



FCC RADIO TEST REPORT

Applicant : Ubiquiti Inc.
Address : 685 Third Avenue, New York, New York 10017 USA
Equipment : Mesh Points
Model No. : AFi-P-HD, AFi-P-G
Trade Name : UBIQUITI
FCC ID. : SWX-AFPHPD

I HEREBY CERTIFY THAT :

The sample was received on Jun. 28, 2019 and the testing was completed on Aug. 27, 2019 at CerpPASS Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of CerpPASS Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Mark Liao / Supervisor

Laboratory Accreditation:

CerpPASS Technology Corporation Test Laboratory





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1. Summary of Test Procedure and Test Results

1.1 Applicable Standards

ANSI C63.4:2014

ANSI C63.10:2013

FCC Rules and Regulations Part 15 Subpart C §15.247

FCC Rule	Description of Test	Result
15.203	. Antenna Requirement	PASS
15.207	. AC Power Line Conducted Emission	PASS
15.209 15.205	. Radiated Spurious Emission	PASS
15.247(d)	. Conducted 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
2.1091	. Radio Frequency Exposure	PASS

*The lab has lowered the uncertainty risk of test equipment, environment, and staff technicians according to ISO-IEC17025. Therefore we define test result as compliant when it complies with the standard without further evaluation of test result uncertainty.

*This EUT has been also tested and compiled with the requirement of FCC Part 15, Subpart B, recorded in a separate test report(TEFD1906240).



2. Test Configuration of Equipment under Test

2.1 Feature of Equipment

Frequency Range	802.11b/g/n: 2400-2483.5MHz 802.11a/n/ac: 5150-5250MHz, 5725-5850MHz
Modulation Type	802.11b: CCK, DQPSK, DBPSK 802.11g/n/a: BPSK, QPSK, 16QAM, 64QAM 802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM
Modulation Technology	DSSS, OFDM
Data Rate	WLAN: 802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0 – MCS23, HT20/40 802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11ac: MCS0 – MCS9, VHT20/40/80
Antenna Type	Internal Antenna
Antenna Gain	2400-2483.5MHz: ANT A / B / C: 5dBi 5150-5250MHz: ANT A / B / C: 5dBi 5725-5850MHz: ANT A / B / C: 5dBi
Firmware Number	v3.3.0

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

Difference description

Model No.	Remark
AFi-P-HD	The differences between these two model numbers is housing color.
AFi-P-G	



2.2 Carrier Frequency of Channels

802.11b, 802.11g, 802.11n HT20 (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 HT40(2422MHz~2452MHz)

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

Note: Channels remarked * are selected to perform test.



2.3 Test Mode and Test Software

- a. During testing, the interface cables and equipment positions were varied according to ANSI C63.10.
- b. The complete test system included Remote workstation and EUT for RF test. The Remote workstation included Notebook.
- c. An executive program, " Art2 Command" under WIN 7 was executed to transmit and receive data via WLAN.
- d. The following test modes were performed for the test:

Conducted Emissions from the AC mains power ports	
Test Mode	Operating Description
1	802.11b (1Mbps)
2	802.11g (6Mbps)
3	VHT20 (6.5Mbps)
4	VHT40 (13.5Mbps)
caused "Test Mode 2" generated the worst case, it was reported as the final data.	
Radiation Emissions (30MHz ~ 1GHz)	
Test Mode	Operating Description
1	802.11b (1Mbps)
2	802.11g (6Mbps)
3	802.11n HT20 (6.5Mbps)
4	802.11n HT40 (13.5Mbps)
caused "Test Mode 2" generated the worst case, they were reported as the final data.	
Radiation Emissions (1GHz ~ 25GHz)	
Test Mode	Operating Description
1	802.11b (1Mbps)
2	802.11g (6Mbps)
3	802.11n HT20 (6.5Mbps)
4	802.11n HT40 (13.5Mbps)
caused "Test Mode 1~4" generated the worst case, they were reported as the final data.	

2.4 Description of Test System

N/A

**2.5 General Information of Test**

Test Site	CerpPASS Technology Corporation Test Laboratory Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel:+886-3-3226-888 Fax:+886-3-3226-881	
	FCC	TW1079, TW1439
	IC	4934E-1, 4934E-2
	VCCI	T-2205 for Telecommunication test C-4663 for Conducted emission test R-4218 for Radiated emission test G-10812, G-10813 for radiated disturbance above 1GHz
Frequency Range Investigated:	Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 25,000MHz	
Test Distance:	The test distance of radiated emission from antenna to EUT is 3 M.	

Test Item	Test Site	Finish Date	Environmental Conditions	Tested By
RF Conducted	RFCON01-NK	2019/08/07	24°C / 61%	Vic Yeh
Radiated Emissions	3M02-NK	2019/08/22	24°C / 60%	Vic Yeh
AC Power Line Conducted Emission	CON01-NK	2019/08/27	22°C / 60%	Leon Huang



2.6 Measurement Uncertainty

Measurement Item	Uncertainty
Radiated Spurious Emission(9KHz~30MHz)	±3.405dB
Radiated Spurious Emission(30MHz~1GHz)	±5.326dB
Radiated Spurious Emission(1GHz~25GHz)	±5.918dB
Conducted Spurious Emission	±2.156dB
6dB Bandwidth	±4.401%
20dB Bandwidth	±4.40%
Occupied Bandwidth	±4.41%
Peak Output Power(Conducted Power Meter)	±1.31dB
Dwell Time	±0.11%
Power Spectral Density	±2.146dB
Duty Cycle	±0.17%



3. Test Equipment and Ancillaries Used for Tests

Test Item	Radiated Emissions				
Test Site	Semi Anechoic Room(3M02-NK)				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
Bilog Antenna	Schwarzbeck	VULB9168	275	2018/09/17	2019/09/16
Active Loop Antenna	EMCO	6507	40855	2019/05/24	2020/05/23
Horn Antenna	EMCO	3115	31589	2019/04/01	2020/03/31
Horn Antenna	EMCO	3116	31974	2018/09/07	2019/09/06
EMI Receiver	ROHDE & SCHWARZ	ESCI	101423	2019/05/14	2020/05/13
Spectrum Analyzer	ROHDE & SCHWARZ	FSP 40	100047	2019/03/28	2020/03/27
Preamplifier	EM Electronics corp.	EM330	60660	2019/03/11	2020/03/10
Preamplifier	EMC INSTRUMENTS	EMC051845SE	980333	2018/09/18	2019/09/17
Preamplifier	Agilent	8449B	3008A01954	2019/03/11	2020/03/10
Bluetooth Tester	ROHDE & SCHWARZ	CBT	101133	2019/04/07	2020/04/06
Cable-3in1(30M-1G)	HARBOUR INDUSTRIES	LL142	CCE1316	2018/09/12	2019/09/11
Cable-0.5m(1G-40G)	HUBER SUHNER	SUCOFLEX 100	805443/4	2019/05/20	2020/05/19
Cable-3m(1G-40G)	HUBER SUHNER	SUCOFLEX 100	805796/4	2019/05/20	2020/05/19
Cable-8m(1G-40G)	HUBER SUHNER	SUCOFLEX 100	805795/4	2019/05/20	2020/05/19
E3	AUDIX	v8.2014-8-6	RK-000529	NA	NA

Test Item	RF Conducted				
Test Site	RFCON01-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
Spectrum Analyzer	ROHDE & SCHWARZ	FSP 40	100047	2019/03/28	2020/03/27
Bluetooth Tester	ROHDE & SCHWARZ	CBT	101133	2019/04/07	2020/04/06
Attenuator	KEYSIGHT	8491B	MY39250705	2018/09/04	2019/09/03
TEMP & HUMIDITY CHAMBER	T-MACHINE	TMJ-9712	T-12-040111	2018/08/30	2019/08/29
Power Sensor	Anritsu	MA2411B	1207295	2019/04/09	2020/04/08

Test Item	AC Power Line Conducted Emission				
Test Site	CON01-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
EMI Receiver	ROHDE & SCHWARZ	ESCI	100443	2019/03/29	2020/03/28
Line Impedance Stabilization Network	Schwarzbeck	NSLK 8127	8127-568	2019/03/15	2020/03/14
Pulse Limiter	ROHDE & SCHWARZ	ESH3-Z2	101934	2019/03/12	2020/03/11
Cable-6m(9k~300M)	NA	EMC5D-BM-BM-6	130606	2019/03/14	2020/03/13
E3	AUDIX	v8.2014-8-6	RK-000531	NA	NA



4. Antenna Requirements

4.1 Antenna Construction and Directional Gain

Antenna Type	Internal Antenna
Antenna Gain	2412-2462MHz: ANT A / B / C : 5dBi 5150MHz -5250MHz: ANT A / B / C : 5dBi 5725MHz -5850MHz: ANT A / B / C : 5dBi

2412-2462MHz

For Power directional gain= $G_{ant}= 5$ dBi

For PSD directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$
= 9.77 (dBi)

5150MHz -5250MHz

For Power directional gain= $G_{ant}= 5$ dBi

For PSD directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$
= 9.77 (dBi)

5725MHz -5850MHz

For Power directional gain= $G_{ant}= 5$ dBi

For PSD directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$
= 9.77 (dBi)



5. Test of AC Power Line Conducted Emission

5.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz, according to the methods defined in ANSI C63.4-2014. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane. 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

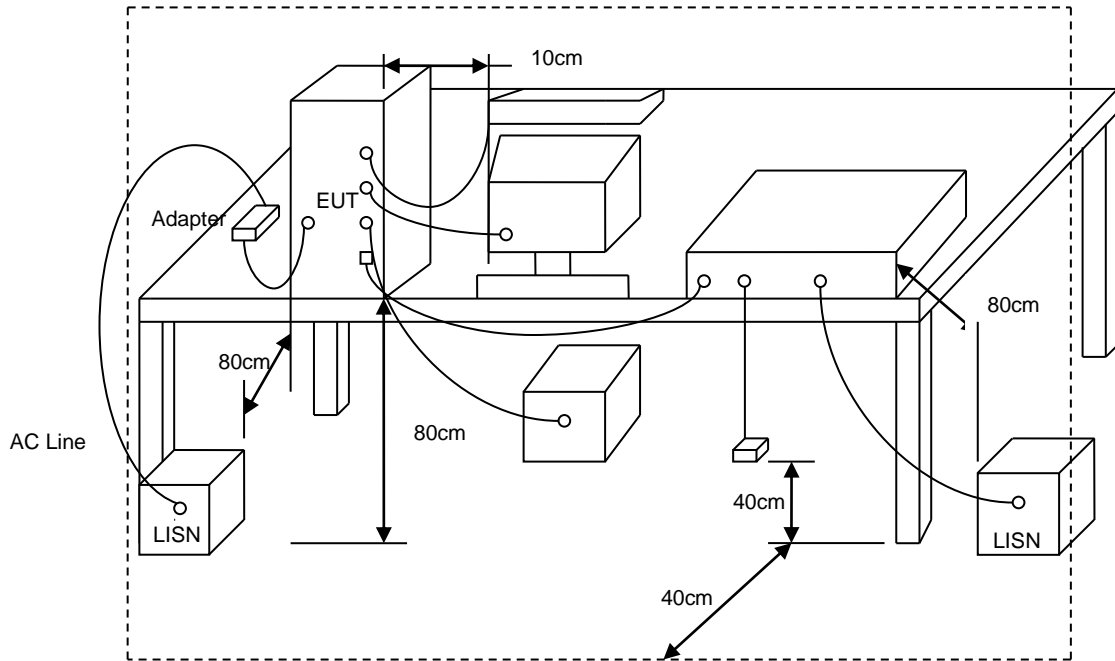
*Decreases with the logarithm of the frequency.

5.2 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.



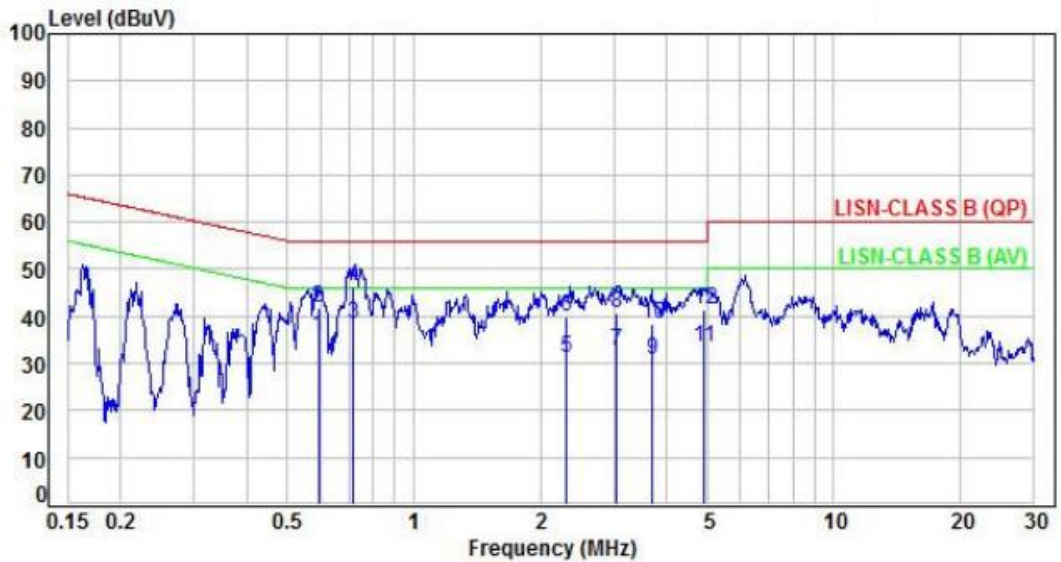
5.3 Typical Test Setup





5.4 Test Result and Data

Power	: AC 120V / 60/Hz	Hol/Phase	: LINE
Test Mode	: Mode 2		:

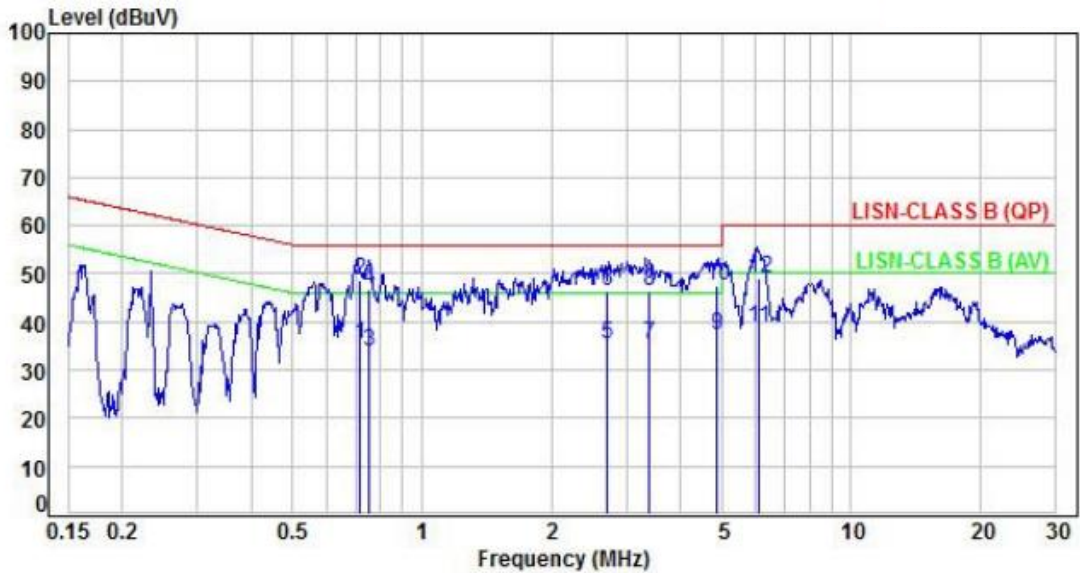


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.59	9.90	25.87	35.77	46.00	-10.23	Average	P
2	0.59	9.90	31.82	41.72	56.00	-14.28	QP	P
3	0.72	9.91	28.35	38.26	46.00	-7.74	Average	P
4	0.72	9.91	36.62	46.53	56.00	-9.47	QP	P
5	2.31	9.97	21.34	31.31	46.00	-14.69	Average	P
6	2.31	9.97	30.00	39.97	56.00	-16.03	QP	P
7	3.03	10.00	22.87	32.87	46.00	-13.13	Average	P
8	3.03	10.00	30.86	40.86	56.00	-15.14	QP	P
9	3.71	10.02	20.84	30.86	46.00	-15.14	Average	P
10	3.71	10.02	28.46	38.48	56.00	-17.52	QP	P
11	4.90	10.04	23.56	33.60	46.00	-12.40	Average	P
12	4.90	10.04	31.24	41.28	56.00	-14.72	QP	P

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



Power	: AC 120V / 60/Hz	Hol/Phase	: NEUTRAL
Test Mode	: Mode 2		



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.72	9.91	25.56	35.47	46.00	-10.53	Average	P
2	0.72	9.91	38.60	48.51	56.00	-7.49	QP	P
3	0.75	9.91	24.03	33.94	46.00	-12.06	Average	P
4	0.75	9.91	36.90	46.81	56.00	-9.19	QP	P
5	2.70	9.98	25.37	35.35	46.00	-10.65	Average	P
6	2.70	9.98	36.60	46.58	56.00	-9.42	QP	P
7	3.38	10.01	25.17	35.18	46.00	-10.82	Average	P
8	3.38	10.01	36.28	46.29	56.00	-9.71	QP	P
9	4.89	10.04	27.24	37.28	46.00	-8.72	Average	P
10	4.89	10.04	37.41	47.45	56.00	-8.55	QP	P
11	6.09	10.06	28.66	38.72	50.00	-11.28	Average	P
12	6.09	10.06	39.01	49.07	60.00	-10.93	QP	P

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



6. Test of Radiated Spurious Emission

6.1 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

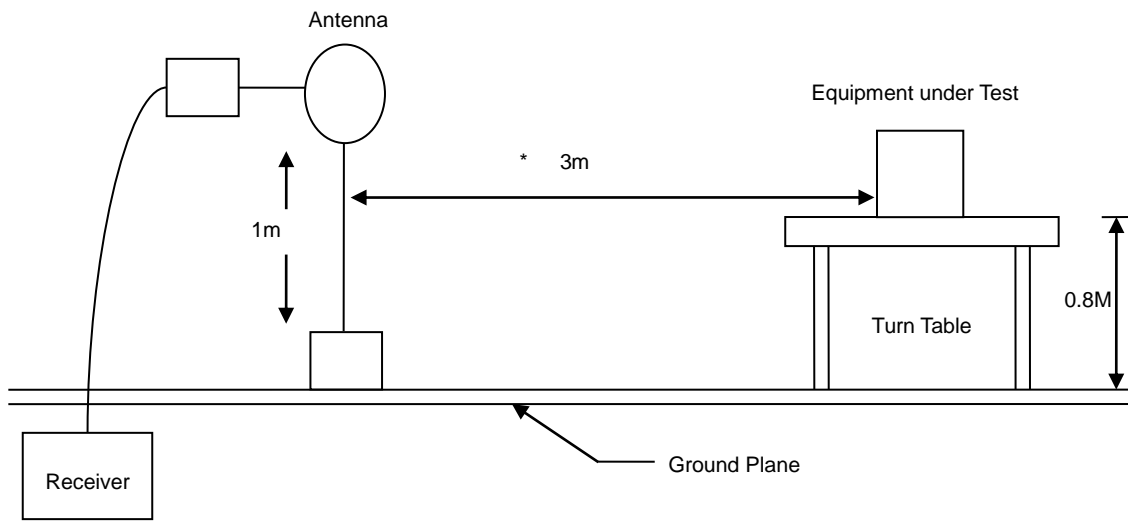
6.2 Test Procedures

- 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.

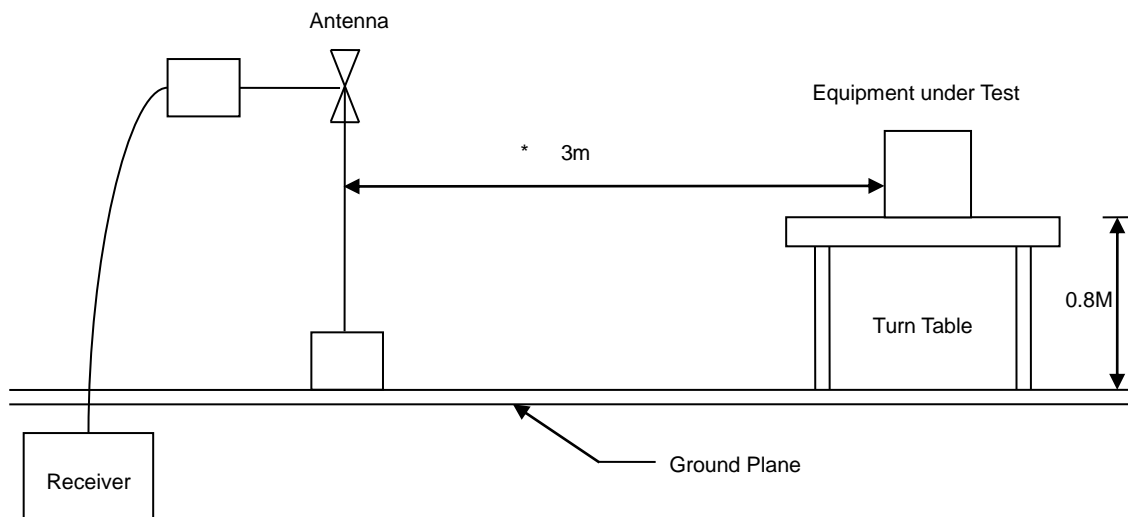


6.3 Typical Test Setup

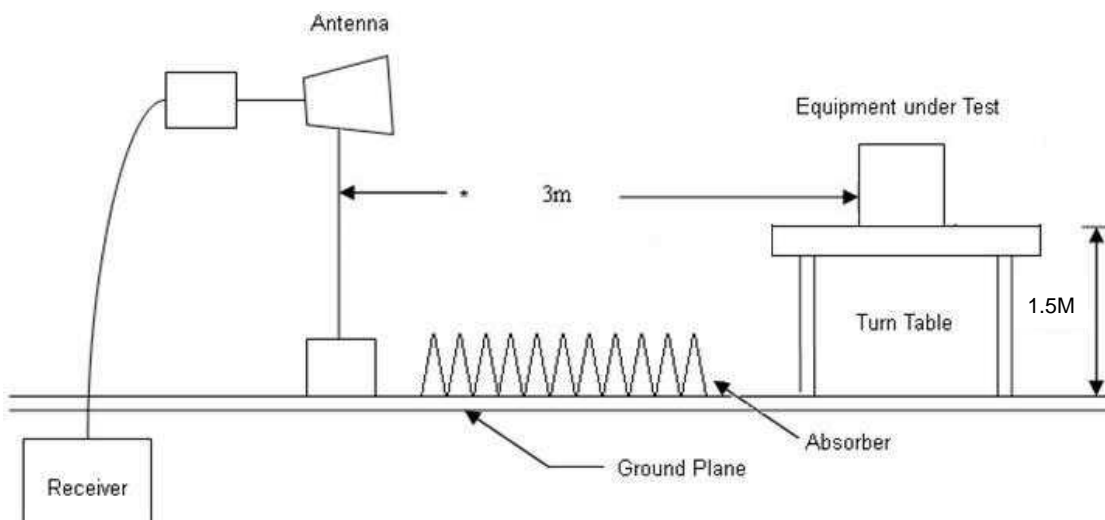
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup



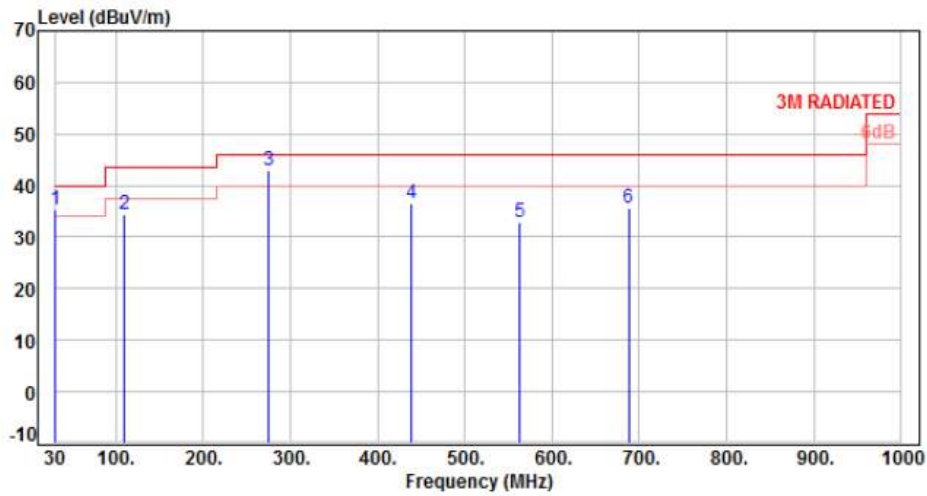


6.4 Test Result and Data (9KHz ~ 30MHz)

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

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

Power	: AC 120V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 2		:

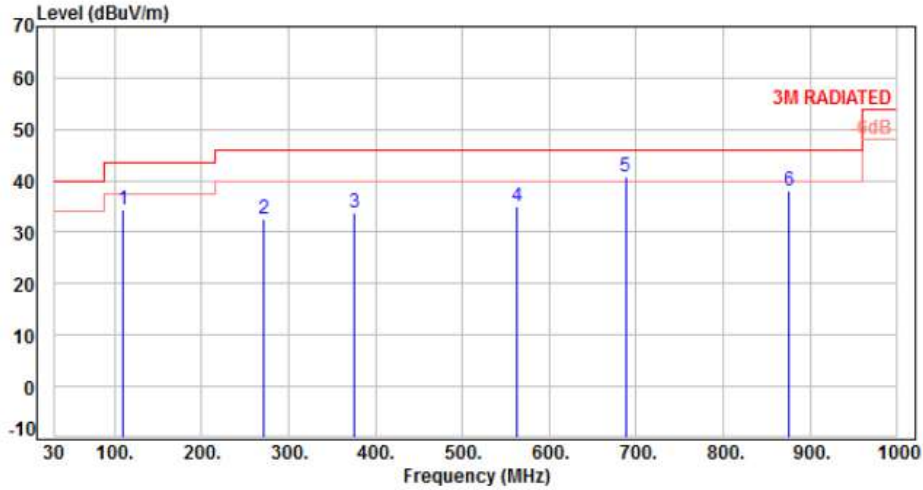


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	30.00	-10.51	45.69	35.18	40.00	-4.82	Peak	100	0	P
2	109.54	-12.91	47.40	34.49	43.50	-9.01	Peak	100	0	P
3	274.44	-9.39	52.37	42.98	46.00	-3.02	Peak	100	0	P
4	439.34	-5.02	41.52	36.50	46.00	-9.50	Peak	100	0	P
5	563.50	-2.51	35.51	33.00	46.00	-13.00	Peak	100	0	P
6	687.66	-0.28	35.85	35.57	46.00	-10.43	Peak	100	0	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2		:



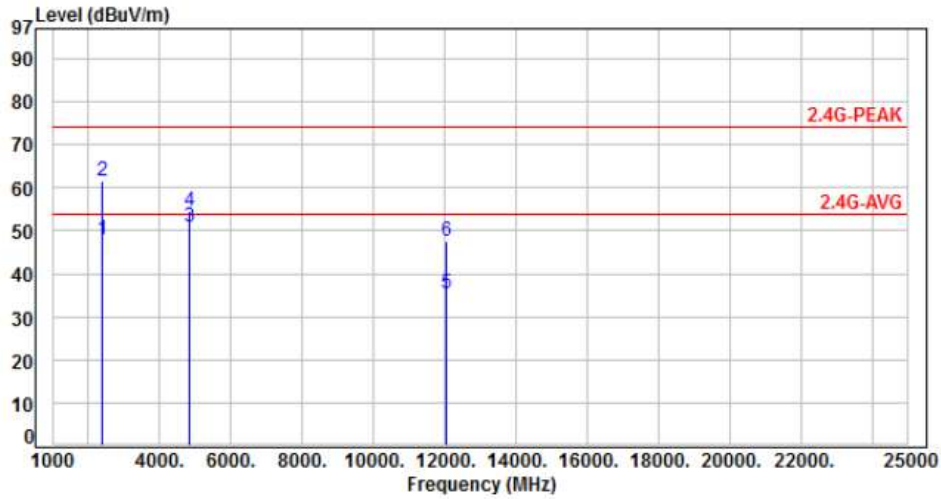
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	109.54	-12.91	47.32	34.41	43.50	-9.09	Peak	100	0	P
2	270.56	-9.58	42.29	32.71	46.00	-13.29	Peak	100	0	P
3	375.32	-6.51	40.36	33.85	46.00	-12.15	Peak	100	0	P
4	563.50	-2.51	37.47	34.96	46.00	-11.04	Peak	100	0	P
5	687.66	-0.28	41.15	40.87	46.00	-5.13	Peak	100	0	P
6	875.84	2.41	35.61	38.02	46.00	-7.98	Peak	100	0	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor



6.6 Test Result and Data (1GHz ~ 25GHz)

Power	: AC 120V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH01		:

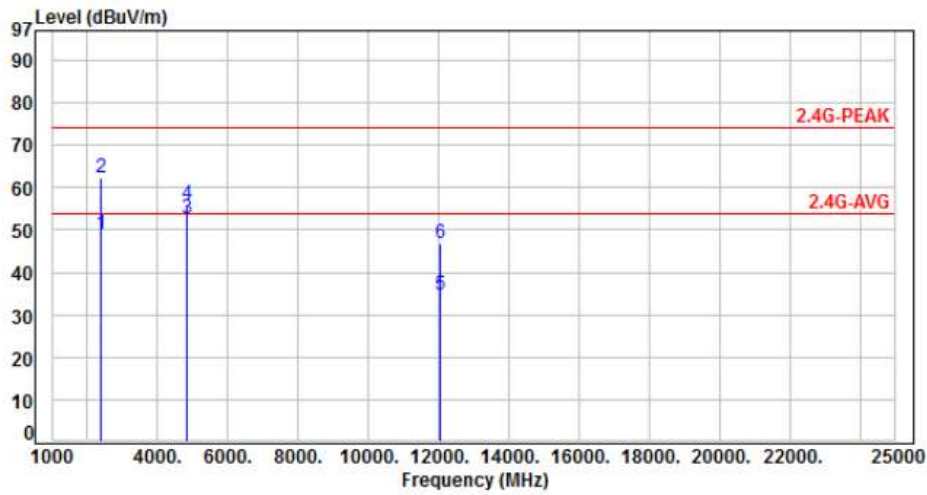


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2370.00	-18.13	66.19	48.06	54.00	-5.94	Average	400	150	P
2	2370.00	-18.13	79.59	61.46	74.00	-12.54	Peak	400	150	P
3	4824.00	-12.03	63.09	51.06	54.00	-2.94	Average	166	148	P
4	4824.00	-12.03	66.59	54.56	74.00	-19.44	Peak	166	148	P
5	12060.00	-3.59	39.09	35.50	54.00	-18.50	Average	162	219	P
6	12060.00	-3.59	51.29	47.70	74.00	-26.30	Peak	162	219	P

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH01		:

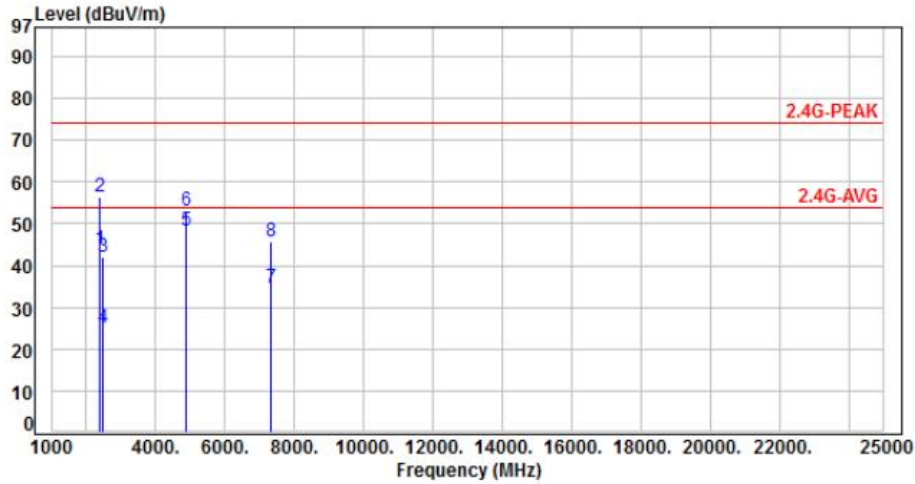


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2370.00	-18.13	67.19	49.06	54.00	-4.94	Average	180	298	P
2	2370.00	-18.13	80.49	62.36	74.00	-11.64	Peak	180	298	P
3	4824.00	-12.03	64.92	52.89	54.00	-1.11	Average	200	157	P
4	4824.00	-12.03	68.01	55.98	74.00	-18.02	Peak	200	157	P
5	12060.00	-3.59	38.19	34.60	54.00	-19.40	Average	100	128	P
6	12060.00	-3.59	50.39	46.80	74.00	-27.20	Peak	100	128	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH06		:

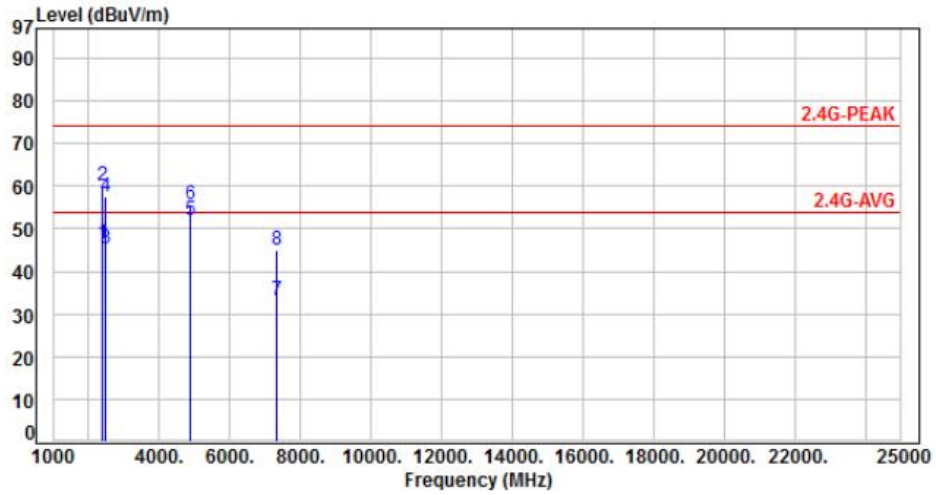


No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.17	62.07	43.90	54.00	-10.10	Average	275	355	P
2	2390.00	-18.17	74.52	56.35	74.00	-17.65	Peak	275	355	P
3	2483.50	-17.85	60.04	42.19	54.00	-11.81	Average	100	133	P
4	2483.50	-17.85	42.94	25.09	74.00	-48.91	Peak	100	133	P
5	4874.00	-11.87	60.19	48.32	54.00	-5.68	Average	110	235	P
6	4874.00	-11.87	64.89	53.02	74.00	-20.98	Peak	110	235	P
7	7311.00	-7.63	42.26	34.63	54.00	-19.37	Average	165	197	P
8	7311.00	-7.63	53.46	45.83	74.00	-28.17	Peak	165	197	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH06		:

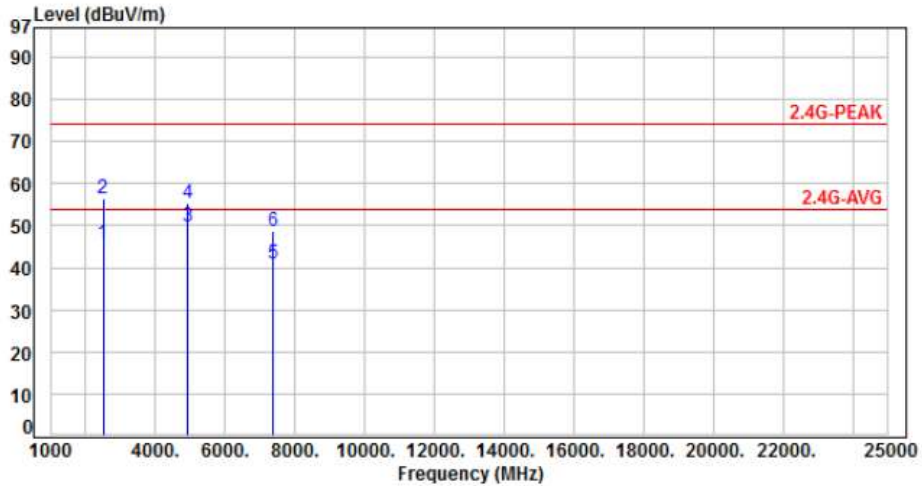


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.17	64.60	46.43	54.00	-7.57	Average	266	310	P
2	2390.00	-18.17	78.31	60.14	74.00	-13.86	Peak	266	310	P
3	2483.50	-17.85	63.34	45.49	54.00	-8.51	Average	330	0	P
4	2483.50	-17.85	75.50	57.65	74.00	-16.35	Peak	330	0	P
5	4874.00	-11.87	64.03	52.16	54.00	-1.84	Average	250	167	P
6	4874.00	-11.87	67.43	55.56	74.00	-18.44	Peak	250	167	P
7	7311.00	-7.63	40.91	33.28	54.00	-20.72	Average	100	120	P
8	7311.00	-7.63	52.71	45.08	74.00	-28.92	Peak	100	120	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 1, CH11		:

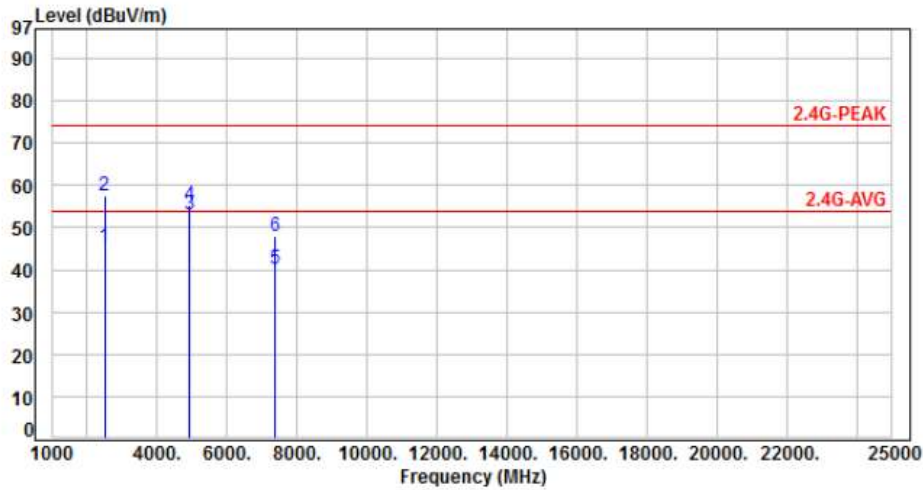


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2500.00	-17.81	63.61	45.80	54.00	-8.20	Average	100	205	P
2	2500.00	-17.81	74.09	56.28	74.00	-17.72	Peak	100	205	P
3	4924.00	-11.76	61.56	49.80	54.00	-4.20	Average	105	233	P
4	4924.00	-11.76	67.00	55.24	74.00	-18.76	Peak	105	233	P
5	7374.00	-7.60	48.39	40.79	54.00	-13.21	Average	100	120	P
6	7374.00	-7.60	56.21	48.61	74.00	-25.39	Peak	100	120	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 1, CH11		:

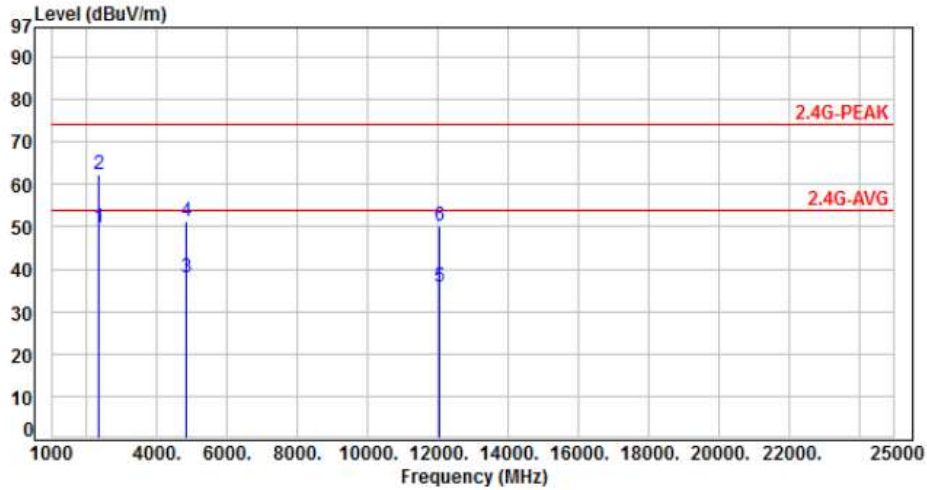


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2500.00	-17.81	63.24	45.43	54.00	-8.57	Average	110	310	P
2	2500.00	-17.81	75.30	57.49	74.00	-16.51	Peak	110	310	P
3	4924.00	-11.76	64.76	53.00	54.00	-1.00	Average	214	166	P
4	4924.00	-11.76	67.22	55.46	74.00	-18.54	Peak	214	166	P
5	7374.00	-7.60	47.75	40.15	54.00	-13.85	Average	100	186	P
6	7374.00	-7.60	55.38	47.78	74.00	-26.22	Peak	100	186	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH01		:

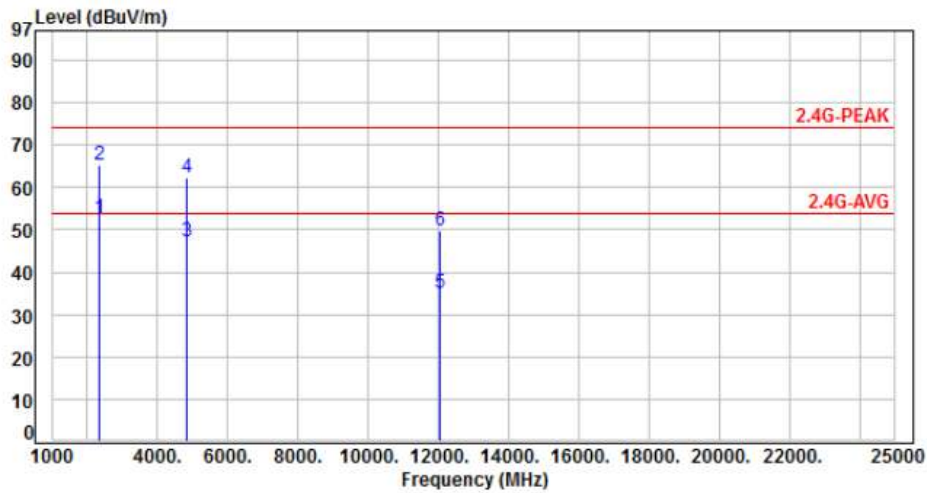


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2366.00	-18.13	68.07	49.94	54.00	-4.06	Average	229	343	P
2	2366.00	-18.13	80.44	62.31	74.00	-11.69	Peak	229	343	P
3	4824.00	-12.03	50.07	38.04	54.00	-15.96	Average	100	200	P
4	4824.00	-12.03	63.40	51.37	74.00	-22.63	Peak	100	200	P
5	12060.00	-3.59	39.29	35.70	54.00	-18.30	Average	170	230	P
6	12060.00	-3.59	53.78	50.19	74.00	-23.81	Peak	170	230	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH01		:

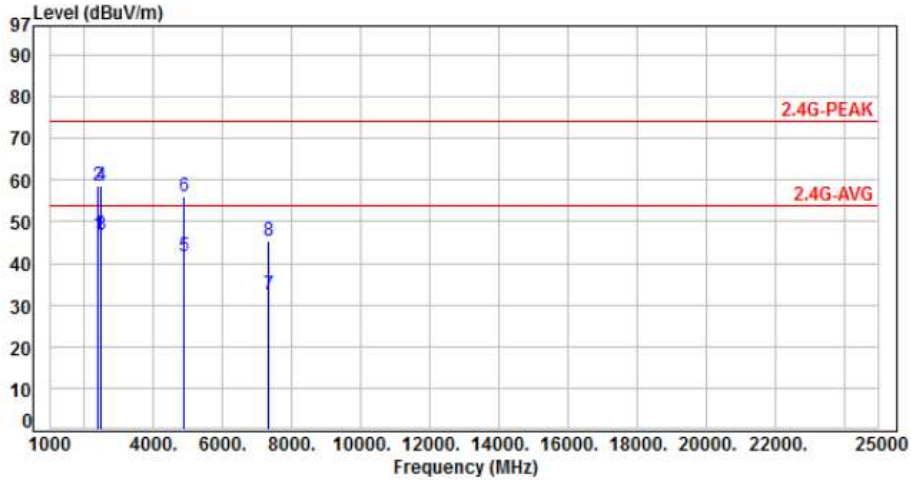


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2366.00	-18.13	70.93	52.80	54.00	-1.20	Average	100	40	P
2	2366.00	-18.13	83.40	65.27	74.00	-8.73	Peak	100	40	P
3	4824.00	-12.03	59.33	47.30	54.00	-6.70	Average	230	208	P
4	4824.00	-12.03	74.53	62.50	74.00	-11.50	Peak	230	208	P
5	12060.00	-3.59	38.79	35.20	54.00	-18.80	Average	205	90	P
6	12060.00	-3.59	53.22	49.63	74.00	-24.37	Peak	205	90	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH06		:

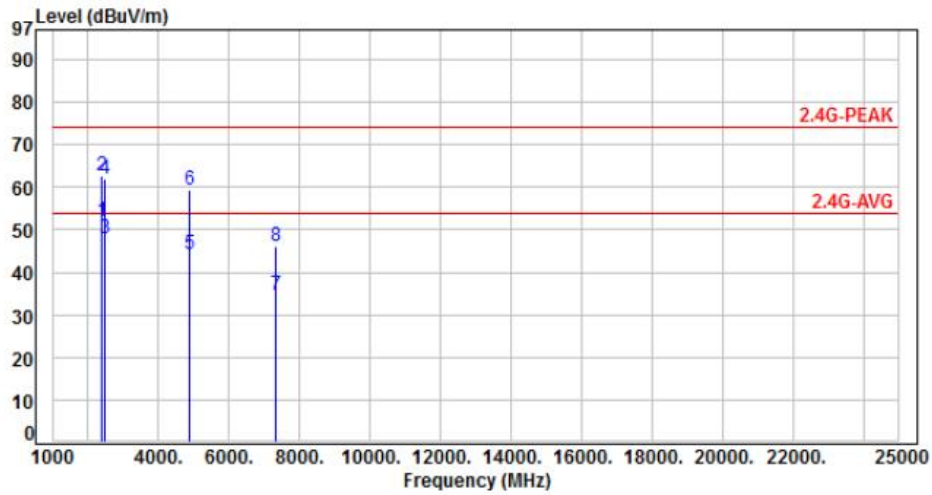


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.17	65.03	46.86	54.00	-7.14	Average	337	220	P
2	2390.00	-18.17	76.72	58.55	74.00	-15.45	Peak	337	220	P
3	2483.50	-17.85	64.76	46.91	54.00	-7.09	Average	100	320	P
4	2483.50	-17.85	76.54	58.69	74.00	-15.31	Peak	100	320	P
5	4874.00	-11.87	53.46	41.59	54.00	-12.41	Average	100	196	P
6	4874.00	-11.87	68.04	56.17	74.00	-17.83	Peak	100	196	P
7	7311.00	-7.63	40.05	32.42	54.00	-21.58	Average	100	235	P
8	7311.00	-7.63	53.09	45.46	74.00	-28.54	Peak	100	235	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH06		:

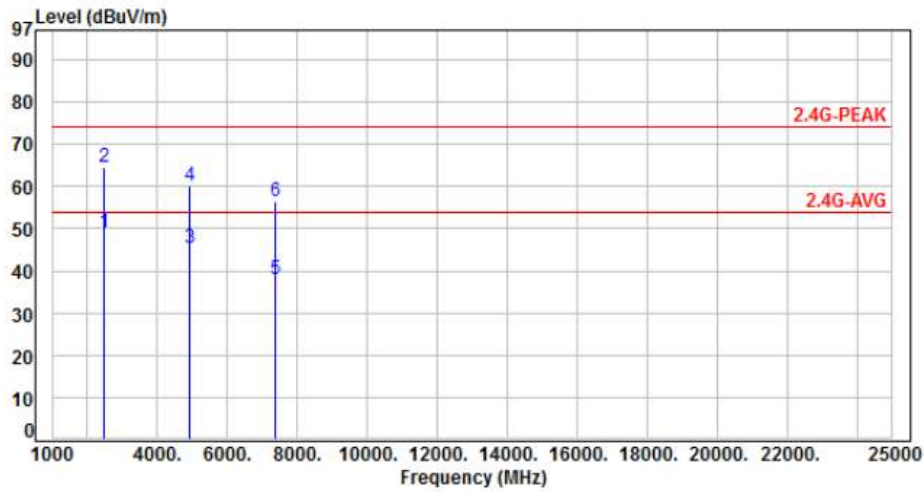


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.17	70.25	52.08	54.00	-1.92	Average	100	290	P
2	2390.00	-18.17	80.91	62.74	74.00	-11.26	Peak	100	290	P
3	2483.50	-17.85	65.80	47.95	54.00	-6.05	Average	100	35	P
4	2483.50	-17.85	79.85	62.00	74.00	-12.00	Peak	100	35	P
5	4874.00	-11.87	56.21	44.34	54.00	-9.66	Average	215	210	P
6	4874.00	-11.87	71.28	59.41	74.00	-14.59	Peak	215	210	P
7	7311.00	-7.63	42.14	34.51	54.00	-19.49	Average	230	233	P
8	7311.00	-7.63	53.68	46.05	74.00	-27.95	Peak	230	233	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 2, CH11		:

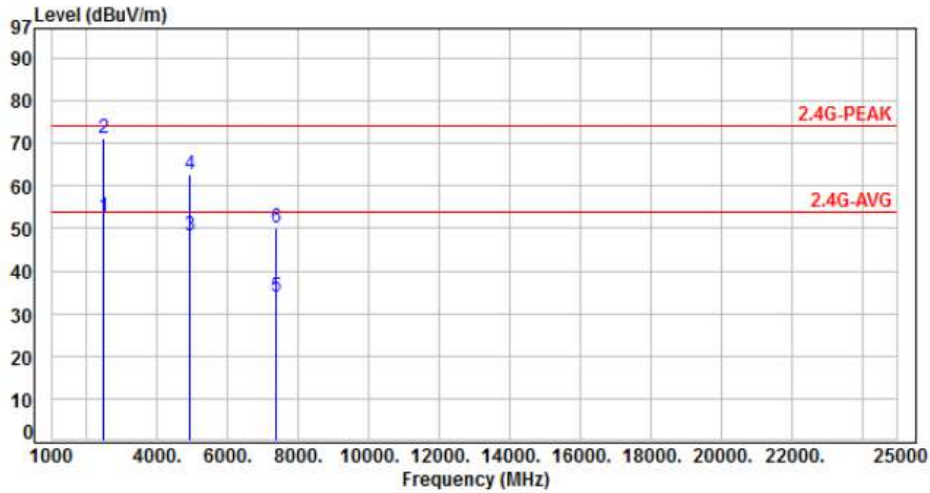


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-17.85	66.90	49.05	54.00	-4.95	Average	365	191	P
2	2483.50	-17.85	82.30	64.45	74.00	-9.55	Peak	365	191	P
3	4924.00	-11.76	57.10	45.34	54.00	-8.66	Average	210	188	P
4	4924.00	-11.76	71.96	60.20	74.00	-13.80	Peak	210	188	P
5	7386.00	-7.59	45.50	37.91	54.00	-16.09	Average	100	216	P
6	7386.00	-7.59	64.20	56.61	74.00	-17.39	Peak	100	216	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 2, CH11		:

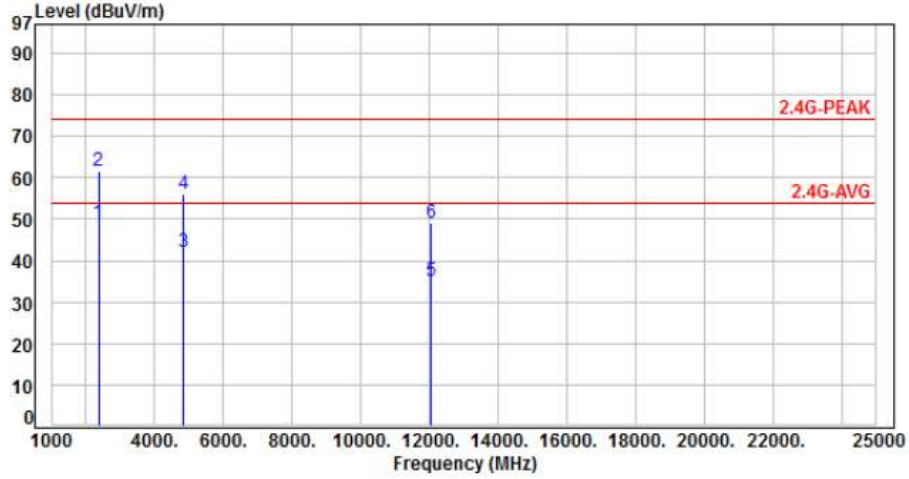


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-17.85	70.70	52.85	54.00	-1.15	Average	270	308	P
2	2483.50	-17.85	88.94	71.09	74.00	-2.91	Peak	270	308	P
3	4924.00	-11.76	60.20	48.44	54.00	-5.56	Average	220	240	P
4	4924.00	-11.76	74.30	62.54	74.00	-11.46	Peak	220	240	P
5	7386.00	-7.59	41.60	34.01	54.00	-19.99	Average	100	122	P
6	7386.00	-7.59	57.80	50.21	74.00	-23.79	Peak	100	122	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 3, CH01		:

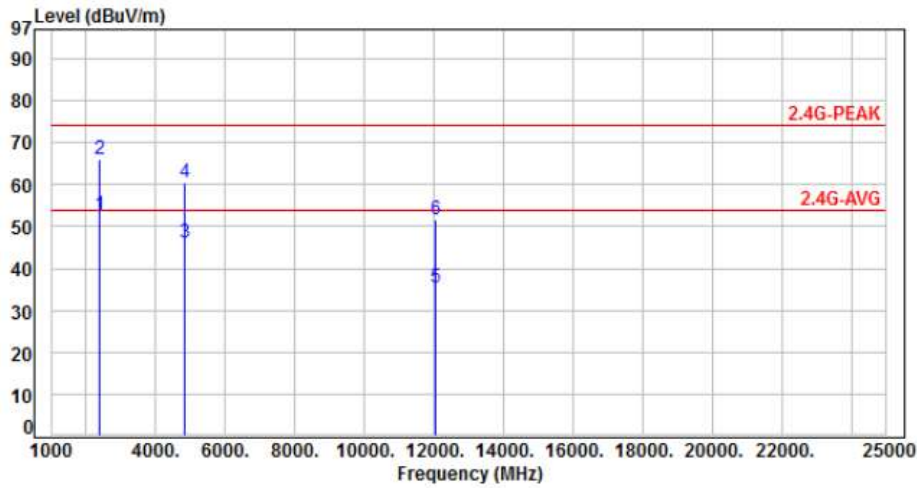


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2367.00	-18.13	67.29	49.16	54.00	-4.84	Average	100	333	P
2	2367.00	-18.13	79.74	61.61	74.00	-12.39	Peak	100	333	P
3	4824.00	-12.03	54.19	42.16	54.00	-11.84	Average	100	206	P
4	4824.00	-12.03	68.09	56.06	74.00	-17.94	Peak	100	206	P
5	12060.00	-3.59	38.72	35.13	54.00	-18.87	Average	105	248	P
6	12060.00	-3.59	52.73	49.14	74.00	-24.86	Peak	105	248	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 3, CH01		:

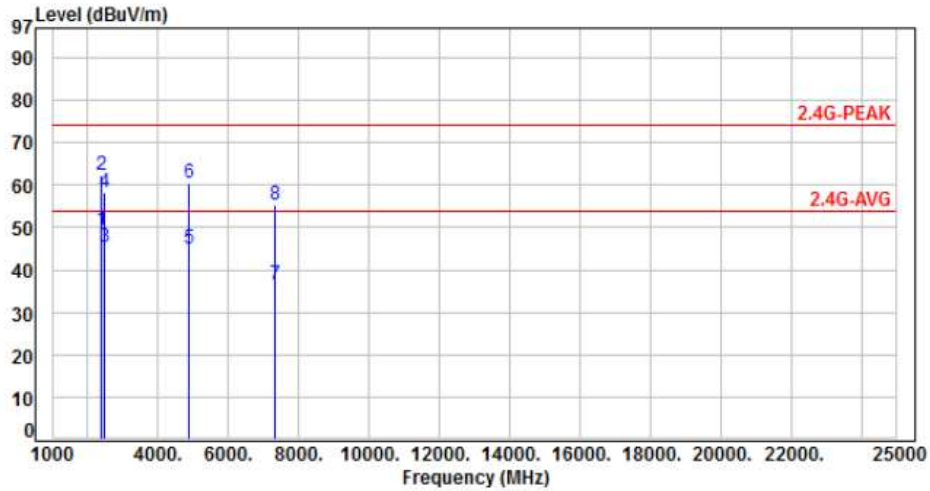


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2370.00	-18.13	70.72	52.59	54.00	-1.41	Average	229	55	P
2	2370.00	-18.13	84.29	66.16	74.00	-7.84	Peak	229	55	P
3	4824.00	-12.03	58.19	46.16	54.00	-7.84	Average	225	202	P
4	4824.00	-12.03	72.59	60.56	74.00	-13.44	Peak	225	202	P
5	12060.00	-3.59	39.10	35.51	54.00	-18.49	Average	135	250	P
6	12060.00	-3.59	55.19	51.60	74.00	-22.40	Peak	135	250	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 3, CH06		:

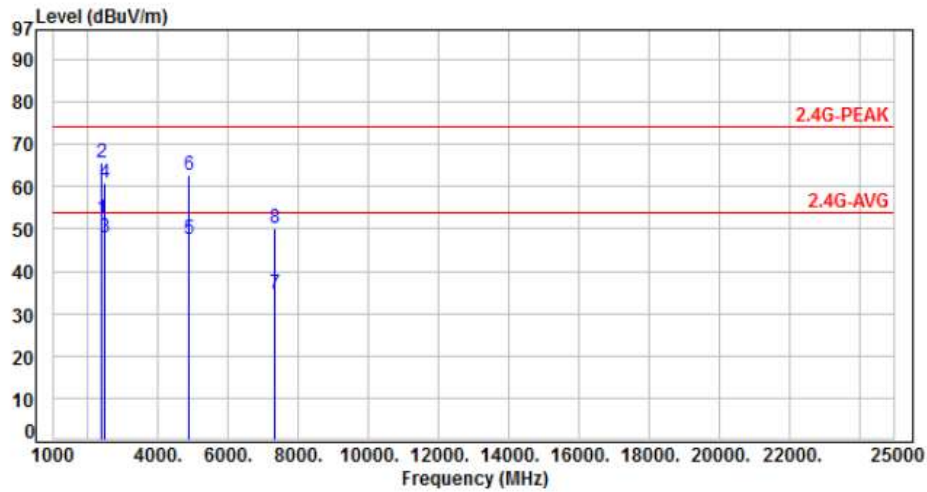


No.	Frequency (MHz)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.17	67.56	49.39	54.00	-4.61	Average	100	350	P
2	2390.00	-18.17	80.45	62.28	74.00	-11.72	Peak	100	350	P
3	2483.50	-17.85	63.40	45.55	54.00	-8.45	Average	100	350	P
4	2483.50	-17.85	76.23	58.38	74.00	-15.62	Peak	100	350	P
5	4874.00	-11.87	56.70	44.83	54.00	-9.17	Average	100	197	P
6	4874.00	-11.87	72.30	60.43	74.00	-13.57	Peak	100	197	P
7	7311.00	-7.63	44.20	36.57	54.00	-17.43	Average	106	209	P
8	7311.00	-7.63	62.80	55.17	74.00	-18.83	Peak	106	209	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 3, CH06		:

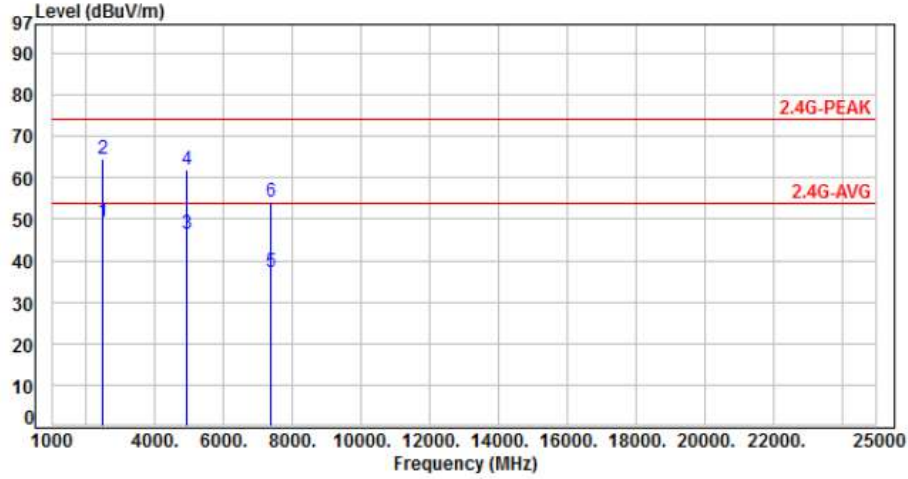


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.17	70.68	52.51	54.00	-1.49	Average	149	294	P
2	2390.00	-18.17	83.91	65.74	74.00	-8.26	Peak	149	294	P
3	2483.50	-17.85	65.90	48.05	54.00	-5.95	Average	149	294	P
4	2483.50	-17.85	78.80	60.95	74.00	-13.05	Peak	149	294	P
5	4874.00	-11.87	59.50	47.63	54.00	-6.37	Average	244	201	P
6	4874.00	-11.87	74.60	62.73	74.00	-11.27	Peak	244	201	P
7	7311.00	-7.63	42.20	34.57	54.00	-19.43	Average	100	112	P
8	7311.00	-7.63	57.80	50.17	74.00	-23.83	Peak	100	112	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 3, CH11		:

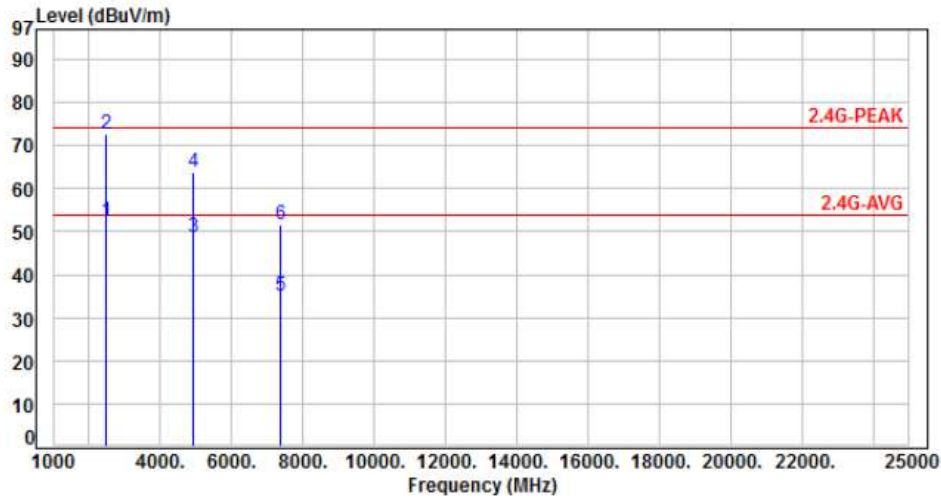


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-17.85	67.30	49.45	54.00	-4.55	Average	211	120	P
2	2483.50	-17.85	82.35	64.50	74.00	-9.50	Peak	211	120	P
3	4924.00	-11.76	58.40	46.64	54.00	-7.36	Average	400	138	P
4	4924.00	-11.76	73.90	62.14	74.00	-11.86	Peak	400	138	P
5	7386.00	-7.59	44.81	37.22	54.00	-16.78	Average	100	241	P
6	7386.00	-7.59	61.77	54.18	74.00	-19.82	Peak	100	241	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 3, CH11		:

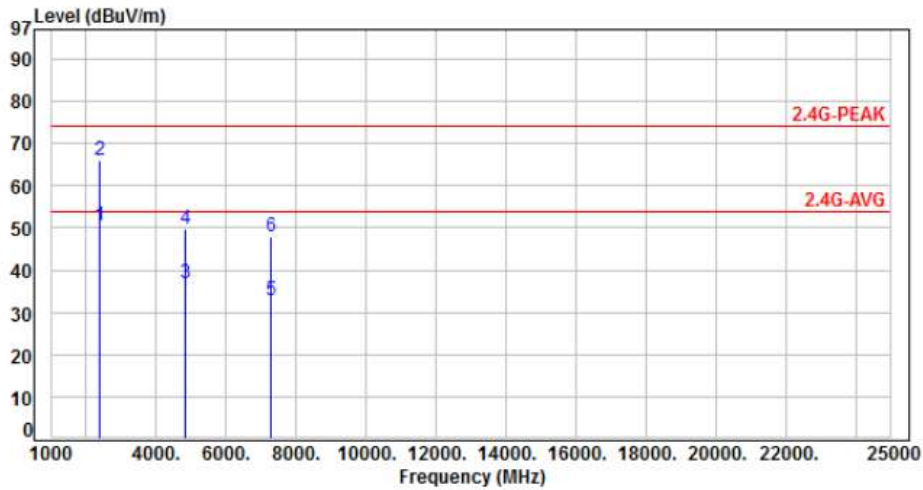


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-17.85	70.13	52.28	54.00	-1.72	Average	191	305	P
2	2483.50	-17.85	90.61	72.76	74.00	-1.24	Peak	191	305	P
3	4924.00	-11.76	60.30	48.54	54.00	-5.46	Average	214	167	P
4	4924.00	-11.76	75.60	63.84	74.00	-10.16	Peak	214	167	P
5	7386.00	-7.59	42.50	34.91	54.00	-19.09	Average	100	115	P
6	7386.00	-7.59	59.40	51.81	74.00	-22.19	Peak	100	115	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH03		:

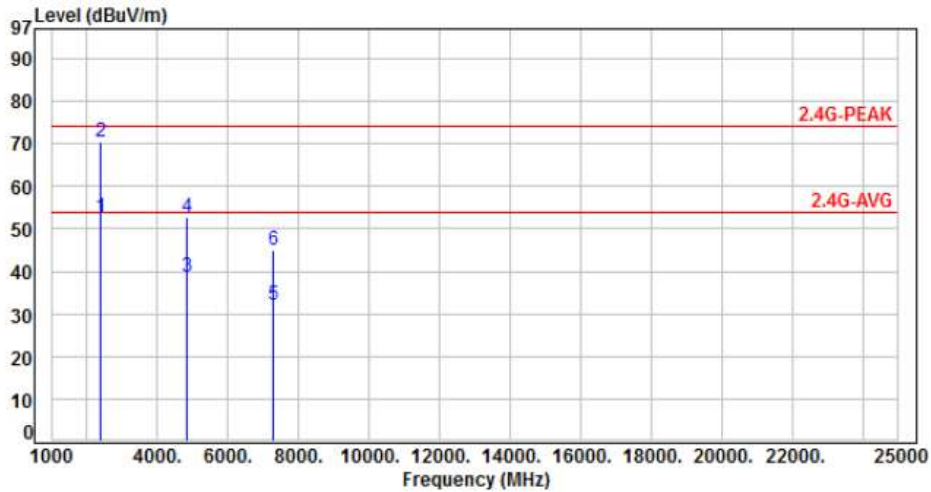


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.17	68.71	50.54	54.00	-3.46	Average	225	118	P
2	2390.00	-18.17	84.24	66.07	74.00	-7.93	Peak	225	118	P
3	4844.00	-11.95	48.90	36.95	54.00	-17.05	Average	100	195	P
4	4844.00	-11.95	61.73	49.78	74.00	-24.22	Peak	100	195	P
5	7266.00	-7.82	40.75	32.93	54.00	-21.07	Average	114	241	P
6	7266.00	-7.82	55.60	47.78	74.00	-26.22	Peak	114	241	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH03		:

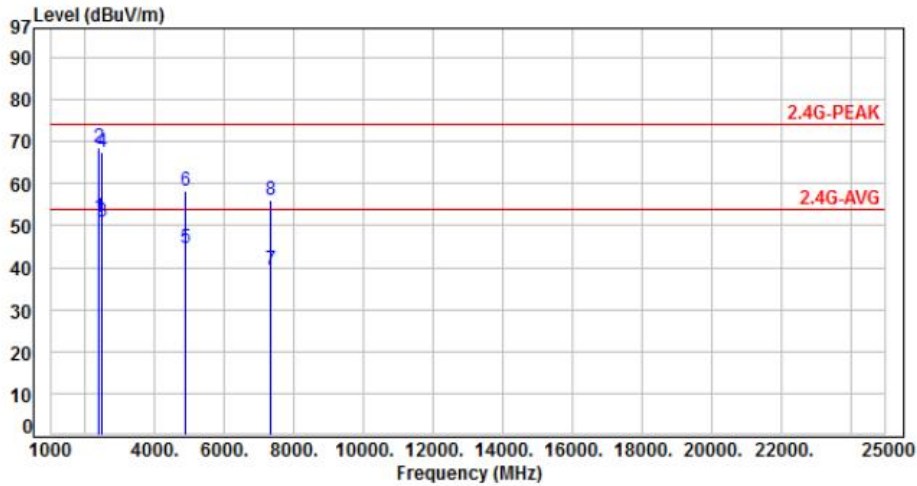


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.17	70.76	52.59	54.00	-1.41	Average	100	47	P
2	2390.00	-18.17	88.58	70.41	74.00	-3.59	Peak	100	47	P
3	4844.00	-11.95	50.70	38.75	54.00	-15.25	Average	233	166	P
4	4844.00	-11.95	64.80	52.85	74.00	-21.15	Peak	233	166	P
5	7266.00	-7.82	39.80	31.98	54.00	-22.02	Average	279	253	P
6	7266.00	-7.82	52.70	44.88	74.00	-29.12	Peak	279	253	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH06		:

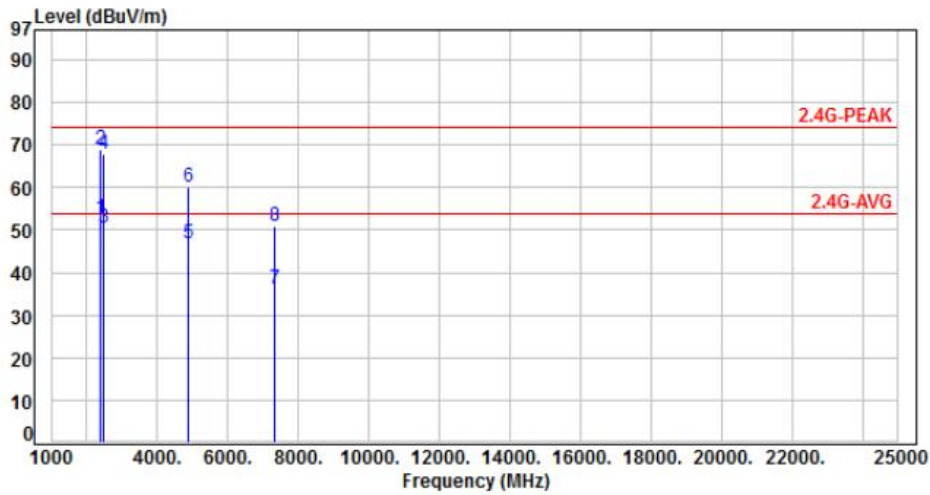


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.17	70.27	52.10	54.00	-1.90	Average	224	118	P
2	2390.00	-18.17	86.68	68.51	74.00	-5.49	Peak	224	118	P
3	2483.50	-17.85	68.79	50.94	54.00	-3.06	Average	224	118	P
4	2483.50	-17.85	85.21	67.36	74.00	-6.64	Peak	224	118	P
5	4874.00	-11.87	56.60	44.73	54.00	-9.27	Average	103	201	P
6	4874.00	-11.87	70.20	58.33	74.00	-15.67	Peak	103	201	P
7	7311.00	-7.63	47.21	39.58	54.00	-14.42	Average	156	197	P
8	7311.00	-7.63	63.80	56.17	74.00	-17.83	Peak	156	197	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH06		:

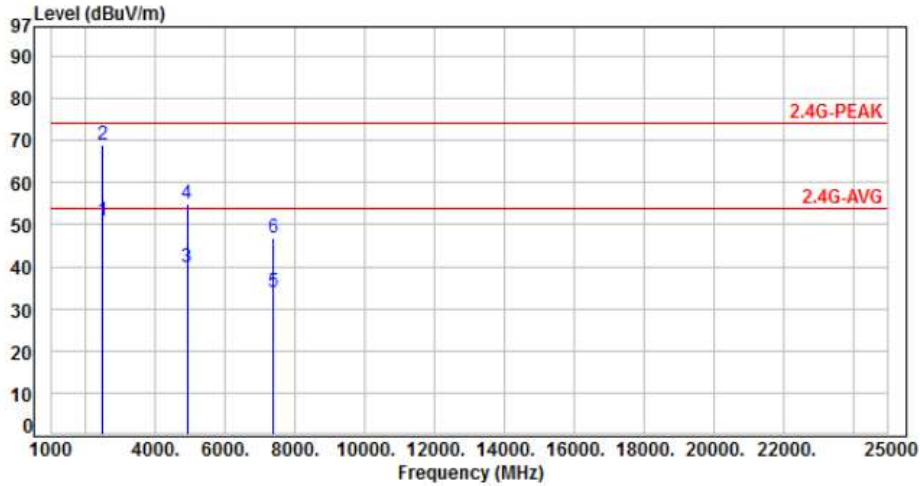


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2390.00	-18.17	71.03	52.86	54.00	-1.14	Average	151	297	P
2	2390.00	-18.17	87.31	69.14	74.00	-4.86	Peak	151	297	P
3	2483.50	-17.85	68.21	50.36	54.00	-3.64	Average	151	297	P
4	2483.50	-17.85	85.72	67.87	74.00	-6.13	Peak	151	297	P
5	4874.00	-11.87	58.60	46.73	54.00	-7.27	Average	244	167	P
6	4874.00	-11.87	72.10	60.23	74.00	-13.77	Peak	244	167	P
7	7311.00	-7.63	43.80	36.17	54.00	-17.83	Average	100	182	P
8	7311.00	-7.63	58.67	51.04	74.00	-22.96	Peak	100	182	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: VERTICAL
Test Mode	: Mode 4, CH09		:

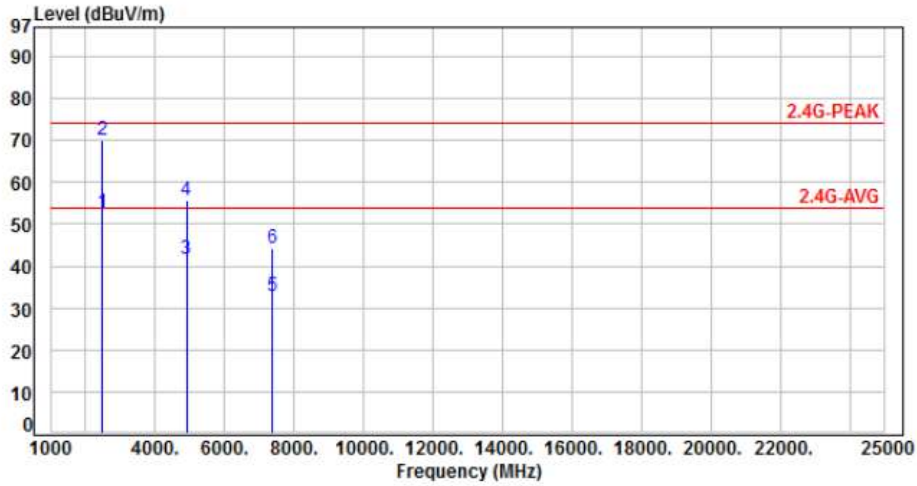


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-17.85	68.93	51.08	54.00	-2.92	Average	142	120	P
2	2483.50	-17.85	86.77	68.92	74.00	-5.08	Peak	142	120	P
3	4904.00	-11.80	51.59	39.79	54.00	-14.21	Average	100	191	P
4	4904.00	-11.80	66.69	54.89	74.00	-19.11	Peak	100	191	P
5	7356.00	-7.64	41.58	33.94	54.00	-20.06	Average	156	147	P
6	7356.00	-7.64	54.42	46.78	74.00	-27.22	Peak	156	147	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



Power	: AC 120V / 60Hz	Pol/Phase	: HORIZONTAL
Test Mode	: Mode 4, CH09		:



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg)	P/F
1	2483.50	-17.85	70.43	52.58	54.00	-1.42	Average	241	299	P
2	2483.50	-17.85	87.83	69.98	74.00	-4.02	Peak	241	299	P
3	4904.00	-11.80	53.29	41.49	54.00	-12.51	Average	230	166	P
4	4904.00	-11.80	67.59	55.79	74.00	-18.21	Peak	230	166	P
5	7356.00	-7.64	40.63	32.99	54.00	-21.01	Average	115	176	P
6	7356.00	-7.64	51.88	44.24	74.00	-29.76	Peak	115	176	P

Note: Level=Reading+Factor
 Margin=Level-Limit
 Factor=Antenna Factor + cable loss - Amplifier Factor



6.7 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



7. Test of Conducted Spurious Emission

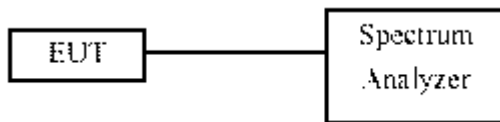
7.1 Test Limit

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

7.2 Test Procedure

- a. The transmitter output was connected to the spectrum analyzer via a low loss 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.

7.3 Test Setup Layout



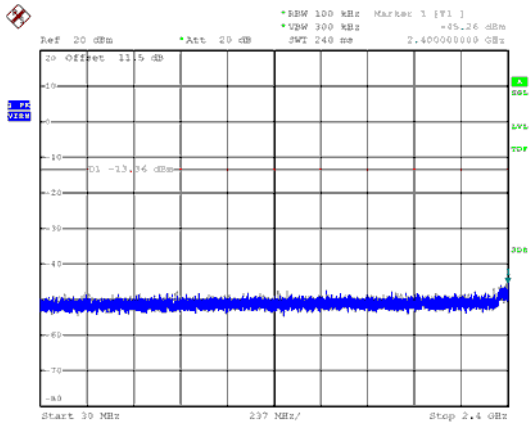
7.4 Test Result and Data

Note: Test plots refers to the following pages.

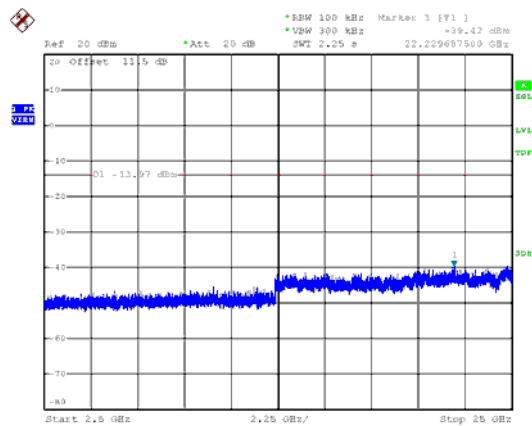
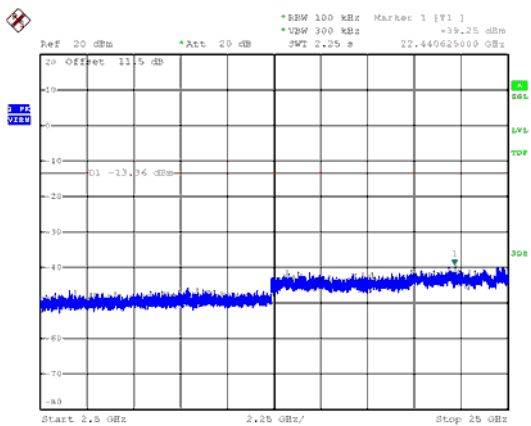
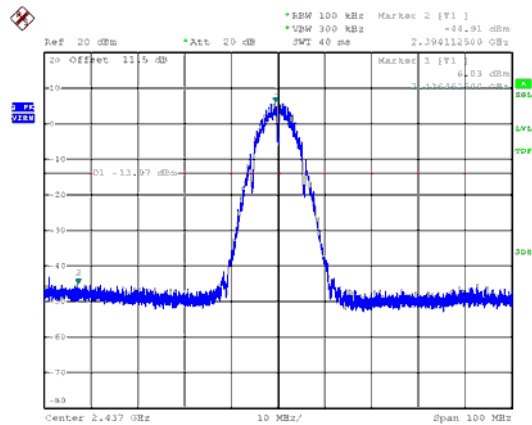
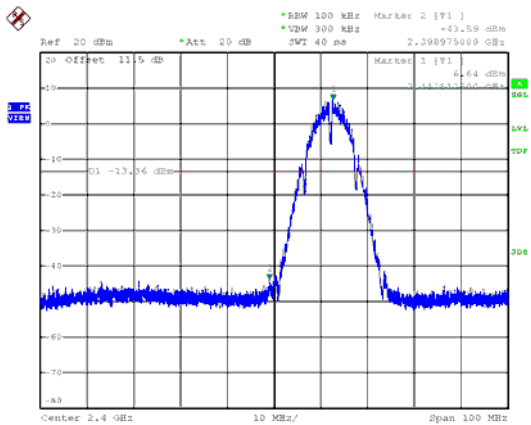
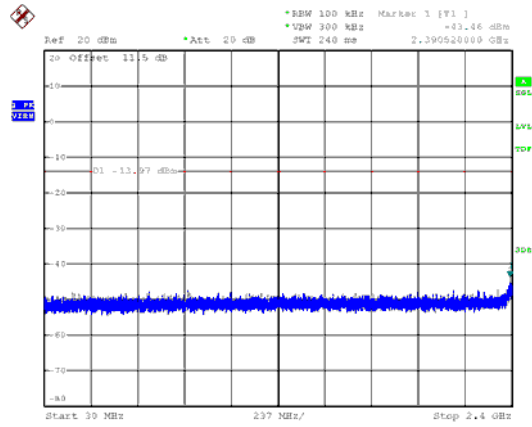


