FCC TEST REPORT

According to

FCC Rules and Regulations Part 15 Subpart C

Applicant	:	Octtel Communication Co., Ltd.
Address	:	8F, No. 270, Sec. 1, Fusing Rd., South District, Taichung 40256, Taiwan, R.O.C.
Equipment	:	Wireless VoIP Router
Model No.	:	ODC-202AC, ODC-202N, OD-202AC, OD-202N, DVG-A5402G, DVG-A5402GF, DVG-N5402G, DVG-N5402GF
Trade Name	:	Octtel, D-Link
FCC ID	:	VP5ODC202AC

- The test result refers exclusively to the test presented test model / sample.,
- Without written approval of **Cerpass Technology Corp.,** the test report shall not be reproduced except in full.
- The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

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History of this test report

■ ORIGINAL.

☐ Additional attachment as following record:

Attachment No.	Issue Date	Description

CERTIFICATE OF COMPLIANCE

According to

FCC Rules and Regulations Part 15 Subpart C

Applicant	:	Octtel Communication Co., Ltd.
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Trade Name	:	Octtel, D-Link
FCC ID	:	VP5ODC202AC

I **HEREBY** CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 2009, KDB558074 & KDB662911.** The equipment was ***passed*** the test performed according to **FCC Rules and Regulations Part 15 Subpart C (2010).** Testing was carried out on Aug. 22, 2014 at **Cerpass Technology(Suzhou) Corp.**

Signature

Miro Chueh/ Technical director

1. Report of Measurements and Examinations

1.1 List of Measurements and Examinations

FCC Rule	. Description of Test	Result
15.203	. Antenna Requirement	Pass
15.207	. Conducted Emission	Pass
15.209 15.247(d)	. Spurious Emission	Pass
15.247(a)(2)	. 6dB Bandwidth	Pass
15.247(b)	. Maximum Peak and Average Output Power	Pass
15.247(e)	. Power Spectral Density	Pass
1.1307 1.1310 2.1091 2.1093	. Restrict Band Emission	Pass

2. Test Configuration of Equipment under Test

2.1 Feature of Equipment under Test

Voice Features	■ G.711 a/μ-law, G.729, G.726, G.723.1 ■ In-Band DTMF, Out-of-Band DTMF Relay (RFC2833 or SIP INFO) ■ Echo Cancellation (G.168) ■ Adaptive Jitter Buffer ■ T.30 FAX Bypass to G.711, T.38 Real Time FAX Relay
Telephony Specifications	■ DTMF / PULSE Dial Support ■ Caller ID Generation / Detection :DTMF, FSK-Bellcore Type 1 & 2, FSK-ETSI Type 1 & 2, FSK-NTT ■ FXS metering pulse: Polarity Reversal, 12kHz/ 16kHz calling tone ■ Polarity Reversal Generation (FXS)
SIP Call Features	■ Peer to Peer Call ■ Call Hold / Retrieve, Call Waiting, Call Pick Up ■ Call Park / Retrieve (SIP Server Required) ■ Call Forward - unconditional, busy, no answer ■ Call Transfer - attended, unattended ■ Do Not Disturb ■ Speed Dialing ■ Repeat Dialing ■ MWI (RFC-3842), ■ Hot Line and Warm Line
SIP Call Management	■ Support Outbound Proxy ■ SIP Registration Failover Mechanism ■ Group Hunting ■ User Programmable Dial Plan Support ■ Automatic Calling Number Manipulation ■ CDR Client ■ E.164 Numbering, ENUM support
Wireless	■ Compliant with IEEE 802.11 a/b/g/n/ac standards ■ Operating Frequency : 2.4GHz/5GHz ■ Multi-SSID ■ Broadcast SSID control ■ 64 / 128 bits WEP supported for encryption ■ Wireless Security with WPA2-PSK, WPA-PSK, WPA-Enterprise, WPA2-Enterprise ■ Wi-Fi Multi-Media (WMM) for AP mode ■ WPS (Wi-Fi Protected Setup) for easy setup

IP Network Specifications	■ Support IPv4, IPv6 (RFC2460, RFC 4861, RFC4862, RFC4863, RFC1981) ■ WAN: Static IP, PPPoE, DHCP, PPTP, L2TP, Bridge ■ NAT Functions: Virtual Servers, DMZ, NAT Traversal : Pass-through NAT, STUN client ■ VRF (Virtual Routing and Forwarding) ■ VLAN (802.1Q, 802.1p) ■ QoS features: ☐SIP and RTP always-first policy ☐WAN access rate control ☐IP Precedence, DSCP (DiffServ) tagging on SIP and RTP packets ☐LAN port rate limit
Network Security Specifications	■ DIGEST Authentication ■ MD5 Encryption ■ DoS Protection (configurable) ■ Firewall: MAC filter, IP/Port filter, URL filter, Contents filter
Router Management	■ WEB , TELNET, ■ TR-069/TR-104 ■ TR-111 part I &II(DHCP option 125) ■ DHCP option 43 auto provisioning ■ Two levels WEB login account ■ WEB languages : English, TC ■ System Information ■ Per call RTP packet summary ■ PING test ■ STUN inquiry ■ Syslog
Physical Interface	■ Combo WAN : Gigabit Ethernet copper and fiber (SFP) ■ LAN : 4-port RJ-45 10/100/1000 Ethernet ■ Antenna : 2 Detachable antenna (dual band concurrent-2T2R) ■ Telephone: 2 FXS ■ Factory default reset button, WPS push button, Power jack, Power switch ■ 2x USB 2.0 Host interface

2.2 Model Number Lists and Differences

Trade Name	Model No.	Description			
Octtel	ODC-202AC	Combo WAN (copper + optical)	4LAN	802.11 a/b/g/n/ac	2FXS
Octtel	ODC-202N	Combo WAN (copper + optical)	4LAN	802.11 b/g/n	2FXS
Octtel	OD-202AC	1 WAN	4LAN	802.11 a/b/g/n/ac	2FXS
Octtel	OD-202N	1 WAN	4LAN	802.11 b/g/n	2FXS
D-Link	DVG-A5402GF	Combo WAN (copper + optical)	4LAN	802.11 a/b/g/n/ac	2FXS
D-Link	DVG-N5402GF	Combo WAN (copper + optical)	4LAN	802.11 b/g/n	2FXS
D-Link	DVG-A5402G	1 WAN	4LAN	802.11 a/b/g/n/ac	2FXS
D-Link	DVG-N5402G	1 WAN	4LAN	802.11 b/g/n	2FXS

2.3 Carrier Frequency of Channels

802.11b, 802.11g, 802.11n HT 20 (2412MHz~2462MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***01**	**2412**	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	***11**	**2462**
***06**	**2437**	---	---

802.11n, HT 40 (2422MHz~2452MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***03**	**2422**	07	2442
04	2427	08	2447
05	2432	***09**	**2452**
***06**	**2437**	---	---

Note: Channels remarked * are selected to perform test.

2.4 Test Mode and Test Software

a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
b. The complete test system included Notebook and EUT for RF test.
c. An executive program, ”MP_TEST” under WIN XP was executed to transmit and receive data via WLAN.
d. The following test modes were performed for test:
   - 802.11b/g/n HT20: CH01: 2412MHz, CH06: 2437MHz, CH11: 2462MHz
   - 802.11n HT40: CH03: 2422MHz, CH06: 2437MHz, CH09: 2452MHz

   * Power output of data rate:

mode	antenna A												
	rate	1M			2M			5.5M			11M		
802.11b	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	1	18.45	16.30	41	18.40	16.25	41	18.40	16.25	41	18.40	16.30	41
	6	18.25	16.15	41	18.25	16.15	41	18.25	16.15	41	18.25	16.15	41
	11	18.35	16.25	42	18.35	16.20	42	18.35	16.20	42	18.35	16.25	42
mode	rate	6M			9M			12M			18M		
802.11g	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	1	21.70	12.20	41	21.45	12.25	41	22.00	12.25	41	21.00	12.30	41
	6	21.65	12.15	41	21.40	12.15	41	22.00	12.10	41	20.90	12.20	41
	11	21.85	12.35	42	21.60	12.40	42	22.20	12.35	42	21.10	12.40	42
mode	rate	24M			36M			48M			54M		
802.11g	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	1	22.00	12.15	41	21.95	12.10	41	21.45	12.17	41	21.95	12.15	41
	6	21.90	12.05	41	21.90	12.05	41	21.40	12.08	41	21.85	12.05	41
	11	22.20	12.30	42	22.15	12.25	42	21.65	12.30	42	22.07	12.27	42
mode	rate	MCS0			MCS1			MCS2			MCS3		
802.11n HT20	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	1	22.00	13.15	45	22.15	13.15	45	22.60	13.10	45	21.95	12.95	45
	6	22.00	13.20	45	22.30	13.30	45	22.55	13.05	45	21.65	12.85	45
	11	22.10	13.30	46	22.15	13.05	46	22.55	13.05	46	21.90	13.15	46
mode	rate	MCS4			MCS5			MCS6			MCS7		
802.11n HT20	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	1	21.90	12.75	45	21.85	12.88	45	22.75	12.75	45	21.92	12.75	45
	6	21.93	12.75	45	21.80	12.75	45	22.70	12.75	45	21.85	12.75	45
	11	22.05	13.05	46	22.05	13.00	46	22.80	12.85	46	22.00	13.00	46
mode	rate	MCS0			MCS1			MCS2			MCS3		
802.11n HT40	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	3	22.35	13.35	48	22.30	13.32	48	22.20	13.15	48	22.95	13.10	48
	6	22.40	13.35	48	22.35	13.30	48	22.45	13.25	48	22.90	13.20	48
	9	22.35	13.20	48	22.30	13.15	48	22.45	13.15	48	22.85	13.10	48
mode	rate	MCS4			MCS5			MCS6			MCS7		
802.11n HT40	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	3	22.70	13.15	48	22.50	13.10	48	22.22	13.12	48	22.15	13.20	48
	6	22.65	13.23	48	22.50	13.20	48	22.28	13.25	48	22.11	13.20	48
	9	22.50	12.90	48	22.32	12.85	48	22.20	13.10	48	22.00	13.06	48

mode	antenna B												
	rate	1M			2M			5.5M			11M		
802.11b	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	1	18.45	16.35	41	18.51	16.41	41	18.51	16.41	41	18.54	16.44	41
	6	18.53	16.43	41	18.50	16.40	41	18.46	16.36	41	18.45	16.35	41
	11	18.17	16.07	42	18.18	16.08	42	18.19	16.08	42	18.20	16.10	42
mode	rate	6M			9M			12M			18M		
802.11g	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	1	21.81	12.50	41	21.57	12.47	41	22.15	12.45	41	21.02	12.52	41
	6	21.70	12.36	41	21.40	12.35	41	22.00	12.35	41	20.90	12.40	41
	11	21.80	12.55	42	21.43	12.55	42	22.04	12.51	42	21.05	12.57	42
mode	rate	24M			36M			48M			54M		
802.11g	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	1	22.15	12.41	41	22.02	12.36	41	21.56	12.40	41	21.96	12.36	41
	6	21.95	12.27	41	21.85	12.22	41	21.35	12.25	41	21.85	12.21	41
	11	22.07	12.43	42	22.00	12.40	42	21.45	12.45	42	21.90	12.40	42
mode	rate	MCS0			MCS1			MCS2			MCS3		
802.11n HT20	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	1	22.10	13.61	45	22.15	13.50	45	22.55	13.55	45	22.06	13.56	45
	6	21.92	13.43	45	22.03	13.33	45	22.45	13.36	45	21.80	13.35	45
	11	22.13	13.68	46	22.26	13.57	46	22.72	13.63	46	22.02	13.62	46
mode	rate	MCS4			MCS5			MCS6			MCS7		
802.11n HT20	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	1	22.17	13.52	45	22.10	13.55	45	22.91	13.51	45	22.15	13.42	45
	6	22.07	13.35	45	21.85	13.33	45	22.85	13.35	45	22.06	13.28	45
	11	22.28	13.60	46	22.09	13.56	46	23.00	13.60	46	22.27	13.52	46
mode	rate	MCS0			MCS1			MCS2			MCS3		
802.11n HT40	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	3	22.43	13.92	48	22.40	13.95	48	22.55	13.80	48	22.95	13.72	48
	6	22.32	13.75	48	22.30	13.75	48	22.45	13.72	48	22.90	13.65	48
	9	22.25	13.66	48	22.23	13.63	48	22.35	13.62	48	22.82	13.55	48
mode	rate	MCS4			MCS5			MCS6			MCS7		
802.11n HT40	Channel	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting	Peak	Average	setting
	3	22.85	13.95	48	22.70	13.80	48	22.40	13.80	48	22.32	13.72	48
	6	22.62	13.67	48	22.54	13.62	48	22.28	13.65	48	22.20	13.62	48
	9	22.57	13.55	48	22.45	13.53	48	22.16	13.55	48	22.02	13.53	48

mode	antenna A+B								
	rate	1M		2M		5.5M		11M	
802.11b	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	1	21.46	19.34	21.47	19.34	21.47	19.34	21.48	19.38
	6	21.40	19.30	21.39	19.29	21.37	19.27	21.36	19.26
	11	21.27	19.17	21.28	19.15	21.28	19.15	21.29	19.19
mode	rate	6M		9M		12M		18M	
802.11g	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	1	24.77	15.36	24.52	15.37	25.09	15.36	24.02	15.42
	6	24.69	15.27	24.41	15.26	25.01	15.24	23.91	15.31
	11	24.84	15.46	24.53	15.49	25.13	15.44	24.09	15.50
mode	rate	24M		36M		48M		54M	
802.11g	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	1	25.09	15.29	25.00	15.24	24.52	15.30	24.97	15.27
	6	24.94	15.17	24.89	15.15	24.39	15.18	24.86	15.14
	11	25.15	15.38	25.09	15.34	24.56	15.39	25.00	15.35
mode	rate	MCS8		MCS9		MCS10		MCS11	
802.11n HT20	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	1	25.06	16.40	25.16	16.34	25.59	16.34	25.02	16.28
	6	24.97	16.33	25.18	16.33	25.51	16.22	24.74	16.12
	11	25.13	16.50	25.22	16.33	25.65	16.36	24.97	16.40
mode	rate	MCS12		MCS13		MCS14		MCS15	
802.11n HT20	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	1	25.05	16.16	24.99	16.24	25.84	16.16	25.05	16.11
	6	25.01	16.07	24.84	16.06	25.79	16.07	24.97	16.03
	11	25.18	16.34	25.08	16.30	25.91	16.25	25.15	16.28
mode	rate	MCS8		MCS9		MCS10		MCS11	
802.11n HT40	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	3	25.40	16.65	25.36	16.66	25.39	16.50	25.96	16.43
	6	25.37	16.56	25.34	16.54	25.46	16.50	25.91	16.44
	9	25.31	16.45	25.28	16.41	25.41	16.40	25.85	16.34
mode	rate	MCS12		MCS13		MCS14		MCS15	
802.11n HT40	Channel	Peak	Average	Peak	Average	Peak	Average	Peak	Average
	3	25.79	16.58	25.61	16.47	25.32	16.48	25.25	16.48
	6	25.65	16.47	25.53	16.43	25.29	16.46	25.17	16.43
	9	25.55	16.25	25.40	16.21	25.19	16.34	25.02	16.31

2.5 Description of Test System

Device	Manufacturer	Model No.	Description
Notebook	ASUS	A8J	Power Cable, Unshielding, 1.8m

Used cable

Cable	Quantity	Description
Network Cable	1	Unshielding, 1.8m

2.6 General Information of Test

Test Site:	Cerpass Technology(Suzhou) Co., Ltd.
Test Site Location :	No.66,Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China
NVLAP LAB Code :	200814-0
FCC Registration Number :	916572, 331395
IC Registration Number :	7290A-1, 7290A-2
VCCI Registration Number :	T-1945 for Telecommunication Test C-2919 for Conducted emission test R-2670 for Radiated emission test below 1GHz G-227 for Radiated emission test above 1GHz
Frequency Range Investigated:	Conducted: from 150kHz to 30MHz Radiation: from 30MHz to 40,000MHz
Test Distance:	The test distance of radiated emission from antenna to EUT is 3 M.

Laboratory accreditation

NVLAP LAB CODE: 200954-0

3. Antenna Requirements

3.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

3.2 Antenna Construction and Directional Gain

ANT A, ANT B
Antenna Type: Dipole Antenna
Antenna Gain: 2 dBi

Note: Directional gain = GANT+10 log(N) dBi=2+10log(2)=5(dBi)

4. Test of Conducted Emission

4.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2009 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

4.2 Test Procedures

a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.

b. Connect EUT to the power mains through a line impedance stabilization network (LISN).

c. All the support units are connecting to the other LISN.

d. The LISN provides 50 ohm coupling impedance for the measuring instrument.

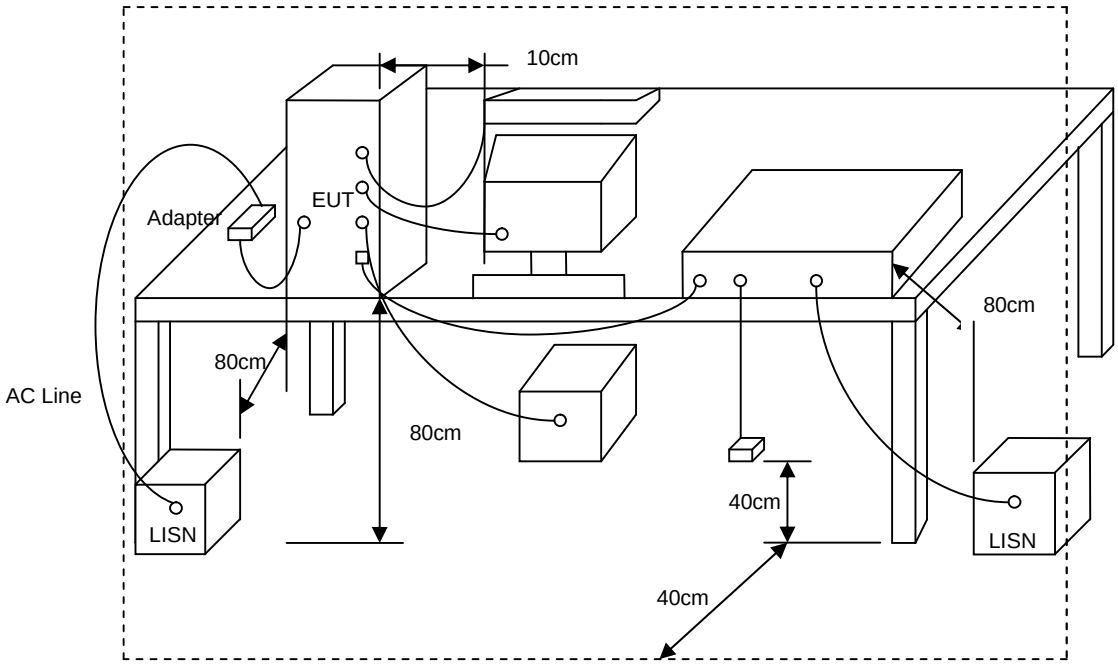
e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.

f. Both sides of AC line were checked for maximum conducted interference.

g. The frequency range from 150 kHz to 30 MHz was searched.

h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

4.3 Typical Test Setup

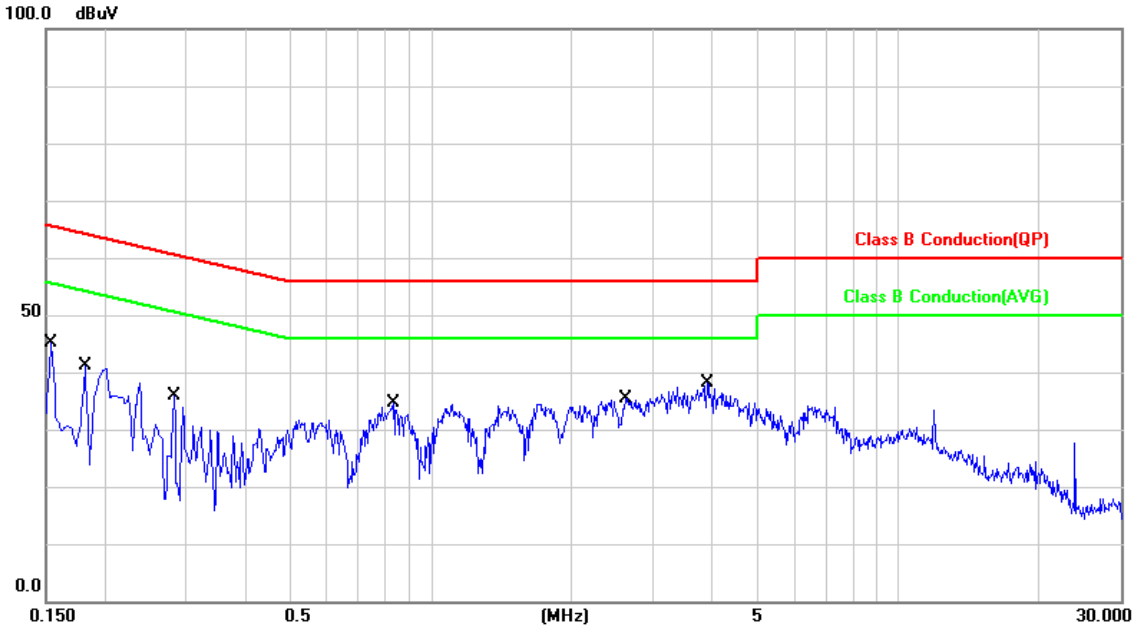


4.4 Measurement Equipment

Instrument	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
EMI Receiver	R&S	ESCI	100821	2013/09/18	2014/09/17
LISN	Rolf Heine	NNB-2/16Z	02/10191	2013/09/30	2014/09/29
LISN	Schwarzbeck	NSLK 8127	8127-568	2013/08/30	2014/08/29
Pulse Limiter	R&S	ESH3-Z2	101933	2014/08/12	2015/08/11
Software	Farad	Ez-EMC	ver.ct3a1	N/A	N/A

4.5 Test Result and Data

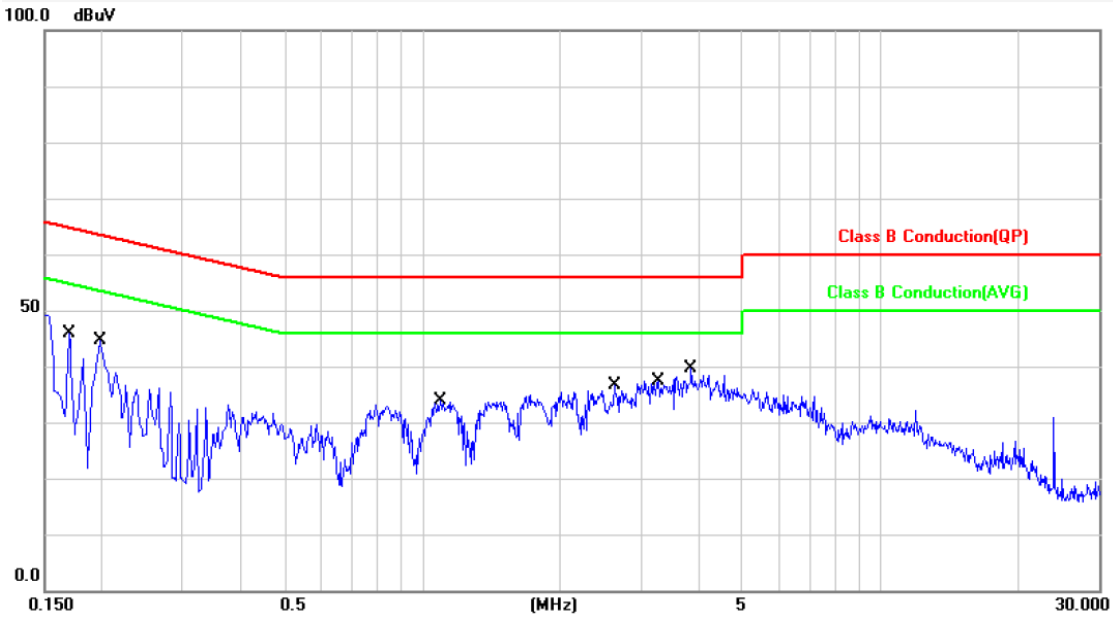
Power	:	AC 120V	Pol/Phase	:	LINE
Test Mode	:	802.11g, CH1	Temperature	:	26 °C
Test Date	:	Aug. 22, 2014	Humidity	:	46 %
Memo	:		Atmospheric Pressure	:	1006 hPa



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1539	9.92	30.53	40.45	65.78	-25.33	QP	P
2	0.1539	9.92	19.69	29.61	55.78	-26.17	AVG	P
3	0.1819	9.92	26.43	36.35	64.39	-28.04	QP	P
4	0.1819	9.92	11.26	21.18	54.39	-33.21	AVG	P
5	0.2819	9.92	16.43	26.35	60.76	-34.41	QP	P
6	0.2819	9.92	6.55	16.47	50.76	-34.29	AVG	P
7	0.8340	9.95	23.01	32.96	56.00	-23.04	QP	P
8	0.8340	9.95	18.01	27.96	46.00	-18.04	AVG	P
9	2.6140	10.05	21.78	31.83	56.00	-24.17	QP	P
10	2.6140	10.05	14.68	24.73	46.00	-21.27	AVG	P
11	3.9100	10.09	23.53	33.62	56.00	-22.38	QP	P
12	3.9100	10.09	17.69	27.78	46.00	-18.22	AVG	P

Note: Level = Reading + Factor
Margin = Level – Limit
Factor = (LISN or ISN or PLC or Current Probe) Factor + Cable Loss + Attenuator

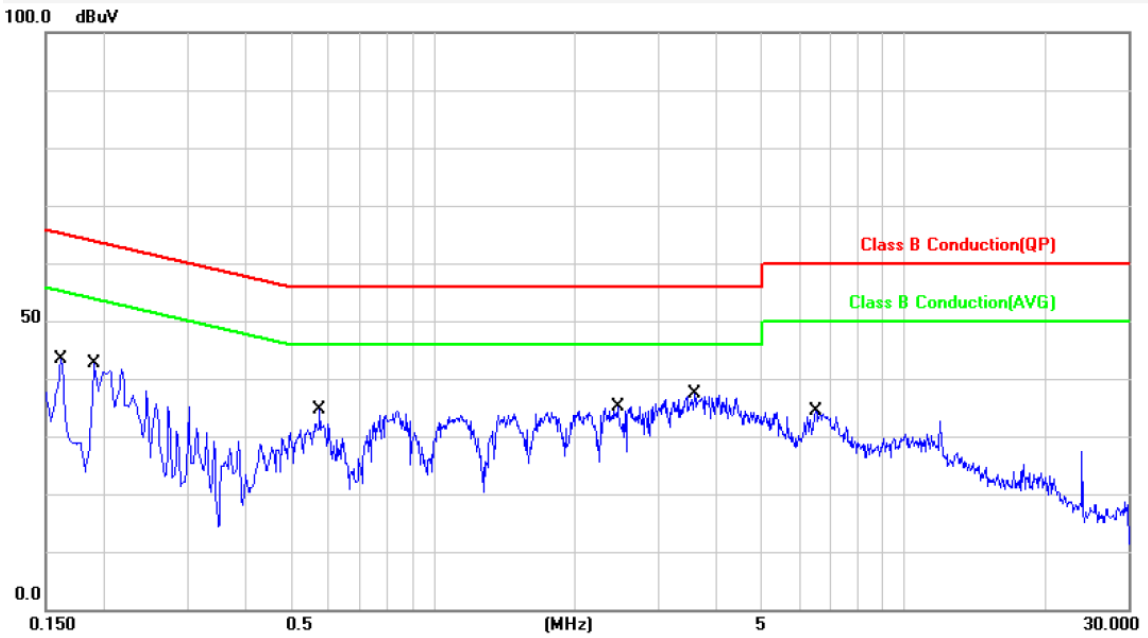
Power :	AC 120V	Pol/Phase :	NEUTRAL
Test Mode :	802.11g, CH1	Temperature :	26 °C
Test Date :	Aug. 22, 2014	Humidity :	46 %
Memo :		Atmospheric Pressure :	1006 hPa



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1700	9.92	28.33	38.25	64.96	-26.71	QP	P
2	0.1700	9.92	12.66	22.58	54.96	-32.38	AVG	P
3	0.1980	9.91	29.63	39.54	63.69	-24.15	QP	P
4	0.1980	9.91	25.21	35.12	53.69	-18.57	AVG	P
5	1.0940	9.96	21.91	31.87	56.00	-24.13	QP	P
6	1.0940	9.96	16.43	26.39	46.00	-19.61	AVG	P
7	2.6300	10.05	23.03	33.08	56.00	-22.92	QP	P
8	2.6300	10.05	16.60	26.65	46.00	-19.35	AVG	P
9	3.2900	10.07	24.34	34.41	56.00	-21.59	QP	P
10	3.2900	10.07	18.50	28.57	46.00	-17.43	AVG	P
11	3.8780	10.09	24.76	34.85	56.00	-21.15	QP	P
12	3.8780	10.09	19.10	29.19	46.00	-16.81	AVG	P

Note: Level = Reading + Factor
Margin = Level – Limit
Factor = (LISN or ISN or PLC or Current Probe) Factor + Cable Loss + Attenuator

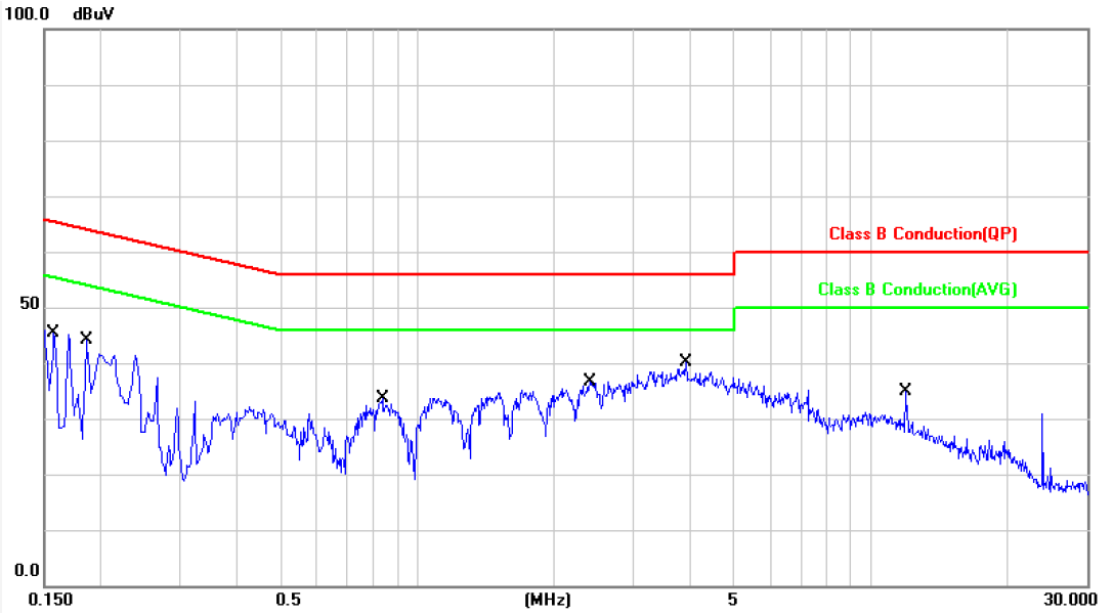
Power :	AC 120V	Pol/Phase :	LINE
Test Mode :	802.11n HT20, CH1	Temperature :	26 °C
Test Date :	Aug. 22, 2014	Humidity :	46 %
Memo :		Atmospheric Pressure :	1006 hPa



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1620	9.92	28.89	38.81	65.36	-26.55	QP	P
2	0.1620	9.92	11.77	21.69	55.36	-33.67	AVG	P
3	0.1900	9.92	27.20	37.12	64.03	-26.91	QP	P
4	0.1900	9.92	17.66	27.58	54.03	-26.45	AVG	P
5	0.5740	9.92	21.41	31.33	56.00	-24.67	QP	P
6	0.5740	9.92	15.00	24.92	46.00	-21.08	AVG	P
7	2.4660	10.04	22.27	32.31	56.00	-23.69	QP	P
8	2.4660	10.04	15.52	25.56	46.00	-20.44	AVG	P
9	3.5900	10.08	23.28	33.36	56.00	-22.64	QP	P
10	3.5900	10.08	17.42	27.50	46.00	-18.50	AVG	P
11	6.4980	10.16	21.02	31.18	60.00	-28.82	QP	P
12	6.4980	10.16	16.41	26.57	50.00	-23.43	AVG	P

Note: Level = Reading + Factor
Margin = Level – Limit
Factor = (LISN or ISN or PLC or Current Probe) Factor + Cable Loss + Attenuator

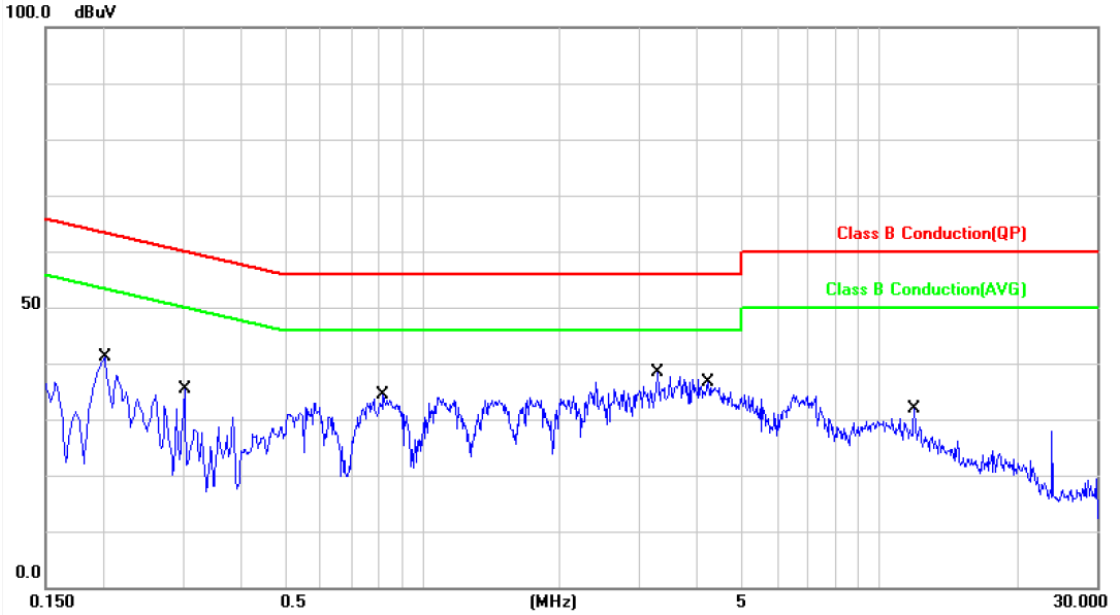
Power	:	AC 120V	Pol/Phase	:	NEUTRAL
Test Mode	:	802.11n HT20, CH1	Temperature	:	26 °C
Test Date	:	Aug. 22, 2014	Humidity	:	46 %
Memo	:		Atmospheric Pressure	:	1006 hPa



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1580	9.92	30.78	40.70	65.56	-24.86	QP	P
2	0.1580	9.92	20.40	30.32	55.56	-25.24	AVG	P
3	0.1860	9.91	26.32	36.23	64.21	-27.98	QP	P
4	0.1860	9.91	10.12	20.03	54.21	-34.18	AVG	P
5	0.8380	9.95	21.89	31.84	56.00	-24.16	QP	P
6	0.8380	9.95	16.59	26.54	46.00	-19.46	AVG	P
7	2.4020	10.04	22.98	33.02	56.00	-22.98	QP	P
8	2.4020	10.04	18.32	28.36	46.00	-17.64	AVG	P
9	3.9180	10.09	24.84	34.93	56.00	-21.07	QP	P
10	3.9180	10.09	19.20	29.29	46.00	-16.71	AVG	P
11	11.9940	10.30	21.99	32.29	60.00	-27.71	QP	P
12	11.9940	10.30	19.93	30.23	50.00	-19.77	AVG	P

Note: Level = Reading + Factor
Margin = Level – Limit
Factor = (LISN or ISN or PLC or Current Probe) Factor + Cable Loss + Attenuator

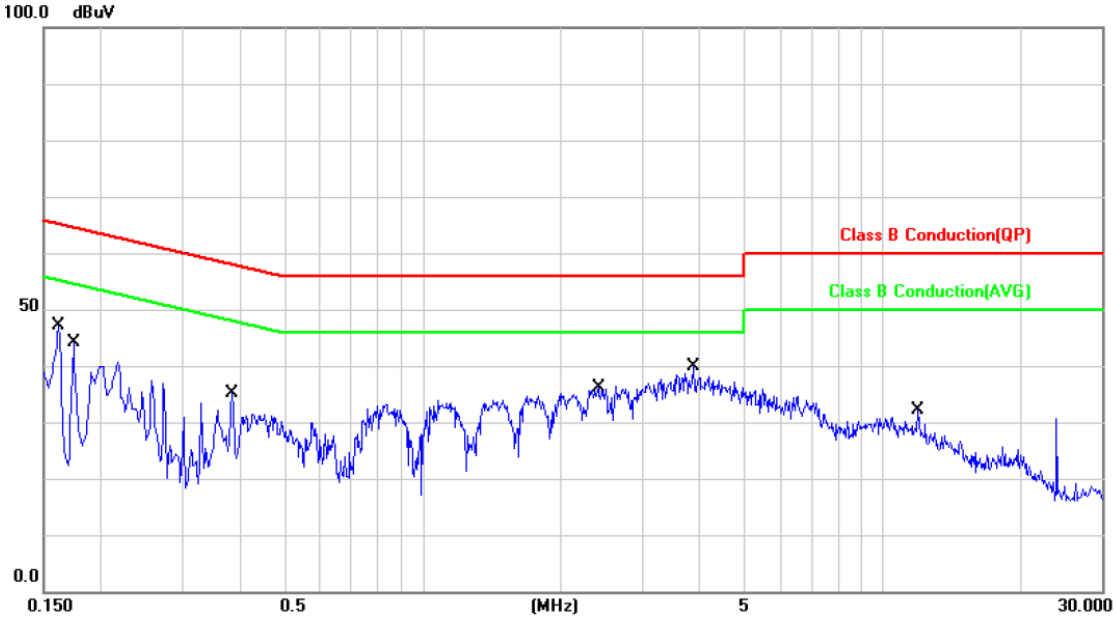
Power :	AC 120V	Pol/Phase :	LINE
Test Mode :	802.11n HT40, CH3	Temperature :	26 °C
Test Date :	Aug. 22, 2014	Humidity :	46 %
Memo :		Atmospheric Pressure :	1006 hPa



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2020	9.92	30.62	40.54	63.52	-22.98	QP	P
2	0.2020	9.92	24.22	34.14	53.52	-19.38	AVG	P
3	0.3020	9.91	16.62	26.53	60.19	-33.66	QP	P
4	0.3020	9.91	8.84	18.75	50.19	-31.44	AVG	P
5	0.8260	9.95	22.53	32.48	56.00	-23.52	QP	P
6	0.8260	9.95	16.44	26.39	46.00	-19.61	AVG	P
7	3.2780	10.07	22.97	33.04	56.00	-22.96	QP	P
8	3.2780	10.07	16.86	26.93	46.00	-19.07	AVG	P
9	4.2300	10.09	22.76	32.85	56.00	-23.15	QP	P
10	4.2300	10.09	17.39	27.48	46.00	-18.52	AVG	P
11	11.9940	10.31	21.09	31.40	60.00	-28.60	QP	P
12	11.9940	10.31	18.92	29.23	50.00	-20.77	AVG	P

Note: Level = Reading + Factor
Margin = Level – Limit
Factor = (LISN or ISN or PLC or Current Probe) Factor + Cable Loss + Attenuator

Power :	AC 120V	Pol/Phase :	NEUTRAL
Test Mode :	802.11n HT40, CH3	Temperature :	26 °C
Test Date :	Aug. 22, 2014	Humidity :	46 %
Memo :		Atmospheric Pressure :	1006 hPa



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1620	9.92	29.64	39.56	65.36	-25.80	QP	P
2	0.1620	9.92	14.29	24.21	55.36	-31.15	AVG	P
3	0.1740	9.92	28.19	38.11	64.76	-26.65	QP	P
4	0.1740	9.92	15.03	24.95	54.76	-29.81	AVG	P
5	0.3860	9.92	18.98	28.90	58.15	-29.25	QP	P
6	0.3860	9.92	13.52	23.44	48.15	-24.71	AVG	P
7	2.4100	10.04	23.07	33.11	56.00	-22.89	QP	P
8	2.4100	10.04	18.28	28.32	46.00	-17.68	AVG	P
9	3.8940	10.09	24.80	34.89	56.00	-21.11	QP	P
10	3.8940	10.09	19.14	29.23	46.00	-16.77	AVG	P
11	11.9900	10.30	20.76	31.06	60.00	-28.94	QP	P
12	11.9900	10.30	18.10	28.40	50.00	-21.60	AVG	P

Note: Level = Reading + Factor
Margin = Level – Limit
Factor = (LISN or ISN or PLC or Current Probe) Factor + Cable Loss + Attenuator

5. Test of Spurious Emission (Radiated)

5.1 Test Limit

In any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

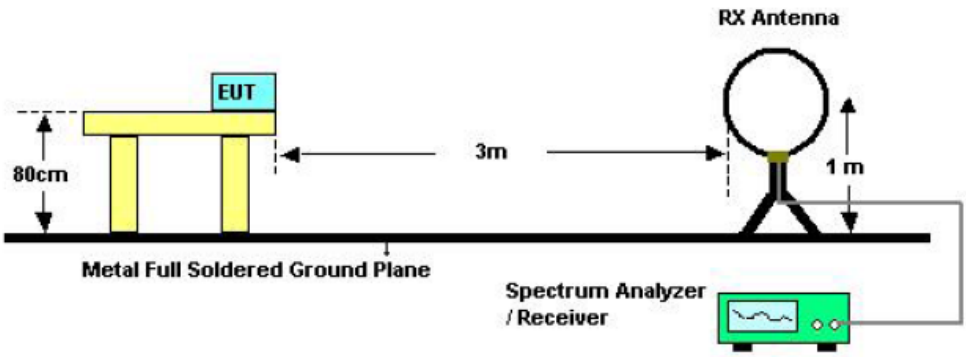
Frequency (MHz)	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

5.2 Test Procedures

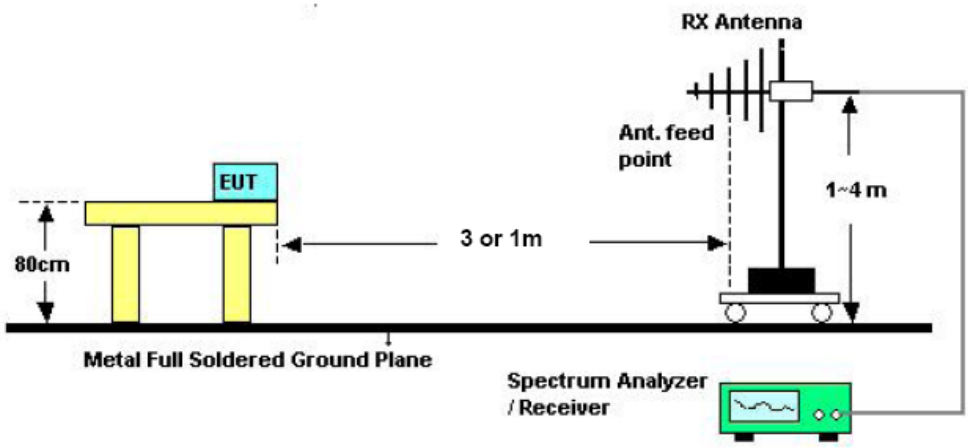
a. The EUT was placed on a rotatable table top 0.8 meter above ground.
b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
c. The table was rotated 360 degrees to determine the position of the highest radiation.
d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
i. “Cone of radiation” has been considered to be 3dB bandwidth of the measurement antenna.

