



Part 15C

TEST REPORT

Product Name	Wireless Office Communication System
Model	2002/2011
FCC ID	AJG-WROCA
Client	NewRock Technologies, Inc
Manufacturer	NewRock Technologies, Inc
Date of issue	May 17, 2013

TA Technology (Shanghai) Co., Ltd.

TA Technology (Shanghai) Co., Ltd.
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GENERAL SUMMARY

Reference Standard(s)	FCC CFR47 Part 15C (2012) Radio Frequency Devices 15.205 Restricted bands of operation; 15.207 Conducted limits; 15.209 Radiated emission limits; general requirements; 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850MHz. ANSI C63.4 Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40GHz. (2009) KDB 558074 D01 DTS Meas Guidance v02 Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 KDB 662911 D01 Multiple Transmitter Output v01r02 Emissions Testing of Transmitters with Multiple Outputs in the Same Band
Conclusion	This wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 2 of this test report are below limits specified in the relevant standards. General Judgment: Pass
Comment	The test result only responds to the measured sample.

Approved by 杨伟中
Director

Revised by 唐凯
RF Manager

Performed by 王峰
RF Engineer

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1. General Information

1.1. Notes of the test report

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS), and accreditation number: L2264.

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements. The site recognition number is 428261.

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement. The site recognition number is 8510A.

TA Technology (Shanghai) Co., Ltd. guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at TA Technology (Shanghai) Co., Ltd. at the time of execution of the test.

TA Technology (Shanghai) Co., Ltd. is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. This report only refers to the item that has undergone the test.

This report standalone dose not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities. This report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of **TA Technology (Shanghai) Co., Ltd.** and the Accreditation Bodies, if it applies.

If the electrical report is inconsistent with the printed one, it should be subject to the latter.

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1.2. Testing laboratory

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City: Shanghai
Post code: 201201
Country: P. R. China
Contact: Yang Weizhong
Telephone: +86-021-50791141/2/3
Fax: +86-021-50791141/2/3-8000
Website: <http://www.ta-shanghai.com>
E-mail: yangweizhong@ta-shanghai.com

1.3. Applicant Information

Company: NewRock Technologies, Inc
Address: 495 Shangzhong Rd, Building B, 2nd Floor, Shanghai
City: Shanghai
Postal Code: 200231
Country: P.R.China

1.4. Manufacturer Information

Company: NewRock Technologies, Inc
Address: 495 Shangzhong Rd, Building B, 2nd Floor, Shanghai
City: Shanghai
Postal Code: 200231
Country: P.R.China

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1.5. Information of EUT

General information

MAC:	000EA926001C
Hardware Version:	Ver1.1
Software Version:	Rev:2.2.5.79.30
Antenna Type	Integral Antenna
Device Operating Configurations:	
Network Standards:	802.11b, 802.11g, 802.11n(HT20/HT40); (tested)
Test Modulation:	(802.11b)DSSS; (802.11g/n)OFDM
Power Supply:	Adapter
Antenna Gain	3dBi
Max Conducted Power	18.37 dBm
Operating Frequency Range(s)	2400MHz~ 2483.5 MHz

Note1: This EUT supports 1T1R at the presence of 802.11 b/g and MCS0~MCS7 for 802.11n(20MHz/40MHz). But 2T2R is supported by the EUT at the presence of MCS8~MCS15 for 802.11n(20MHz/40MHz).

Note2: The two antennas for the EUT are completely uncorrelated with each other. The Directional Gain is calculated following the KDB 662911 D01. As the manufacture declared that, the Gain for each antenna is 3dBi, so the directional Gain is equal to the Gain.

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Auxiliary Equipment Details

AE1: Adapter

Model:	WA-12L12R
Manufacturer:	Asian Power Devices, Inc
S/N:	288039499-AAAA

Equipment under Test (EUT) has two WIFI antennas that are CHAIN 0 and CHAIN 1. The detail about these is in chapter 1.5 in this report. The EUT supports WiFi function.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. Test Date

The test performed from February 28, 2013 to May 16, 2013.

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2. Test Information

2.1. Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.3.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests.

Results of test modes, data rates and test channels are shown as following table.

	Test items		Modes	Data Rate	Test channel
Conducted Test cases	Peak Power Output –Conducted	CHAIN 0	802.11b	11 Mbps	1/6/11
			802.11g	6 Mbps	1/6/11
			802.11n HT20	MCS1	1/6/11
			802.11n HT40	MCS0	3/6/9
		CHAIN 1	802.11b	11 Mbps	1/6/11
			802.11g	48 Mbps	1/6/11
			802.11n HT20	MCS2	1/6/11
			802.11n HT40	MCS2	3/6/9
	Minimum bandwidth 6dB	CHAIN 0	802.11b	11 Mbps	1/6/11
			802.11g	6 Mbps	1/6/11
			802.11n HT20	MCS1	1/6/11
			802.11n HT40	MCS0	3/6/9
		CHAIN 1	802.11b	11 Mbps	1/6/11
			802.11g	48 Mbps	1/6/11
			802.11n HT20	MCS2	1/6/11
			802.11n HT40	MCS2	3/6/9
	Band compliance Edges	CHAIN 0	802.11b	11 Mbps	1/11
			802.11g	6 Mbps	1/11
			802.11n HT20	MCS1	1/11
			802.11n HT40	MCS0	3/9
		CHAIN 1	802.11b	11 Mbps	1/11
			802.11g	48 Mbps	1/11
			802.11n HT20	MCS2	1/11
			802.11n HT40	MCS2	3/9

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	Power spectral Density	CHAIN 0	802.11b	11 Mbps	1/6/11
			802.11g	6 Mbps	1/6/11
			802.11n HT20	MCS1	1/6/11
			802.11n HT40	MCS0	3/6/9
		CHAIN 1	802.11b	11 Mbps	1/6/11
			802.11g	48 Mbps	1/6/11
			802.11n HT20	MCS2	1/6/11
			802.11n HT40	MCS2	3/6/9
	Conducted Spurious Emission	CHAIN 0	802.11b	11 Mbps	1/6/11
			802.11g	6 Mbps	1/6/11
			802.11n HT20	MCS1	1/6/11
			802.11n HT40	MCS0	3/6/9
		CHAIN 1	802.11b	11 Mbps	1/6/11
			802.11g	48 Mbps	1/6/11
			802.11n HT20	MCS2	1/6/11
			802.11n HT40	MCS2	3/6/9
	Conducted Emissions	Simultaneous Transmission	802.11b	11 Mbps	6
			802.11g	48 Mbps	6
			802.11n HT20	MCS2	6
			802.11n HT40	MCS2	6
Radiated Test cases	Spurious Radiated Emissions in the restricted band	Simultaneous Transmission	802.11b	11 Mbps	1/11
			802.11g	48 Mbps	1/11
			802.11n HT20	MCS2	1/11
			802.11n HT40	MCS2	3/9
	Radiates Emission	Simultaneous Transmission	802.11b	11 Mbps	6
			802.11g	48 Mbps	6
			802.11n HT20	MCS2	6
			802.11n HT40	MCS2	6

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2.2. Summary of test results

Number	Summary of measurements of results	Clause in FCC rules	Verdict
1	Peak Power Output –Conducted	15.247(b)(3)	PASS
2	Minimum 6dB bandwidth	15.247(a)(2)	PASS
3	Band Edges compliance	15.247(d)	PASS
4	Spurious Radiated Emissions in the restricted band	15.247(d),15.205,15.209	PASS
5	Power spectral Density	15.247(e)	PASS
6	Conducted Spurious Emission	15.247	PASS
7	Radiates Emission	15.247(d),15.205,15.209	PASS
8	Conducted Emissions	15.207,15.107	PASS

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2.3. Peak Power Output –Conducted

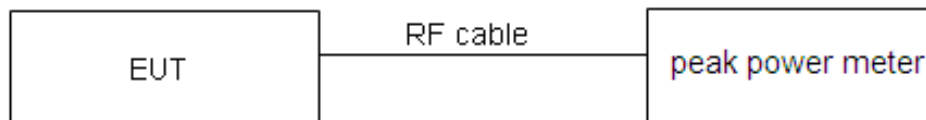
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~ 25°C	45% ~ 50%	101.5kPa

Methods of Measurement

During the process of the testing, the EUT was connected to the peak power meter through an external attenuator and a known loss cable. The EUT is max power transmission with proper modulation. We use 5.2.1 Maximum Peak Conducted Output Power Level Method in KDB 558074 D01 for this test.

Test Setup



Limits

Rule Part 15.247 (b) (3) specifies that " For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt."

Peak Output Power	$\leq 1\text{W}$ (30dBm)
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.44$ dB.

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Test Results: Pass

CHAIN 0:

Network Standards	Data Rate	Peak Output Power (dBm)		
		CH 1	CH 6	CH 11
802.11b	1 Mbps	17.06	17.22	17.21
	2 Mbps	17.01	17.68	17.66
	5.5 Mbps	17.45	17.82	17.32
	11 Mbps	17.51	17.89	17.89
802.11g	6 Mbps	14.51	14.05	13.89
	9 Mbps	13.94	14.32	13.52
	12 Mbps	14.42	14.09	13.89
	18 Mbps	14.01	14.37	13.76
	24 Mbps	14.41	13.98	13.24
	36 Mbps	14.26	14.28	13.85
	48 Mbps	14.32	13.92	13.48
	54 Mbps	14.05	14.33	13.88
802.11n HT20	MCS0	13.68	13.66	13.61
	MCS1	13.75	14.32	13.92
	MCS2	13.58	13.89	13.53
	MCS3	13.11	13.82	13.87
	MCS4	12.89	13.78	13.25
	MCS5	13.02	14.01	13.87
	MCS6	13.41	13.76	13.31
	MCS7	12.81	14.22	13.75
	MCS8	13.34	13.70	13.62
	MCS9	13.61	13.98	13.64
	MCS10	13.21	13.34	13.53
	MCS11	13.52	13.71	13.39
	MCS12	13.01	13.66	13.45
	MCS13	13.27	14.00	13.38
	MCS14	13.47	13.68	13.47
	MCS15	12.89	13.98	13.68
Network Standards	Data Rate	Peak Output Power (dBm)		
		CH 3	CH 6	CH 9
802.11n HT40	MCS0	14.32	14.14	13.98
	MCS1	14.16	14.03	13.86
	MCS2	14.12	14.02	13.57
	MCS3	13.97	13.86	13.98
	MCS4	14.02	13.96	13.86

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	MCS5	13.98	13.78	13.42
	MCS6	14.04	13.87	13.68
	MCS7	13.89	13.99	13.85
	MCS8	14.01	13.85	13.66
	MCS9	13.71	14.01	13.91
	MCS10	13.48	13.87	13.55
	MCS11	13.27	13.62	13.77
	MCS12	12.97	13.57	13.75
	MCS13	13.00	14.01	13.56
	MCS14	13.44	13.87	13.74
	MCS15	12.88	14.10	13.67

Note: The maximum output power values are marked in bold.

CHAIN 1:

Network Standards	Data Rate	Peak Output Power (dBm)		
		CH 1	CH 6	CH 11
802.11b	1 Mbps	17.94	18.12	17.47
	2 Mbps	17.93	17.78	18.14
	5.5 Mbps	18.36	18.17	17.85
	11 Mbps	18.37	18.19	18.26
802.11g	6 Mbps	14.92	14.87	14.06
	9 Mbps	14.75	14.52	14.25
	12 Mbps	15.02	14.92	14.23
	18 Mbps	14.76	14.57	14.47
	24 Mbps	14.84	14.48	14.24
	36 Mbps	14.87	14.52	14.42
	48 Mbps	15.12	14.95	14.50
	54 Mbps	14.65	14.35	14.37
802.11n HT20	MCS0	14.98	14.76	14.17
	MCS1	14.76	13.97	14.35
	MCS2	15.24	14.78	14.40
	MCS3	14.65	13.96	13.96
	MCS4	15.04	14.26	14.05
	MCS5	14.58	14.05	14.26
	MCS6	14.87	14.26	13.88
	MCS7	14.51	13.98	14.15
	MCS8	14.87	14.27	14.17
	MCS9	14.74	13.85	14.10

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	MCS10	14.58	14.13	13.97
	MCS11	14.98	13.94	13.67
	MCS12	15.01	14.22	14.01
	MCS13	14.97	14.20	14.22
	MCS14	14.84	14.10	13.74
	MCS15	14.52	13.97	13.65
Network Standards	Data Rate	Peak Output Power (dBm)		
		CH 3	CH 6	CH 9
802.11n HT40	MCS0	14.35	14.23	13.89
	MCS1	14.38	14.35	14.31
	MCS2	14.54	14.37	14.35
	MCS3	14.16	14.21	14.22
	MCS4	14.35	14.13	13.85
	MCS5	14.12	14.21	14.22
	MCS6	14.29	14.13	13.87
	MCS7	14.13	14.08	13.95
	MCS8	14.45	14.27	14.17
	MCS9	14.38	14.20	14.20
	MCS10	14.45	14.07	13.87
	MCS11	14.27	13.96	13.92
	MCS12	14.01	14.05	14.24
	MCS13	14.23	14.19	14.06
	MCS14	14.18	14.11	13.97
	MCS15	14.05	13.98	13.61

Note: The maximum output power values are marked in bold.

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Total

Network Standards	Data Rate	Peak Output Power (dBm)		
		CH 1	CH 6	CH 11
802.11n HT20	MCS8	17.18	17.00	16.91
	MCS9	17.22	16.92	16.89
	MCS10	16.96	16.76	16.77
	MCS11	17.32	16.84	16.54
	MCS12	17.13	16.96	16.75
	MCS13	17.21	17.11	16.83
	MCS14	17.22	16.90	16.62
	MCS15	16.79	16.98	16.67
/	/	CH 3	CH 6	CH 9
802.11n HT40	MCS8	17.25	17.08	16.93
	MCS9	17.07	17.12	17.07
	MCS10	17.00	16.98	16.72
	MCS11	16.81	16.80	16.86
	MCS12	16.53	16.83	17.01
	MCS13	16.67	17.11	16.83
	MCS14	16.84	17.00	16.87
	MCS15	16.51	17.05	16.65

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2.4. Occupied Bandwidth (6dB)

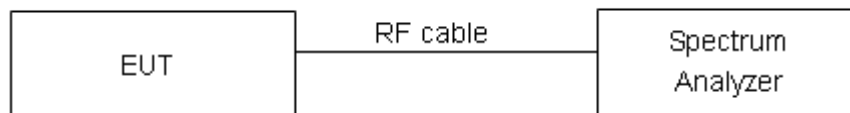
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 100 kHz; VBW is set to 300 kHz on spectrum analyzer.

Test Setup



Limits

Rule Part 15.247 (a) (2) specifies that “Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.”

minimum 6 dB bandwidth	≥ 500 kHz
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936$ Hz.

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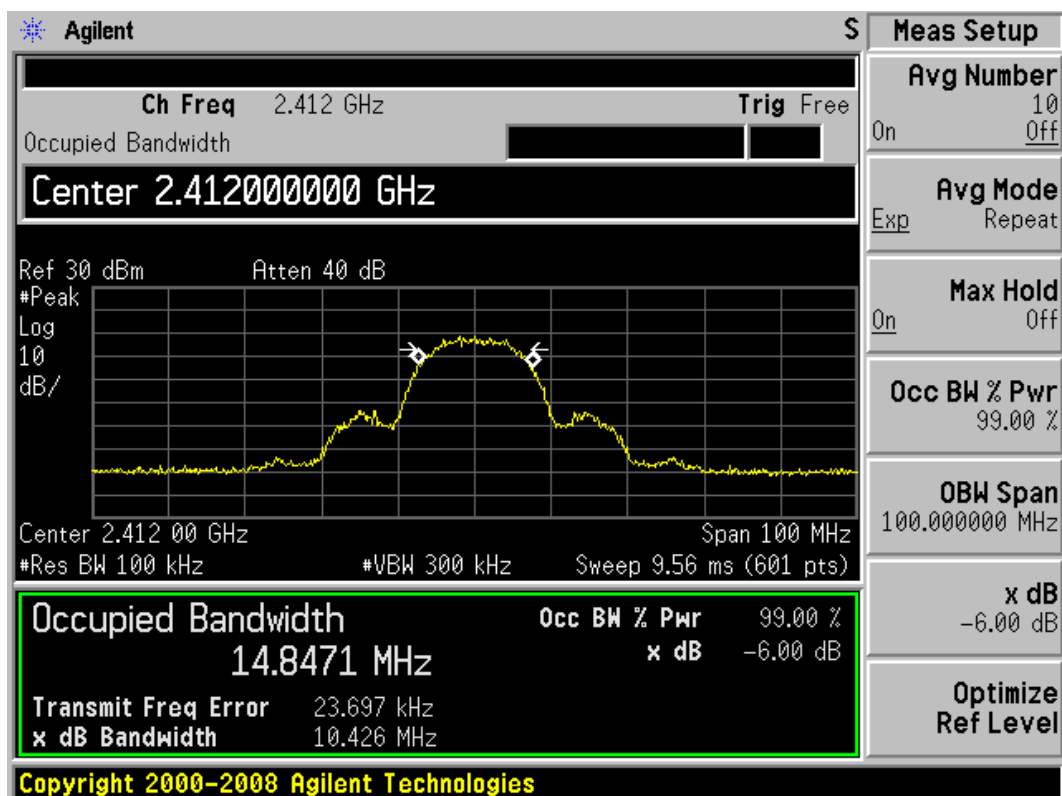
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Test Results:

CHAIN 0:

Network Standards	Carrier frequency (MHz)	Minimum 6dB bandwidth (MHz)	Conclusion
802.11b	2412	10.426	PASS
	2437	10.403	PASS
	2462	10.440	PASS
802.11g	2412	16.013	PASS
	2437	16.415	PASS
	2462	16.029	PASS
802.11n HT20	2412	15.300	PASS
	2437	15.905	PASS
	2462	15.859	PASS
802.11n HT40	2422	35.207	PASS
	2437	35.204	PASS
	2452	34.094	PASS

802.11b

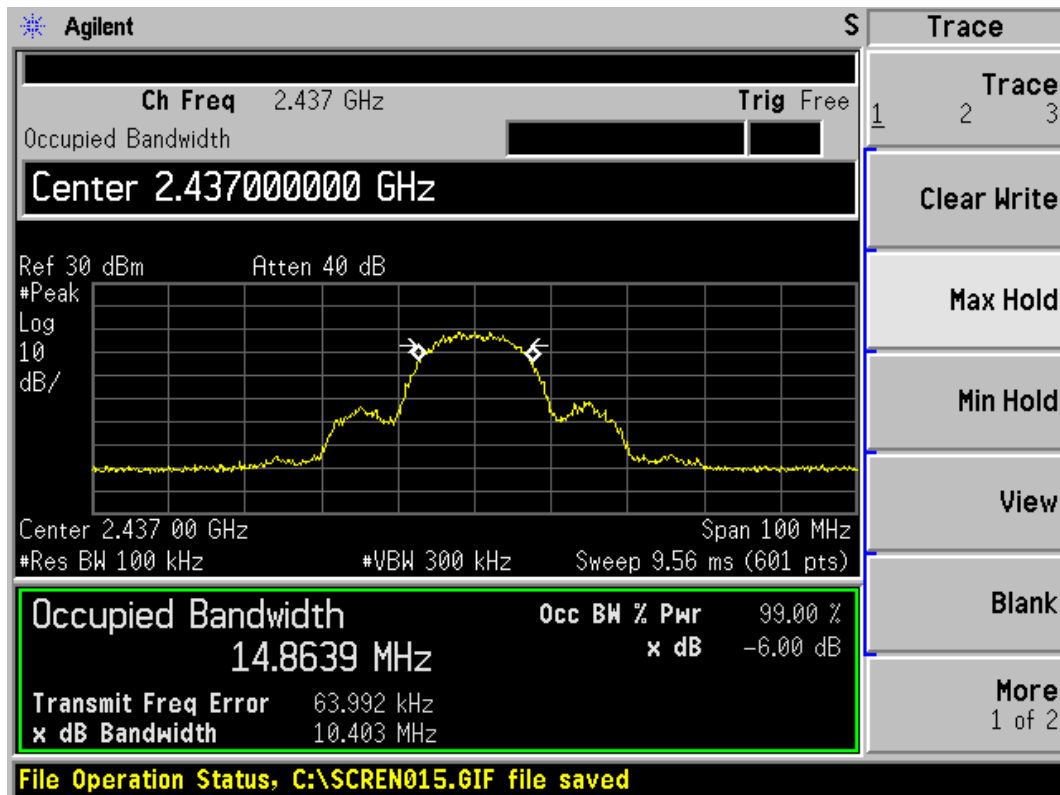


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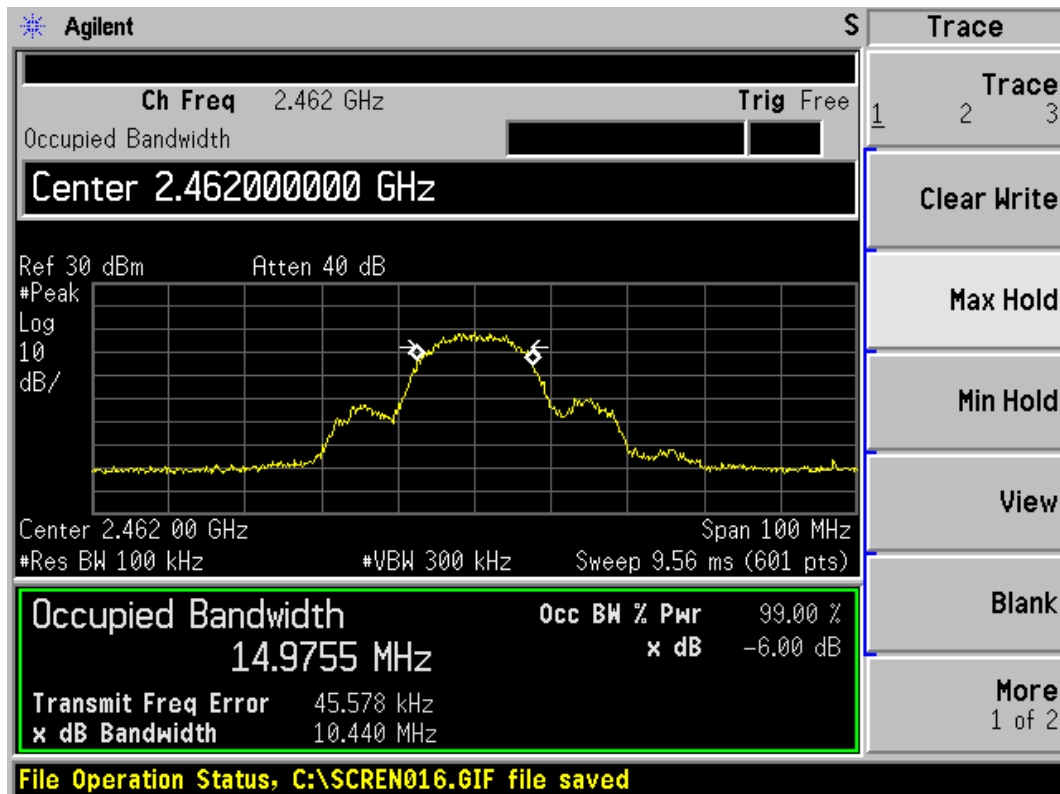
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802.11b, Carrier frequency (MHz): 2412



802.11b, Carrier frequency (MHz): 2437



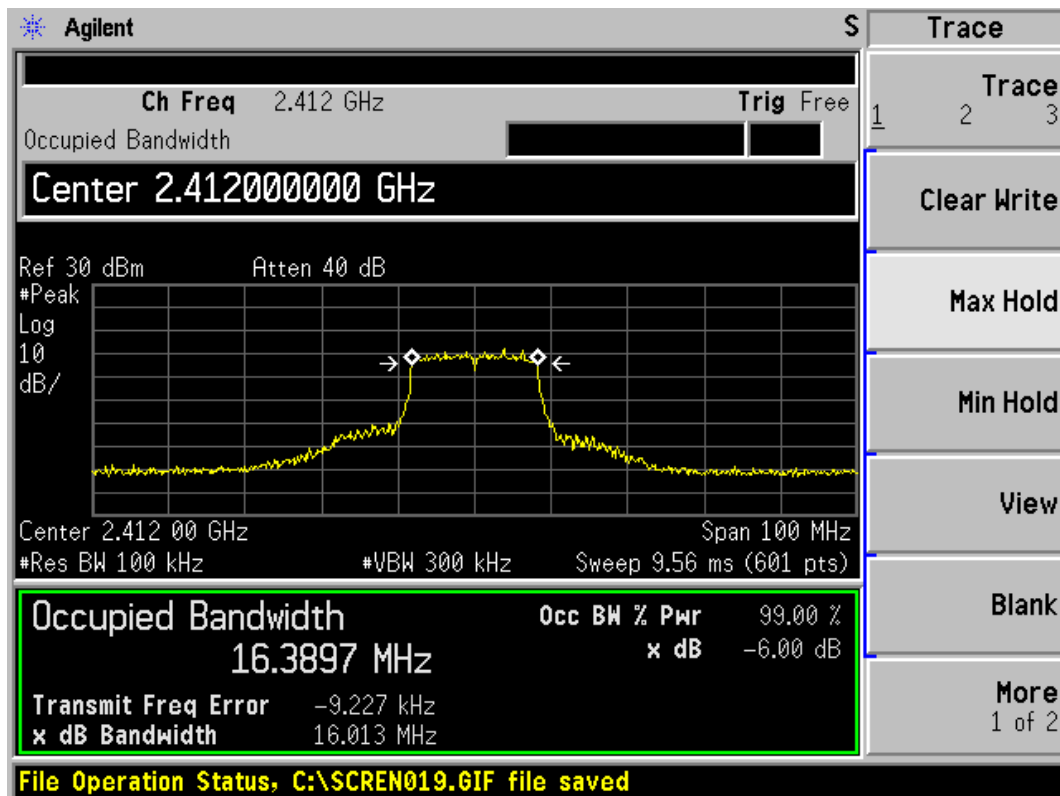
802.11b, Carrier frequency (MHz):2462

802.11g

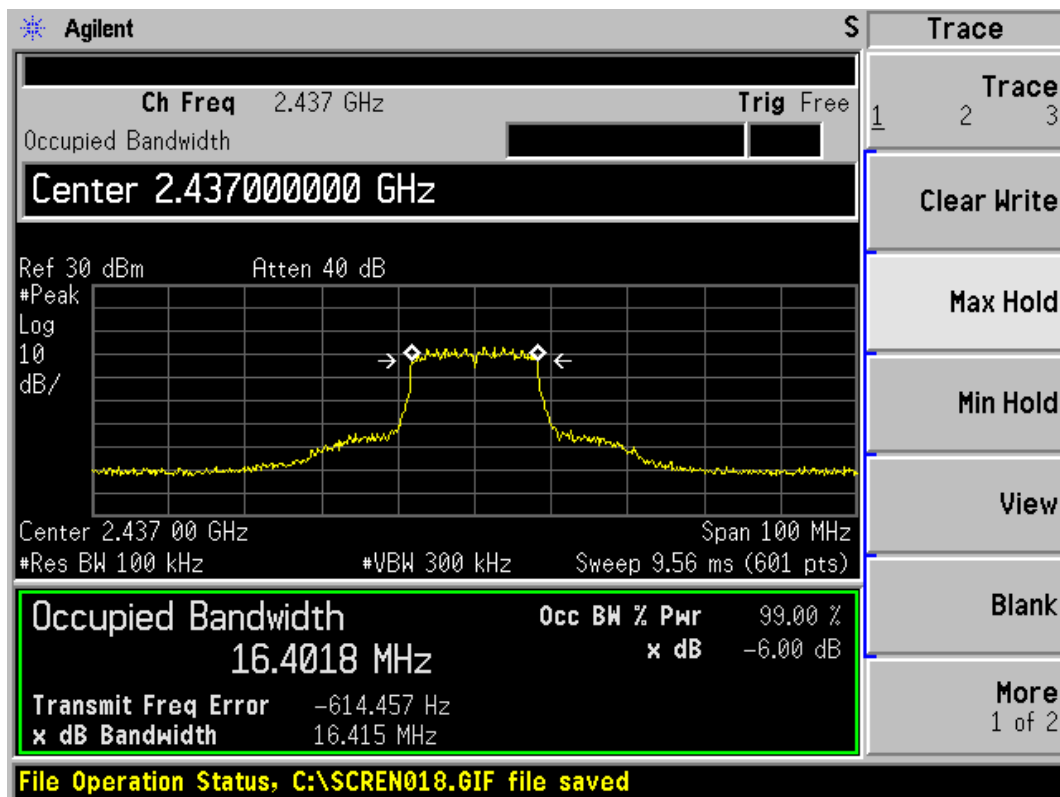
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802.11g, Carrier frequency (MHz): 2412

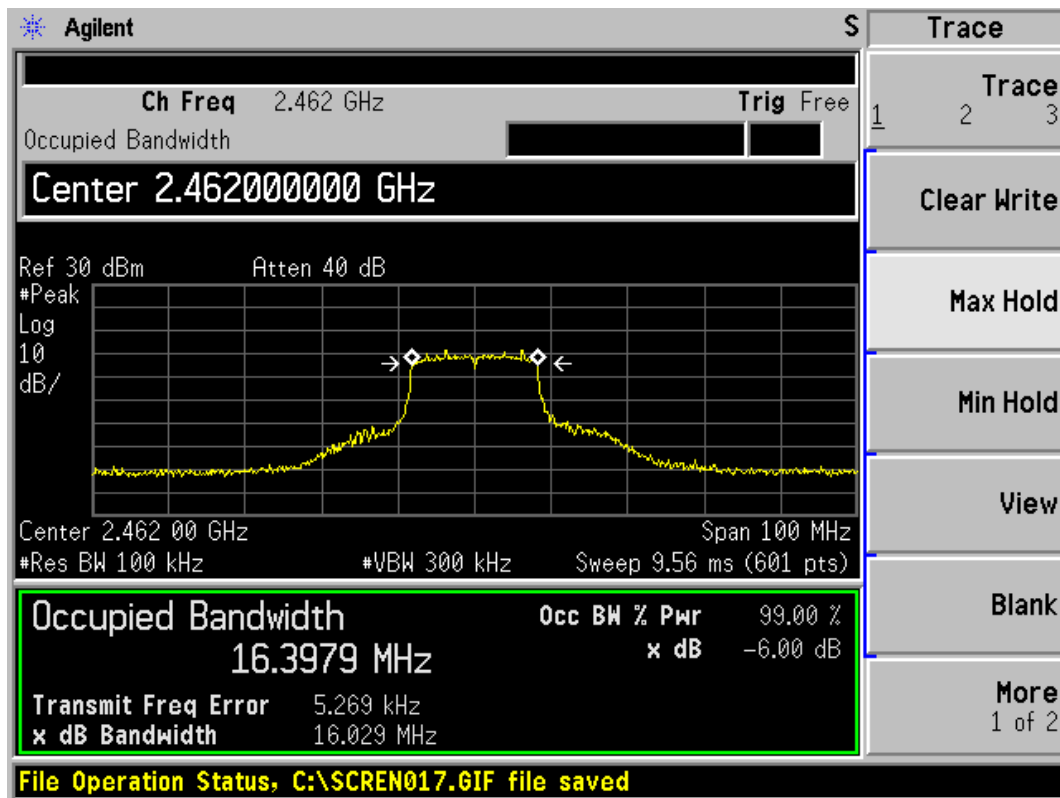


802.11g, Carrier frequency (MHz): 2437

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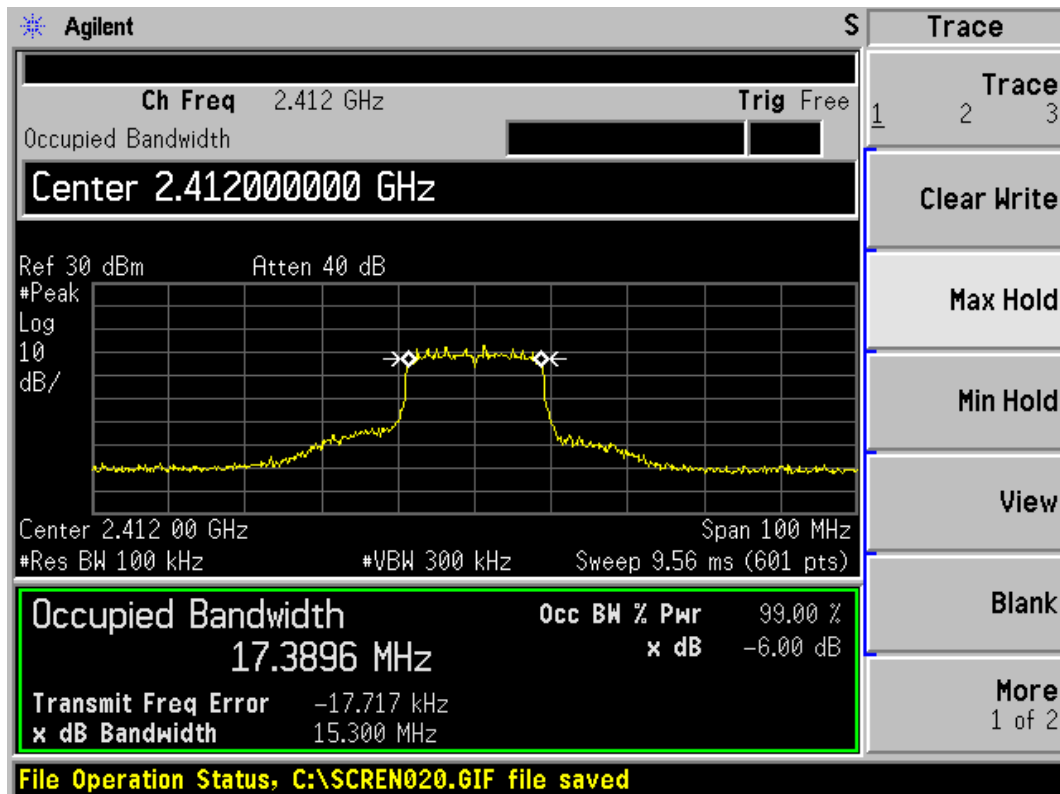
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802.11g, Carrier frequency (MHz):2462

802.11n (HT20)

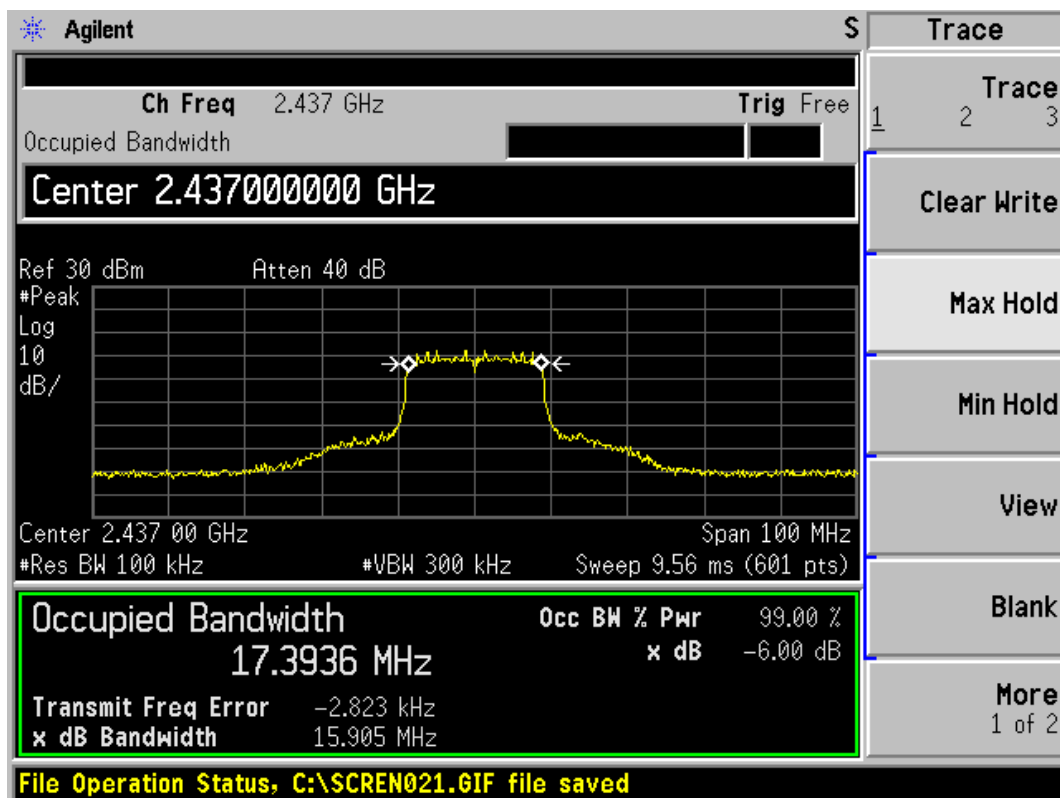


802.11n (HT20), Carrier frequency (MHz): 2412

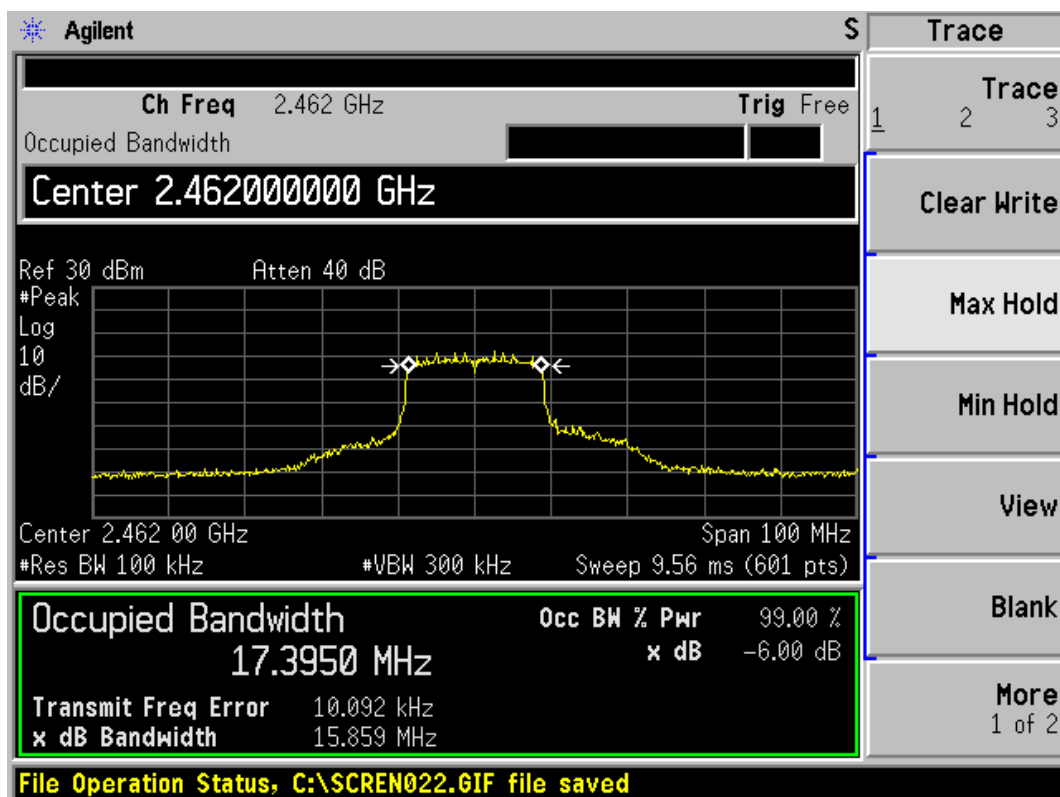
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802.11n (HT20), Carrier frequency (MHz): 2437



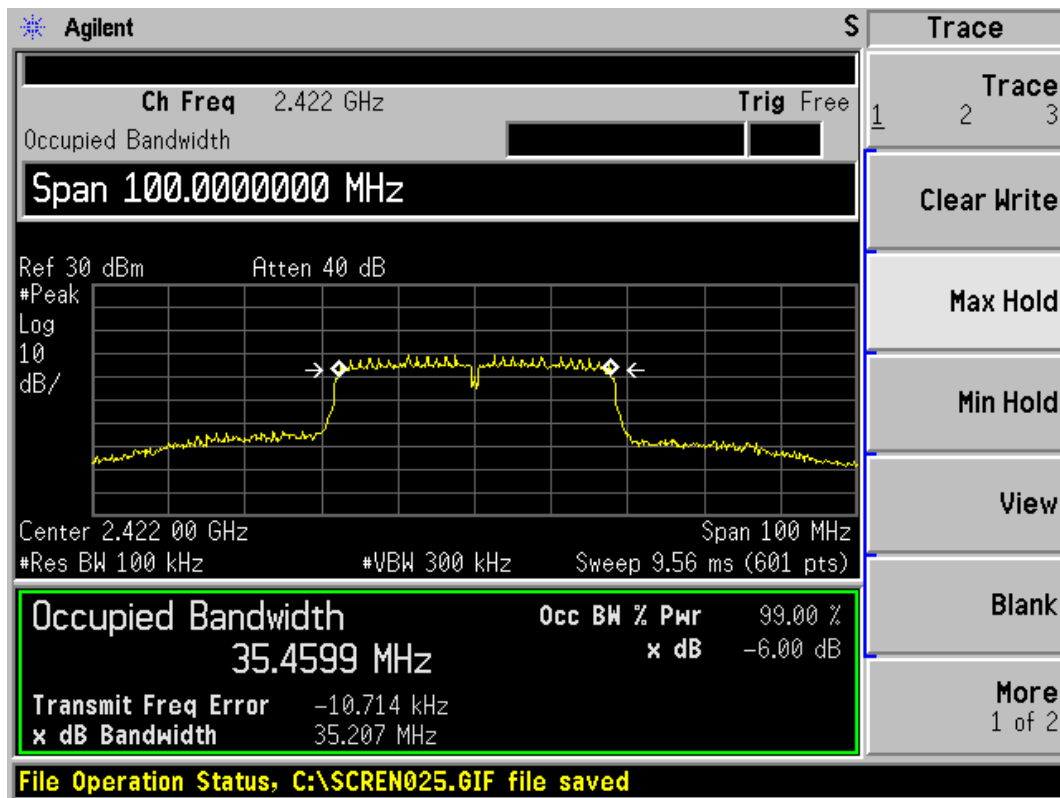
802.11n (HT20), Carrier frequency (MHz):2462

802.11n (HT40)

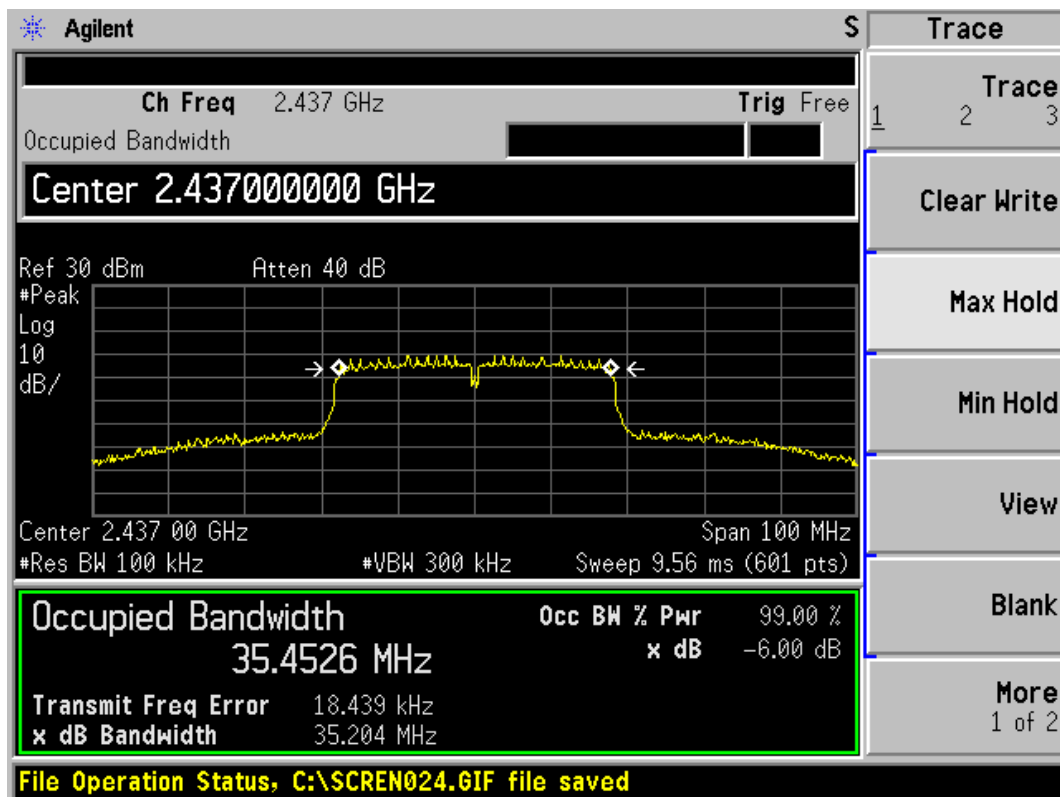
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802.11n (HT40), Carrier frequency (MHz): 2422

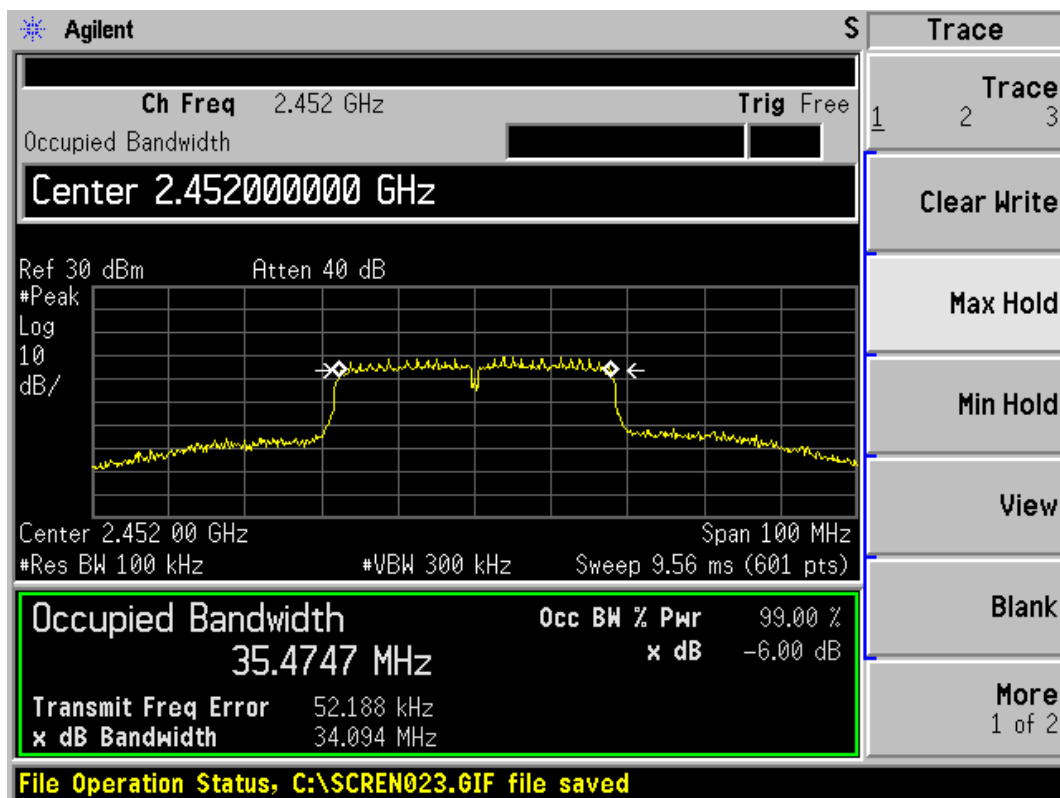


802.11n (HT40), Carrier frequency (MHz): 2437

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802.11n (HT40), Carrier frequency (MHz):2452

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CHAIN 1:

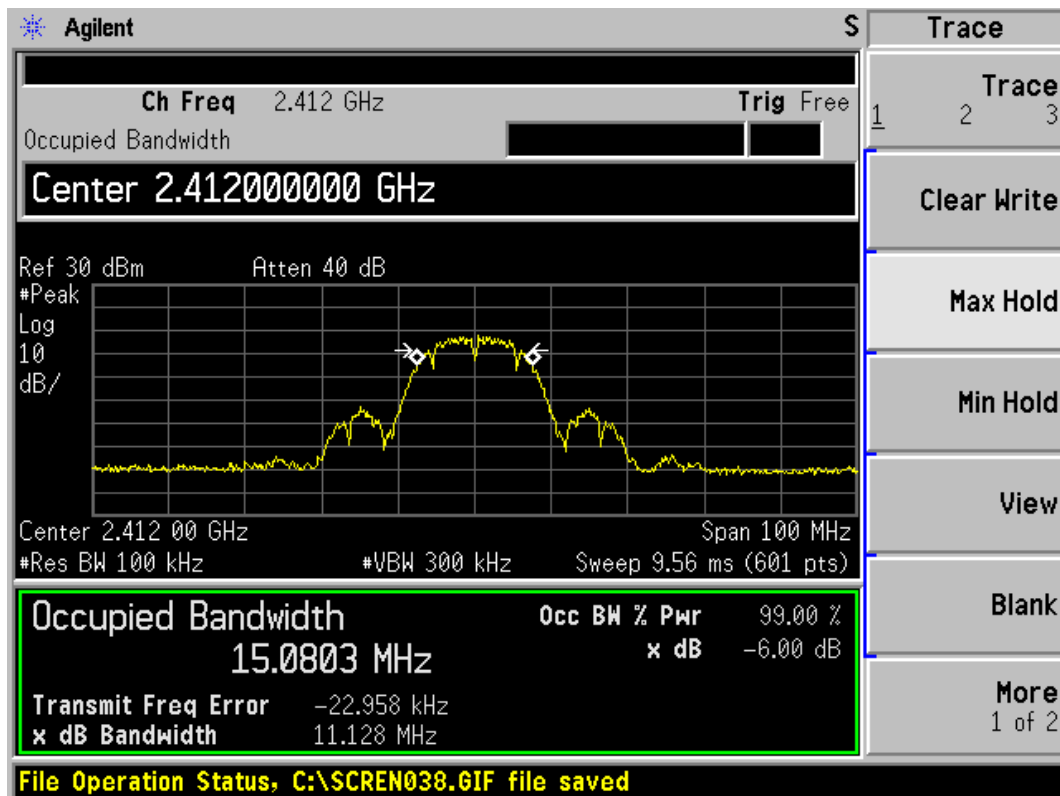
Network Standards	Carrier frequency (MHz)	Minimum 6dB bandwidth (MHz)	Conclusion
802.11b	2412	11.128	PASS
	2437	12.129	PASS
	2462	12.164	PASS
802.11g	2412	15.755	PASS
	2437	15.849	PASS
	2462	15.884	PASS
802.11n HT20	2412	15.804	PASS
	2437	15.925	PASS
	2462	15.366	PASS
802.11n HT40	2422	35.157	PASS
	2437	35.167	PASS
	2452	34.318	PASS

802.11b

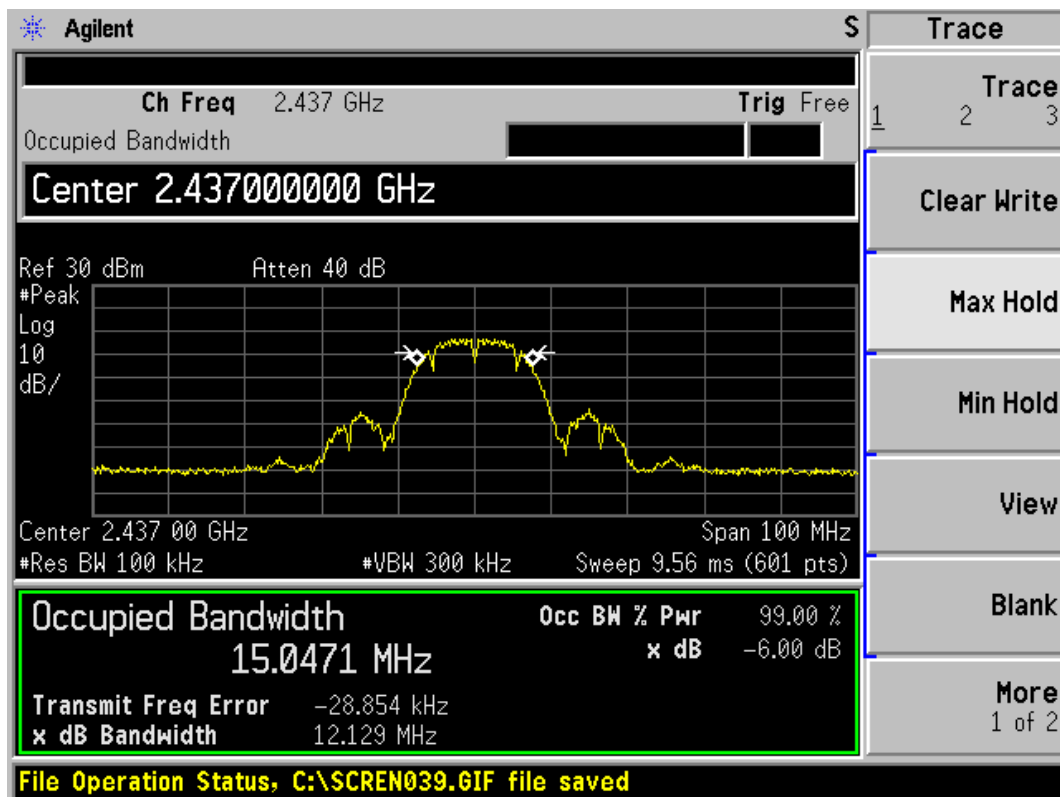
TA Technology (Shanghai) Co., Ltd.
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802.11b, Carrier frequency (MHz): 2412

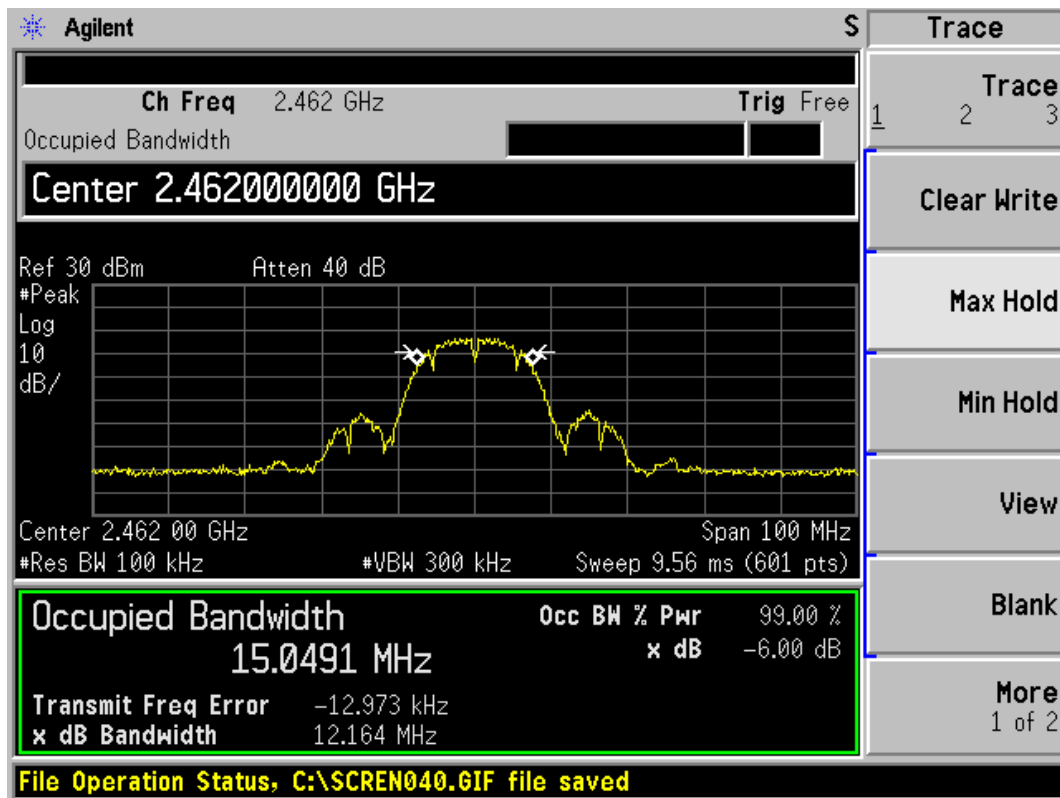


802.11b, Carrier frequency (MHz): 2437

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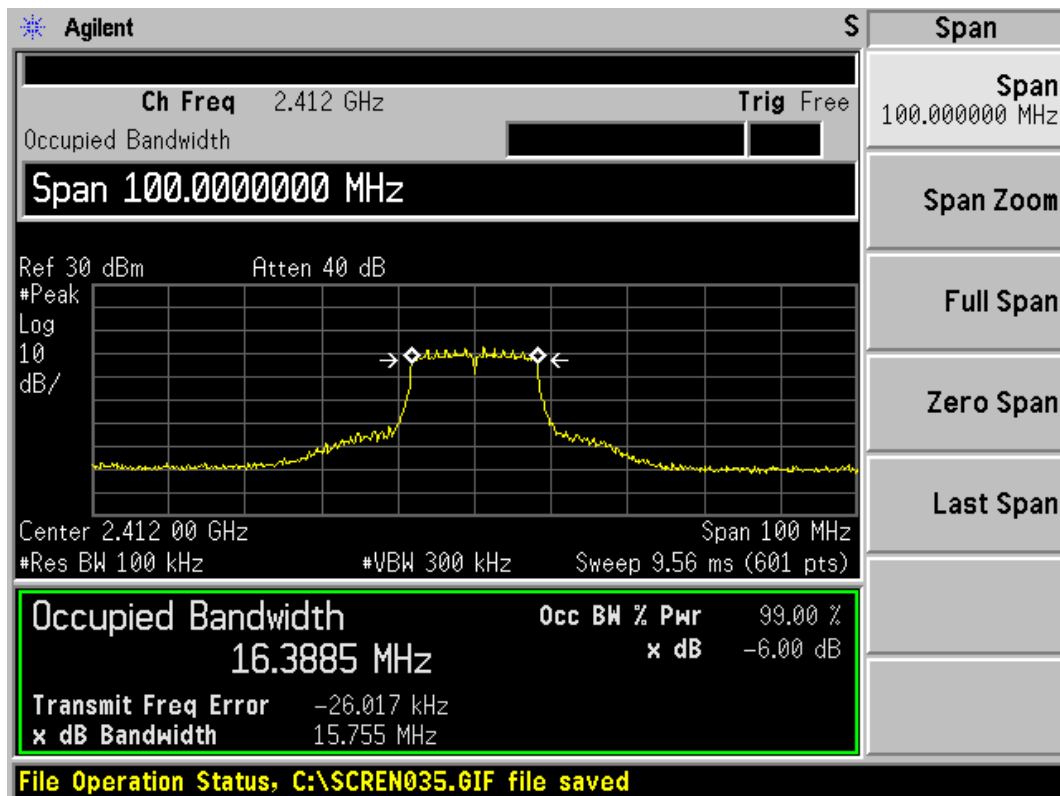
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802.11b, Carrier frequency (MHz):2462

802.11g

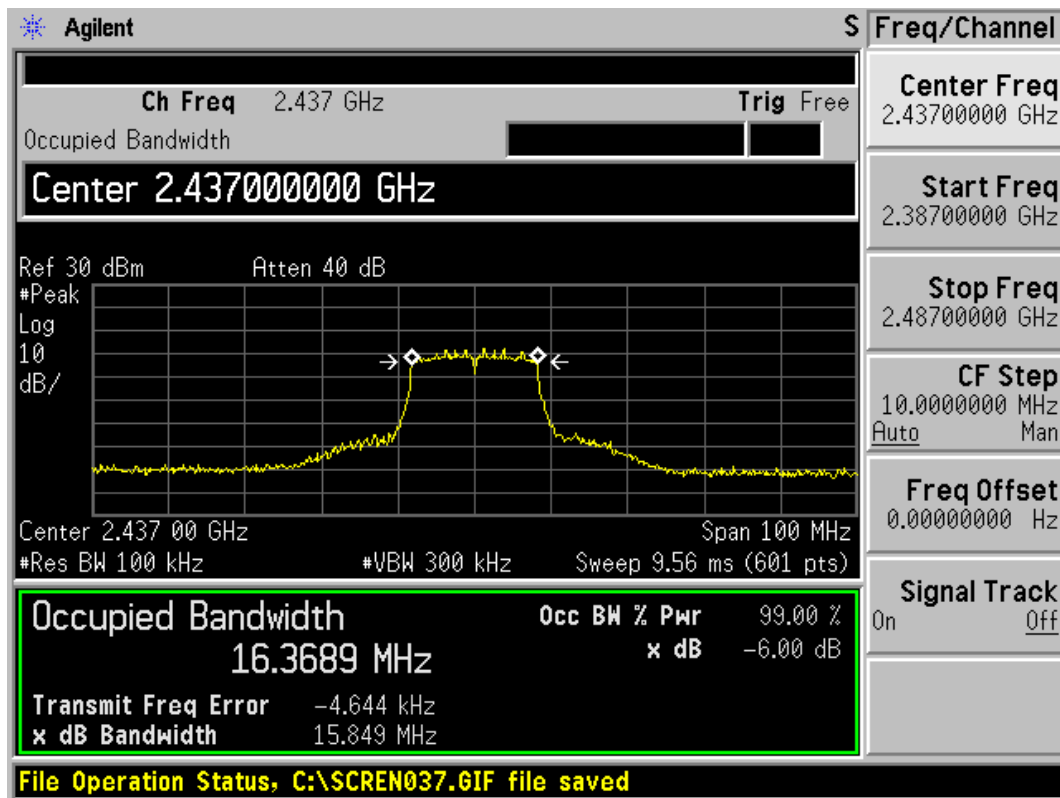


802.11g, Carrier frequency (MHz): 2412

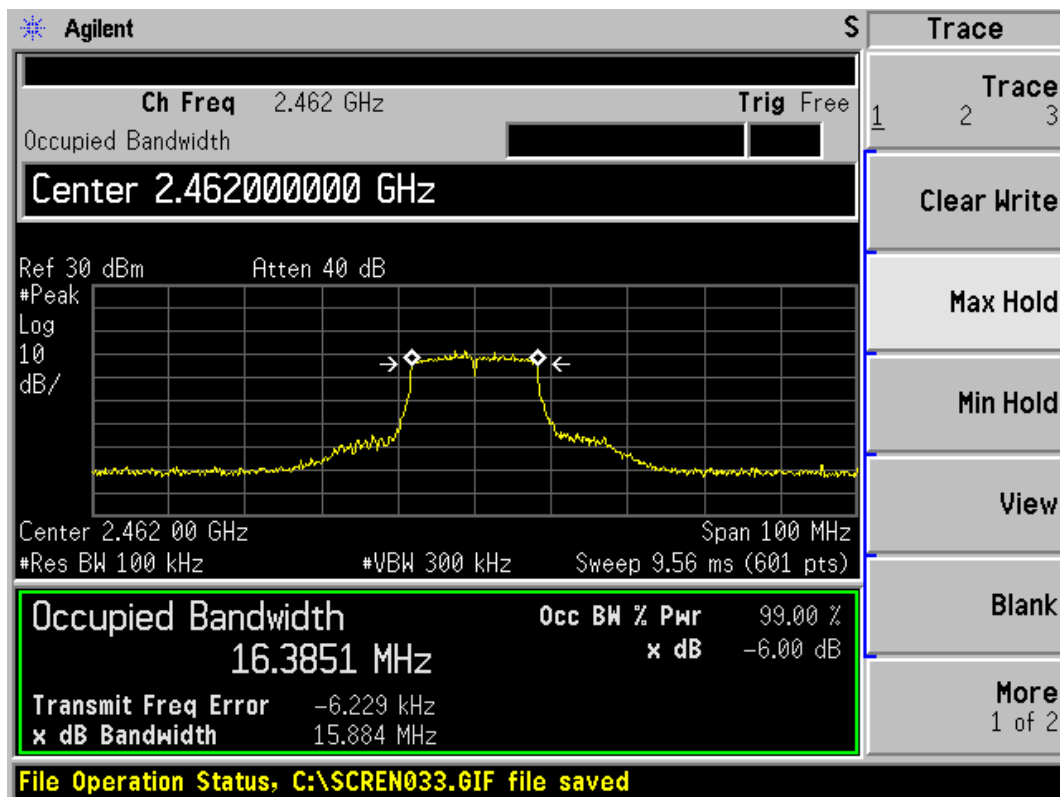
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802.11g, Carrier frequency (MHz): 2437



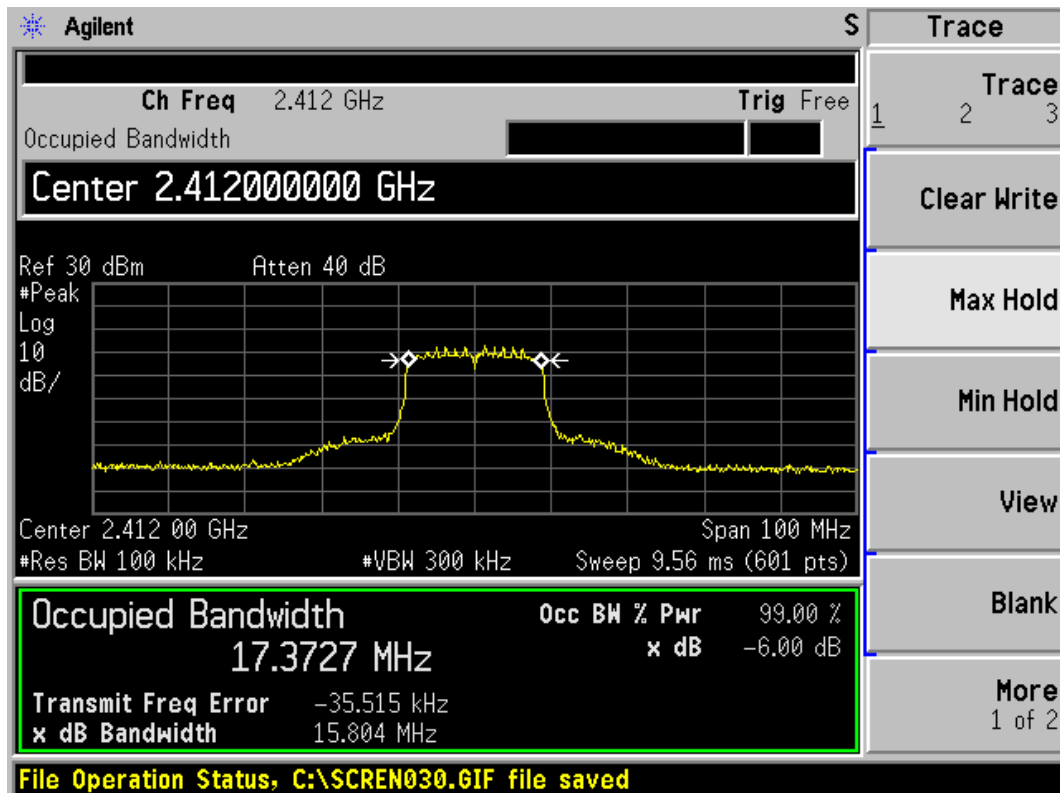
802.11g, Carrier frequency (MHz):2462

TA Technology (Shanghai) Co., Ltd.
Test Report

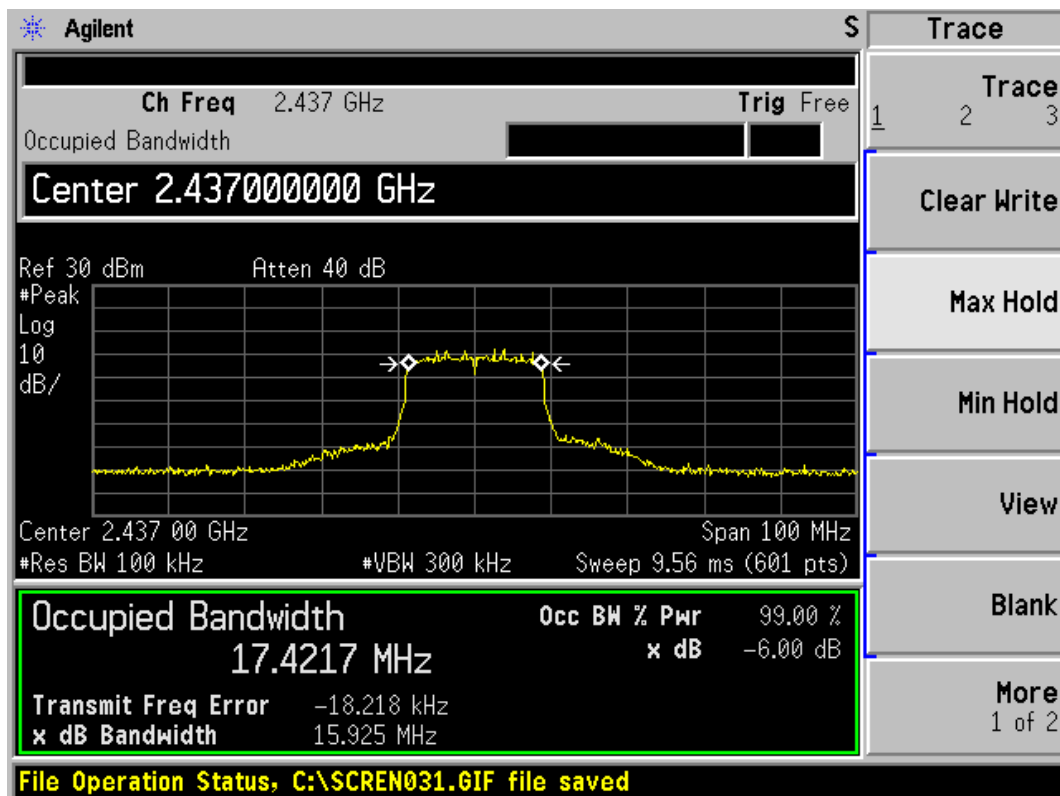
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802.11n (HT20)



