

WiFi Test Report

Applicant: Shenzhen Emperor Technology Company Limited

Address of Applicant: F9, Block C, Building 1, Software Industry Base, Nanshan District, Shenzhen, China

Manufacturer: Shenzhen Emperor Technology Company Limited

Address of Manufacturer: F9, Block C, Building 1, Software Industry Base, Nanshan District, Shenzhen, China

Factory: Shenzhen Emperor Technology Company Limited

Address of Factory: F9, Block C, Building 1, Software Industry Base, Nanshan District, Shenzhen, China

Equipment Under Test (EUT):

Product: ID tablet

Model No.: EMP2920

Brand Name: 

FCC ID: 2AKP2-2920A

Standards: 47 CFR Part 15, Subpart C

Date of Test: 2017-02-27 to 2017-03-09

Date of Issue: 2017-03-09

Report No. : FCC17050447A-2

Test Result : PASS

Tested By:


(Daisy Qin)

Reviewed By:


(Sol Qin)

Approved By:


(Michal Ling)

Prepared by:

QTC Certification & Testing Co., Ltd.

2nd Floor, Bl Building, Fengyeyuan Industrial Plant,, Liuxian 2st.
Road, Xin'an Street, Bao'an District, Shenzhen, 518000

Registration Number: 588523

2 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
FCC17050447A-2	Rev.01	Initial report	2017-03-09

3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15, Subpart C Section 15.203/15.247 (c)	ANSI C63.10 2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15, Subpart C Section 15.207	ANSI C63.10 2013	PASS
Conducted Peak Output Power	47 CFR Part 15, Subpart C Section 15.247 (b)(3)	KDB558074 D01 v03r05	PASS
6dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section 15.247 (a)(2)	KDB558074 D01 v03r05	PASS
Power Spectral Density	47 CFR Part 15, Subpart C Section 15.247 (e)	KDB558074 D01 v03r05	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15, Subpart C Section 15.247(d)	KDB558074 D01 v03r05	PASS
RF Conducted Spurious Emissions	47 CFR Part 15, Subpart C Section 15.247(d)	KDB558074 D01 v03r05	PASS
Radiated Spurious Emissions	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10 2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10 2013	PASS

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5 General Information

5.1 Client Information

Applicant:	Shenzhen Emperor Technology Company Limited
Address of Applicant:	F9, Block C, Building 1, Software Industry Base, Nanshan District, Shenzhen, China
Manufacturer:	Shenzhen Emperor Technology Company Limited
Address of Manufacturer:	F9, Block C, Building 1, Software Industry Base, Nanshan District, Shenzhen, China
Factory:	Shenzhen Emperor Technology Company Limited
Address of Factory:	F9, Block C, Building 1, Software Industry Base, Nanshan District, Shenzhen, China

5.2 General Description of EUT

Product Name:	ID tablet
Model No.:	EMP2920
Trade Mark:	
Hardware version:	V1.0
Software version:	EMP2920_J979_V1.0_20170224
Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels
Channel Separation:	5MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM, QPSK,BPSK)
Sample Type:	portable production
Test Software of EUT:	RF test (manufacturer declare)
Antenna Type:	Internal antenna
Antenna Gain:	1.0dBi
Power Supply:	Rechargeable Battery: 3.7VDC/8000mAh AC adapter: Model No.: HYX-05300W Input:100-240VAC 50/60Hz 0.5A Output: DC5V 3000mA

Operation Frequency each of channel(802.11b/g/n HT20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Operation Frequency each of channel(802.11n HT40)					
Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2422MHz	4	2437MHz	7	2452MHz
2	2427MHz	5	2442MHz		
3	2432MHz	6	2447MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

For 802.11b/g/n (HT20):

Channel	Frequency
The Lowest channel	2412MHz
The Middle channel	2437MHz
The Highest channel	2462MHz

For 802.11n (HT40):

Channel	Frequency
The Lowest channel	2422MHz
The Middle channel	2437MHz
The Highest channel	2452MHz

The output power setting of EUT is set in the factory and followed the max. peak level in below.

802.11b	18dBm±1.0dB
802.11g	17dBm±1.0dB
802.11n(HT20)	17dBm±1.0dB
802.11n(HT40)	16dBm±1.0dB

Note:

1. Software (RF test) provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.
2. The rechargeable battery is fully-charged batter.

5.3 Test Environment and Mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1008 mbar
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.
Operated Mode for Worst Duty Cycle:	
Test Signal Duty Cycle(x)	Average correction factor(dB)
100% - IEEE802.11b	0
100% - IEEE802.11g	0
100% - IEEE802.11n (HT20)	0
100% - IEEE802.11n (HT40)	0

5.4 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	Remark	FCC certification
Adapter	HEYIXUN	HYX-053000W	Provide by client	DOC

5.5 Test Location

The above equipment was tested by QTC Certification & Testing Co., Ltd.

2nd Floor, BI Building, Fengyeyuan Industrial Plant,, Liuxian 2st. Road, Xin'an Street, Bao'an District,,Shenzhen,518000

Registration Number: 588523

5.6 Statement of the measurement uncertainty

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	±3.2dB
2	RF power, conducted	±0.16dB
3	Spurious emissions, conducted	±0.21dB
4	All emissions, radiated(<1G)	±4.7dB
5	All emissions, radiated(>1G)	±4.7dB
6	Temperature	±0.5°C
7	Humidity	±2%

5.7 Equipment List

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	Calibration Date	Calibration Due.
EMI Test Receiver	R&S	ESCI	100005	08/19/2016	08/18/2017
LISN	AFJ	LS16	16010222119	08/19/2016	08/18/2017
LISN(EUT)	Mestec	AN3016	04/10040	08/19/2016	08/18/2017
Universal Radio Communication Tester	R&S	CMU 200	1100.0008.02	08/19/2016	08/18/2017
Coaxial cable	Megalon	LMR400	N/A	08/12/2016	08/11/2017
GPIB cable	Megalon	GPIB	N/A	08/12/2016	08/11/2017
Spectrum Analyzer	R&S	FSU	100114	08/19/2016	08/18/2017
Pre Amplifier	H.P.	HP8447E	2945A02715	10/13/2016	10/12/2017
Pre-Amplifier	CDSI	PAP-1G18-38	--	10/13/2016	10/12/2017
Bi-log Antenna	SUNOL Sciences	JB3	A021907	09/13/2016	09/12/2017
9*6*6 Anechoic	--	--	--	08/21/2016	08/20/2017
Horn Antenna	COMPLIANCE ENGINEERING	CE18000	--	09/13/2016	09/12/2017
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-631	08/23/2016	08/22/2017
Cable	TIME MICROWAVE	LMR-400	N-TYPE04	04/25/2016	04/24/2017
System-Controller	CCS	N/A	N/A	N.C.R	N.C.R
Turn Table	CCS	N/A	N/A	N.C.R	N.C.R
Antenna Tower	CCS	N/A	N/A	N.C.R	N.C.R
RF cable	Murata	MXHQ87WA300 0	-	08/21/2016	08/20/2017
Loop Antenna	EMCO	6502	00042960	08/22/2016	08/21/2017
Horn Antenna	SCHWARZBECK	BBHA 9170	1123	08/19/2016	08/18/2017
Power meter	Anritsu	ML2487A	6K00003613	08/23/2016	08/22/2017
Power sensor	Anritsu	MX248XD	--	08/19/2016	08/18/2017

6 Test results and Measurement Data

6.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
15.203 requirement:	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
15.247(b) (4) requirement:	The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
EUT Antenna:	
The antenna is internal antenna with ipex connector. The best case gain of the antenna is 1.0dBi.	

6.2 Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207		
Test Method:	ANSI C63.10: 2013		
Test Frequency Range:	150kHz to 30MHz		
Limit:	Frequency range (MHz)		Limit (dBuV)
			Quasi-peak
	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.			
Test Procedure:	<ol style="list-style-type: none"> 1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. 		
Test Setup:			
Exploratory Test Mode:	<p>Transmitting with all kind of modulations, data rates at lowest, middle and highest channel. Charge + Transmitting mode.</p>		

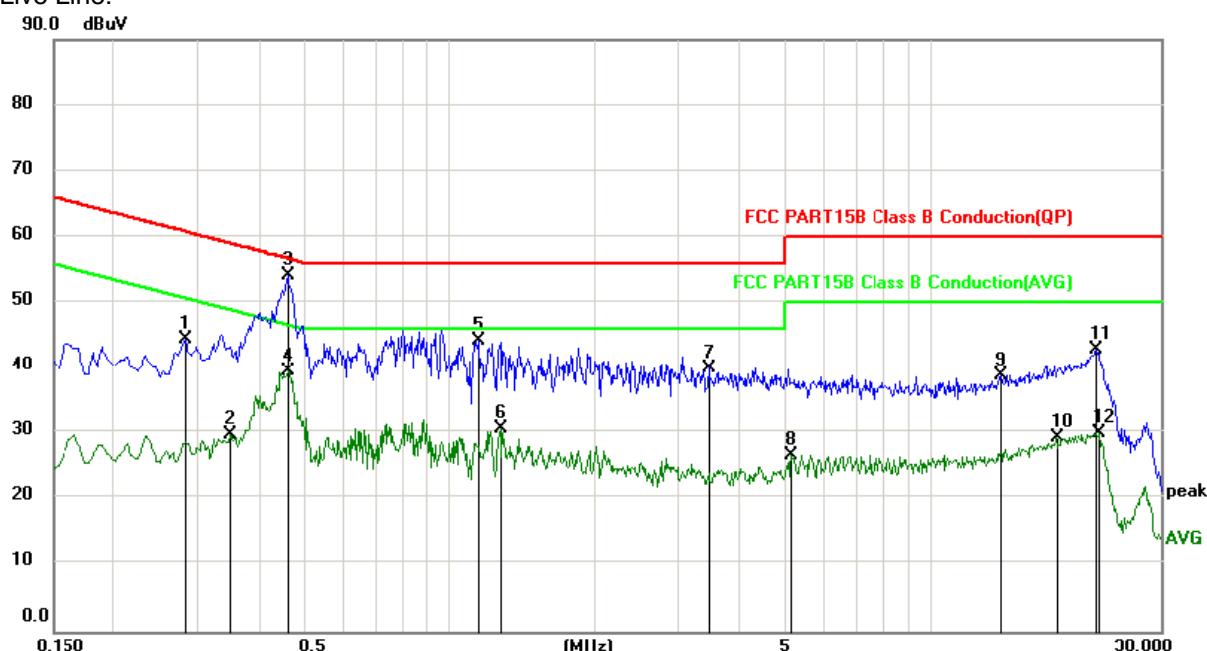
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate of 802.11b at lowest channel is the worst case. Charge + Transmitting mode. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Voltage:	AC120V/60Hz
Test Results:	Pass

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

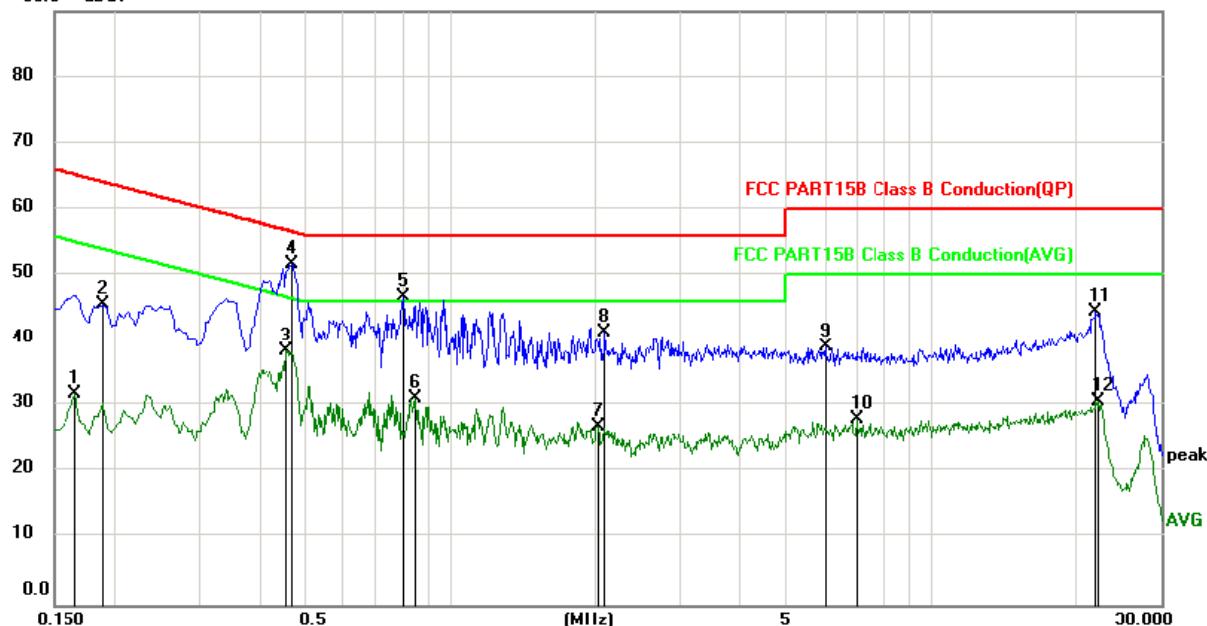
Live Line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dB	Detector	
1		0.2819	34.64	9.74	44.38	60.76	-16.38	peak
2		0.3500	19.97	9.74	29.71	48.96	-19.25	AVG
3	*	0.4620	44.39	9.74	54.13	56.66	-2.53	peak
4		0.4620	29.67	9.74	39.41	46.66	-7.25	AVG
5		1.1500	34.35	9.75	44.10	56.00	-11.90	peak
6		1.2820	20.89	9.75	30.64	46.00	-15.36	AVG
7		3.4580	30.28	9.77	40.05	56.00	-15.95	peak
8		5.1300	16.91	9.79	26.70	50.00	-23.30	AVG
9		13.9620	29.06	9.83	38.89	60.00	-21.11	peak
10		18.1860	19.42	9.87	29.29	50.00	-20.71	AVG
11		22.1180	33.02	9.88	42.90	60.00	-17.10	peak
12		22.4420	20.24	9.88	30.12	50.00	-19.88	AVG

Neutral Line:

90.0 dBuV

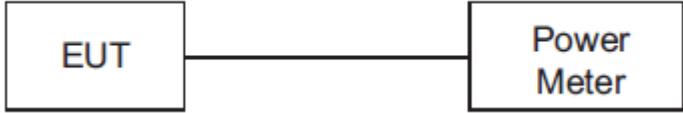


No.	Mk.	Freq. MHz	Reading	Correct	Measure-	Limit dBuV	Over dB	Over Detector
			Level dBuV	Factor dB	ment dBuV			
1		0.1660	22.03	9.79	31.82	55.16	-23.34	AVG
2		0.1900	35.66	9.80	45.46	64.04	-18.58	peak
3		0.4580	28.66	9.80	38.46	46.73	-8.27	AVG
4	*	0.4700	41.79	9.80	51.59	56.51	-4.92	peak
5		0.7980	36.81	9.80	46.61	56.00	-9.39	peak
6		0.8460	21.34	9.80	31.14	46.00	-14.86	AVG
7		2.0300	16.92	9.88	26.80	46.00	-19.20	AVG
8		2.0940	31.49	9.88	41.37	56.00	-14.63	peak
9		6.0060	29.12	9.84	38.96	60.00	-21.04	peak
10		6.9580	18.19	9.85	28.04	50.00	-21.96	AVG
11		22.0580	34.43	9.92	44.35	60.00	-15.65	peak
12		22.1820	20.85	9.92	30.77	50.00	-19.23	AVG

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

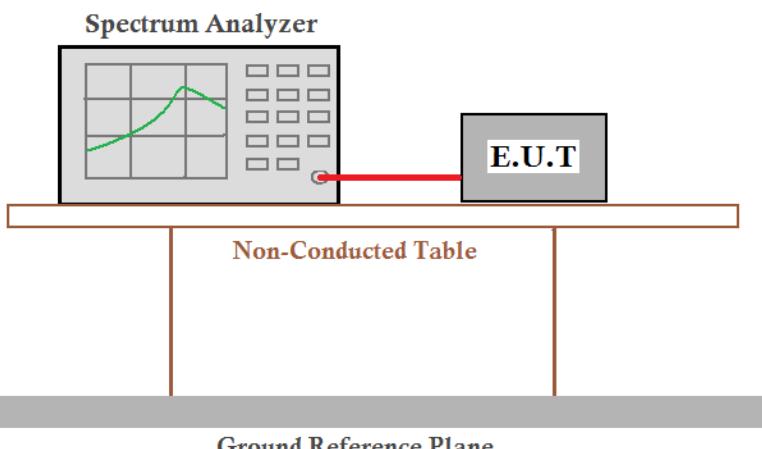
6.3 Conducted Peak Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)
Test Method:	KDB558074 D01 v03r05
Test Setup:	
Test Instruments:	Refer to section 5.10 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 13.5Mbps of rate is the worst case of 802.11n(HT40) Only the worst case is recorded in the report.
Limit:	30dBm
Test Results:	Pass

Measurement Data

802.11b mode				
Test channel	Peak Output Power (dBm)	Average Output Power (dBm)	Limit (dBm)	Result
Lowest	18.37	16.39	30.00	Pass
Middle	18.62	16.77	30.00	Pass
Highest	18.57	16.67	30.00	Pass
802.11g mode				
Test channel	Peak Output Power (dBm)	Average Output Power (dBm)	Limit (dBm)	Result
Lowest	17.63	15.51	30.00	Pass
Middle	17.91	15.75	30.00	Pass
Highest	17.53	15.55	30.00	Pass
802.11n(HT20)mode				
Test channel	Peak Output Power (dBm)	Average Output Power (dBm)	Limit (dBm)	Result
Lowest	17.54	15.57	30.00	Pass
Middle	17.82	15.66	30.00	Pass
Highest	17.27	15.47	30.00	Pass
802.11n(HT40)mode				
Test channel	Peak Output Power (dBm)	Average Output Power (dBm)	Limit (dBm)	Result
Lowest	16.35	14.49	30.00	Pass
Middle	16.63	14.73	30.00	Pass
Highest	16.33	14.45	30.00	Pass

6.4 6dB Occupy Bandwidth

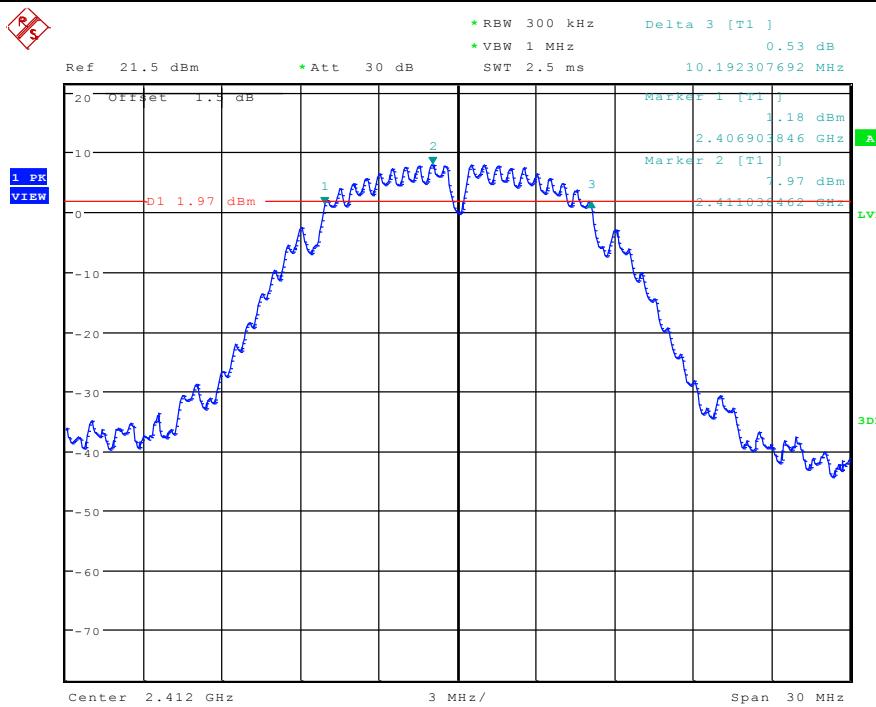
Test Requirement:	47 CFR Part 15C Section 15.247 (a)(2)
Test Method:	KDB558074 D01 v03r05
Test Setup:	<p style="text-align: center;">Spectrum Analyzer</p>  <p>The diagram illustrates the test setup. A Spectrum Analyzer is positioned at the top left, showing a green waveform on its screen. A red line connects it to a gray rectangular box labeled "E.U.T". This "E.U.T" box rests on a horizontal brown bar labeled "Non-Conducted Table". Below the table is a thick gray horizontal bar labeled "Ground Reference Plane".</p>
Instruments Used:	Refer to section 5.10 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 13.5Mbps of rate is the worst case of 802.11n(HT40)
Limit:	$\geq 500 \text{ kHz}$
Test Results:	Pass

Measurement Data

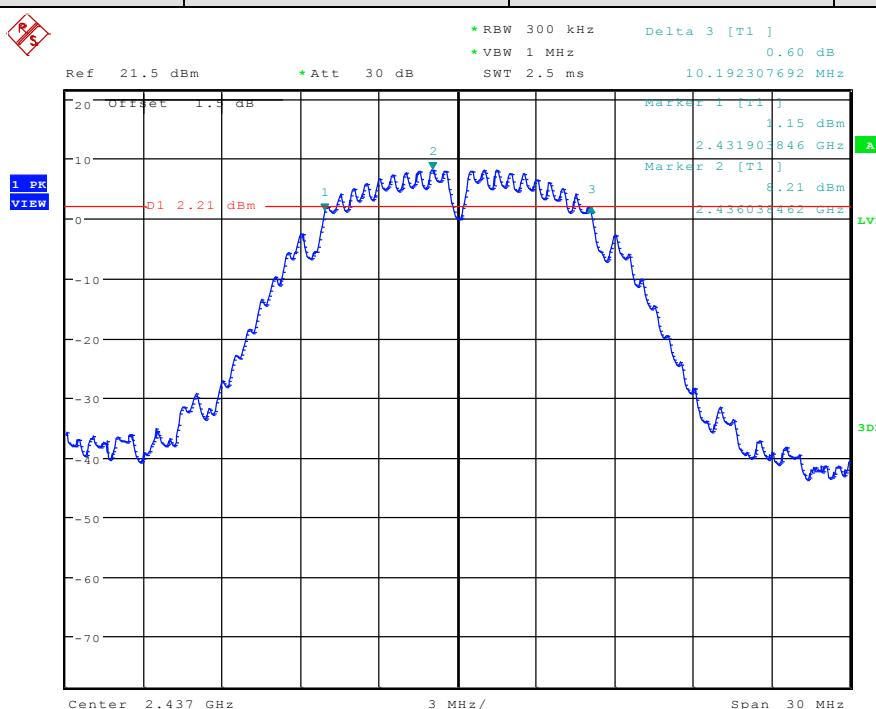
802.11b mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
Lowest	10.1923	≥500	Pass
Middle	10.1923	≥500	Pass
Highest	10.1923	≥500	Pass
802.11g mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
Lowest	16.3462	≥500	Pass
Middle	16.2981	≥500	Pass
Highest	16.3462	≥500	Pass
802.11n(HT20) mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
Lowest	17.5481	≥500	Pass
Middle	17.5962	≥500	Pass
Highest	17.5000	≥500	Pass
802.11n(HT40)mode			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
Lowest	35.7692	≥500	Pass
Middle	36.1538	≥500	Pass
Highest	36.2500	≥500	Pass

Test plot as follows:

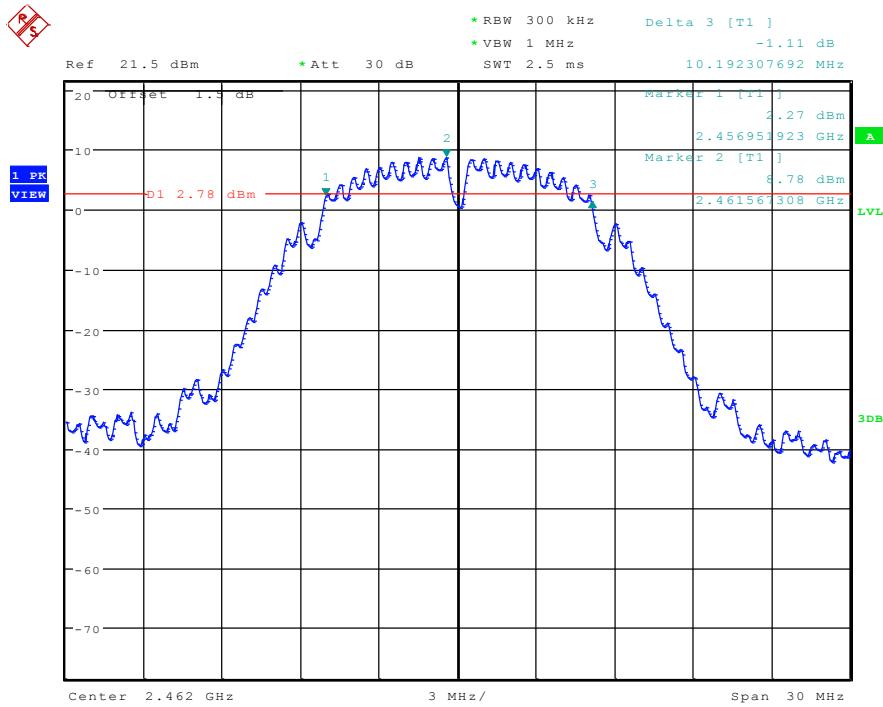
Test mode:	802.11b	Test channel:	Lowest
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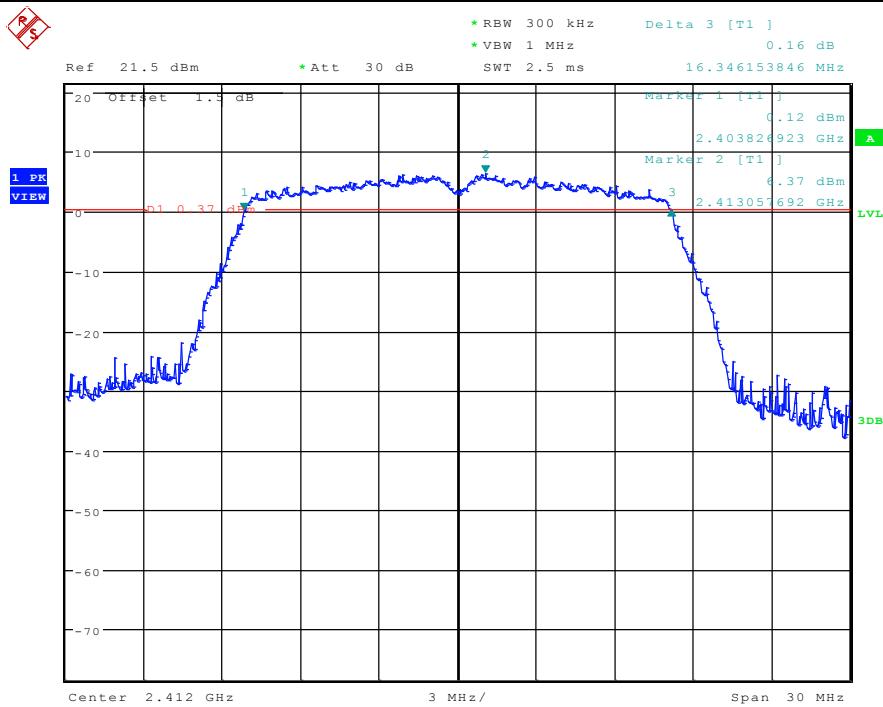
Test mode:	802.11b	Test channel:	Middle
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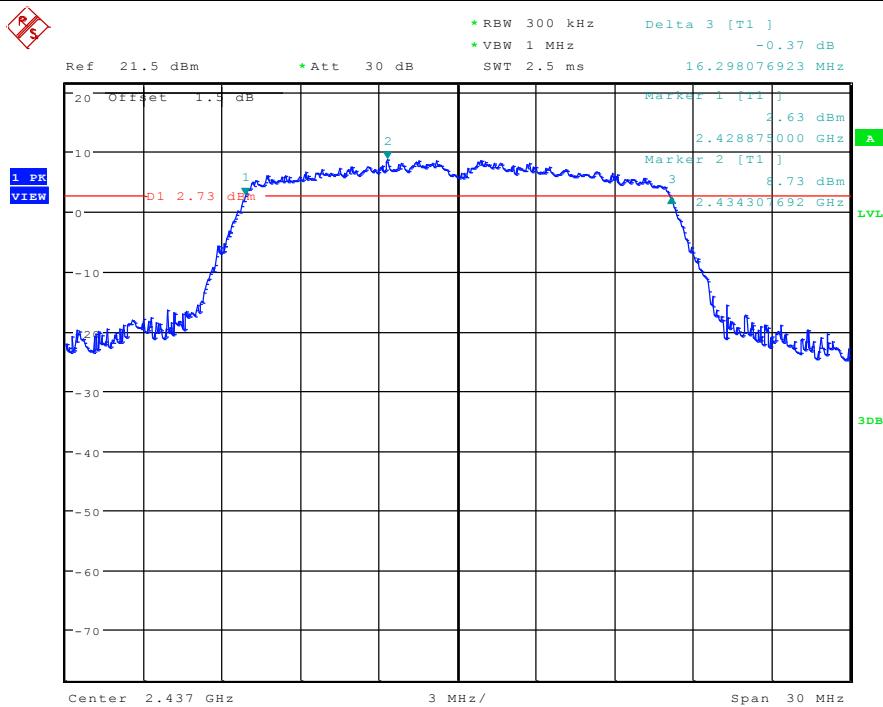
Test mode:	802.11b	Test channel:	Highest
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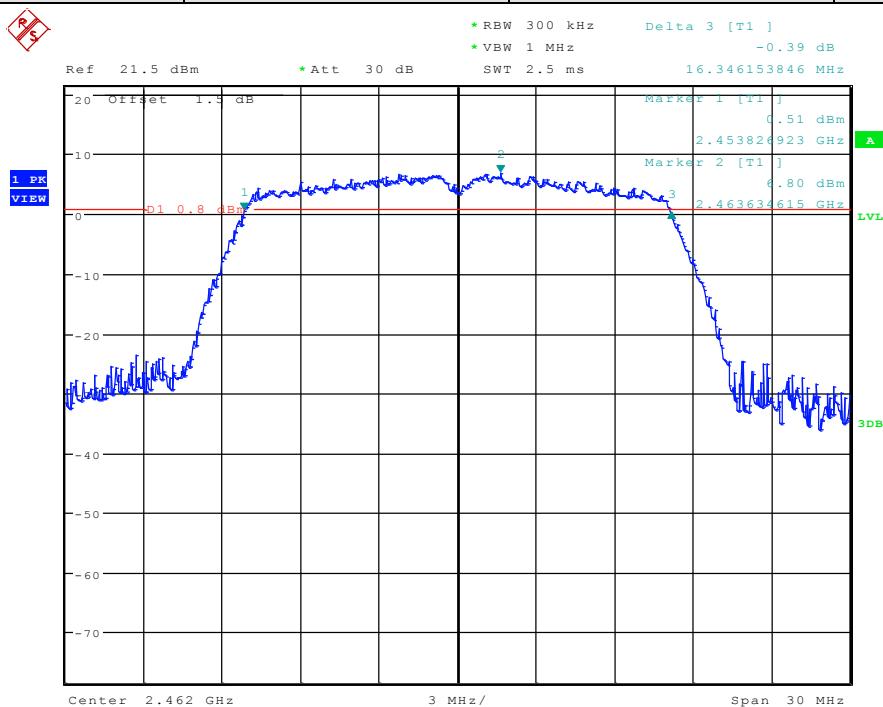
Test mode:	802.11g	Test channel:	Lowest
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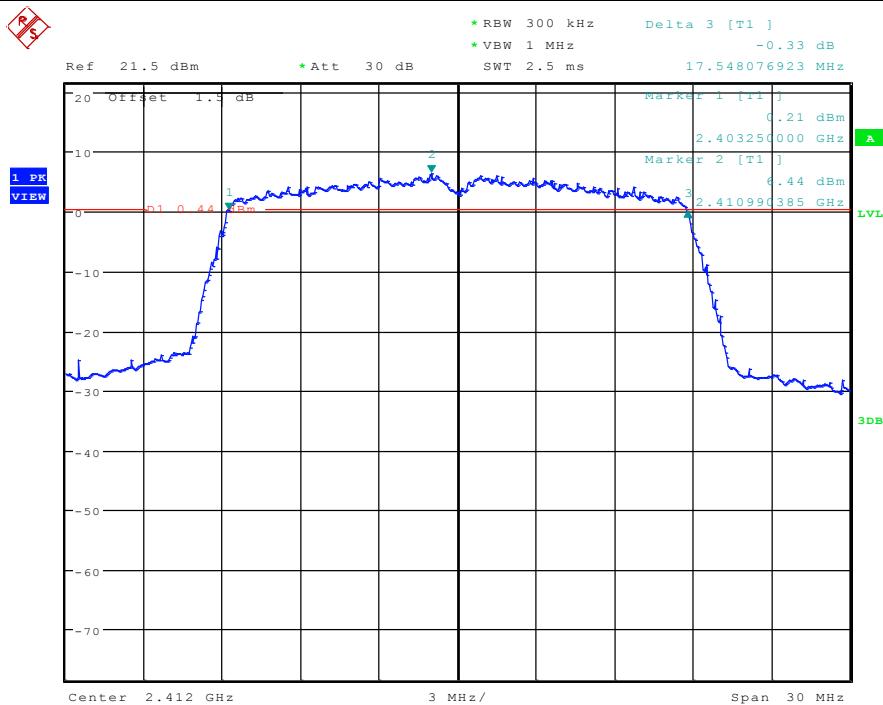
Test mode:	802.11g	Test channel:	Middle
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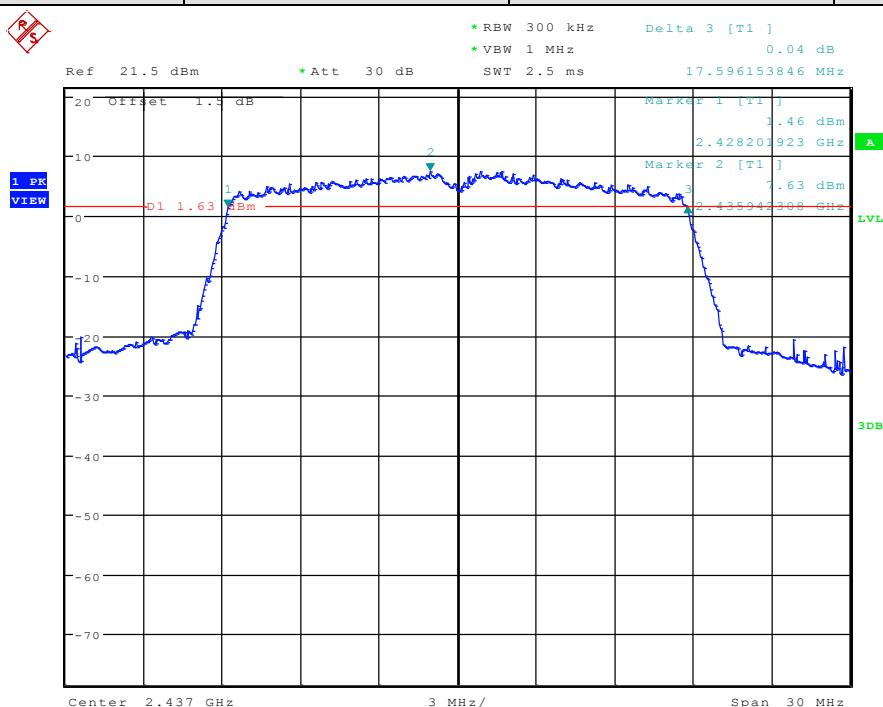
Test mode:	802.11g	Test channel:	Highest
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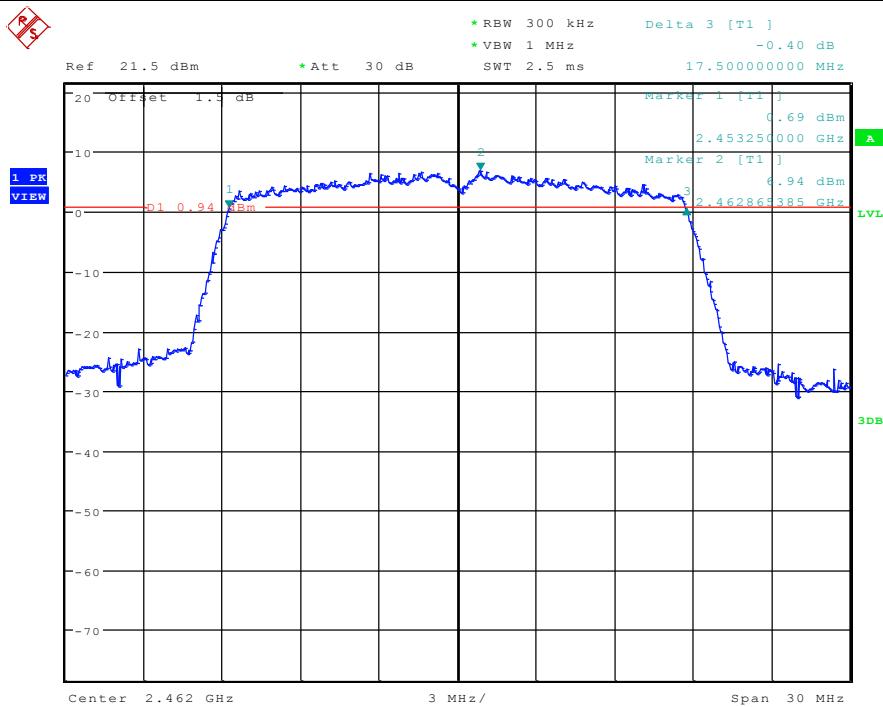
Test mode:	802.11n(HT20)	Test channel:	Lowest
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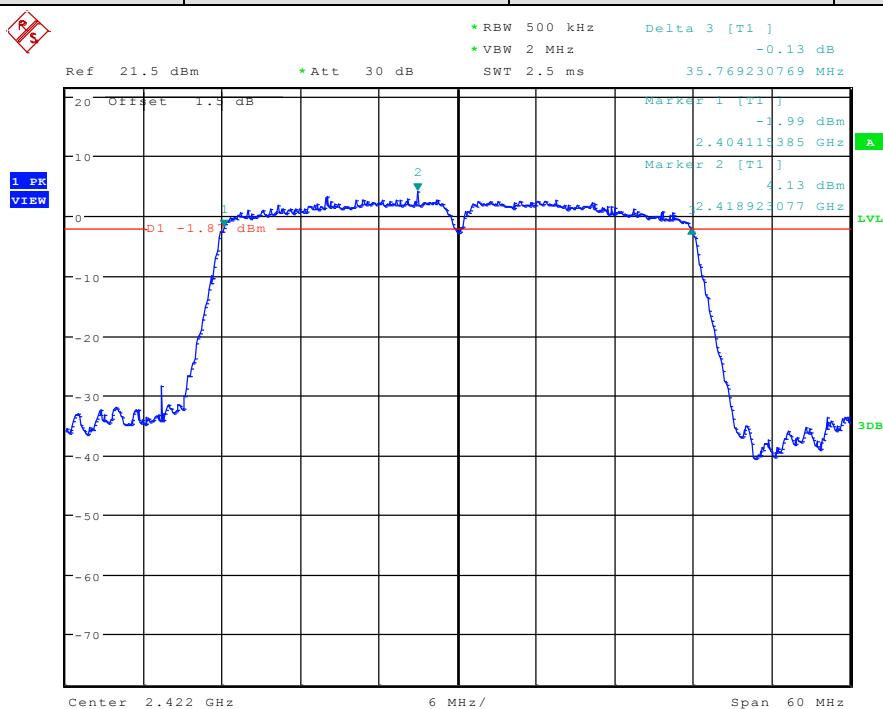
Test mode:	802.11n(HT20)	Test channel:	Middle
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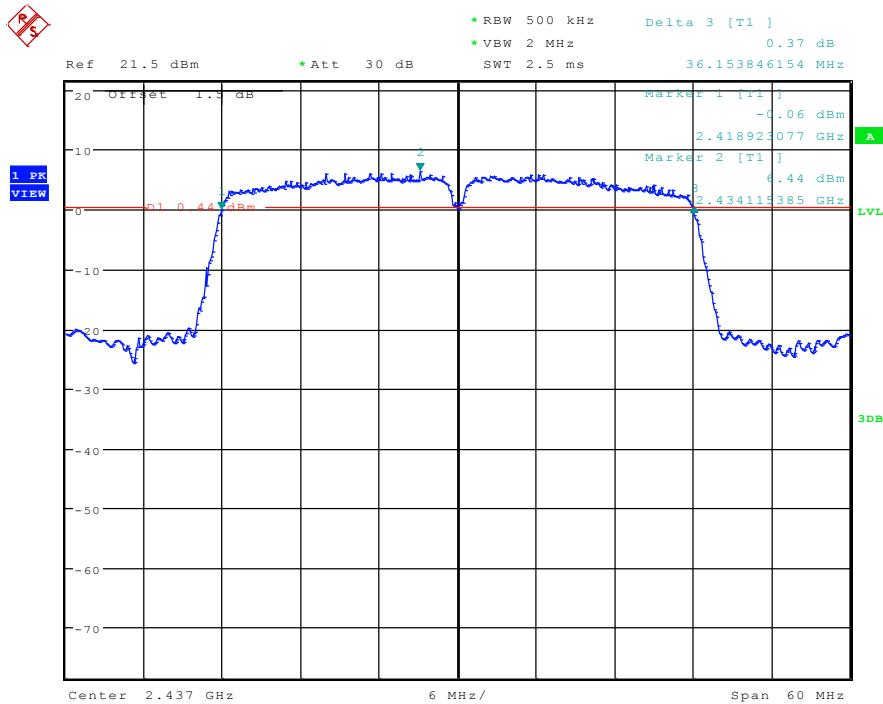
Test mode:	802.11n(HT20)	Test channel:	Highest
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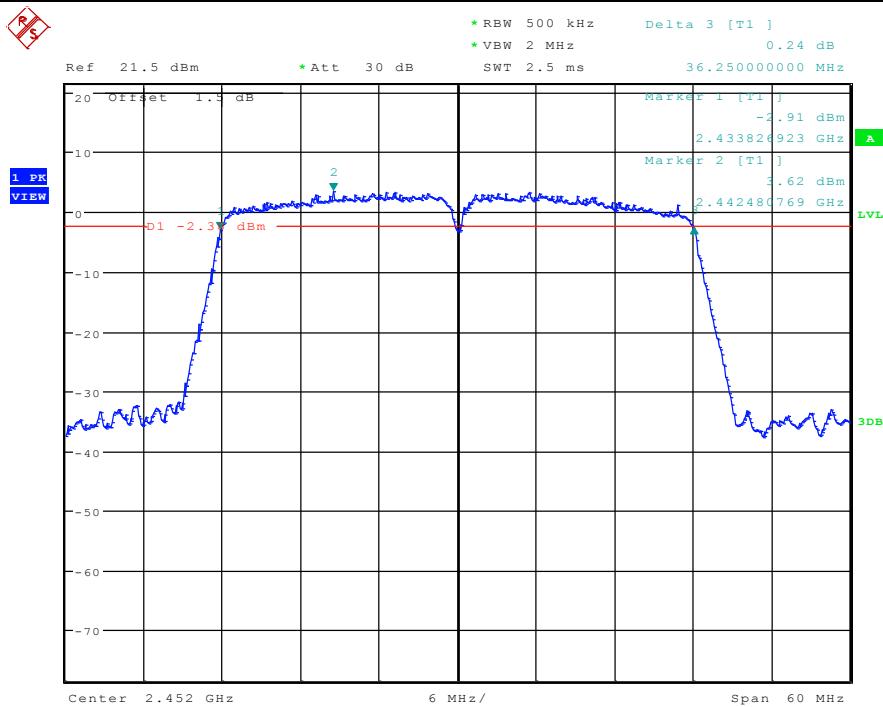
Test mode:	802.11n(HT40)	Test channel:	Lowest
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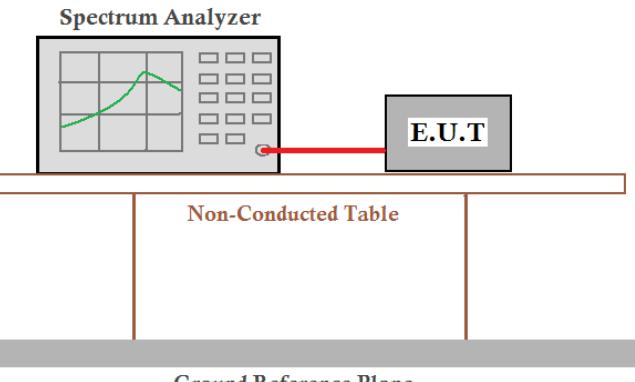
Test mode:	802.11n(HT40)	Test channel:	Middle
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Test mode:	802.11n(HT40)	Test channel:	Highest
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6.5 Power Spectral Density