5.3 Typical Test Setup

For radiated emissions below 30MHz



For radiated emissions above 30MHz



Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.
Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1m]) (dB);
Limit line = specific limits (dBuV) + distance extrapolation factor [9.54 dB].

5.4 Measurement Equipment

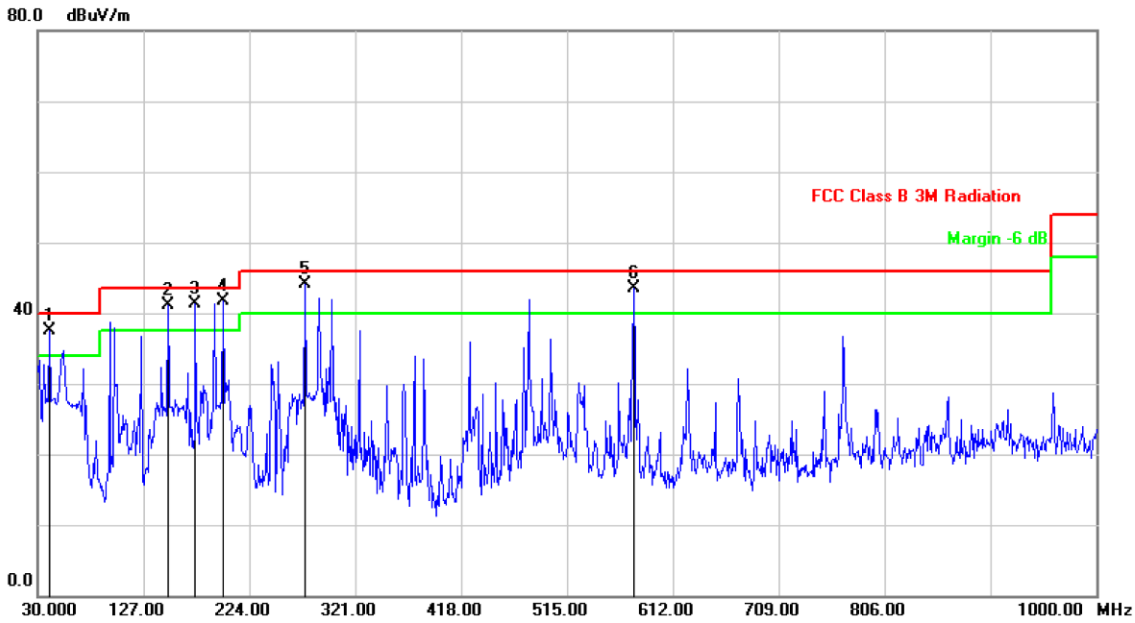
Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
EMI Receiver	R&S	ESCI	100443	2014/04/09	2015/04/08
Bilog Antenna	Schwarzbeck	VULB 9168	275	2013/10/01	2014/09/30
Amplifier	QuieTek	AP/0100A	CHM0906075	2013/09/30	2014/09/29
SPECTRUM ANALYZER	R&S	FSP40	100219	2013/09/14	2014/09/13
HORN ANTENNA	EMCO	3115	31601	2013/09/18	2014/09/17
PREAMPLIFIER	AGILENT	8449B	3008A01954	2014/03/28	2015/03/27
Software	Farad	Ez-EMC	ver.ct3a1	N/A	N/A

5.5 Test Result and Data (9kHz ~ 30MHz)

The 9kHz - 30MHz spurious emission is under limit 20dB more.

5.6 Test Result and Data (30MHz ~ 1GHz)

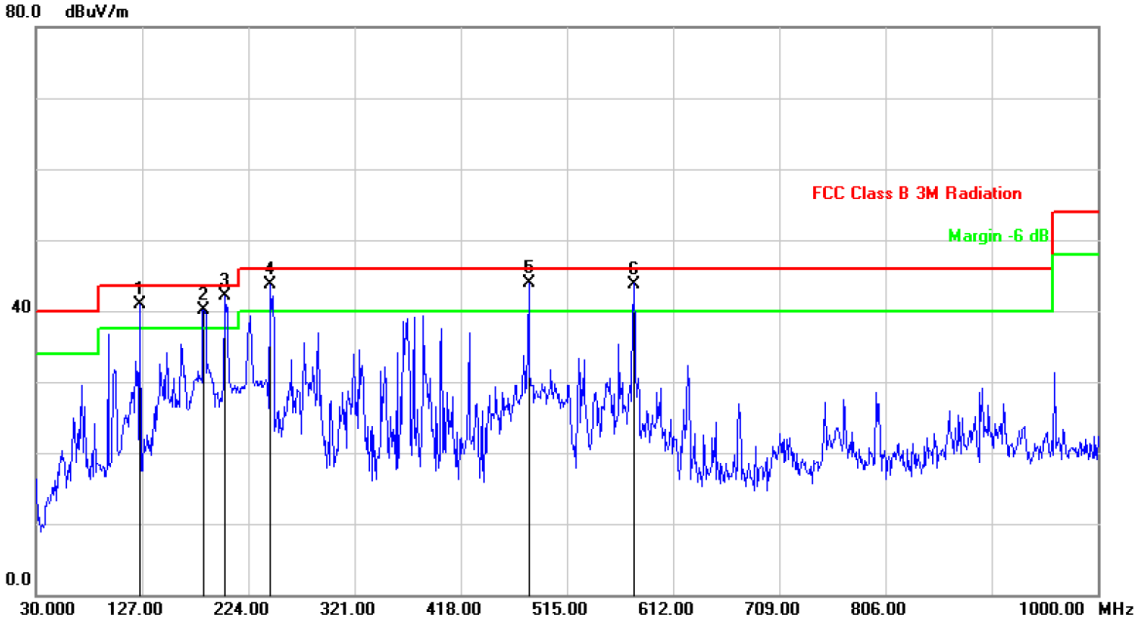
Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	802.11g, CH1	Temperature :	24 °C
Test Date :	Aug. 01, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	40.6700	-18.30	55.71	37.41	40.00	-2.59	peak	100	182
2	149.3100	-18.75	59.92	41.17	43.50	-2.33	peak	100	182
3	174.5300	-19.46	60.76	41.30	43.50	-2.20	peak	100	182
4	199.7500	-21.51	63.23	41.72	43.50	-1.78	peak	100	182
5	275.4100	-18.64	62.80	44.16	46.00	-1.84	peak	100	182
6	576.1100	-10.99	54.48	43.49	46.00	-2.51	peak	100	182

Note: Level = Reading + Factor
Margin = Level - Limit

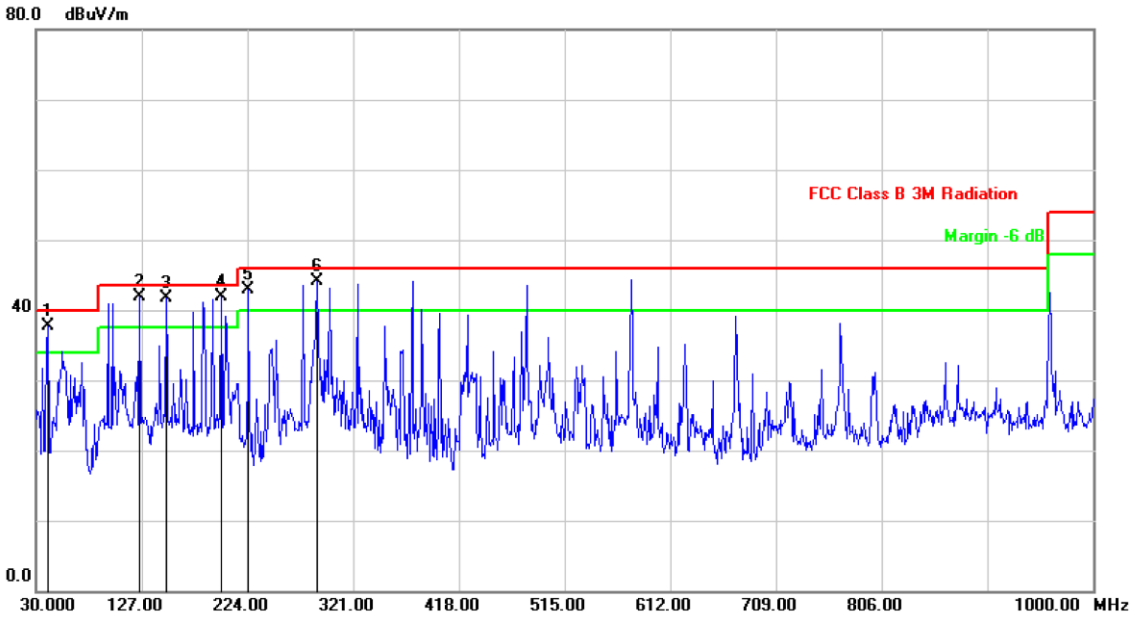
Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	802.11g, CH1	Temperature :	24 °C
Test Date :	Aug. 01, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	125.0600	-20.64	61.48	40.84	43.50	-2.66	peak	100	190
2	183.2600	-20.31	60.50	40.19	43.50	-3.31	peak	100	190
3	202.6600	-21.45	63.62	42.17	43.50	-1.33	peak	100	190
4	243.4000	-19.89	63.64	43.75	46.00	-2.25	peak	100	190
5	480.0800	-13.11	56.96	43.85	46.00	-2.15	peak	100	190
6	576.1100	-10.99	54.79	43.80	46.00	-2.20	peak	100	190

Note: Level = Reading + Factor
Margin = Level - Limit

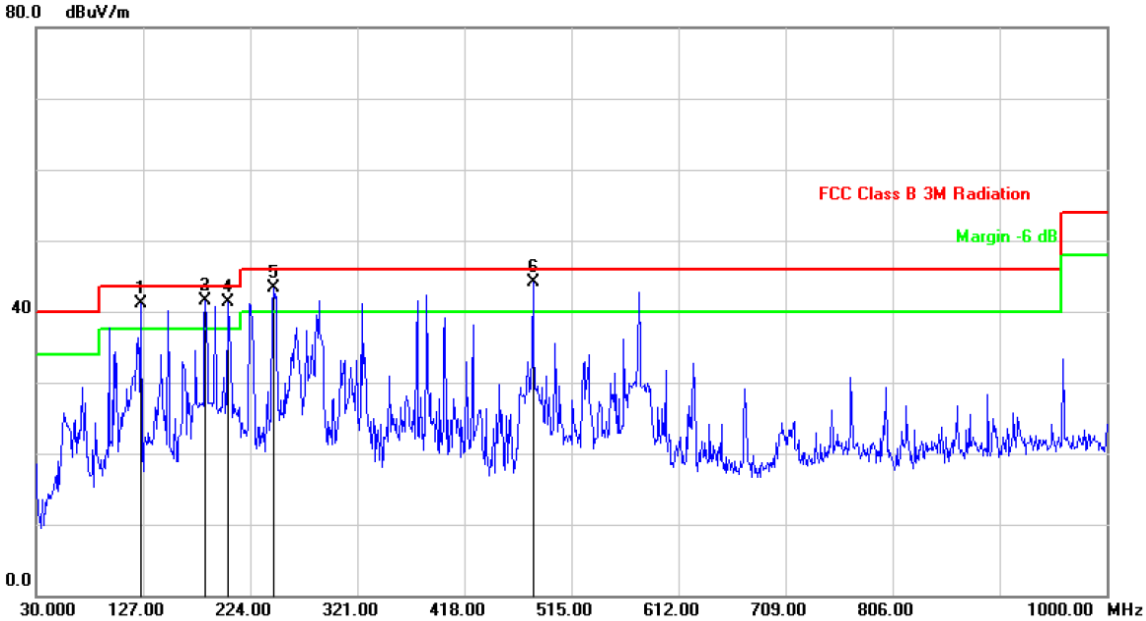
Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	802.11n HT20, CH1	Temperature :	24 °C
Test Date :	Aug. 01, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	40.6700	-18.30	56.00	37.70	40.00	-2.30	peak	100	162
2	125.0600	-20.64	62.60	41.96	43.50	-1.54	peak	100	162
3	149.3100	-18.75	60.43	41.68	43.50	-1.82	peak	100	162
4	199.7500	-21.51	63.44	41.93	43.50	-1.57	peak	100	162
5	224.9700	-20.94	63.89	42.95	46.00	-3.05	peak	100	162
6	288.0200	-18.17	62.31	44.14	46.00	-1.86	peak	100	162

Note: Level = Reading + Factor
Margin = Level - Limit

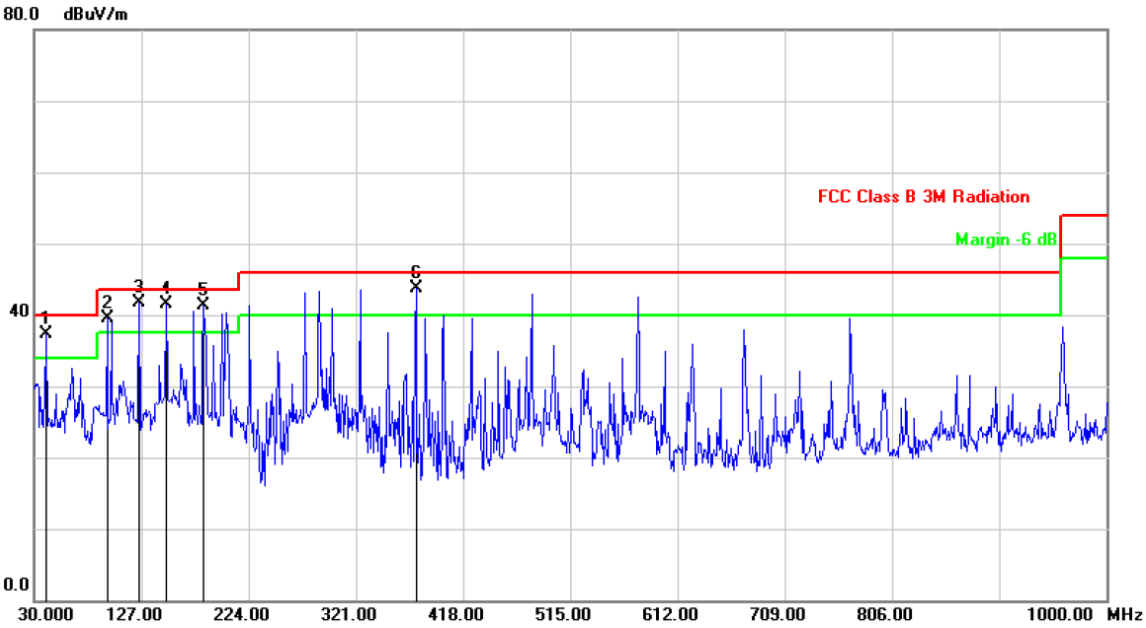
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	802.11n HT20, CH1	Temperature	:	24 °C
Test Date	:	Aug. 01, 2014	Humidity	:	53 %
Memo	:		Atmospheric Pressure	:	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	125.0600	-20.64	61.77	41.13	43.50	-2.37	peak	100	175
2	183.2600	-20.31	61.81	41.50	43.50	-2.00	peak	100	175
3	183.2600	-20.31	61.81	41.50	43.50	-2.00	peak	100	175
4	203.6300	-21.43	62.71	41.28	43.50	-2.22	peak	100	175
5	245.3400	-19.81	63.16	43.35	46.00	-2.65	peak	100	175
6	480.0800	-13.11	57.24	44.13	46.00	-1.87	peak	100	175

Note: Level = Reading + Factor
Margin = Level - Limit

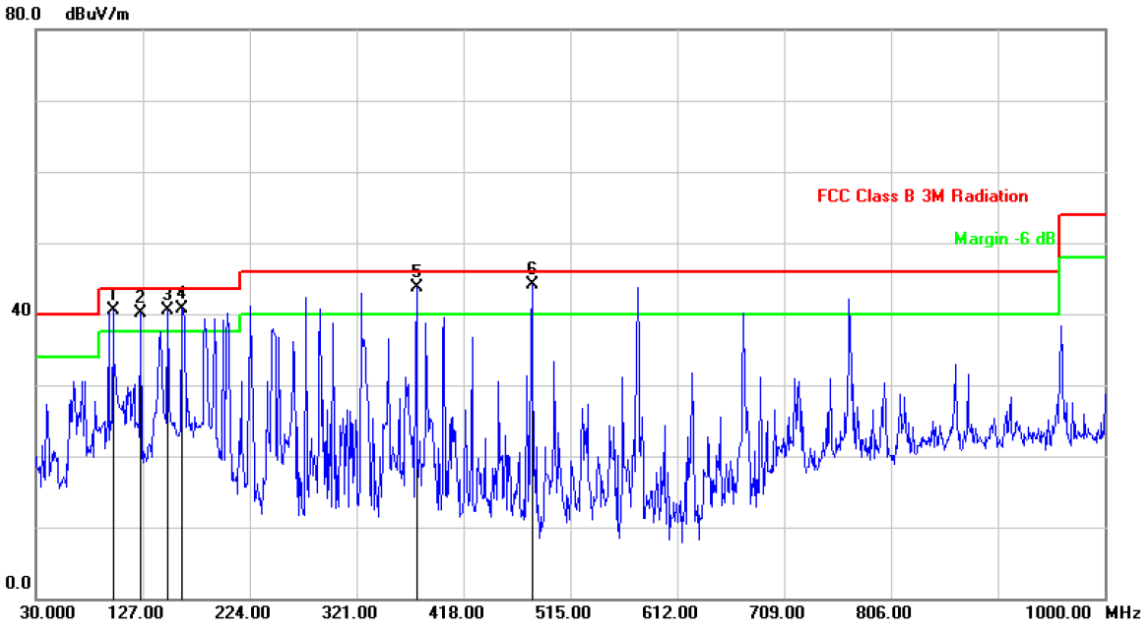
Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	802.11n HT40, CH3	Temperature :	24 °C
Test Date :	Aug. 01, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	40.6700	-18.30	55.53	37.23	40.00	-2.77	peak	100	153
2	95.9600	-24.05	63.54	39.49	43.50	-4.01	peak	100	153
3	125.0600	-20.64	62.38	41.74	43.50	-1.76	peak	100	153
4	149.3100	-18.75	60.22	41.47	43.50	-2.03	peak	100	153
5	183.2600	-20.31	61.58	41.27	43.50	-2.23	peak	100	153
6	375.3200	-15.71	59.36	43.65	46.00	-2.35	peak	100	153

Note: Level = Reading + Factor
Margin = Level - Limit

Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	802.11n HT40, CH3	Temperature :	24 °C
Test Date :	Aug. 01, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa

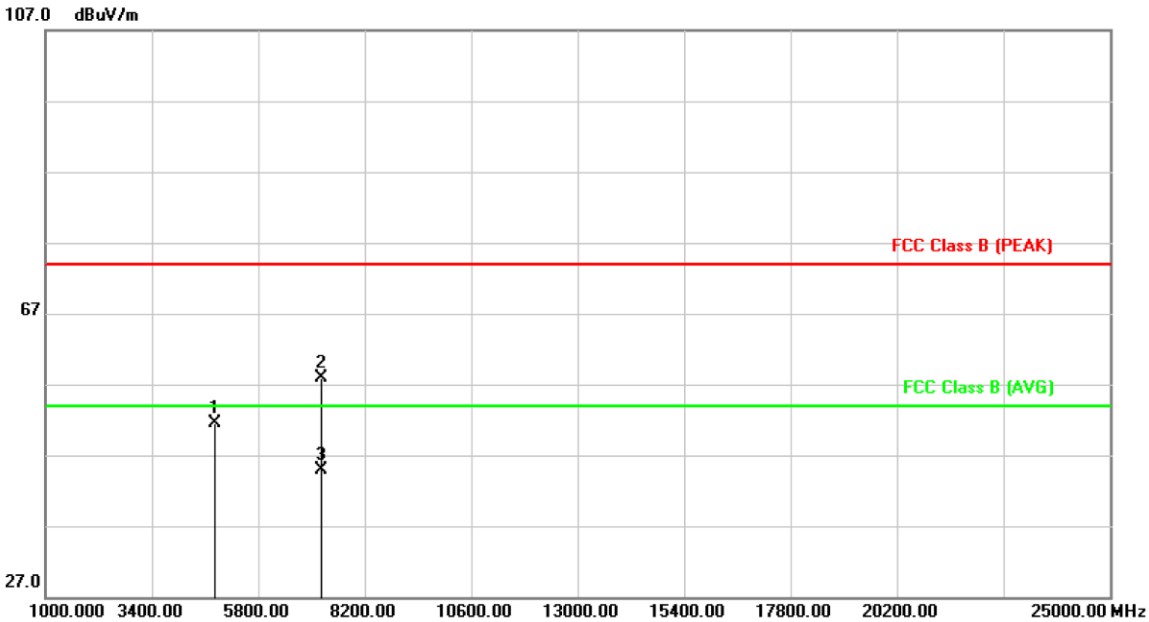


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	99.8400	-23.54	63.98	40.44	43.50	-3.06	peak	100	188
2	125.0600	-20.64	60.81	40.17	43.50	-3.33	peak	100	188
3	149.3100	-18.75	59.18	40.43	43.50	-3.07	peak	100	188
4	162.8900	-18.78	59.42	40.64	43.50	-2.86	peak	100	188
5	375.3200	-15.71	59.40	43.69	46.00	-2.31	peak	100	188
6	480.0800	-13.11	57.24	44.13	46.00	-1.87	peak	100	188

Note: Level = Reading + Factor
Margin = Level - Limit

5.7 Test Result and Data (Above 1GHz)

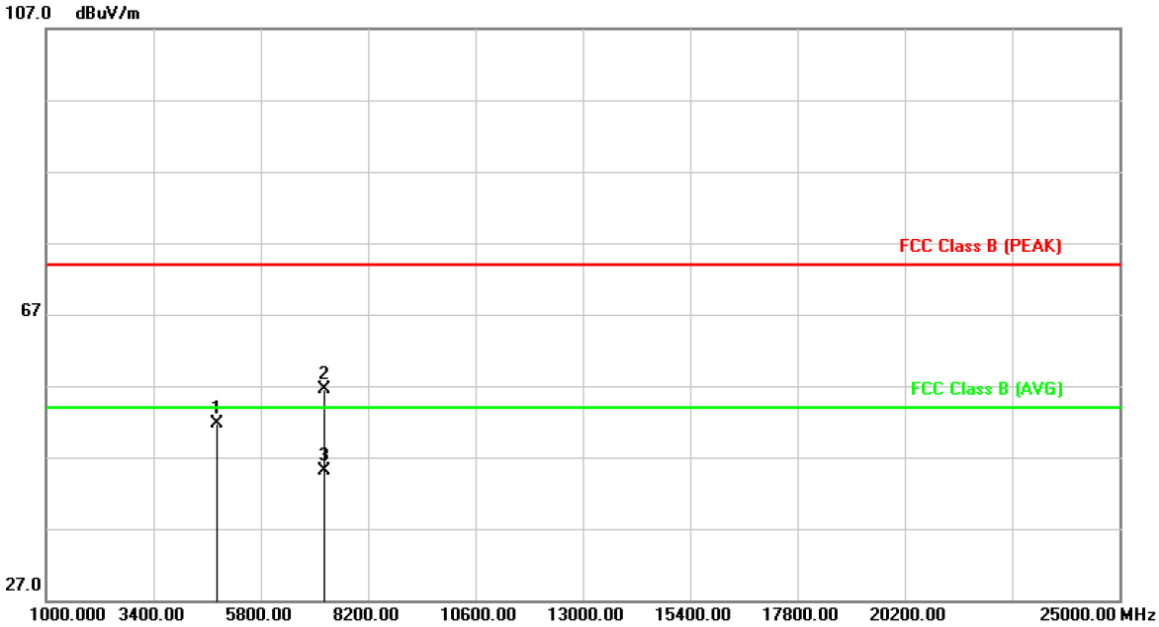
Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	802.11b, CH1	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4824.000	7.31	44.10	51.41	74.00	-22.59	peak	100	181
2	7236.000	12.29	45.55	57.84	74.00	-16.16	peak	100	181
3	7236.000	12.29	32.60	44.89	54.00	-9.11	AVG	100	181

Note: Level = Reading + Factor
Margin = Level - Limit

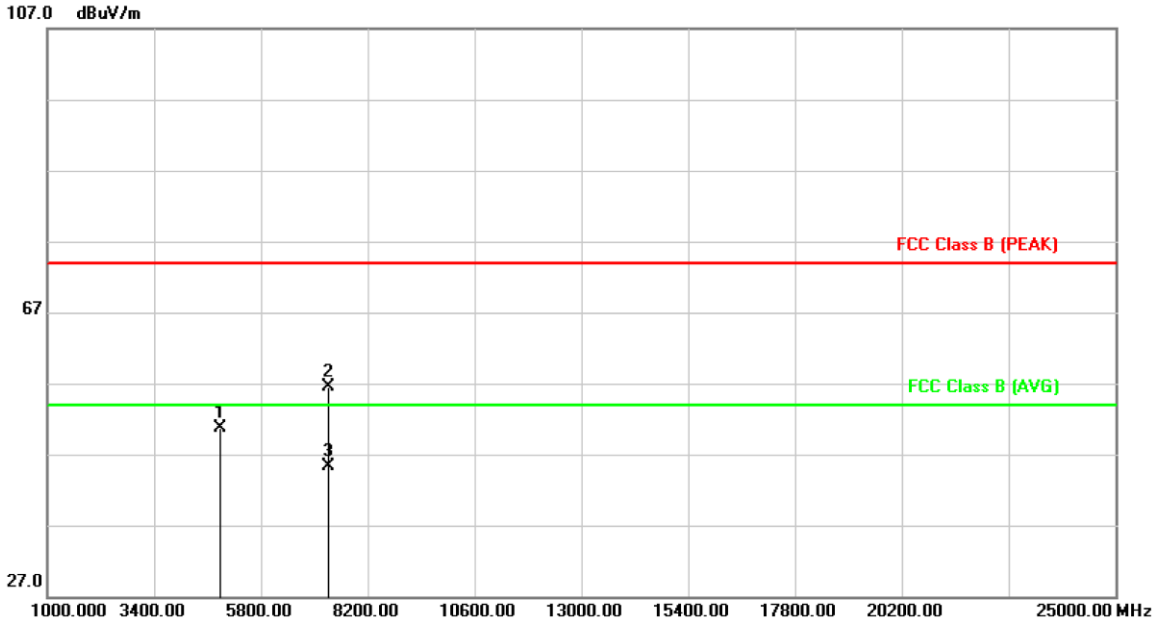
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	802.11b, CH1	Temperature	:	24 °C
Test Date	:	Aug. 04, 2014	Humidity	:	53 %
Memo	:		Atmospheric Pressure	:	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4824.000	7.31	44.34	51.65	74.00	-22.35	peak	100	182
2	7236.000	12.29	44.27	56.56	74.00	-17.44	peak	100	182
3	7236.000	12.29	32.88	45.17	54.00	-8.83	AVG	100	182

Note: Level = Reading + Factor
Margin = Level - Limit

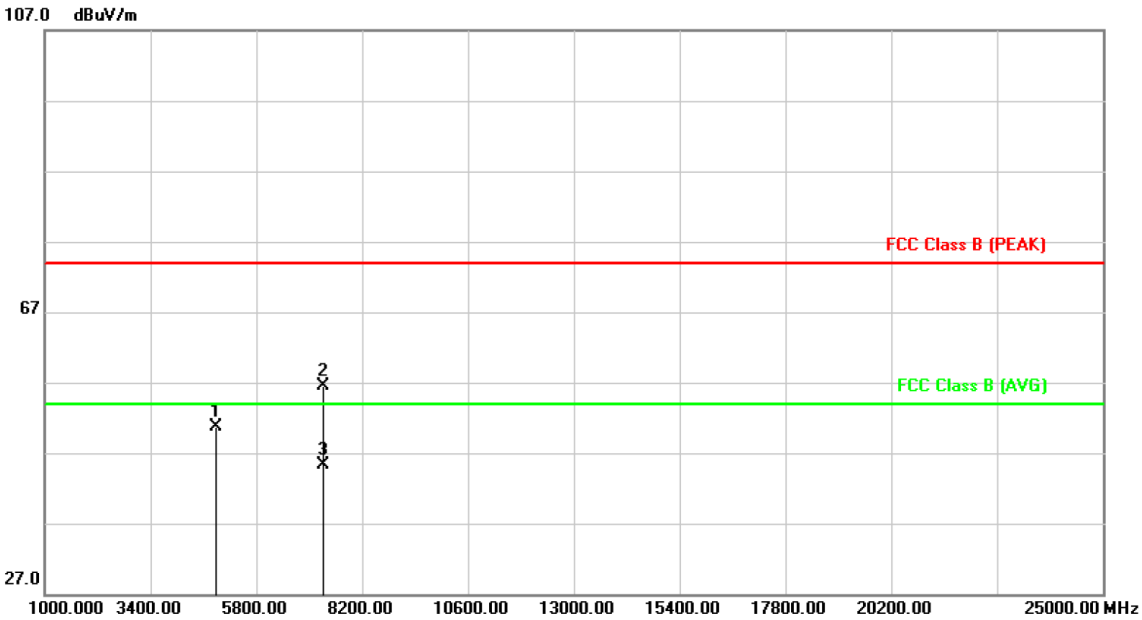
Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	802.11b, CH6	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4874.000	7.47	43.25	50.72	74.00	-23.28	peak	100	172
2	7311.000	12.27	42.35	54.62	74.00	-19.38	peak	100	172
3	7311.000	12.08	30.88	42.96	54.00	-11.04	AVG	100	172

Note: Level = Reading + Factor
Margin = Level - Limit

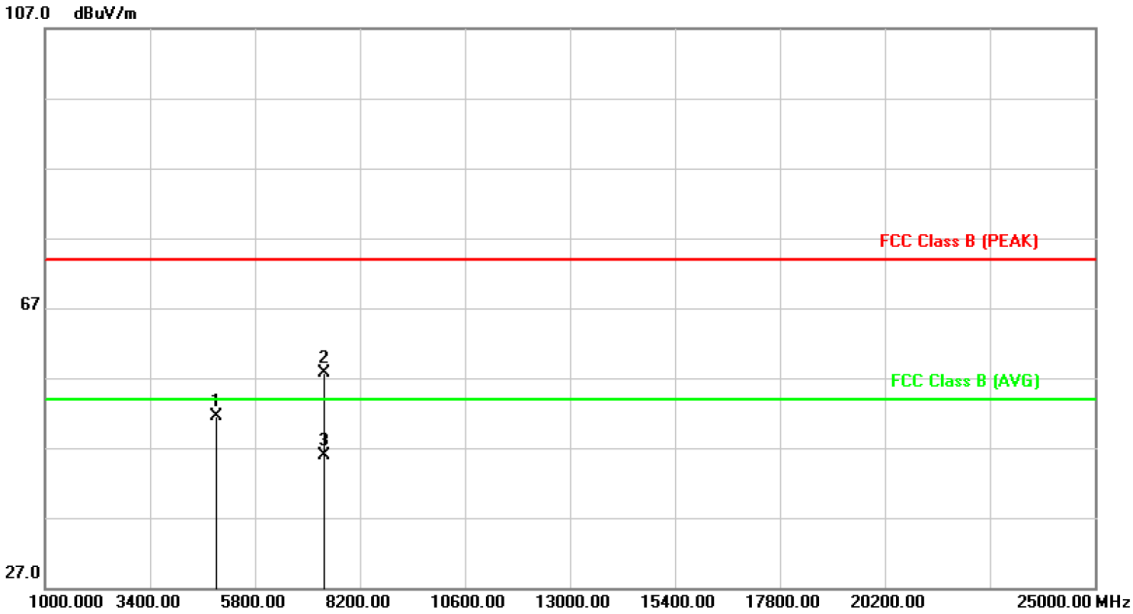
Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	802.11b, CH6	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4874.000	7.47	43.25	50.72	74.00	-23.28	peak	100	165
2	7311.000	12.61	43.95	56.56	74.00	-17.44	peak	100	165
3	7311.000	12.61	32.69	45.30	54.00	-8.70	AVG	100	165

Note: Level = Reading + Factor
Margin = Level - Limit

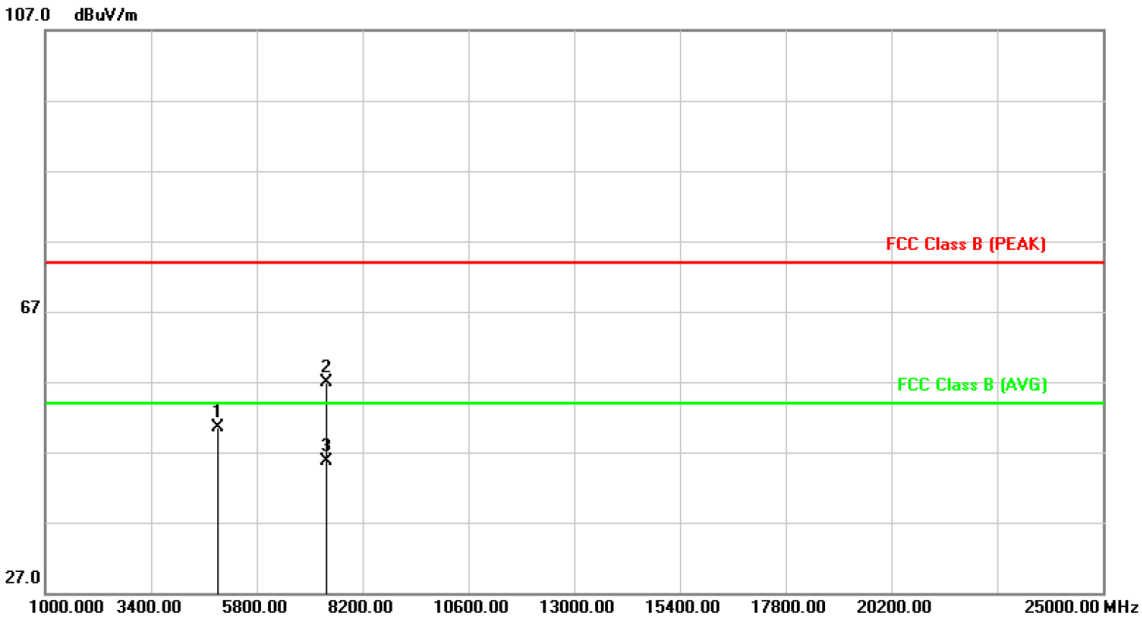
Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	802.11b, CH11	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4924.000	7.64	43.81	51.45	74.00	-22.55	peak	100	175
2	7386.000	12.92	44.76	57.68	74.00	-16.32	peak	100	175
3	7386.000	12.92	32.97	45.89	54.00	-8.11	AVG	100	175

Note: Level = Reading + Factor
Margin = Level - Limit

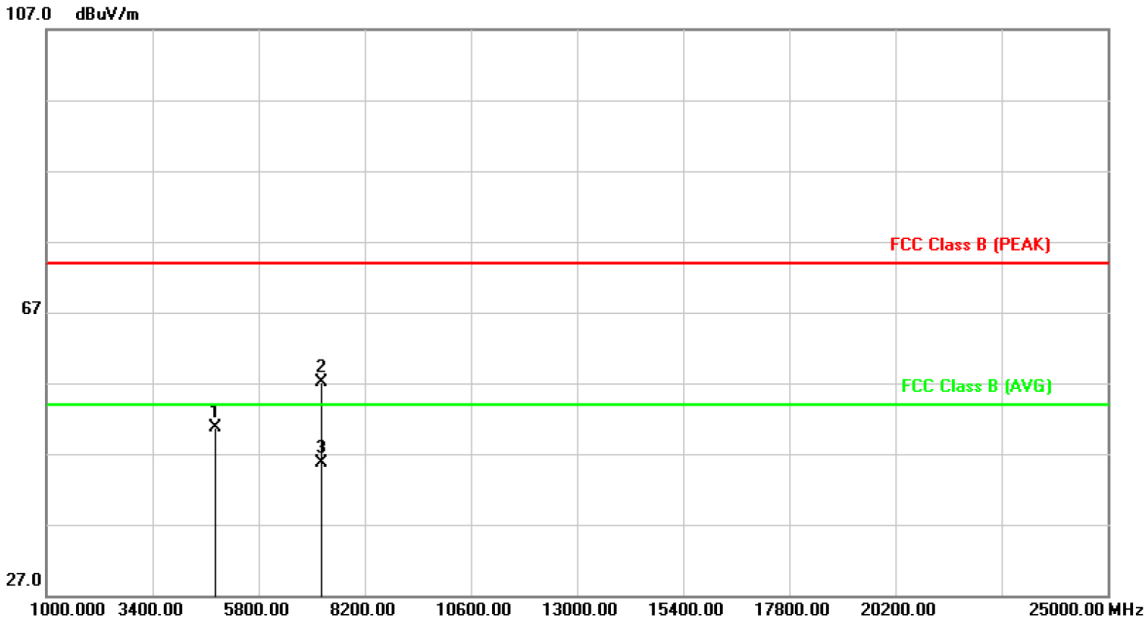
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	802.11b, CH11	Temperature	:	24 °C
Test Date	:	Aug. 04, 2014	Humidity	:	53 %
Memo	:		Atmospheric Pressure	:	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4924.000	7.64	42.85	50.49	74.00	-23.51	peak	100	173
2	7386.000	12.92	43.94	56.86	74.00	-17.14	peak	100	173
3	7386.000	12.92	32.85	45.77	54.00	-8.23	AVG	100	173

Note: Level = Reading + Factor
Margin = Level - Limit

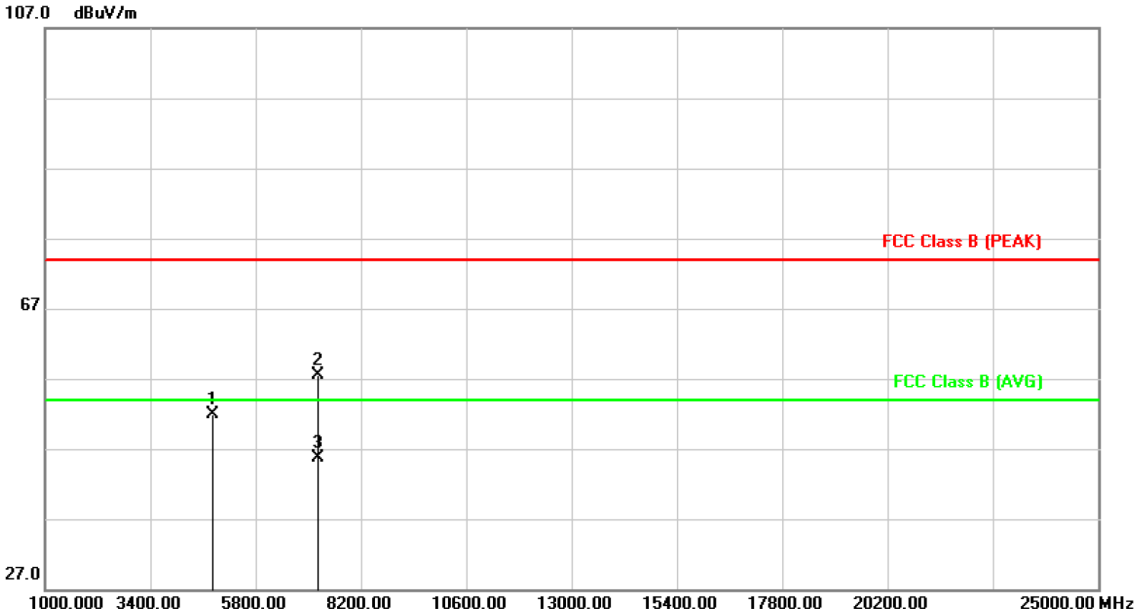
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	802.11g, CH1	Temperature	:	24 °C
Test Date	:	Aug. 04, 2014	Humidity	:	53 %
Memo	:		Atmospheric Pressure	:	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4824.000	7.31	43.33	50.64	74.00	-23.36	peak	100	179
2	7236.000	12.29	44.91	57.20	74.00	-16.80	peak	100	179
3	7236.000	12.29	33.33	45.62	54.00	-8.38	AVG	100	179

