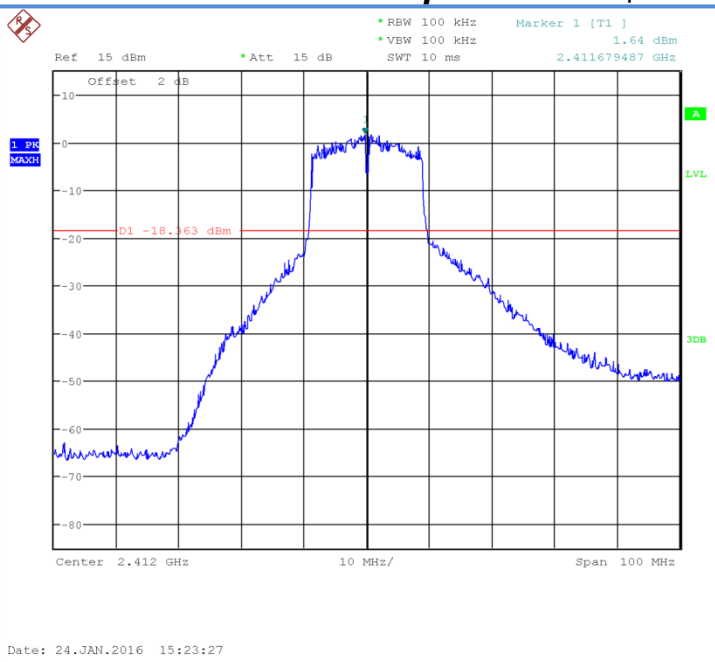


Fig 45. Conducted Spurious Emission (802.11n-20MHz, Ch1)

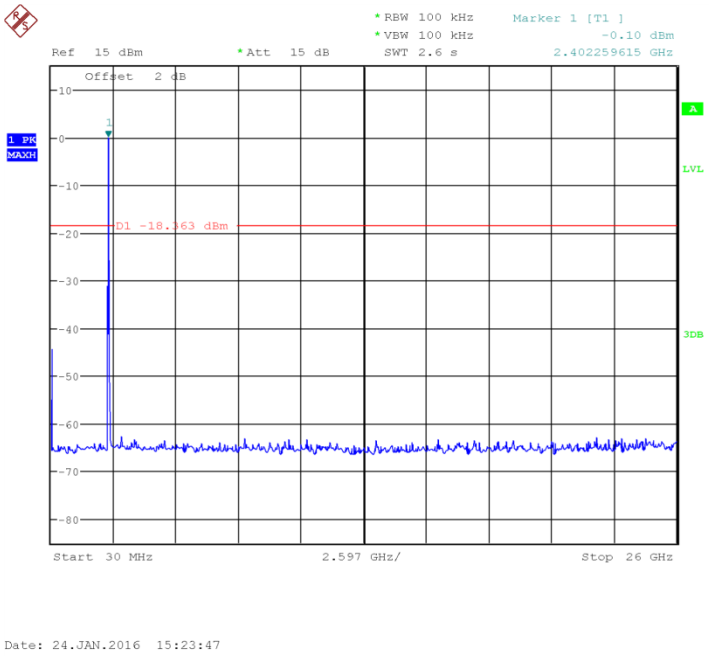


Fig 46. Conducted Spurious Emission (802.11n-20MHz, Ch1, 30MHz~26GHz)

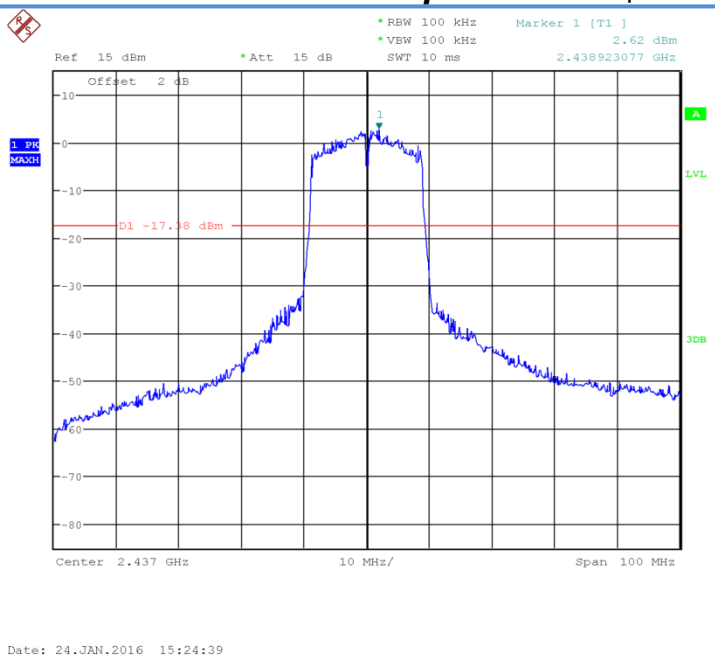


Fig 47. Conducted Spurious Emission (802.11n-20MHz, Ch6)

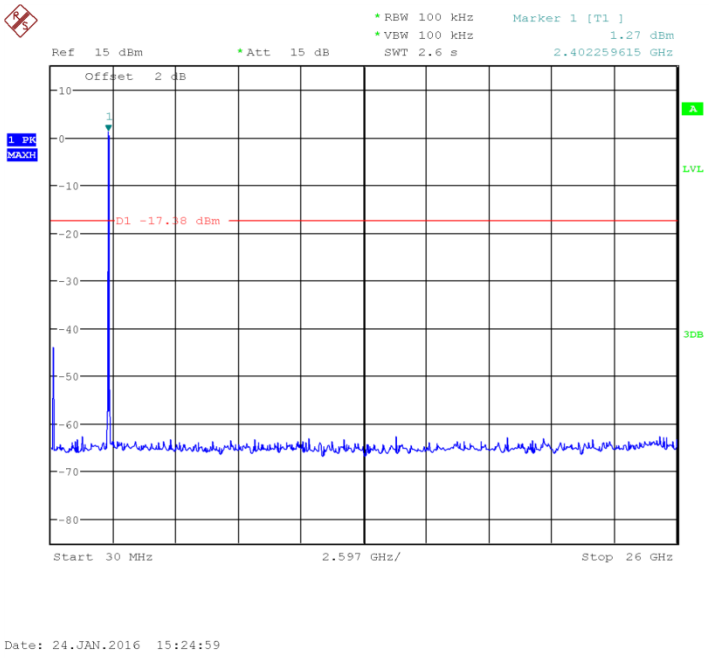


Fig 48. Conducted Spurious Emission (802.11n-20MHz, Ch6, 30MHz~26GHz)

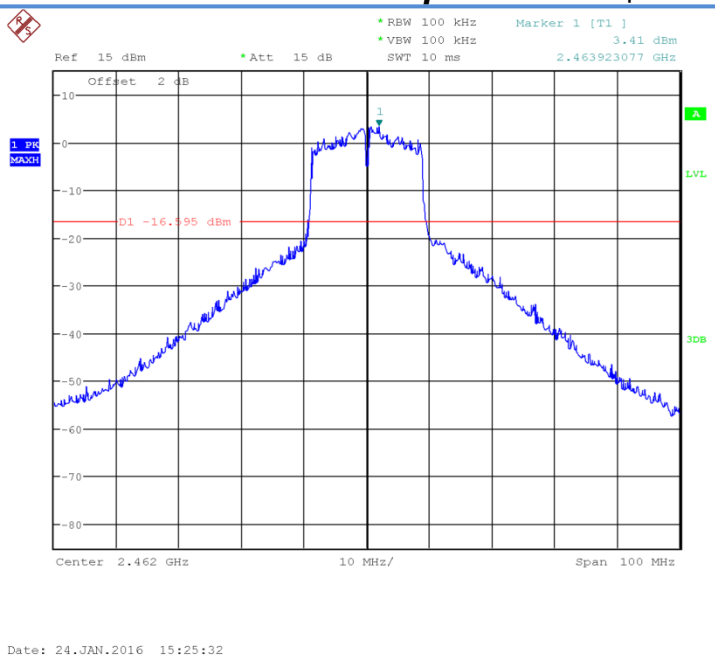


Fig 49. Conducted Spurious Emission (802.11n-20MHz, Ch11)

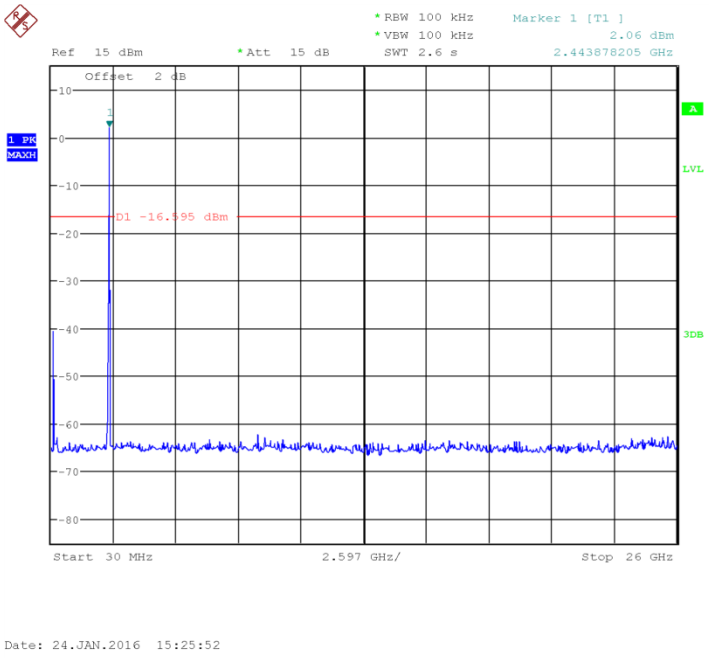


Fig 50. Conducted Spurious Emission (802.11n-20MHz, Ch11, 30MHz~26GHz)

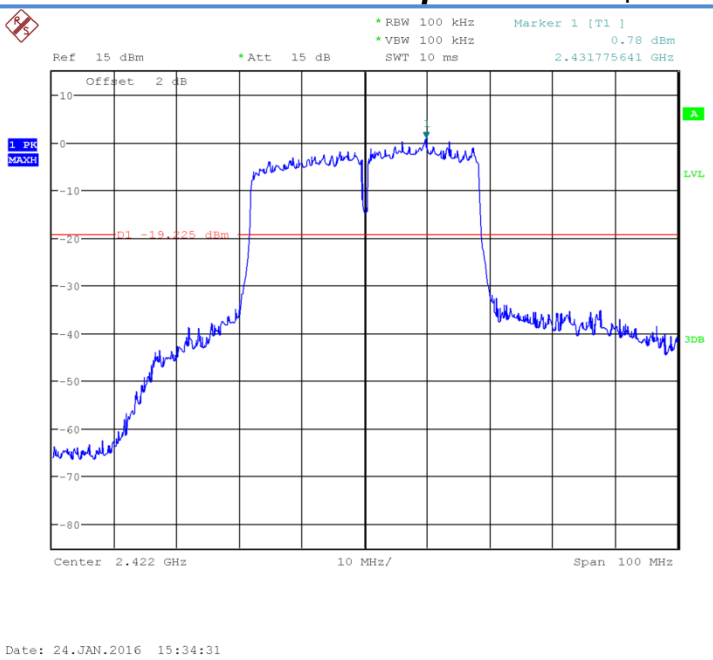


Fig 51. Conducted Spurious Emission (802.11n-40MHz, Ch3)