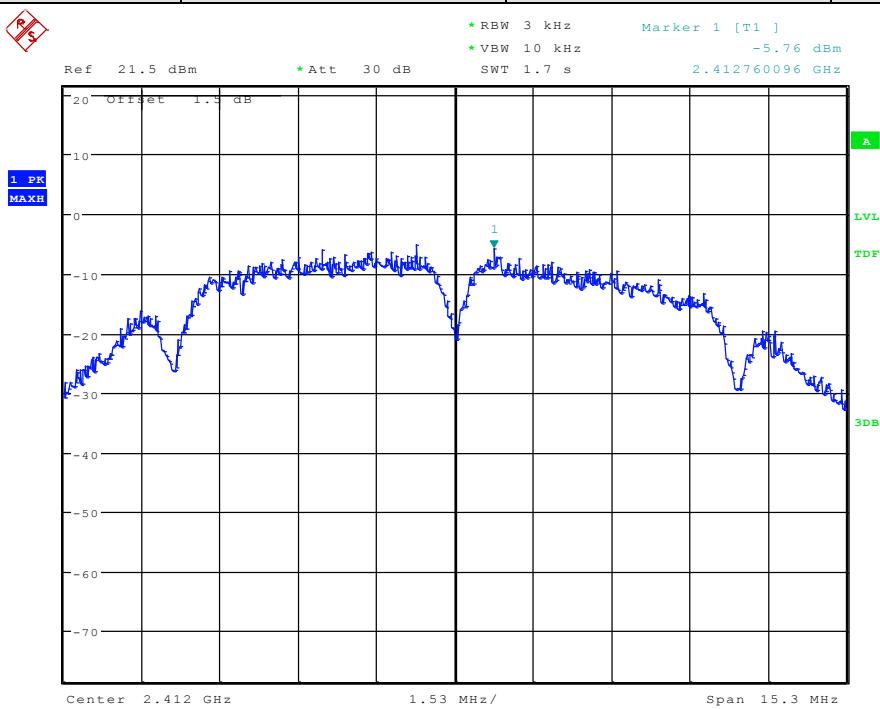
Test Requirement:	47 CFR Part 15C Section 15.247 (e)
Test Method:	KDB558074 D01 v03r05
Test Setup:	 <p>The diagram illustrates the test setup. A 'Spectrum Analyzer' is shown with a green waveform on its screen and a keypad below. A red line extends from the analyzer to a gray rectangular box labeled 'E.U.T'. This assembly rests on a horizontal brown bar labeled 'Non-Conducted Table'. Below the table is a thick gray bar labeled 'Ground Reference Plane'.</p>
	<p><i>Remark:</i> <i>Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</i></p>
Test Instruments:	Refer to section 5.10 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 13.5Mbps of rate is the worst case of 802.11n(HT40)
Limit:	$\leq 8.00 \text{ dBm}/3\text{kHz}$
Test Results:	Pass

Measurement Data

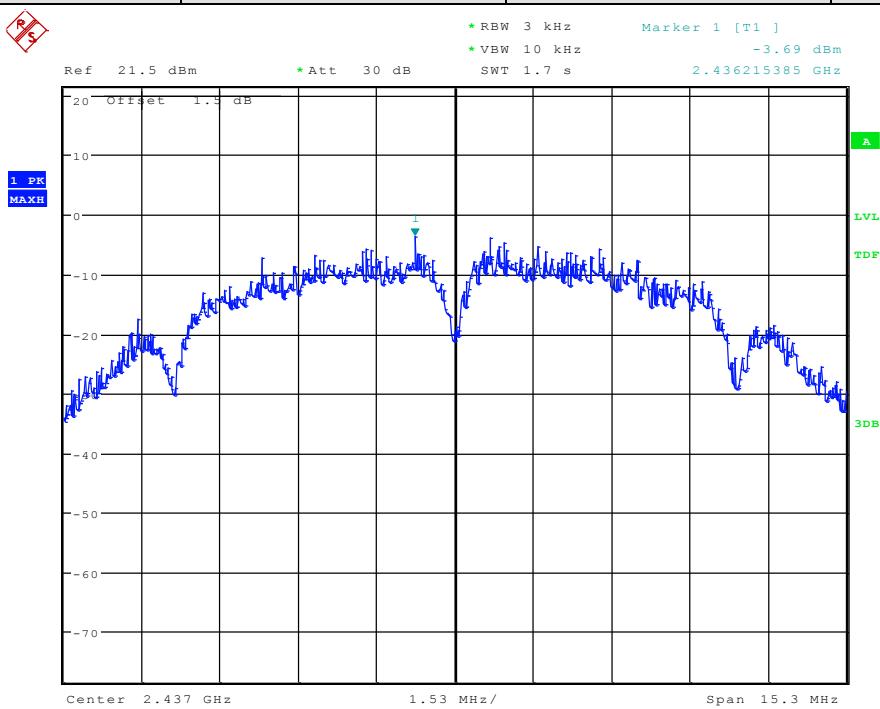
802.11b mode			
Test channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Lowest	-5.76	≤8.00	Pass
Middle	-3.69	≤8.00	Pass
Highest	-4.46	≤8.00	Pass
802.11g mode			
Test channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Lowest	-11.46	≤8.00	Pass
Middle	-8.39	≤8.00	Pass
Highest	-9.46	≤8.00	Pass
802.11n(HT20) mode			
Test channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Lowest	-11.27	≤8.00	Pass
Middle	-9.71	≤8.00	Pass
Highest	-9.31	≤8.00	Pass
802.11n(HT40) mode			
Test channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Lowest	-14.16	≤8.00	Pass
Middle	-14.36	≤8.00	Pass
Highest	-15.94	≤8.00	Pass

Test plot as follows:

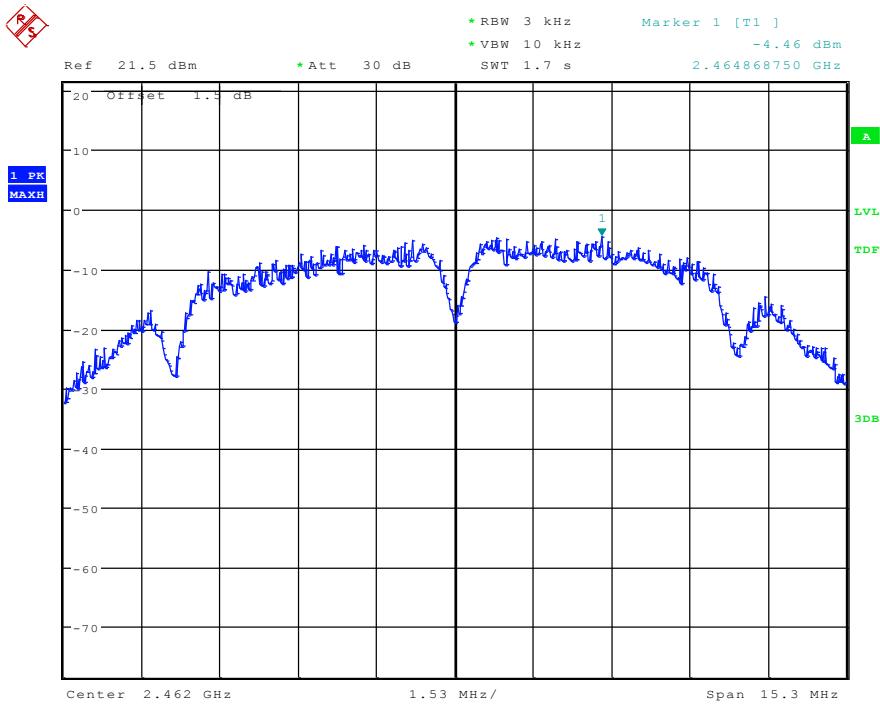
Test mode:	802.11b	Test channel:	Lowest
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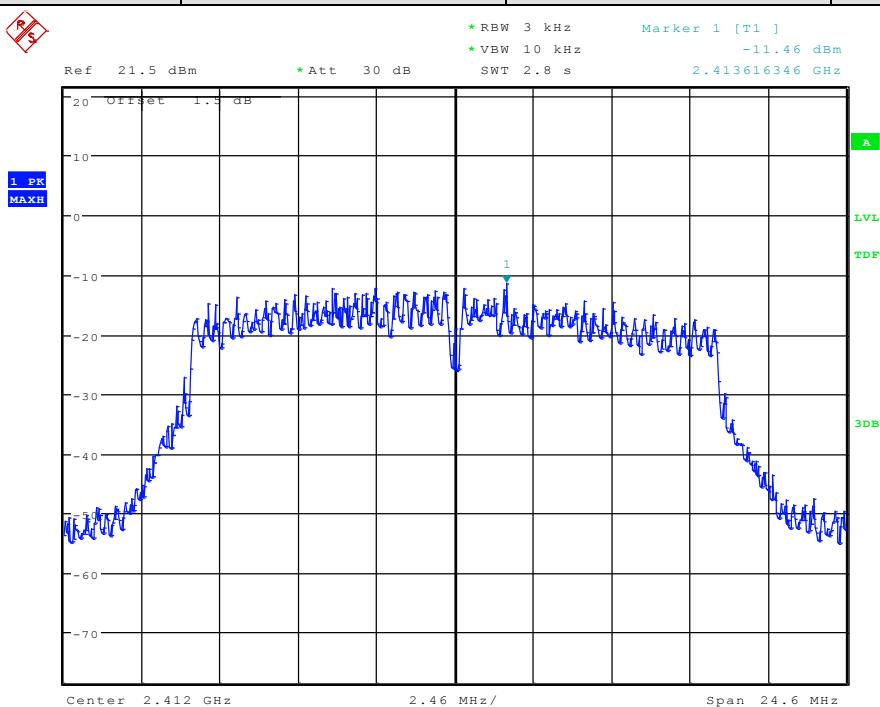
Test mode:	802.11b	Test channel:	Middle
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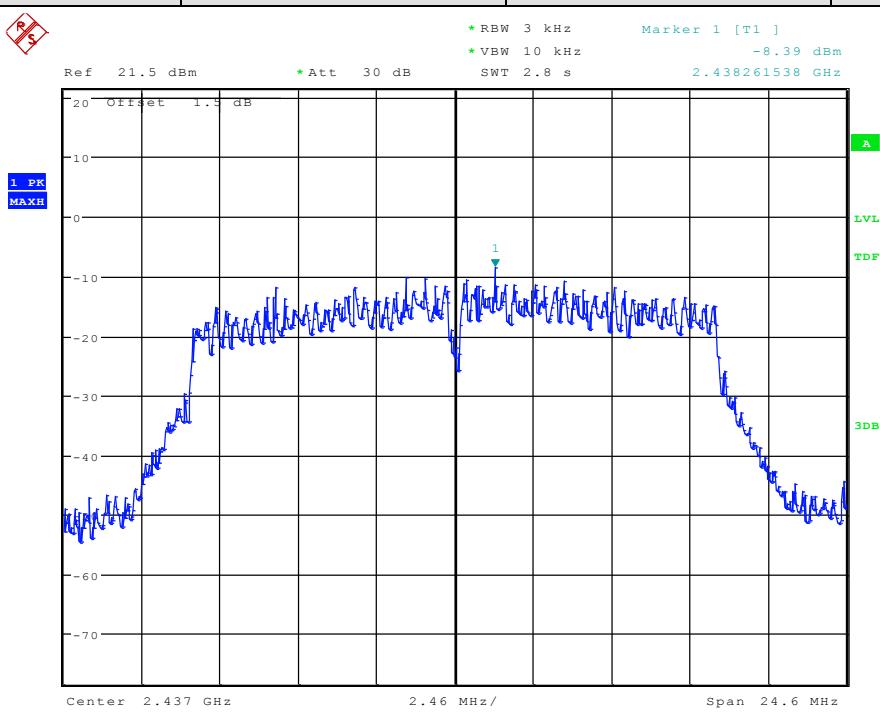
Test mode:	802.11b	Test channel:	Highest
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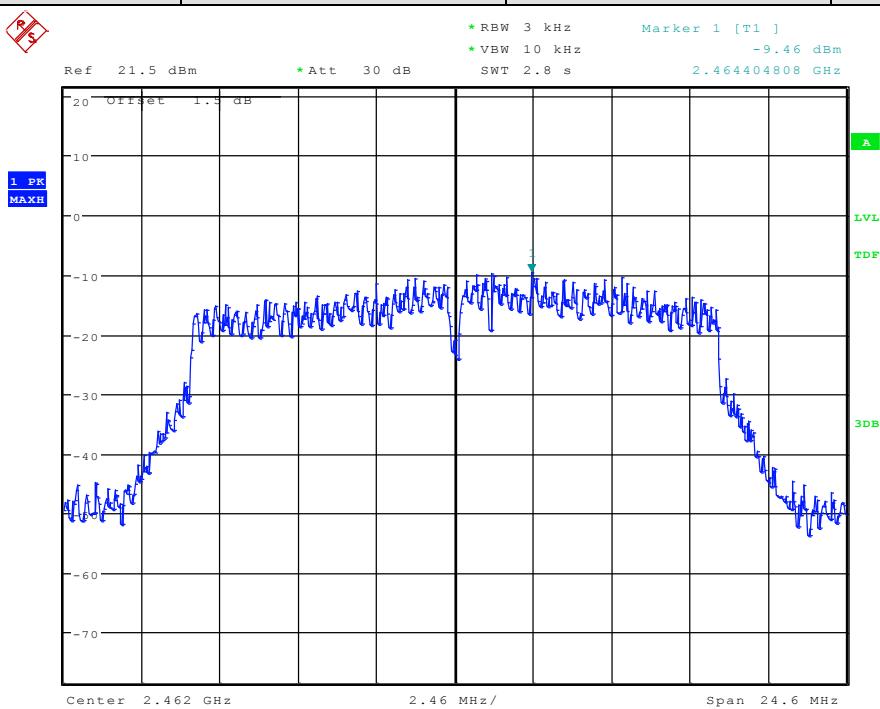
Test mode:	802.11g	Test channel:	Lowest
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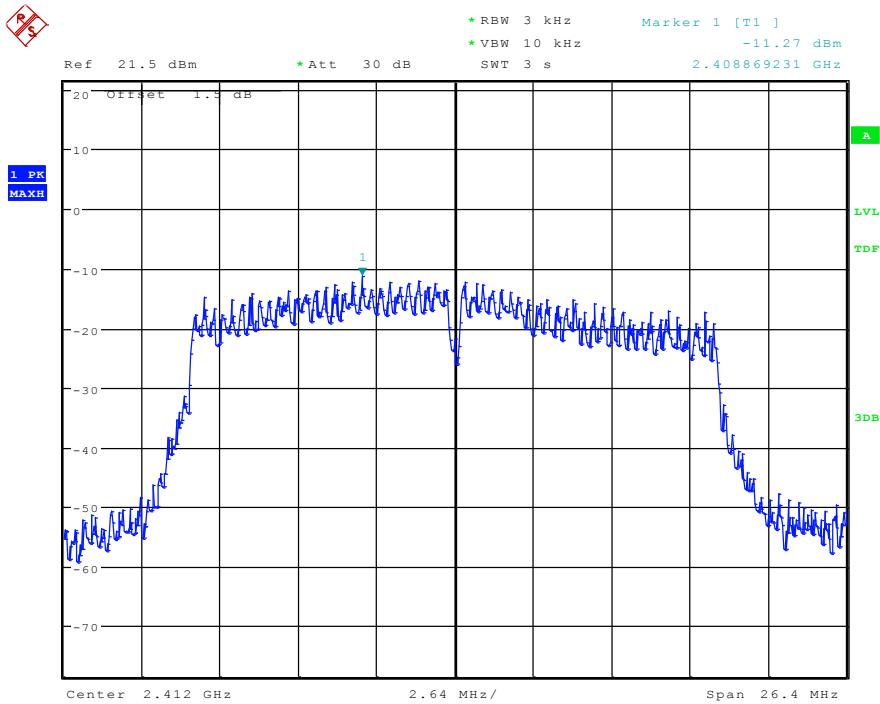
Test mode:	802.11g	Test channel:	Middle
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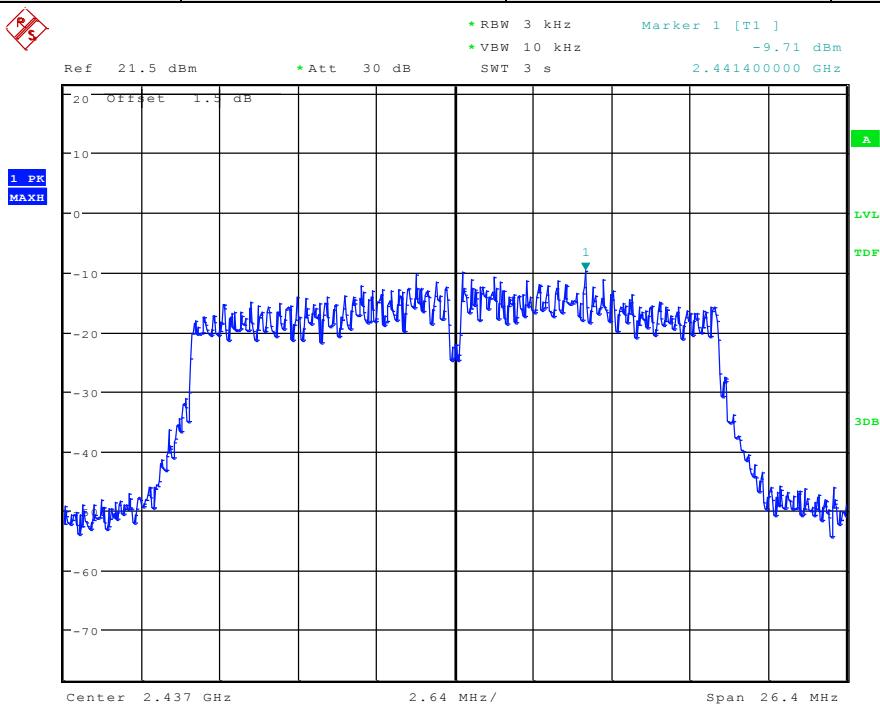
Test mode:	802.11g	Test channel:	Highest
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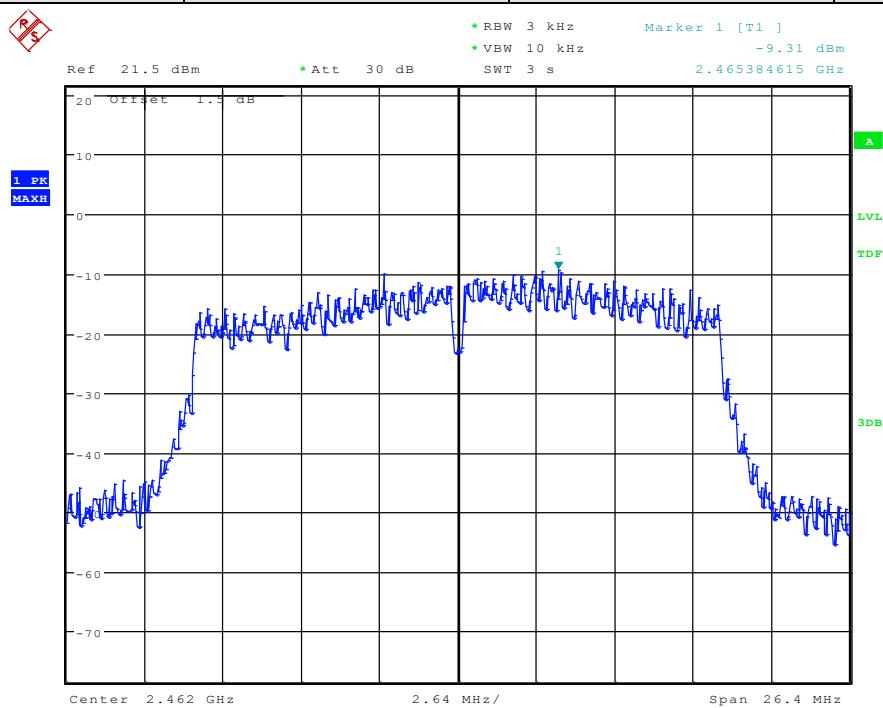
Test mode:	802.11n(HT20)	Test channel:	Lowest
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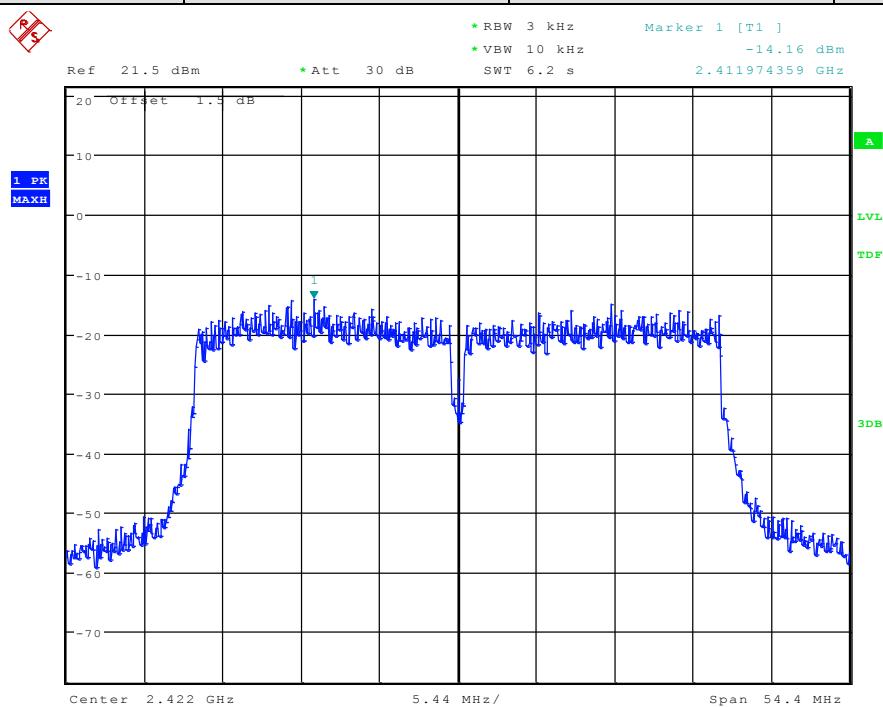
Test mode:	802.11n(HT20)	Test channel:	Middle
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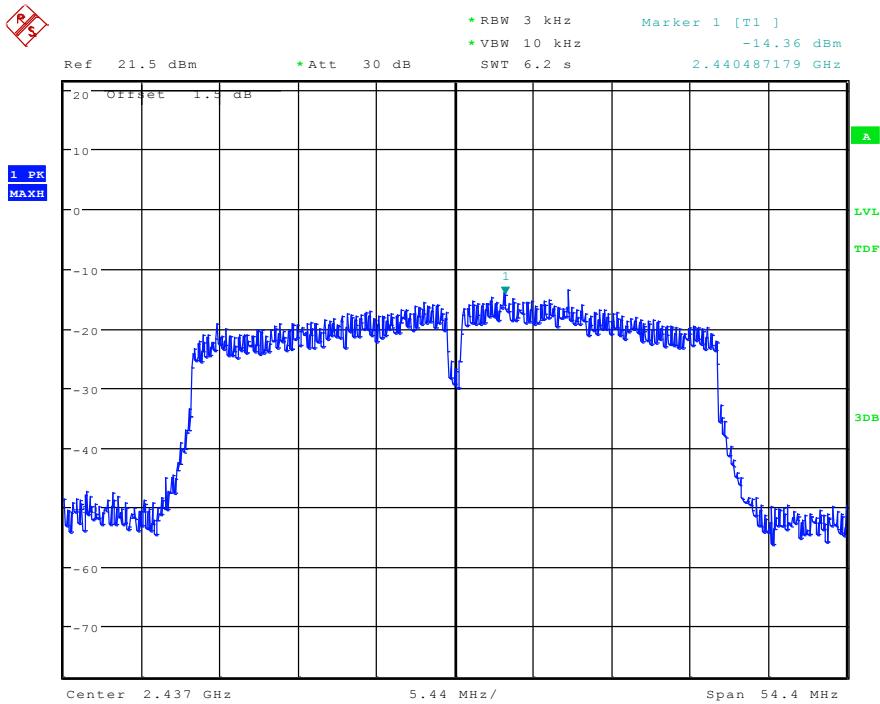
Test mode:	802.11n(HT20)	Test channel:	Highest
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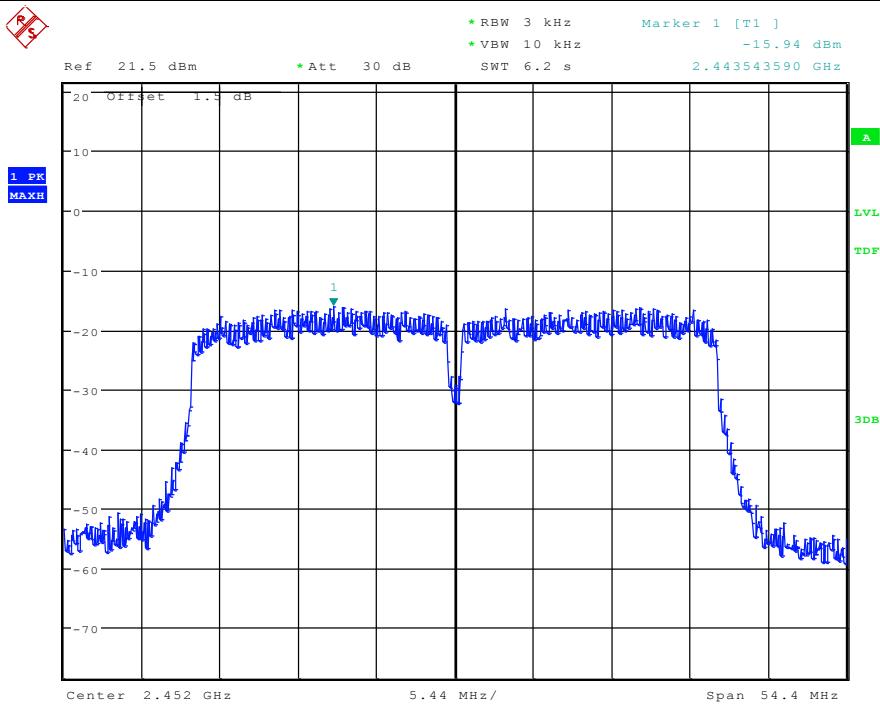
Test mode:	802.11n(HT40)	Test channel:	Lowest
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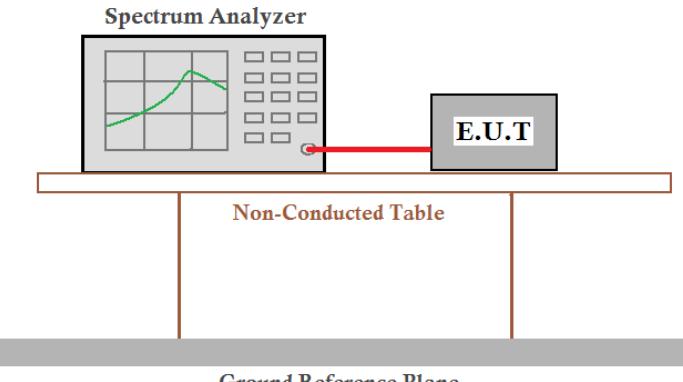
Test mode:	802.11n(HT40)	Test channel:	Middle
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Test mode:	802.11n(HT40)	Test channel:	Highest
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6.6 Band-edge for RF Conducted Emissions