Note: Level = Reading + Factor
Margin = Level - Limit

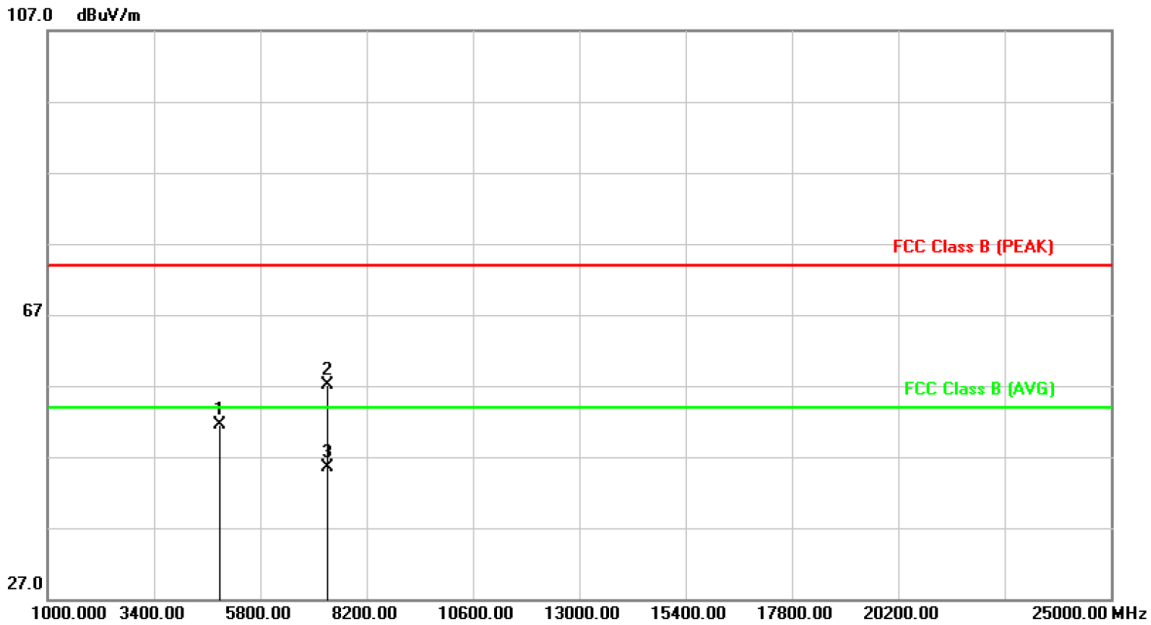
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	802.11g, CH1	Temperature	:	24 °C
Test Date	:	Aug. 04, 2014	Humidity	:	53 %
Memo	:		Atmospheric Pressure	:	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4824.000	7.31	44.66	51.97	74.00	-22.03	peak	100	186
2	7236.000	12.29	45.31	57.60	74.00	-16.40	peak	100	186
3	7236.000	12.29	33.34	45.63	54.00	-8.37	AVG	100	186

Note: Level = Reading + Factor
Margin = Level - Limit

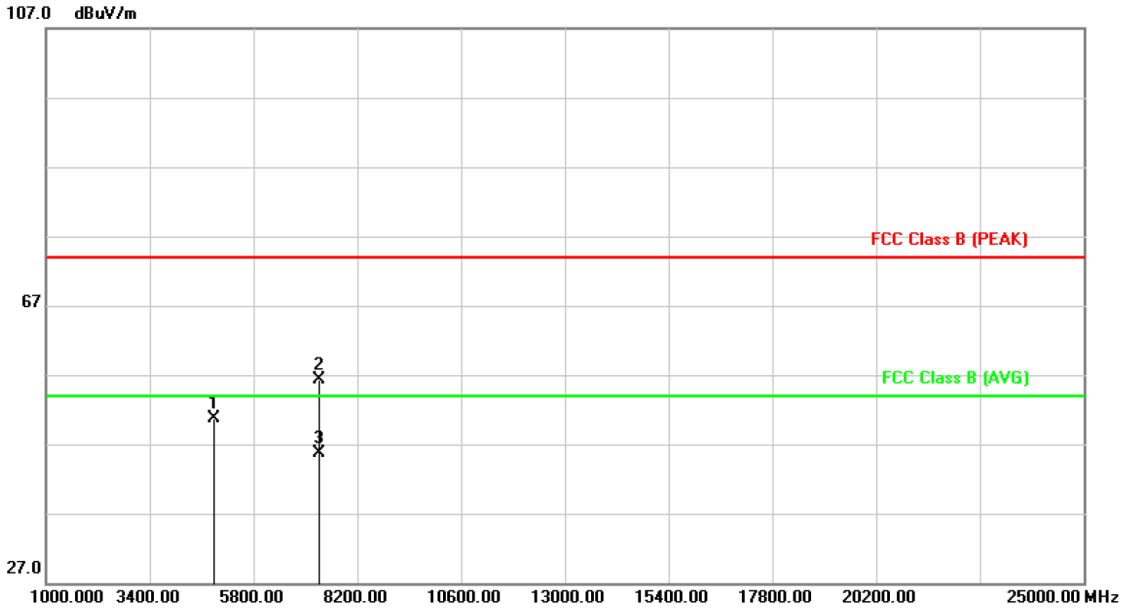
Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	802.11g, CH6	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4874.000	7.47	44.08	51.55	74.00	-22.45	peak	100	191
2	7311.000	12.61	44.49	57.10	74.00	-16.90	peak	100	191
3	7311.000	12.61	32.92	45.53	54.00	-8.47	AVG	100	191

Note: Level = Reading + Factor
Margin = Level - Limit

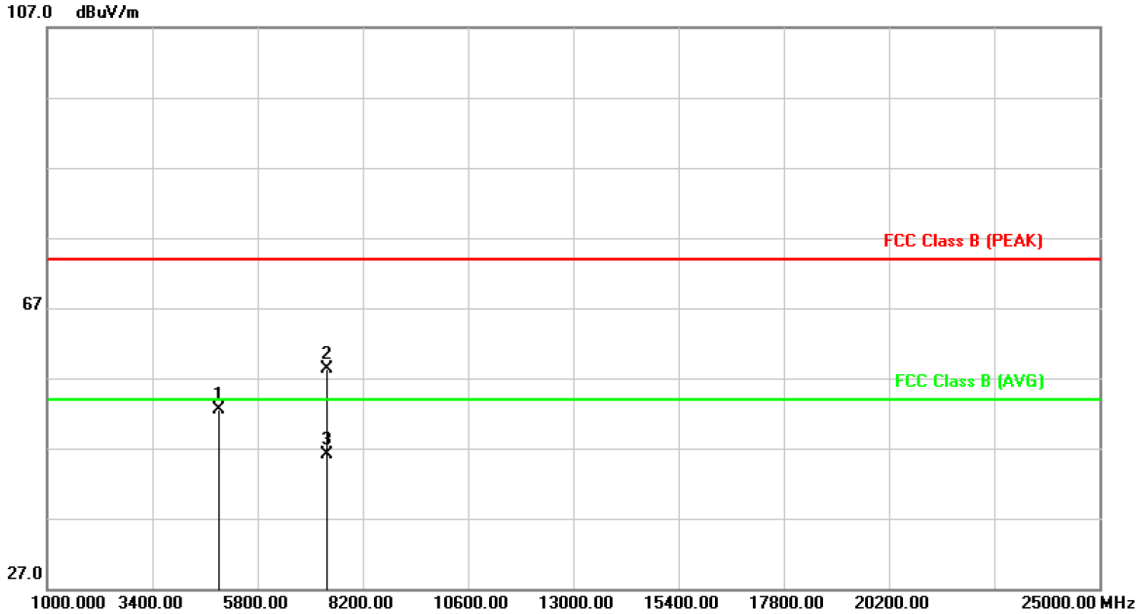
Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	802.11g, CH6	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4874.000	7.47	43.18	50.65	74.00	-23.35	peak	100	178
2	7311.000	12.61	43.78	56.39	74.00	-17.61	peak	100	178
3	7311.000	12.61	33.09	45.70	54.00	-8.30	AVG	100	178

Note: Level = Reading + Factor
Margin = Level - Limit

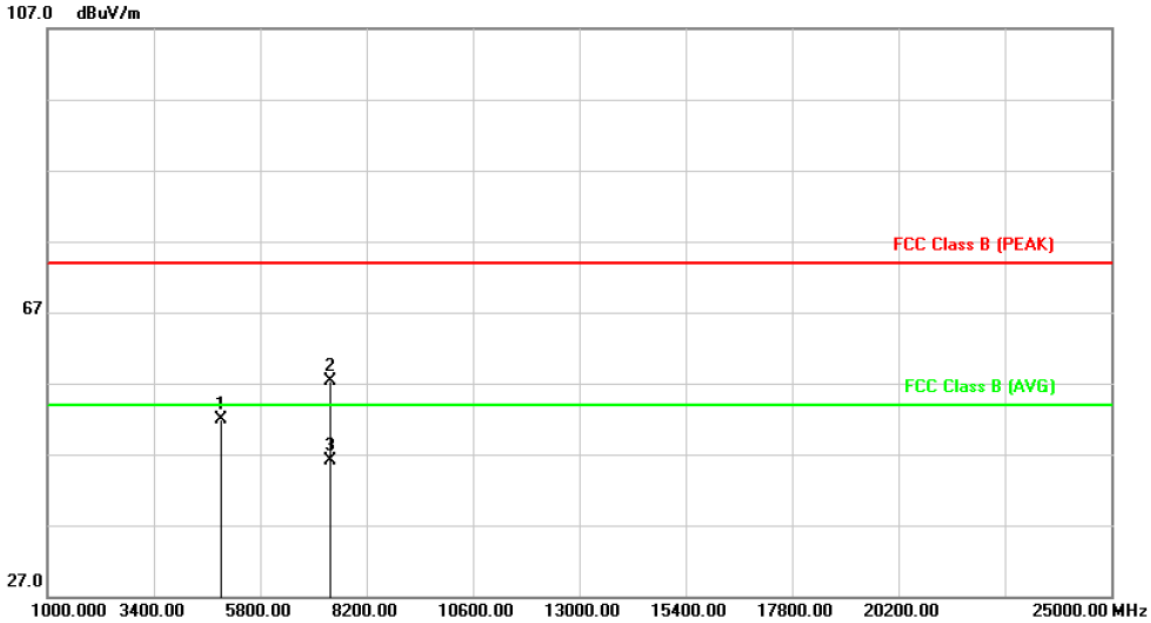
Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	802.11g, CH11	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4924.000	7.64	44.80	52.44	74.00	-21.56	peak	100	176
2	7386.000	12.92	45.34	58.26	74.00	-15.74	peak	100	176
3	7386.000	12.92	33.27	46.19	54.00	-7.81	AVG	100	176

Note: Level = Reading + Factor
Margin = Level - Limit

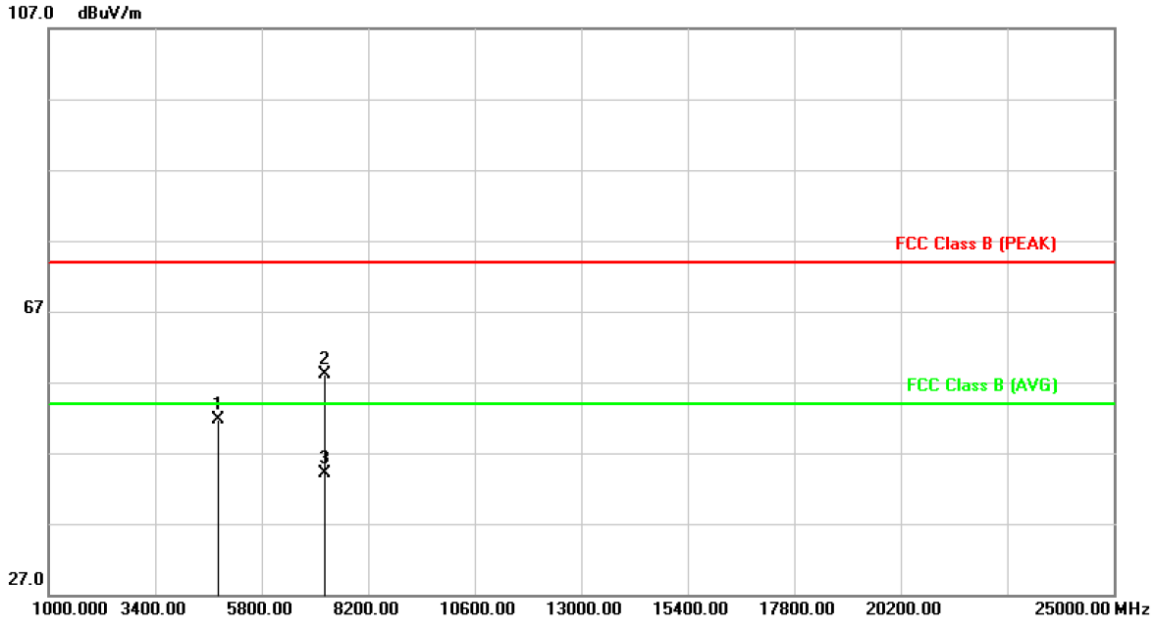
Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	802.11g, CH11	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4924.000	7.64	44.29	51.93	74.00	-22.07	peak	100	166
2	7386.000	12.92	44.48	57.40	74.00	-16.60	peak	100	166
3	7386.000	12.92	33.27	46.19	54.00	-7.81	AVG	100	166

Note: Level = Reading + Factor
Margin = Level - Limit

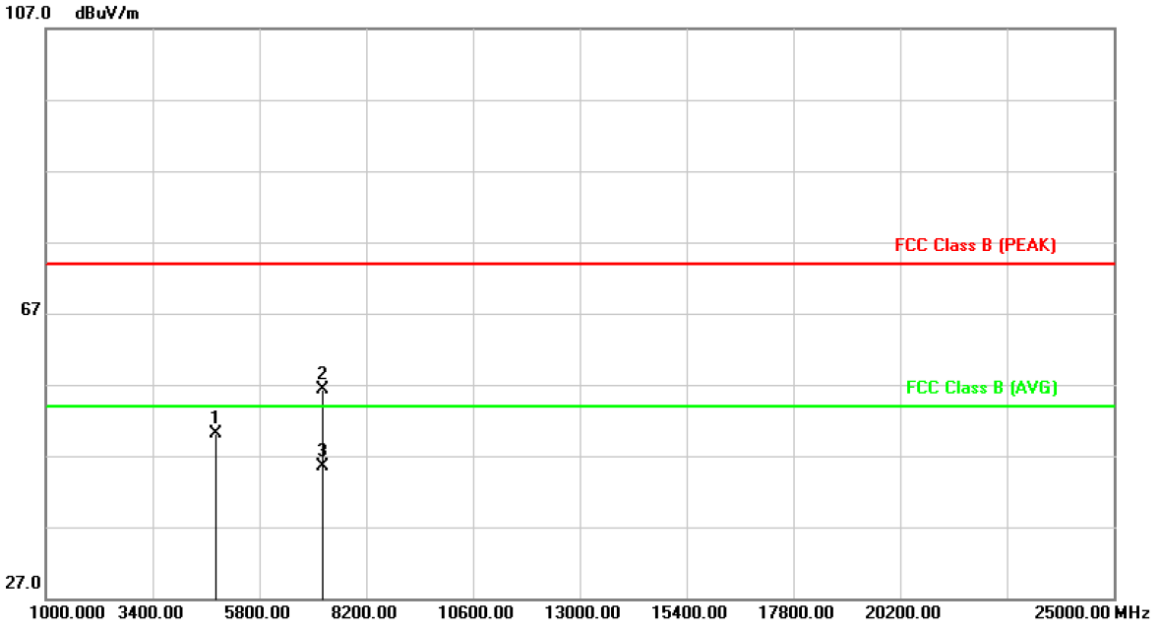
Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	802.11n HT20, CH1	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4824.000	7.31	44.38	51.69	74.00	-22.31	peak	100	190
2	7236.000	12.29	45.82	58.11	74.00	-15.89	peak	100	190
3	7236.000	12.29	31.89	44.18	54.00	-9.82	AVG	100	190

Note: Level = Reading + Factor
Margin = Level - Limit

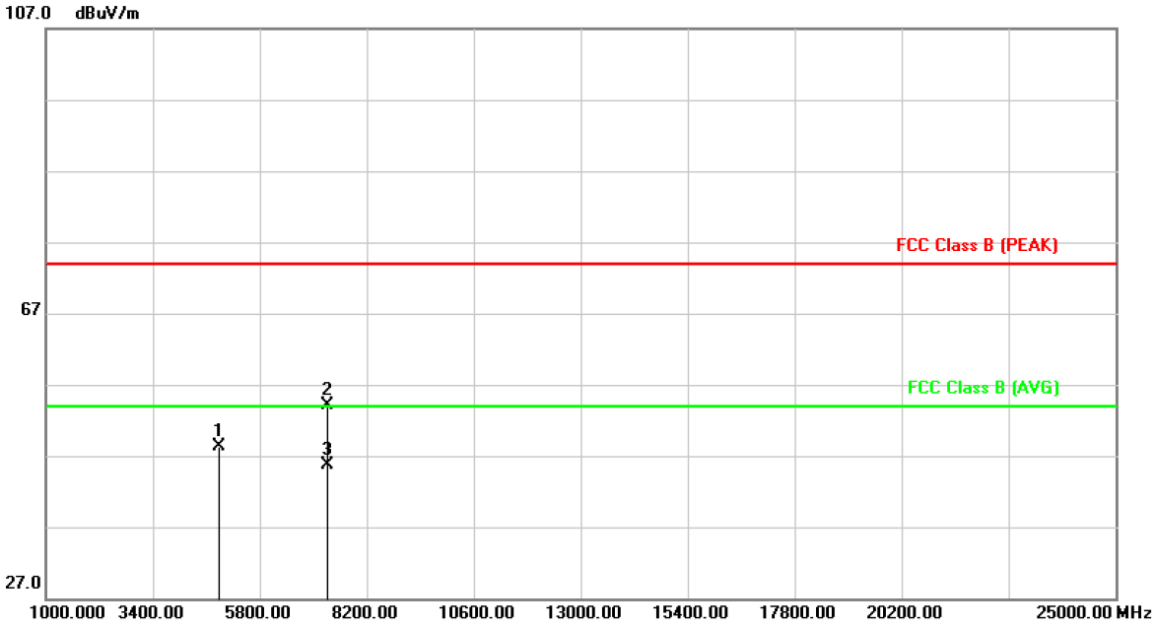
Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	802.11n HT20, CH1	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4824.000	7.31	42.80	50.11	74.00	-23.89	peak	100	175
2	7236.000	12.29	44.01	56.30	74.00	-17.70	peak	100	175
3	7236.000	12.29	33.23	45.52	54.00	-8.48	AVG	100	175

Note: Level = Reading + Factor
Margin = Level - Limit

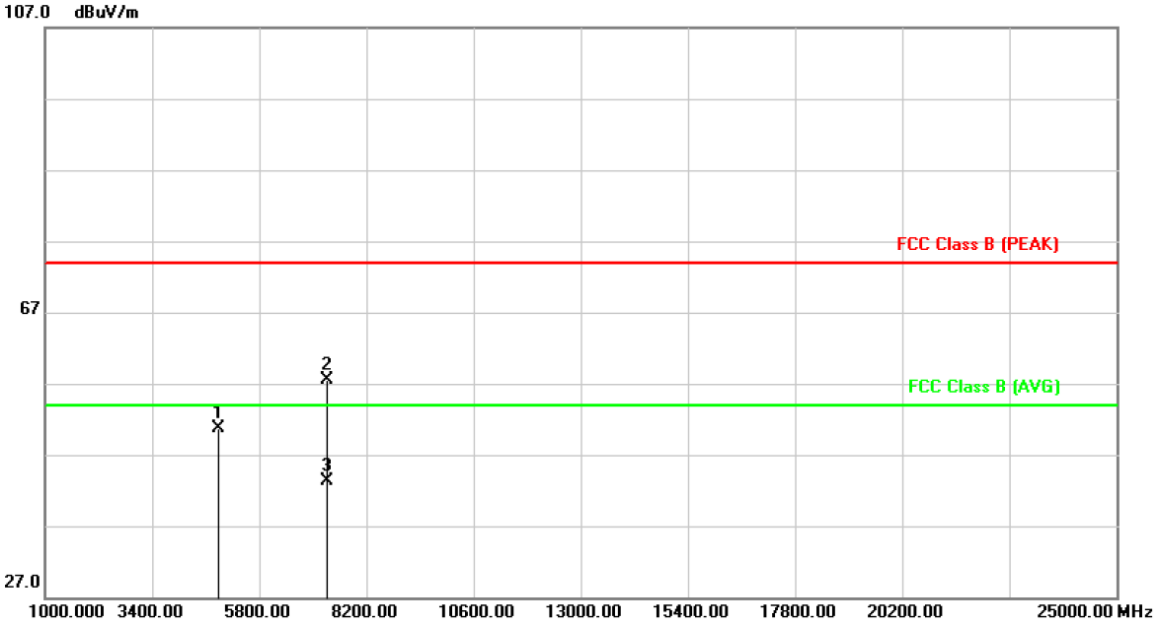
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	802.11n HT20, CH6	Temperature	:	24 °C
Test Date	:	Aug. 04, 2014	Humidity	:	53 %
Memo	:		Atmospheric Pressure	:	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4874.000	7.47	40.74	48.21	74.00	-25.79	peak	100	164
2	7311.000	12.61	41.54	54.15	74.00	-19.85	peak	100	164
3	7311.000	12.61	33.01	45.62	54.00	-8.38	AVG	100	164

Note: Level = Reading + Factor
Margin = Level - Limit

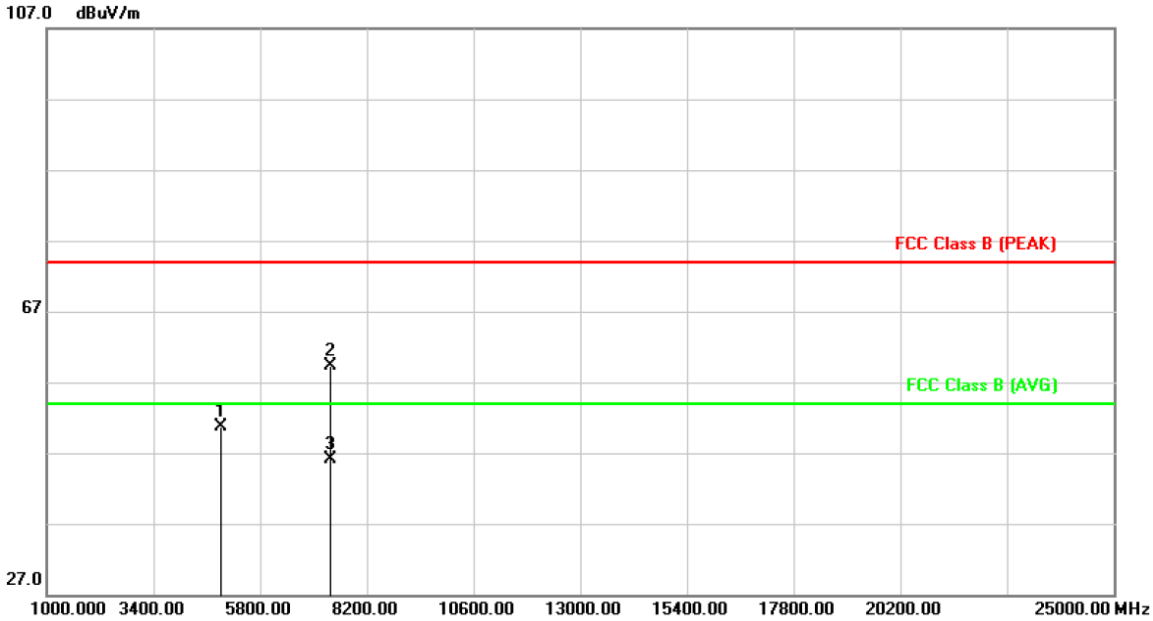
Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	802.11n HT20, CH6	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4874.000	7.47	43.25	50.72	74.00	-23.28	peak	100	167
2	7311.000	12.61	44.94	57.55	74.00	-16.45	peak	100	167
3	7311.000	12.61	30.78	43.39	54.00	-10.61	AVG	100	167

Note: Level = Reading + Factor
Margin = Level - Limit

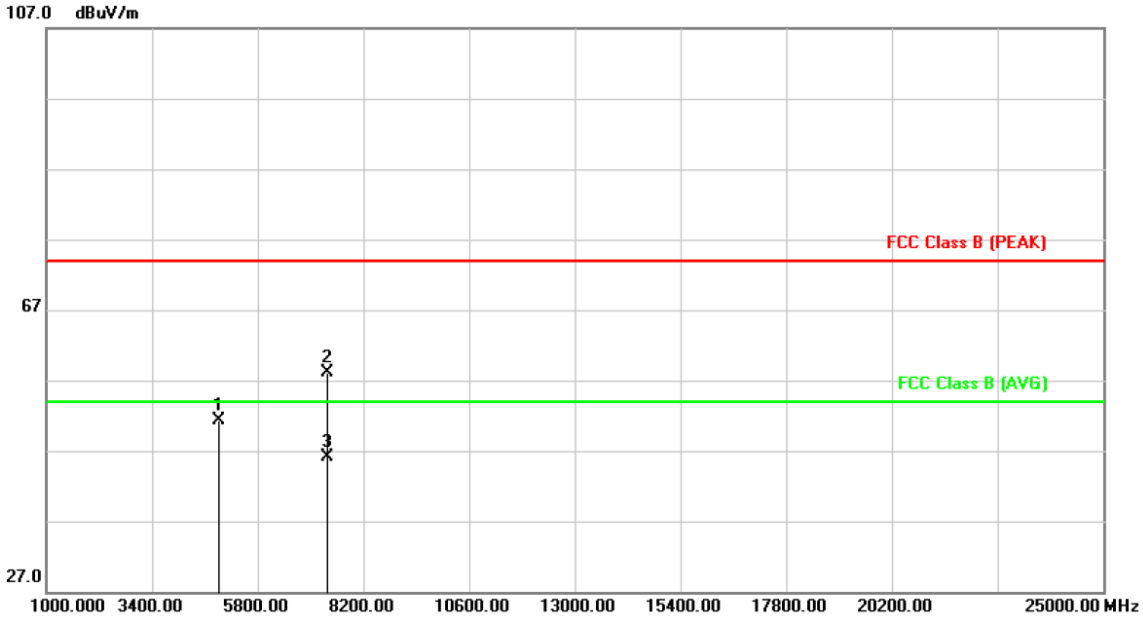
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	802.11n HT20, CH11	Temperature	:	24 °C
Test Date	:	Aug. 04, 2014	Humidity	:	53 %
Memo	:		Atmospheric Pressure	:	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4924.000	7.64	42.98	50.62	74.00	-23.38	peak	100	161
2	7386.000	12.92	46.35	59.27	74.00	-14.73	peak	100	161
3	7386.000	12.92	33.19	46.11	54.00	-7.89	AVG	100	161

Note: Level = Reading + Factor
Margin = Level - Limit

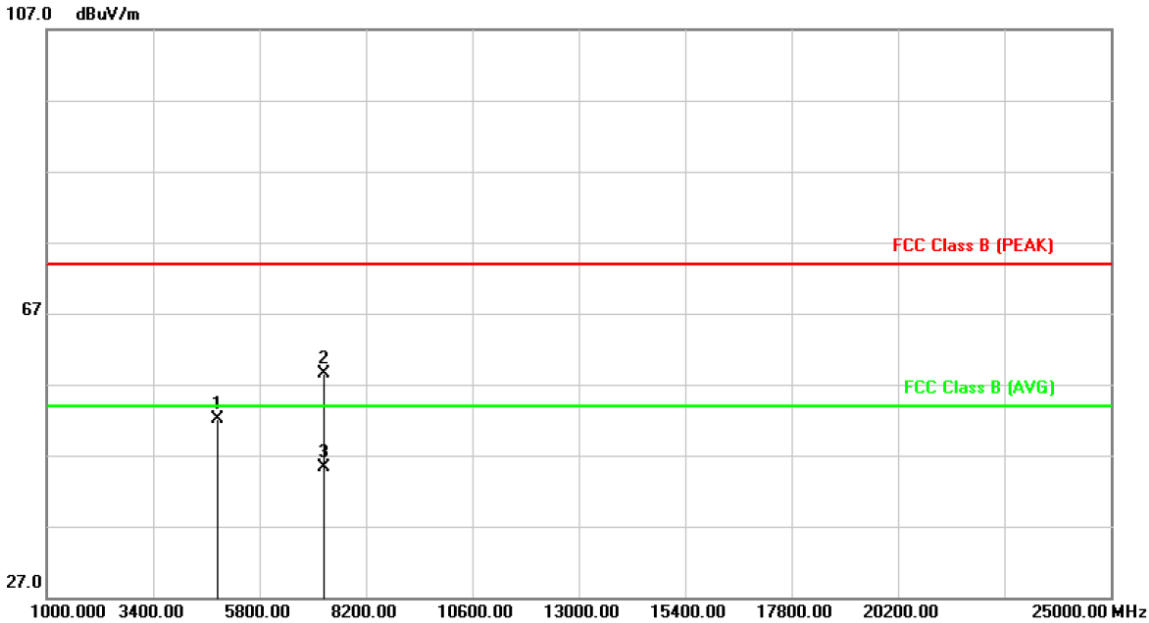
Power :	AC 120V	Pol/Phase :	HORIZONTAL
Test Mode :	802.11n HT20, CH11	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4924.000	7.64	43.67	51.31	74.00	-22.69	peak	100	169
2	7386.000	12.92	45.17	58.09	74.00	-15.91	peak	100	169
3	7386.000	12.92	33.19	46.11	54.00	-7.89	AVG	100	169

Note: Level = Reading + Factor
Margin = Level - Limit

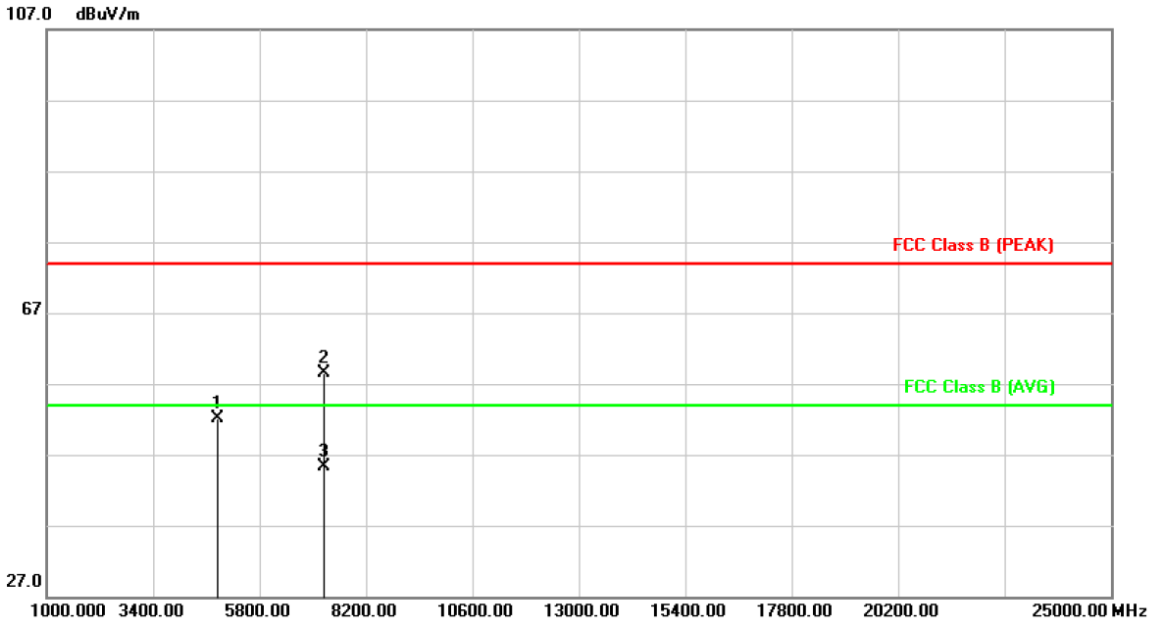
Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	802.11n HT40 CH3	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4844.000	7.38	44.69	52.07	74.00	-21.93	peak	100	177
2	7266.000	12.42	46.07	58.49	74.00	-15.51	peak	100	177
3	7266.000	12.42	32.93	45.35	54.00	-8.65	AVG	100	177

Note: Level = Reading + Factor
Margin = Level - Limit

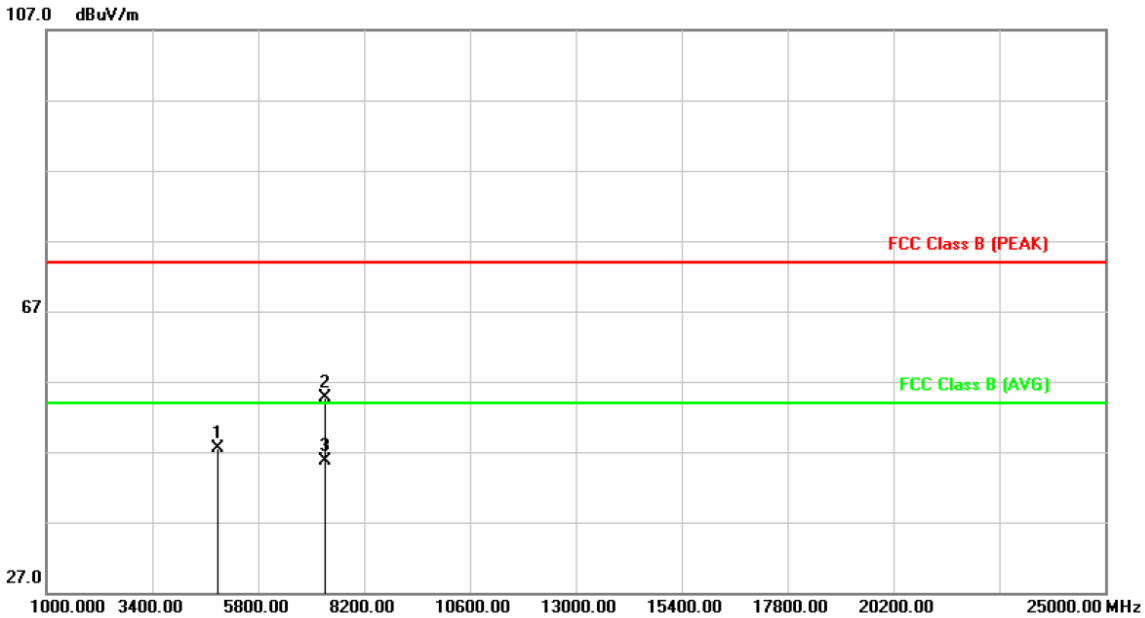
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	802.11n HT40 CH3	Temperature	:	24 °C
Test Date	:	Aug. 04, 2014	Humidity	:	53 %
Memo	:		Atmospheric Pressure	:	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4844.000	7.38	44.75	52.13	74.00	-21.87	peak	100	177
2	7266.000	12.42	46.13	58.55	74.00	-15.45	peak	100	177
3	7266.000	12.42	32.93	45.35	54.00	-8.65	AVG	100	177

Note: Level = Reading + Factor
Margin = Level - Limit

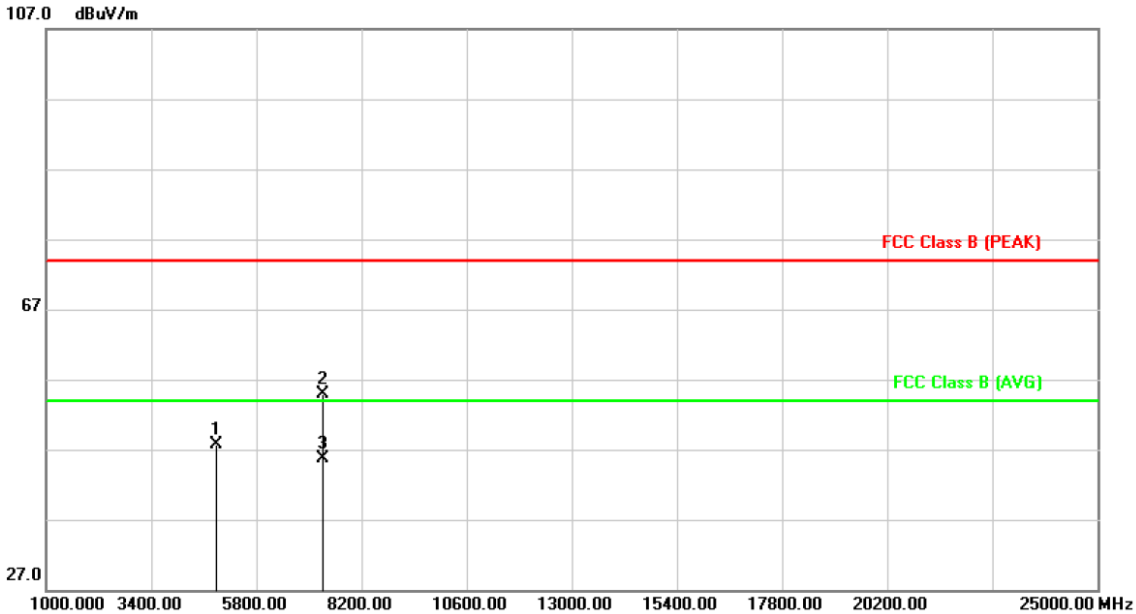
Power	:	AC 120V	Pol/Phase	:	VERTICAL
Test Mode	:	802.11n HT40 CH6	Temperature	:	24 °C
Test Date	:	Aug. 04, 2014	Humidity	:	53 %
Memo	:		Atmospheric Pressure	:	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4874.000	7.47	40.09	47.56	74.00	-26.44	peak	100	173
2	7311.000	12.61	42.18	54.79	74.00	-19.21	peak	100	173
3	7311.000	12.61	33.05	45.66	54.00	-8.34	AVG	100	173

Note: Level = Reading + Factor
Margin = Level - Limit

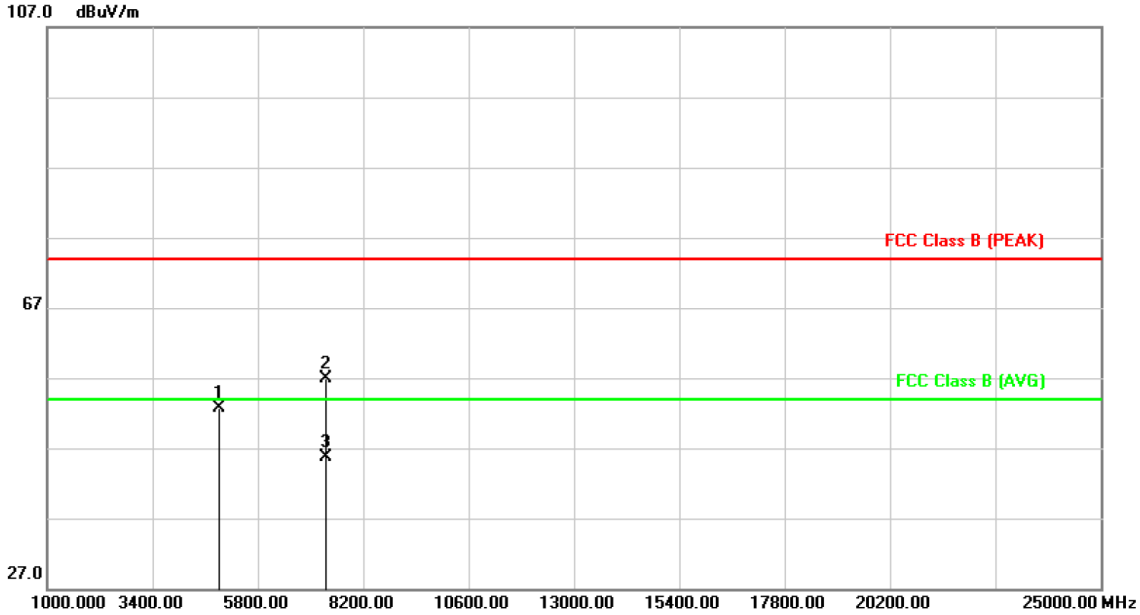
Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	802.11n HT40 CH6	Temperature	:	24 °C
Test Date	:	Aug. 04, 2014	Humidity	:	53 %
Memo	:		Atmospheric Pressure	:	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4874.000	7.47	40.27	47.74	74.00	-26.26	peak	100	173
2	7311.000	12.61	42.23	54.84	74.00	-19.16	peak	100	173
3	7311.000	12.61	33.05	45.66	54.00	-8.34	AVG	100	173

Note: Level = Reading + Factor
Margin = Level - Limit

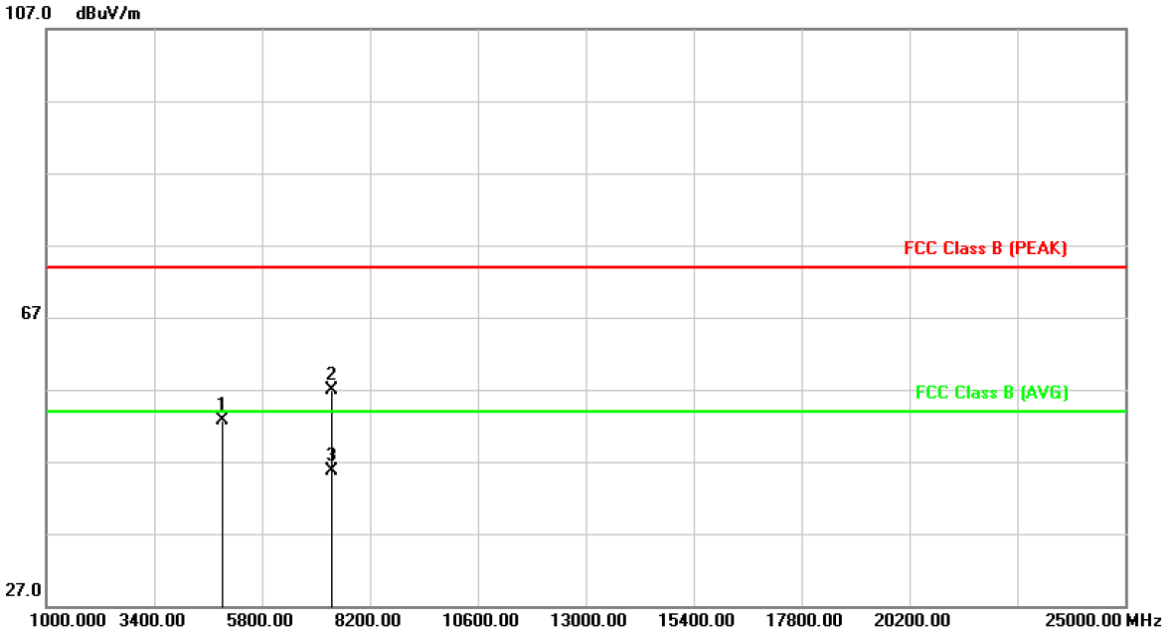
Power :	AC 120V	Pol/Phase :	VERTICAL
Test Mode :	802.11n HT40 CH9	Temperature :	24 °C
Test Date :	Aug. 04, 2014	Humidity :	53 %
Memo :		Atmospheric Pressure :	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4904.000	7.58	45.05	52.63	74.00	-21.37	peak	100	161
2	7356.000	12.81	42.09	54.90	74.00	-19.10	peak	100	161
3	7356.000	12.81	33.14	45.95	54.00	-8.05	AVG	100	161

Note: Level = Reading + Factor
Margin = Level - Limit

Power	:	AC 120V	Pol/Phase	:	HORIZONTAL
Test Mode	:	802.11n HT40 CH9	Temperature	:	24 °C
Test Date	:	Aug. 04, 2014	Humidity	:	53 %
Memo	:		Atmospheric Pressure	:	1012 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	4904.000	7.58	45.17	52.75	74.00	-21.25	peak	100	162
2	7356.000	12.81	44.19	57.00	74.00	-17.00	peak	100	162
3	7356.000	12.81	32.86	45.67	54.00	-8.33	AVG	100	162

Note: Level = Reading + Factor
Margin = Level - Limit

6. Test of Spurious Emission (Conducted)

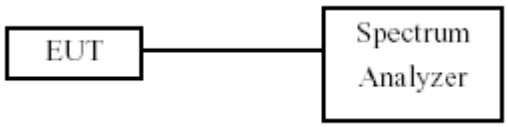
6.1 Test Limit

Below –20dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

6.2 Test Procedure

a. The transmitter output was connected to the spectrum analyzer via a low lose cable.
b. Set RBW of spectrum analyzer to 100 KHz and VBW of spectrum analyzer to 300 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
c. Peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20dB relative to the maximum measured in-band peak PSD level.
d. The band edges was measured and recorded.