802.11n (HT20), Carrier frequency (MHz): 2412

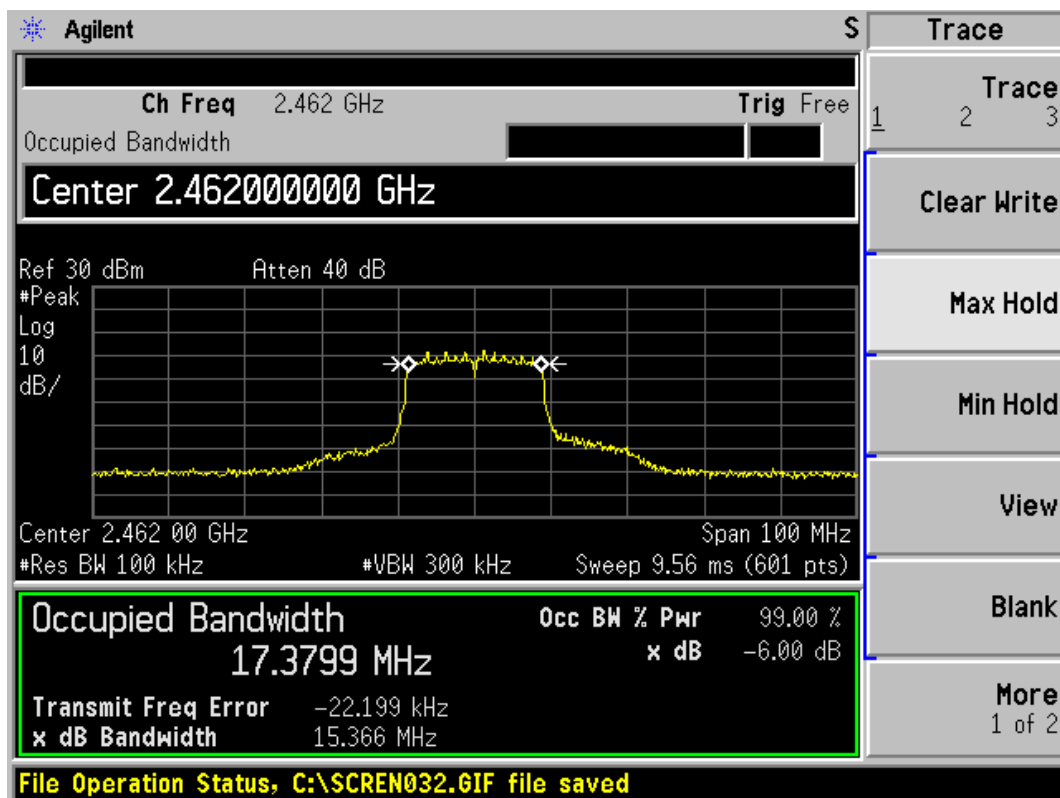


802.11n (HT20), Carrier frequency (MHz): 2437

TA Technology (Shanghai) Co., Ltd.
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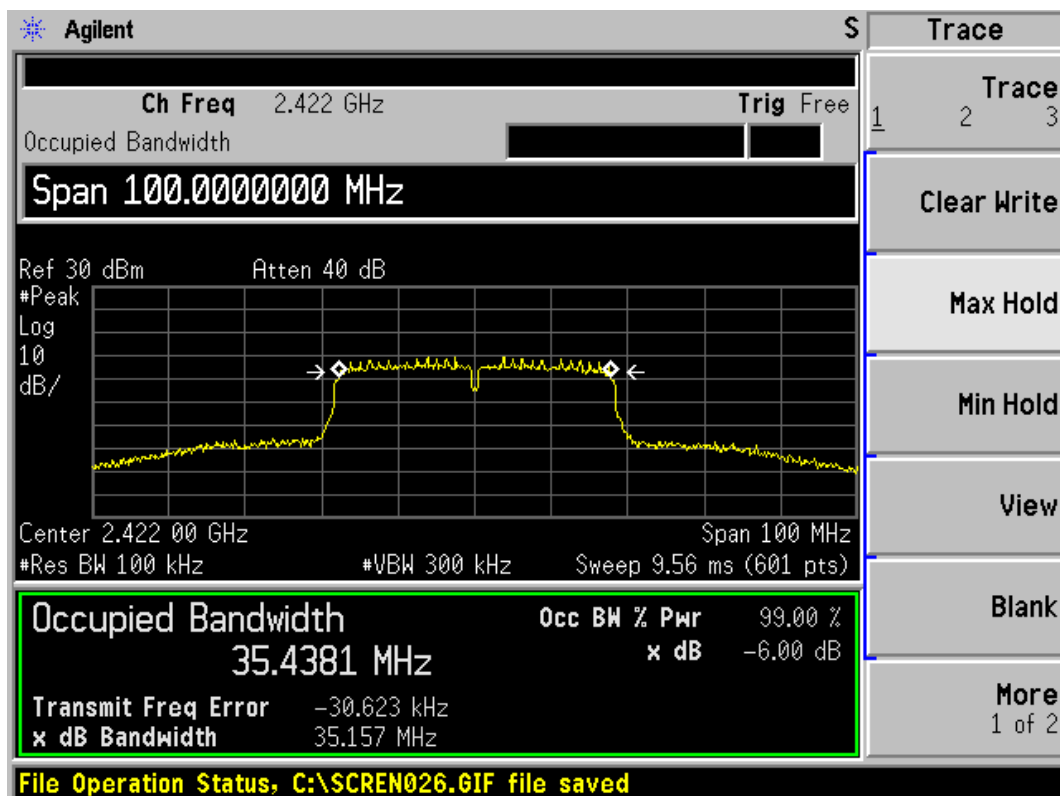
Report No.: RZA1201-0014RF01R5

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802.11n (HT20), Carrier frequency (MHz):2462

802.11n (HT40)

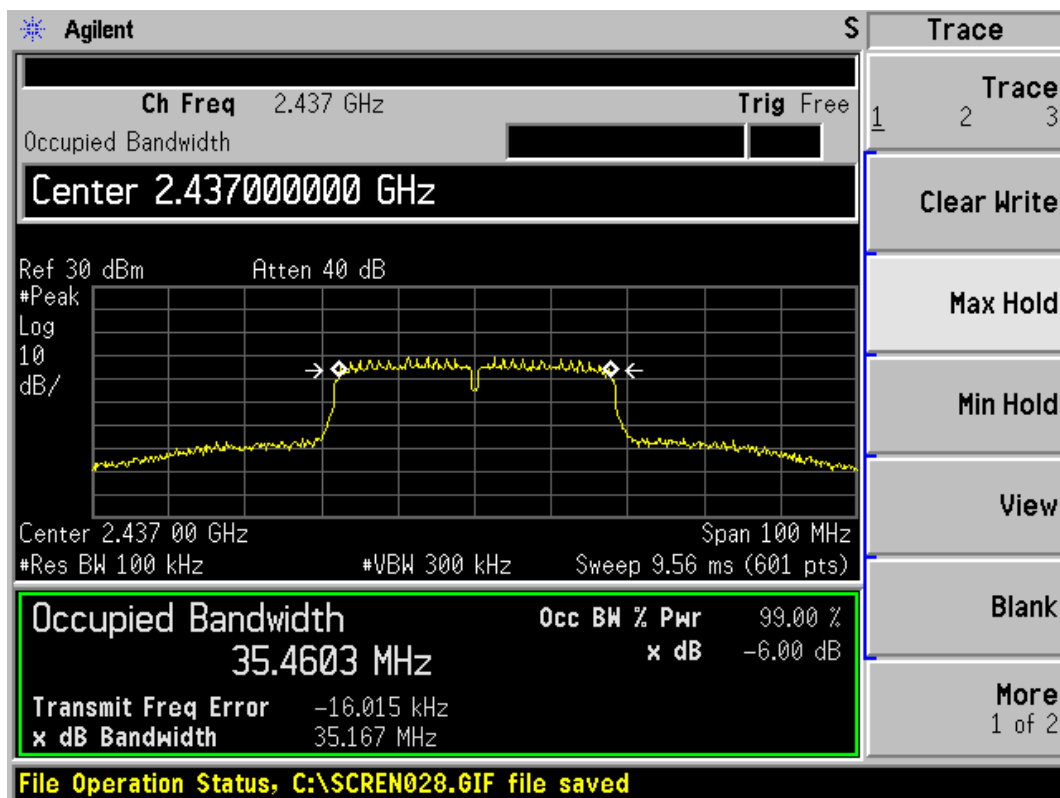


802.11n (HT40), Carrier frequency (MHz): 2422

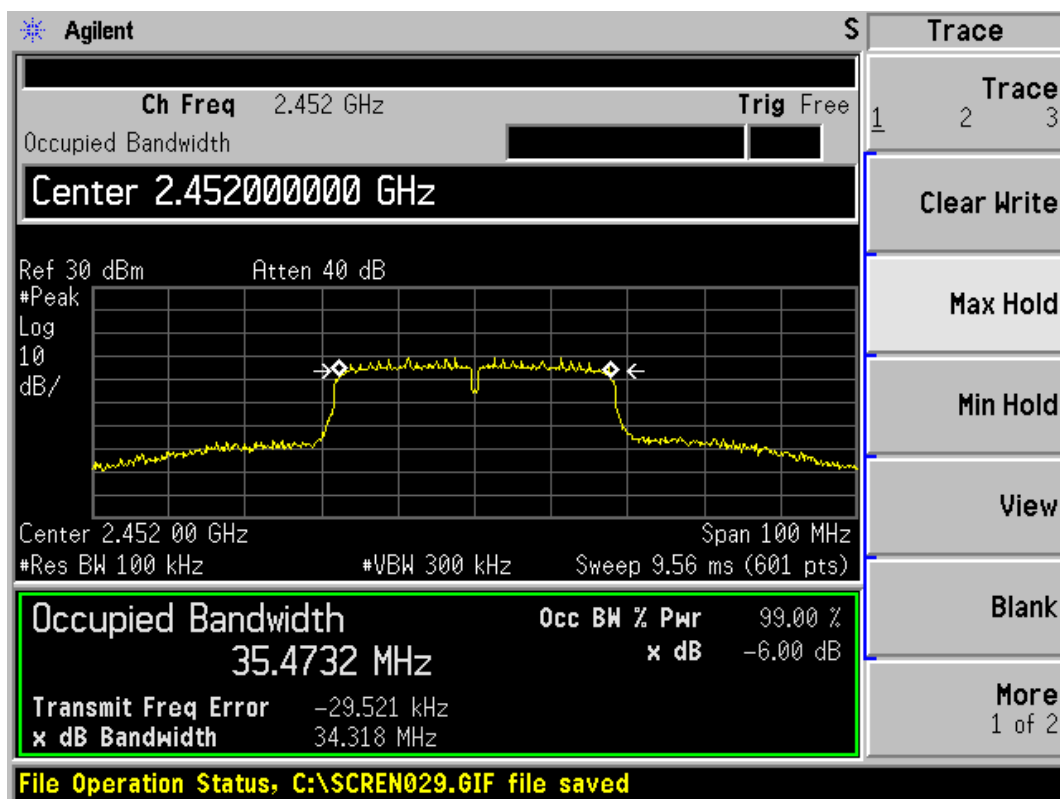
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802.11n (HT40), Carrier frequency (MHz): 2437



802.11n (HT40), Carrier frequency (MHz):2452

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2.5. Band Edge Compliance

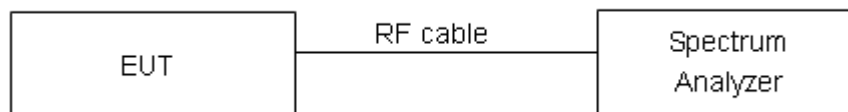
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable the band edge of the lowest and highest channels were measured. The peak detector is used and RBW is set to 100kHz and VBW is set to 300kHz on spectrum analyzer. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 15.247(d) specifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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.”

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
2GHz-3GHz	1.407 dB

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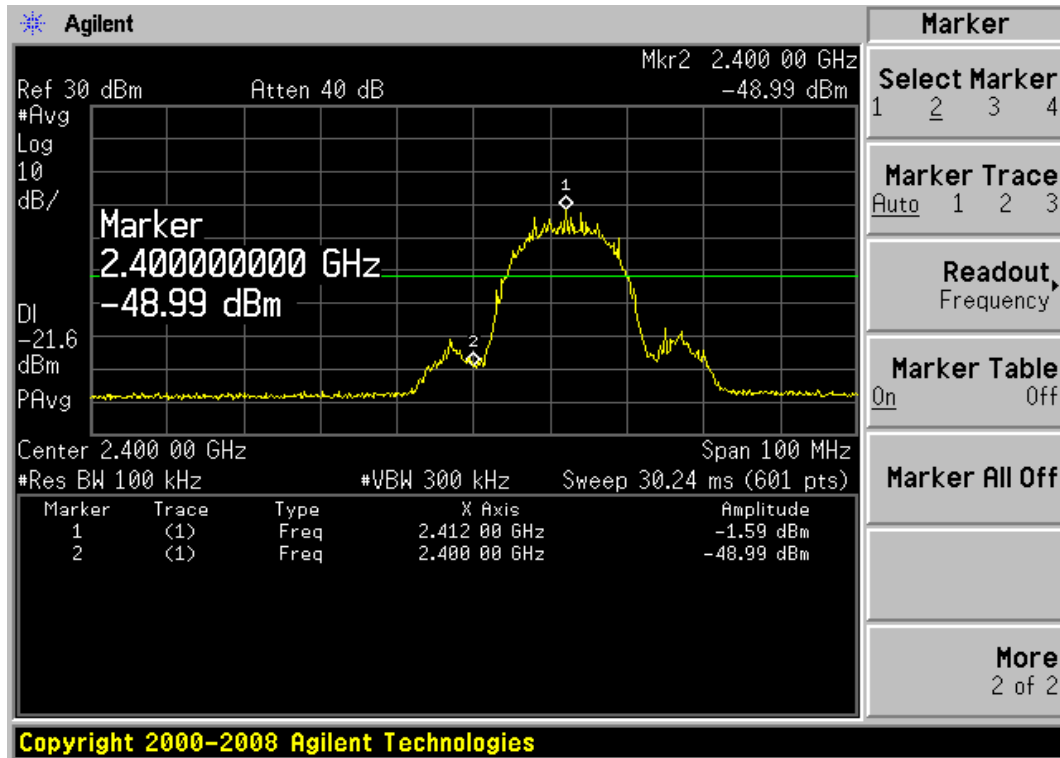
Report No.: RZA1201-0014RF01R5

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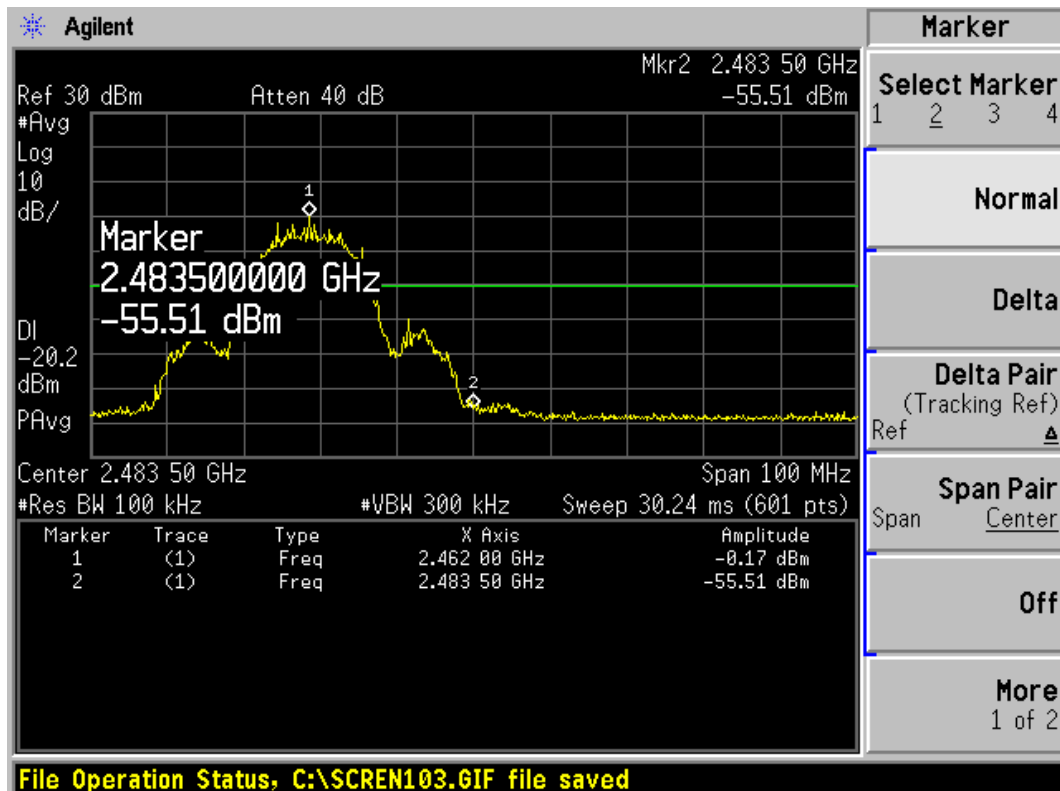
Test Results: PASS

CHAIN 0:

802.11b



802.11b, Channel No.: 1



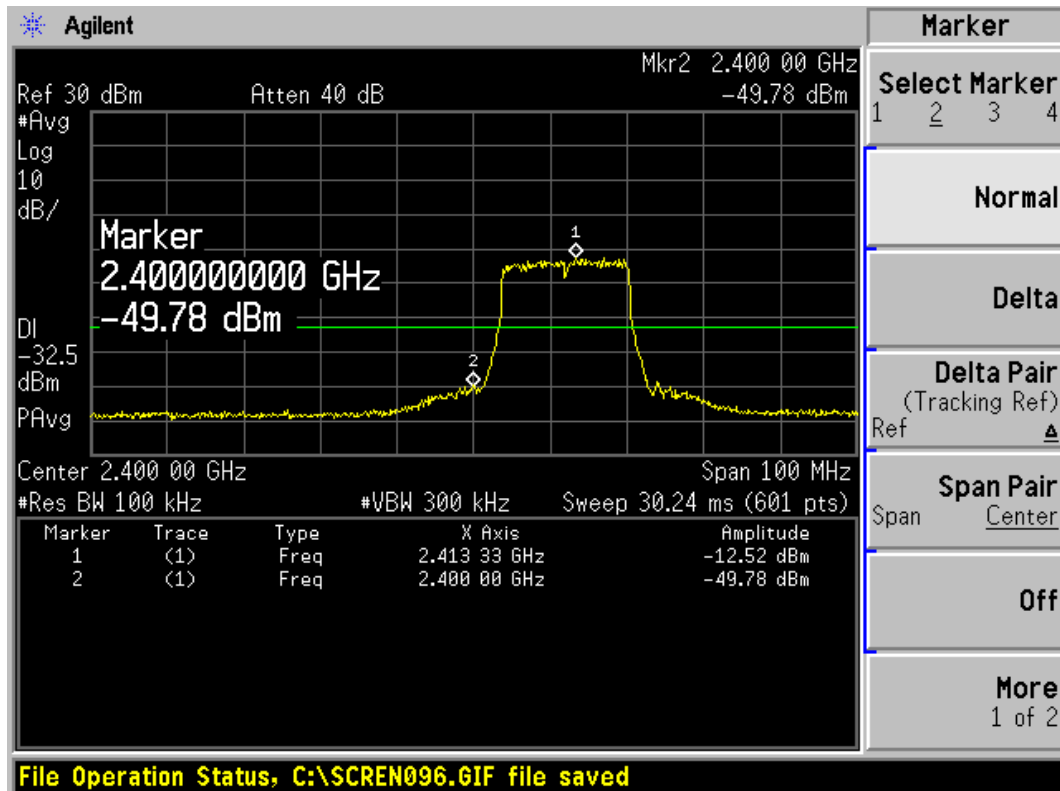
802.11b, Channel No.: 11

TA Technology (Shanghai) Co., Ltd. Test Report

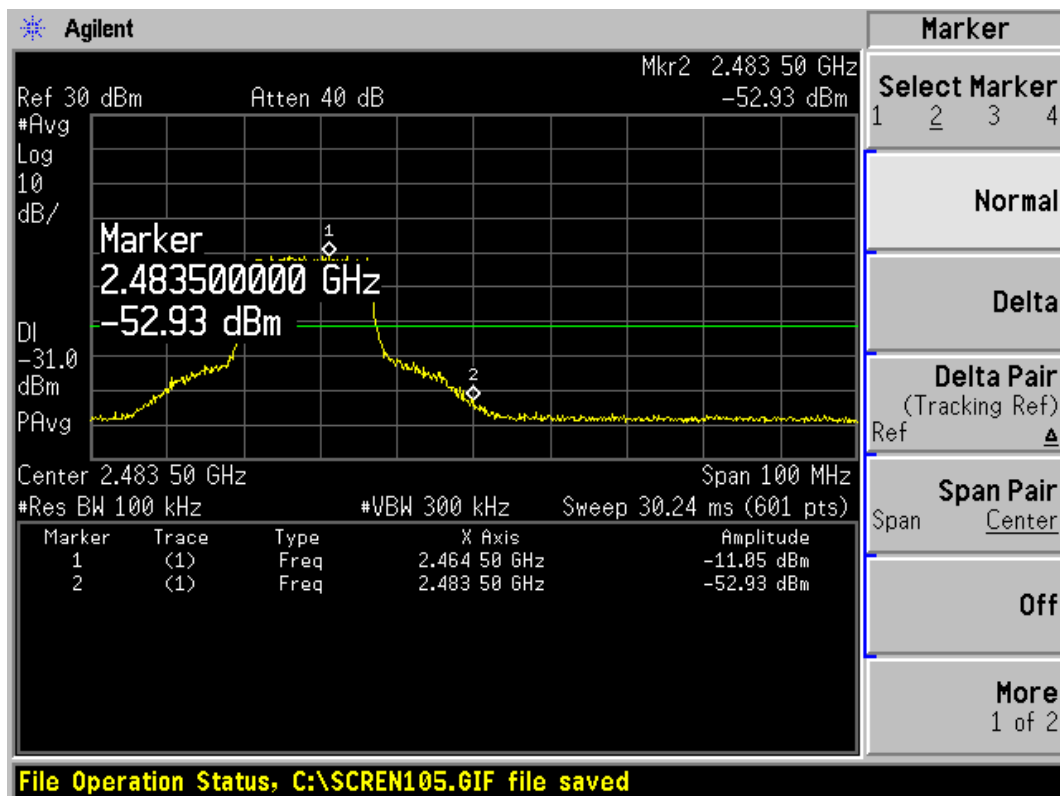
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802.11g



802.11g, Channel No.: 1



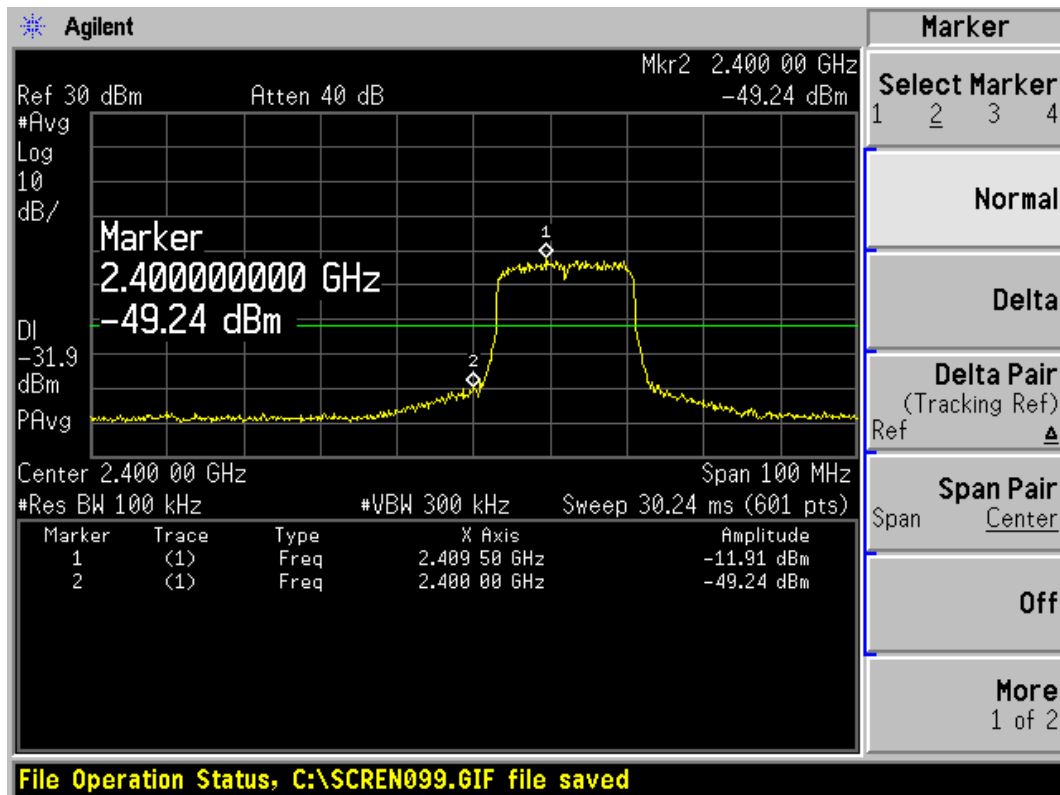
802.11g, Channel No.: 11

TA Technology (Shanghai) Co., Ltd. Test Report

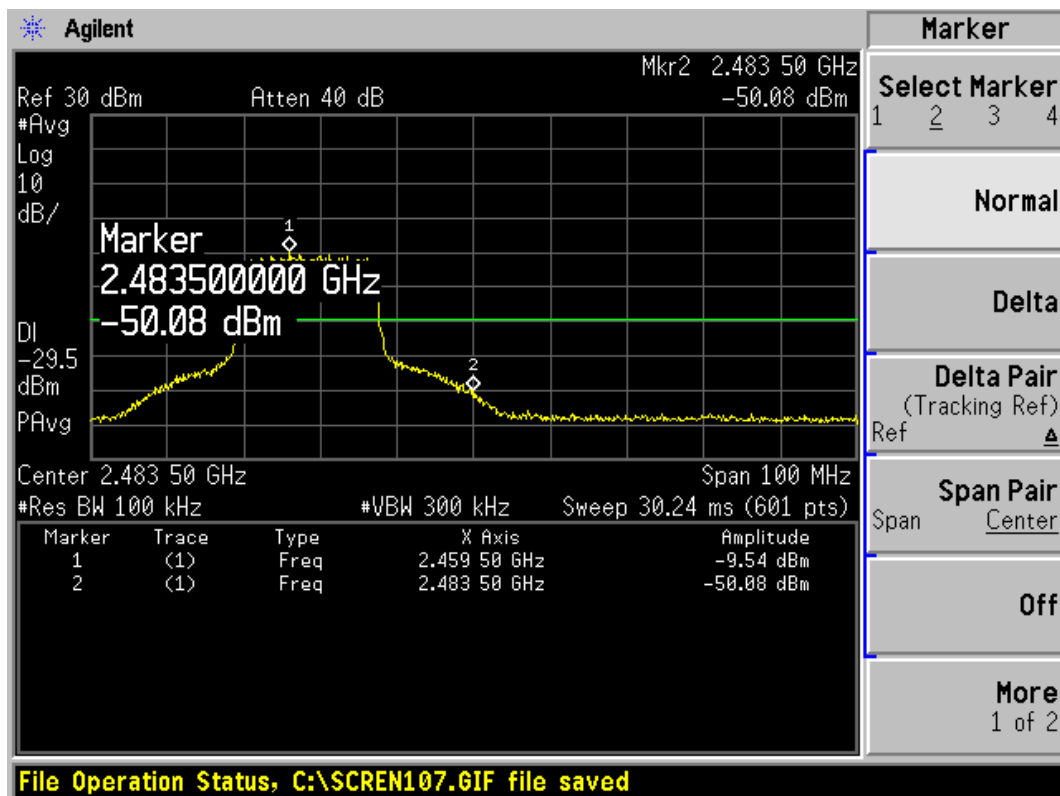
Report No.: RZA1201-0014RF01R5

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802.11n (HT20)



802.11n (HT20), Channel No.: 1



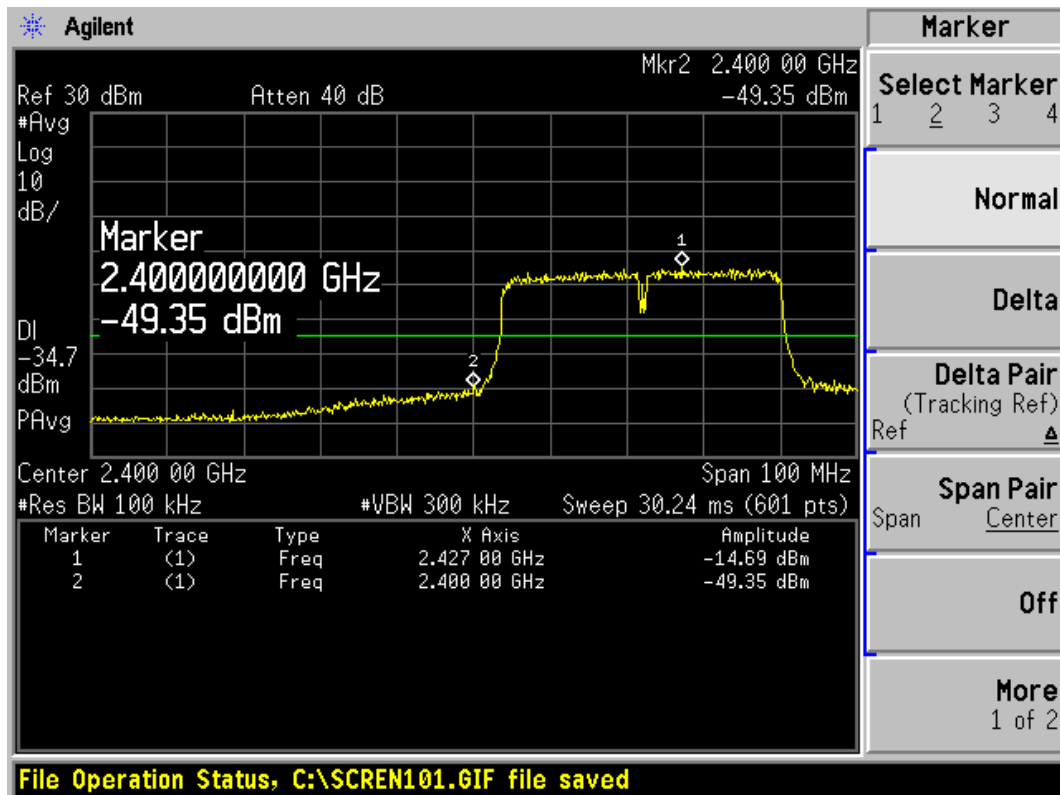
802.11n (HT20), Channel No.: 11

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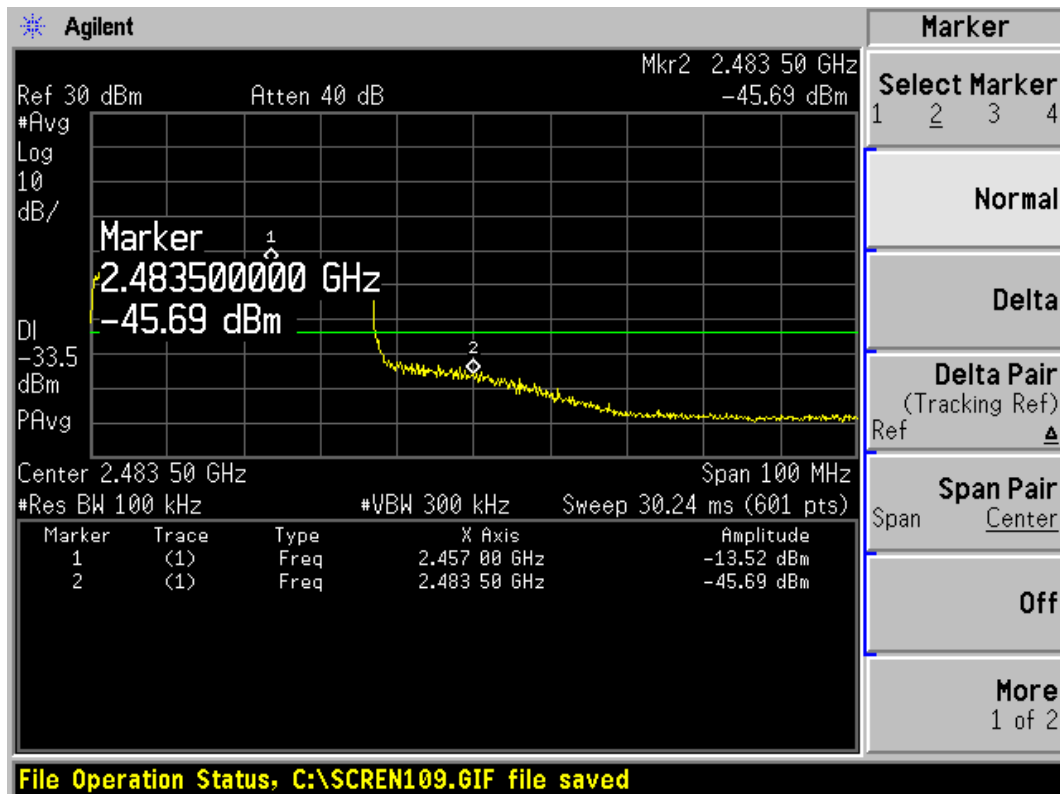
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802.11n (HT40)



802.11n (HT40), Channel No.: 3



802.11n (HT40), Channel No.: 9

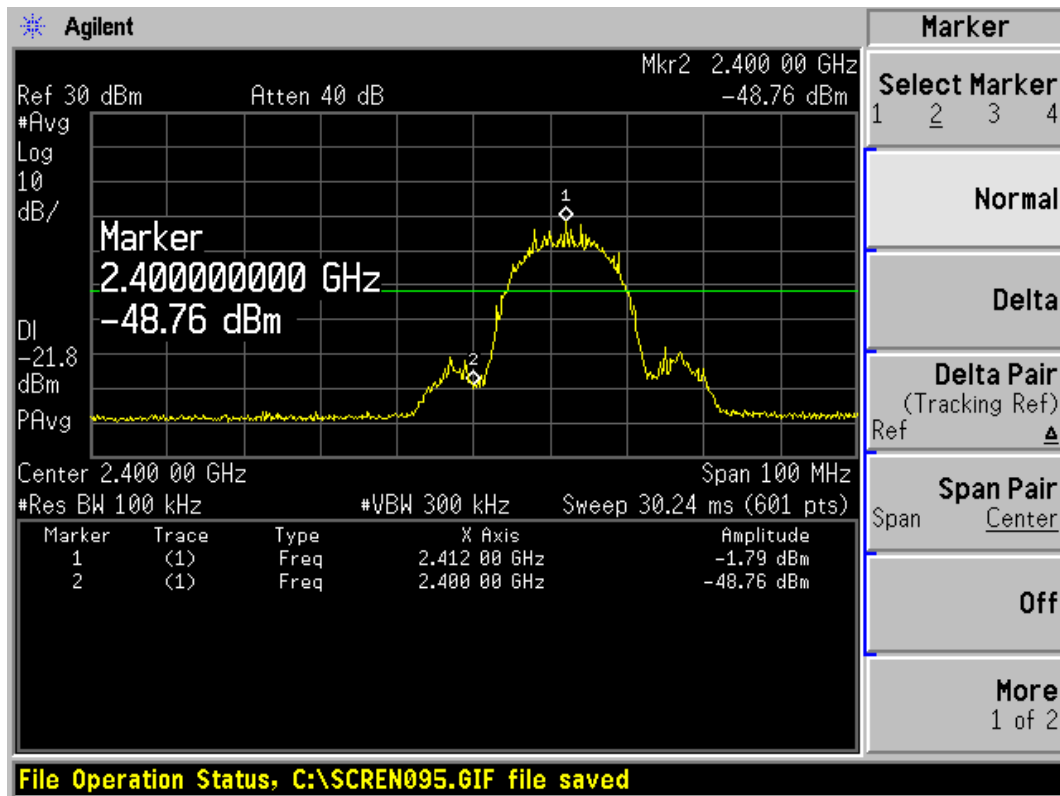
TA Technology (Shanghai) Co., Ltd.
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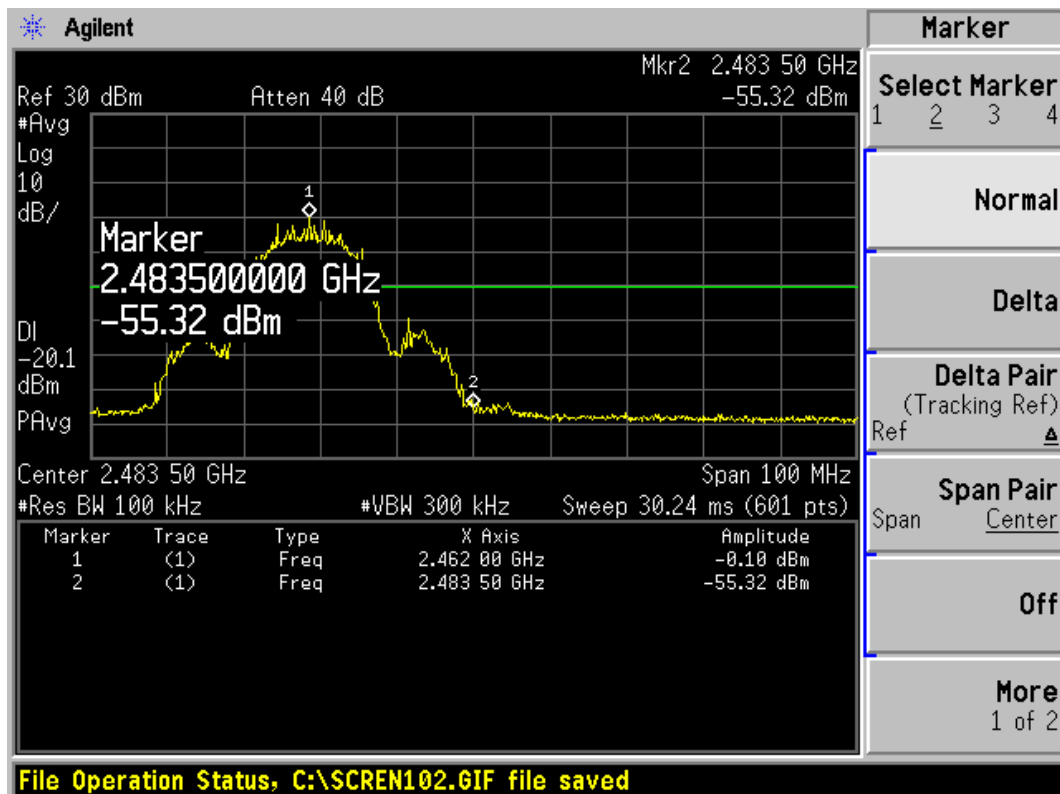
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CHAIN 1:

802.11b



802.11b, Channel No.: 1



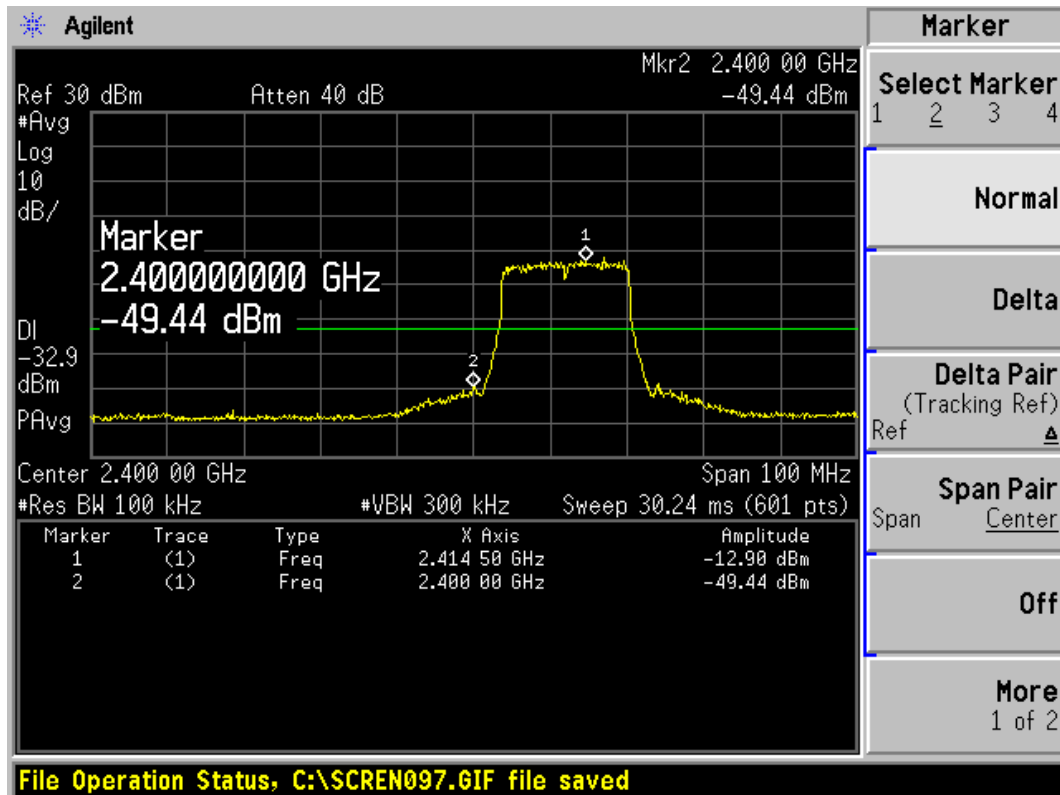
802.11b, Channel No.: 11

TA Technology (Shanghai) Co., Ltd. Test Report

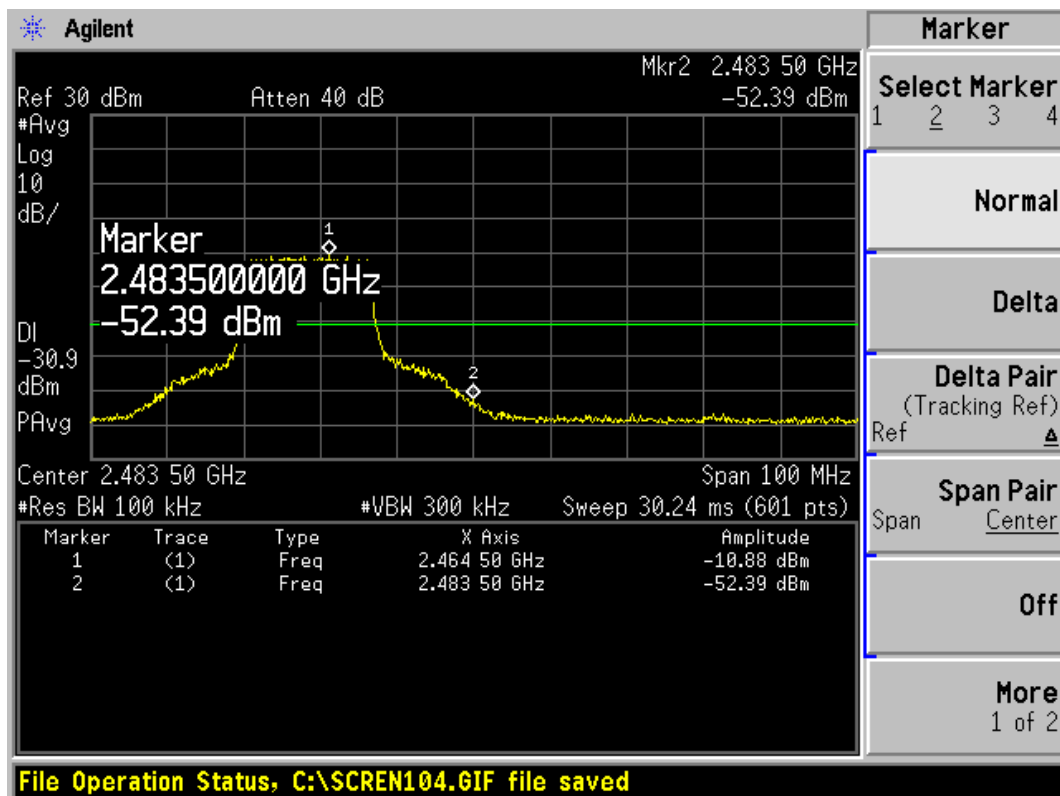
Report No.: RZA1201-0014RF01R5

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802.11g



802.11g, Channel No.: 1



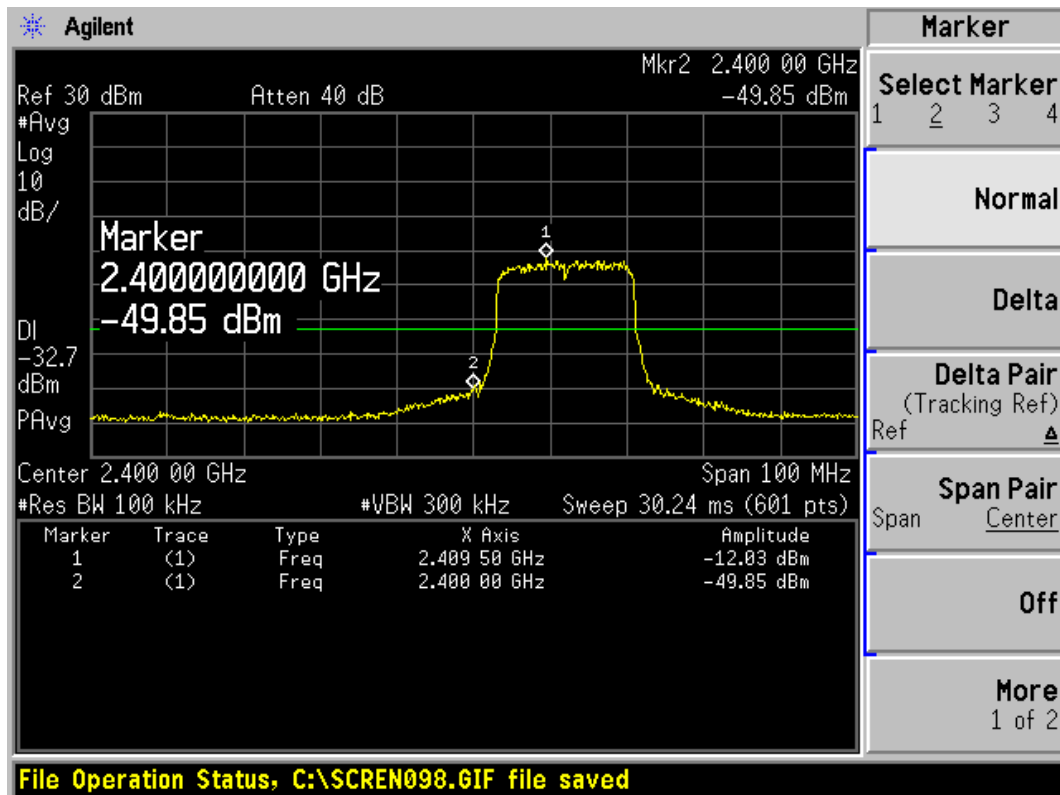
802.11g, Channel No.: 11

TA Technology (Shanghai) Co., Ltd.
Test Report

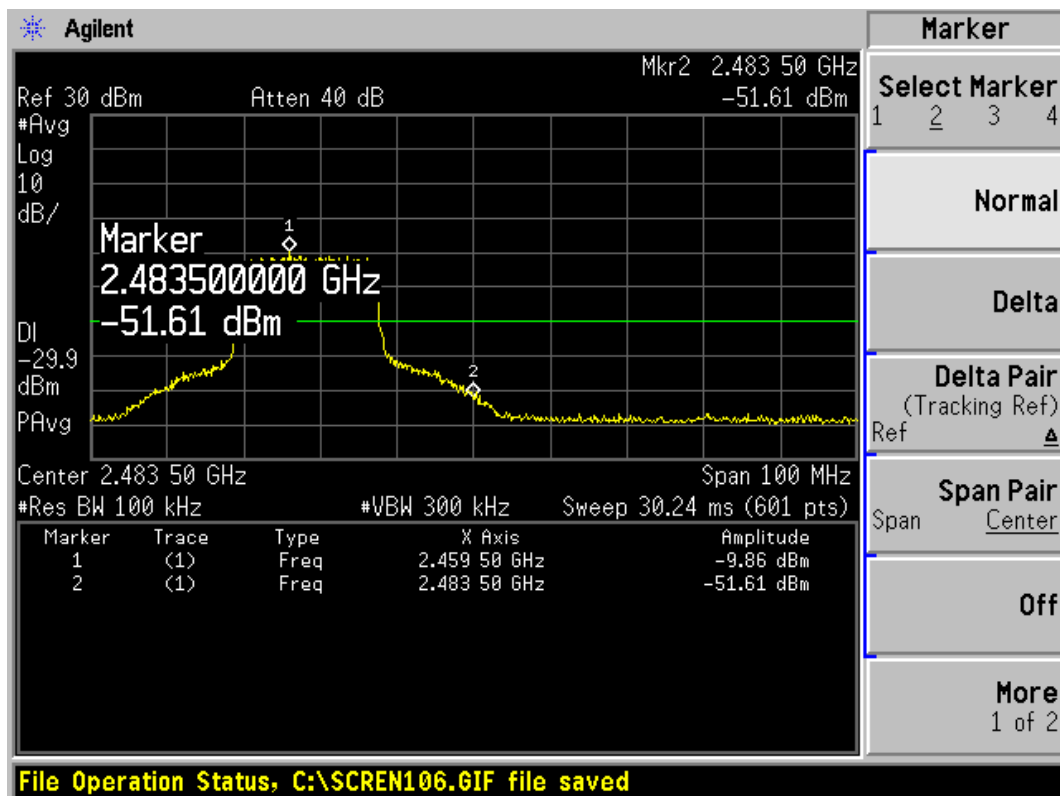
Report No.: RZA1201-0014RF01R5

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802.11n (HT20)



802.11n (HT20), Channel No.: 1



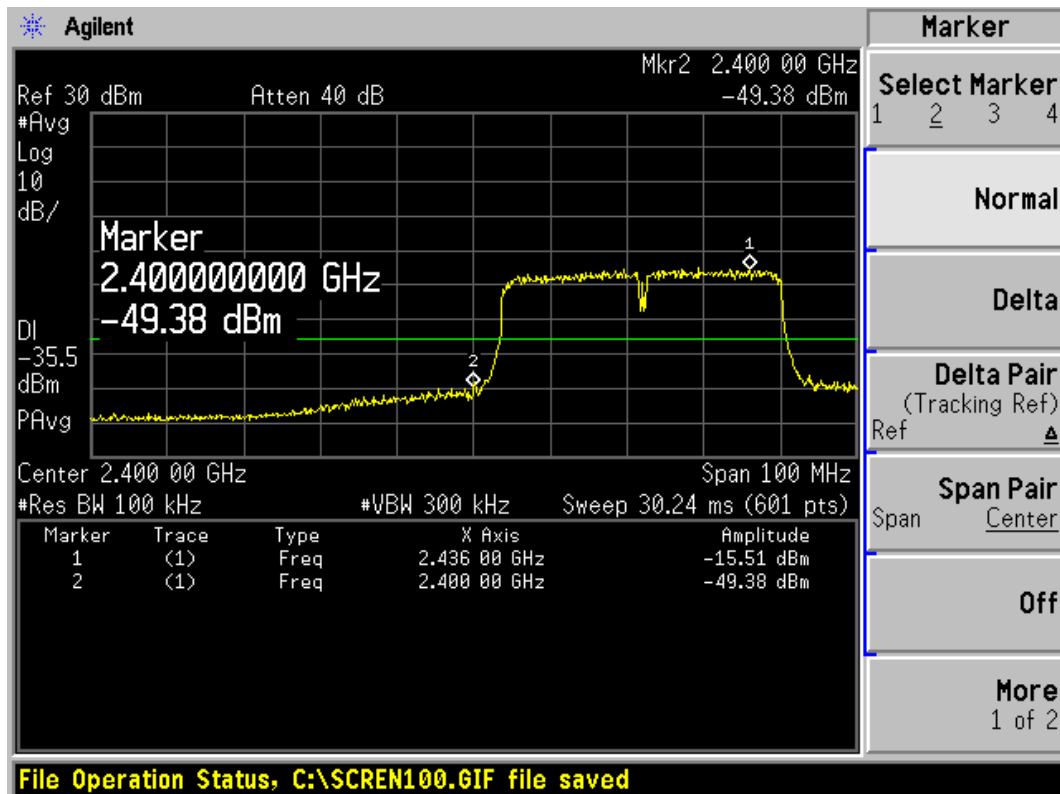
802.11n (HT20), Channel No.: 11

TA Technology (Shanghai) Co., Ltd.
Test Report

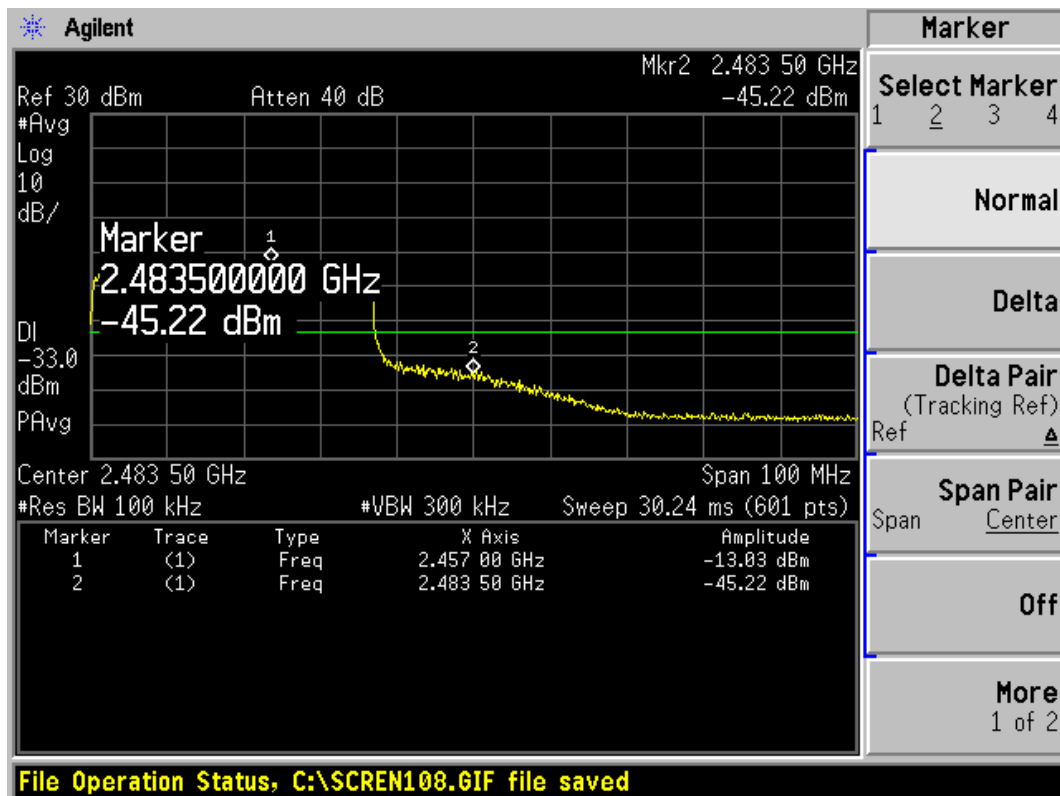
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802.11n (HT40)



802.11n (HT40), Channel No.: 3



802.11n (HT40), Channel No.: 9

2.6. Spurious Radiated Emissions in the restricted band

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. RBW is set to 100kHz. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

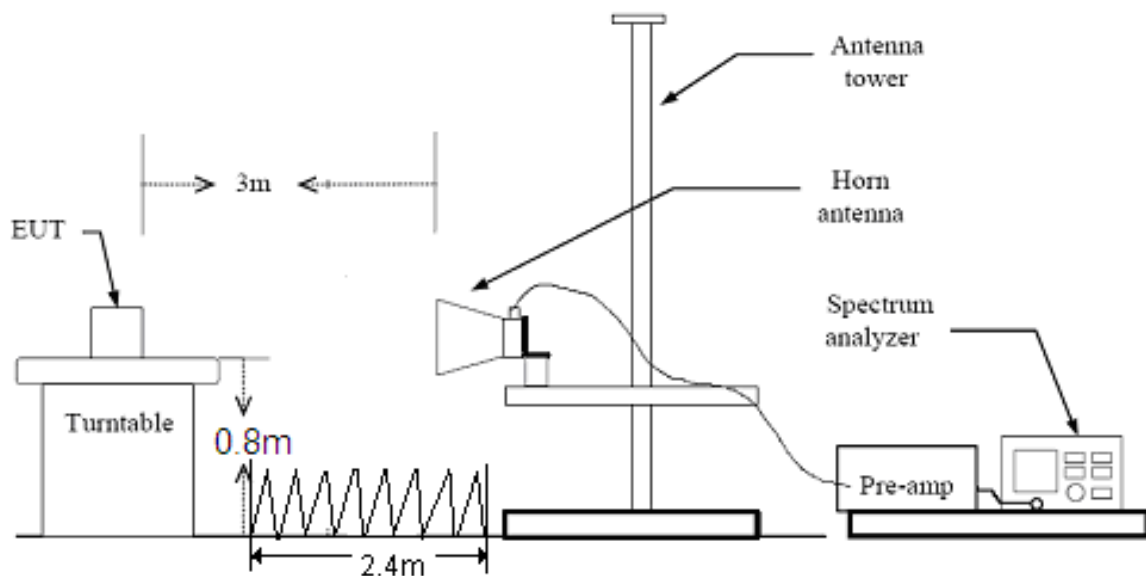
Set the spectrum analyzer in the following:

- (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
- (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

This setting method can refer to **KDB 558074**.

The test is in transmitting mode.

Test setup



Note: Area side: 2.4m X 3.6m

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Limits

Spurious Radiated Emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

Limit in restricted band

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
0.009-0.490	2400/F(kHz)	/
0.490-1.705	24000/F(kHz)	/
1.705-30.0	30	/
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

§15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

Peak Limit=74 dBuV/m

Average Limit=54 dBuV/m

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 3.55$ dB.

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Test Results: PASS

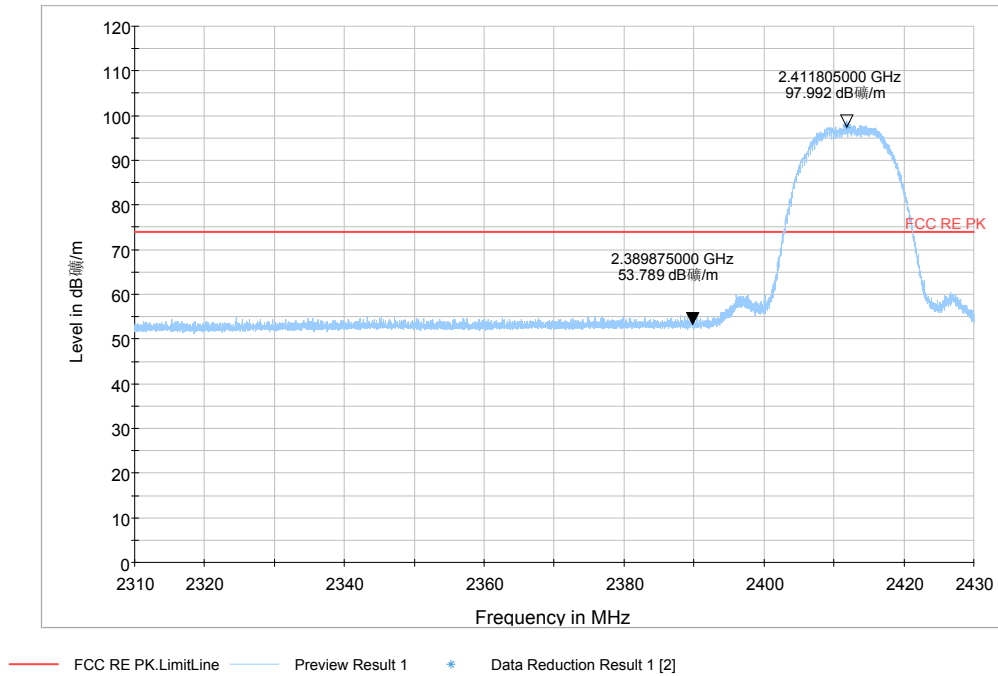
Test Results of Simultaneous Transmission:

Channel.	Fre. (MHz)	Detection Type	Value (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	PASS /FAIL
802.11b, Ch1	2389.88	PK	53.789	74	20.211	1.05	0	PASS
802.11b, Ch1	2389.97	AV	43.055	54	10.945	1.05	180	PASS
802.11b, Ch 11	2483.58	PK	55.426	74	18.574	1.05	135	PASS
802.11b, Ch 11	2483.56	AV	43.836	54	10.164	1.25	45	PASS
802.11g, Ch1	2391.62	PK	65.287	74	8.713	1.01	90	PASS
802.11g, Ch1	2388.87	AV	38.423	54	15.577	1.02	180	PASS
802.11g, Ch 11	2483.18	PK	45.796	74	28.204	1.02	45	PASS
802.11g, Ch 11	2483.03	AV	38.142	54	15.858	1.05	0	PASS
802.11n HT20,Ch1	2390.03	PK	66.799	74	7.201	1.05	45	PASS
802.11n HT20,Ch1	2391.48	AV	40.725	54	13.275	1.05	90	PASS
802.11n HT20,Ch11	2483.34	PK	66.651	74	7.349	1.05	115	PASS
802.11n HT20,Ch11	2483.46	AV	41.178	54	12.822	1.05	0	PASS
802.11n HT40,Ch3	2392.10	PK	68.436	74	5.564	1.15	90	PASS
802.11n HT40,Ch3	2390.94	AV	44.772	54	9.228	1.05	90	PASS
802.11n HT40,Ch9	2482.69	PK	65.379	74	8.621	1.20	180	PASS
802.11n HT40,Ch9	2483.13	AV	41.483	54	12.517	1.05	180	PASS

Note: plots show Polarization (V) and Polarization (H) maximum value that is synthesized by software.