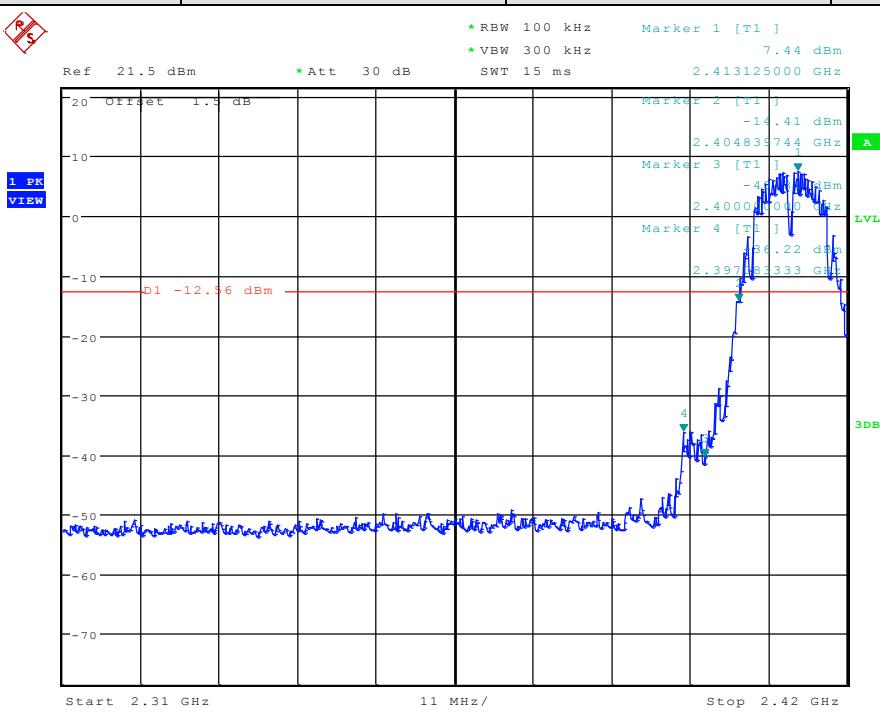
Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	KDB558074 D01 v03r05
Test Setup:	 <p>Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane</p> <p><i>Remark:</i> <i>Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</i></p>
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 13.5Mbps of rate is the worst case of 802.11n(HT40)
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

Test Data:

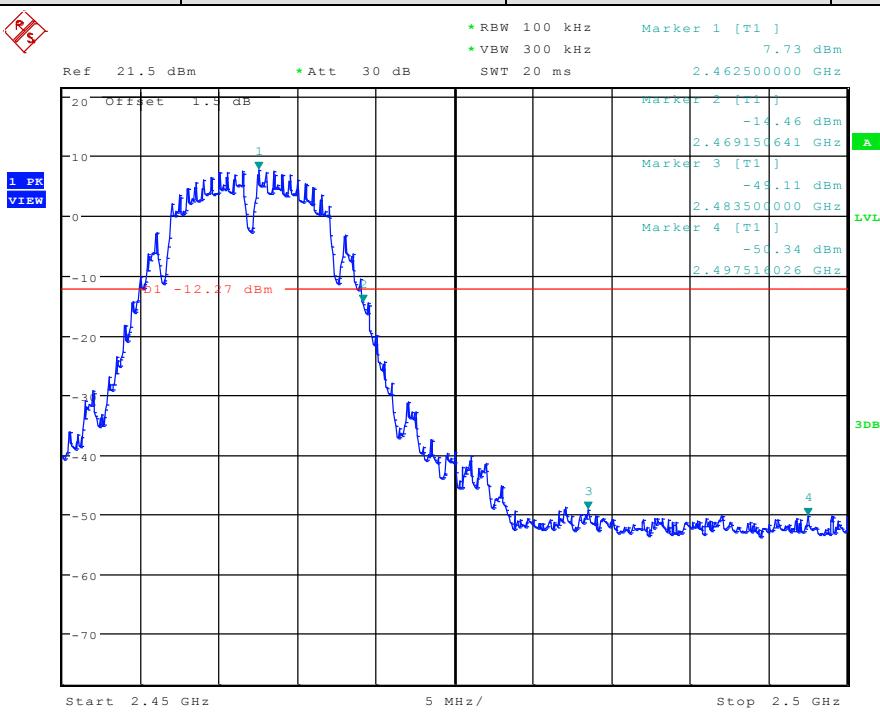
Test mode: 802.11b				
Test channel	Frequency(MHz)	Emission Level(dBm)	Limit(dBm)	Result
Lowest	2400	-40.31	-12.56	Pass
Highest	2483.5	-49.11	-12.27	Pass
Test mode: 802.11g				
Test channel	Frequency(MHz)	Emission Level(dBm)	Limit(dBm)	Result
Lowest	2400	-33.86	-17.14	Pass
Highest	2483.5	-48.12	-16.69	Pass
Test mode: 802.11n(HT20)				
Test channel	Frequency(MHz)	Emission Level(dBm)	Limit(dBm)	Result
Lowest	2400	-35.02	-17.05	Pass
Highest	2483.5	-42.94	-16.74	Pass
Test mode: 802.11n(HT40)				
Test channel	Frequency(MHz)	Emission Level(dBm)	Limit(dBm)	Result
Lowest	2400	-41.08	-22.14	Pass
Highest	2483.5	-47.80	-21.81	Pass

Test plot as follows:

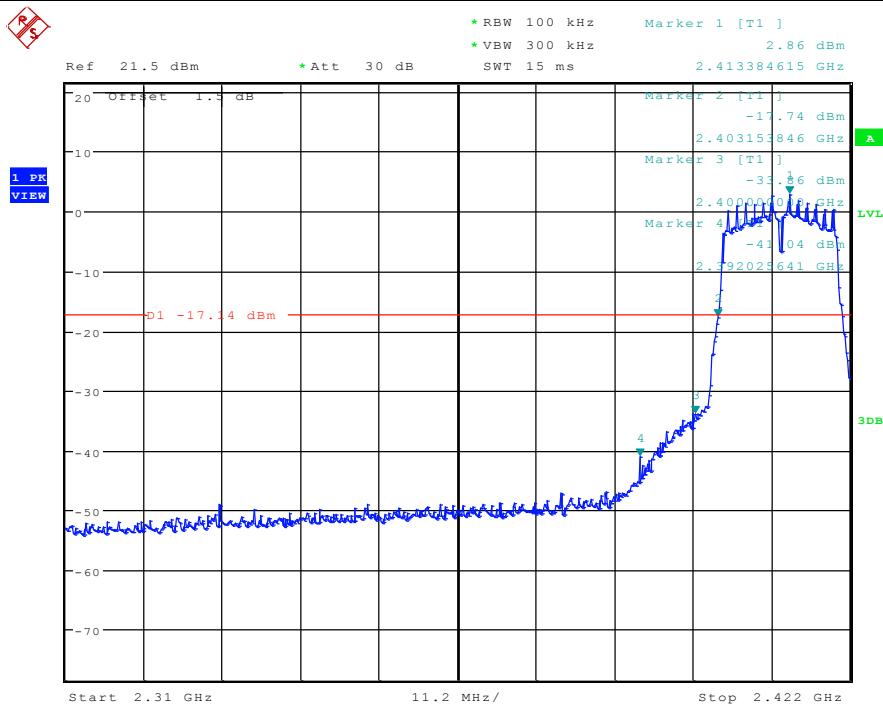
Test mode:	802.11b	Test channel:	Lowest
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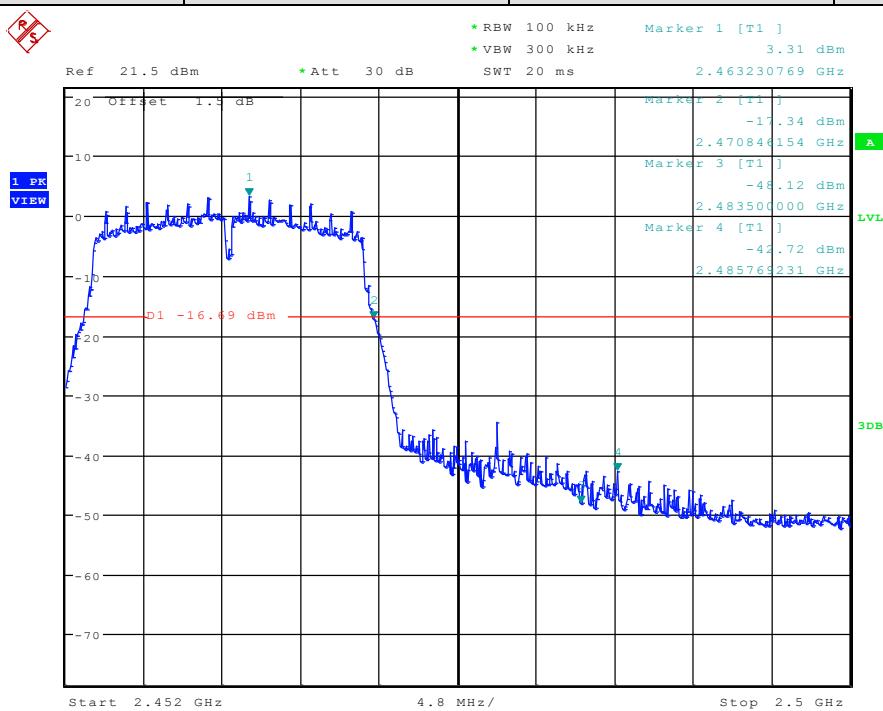
Test mode:	802.11b	Test channel:	Highest
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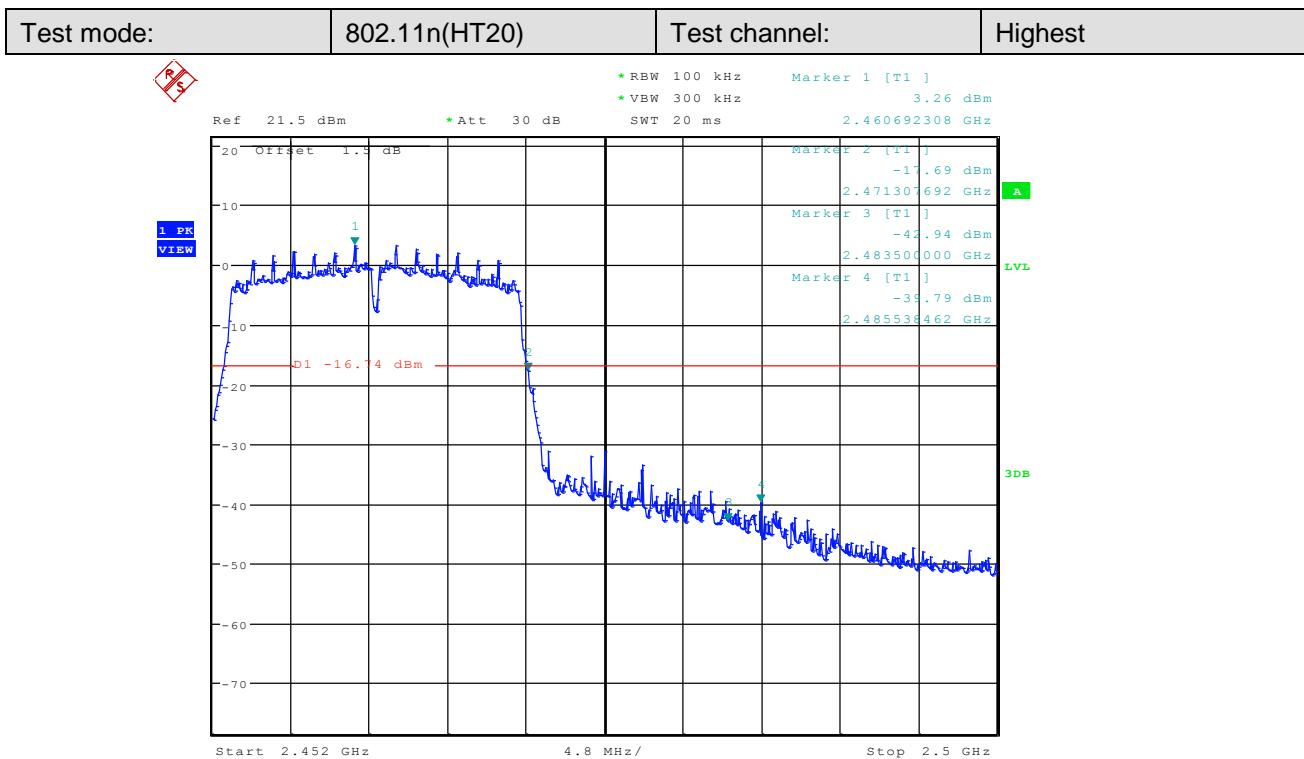
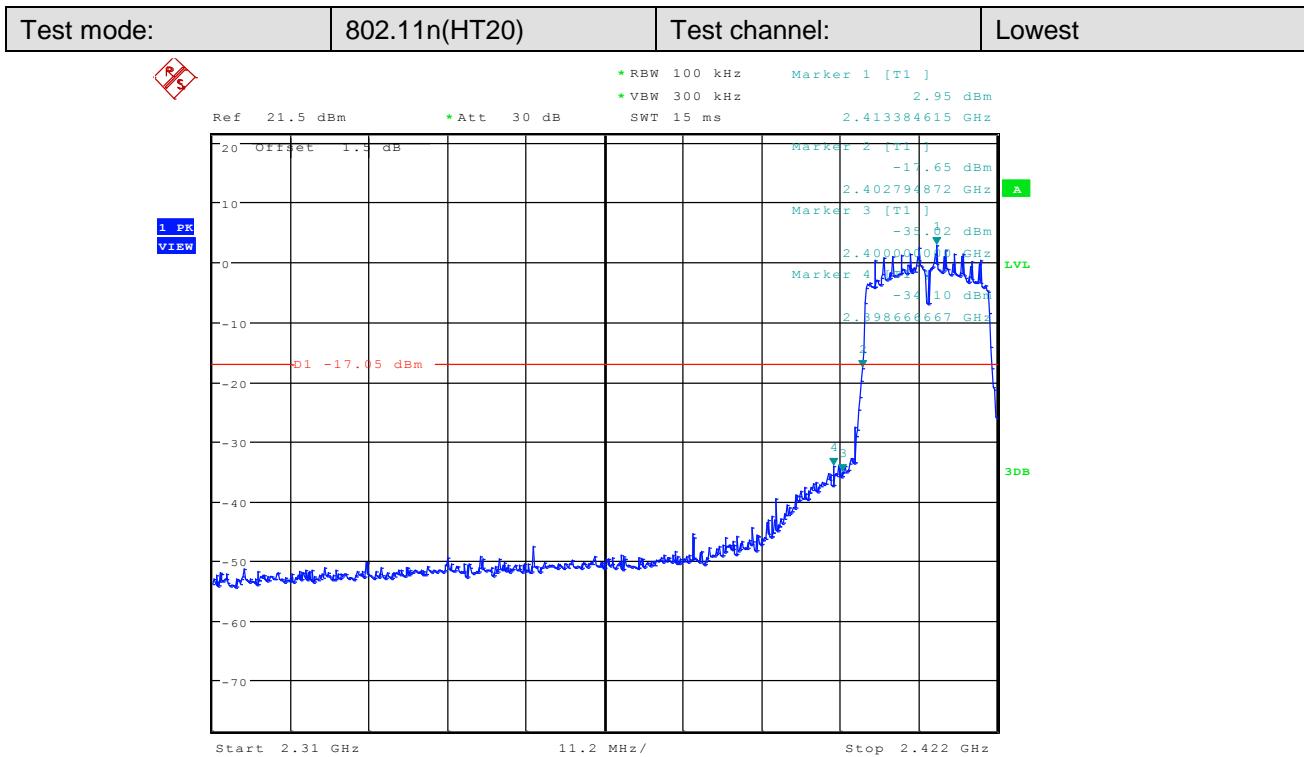


Test mode:	802.11g	Test channel:	Lowest
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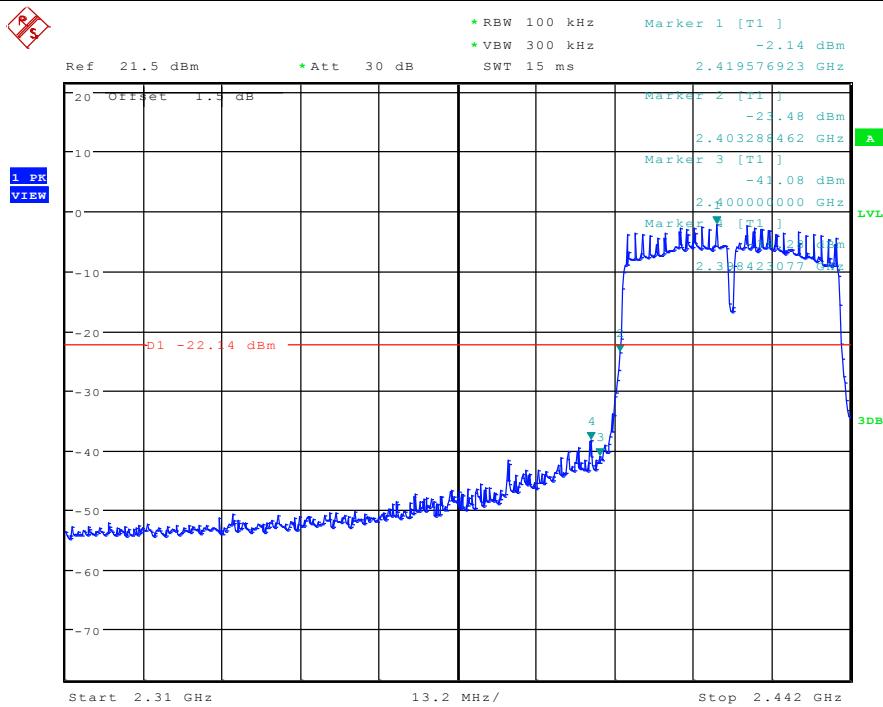


Test mode:	802.11g	Test channel:	Highest
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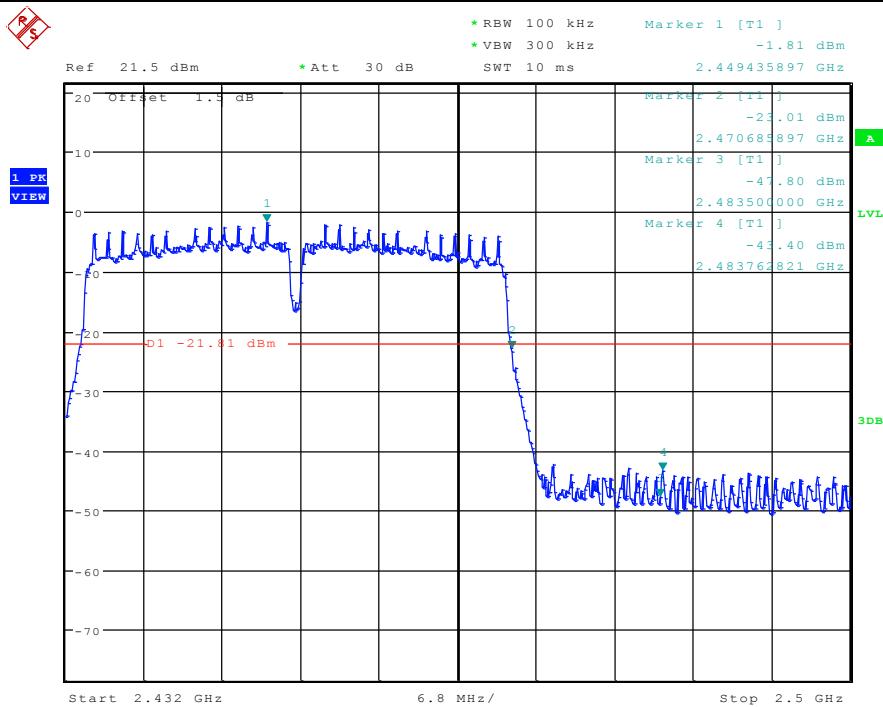




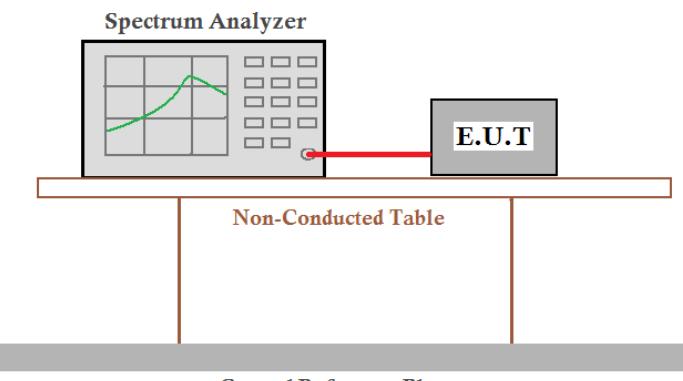
Test mode:	802.11n(HT40)	Test channel:	Lowest
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Test mode:	802.11n(HT40)	Test channel:	Highest
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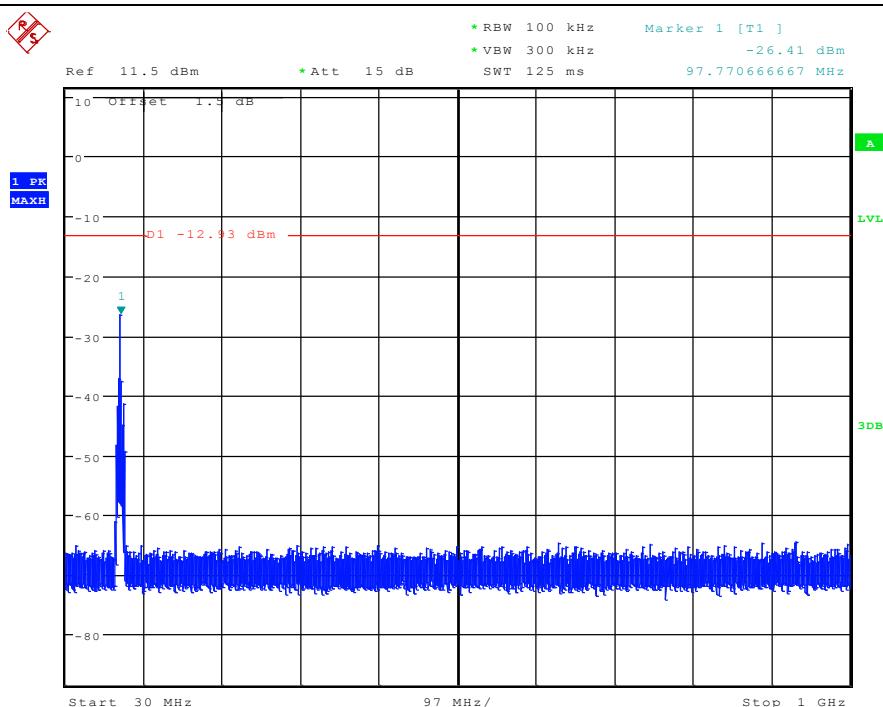
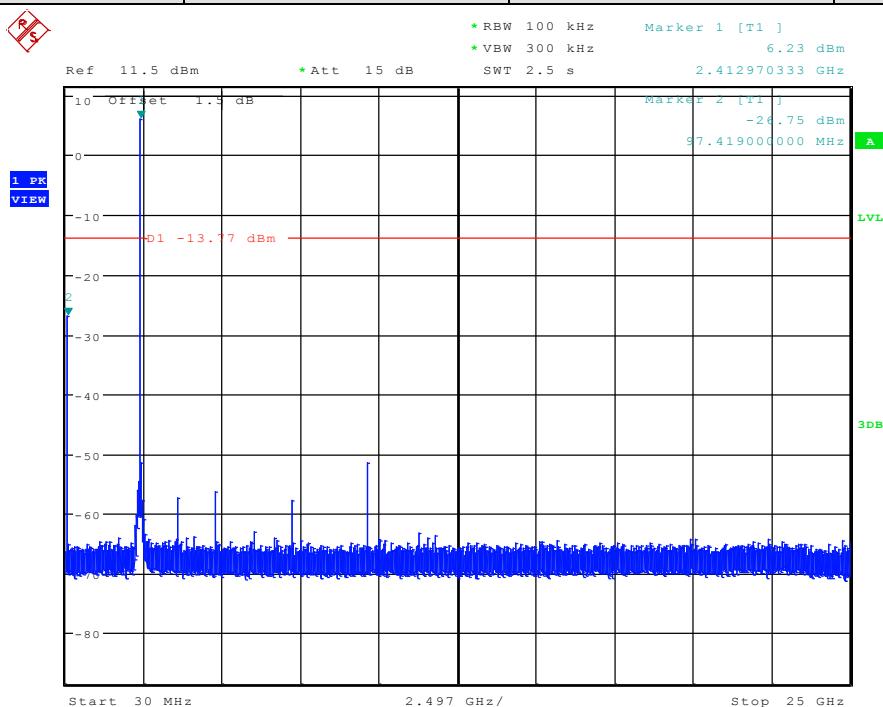


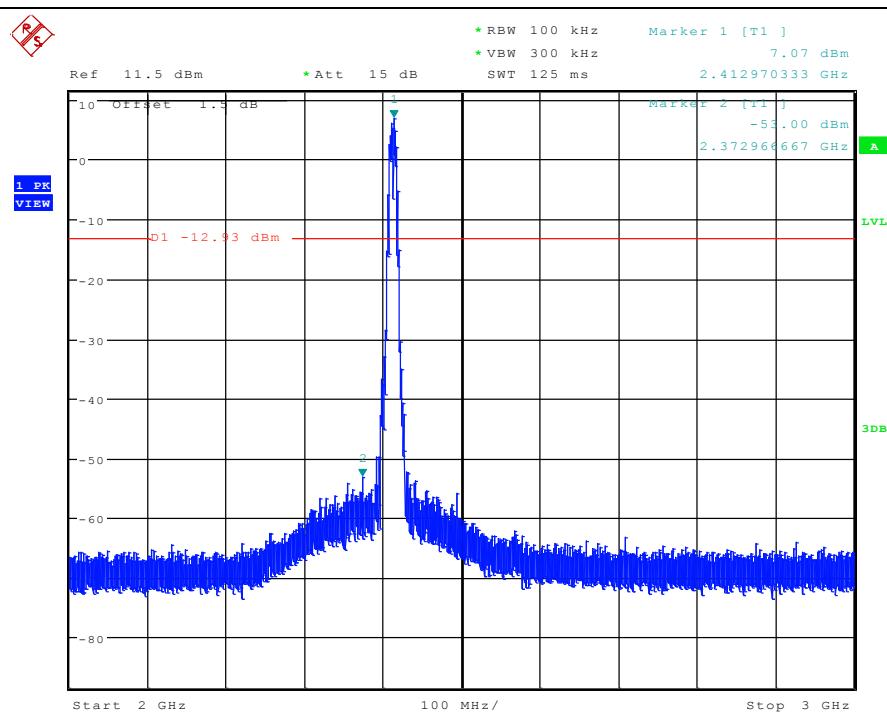
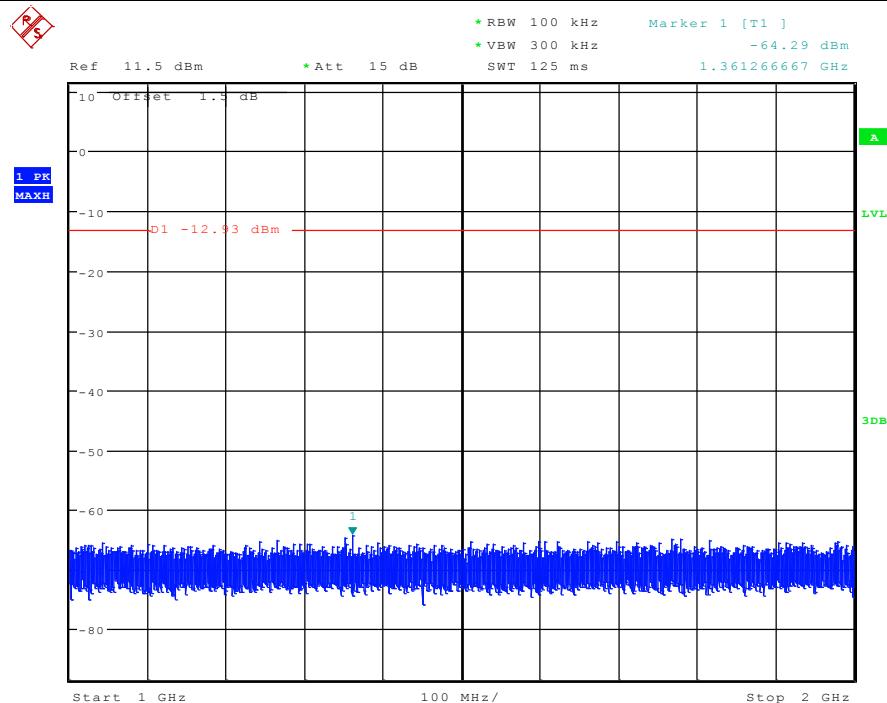
6.7 RF Conducted Spurious Emissions

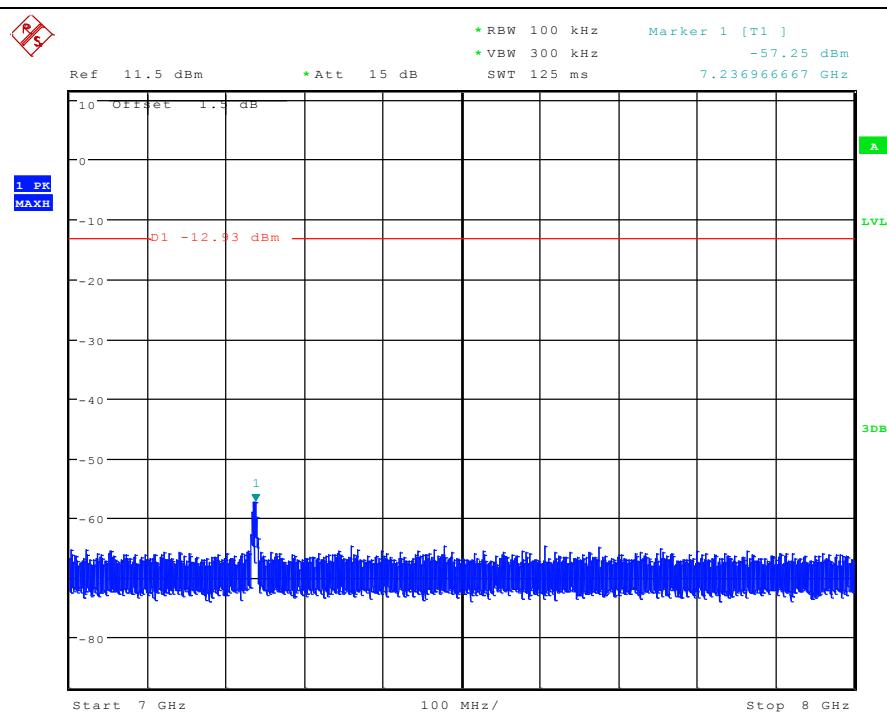
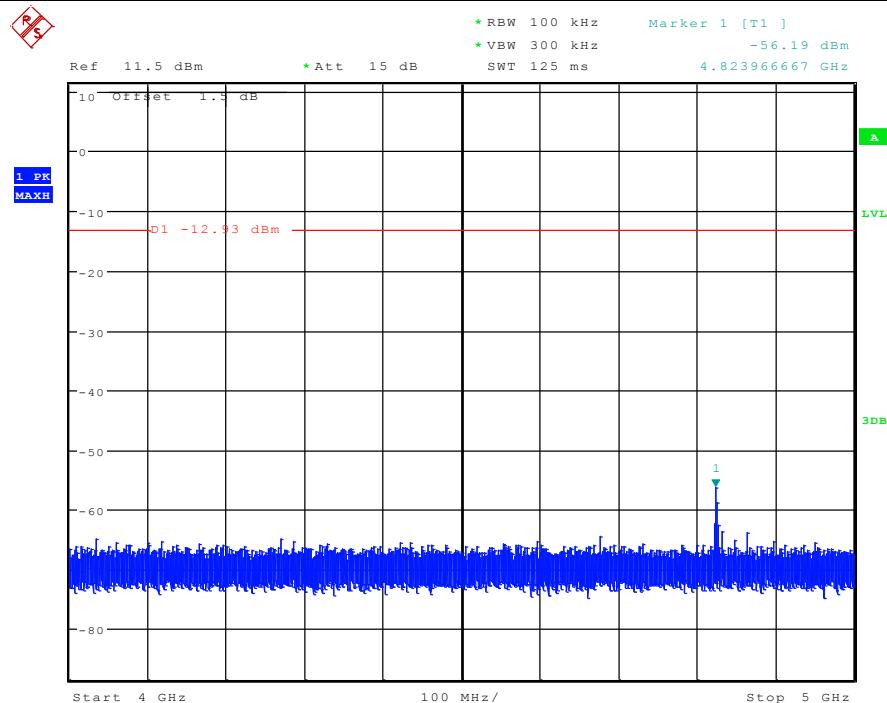
Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	KDB558074 D01 v03r05
Test Setup:	 <p>Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane</p> <p><i>Remark: Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.</i></p>
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 13.5Mbps of rate is the worst case of 802.11n(HT40)
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

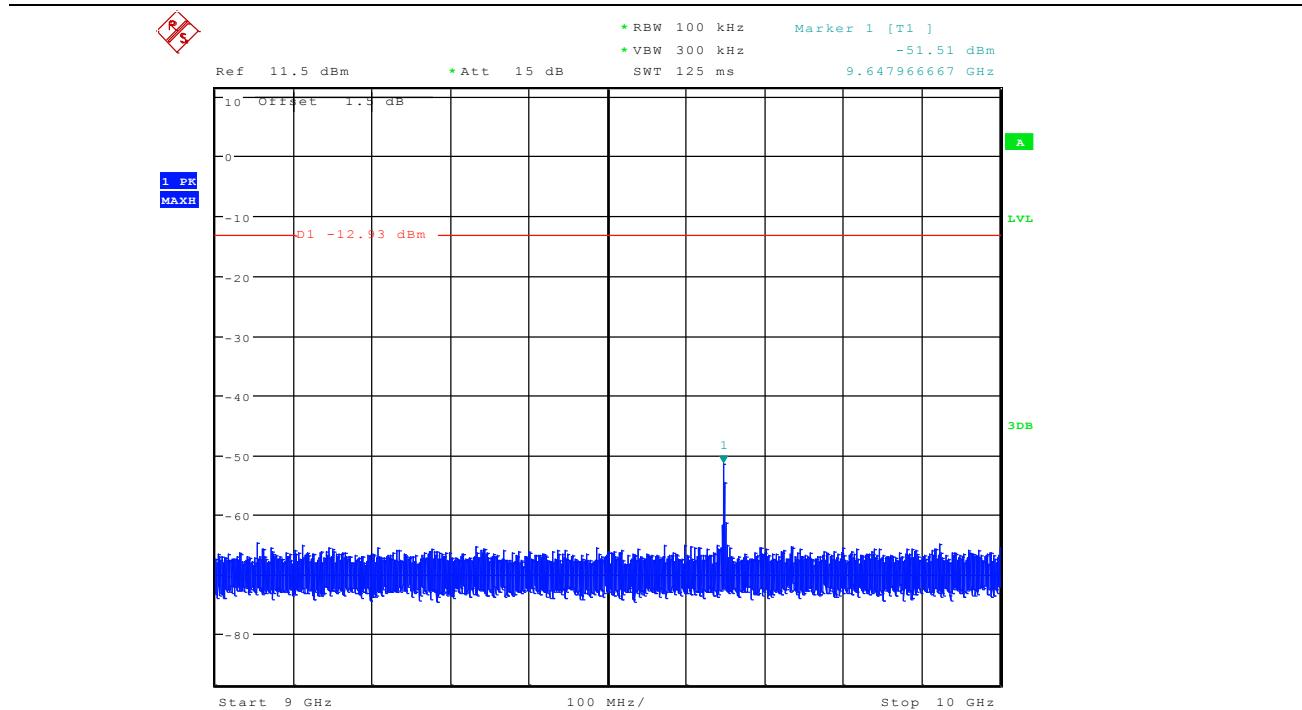
Test plot as follows:

Test mode:	802.11b	Test channel:	Lowest
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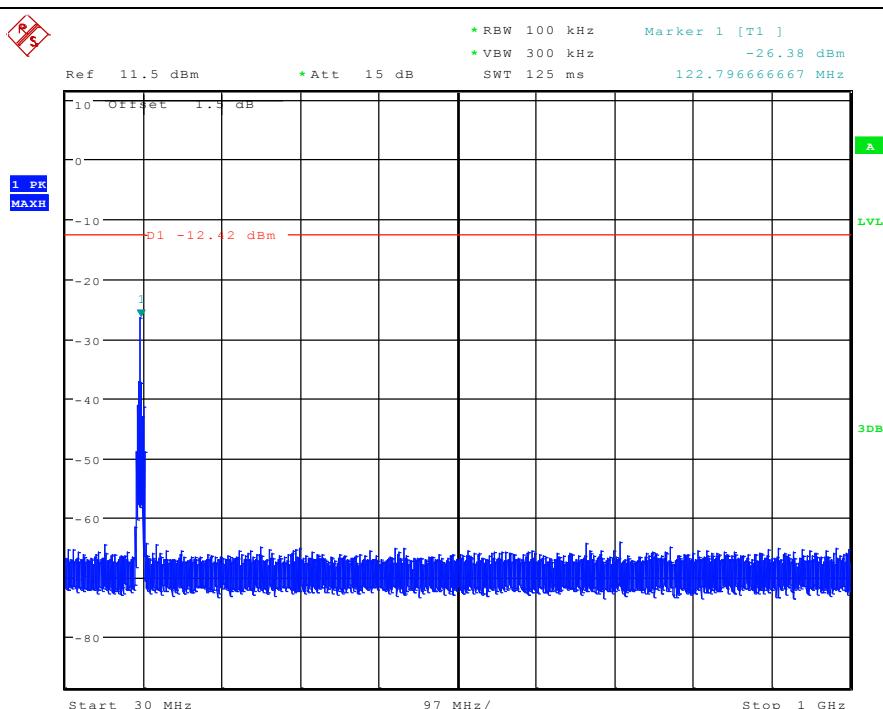
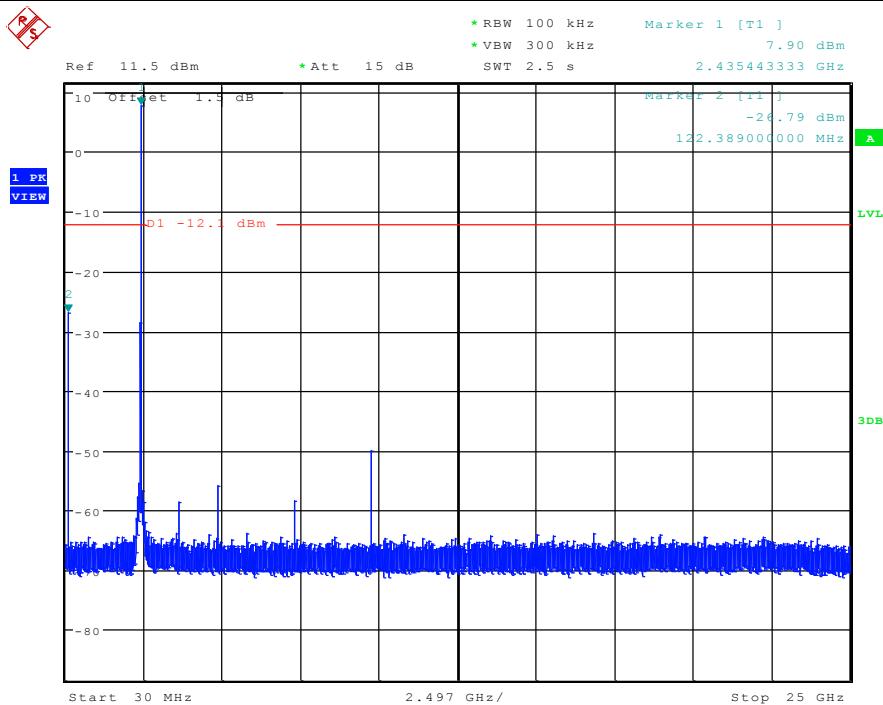


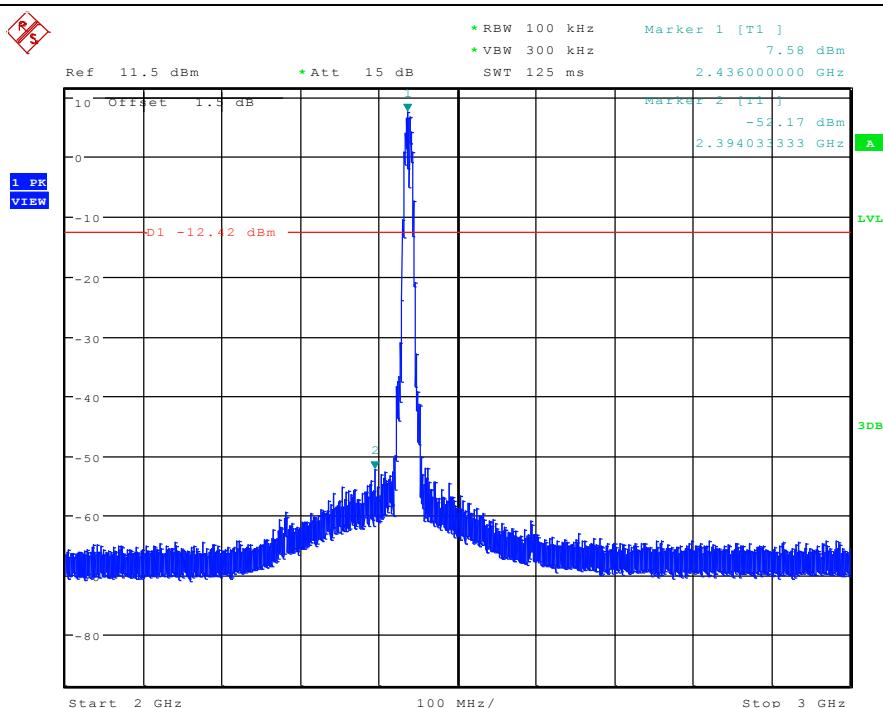
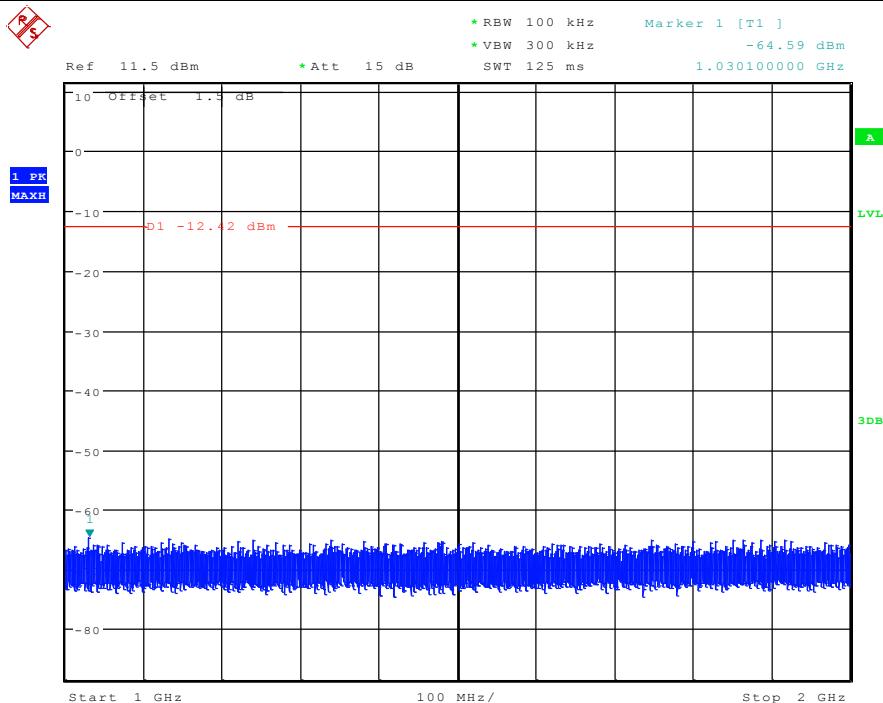


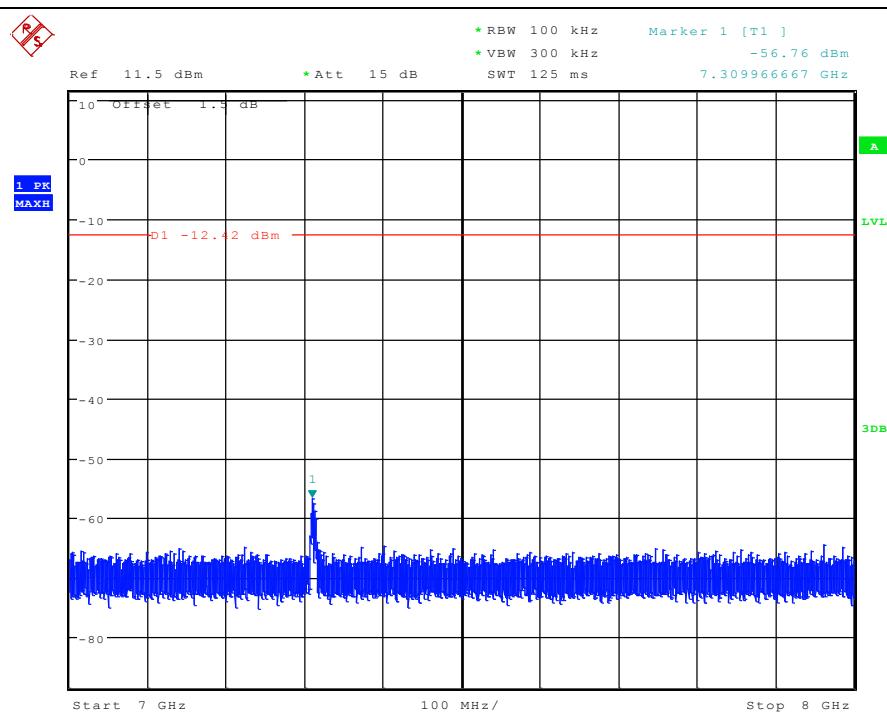
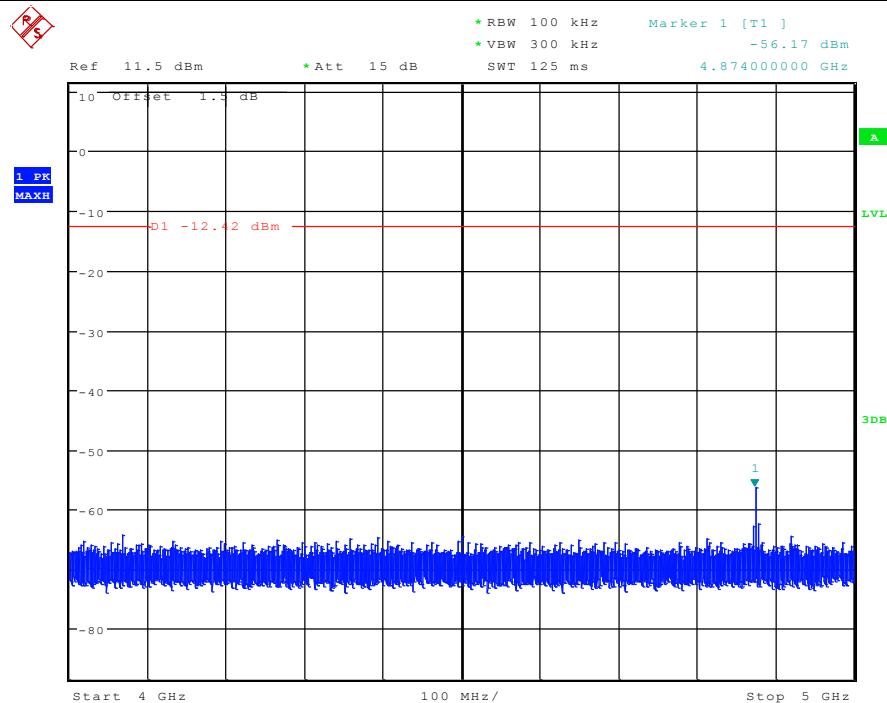


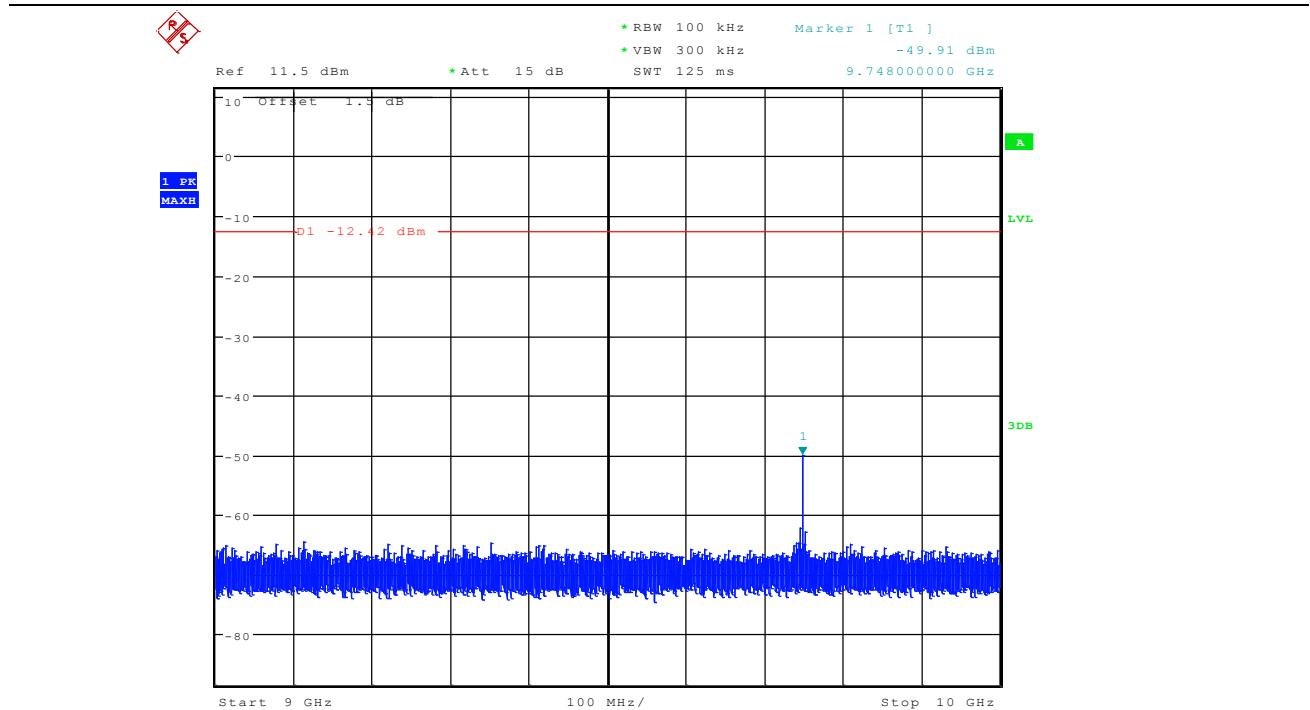


Test mode:	802.11b	Test channel:	Middle
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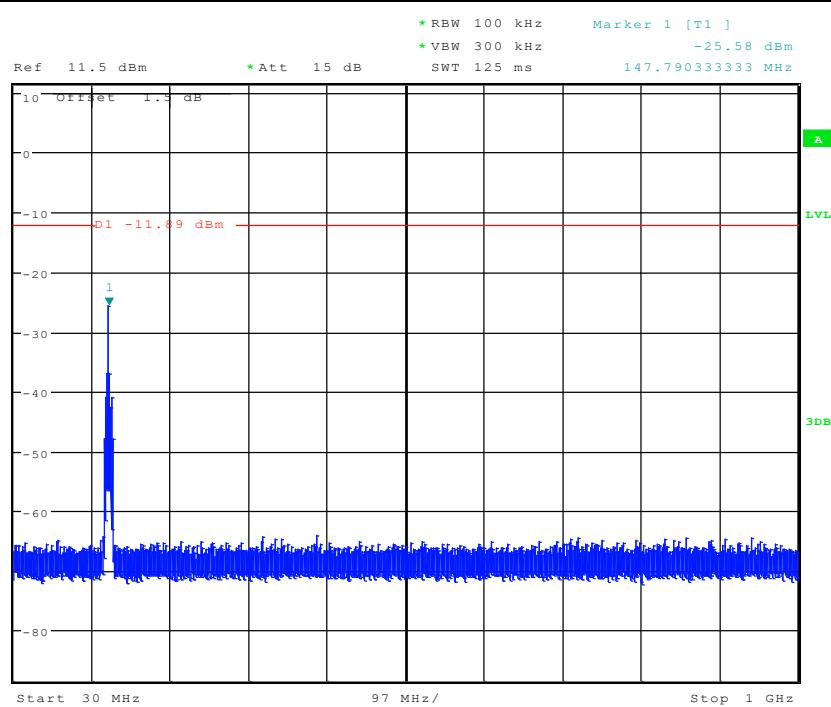
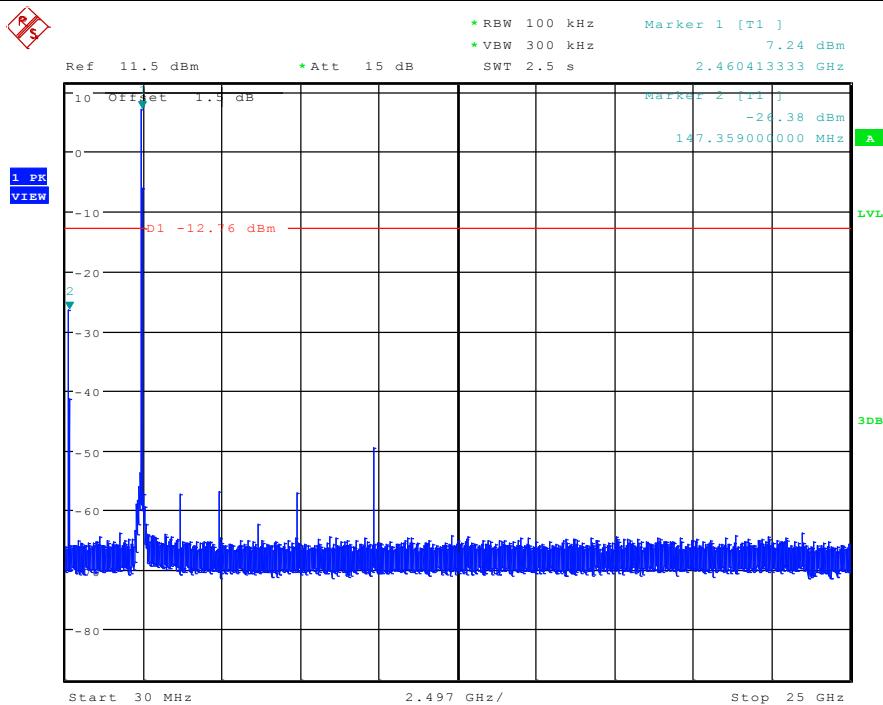


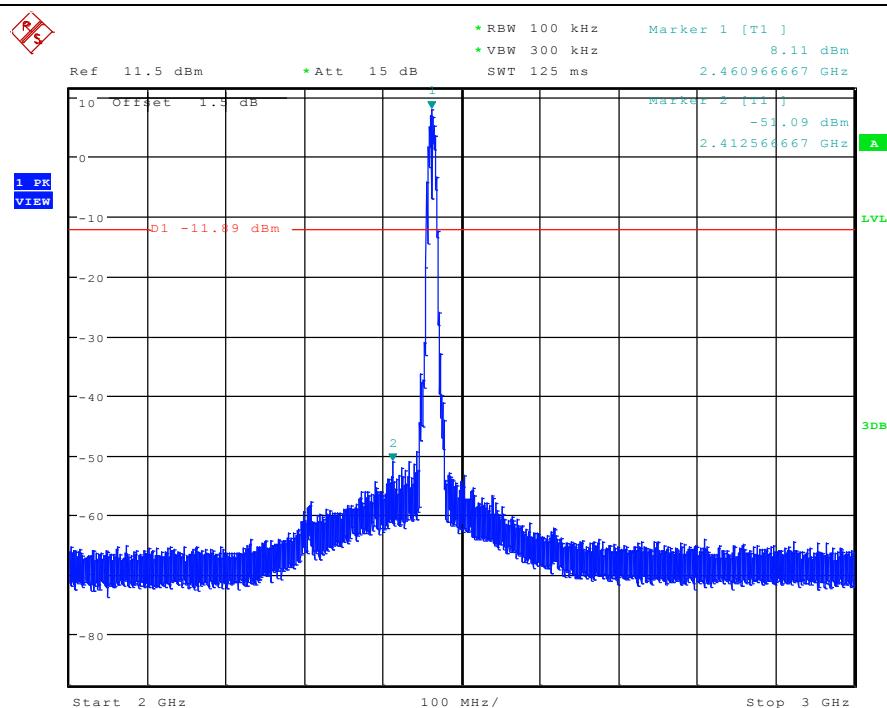
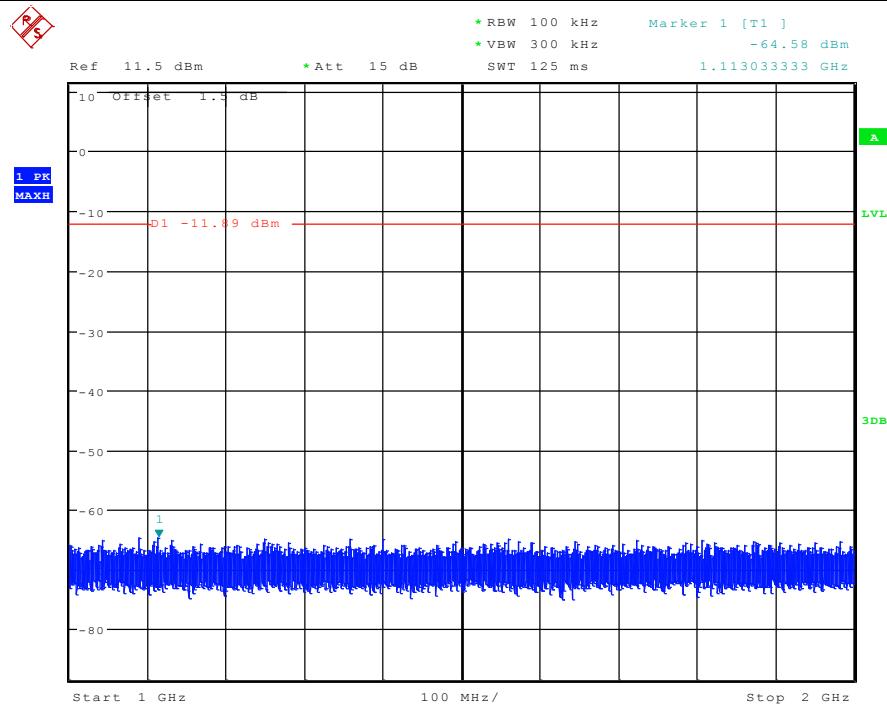


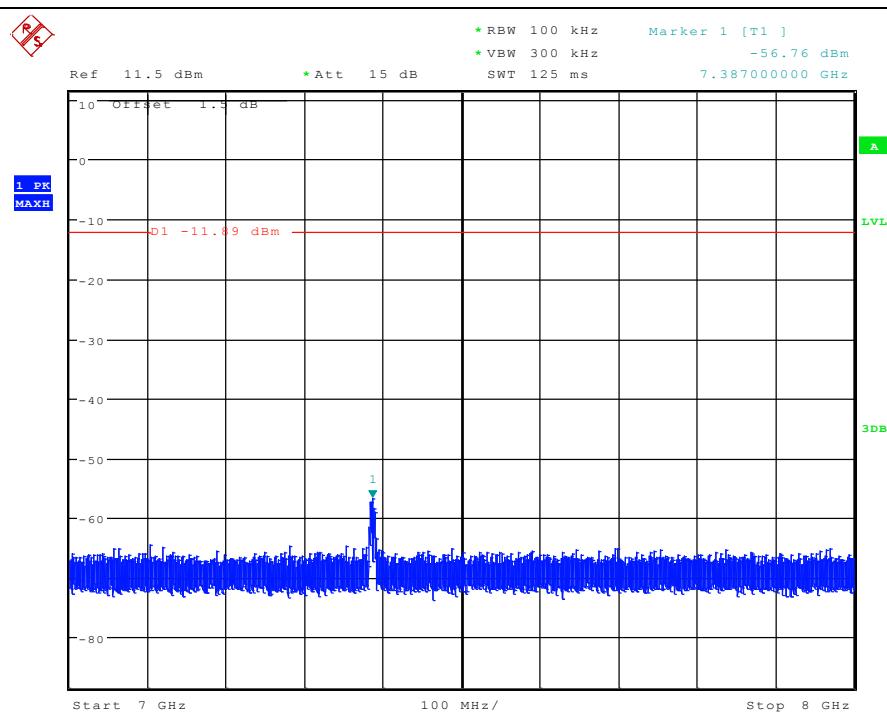
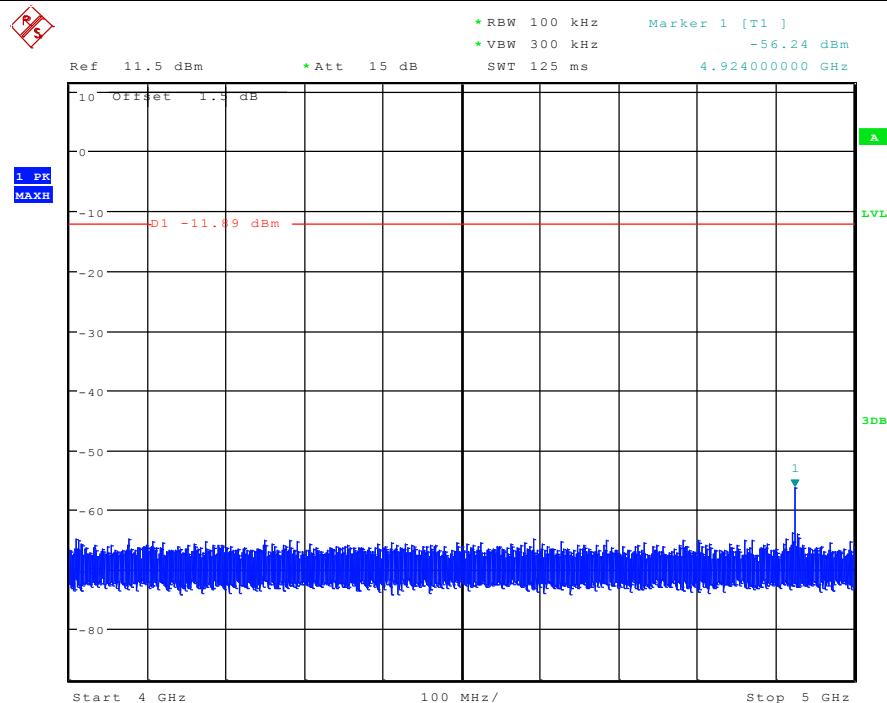


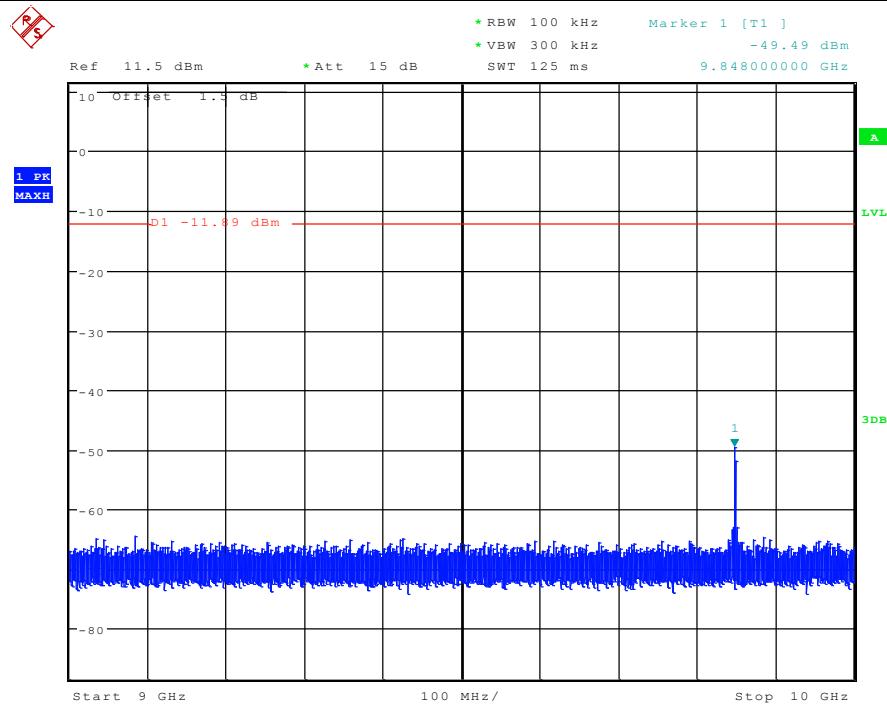


Test mode:	802.11b	Test channel:	Highest
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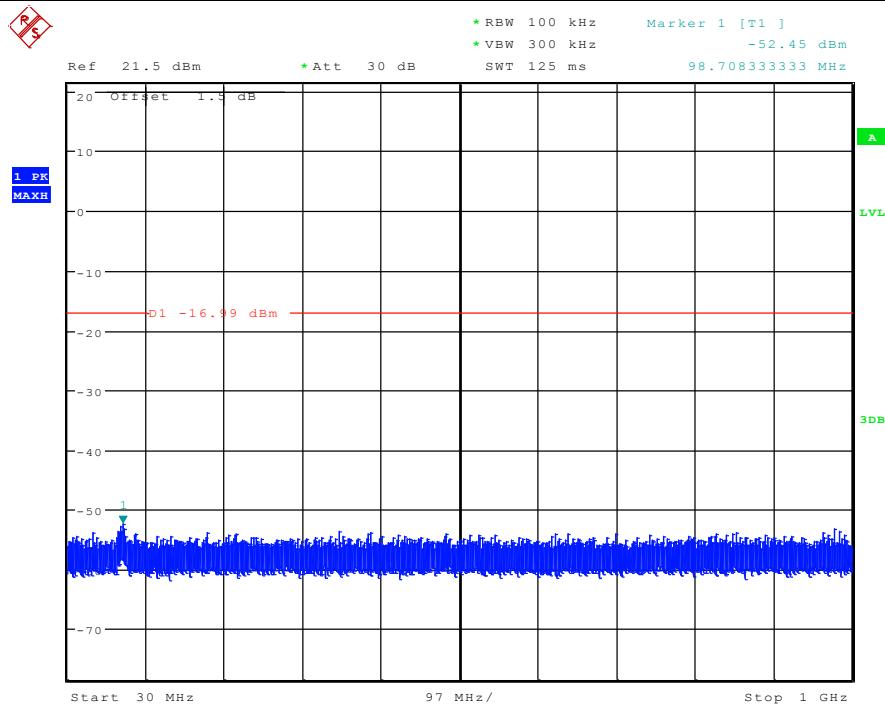
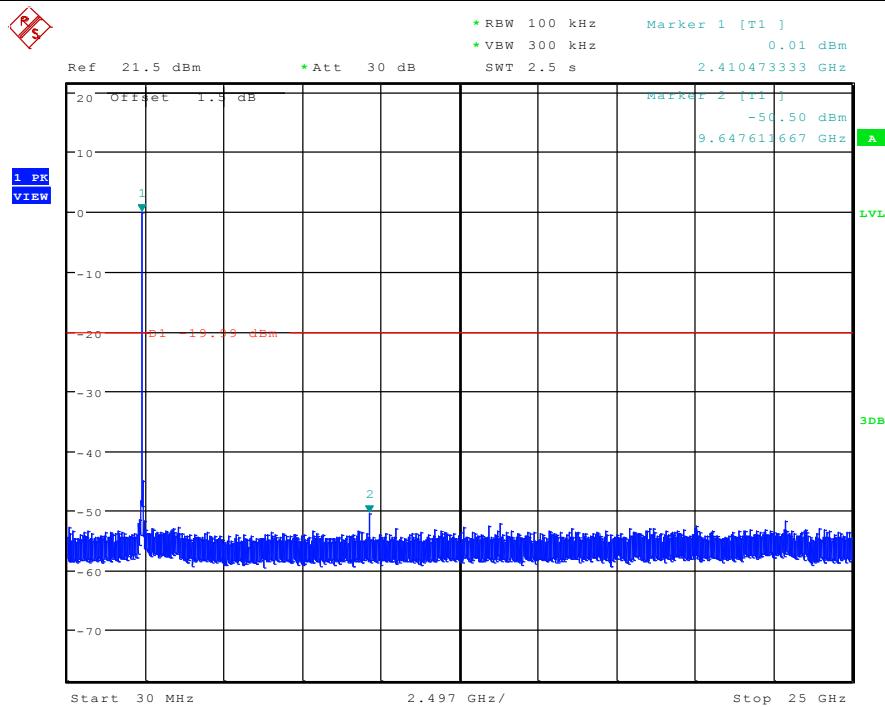


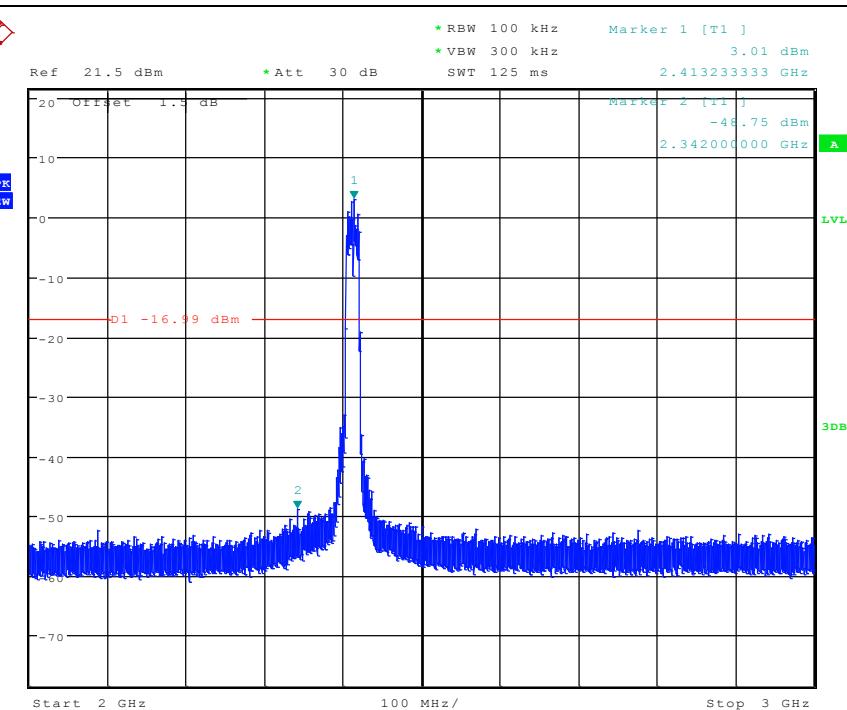
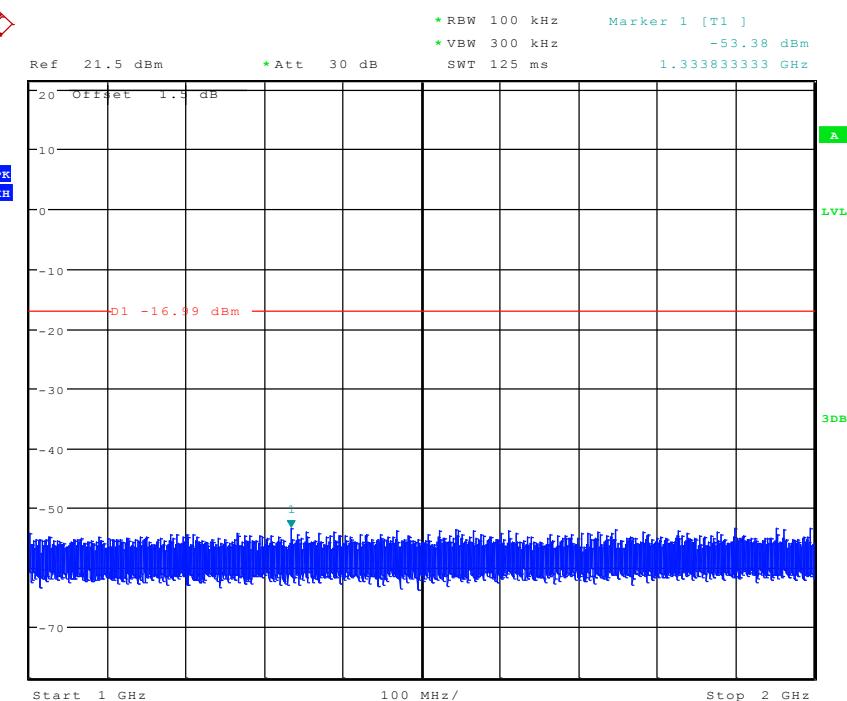