ANT A

Modulation Type: 802.11b, CH 01



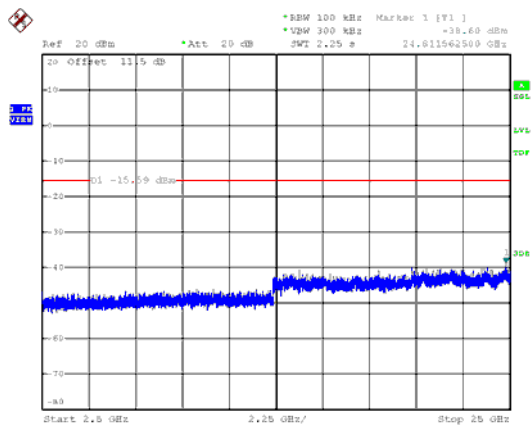
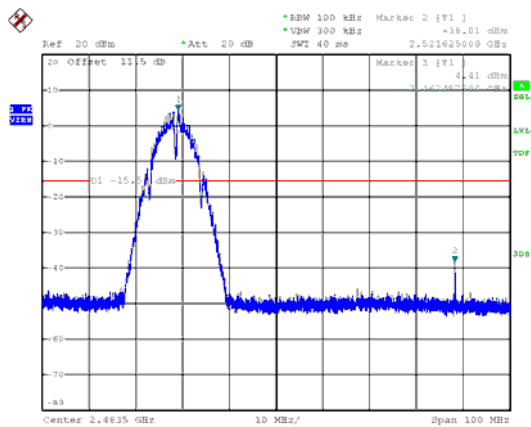
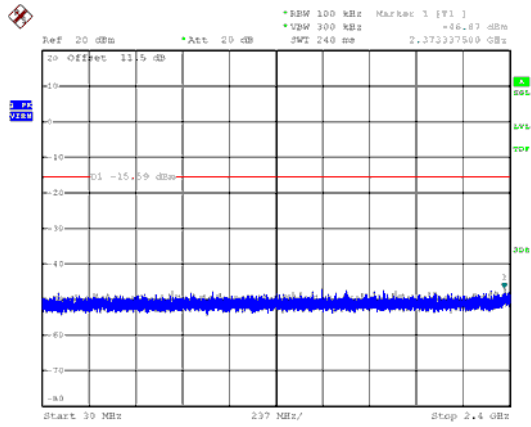
Modulation Type: 802.11b, CH 06





ANT A

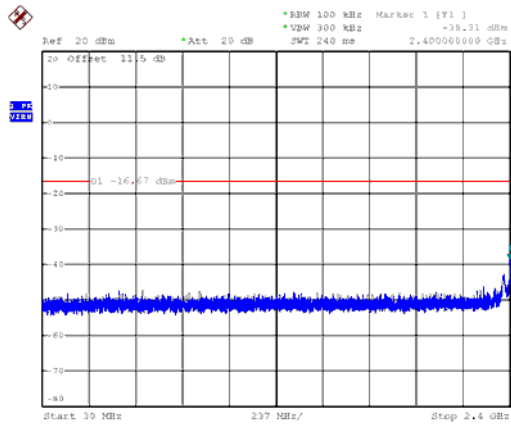
Modulation Type: 802.11b, CH 11



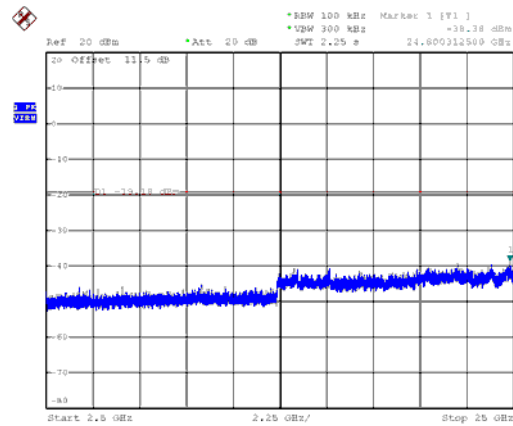
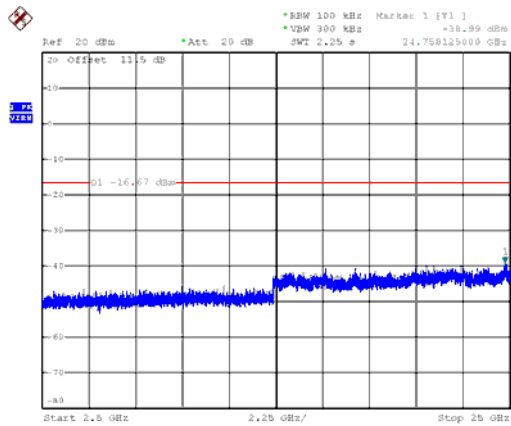
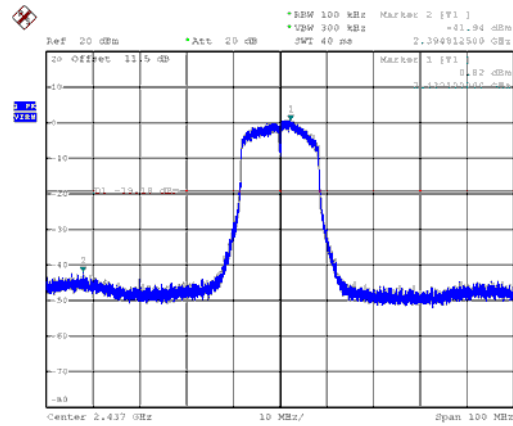
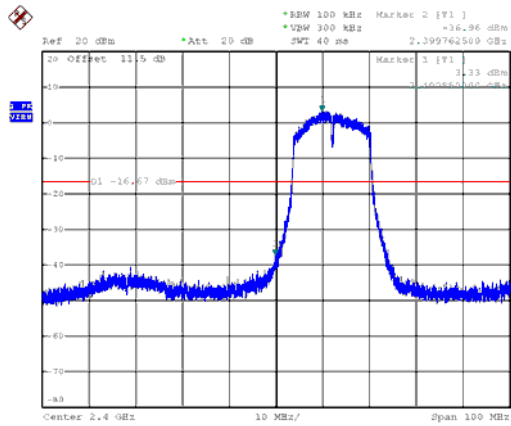
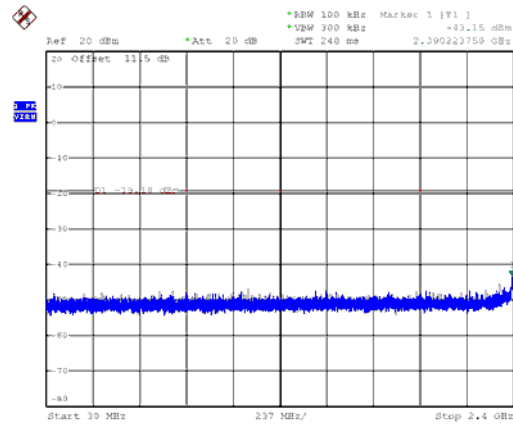


ANT A

Modulation Type: 802.11g, CH 01



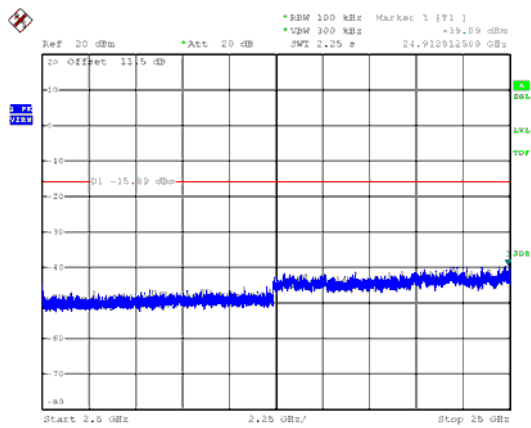
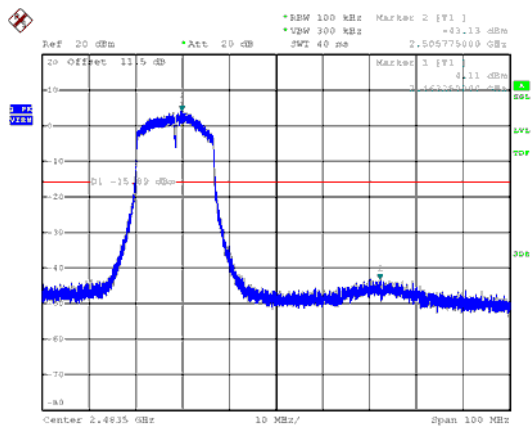
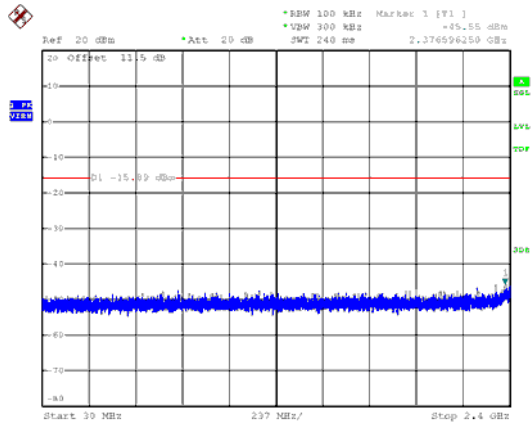
Modulation Type: 802.11g, CH 06





ANT A

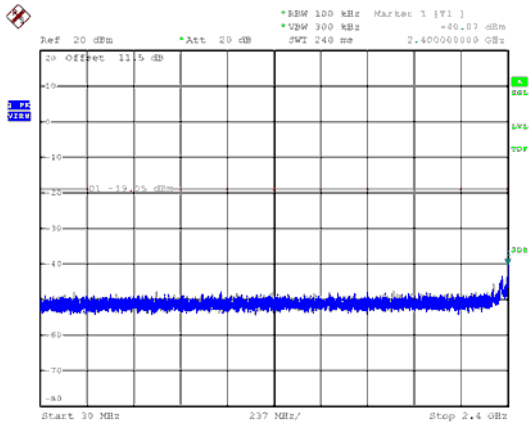
Modulation Type: 802.11g, CH 11



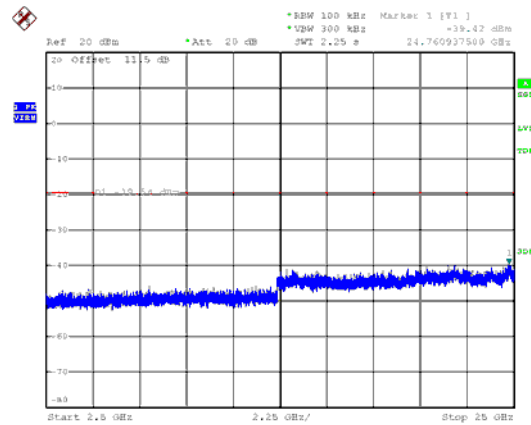
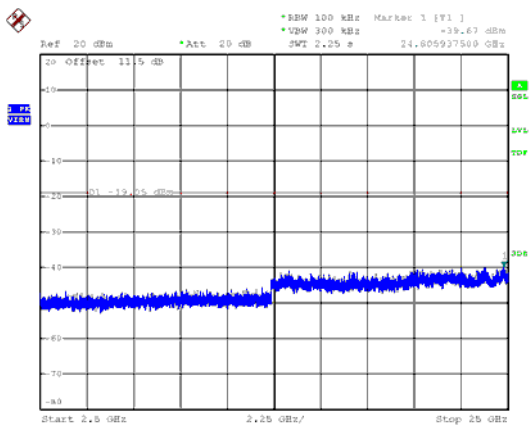
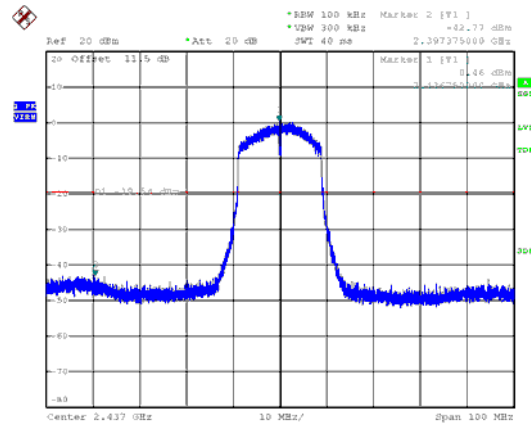
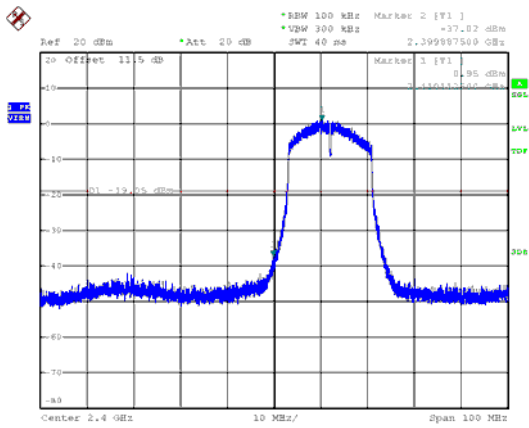
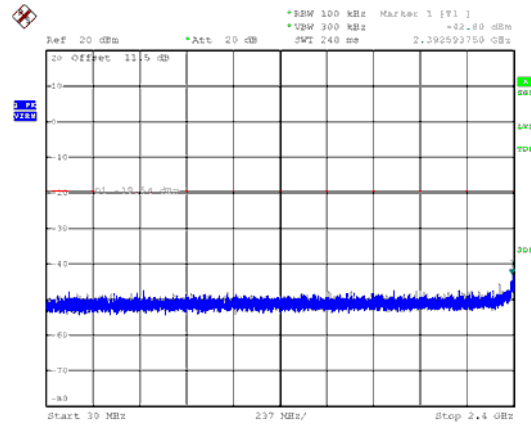


ANT A

Modulation Type: 802.11n HT20, CH01



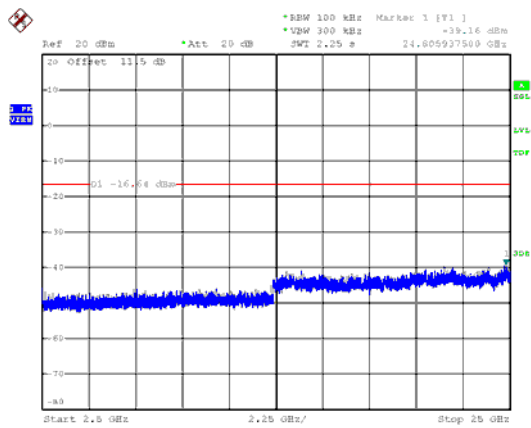
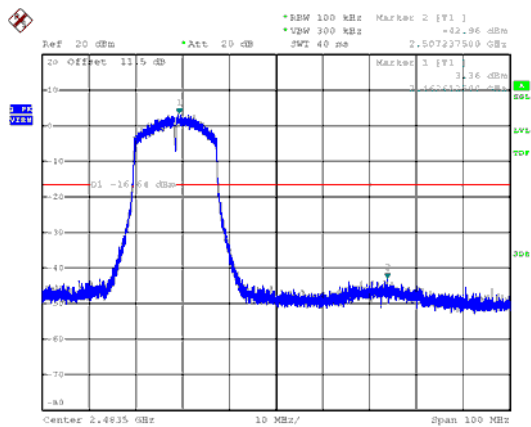
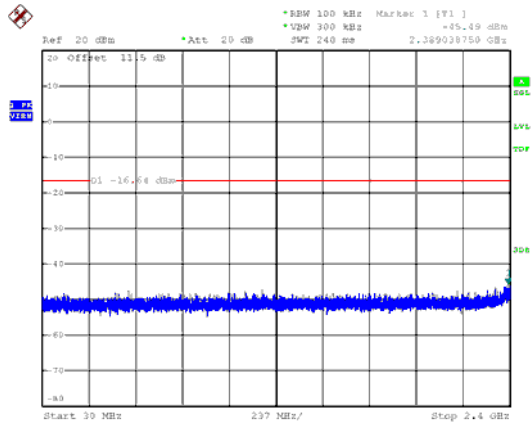
Modulation Type: 802.11n HT20, CH06





ANT A

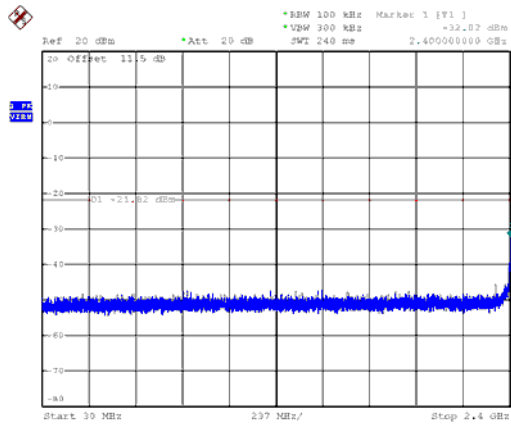
Modulation Type: 802.11n HT20, CH11



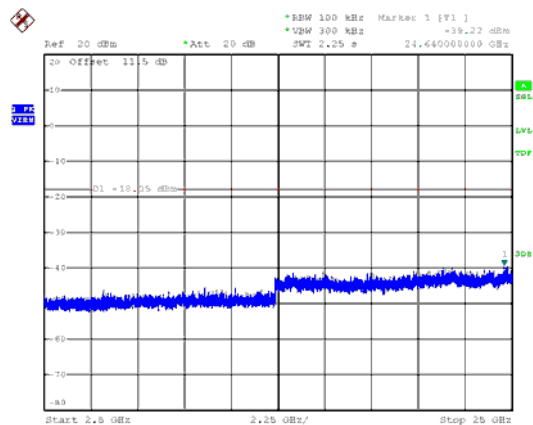
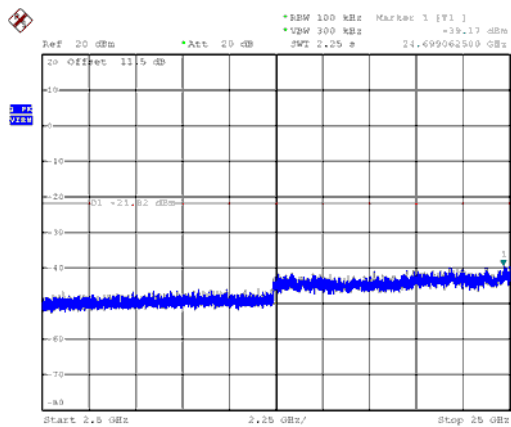
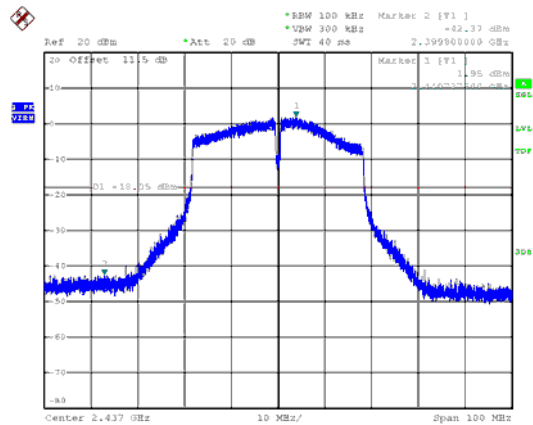
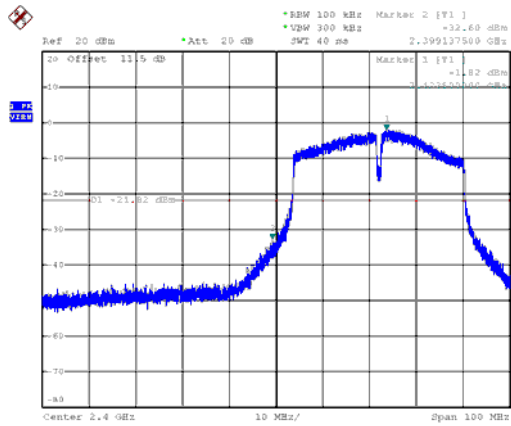
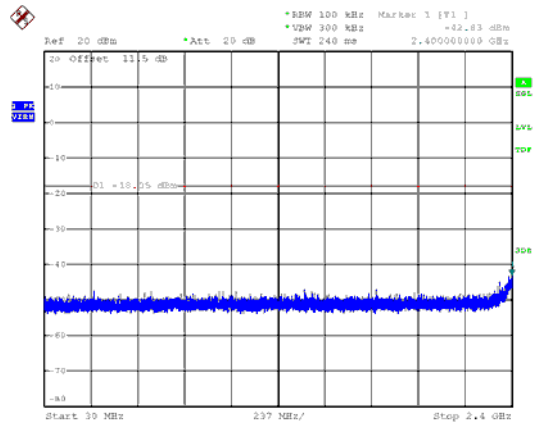


ANT A

Modulation Type: 802.11n HT40, CH03



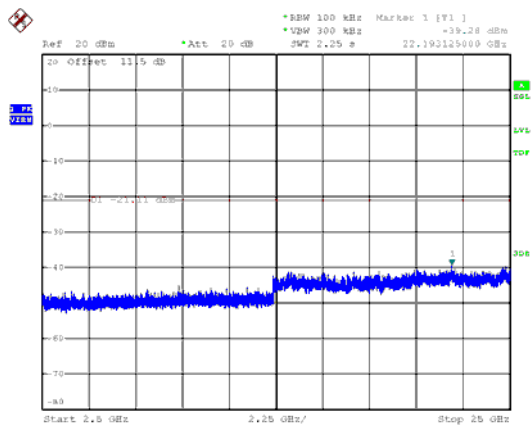
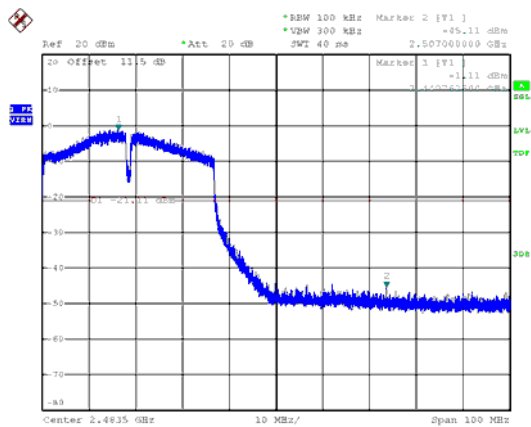
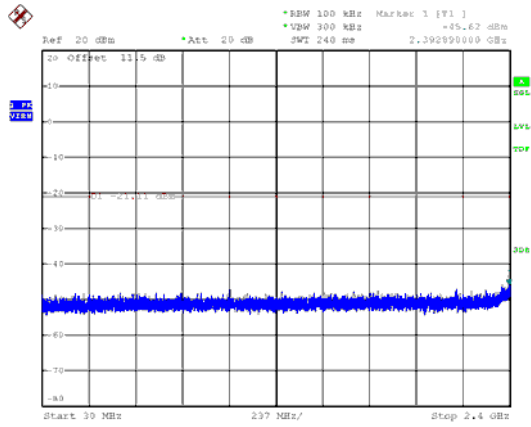
Modulation Type: 802.11n HT40, CH06





ANT A

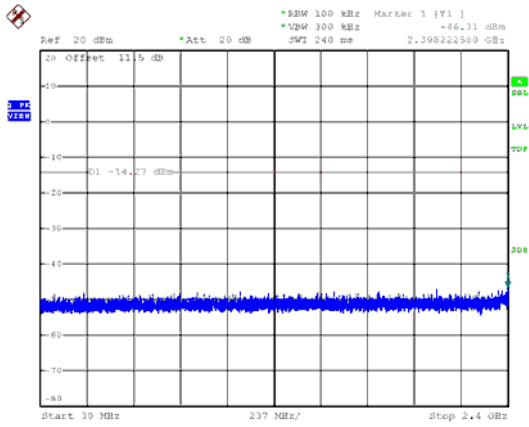
Modulation Type: 802.11n HT40, CH09



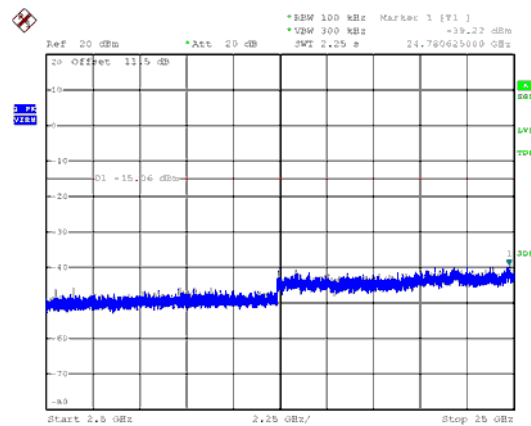
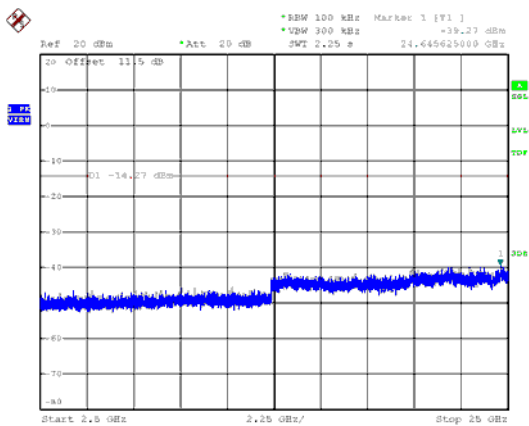
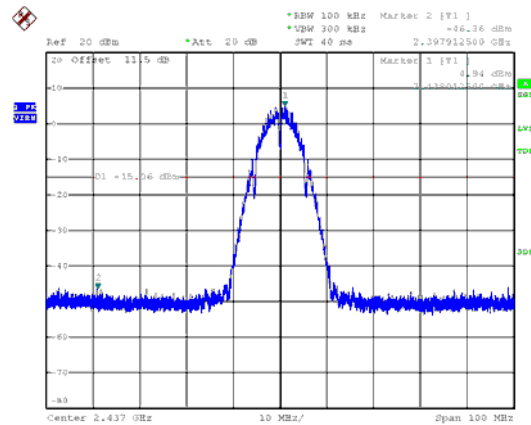
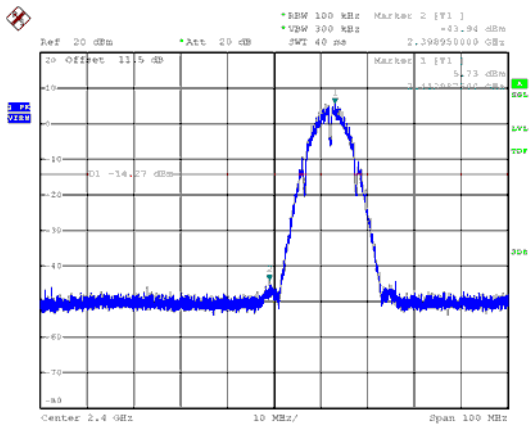
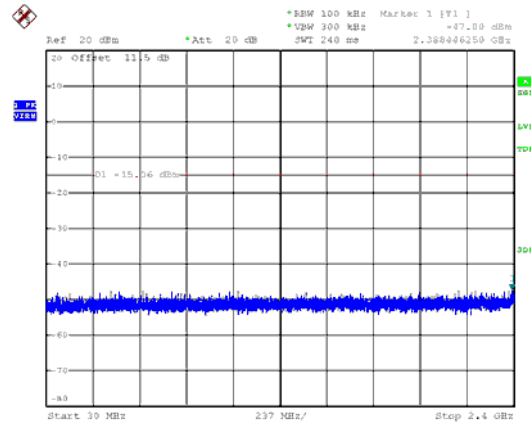