6.3 Test Setup Layout



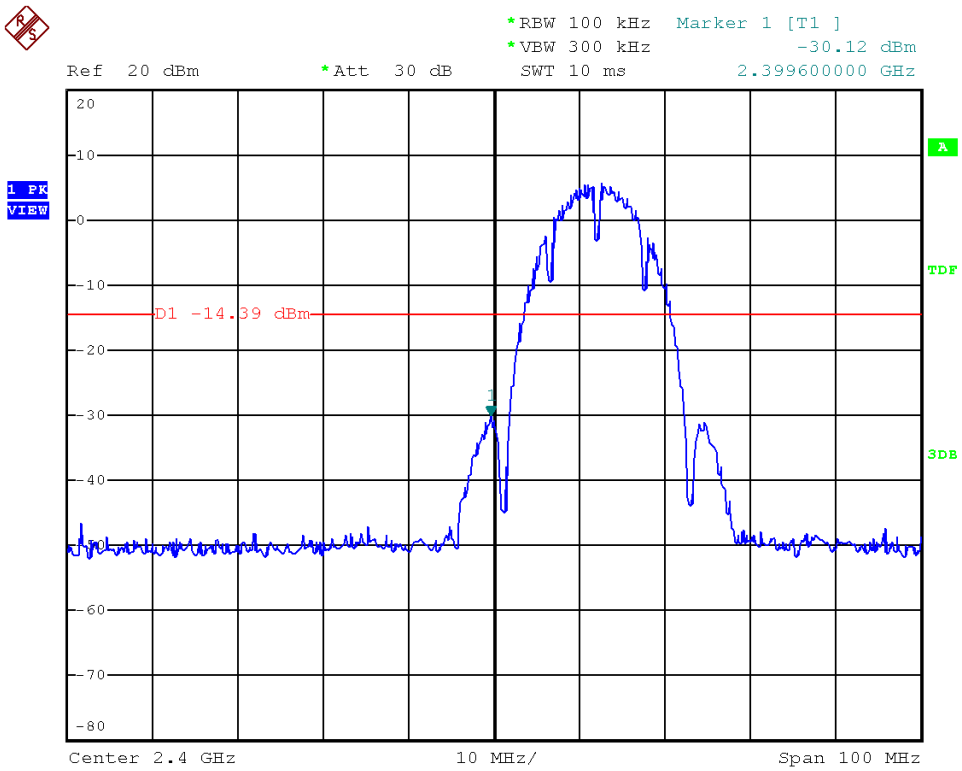
6.4 Test Result and Data

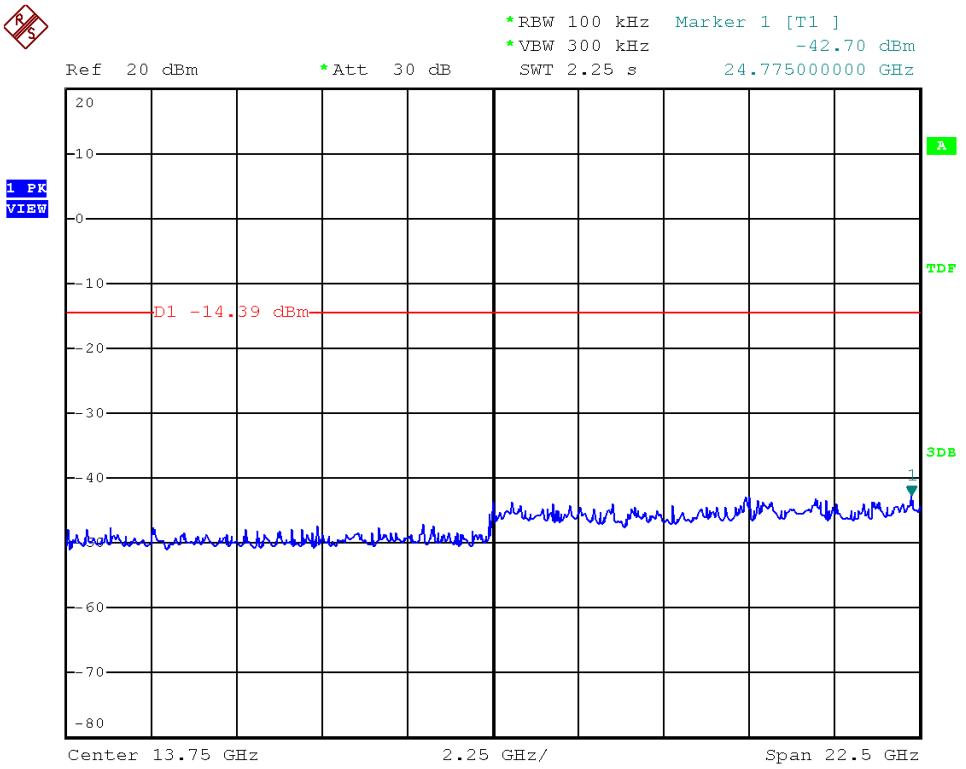
Test Date: Jul. 28, 2014 Temperature: 24

Atmospheric pressure: 1027Pa Humidity: 52

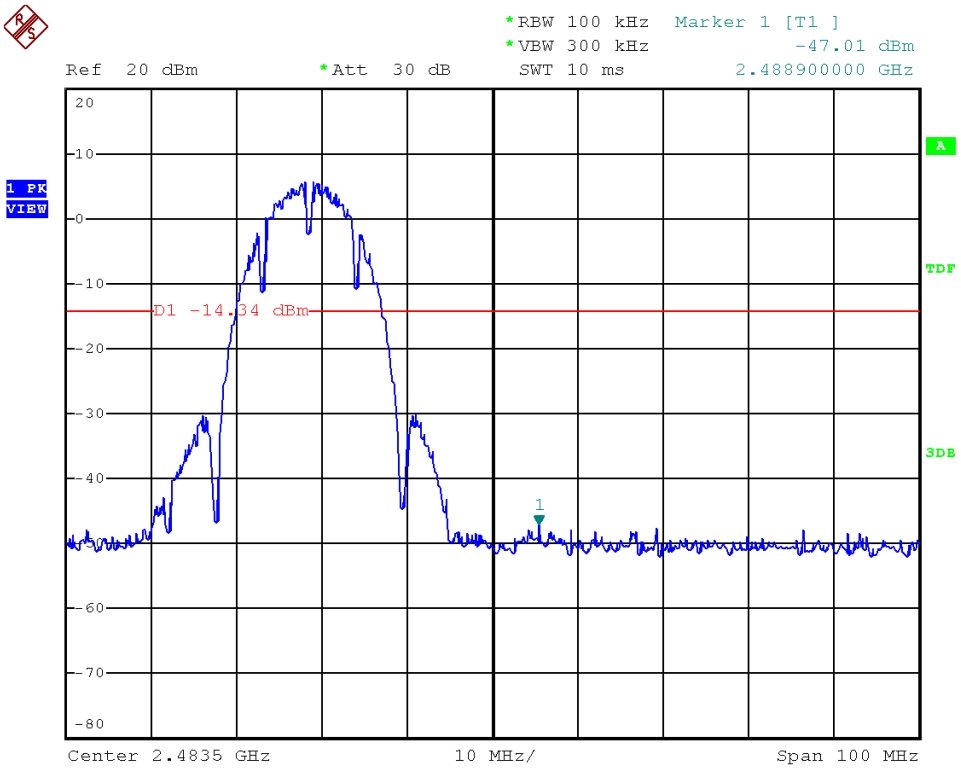
Modulation Standard	Channel	Frequency (MHz)	maximum value in frequency (MHz)		maximum value (dBm)	
			ANT A	ANT B	ANT A	ANT B
802.11b (1Mbps)	01	2412	2399.6	2399.6	-30.12	-29.26
	11	2462	21580.0	24640.0	-41.51	-42.31
802.11g (2Mbps)	01	2412	2395.4	2398.8	-42.03	-39.77
	11	2462	21670.0	24730.0	-42.75	-42.83
802.11n HT20 (58.5Mbps)	01	2412	2396.8	2397.6	-39.06	-36.66
	11	2462	21580.0	22345.0	-42.45	-42.61
802.11n HT40 (54Mbps)	03	2422	2398.0	2398.0	-37.38	-32.93
	09	2452	2485.1	2485.5	-40.78	-42.41

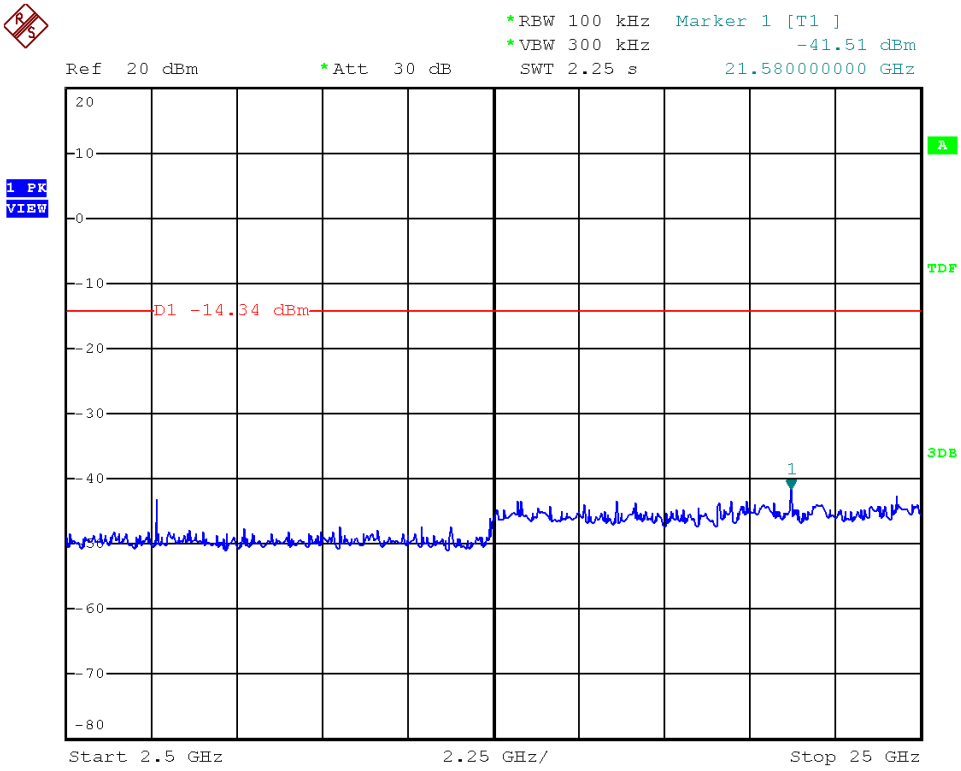
Modulation Standard: 802.11b (1Mbps), ANT A
Channel: 01



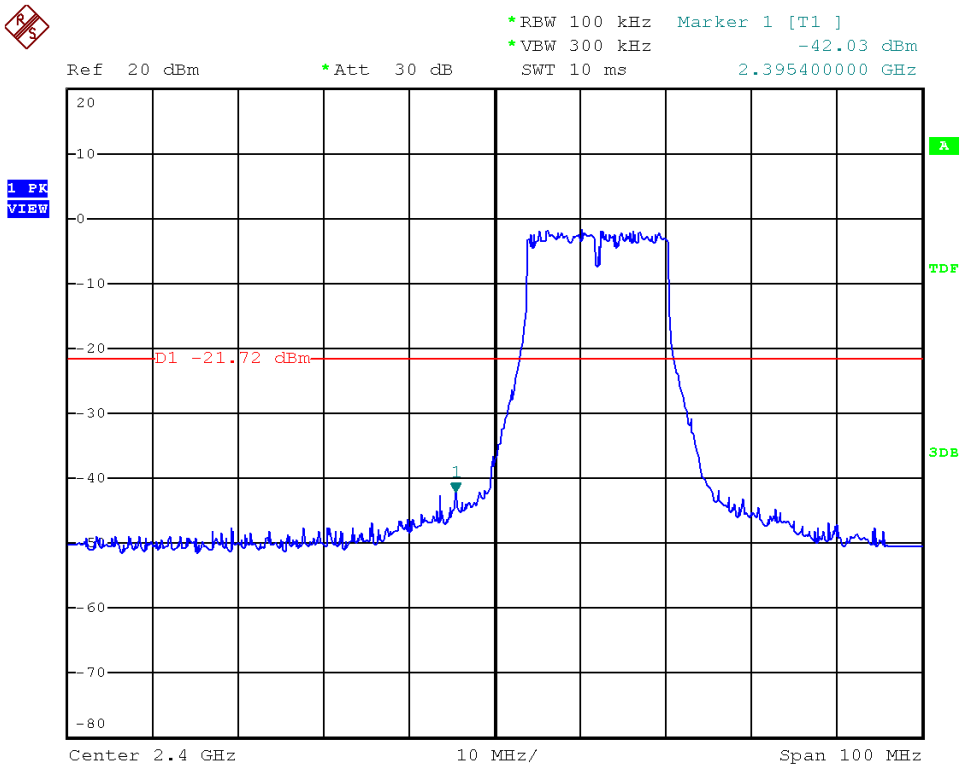


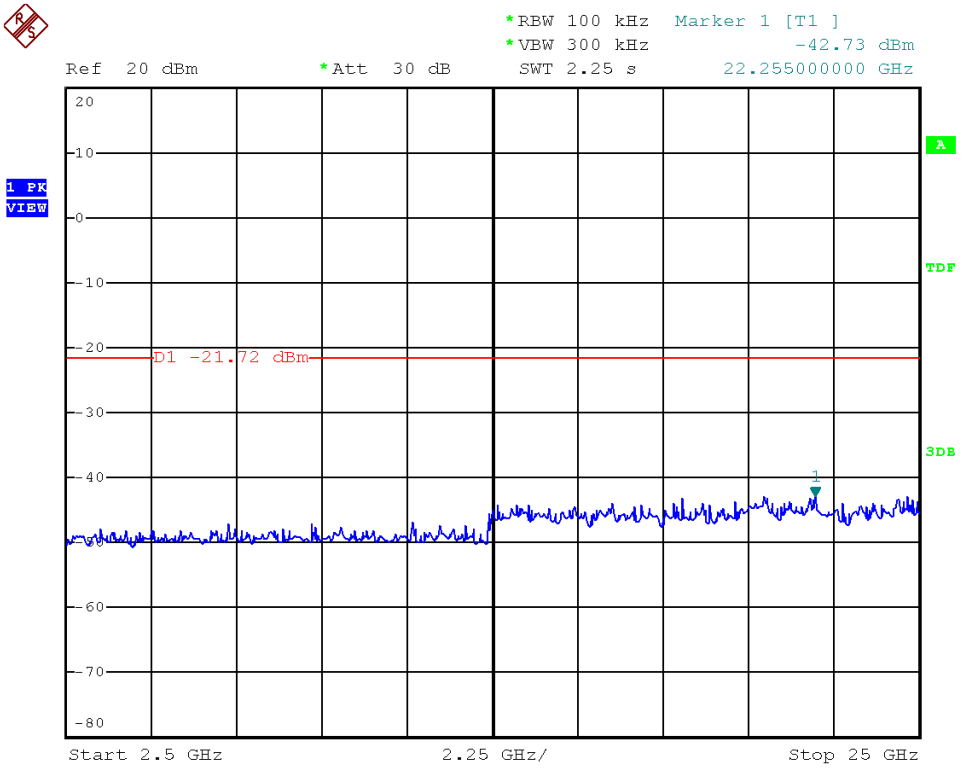
Modulation Standard: 802.11b (1Mbps), ANT A
Channel: 11



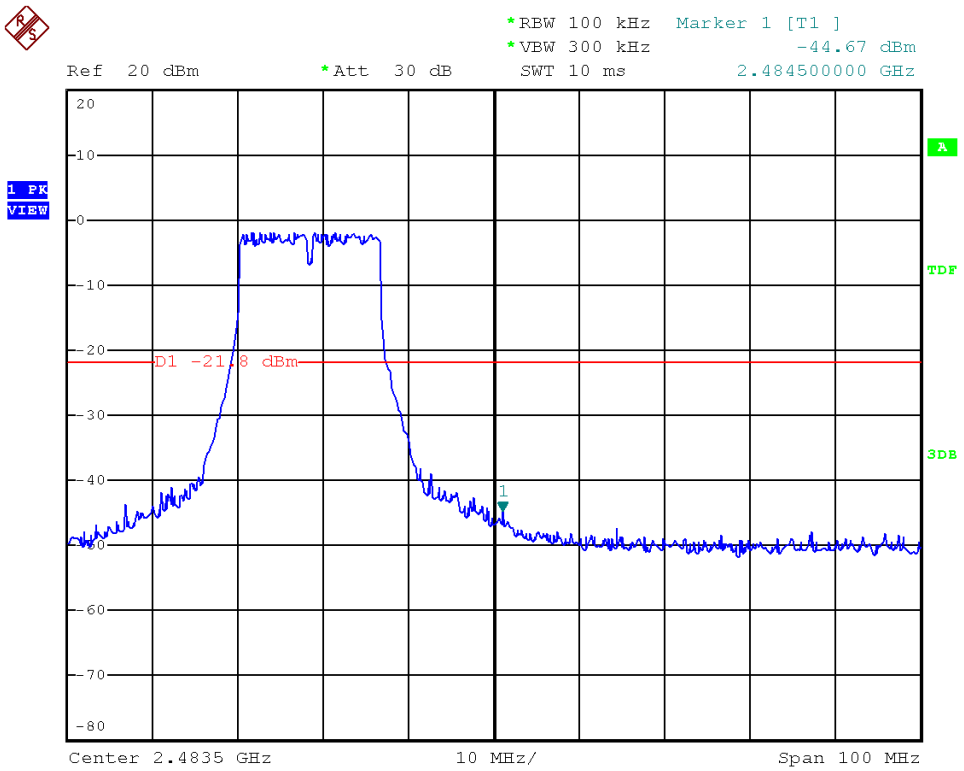


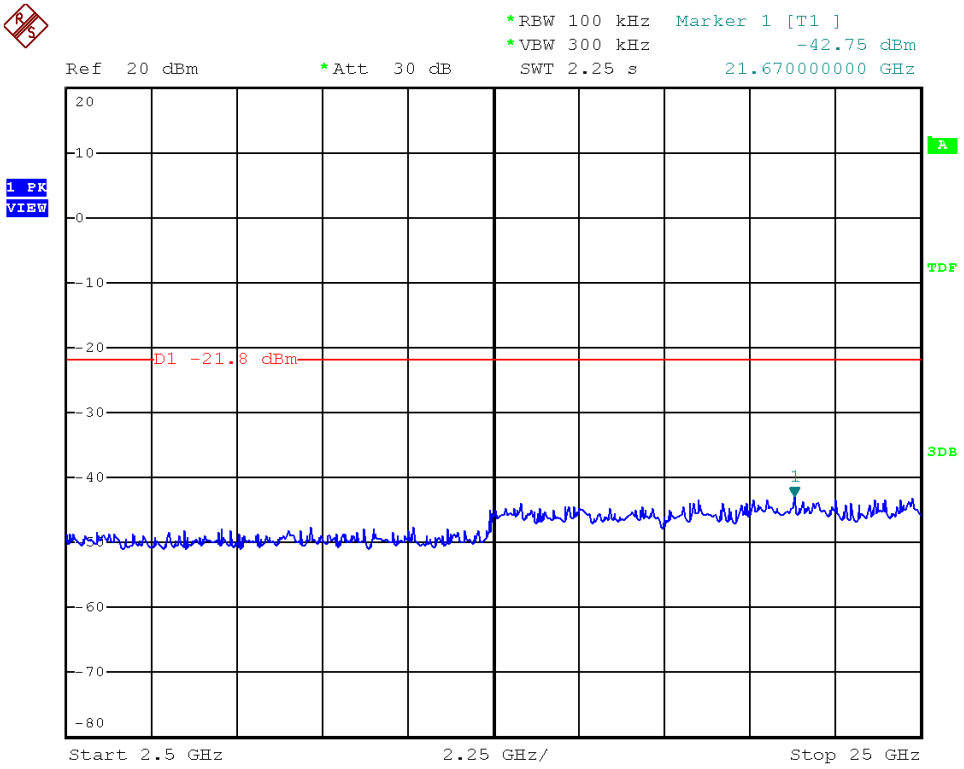
Modulation Standard: 802.11g (24Mbps), ANT A
Channel: 01



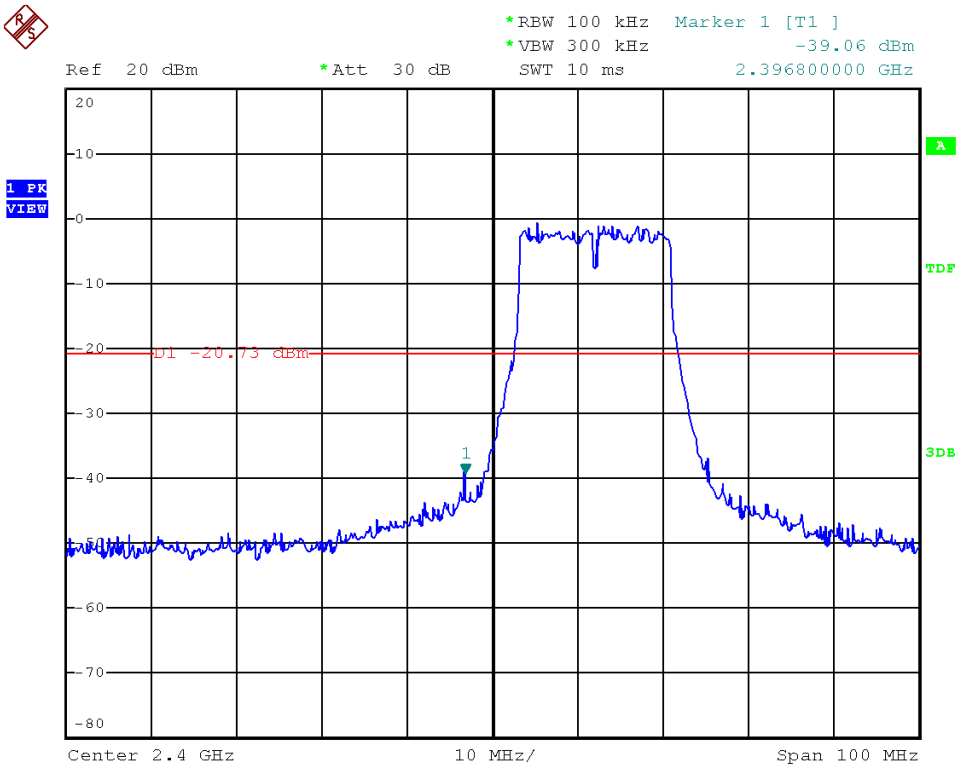


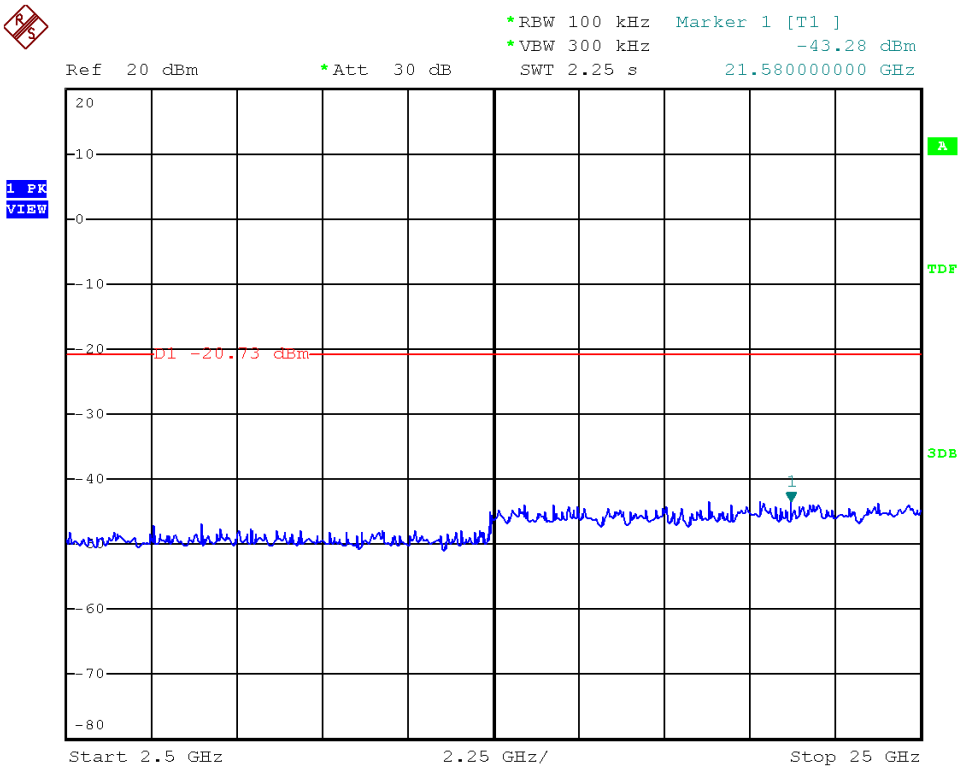
Modulation Standard: 802.11g (24Mbps), ANT A
Channel: 11



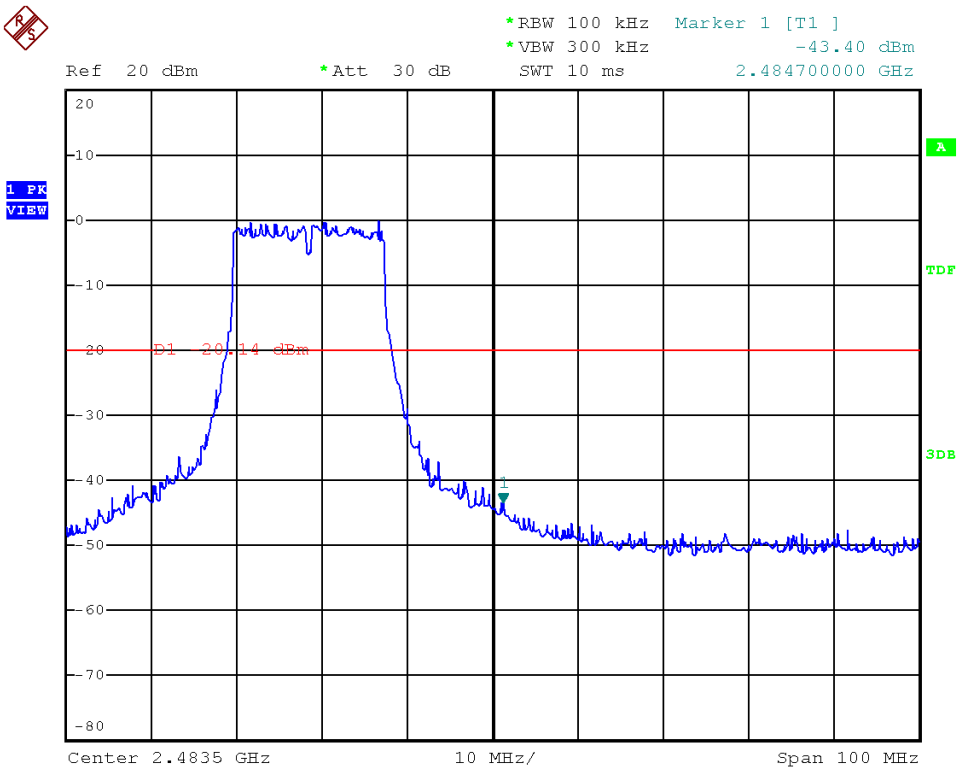


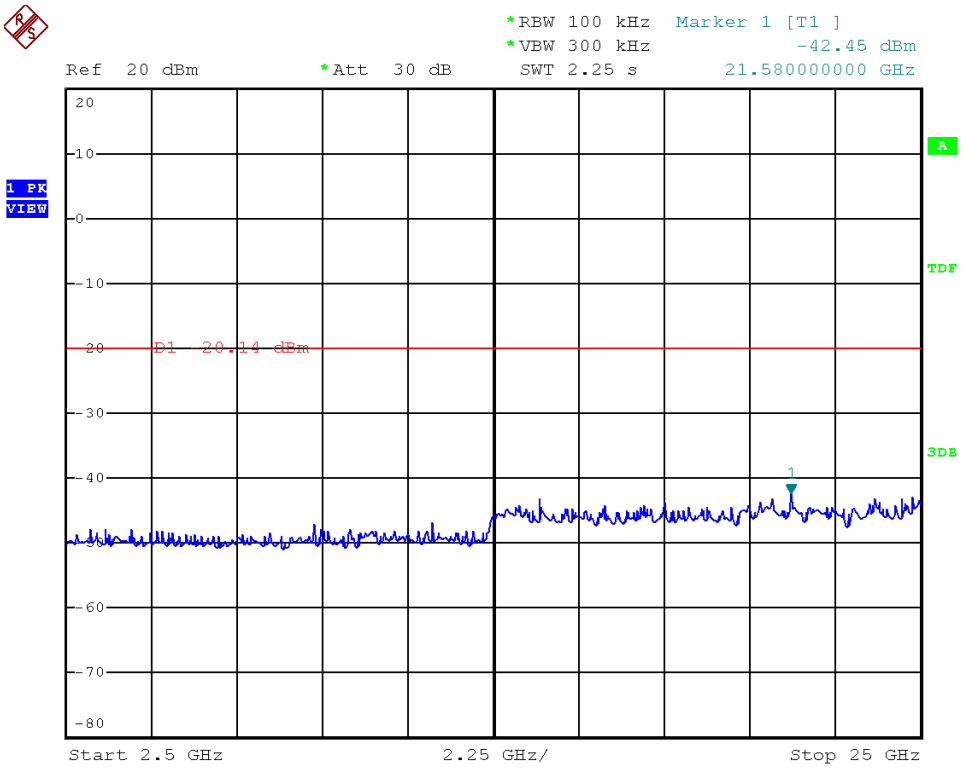
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT A
Channel: 01



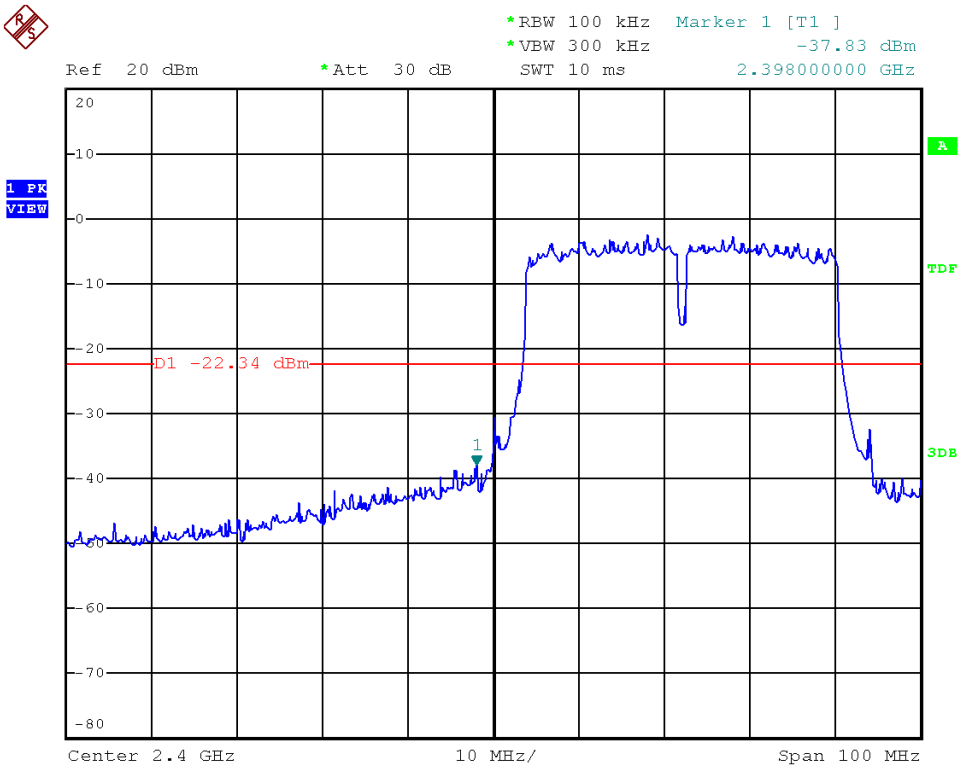


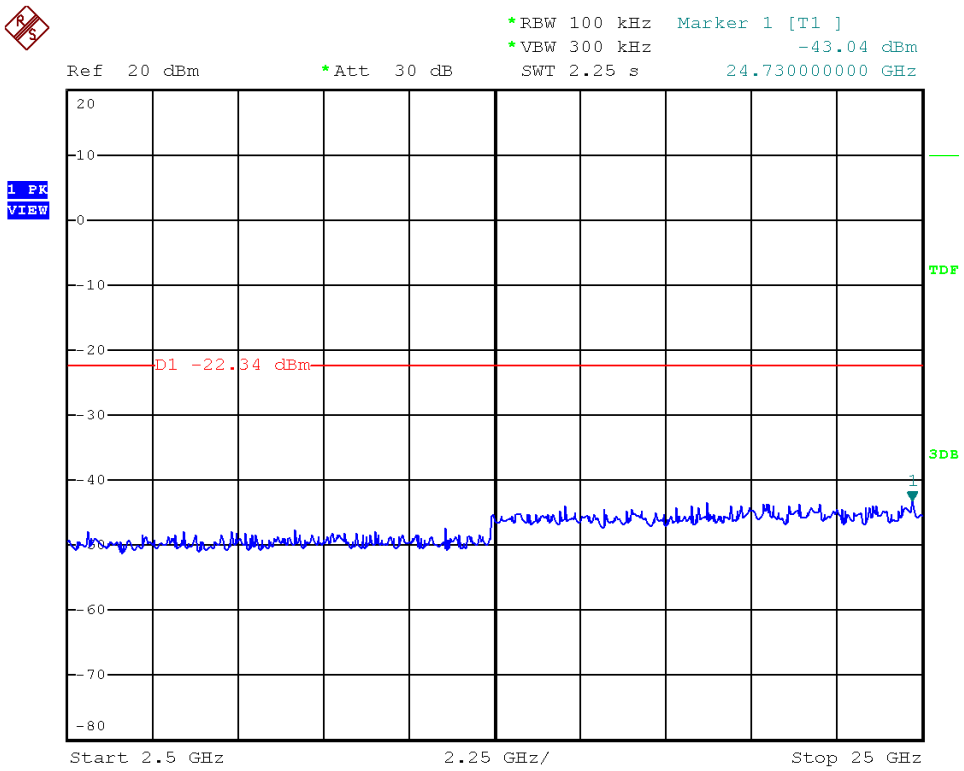
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT A
Channel: 11



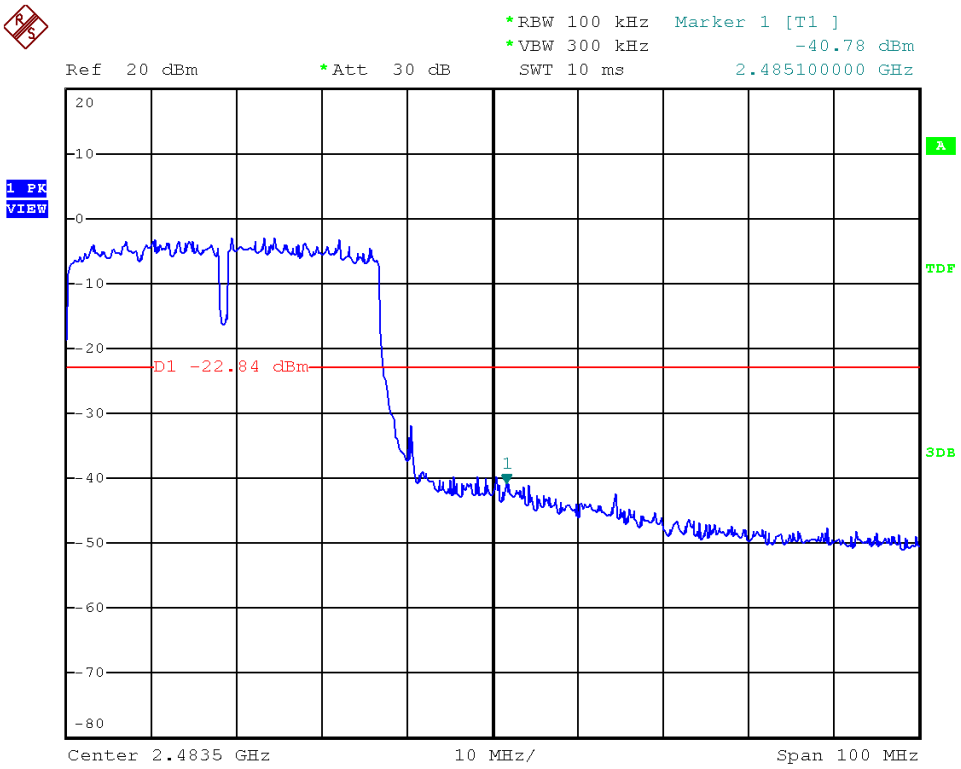


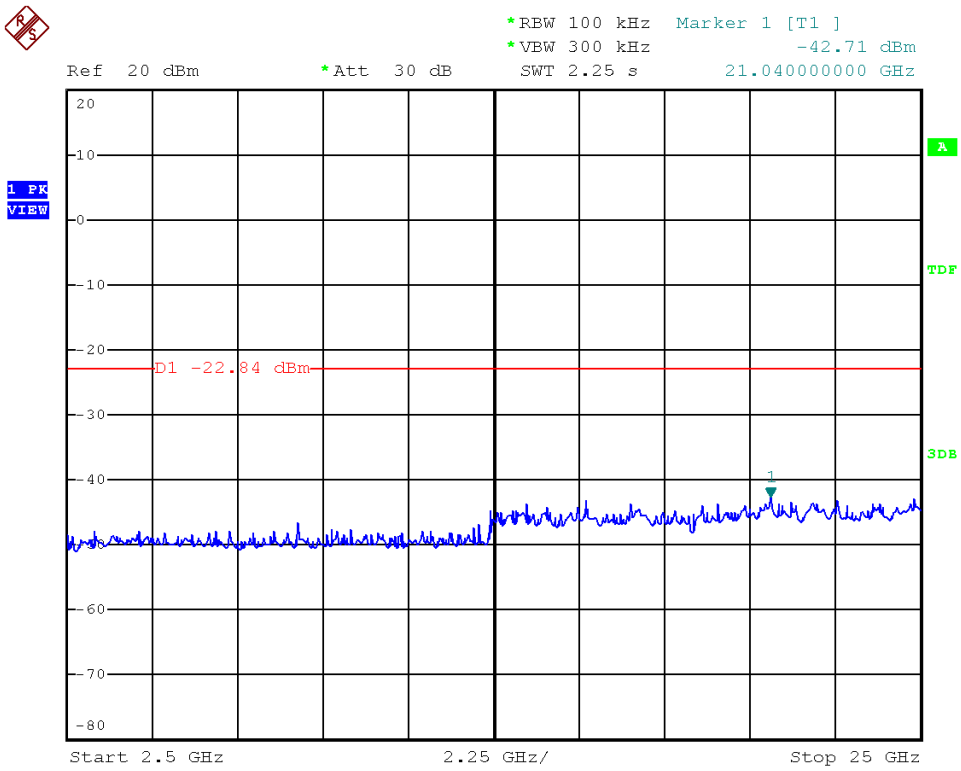
Modulation Standard: 802.11n HT40 (54Mbps), ANT A
Channel: 03