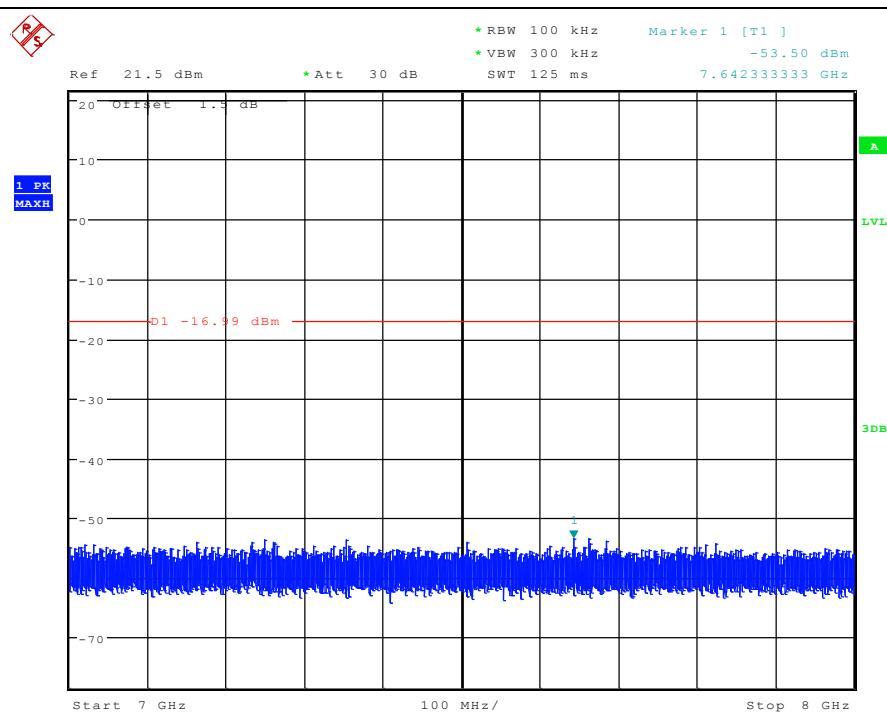
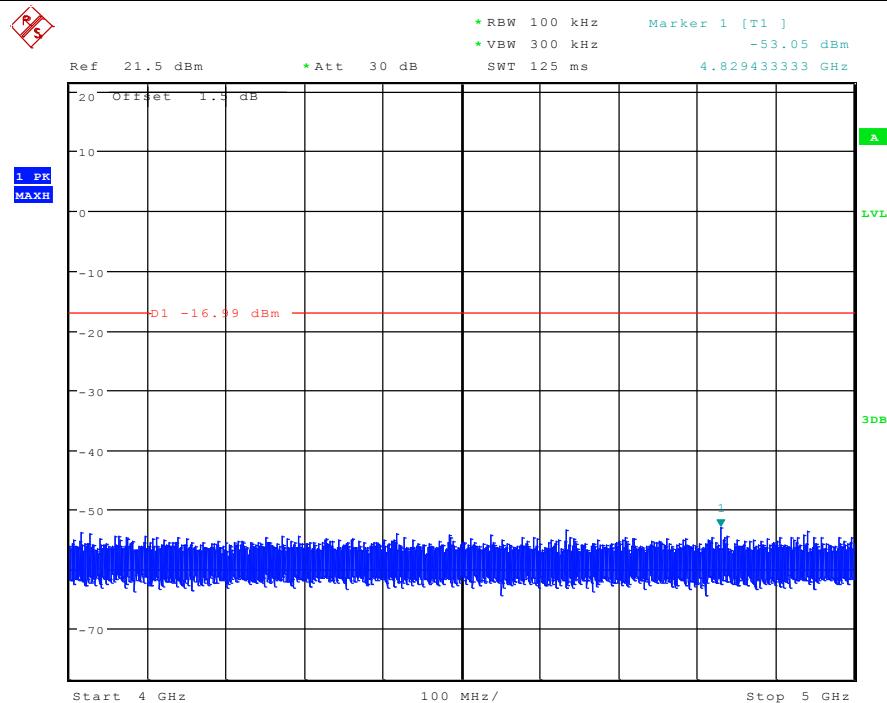


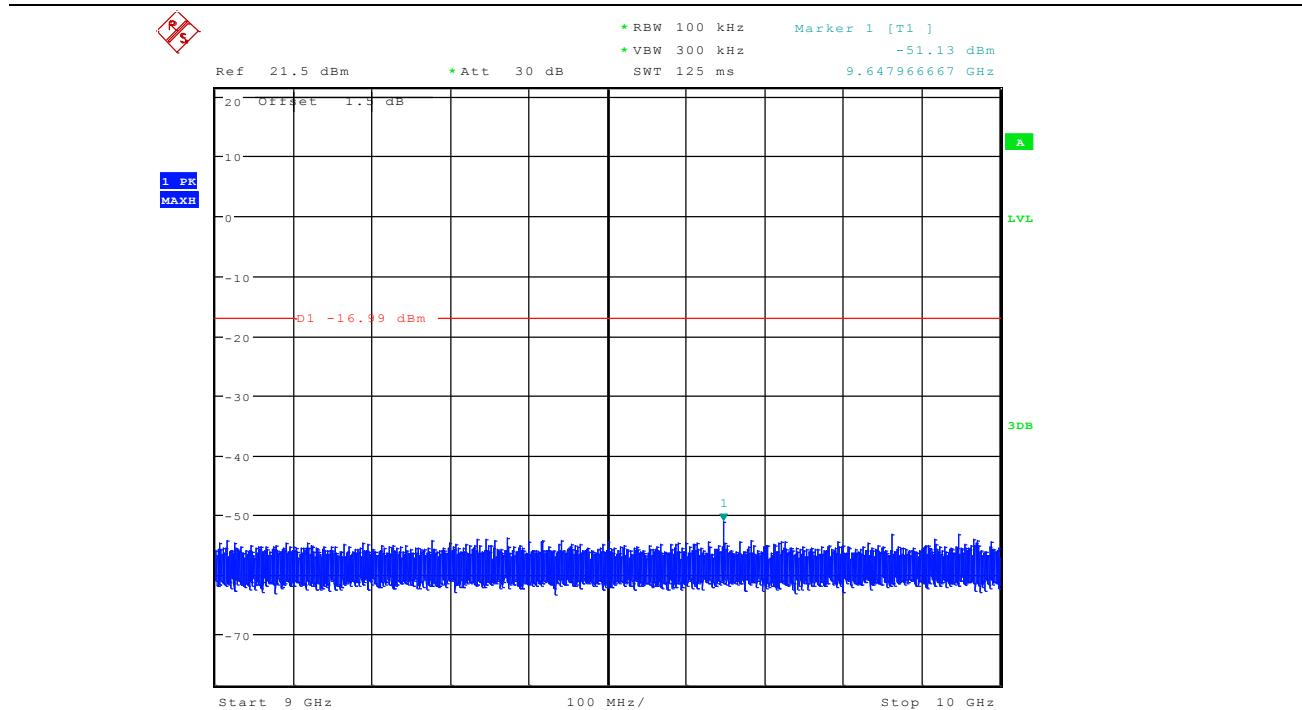


Test mode:	802.11g	Test channel:	Lowest
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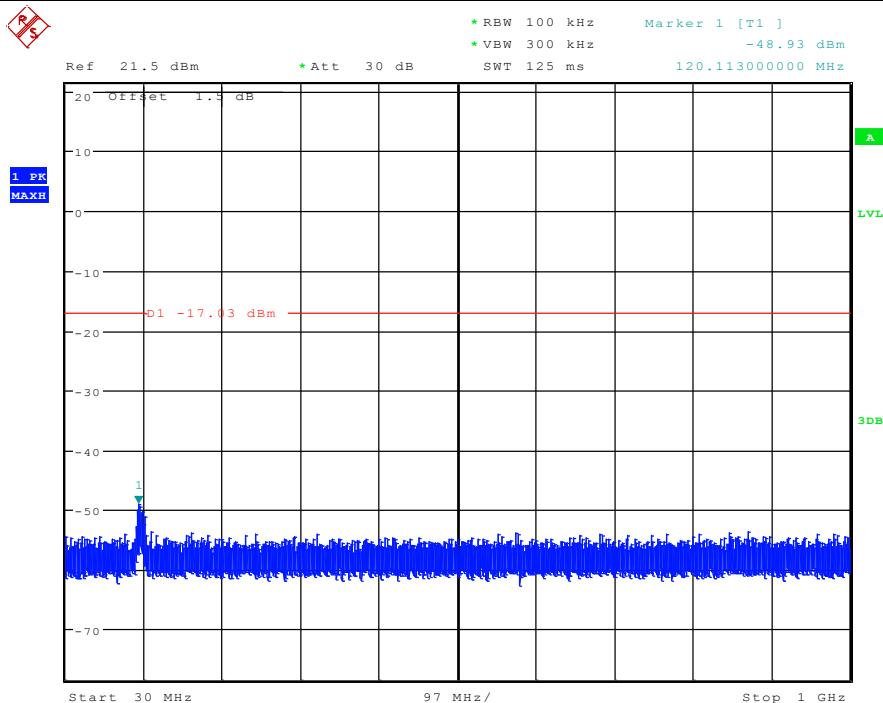
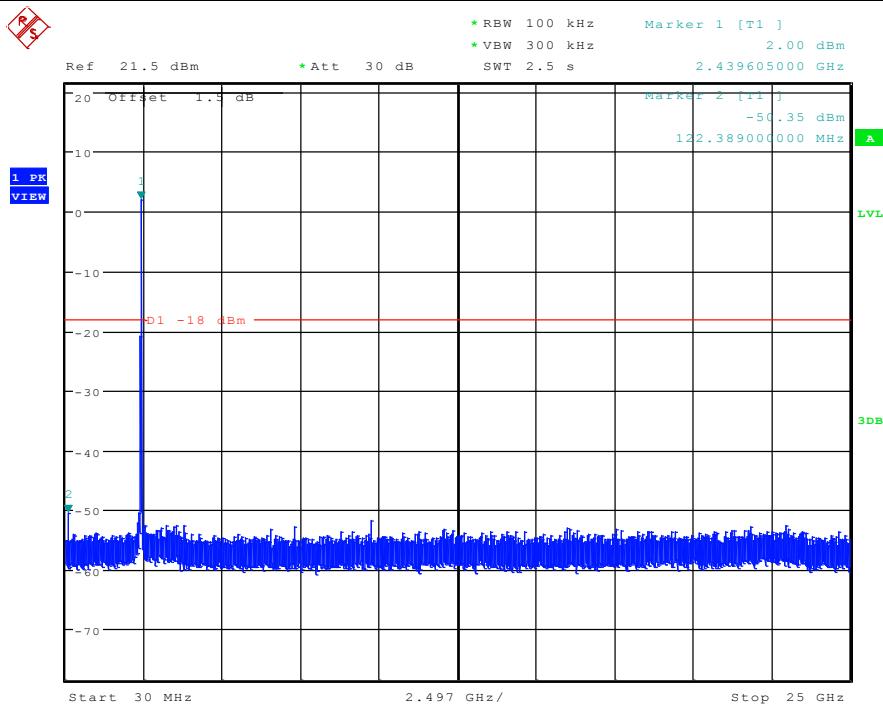


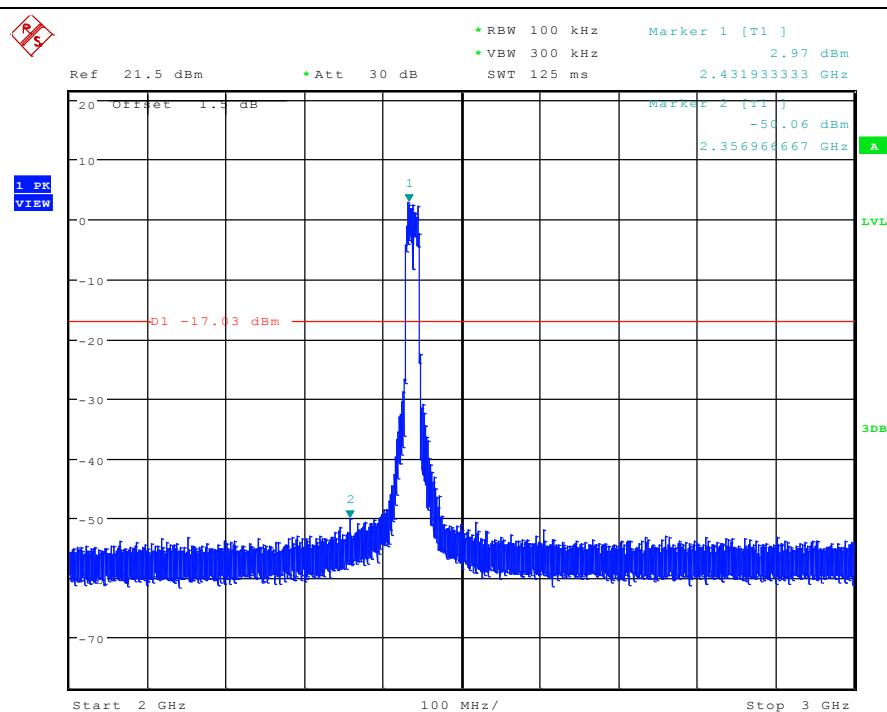
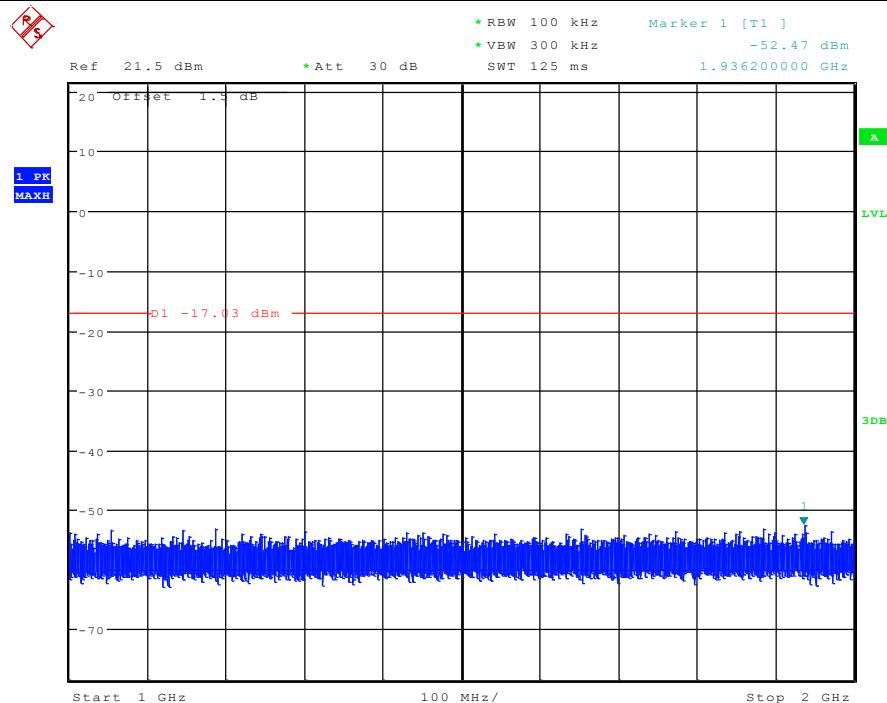


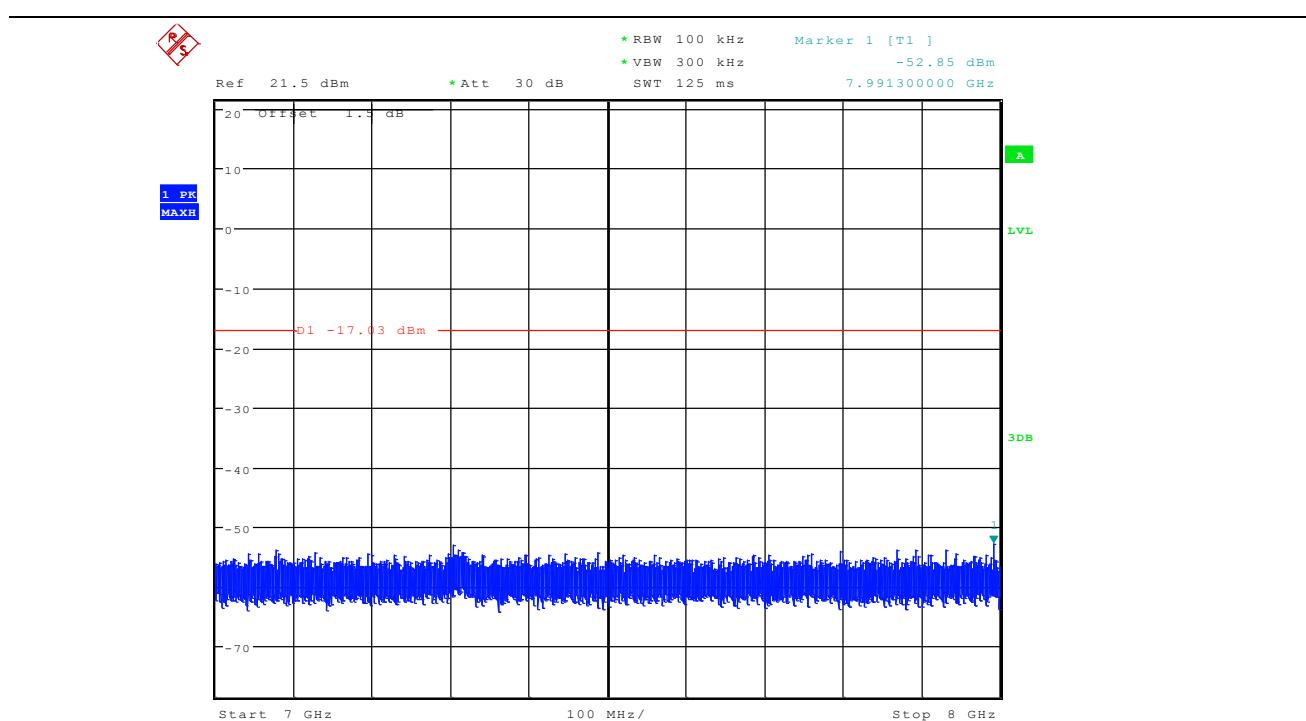
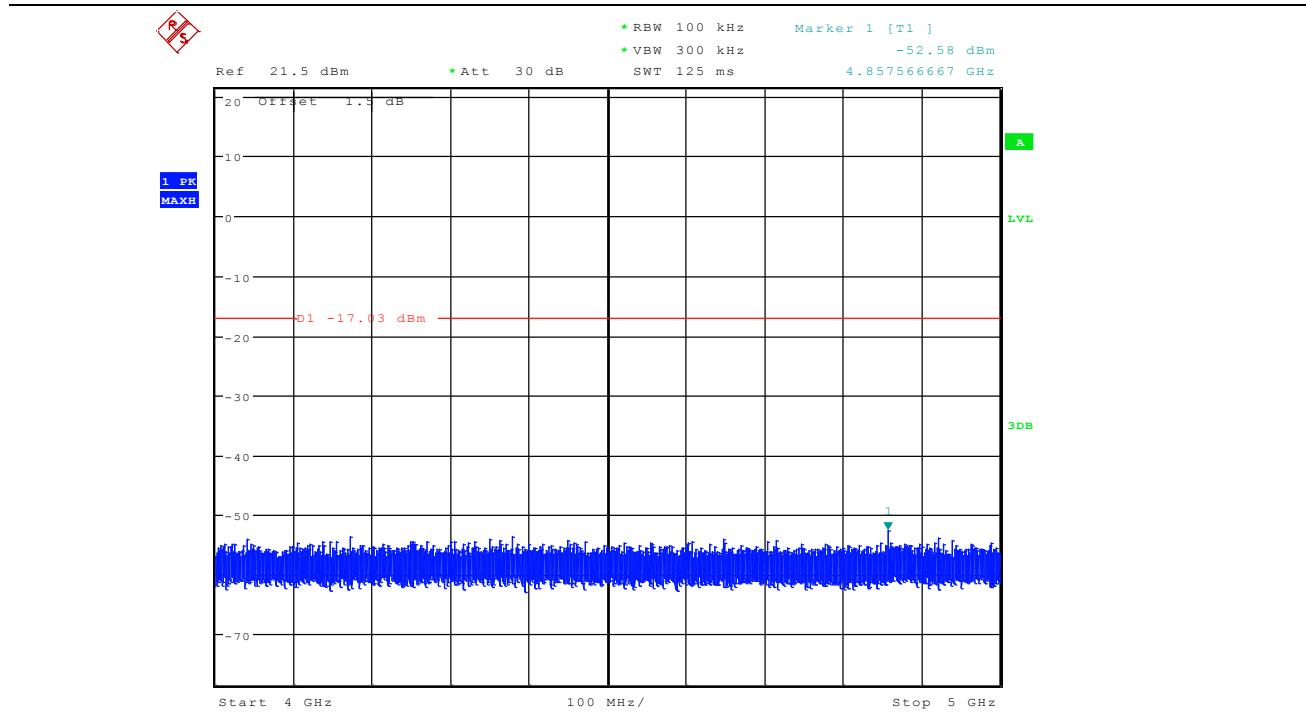


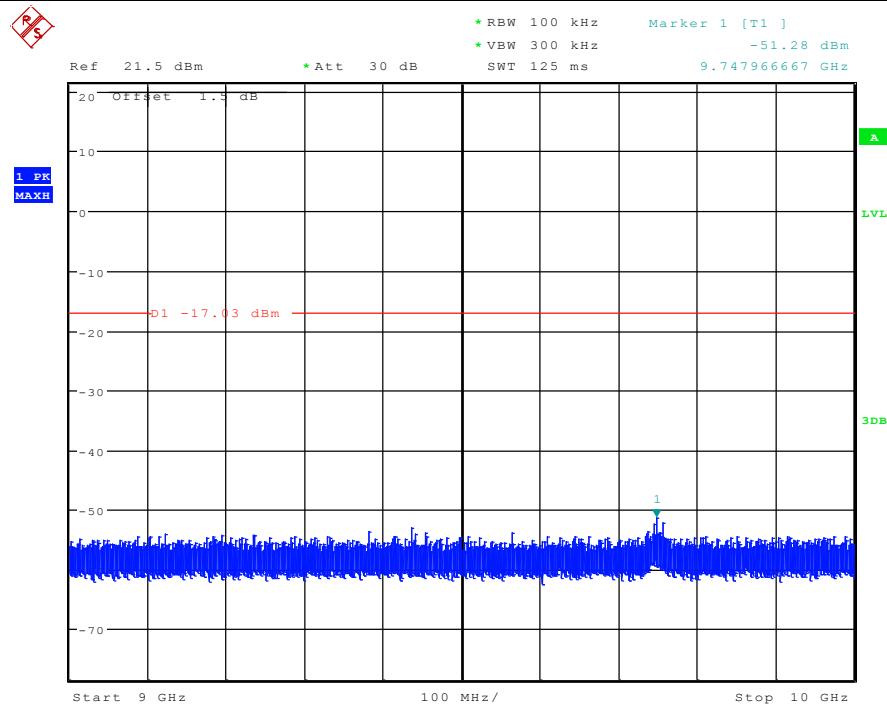


Test mode:	802.11g	Test channel:	Middle
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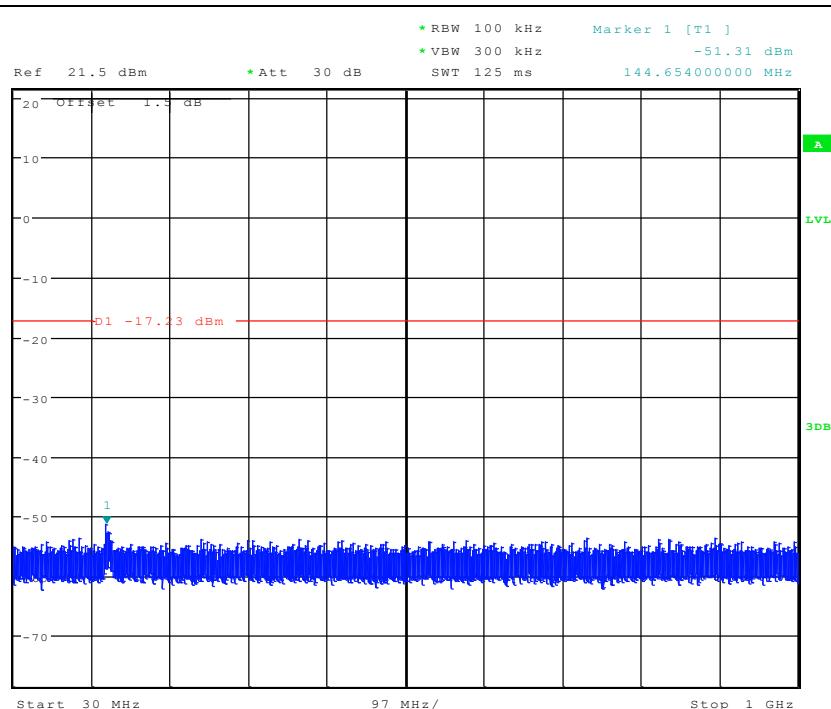
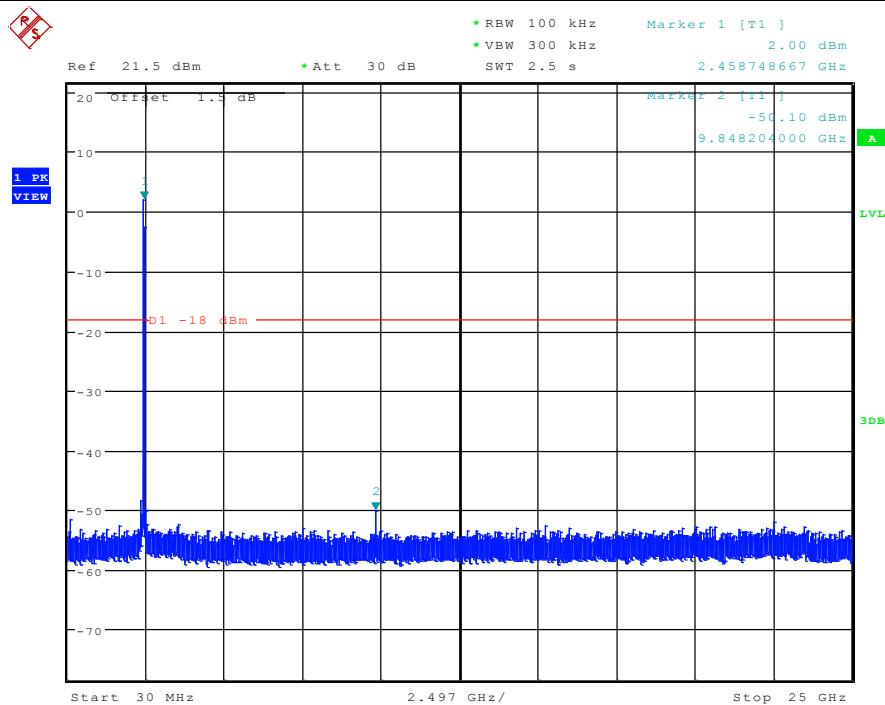


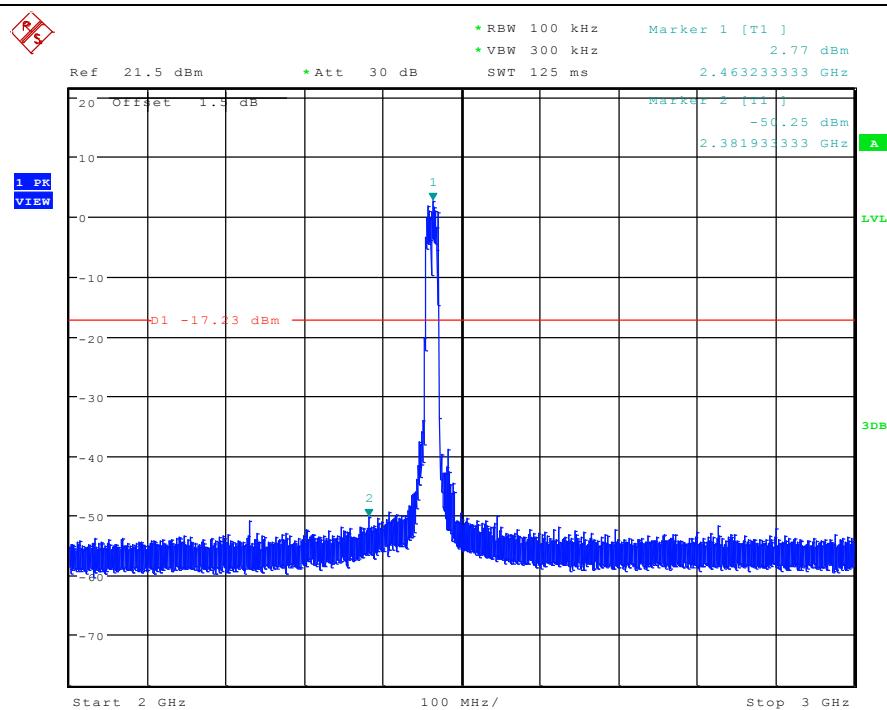
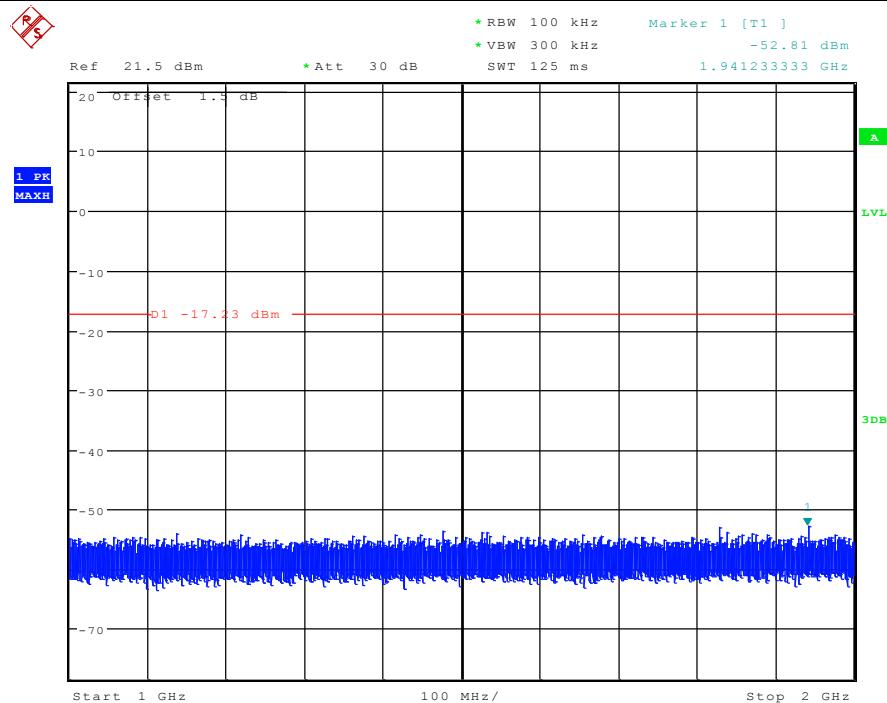


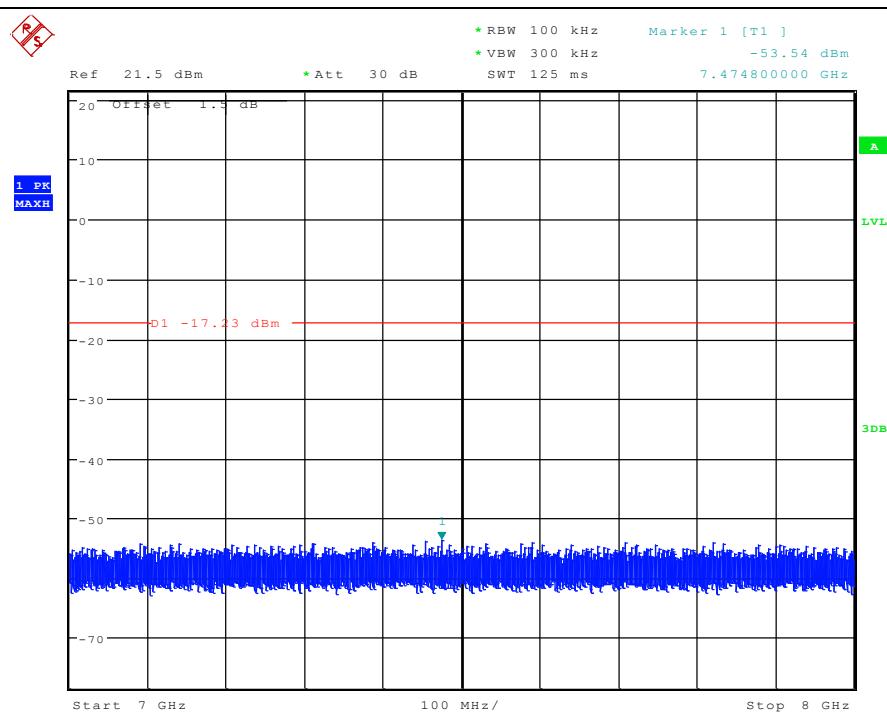
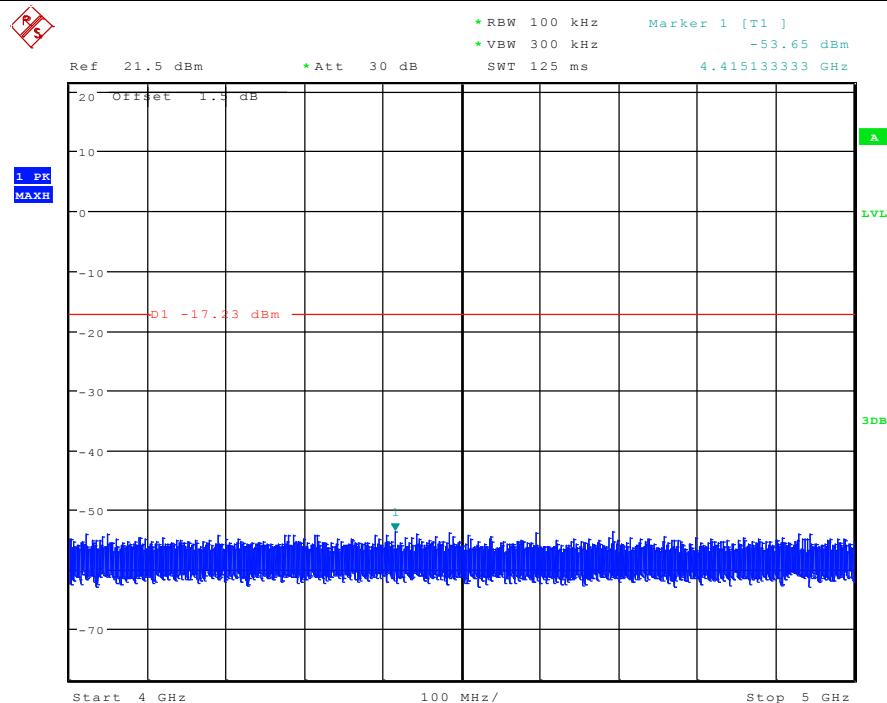