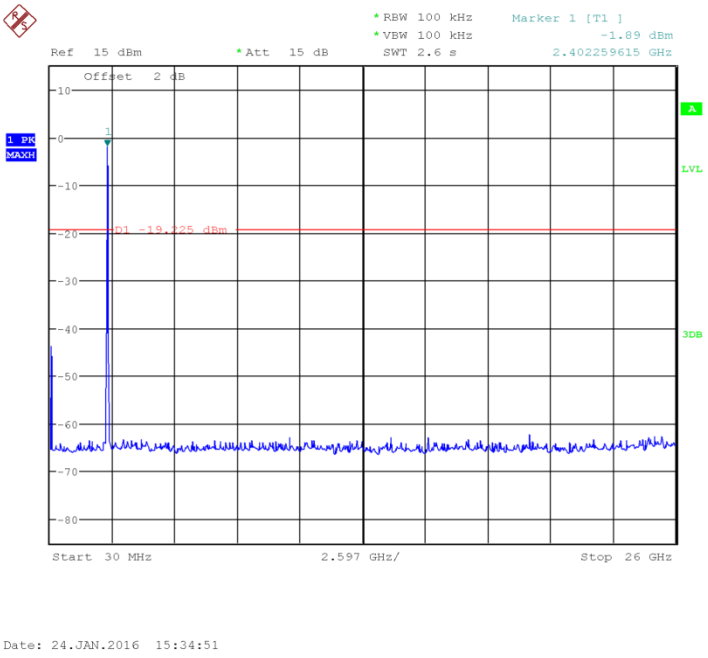


Fig 52. Conducted Spurious Emission (802.11n-40MHz, Ch3, 30MHz~26GHz)

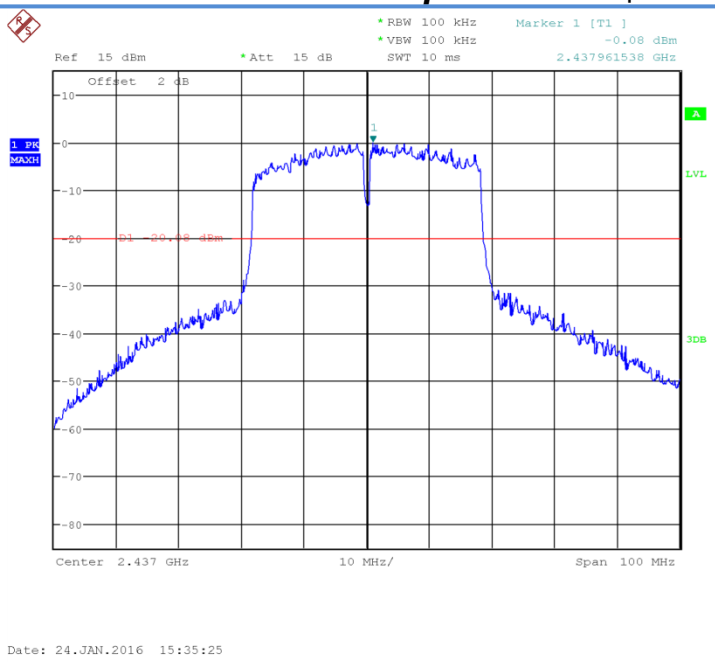


Fig 53. Conducted Spurious Emission (802.11n-40MHz, Ch6)

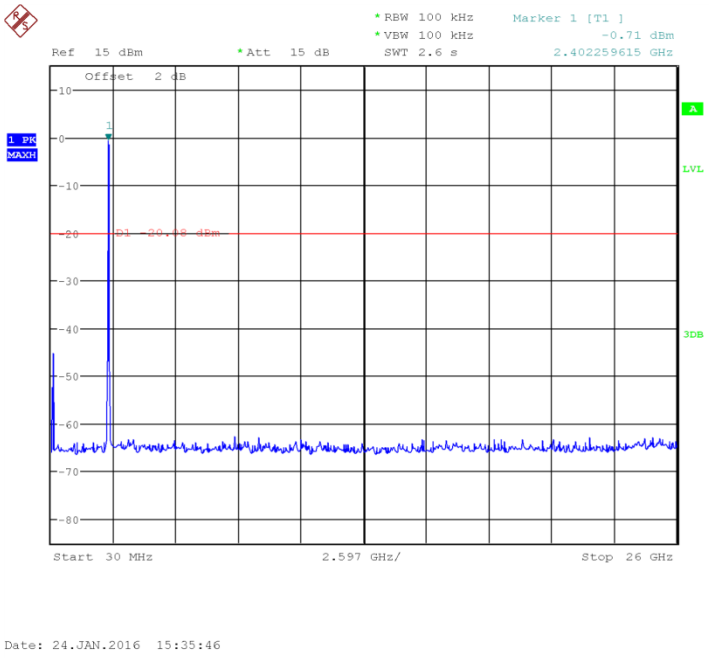


Fig 54. Conducted Spurious Emission (802.11n-40MHz, Ch6, 30MHz~26GHz)

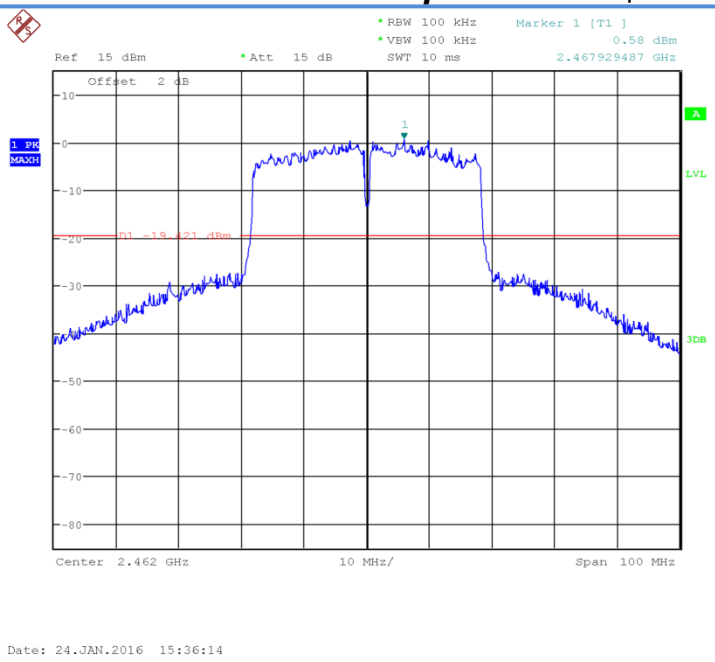


Fig 55. Conducted Spurious Emission (802.11n-40MHz, Ch11)

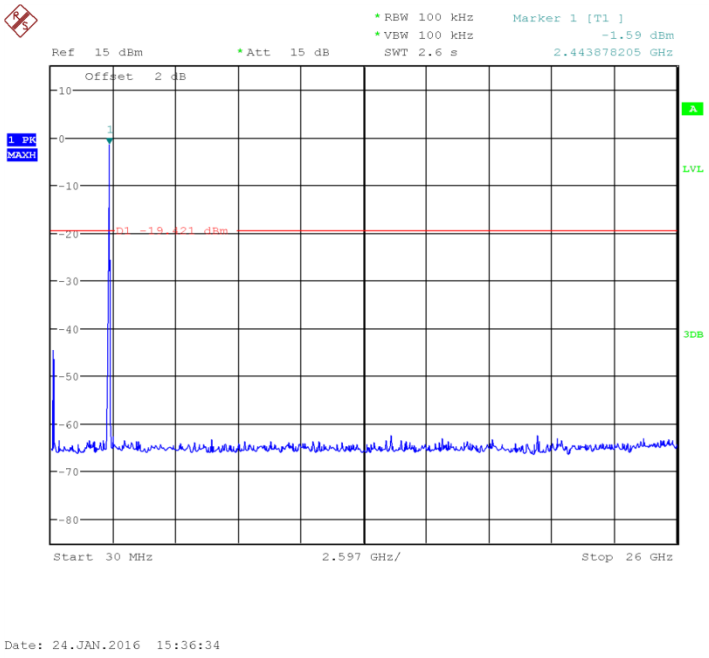


Fig 56. Conducted Spurious Emission (802.11n-40MHz, Ch11, 30MHz~26GHz)

6.6. Transmitter Spurious Emission-Radiated

6.6.1 Measurement 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 25.205(a),

must also comply with the radiated emission limits specified in 15.209(a)(see 15.205(c)). The measurement is according to ANSI C63.10 clause 11.11 and 11.12.

6.6.2 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

6.6.3 Test procedures

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 nonconducting 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 C63.4-2009 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 testing, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emission from the EUT. This maximization process was repeated with the EUT positioned in each of its three rthogonal orientations.

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

Main supply(N06)

802.11b/g mode

Mode	Channel	Frequency Range	Test Results	Conclusion

802.11b	Power	2.38GHz~2.45GHz	Fig 57.	P
	Power	2.45GHz~2.5GHz	Fig 58.	P
	6	30MHz~1GHz	Fig 59.	P
		1GHz~3GHz	Fig 60.	P
		3GHz~18GHz	Fig 61.	P
802.11g	Power	2.38GHz~2.45GHz	Fig 62.	P
	Power	2.45GHz~2.5GHz	Fig 63.	P
	6	30MHz~1GHz	Fig 64.	P
		1GHz~3GHz	Fig 65.	P
		3GHz~18GHz	Fig 66.	P

802.11n mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n(20MHz)	Power	2.38GHz~2.45GHz	Fig 67.	P
	Power	2.45GHz~2.5GHz	Fig 68.	P
	1	30MHz~1GHz	Fig 69.	P
		1GHz~3GHz	Fig 70.	P
		3GHz~18GHz	Fig 71.	P
/	All channels	18GHz~26.5GHz	Fig 72.	P

Secondary supply(N16)

802.11b/g mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	Power	2.38GHz~2.45GHz	Fig 73.	P
	Power	2.45GHz~2.5GHz	Fig 74.	P
	6	30MHz~1GHz	Fig 75.	P
		1GHz~3GHz	Fig 76.	P
		3GHz~18GHz	Fig 77.	P

802.11g	Power	2.38GHz~2.45GHz	Fig 78.	P
	Power	2.45GHz~2.5GHz	Fig 79.	P
	6	30MHz~1GHz	Fig 80.	P
		1GHz~3GHz	Fig 81.	P
		3GHz~18GHz	Fig 82.	P

802.11n mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n(20MHz)	Power	2.38GHz~2.45GHz	Fig 83.	P
	Power	2.45GHz~2.5GHz	Fig 84.	P
	1	30MHz~1GHz	Fig 85.	P
		1GHz~3GHz	Fig 86.	P
		3GHz~18GHz	Fig 87.	P
/	All channels	18GHz~26.5GHz	Fig 88.	P

Conclusion: PASS

Note:

A "reference path loss" is established and A_{Rpi} is the attenuation of "reference path loss", and including the gain of receive antenna , the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

ARpi = Cable loss + Antenna Gain-Preamplifier gain

Result = P_{Mea} + Cable loss + Antenna Gain-Preamplifier gain = P_{Mea} + ARpi .