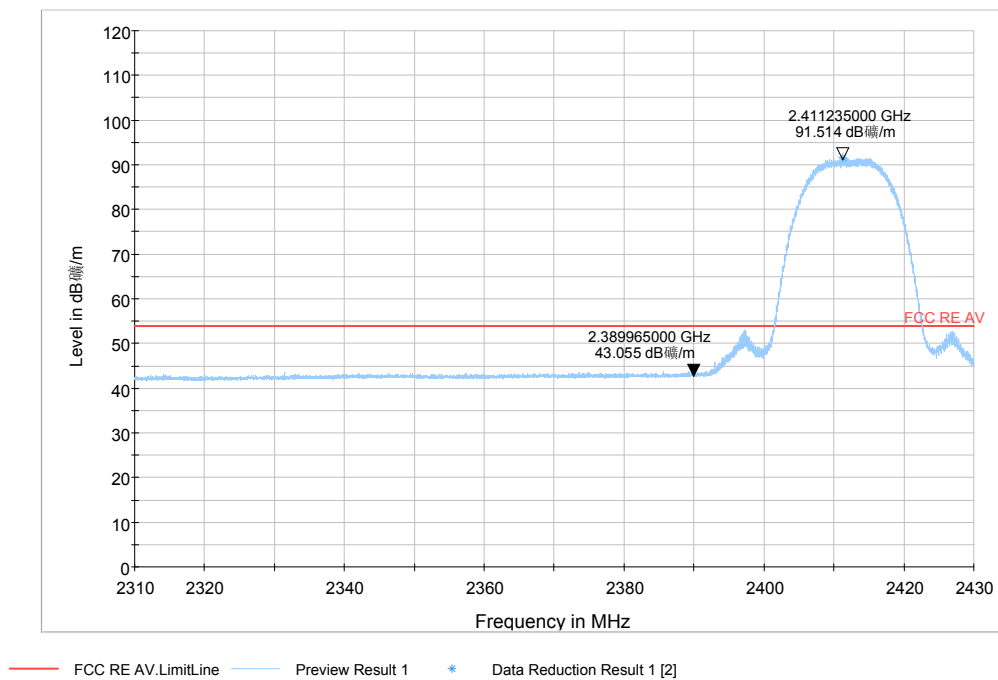
802.11b-Channel 1:

Peak



Note: The signal beyond the limit is carrier
Channel 1

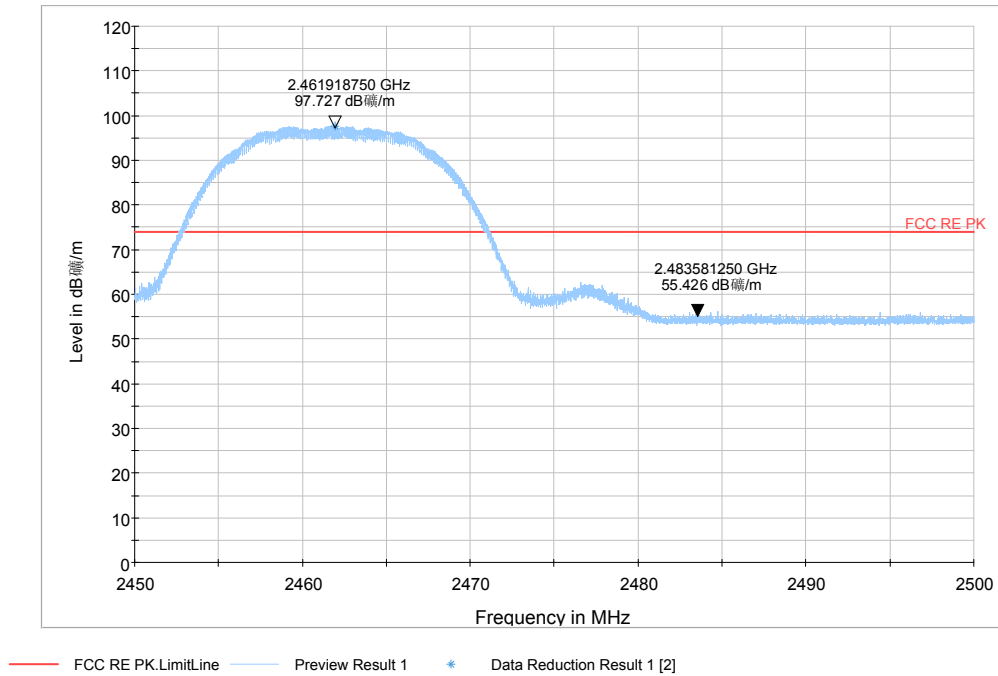
Average



Note: The signal beyond the limit is carrier
Channel 1

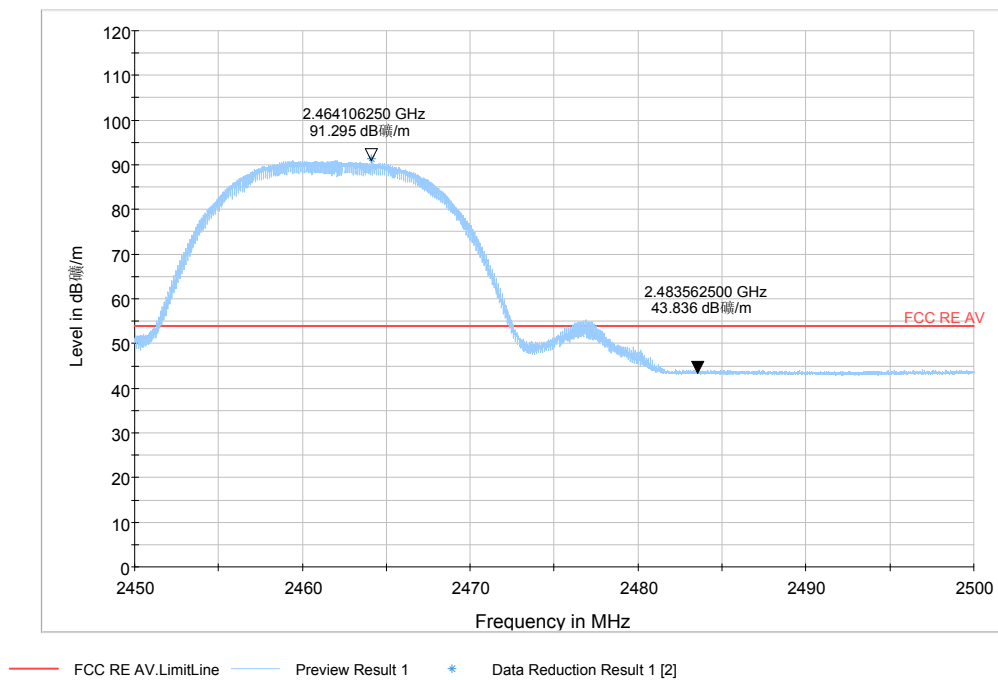
802.11b-Channel 11:

Peak



Note: The signal beyond the limit is carrier
Channel 11

Average



Note: The signal beyond the limit is carrier
Channel 11

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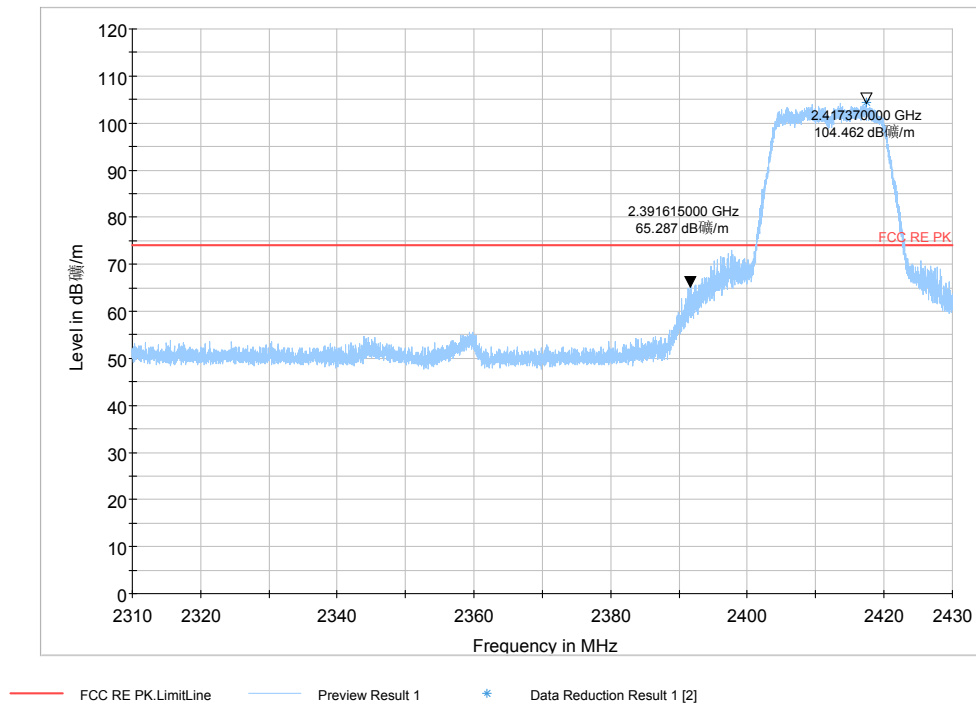
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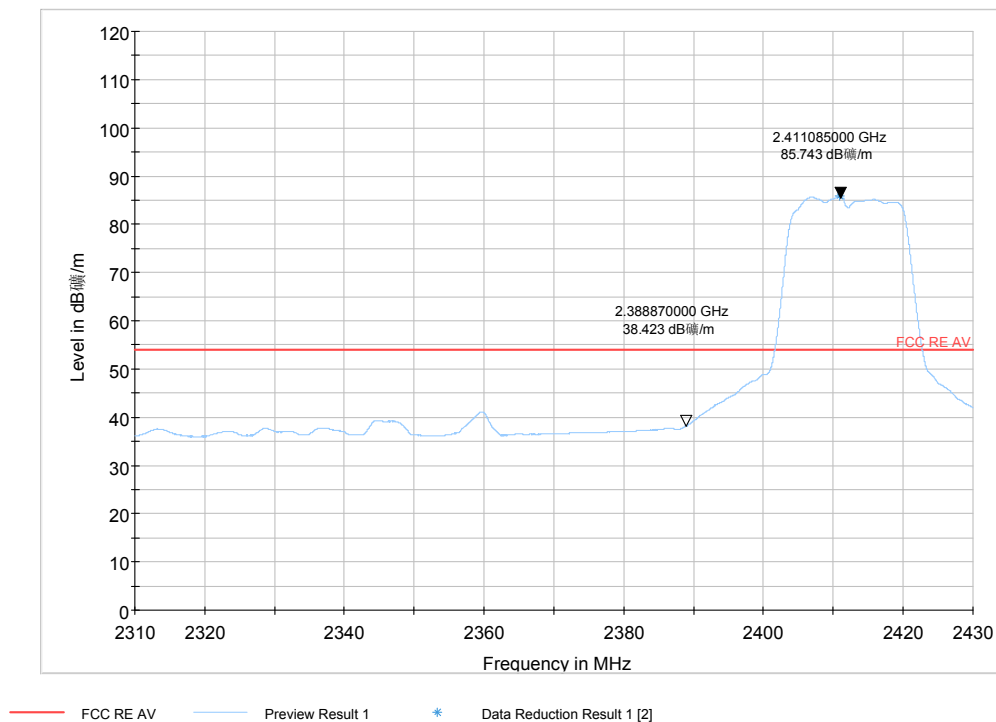
802.11g-Channel 1:

Peak



Note: The signal beyond the limit is carrier
Channel 1

Average



Note: The signal beyond the limit is carrier
Channel 1

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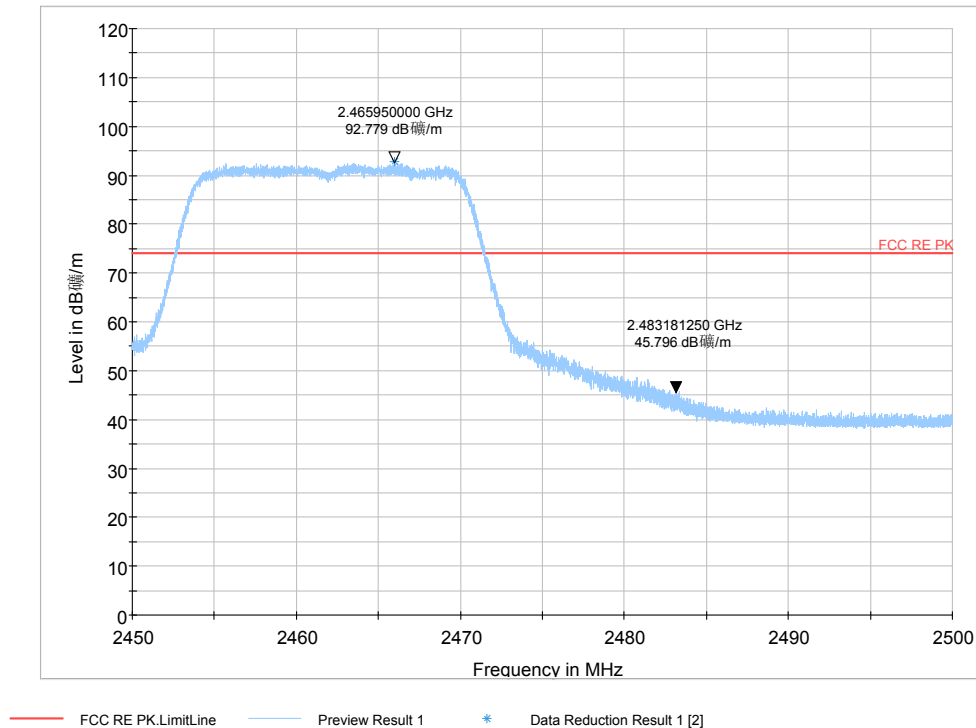
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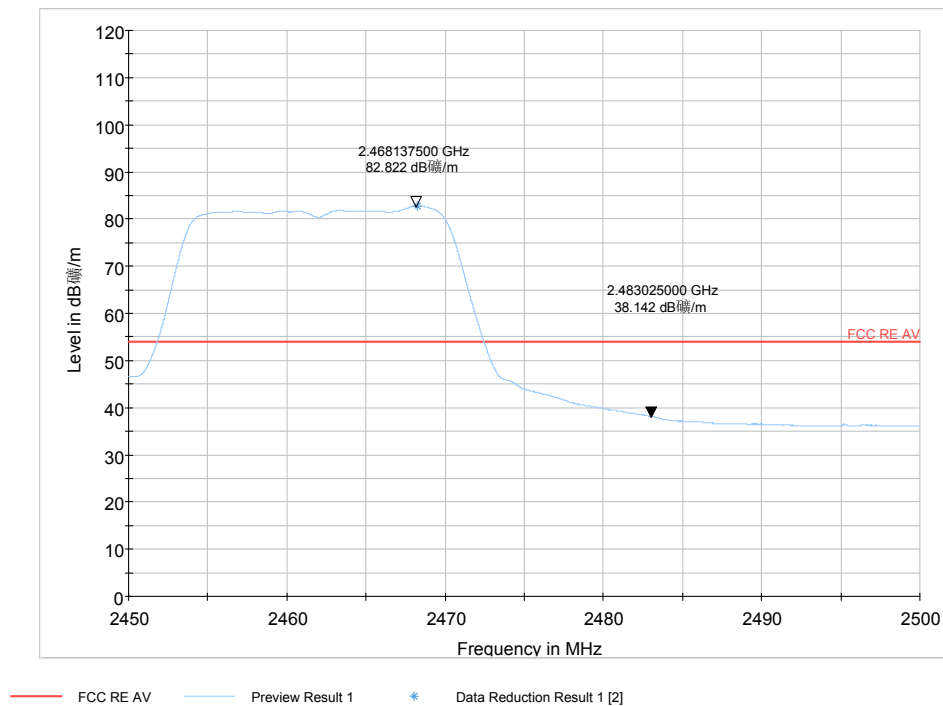
802.11g-Channel 11:

Peak



Note: The signal beyond the limit is carrier
Channel 11

Average



Note: The signal beyond the limit is carrier
Channel 11

TA Technology (Shanghai) Co., Ltd.

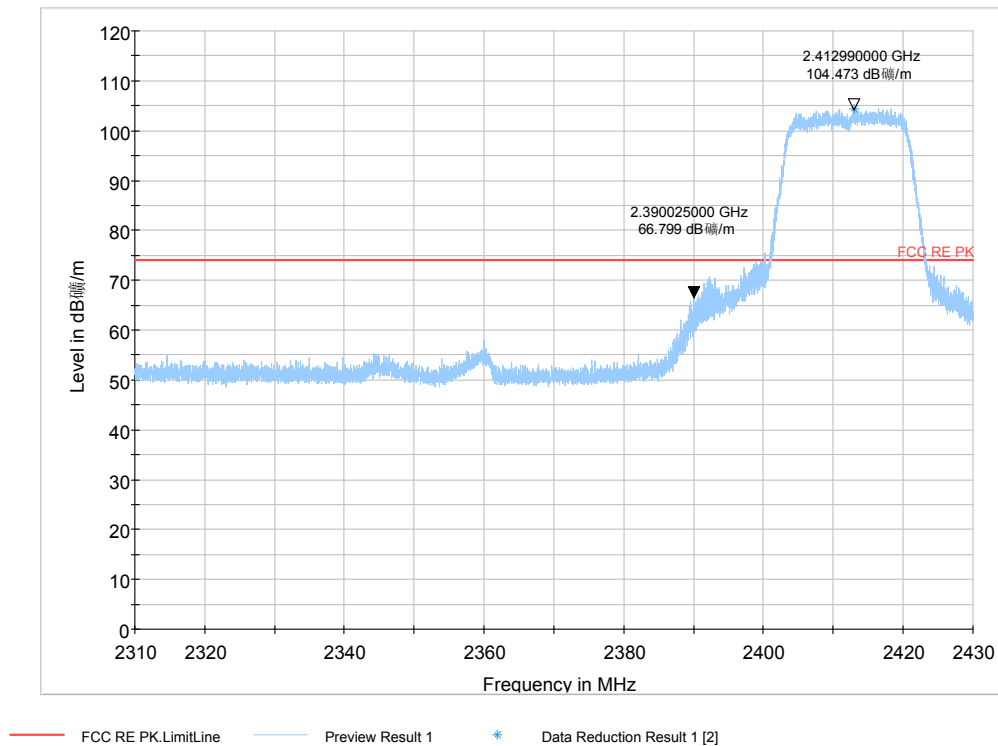
Test Report

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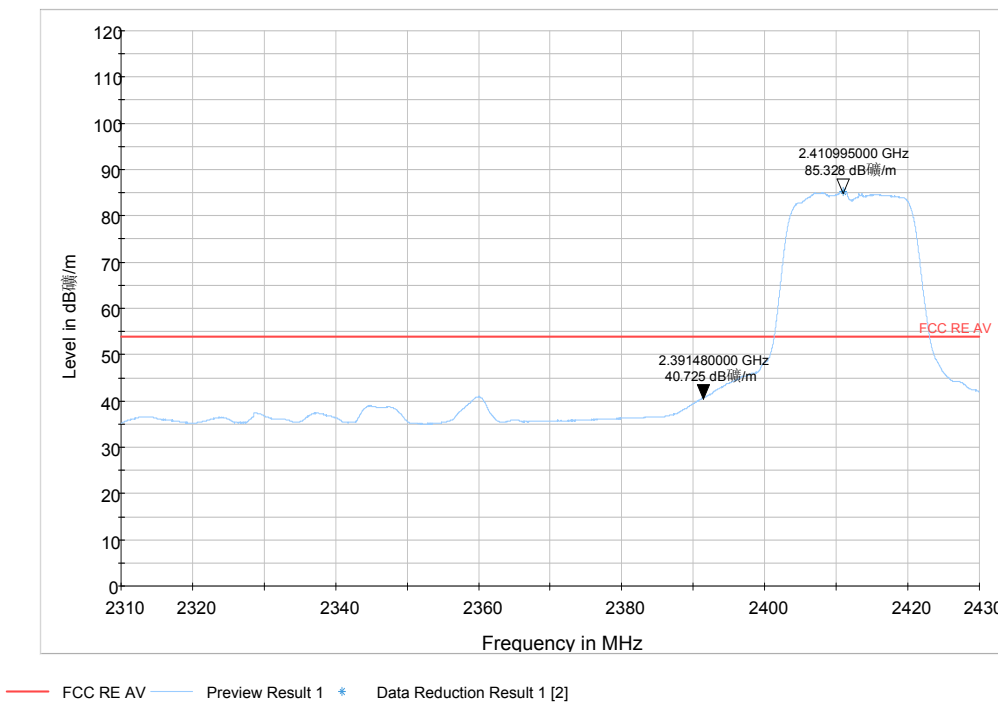
802.11n (HT20)-Channel 1:

Peak



Note: The signal beyond the limit is carrier
Channel 1

Average



Note: The signal beyond the limit is carrier
Channel 1

TA Technology (Shanghai) Co., Ltd.

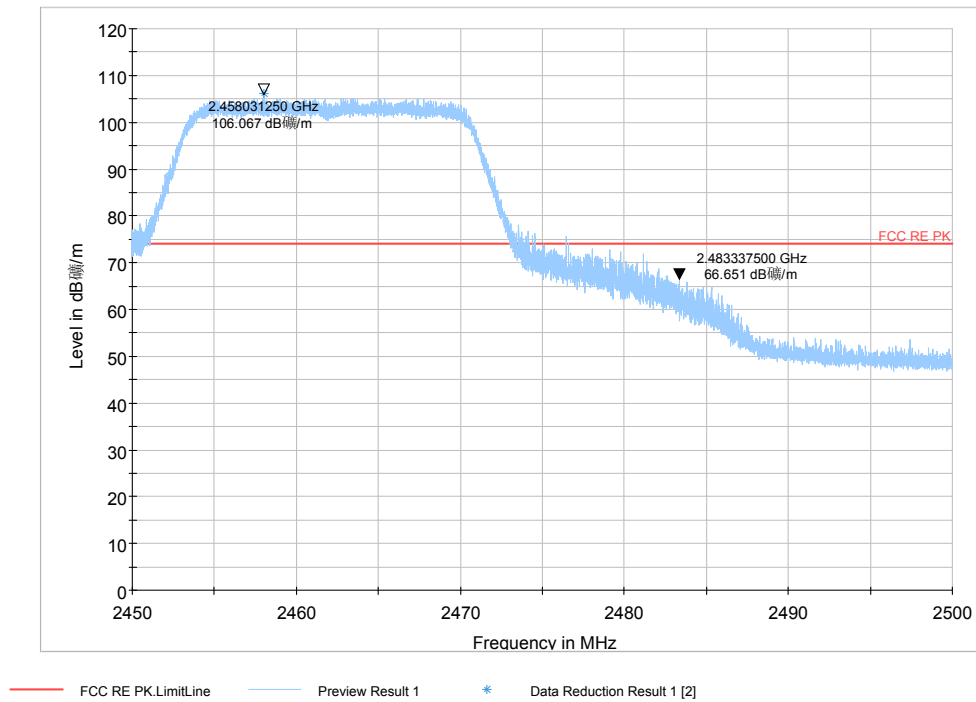
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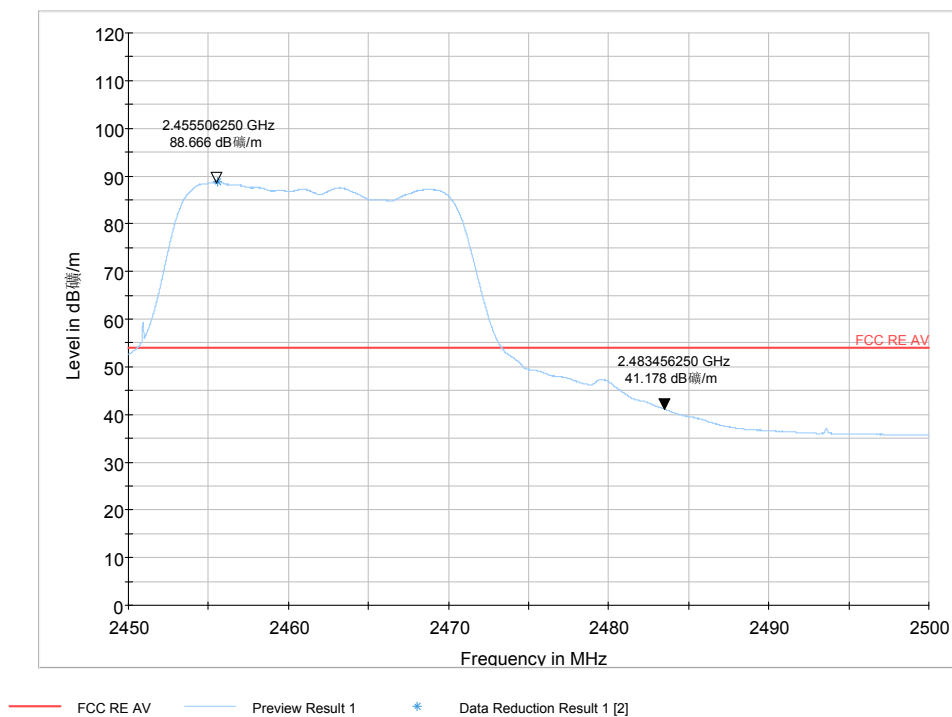
802.11n (HT20)-Channel 11:

Peak



Note: The signal beyond the limit is carrier
Channel 11

Average



Note: The signal beyond the limit is carrier
Channel 11

TA Technology (Shanghai) Co., Ltd.

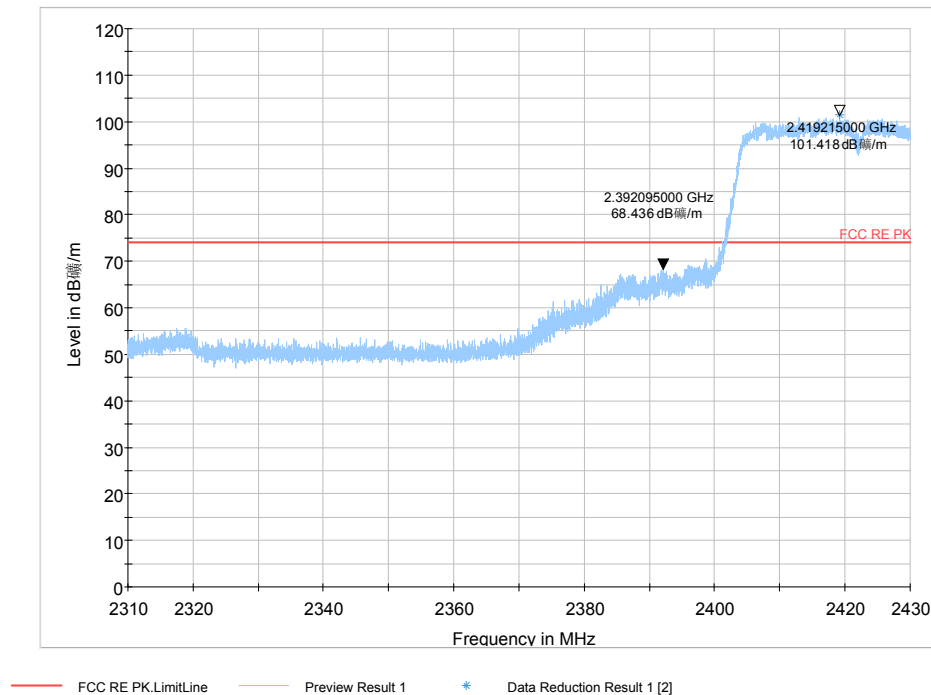
Test Report

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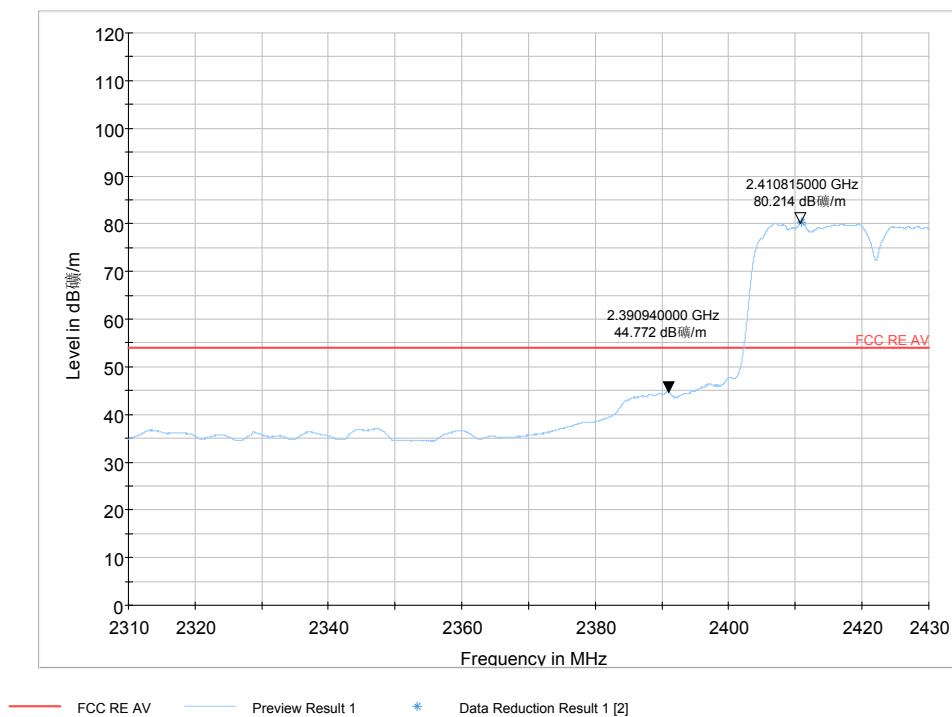
802.11n (HT40)-Channel 3:

Peak



Note: The signal beyond the limit is carrier
Channel 3

Average



Note: The signal beyond the limit is carrier
Channel 3

TA Technology (Shanghai) Co., Ltd.

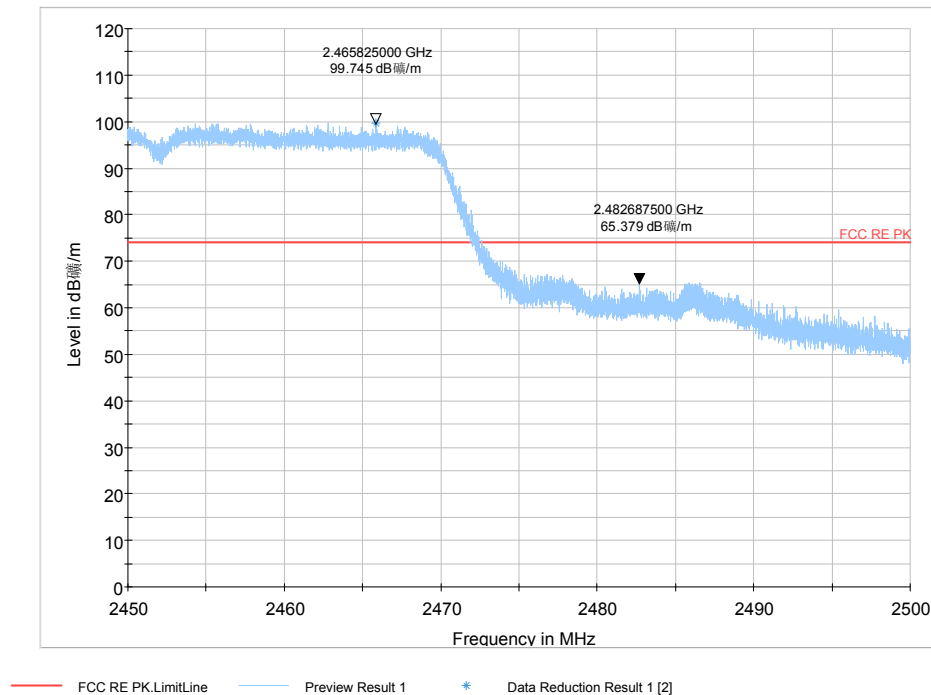
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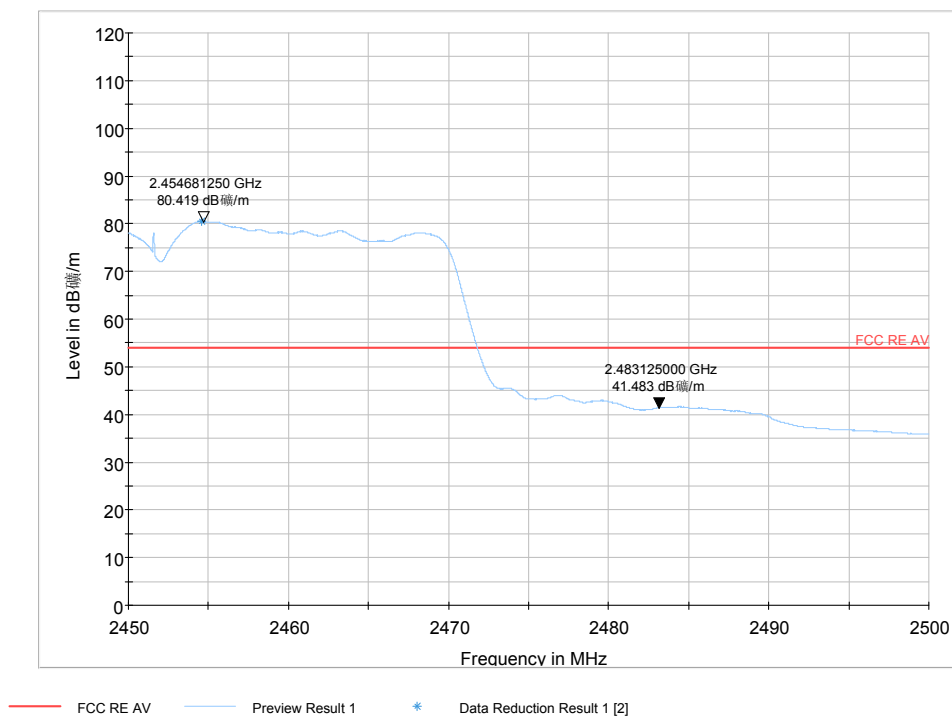
802.11n (HT40)-Channel 9:

Peak



Note: The signal beyond the limit is carrier
Channel 9

Average



Note: The signal beyond the limit is carrier
Channel 9

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2.7. Power Spectral Density

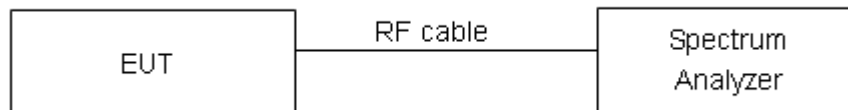
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 3 kHz and VBW is set to 10 kHz on spectrum analyzer. Set the span to at least 1.5 times the DTS channel bandwidth. Sweep time = auto couple. Trace mode = max hold. The peak power spectral density is recorded.

Test setup



Limits

Rule Part 15.247(e) specifies that "For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission."

Limits	$\leq 8 \text{ dBm} / 3\text{kHz}$
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.75\text{dB}$.

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Test Results:

CHAIN 0:

Network Standards	data rate(Mbps)	Power Spectral Density dBm / 3kHz			Conclusion
		CH1	CH6	CH11	
802.11b	1	-7.98	-7.77	-8.29	PASS
	2	-8.01	-7.84	-8.37	PASS
	5.5	-8.09	-8.01	-8.33	PASS
	11	-7.96	-7.61	-8.26	PASS
802.11g	6	-13.27	-13.26	-13.59	PASS
	9	-13.34	-13.43	-13.87	PASS
	12	-13.42	-13.48	-13.75	PASS
	18	-13.34	-13.52	-13.76	PASS
	24	-13.42	-14	-13.66	PASS
	36	-13.52	-13.67	-13.89	PASS
	48	-13.42	-13.77	-13.92	PASS
	54	-13.3	-13.76	-13.96	PASS
802.11n HT20	MCS0	-13.67	-13.56	-14.23	PASS
	MCS1	-13.48	-13.43	-14.04	PASS
	MCS2	-13.64	-13.56	-14.09	PASS
	MCS3	-13.68	-13.71	-14.56	PASS
	MCS4	-13.71	-13.68	-14.27	PASS
	MCS5	-13.6	-13.72	-14.98	PASS
	MCS6	-13.98	-13.77	-14.76	PASS
	MCS7	-14.02	-13.88	-14.56	PASS
	MCS8	-13.84	-14.18	-14.54	PASS
	MCS9	-13.9	-14.22	-15.02	PASS
	MCS10	-13.99	-14.64	-15.21	PASS
	MCS11	-14.01	14.5	-14.72	PASS
	MCS12	-14.22	-14.23	-14.77	PASS
	MCS13	-14.23	-14.34	-14.53	PASS

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	MCS14	-14.32	-14.2	-14.67	PASS
	MCS15	-14.51	-14.55	-14.87	PASS
/	/	CH3	CH6	CH9	/
802.11n HT40	MCS0	-13.48	-13.73	-14.05	PASS
	MCS1	-13.49	-13.87	-14.22	PASS
	MCS2	-13.57	-13.9	-14.34	PASS
	MCS3	-13.63	-13.91	-14.35	PASS
	MCS4	-13.75	-13.88	-14.65	PASS
	MCS5	-13.67	-13.79	-14.71	PASS
	MCS6	-13.87	-14.09	-14.72	PASS
	MCS7	-13.71	-13.84	-14.76	PASS
	MCS8	-14.14	-13.36	-14.1	PASS
	MCS9	-14.23	-13.65	-14.22	PASS
	MCS10	-14.4	-13.45	-14.32	PASS
	MCS11	-14.35	-13.7	-14.17	PASS
	MCS12	-14.45	-13.42	-14.74	PASS
	MCS13	-14.51	-13.47	-14.25	PASS
	MCS14	-14.36	-13.61	-14.23	PASS
	MCS15	-14.36	-13.45	-14.41	PASS

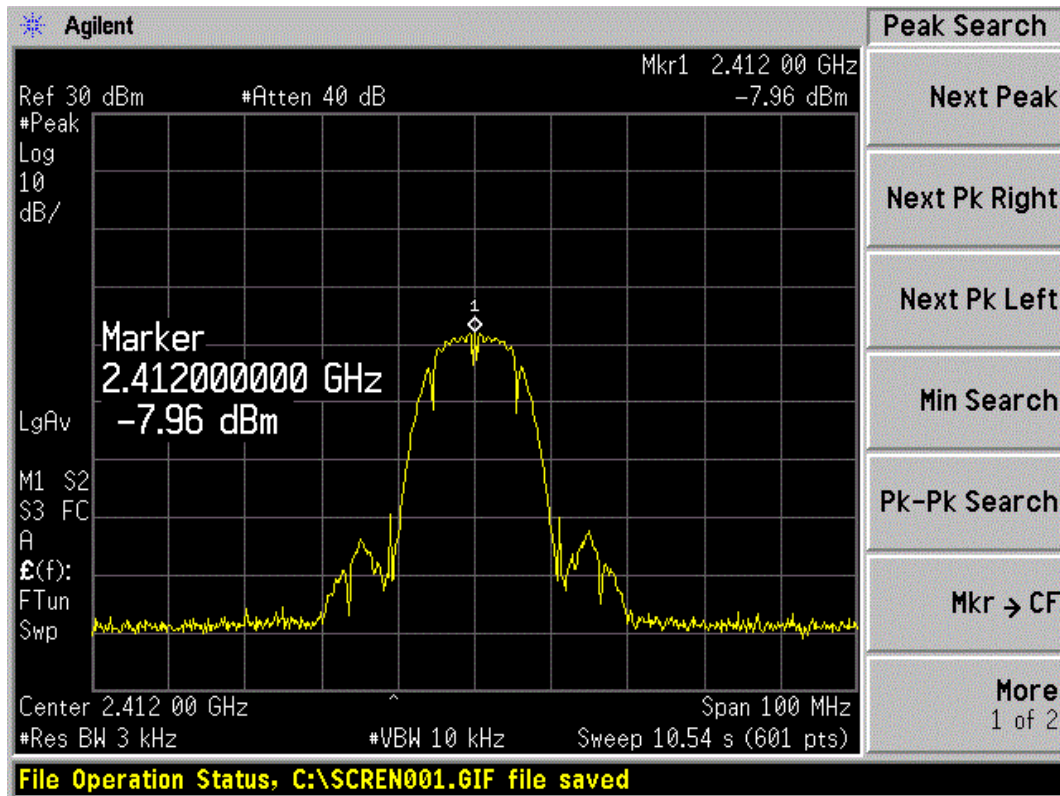
NOTE: The Power spectrum density photos below means worst case in 802.11b/g/n mode

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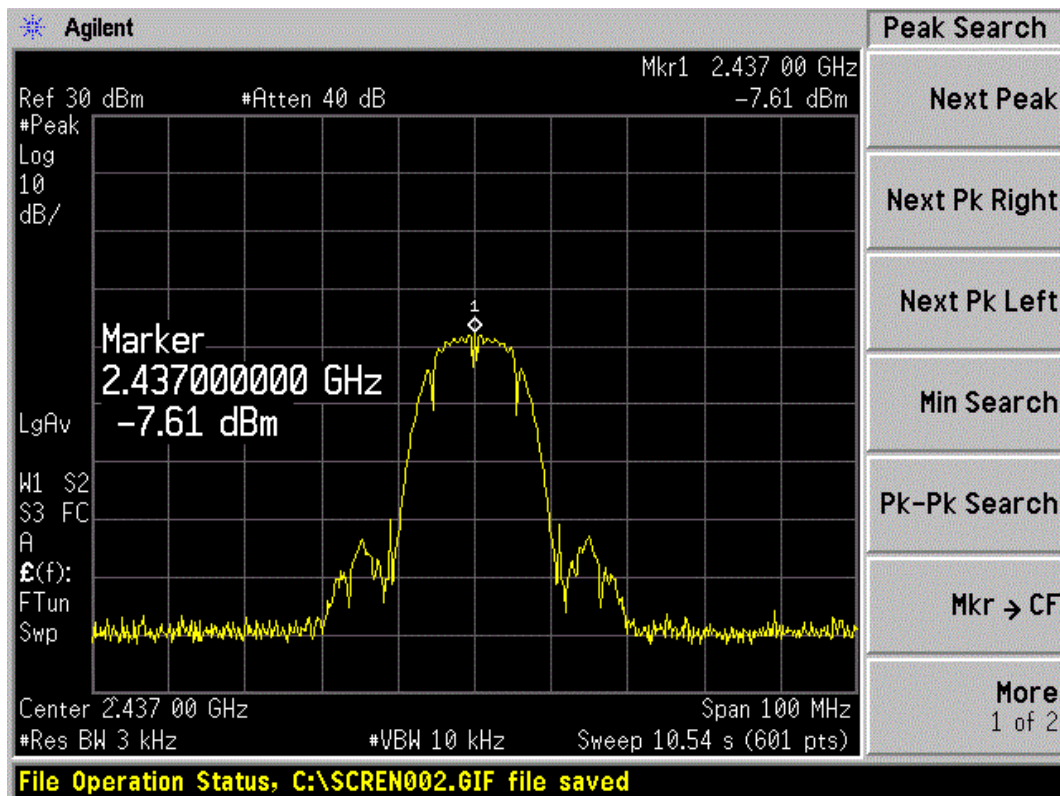
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802.11b



802.11b, Channel No.: 1

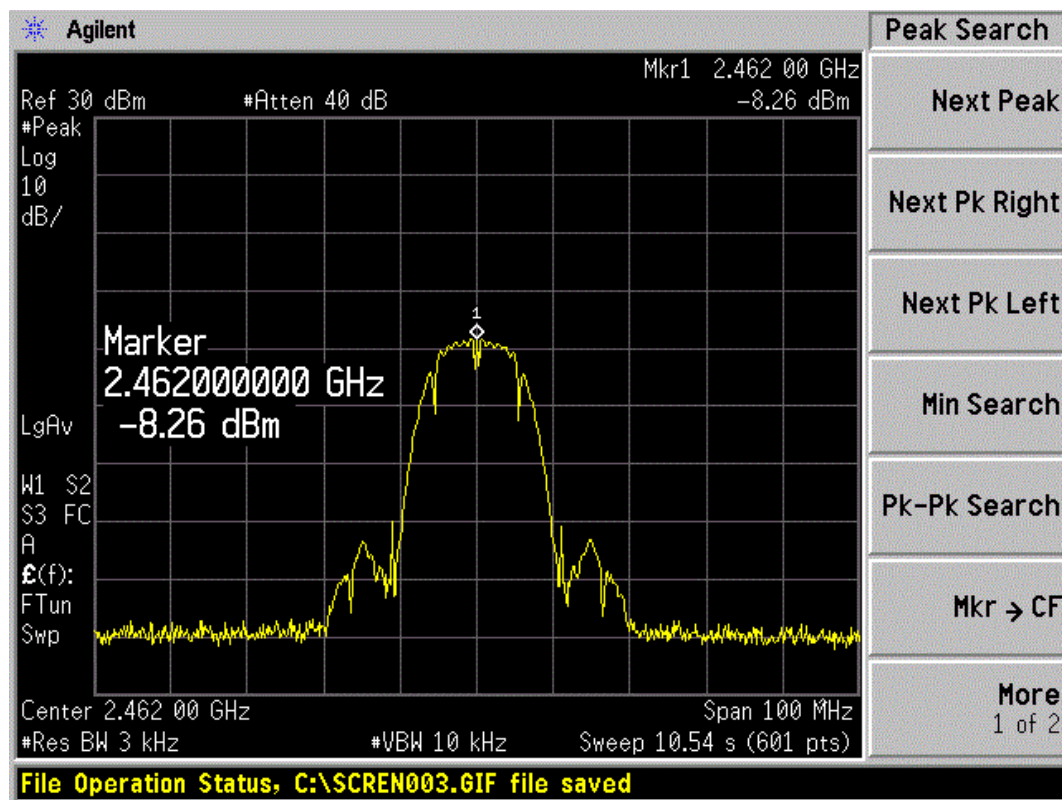


802.11b, Channel No.: 6

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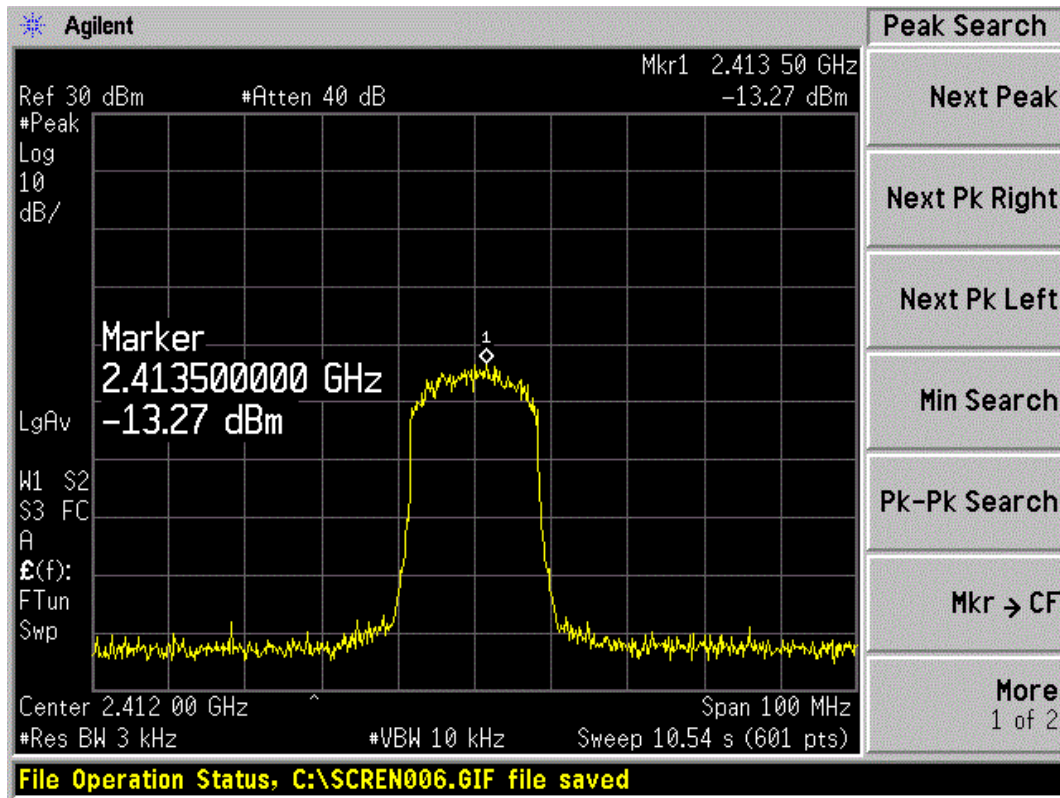
802.11b, Channel No.: 11

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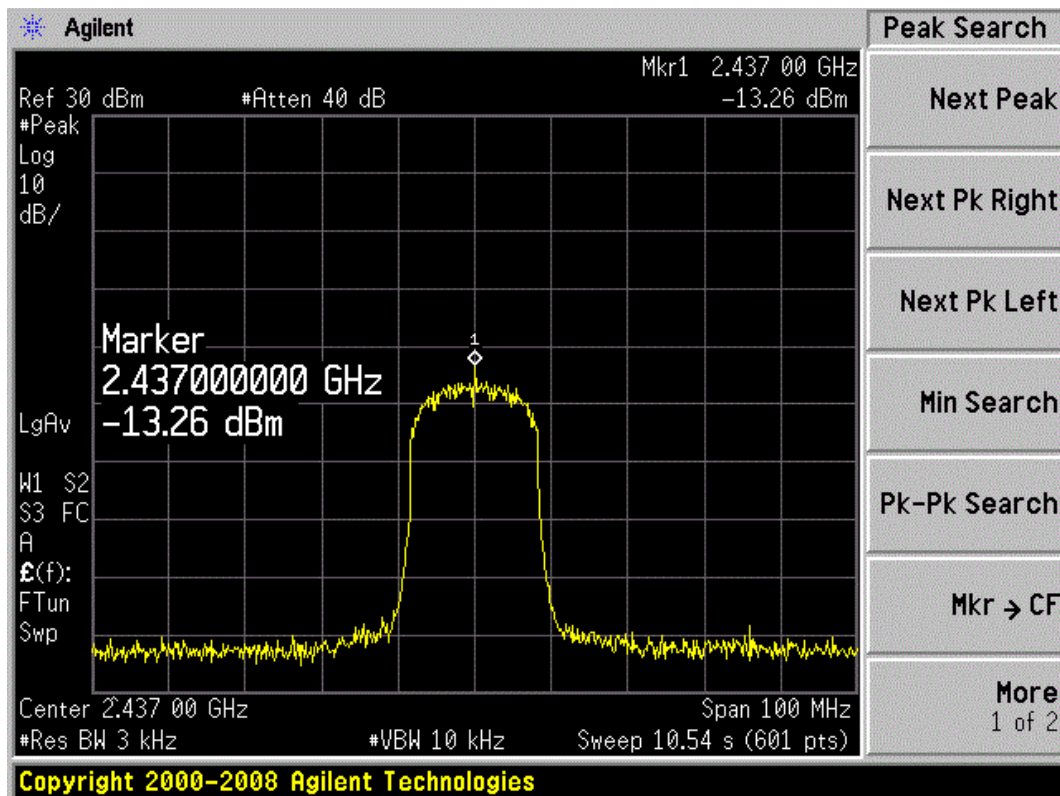
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802.11g



802.11g, Channel No.: 1

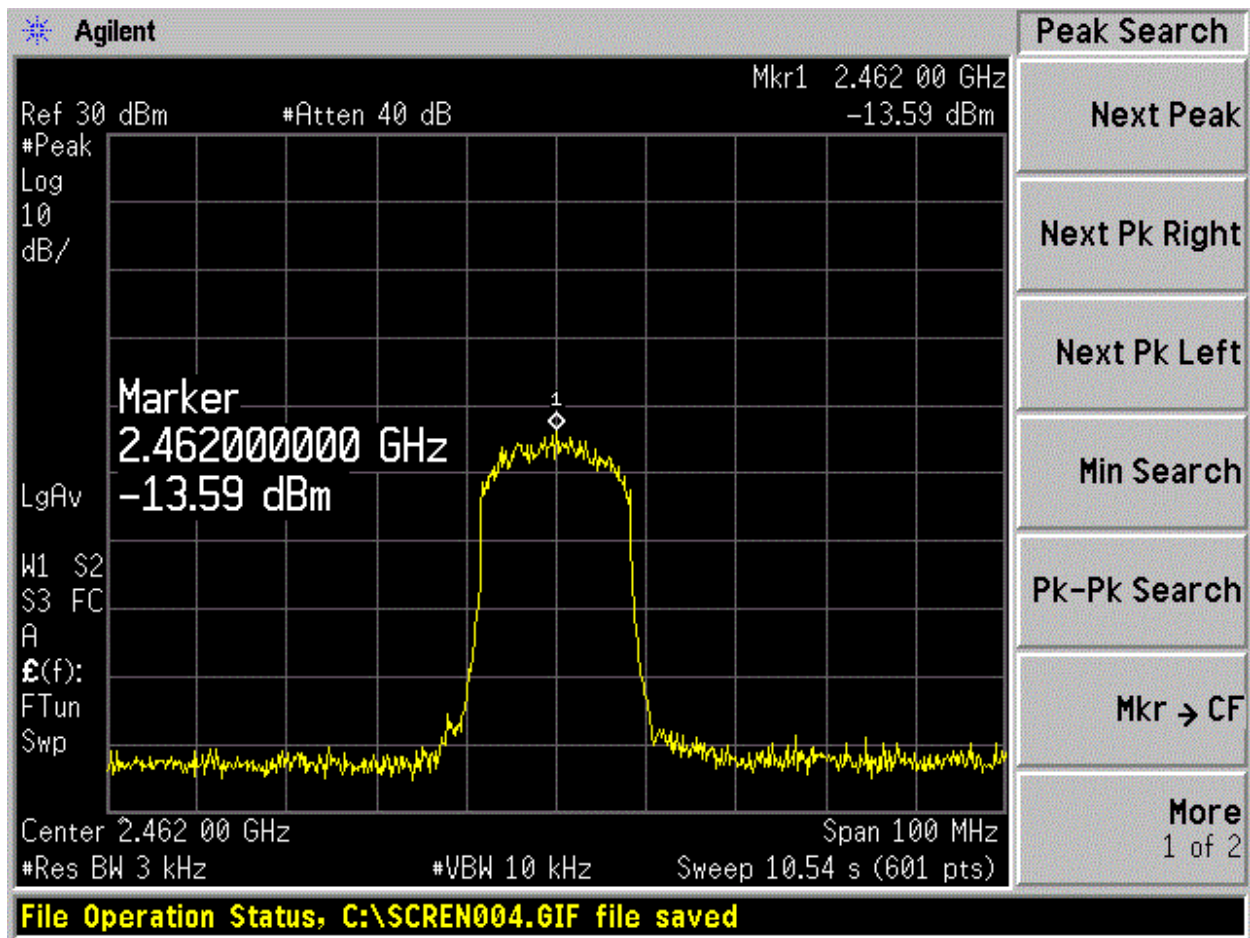


802.11g, Channel No.: 6

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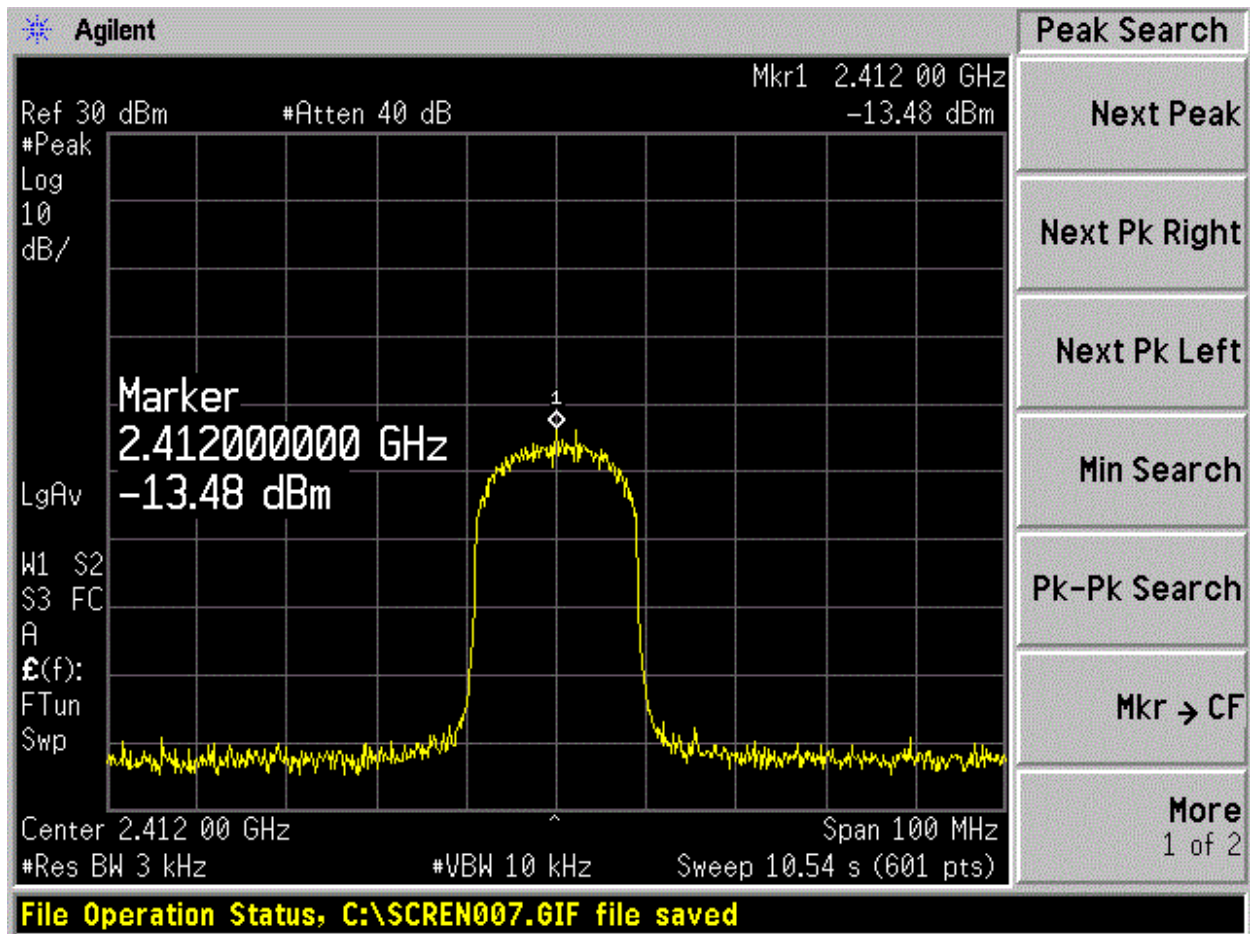
802.11g, Channel No.: 11

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802.11n (HT20)

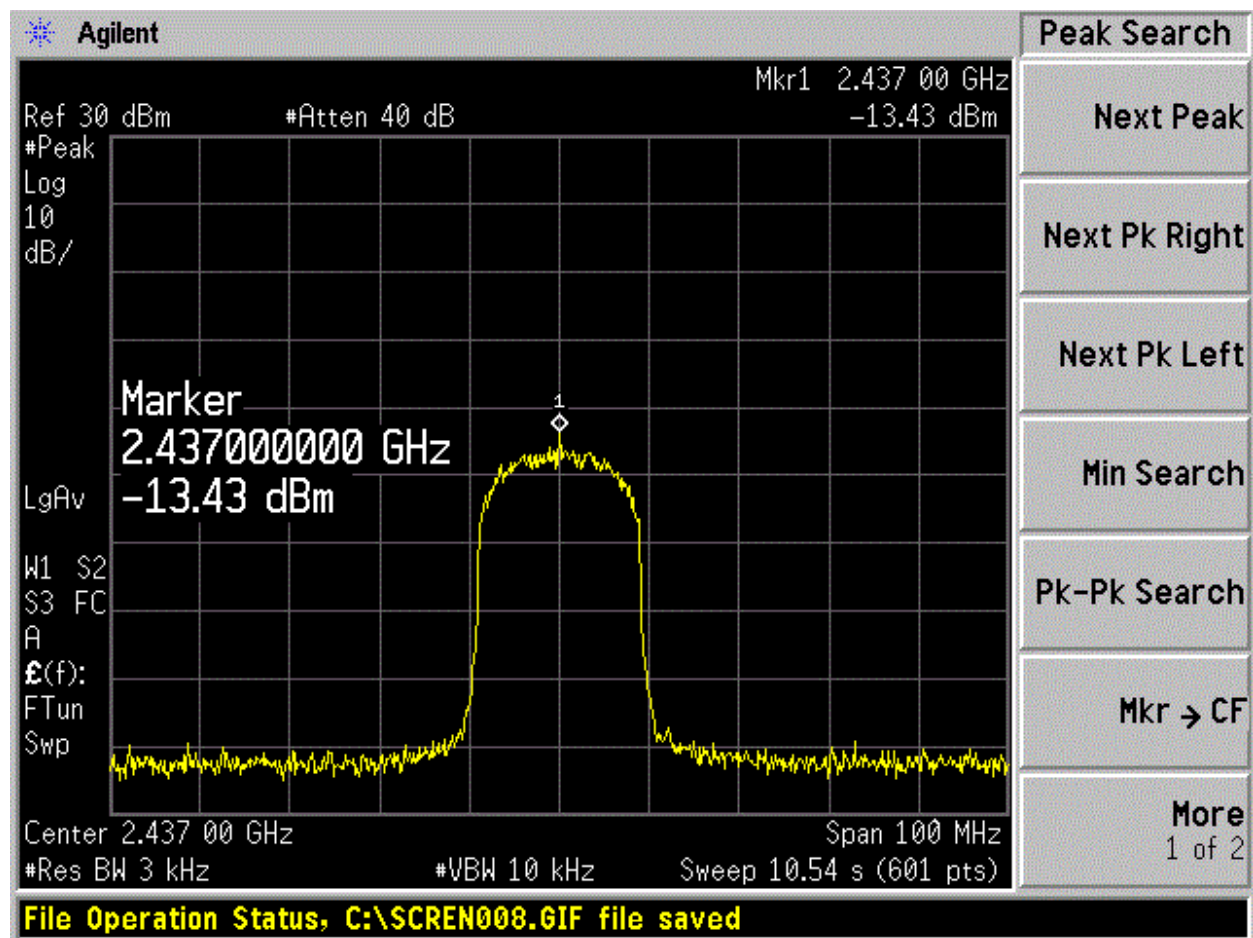


802.11n (HT20) (MCS1), Channel No.: 1

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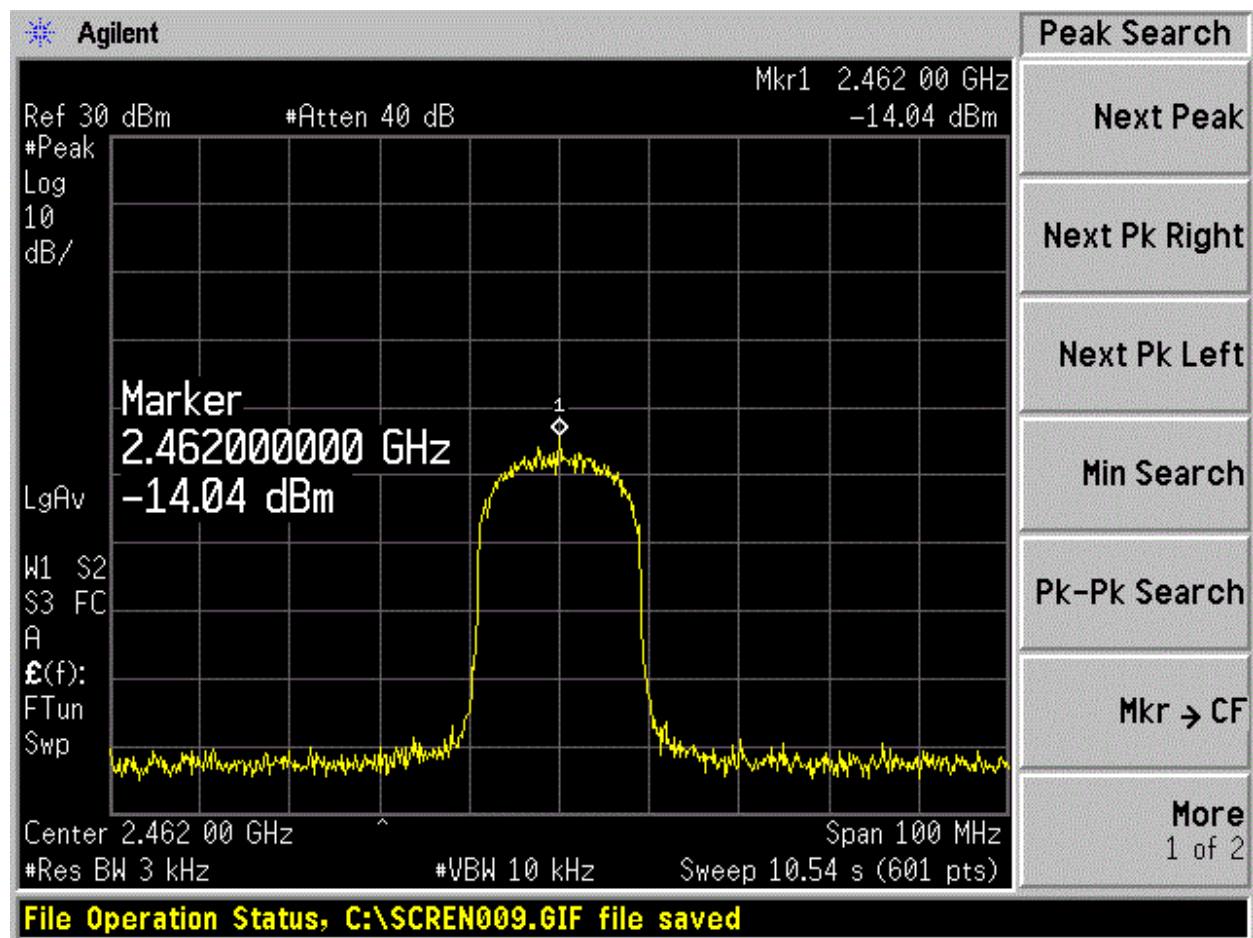


802.11n (HT20) (MCS1), Channel No.: 6

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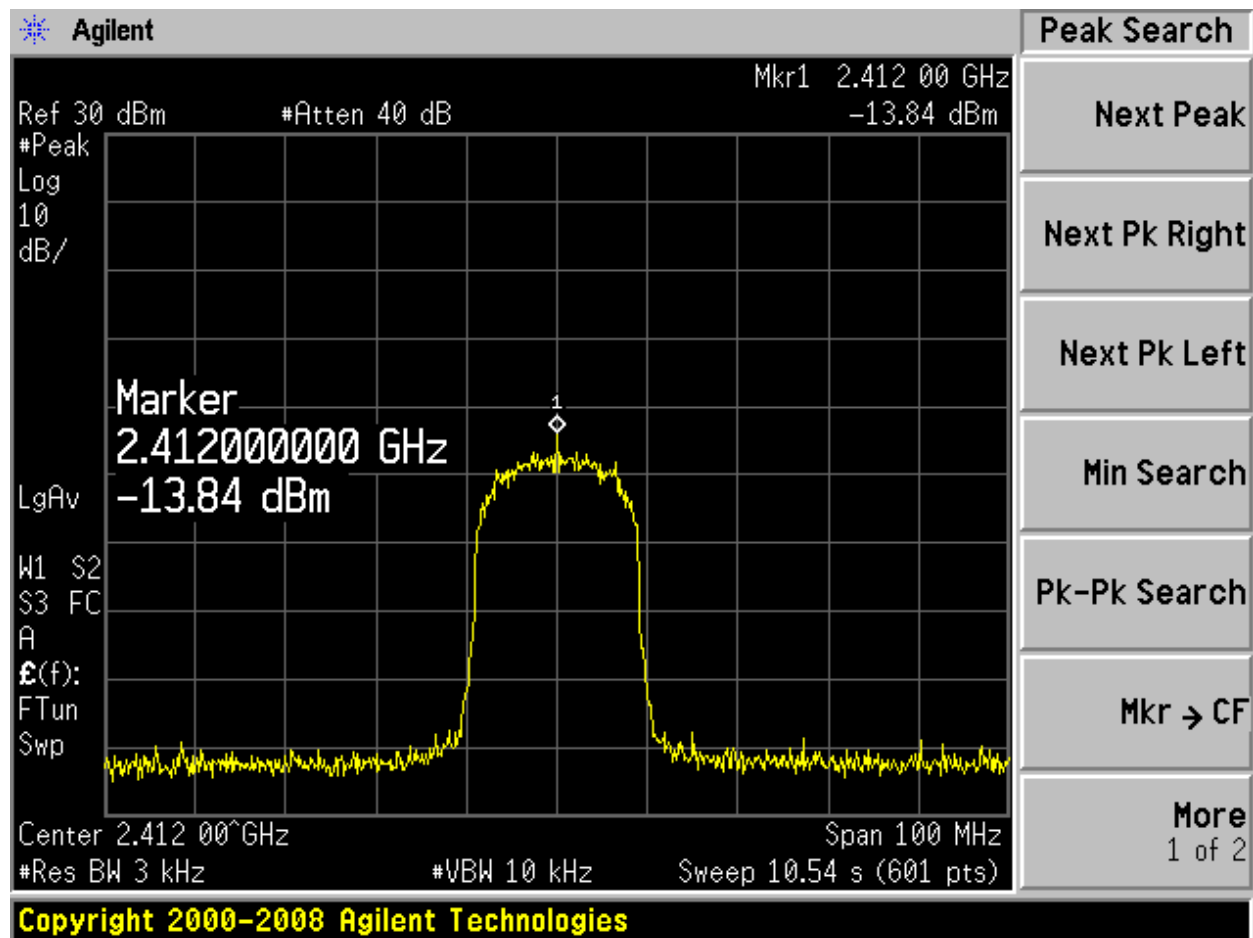


802.11n (HT20) (MCS1), Channel No.: 11

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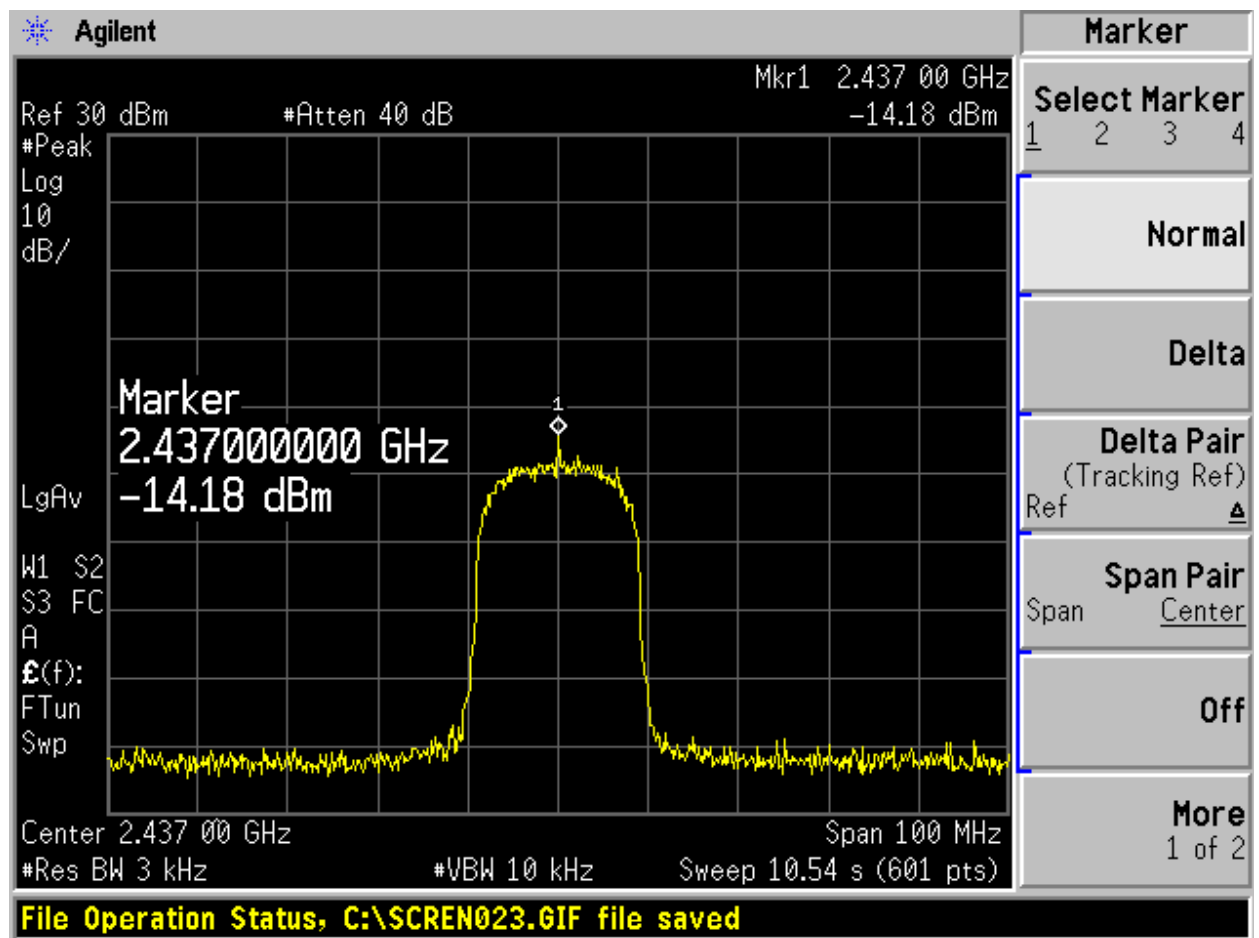
Chain 0, 802.11n (HT20) (MCS8), Channel No.: 1