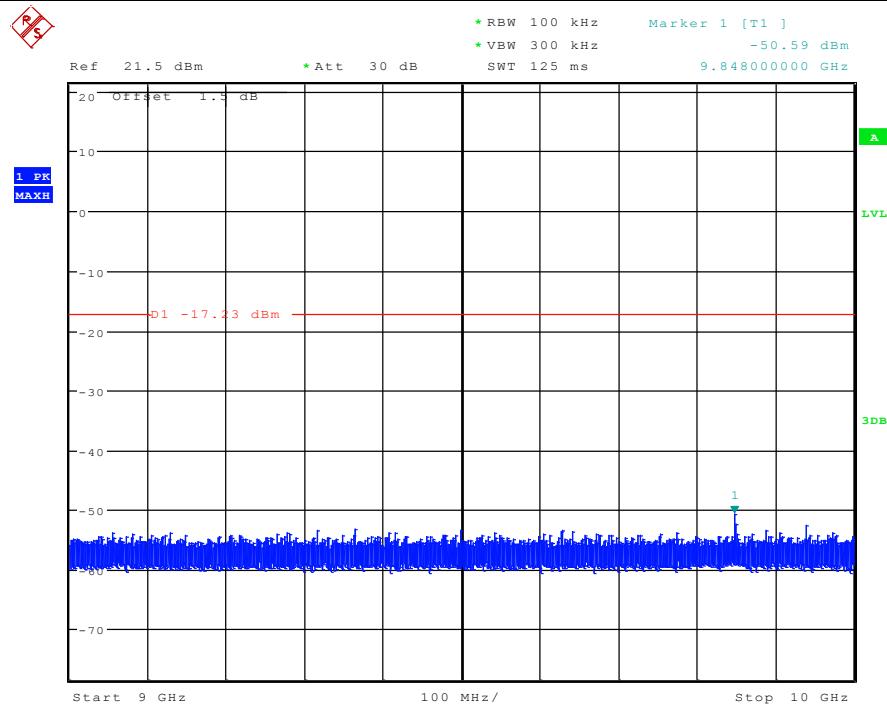


Test mode:	802.11g	Test channel:	Highest
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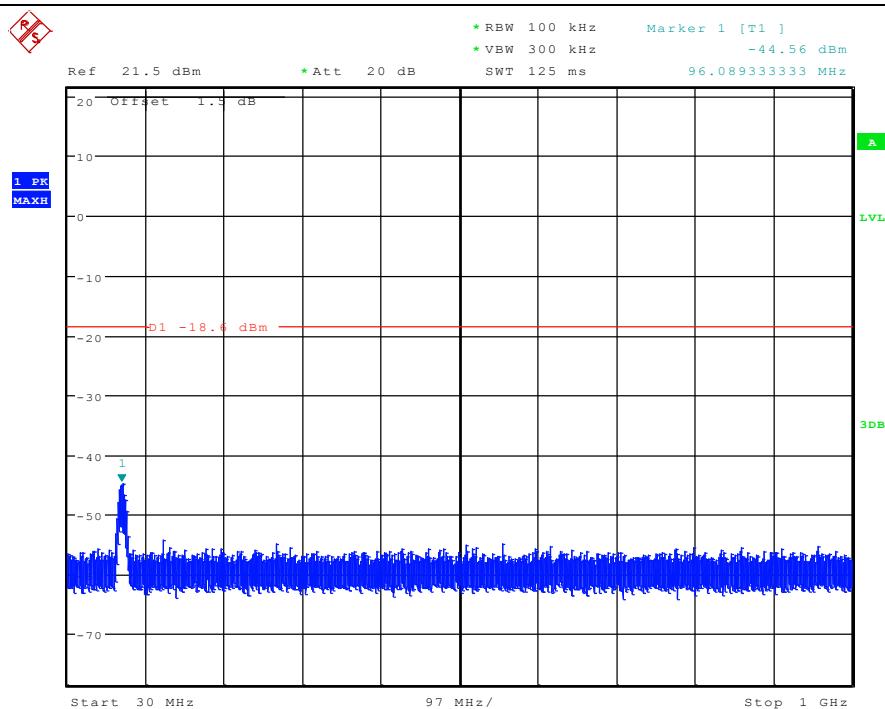
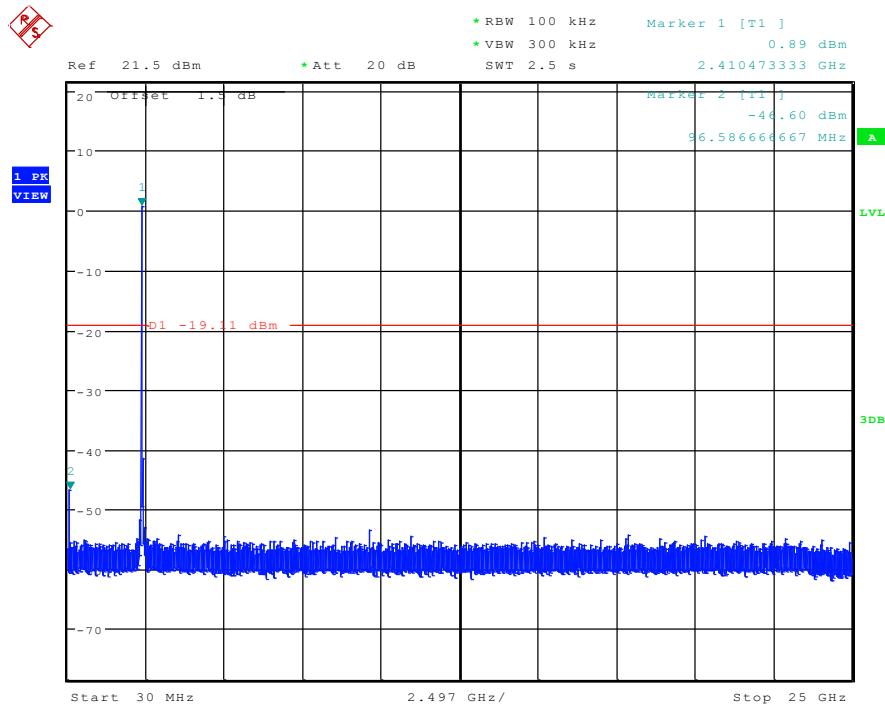


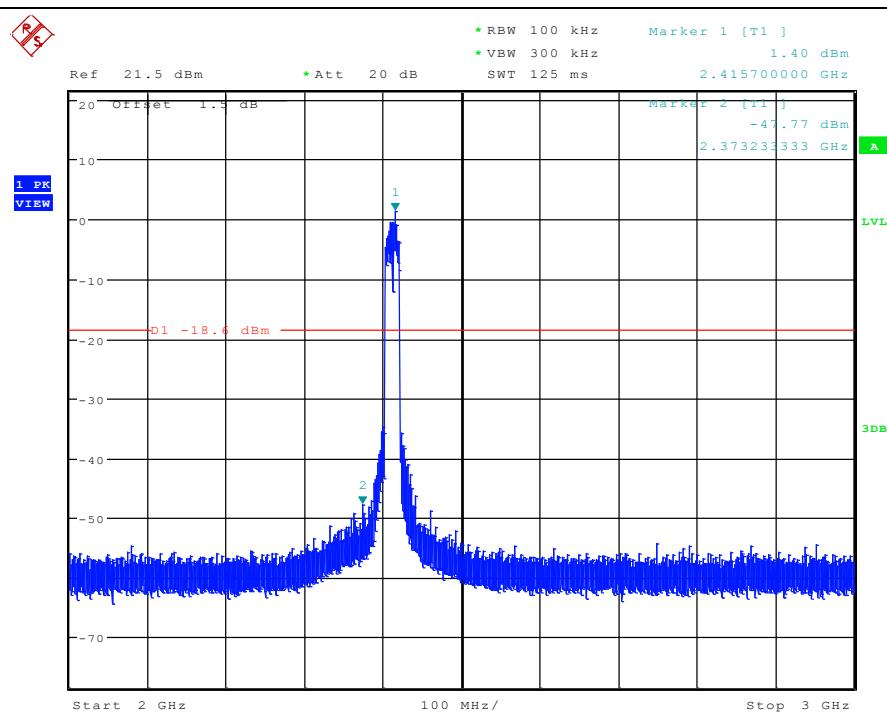
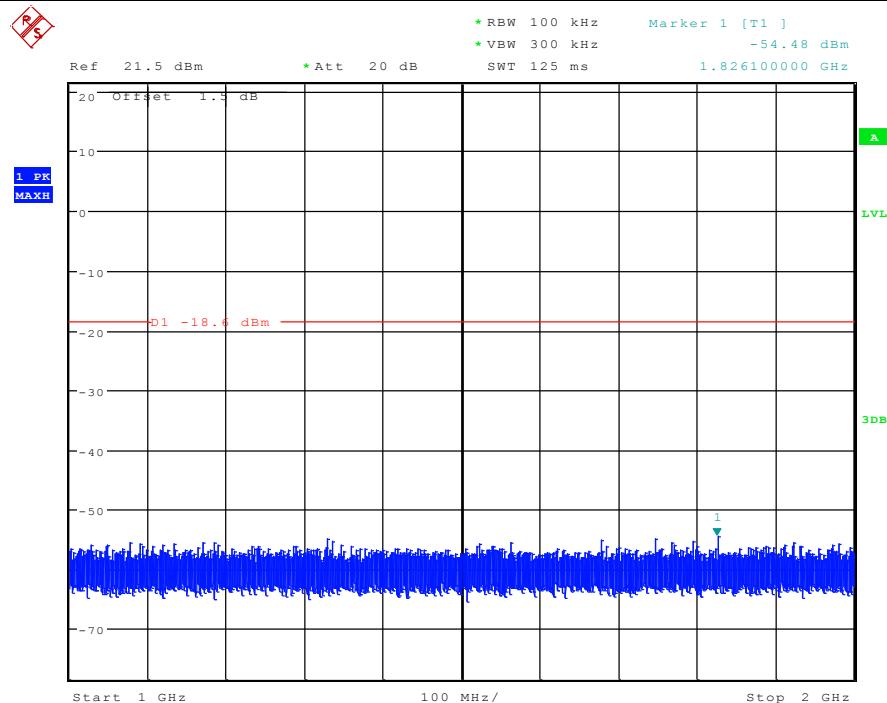


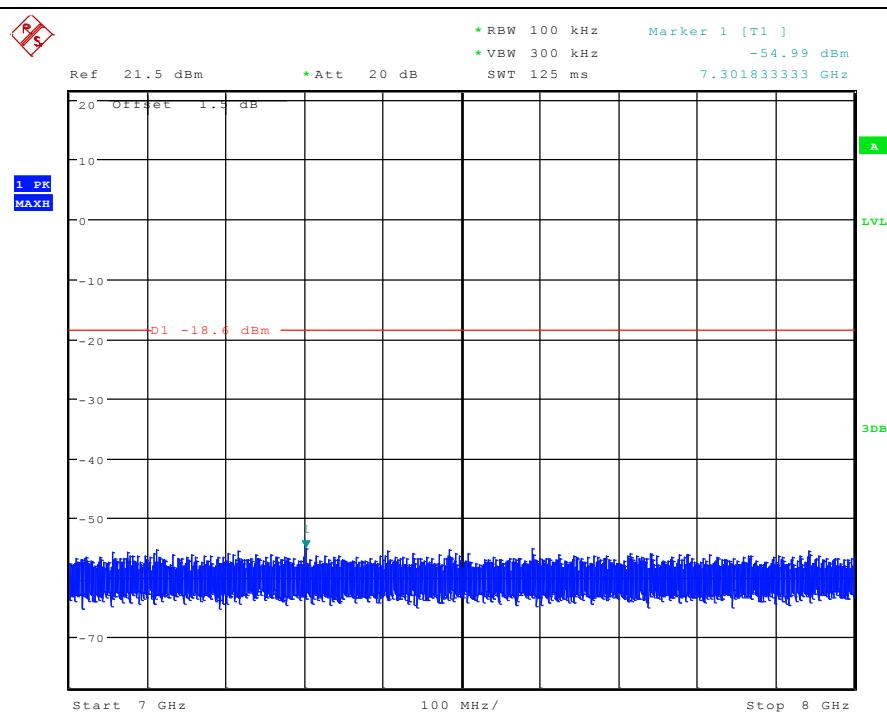
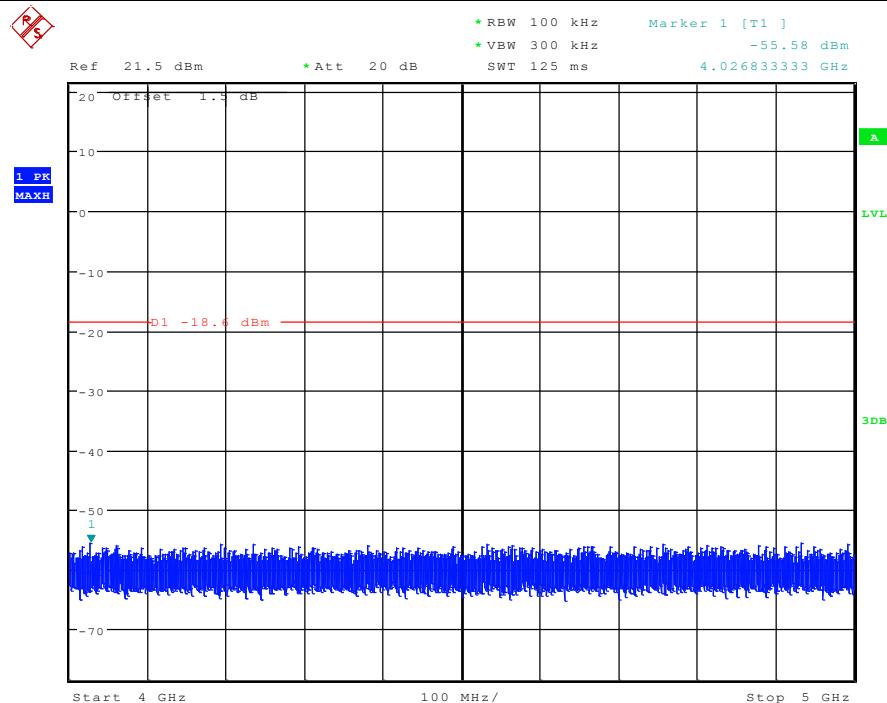


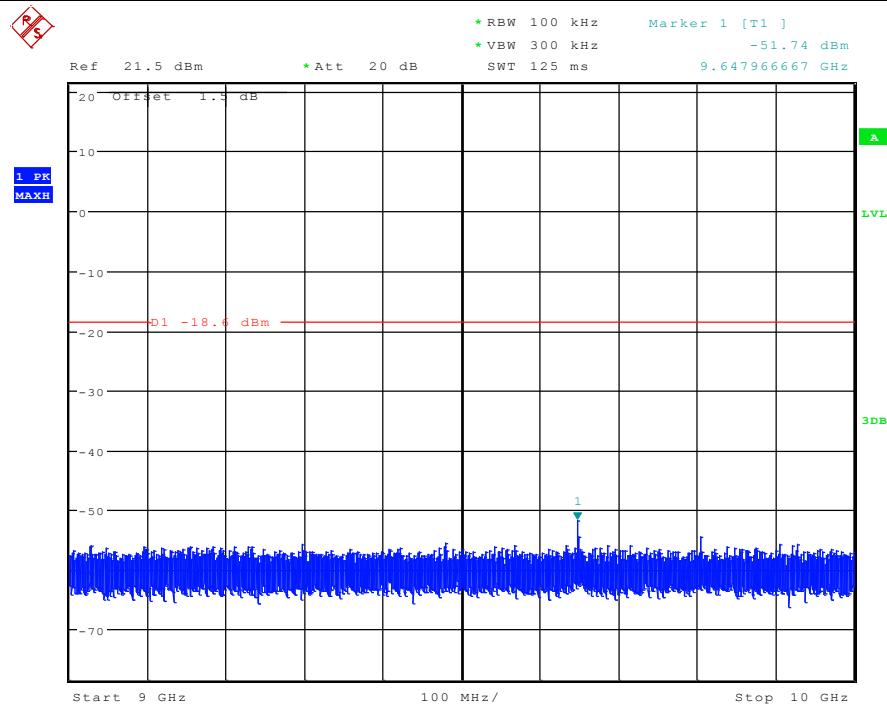


Test mode:	802.11n(HT20)	Test channel:	Lowest
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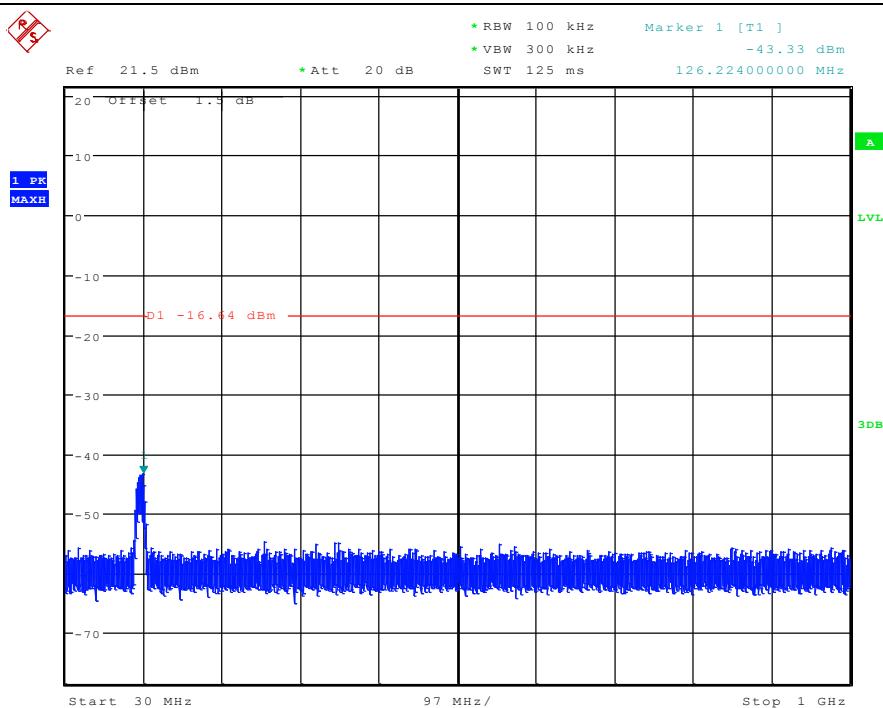
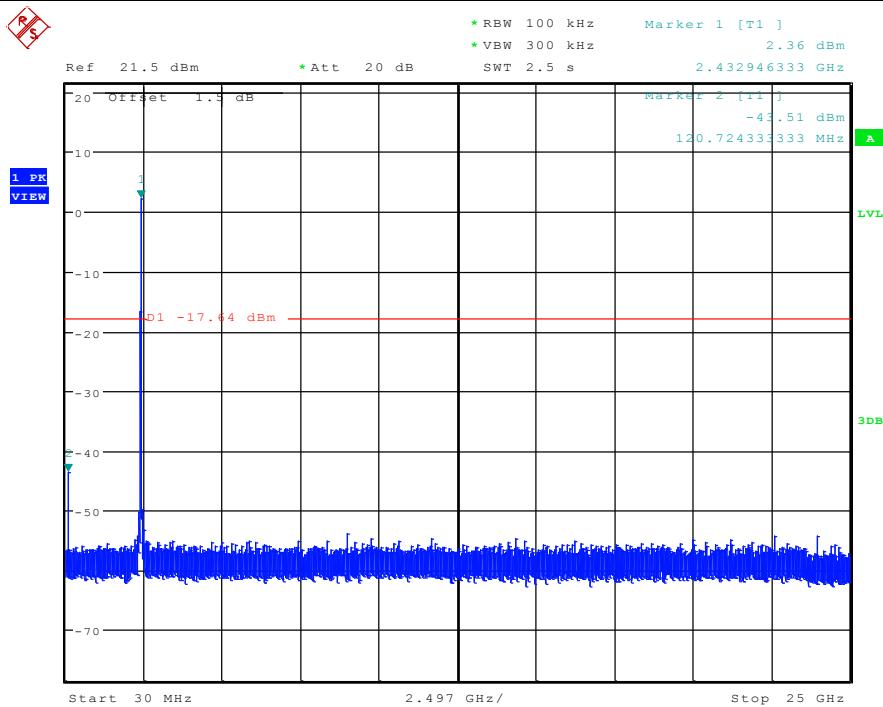


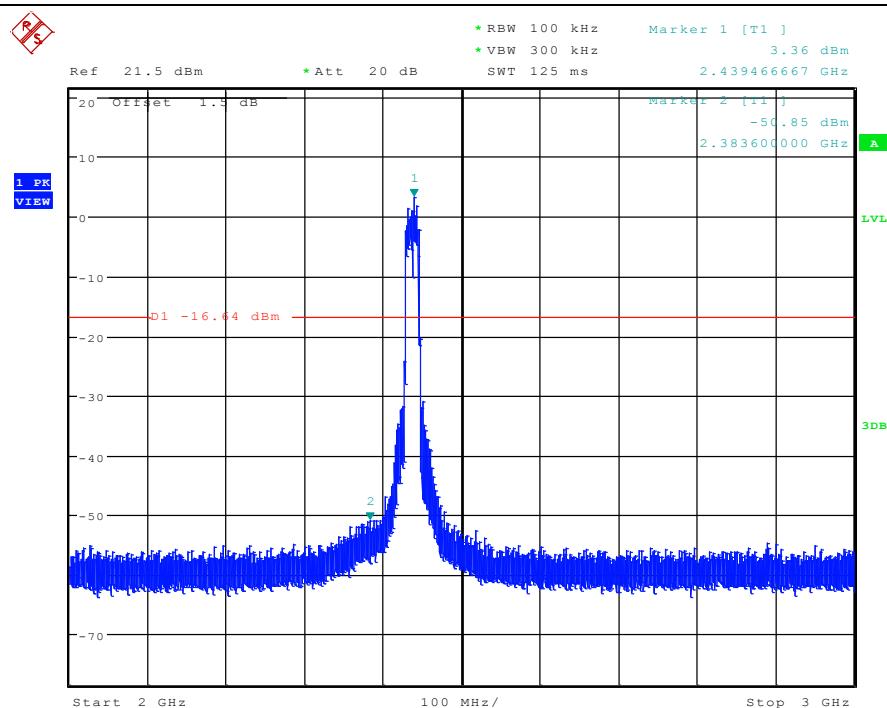
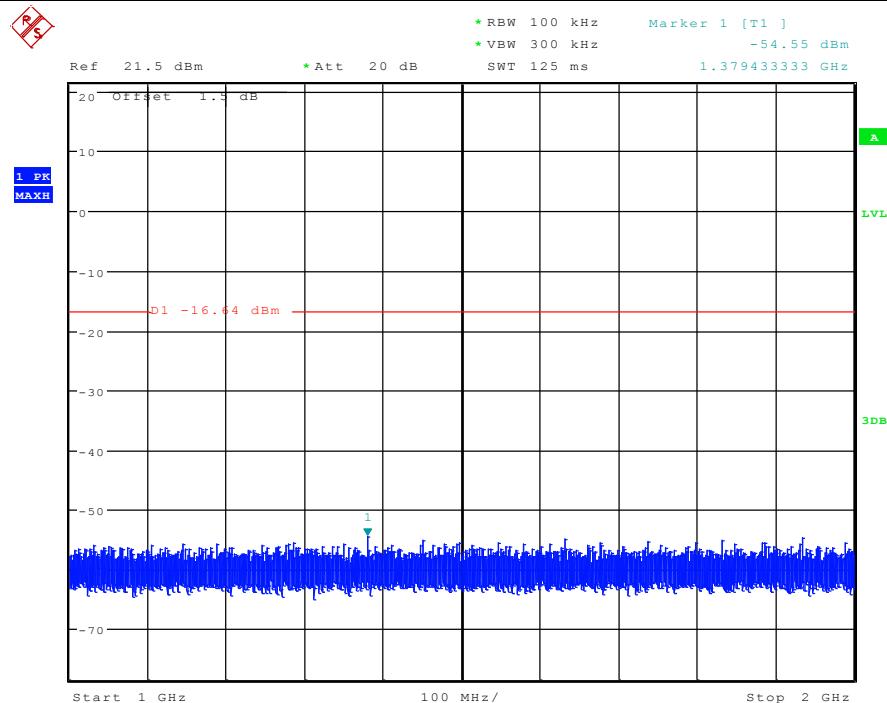


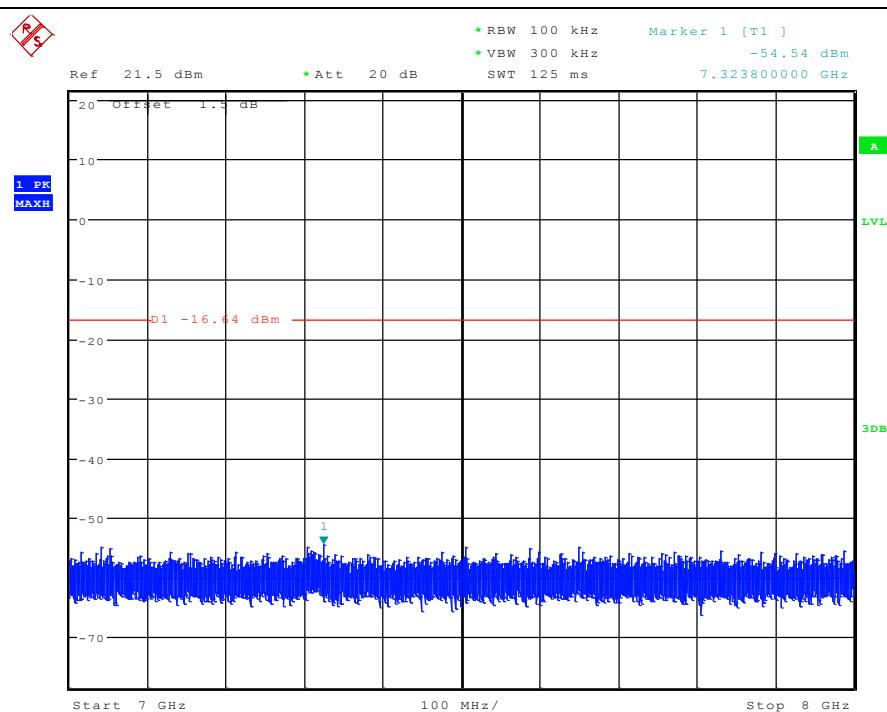
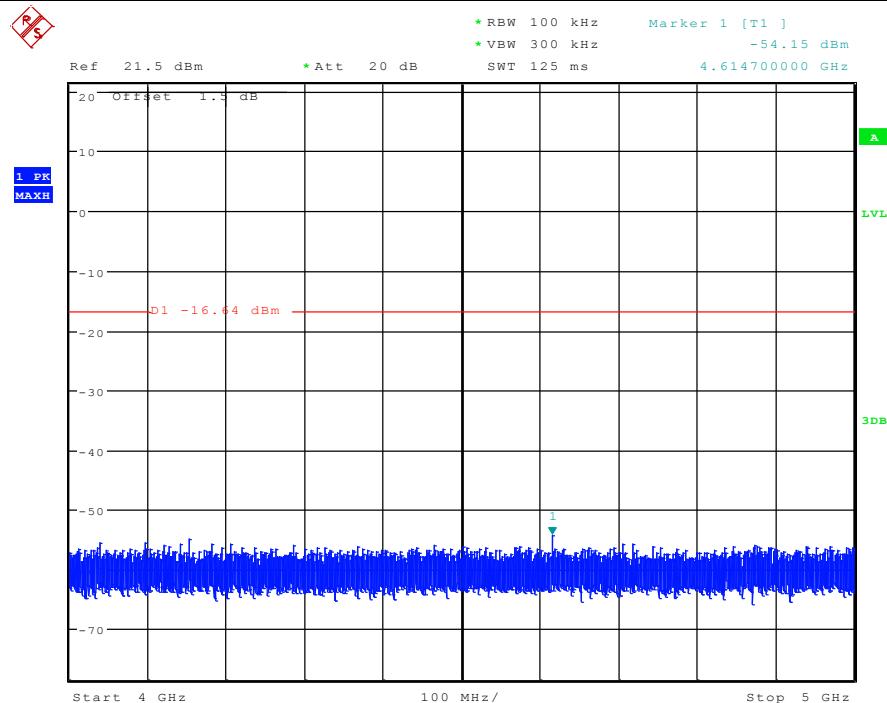


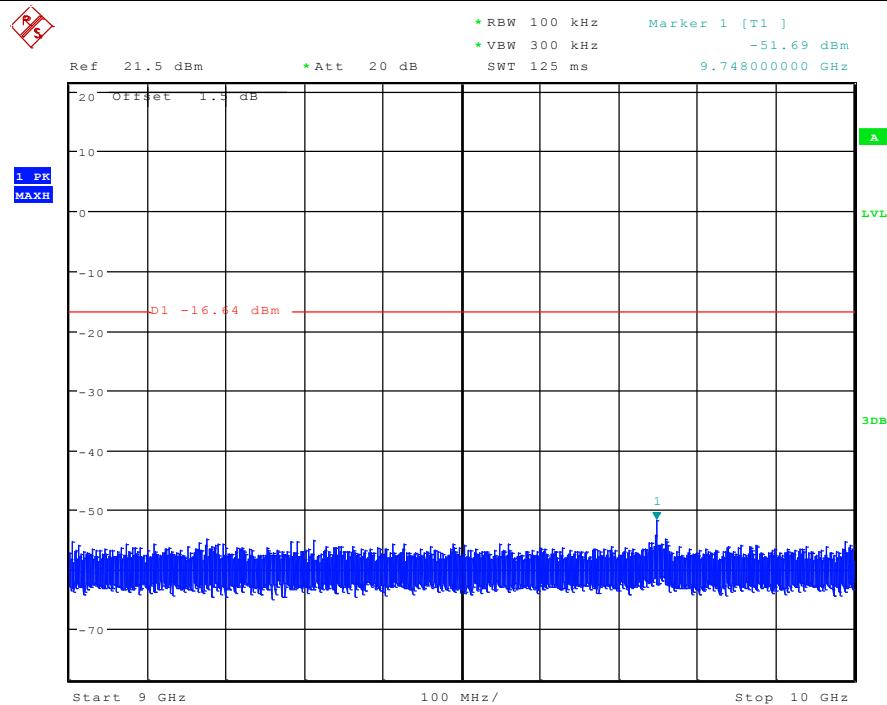


Test mode:	802.11n(HT20)	Test channel:	Middle
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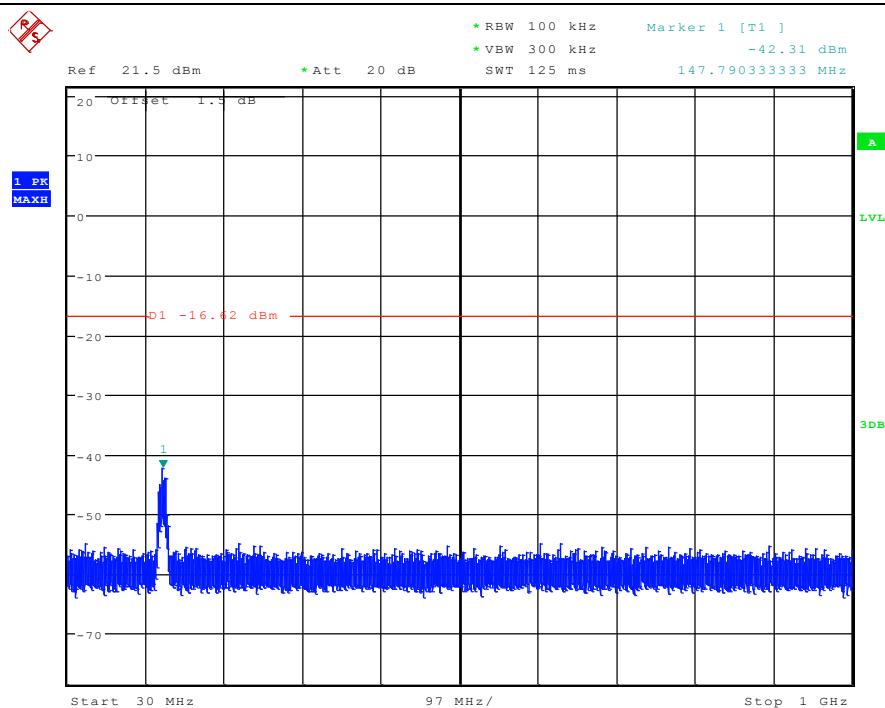
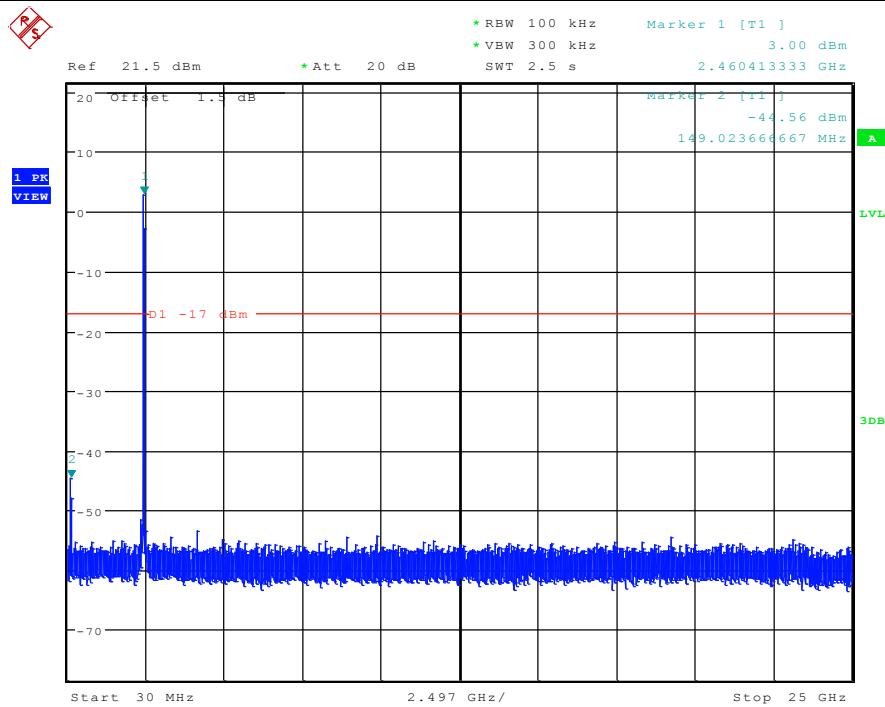


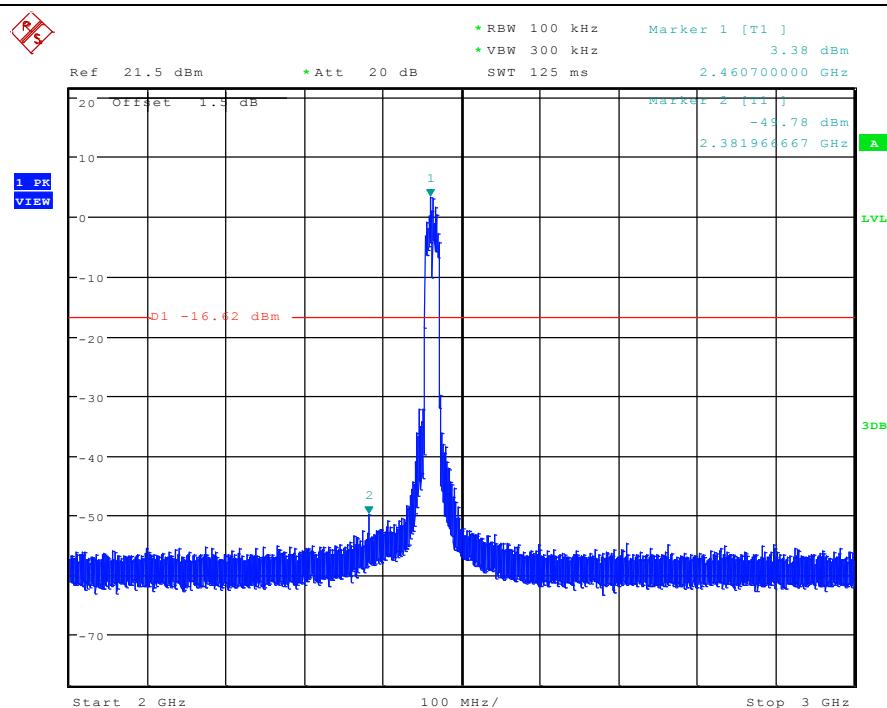
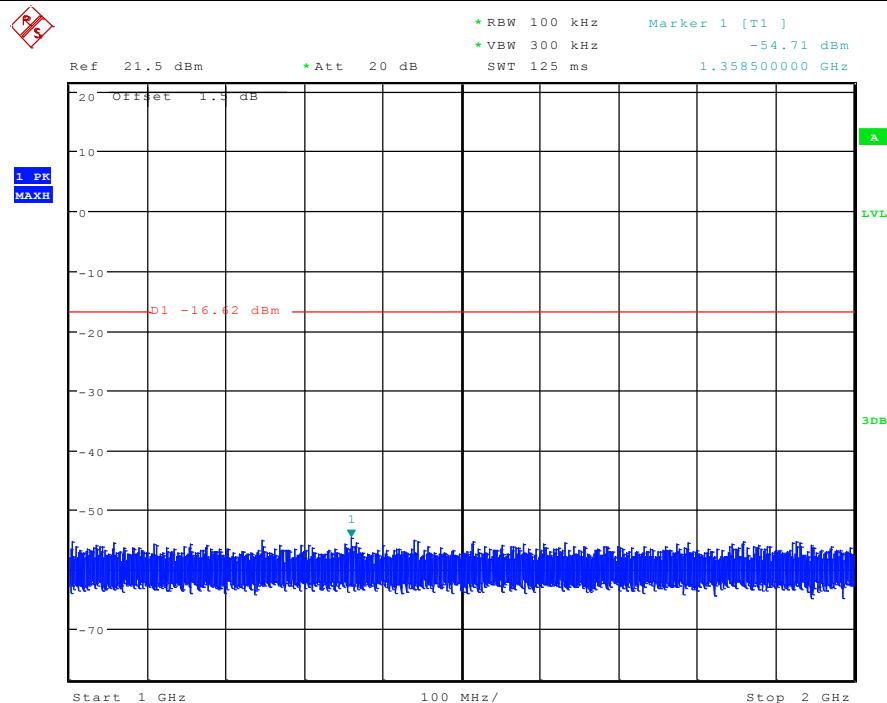