ANT B

Modulation Type: 802.11b, CH 01



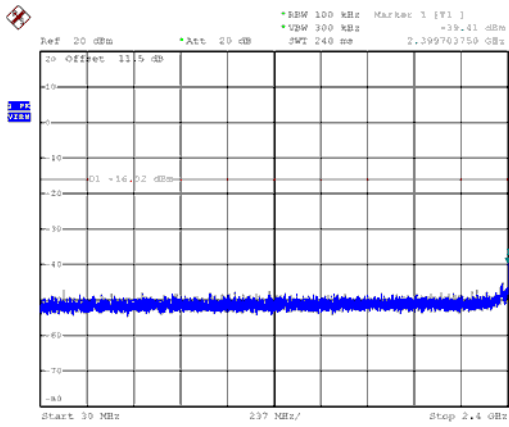
Modulation Type: 802.11b, CH 06



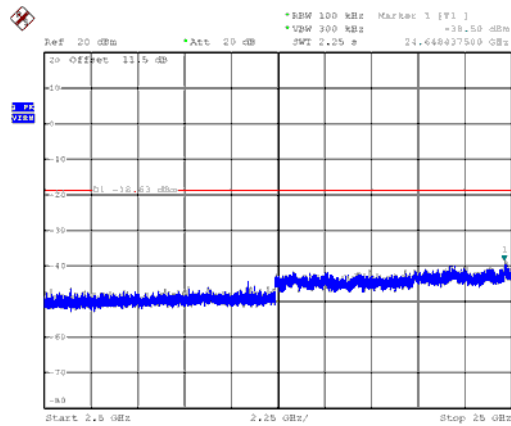
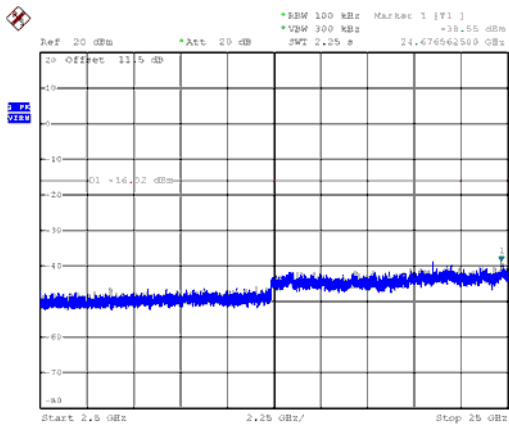
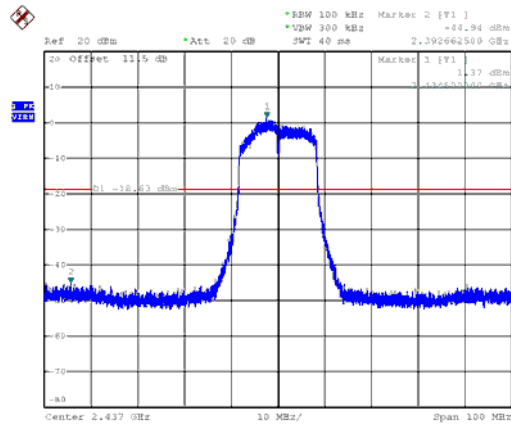
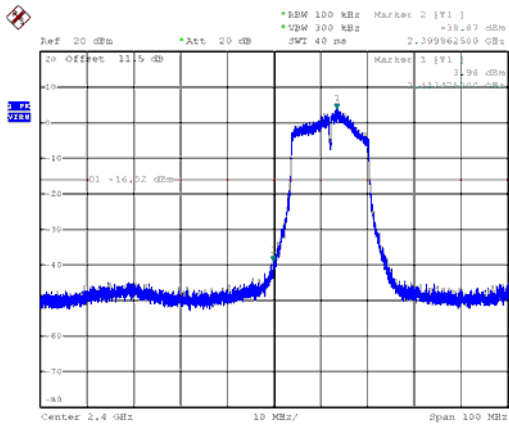
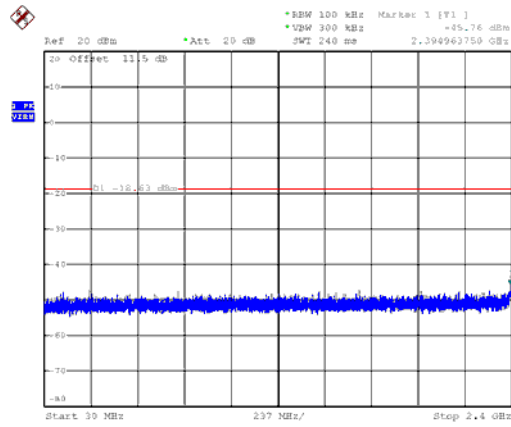


ANT B

Modulation Type: 802.11g, CH 01



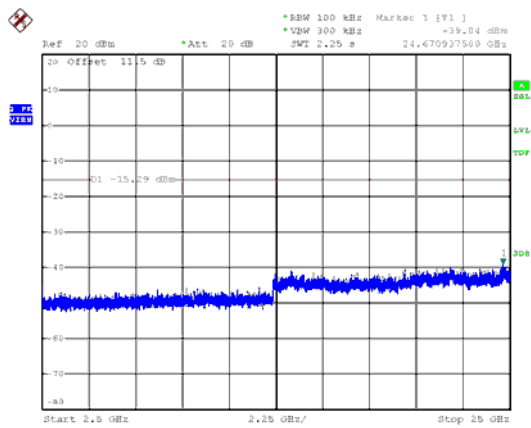
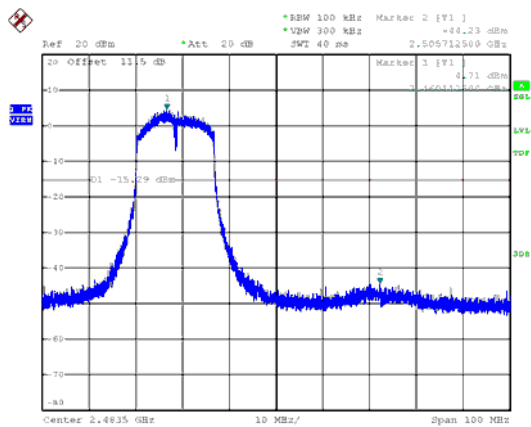
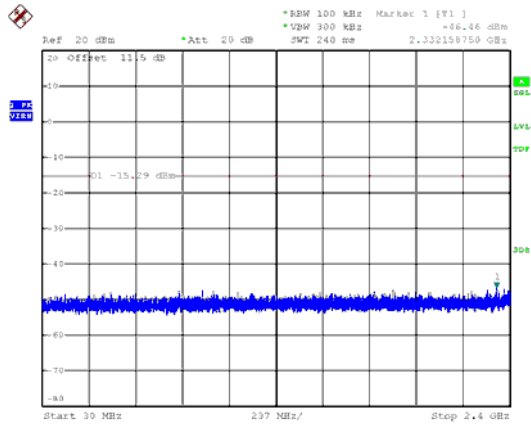
Modulation Type: 802.11g, CH 06





ANT B

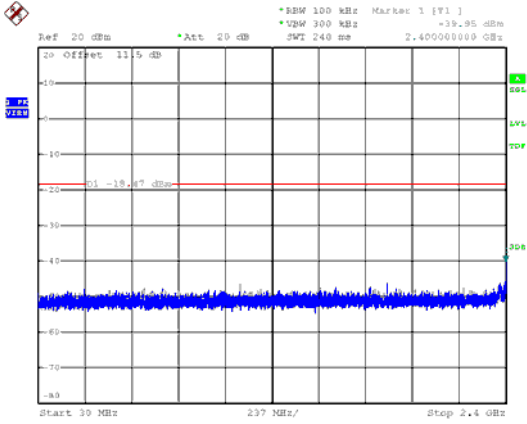
Modulation Type: 802.11g, CH 11



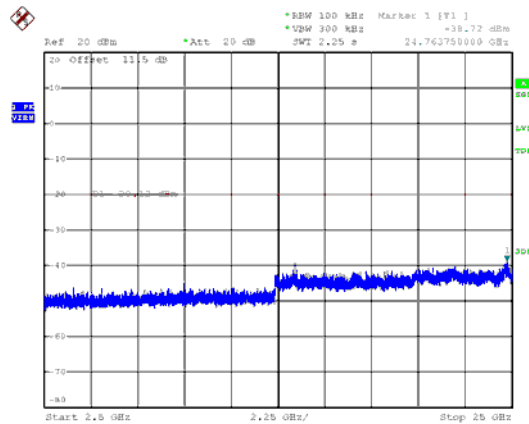
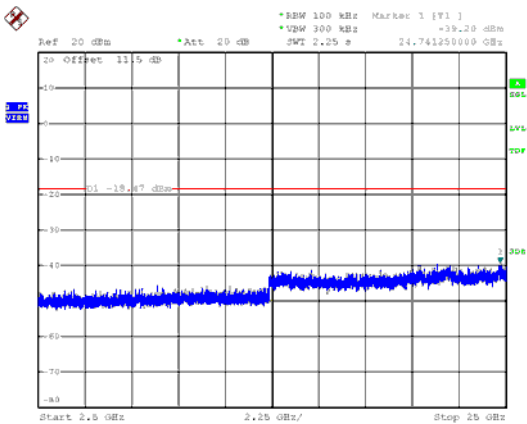
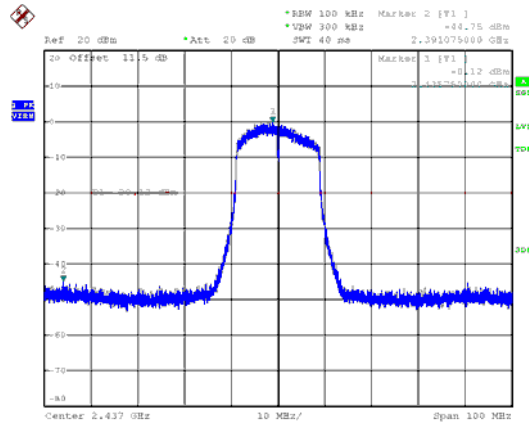
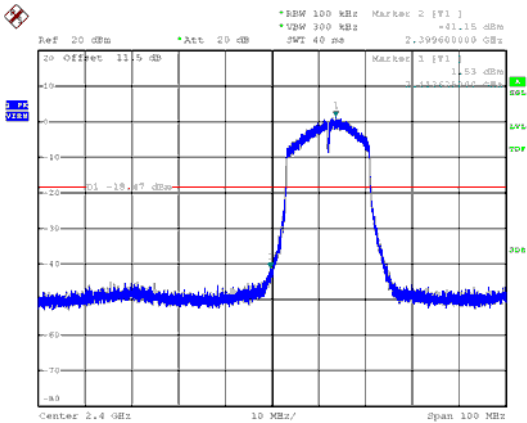
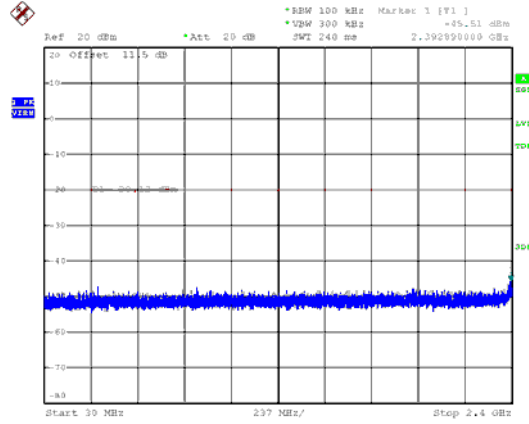


ANT B

Modulation Type: 802.11n HT20, CH01



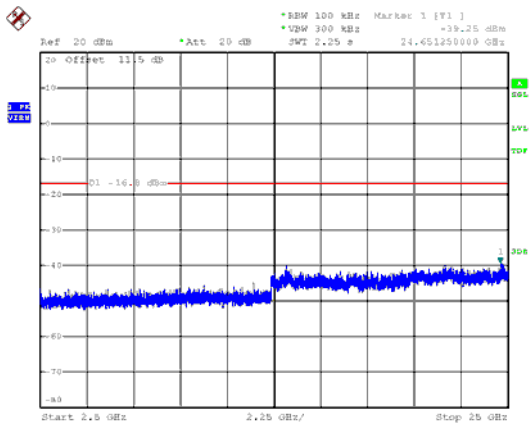
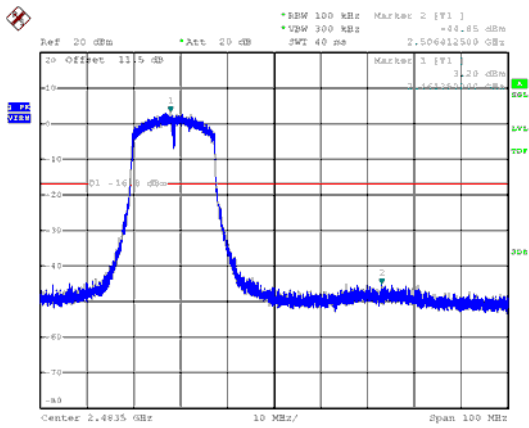
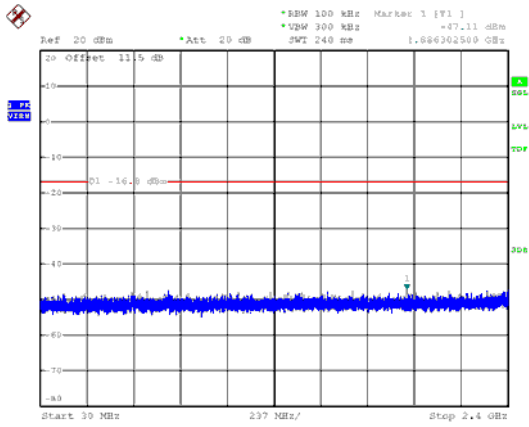
Modulation Type: 802.11n HT20, CH06





ANT B

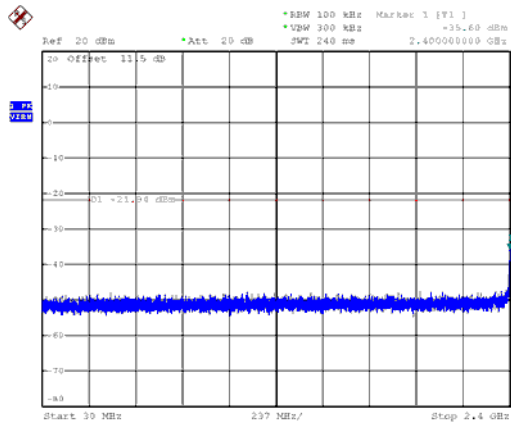
Modulation Type: 802.11n HT20, CH11



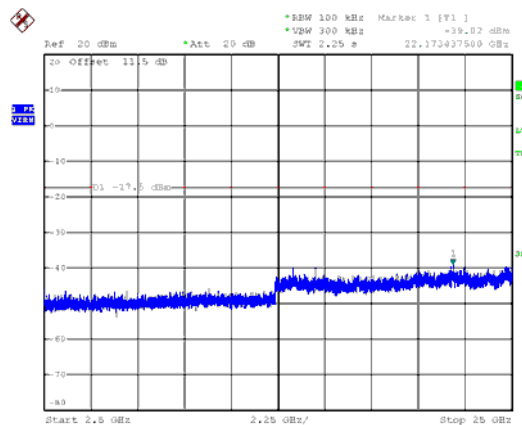
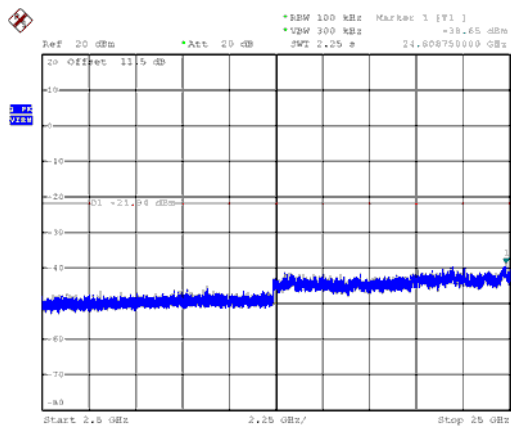
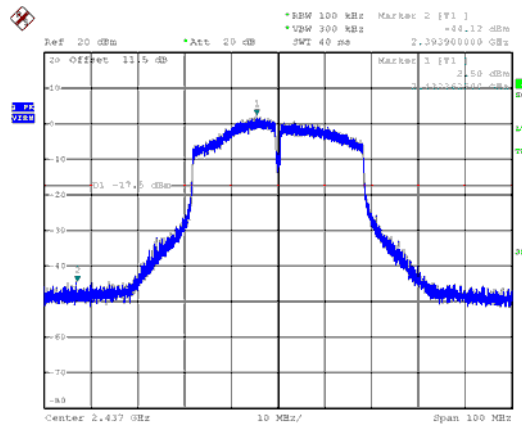
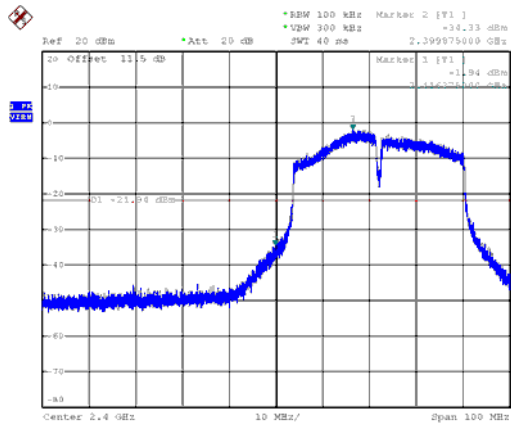
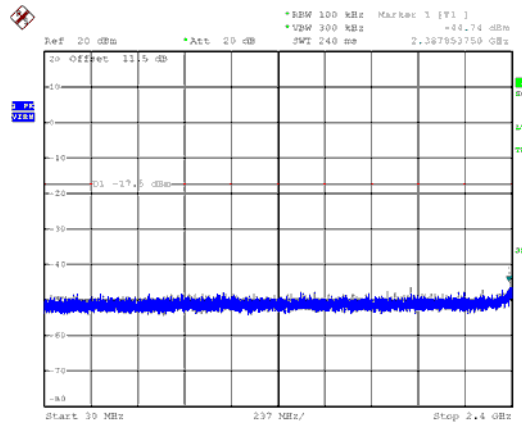


ANT B

Modulation Type: 802.11n HT40, CH03



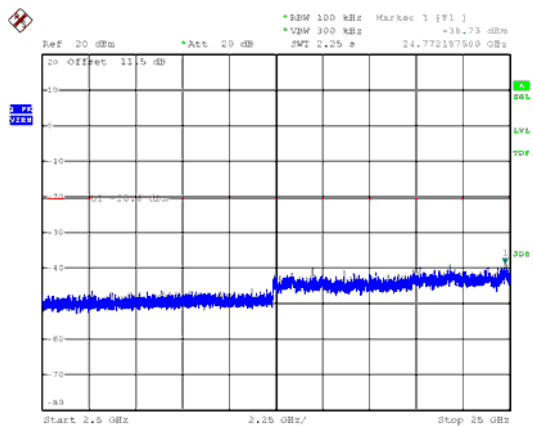
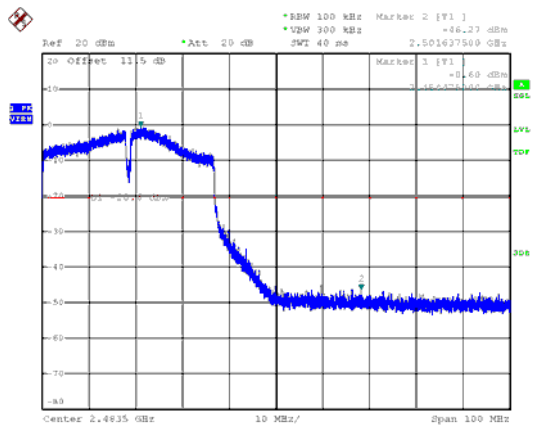
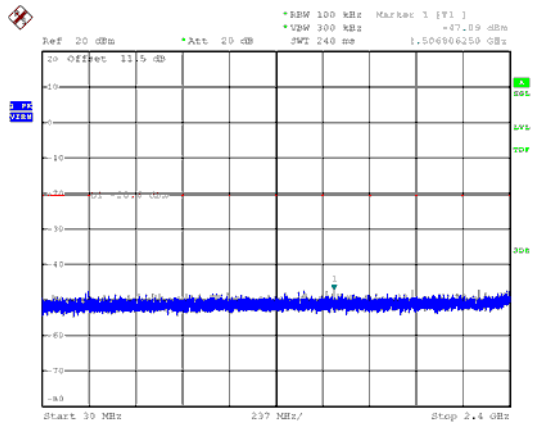
Modulation Type: 802.11n HT40, CH06





ANT B

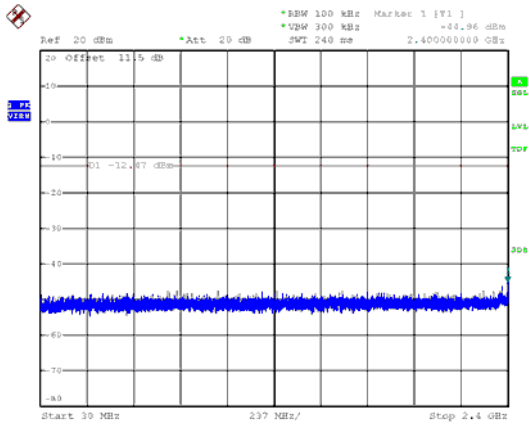
Modulation Type: 802.11n HT40, CH09



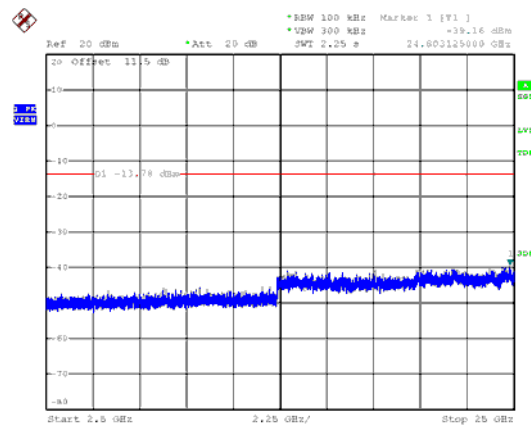
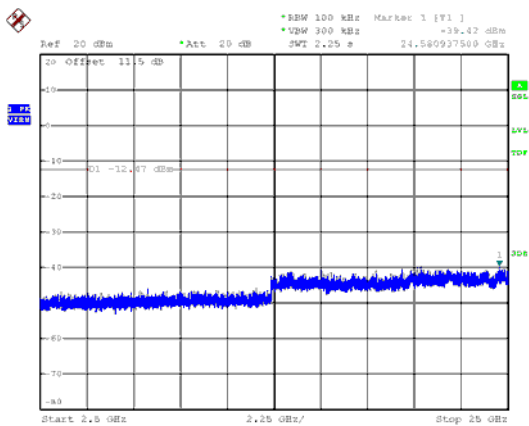
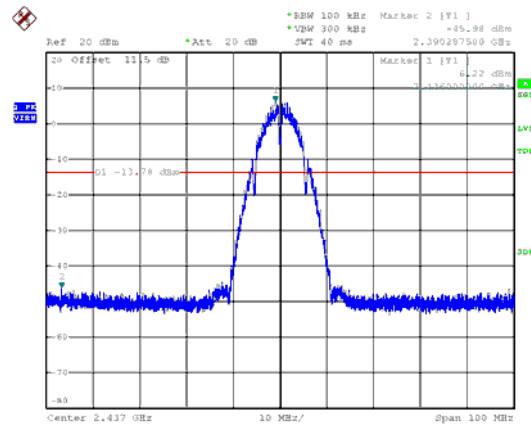
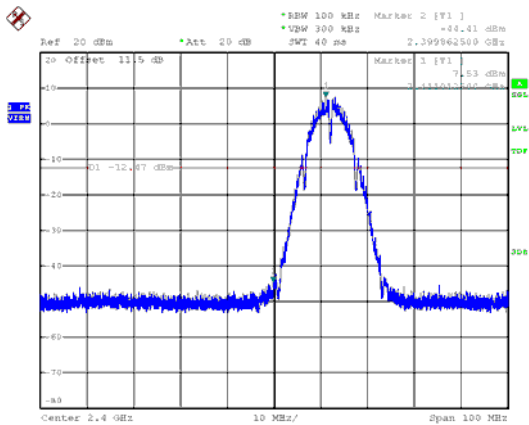
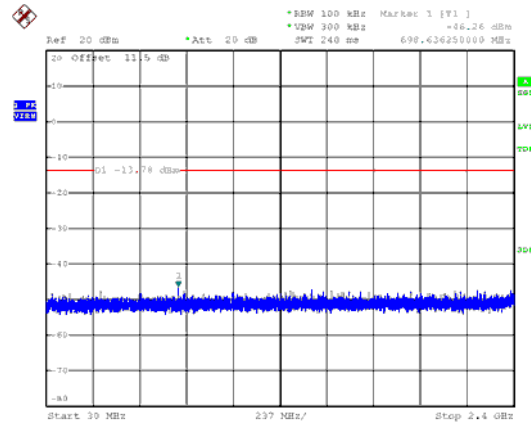


ANT C

Modulation Type: 802.11b, CH 01



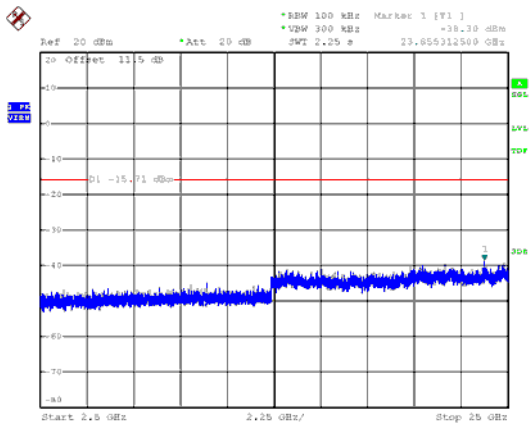
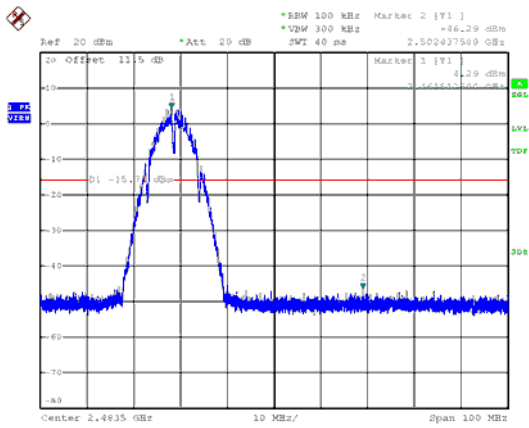
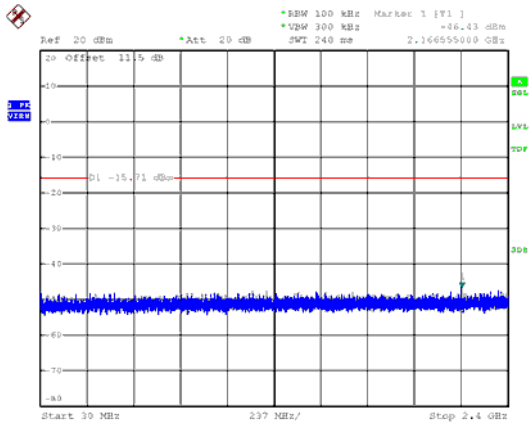
Modulation Type: 802.11b, CH 06





