CE Radio Test Report

Project No.	:	1504C213
Equipment	:	PHOTON
Model Name	:	PHOTONH, PHOTONNOH
Applicant	:	Spark Labs, Inc.,
Address	:	320 Alabama St #2, San Francisco, CA 94110

Date of Receipt	:	Apr. 22, 2015
Date of Test	:	Apr. 22, 2015 ~ May 21, 2015
Issued Date	:	May 22, 2015
Tested by	:	BTL Inc.

Testing Engineer : David Mao
(David Mao)

Technical Manager : Leo Hung
(Leo Hung)

Authorized Signatory : Steven Lu
(Steven Lu)

BTL INC.

No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

TEL: +86-769-8318-3000 FAX: +86-769-8319-6000

ilac-MRA TAF Testing Laboratory 2640

Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C**., or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

BTL's report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and **BTL-self**, extracts from the test report shall not be reproduced except in full with **BTL**'s authorized written approval.

BTL's laboratory quality assurance procedures are in compliance with the **ISO Guide 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Table of Contents Page

Table of Contents Page

Table of Contents Page

Table of Contents

Page

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-ETSP-1-1504C213	Original Issue	May 22, 2015

1. CERTIFICATION

Equipment	:	PHOTON
Brand Name	:	N/A
Model Name	:	PHOTONH, PHOTONNOH
Applicant	:	Spark Labs, Inc.,
Date of Test	:	Apr. 22, 2015 ~ May 21, 2015
Test Sample	:	ENGINEERING SAMPLE
Standard(s)	:	EN 300 328 V1.8.1 (2012-06)

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-ETSP-1-1504C213) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. RF EMISSIONS MEASUREMENT

2.1TEST FACILITY

The test facilities used to collect the test data in this report is **DG-CB12/OVEN** at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

2.2MEASUREMENT UNCERTAINTY

Measurement Uncertainty for a Level of Confidence of 95 %, U=2xUc(y)
The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2;
The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.

Occupied Channel Bandwidth	± 5 %
RF power density, conducted	± 1.5 dB
Power Spectral Density, conducted	± 3.0 dB
Unwanted Emissions, conducted	± 3.0 dB
All emission, radiated	± 6.0 dB
Temperature	± 1 °C
Humidity	± 5 %
DC and low frequency voltages	± 3 %
Time	± 5 %
Duty Cycle	± 5 %

2.3 TEST CHANNEL

IEEE 802.11b/g/n(20 MHz)		
Test Channel	EUT Channel	Test Frequency (MHz)
low	CH01	2412
middle	CH07	2442
high	CH13	2472
IEEE 802.11n(40 MHz)		
Test Channel	EUT Channel	Test Frequency (MHz)
low	CH03	2422
middle	CH07	2442
high	CH11	2462

Note:

(1) The technical requirements of the present document apply under the environmental profile for operation of the equipment, which shall be stated by the supplier.

2.4 TEST METHODOLOGY AND RESULTS

ETSI EN 300 328 V1.8.1							
Essential Requirement			Requirement Conditionality		Test Specification		
No	Description	Reference: Clause No	U/C	Condition	E/O	Reference: Clause No	Observations
1	RF Output Power	4.3.1.1 or 4.3.2 1	U		E	5.3.2	PASS
2	Power Spectral Density	4.3.2.2	C	Only for modulations other than FHSS	E	5.3.3	PASS
3	Duty cycle, Tx-Sequence, Tx-gap	4.3.1.2 or 4.3.2.3	C	Only for non-adaptive equipment and RF Output Power>10dBm	E	5.3.2	N/A
4	Dwell time, Minimum Frequency Occupation & Hopping Sequence	4.3.1.3	C	Only for FHSS	E	5.3.4	N/A
5	Hopping Frequency Separation	4.3.1.4	C	Only for FHSS	E	5.3.5	N/A
6	Medium Utilisation	4.3.1.5 or 4.3.2.4	C	Only for non-adaptive equipment and RF Output Power>10dBm	E	5.3.2	N/A
7	Adaptivity	4.3.1.6 or 4.3.2.5	C	Only for adaptive equipment and RF Output Power>10dBm	E	5.3.7	PASS
8	Occupied Channel Bandwidth	4.3.1.7 or 4.3.2.6	U	---	E	5.3.8	PASS
9	Transmitter unwanted emissions in the OOB domain	4.3.1.8 or 4.3.2.7	U	---	E	5.3.9	PASS
10	Transmitter unwanted emissions in the spurious domain	4.3.1.9 or 4.3.2.8	U	---	E	5.3.10	PASS
11	Receiver spurious emissions	4.3.1.10 or 4.3.2.9	U	---	E	5.3.11	PASS
12	Receiver Blocking	4.3.1.11 or 4.3.2.10	C	Only for adaptive equipment and RF Output Power>10dBm	E	5.3.7	PASS

NOTE:

(1) **"U/C":** indicates whether the requirement is to be **unconditionally** applicable **(U)** or is **conditional** upon the manufacturers claimed functionality of the equipment **(C)**.
"E/O": indicates whether the test specification forms part of the Essential Radio Test Suite **(E)** or whether it is one of the Other Test Suite **(O)**.
"X": indicates there is no test specified corresponding to the requirement.
"N/A": indicates test is not applicable in this test report.