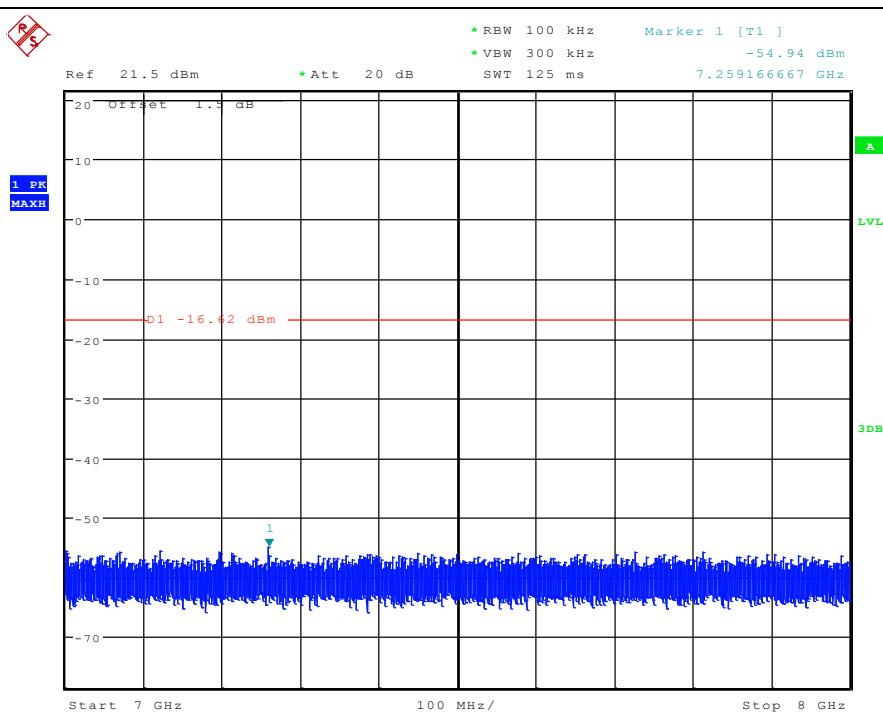
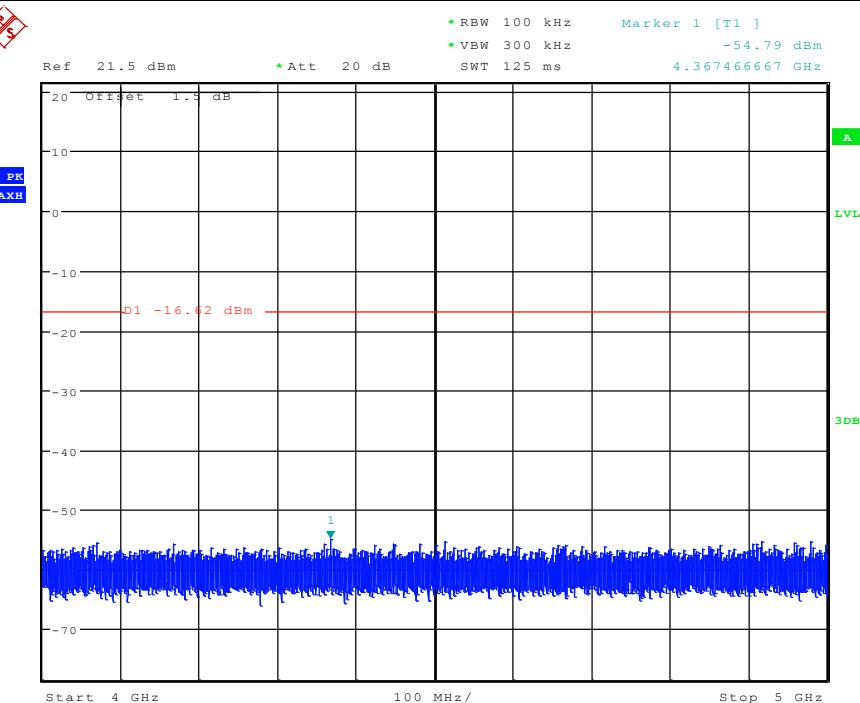


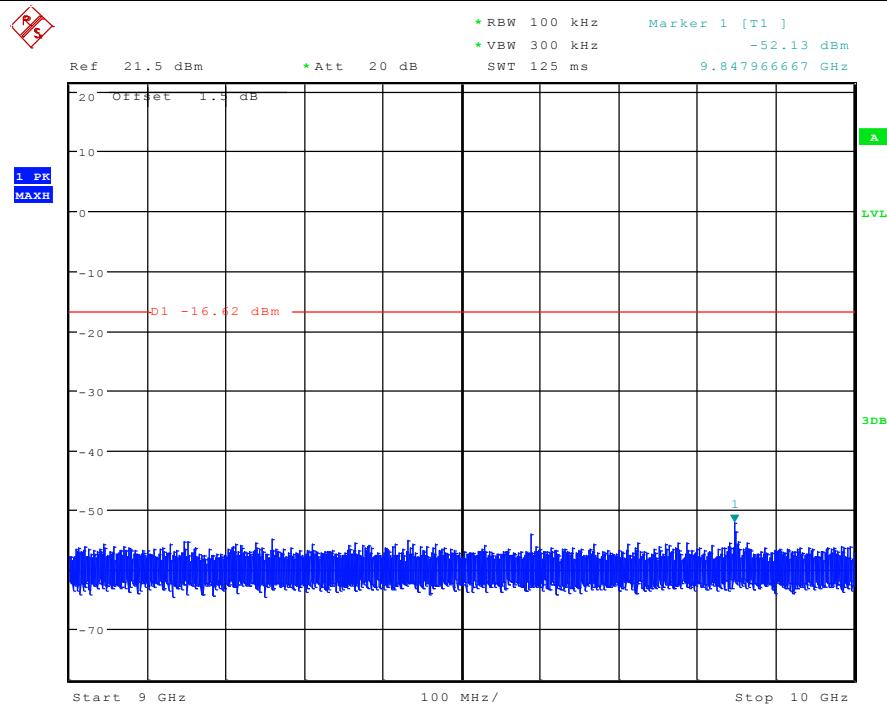


Test mode:	802.11n(HT20)	Test channel:	Highest
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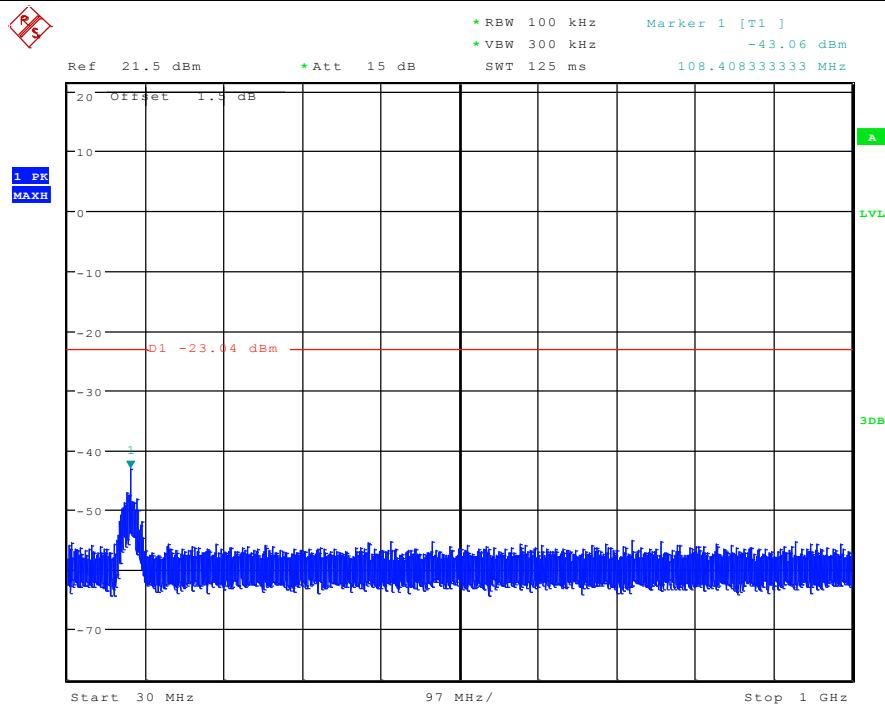
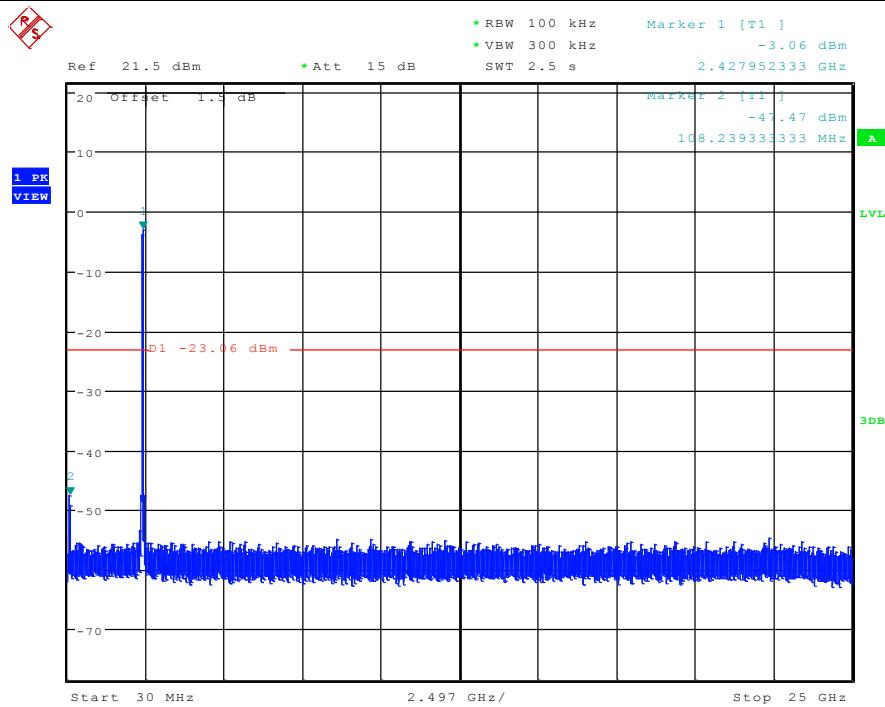


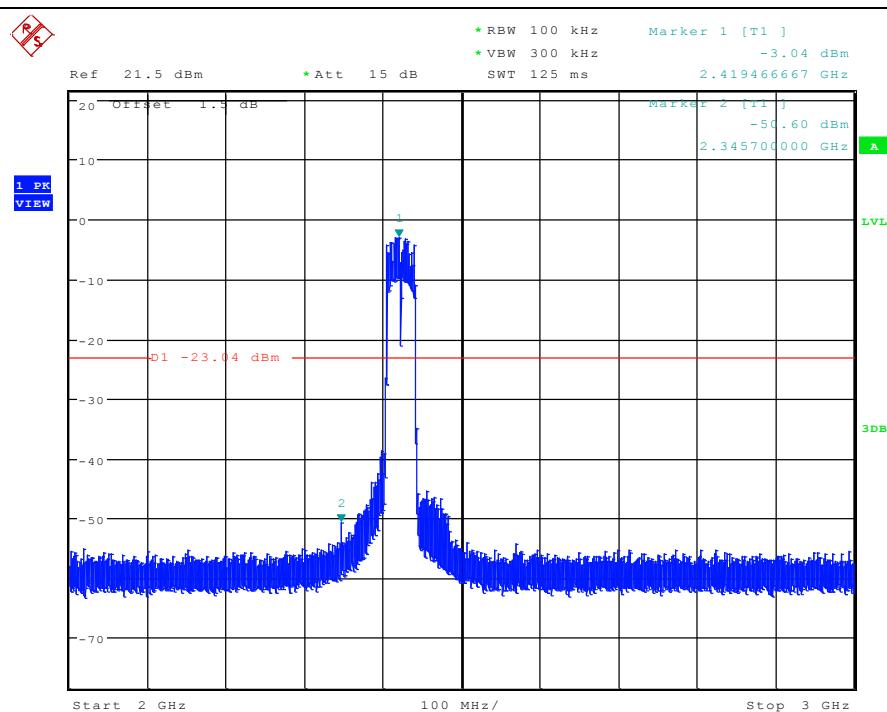
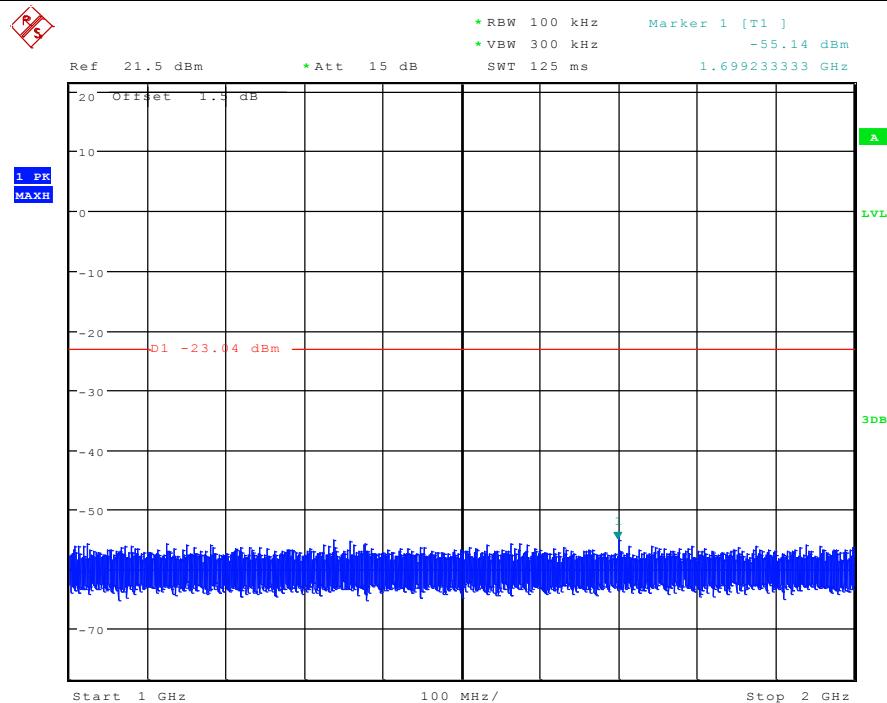


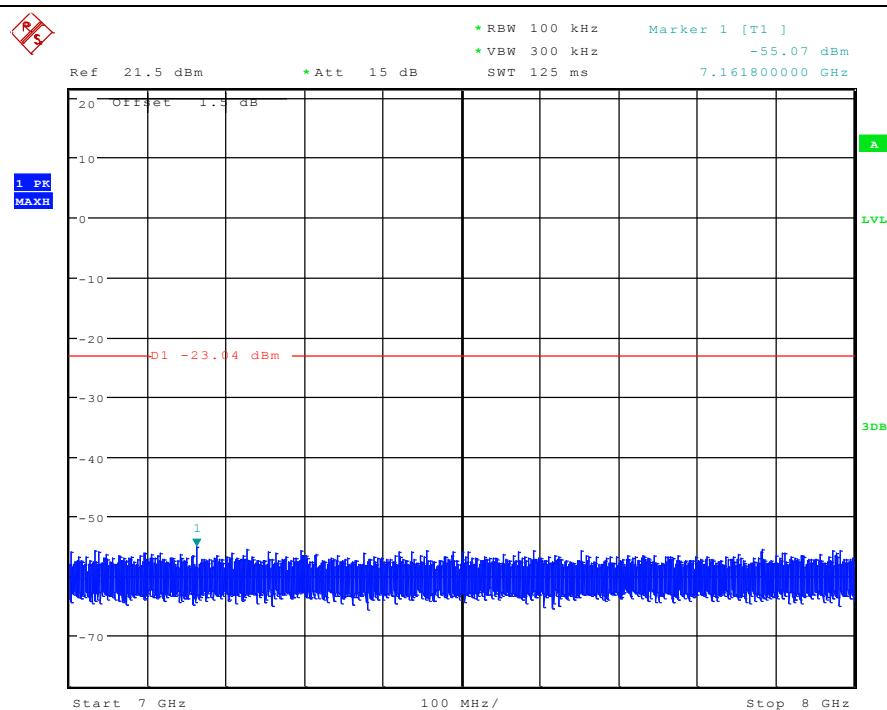
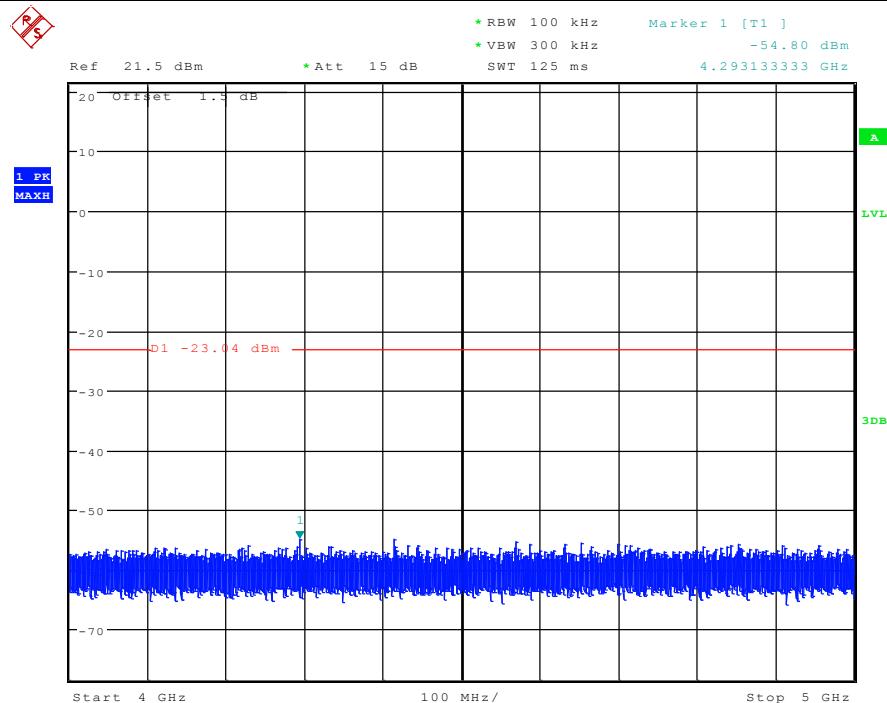


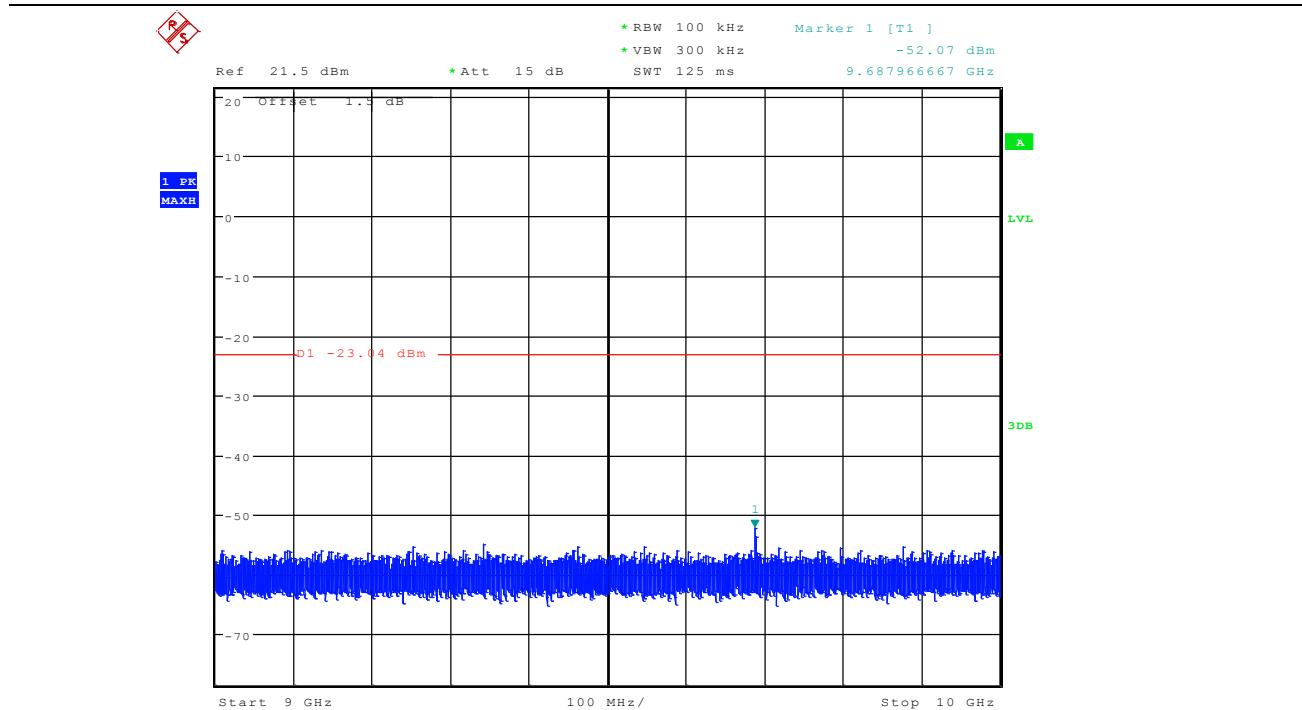


Test mode:	802.11n(HT40)	Test channel:	Lowest
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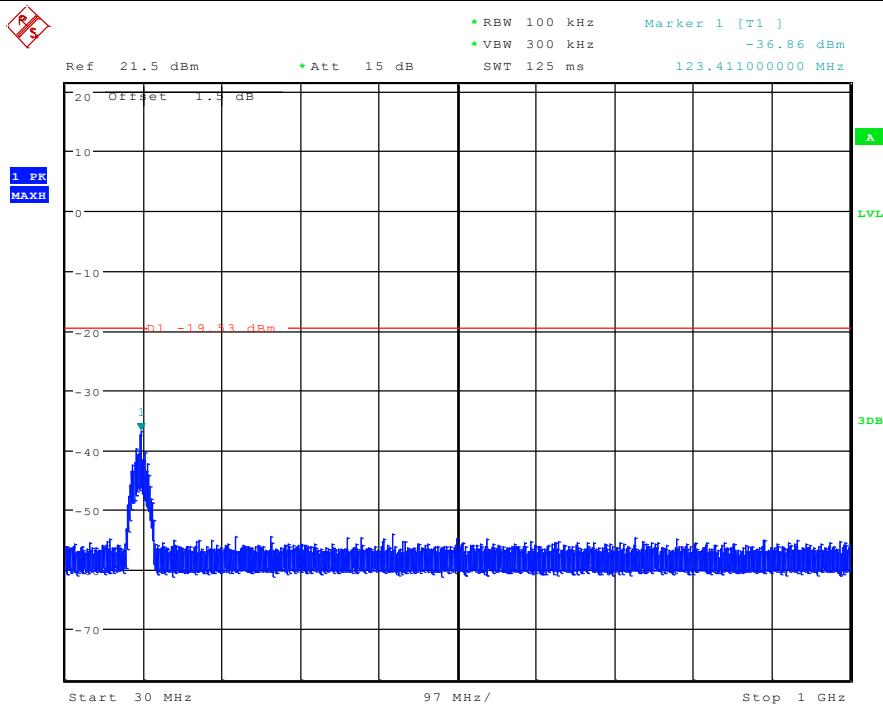
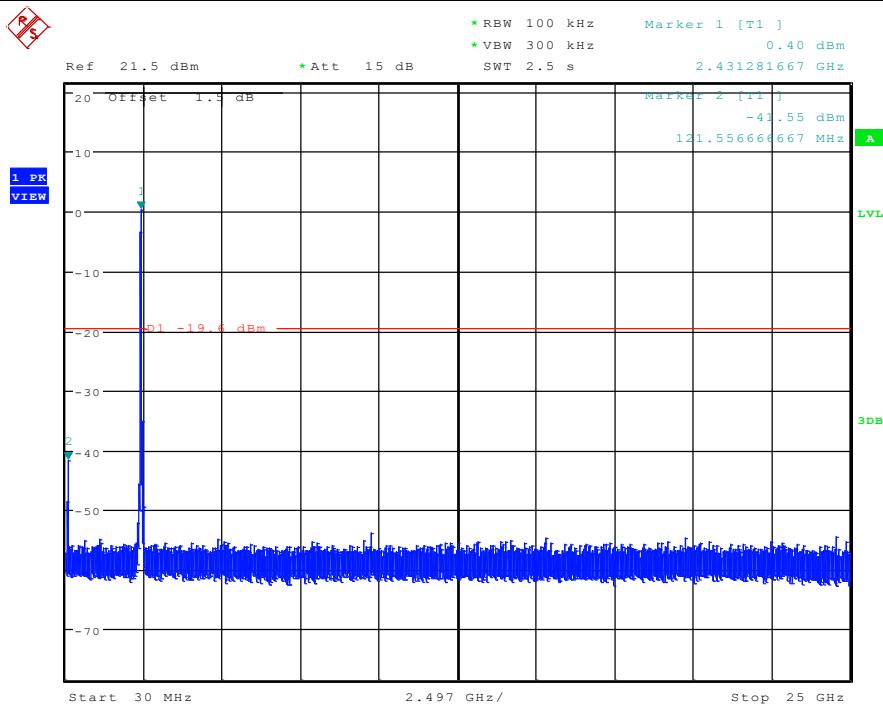


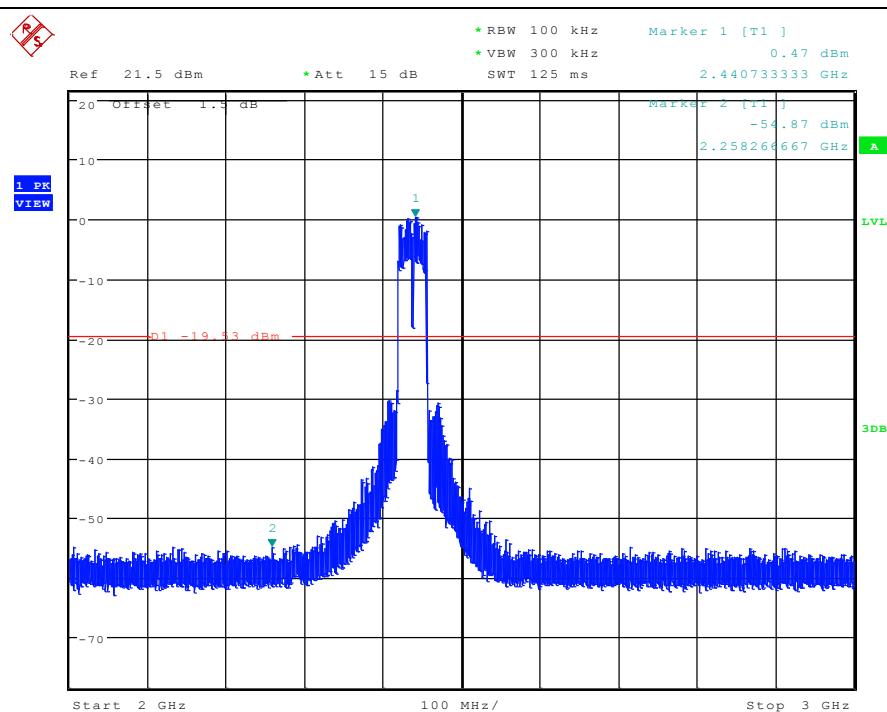
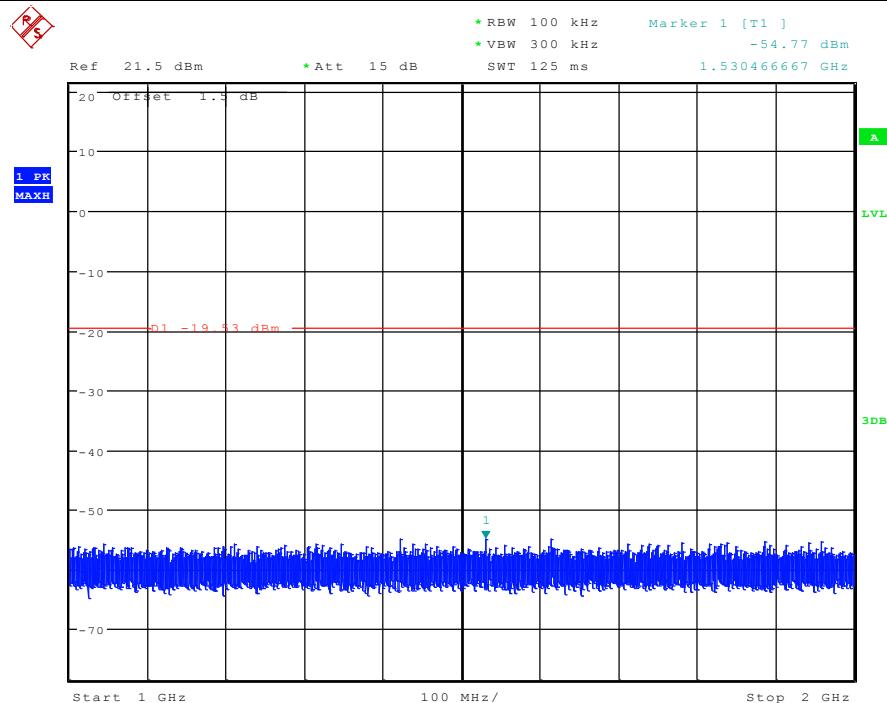


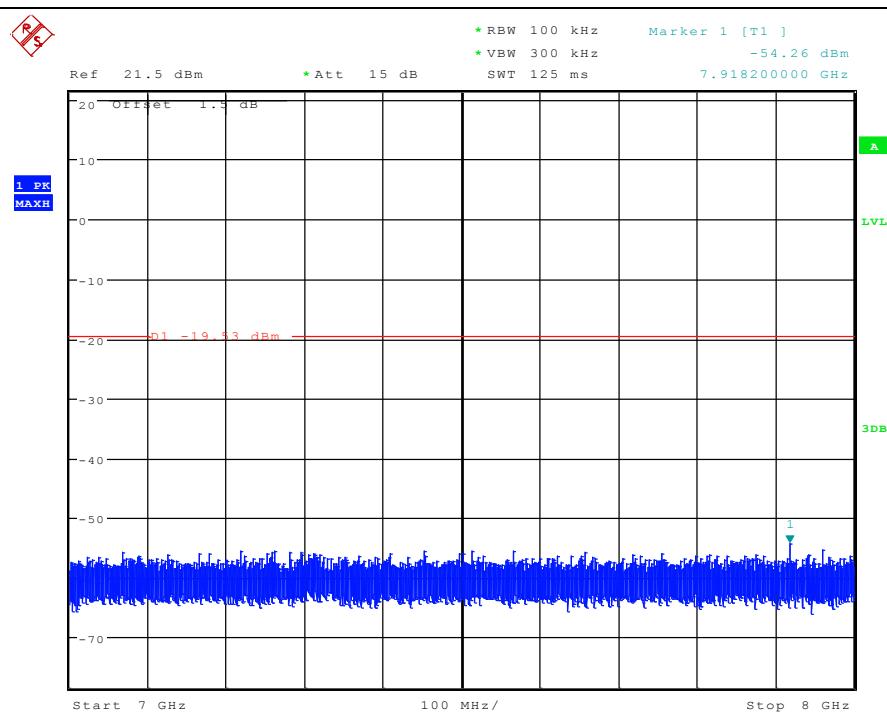
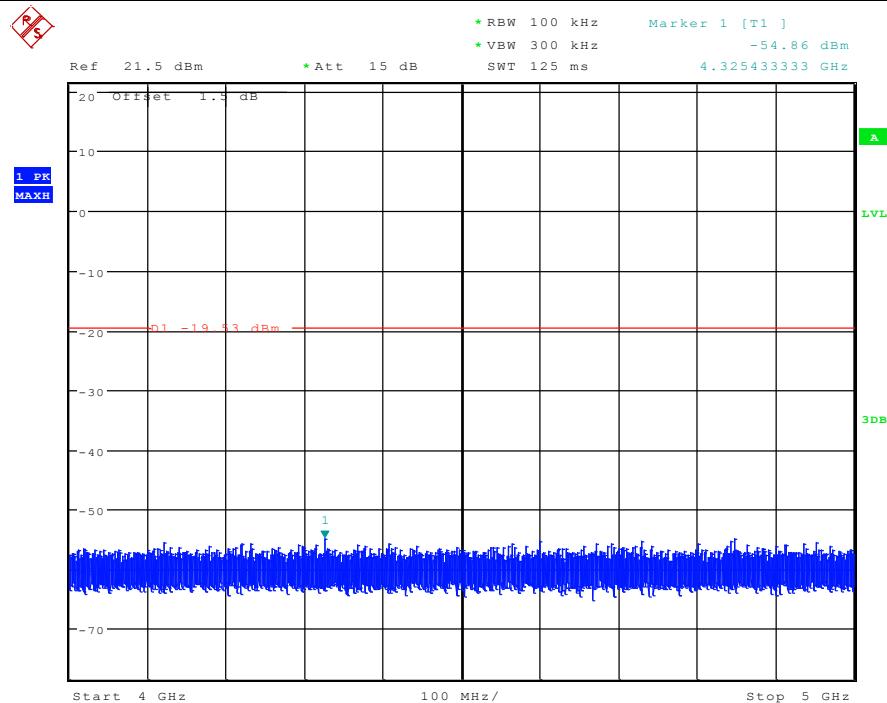


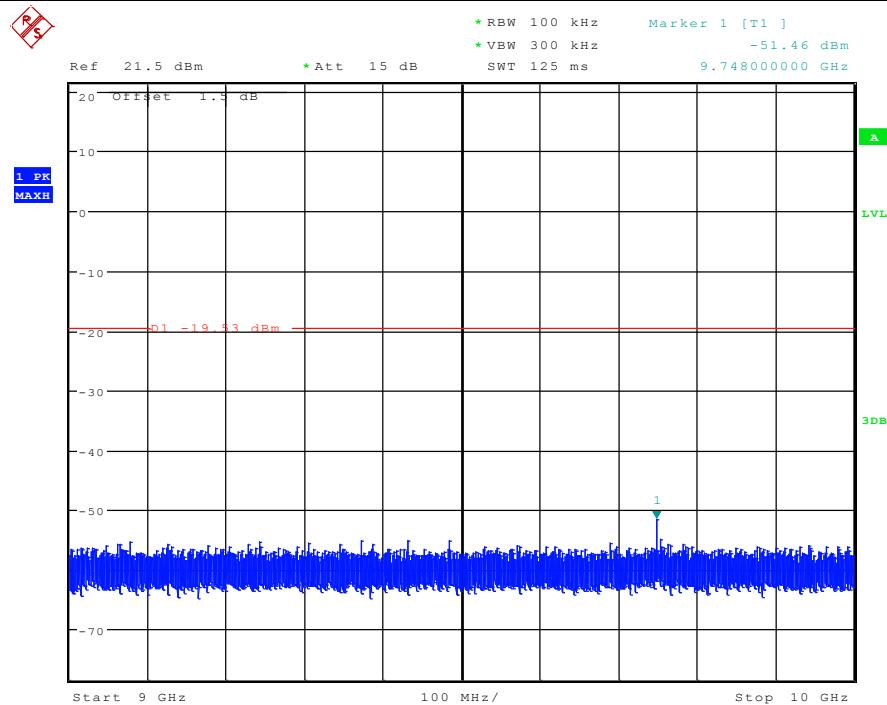


Test mode:	802.11n(HT40)	Test channel:	Middle
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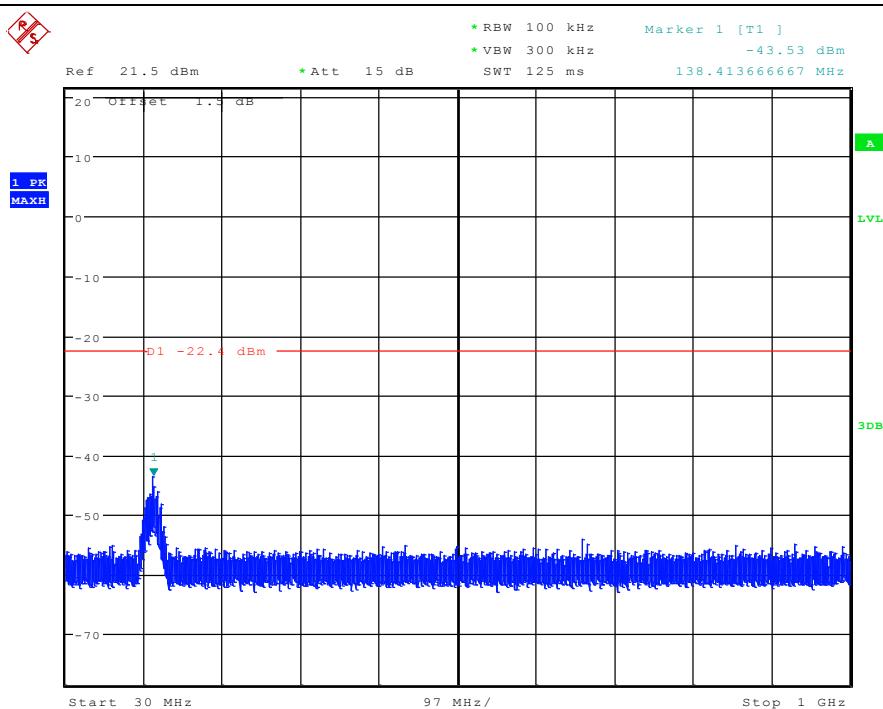
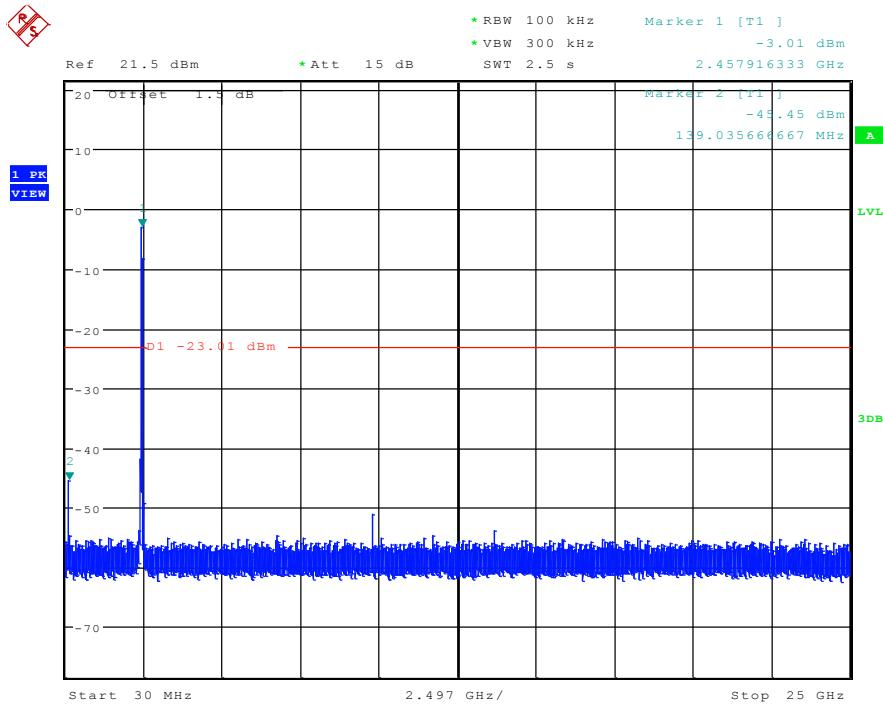