Main supply(N06)

802.11b mode

Ch6 30MHz~1GHz

Frequency(MHz)	Result(dBuV/m)	ARpI (dB)	PMea(dBuV/m)	Polarity
31.625588	6.39	-26	32.39	V
34.238576	11.05	-25.9	36.95	V
47.213608	12.39	-24.9	37.29	V
80.425696	2.4	-28.1	30.5	V
138.571756	2.76	-27.3	30.06	V

252.001792	11.56	-22	33.56	V

Ch6 1GHz~3GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
2547.756154	51.76	8.9	42.86	V
2611.318077	52.81	9.5	43.31	V
2746.106538	52.93	10.1	42.83	H
2801.968462	53.59	10.4	43.19	H
2861.236346	53.3	11	42.3	H
2951.181923	54.42	11.2	43.22	H

Ch6 3GHz~18GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
4924.806333	42.95	0.9	42.05	V
7067.795733	44.33	4.9	39.43	V
11039.9616	49.8	13.9	35.9	H
12813.268	52.05	16.7	35.35	V
14327.7446	54.98	20.5	34.48	H
17560.0484	62.08	29.4	32.68	H

802.11g

Ch6 30MHz~1GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
34.592916	9.11	-25.9	35.01	V
37.504988	9.76	-25.4	35.16	V
58.548892	7.42	-25	32.42	V
86.494676	5.15	-26.3	31.45	H
114.297048	5.99	-24.4	30.39	H
169.623604	4.37	-25.9	30.27	V

Ch6 1GHz~3GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
2565.553462	52.1	9	43.1	V
2637.302307	52.35	9.8	42.55	H
2745.693461	53.45	10.1	43.35	V
2895.876154	54.96	11.3	43.66	V
2942.961731	54.38	11.2	43.18	H
2997.713462	54.94	11.8	43.14	H

Ch6 3GHz~18GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
16484.03633	59.91	26.7	33.21	H
16807.82653	59.62	27.4	32.22	H
17056.22747	60.54	27.1	33.44	V
17555.80873	62.01	29.4	32.61	V
17741.72787	60.53	28.4	32.13	V
17968.2438	62.69	30	32.69	H

802.11n-20MHz

Ch1 30MHz~1GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
33.778012	10.4	-25.9	36.3	V
47.169656	12.5	-24.9	37.4	V
59.924832	13.19	-25.1	38.29	V
67.950152	5.13	-27.6	32.73	V
83.534036	3.88	-27.2	31.08	H
182.19936	5.51	-25.2	30.71	V

Ch1 1GHz~3GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity

2631.094807	53.44	9.7	43.74	V
2673.704231	53.59	10	43.59	V
2751.902308	52.8	10.1	42.7	H
2834.076346	53.31	10.7	42.61	V
2892.108654	54.58	11.3	43.28	V
2964.036923	54.48	11.4	43.08	H

Ch1 3GHz~18GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
15729.50287	57.26	24.1	33.16	V
16158.31327	58.89	25.3	33.59	H
16500.10927	60.01	26.9	33.11	V
17007.62607	60.24	27.1	33.14	V
17577.1276	62.66	29.5	33.16	V
17941.79627	63.65	29.9	33.75	H

All Ch 18GHz~26.5GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
21179.000000	45.48	6.97	38.51	V
22748.950000	41.63	3.05	38.58	H
23684.800000	41.59	3.05	38.54	H
24633.400000	40.05	3.05	37.00	V
25567.550000	43.01	2.90	40.11	H
26066.500000	42.06	2.90	39.16	V

Test graphs as below:

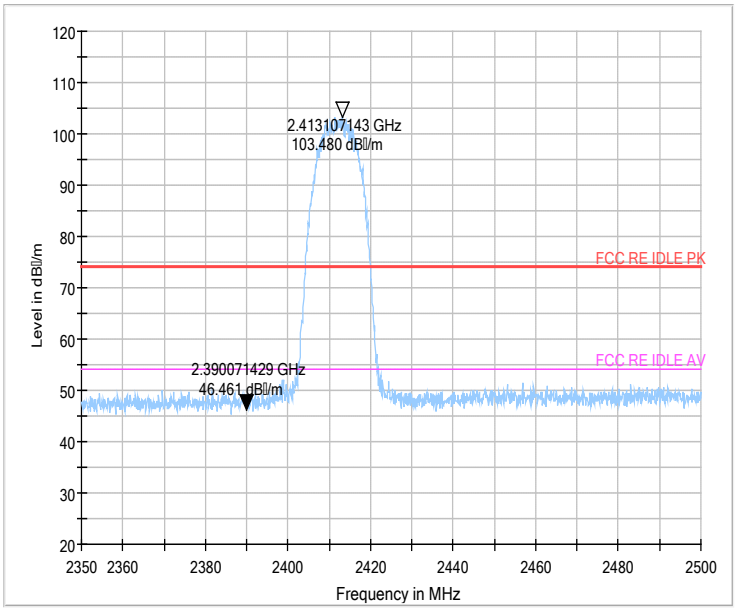


Fig 57. Radiated emission (Power): 802.11b, low channel

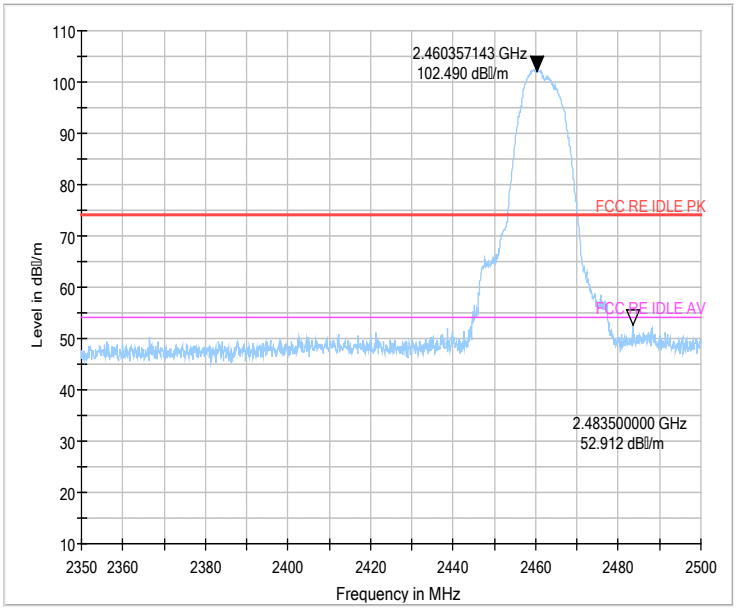


Fig 58. Radiated emission (Power): 802.11b, high channel

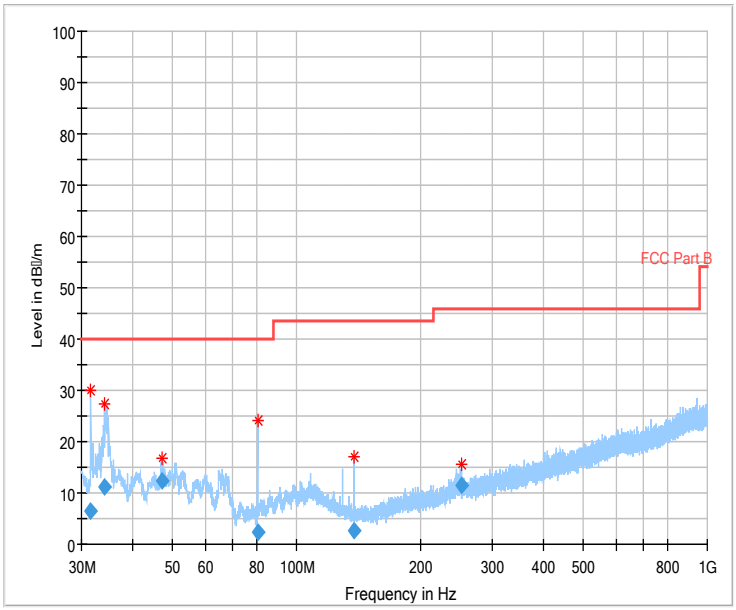


Fig 59. Radiated Spurious Emission (802.11b,Ch6,30MHz~1GHz)

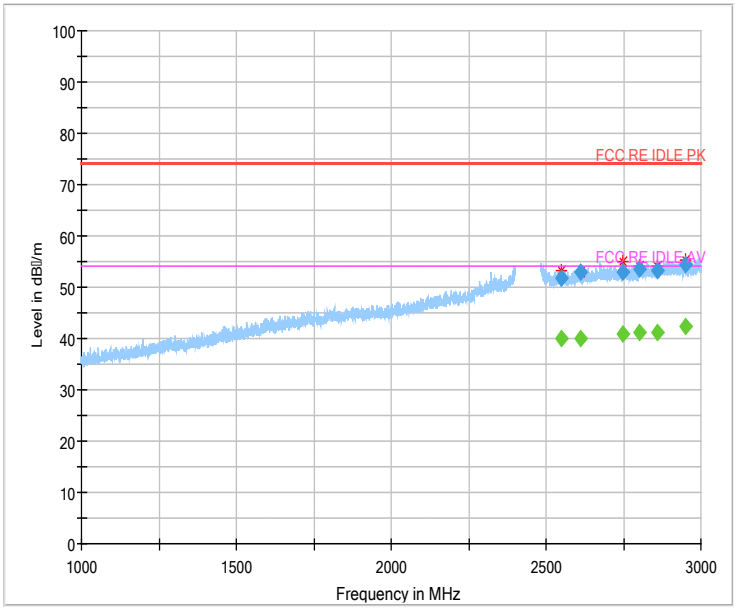


Fig 60. Radiated Spurious Emission (802.11b,Ch6,1GHz~3GHz)