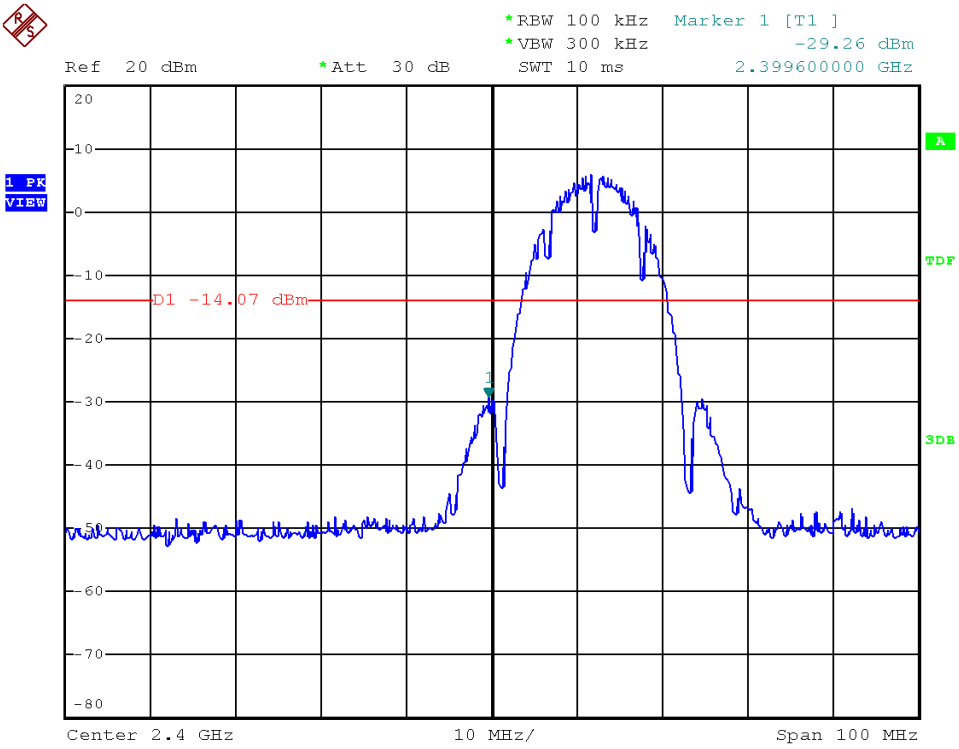


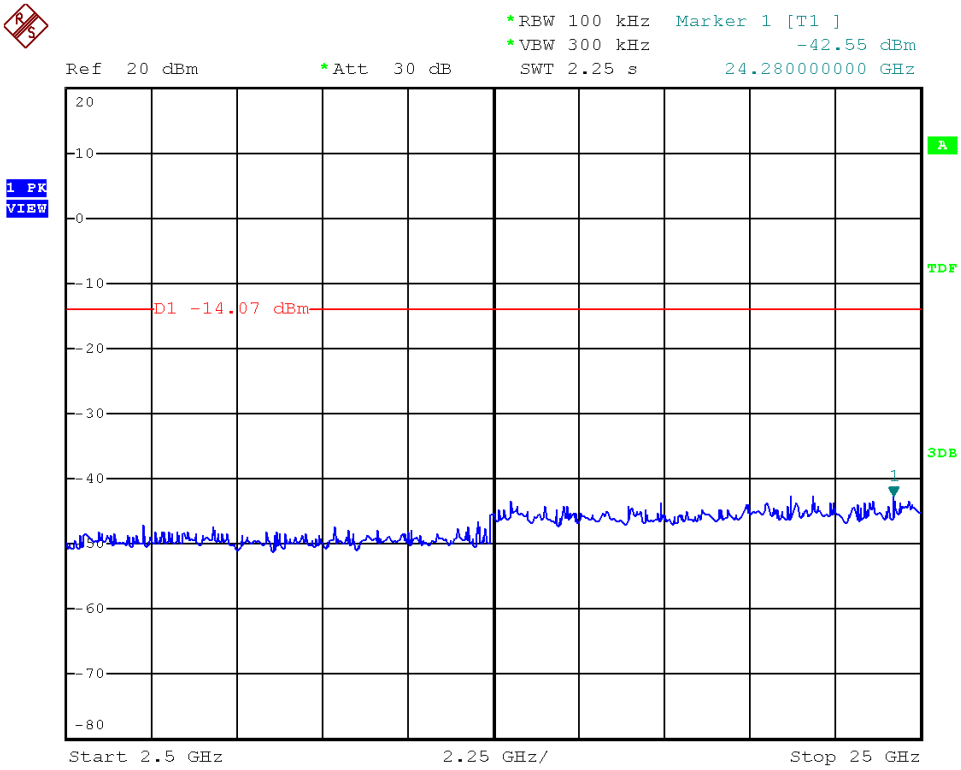
Modulation Standard: 802.11n HT40 (54Mbps), ANT A
Channel: 09



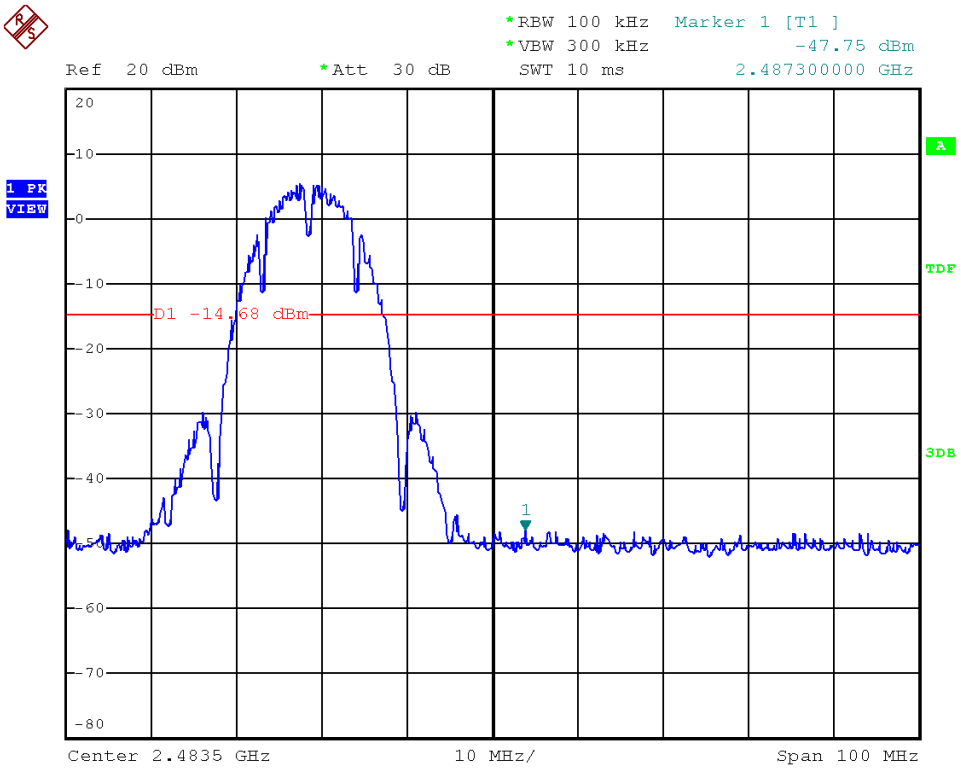


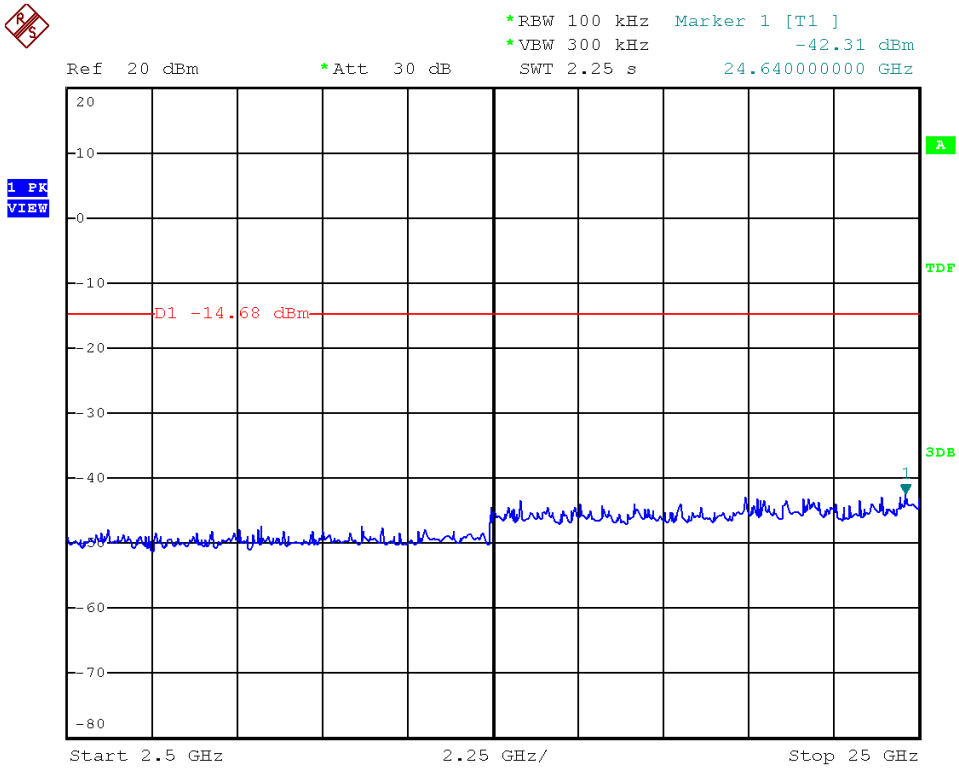
Modulation Standard: 802.11b (1Mbps), ANT B
Channel: 01



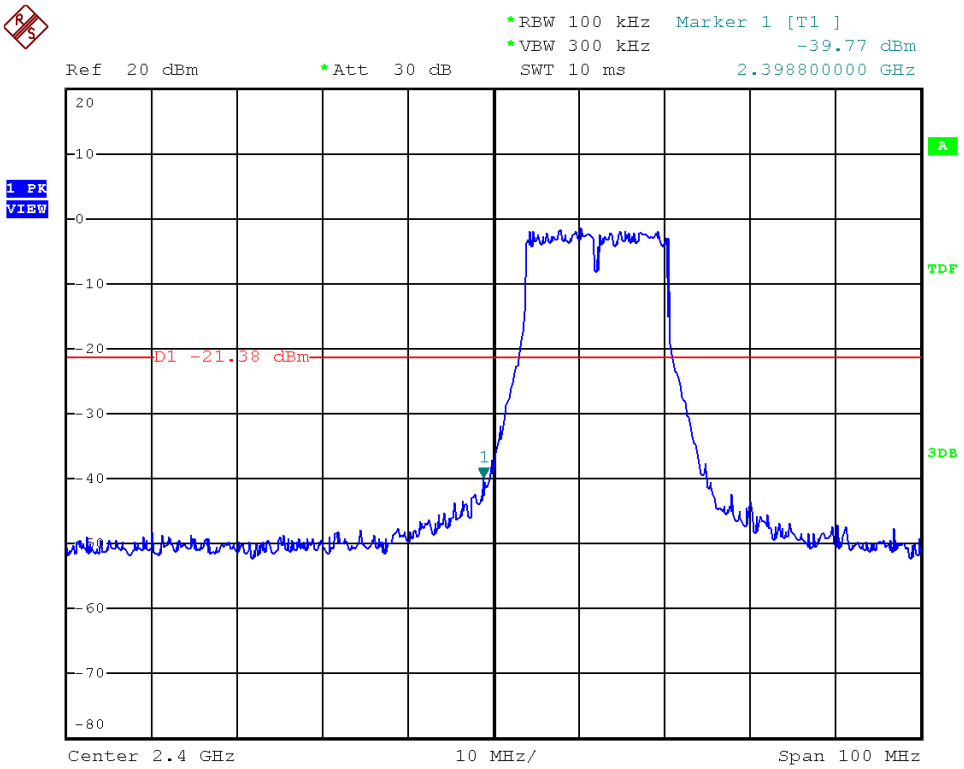


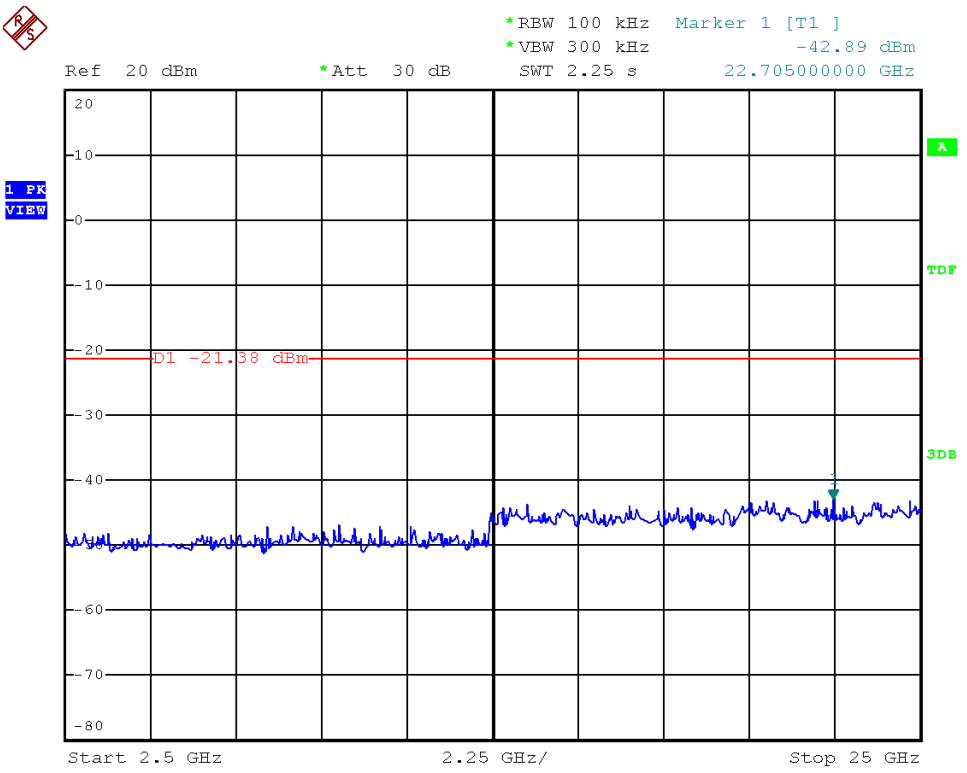
Modulation Standard: 802.11b (1Mbps), ANT B
Channel: 11



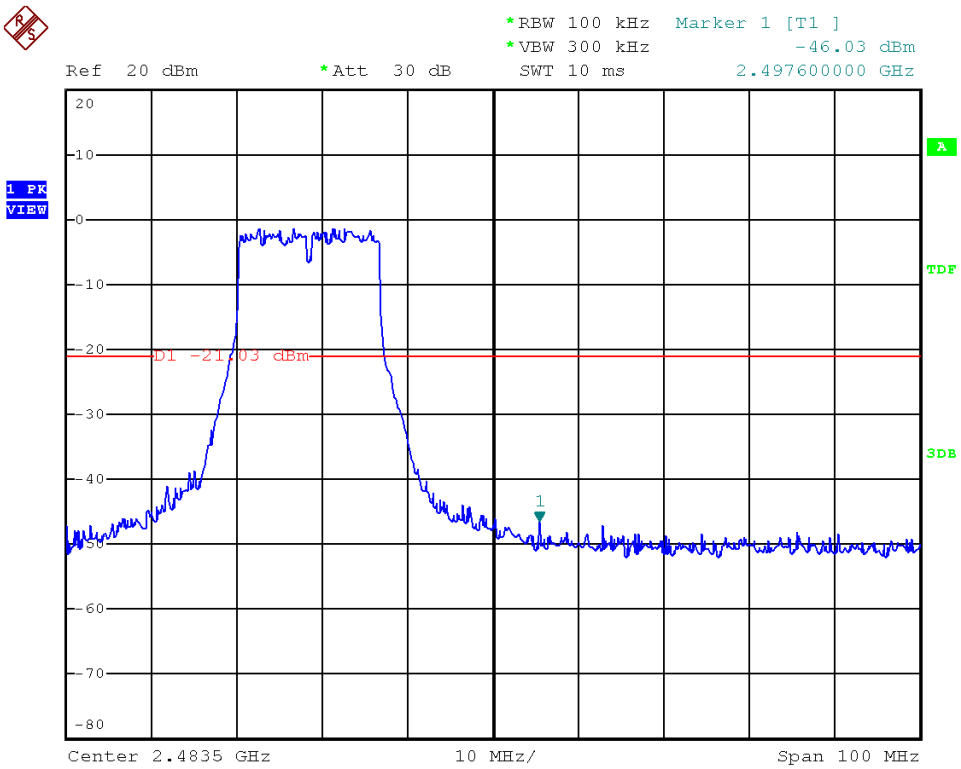


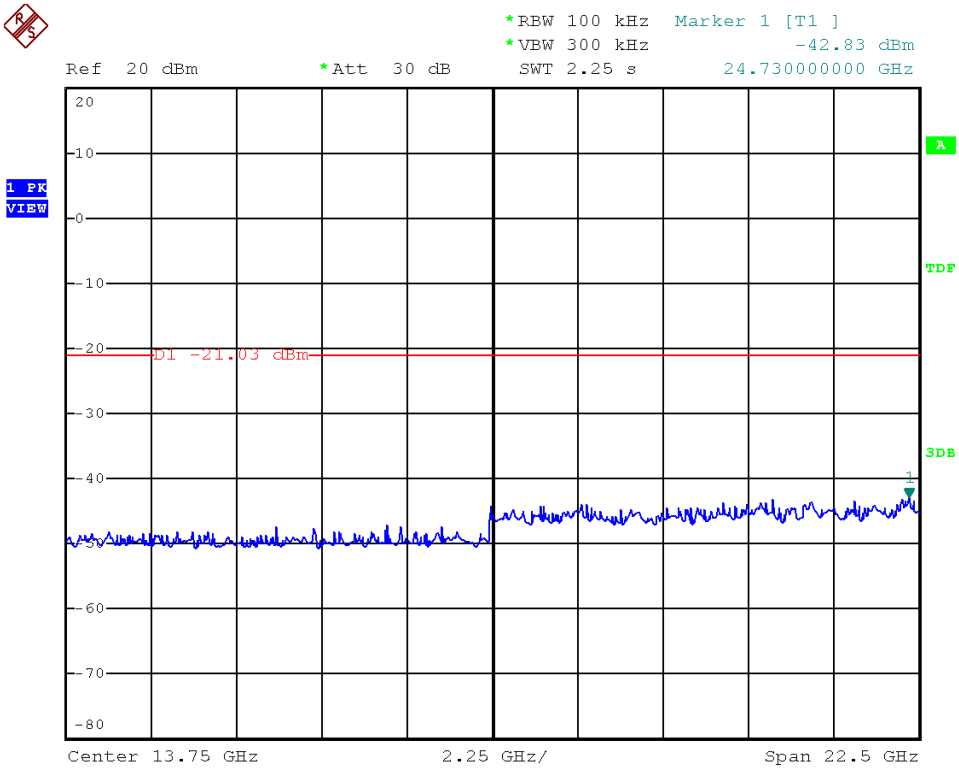
Modulation Standard: 802.11g (24Mbps), ANT B
Channel: 01



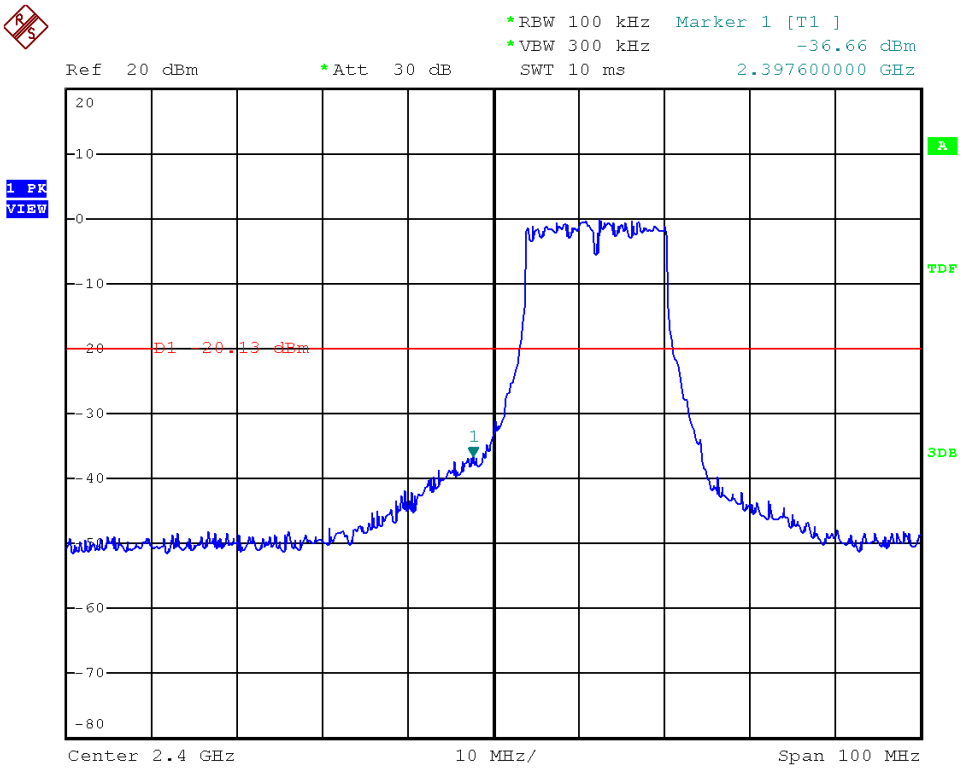


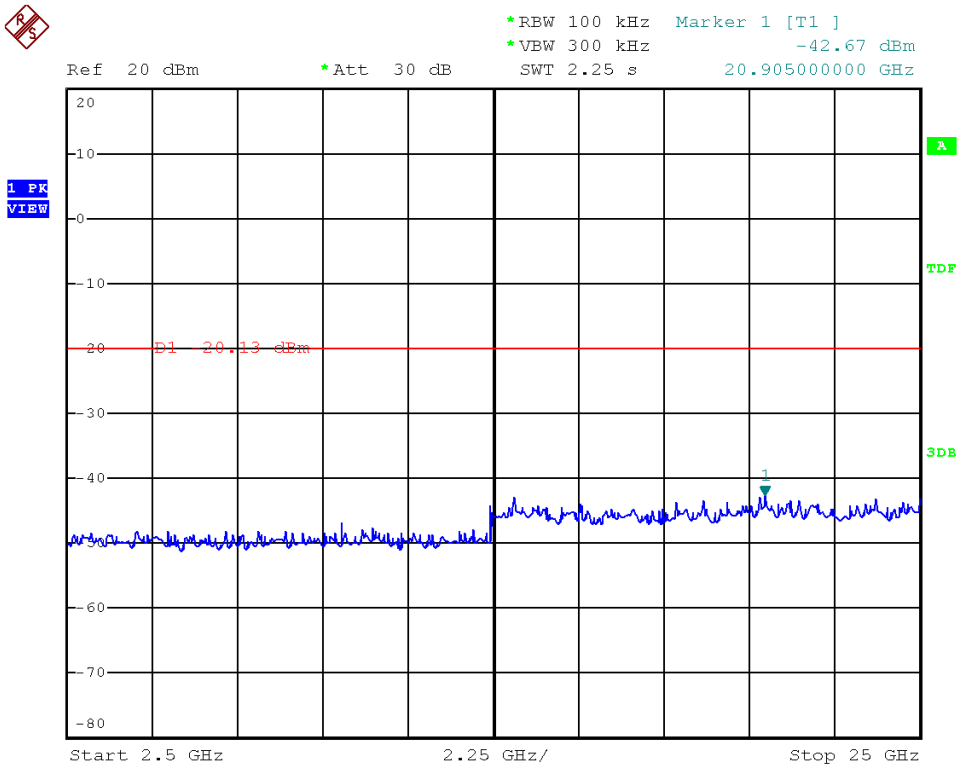
Modulation Standard: 802.11g (24Mbps), ANT B
Channel: 11



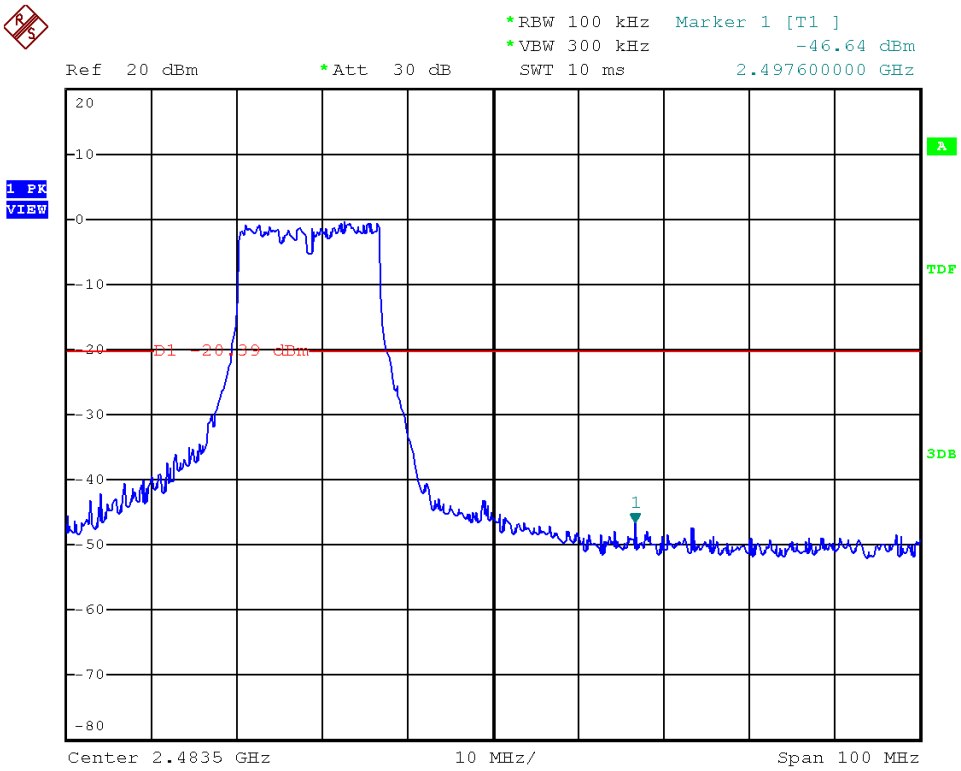


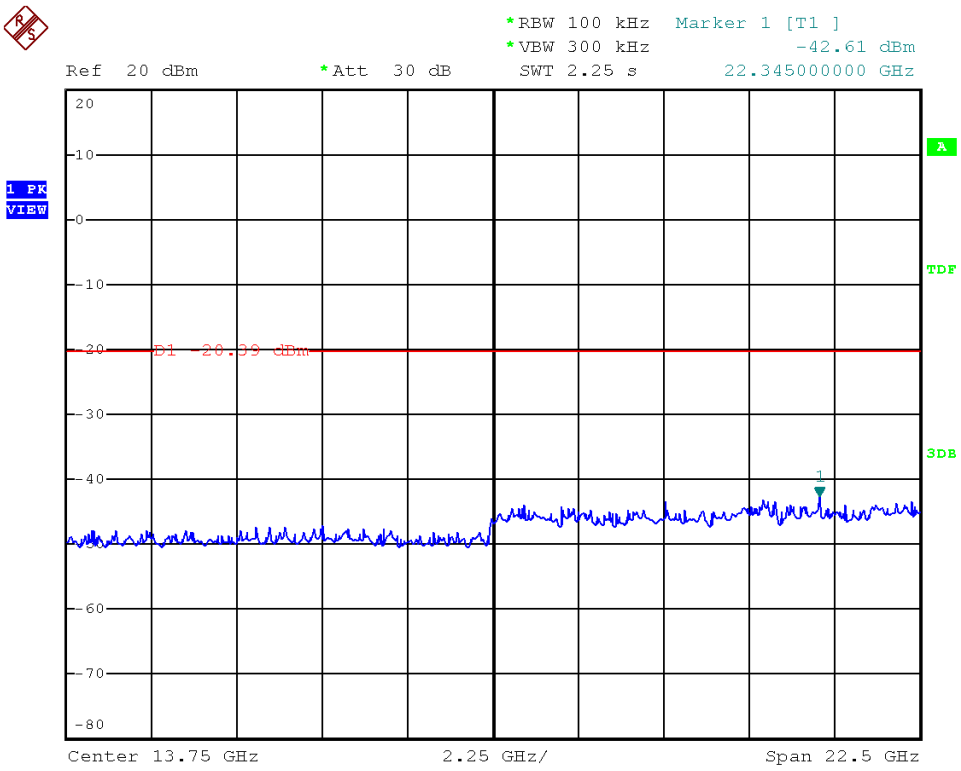
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT B
Channel: 01



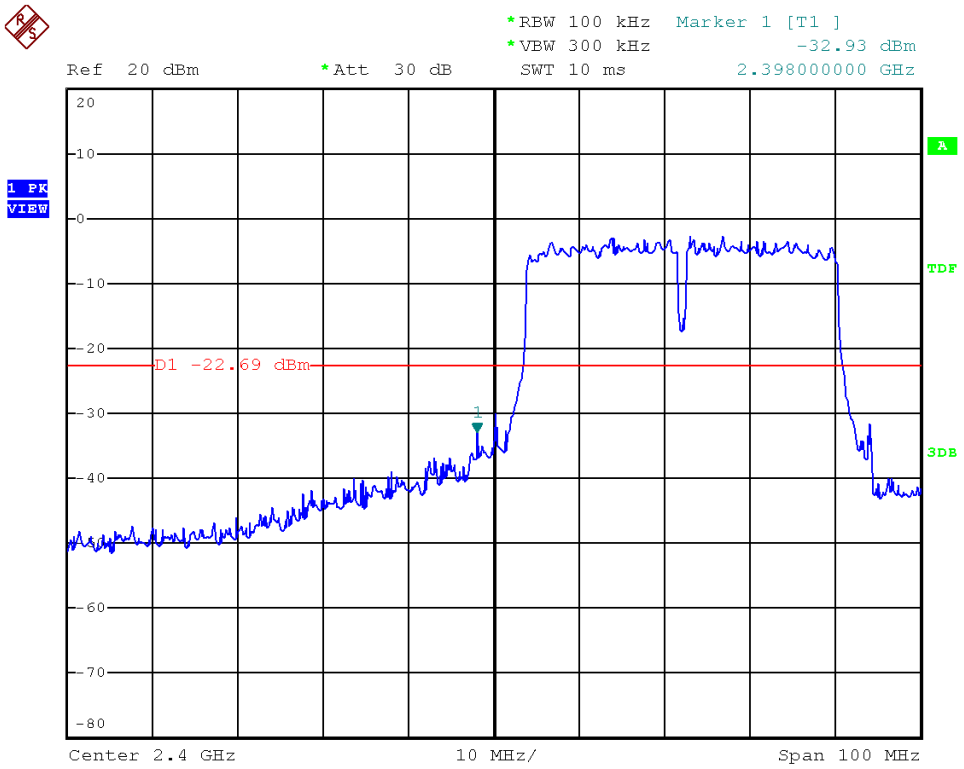


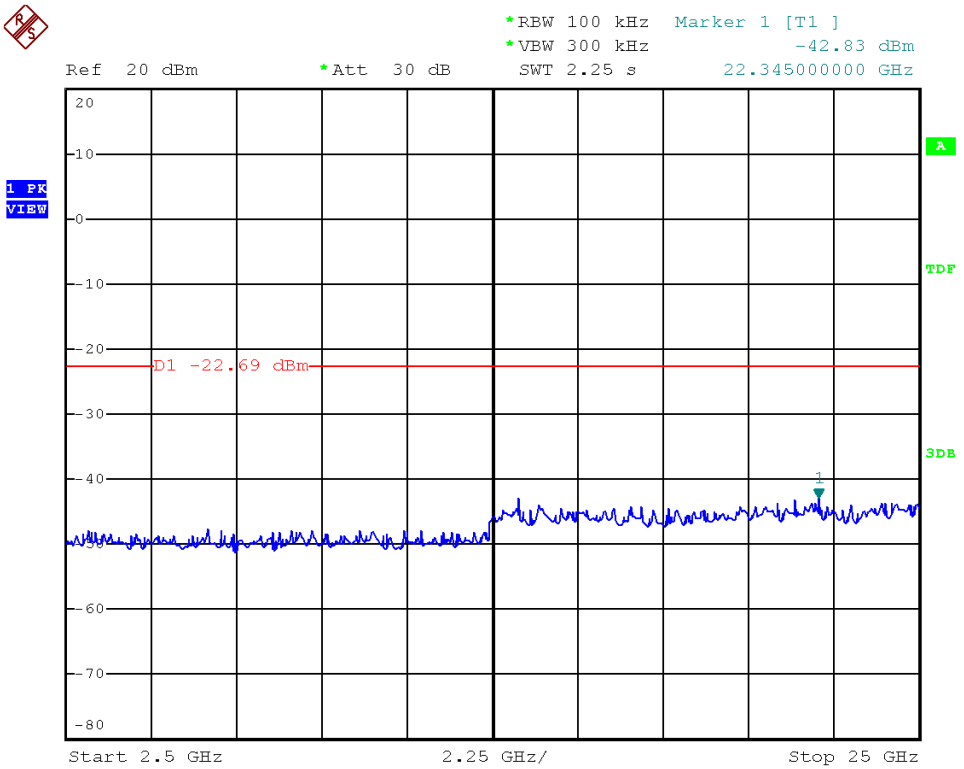
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT B
Channel: 11



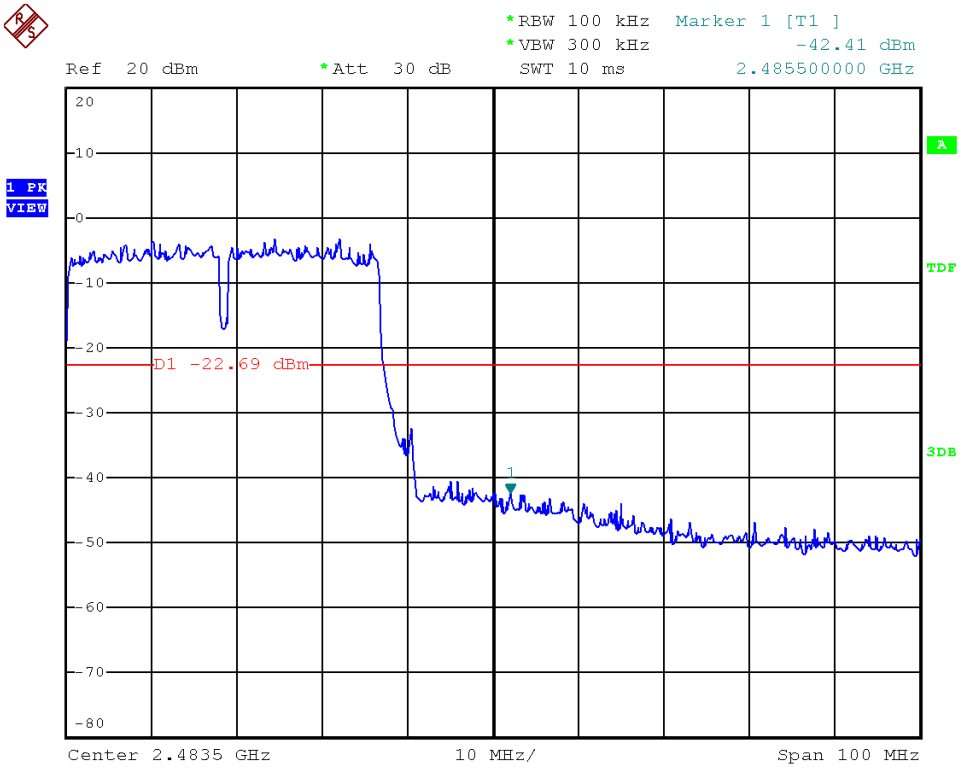


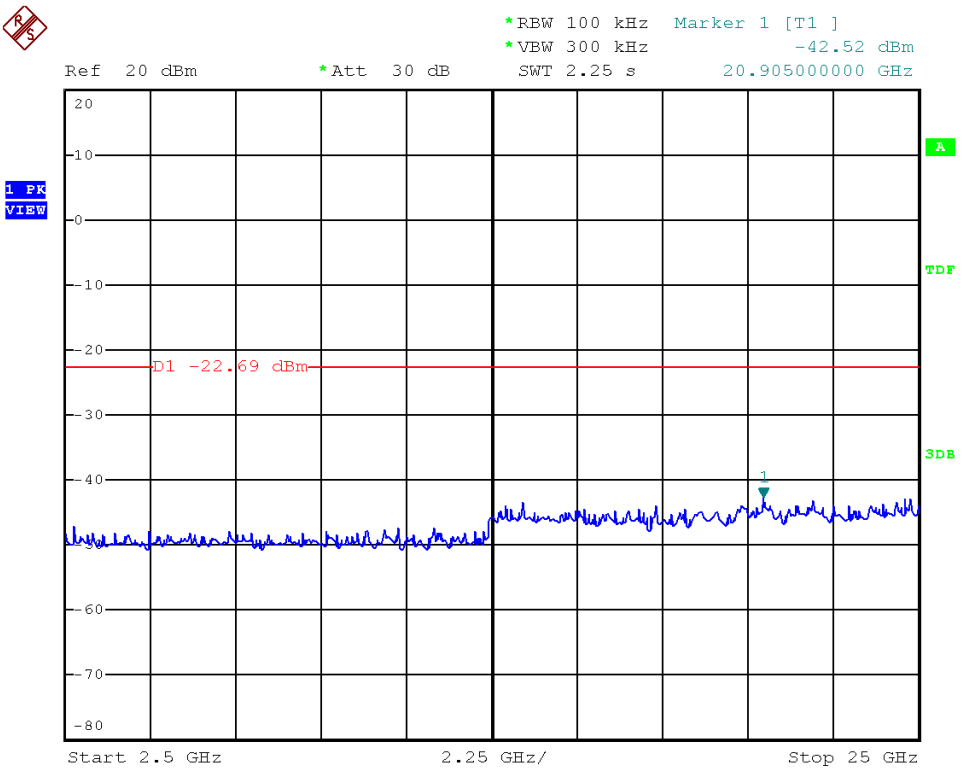
Modulation Standard: 802.11n HT40 (54Mbps), ANT B
Channel: 03





Modulation Standard: 802.11n HT40 (54Mbps), ANT B
Channel: 09





7. 6dB Bandwidth Measurement Data

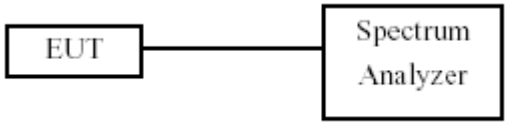
7.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

7.2 Test Procedures

a. The transmitter output was connected to the spectrum analyzer.
b. Set RBW of spectrum analyzer to 1~5% of the emission bandwidth and VBW ≥ 3x RBW.
c. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.
d. The 6dB Bandwidth was measured and recorded.