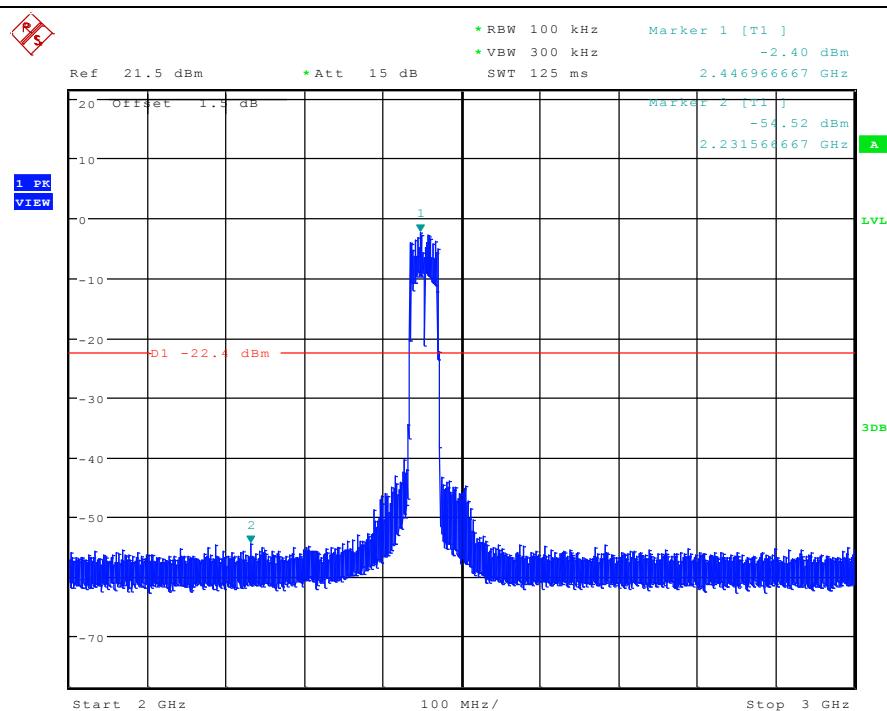
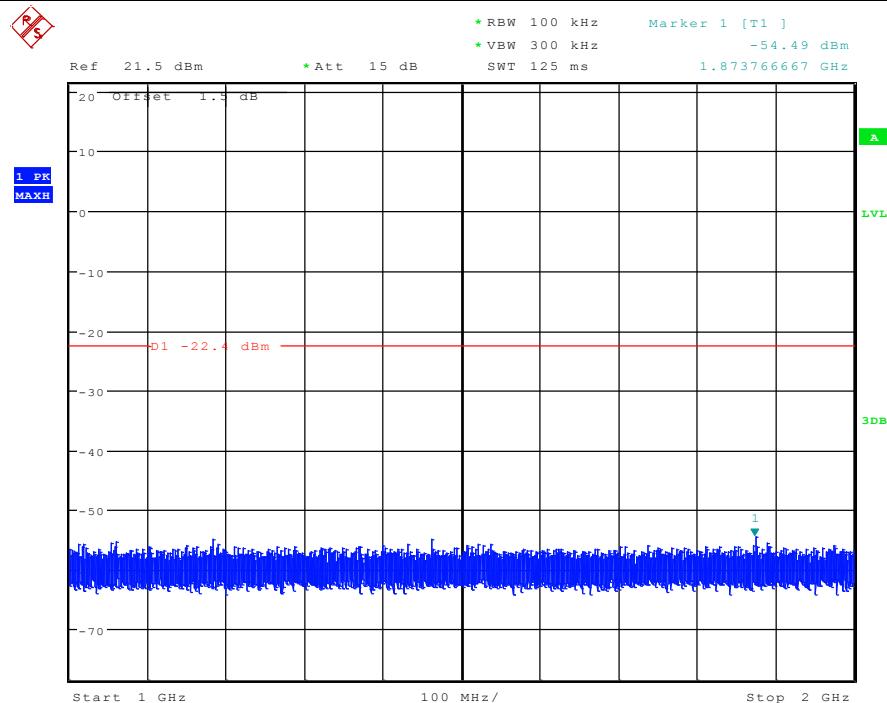


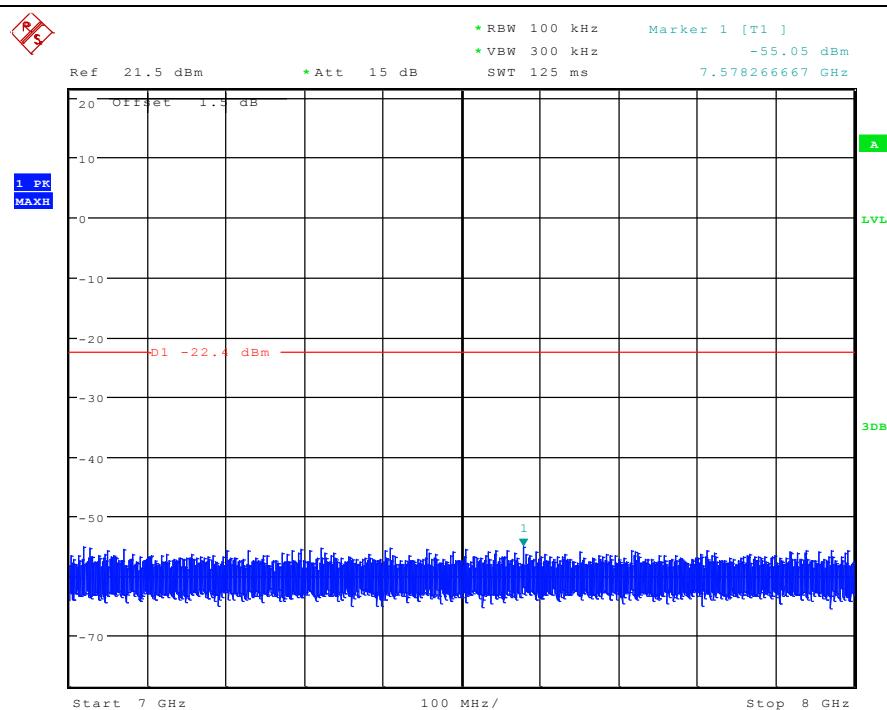
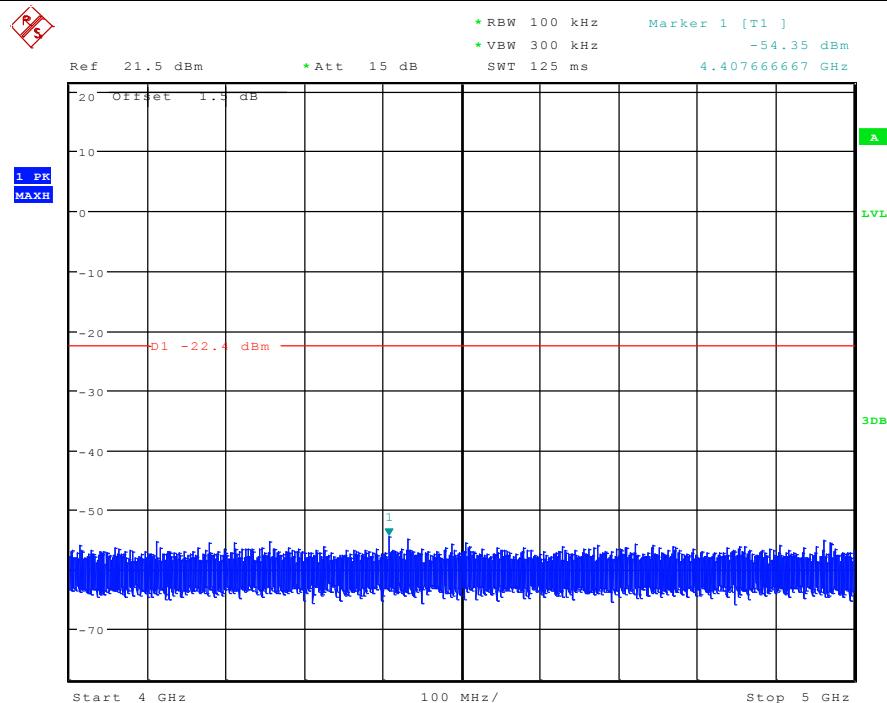


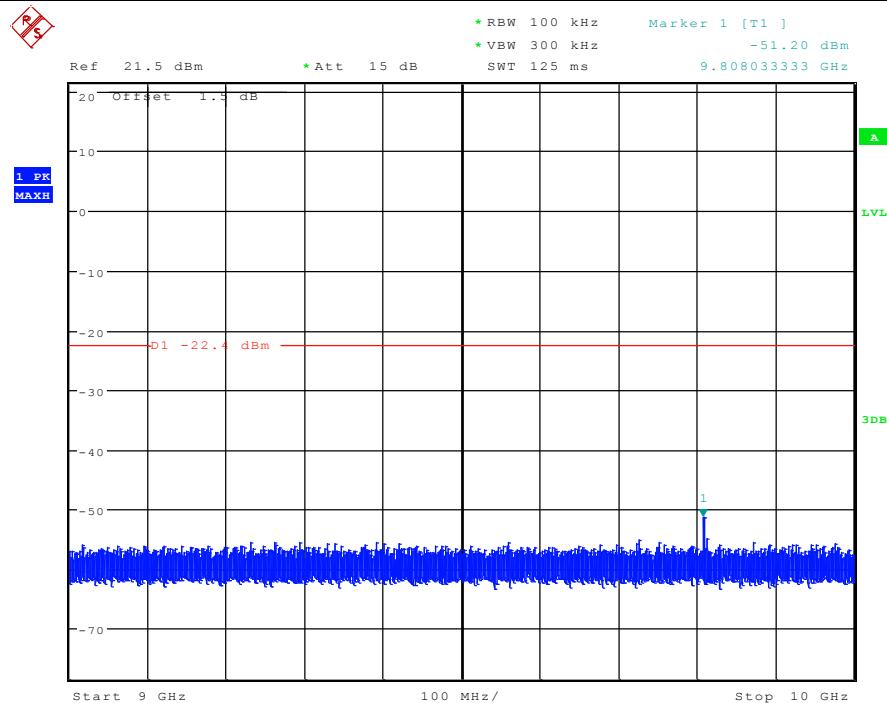


Test mode:	802.11n(HT40)	Test channel:	Highest
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Remark:

Pretest 9kHz to 25GHz, find the highest point when testing, so only the worst data were shown in the test report. Per FCC Part 15.33 (a) and 15.31 (o) ,The amplitude of spurious emissions from intentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this part.

6.8 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205				
Test Method:	ANSI C63.10 2013				
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	100 kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.					

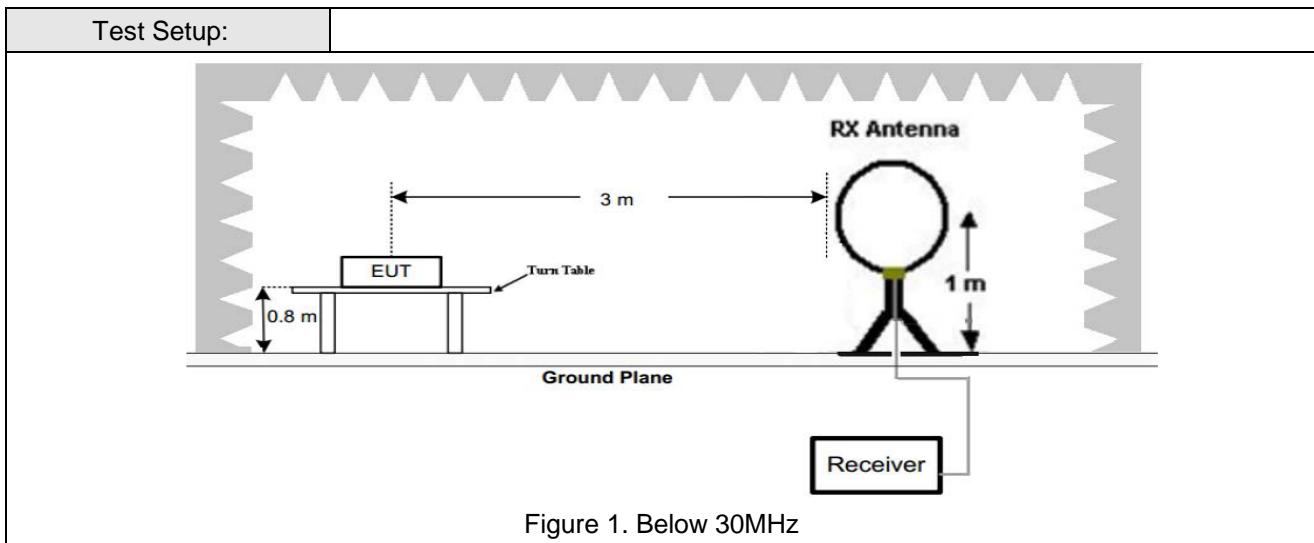


Figure 1. Below 30MHz

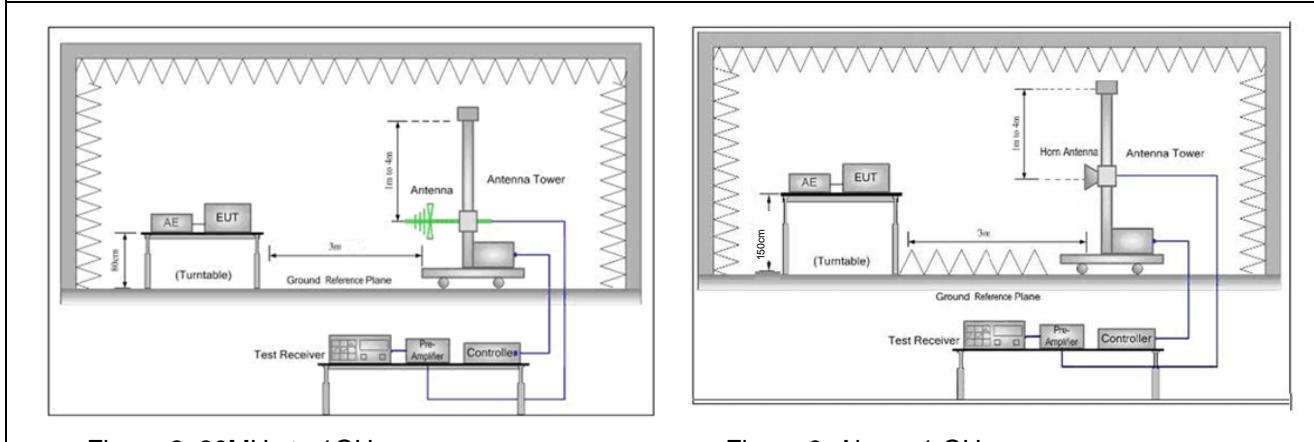


Figure 2. 30MHz to 1GHz

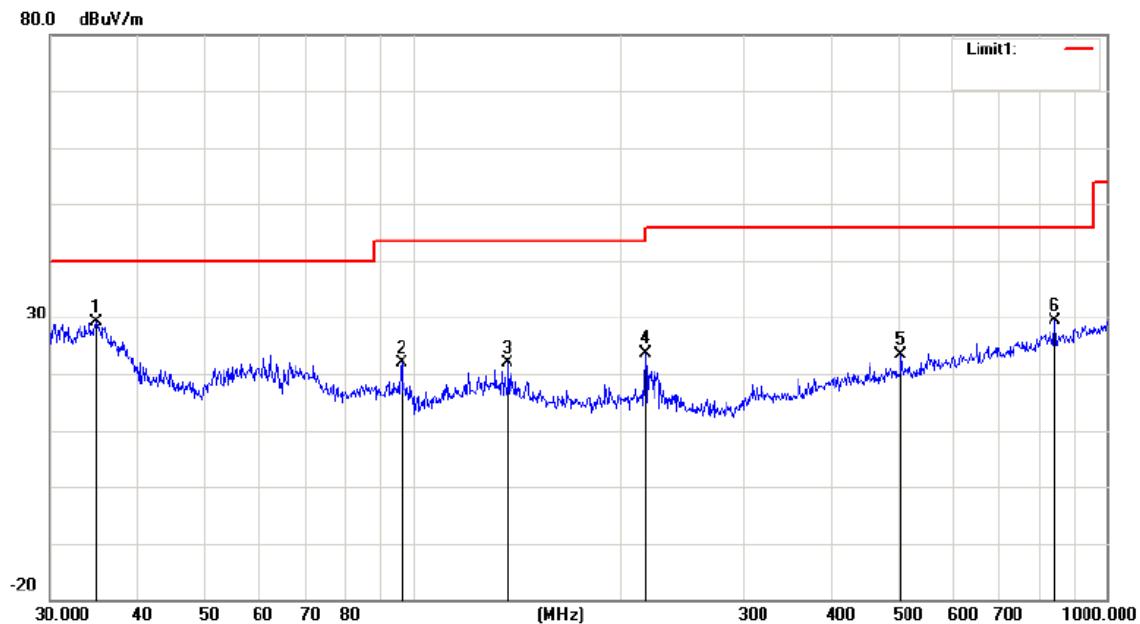
Figure 3. Above 1 GHz

Test Procedure:	<ul style="list-style-type: none"> a. 1) Below 1G: The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. 2) Above 1G: The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. Note: For the radiated emission test above 1GHz: Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters(for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees
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	<p>to find the maximum reading.</p> <ul style="list-style-type: none"> e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel ,the middle channel ,the Highest channel h. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	<p>Transmitting with all kind of modulations, data rates.</p> <p>Transmitting mode.</p>
Final Test Mode:	<p>Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case</p> <p>Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 13.5Mbps of rate is the worst case of 802.11n(HT40)</p> <p>For below 1GHz, through Pre-scan, find the 1Mbps of rate of 802.11b at lowest channel is the worst case.</p> <p>Only the worst case is recorded in the report.</p>
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

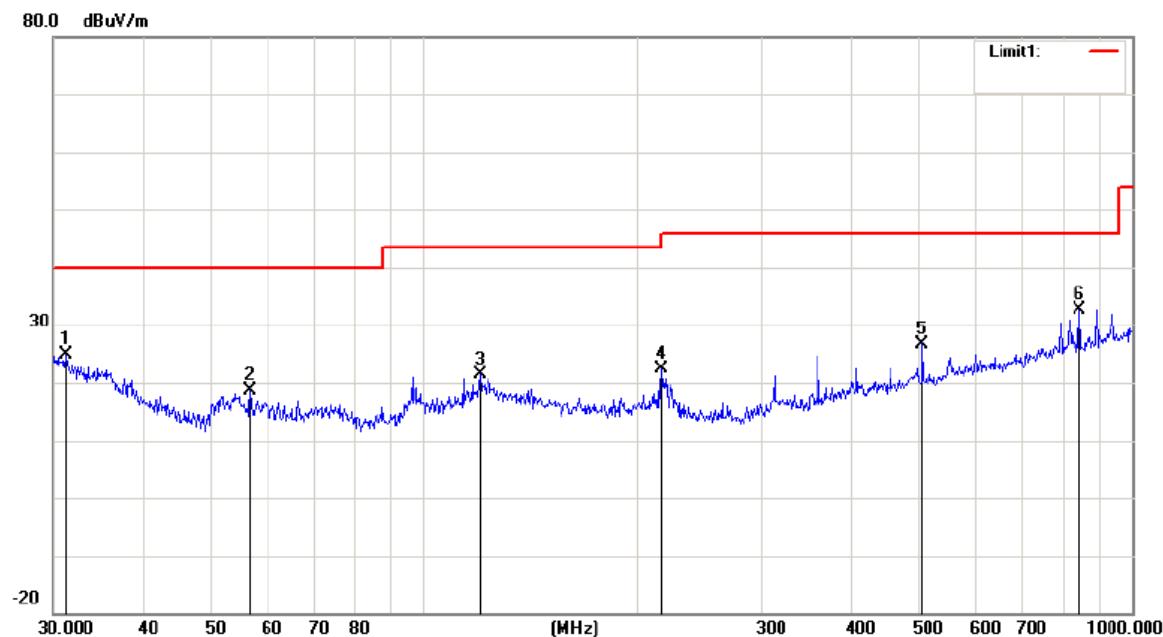
6.8.1 Radiated emission below 1GHz

30MHz~1GHz		
Test mode:	Transmitting	Vertical



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
			Level	Factor	ment			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	34.8823	28.91	0.21	29.12	40.00	-10.88	peak
2		96.0986	29.12	-7.12	22.00	43.50	-21.50	peak
3		136.9391	24.97	-3.05	21.92	43.50	-21.58	peak
4		216.0240	28.92	-5.39	23.53	46.00	-22.47	peak
5		504.7062	24.36	-0.89	23.47	46.00	-22.53	peak
6		842.1296	24.50	4.86	29.36	46.00	-16.64	peak

Test mode:	Transmitting	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Over Detector
1		31.1798	22.23	2.70	24.93	40.00	-15.07	peak
2		56.7917	28.02	-9.46	18.56	40.00	-21.44	peak
3		119.8556	23.72	-2.33	21.39	43.50	-22.11	peak
4		216.0240	27.65	-5.39	22.26	46.00	-23.74	peak
5		504.7062	27.64	-0.89	26.75	46.00	-19.25	peak
6	*	842.1296	27.86	4.86	32.72	46.00	-13.28	peak

6.8.2 Transmitter emission above 1GHz

Test mode:		802.11b(1Mbps)		Test channel:		Lowest	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)		H/V
4824.000	51.91	-5.18	46.73	74	-27.27	peak	H
4824.000	37.20	-5.18	32.02	54	-21.98	AVG	H
7236.000	50.83	-6.45	44.38	74	-29.62	peak	H
7236.000	38.56	-6.45	32.11	54	-21.89	AVG	H
4824.000	52.73	-5.18	47.55	74	-26.45	peak	V
4824.000	38.05	-5.18	32.87	54	-21.13	AVG	V
7236.000	55.01	-6.45	48.56	74	-25.44	peak	V
7236.000	40.97	-6.45	34.52	54	-19.48	AVG	V

Test mode:		802.11b(1Mbps)		Test channel:		Middle	
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.
(MHz)	(dB μ V)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)		H/V
4874.000	49.96	-5.19	44.77	74	-29.23	peak	H
4874.000	36.23	-5.19	31.04	54	-22.96	AVG	H
7311.000	49.63	-6.47	43.16	74	-30.84	peak	H
7311.000	35.13	-6.47	28.66	54	-25.34	AVG	H
4874.000	48.55	-5.19	43.36	74	-30.64	peak	V
4874.000	37.79	-5.19	32.60	54	-21.40	AVG	V
7311.000	50.16	-6.47	43.69	74	-30.31	peak	V
7311.000	35.81	-6.47	29.34	54	-24.66	AVG	V

Test mode:		802.11b(1Mbps)		Test channel:		Highest	
Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Over (dB)	Detector Type	Ant. Pol. H/V
4924.000	49.49	-5.2	44.29	74	-29.71	peak	H
4924.000	38.52	-5.2	33.32	54	-20.68	AVG	H
7386.000	49.31	-6.47	42.84	74	-31.16	peak	H
7386.000	36.02	-6.47	29.55	54	-24.45	AVG	H
4924.000	49.39	-5.2	44.19	74	-29.81	peak	V
4924.000	38.25	-5.2	33.05	54	-20.95	AVG	V
7386.000	50.54	-6.47	44.07	74	-29.93	peak	V
7386.000	36.62	-6.47	30.15	54	-23.85	AVG	V

Remark:

- 1) The 1Mbps of rate of 802.11b is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

6.9 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205		
Test Method:	ANSI C63.10 2013		
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m @3m)	Remark
	30MHz-88MHz	40.0	Quasi-peak Value
	88MHz-216MHz	43.5	Quasi-peak Value
	216MHz-960MHz	46.0	Quasi-peak Value
	960MHz-1GHz	54.0	Quasi-peak Value
	Above 1GHz	54.0	Average Value
		74.0	Peak Value
Test Setup:			

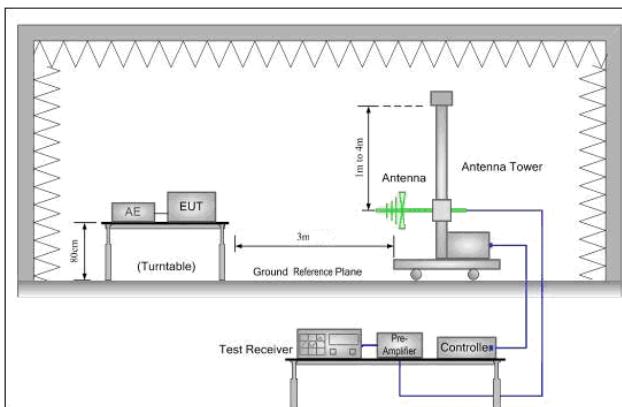


Figure 1. 30MHz to 1GHz

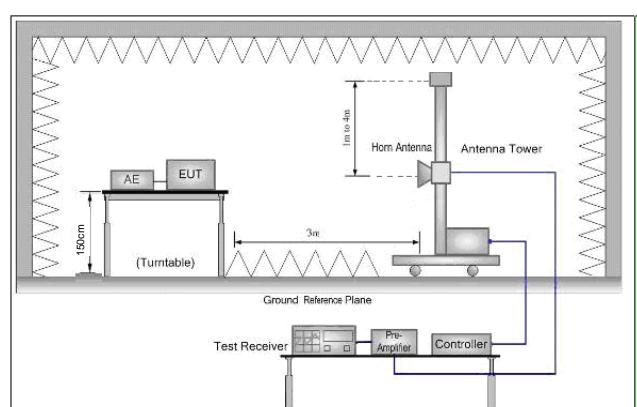


Figure 2. Above 1 GHz

Test Procedure:	<p>a. 1) Below 1G: The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>2) Above 1G: The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>Note: For the radiated emission test above 1GHz:</p> <p>Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.</p> <p>b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</p> <p>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</p> <p>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the</p>
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	<p>maximum reading.</p> <ul style="list-style-type: none"> e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel g. Test the EUT in the lowest channel , the Highest channel h. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	<p>Transmitting with all kind of modulations, data rates.</p> <p>Transmitting mode.</p>
Final Test Mode:	<p>Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case</p> <p>Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 13.5Mbps of rate is the worst case of 802.11n(HT40)</p> <p>Only the worst case is recorded in the report.</p>
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

Test data:

Worse case mode:		802.11b(1Mbps)		Test channel:		Lowest	
Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Over (dB)	Detector Type	Ant. Pol. H/V
2390.000	48.49	-4.36	44.13	74	-29.87	peak	H
2390.000	35.22	-4.36	30.86	54	-23.14	AVG	H
2400.000	53.86	-4.36	49.50	74	-24.50	peak	H
2400.000	41.86	-4.36	37.50	54	-16.50	AVG	H
2390.000	49.57	-4.36	45.21	74	-28.79	peak	V
2390.000	34.67	-4.36	30.31	54	-23.69	AVG	V
2400.000	53.02	-4.36	48.66	74	-25.34	peak	V
2400.000	41.37	-4.36	37.01	54	-16.99	AVG	V

Worse case mode:		802.11b(1Mbps)		Test channel:		Highest	
Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Over (dB)	Detector Type	Ant. Pol. H/V
2483.500	52.18	-4.22	47.96	74	-26.04	peak	H
2483.500	35.58	-4.22	31.36	54	-22.64	AVG	H
2483.500	51.00	-4.22	46.78	74	-27.22	peak	V
2483.500	36.98	-4.22	32.76	54	-21.24	AVG	V

Worse case mode:		802.11g(6Mbps)		Test channel:		Lowest	
Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Over (dB)	Detector Type	Ant. Pol. H/V
2390.000	48.99	-4.36	44.63	74	-29.37	peak	H
2390.000	35.79	-4.36	31.43	54	-22.57	AVG	H
2400.000	54.59	-4.36	50.23	74	-23.77	peak	H
2400.000	42.59	-4.36	38.23	54	-15.77	AVG	H
2390.000	49.36	-4.36	45.00	74	-29.00	peak	V
2390.000	35.31	-4.36	30.95	54	-23.05	AVG	V
2400.000	54.22	-4.36	49.86	74	-24.14	peak	V
2400.000	40.48	-4.36	36.12	54	-17.88	AVG	V

Worse case mode:		802.11g(6Mbps)		Test channel:		Highest	
Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Over (dB)	Detector Type	Ant. Pol. H/V
2483.500	52.00	-4.22	47.78	74	-26.22	peak	H
2483.500	36.04	-4.22	31.82	54	-22.18	AVG	H
2483.500	51.05	-4.22	46.83	74	-27.17	peak	V
2483.500	37.74	-4.22	33.52	54	-20.48	AVG	V

Worse case mode:		802.11n(HT20)(6.5Mbps)		Test channel:		Lowest	
Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Over (dB)	Detector Type	Ant. Pol. H/V
2390.000	48.95	-4.36	44.59	74	-29.41	peak	H
2390.000	35.58	-4.36	31.22	54	-22.78	AVG	H
2400.000	55.03	-4.36	50.67	74	-23.33	peak	H
2400.000	42.69	-4.36	38.33	54	-15.67	AVG	H
2390.000	49.61	-4.36	45.25	74	-28.75	peak	V
2390.000	34.85	-4.36	30.49	54	-23.51	AVG	V
2400.000	53.33	-4.36	48.97	74	-25.03	peak	V
2400.000	41.75	-4.36	37.39	54	-16.61	AVG	V

Worse case mode:		802.11n(HT20)(6.5Mbps)		Test channel:		Highest	
Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Over (dB)	Detector Type	Ant. Pol. H/V
2483.500	52.38	-4.22	48.16	74	-25.84	peak	H
2483.500	35.93	-4.22	31.71	54	-22.29	AVG	H
2483.500	50.67	-4.22	46.45	74	-27.55	peak	V
2483.500	36.86	-4.22	32.64	54	-21.36	AVG	V

Worse case mode:		802.11n(HT40)(13.5Mbps)		Test channel:		Lowest	
Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Over (dB)	Detector Type	Ant. Pol. H/V
2390.000	49.14	-4.36	44.78	74	-29.22	peak	H
2390.000	35.01	-4.36	30.65	54	-23.35	AVG	H
2400.000	57.57	-4.36	53.21	74	-20.79	peak	H
2400.000	44.36	-4.36	40.00	54	-14.00	AVG	H
2390.000	49.00	-4.36	44.64	74	-29.36	peak	V
2390.000	34.99	-4.36	30.63	54	-23.37	AVG	V
2400.000	55.16	-4.36	50.80	74	-23.20	peak	V
2400.000	42.06	-4.36	37.70	54	-16.30	AVG	V

Worse case mode:		802.11n(HT40)(13.5Mbps)		Test channel:		Highest	
Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Over (dB)	Detector Type	Ant. Pol. H/V
2483.500	63.35	-4.22	59.13	74	-14.87	peak	H
2483.500	48.09	-4.22	43.87	54	-10.13	AVG	H
2483.500	64.12	-4.22	59.90	74	-14.10	peak	V
2483.500	48.89	-4.22	44.67	54	-9.33	AVG	V

Note:

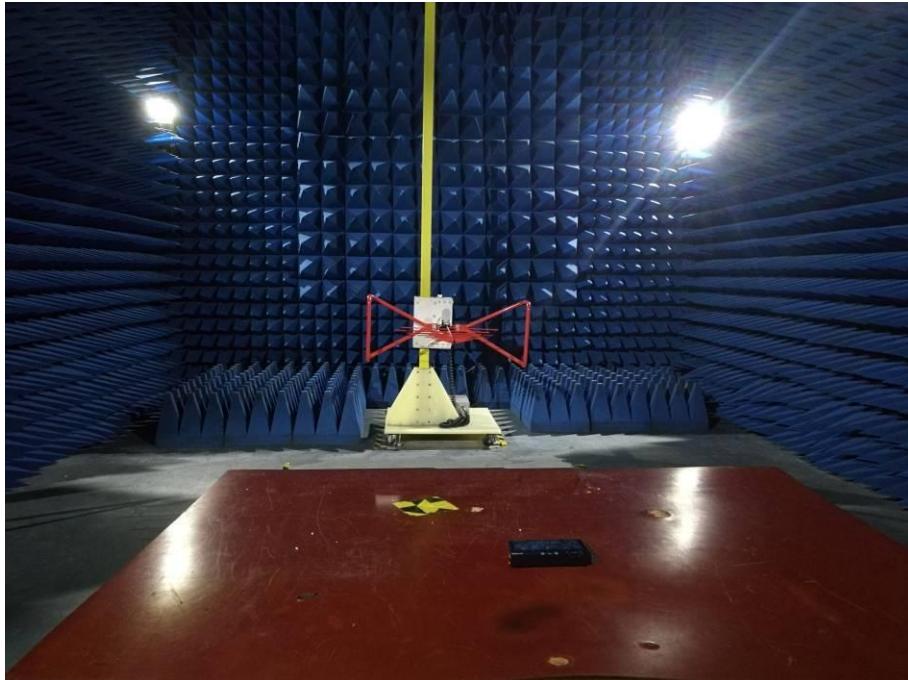
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

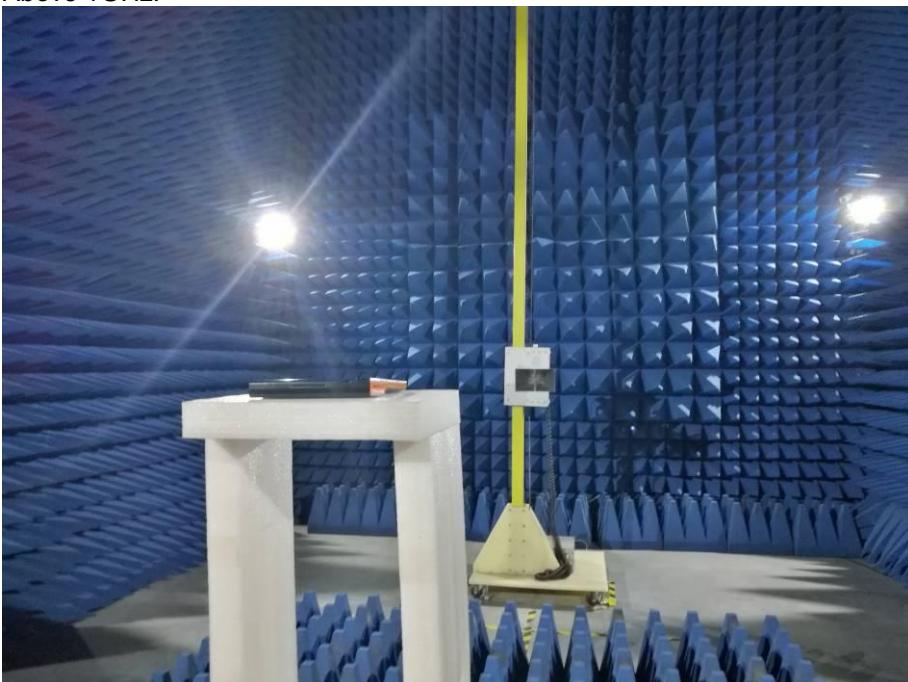
7 Photographs - EUT Test Setup

7.1 Radiated Spurious Emission

Below 1GHz:



Above 1GHz:



7.2 Conducted Emission



8 Photographs - EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for FCC17050447A-2.

The End