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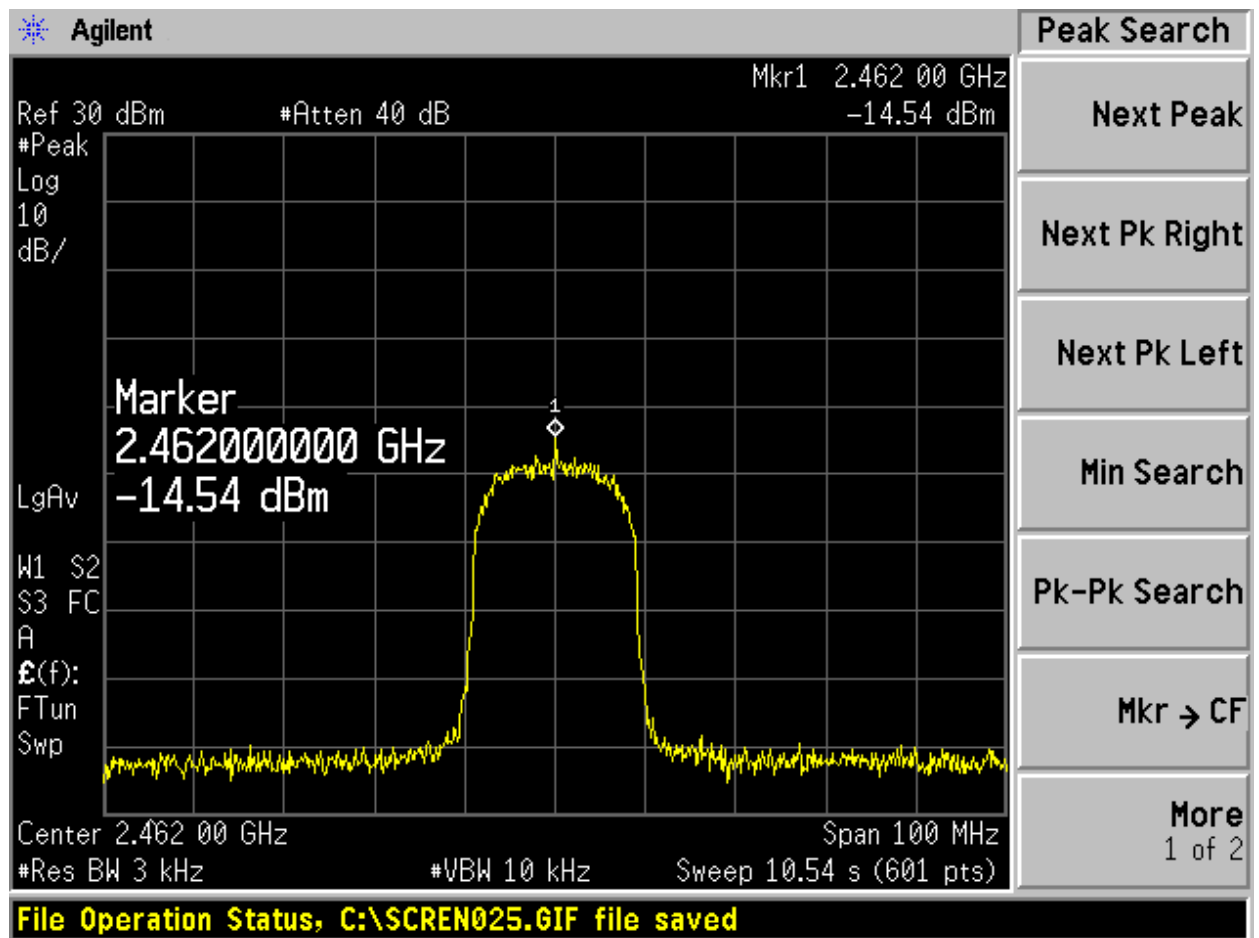


Chain 0, 802.11n (HT20) (MCS8), Channel No.: 6

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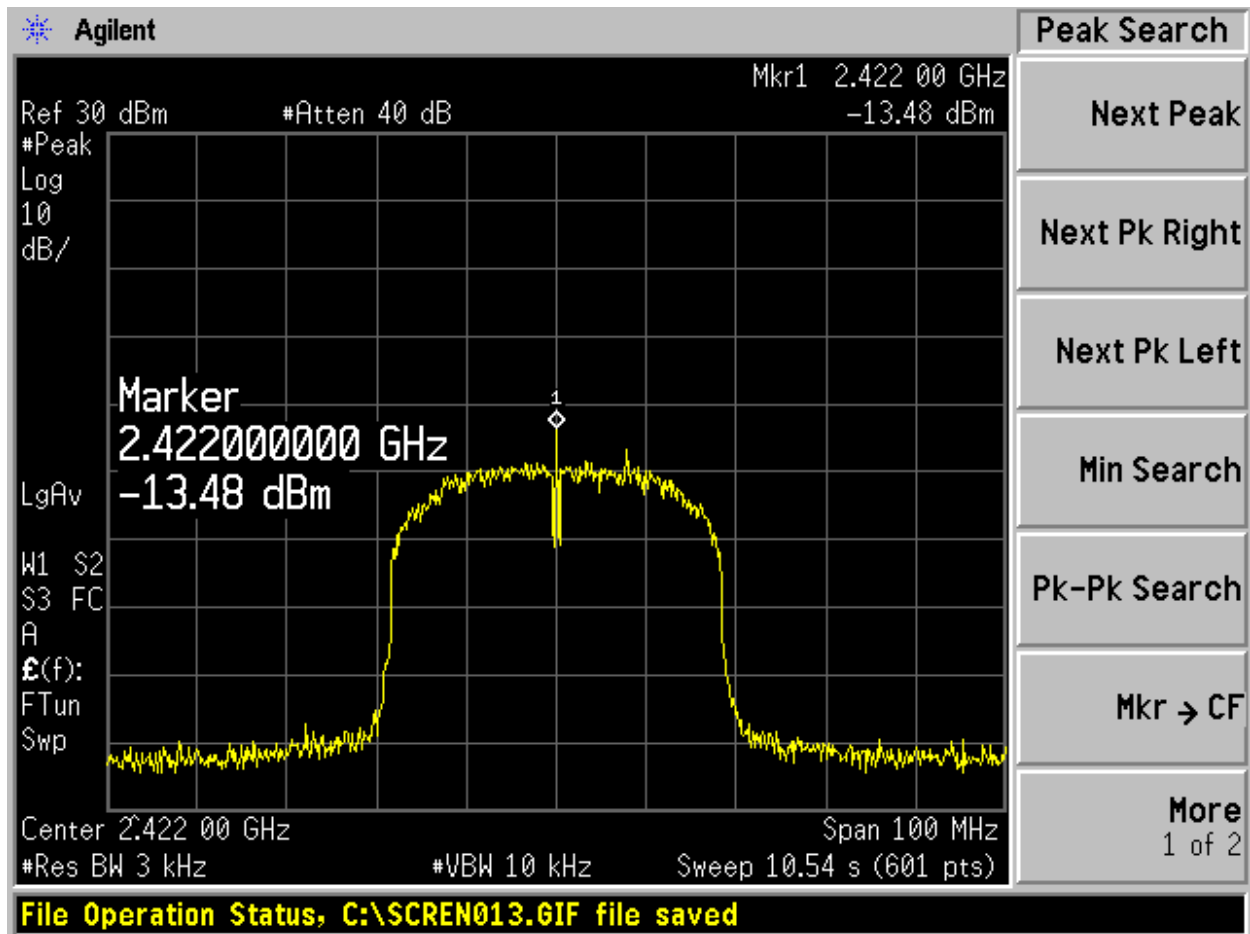
Chain 0, 802.11n (HT20) (MCS8), Channel No.: 11

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802.11n (HT40)

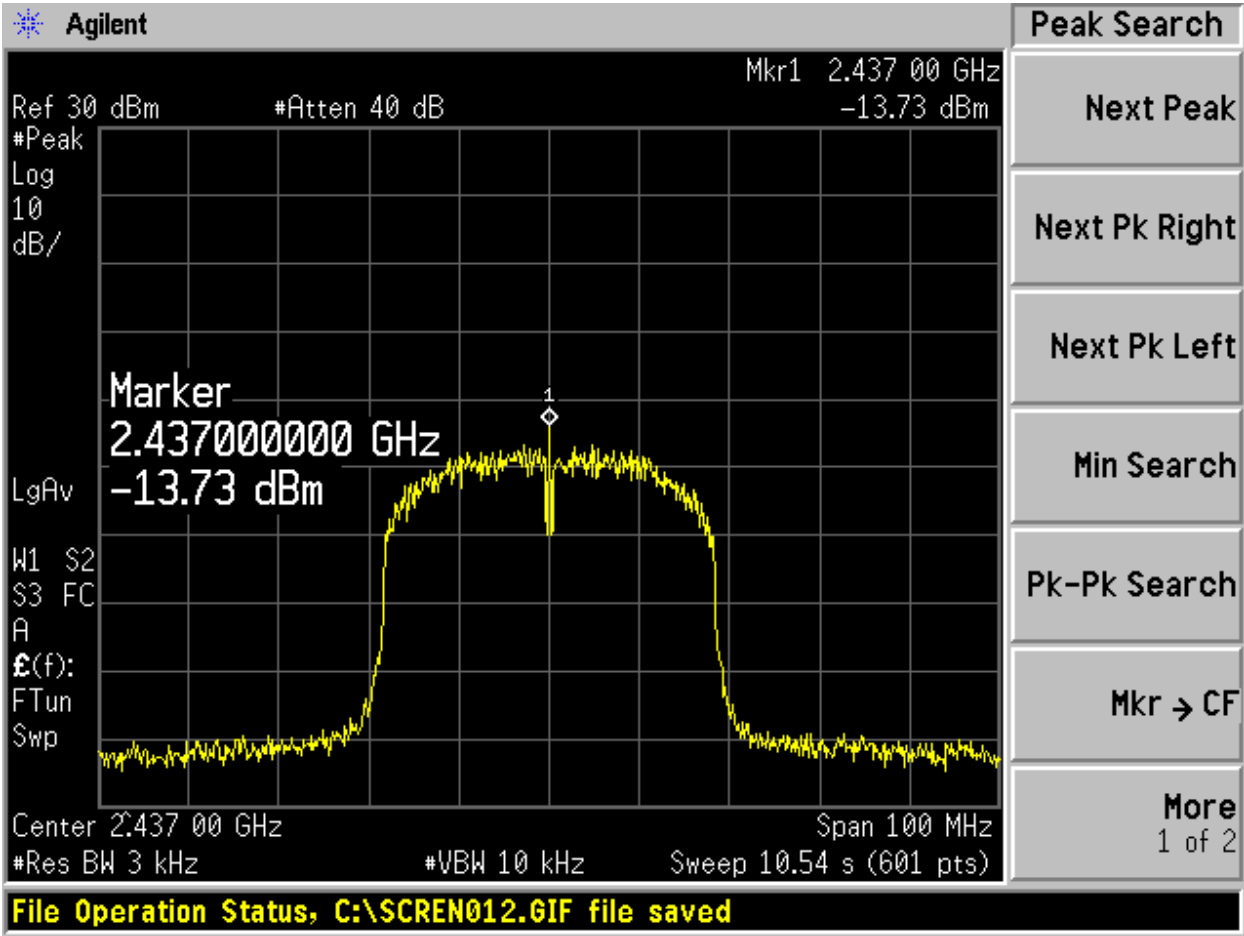


802.11n (HT40) (MCS0), Channel No.: 3

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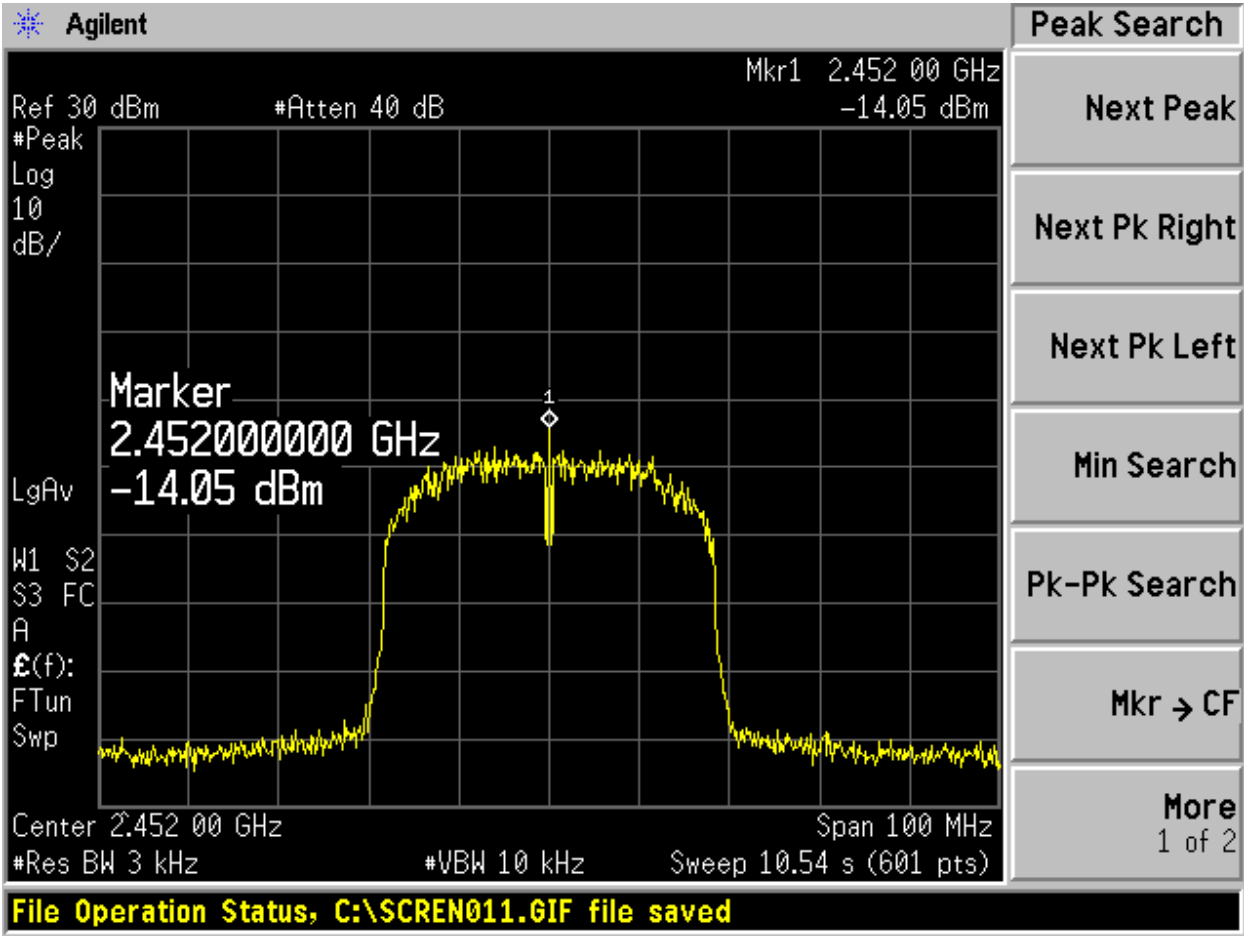


802.11n (HT40) (MCS0), Channel No.: 6

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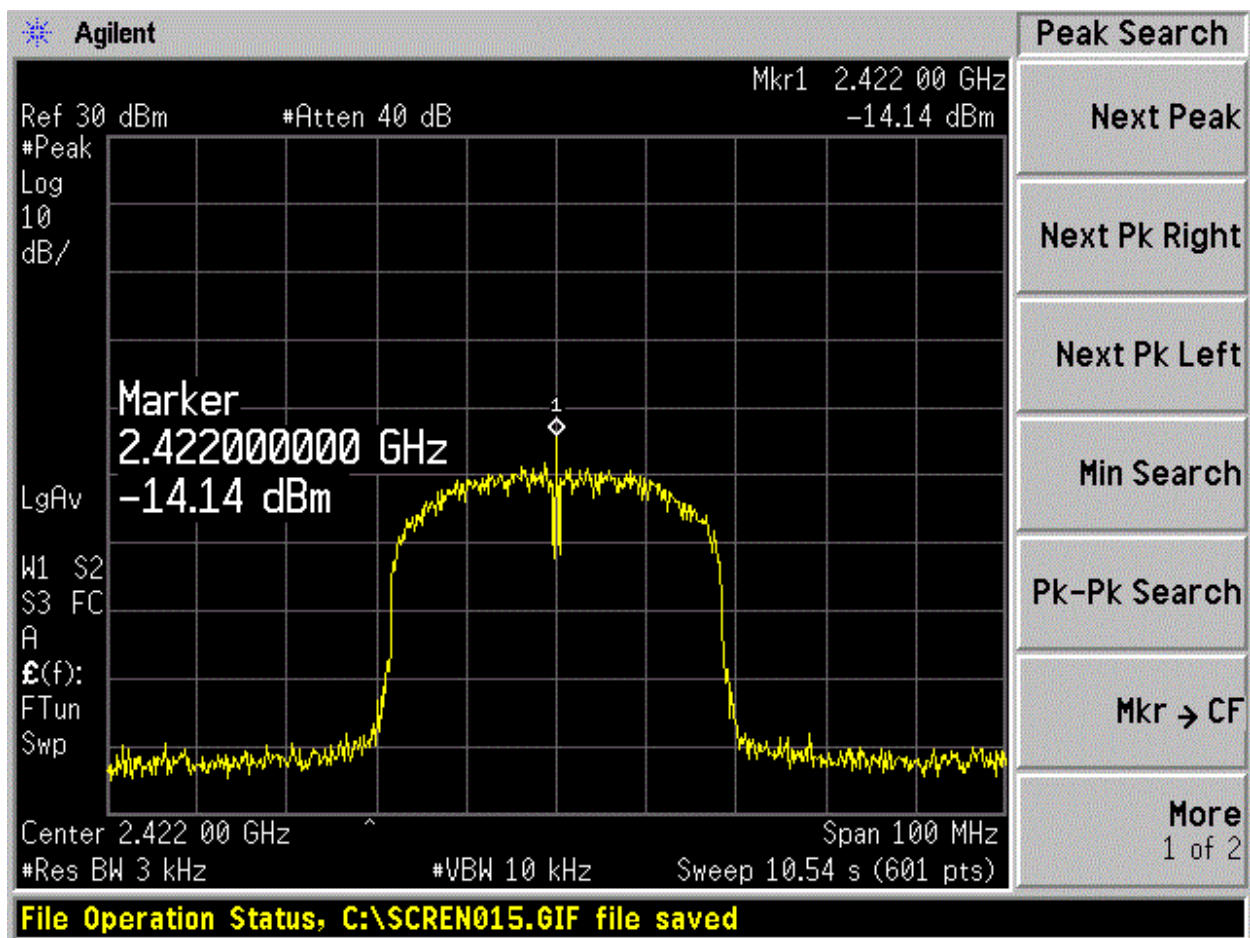


802.11n (HT40) (MCS0), Channel No.: 9

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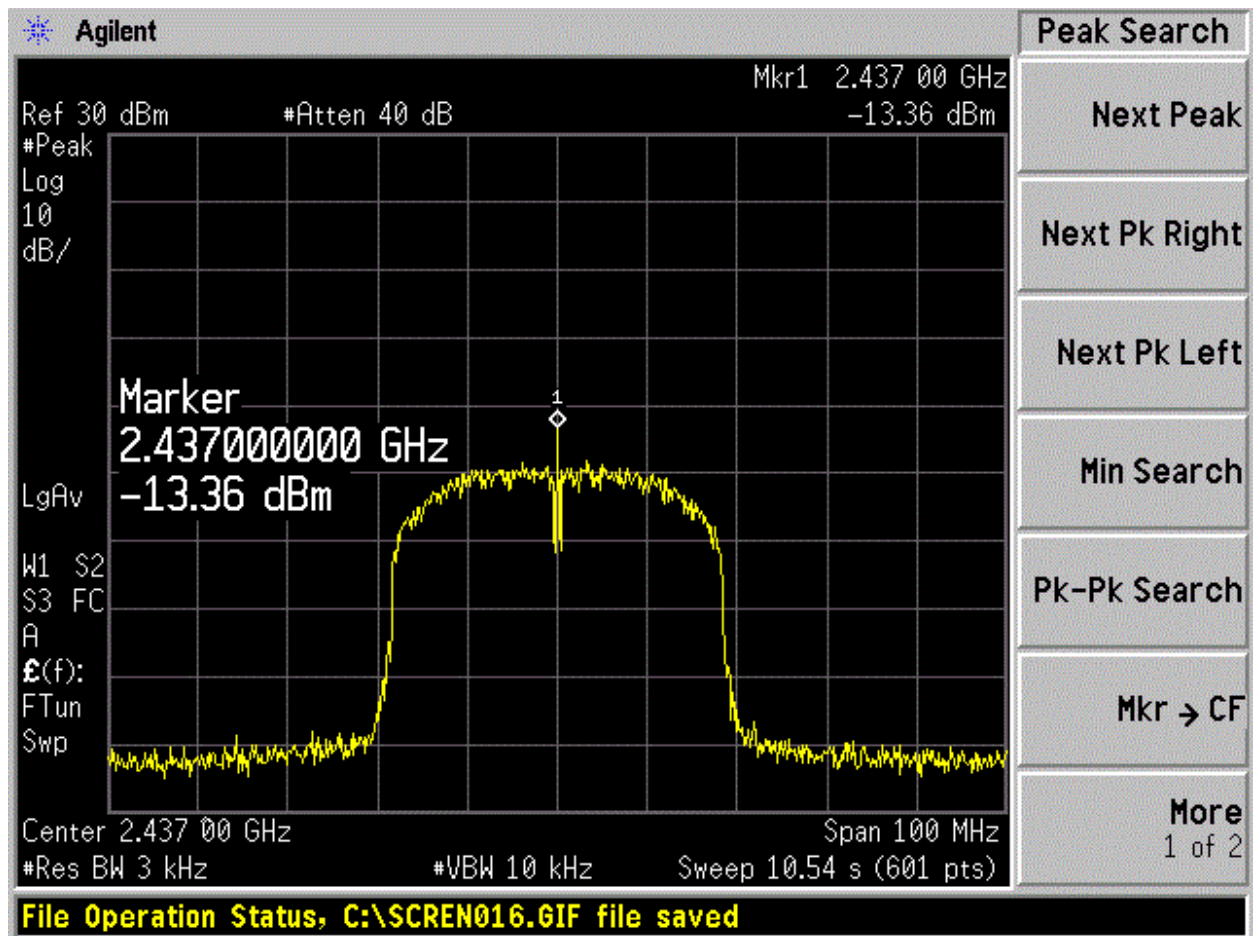


Chain 0, 802.11n (HT40) (MCS8), Channel No.:3

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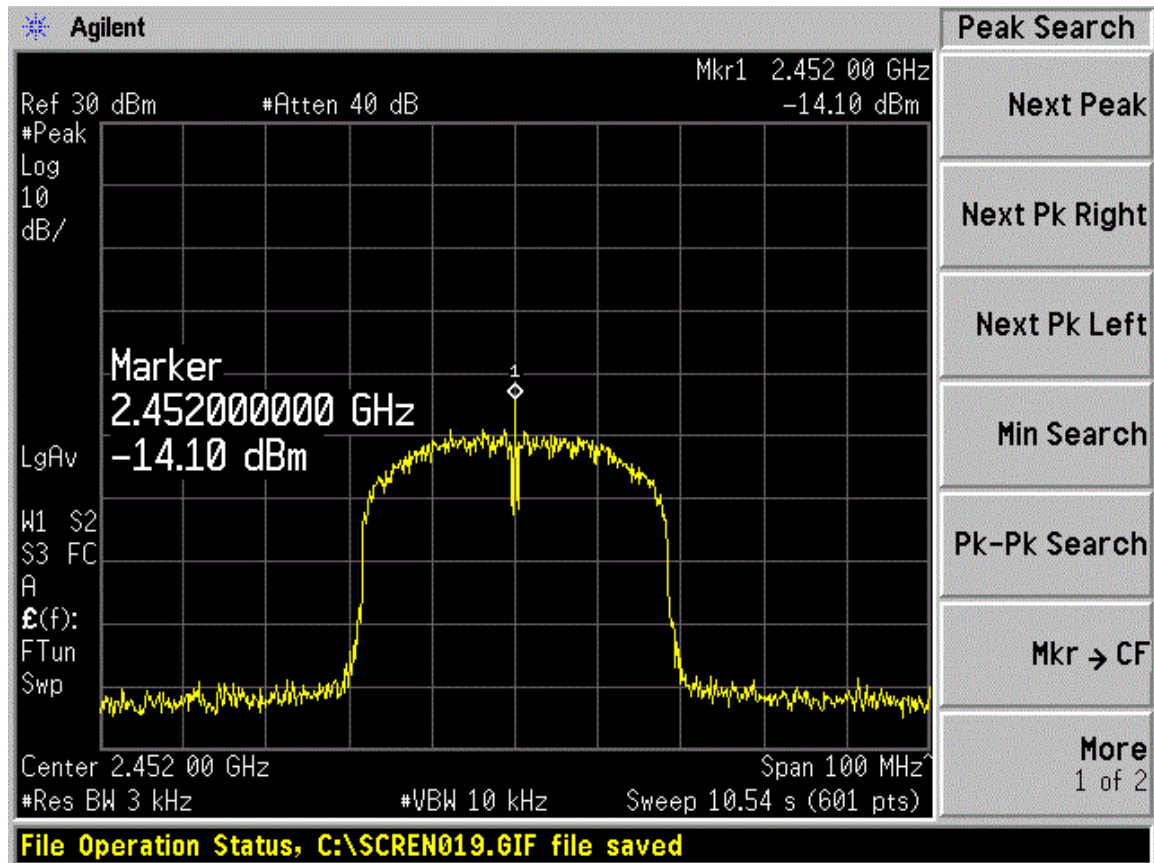


Chain 0, 802.11n (HT40) (MCS8), Channel No.: 6

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Chain 0, 802.11n (HT40) (MCS8), Channel No.: 9

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CHAIN 1:

Network Standards	data rate (Mbps)	Power Spectral Density dBm / 3kHz			Conclusion
		CH1	CH6	CH11	
802.11b	1	-6.68	-9.45	-9.89	PASS
	2	-7.34	-9.34	-9.54	PASS
	5.5	-7.12	-9.25	-9.67	PASS
	11	-6.17	-9.17	-9.35	PASS
802.11g	6	-14.13	-14.78	-14.81	PASS
	9	-14.17	-14.97	-14.94	PASS
	12	-14.01	-14.63	-14.78	PASS
	18	-13.89	-14.67	-14.92	PASS
	24	-13.93	-14.87	-14.73	PASS
	36	-14.11	-15	-14.93	PASS
	48	-13.81	-14.45	-14.69	PASS
	54	-13.98	-14.78	-14.77	PASS
802.11n HT20	MCS0	-13.98	-13.98	-14.55	PASS
	MCS1	-14.03	-13.97	-14.63	PASS
	MCS2	-13.94	-13.82	-14.3	PASS
	MCS3	-14.08	-13.87	-14.88	PASS
	MCS4	-14.27	-13.92	-14.64	PASS
	MCS5	-13.96	-14.23	-14.31	PASS
	MCS6	-14.01	-14.27	-14.52	PASS
	MCS7	-14.28	-14.31	-14.45	PASS
	MCS8	-13.25	-13.79	-13.44	PASS
	MCS9	-13.46	-13.83	-13.56	PASS
	MCS10	-13.41	-14	-13.69	PASS
	MCS11	-13.53	-14.21	-13.47	PASS
	MCS12	-13.3	-14.12	-13.58	PASS
	MCS13	-13.34	-14.17	-13.91	PASS
	MCS14	-13.39	-14.42	-13.75	PASS

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	MCS15	-14.01	-13.98	-13.78	PASS
/	/	CH3	CH6	CH9	/
802.11n HT40	MCS0	-14.42	-14.42	-14.8	PASS
	MCS1	-14.35	-14.35	-14.88	PASS
	MCS2	-14.21	-14.31	-14.72	PASS
	MCS3	-14.54	-14.44	-14.9	PASS
	MCS4	-14.35	-14.47	-14.92	PASS
	MCS5	-14.46	-14.56	-15.01	PASS
	MCS6	-14.34	-14.33	-15.21	PASS
	MCS7	-14.41	-14.43	-14.97	PASS
	MCS8	-13.38	-13.22	-13.3	PASS
	MCS9	-13.41	-13.41	-13.34	PASS
	MCS10	-13.47	-13.27	-13.45	PASS
	MCS11	-13.58	-13.39	-13.6	PASS
	MCS12	-13.54	-13.45	-13.71	PASS
	MCS13	-13.67	-13.26	-13.57	PASS
	MCS14	-13.72	-13.5	-13.63	PASS
	MCS15	-13.78	-13.52	-13.41	PASS

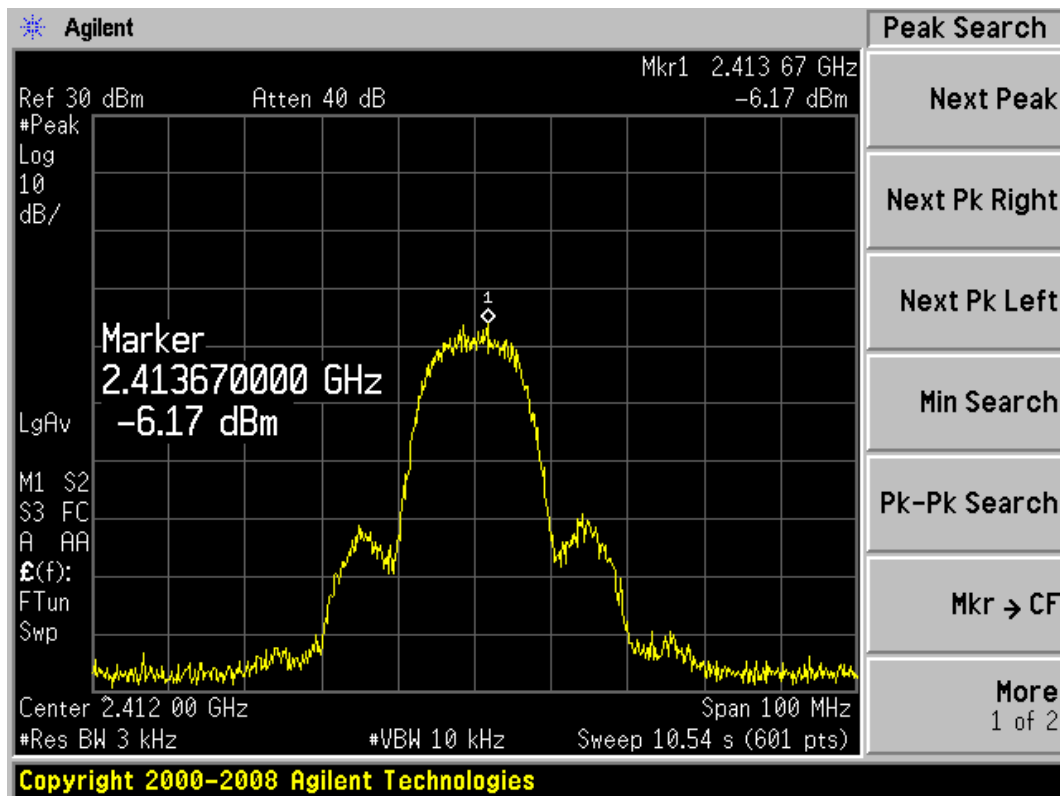
NOTE: The Power spectrum density photos below means worst case in 802.11b/g/n mode

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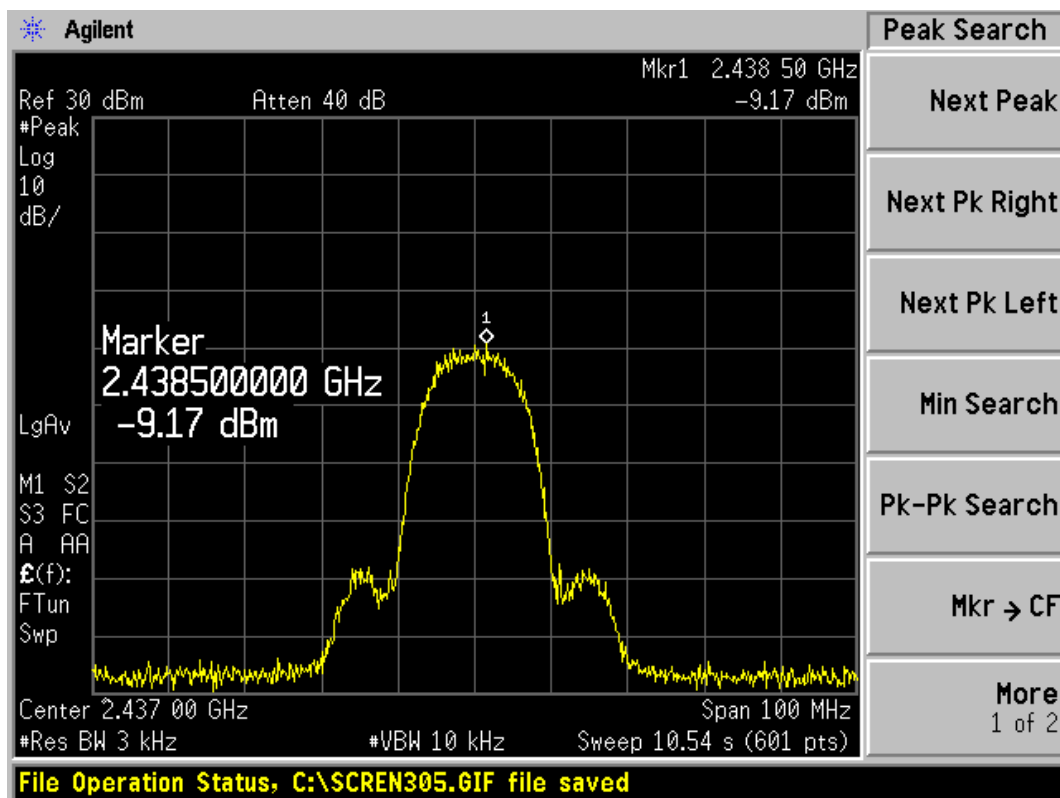
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802.11b



802.11b, Channel No.: 1

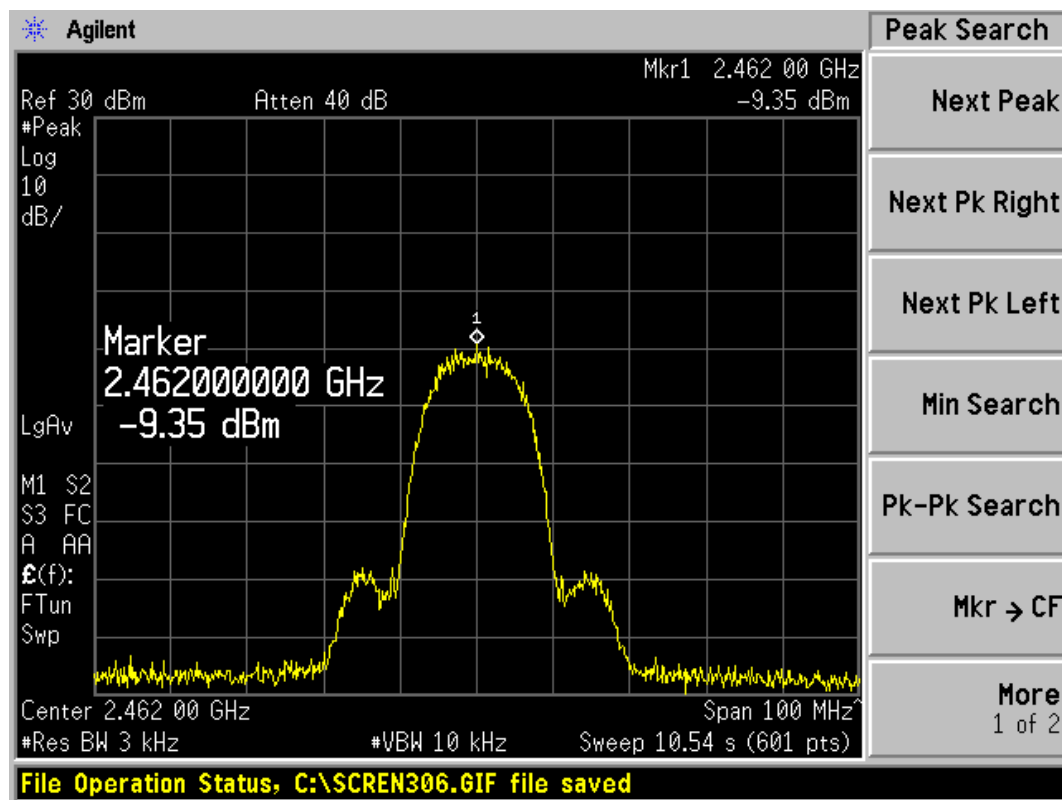


802.11b, Channel No.: 6

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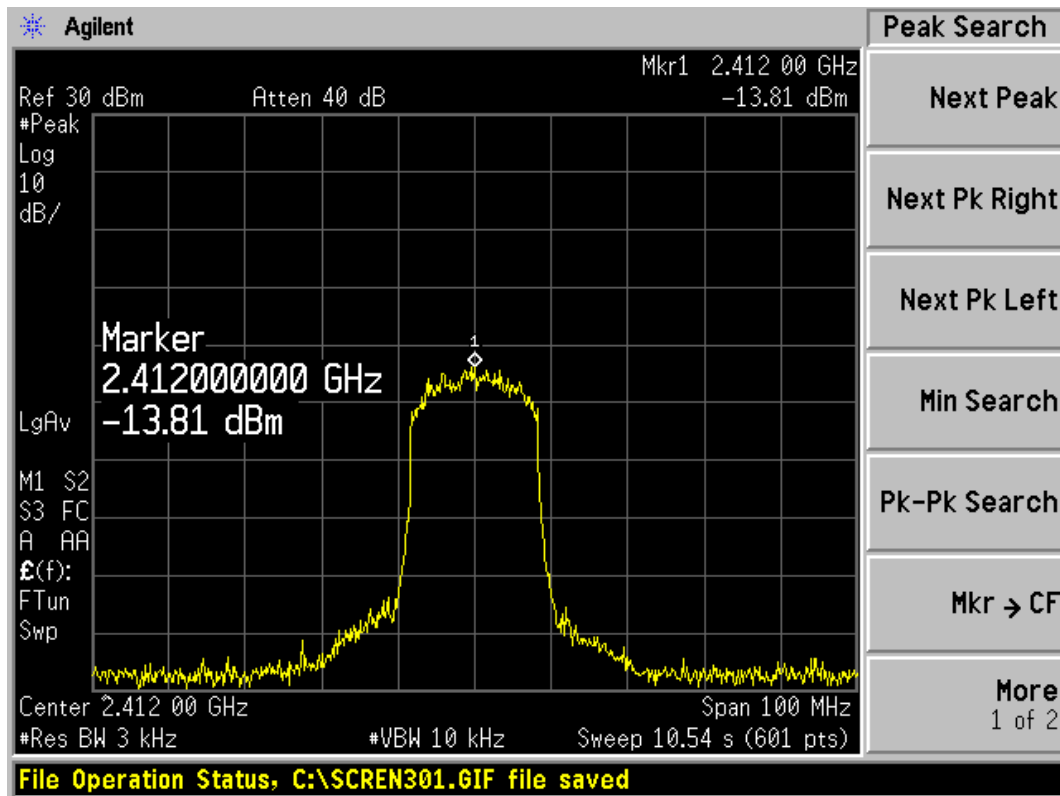
802.11b, Channel No.: 11

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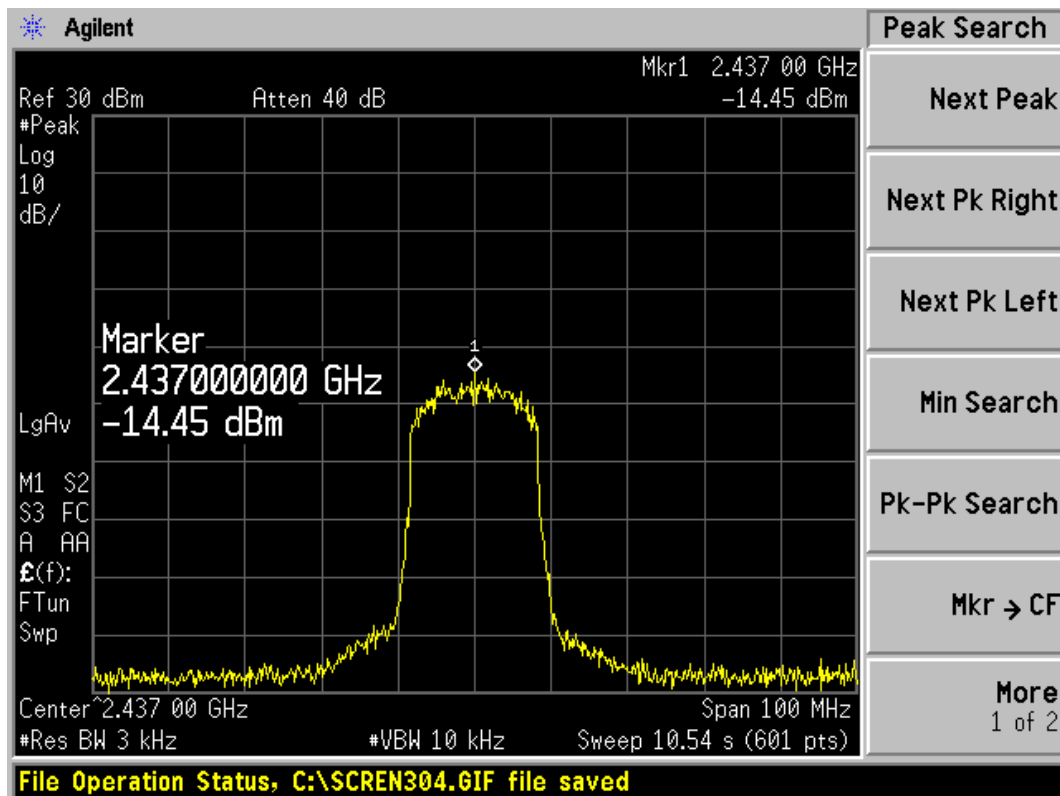
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802.11g



802.11g, Channel No.: 1

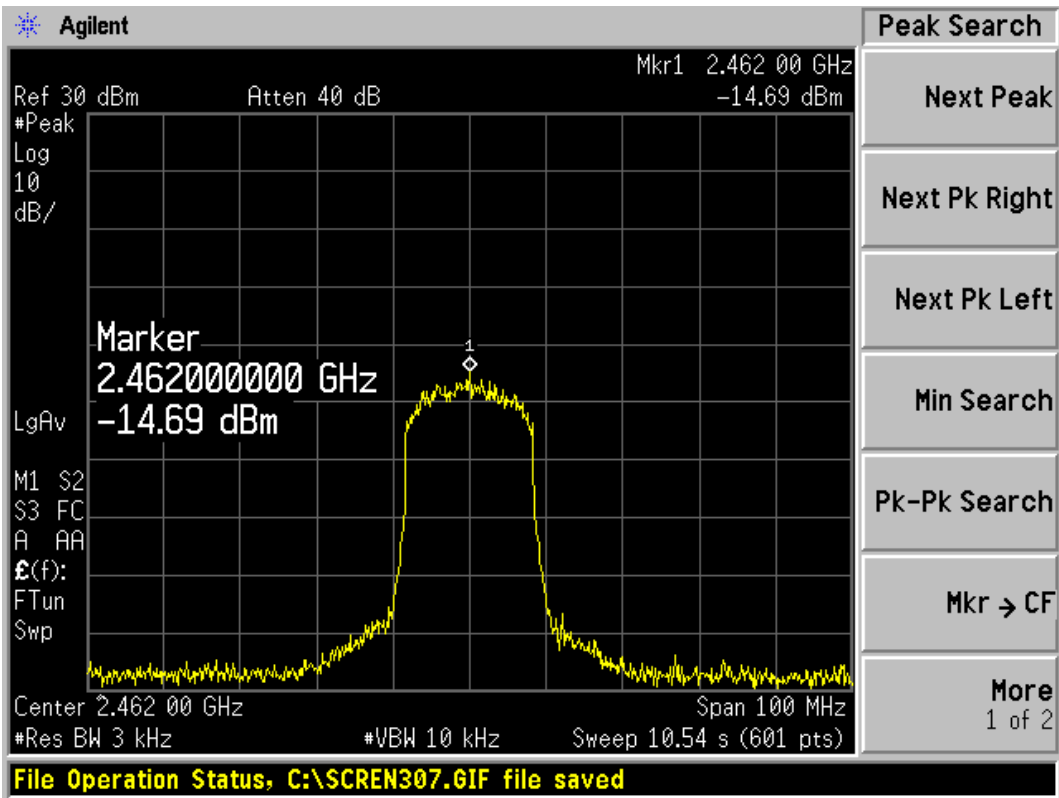


802.11g, Channel No.: 6

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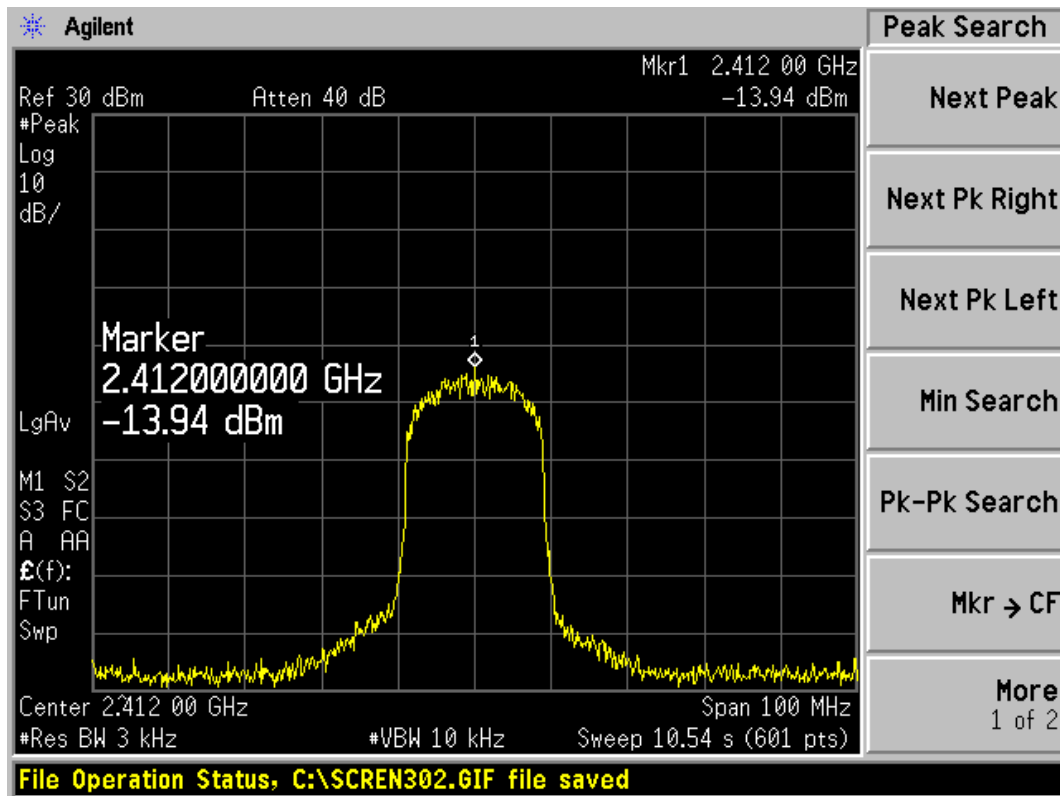
802.11g, Channel No.: 11

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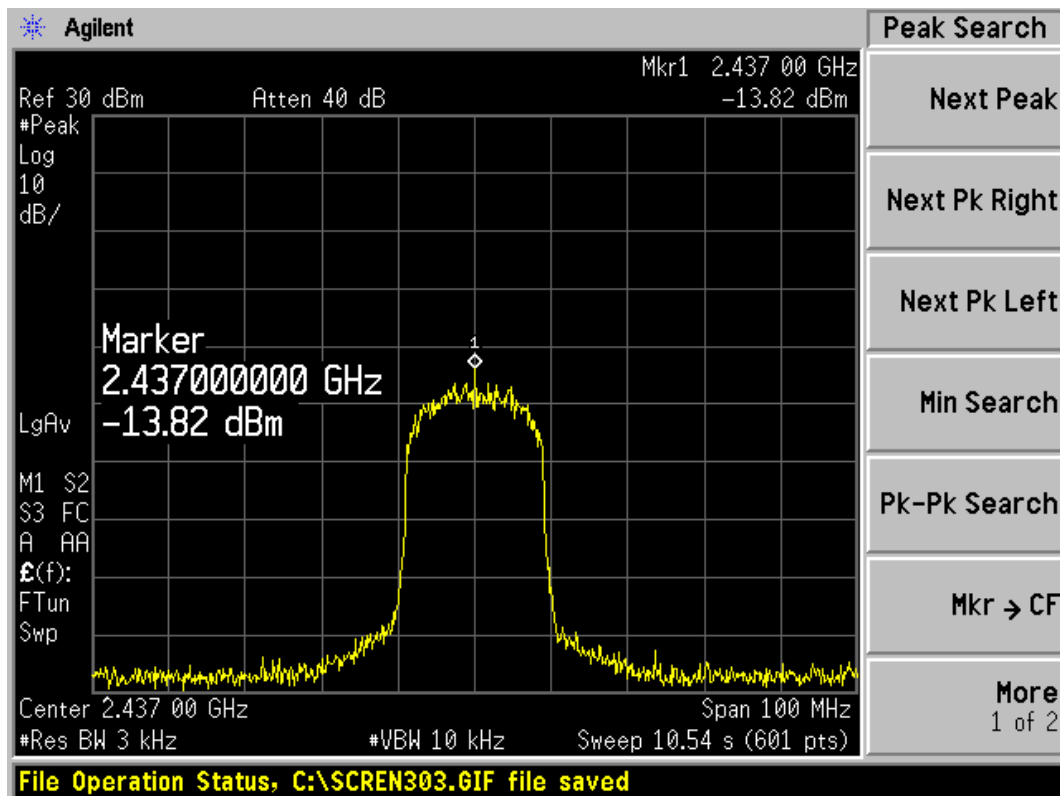
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802.11n (HT20)



802.11n (HT20) (MCS2), Channel No.: 1

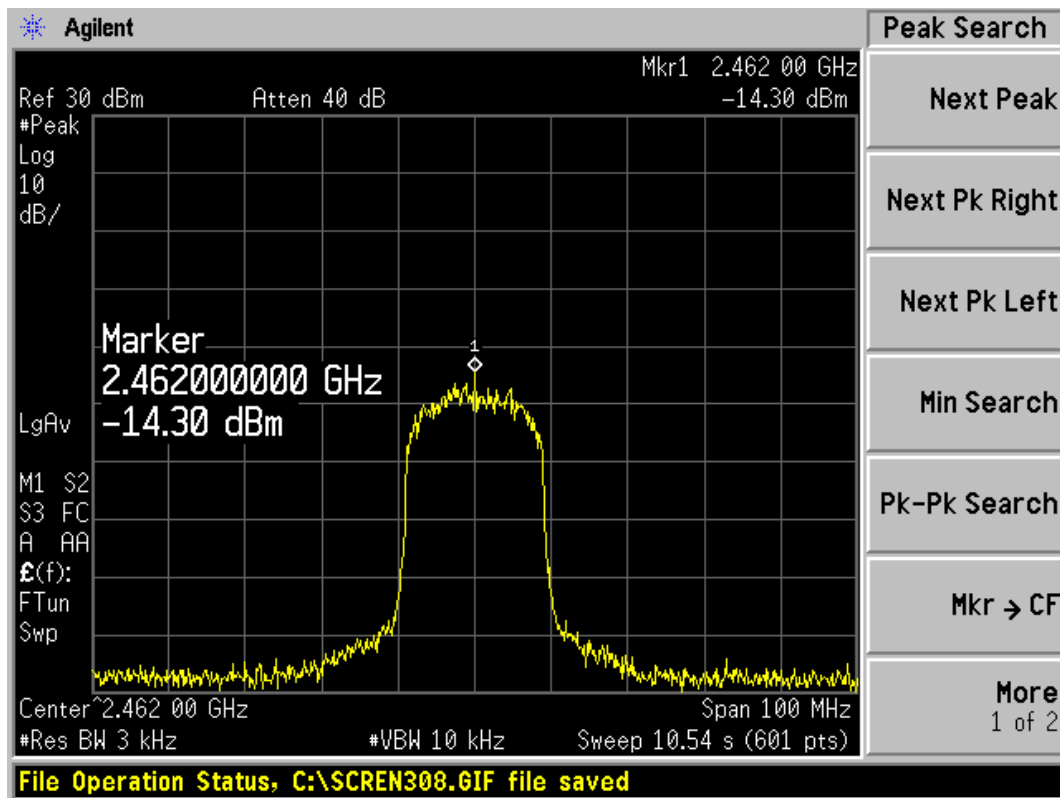


802.11n (HT20) (MCS2), Channel No.: 6

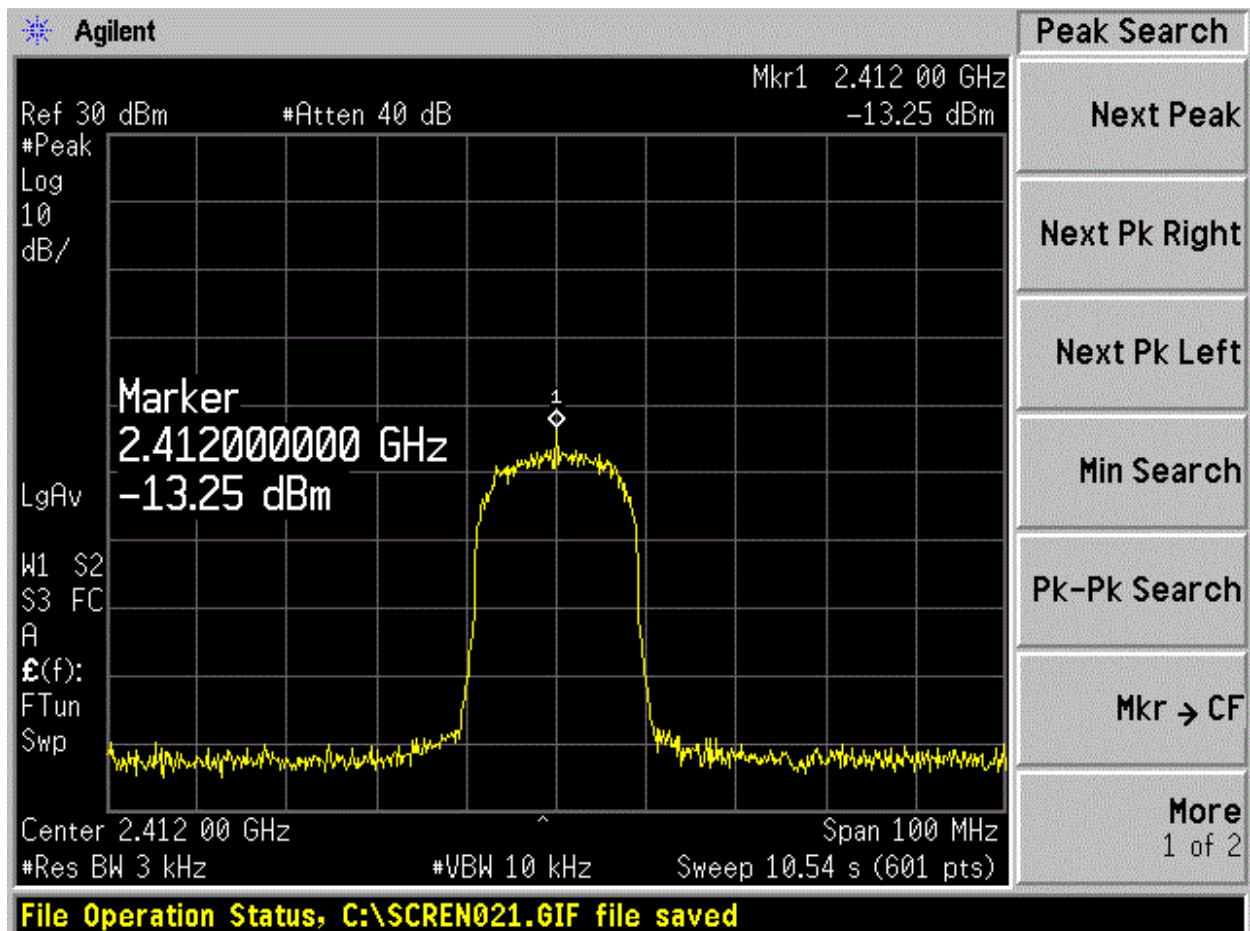
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802.11n (HT20) (MCS2), Channel No.: 11



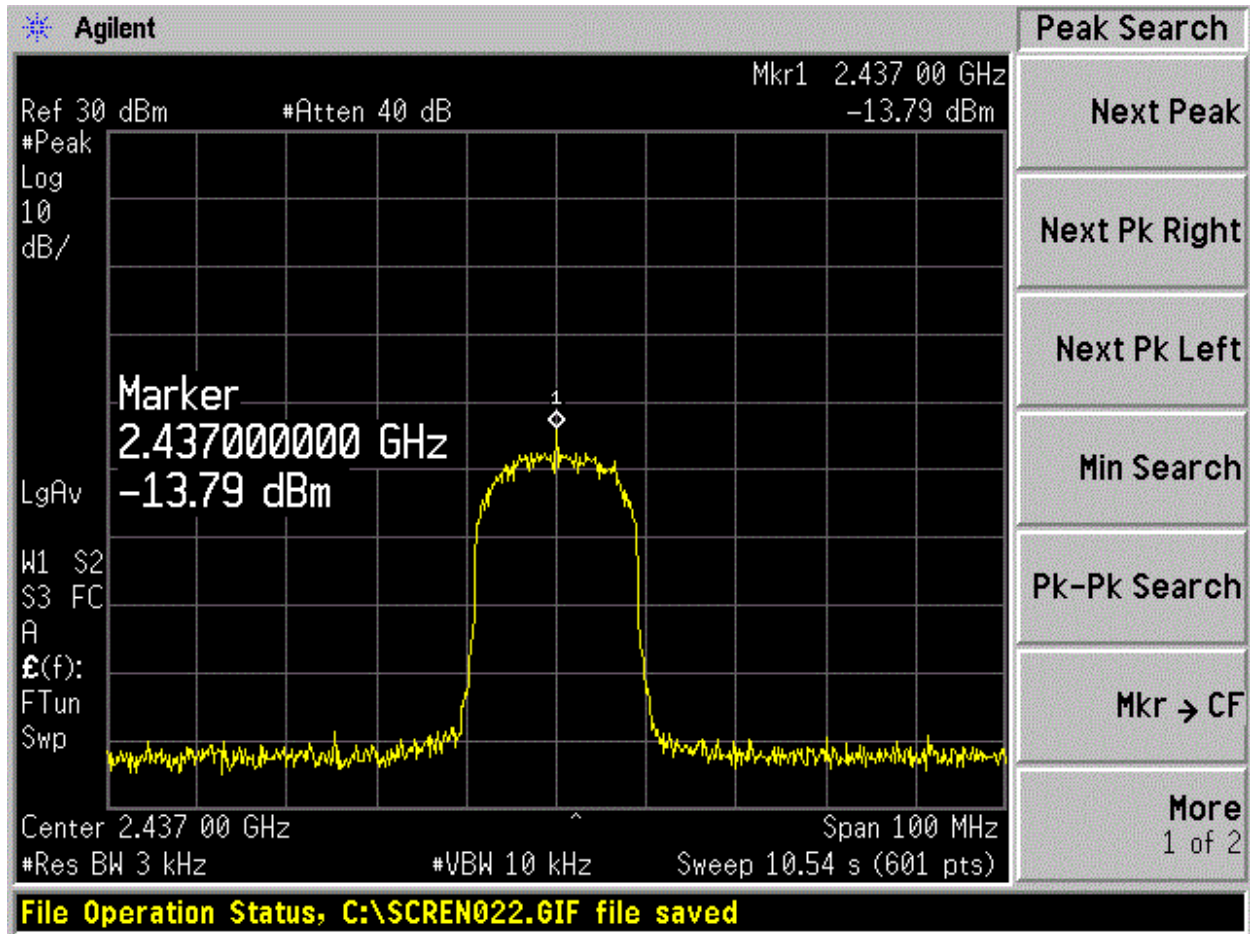
Chain 1, 802.11n (HT20) (MCS8), Channel No.: 1

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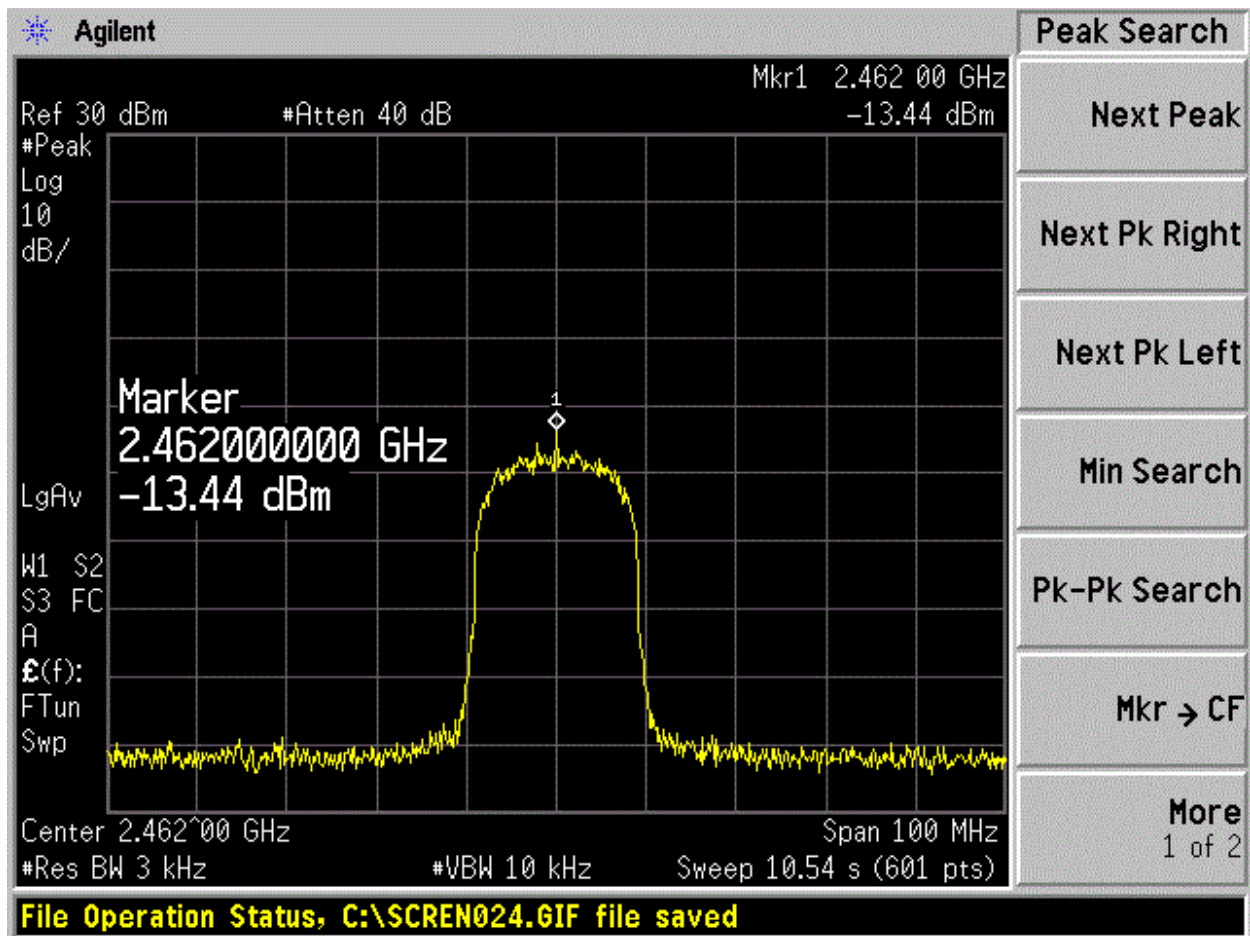


Chain 1, 802.11n (HT20) (MCS8), Channel No.: 6

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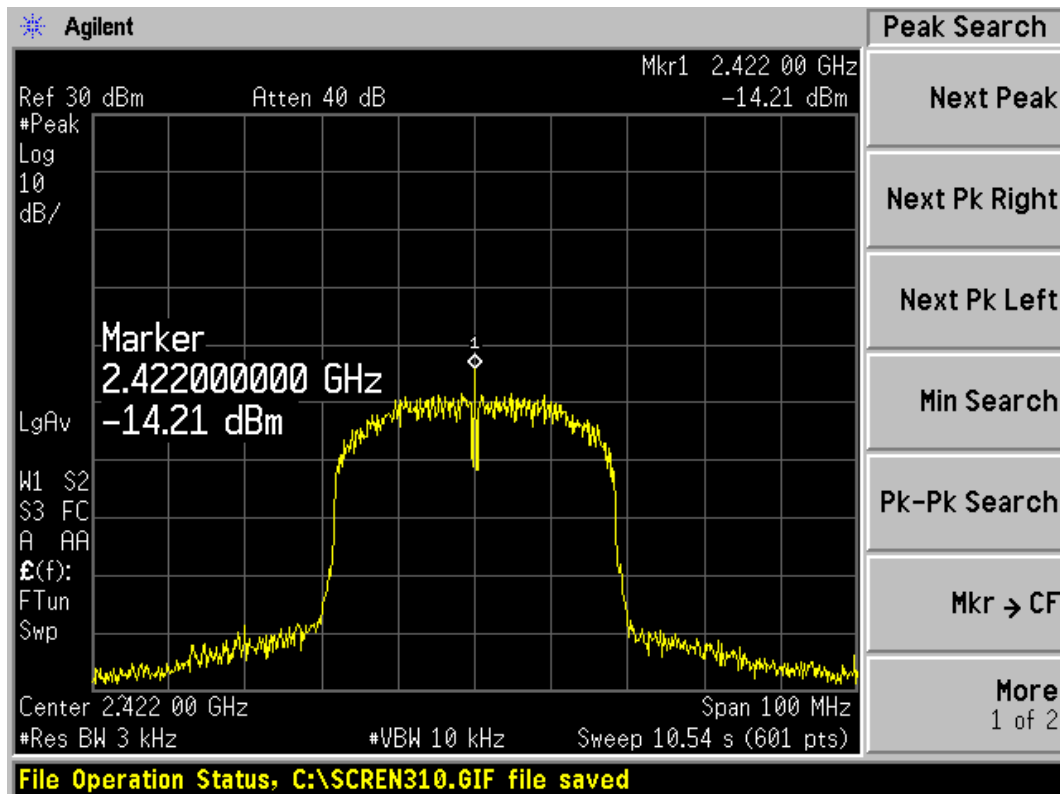
Chain 1, 802.11n (HT20) (MCS8), Channel No.: 11

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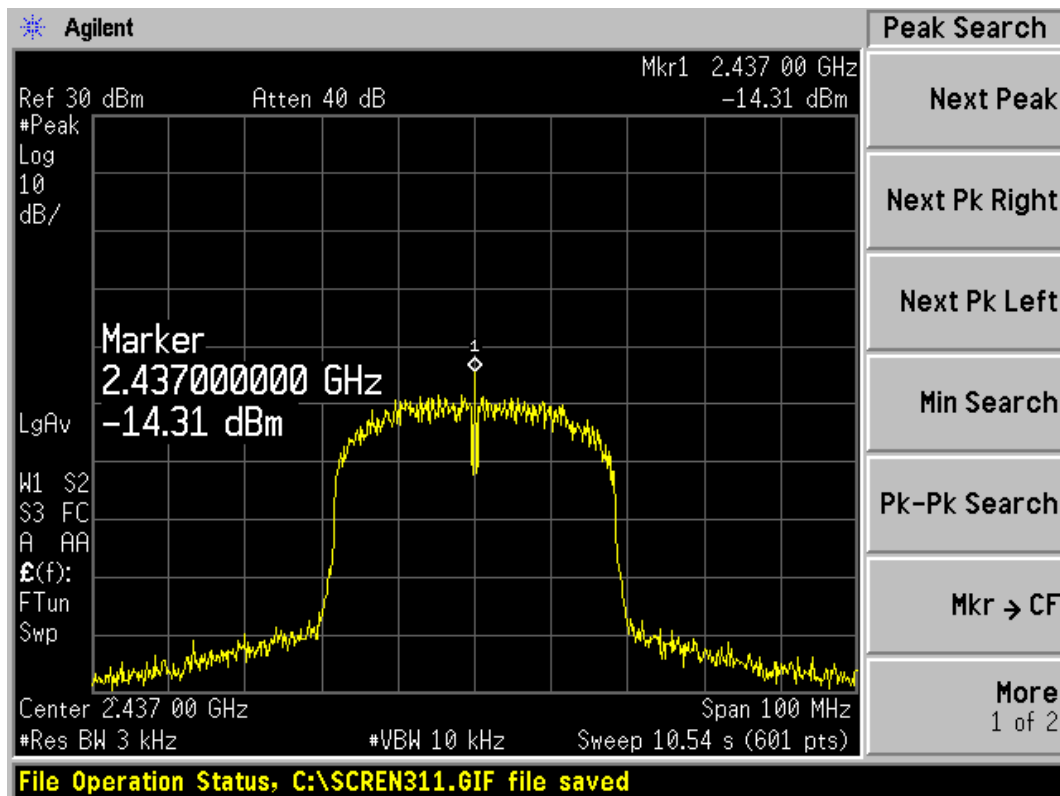
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802.11n (HT40)