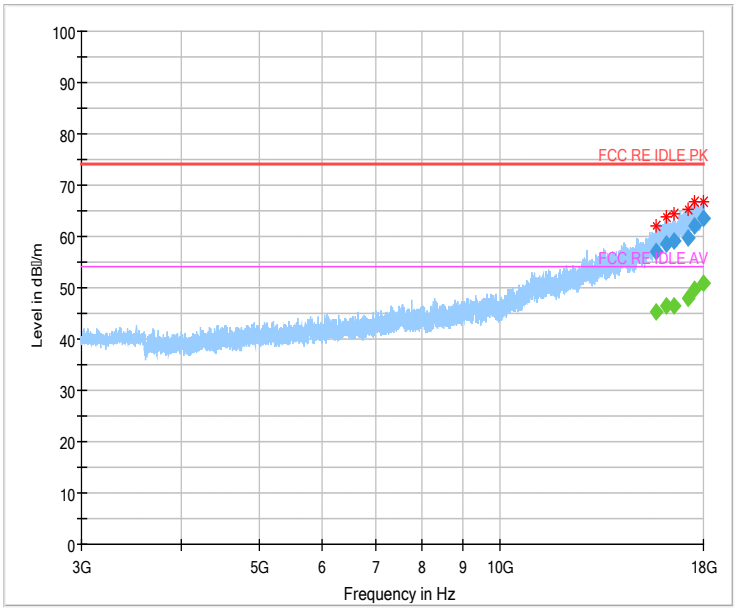
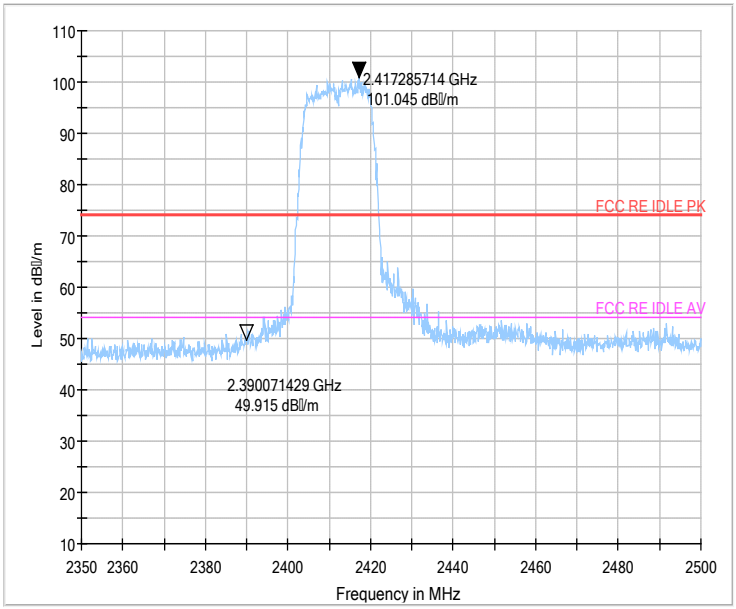
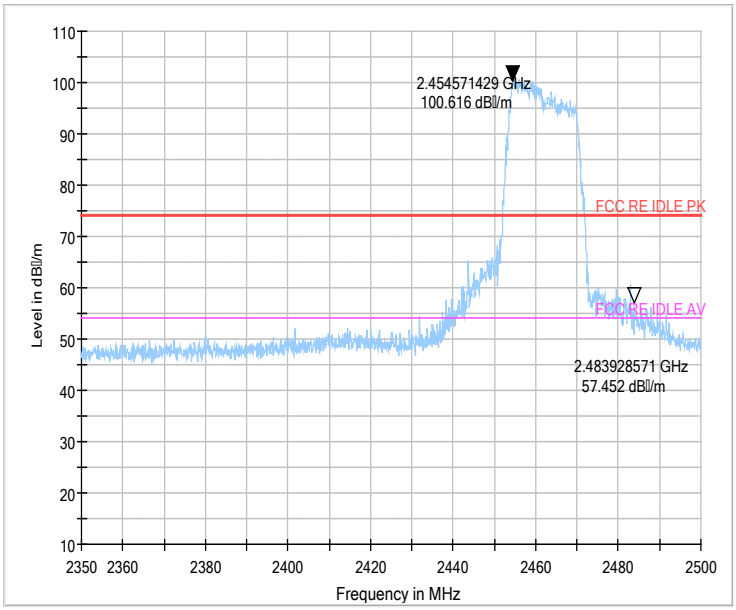


Fig 61. Radiated Spurious Emission (802.11b,Ch6,3GHz~18GHz)



Peak

Fig 62. Radiated emission (Power): 802.11g, low channel



Peak

Fig 63. Radiated emission (Power): 802.11g, high channel

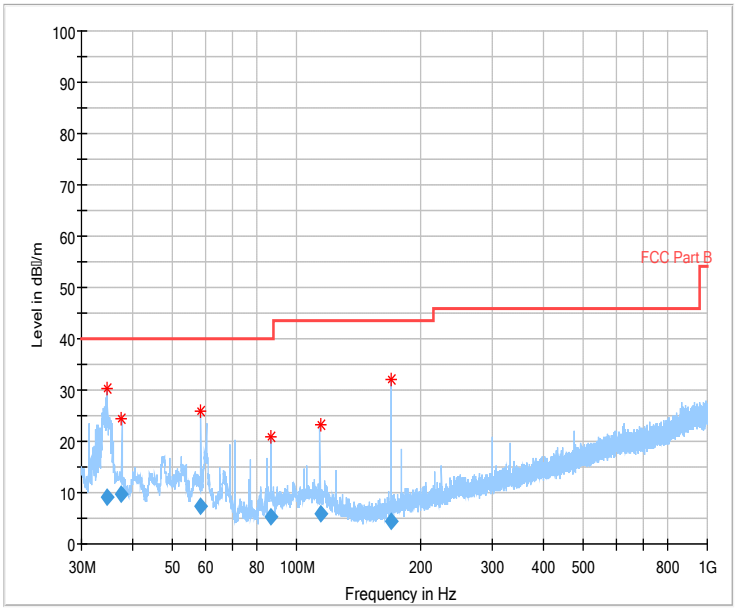


Fig 64. Radiated Spurious Emission (802.11g,Ch6,30MHz~1GHz)

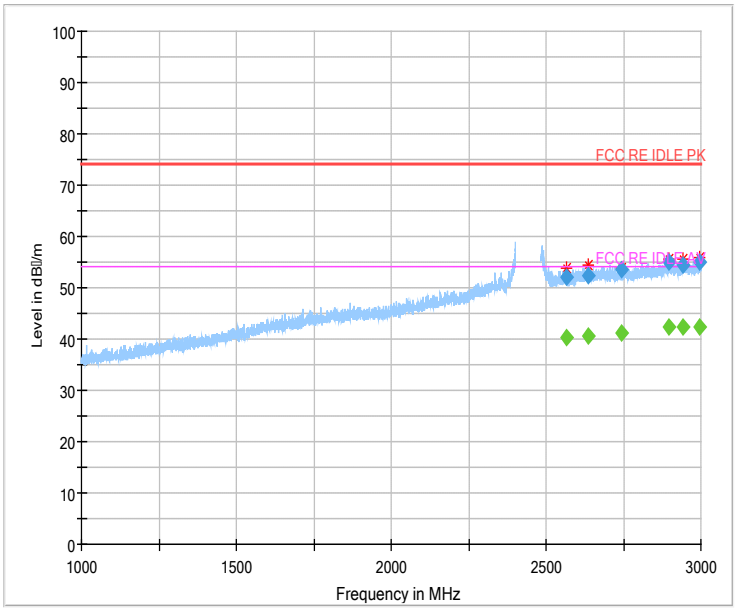


Fig 65. Radiated Spurious Emission (802.11g,Ch6,1GHz~3GHz)

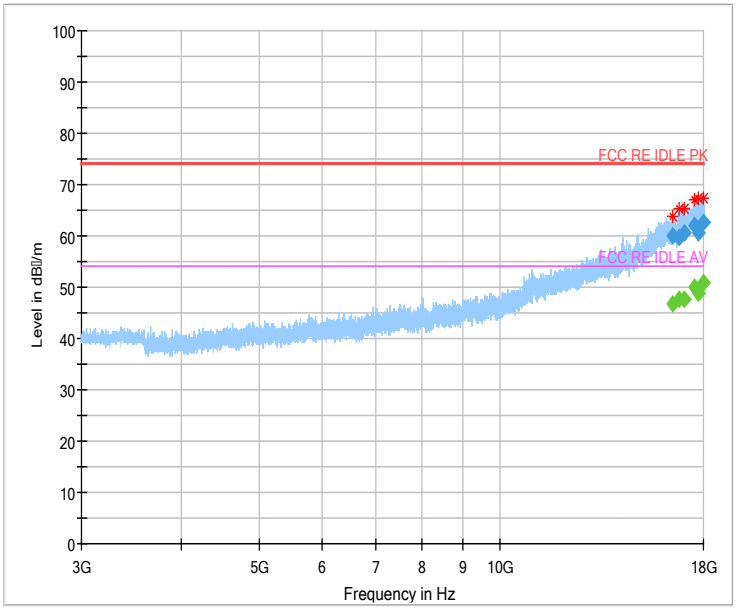
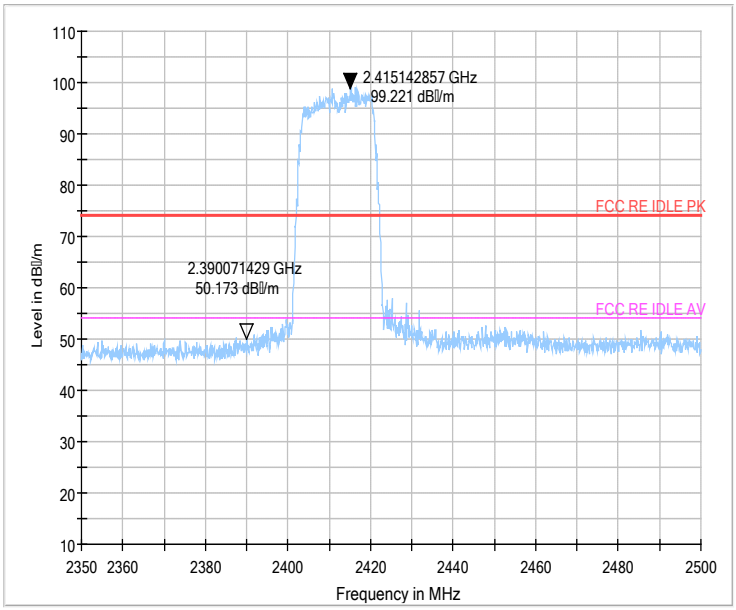
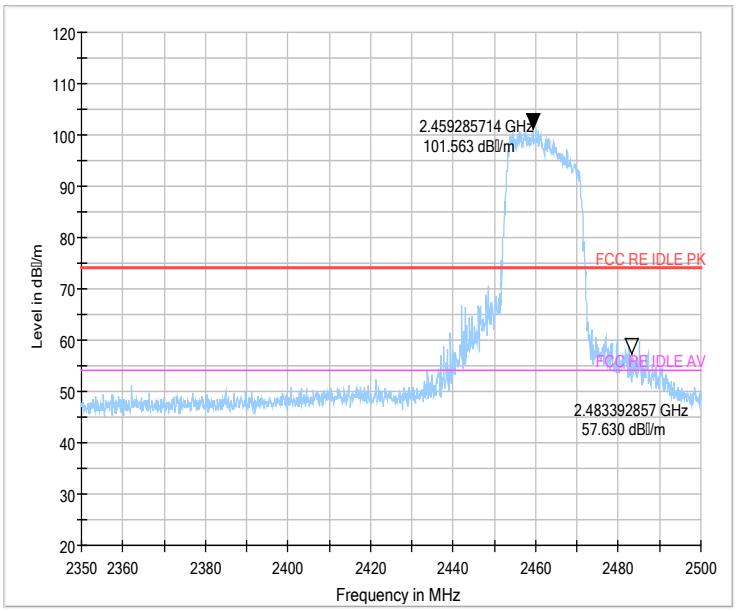