7.3 Test Setup Layout



7.4 Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	R&S	FSP40	100047	2014/03/27	2015/03/26

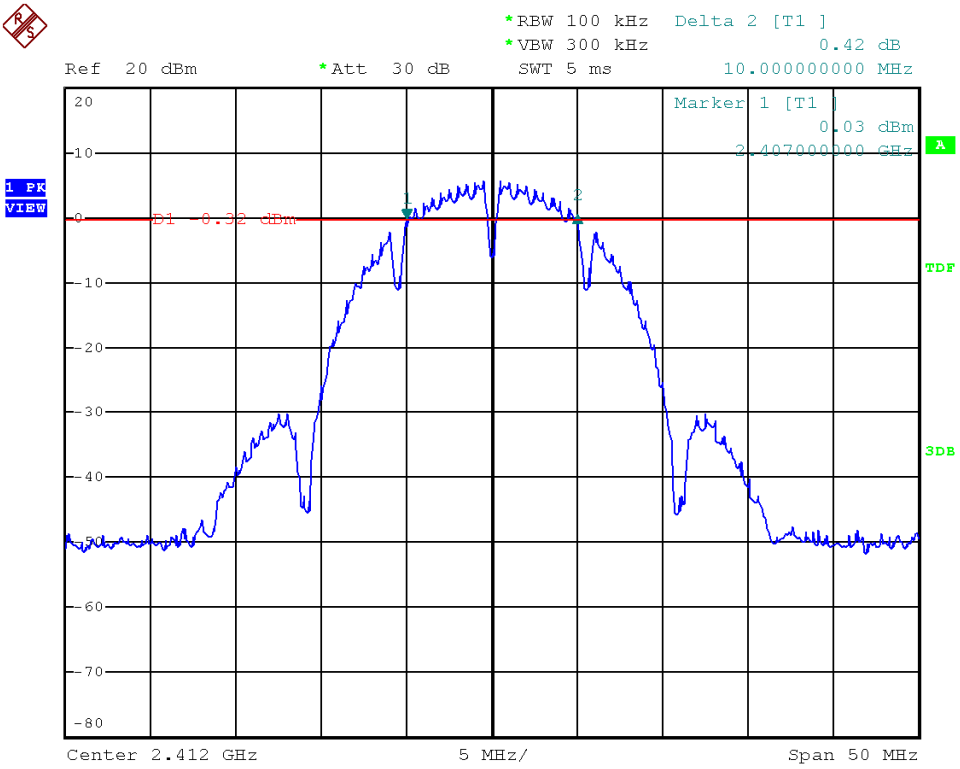
7.5 Test Result and Data

Test Date: Jul. 28, 2014 Temperature: 24℃

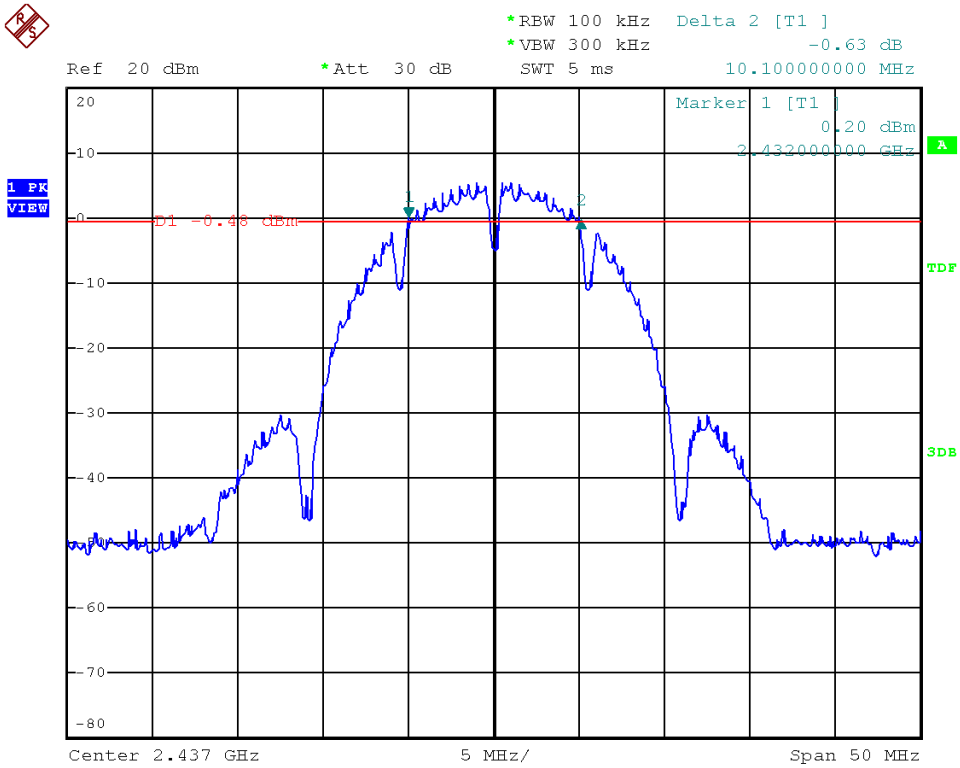
Atmospheric pressure: 1027 hPa Humidity: 52%

Modulation Standard	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	
			ANT A	ANT B
802.11b (1Mbps)	01	2412	10.0	10.1
	06	2437	10.1	10.0
	11	2462	9.5	10.0
802.11g (24Mbps)	01	2412	16.6	16.5
	06	2437	16.5	16.5
	11	2462	16.6	16.5
802.11n HT20 (58.5Mbps)	01	2412	17.8	17.8
	06	2437	17.8	17.8
	11	2462	17.8	17.7
802.11n HT40 (54Mbps)	03	2422	36.4	36.6
	06	2437	36.4	36.4
	09	2452	36.6	36.6

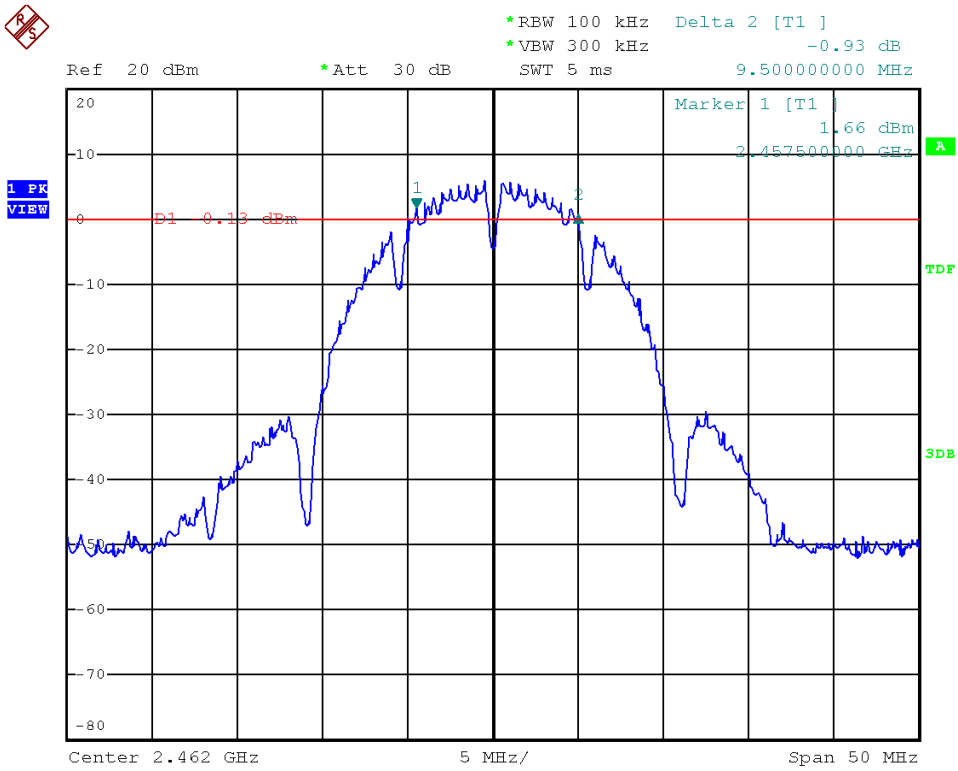
Modulation Standard: 802.11b (1Mbps), ANT A
Channel: 01



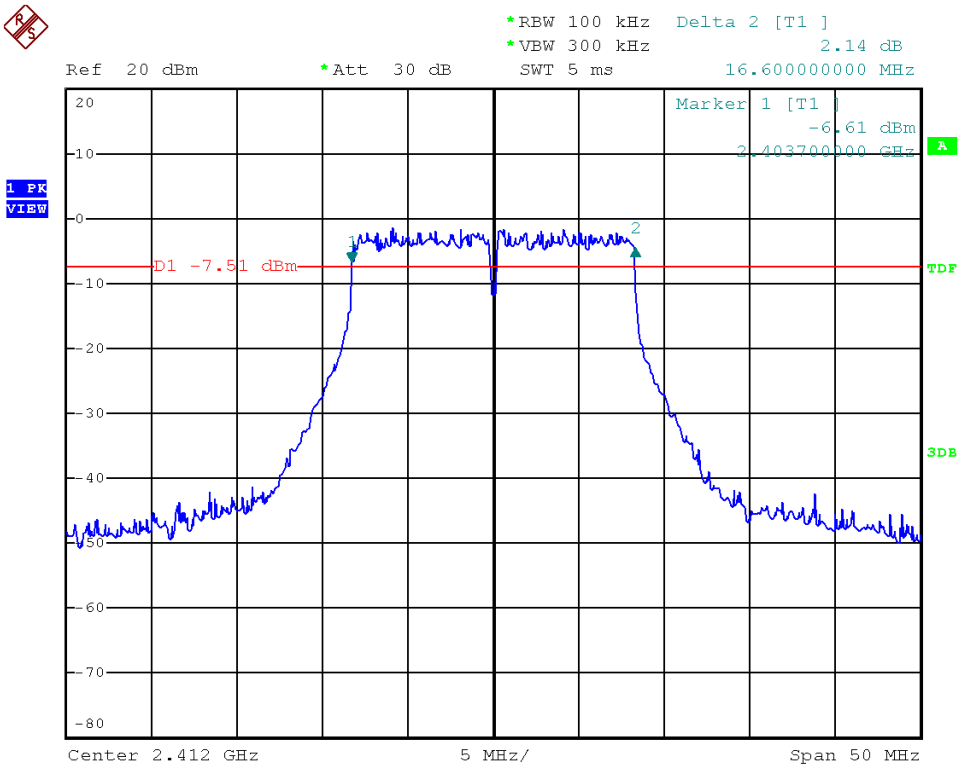
Modulation Standard: 802.11b (1Mbps), ANT A
Channel: 06



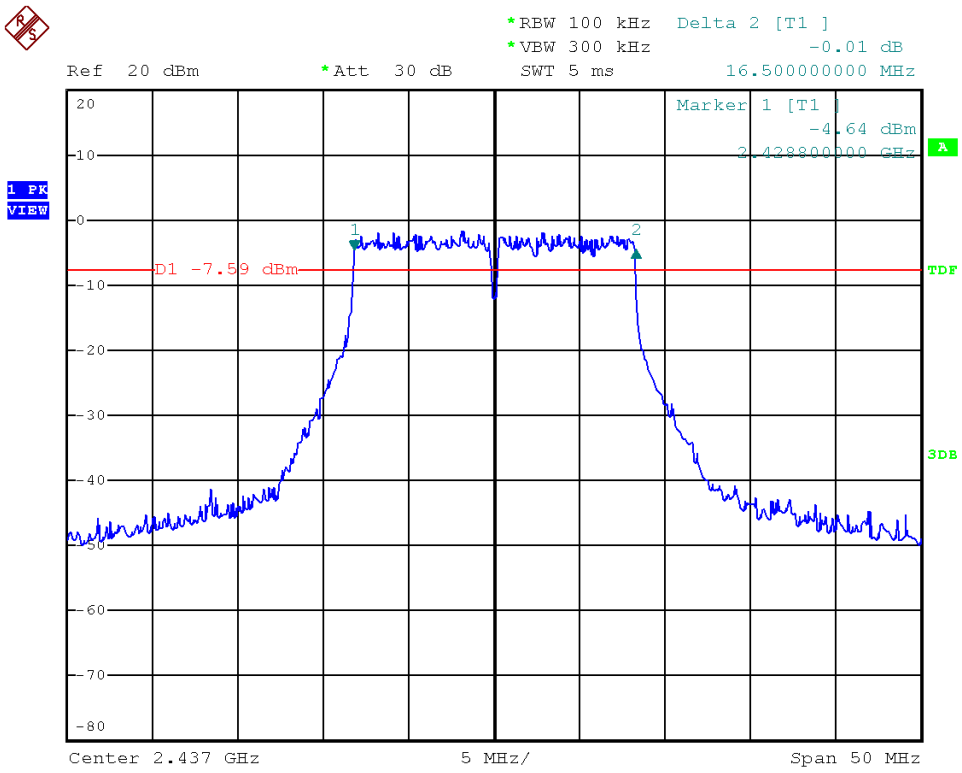
Modulation Standard: 802.11b (1Mbps), ANT A
Channel: 11



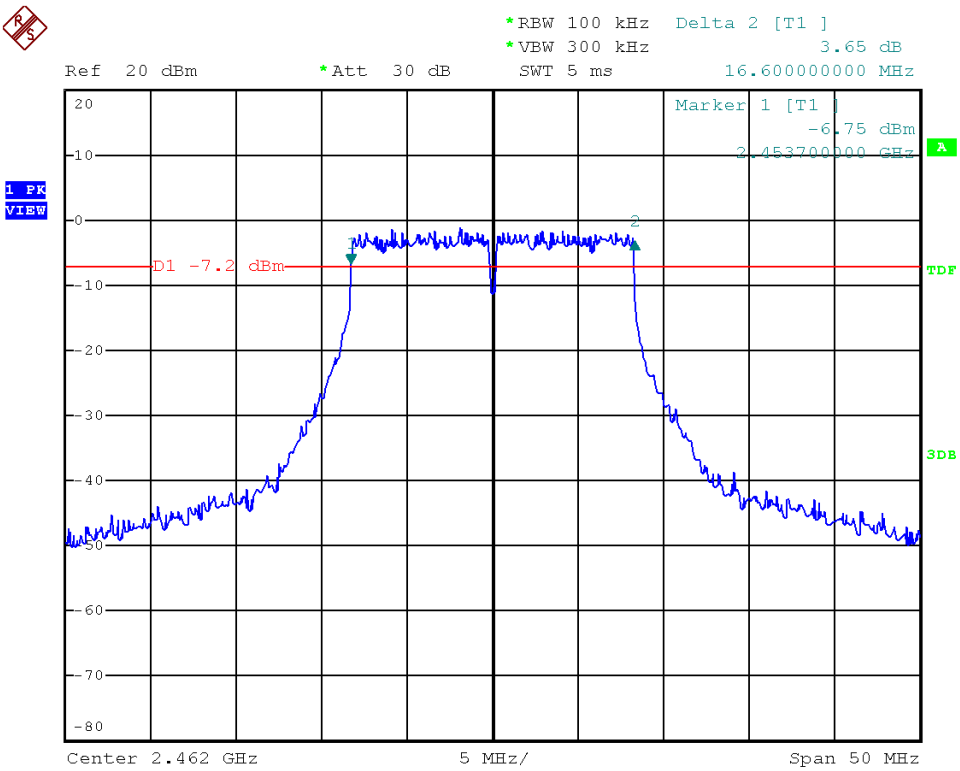
Modulation Standard: 802.11g (24Mbps), ANT A
Channel: 01



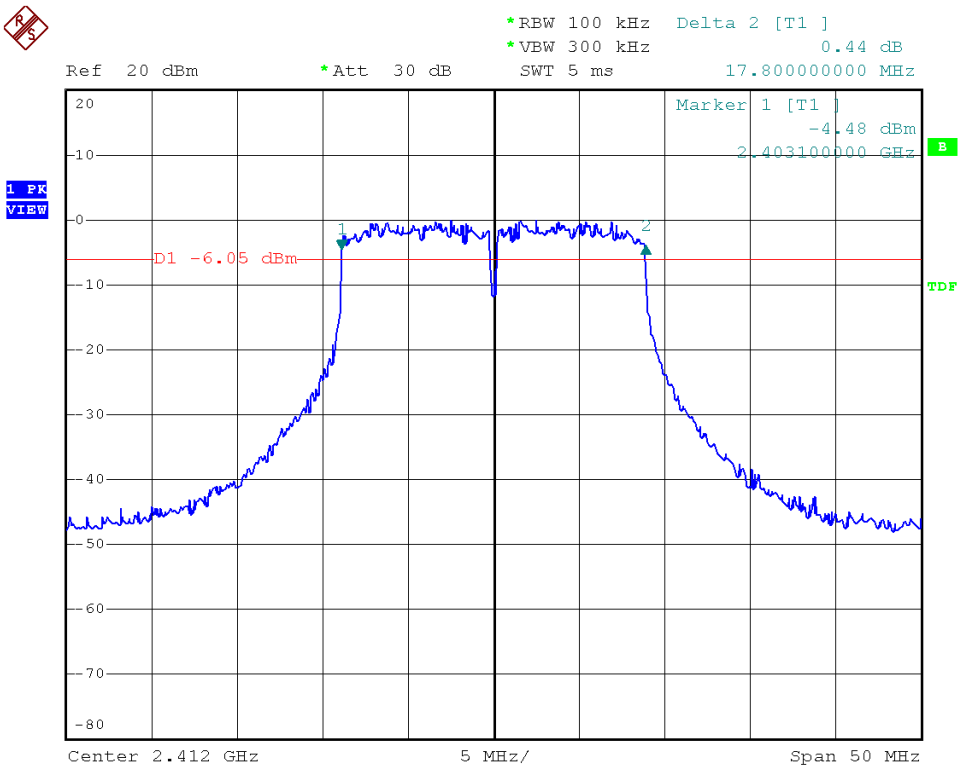
Modulation Standard: 802.11g (24Mbps), ANT A
Channel: 06



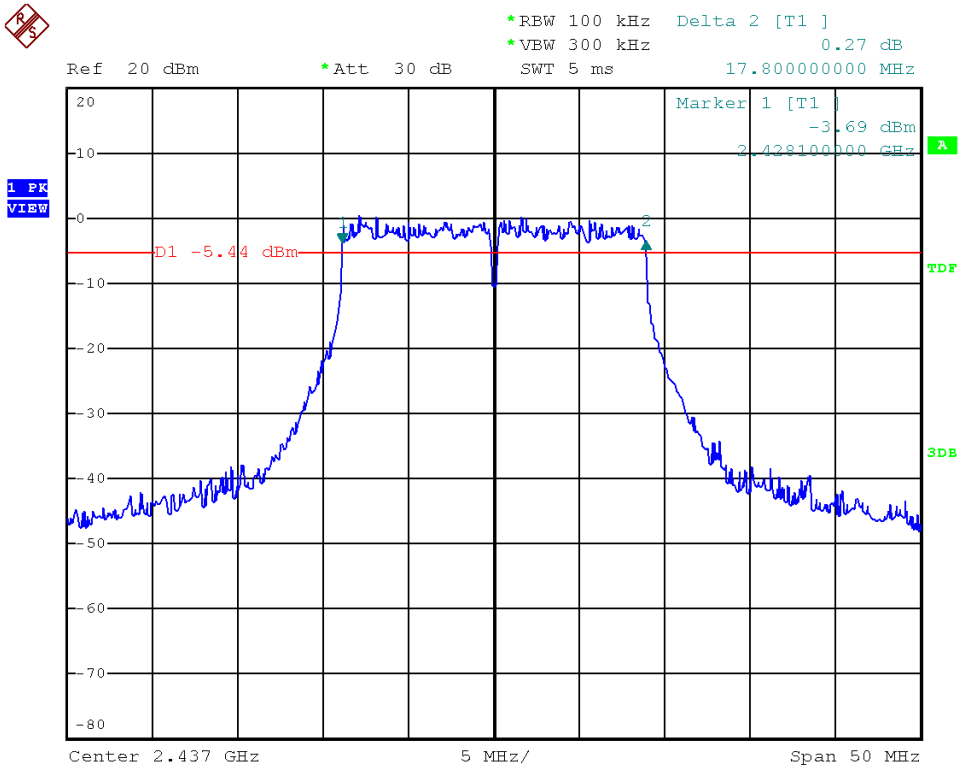
Modulation Standard: 802.11g (24Mbps), ANT A
Channel: 11



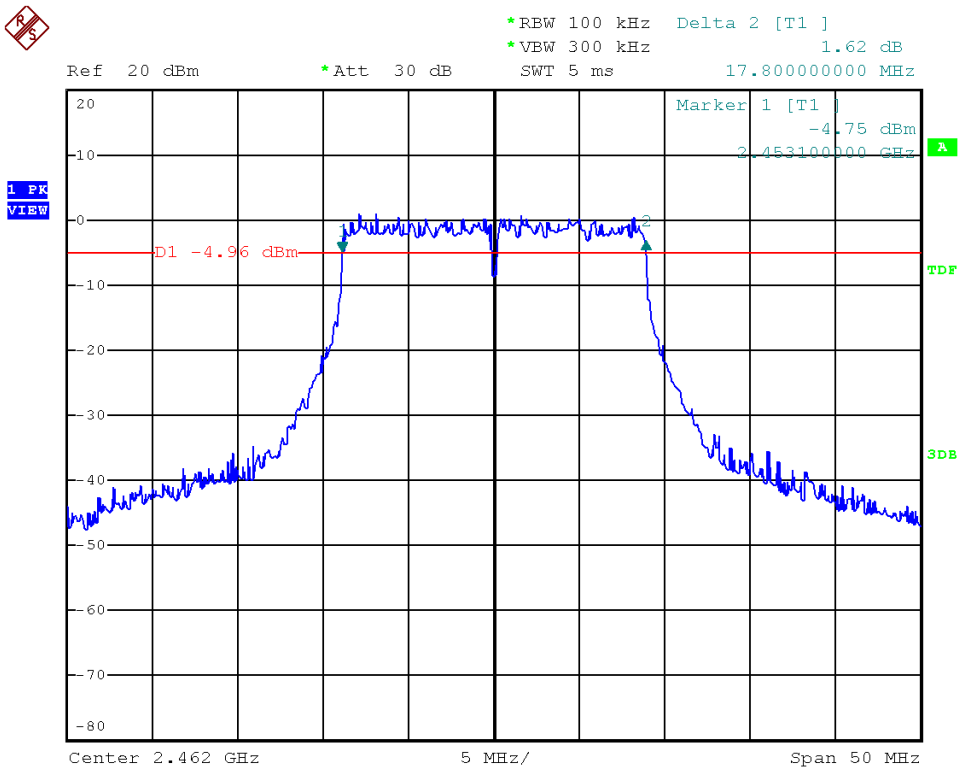
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT A
Channel: 01



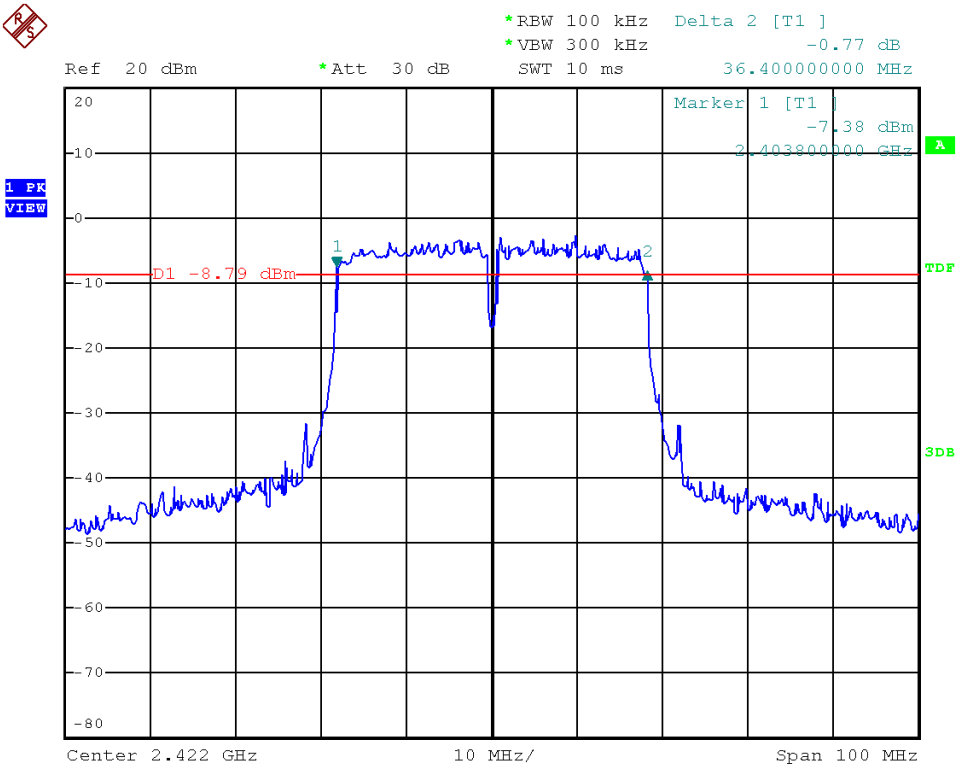
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT A
Channel: 06



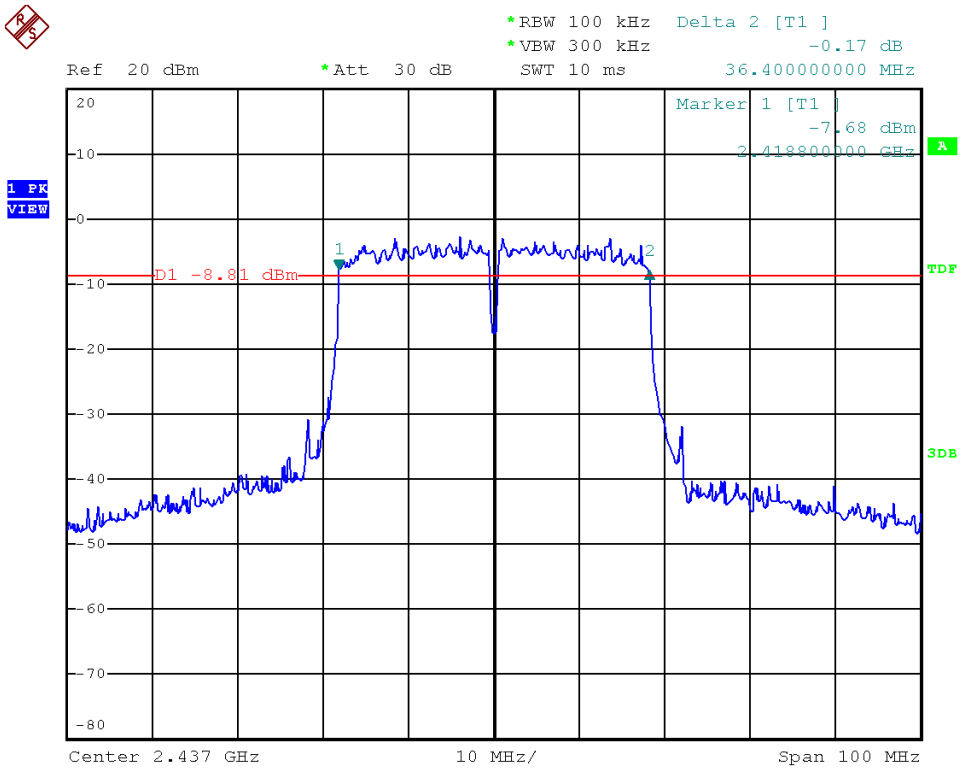
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT A
Channel: 11



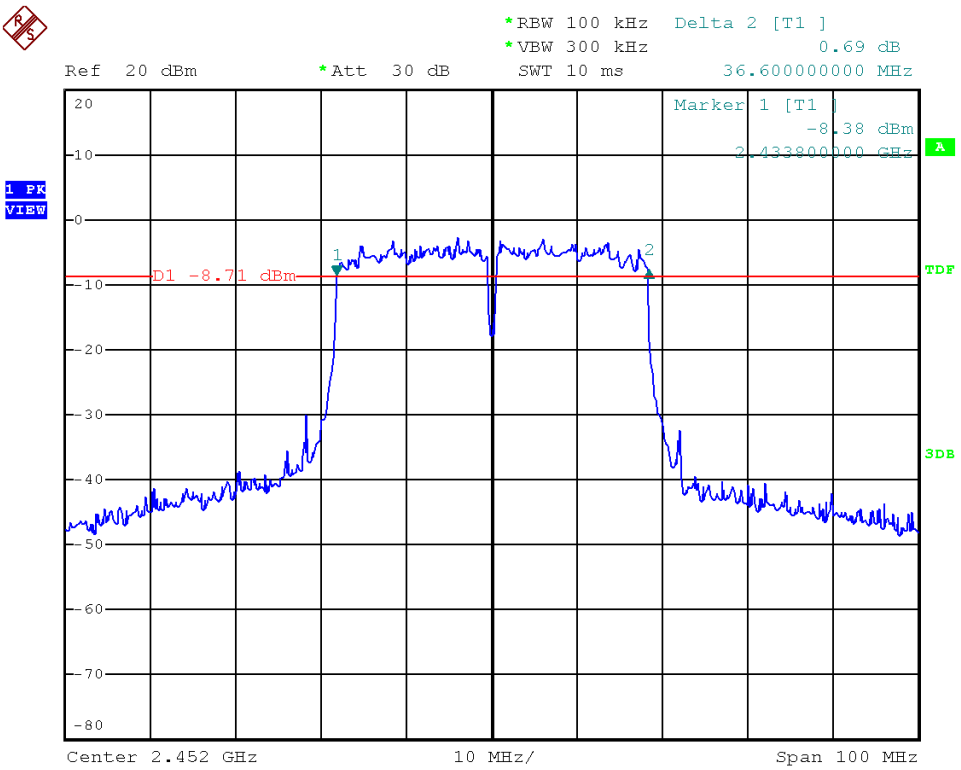
Modulation Standard: 802.11n HT40 (54Mbps), ANT A
Channel: 03



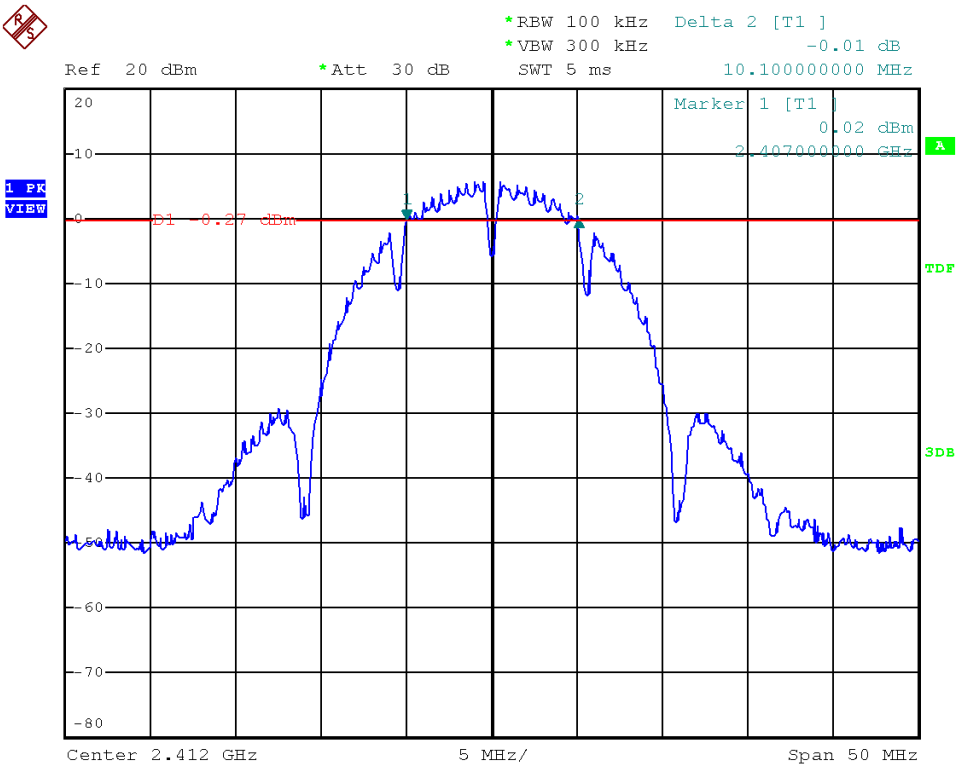
Modulation Standard: 802.11n HT40 (54Mbps), ANT A
Channel: 06



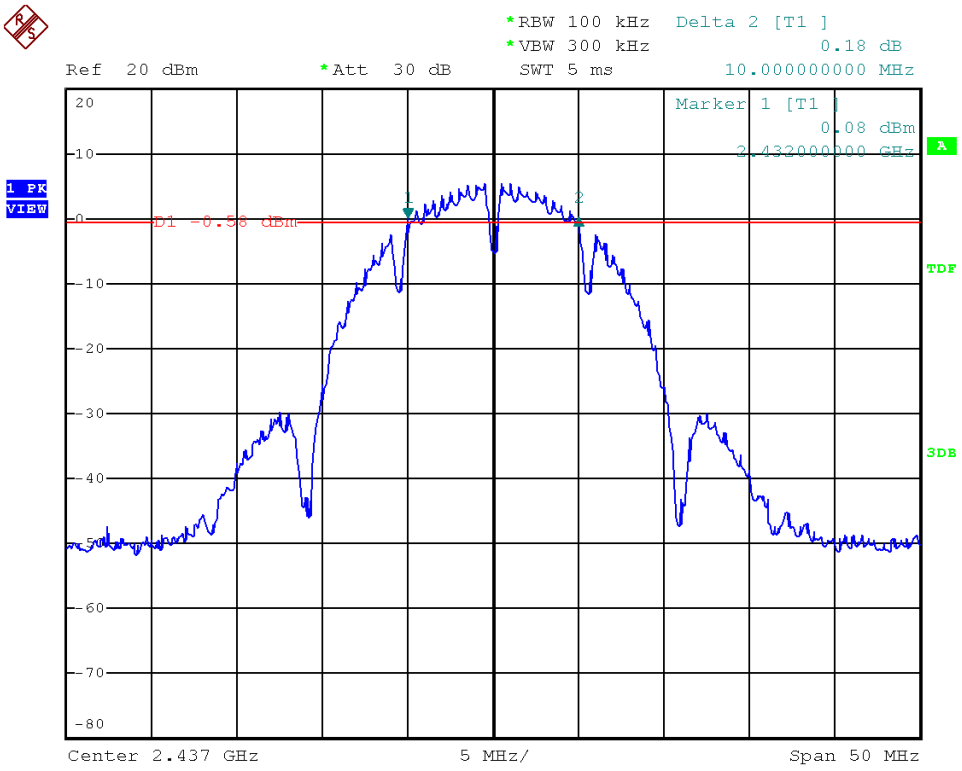
Modulation Standard: 802.11n HT40 (54Mbps), ANT A
Channel: 09



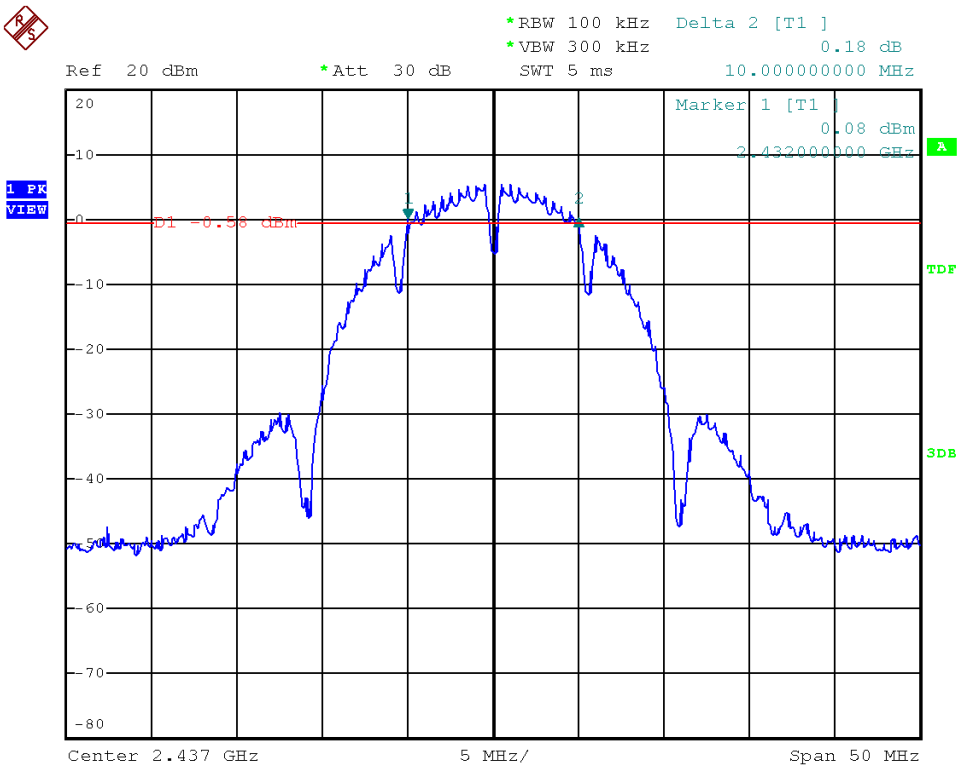
Modulation Standard: 802.11b (1Mbps), ANT B
Channel: 01



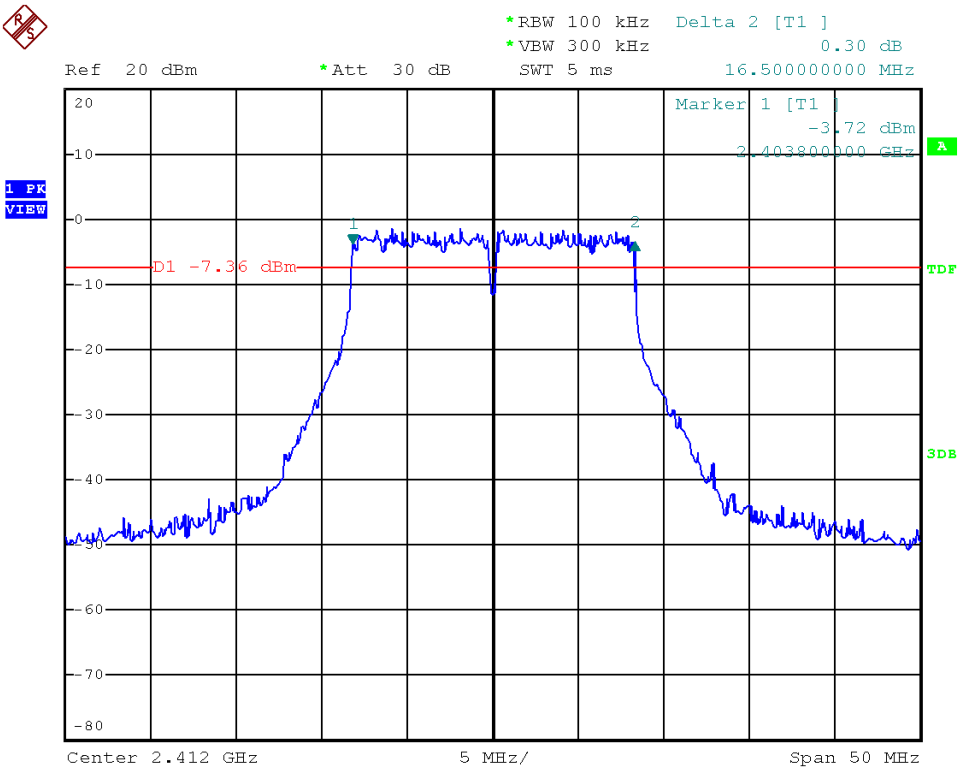
Modulation Standard: 802.11b (1Mbps), ANT B
Channel: 06



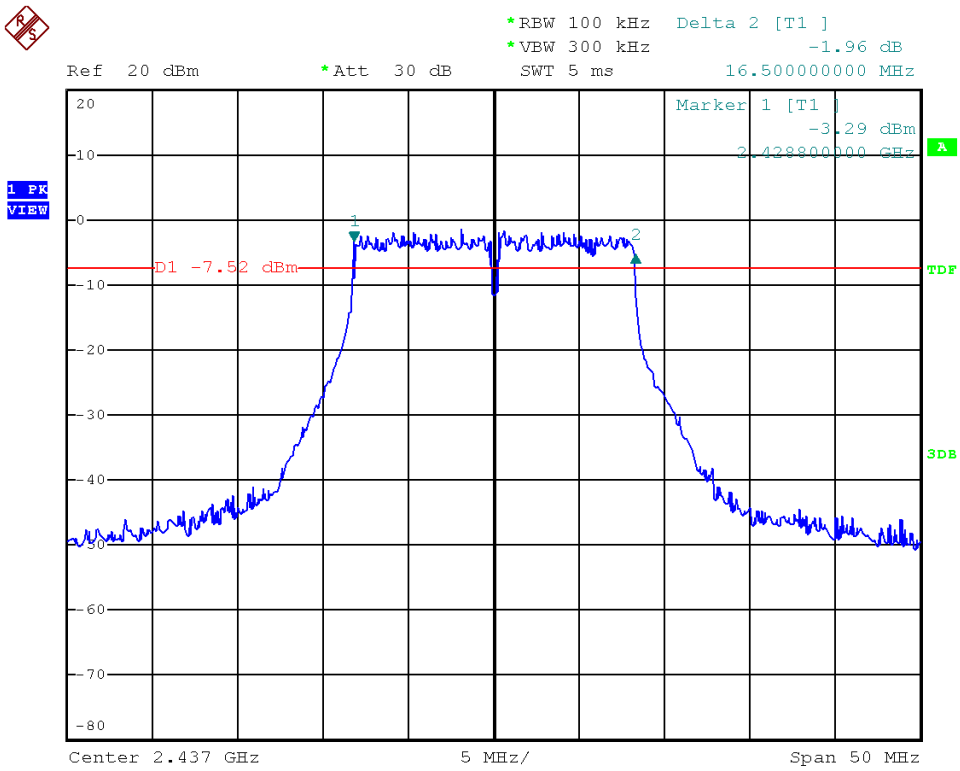
Modulation Standard: 802.11b (1Mbps), ANT B
Channel: 11