802.11n (HT40) (MCS2), Channel No.: 3

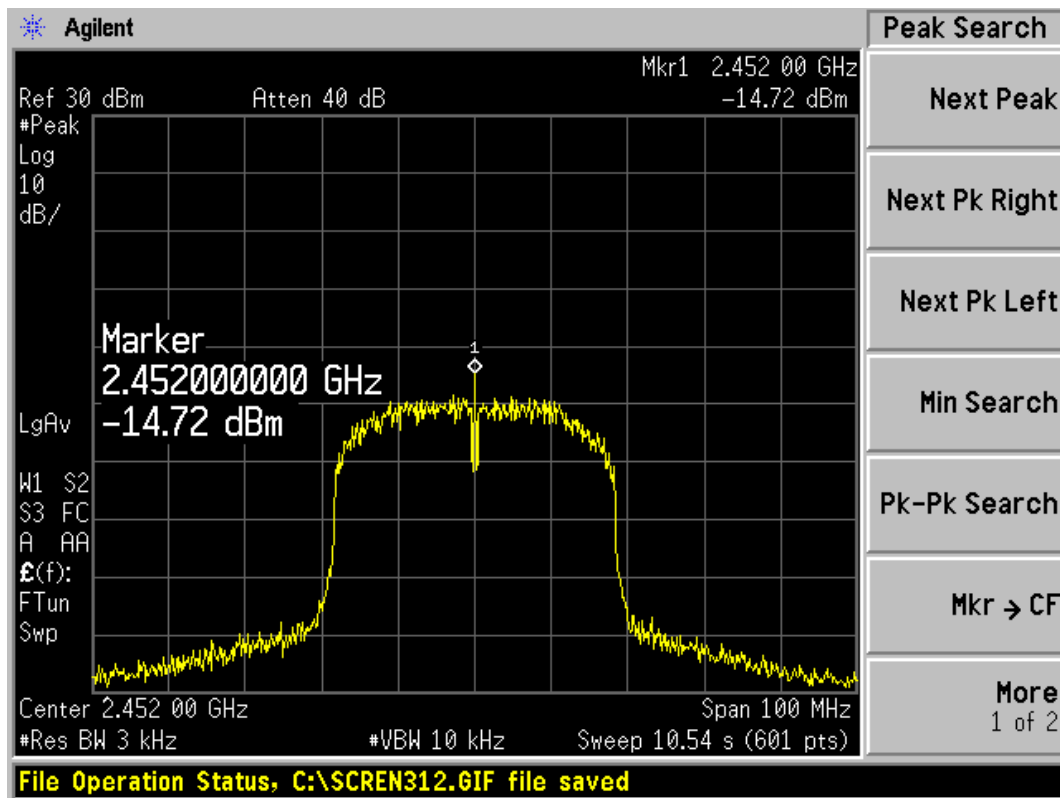


802.11n (HT40) (MCS2), Channel No.: 6

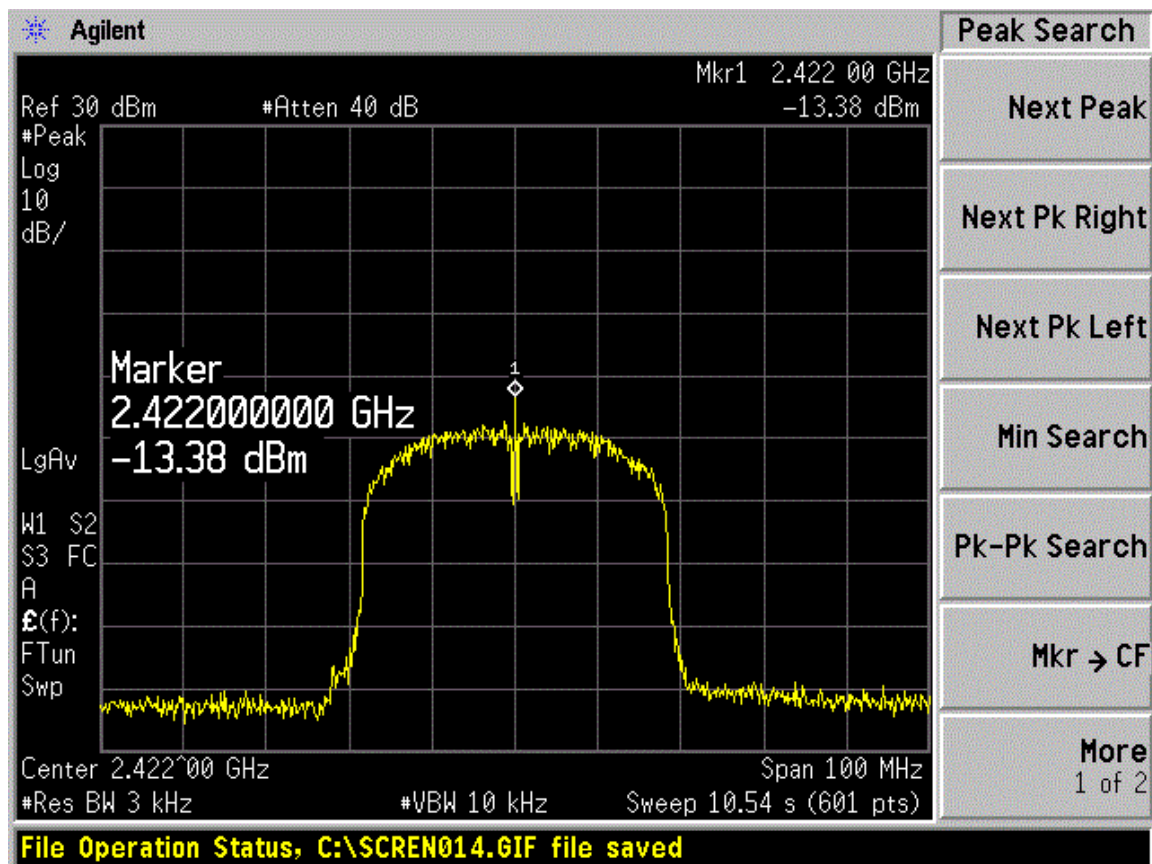
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802.11n (HT40) (MCS2), Channel No.: 9

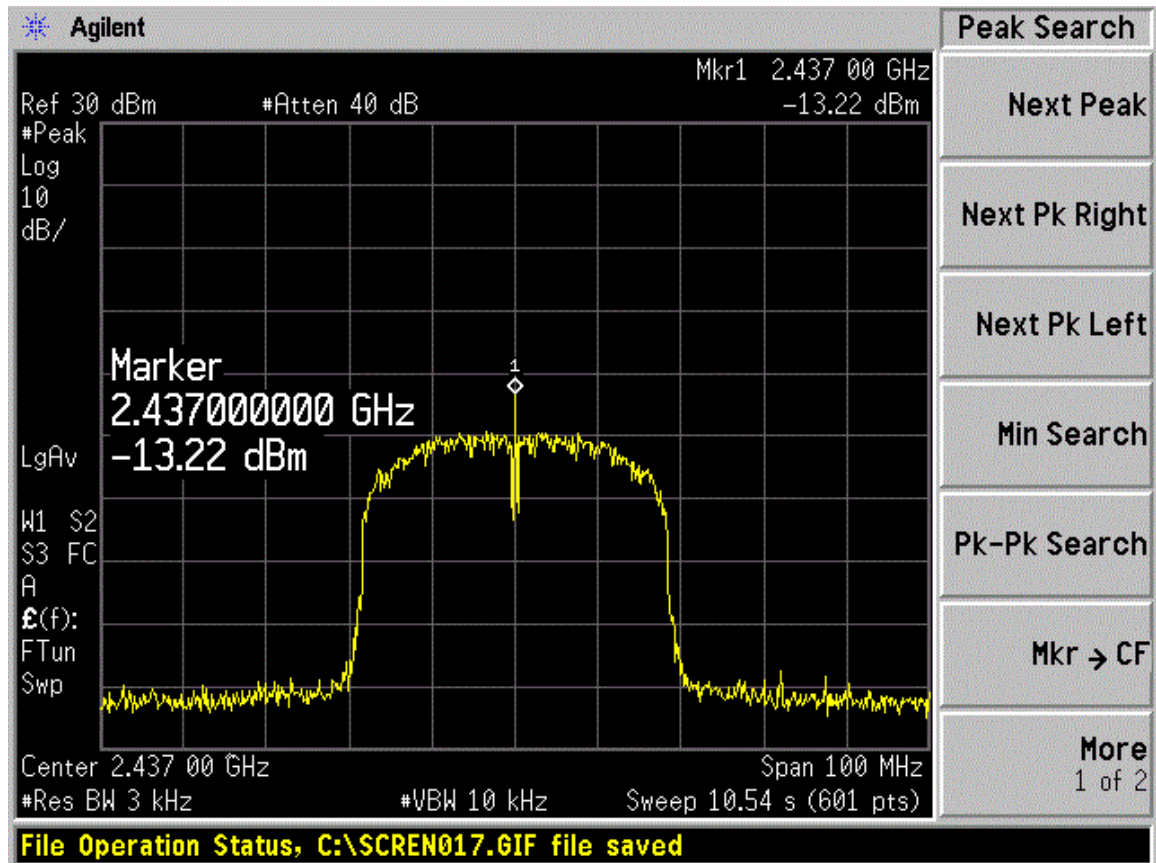


Chain 1, 802.11n (HT40) (MCS8), Channel No.: 3

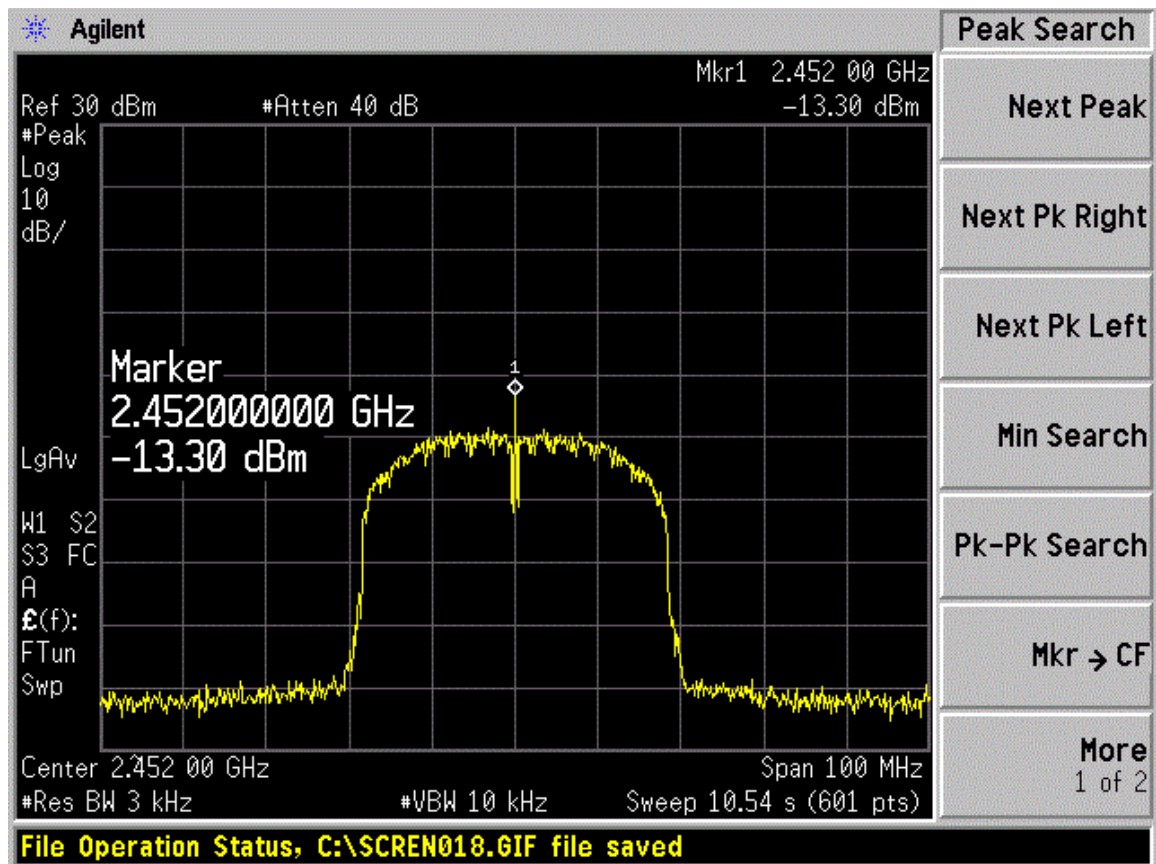
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Chain 1, 802.11n (HT40) (MCS8), Channel No.: 6



Chain 1, 802.11n (HT40) (MCS8), Channel No.: 9

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Total

Mode	channel	chain0	chain1	Total
n20	1	-13.84	-13.25	-10.53
	6	-14.18	-13.79	-10.97
	11	-14.54	-13.44	-10.95
n40	3	-14.14	-13.38	-10.73
	6	-13.36	-13.22	-10.28
	9	-14.10	-13.30	-10.67

Note: The table values displayed above are total PSD of worst case(MCS8~MCS15)

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2.8. Spurious RF Conducted Emissions

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. RBW and VBW are set to 100 kHz, Sweep is set to ATUO.

The test is in transmitting mode.

Test setup



Limits

Rule Part 15.247(d) pacifies that "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."

CHAIN 0:

Network Standards	Carrier frequency (MHz)	Reference value (dBm)	Limit
802.11b	2412	17.51	≤-2.49
	2437	17.89	≤-2.11
	2462	17.89	≤-2.11
802.11g	2412	14.51	≤-5.49
	2437	14.05	≤-5.95
	2462	13.89	≤-6.11
802.11n	2412	13.25	≤-6.75

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HT20	2437	14.32	≤-5.68
	2462	13.92	≤-6.08
802.11n HT40	2422	14.32	≤-5.68
	2437	14.14	≤-5.86
	2452	13.97	≤-6.03

CHAIN 1:

Network Standards	Carrier frequency (MHz)	Reference value (dBm)	Limit
802.11b	2412	18.37	≤-1.63
	2437	18.13	≤-1.87
	2462	18.26	≤-1.74
802.11g	2412	15.12	≤-4.88
	2437	14.88	≤-5.12
	2462	14.13	≤-5.87
802.11n HT20	2412	15.24	≤-4.76
	2437	14.35	≤-5.65
	2462	13.94	≤-6.06
802.11n HT40	2422	14.54	≤-5.46
	2437	14.35	≤-5.65
	2452	14.05	≤-5.95

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-26.5GHz	1.407 dB

TA Technology (Shanghai) Co., Ltd.

Test Report

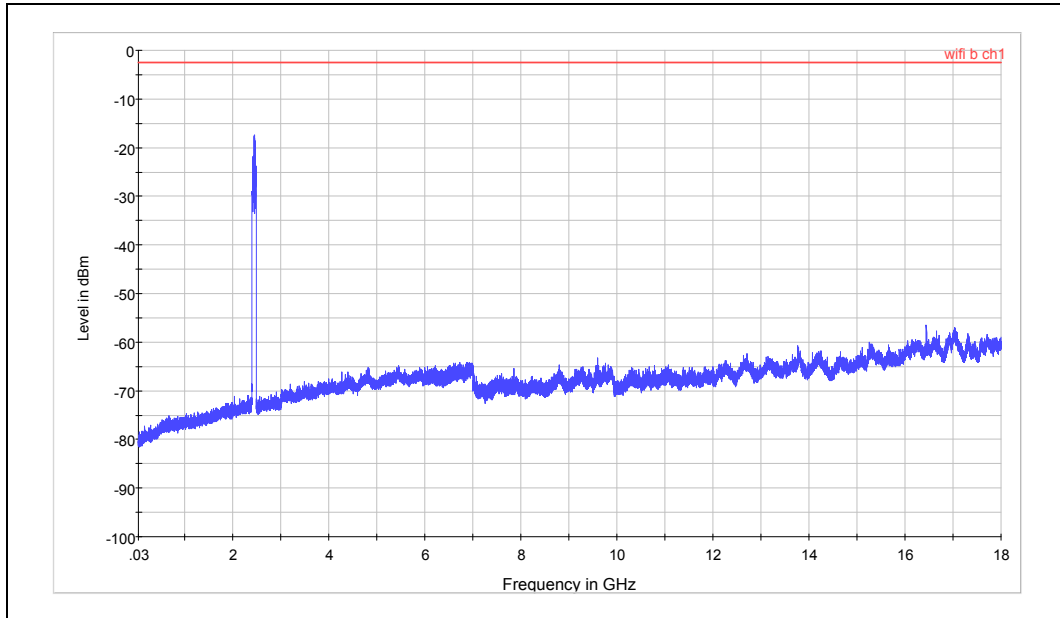
Report No.: RZA1201-0014RF01R5

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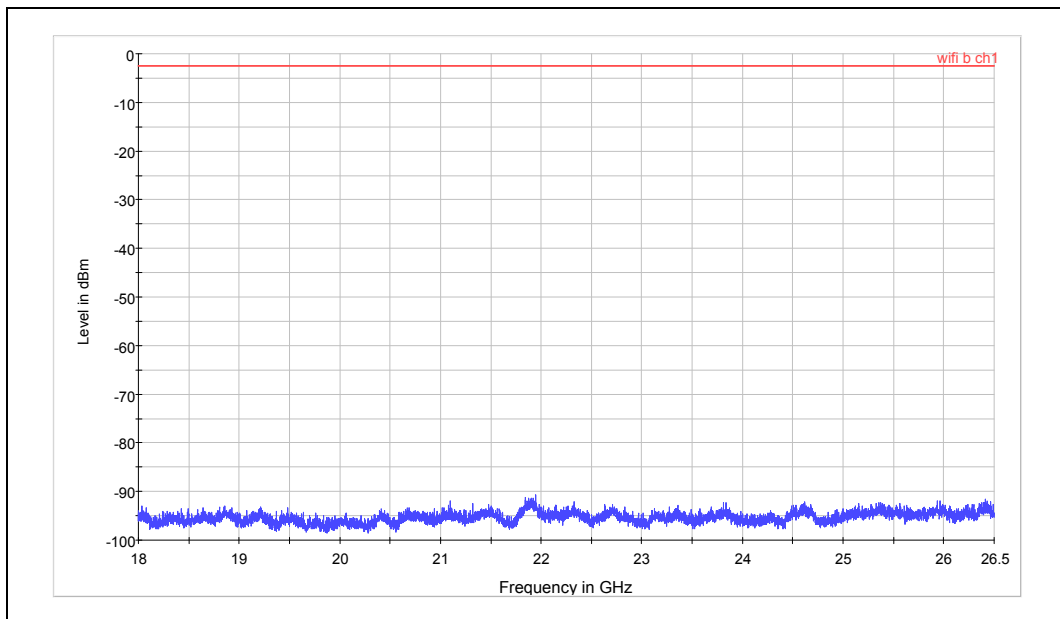
Test Results:

CHAIN 0:

802.11b CH1



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

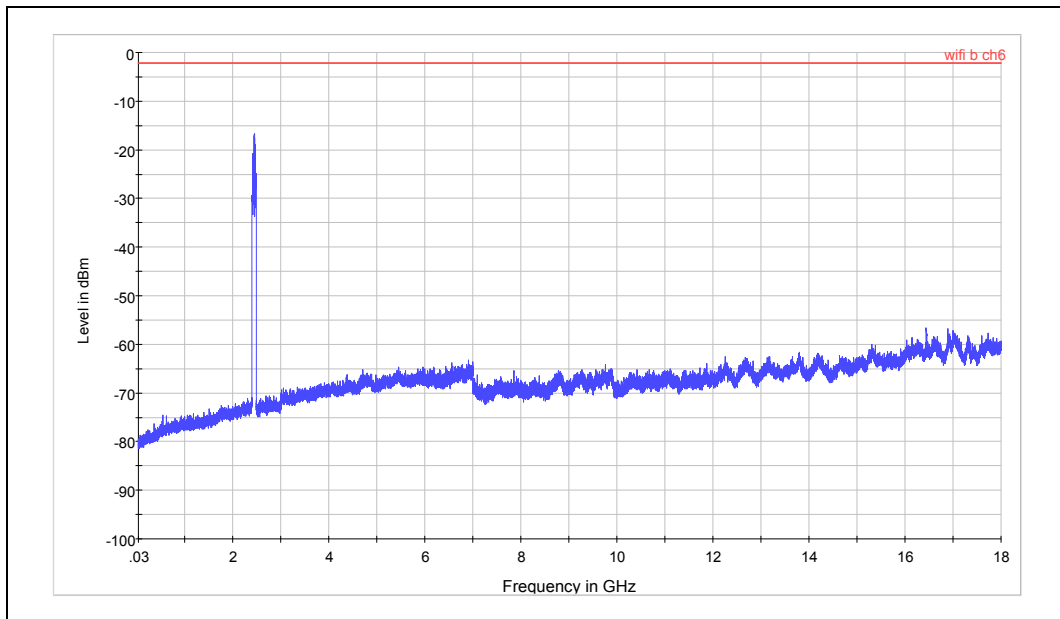
TA Technology (Shanghai) Co., Ltd.

Test Report

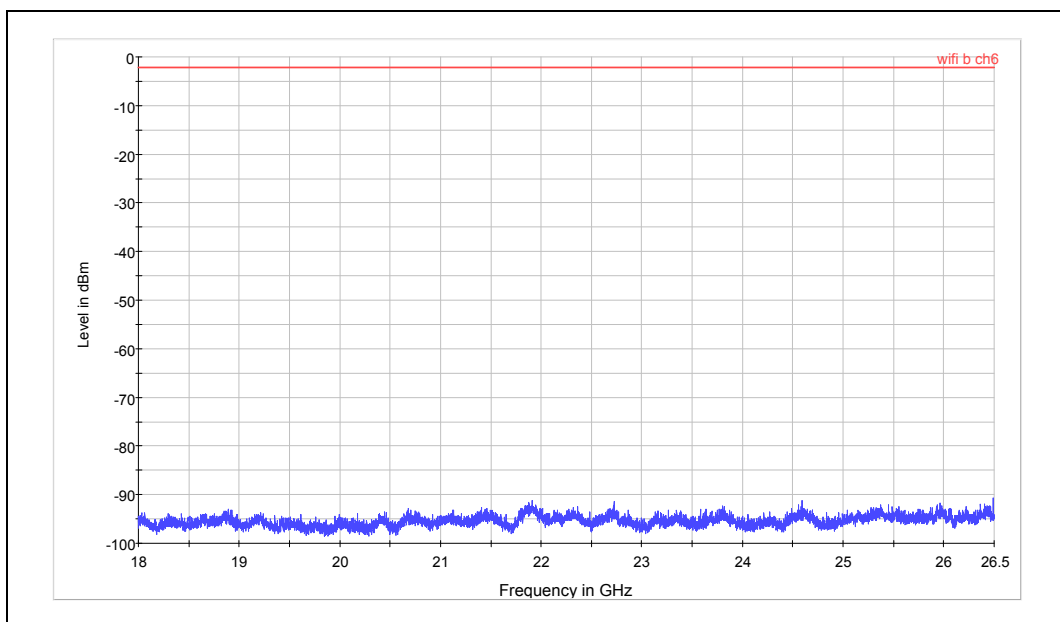
Report No.: RZA1201-0014RF01R5

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802.11b CH6



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

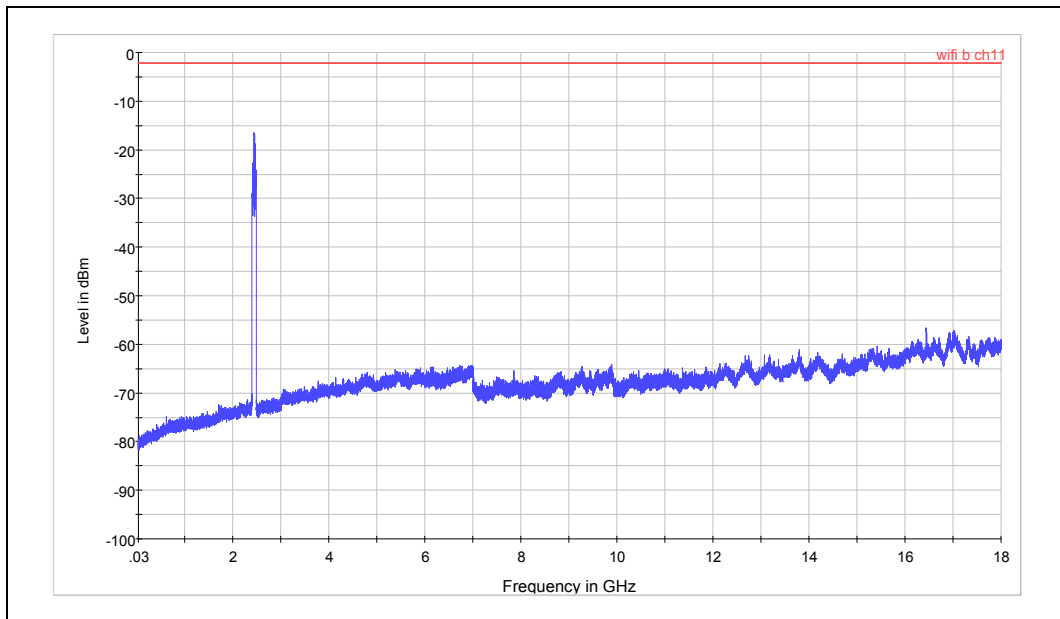
TA Technology (Shanghai) Co., Ltd.

Test Report

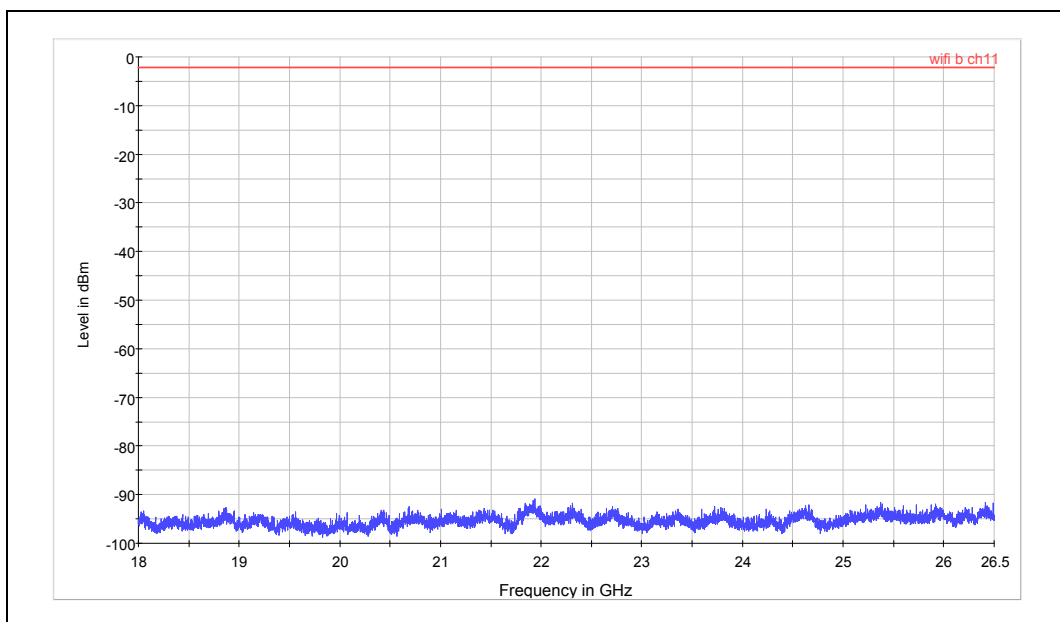
Report No.: RZA1201-0014RF01R5

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802.11b CH11



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

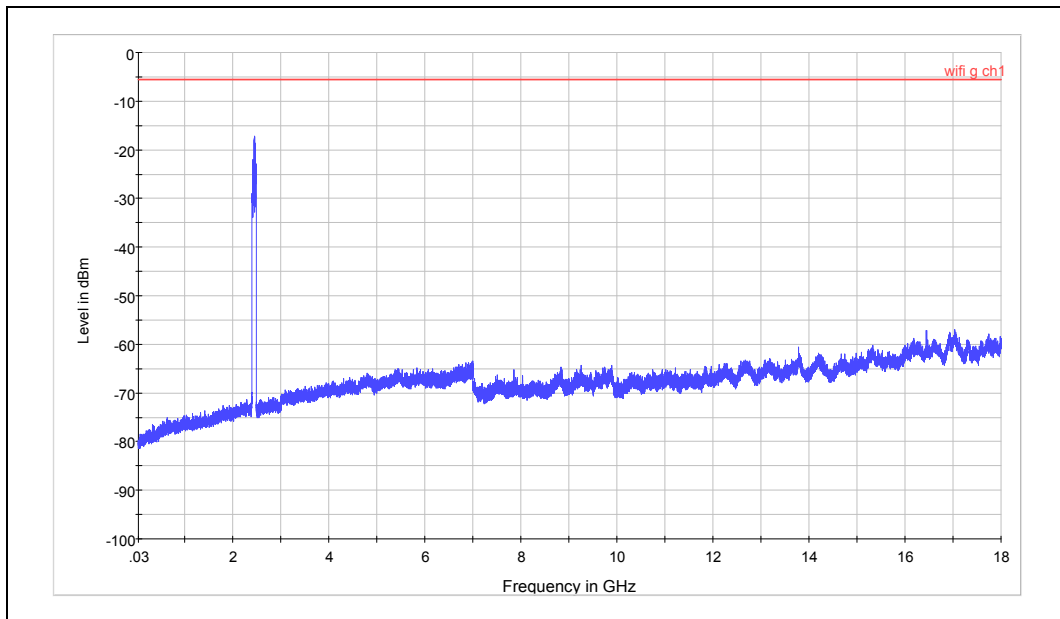
TA Technology (Shanghai) Co., Ltd.

Test Report

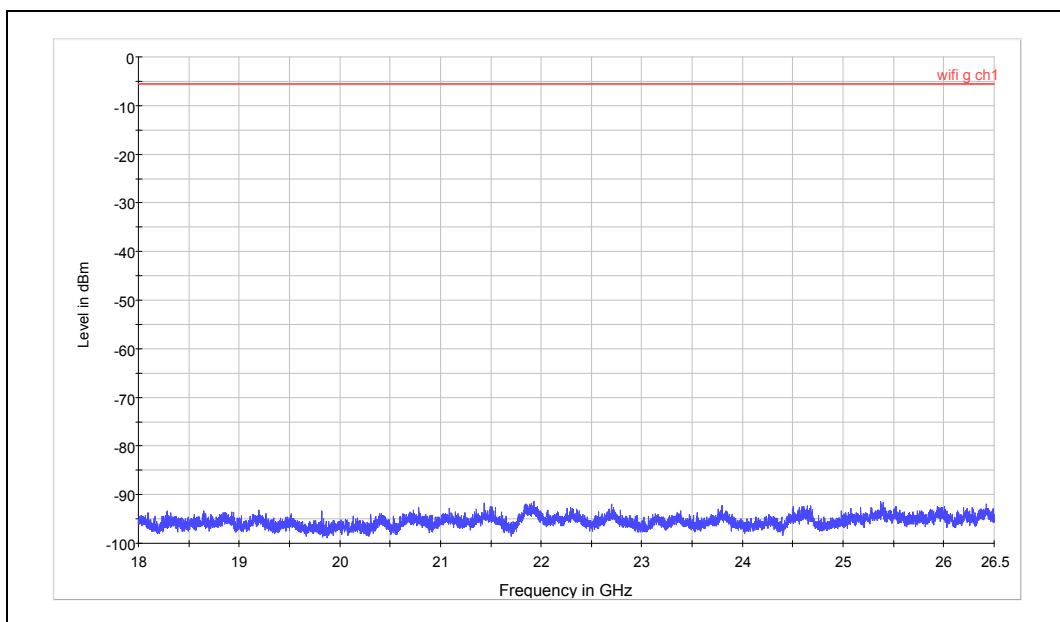
Report No.: RZA1201-0014RF01R5

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802.11g CH1



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

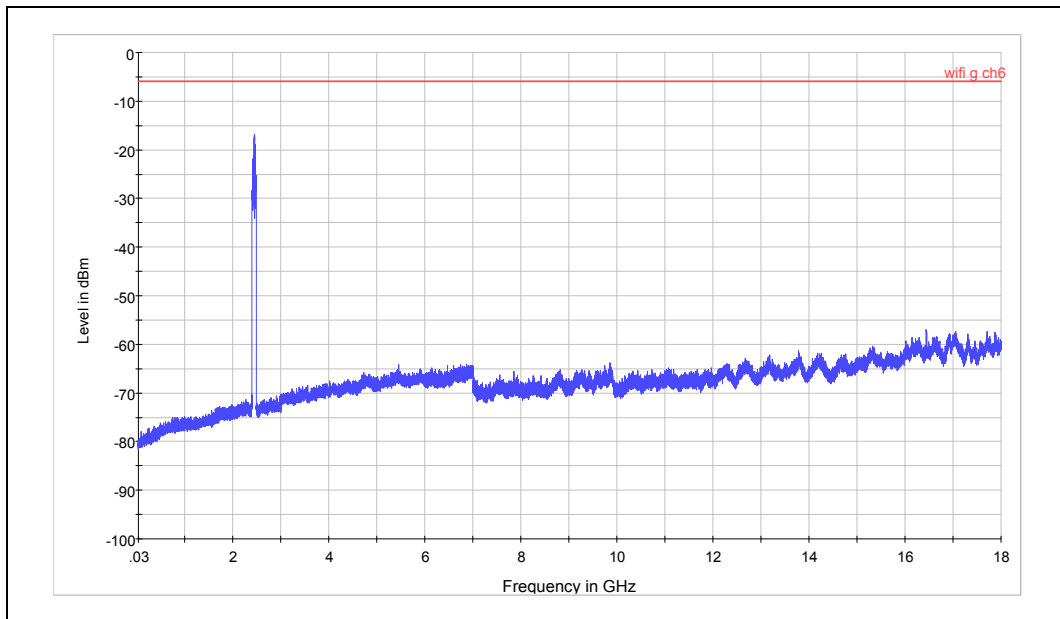
TA Technology (Shanghai) Co., Ltd.

Test Report

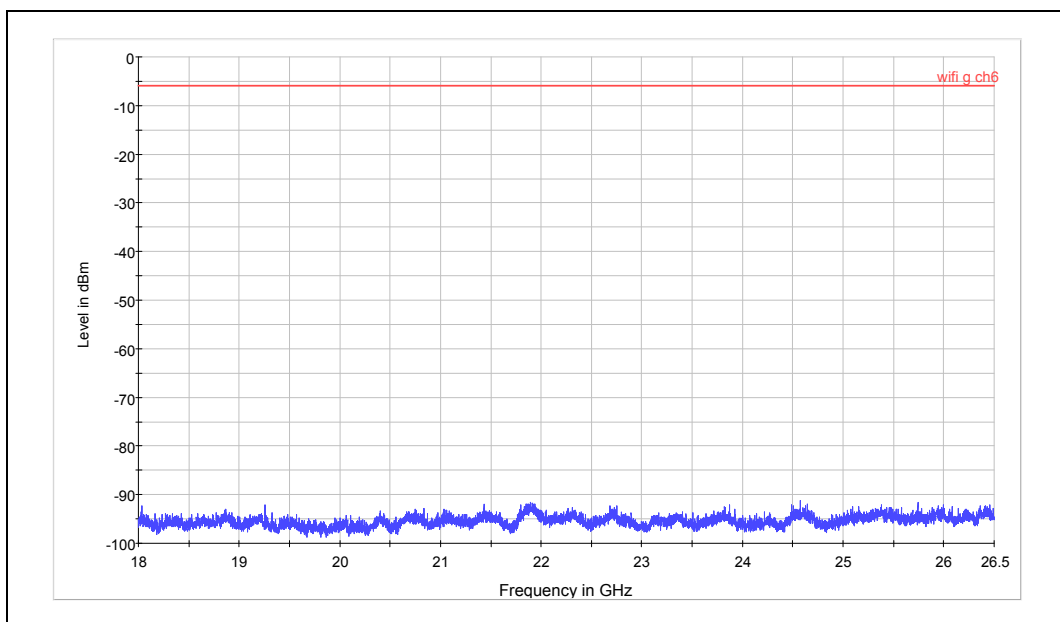
Report No.: RZA1201-0014RF01R5

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802.11g CH6



Spurious RF conducted emissions from 30MHz to 18GHz



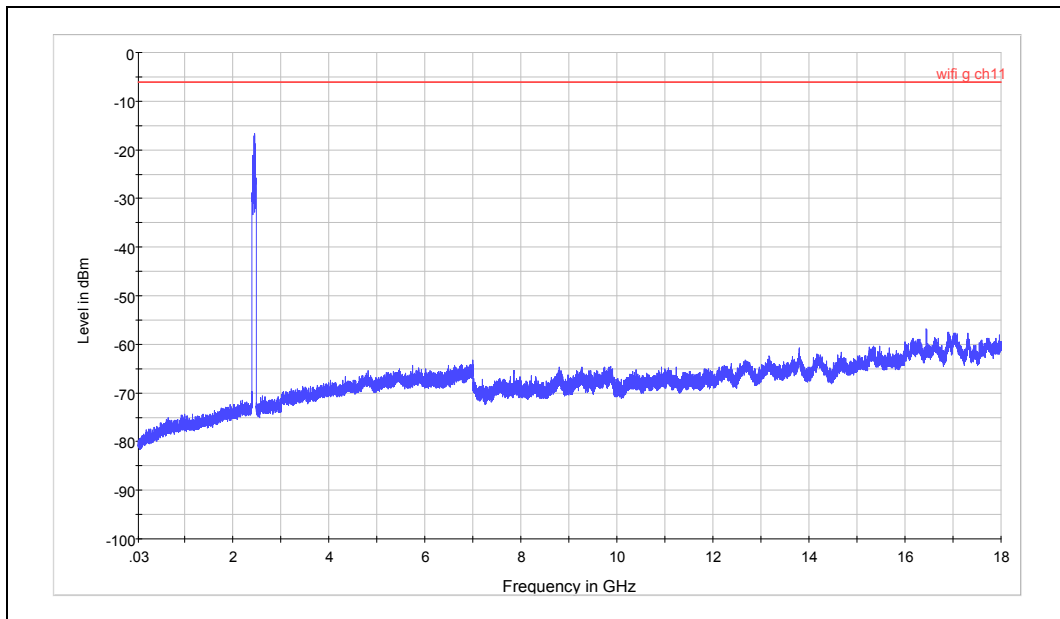
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.
Test Report

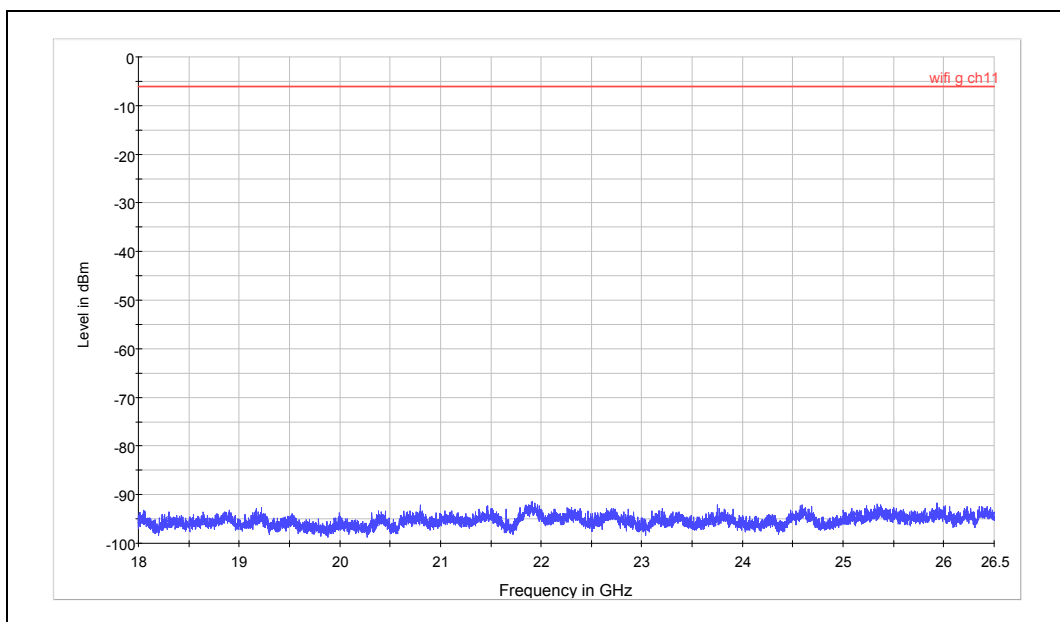
Report No.: RZA1201-0014RF01R5

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802.11g CH11



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

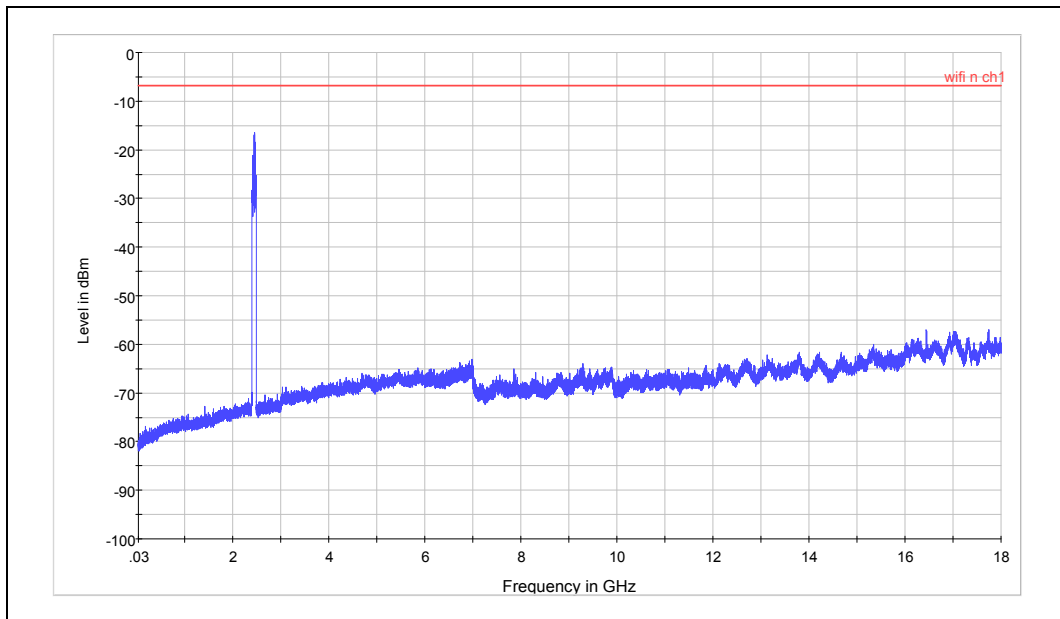
TA Technology (Shanghai) Co., Ltd.

Test Report

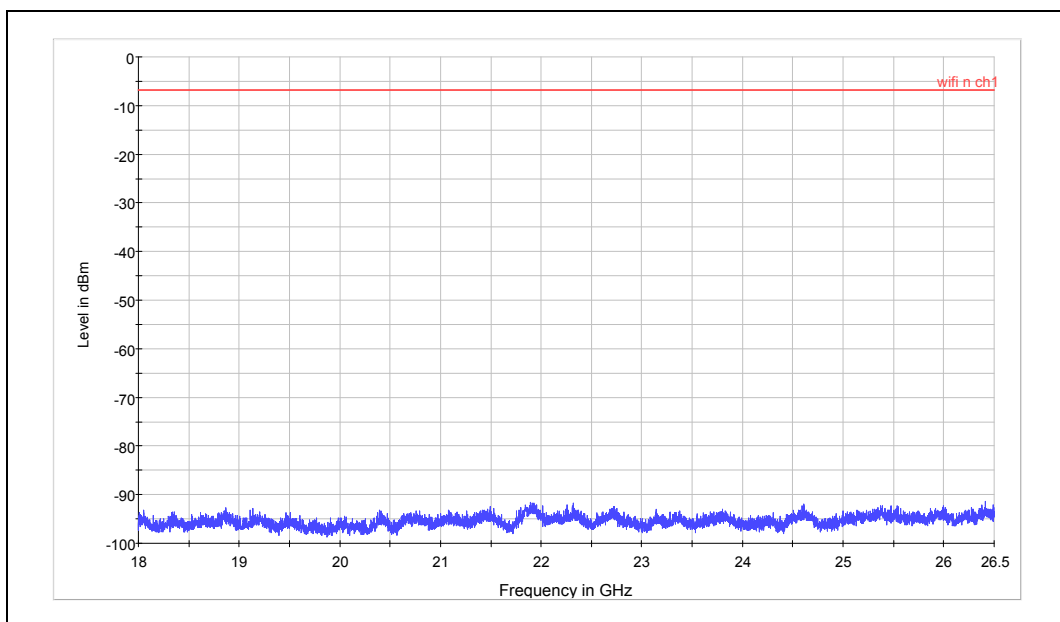
Report No.: RZA1201-0014RF01R5

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802.11n (HT20) CH1



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

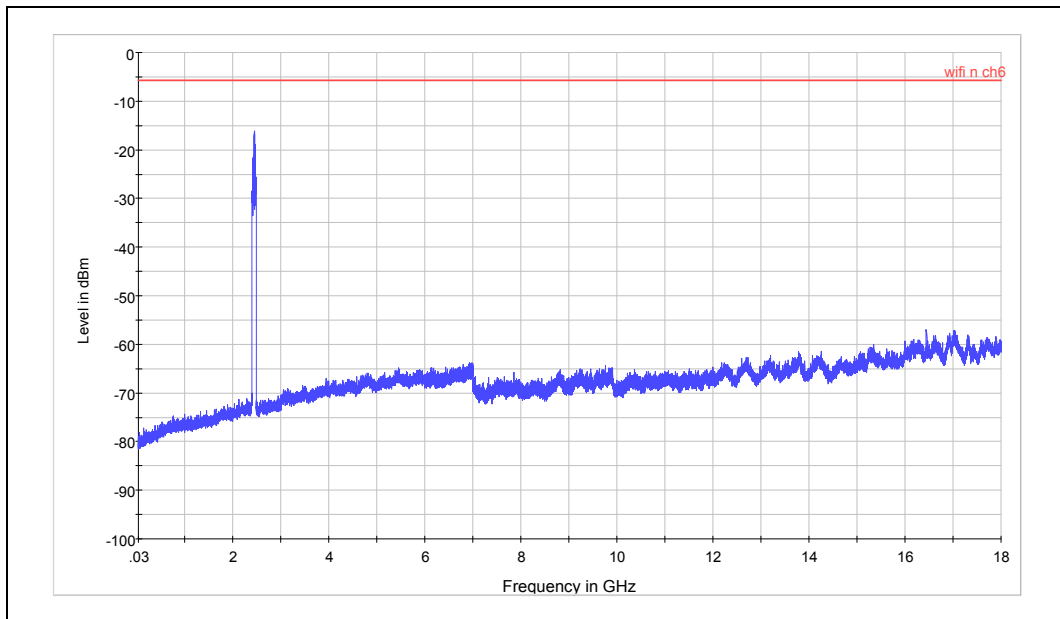
TA Technology (Shanghai) Co., Ltd.

Test Report

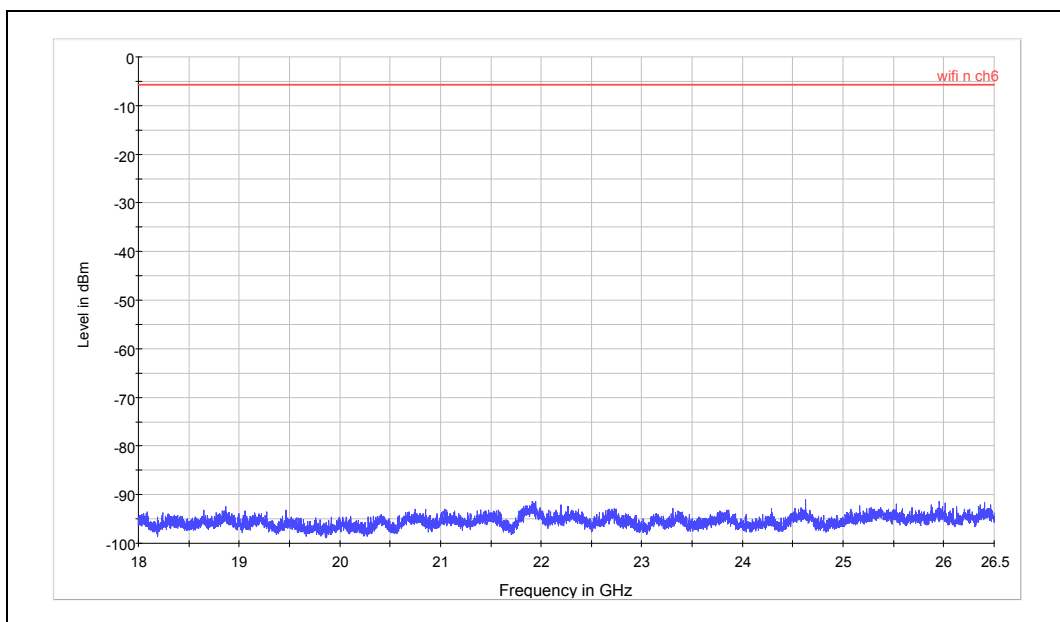
Report No.: RZA1201-0014RF01R5

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802.11n (HT20) CH6



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

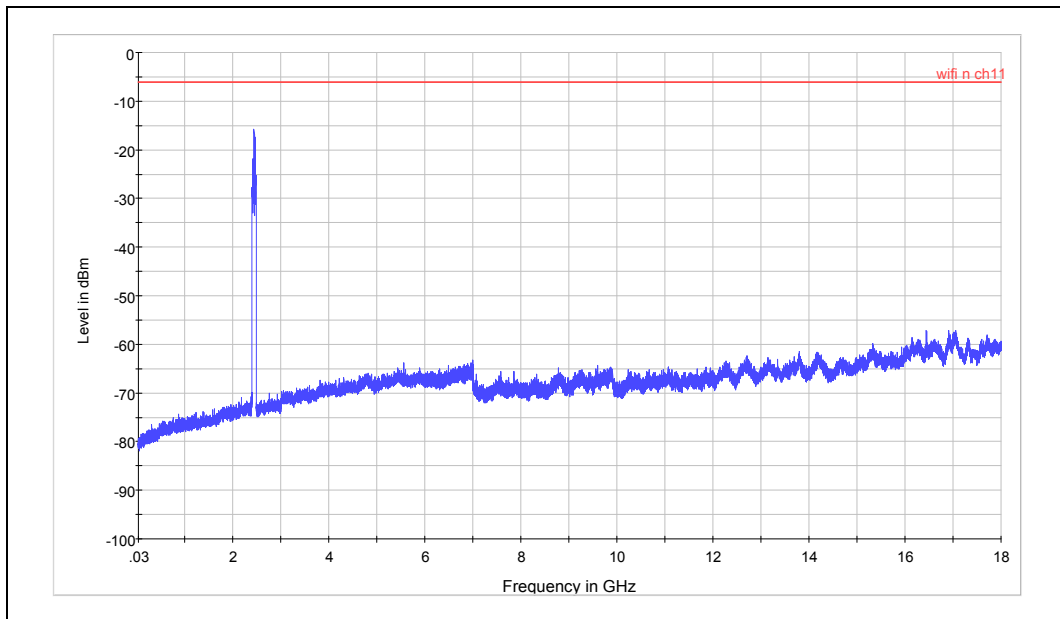
TA Technology (Shanghai) Co., Ltd.

Test Report

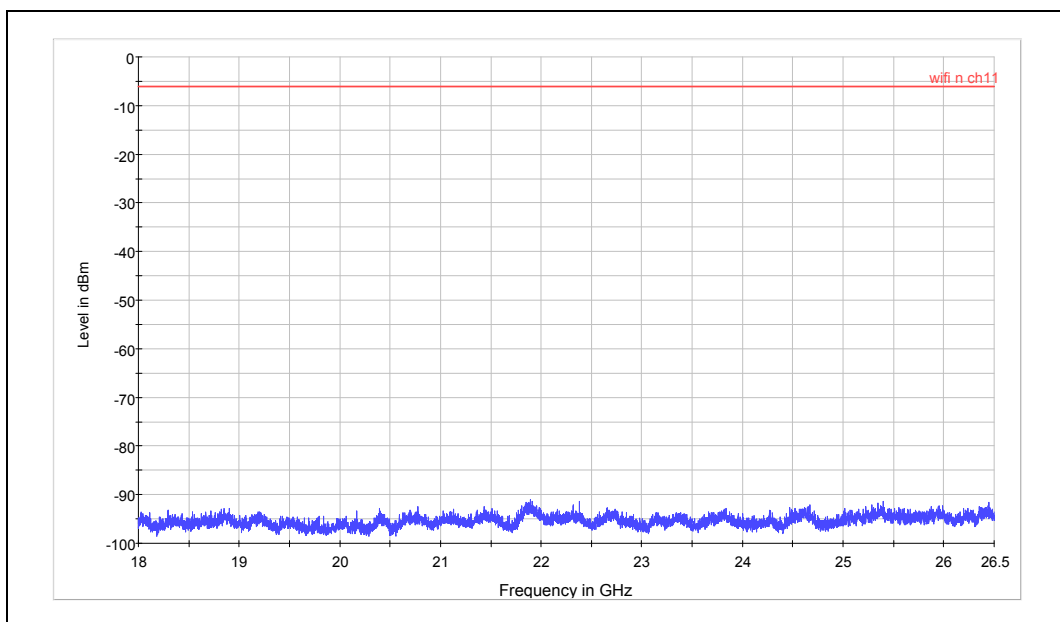
Report No.: RZA1201-0014RF01R5

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802.11n (HT20) CH11



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

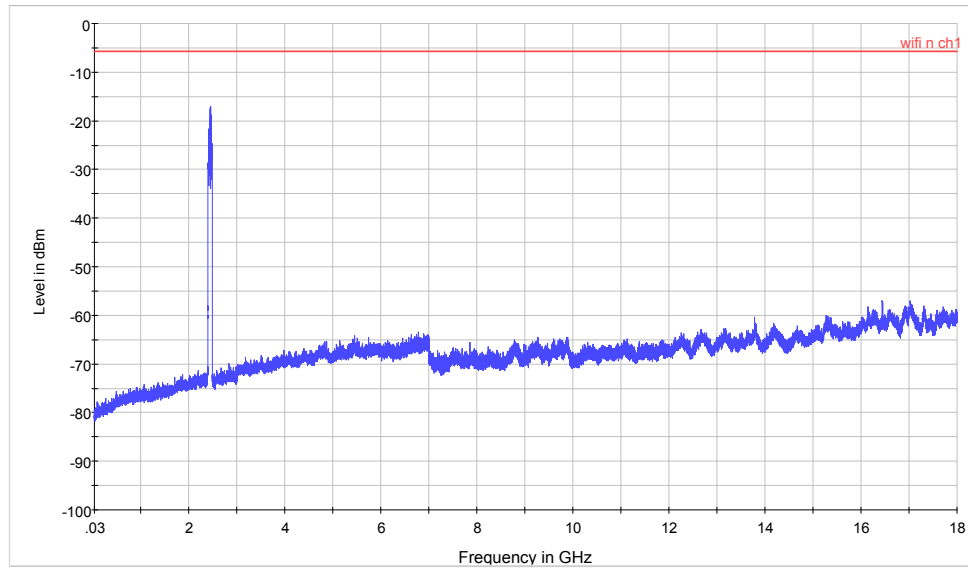
TA Technology (Shanghai) Co., Ltd.

Test Report

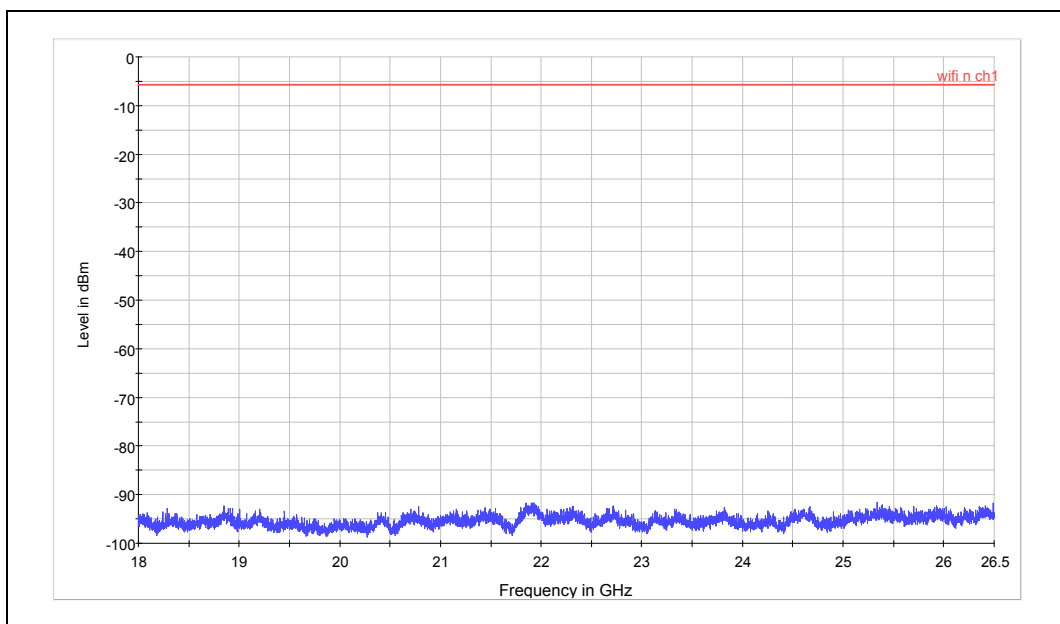
Report No.: RZA1201-0014RF01R5

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802.11n (HT40) CH3



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

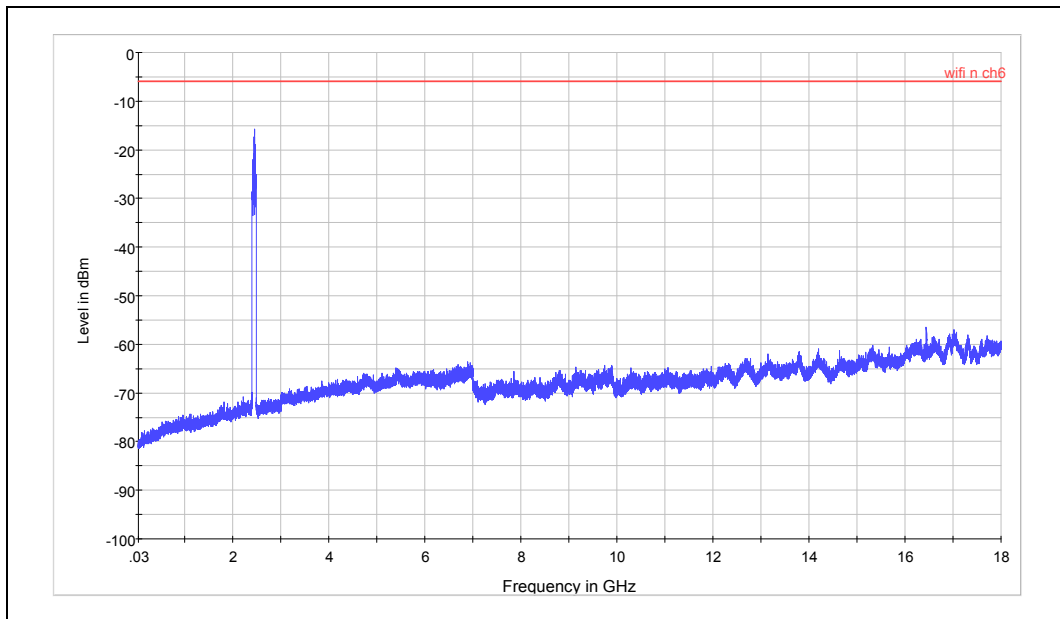
TA Technology (Shanghai) Co., Ltd.

Test Report

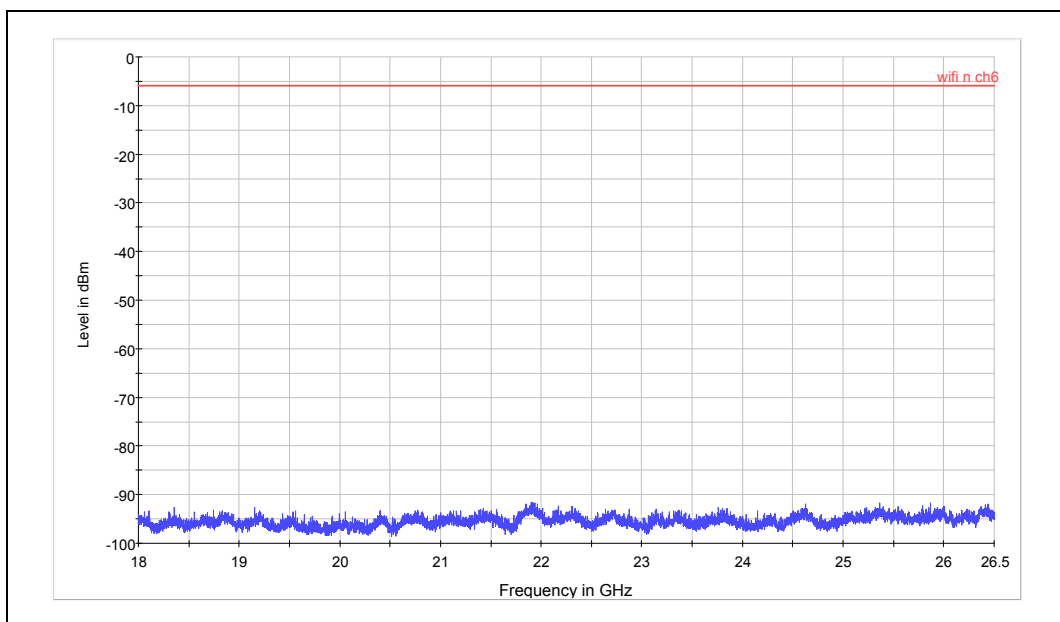
Report No.: RZA1201-0014RF01R5

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802.11n (HT40) CH6



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

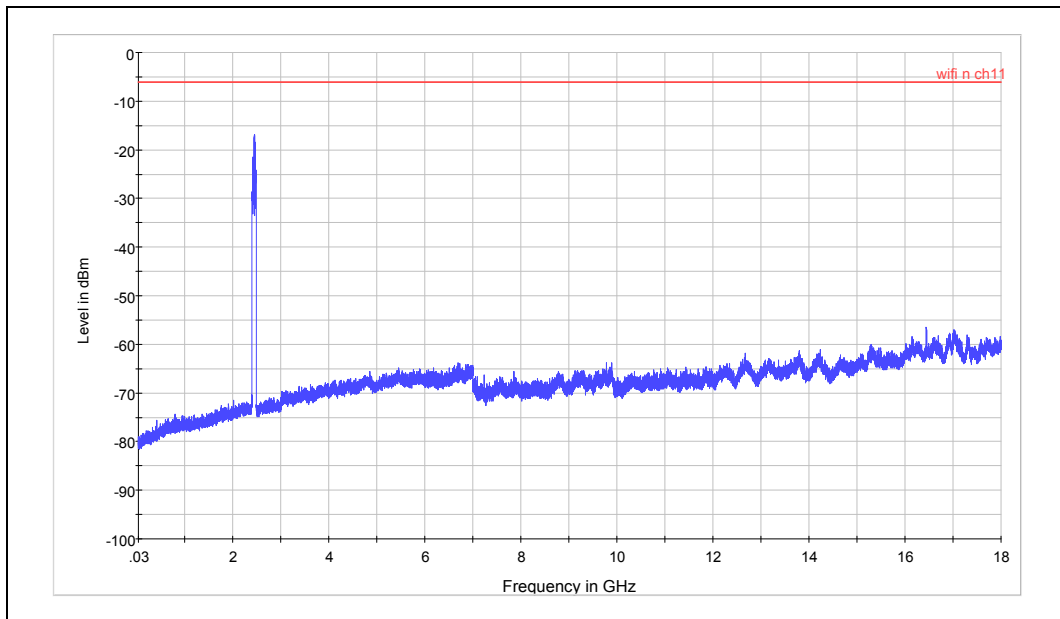
TA Technology (Shanghai) Co., Ltd.

Test Report

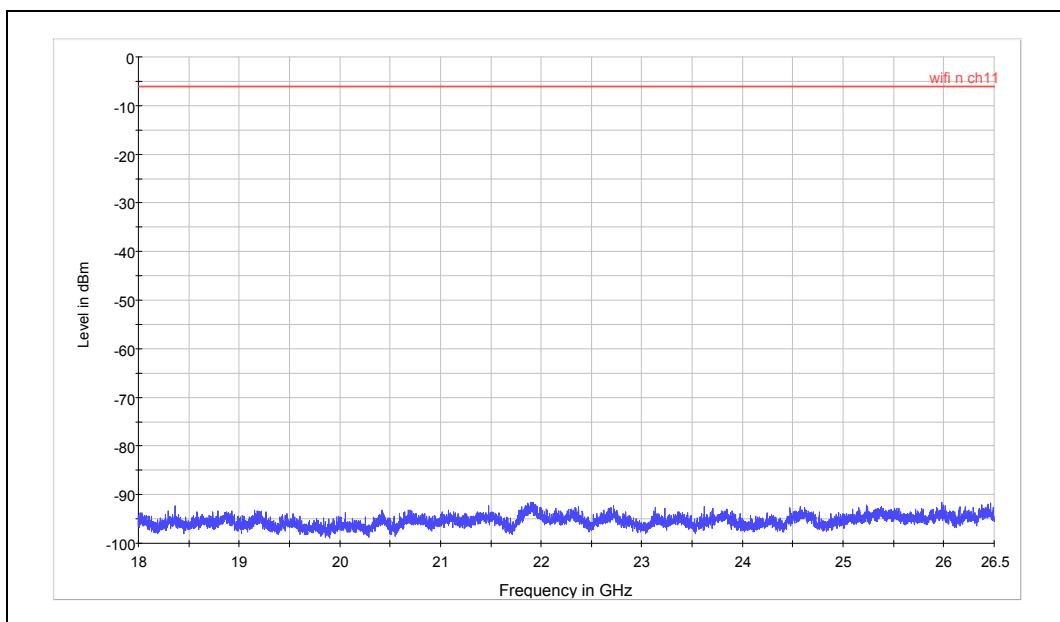
Report No.: RZA1201-0014RF01R5

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802.11n (HT40) CH9



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.