Fig 66. Radiated Spurious Emission (802.11g,Ch6,3GHz~18GHz)



Peak

Fig 67. Radiated emission (Power): 802.11n, low channel



Peak

Fig 68. Radiated emission (Power): 802.11n, high channel

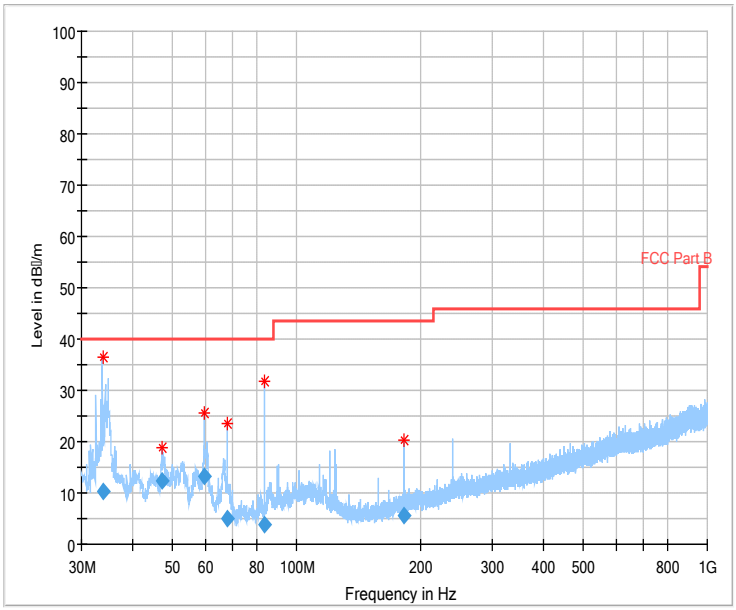


Fig 69. Radiated Spurious Emission (802.11 n-20MHz,Ch1,30MHz~1GHz)

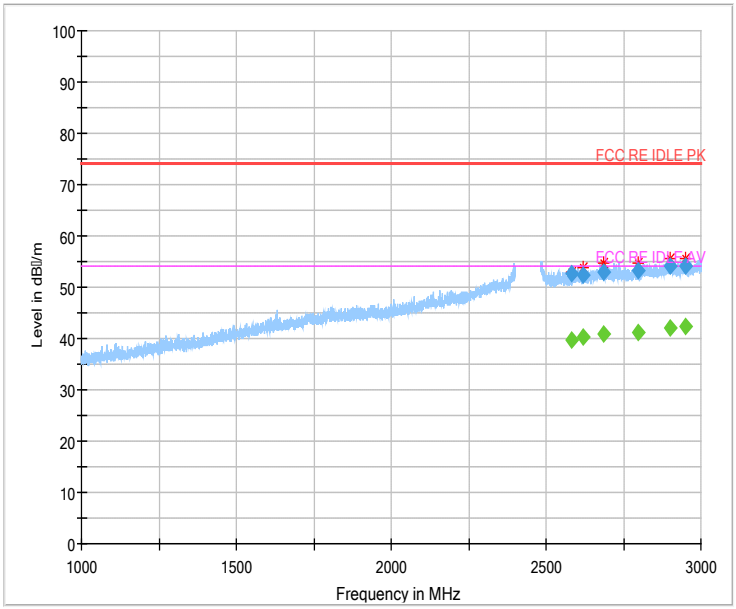


Fig 70. Radiated Spurious Emission (802.11 n-20MHz,Ch1,1GHz~3GHz)

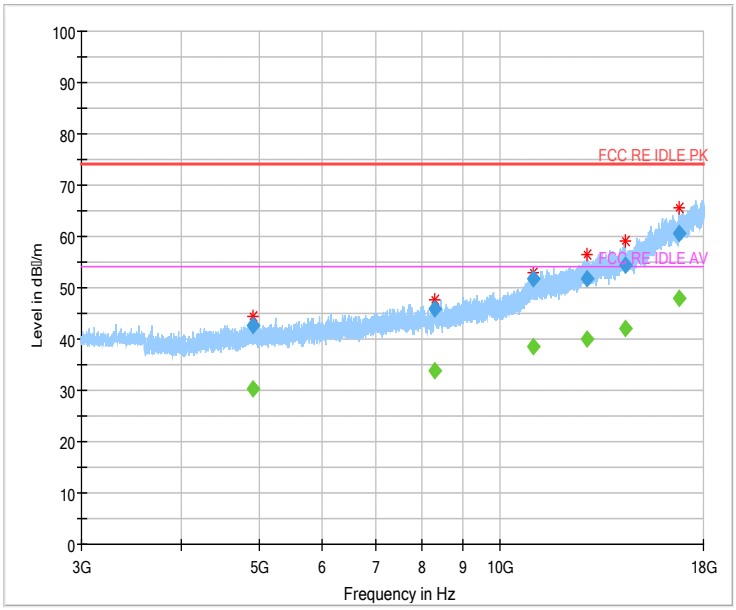


Fig 71. Radiated Spurious Emission (802.11 n-20MHz,Ch1,3GHz~18GHz)

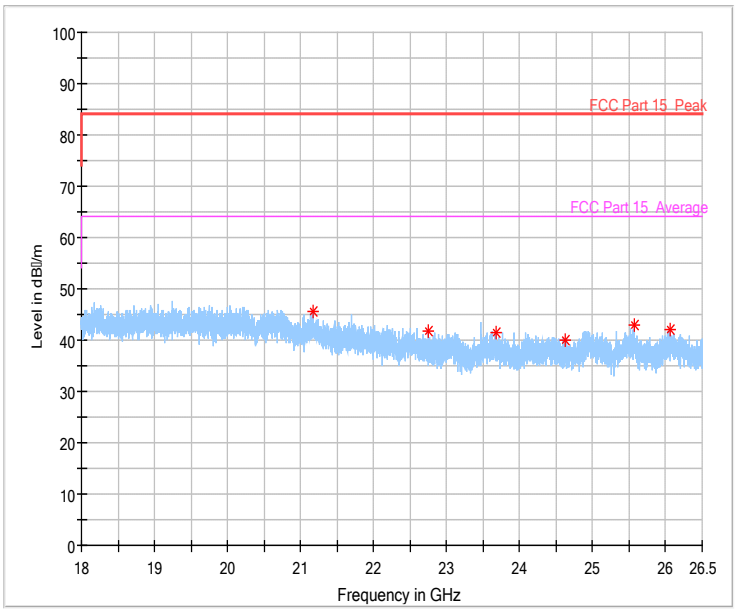


Fig 72. Radiated emission: GFSK, 18 GHz – 26.5 GHz

Secondary supply(N16)

802.11b mode

Ch6 30MHz~1GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
34.626828	9.19	-25.9	35.09	V

57.449836	8.07	-25	33.07	H
62.132608	6.41	-25.8	32.21	V
107.171704	7.29	-23.8	31.09	H
128.848316	3.7	-27	30.7	V
243.366572	7.68	-22.4	30.08	H

Ch6 1GHz~3GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
2603.625385	52.63	9.4	43.23	H
2675.533846	53.07	10	43.07	V
2732.499039	53.09	10.1	42.99	H
2823.310577	54.17	10.6	43.57	V
2875.535192	53.74	11.1	42.64	V
2989.009808	55.33	11.7	43.63	H

Ch6 3GHz~18GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
14271.93353	55.2	20.4	34.8	H
15453.9598	57.17	23.3	33.87	V
16010.031	58.92	25.3	33.62	V
16496.67367	59.07	26.9	32.17	H
17543.91453	62.07	29.3	32.77	H
17997.744	63.25	30.1	33.15	V

802.11g

Ch6 30MHz~1GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
34.838208	8.4	-25.9	34.3	V
47.35488	14.19	-24.9	39.09	V

82.248248	4.53	-27.6	32.13	V
115.098024	6.21	-24.6	30.81	H
124.959712	11.96	-26.3	38.26	V
891.219616	21.51	-7.6	29.11	H

Ch6 1GHz~3GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
2682.159039	53.45	10	43.45	V
2747.56077	54.07	10.1	43.97	H
2823.192693	53.95	10.6	43.35	V
2873.618269	54.32	11.1	43.22	H
2964.805192	54.19	11.4	42.79	V
2980.748269	54.45	11.6	42.85	H

Ch6 3GHz~18GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
14304.33973	54.98	20.7	34.28	H
14918.9624	56.34	22.1	34.24	H
15983.76193	58.98	25.2	33.78	V
16894.21493	59.64	27.1	32.54	H
17626.33093	61.3	29.3	32	H
17943.5442	63.78	29.9	33.88	V

802.11n-20MHz

Ch1 30MHz~1GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
34.745504	8.42	-25.9	34.32	V
46.87004	10.77	-24.9	35.67	V
64.57772	5.78	-26.6	32.38	V
193.435104	5.16	-24.8	29.96	H

205.950088	5.79	-24.4	30.19	V
998.066696	22.45	-6.6	29.05	H

Ch1 1GHz~3GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
2543.745193	52.73	8.9	43.83	H
2662.570193	53.1	10	43.1	V
2761.497307	53.67	10.2	43.47	V
2844.056731	53.35	10.8	42.55	H
2912.761731	53.79	11.3	42.49	V
2973.458461	54.12	11.5	42.62	H