ANT C

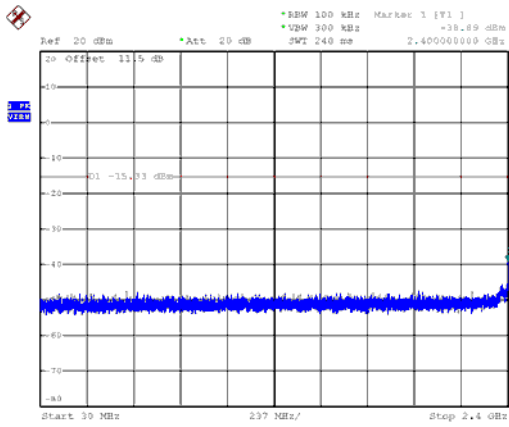
Modulation Type: 802.11b, CH 11



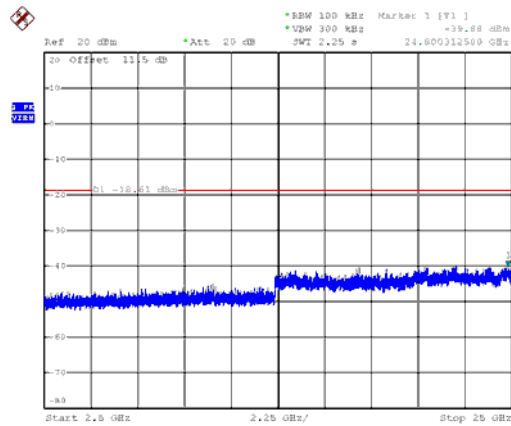
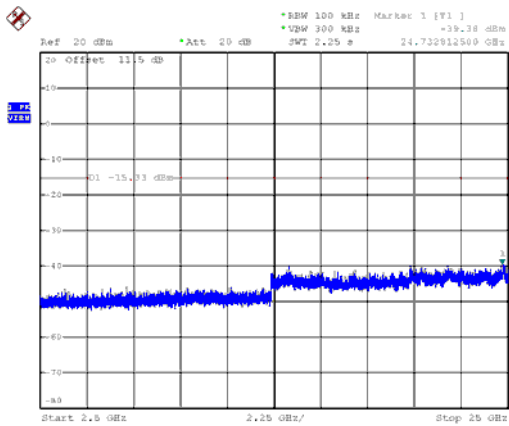
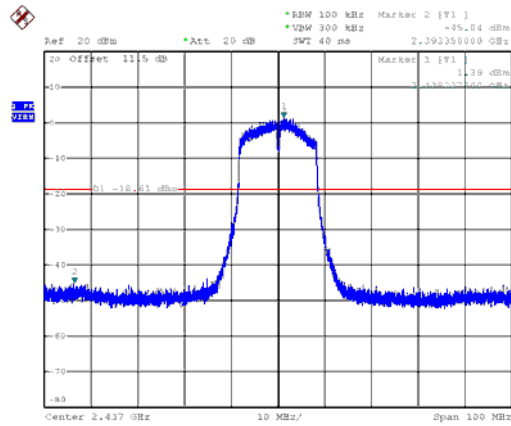
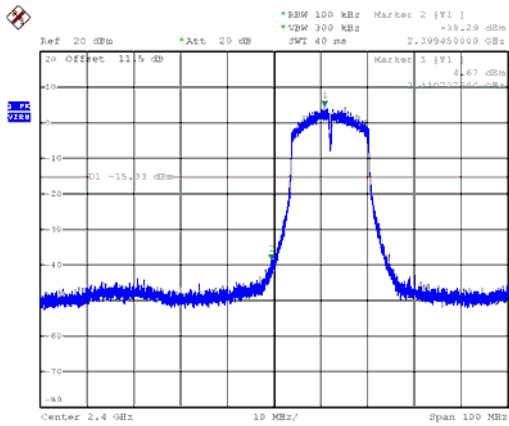
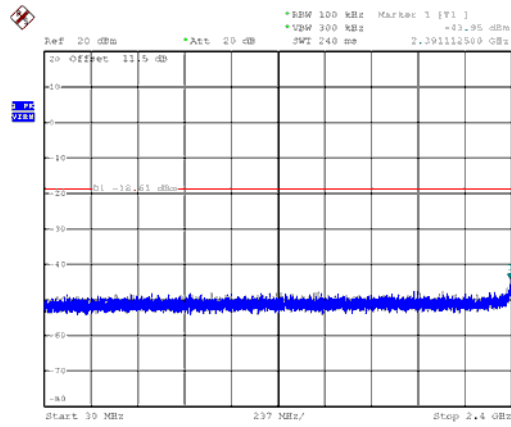


ANT C

Modulation Type: 802.11g, CH 01



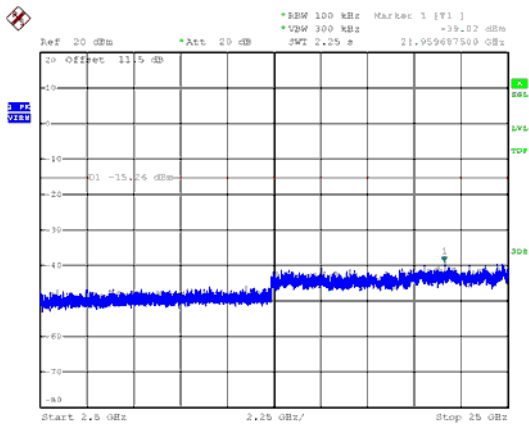
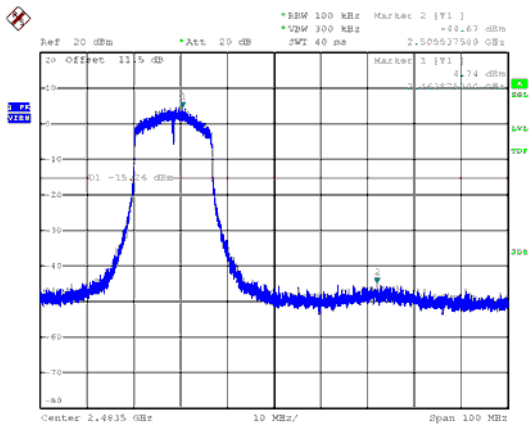
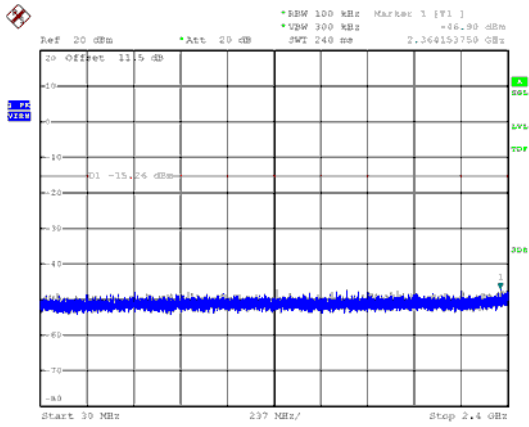
Modulation Type: 802.11g, CH 06





ANT C

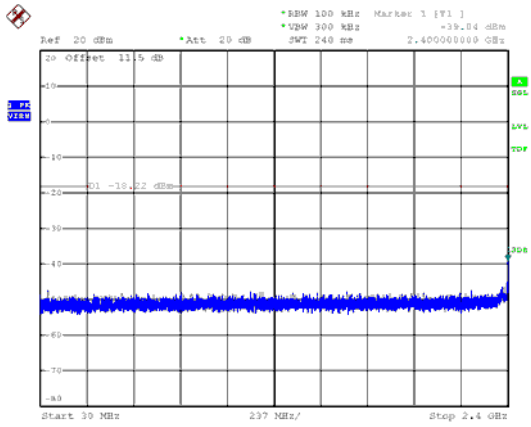
Modulation Type: 802.11g, CH 11



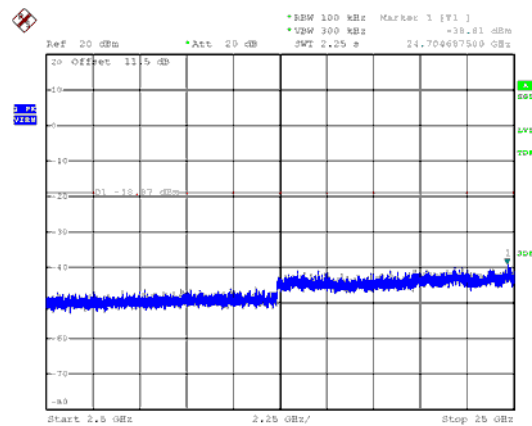
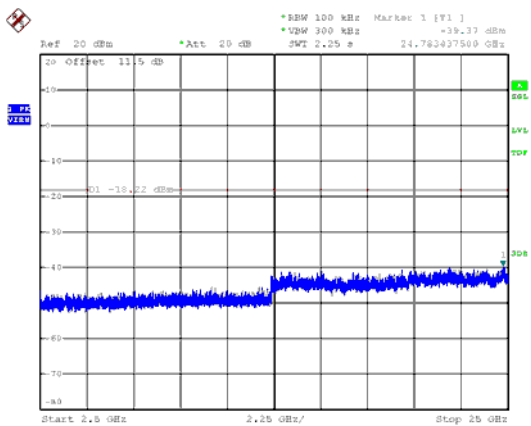
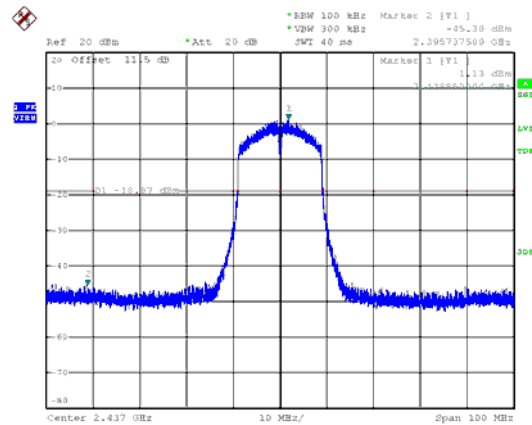
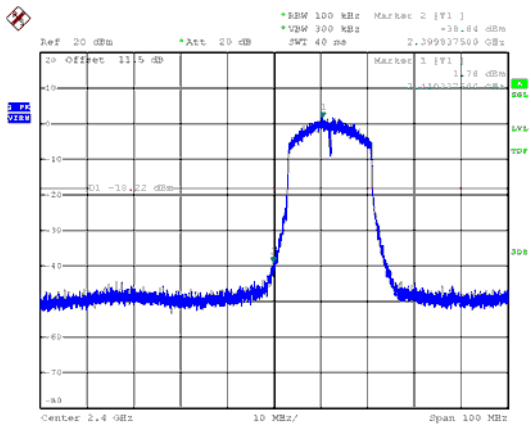
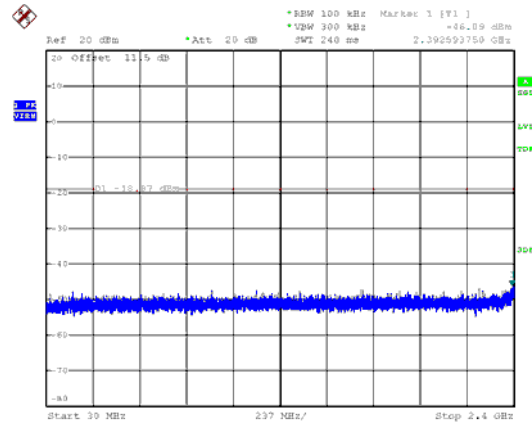


ANT C

Modulation Type: 802.11n HT20, CH01



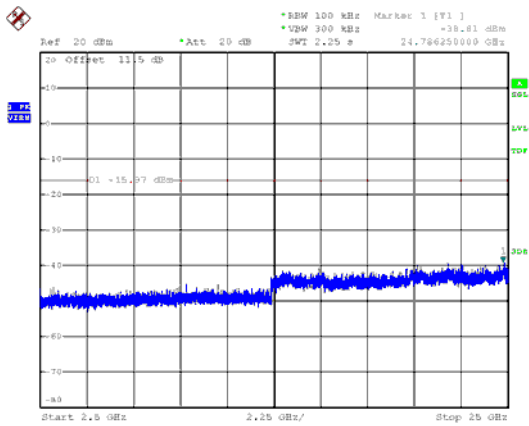
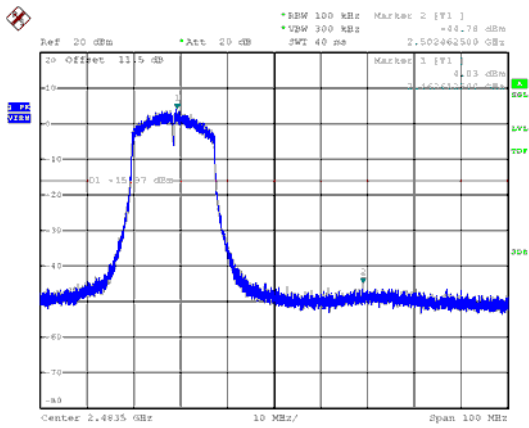
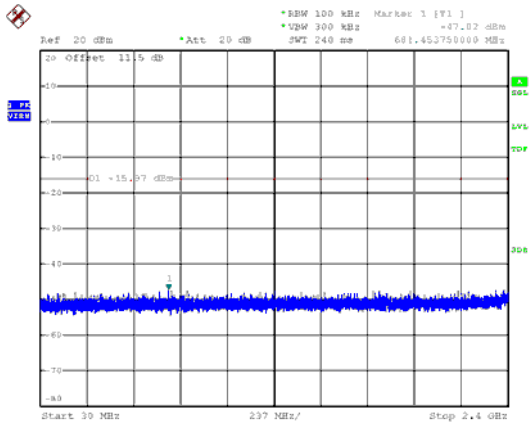
Modulation Type: 802.11n HT20, CH06





ANT C

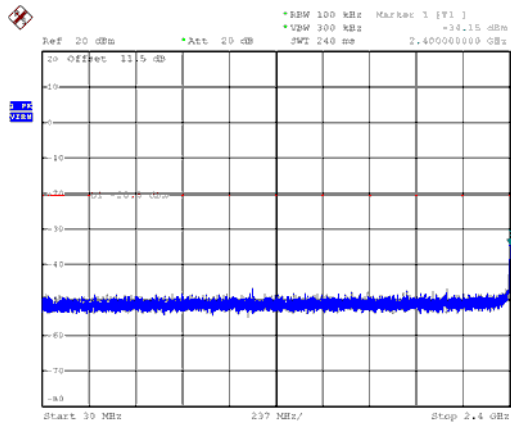
Modulation Type: 802.11n HT20, CH11



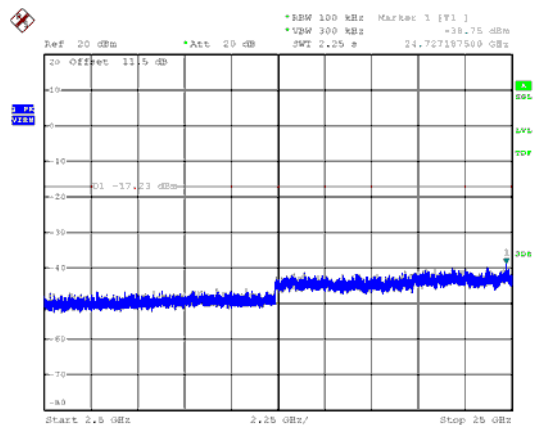
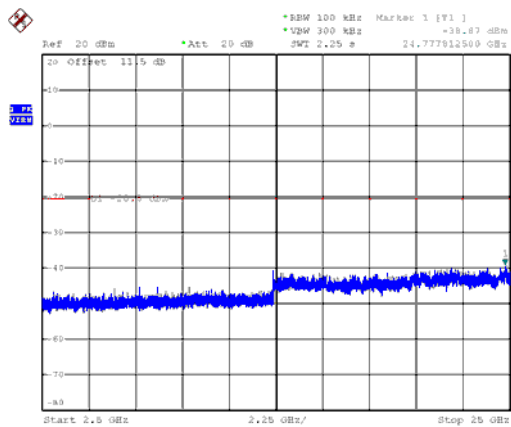
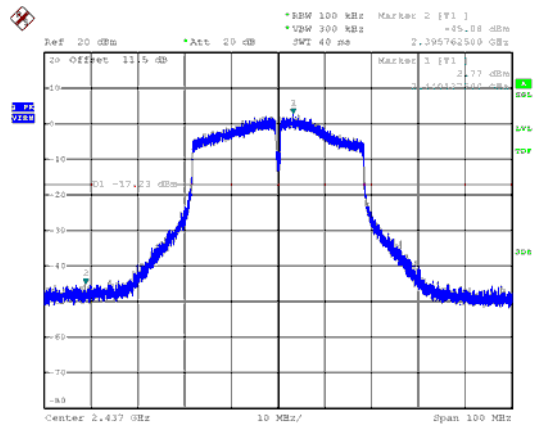
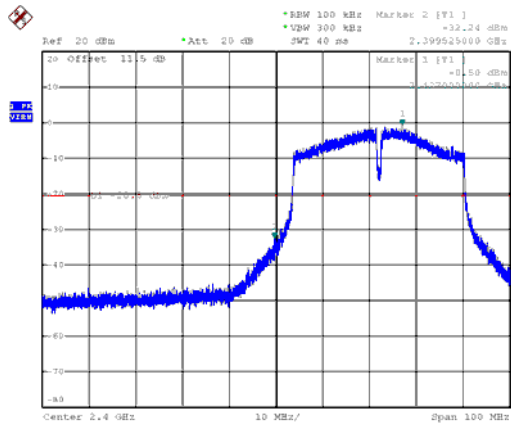
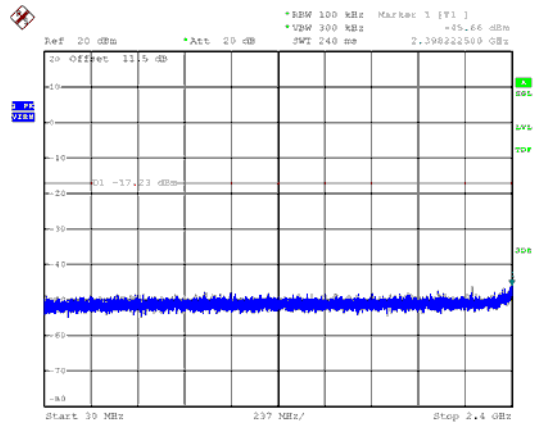


ANT C

Modulation Type: 802.11n HT40, CH03



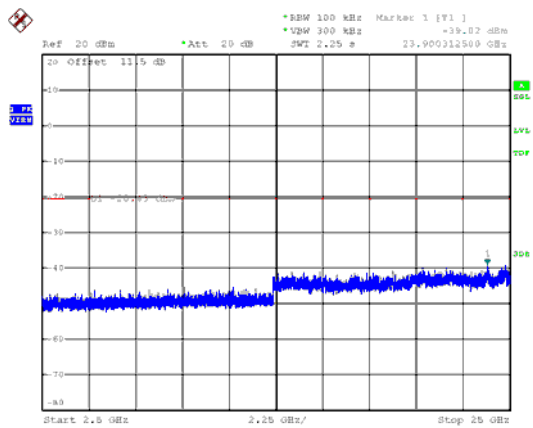
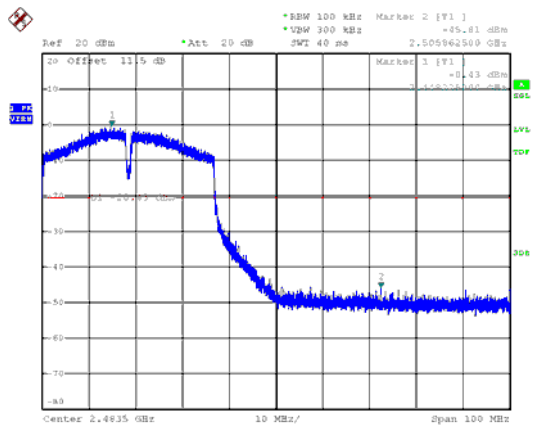
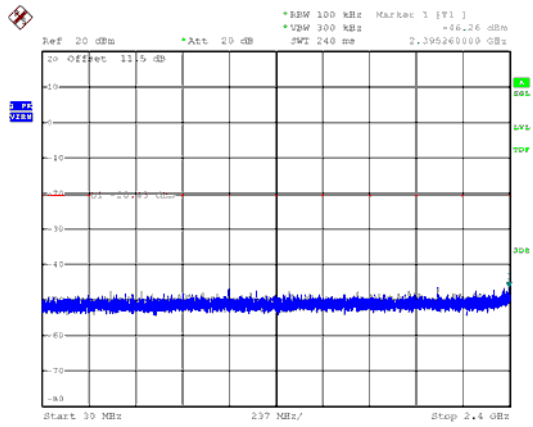
Modulation Type: 802.11n HT40, CH06





ANT C

Modulation Type: 802.11n HT40, CH09





8. On Time, Duty Cycle and Measurement methods

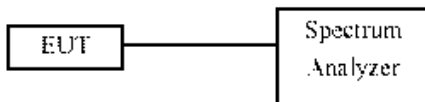
8.1 Test Limit

None; for reporting purposes only.

8.2 Test Procedure

Zero-Span Spectrum Analyzer Method.

8.3 Test Setup Layout

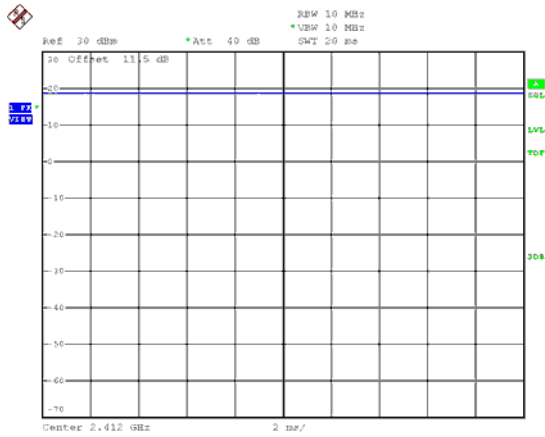


8.4 Test Result and Data

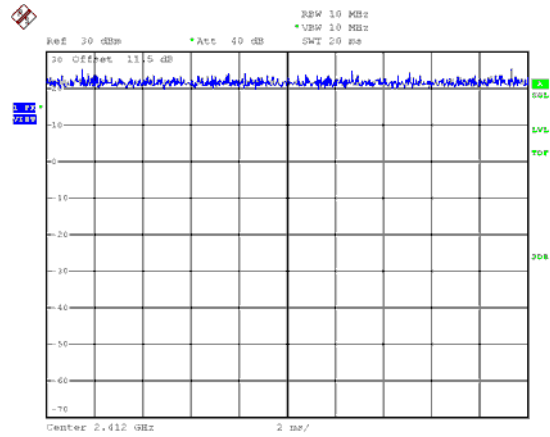
Modulation Type	On Time (msec)	Period Time (msec)	Duty Cycle (%)
11b,1M	100.00	100.00	100.00%
11g,6M	100.00	100.00	100.00%
11n HT20	100.00	100.00	100.00%
11n HT40	100.00	100.00	100.00%



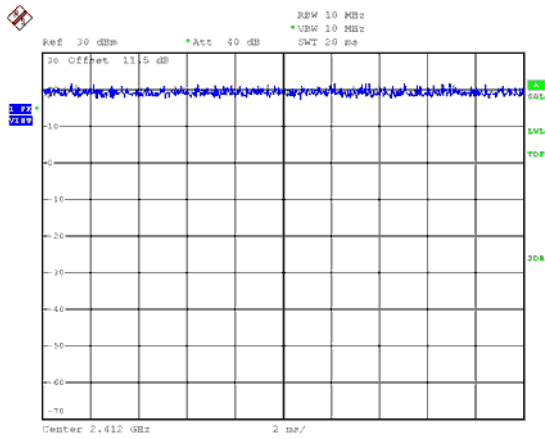
Modulation Type: 802.11b (1Mbps)



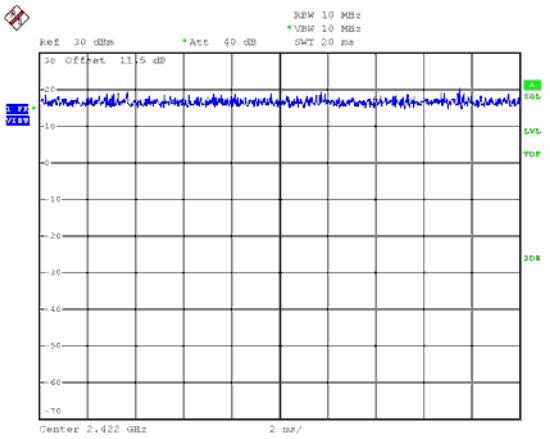
Modulation Type: 802.11g (6Mbps)



Modulation Type: 802.11ac VHT20 (6.5Mbps)



Modulation Type: 802.11ac VHT40 (13.5Mbps)





9. 6dB Bandwidth Measurement Data

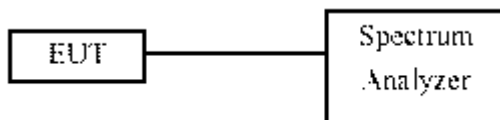
9.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

9.2 Test Procedures

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 100 KHz and VBW to 300 KHz.
- The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.
- The 6dB Bandwidth was measured and recorded.

9.3 Test Setup Layout



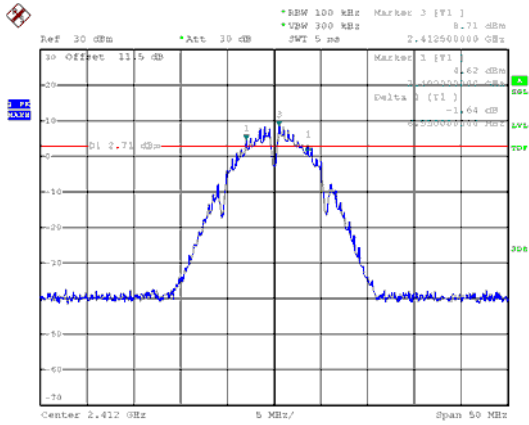
9.4 Test Result and Data

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Limit (MHz)
			ANT A (J9)	ANT B (J10)	ANT C (J8)	
11b	01	2412	6.55	6.55	7.05	0.5
	06	2437	7.55	6.55	7.00	0.5
	11	2462	6.55	6.10	7.00	0.5
11g	01	2412	15.30	14.40	15.45	0.5
	06	2437	15.40	15.45	15.05	0.5
	11	2462	15.30	14.90	15.65	0.5
11n HT20	01	2412	15.55	14.20	16.30	0.5
	06	2437	16.65	14.15	16.65	0.5
	11	2462	16.90	16.30	15.95	0.5
11n HT40	03	2422	30.70	27.90	25.80	0.5
	06	2437	31.60	30.80	30.60	0.5
	09	2452	32.20	31.00	30.90	0.5