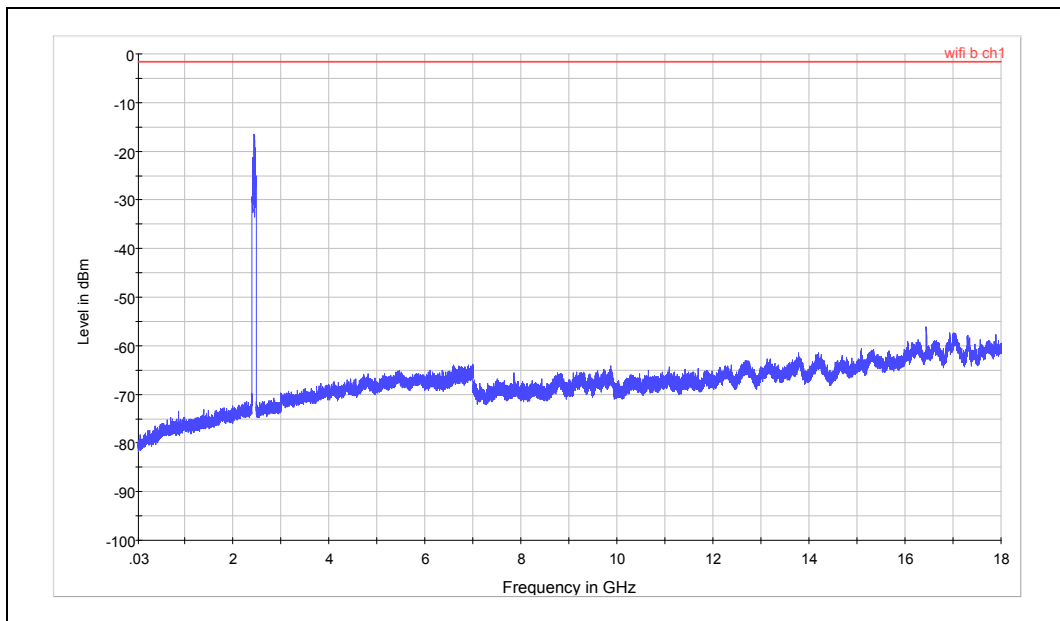
Test Report

Report No.: RZA1201-0014RF01R5

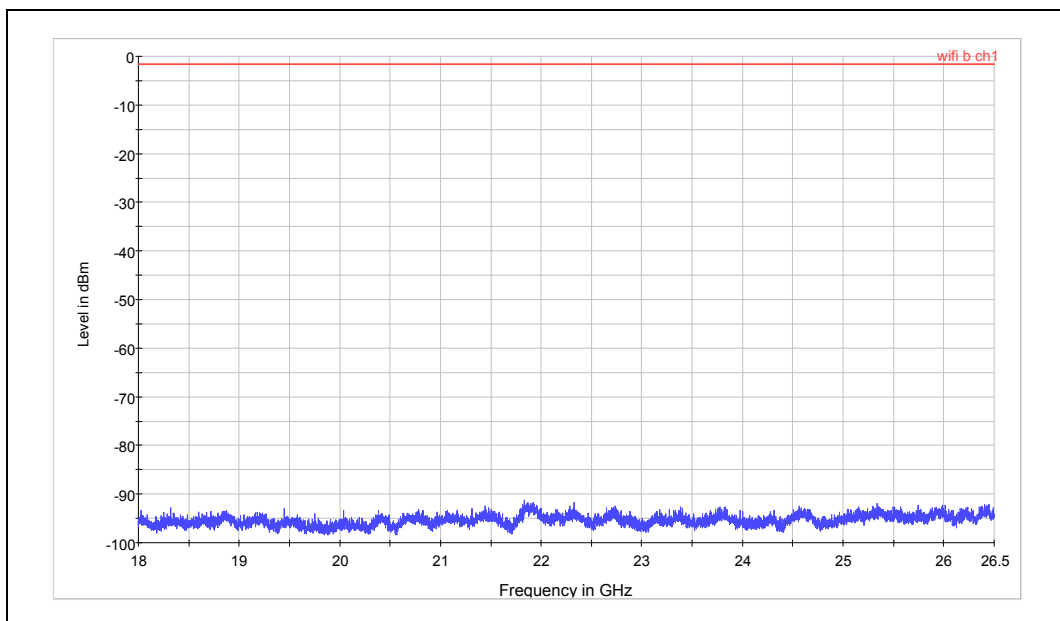
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CHAIN 1:

802.11b CH1



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

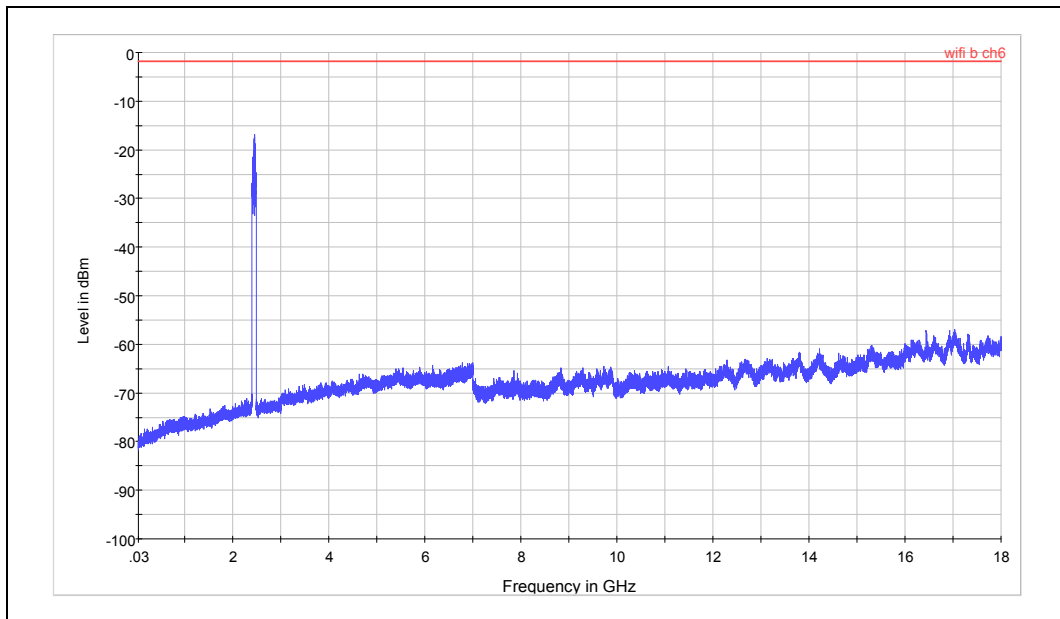
TA Technology (Shanghai) Co., Ltd.

Test Report

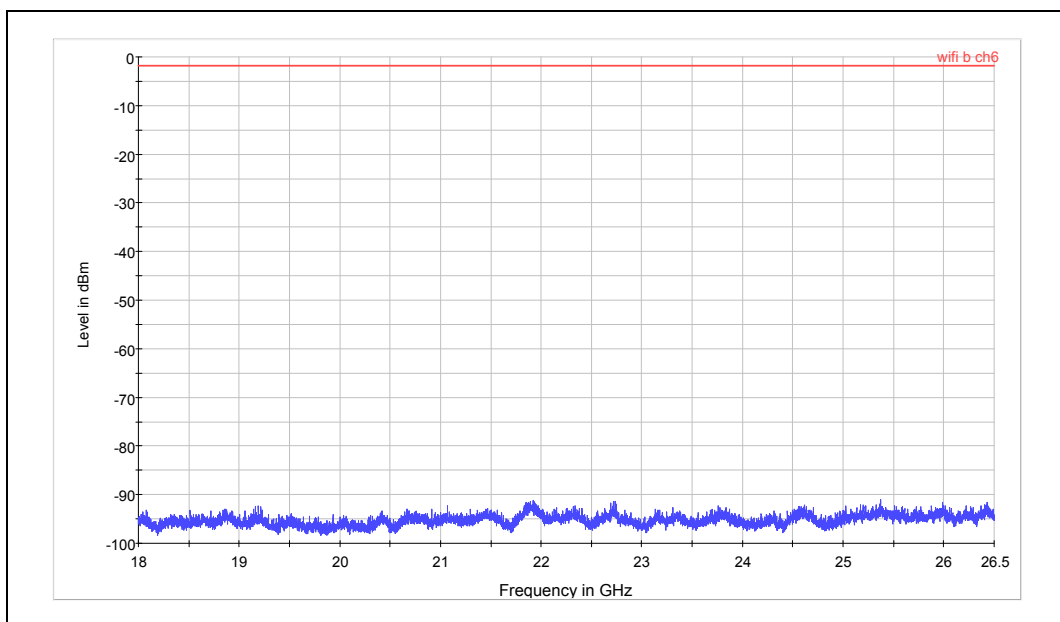
Report No.: RZA1201-0014RF01R5

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802.11b CH6



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

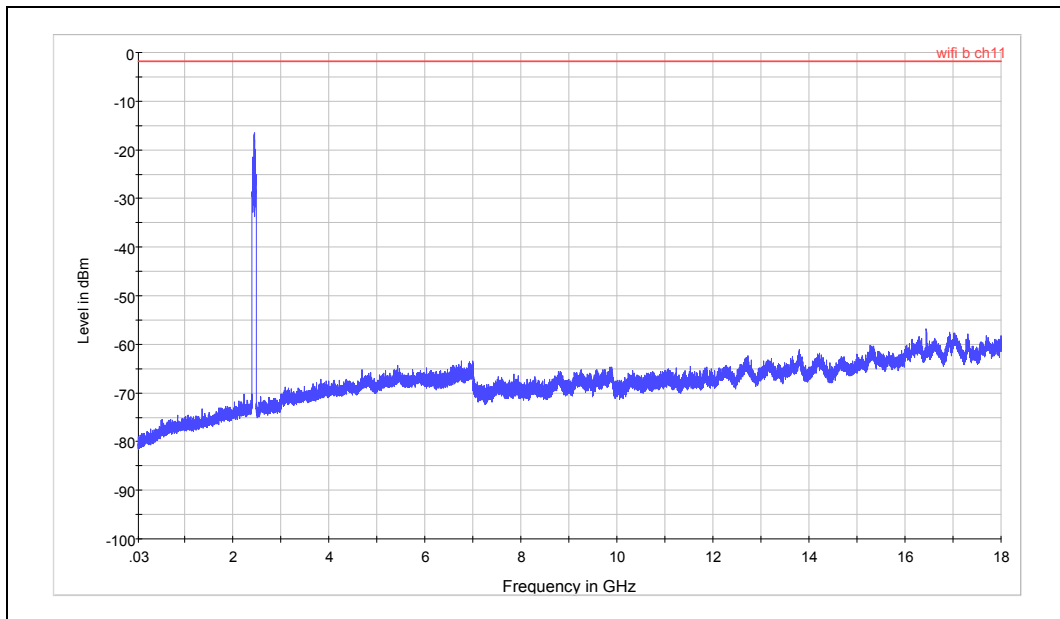
TA Technology (Shanghai) Co., Ltd.

Test Report

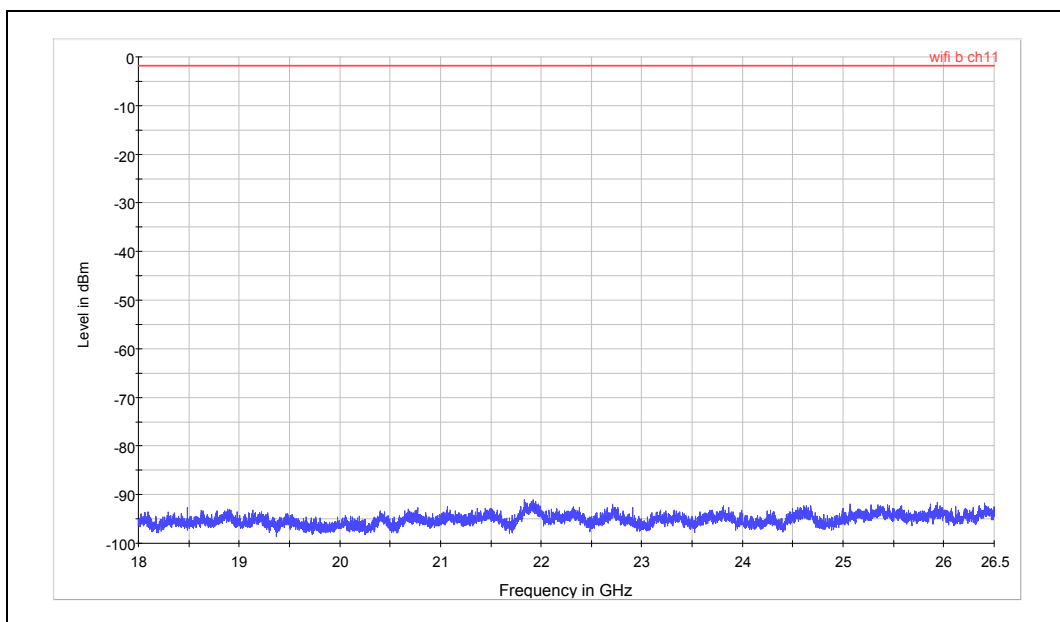
Report No.: RZA1201-0014RF01R5

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802.11b CH11



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

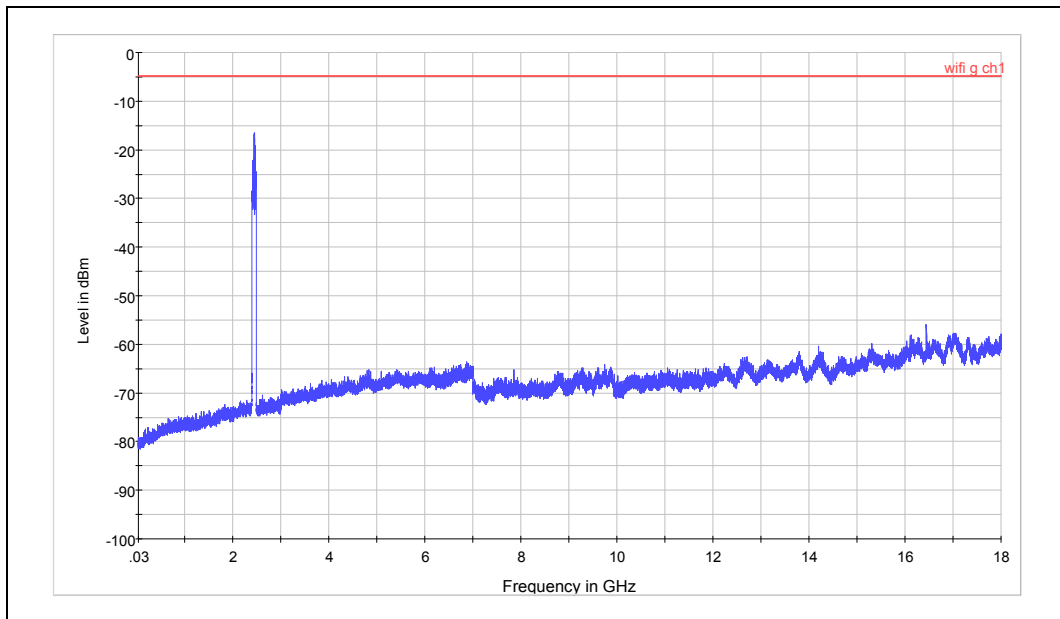
TA Technology (Shanghai) Co., Ltd.

Test Report

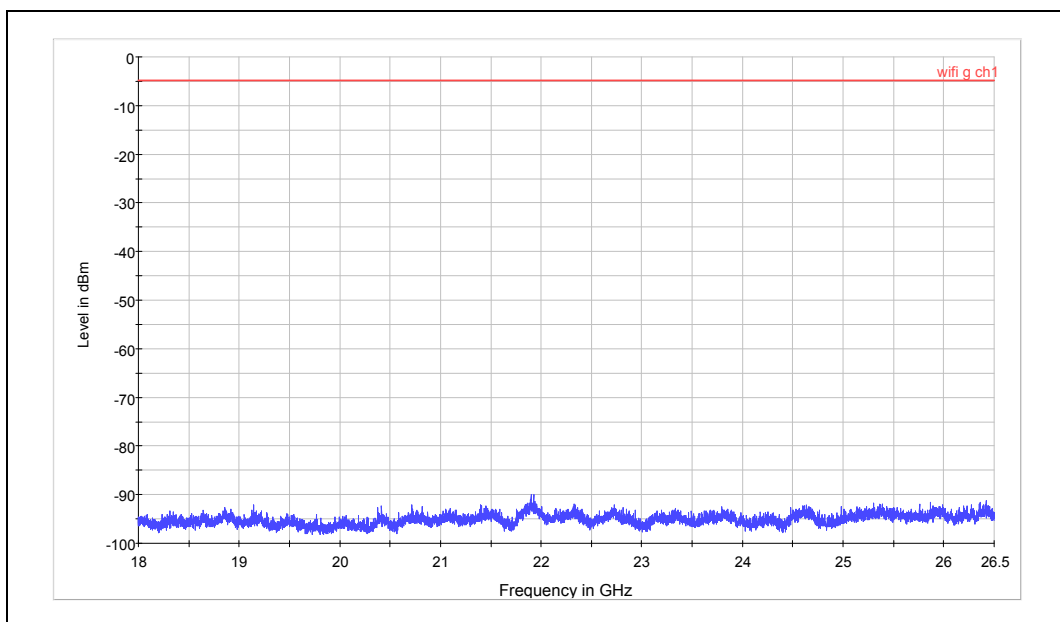
Report No.: RZA1201-0014RF01R5

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802.11g CH1



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

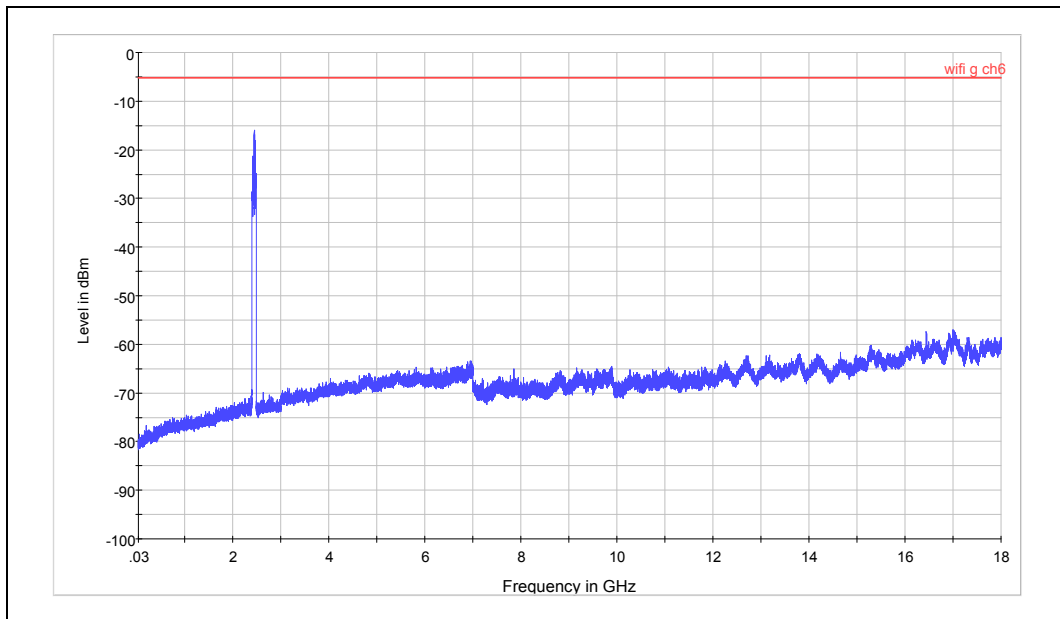
TA Technology (Shanghai) Co., Ltd.

Test Report

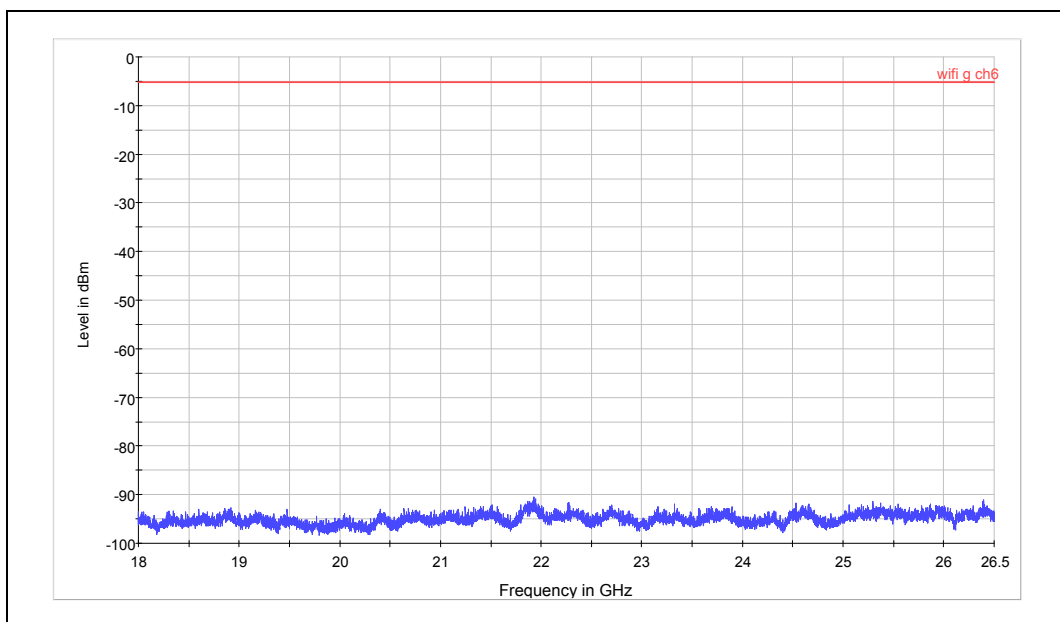
Report No.: RZA1201-0014RF01R5

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802.11g CH6



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

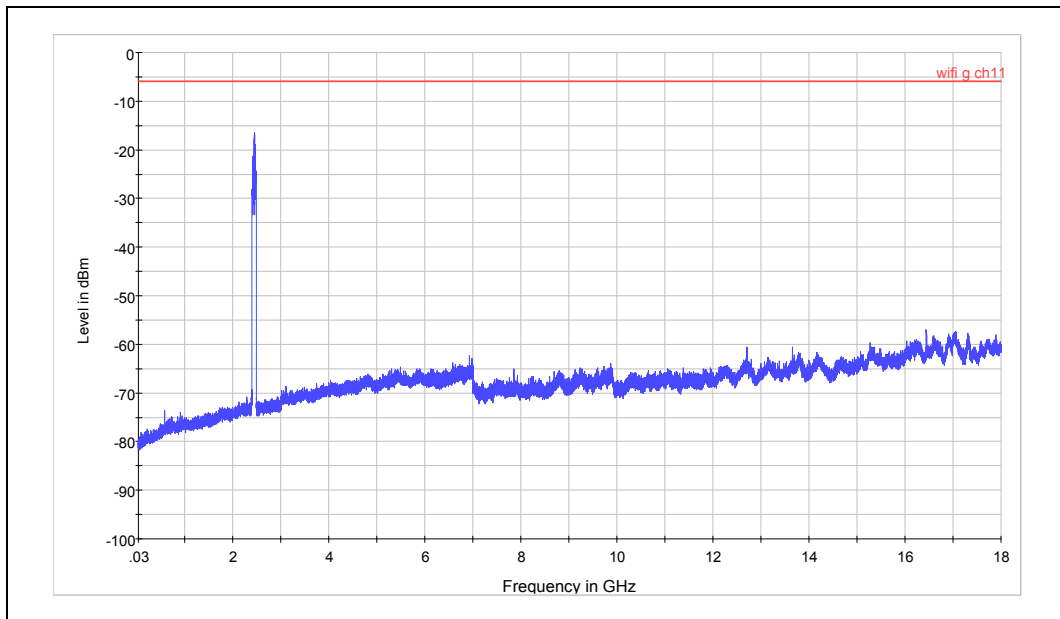
TA Technology (Shanghai) Co., Ltd.

Test Report

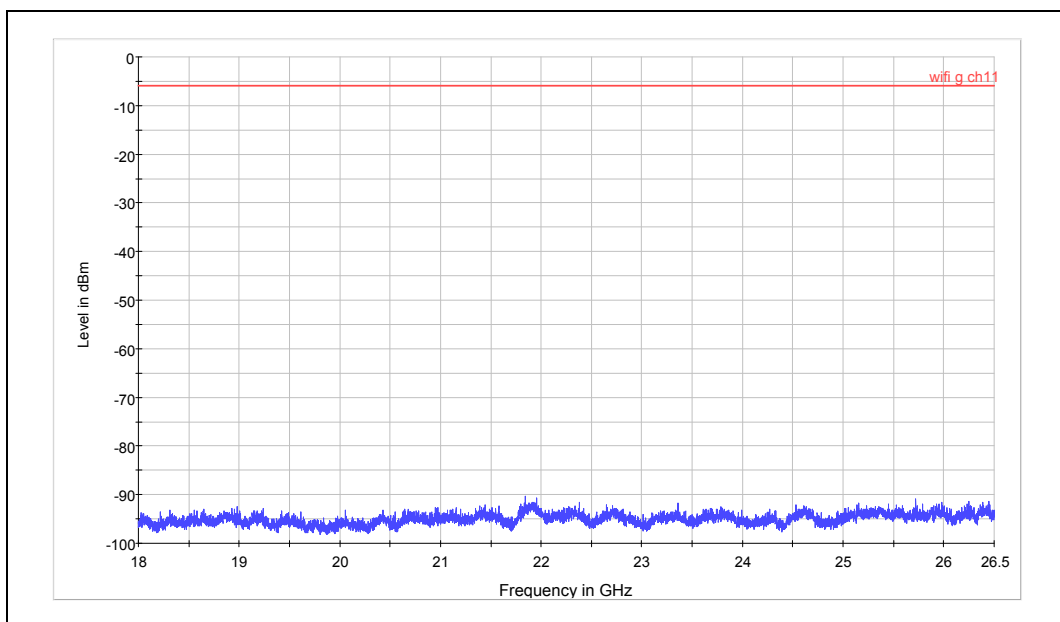
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802.11g CH11



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

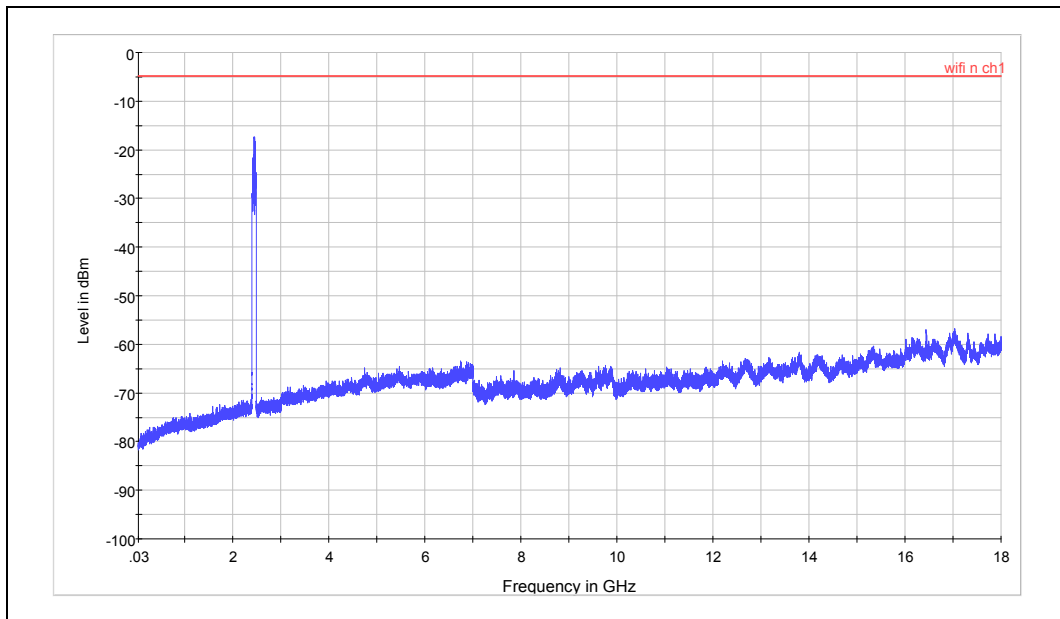
TA Technology (Shanghai) Co., Ltd.

Test Report

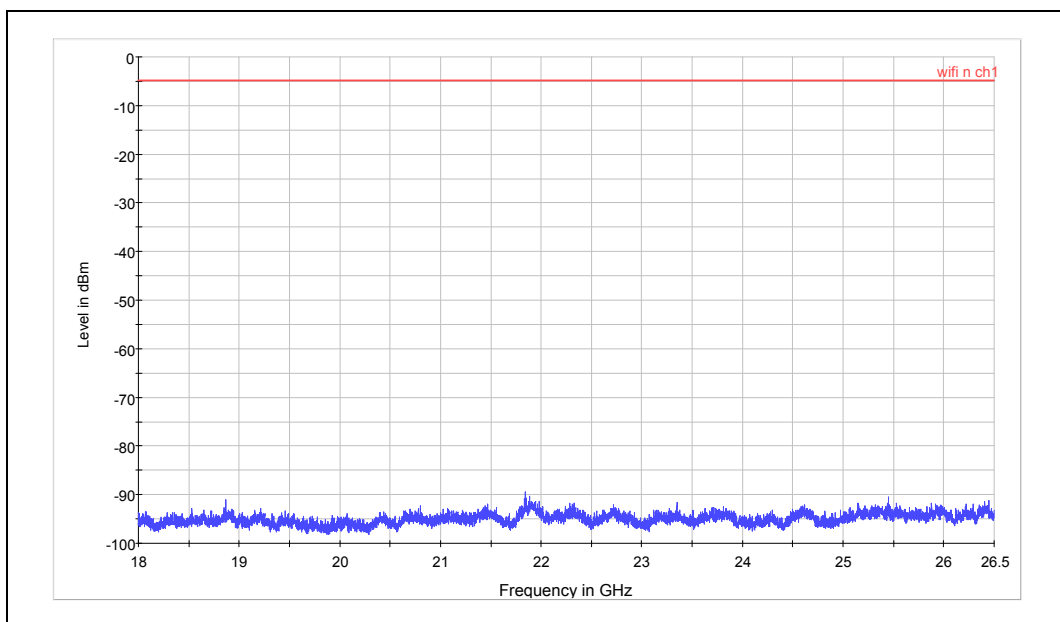
Report No.: RZA1201-0014RF01R5

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802.11n (HT20) CH1



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

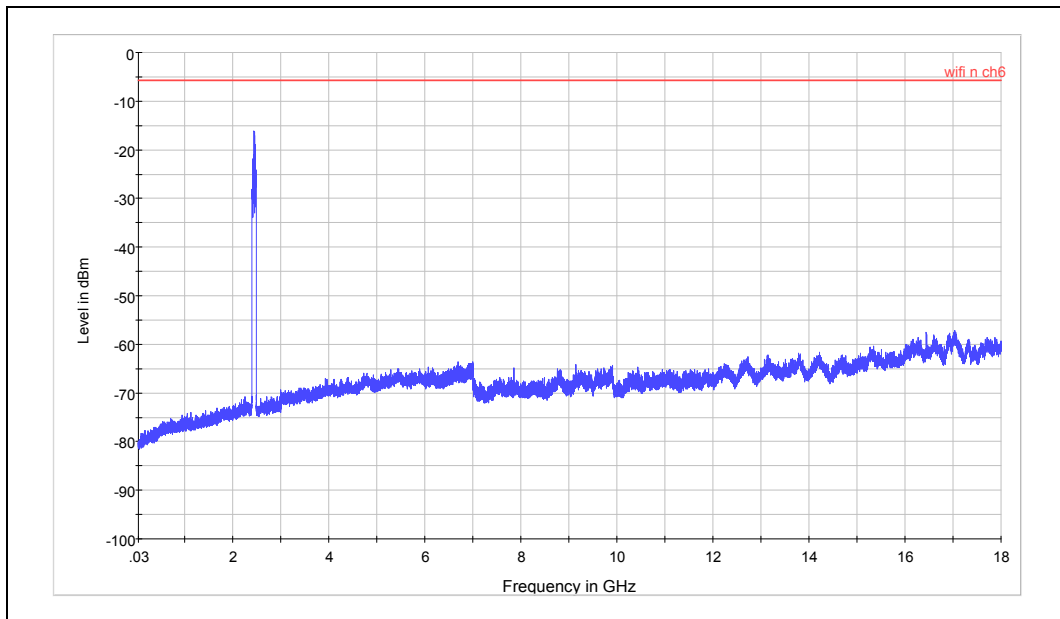
TA Technology (Shanghai) Co., Ltd.

Test Report

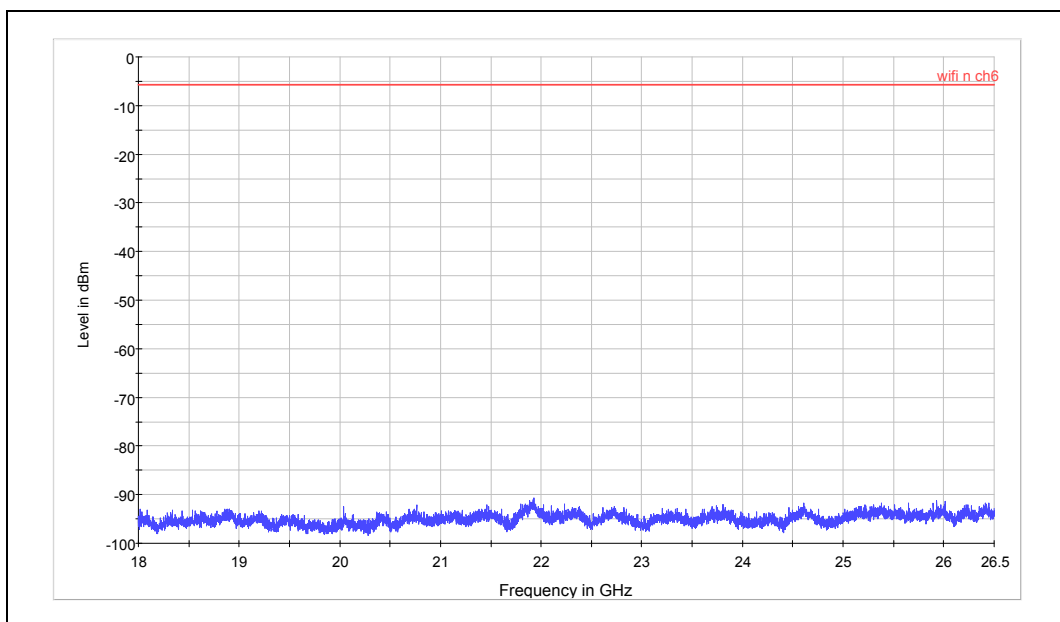
Report No.: RZA1201-0014RF01R5

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802.11n (HT20) CH6



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

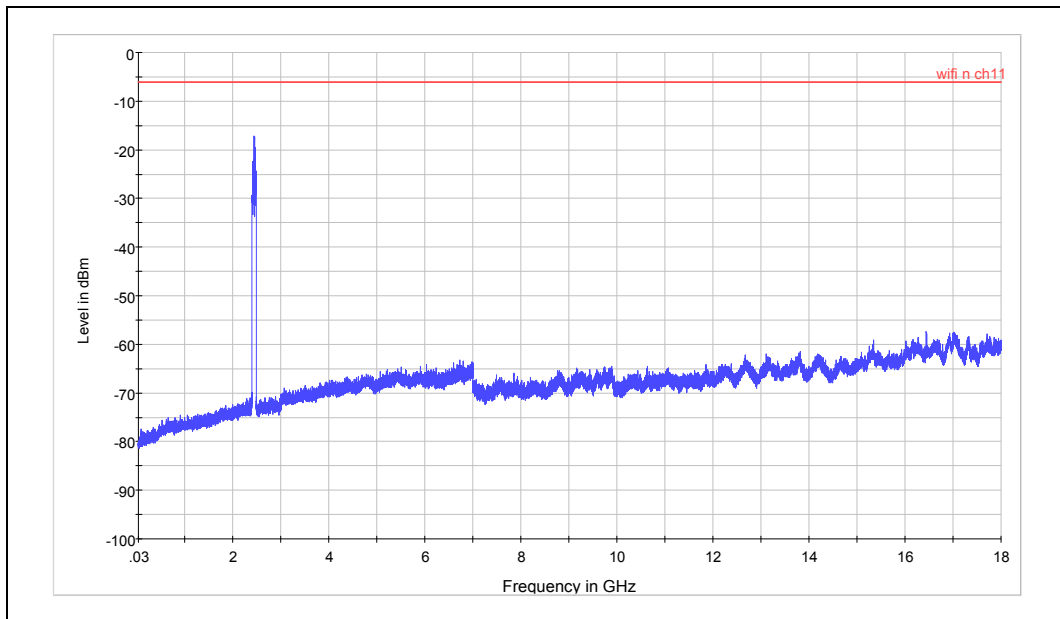
TA Technology (Shanghai) Co., Ltd.

Test Report

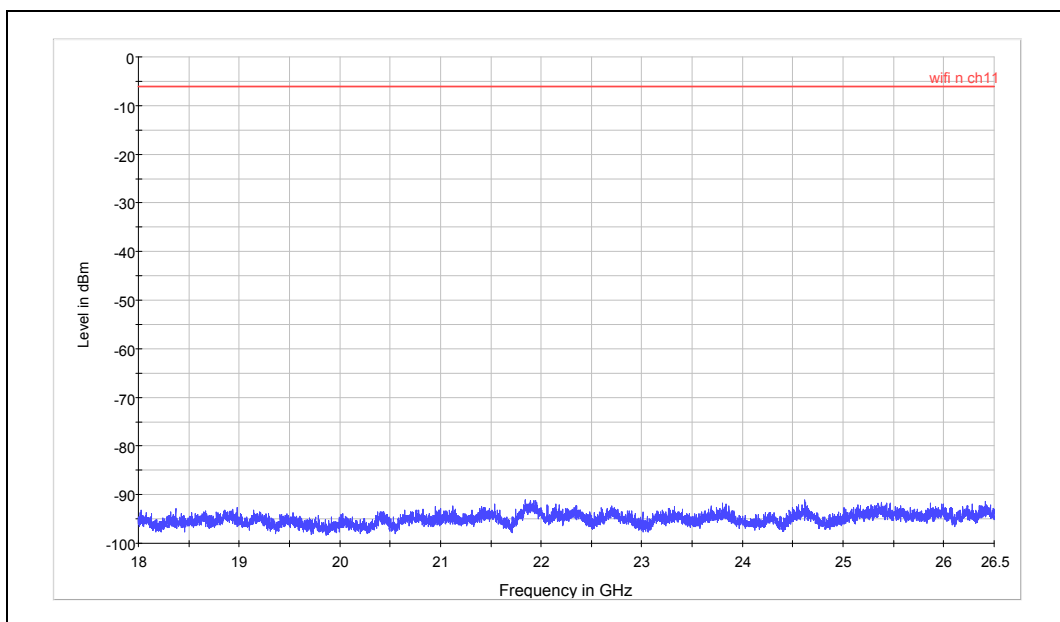
Report No.: RZA1201-0014RF01R5

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802.11n (HT20) CH11



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

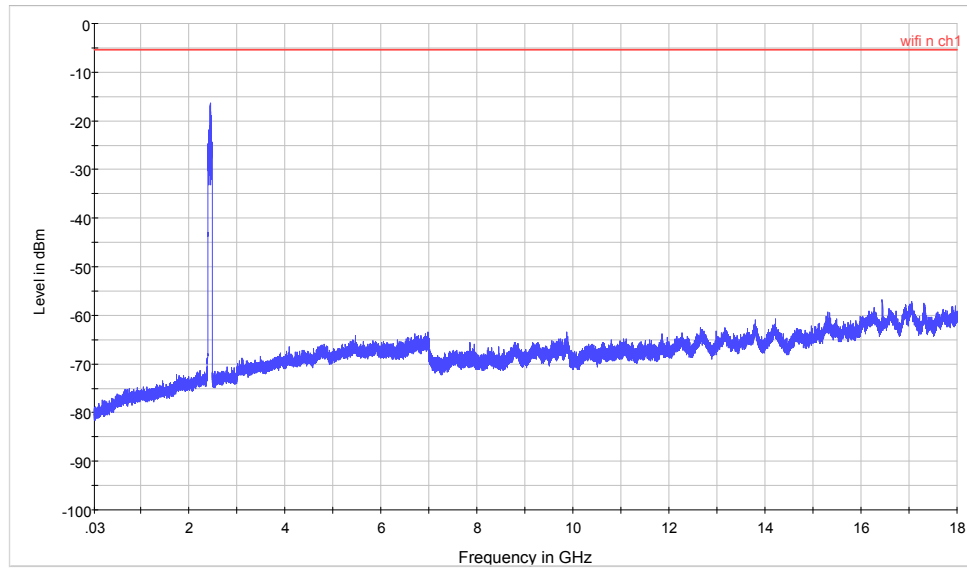
TA Technology (Shanghai) Co., Ltd.

Test Report

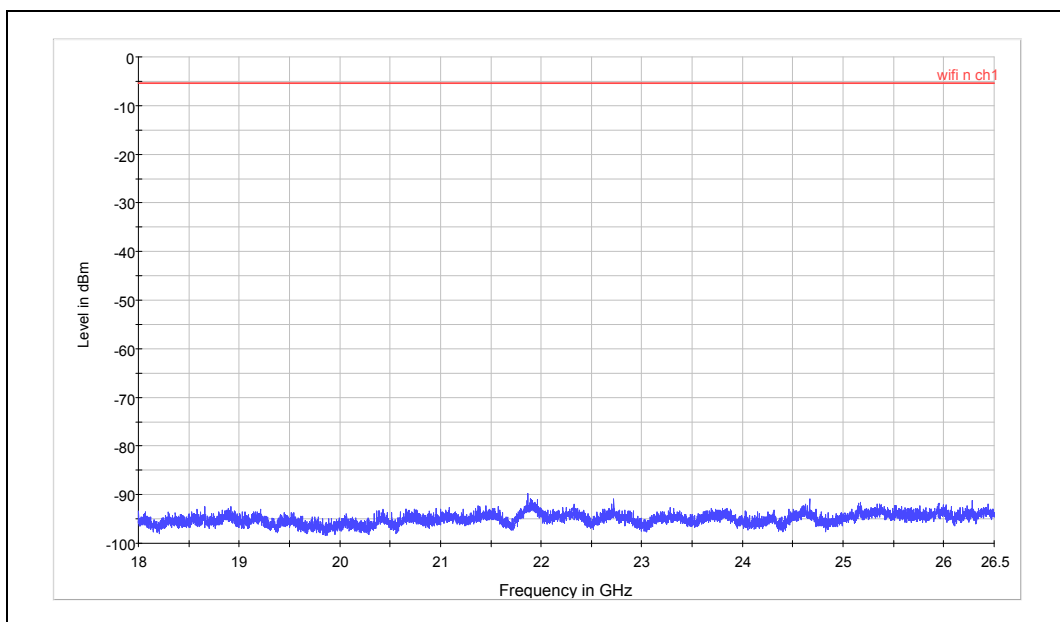
Report No.: RZA1201-0014RF01R5

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802.11n (HT40) CH3



Spurious RF conducted emissions from 30MHz to 18GHz



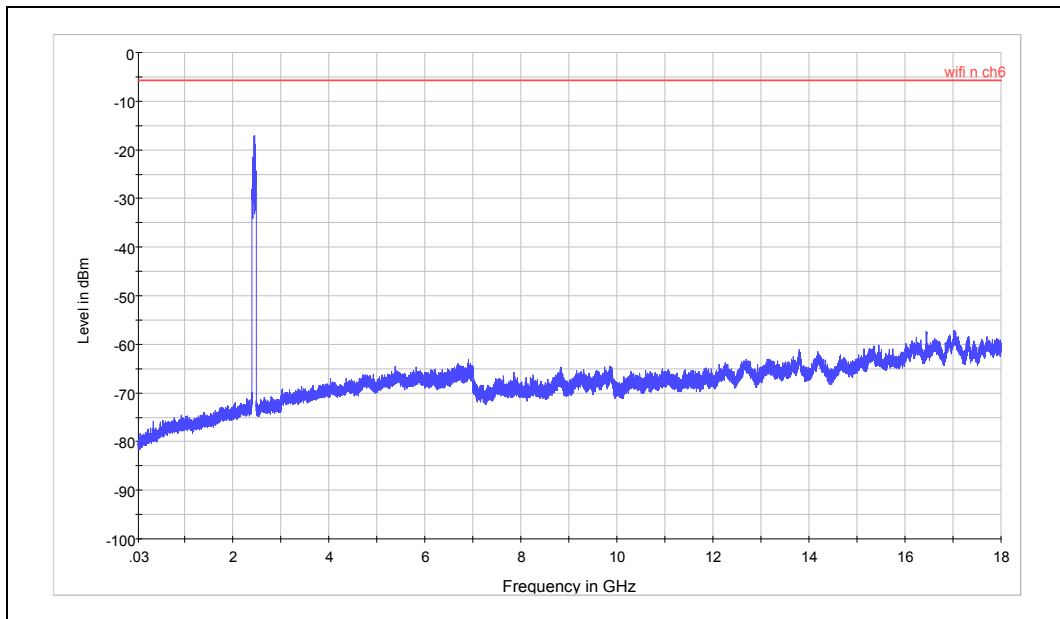
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.
Test Report

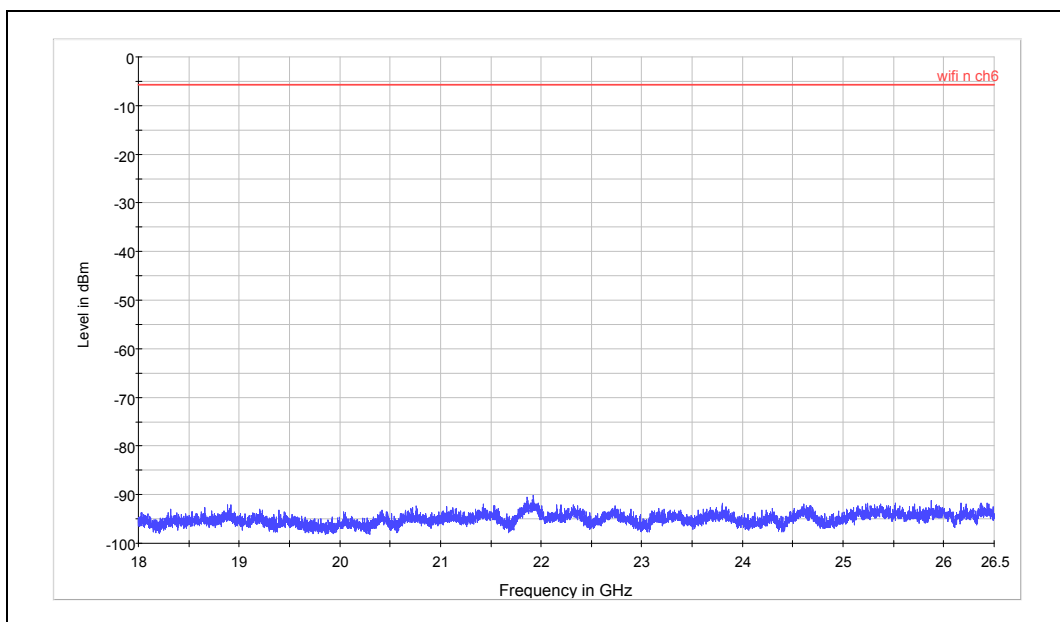
Report No.: RZA1201-0014RF01R5

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802.11n (HT40) CH6



Spurious RF conducted emissions from 30MHz to 18GHz



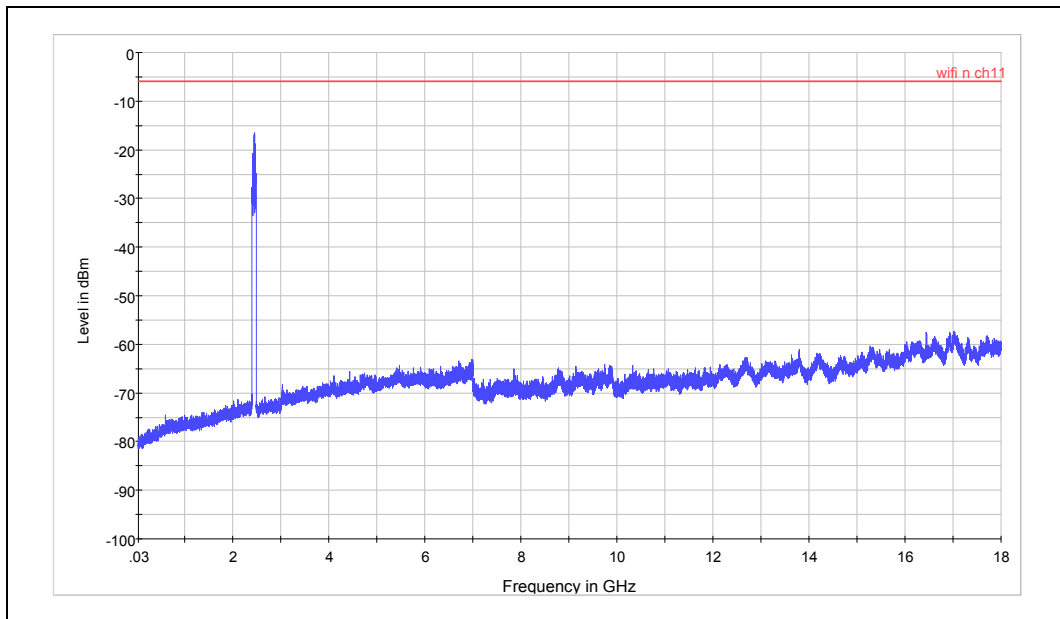
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.
Test Report

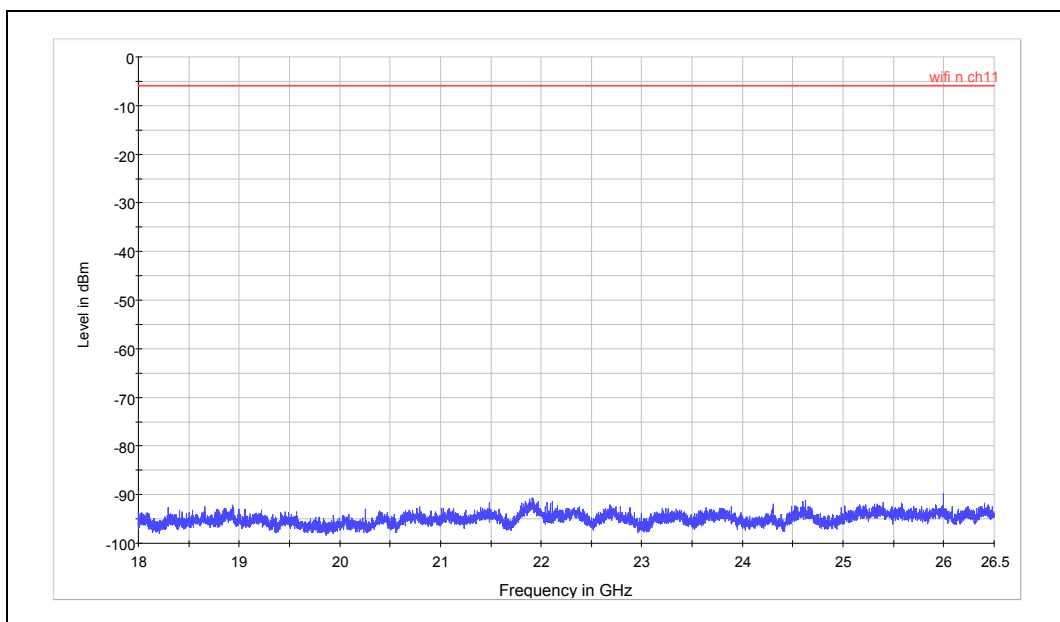
Report No.: RZA1201-0014RF01R5

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802.11n (HT40) CH9



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

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Test Report

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2.9. Radiates Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.4-2009. The Equipment under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration. Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

Below 1GHz (detector: Peak and Quasi-Peak)

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz(detector: Peak):

(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

The test is in transmitting mode.

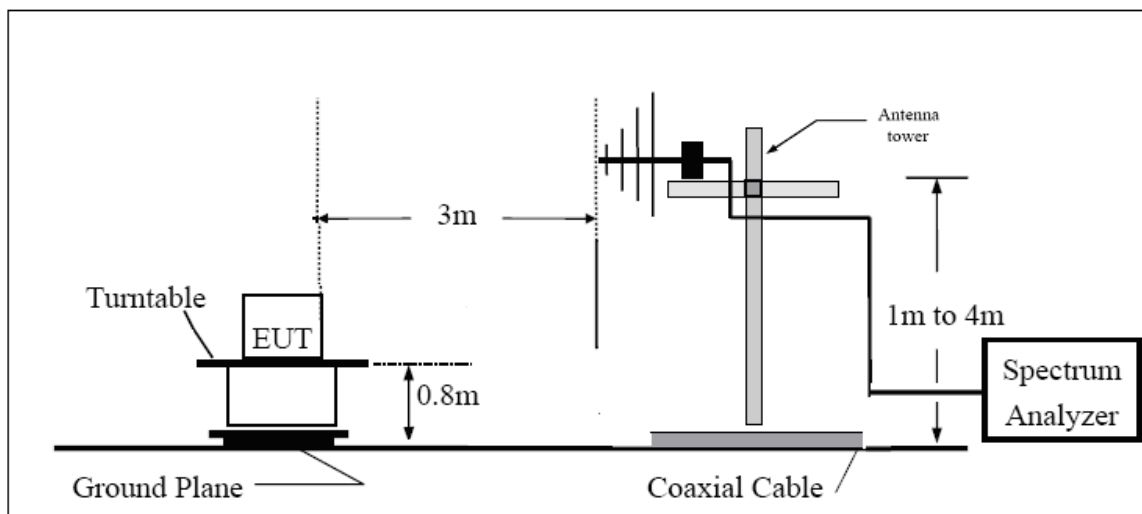
TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RZA1201-0014RF01R5

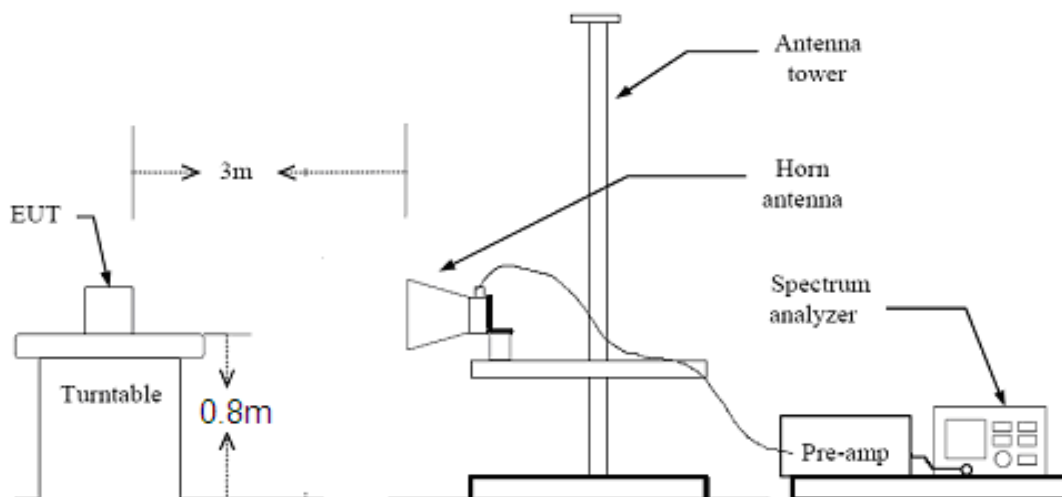
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Test setup

30MHz~~~ 1GHz



Above 1GHz



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Test Report

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Limits

Rule Part 15.247(d) specifies that “In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).”

Limit in restricted band

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/
1.705–30.0	30	/
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
9kHz-30MHz	3.55 dB
30MHz-200MHz	4.19 dB
200MHz-1GHz	3.63 dB
Above 1GHz	3.68 dB

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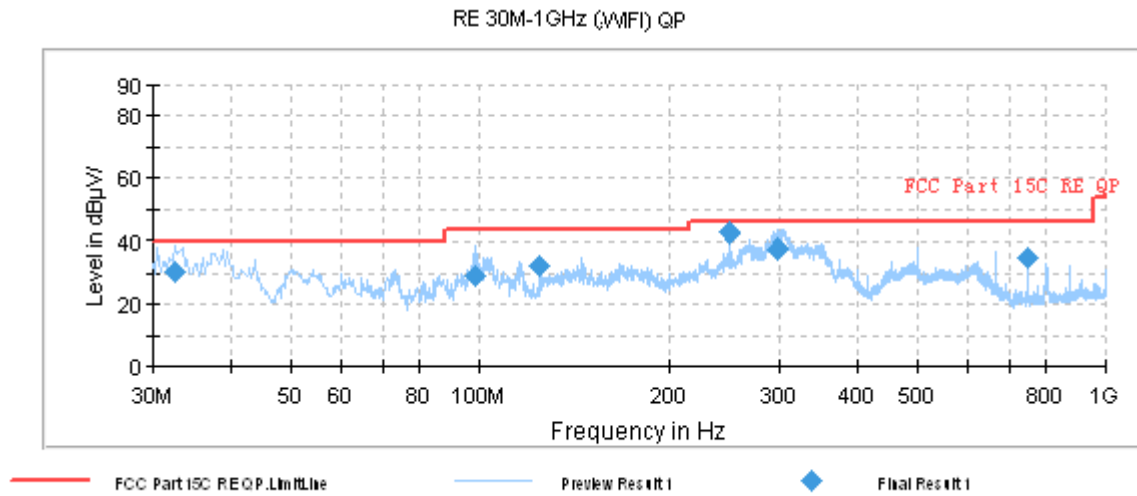
Test Report

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Test result

802.11b CH1



Radiates Emission from 30MHz to 1GHz

Note: plots show Polarization (V) and Polarization (H) maximum value that is synthesized by software.

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
32.585000	30.8	100.0	V	124.0	55.0	-24.2	9.2	40.0
98.385000	29.4	225.0	H	198.0	57.4	-28.0	14.1	43.5
124.980000	32.4	100.0	V	289.0	63.9	-31.5	11.1	43.5
249.987500	43.0	100.0	H	92.0	71.1	-28.1	3.0	46.0
296.997500	37.6	100.0	H	13.0	64.9	-27.3	8.4	46.0
750.022500	34.8	100.0	H	312.0	53.7	-18.9	11.2	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

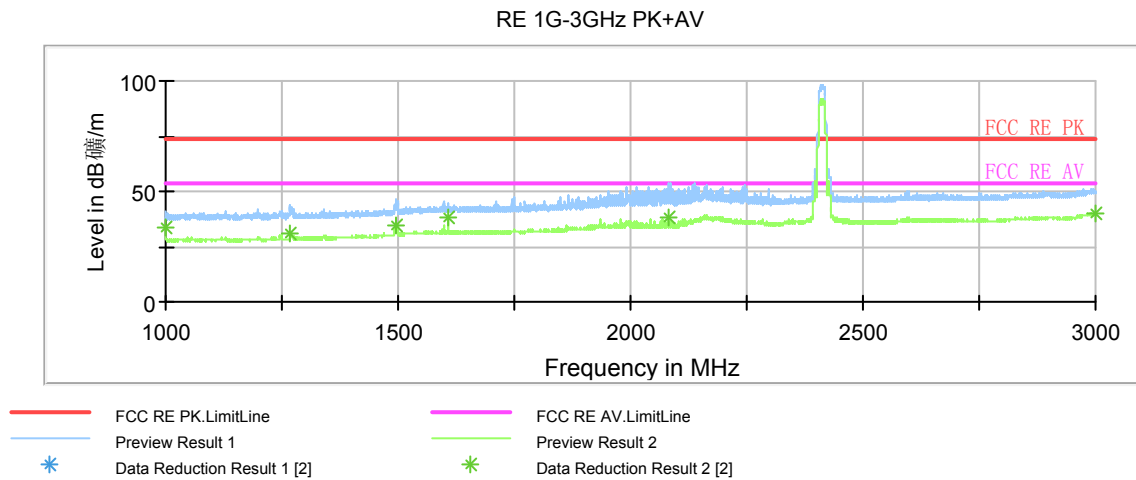
3. Margin = Limit – Quasi-Peak

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Test Report

Report No.: RZA1201-0014RF01R5

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Note: a font (Level in dB/m) in the test plot = (level in dBuV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	41.1	100.0	H	19.0	-12.6	32.9	74
1268.000000	43.7	200.0	V	184.0	-12.0	30.3	74
1494.000000	46.0	100.0	V	103.0	-10.2	28.0	74
1608.000000	44.6	100.0	V	254.0	-9.1	29.4	74
2079.750000	46.7	100.0	V	0.0	-6.0	27.3	74
3000.000000	49.5	100.0	H	168.0	-1.8	24.5	74

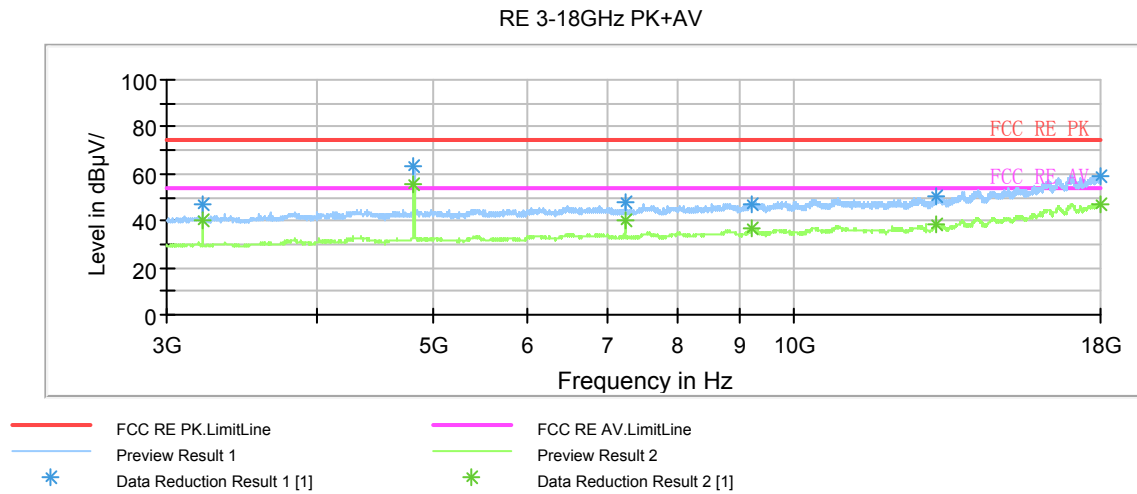
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	33.9	100.0	H	19.0	-12.6	20.1	54
1268.000000	31.2	200.0	V	184.0	-12.0	22.8	54
1494.000000	34.4	100.0	V	103.0	-10.2	19.6	54
1608.000000	38.2	100.0	V	254.0	-9.1	15.8	54
2079.750000	37.9	100.0	V	0.0	-6.0	16.1	54
3000.000000	40.0	100.0	H	168.0	-1.8	14.1	54

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Note: The signal beyond the limit is harmonic of carrier.
Radiates Emission from 3GHz to 18GHz

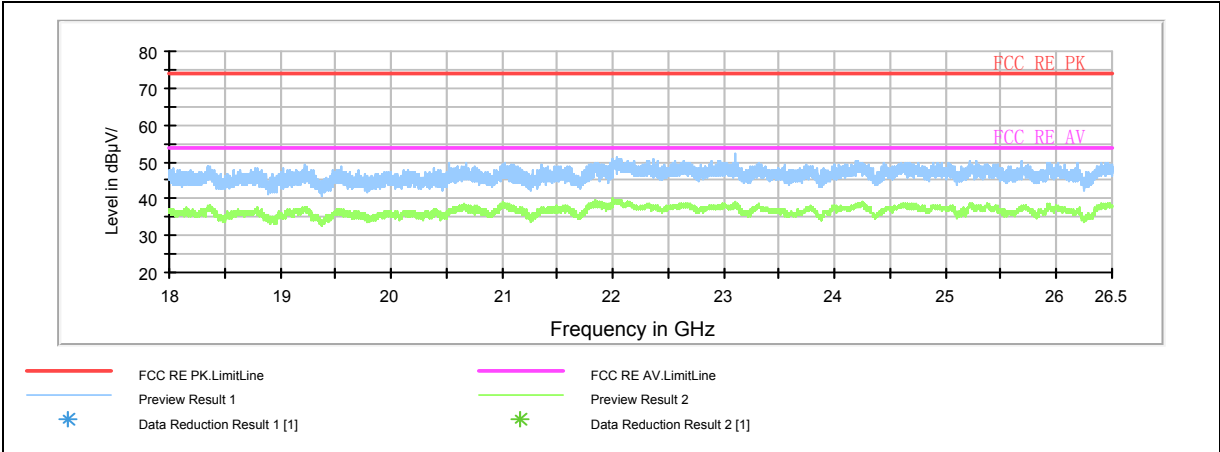
Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	47.2	99.0	V	0.0	-2.7	26.8	74
4822.500000	63.1	99.0	V	0.0	1.9	10.9	74
7237.500000	48.3	99.0	V	181.0	6.1	25.7	74
13151.250000	50.2	99.0	V	77.0	12.7	23.8	74
17973.750000	59.3	99.0	H	235.0	23.4	14.7	74
9230.625000	47.4	99.0	V	336.0	8.8	26.6	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	40.2	99.0	V	0.0	-2.7	13.8	54
7237.500000	40.3	99.0	V	181.0	6.1	13.7	54
9232.500000	36.3	99.0	H	0.0	8.8	17.7	54
13149.375000	38.2	99.0	V	254.0	12.7	15.8	54
17994.375000	47.3	99.0	V	0.0	23.5	6.7	54

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Radiates Emission from 18GHz to 26.5GHz

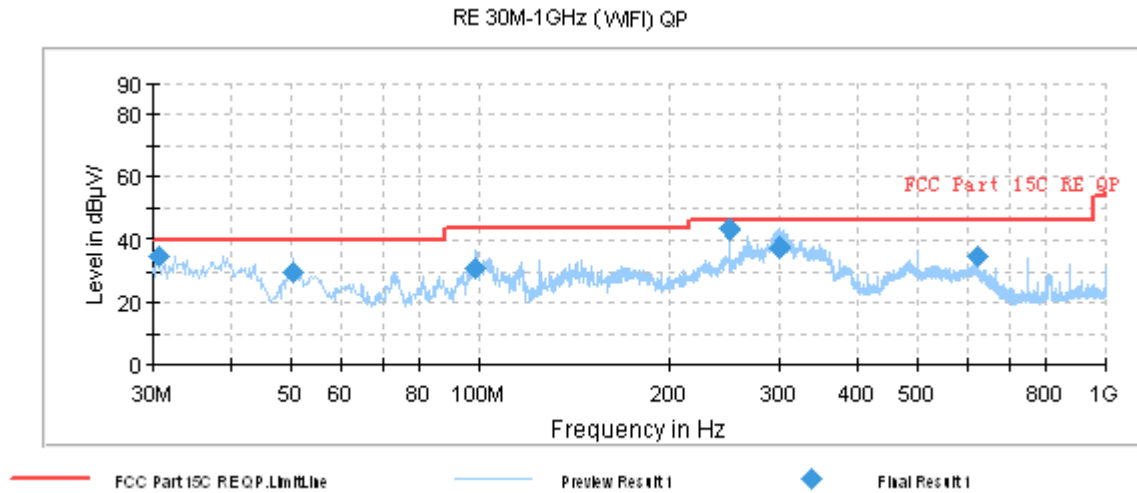
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Radiates Emission from 30MHz to 1GHz

Note: plots show Polarization (V) and Polarization (H) maximum value that is synthesized by software.