Ch1 3GHz~18GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
14274.5698	54.96	20.4	34.56	V
15423.02513	57.54	23.2	34.34	H
16133.7034	58.8	25	33.8	V
16811.94967	60.42	27.4	33.02	H
17530.11527	61.83	29.3	32.53	V
17988.65227	62.52	30.1	32.42	V

All Ch 18GHz~26.5GHz

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)	Polarity
21179.000000	45.48	6.97	38.51	V
22748.950000	41.63	3.05	38.58	H
23684.800000	41.59	3.05	38.54	H
24633.400000	40.05	3.05	37.00	V
25567.550000	43.01	2.90	40.11	H

26066.500000	42.06	2.90	39.16	V

Test graphs as below:

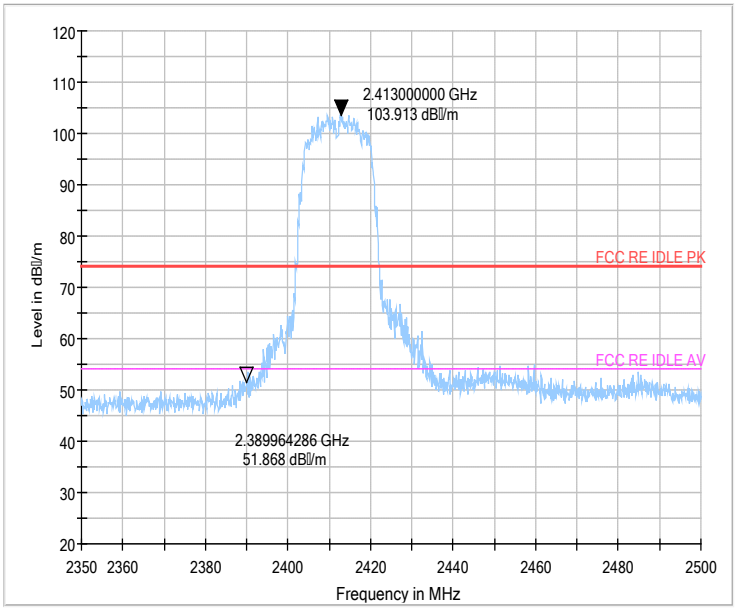


Fig 73. Radiated emission (Power): 802.11b, low channel

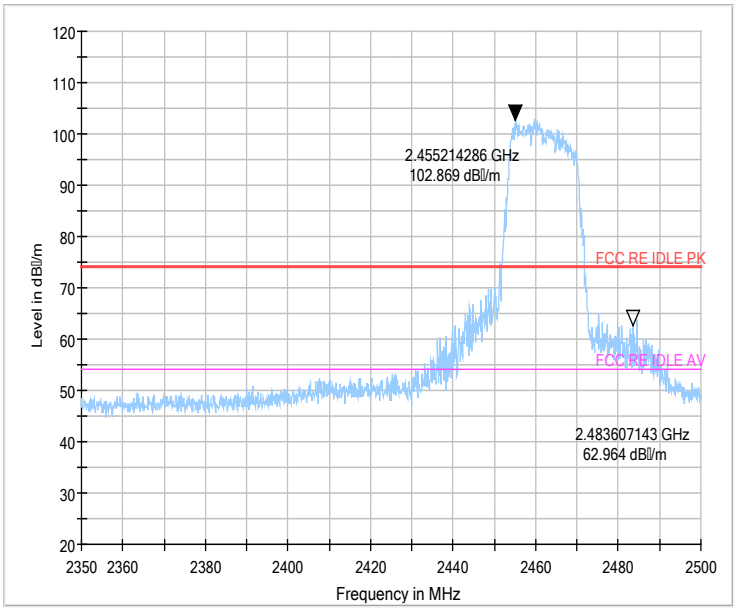


Fig 74. Radiated emission (Power): 802.11b, high channel

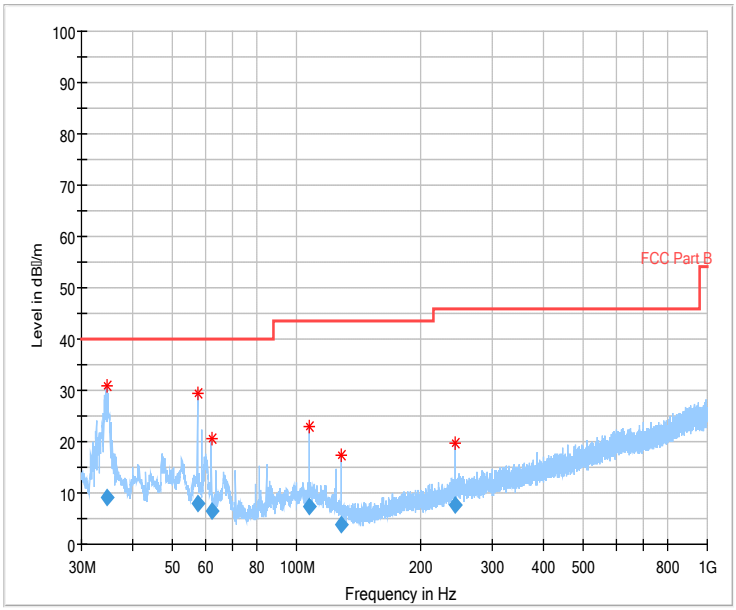


Fig 75. Radiated Spurious Emission (802.11b,Ch6,30MHz~1GHz)

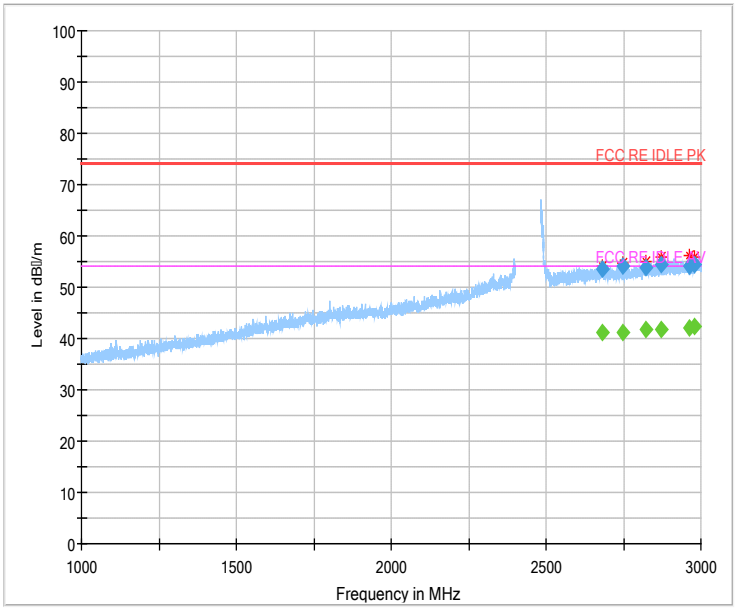


Fig 76. Radiated Spurious Emission (802.11b,Ch6,1GHz~3GHz)

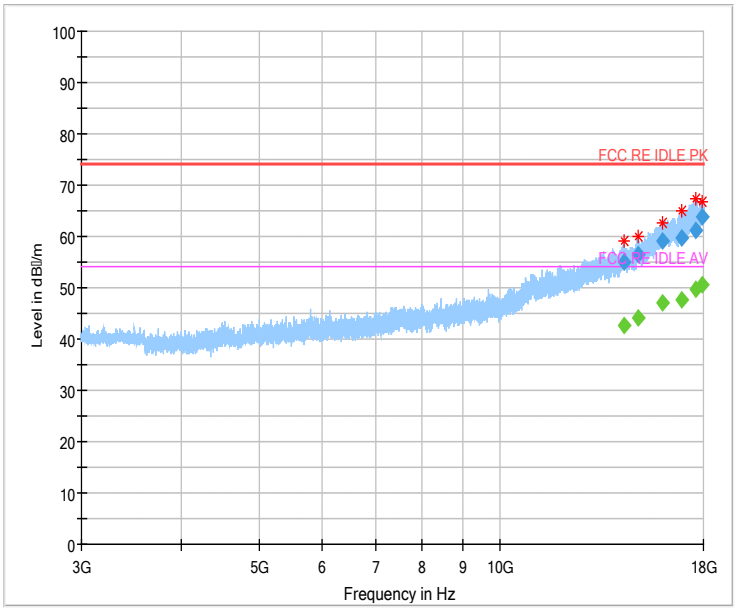
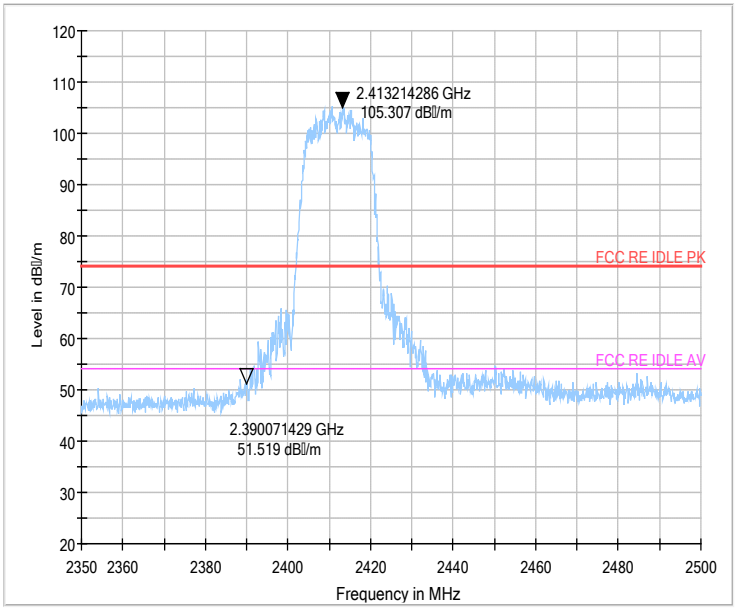
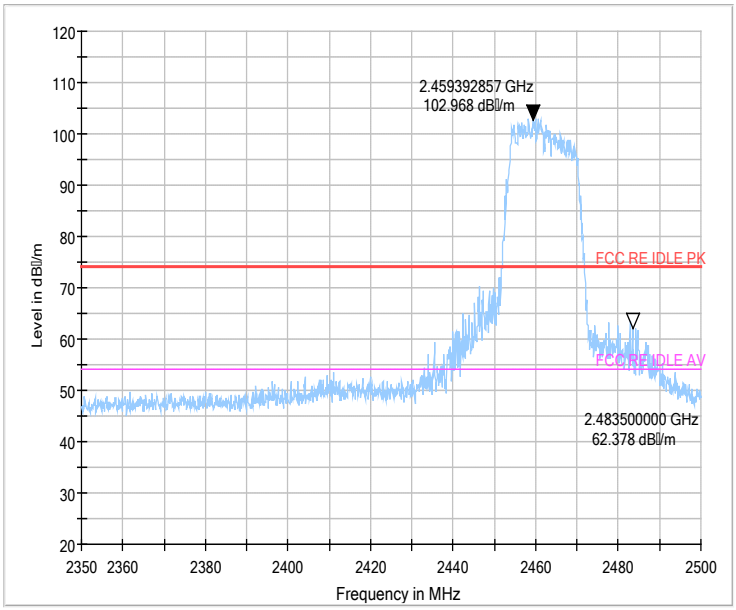