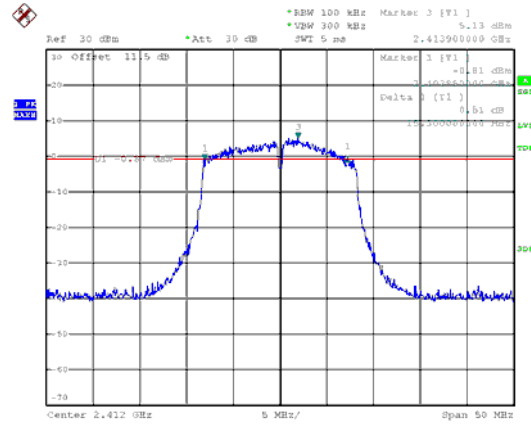


ANT A

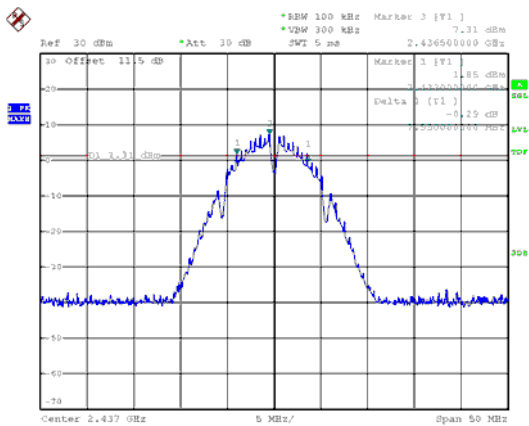
Modulation Type: 802.11b
CH01



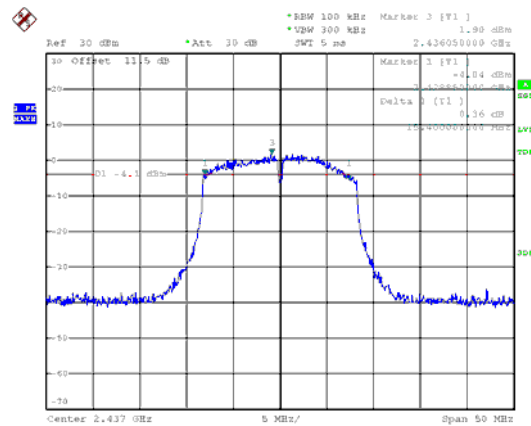
Modulation Type: 802.11g
CH01



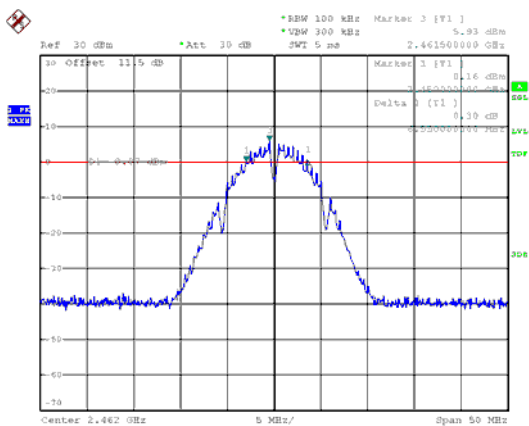
CH06



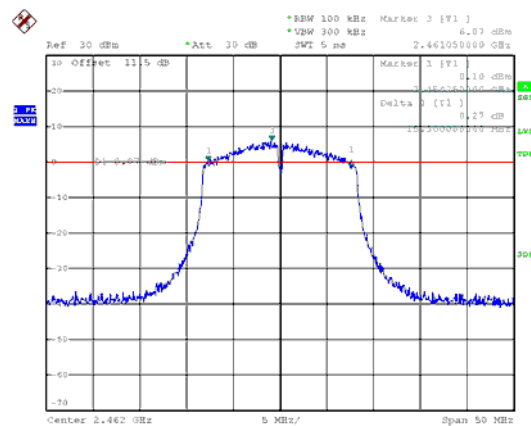
CH06



CH11



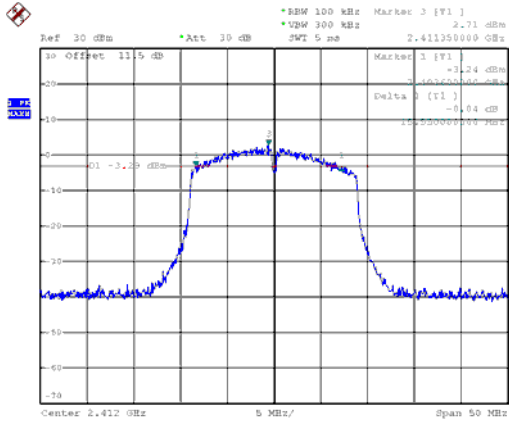
CH11



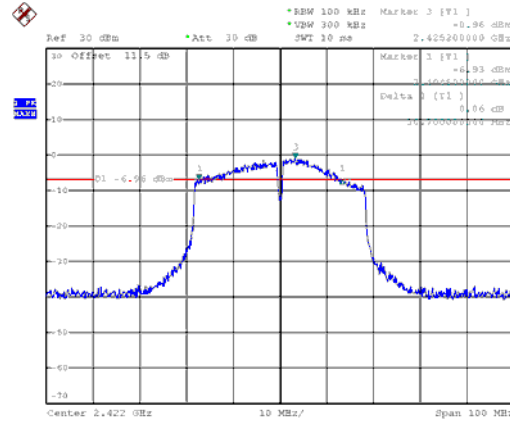


ANT A

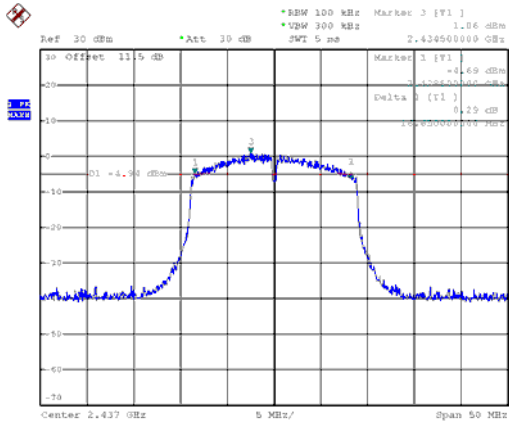
Modulation Type: 802.11n HT20
CH01



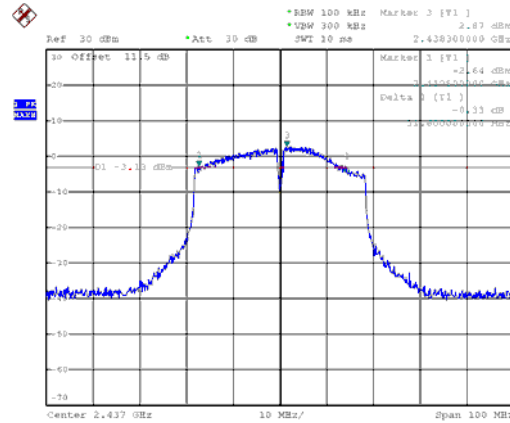
Modulation Type: 802.11n HT40
CH03



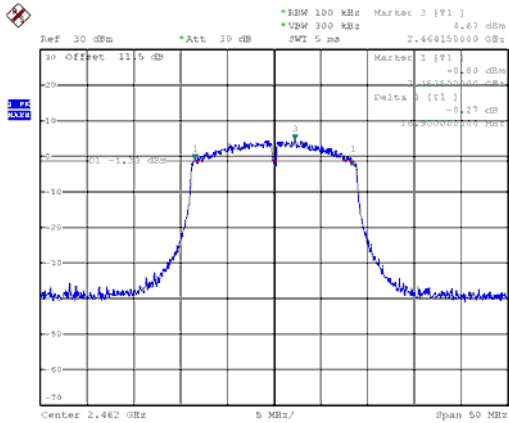
CH06



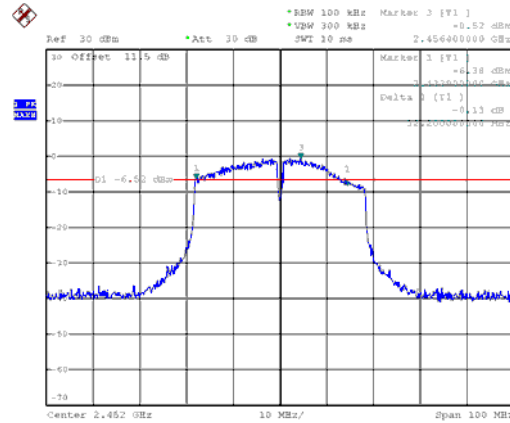
CH06



CH11

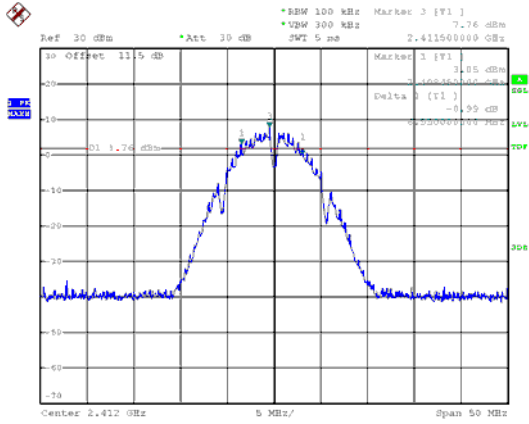


CH09

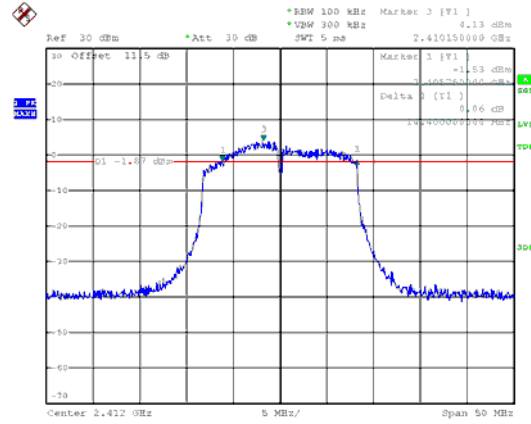




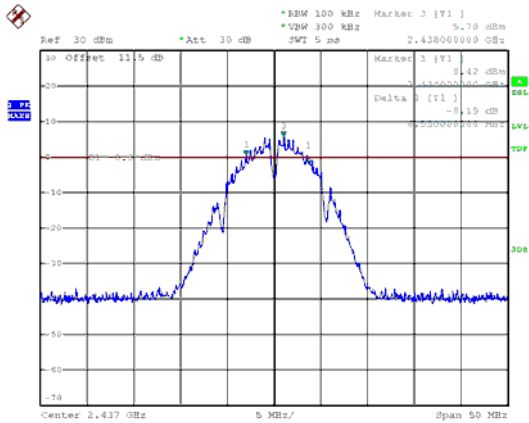
ANT B
Modulation Type: 802.11b
CH01



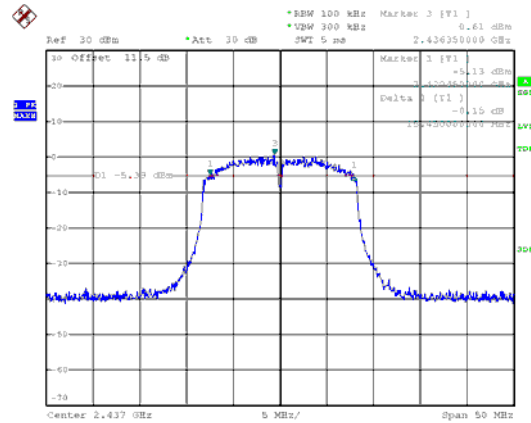
Modulation Type: 802.11g
CH01



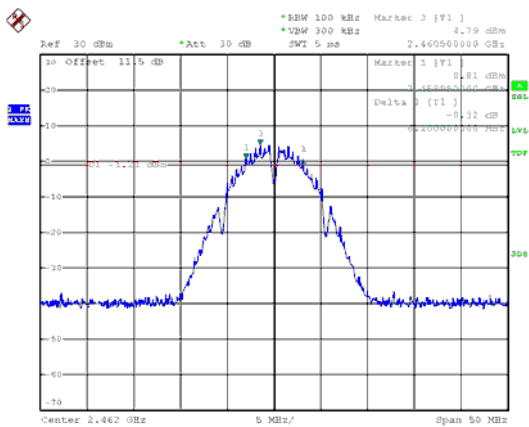
CH06



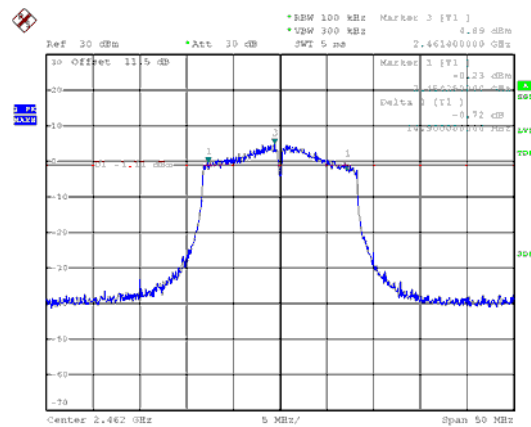
CH06



CH11



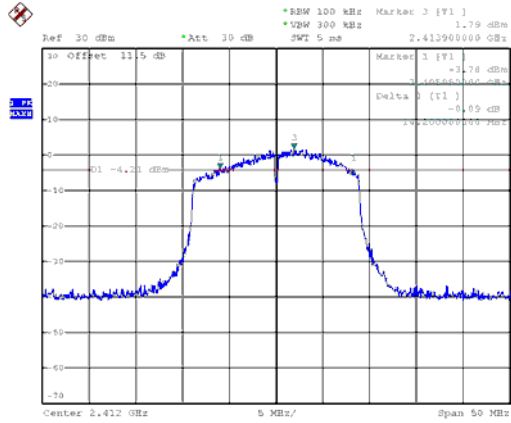
CH11



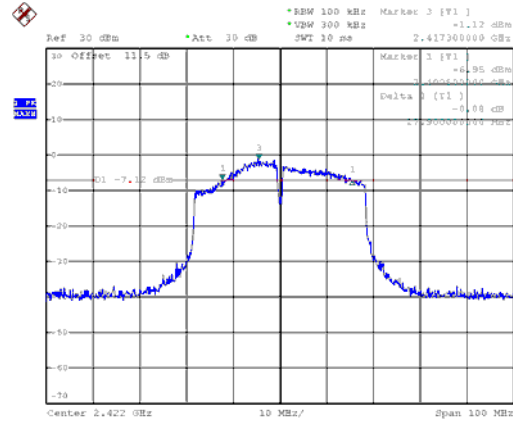


ANT B

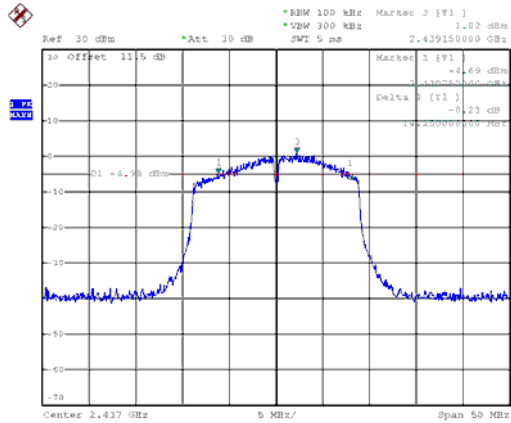
Modulation Type: 802.11n HT20
CH01



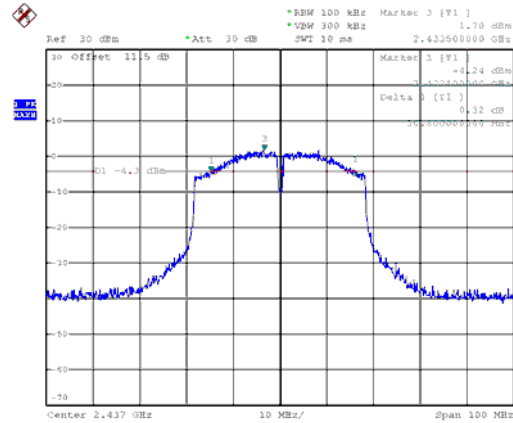
Modulation Type: 802.11n HT40
CH03



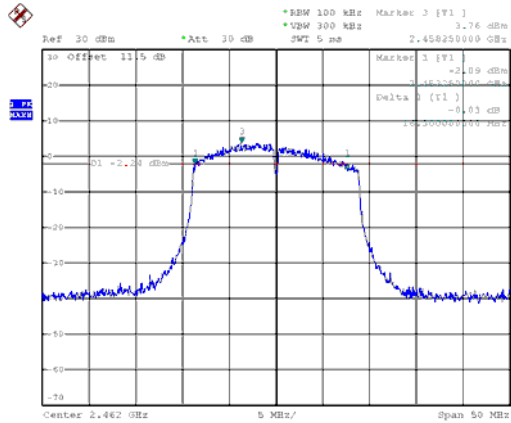
CH06



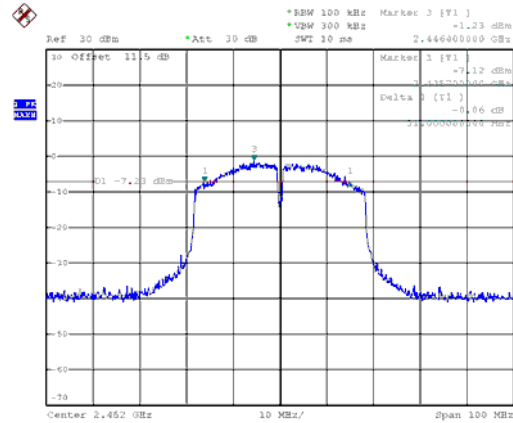
CH06



CH11

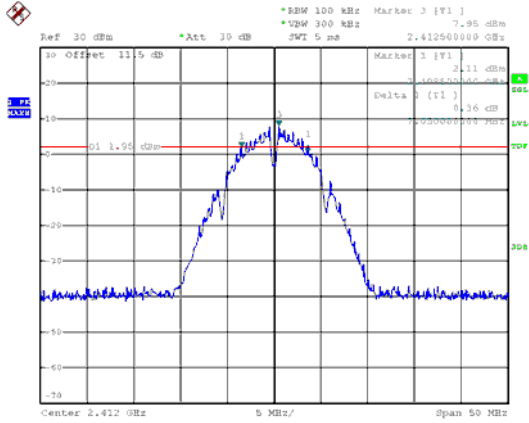


CH09

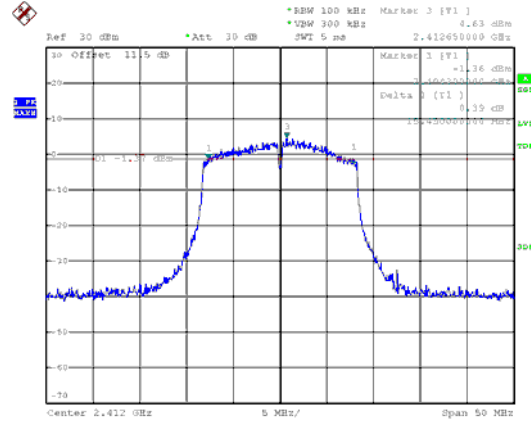




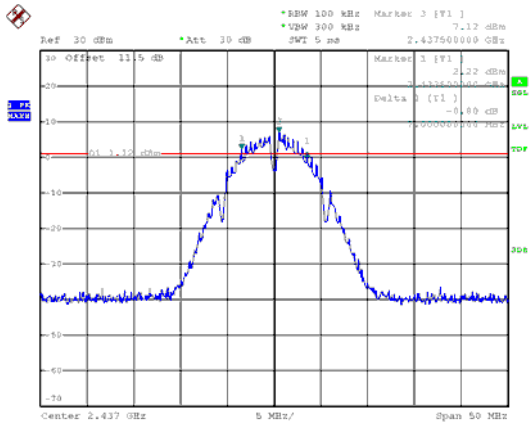
ANT C
Modulation Type: 802.11b
CH01



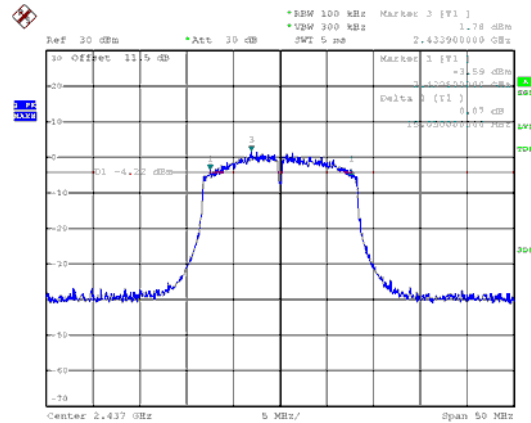
Modulation Type: 802.11g
CH01



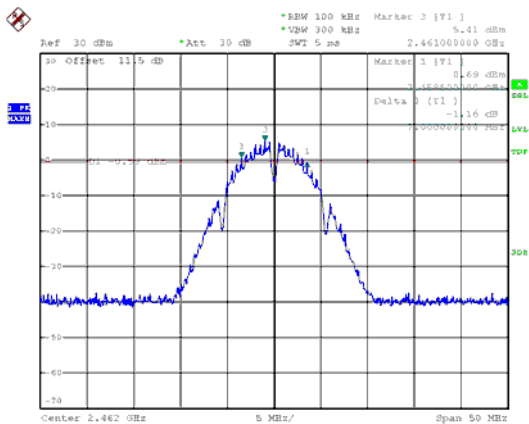
CH06



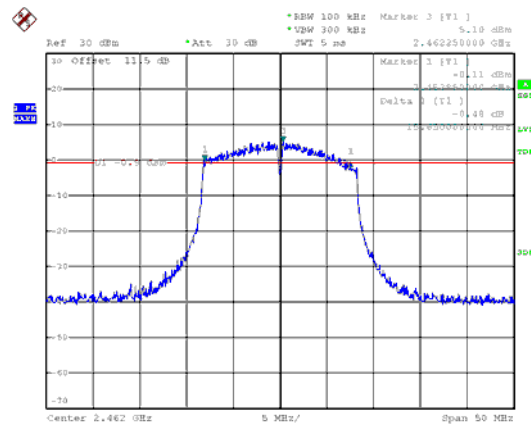
CH06



CH11



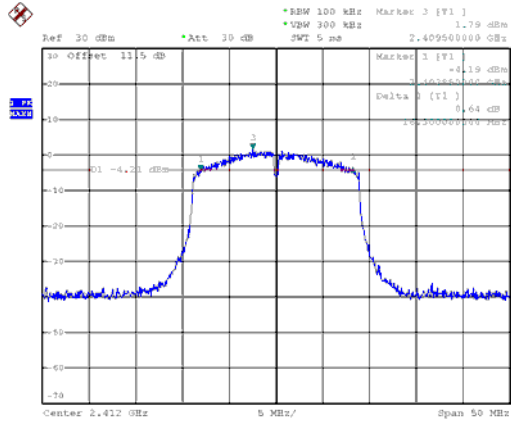
CH11



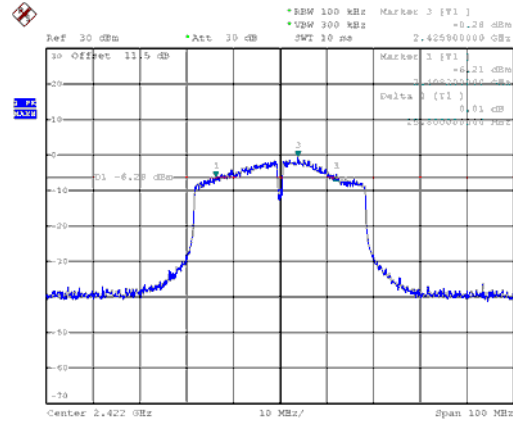


ANT C

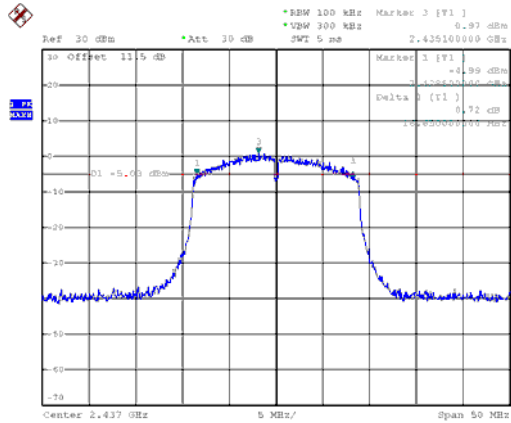
Modulation Type: 802.11n HT20
CH01



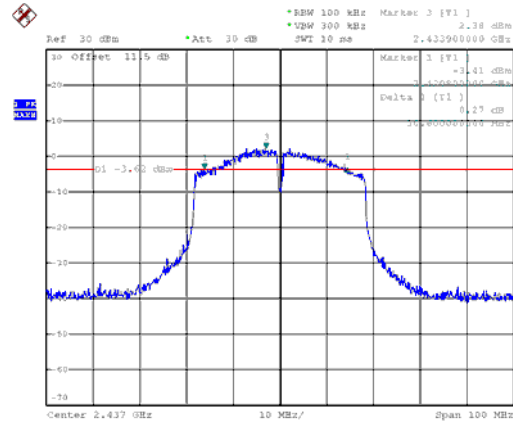
Modulation Type: 802.11n HT40
CH03



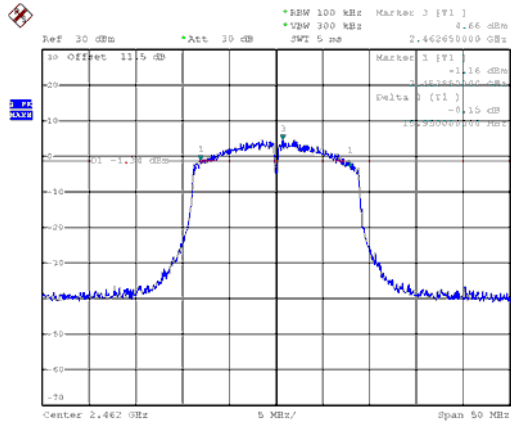
CH06



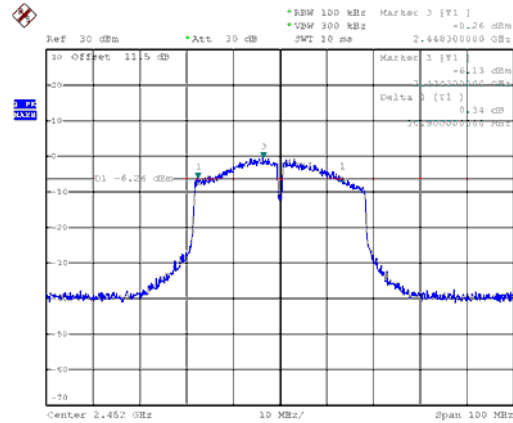
CH06



CH11



CH09





10. Maximum Peak and Average Output Power

10.1 Test Limit

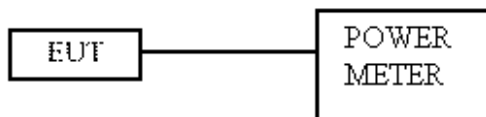
The Maximum Peak Output Power Measurement is 30dBm.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

10.2 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.

10.3 Test Setup Layout



10.4 Test Result and Data

Modulation Type	Channel	Frequency (MHz)	Peak Power Output (dBm)			Total PK Power (mW)	Total PK Power (dBm)	Limit (dBm)
			ANT A(J9)	ANT B(J10)	ANT C(J8)			
11b	01	2412	17.90	16.78	17.98	22.36	172.108	30.00
	06	2437	16.96	16.12	17.38	21.62	145.287	30.00
	11	2462	14.56	14.55	15.39	19.62	91.680	30.00
11g	01	2412	23.93	23.71	24.62	28.88	771.870	30.00
	06	2437	21.49	21.94	22.76	26.87	486.043	30.00
	11	2462	24.88	25.21	25.24	29.88	973.699	30.00
11n HT20	01	2412	22.46	22.01	23.96	27.66	583.938	30.00
	06	2437	21.94	21.56	21.46	26.43	439.492	30.00
	11	2462	24.34	25.24	24.66	29.53	898.254	30.00
11n HT40	03	2422	21.73	21.33	22.02	26.47	443.988	30.00
	06	2437	24.69	24.88	24.97	29.62	916.103	30.00
	09	2452	21.55	21.68	22.03	26.53	449.709	30.00



Modulation Type	Channel	Frequency (MHz)	Avg. Power Output (dBm)			Total Avg. Power (mW)	Total Avg. Power (dBm)	Limit (dBm)
			ANT A(J9)	ANT B(J10)	ANT C(J8)			
11b	01	2412	14.12	13.75	14.62	18.95	78.510	NA
	06	2437	13.64	13.75	13.85	18.52	71.100	NA
	11	2462	11.48	11.83	11.91	16.52	44.825	NA
11g	01	2412	16.11	15.84	16.89	21.07	128.068	NA
	06	2437	13.59	13.72	13.83	18.49	70.561	NA
	11	2462	17.08	17.31	17.48	22.06	160.853	NA
11n HT20	01	2412	14.26	13.81	14.65	19.02	79.886	NA
	06	2437	13.46	13.62	13.76	18.39	68.965	NA
	11	2462	16.86	17.36	17.16	21.90	154.979	NA
11n HT40	03	2422	13.51	13.51	14.33	18.57	71.980	NA
	06	2437	17.38	17.35	17.46	22.17	164.745	NA
	09	2452	14.08	14.57	14.61	19.20	83.134	NA

Note: Average power is for reference only.



11. Power Spectral Density

11.1 Test Limit

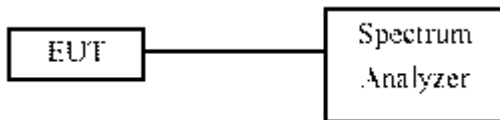
The Maximum of Power Spectral Density Measurement is 8dBm.

If transmitting antennas of directional gain greater than 6 dBi are used, the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

11.2 Test Procedures

- a. The transmitter output was connected to spectrum analyzer.
- b. The spectrum analyzer’s resolution bandwidth were set at 3kHz RBW and 10KHz VBW as that of the fundamental frequency. Set the sweep time=auto couple.
- c. The power spectral density was measured and recorded.