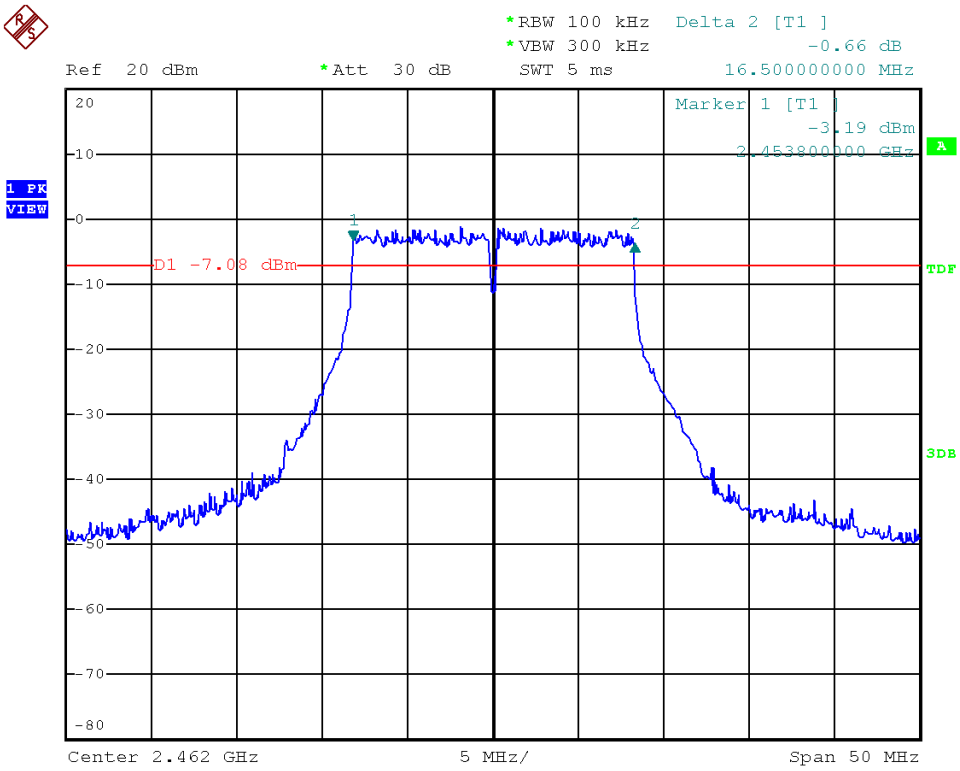
Modulation Standard: 802.11g (24Mbps), ANT B
Channel: 01



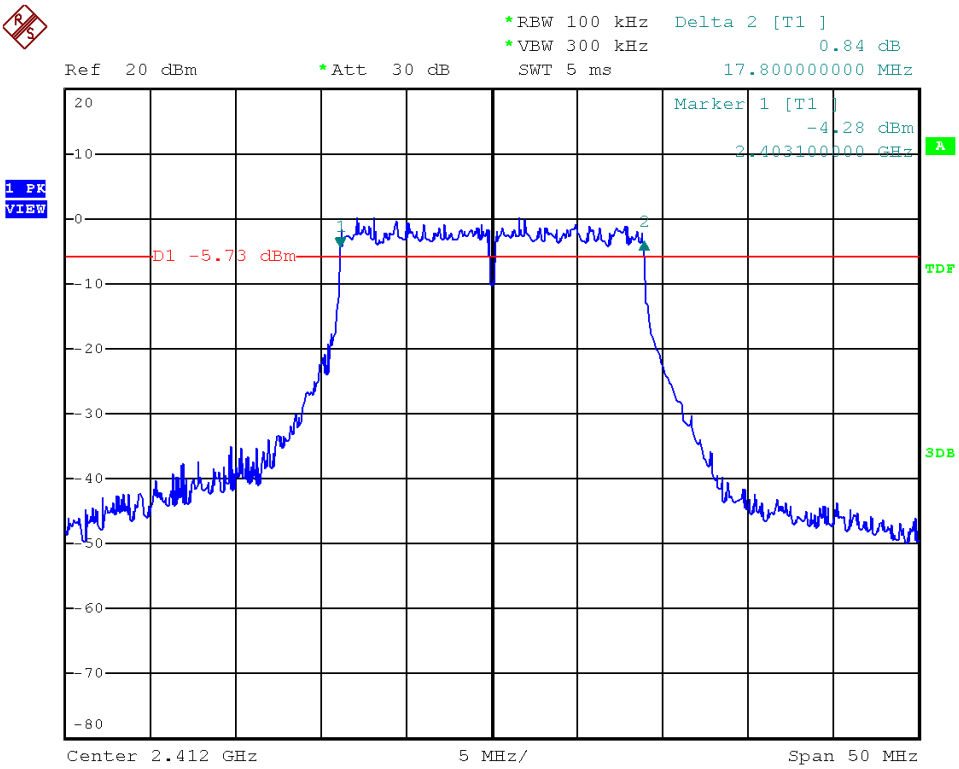
Modulation Standard: 802.11g (24Mbps), ANT B
Channel: 06



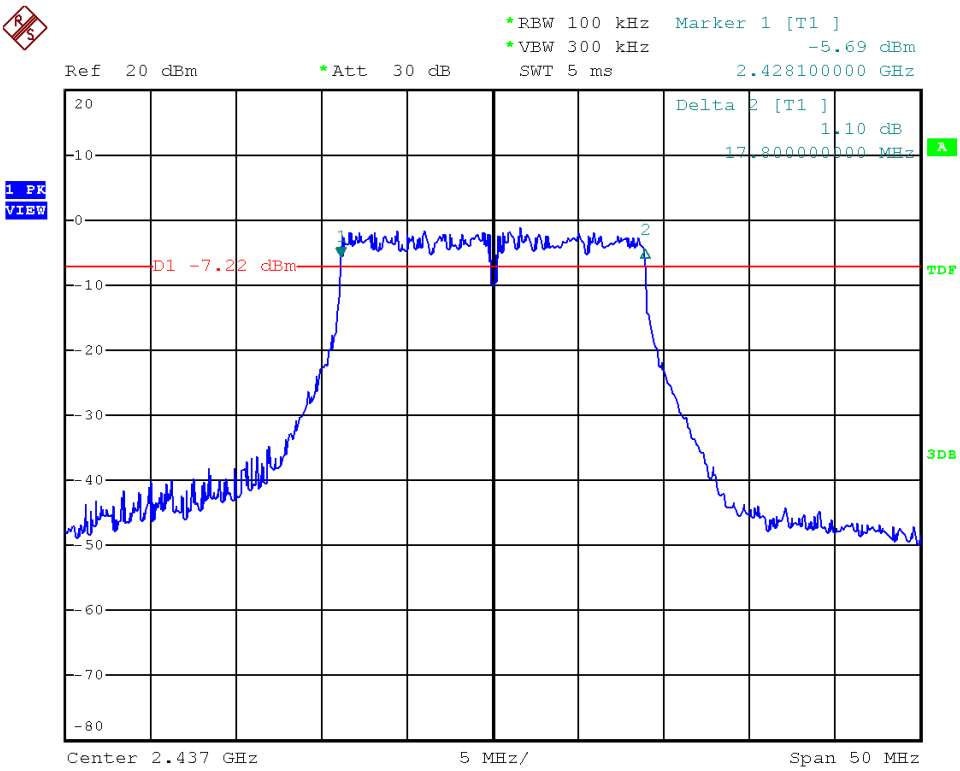
Modulation Standard: 802.11g (24Mbps), ANT B
Channel: 11



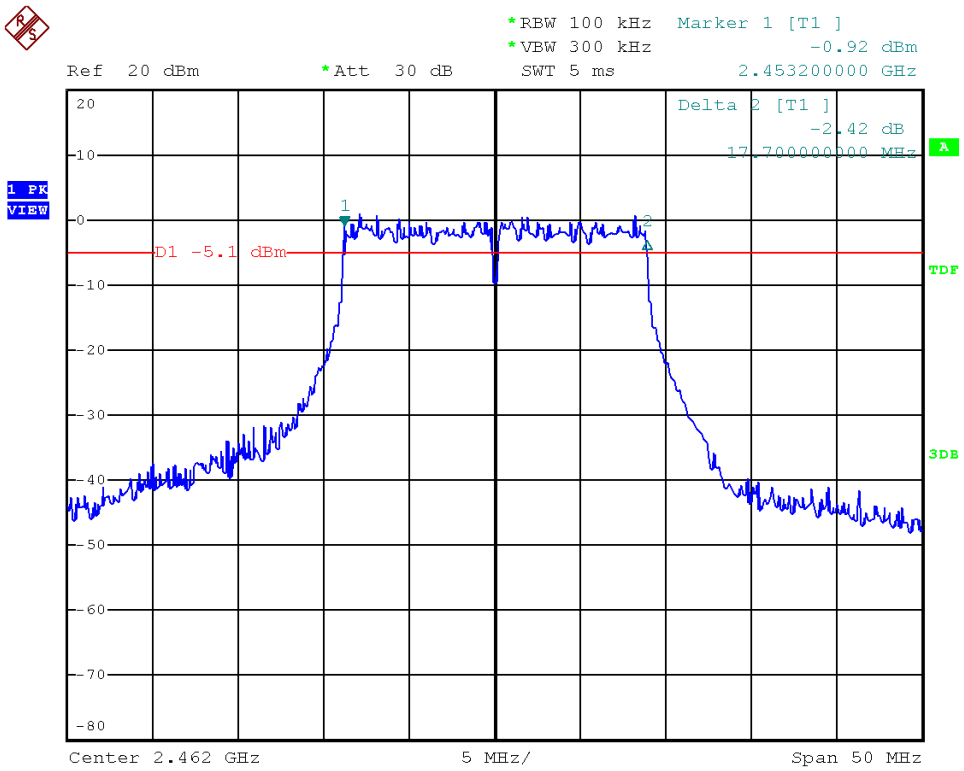
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT B
Channel: 01



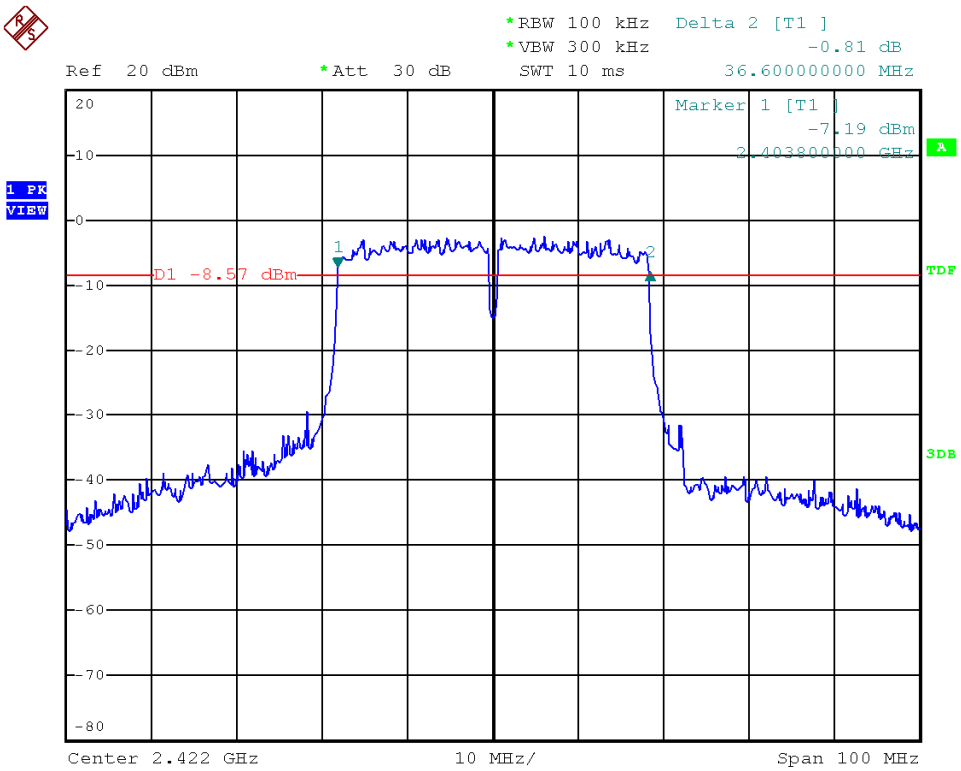
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT B
Channel: 06



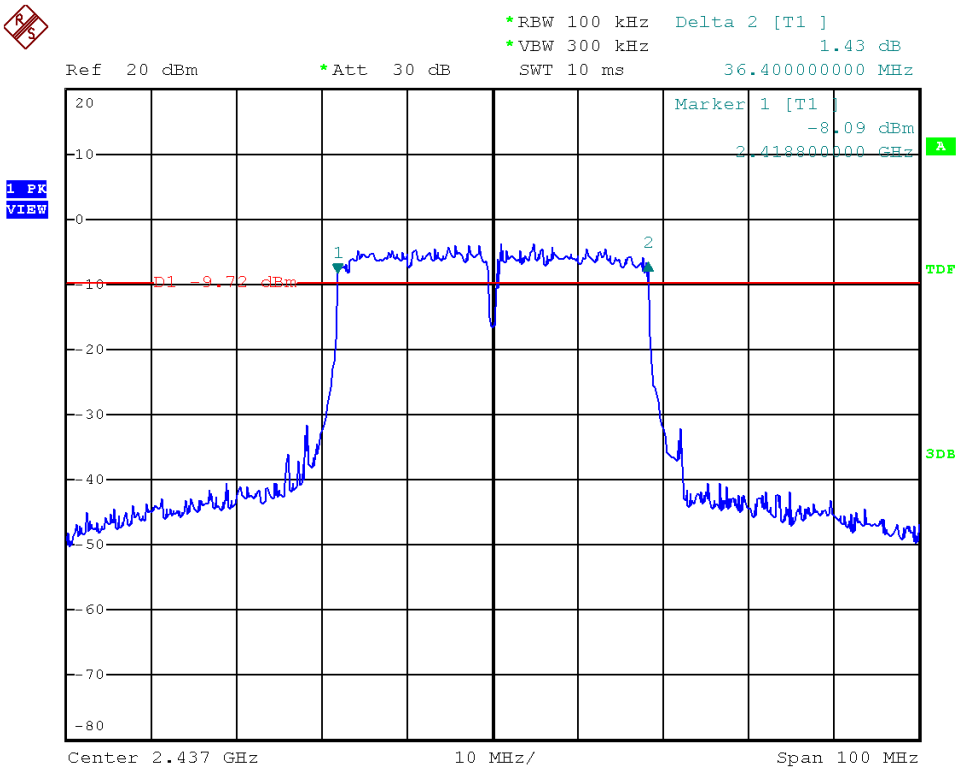
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT B
Channel: 11



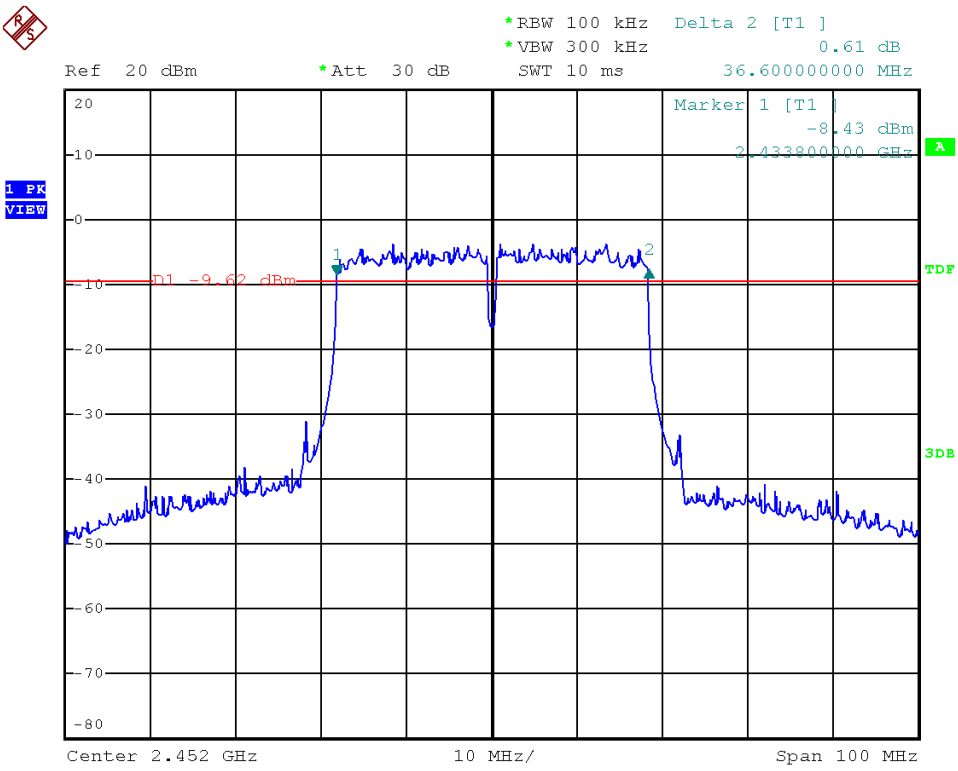
Modulation Standard: 802.11n HT40 (54Mbps), ANT B
Channel: 03



Modulation Standard: 802.11n HT40 (54Mbps), ANT B
Channel: 06



Modulation Standard: 802.11n HT40 (54Mbps), ANT B
Channel: 09



8. Maximum Peak and Average Output Power

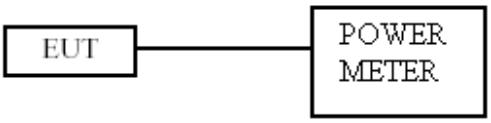
8.1 Test Limit

The Maximum Peak Output Power Measurement is 27dBm.
30dBm-(Directional gain 9dBi-6dBi) =27dBm.

8.2 Test Procedures

The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

8.3 Test Setup Layout



8.4 Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	R&S	FSP40	100047	2014/03/27	2015/03/26
SERIES POWER METER	ANRITSU	ML2495A	1224005	2014/03/27	2015/03/26
POWER SENSOR	ANRITSU	MA2411B	1207295	2014/03/27	2015/03/26

8.5 Test Result and Data

Test Date: Jul. 28, 2014 Temperature: 24℃

Atmospheric pressure: 1027 hPa Humidity: 52%

Modulation Standard	Channel	Frequency (MHz)	Peak Power Output (dBm)			Peak Power Output(mW)
			ANT A	ANT B	ANT A+B	ANT A+B
802.11b (1Mbps)	01	2412	18.45	18.45	21.46	139.97
	06	2437	18.25	18.53	21.40	138.12
	11	2462	18.35	18.17	21.27	134.01
802.11g (24Mbps)	01	2412	22.00	22.15	25.09	322.55
	06	2437	21.90	21.95	24.94	311.56
	11	2462	22.20	22.07	25.15	327.02

Modulation Standard	Channel	Frequency (MHz)	Peak Power Output (dBm)			Peak Power Output (mW)
			ANT A	ANT B	ANT A+B	ANT A+B
802.11n HT20 (58.5Mbps)	01	2412	22.75	22.91	25.84	383.80
	06	2437	22.70	22.85	25.79	378.96
	11	2462	22.80	23.00	25.91	390.07
802.11n HT40 (54Mbps)	03	2422	22.95	22.95	25.96	394.48
	06	2437	22.90	22.90	25.91	389.97
	09	2452	22.85	22.82	25.85	384.18

Test Date: Jul. 28, 2014 Temperature: 24℃

Atmospheric pressure: 1027 hPa Humidity: 52%

Modulation Standard	Channel	Frequency (MHz)	Average Power Output (dBm)			Average Power Output (mW)
			ANT A	ANT B	ANT A+B	ANT A+B
802.11b (1Mbps)	01	2412	16.30	16.35	19.34	85.81
	06	2437	16.15	16.43	19.30	85.16
	11	2462	16.25	16.07	19.17	82.63
802.11g (24Mbps)	01	2412	12.15	12.41	15.29	33.82
	06	2437	12.05	12.27	15.17	32.90
	11	2462	12.30	12.43	15.38	34.48

Modulation Standard	Channel	Frequency (MHz)	Average Power Output (dBm)			Average Power Output (mW)
			ANT A	ANT B	ANT A+B	ANT A+B
802.11n HT20 (58.5Mbps)	01	2412	12.75	13.51	16.16	41.28
	06	2437	12.75	13.35	16.07	40.46
	11	2462	12.85	13.60	16.25	42.18
802.11n HT40 (54Mbps)	03	2422	13.10	13.72	16.43	43.97
	06	2437	13.20	13.65	16.44	44.07
	09	2452	13.10	13.55	16.34	43.06

9. Power Spectral Density

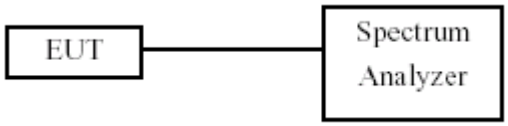
9.1 Test Limit

The Maximum of Power Spectral Density Measurement is 8dBm.

9.2 Test Procedures

a. The transmitter output was connected to spectrum analyzer.
b. The spectrum analyzer's resolution bandwidth were set at 3KHz RBW and 30KHz VBW as that of the fundamental frequency. Set the sweep time=auto couple.
c. The power spectral density was measured and recorded.

9.3 Test Setup Layout



9.4 Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	R&S	FSP40	100047	2014/03/27	2015/03/26

9.5 Test Result and Data

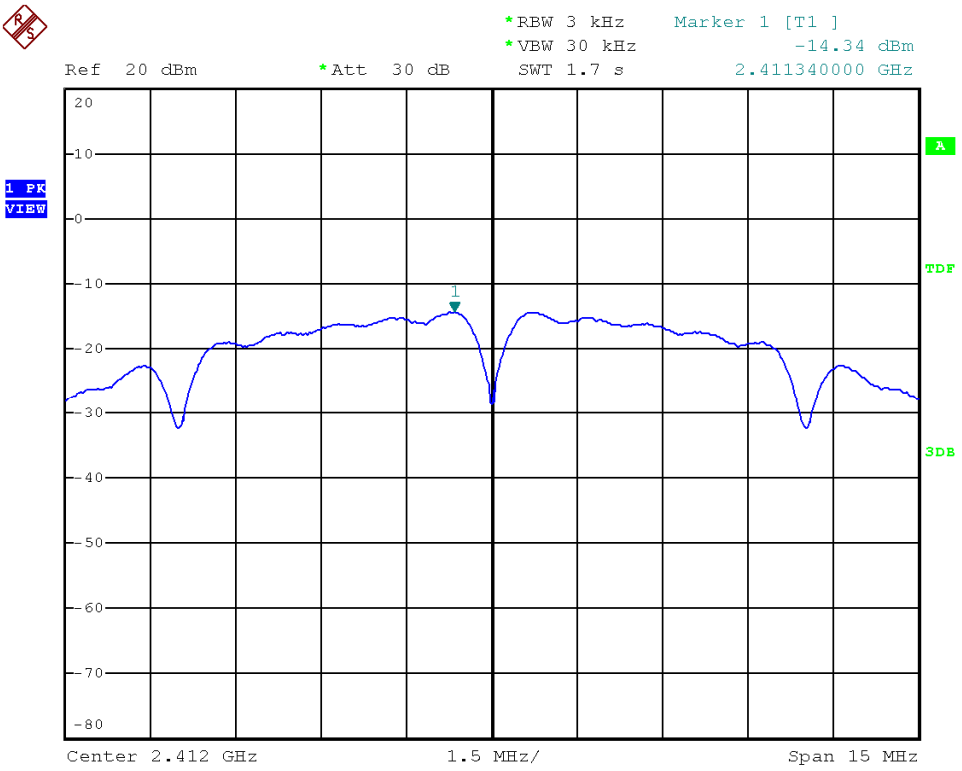
Test Date: Jul. 28, 2014 Temperature: 24℃

Atmospheric pressure: 1027 hPa Humidity: 52%

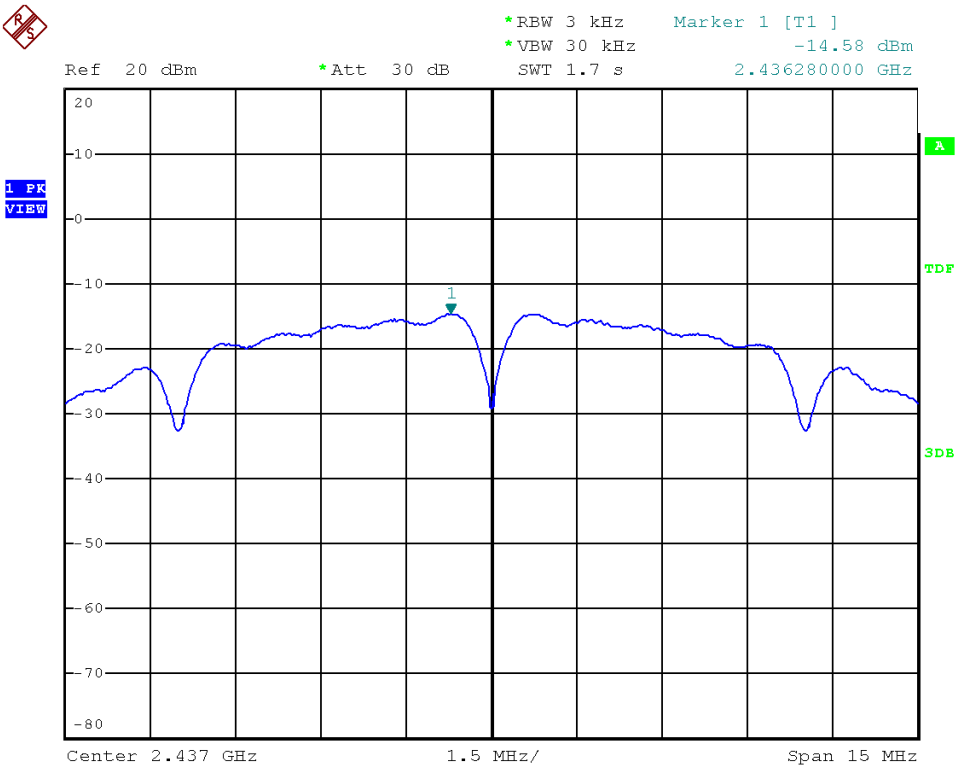
Modulation Standard	Channel	Frequency (MHz)	Measured Power Density (dBm)		
			ANT A	ANT B	ANT A+B
802.11b (1Mbps)	01	2412	-14.34	-14.32	-11.33
	06	2437	-14.58	-14.60	-11.58
	11	2462	-14.70	-14.38	-11.53
802.11g (24Mbps)	01	2412	-15.10	-14.78	-11.93
	06	2437	-14.90	-15.26	-12.07
	11	2462	-14.38	-15.31	-11.81

Modulation Standard	Channel	Frequency (MHz)	Measured Power Density (dBm)		
			ANT A	ANT B	ANT A+B
802.11n HT20 (58.5Mbps)	01	2412	-13.72	-12.05	-9.79
	06	2437	-13.28	-12.68	-9.96
	11	2462	-13.50	-11.83	-9.57
802.11n HT40 (54Mbps)	03	2422	-17.59	-17.47	-14.52
	06	2437	-17.08	-16.77	-13.91
	09	2452	-17.19	-17.04	-14.10

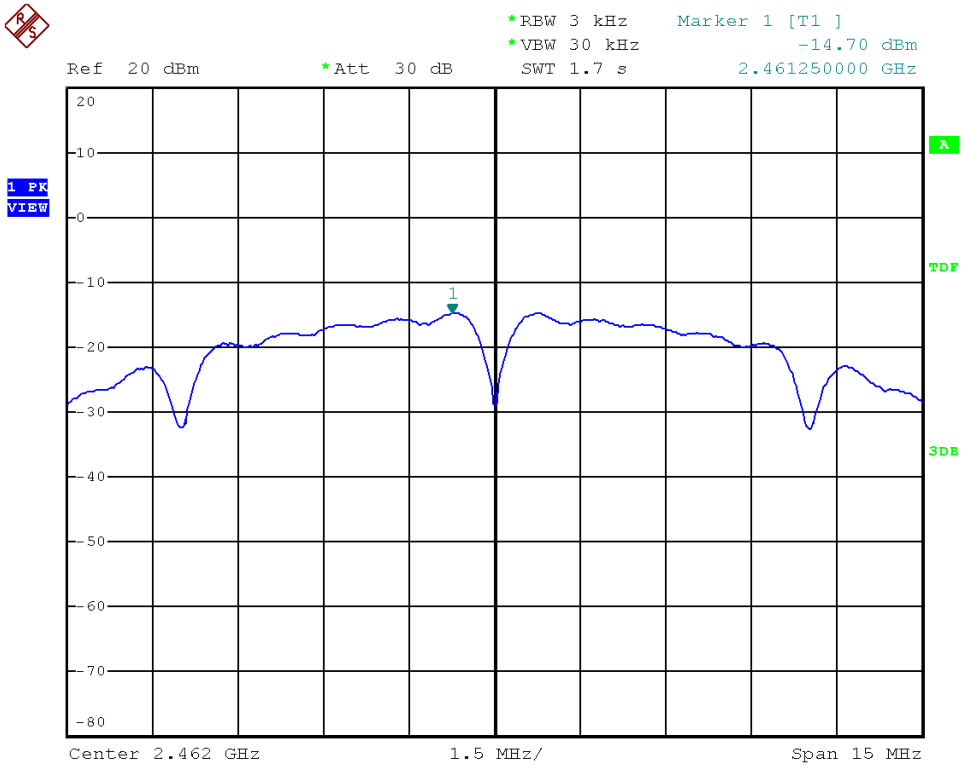
Modulation Standard: 802.11b (1Mbps), ANT A
Channel: 01



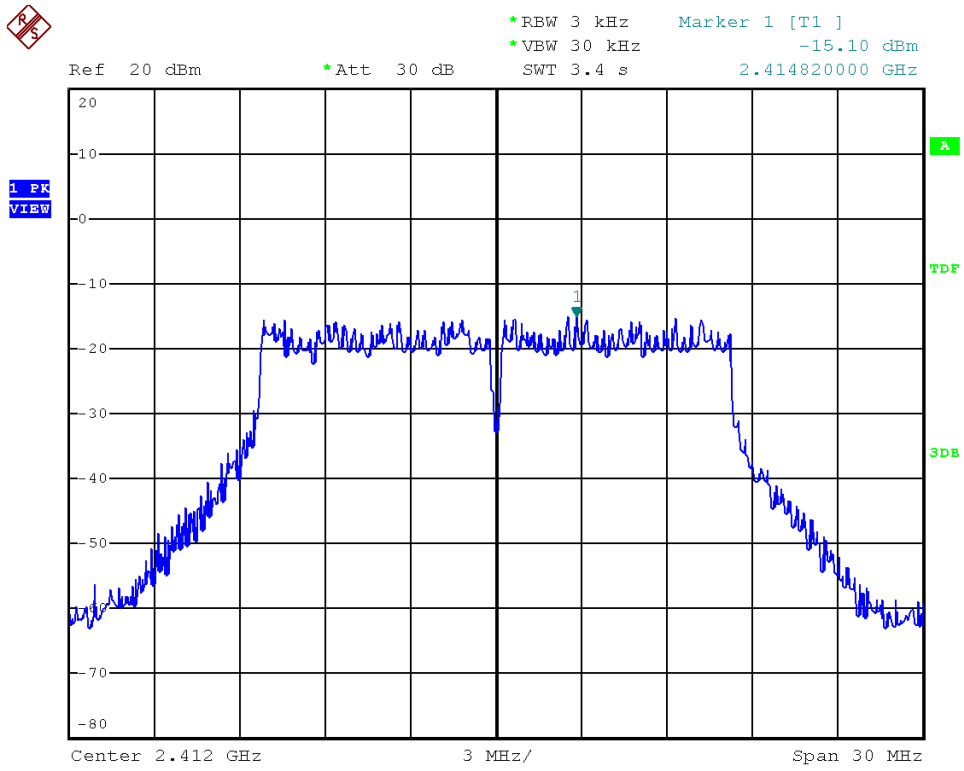
Modulation Standard: 802.11b (1Mbps), ANT A
Channel: 06



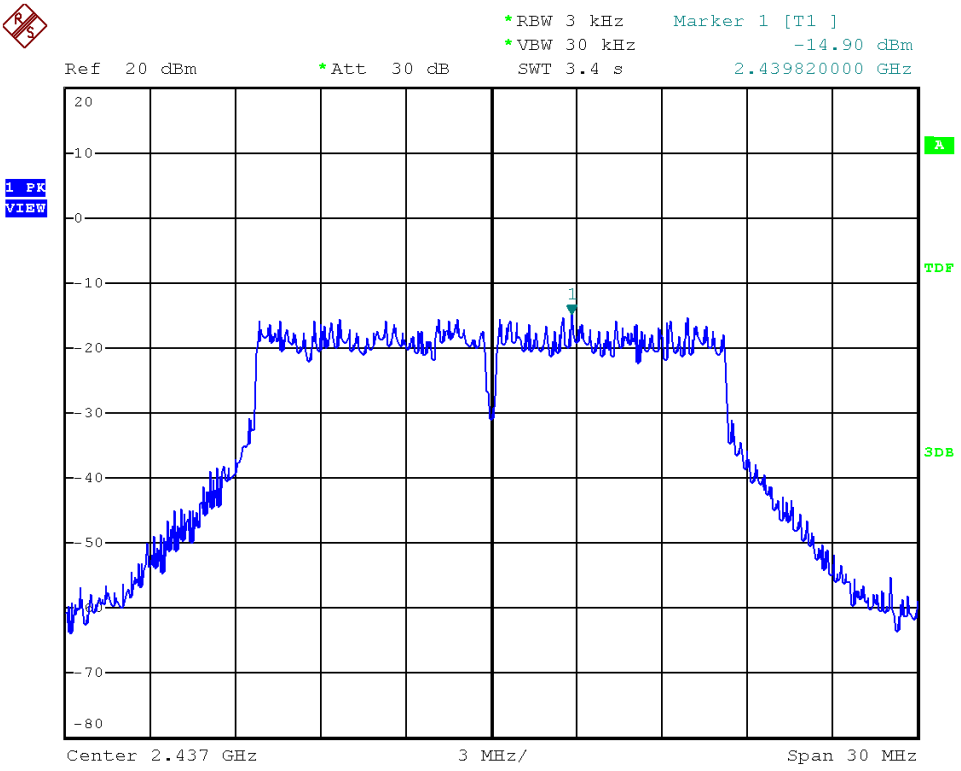
Modulation Standard: 802.11b (1Mbps), ANT A
Channel: 11



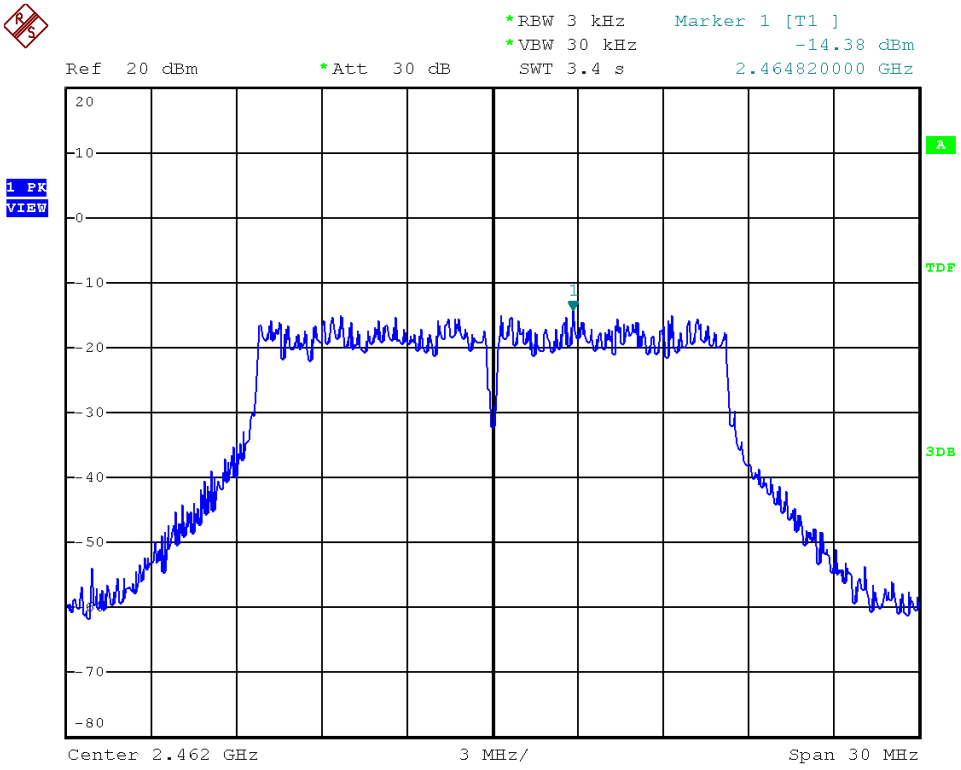
Modulation Standard: 802.11g (24Mbps), ANT A
Channel: 01



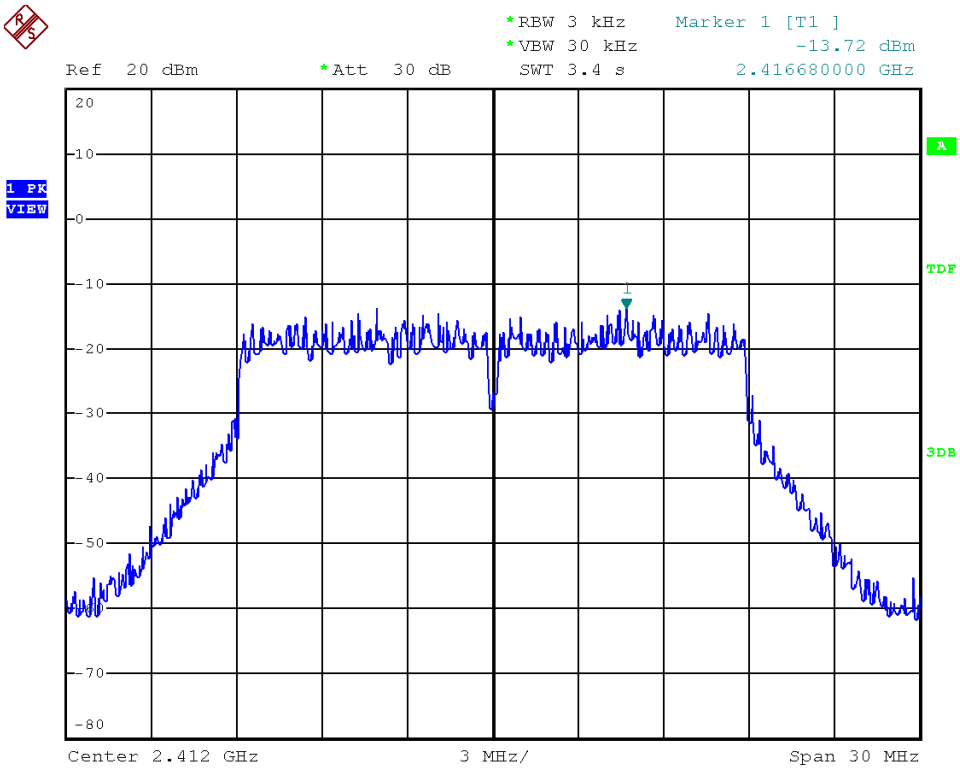
Modulation Standard: 802.11g (24Mbps), ANT A
Channel: 06



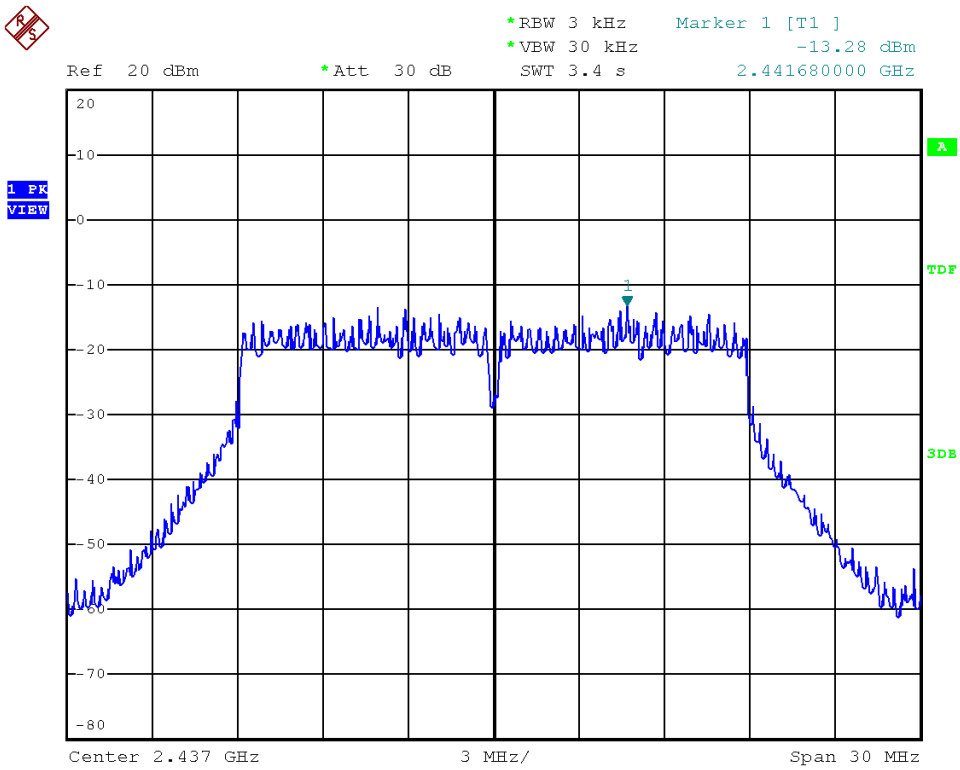
Modulation Standard: 802.11g (24Mbps), ANT A
Channel: 11