Fig 77. Radiated Spurious Emission (802.11b,Ch6,3GHz~18GHz)



Peak

Fig 78. Radiated emission (Power): 802.11g, low channel



Peak

Fig 79. Radiated emission (Power): 802.11g, high channel

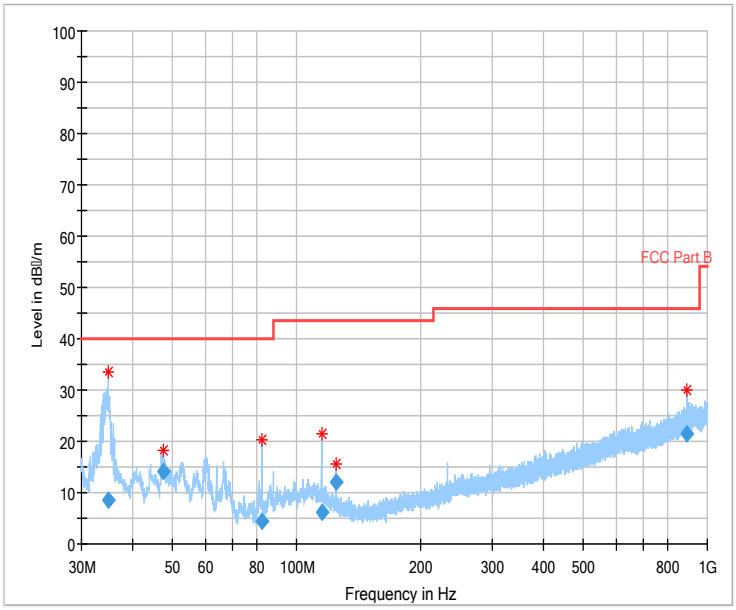


Fig 80. Radiated Spurious Emission (802.11g,Ch6,30MHz~1GHz)

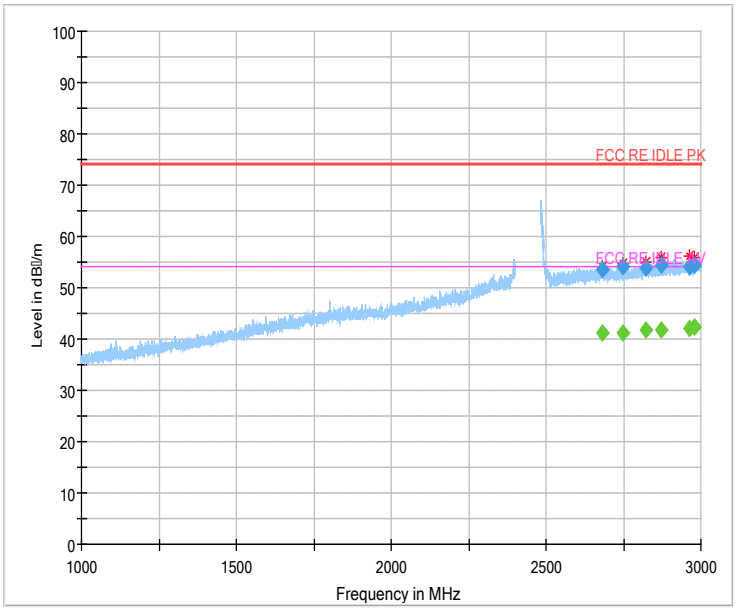


Fig 81. Radiated Spurious Emission (802.11g,Ch6,1GHz~3GHz)

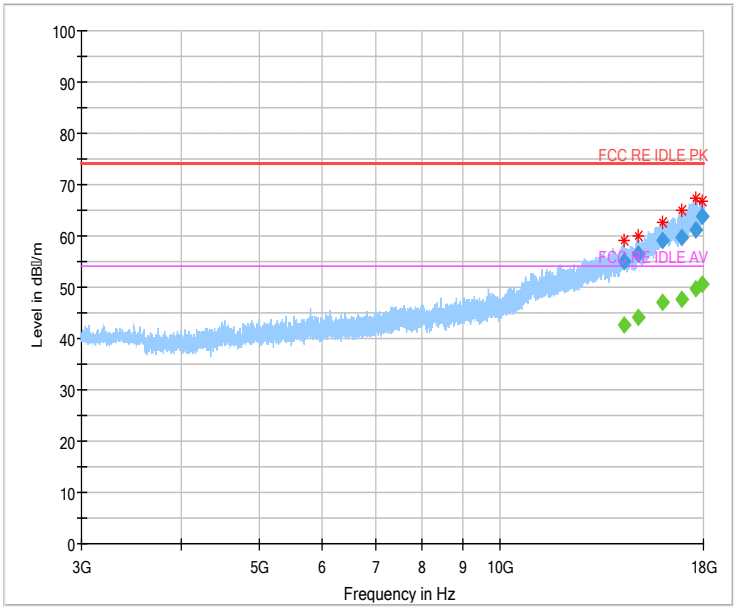
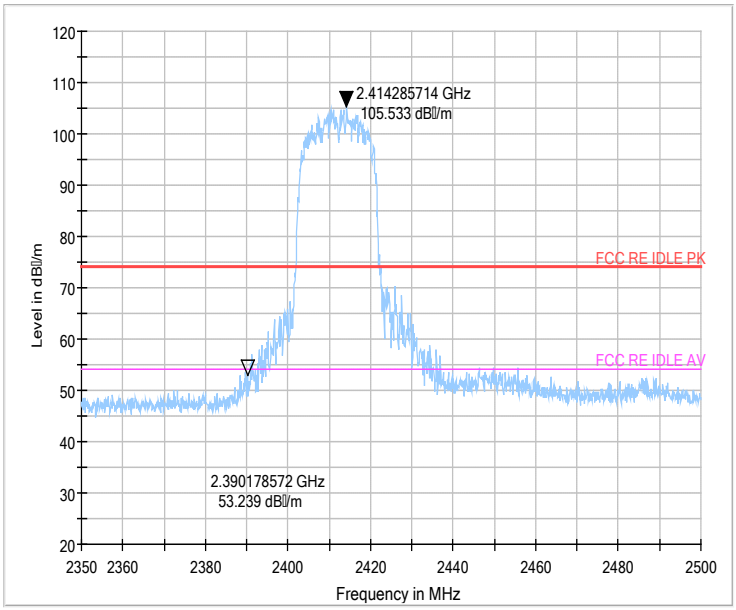
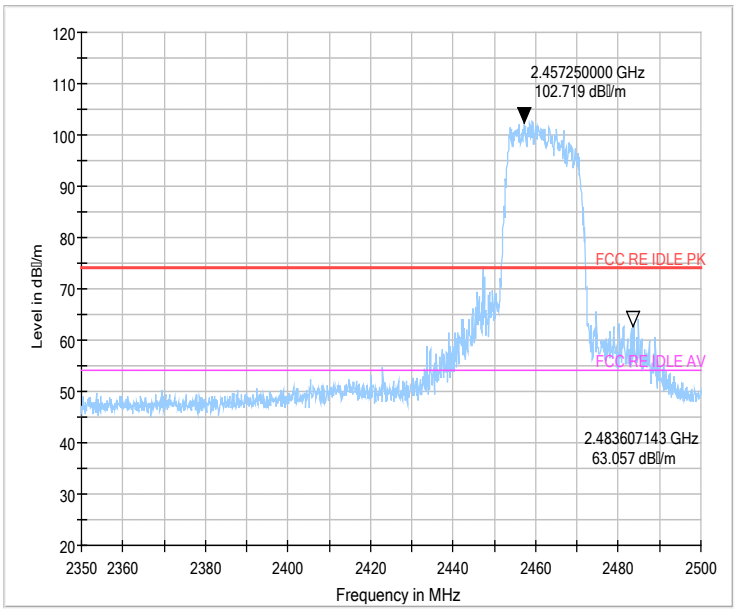


Fig 82. Radiated Spurious Emission (802.11g,Ch6,3GHz~18GHz)



Peak

Fig 83. Radiated emission (Power): 802.11n, low channel



Peak

Fig 84. Radiated emission (Power): 802.11n, high channel

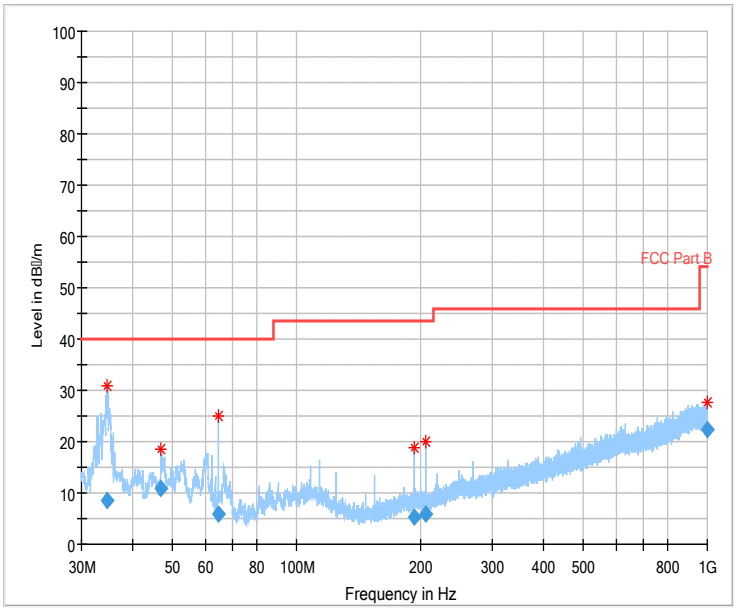


Fig 85. Radiated Spurious Emission (802.11 n-20MHz,Ch1,30MHz~1GHz)