11.3 Test Setup Layout

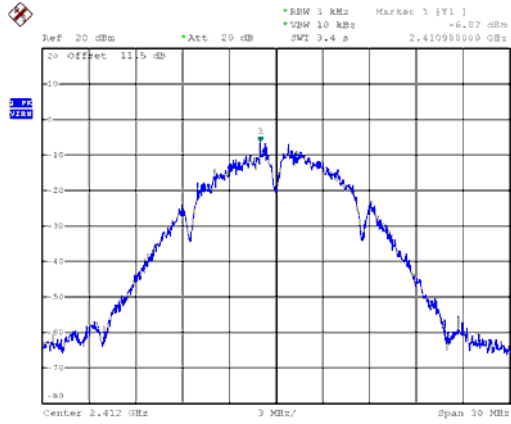


11.4 Test Result and Data

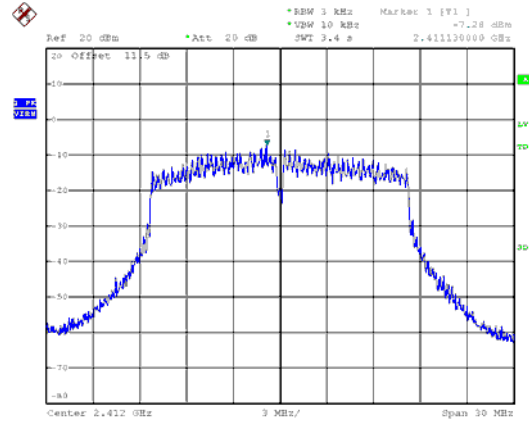
Modulation Type	Channel	Frequency (MHz)	Maximum Power Density of 3 kHz Bandwidth (dBm)			Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
			ANT A(J9)	ANT B(J10)	ANT C(J8)				
11b	01	2412	-6.02	-8.39	-6.79	-2.19	0.00	-2.19	4.23
	06	2437	-7.54	-8.4	-7.83	-3.14	0.00	-3.14	4.23
	11	2462	-9.75	-11.09	-9.57	-5.31	0.00	-5.31	4.23
11g	01	2412	-7.28	-7.62	-7.39	-2.66	0.00	-2.66	4.23
	06	2437	-10.52	-10.79	-9.82	-5.59	0.00	-5.59	4.23
	11	2462	-7.67	-7.81	-6.68	-2.59	0.00	-2.59	4.23
11n HT20	01	2412	-10.54	-11.03	-10.24	-5.82	0.00	-5.82	4.23
	06	2437	-10.54	-12.56	-10.64	-6.38	0.00	-6.38	4.23
	11	2462	-7.62	-8.87	-8.04	-3.37	0.00	-3.37	4.23
11n HT40	03	2422	-12.38	-14.39	-12.86	-8.36	0.00	-8.36	4.23
	06	2437	-8.97	-10.26	-7.41	-3.95	0.00	-3.95	4.23
	09	2452	-12.56	-12.29	-12.08	-7.53	0.00	-7.53	4.23



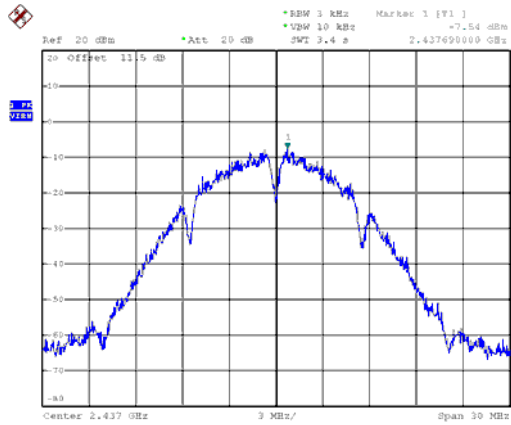
ANT A
Modulation Type: 802.11b
CH01



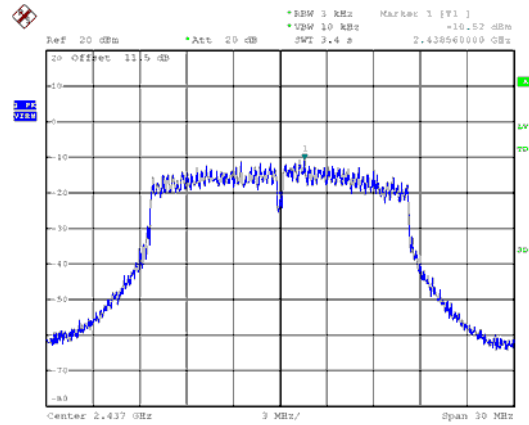
Modulation Type: 802.11g
CH01



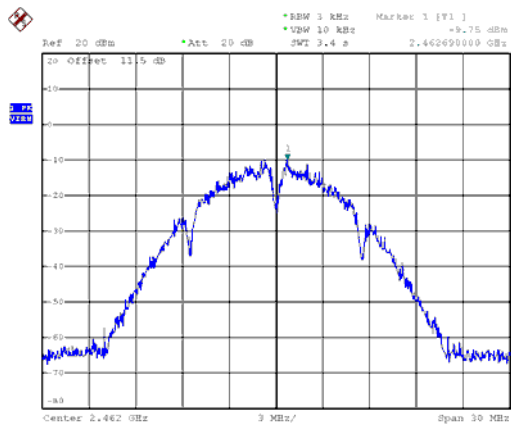
CH06



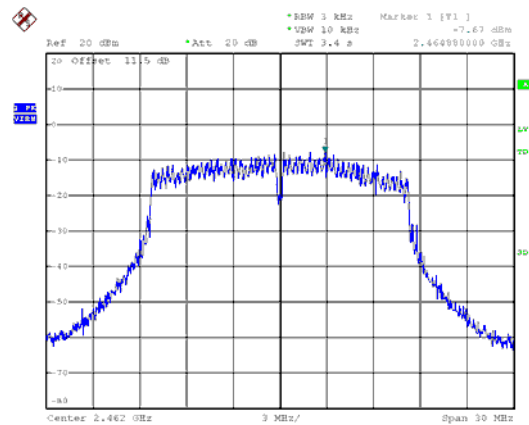
CH06



CH11

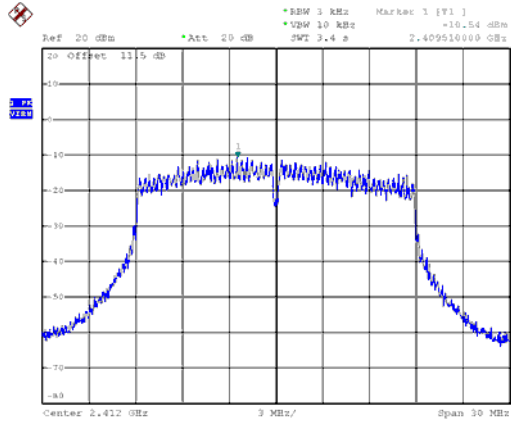


CH11

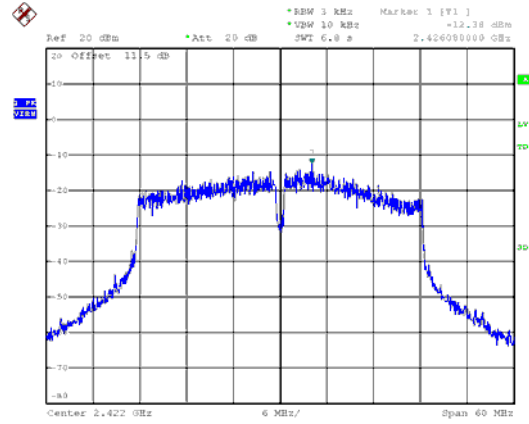




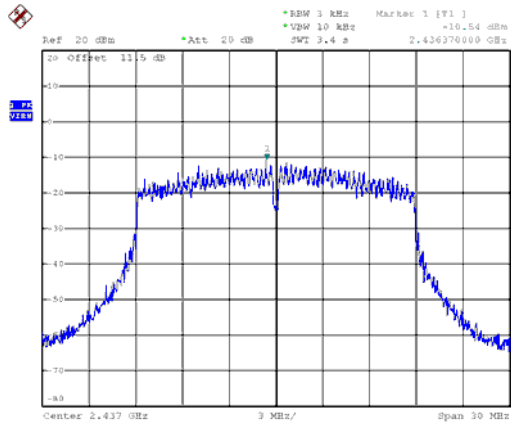
ANT A
Modulation Type: 802.11n HT20
CH01



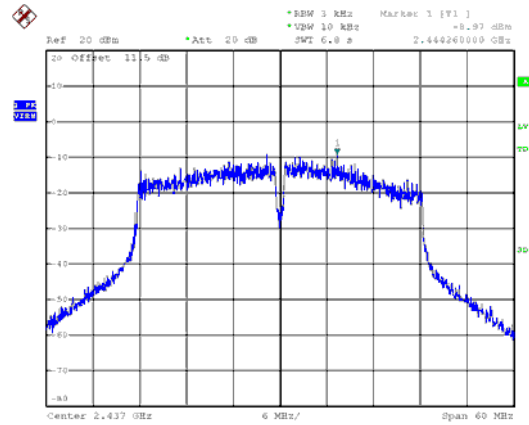
Modulation Type: 802.11n HT40
CH03



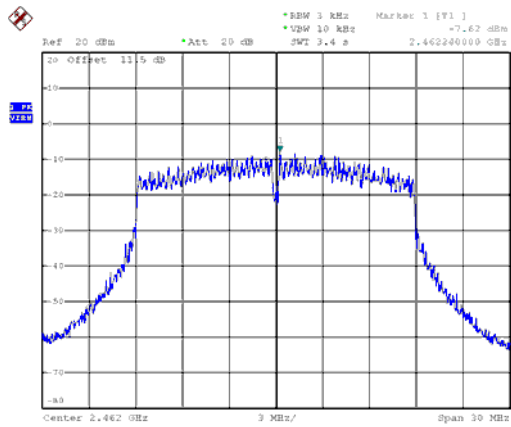
CH06



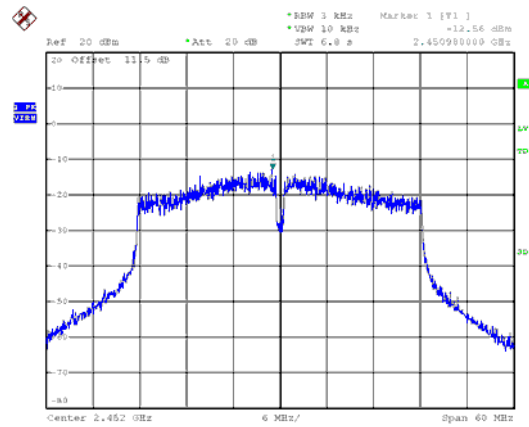
CH06



CH11

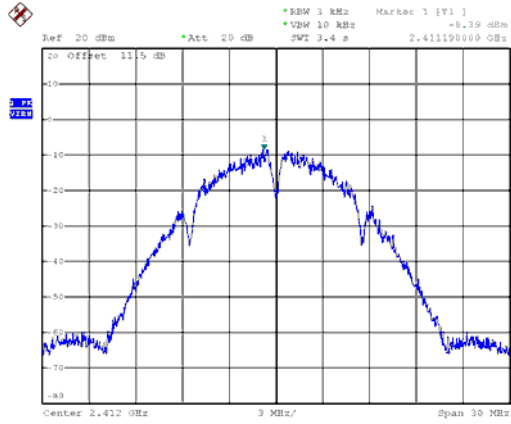


CH09

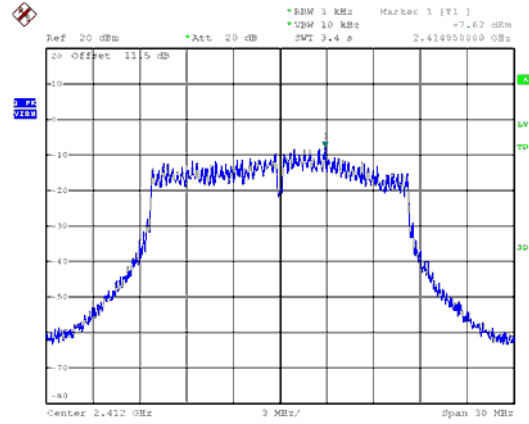




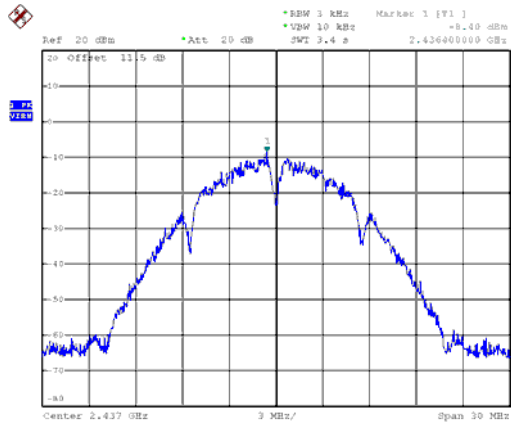
ANT B
Modulation Type: 802.11b
CH01



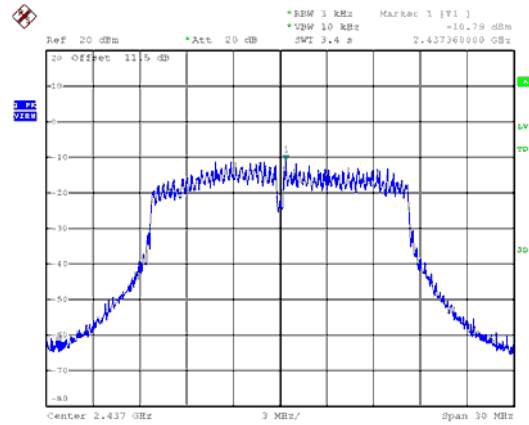
Modulation Type: 802.11g
CH01



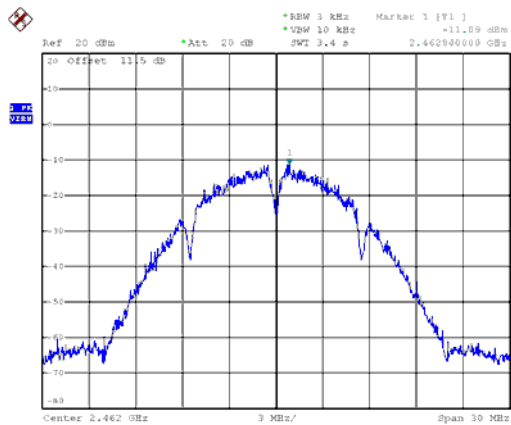
CH06



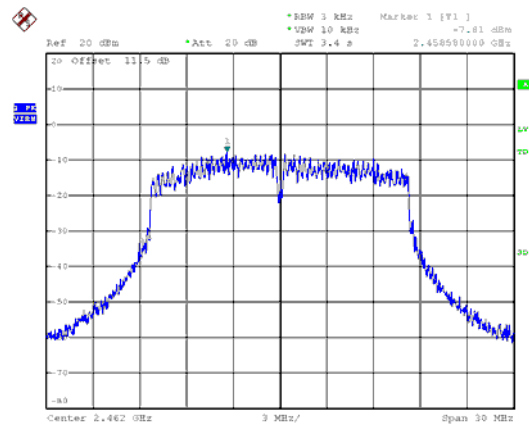
CH06



CH11

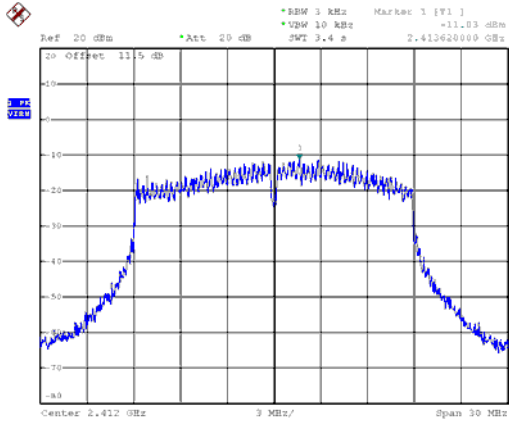


CH11

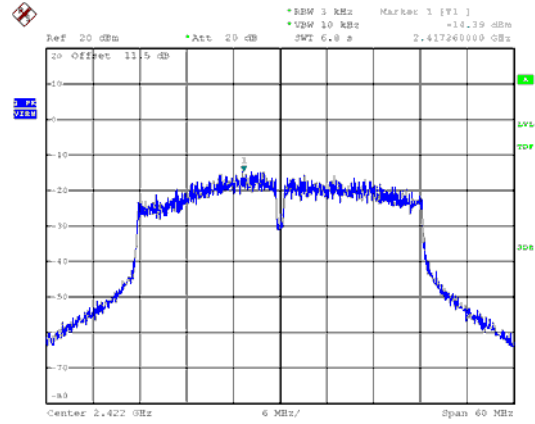




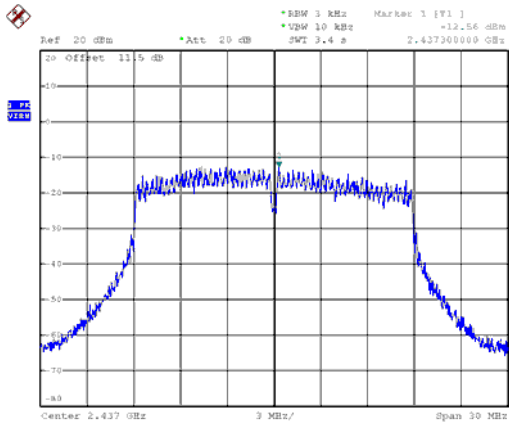
ANT B
Modulation Type: 802.11n HT20
CH01



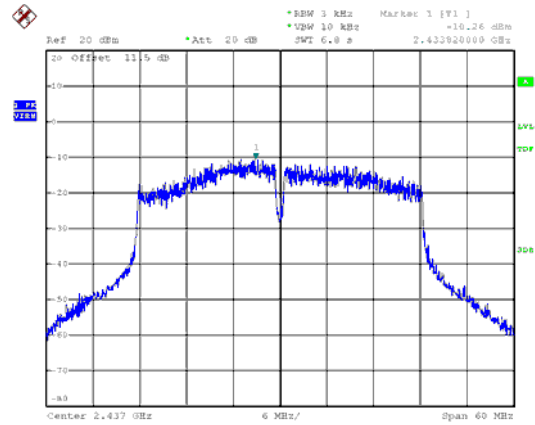
Modulation Type: 802.11n HT40
CH03



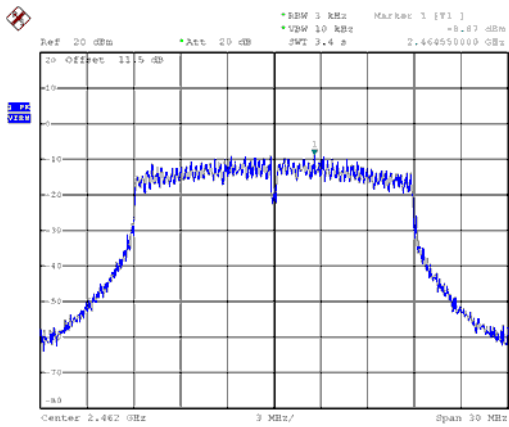
CH06



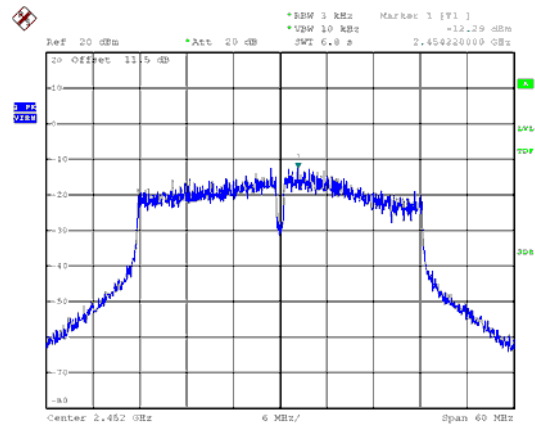
CH06



CH11

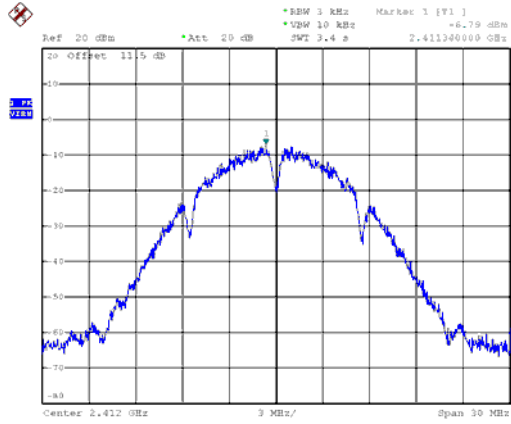


CH09

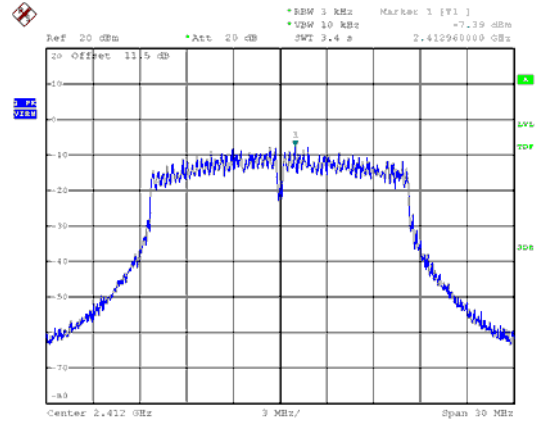




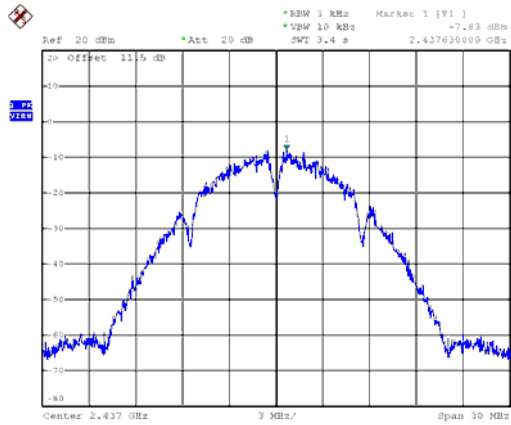
ANT C
Modulation Type: 802.11b
CH01



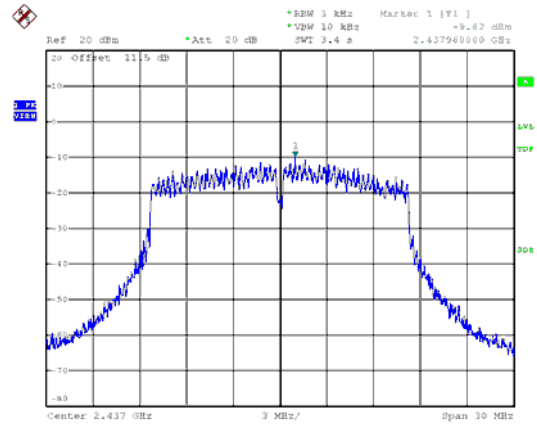
Modulation Type: 802.11g
CH01



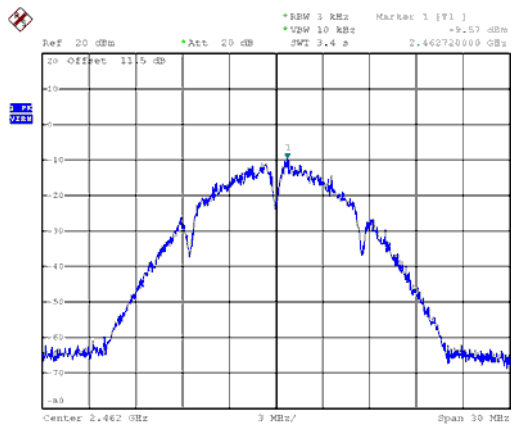
CH06



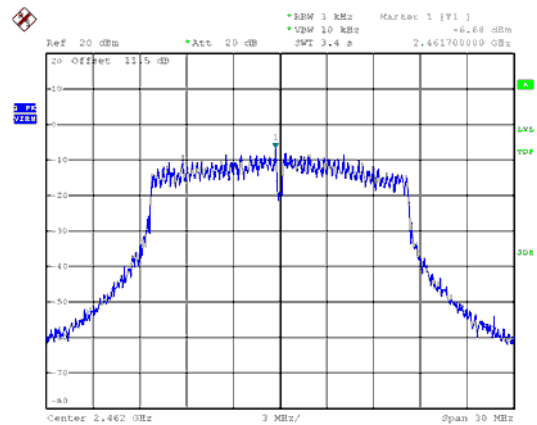
CH06



CH11

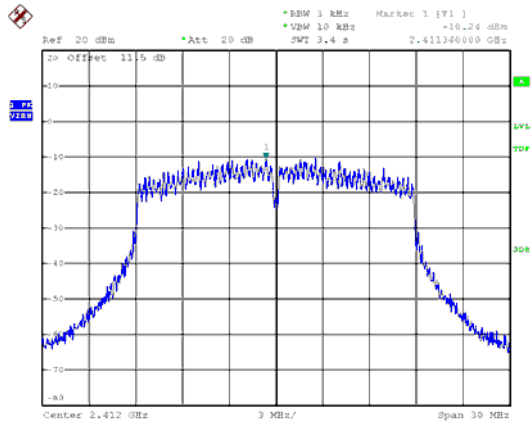


CH11

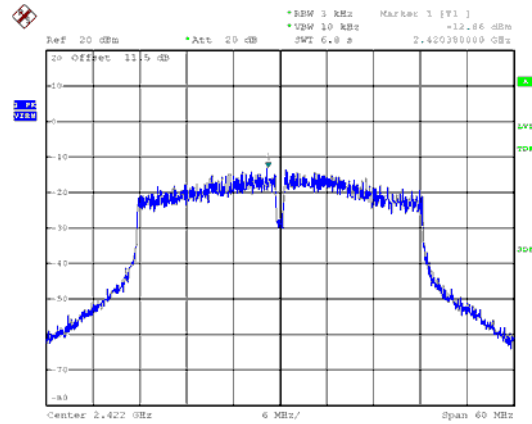




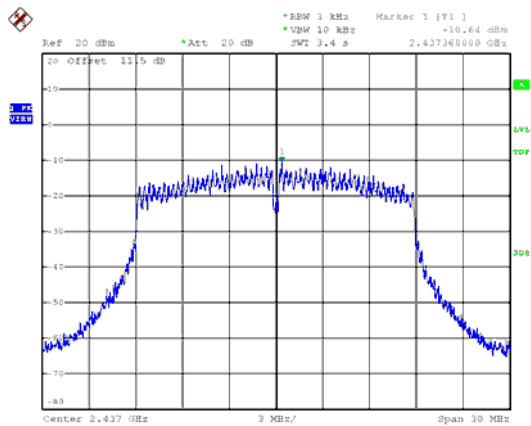
ANT C
Modulation Type: 802.11n HT20
CH01



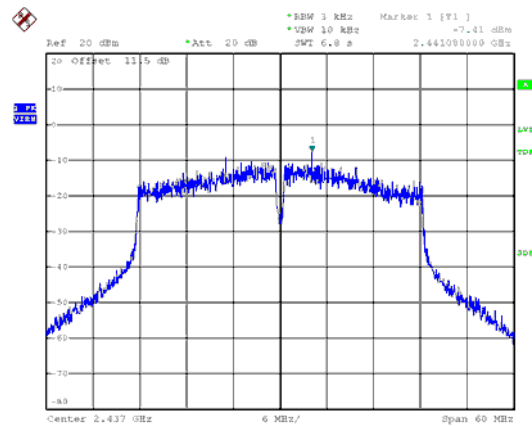
Modulation Type: 802.11n HT40
CH03



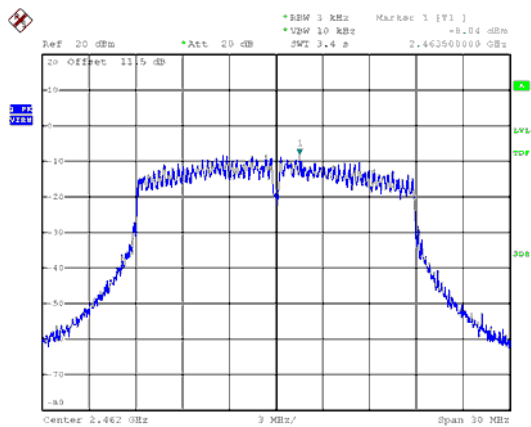
CH06



CH06



CH11



CH09