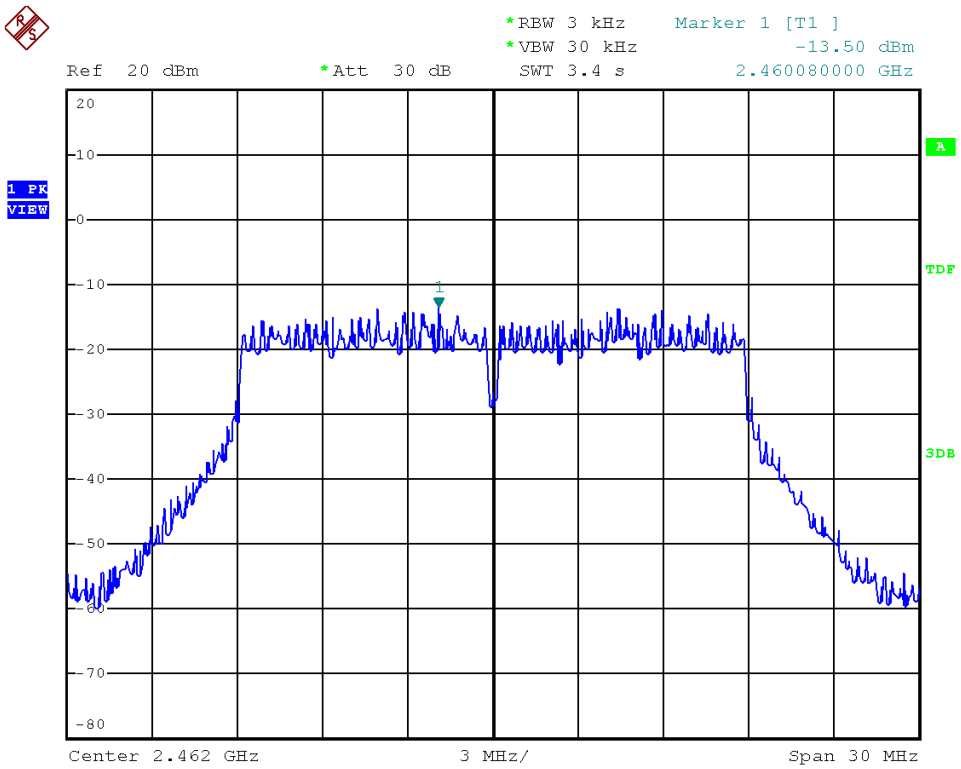
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT A
Channel: 01



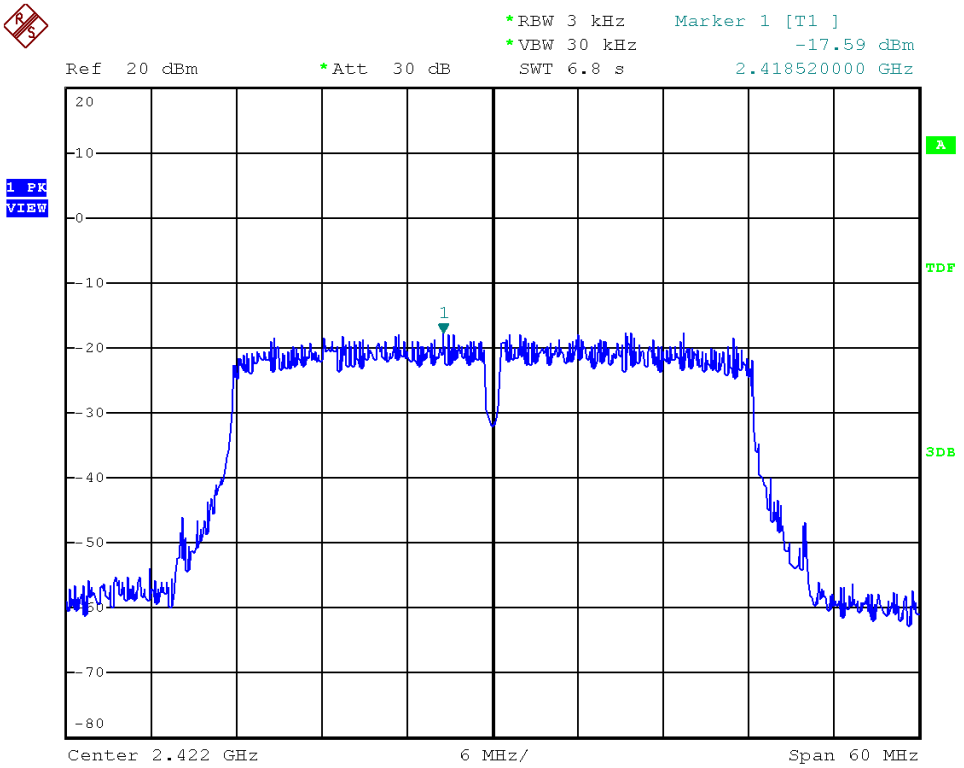
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT A
Channel: 06



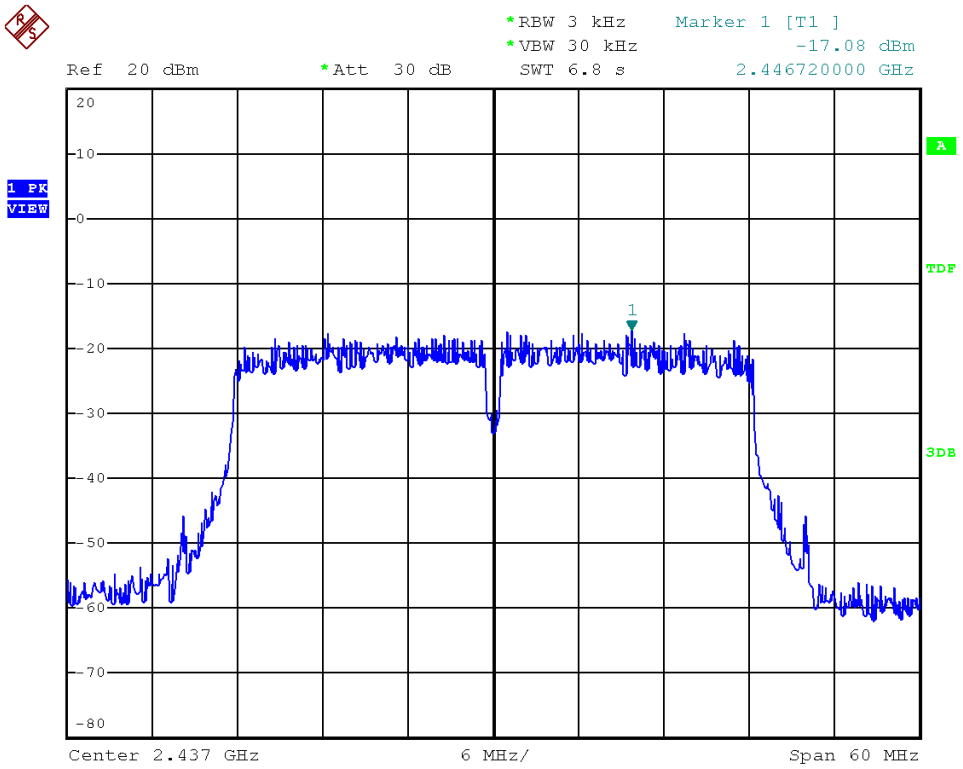
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT A
Channel: 11



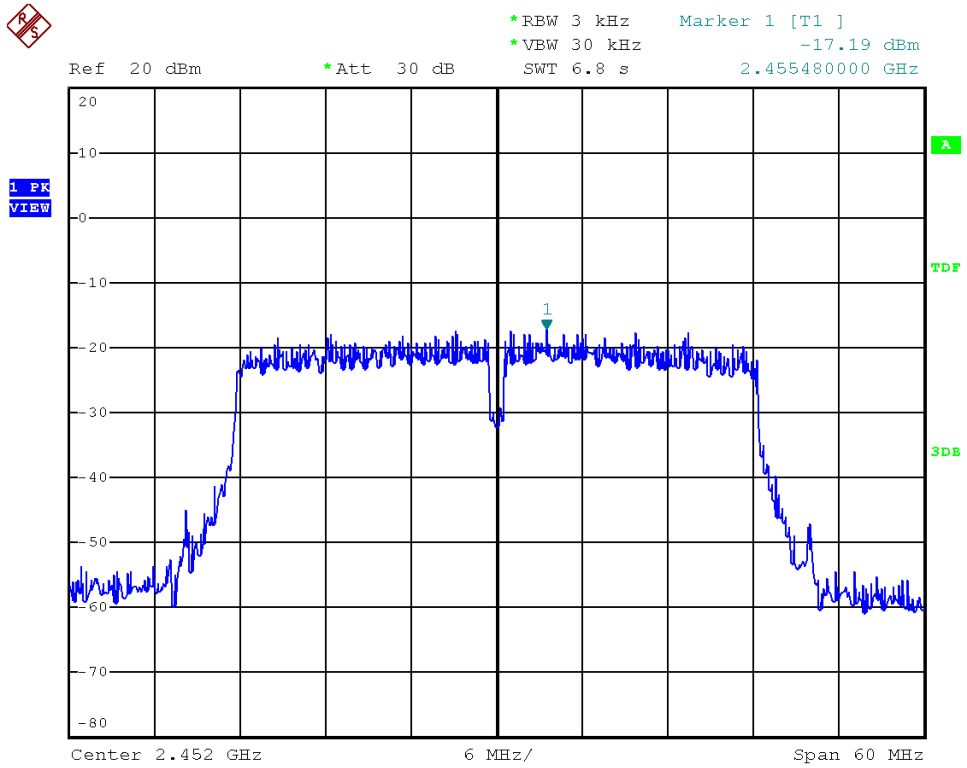
Modulation Standard: 802.11n HT40 (54Mbps), ANT A
Channel: 03



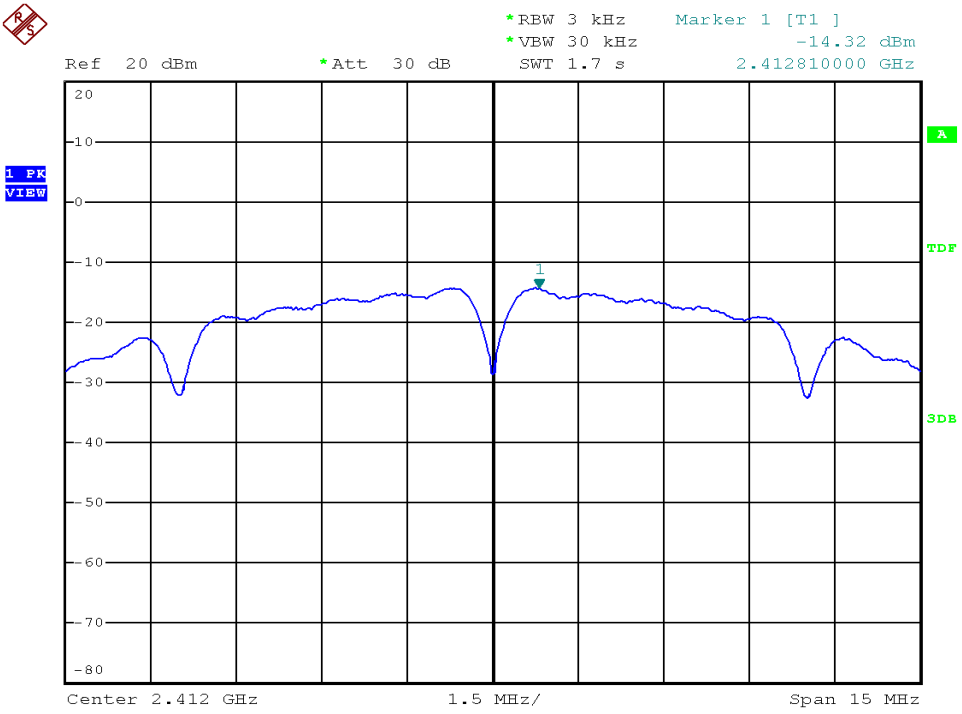
Modulation Standard: 802.11n HT40 (54Mbps), ANT A
Channel: 06



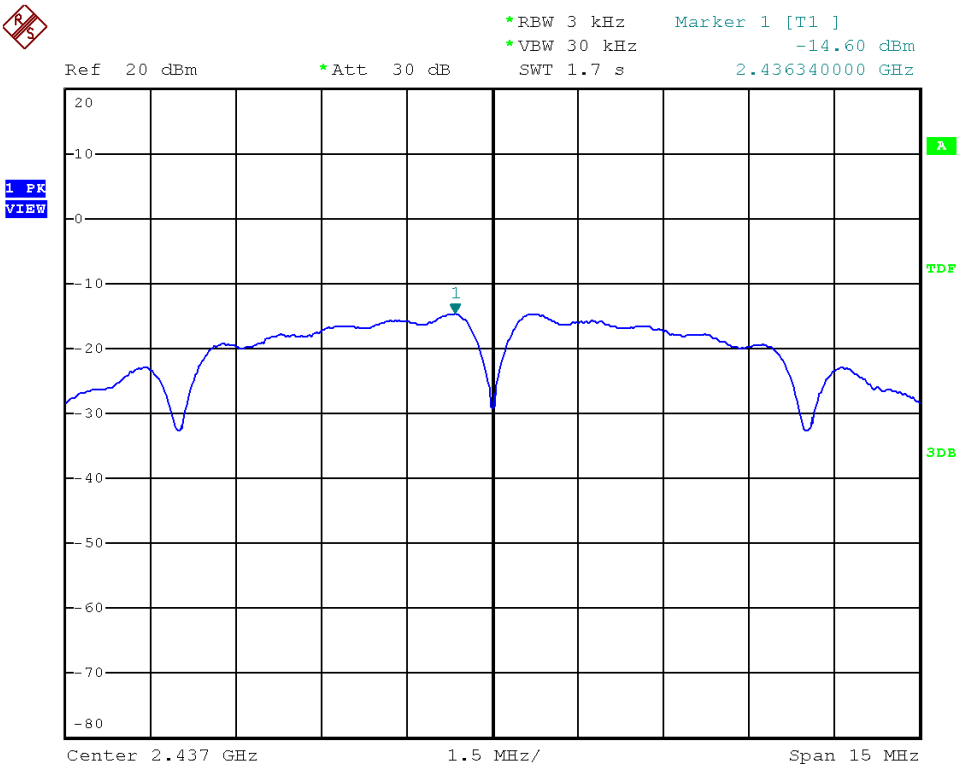
Modulation Standard: 802.11n HT40 (54Mbps), ANT A
Channel: 09



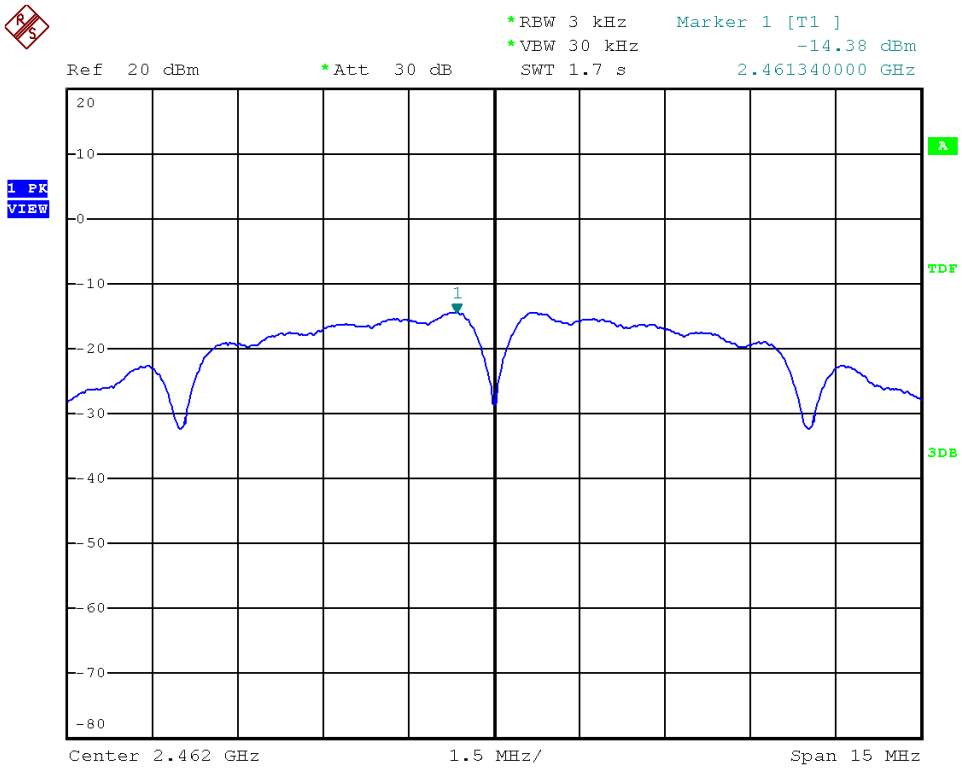
Modulation Standard: 802.11b (1Mbps), ANT B
Channel: 01



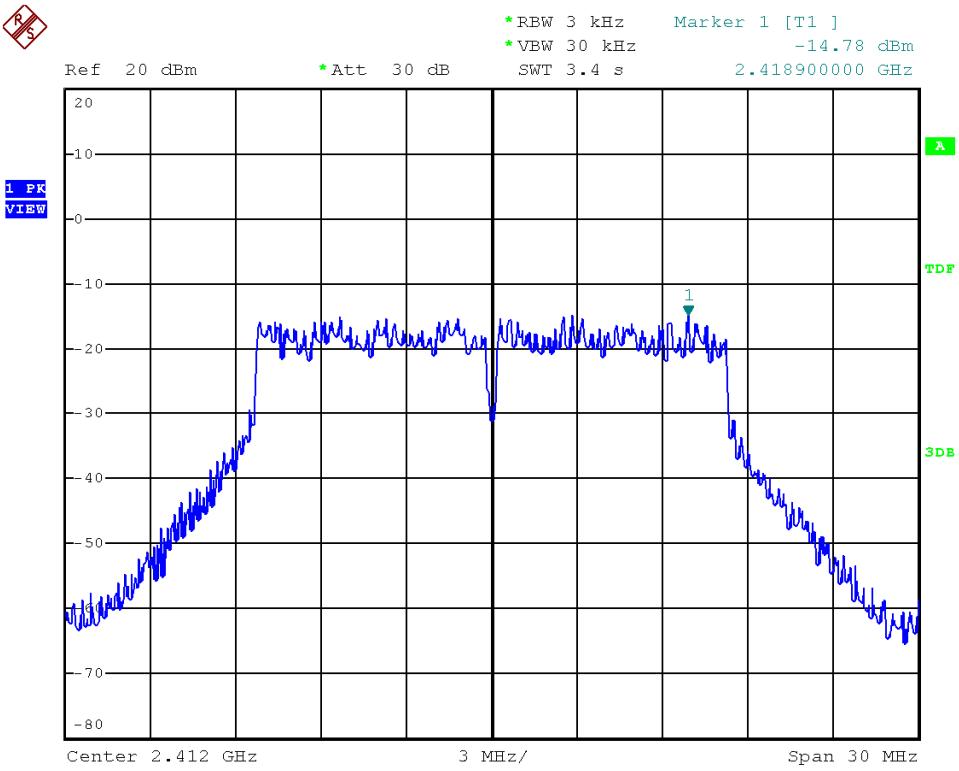
Modulation Standard: 802.11b (1Mbps), ANT B
Channel: 06



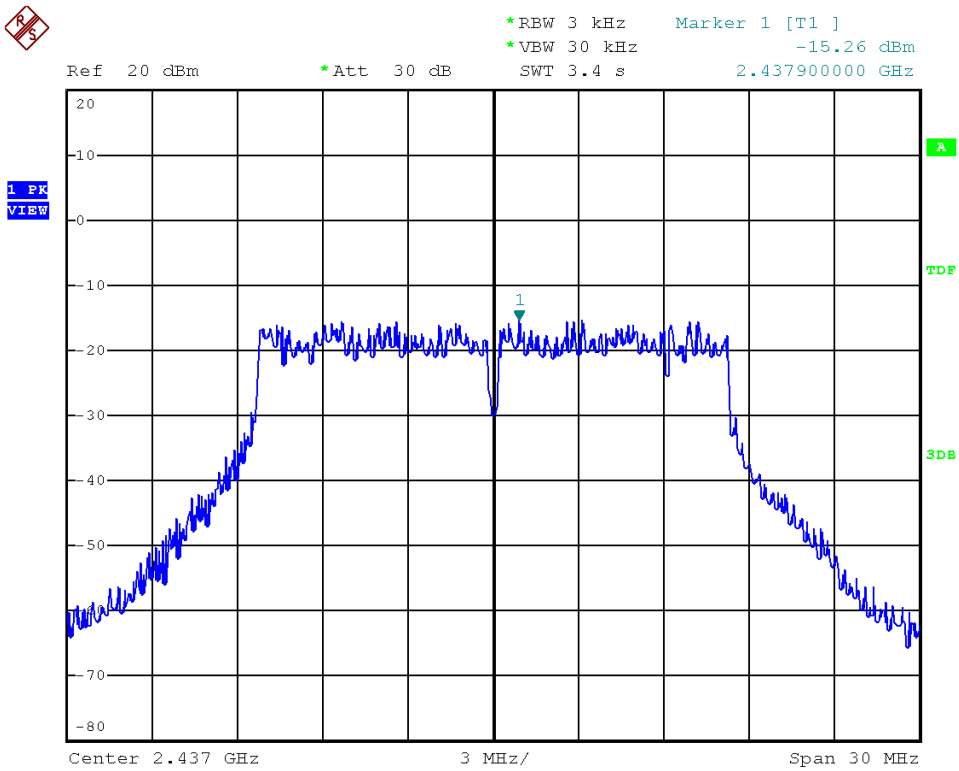
Modulation Standard: 802.11b (1Mbps), ANT B
Channel: 11



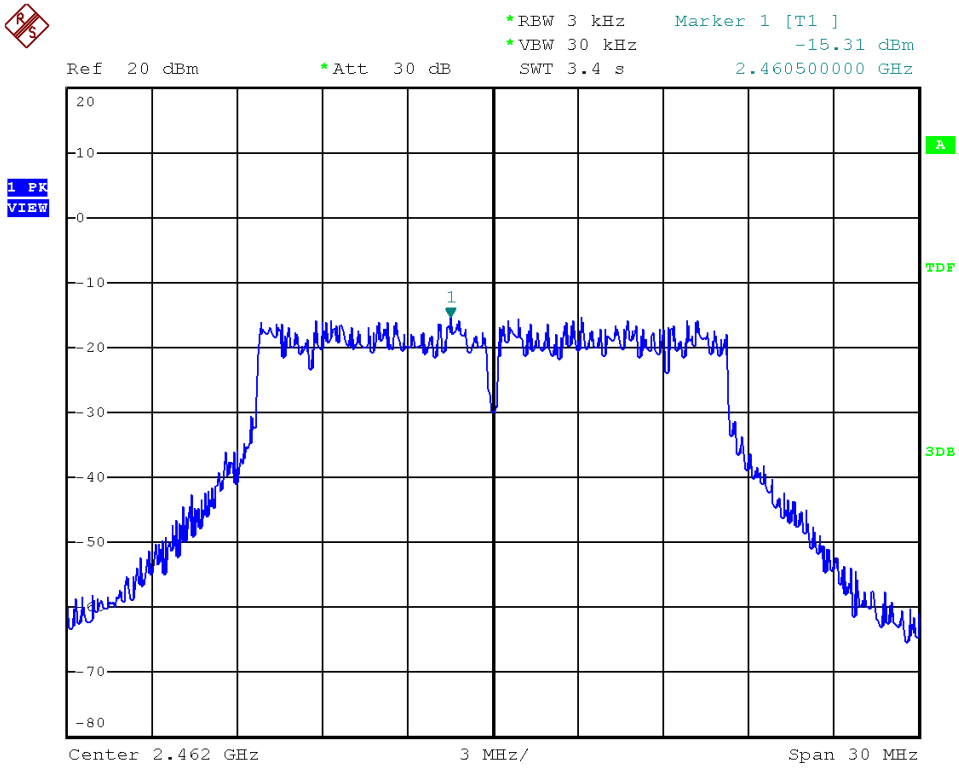
Modulation Standard: 802.11g (24Mbps), ANT B
Channel: 01



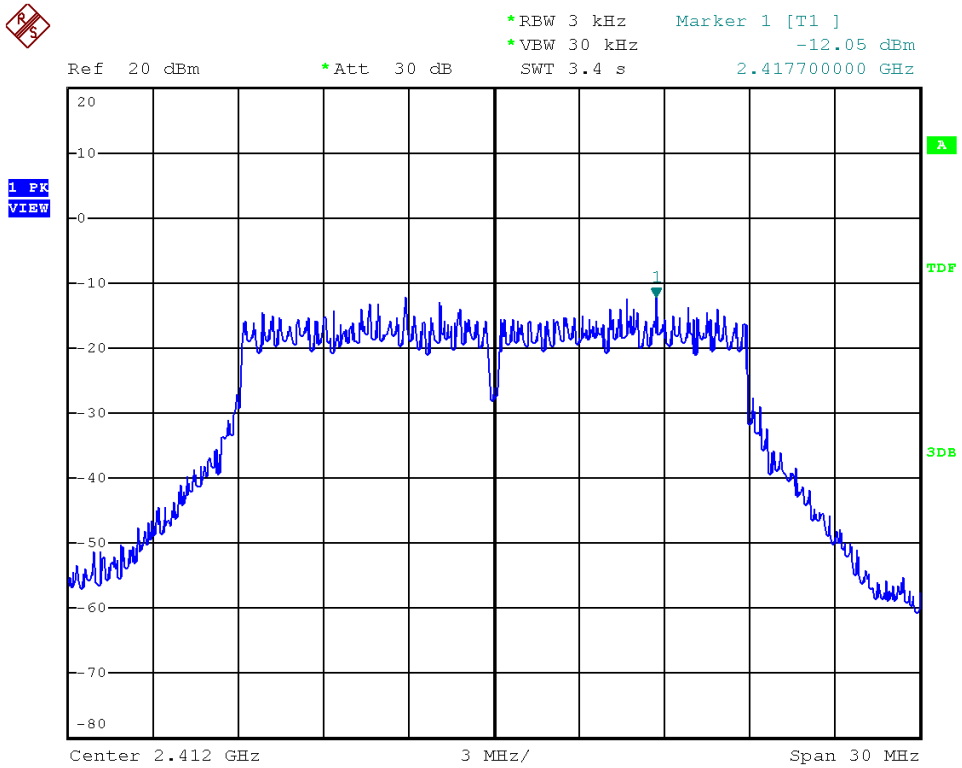
Modulation Standard: 802.11g (24Mbps), ANT B
Channel: 06



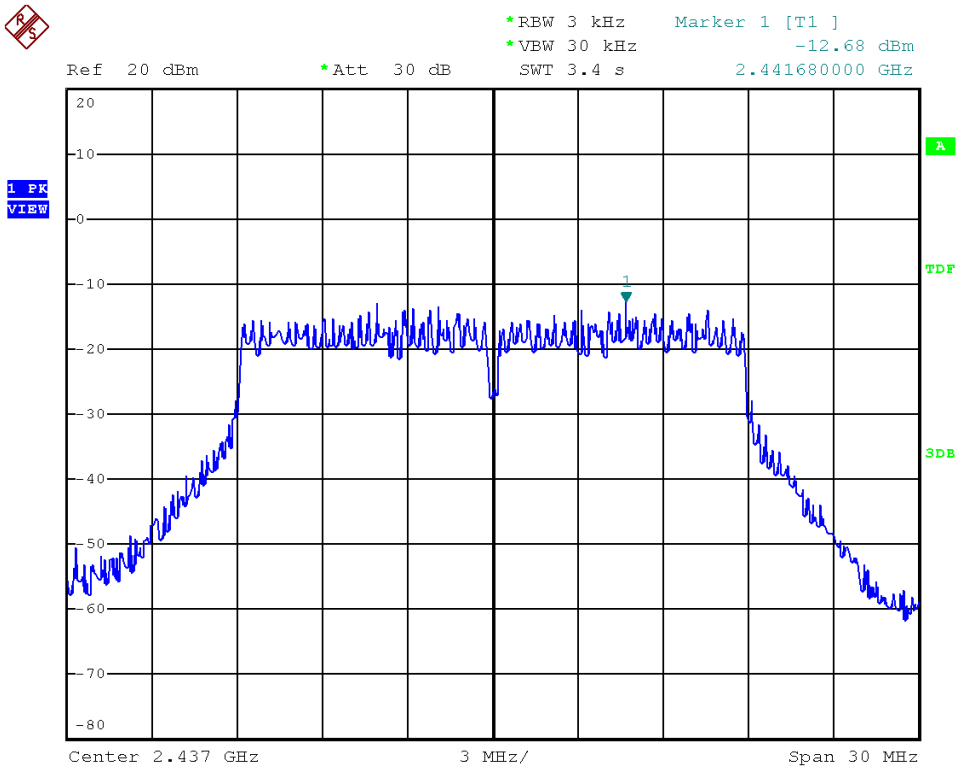
Modulation Standard: 802.11g (24Mbps), ANT B
Channel: 11



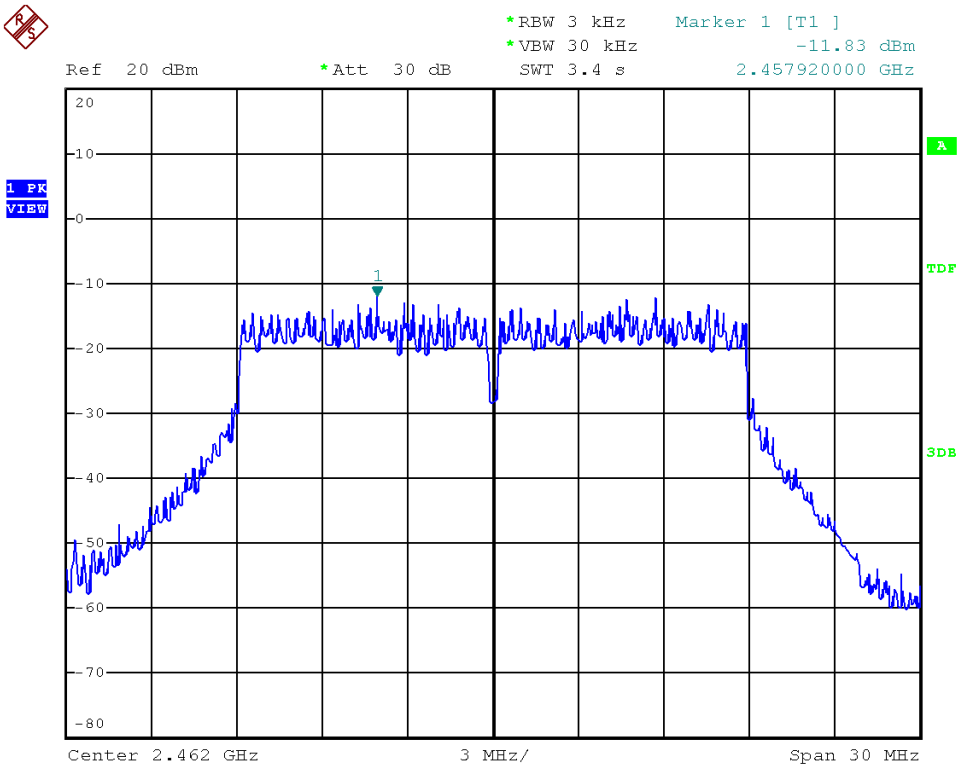
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT B
Channel: 01



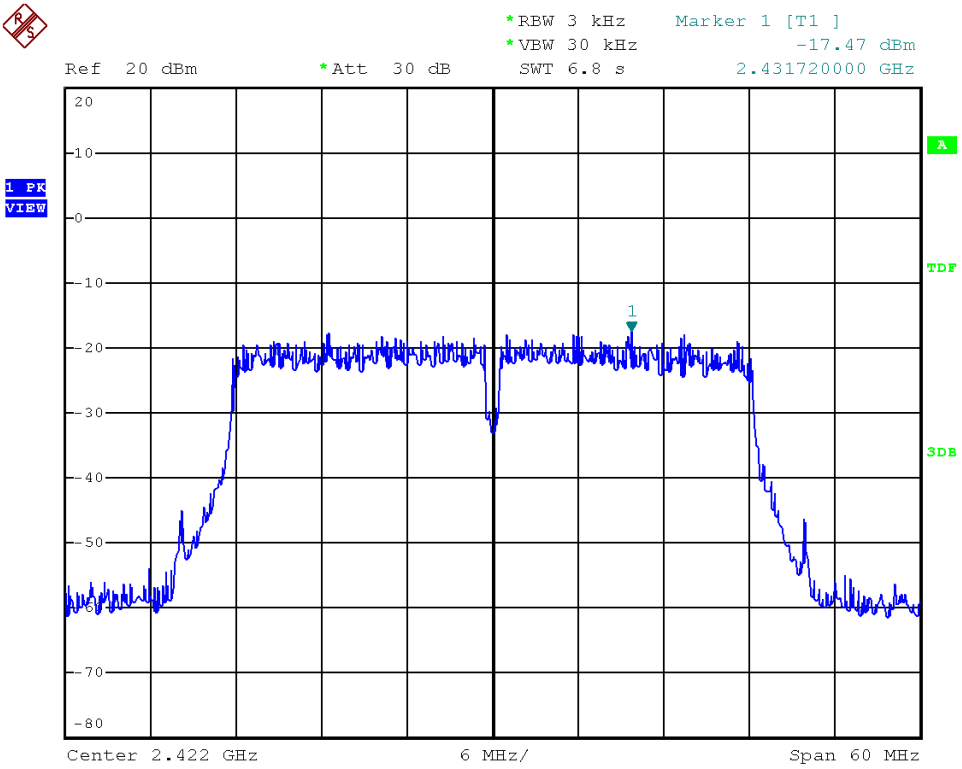
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT B
Channel: 06



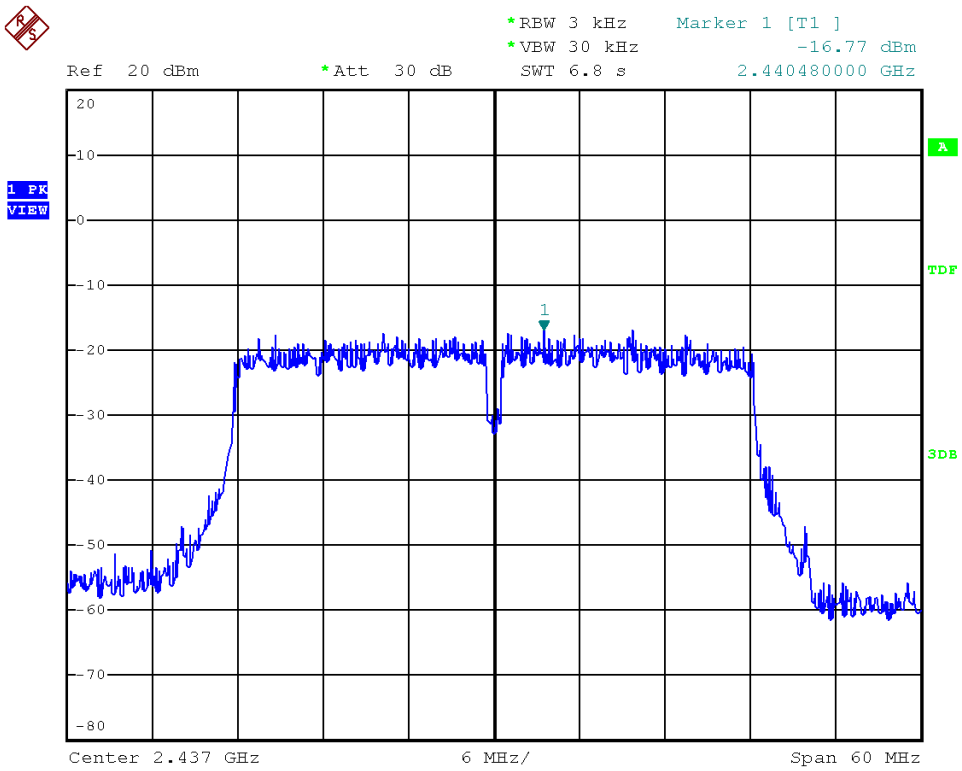
Modulation Standard: 802.11n HT20 (58.5Mbps), ANT B
Channel: 11



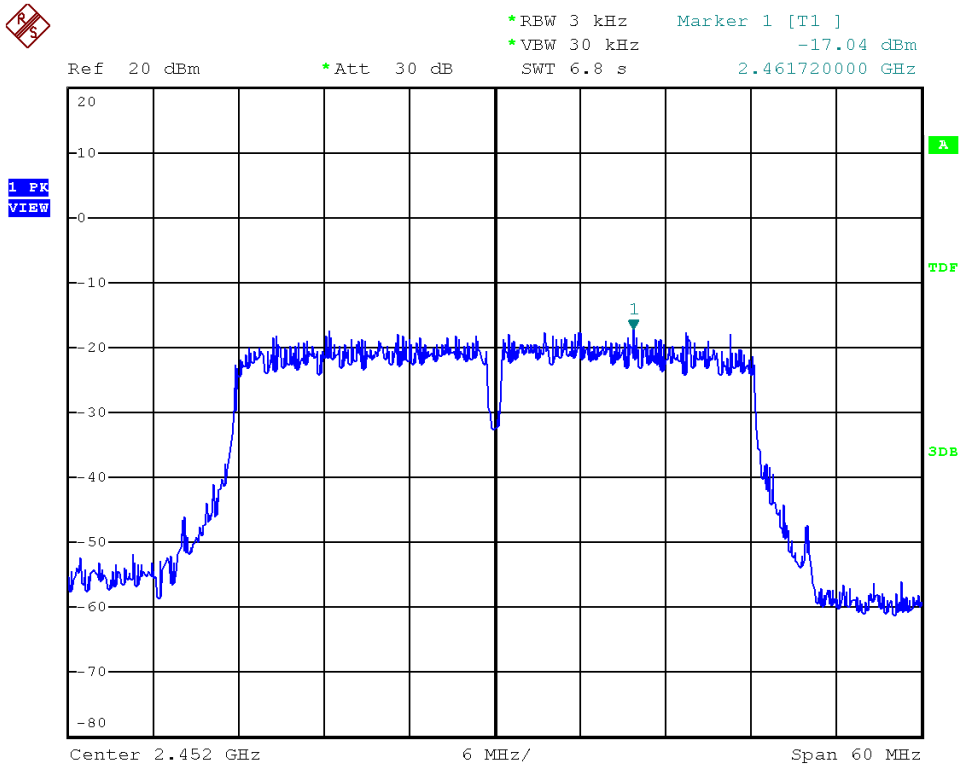
Modulation Standard: 802.11n HT40 (54Mbps), ANT B
Channel: 03



Modulation Standard: 802.11n HT40 (54Mbps), ANT B
Channel: 06



Modulation Standard: 802.11n HT40 (54Mbps), ANT B
Channel: 09



10. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

**: Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

10.1 Restrict Band Emission Measurement Data

Test Date: Jul. 28, 2014 Temperature: 24 ℃

Atmospheric pressure: 1027 hPa Humidity: 52 %

Modulation Standard: IEEE 802.11b (1Mbps)

Channel 1										Fundamental Frequency: 2412 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2383.848	V	55.42	-1.20	54.22	Peak	74	54	-19.78	198	1.00
2383.848	V	42.29	-1.20	41.09	Ave	74	54	-12.91	198	1.00
2342.232	H	50.97	-1.36	49.61	Peak	74	54	-24.39	185	1.00
---	---	---	---	---	Ave	74	54	---	---	1.00
Channel 11										Fundamental Frequency: 2462 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2488.752	V	58.76	-0.81	57.95	Peak	74	54	-16.05	111	1.00
2488.752	V	45.06	-0.81	44.25	Ave	74	54	-9.75	111	1.00
2499.734	H	52.40	-0.76	51.64	Peak	74	54	-22.36	181	1.00
2499.734	H	45.37	-0.76	44.61	Ave	74	54	-9.39	181	1.00

Modulation Standard: IEEE 802.11g (24Mbps)

Channel 1										Fundamental Frequency: 2412 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2388.540	V	61.28	-1.19	60.09	Peak	74	54	-13.91	108	1.00
2388.540	V	45.06	-1.19	43.87	Ave	74	54	-10.13	108	1.00
2387.826	H	52.85	-1.19	51.66	Peak	74	54	-22.34	181	1.00
2387.826	H	38.30	-1.19	37.11	Ave	74	54	-16.89	181	1.00
Channel 11										Fundamental Frequency: 2462 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2486.358	V	64.46	-0.81	63.65	Peak	74	54	-10.35	171	1.00
2486.358	V	45.82	-0.81	45.01	Ave	74	54	-8.99	171	1.00
2484.154	H	56.32	-0.82	55.50	Peak	74	54	-18.50	231	1.00
2484.154	H	40.68	-0.82	39.86	Ave	74	54	-14.14	231	1.00

Modulation Standard: IEEE 802.11n HT20 (58.5Mbps)

Channel 1										Fundamental Frequency: 2412 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2389.458	V	62.46	-1.19	61.27	Peak	74	54	-12.73	175	1.00
2389.458	V	41.57	-1.19	40.38	Ave	74	54	-13.62	175	1.00
2388.438	H	70.20	-1.19	69.01	Peak	74	54	-4.99	166	1.00
2389.458	H	50.07	-1.19	48.88	Ave	74	54	-5.12	166	1.00
Channel 11										Fundamental Frequency: 2462 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2490.766	V	57.21	-0.79	56.42	Peak	74	54	-17.58	177	1.00
2490.766	V	39.43	-0.79	38.64	Ave	74	54	-15.36	177	1.00
2484.990	H	62.49	-0.82	61.67	Peak	74	54	-12.33	189	1.00
2484.990	H	50.75	-0.82	49.93	Ave	74	54	-4.07	189	1.00

Modulation Standard: IEEE 802.11n HT40 (54Mbps)

Channel 3										Fundamental Frequency: 2422 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2387.952	V	61.37	-1.19	60.18	Peak	74	54	-13.82	168	1.00
2387.952	V	43.96	-1.19	42.77	Ave	74	54	-11.23	168	1.00
2382.576	H	64.38	-1.21	63.17	Peak	74	54	-10.83	167	1.00
2382.576	H	51.17	-1.21	49.96	Ave	74	54	-4.04	167	1.00
Channel 9										Fundamental Frequency: 2452 MHz
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2488.912	V	58.06	-0.81	57.25	Peak	74	54	-16.75	190	1.00
2488.912	V	37.99	-0.81	37.18	Ave	74	54	-16.82	190	1.00
2483.680	H	64.67	-0.82	63.85	Peak	74	54	-10.15	178	1.00
2483.680	H	50.51	-0.82	49.69	Ave	74	54	-4.31	178	1.00

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector sample mode) for Average detection at frequency above 1GHz.