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
30.640000	35.0	125.0	V	84.0	58.9	-23.9	5.0	40.0
50.410000	29.9	100.0	V	121.0	55.5	-25.6	10.1	40.0
98.425000	31.1	220.0	H	34.0	59.1	-28.0	12.4	43.5
249.987500	43.1	100.0	H	90.0	71.2	-28.1	2.9	46.0
299.582500	37.7	100.0	H	0.0	64.8	-27.1	8.3	46.0
625.015000	35.1	100.0	V	23.0	55.6	-20.5	10.9	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

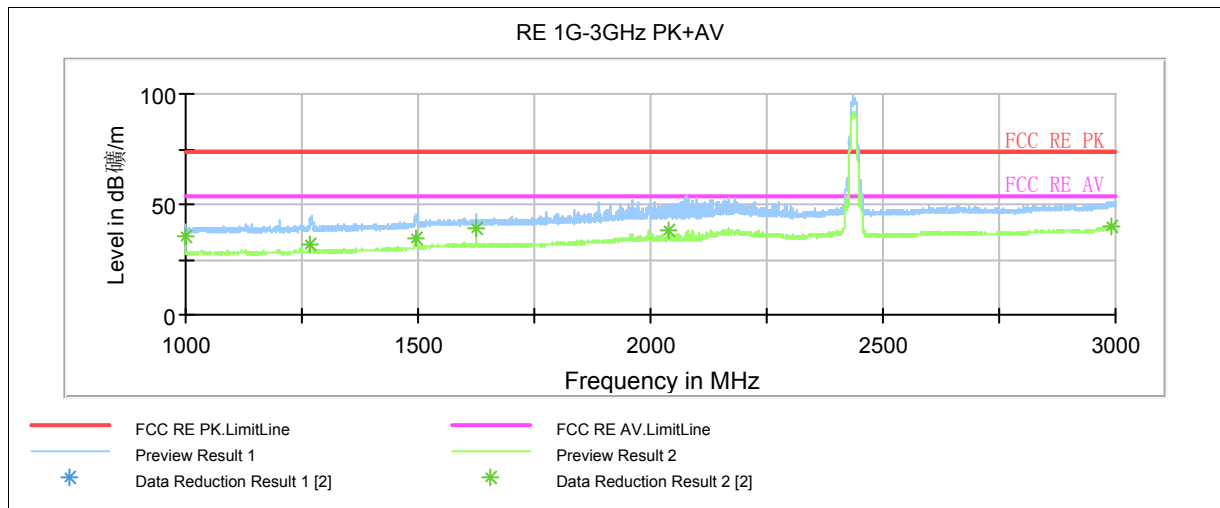
3. Margin = Limit – Quasi-Peak

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Note: a font (Level in dB 磁/m) in the test plot = (level in dBuV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	40.6	98.0	H	13.0	-12.6	33.4	74
1268.500000	43.1	200.0	V	190.0	-12.0	30.9	74
1494.000000	44.9	100.0	V	103.0	-10.2	29.1	74
1624.750000	45.2	200.0	V	99.0	-9.2	28.8	74
2038.750000	47.4	100.0	V	211.0	-6.3	26.6	74
2993.000000	49.6	98.0	H	13.0	-1.8	24.4	74

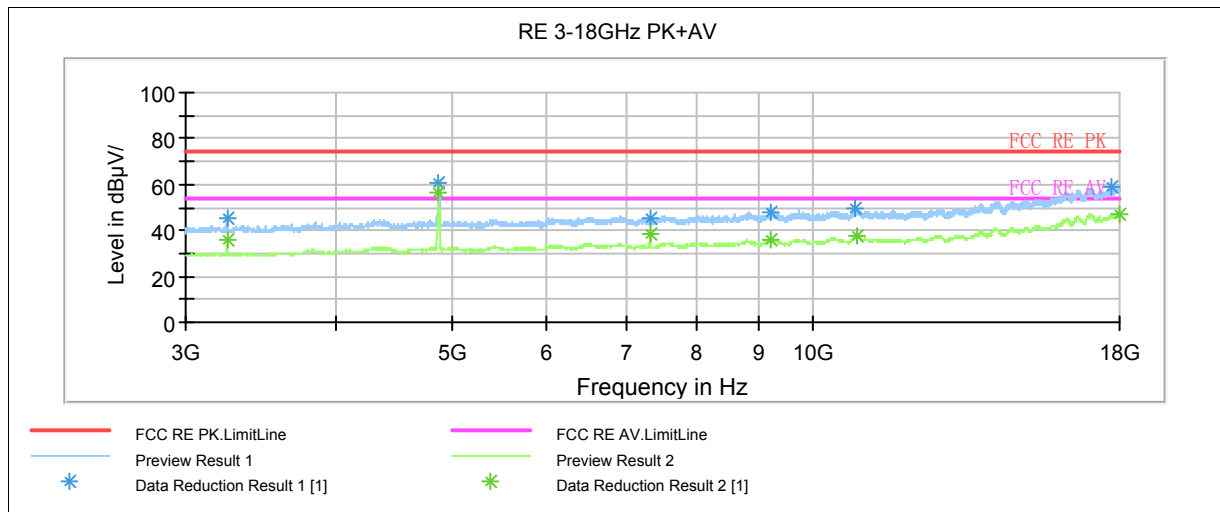
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	35.2	98.0	H	13.0	-12.6	18.8	54
1268.500000	31.7	200.0	V	190.0	-12.0	22.3	54
1494.000000	34.4	100.0	V	103.0	-10.2	19.6	54
1624.750000	39.4	200.0	V	99.0	-9.20	14.6	54
2038.750000	38.0	100.0	V	211.0	-6.30	16.0	54
2993.000000	40.0	98.0	H	13.0	-1.80	14.0	54

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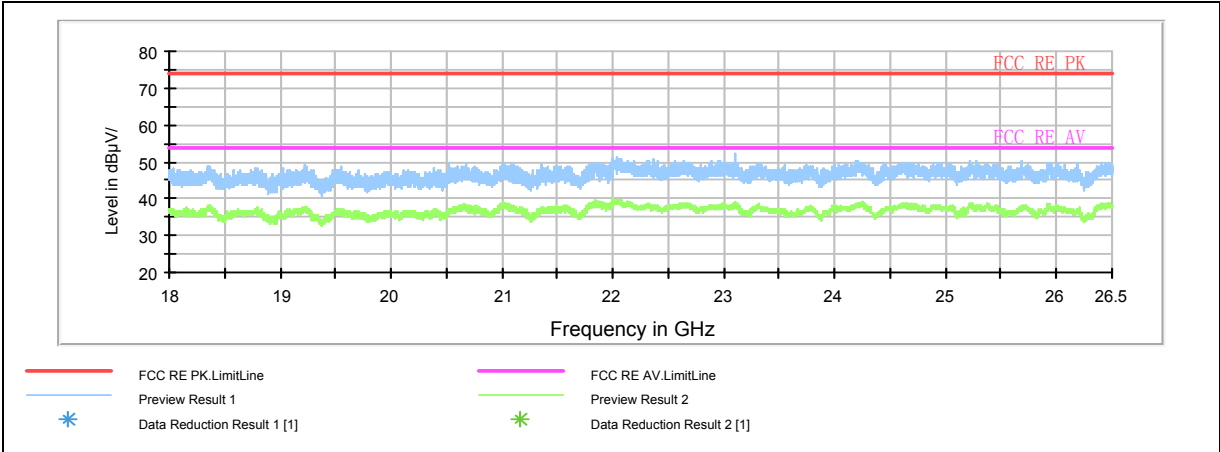


Note: The signal beyond the limit is harmonic of carrier.
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3247.500000	45.6	99.0	V	0.0	-2.3	28.4	74
4878.750000	60.7	99.0	V	272.0	1.9	13.3	74
10852.500000	49.5	99.0	V	0.0	11.7	24.5	74
17707.500000	58.7	99.0	H	158.0	22.6	15.3	74
7312.500000	45.5	99.0	V	24.0	5.7	28.5	74
9234.375000	48.1	99.0	V	0.0	8.8	25.9	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3247.500000	35.8	99.0	V	0.0	-2.3	18.2	54
7312.500000	38.6	99.0	V	24.0	5.7	15.4	54
9223.125000	35.9	99.0	H	252.0	8.9	18.1	54
17998.125000	47.2	99.0	V	156.0	23.5	6.8	54
10878.750000	37.7	99.0	V	0.0	11.5	16.3	54

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Radiates Emission from 18GHz to 26.5GHz

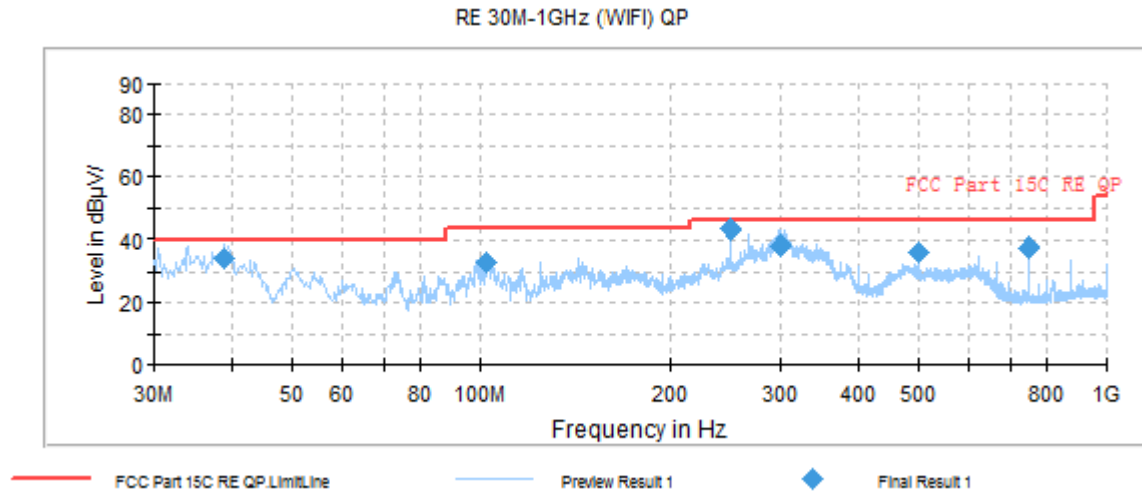
TA Technology (Shanghai) Co., Ltd.

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Radiates Emission from 30MHz to 1GHz

Note: plots show Polarization (V) and Polarization (H) maximum value that is synthesized by software.

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
38.972500	34.1	121.0	V	152.0	58.2	-24.1	5.9	40.0
101.860000	32.9	100.0	V	145.0	60.8	-27.9	10.6	43.5
249.987500	43.5	100.0	H	83.0	71.6	-28.1	2.5	46.0
299.702500	38.1	100.0	H	0.0	65.2	-27.1	7.9	46.0
500.005000	36.2	175.0	H	53.0	59.3	-23.1	9.8	46.0
750.022500	37.5	100.0	H	328.0	56.4	-18.9	8.5	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

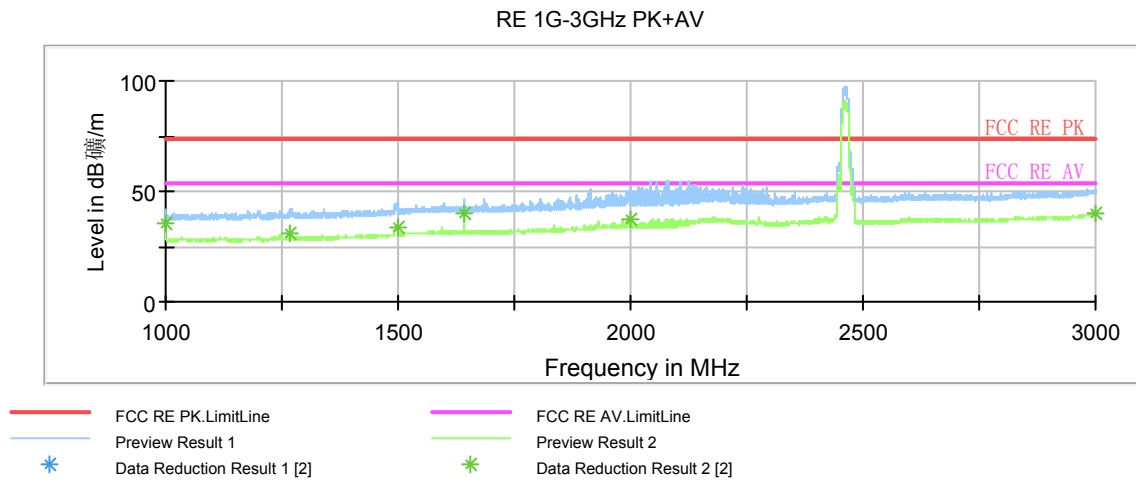
3. Margin = Limit – Quasi-Peak

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Note: a font (Level in dB 磁/m) in the test plot = (level in dBuV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	41.4	100.0	H	10.0	-12.6	32.6	74
1268.500000	41.7	200.0	V	194.0	-12.0	32.3	74
1498.000000	41.6	101.0	V	105.0	-10.1	32.4	74
1641.500000	44.2	101.0	V	105.0	-9.2	29.8	74
1999.500000	47.6	101.0	V	113.0	-6.4	26.4	74
2998.750000	48.9	200.0	H	0.0	-1.8	25.1	74

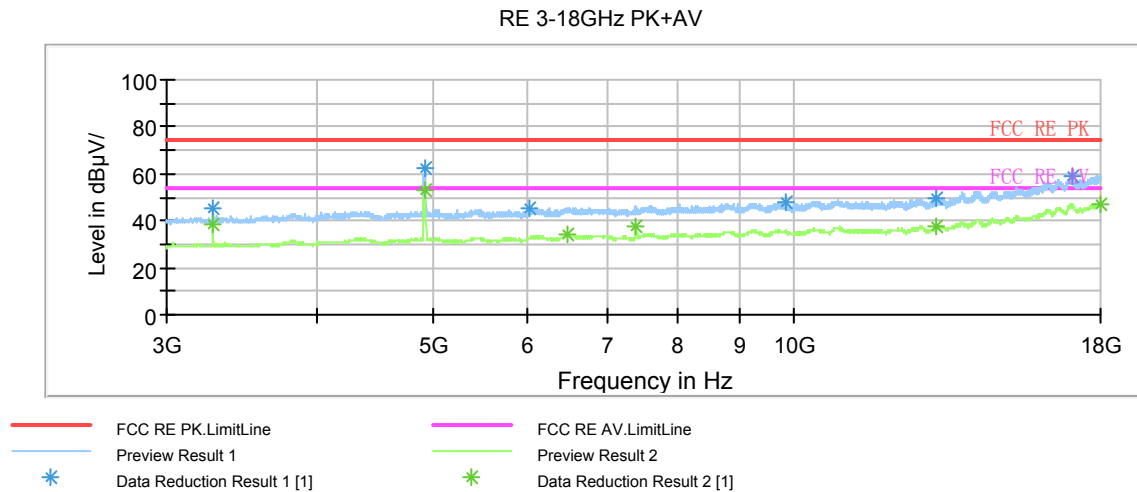
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	35.6	100.0	H	10.0	-12.6	18.4	54
1268.500000	30.7	200.0	V	194.0	-12.0	23.3	54
1498.000000	33.9	101.0	V	105.0	-10.1	20.1	54
1641.500000	39.6	101.0	V	105.0	-9.2	14.4	54
1999.500000	37.6	101.0	V	113.0	-6.4	16.4	54
2998.750000	40.0	200.0	H	0.0	-1.8	14.0	54

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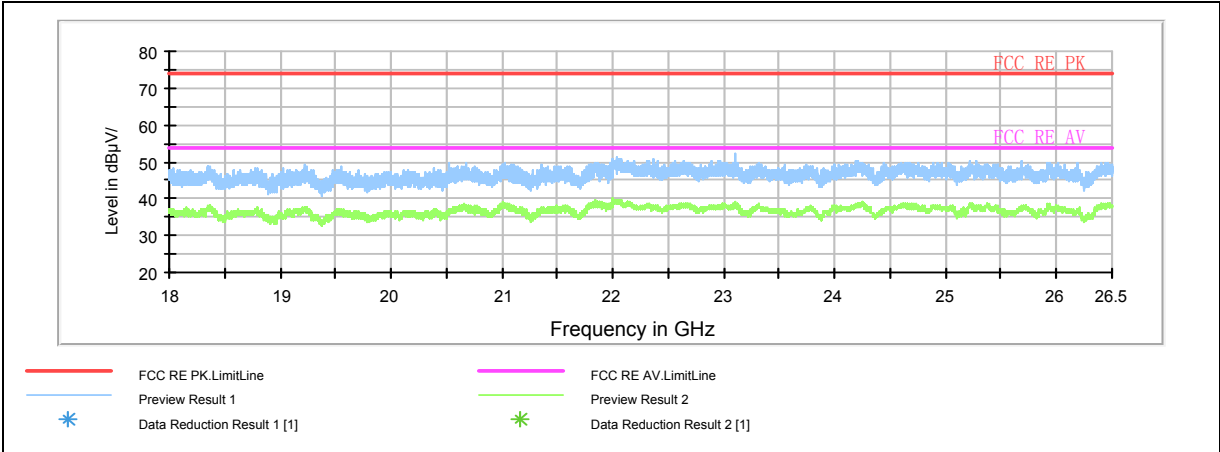


Note: The signal beyond the limit is harmonic of carrier.
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	45.6	38.1	99.0	V	0.0	28.4	74
4923.750000	62.2	52.7	99.0	V	0.0	11.8	74
6007.500000	45.7	32.3	99.0	V	183.0	28.3	74
9828.750000	47.5	35.1	99.0	H	74.0	26.5	74
13145.625000	49.2	37.0	99.0	V	0.0	24.8	74
17049.375000	59.0	46.5	99.0	H	189.0	15.0	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	45.6	38.1	99.0	V	0.0	8.4	54
6481.875000	44.2	33.8	99.0	H	0.0	9.8	54
7385.625000	45.2	37.8	99.0	V	25.0	8.8	54
13130.625000	47.8	37.9	99.0	V	310.0	6.2	54

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Radiates Emission from 18GHz to 26.5GHz

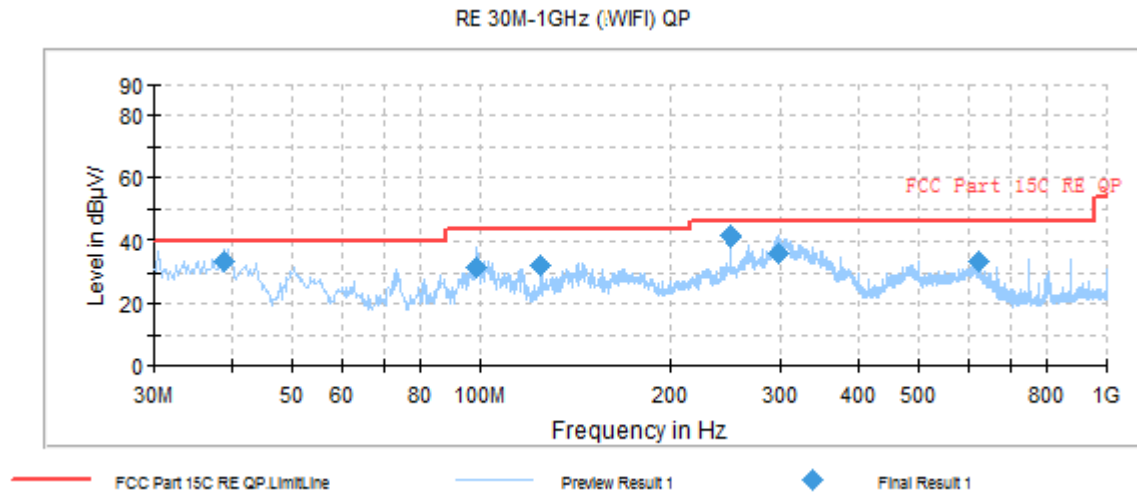
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Radiates Emission from 30MHz to 1GHz

Note: plots show Polarization (V) and Polarization (H) maximum value that is synthesized by software.

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
38.937500	33.7	125.0	V	107.0	57.8	-24.1	6.3	40.0
98.425000	31.9	225.0	H	195.0	59.9	-28.0	11.6	43.5
125.020000	32.4	100.0	V	280.0	63.9	-31.5	11.1	43.5
249.987500	41.4	125.0	H	86.0	69.5	-28.1	4.6	46.0
298.487500	36.2	120.0	H	5.0	63.4	-27.2	9.8	46.0
625.015000	33.4	100.0	V	352.0	53.9	-20.5	12.6	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

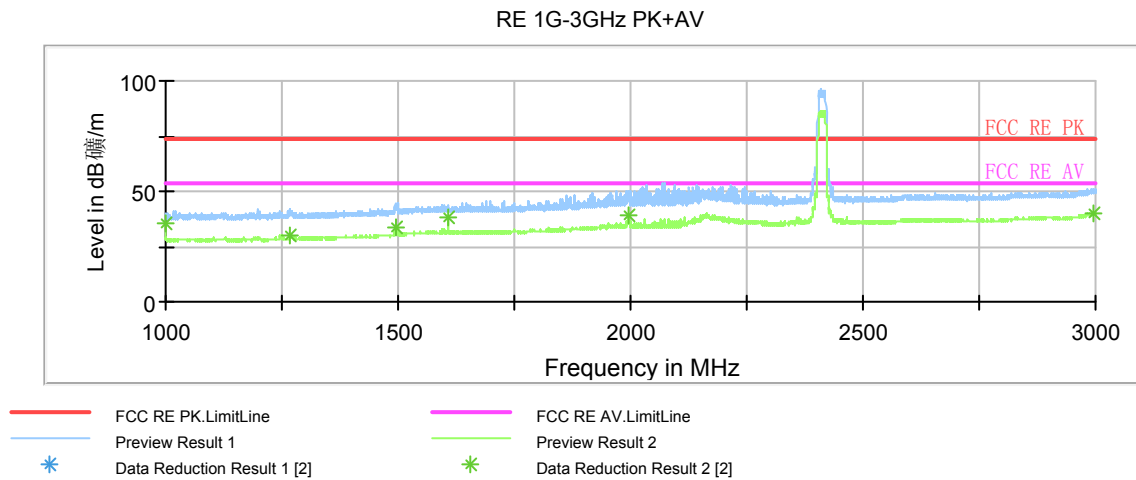
3. Margin = Limit – Quasi-Peak

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Note: a font (Level in dB 磁/m) in the test plot = (level in dBuV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	40.2	100.0	H	14.0	-12.6	33.8	74
1266.750000	41.6	200.0	V	173.0	-12.0	32.4	74
1495.000000	43.7	100.0	V	105.0	-10.1	30.3	74
1608.000000	43.2	100.0	V	252.0	-9.1	30.8	74
1996.250000	50.0	100.0	V	97.0	-6.4	24.0	74
2996.750000	48.7	100.0	H	58.0	-1.8	25.3	74

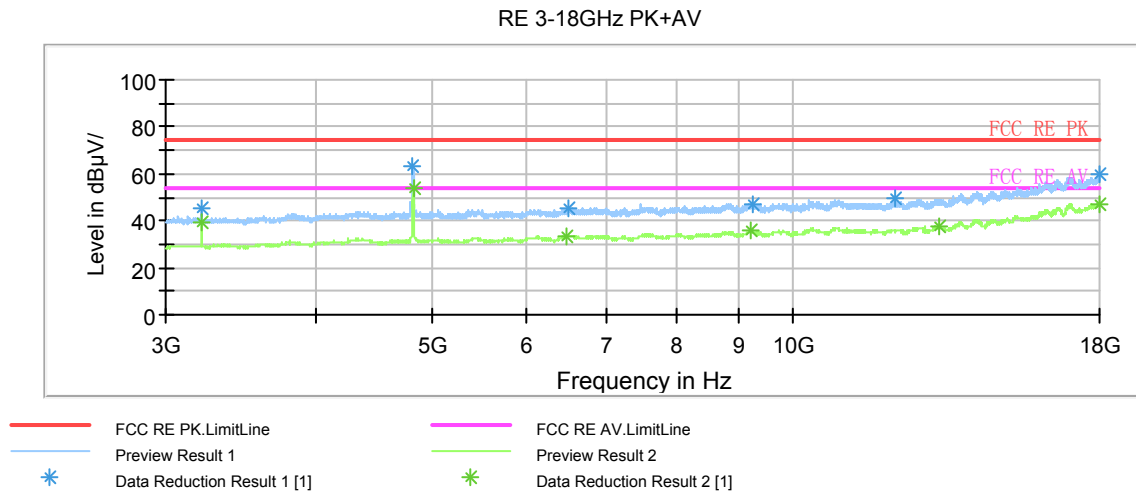
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	35.2	100.0	H	14.0	-12.6	18.8	54
1266.750000	30.4	200.0	V	173.0	-12.0	23.6	54
1495.000000	33.7	100.0	V	105.0	-10.1	20.3	54
1608.000000	38.2	100.0	V	252.0	-9.1	15.8	54
1996.250000	38.7	100.0	V	97.0	-6.4	15.3	54
2996.750000	39.9	100.0	H	58.0	-1.8	14.1	54

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Note: The signal beyond the limit is harmonic of carrier.
Radiates Emission from 3GHz to 18GHz

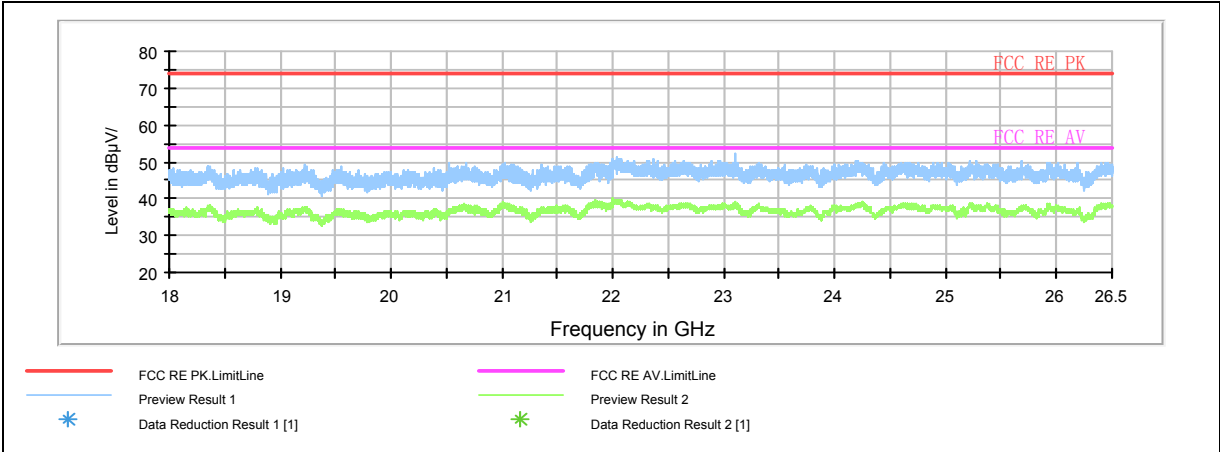
Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	45.7	39.1	100.0	V	0.0	28.3	74
4815.000000	62.9	46.1	100.0	V	0.0	11.1	74
6489.375000	45.6	33.3	100.0	V	237.0	28.4	74
9264.375000	47.2	35.0	100.0	V	0.0	26.8	74
12178.125000	49.4	35.6	100.0	V	0.0	24.6	74
17998.125000	59.7	47.1	100.0	V	343.0	14.3	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	45.7	39.1	100.0	V	0.0	8.3	54
6465.000000	43.7	33.6	100.0	H	63.0	10.3	54
9226.875000	45.9	35.7	100.0	V	214.0	8.1	54
13237.500000	47.2	37.4	100.0	V	0.0	6.8	54

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Radiates Emission from 18GHz to 26.5GHz

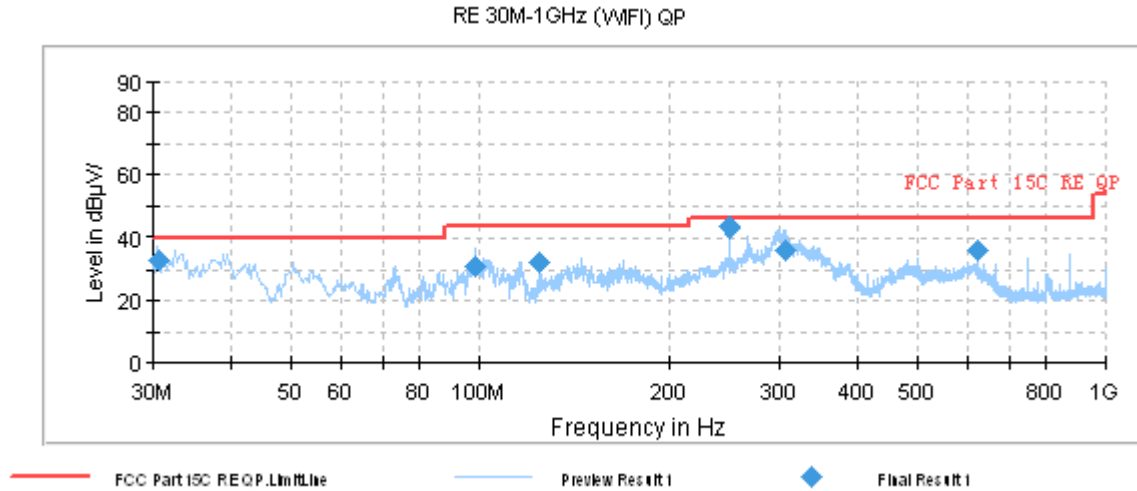
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Radiates Emission from 30MHz to 1GHz

Note: plots show Polarization (V) and Polarization (H) maximum value that is synthesized by software.

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
30.600000	33.1	100.0	V	135.0	57	-23.9	6.9	40.0
98.465000	30.9	225.0	H	235.0	58.9	-28.0	12.6	43.5
125.020000	32.4	100.0	V	278.0	63.9	-31.5	11.1	43.5
249.987500	43.1	100.0	H	84.0	71.2	-28.1	2.9	46.0
306.292500	36.5	125.0	H	0.0	63.3	-26.8	9.5	46.0
625.015000	36.4	100.0	V	23.0	56.9	-20.5	9.6	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

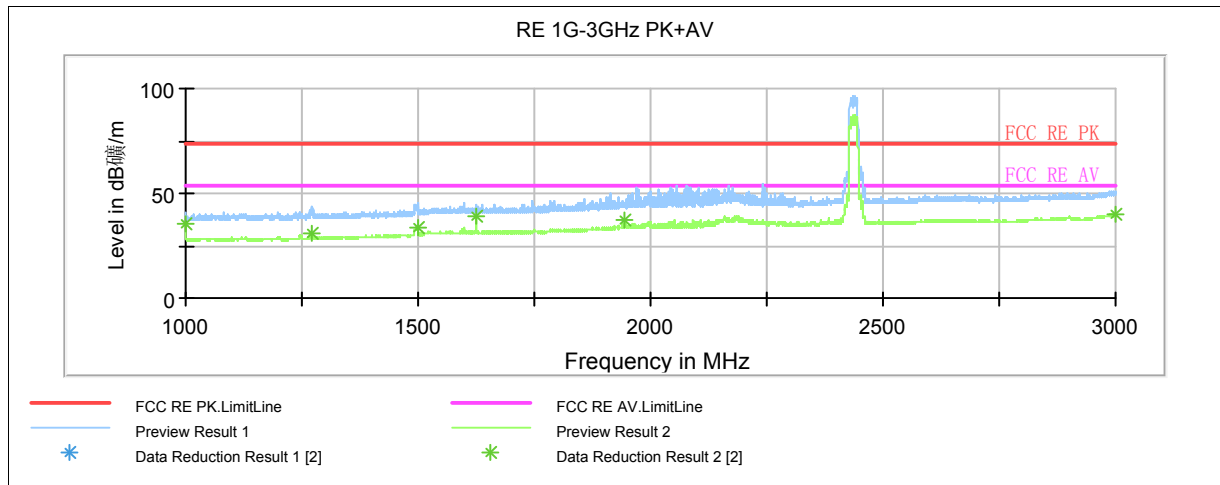
3. Margin = Limit – Quasi-Peak

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Note: a font (Level in dB/m) in the test plot = (level in dBuV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	41.1	101.0	H	12.0	-12.6	32.9	74
1271.000000	41.3	200.0	V	181.0	-11.9	32.7	74
1499.250000	43.8	100.0	V	263.0	-10.1	30.2	74
1624.750000	44.6	200.0	V	81.0	-9.2	29.4	74
1946.000000	45.4	100.0	V	192.0	-6.9	28.6	74
2998.750000	49.7	100.0	V	286.0	-1.8	24.3	74

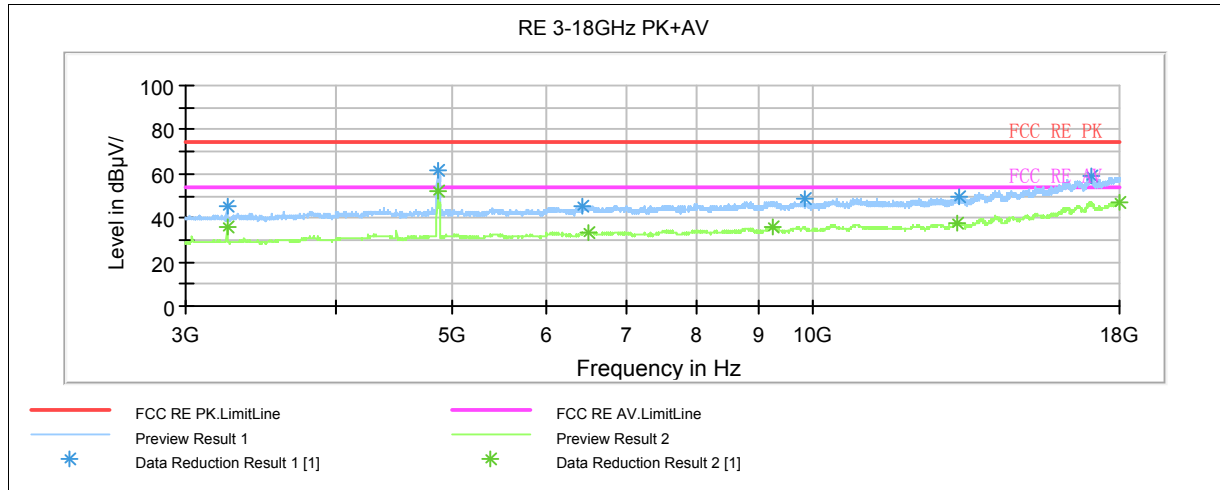
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	35.4	101.0	H	12.0	-12.6	18.6	54
1271.000000	31.3	200.0	V	181.0	-11.9	22.7	54
1499.250000	33.7	100.0	V	263.0	-10.1	20.3	54
1624.750000	38.7	200.0	V	81.0	-9.2	15.3	54
1946.000000	36.9	100.0	V	192.0	-6.9	17.1	54
2998.750000	40.0	100.0	V	286.0	-1.8	14.0	54

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Note: The signal beyond the limit is harmonic of carrier.

Radiates Emission from 3GHz to 18GHz

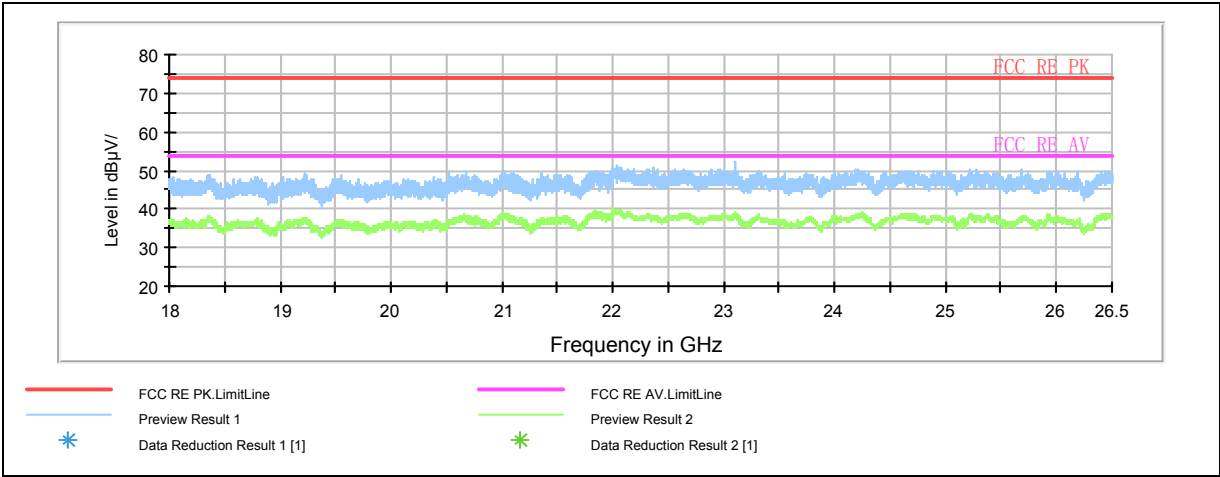
Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3249.375000	45.3	35.4	99.0	V	0.0	28.7	74
4873.125000	61.8	52.6	99.0	V	278.0	12.2	74
6433.125000	45.7	32.6	99.0	H	49.0	28.3	74
9830.625000	48.3	35.3	99.0	H	0.0	25.7	74
13218.750000	49.2	36.9	99.0	H	165.0	24.8	74
17045.625000	58.6	46.4	99.0	V	183.0	15.4	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3247.500000	44.7	35.5	99.0	V	0.0	9.3	54
6504.375000	43.4	33.7	99.0	H	0.0	10.6	54
9251.250000	46.1	35.9	99.0	H	0.0	7.9	54
13158.750000	47.8	37.4	99.0	V	0.0	6.2	54

TA Technology (Shanghai) Co., Ltd.
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Radiates Emission from 18GHz to 26.5GHz

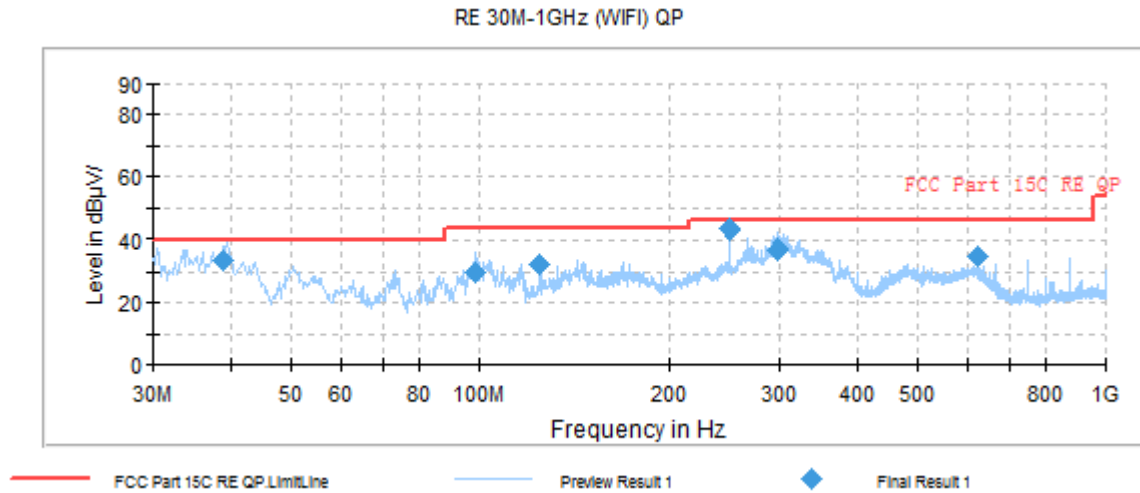
TA Technology (Shanghai) Co., Ltd.

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802.11g CH11



Radiates Emission from 30MHz to 1GHz

Note: plots show Polarization (V) and Polarization (H) maximum value that is synthesized by software.

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
38.937500	33.5	100.0	V	77.0	57.6	-24.1	6.5	40.0
98.385000	29.5	200.0	H	55.0	57.5	-28.0	14.0	43.5
125.020000	32.3	100.0	V	290.0	63.8	-31.5	11.2	43.5
249.987500	43.3	100.0	H	84.0	71.4	-28.1	2.7	46.0
298.482500	36.7	100.0	H	13.0	63.9	-27.2	9.3	46.0
625.015000	34.8	100.0	V	34.0	55.3	-20.5	11.2	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

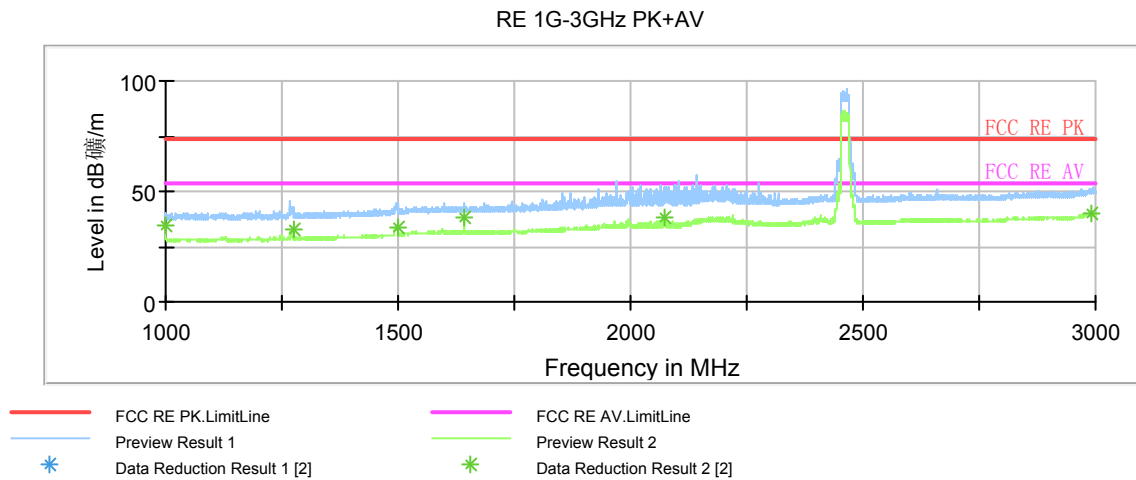
3. Margin = Limit – Quasi-Peak

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Note: a font (Level in dB/m) in the test plot = (level in dBuV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	39.6	101.0	H	12.0	-12.6	34.4	74
1275.500000	38.9	101.0	V	144.0	-11.8	35.1	74
1498.750000	43.9	101.0	V	104.0	-10.1	30.1	74
1641.250000	44.5	200.0	V	8.0	-9.2	29.5	74
2072.500000	50.7	101.0	V	0.0	-6.2	23.3	74
2990.500000	49.1	200.0	H	123.0	-1.8	24.9	74

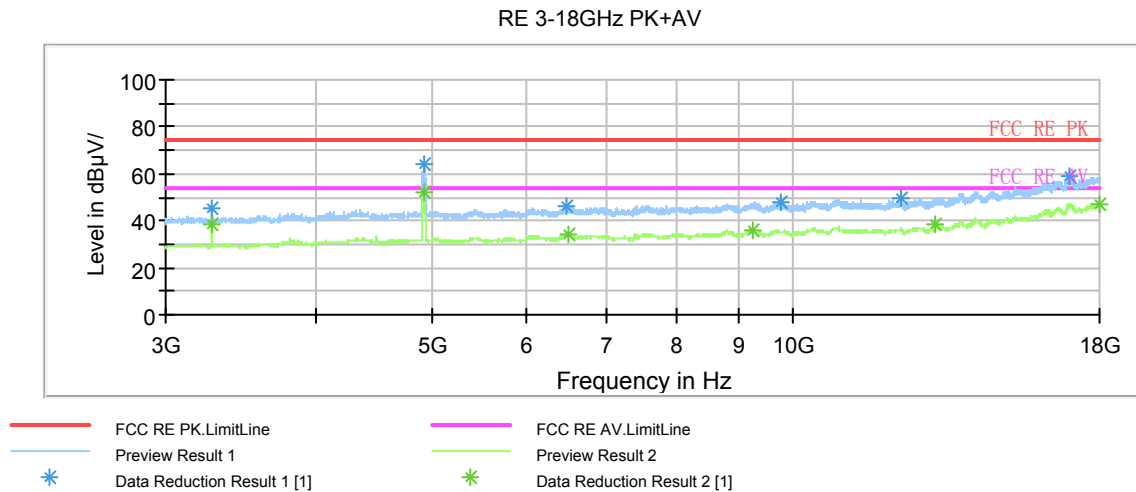
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	34.6	101.0	H	12.0	-12.6	19.4	54
1275.500000	32.5	101.0	V	144.0	-11.8	21.5	54
1498.750000	34.0	101.0	V	104.0	-10.1	20.0	54
1641.250000	38.6	200.0	V	8.0	-9.2	15.4	54
2072.500000	38.5	101.0	V	0.0	-6.2	15.5	54
2990.500000	40.1	200.0	H	123.0	-1.8	13.9	54

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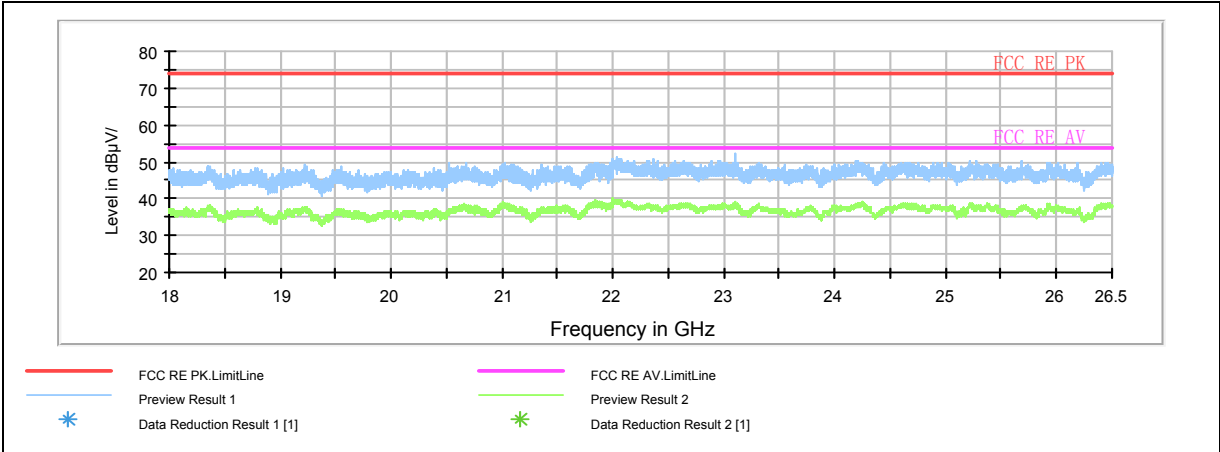


Note: The signal beyond the limit is harmonic of carrier.
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	44.9	99.0	V	160.0	-2.3	29.1	74
4925.625000	64.1	99.0	V	0.0	1.9	9.9	74
6472.500000	45.9	99.0	V	0.0	4.7	28.1	74
9766.875000	47.6	99.0	V	0.0	8.9	26.4	74
12303.750000	49.9	99.0	V	347.0	11.5	24.1	74
17015.625000	58.8	99.0	H	190.0	21.8	15.2	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	38.1	99.0	V	160.0	-2.3	15.9	54
4923.750000	52.0	99.0	V	253.0	1.9	2.0	54
6502.500000	33.8	99.0	H	0.0	4.6	20.2	54
9255.000000	36.0	99.0	H	225.0	8.7	18.0	54
13130.625000	38.1	99.0	V	277.0	12.8	15.9	54
18000.000000	47.1	99.0	H	0.0	23.5	6.9	54

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Radiates Emission from 18GHz to 26.5GHz

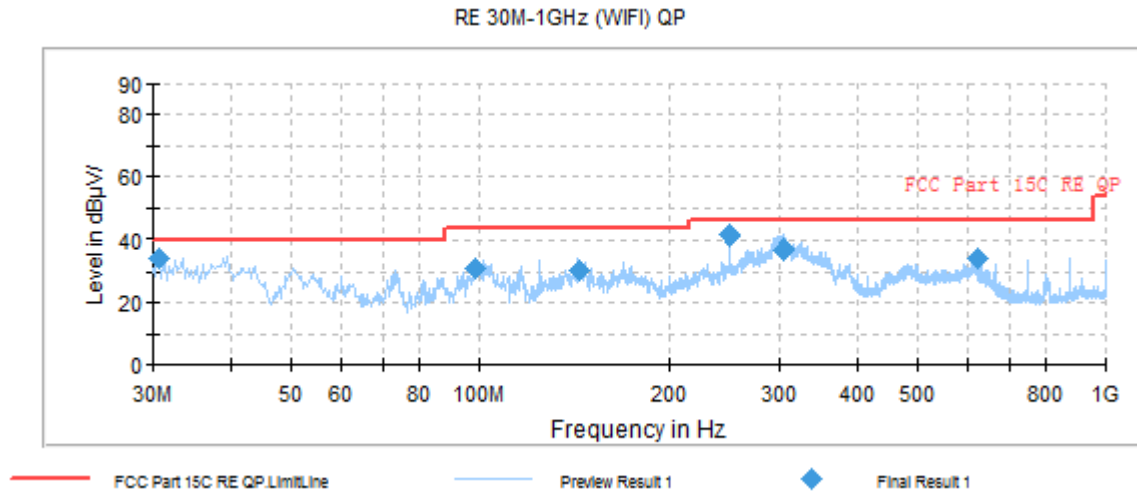
TA Technology (Shanghai) Co., Ltd.

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802.11n (HT20) CH1



Radiates Emission from 30MHz to 1GHz

Note: plots show Polarization (V) and Polarization (H) maximum value that is synthesized by software.

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
30.600000	34.6	100.0	V	52.0	58.5	-23.9	5.4	40.0
98.505000	31.2	200.0	H	213.0	59.1	-27.9	12.3	43.5
143.247500	30.3	100.0	V	23.0	63.1	-32.8	13.2	43.5
249.987500	41.4	121.0	H	84.0	69.5	-28.1	4.6	46.0
305.157500	36.7	100.0	H	0.0	63.6	-26.9	9.3	46.0
625.015000	34.2	100.0	V	0.0	54.7	-20.5	11.8	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

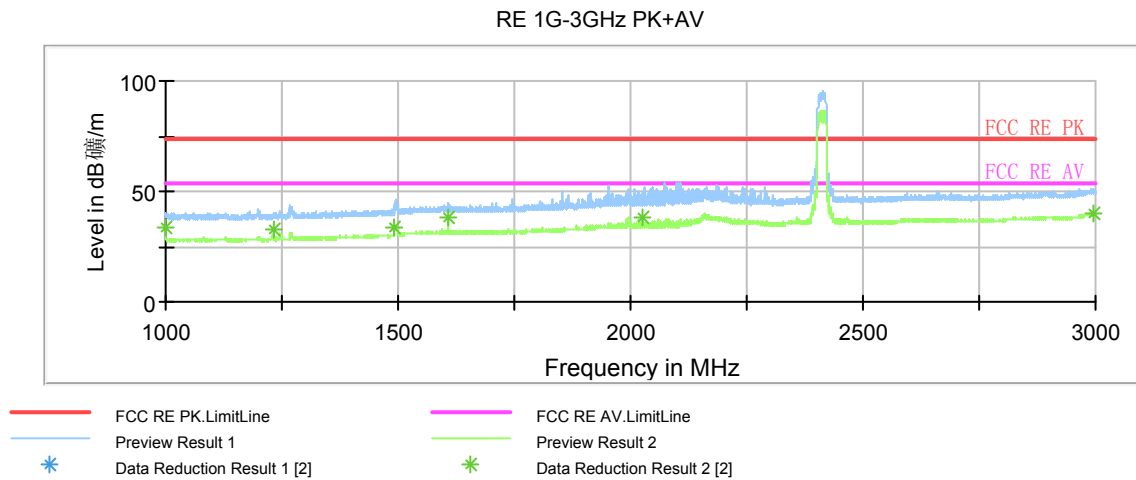
3. Margin = Limit – Quasi-Peak

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Note: a font (Level in dBμV/m) in the test plot = (level in dBuV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.250000	40.1	100.0	H	8.0	-12.6	33.9	74
1231.000000	38.5	100.0	H	98.0	-12.0	35.5	74
1493.500000	43.8	101.0	V	264.0	-10.2	30.2	74
1607.750000	44.0	200.0	V	88.0	-9.1	30.0	74
2025.000000	48.3	101.0	V	120.0	-6.4	25.7	74
2996.000000	48.7	200.0	H	121.0	-1.8	25.3	74

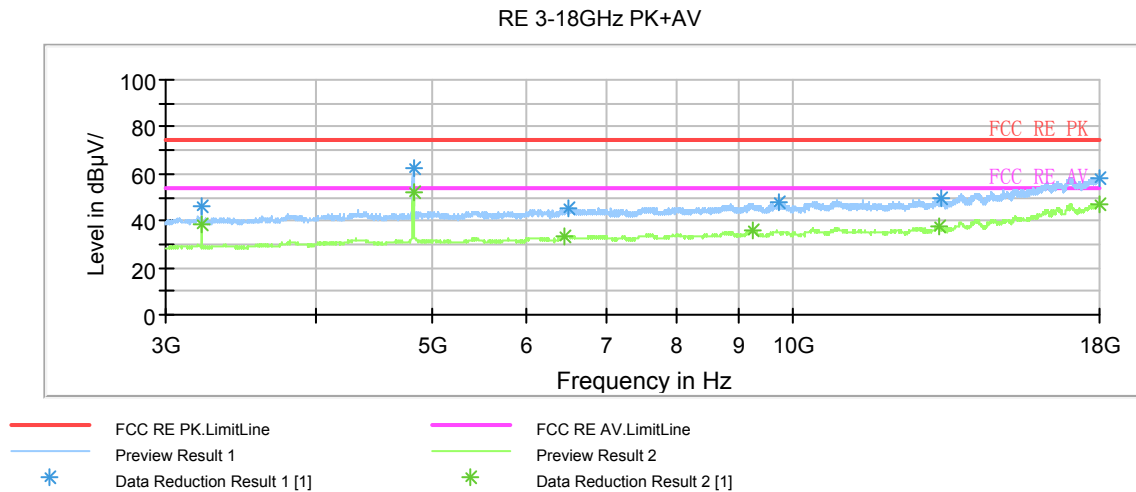
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.250000	34.0	100.0	H	8.0	-12.6	20.0	54
1231.000000	32.7	100.0	H	98.0	-12.0	21.3	54
1493.500000	34.0	101.0	V	264.0	-10.2	20.0	54
1607.750000	38.0	200.0	V	88.0	-9.1	16.0	54
2025.000000	38.4	101.0	V	120.0	-6.4	15.6	54
2996.000000	39.8	200.0	H	121.0	-1.8	14.2	54

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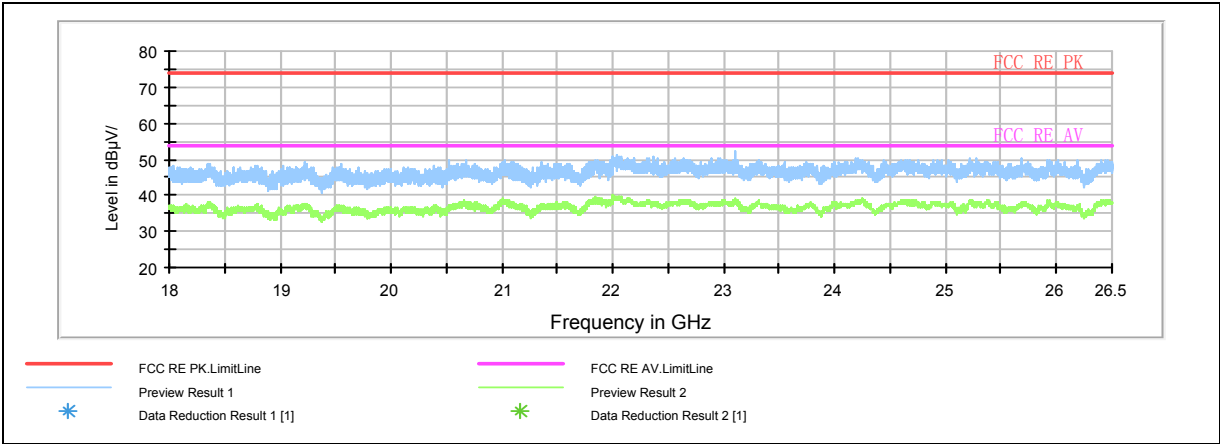


Note: The signal beyond the limit is harmonic of carrier.
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	45.7	100.0	V	0.0	-2.7	28.3	74
4824.375000	62.5	100.0	V	273.0	1.9	11.5	74
6504.375000	45.1	100.0	H	189.0	4.6	28.9	74
9729.375000	47.5	100.0	V	38.0	8.7	26.5	74
13291.875000	49.4	100.0	V	0.0	12.7	24.6	74
17986.875000	58.4	100.0	V	250.0	23.5	15.6	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	38.6	100.0	V	0.0	-2.7	15.4	54
4824.375000	52.5	100.0	V	273.0	1.9	1.5	54
6446.250000	33.6	100.0	V	0.0	4.5	20.4	54
9240.000000	35.6	100.0	H	348.0	8.8	18.4	54
13222.500000	37.3	100.0	H	108.0	12.7	16.7	54
17998.125000	47.0	100.0	H	62.0	23.5	7.0	54

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Radiates Emission from 18GHz to 26.5GHz

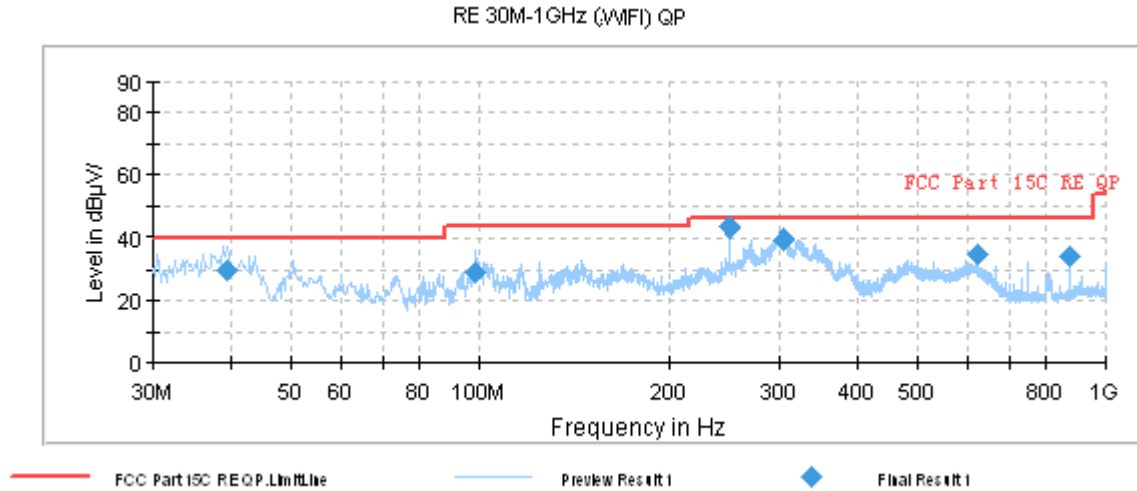
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802.11n (HT20) CH6



Radiates Emission from 30MHz to 1GHz

Note: plots show Polarization (V) and Polarization (H) maximum value that is synthesized by software.

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
39.457500	29.9	125.0	V	146.0	54.0	-24.1	10.1	40.0
98.505000	29.0	220.0	H	194.0	56.9	-27.9	14.5	43.5
249.987500	43.7	100.0	H	80.0	71.8	-28.1	2.3	46.0
305.117500	39.2	120.0	H	355.0	66.1	-26.9	6.8	46.0
625.015000	35.1	100.0	V	22.0	55.6	-20.5	10.9	46.0
874.992500	34.4	100.0	H	48.0	51.4	-17.0	11.6	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

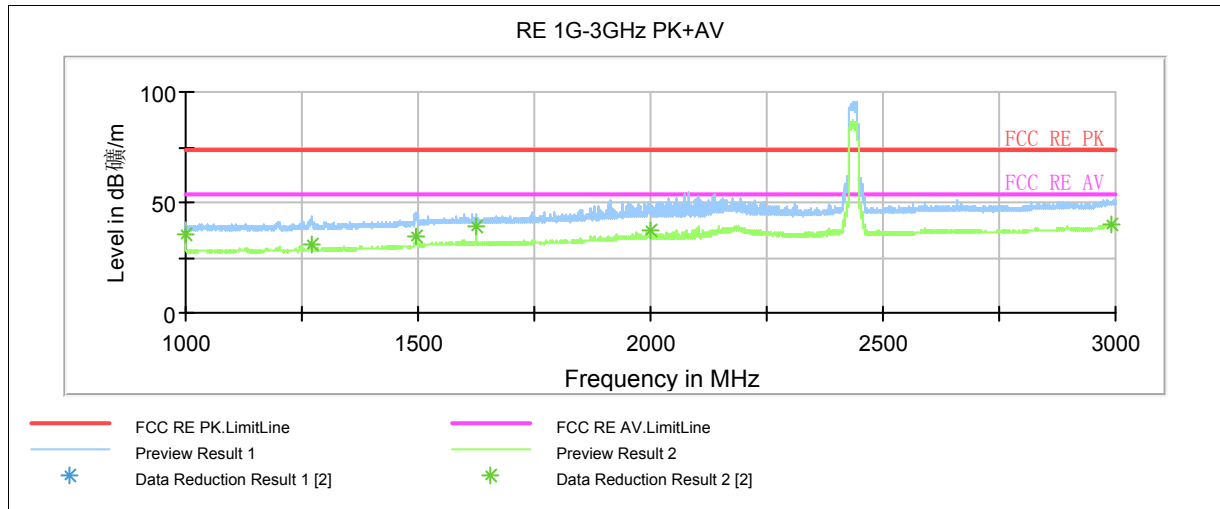
3. Margin = Limit – Quasi-Peak

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Note: a font (Level in dB/m) in the test plot = (level in dBuV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.250000	41.1	100.0	H	18.0	-12.6	32.9	74
1270.500000	41.7	200.0	V	183.0	-11.9	32.3	74
1494.750000	43.0	100.0	V	102.0	-10.1	31.0	74
1624.750000	44.1	200.0	V	84.0	-9.2	29.9	74
2000.500000	47.9	100.0	V	94.0	-6.4	26.1	74
2992.750000	48.9	100.0	H	86.0	-1.8	25.1	74

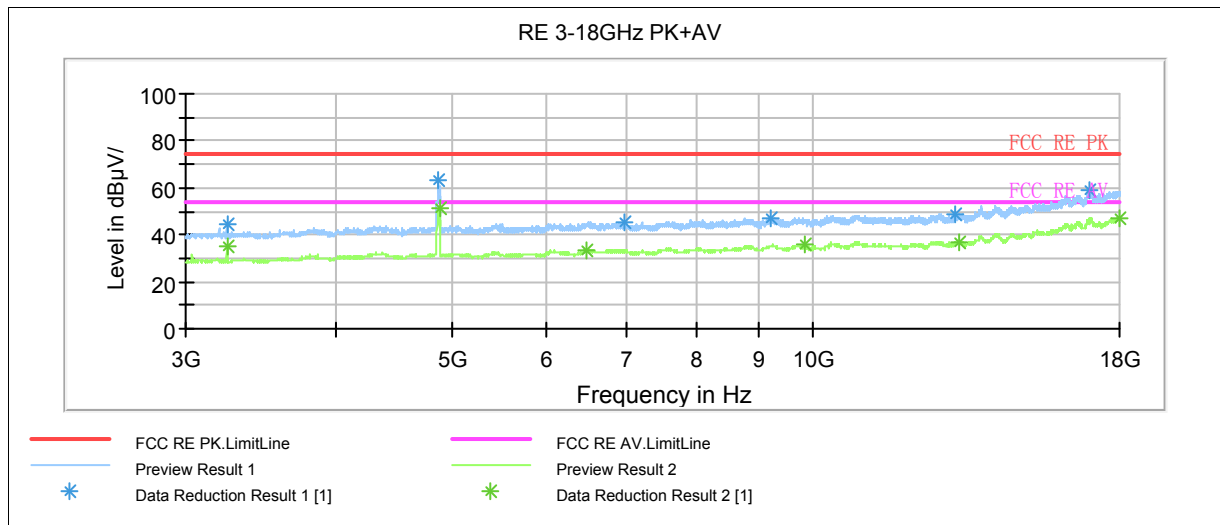
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.250000	35.4	100.0	H	18.0	-12.6	18.6	54
1270.500000	31.1	200.0	V	183.0	-11.9	22.9	54
1494.750000	34.1	100.0	V	102.0	-10.1	19.9	54
1624.750000	38.8	200.0	V	84.0	-9.2	15.2	54
2000.500000	37.3	100.0	V	94.0	-6.4	16.7	54
2992.750000	39.9	100.0	H	86.0	-1.8	14.1	54

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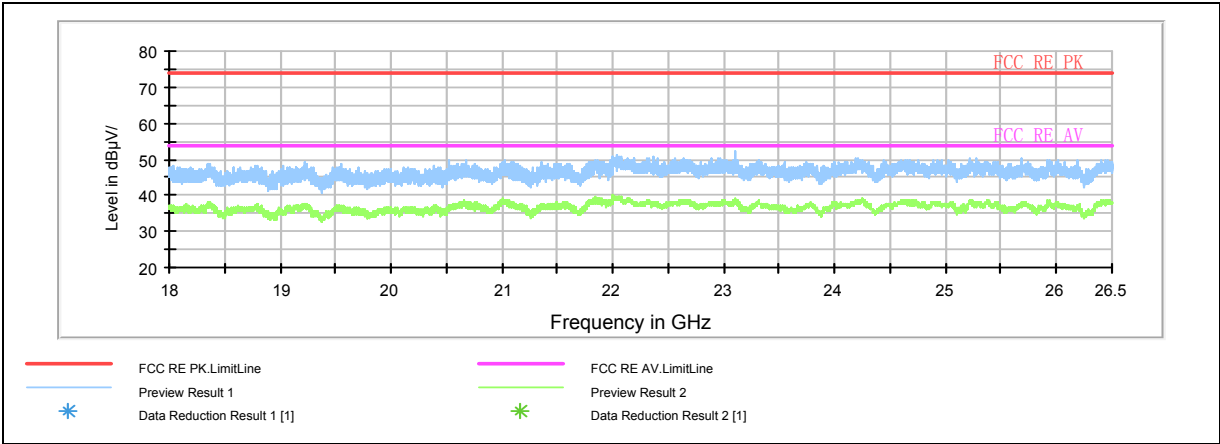


Note: The signal beyond the limit is harmonic of carrier.
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3247.500000	44.7	100.0	V	24.0	-2.4	29.3	74
4869.375000	63.2	100.0	V	275.0	1.9	10.8	74
6960.000000	45.5	100.0	V	86.0	4.7	28.5	74
9215.625000	47.1	100.0	V	0.0	9.8	26.9	74
13156.875000	48.8	100.0	H	0.0	12.7	25.2	74
17002.500000	58.6	100.0	V	321.0	23.5	15.4	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3247.500000	35.0	100.0	V	24.0	-2.4	19.0	54
4869.375000	51.1	100.0	V	275.0	1.9	2.9	54
6960.000000	33.5	100.0	V	86.0	4.7	20.5	54
9215.625000	35.7	100.0	V	0.0	9.8	18.3	54
13156.875000	37.0	100.0	H	0.0	12.7	17.0	54
17002.500000	47.0	100.0	V	321.0	23.5	7.0	54

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Radiates Emission from 18GHz to 26.5GHz

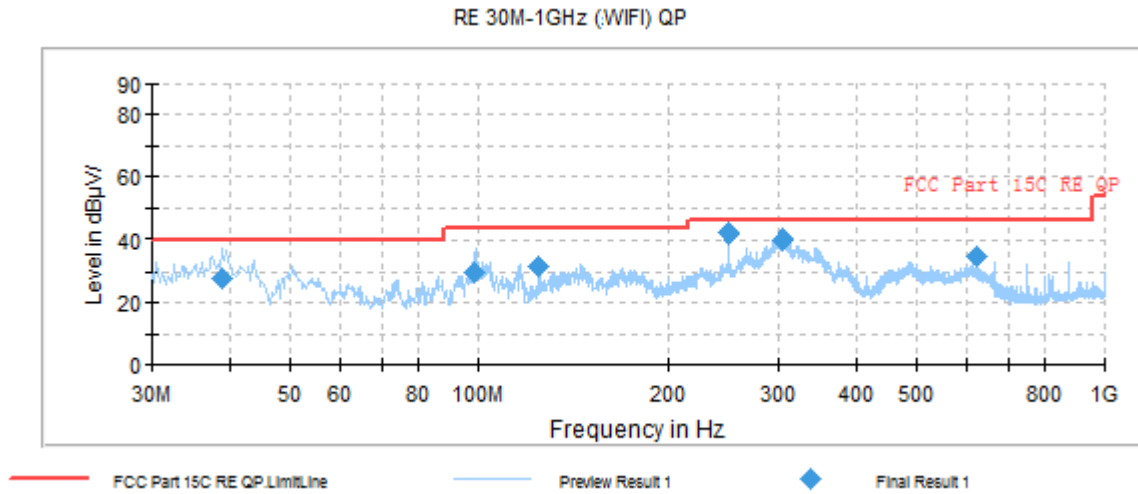
TA Technology (Shanghai) Co., Ltd.

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802.11n (HT20) CH11



Radiates Emission from 30MHz to 1GHz

Note: plots show Polarization (V) and Polarization (H) maximum value that is synthesized by software.