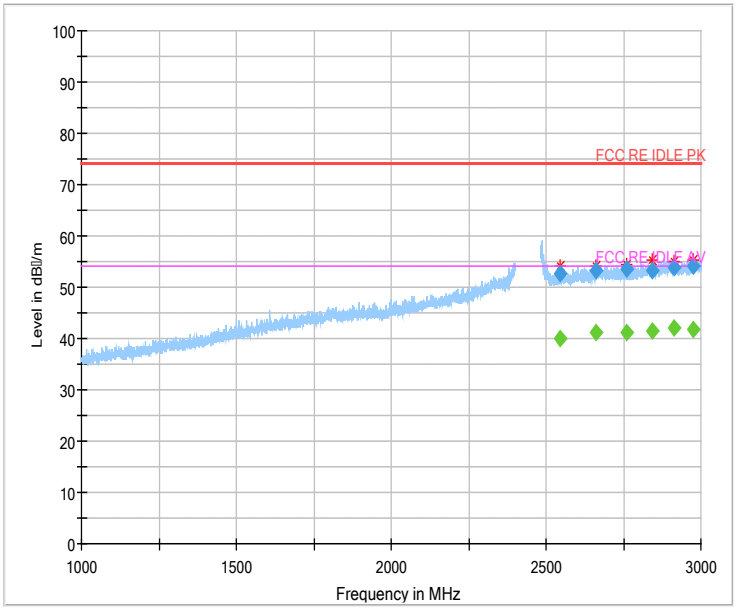


Fig 86. Radiated Spurious Emission (802.11 n-20MHz,Ch1,1GHz~3GHz)

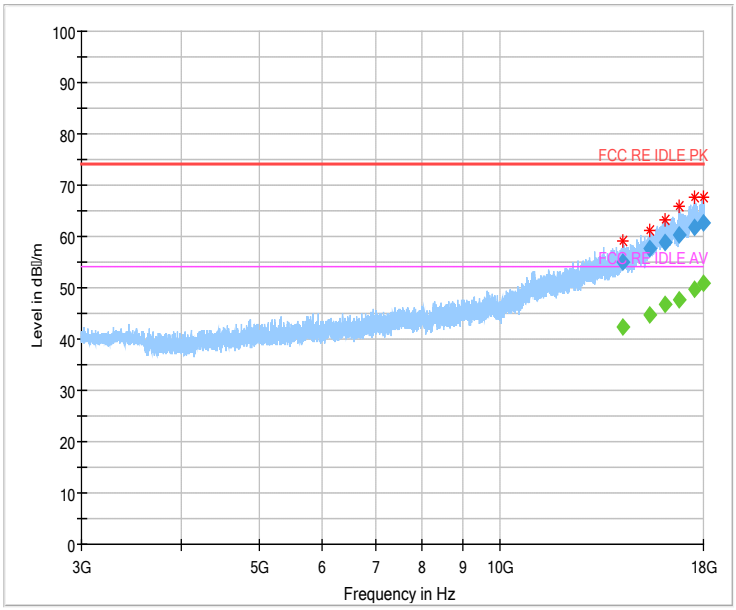


Fig 87. Radiated Spurious Emission (802.11 n-20MHz,Ch1,3GHz~18GHz)

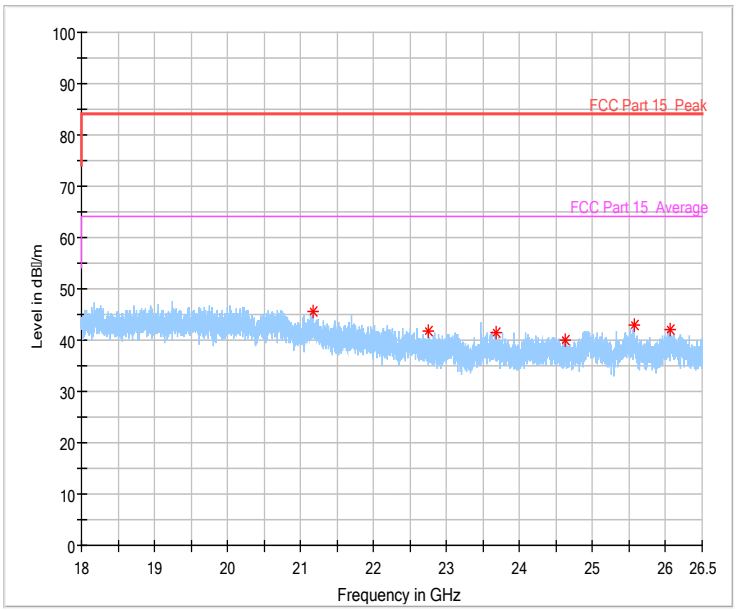


Fig 88. Radiated emission: GFSK, 18 GHz – 26.5 GHz

6.6.4 The Result of AC Conducted Emission

Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator 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, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of

the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz) Conducted limit (dBμV)
Quasi-peak Average

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

(b) The limit shown in paragraph (a) of this section shall not apply to carrier current systems operating as intentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 μV within the frequency band 535-1705 kHz, as measured using a 50 μH/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in §15.205, §15.209, §15.221, §15.223, or §15.227, as appropriate.

(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provisions for, the use of battery chargers which permit operating while charging, AC adapters or battery eliminators or that connect to the AC power lines indirectly, obtainig their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

Main supply(N06)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)
0.217162	53.7	9.6	44.1
0.258206	48.58	9.6	38.98

1.064156	38.47	9.6	28.87
1.168631	41.17	9.7	31.47
4.702125	39.77	9.7	30.07
5.478225	39.2	9.7	29.5

Secondary supply(N016)

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	PMea(dBuV/m)
0.459694	41.83	9.6	32.23
1.179825	39.58	9.7	29.88
1.429819	36.41	9.7	26.71
2.814112	29.77	9.7	20.07
3.76185	29.72	9.7	20.02
24.373275	32.81	10	22.81

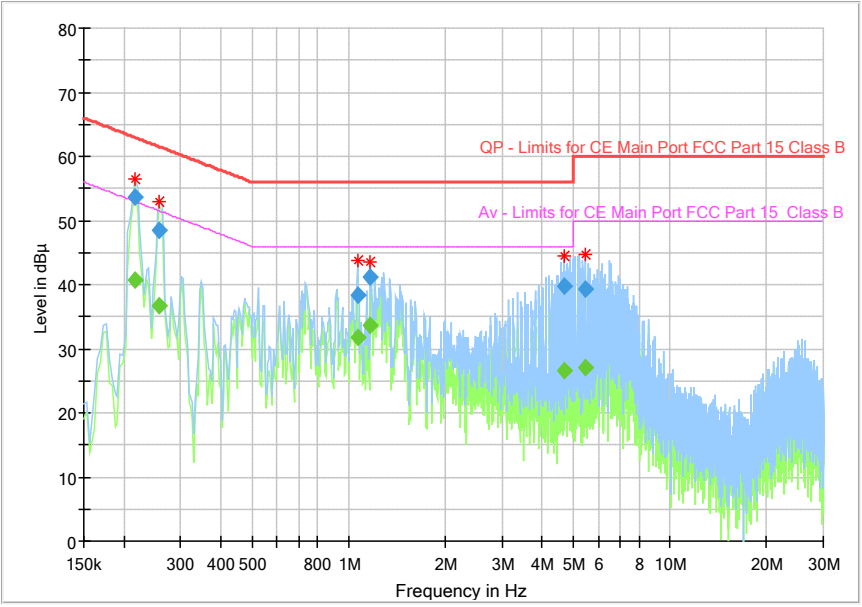


Fig 89. AC Conducted Emission

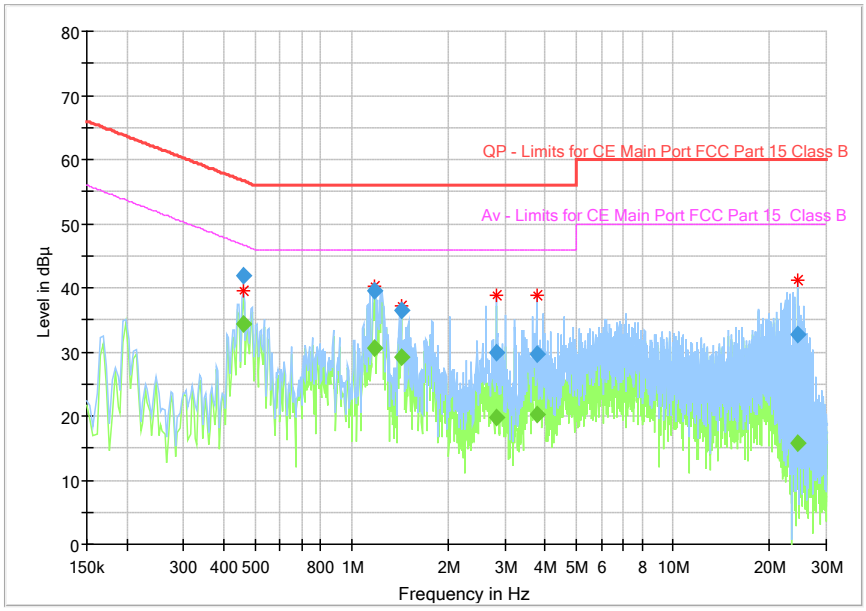


Fig 90. AC Conducted Emission

7. Test Equipments and Ancillaries Used For Tests

The test equipments and ancillaries used are as follows.

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Date	Cal.interval
1	Vector Signal Analyser	FSQ26	101096	Rohde&Schwarz	2015-05-13	1
2	DC Power Supply	ZUP60-14	LOC-220Z006-0007	TDL-Lambda	2015-05-13	1
3	Power Meter	NRP2	101804	Rohde&Schwarz	2015-08-313	1
4	Wideband Power	Z81	100241	Rohde&Schwarz	2015-05-04	1

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Date	Cal.interval
1	Universal Radio Communicati	CMU200	123126	R&S	2015-05-13	1
2	Test Receiver	ESU40	100307	R&S	2015-05-13	1
3	Trilog Antenna	VULB9163	VULB9163-515	Schwarzbeck	2014-11-05	3
4	Double Ridged Guide Antenna	ETS-3117	00135885	ETS	2014-05-06	3
5	2-Line V-Network	ENV216	101380	R&S	2015-05-13	1

Anechoic chamber

Fully anechoic chamber by Frankonia German.

8. Test Environment

Shielding Room1 (6.0 meters×3.0 meters×2.7 meters) did not exceed following limits along the conducted RF performance testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

Control room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. =30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

Fully-anechoic chamber1 (6.8 meters×3.08 meters×3.53 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

Fully-anechoic chamber2 (Tapered Section: 8.75 meters×3.66 meters×3.66 meters, Rectangular Section: 7.32 meters×3.97 meters×3.66 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 30MHz to 40000MHz

ANNEX A. Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

ANNEX B. Accreditation Certificate

Accredited Laboratory

A2LA has accredited

EAST CHINA INSTITUTE OF TELECOMMUNICATIONS

Shanghai, People's Republic of China

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of any additional program requirements in the field of Electrical. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 10th day of December 2014.

President & CEO
For the Accreditation Council
Certificate Number 3682.01
Valid to February 28, 2017

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

************End The Report************