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
38.970000	27.6	125.0	V	76.0	51.7	-24.1	12.4	40.0
98.510000	29.6	225.0	H	230.0	57.5	-27.9	13.9	43.5
125.020000	31.9	100.0	V	298.0	63.4	-31.5	11.6	43.5
249.987500	42.1	121.0	H	89.0	70.2	-28.1	3.9	46.0
305.197500	39.8	120.0	H	347.0	66.7	-26.9	6.2	46.0
625.015000	35.1	120.0	V	191.0	55.6	-20.5	10.9	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

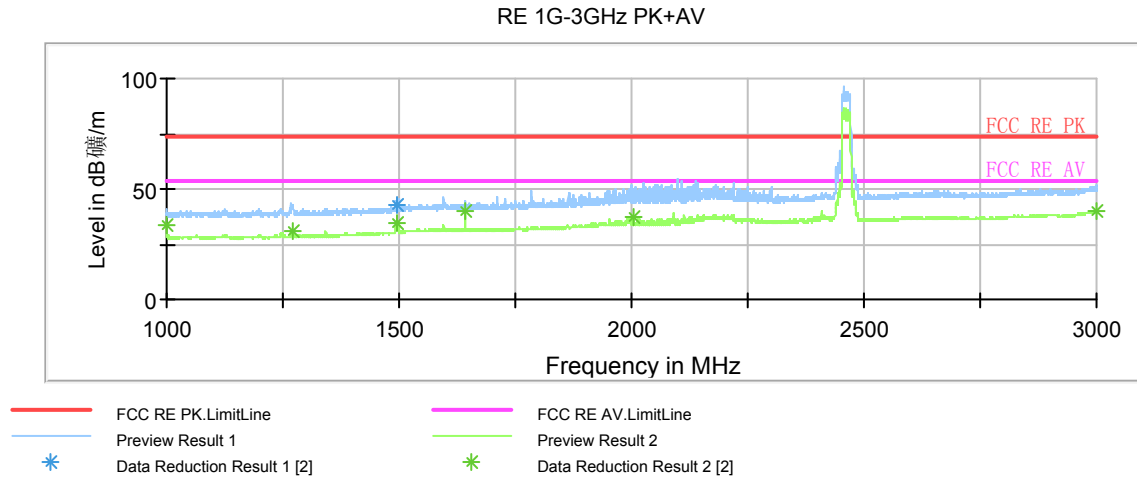
3. Margin = Limit – Quasi-Peak

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Note: a font (Level in dB 磁/m) in the test plot = (level in dBuV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	40.5	97.0	H	16.0	-12.6	33.5	74
1270.000000	40.7	200.0	V	155.0	-11.9	33.3	74
1496.500000	42.5	100.0	V	264.0	-10.1	31.5	74
1641.250000	44.6	200.0	V	95.0	-9.2	29.4	74
2002.750000	46.4	100.0	V	94.0	-6.4	27.6	74
2999.250000	49.3	200.0	H	261.0	-1.8	24.7	74

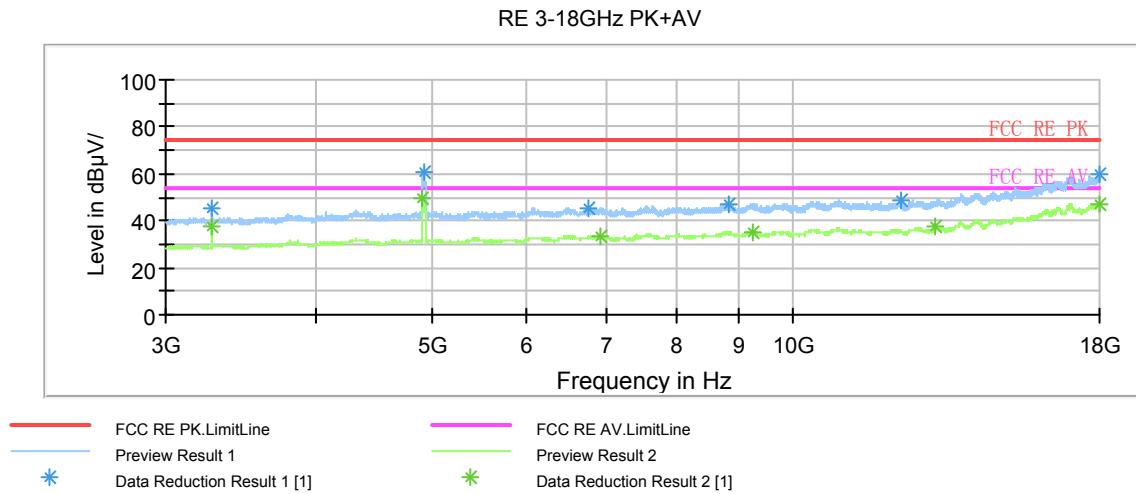
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	34.0	97.0	H	16.0	-12.6	20.0	54
1270.000000	31.3	200.0	V	155.0	-11.9	22.7	54
1496.500000	34.3	100.0	V	264.0	-10.1	19.7	54
1641.250000	39.6	200.0	V	95.0	-9.2	14.4	54
2002.750000	37.0	100.0	V	94.0	-6.4	17.0	54
2999.250000	39.9	200.0	H	261.0	-1.8	14.1	54

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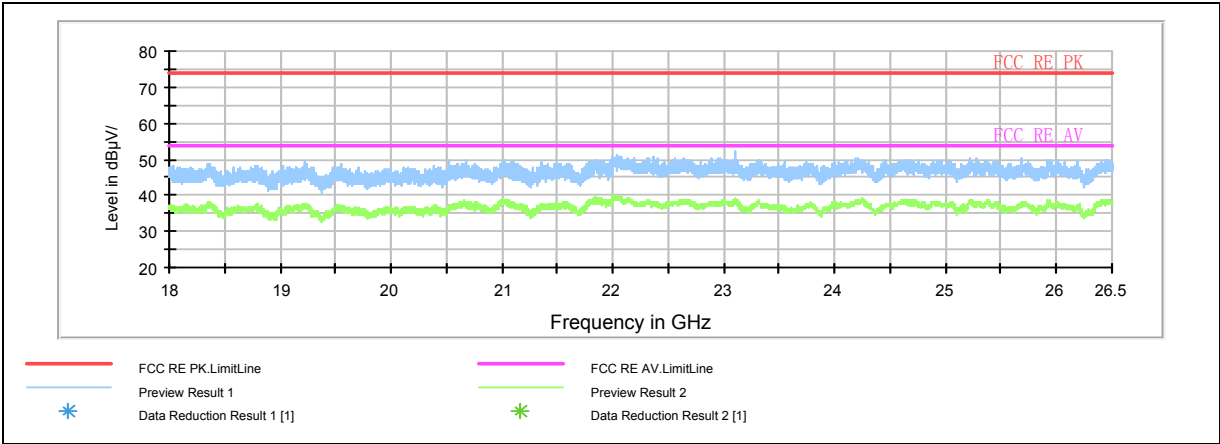


Note: The signal beyond the limit is harmonic of carrier.
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	45.0	100.0	V	0.0	-2.3	29.0	74
4920.000000	61.1	100.0	V	264.0	1.9	12.9	74
6740.625000	45.3	100.0	V	322.0	4.4	28.7	74
8838.750000	47.1	100.0	H	0.0	8.1	26.9	74
12311.250000	48.8	100.0	V	345.0	11.4	25.2	74
17992.500000	59.5	100.0	H	122.0	23.5	14.5	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	37.5	100.0	V	0.0	-2.3	16.5	54
4916.250000	49.5	100.0	V	264.0	1.9	4.5	54
6913.125000	33.5	100.0	V	195.0	4.7	20.5	54
9249.375000	35.4	100.0	H	180.0	8.7	18.6	54
13130.625000	37.6	100.0	V	334.0	12.8	16.4	54
17981.250000	47.4	100.0	V	0.0	23.4	6.6	54

TA Technology (Shanghai) Co., Ltd.
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Radiates Emission from 18GHz to 26.5GHz

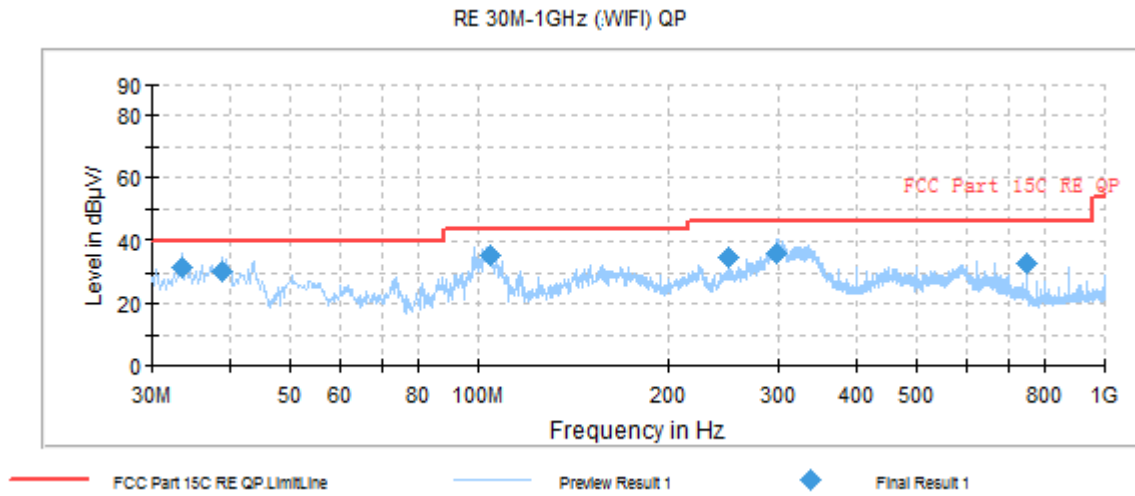
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802.11n (HT40) CH3



Radiates Emission from 30MHz to 1GHz

Note: plots show Polarization (V) and Polarization (H) maximum value that is synthesized by software.

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
33.435000	31.9	100.0	V	48.0	56.2	-24.3	8.1	40.0
38.930000	30.7	209.0	V	45.0	54.8	-24.1	9.3	40.0
104.730000	35.7	225.0	H	235.0	64.0	-28.3	7.8	43.5
249.987500	34.8	100.0	H	356.0	62.9	-28.1	11.2	46.0
298.447500	36.0	120.0	H	315.0	63.2	-27.2	10.0	46.0
750.022500	33.2	195.0	H	283.0	52.1	-18.9	12.8	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

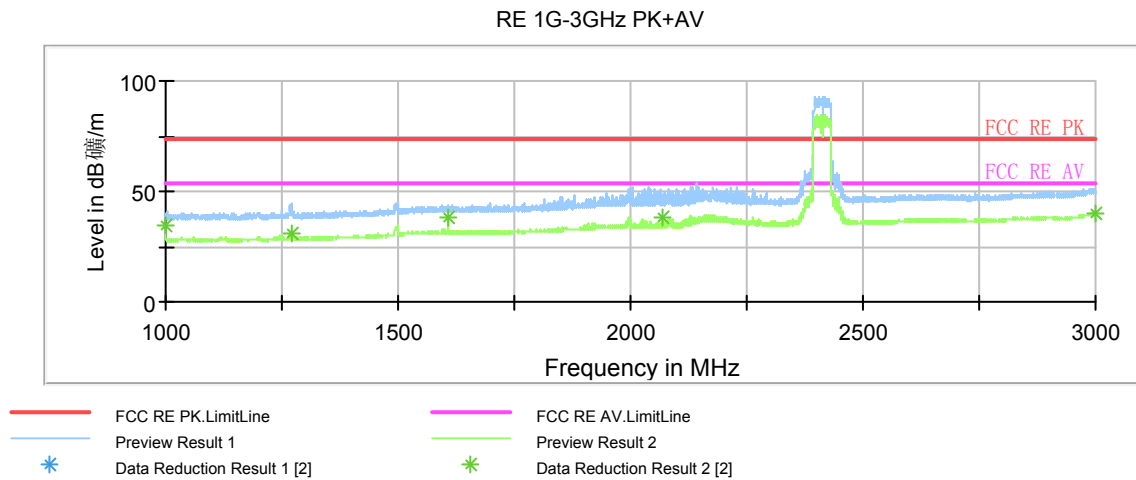
3. Margin = Limit – Quasi-Peak

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Note: a font (Level in dB 磁/m) in the test plot = (level in dBuV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

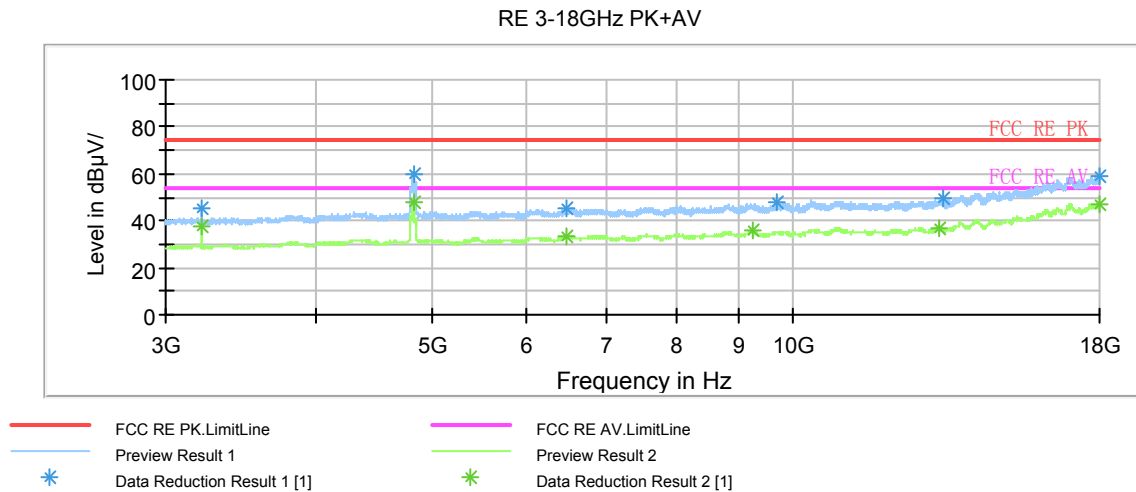
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	34.3	101.0	H	8.0	-12.6	19.7	54
1270.500000	31.3	200.0	V	184.0	-11.9	22.7	54
1608.000000	38.2	100.0	V	120.0	-9.1	15.8	54
2068.000000	38.5	100.0	V	0.0	-6.3	15.5	54
3000.000000	40.0	100.0	V	306.0	-1.8	14.0	54
1000.000000	34.3	101.0	H	8.0	-12.6	19.7	54

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Note: The signal beyond the limit is harmonic of carrier.
Radiates Emission from 3GHz to 18GHz

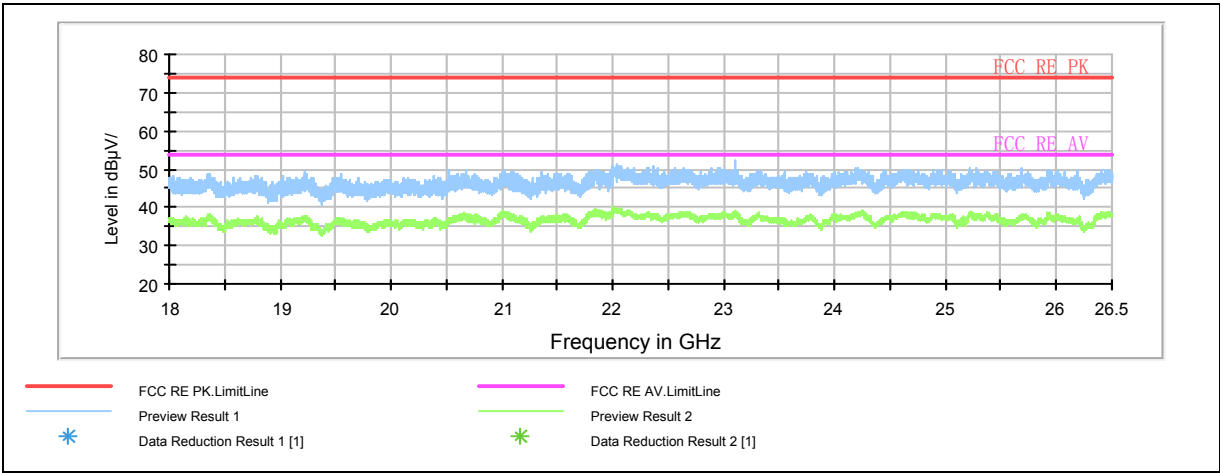
Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	45.5	100.0	V	0.0	-2.7	28.5	74
4826.250000	60.2	100.0	V	277.0	1.9	13.8	74
6466.875000	45.1	100.0	V	63.0	4.7	28.9	74
9697.500000	47.7	100.0	V	0.0	8.7	26.3	74
13335.000000	49.2	100.0	H	180.0	12.7	24.8	74
17968.125000	58.9	100.0	H	132.0	23.5	15.1	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	37.9	100.0	V	0.0	-2.7	16.1	54
4826.250000	48.1	100.0	V	277.0	1.9	5.9	54
6466.875000	33.3	100.0	V	63.0	4.7	20.7	54
9697.500000	35.5	100.0	V	0.0	8.7	18.5	54
13335.000000	37.1	100.0	H	180.0	12.7	16.9	54
17968.125000	47.1	100.0	H	132.0	23.5	6.9	54

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Radiates Emission from 18GHz to 26.5GHz

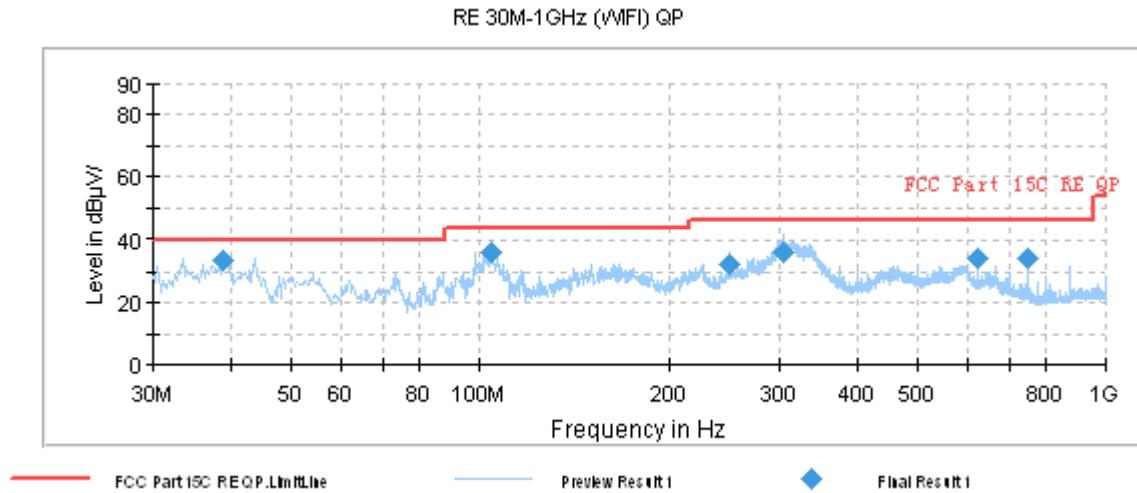
TA Technology (Shanghai) Co., Ltd.

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802.11n (HT40) CH6



Radiates Emission from 30MHz to 1GHz

Note: plots show Polarization (V) and Polarization (H) maximum value that is synthesized by software.

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
38.930000	33.4	100.0	V	75.0	57.5	-24.1	6.6	40.0
104.730000	36.5	225.0	H	221.0	64.8	-28.3	7.0	43.5
249.987500	32.6	100.0	H	0.0	60.7	-28.1	13.4	46.0
305.475000	36.1	100.0	H	338.0	63	-26.9	9.9	46.0
625.015000	34.2	100.0	V	190.0	54.7	-20.5	11.8	46.0
750.022500	34.5	209.0	H	281.0	53.4	-18.9	11.5	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

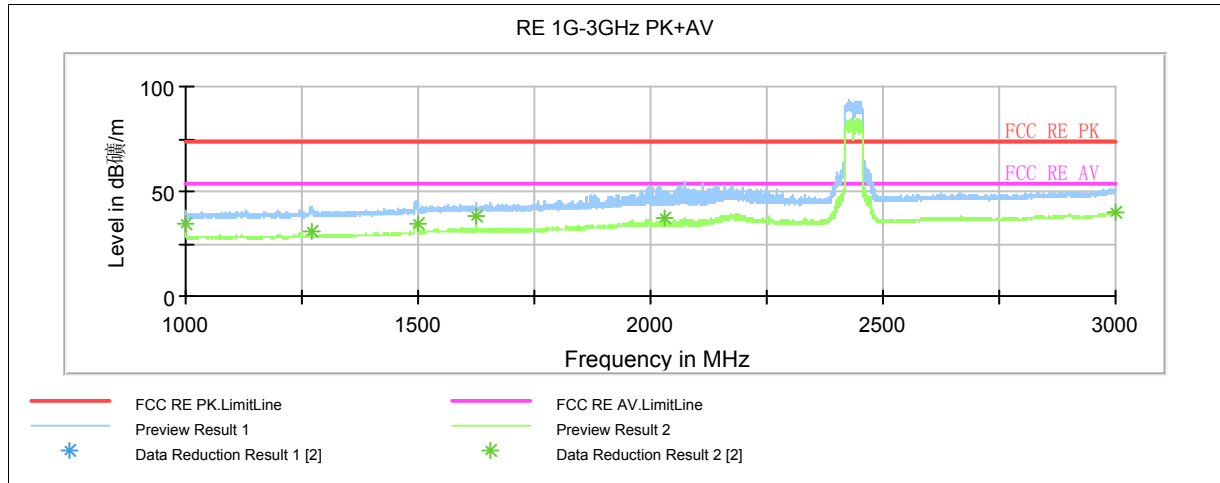
3. Margin = Limit – Quasi-Peak

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Note: a font (Level in dB/m) in the test plot = (level in dBuV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	41.0	101.0	H	5.0	-12.6	33.0	74
1270.500000	41.8	200.0	V	177.0	-11.9	32.2	74
1498.500000	42.3	101.0	V	259.0	-10.1	31.7	74
1624.750000	44.6	200.0	V	240.0	-9.2	29.4	74
2029.250000	47.0	101.0	V	212.0	-6.4	27.0	74
3000.000000	48.9	101.0	H	79.0	-1.8	25.1	74

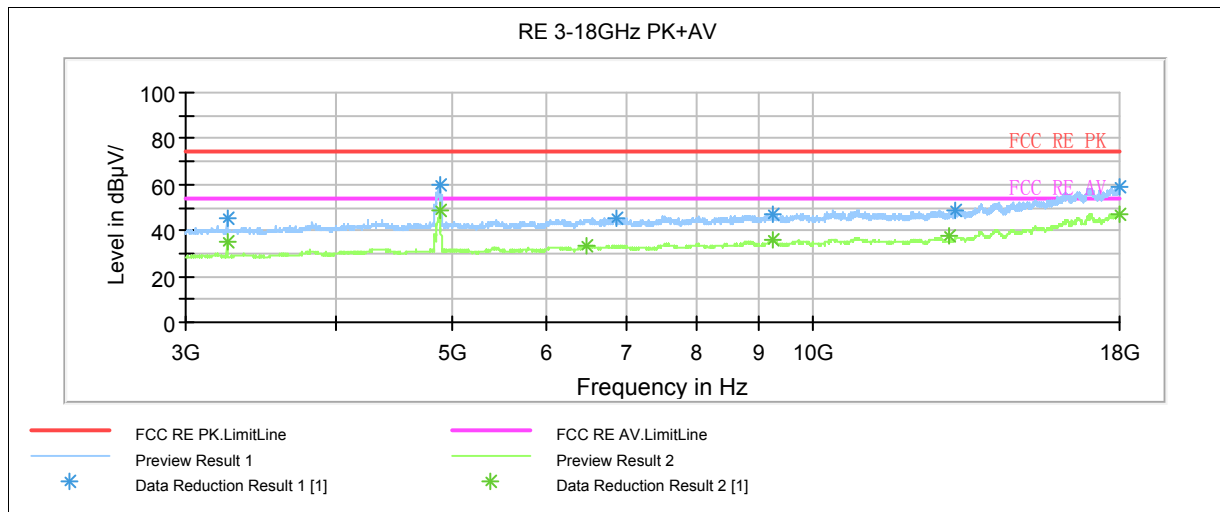
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	35.0	101.0	H	5.0	-12.6	19.0	54
1270.500000	30.9	200.0	V	177.0	-11.9	23.1	54
1498.500000	34.1	101.0	V	259.0	-10.1	19.9	54
1624.750000	38.5	200.0	V	240.0	-9.2	15.5	54
2029.250000	37.7	101.0	V	212.0	-6.4	16.3	54
3000.000000	39.9	101.0	H	79.0	-1.8	14.1	54

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Note: The signal beyond the limit is harmonic of carrier.
Radiates Emission from 3GHz to 18GHz

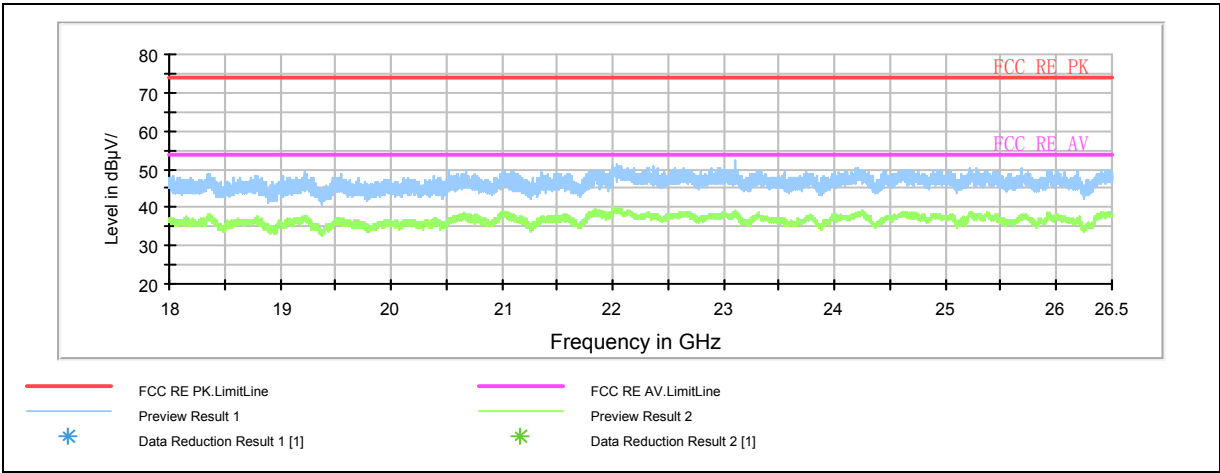
Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3247.500000	45.0	100.0	V	0.0	-2.3	29.0	74
4880.625000	59.6	100.0	V	274.0	1.9	14.4	74
6849.375000	45.1	100.0	V	0.0	4.5	28.9	74
9255.000000	46.9	100.0	V	240.0	8.7	27.1	74
13151.250000	49.1	100.0	H	17.0	12.7	24.9	74
17994.375000	58.8	100.0	V	308.0	23.5	15.2	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3247.500000	34.8	100.0	V	0.0	-2.3	19.2	54
4880.625000	48.8	100.0	V	274.0	1.9	5.2	54
6849.375000	33.4	100.0	H	63.0	4.7	20.6	54
9255.000000	35.6	100.0	H	336.0	8.8	18.4	54
13151.250000	37.3	100.0	V	251.0	11.7	16.7	54
17994.375000	47.1	100.0	V	240.0	23.5	6.9	54

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Radiates Emission from 18GHz to 26.5GHz

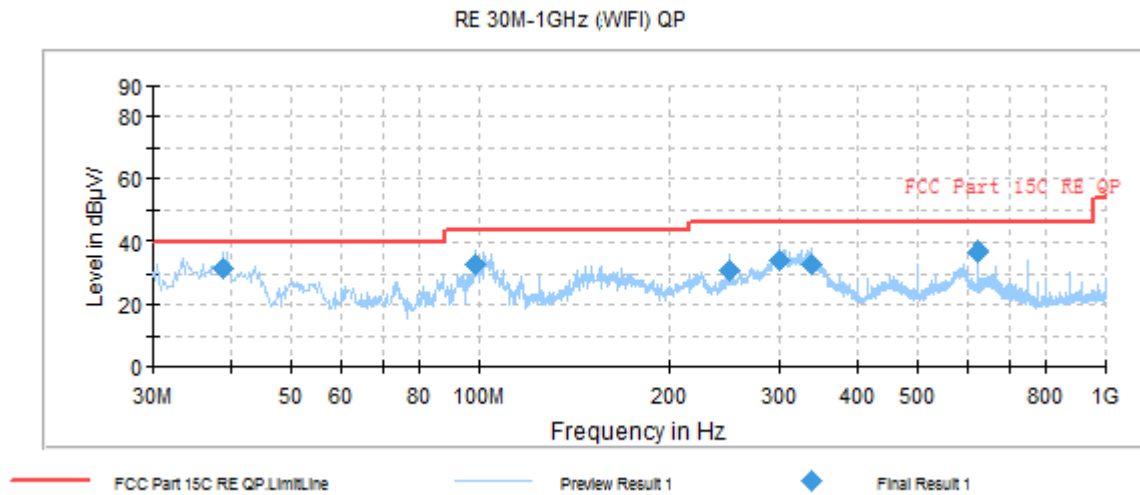
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802.11n (HT40) CH9



Radiates Emission from 30MHz to 1GHz

Note: plots show Polarization (V) and Polarization (H) maximum value that is synthesized by software.

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
38.937500	31.8	125.0	V	127.0	55.9	-24.1	8.2	40.0
98.425000	33.3	200.0	H	46.0	61.3	-28.0	10.2	43.5
249.987500	31.3	120.0	H	5.0	59.4	-28.1	14.7	46.0
299.980000	34.6	100.0	H	334.0	61.7	-27.1	11.4	46.0
337.612500	33.1	100.0	H	328.0	59.6	-26.5	12.9	46.0
625.015000	37.1	100.0	V	192.0	57.6	-20.5	8.9	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

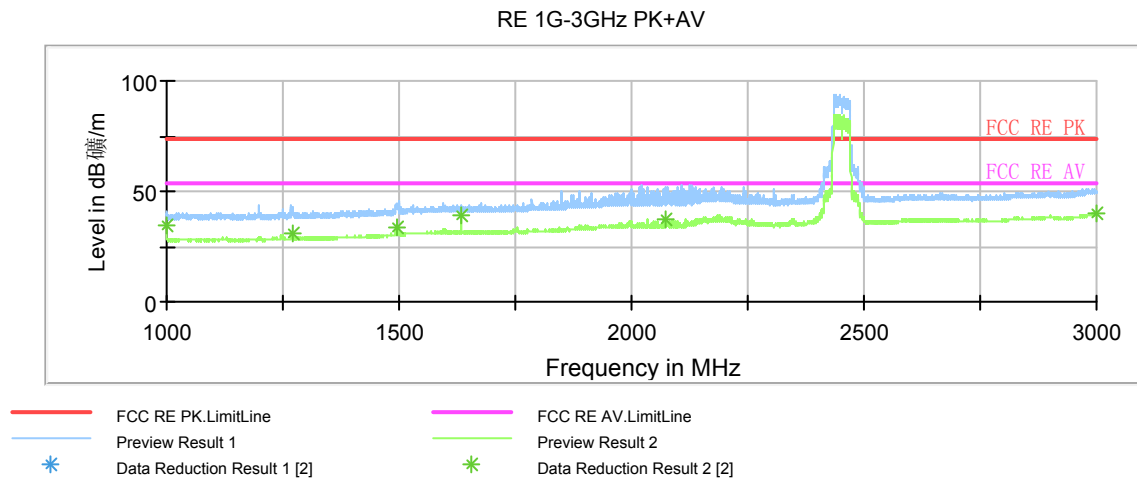
3. Margin = Limit – Quasi-Peak

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Note: a font (Level in dB 磁/m) in the test plot = (level in dBuV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	40.9	101.0	H	12.0	-12.6	33.1	74
1269.500000	42.7	200.0	V	176.0	-12.0	31.3	74
1497.250000	43.0	101.0	V	103.0	-10.1	31.0	74
1634.750000	43.9	101.0	V	0.0	-9.2	30.1	74
2071.750000	48.0	101.0	V	103.0	-6.2	26.0	74
2998.750000	50.3	101.0	V	190.0	-1.8	23.7	74

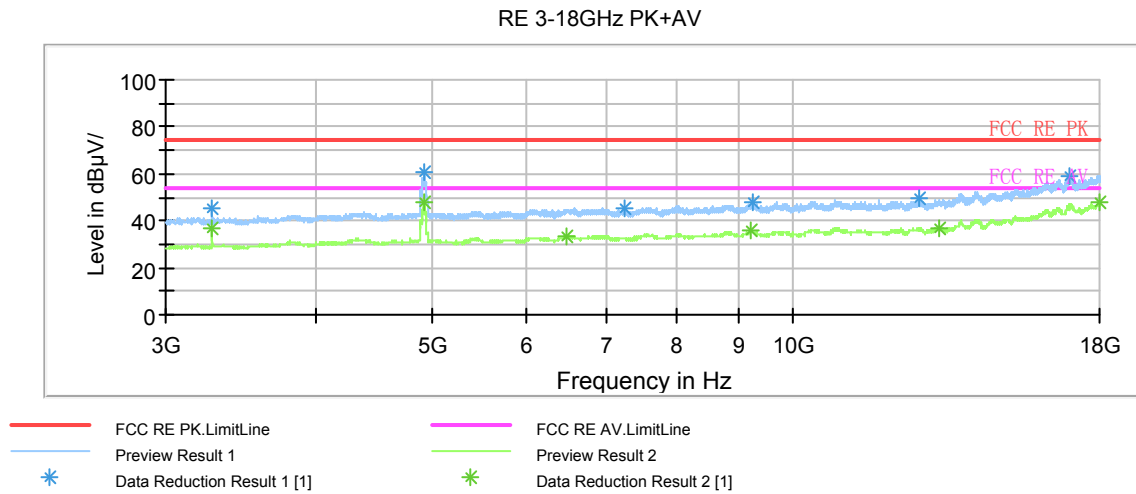
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	34.4	101.0	H	12.0	-12.6	19.6	54
1269.500000	31.3	200.0	V	176.0	-12.0	22.7	54
1497.250000	33.9	101.0	V	103.0	-10.1	20.1	54
1634.750000	38.8	101.0	V	0.0	-9.2	15.2	54
2071.750000	37.4	101.0	V	103.0	-6.2	16.6	54
2998.750000	39.9	101.0	V	190.0	-1.8	14.1	54

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Note: The signal beyond the limit is harmonic of carrier.
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Height (cm)	Polarizatio	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	45.5	100.0	V	0.0	-2.3	28.5	74
4921.875000	60.8	100.0	V	273.0	1.9	13.2	74
7243.125000	44.9	100.0	V	249.0	6.1	29.1	74
9268.125000	47.5	100.0	H	6.0	8.6	26.5	74
12757.500000	49.3	100.0	V	353.0	12.6	24.7	74
17011.875000	59.3	100.0	H	29.0	21.9	14.7	74

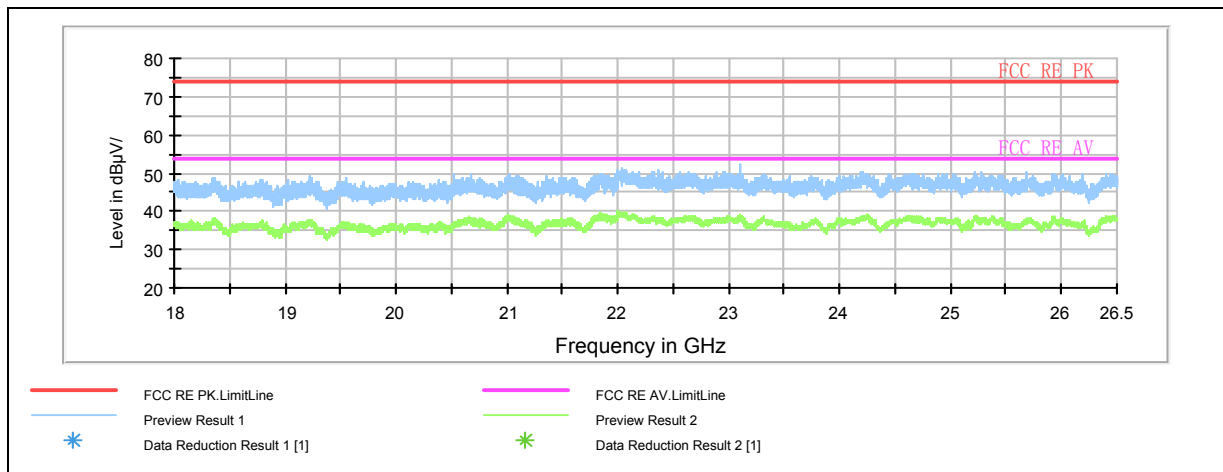
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	36.8	100.0	V	0.0	-2.3	17.2	54
4921.875000	48.1	100.0	V	273.0	1.9	5.9	54
6481.875000	33.5	100.0	V	110.0	4.7	20.5	54
9236.250000	35.5	100.0	V	0.0	8.8	18.5	54
13228.125000	37.1	100.0	H	133.0	12.7	16.9	54
18000.000000	47.5	100.0	H	0.0	23.5	6.5	54

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Radiates Emission from 18GHz to 26.5GHz

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2.10. Conducted Emissions

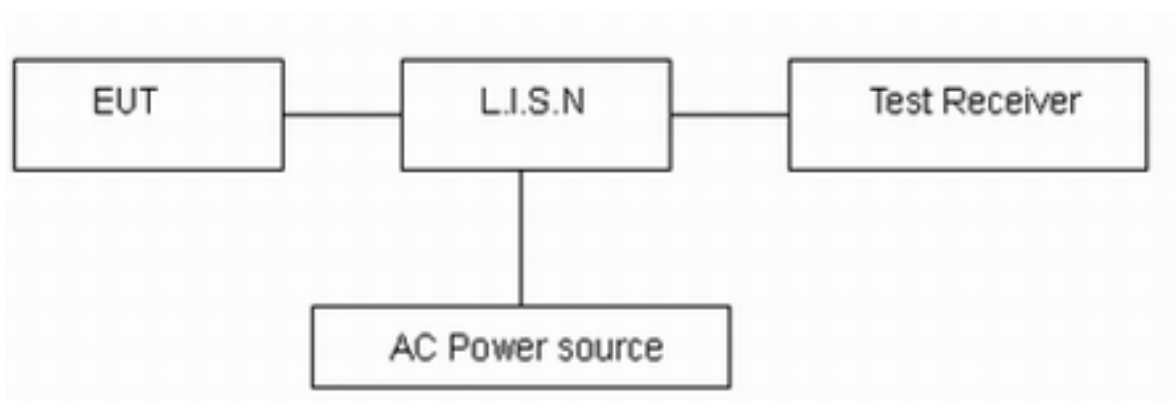
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT IS placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSIC63.4-2009. Connect the AC power line of the EUT to the LISN Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9kHz, VBW is set to 30kHz. The measurement result should include both L line and N line.
The test is in transmitting mode.

Test setup



Note: AC Power source is used to change the voltage from 220V/50Hz to 110V/60Hz.

Limits

Frequency (MHz)	Conducted Limits(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.		

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 2.69$ dB.

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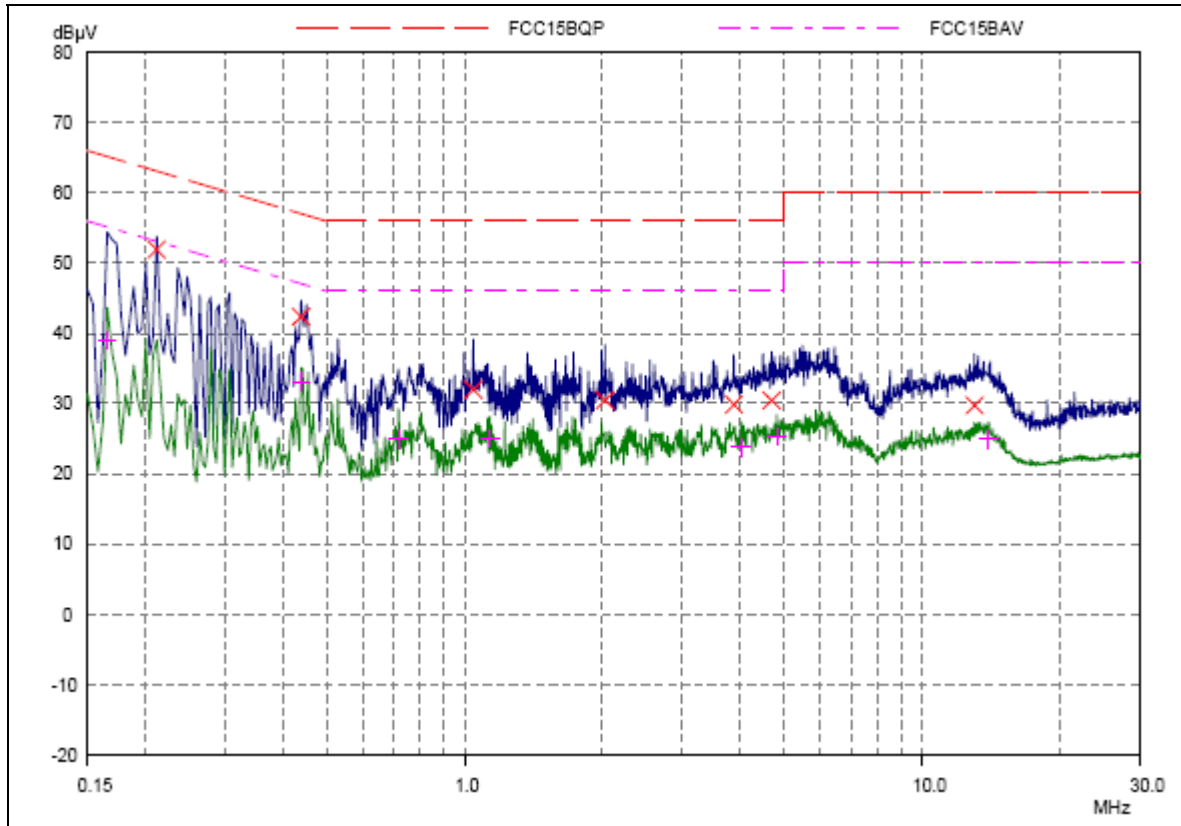
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Test Results:

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Final Measurement Results					
Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.2125	51.90	63.11	11.21	L1	gnd
0.43906	42.36	57.08	14.72	L1	gnd
1.04453	31.96	56.00	24.04	L1	gnd
2.025	30.41	56.00	25.59	L1	gnd
3.87265	29.84	56.00	26.16	L1	gnd
4.69687	30.45	56.00	25.55	L1	gnd
13.00937	29.72	60.00	30.28	L1	gnd
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.16562	38.99	55.18	16.19	L1	gnd
0.43906	33.07	47.08	14.01	L1	gnd
0.7164	24.90	46.00	21.10	L1	gnd
1.13437	24.99	46.00	21.01	L1	gnd
4.02109	23.78	46.00	22.22	L1	gnd
4.81015	25.27	46.00	20.73	L1	gnd
13.97421	24.88	50.00	25.12	L1	gnd

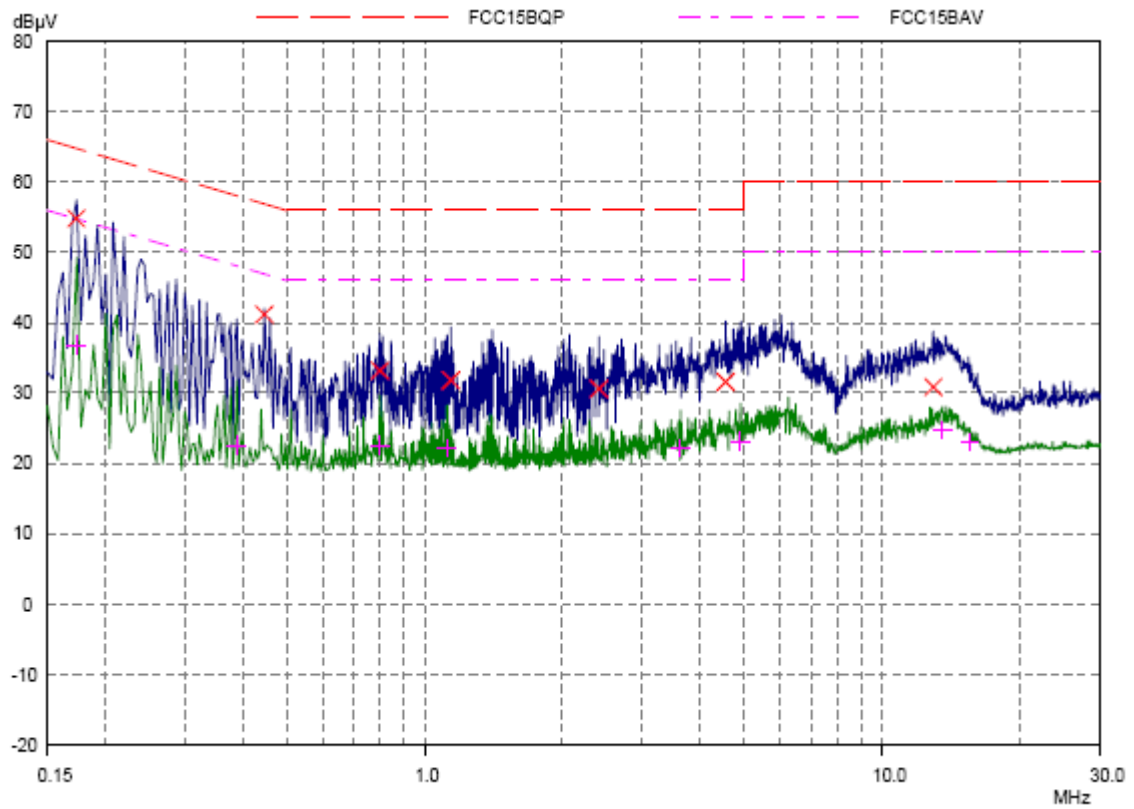
L Line

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Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.17343	54.86	64.79	9.93	N	gnd
0.44687	41.19	56.93	15.74	N	gnd
0.79843	33.19	56.00	22.81	N	gnd
1.14218	31.82	56.00	24.18	N	gnd
2.4039	30.61	56.00	25.39	N	gnd
4.55234	31.57	56.00	24.43	N	gnd
12.92734	30.81	60.00	29.19	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.17343	36.87	54.79	17.92	N	gnd
0.38828	22.57	48.10	25.53	N	gnd
0.79843	22.56	46.00	23.44	N	gnd
1.11875	22.17	46.00	23.83	N	gnd
3.63046	22.12	46.00	23.88	N	gnd
4.90781	23.11	46.00	22.89	N	gnd
13.55625	24.80	50.00	25.20	N	gnd
15.53281	23.03	50.00	26.97	N	gnd

N Line

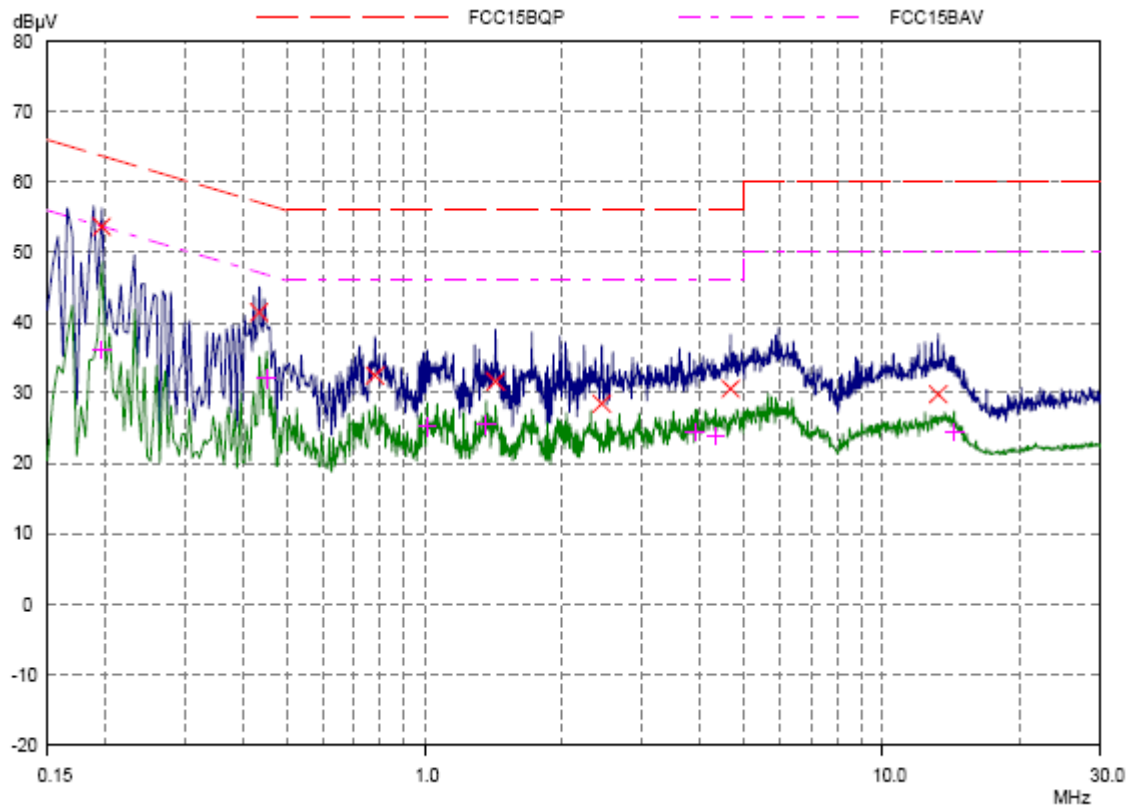
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802.11g CH6



Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.19687	53.65	63.74	10.09	L1	gnd
0.43515	41.46	57.15	15.69	L1	gnd
0.7789	32.50	56.00	23.50	L1	gnd
1.42734	31.62	56.00	24.38	L1	gnd
2.44296	28.50	56.00	27.50	L1	gnd
4.66562	30.57	56.00	25.43	L1	gnd
13.24765	29.80	60.00	30.20	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.19687	36.10	53.74	17.64	L1	gnd
0.45078	32.02	46.86	14.84	L1	gnd
1.01328	25.22	46.00	20.78	L1	gnd
1.36484	25.54	46.00	20.46	L1	gnd
3.9039	24.42	46.00	21.58	L1	gnd
4.32968	23.94	46.00	22.06	L1	gnd
14.35703	24.45	50.00	25.55	L1	gnd

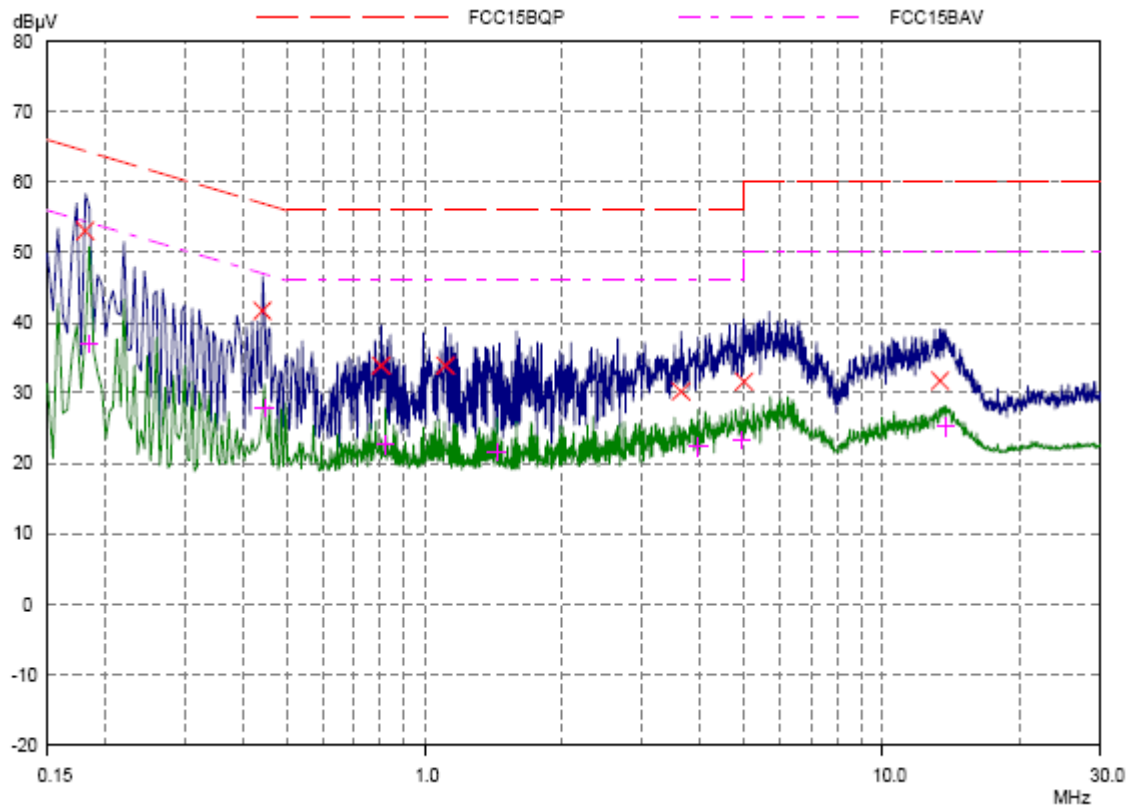
L Line

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Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.18125	53.05	64.43	11.38	N	gnd
0.44298	41.89	57.01	15.32	N	gnd
0.80234	33.87	56.00	22.13	N	gnd
1.11093	33.88	56.00	22.12	N	gnd
3.63828	30.20	56.00	25.80	N	gnd
4.99375	31.64	56.00	24.36	N	gnd
13.37265	31.73	60.00	28.27	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.18515	37.00	54.25	17.25	N	gnd
0.44687	27.94	46.93	18.99	N	gnd
0.82187	22.62	46.00	23.38	N	gnd
1.43908	21.67	46.00	24.33	N	gnd
3.9664	22.35	46.00	23.65	N	gnd
4.92343	23.28	46.00	22.72	N	gnd
13.775	25.18	50.00	24.82	N	gnd

N Line

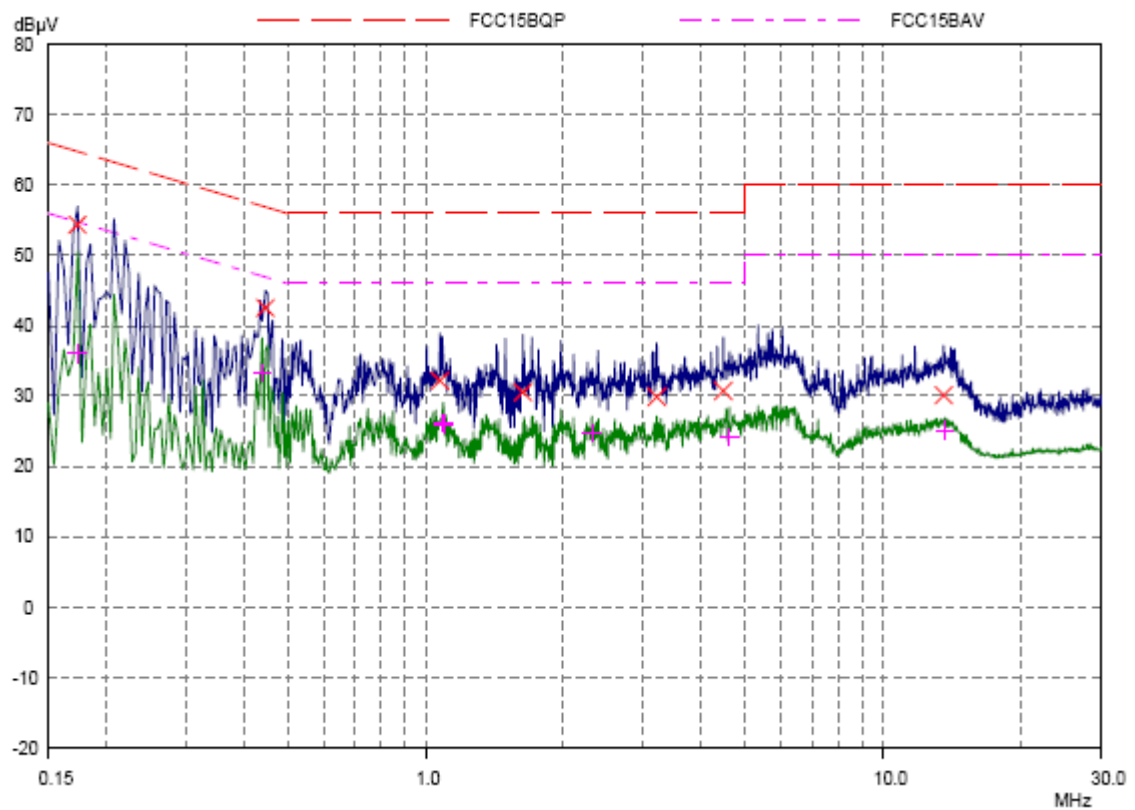
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Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.17343	54.36	64.79	10.43	L1	gnd
0.44687	42.51	56.93	14.42	L1	gnd
1.07578	32.17	56.00	23.83	L1	gnd
1.63046	30.54	56.00	25.46	L1	gnd
3.20078	29.83	56.00	26.17	L1	gnd
4.48203	30.70	56.00	25.30	L1	gnd
13.56796	30.10	60.00	29.90	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.17343	36.05	54.79	18.74	L1	gnd
0.43908	33.33	47.08	13.75	L1	gnd
1.0914	26.18	46.00	19.82	L1	gnd
1.09531	26.03	46.00	19.97	L1	gnd
2.31015	24.77	46.00	21.23	L1	gnd
4.61875	24.19	46.00	21.81	L1	gnd
13.63046	25.12	50.00	24.88	L1	gnd

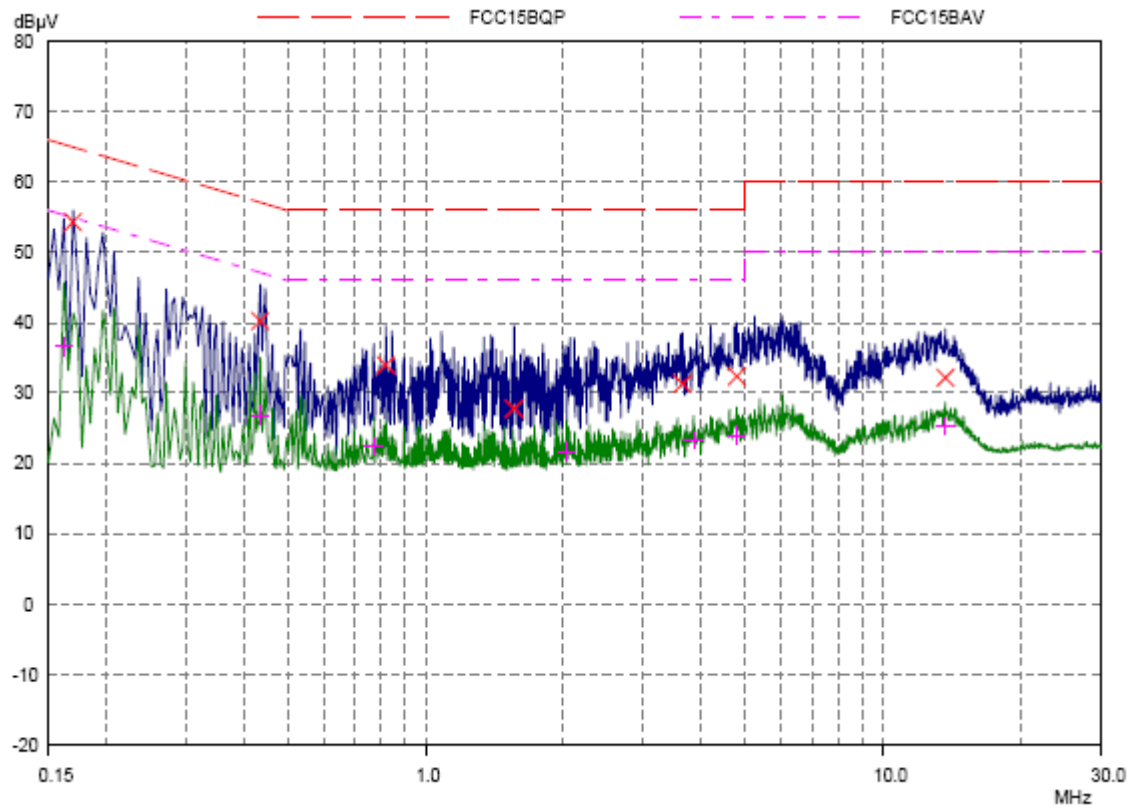
L Line

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Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.16953	54.32	64.98	10.66	N	gnd
0.43515	40.24	57.15	16.91	N	gnd
0.81798	33.97	56.00	22.03	N	gnd
1.56015	27.78	56.00	28.22	N	gnd
3.65	31.32	56.00	24.68	N	gnd
4.79062	32.35	56.00	23.65	N	gnd
13.66562	32.18	60.00	27.82	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.16171	36.64	55.38	18.74	N	gnd
0.43515	26.78	47.15	20.37	N	gnd
0.77109	22.44	46.00	23.56	N	gnd
2.03281	21.72	46.00	24.28	N	gnd
3.85312	23.32	46.00	22.68	N	gnd
4.79062	23.96	46.00	22.04	N	gnd
13.67734	25.23	50.00	24.77	N	gnd

N Line

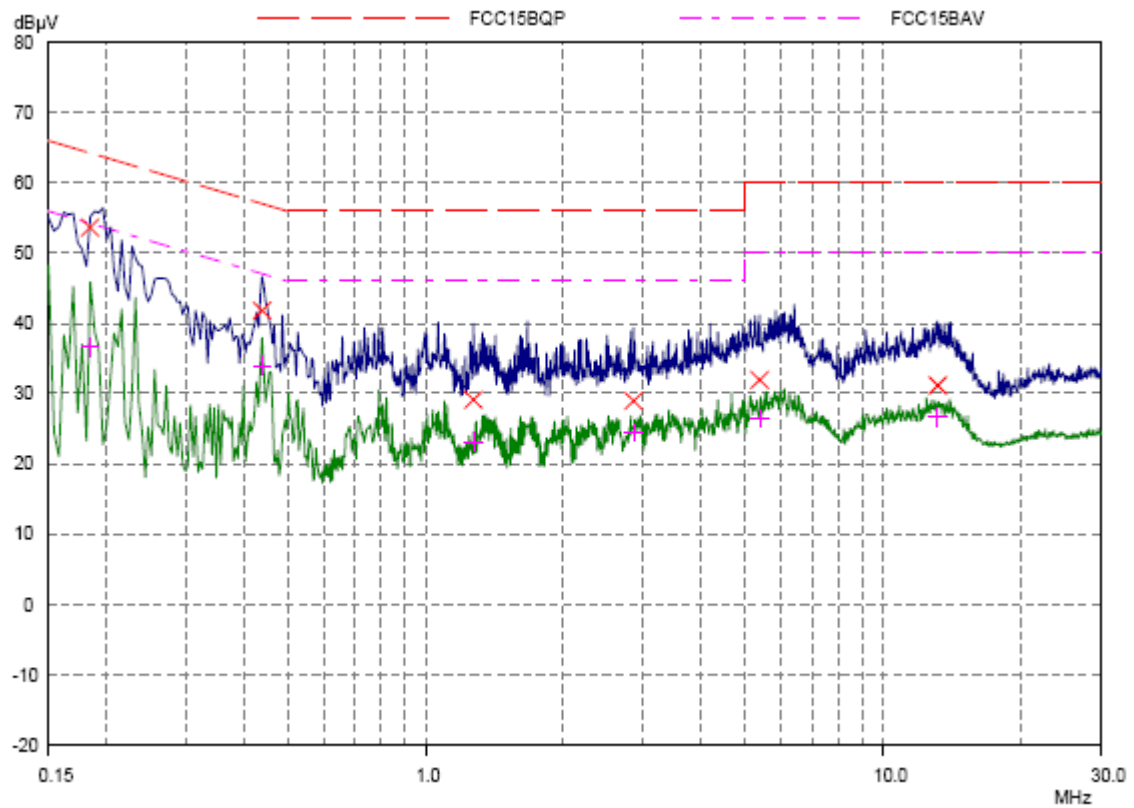
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Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.18515	53.68	64.25	10.59	L1	gnd
0.43908	41.81	57.08	15.27	L1	gnd
1.27109	29.08	56.00	26.92	L1	gnd
2.84921	28.95	56.00	27.05	L1	gnd
5.37656	31.90	60.00	28.10	L1	gnd
13.13828	31.16	60.00	28.84	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.18515	36.62	54.25	17.63	L1	gnd
0.43908	33.92	47.08	13.16	L1	gnd
1.27109	23.12	46.00	22.88	L1	gnd
2.84921	24.44	46.00	21.56	L1	gnd
5.37656	26.41	50.00	23.59	L1	gnd
13.13828	26.61	50.00	23.39	L1	gnd

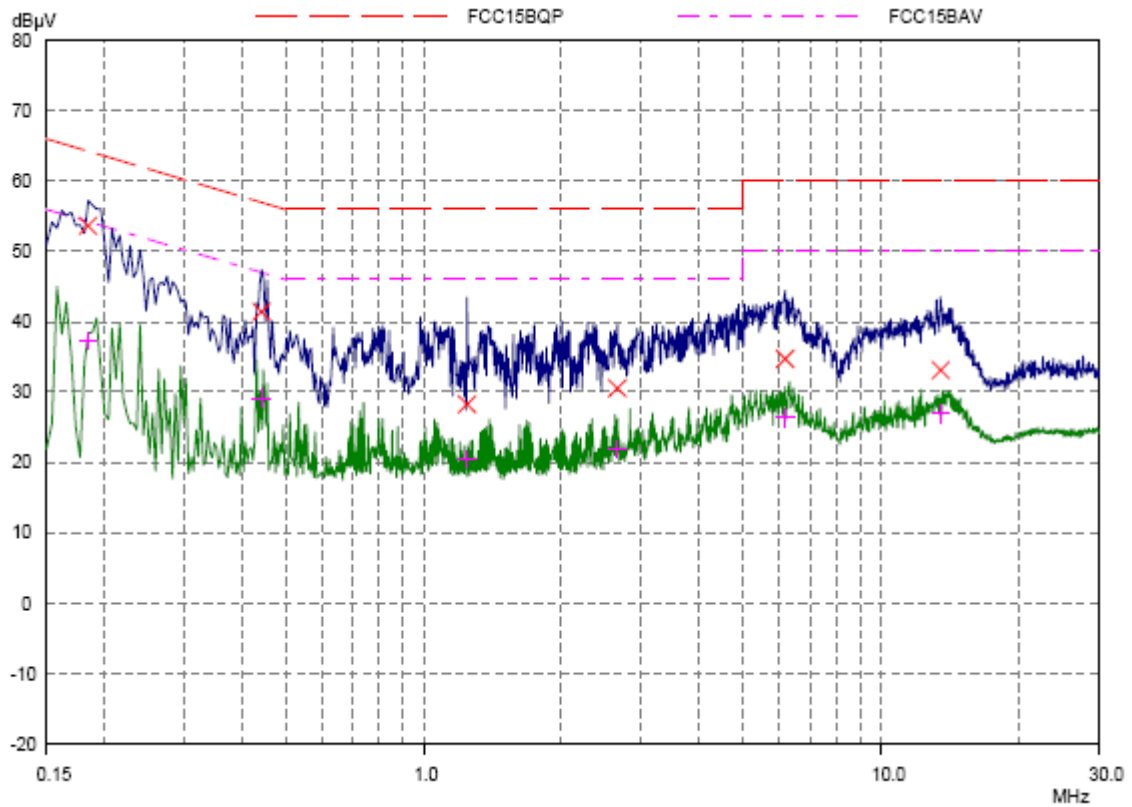
L Line

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Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.18515	53.62	64.25	10.63	N	gnd
0.44298	41.39	57.01	15.62	N	gnd
1.24375	28.24	56.00	27.76	N	gnd
2.6539	30.50	56.00	25.50	N	gnd
6.16562	34.70	60.00	25.30	N	gnd
13.50546	33.07	60.00	26.93	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.18515	37.32	54.25	16.93	N	gnd
0.44298	29.16	47.01	17.85	N	gnd
1.24375	20.48	46.00	25.52	N	gnd
2.6539	21.82	46.00	24.18	N	gnd
6.16562	26.38	50.00	23.62	N	gnd
13.50546	26.84	50.00	23.16	N	gnd

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2. Main Test Instruments

No.	Name	Type	Manufacturer	Serial Number	Calibration Date	Valid Period
01	EMI Test Receiver	ESCI	R&S	100948	2012-06-30	One year
02	TRILOG Broadband Antenna	VULB 9163	Schwarzbeck	9163-201	2010-06-20	Three years
03	Loop Antenna	FMZB1516	SCHWARZBECK	237	2012-06-30	Two years
04	Double Ridged Waveguide Horn Antenna	HF907	R&S	100126	2012-07-02	Three years
05	EMI Test Receiver	ESCS30	R&S	100138	2013-01-15	One year
06	LISN	ENV216	R&S	101171	2010-04-16	Three years
07	Spectrum Analyzer	E4445A	Agilent	MY46181146	2012-06-30	One year
08	Power sensor	E9304A	Agilent	MY50220022	2012-06-30	One year
09	Power meter	E4418B	Agilent	MY50000623	2012-06-30	One year
10	MOB COMMS DC SUPPLY	66319D	Agilent	MY43004105	2012-06-30	One year
11	Peak Power Analyzer	8990B	Agilent	51000109	2012-06-01	One year
12	Wideband Power Sensors	N1923A	Agilent	MY51220004	2012-06-01	One year
13	Standard Gain Horn	3160-09	ETS-Lindgren	00102644	2012-05-20	Three years
14	Power sensor	E9304A	Agilent	MY50220022	2012-06-30	One year

*****END OF REPORT *****

ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance

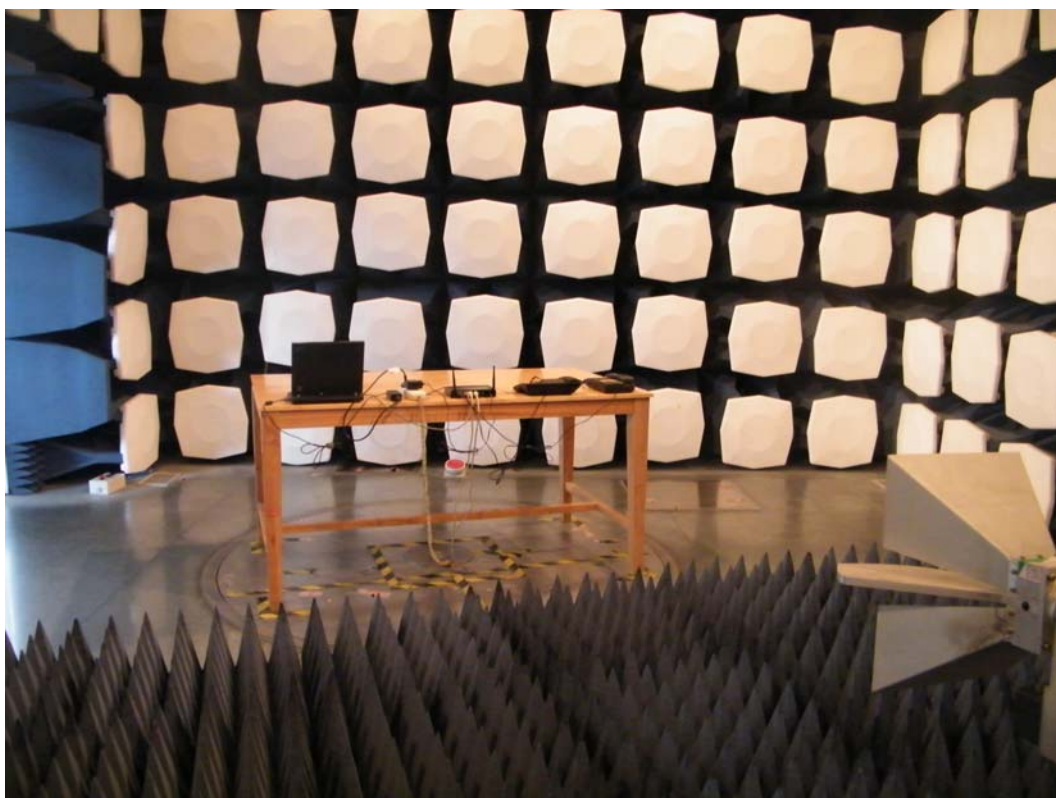


Picture 1 Constituents of EUT

A.2 Test Setup



a: Below 1GHz



b: Above 1GHz

Picture 2 Radiated Emission Test Setup

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a: Front View



b: Back View

Picture 3 Conducted Emission Test Setup