(2) The emission of the transmitter on standby mode is equal to that of receiving mode.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	PHOTON	
Brand Name	N/A	
Model Name	PHOTONH, PHOTONNOH	
Model Difference	Model PHOTONH with pin, PHOTONNOH without pin.	
Product Description	Operation Frequency	2412~2472MHz
	Modulation Type	802.11b: DSSS 802.11g: OFDM 802.11n: OFDM
	Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n: 802.11n up to 65 Mbps
	E.I.R.P. Power (Max.) - Chip antenna	802.11b: 17.87dBm 802.11g: 15.68dBm 802.11n(20 MHz): 14.60dBm
	E.I.R.P. Power (Max.) - Dipole antenna	802.11b: 18.36dBm 802.11g: 16.82dBm 802.11n(20 MHz): 16.13dBm
Power Source	Supplied from PC USB port.	
Power Rating	DC 5V	

Note:
1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Channel List:

CH01 – CH13 for 802.11b, 802.11g, 802.11n(20MHz)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	06	2437	11	2462
02	2417	07	2442	12	2467
03	2422	08	2447	13	2472
04	2427	09	2452		
05	2432	10	2457		

3. Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	ACX	AT7020 -E3R0HBA	Chip	N/A	1.30	TX/RX
2	CRMX$_{TM}$	104-1001	Dipole	RP-TNC	2.15	TX/RX

Note: EUT has two tpyes of antenna, one with chip antenna, another one with dipole antenna.

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test Items	Mode	Data Rate	Channel
RF Output Power	IEEE 802.11b/CCK	1 Mbps	01/07/13
	IEEE 802.11g/BPSK	6 Mbps	01/07/13
Power Spectral Density	IEEE 802.11n(20MHz)/BPSK	MCS 0	01/07/13
Adaptivity	IEEE 802.11b/CCK	1 Mbps	01/13
	IEEE 802.11g/BPSK	6 Mbps	01/13
Receiver Blocking Occupied Channel Bandwidth	IEEE 802.11n(20MHz)/BPSK	MCS 0	01/13
Transmitter unwanted emissions in the OOB domain	IEEE 802.11b/CCK	1 Mbps	01/13
	IEEE 802.11g/BPSK	6 Mbps	01/13
Transmitter unwanted emissions in the spurious domain Receiver spurious emissions	IEEE 802.11n(20MHz)/BPSK	MCS 0	01/13

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

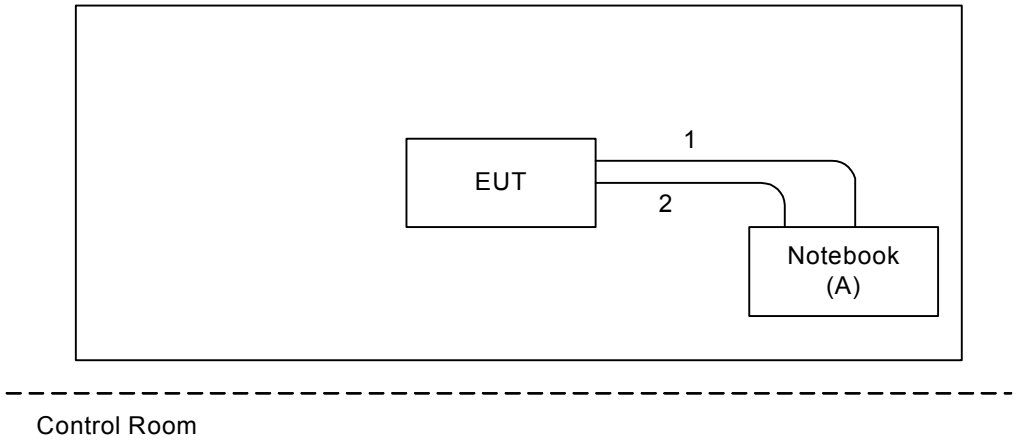
For Chip antenna

Test Software Version	NA		
Frequency (MHz)	2412	2442	2472
IEEE 802.11b	16.3	16.3	16.3
IEEE 802.11g	15.5	15.5	15.5
IEEE 802.11n20	14	14	14

For Dipole antenna

Test Software Version	NA		
Frequency (MHz)	2412	2442	2472
IEEE 802.11b	16.3	16.3	16.3
IEEE 802.11g	15	15	15
IEEE 802.11n20	14.5	14.5	14.5

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
A	NOTEBOOK	DELL	INSPIRON 1420	DOC	JX193A01SDC2	

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	0.5m	Fixture Cable
2	NO	NO	0.5m	USB Cable

Note:

(1) For detachable type I/O cable should be specified the length in m in『Length』column.

4. RF OUTPUT POWER

4.1 APPLIED PROCEDURES / LIMIT

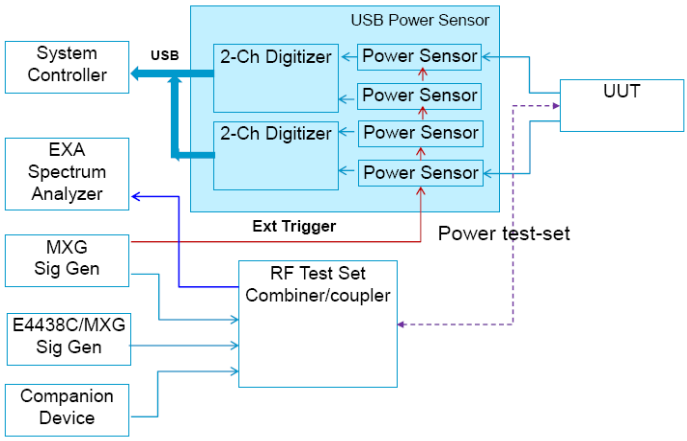
Clause	4.3.2.1
Test Item	RF output power
Limit	For adaptive equipment using wide band modulations other than FHSS, the maximum RF output power shall be 20 dBm. The maximum RF output power for non-adaptive equipment shall be declared by the supplier and shall not exceed 20 dBm. See clause 5.3.1 m). For non-adaptive equipment using wide band modulations other than FHSS, the maximum RF output power shall be equal to or less than the value declared by the supplier.

4.2 TEST PROCEDURES

Please refer to chapter 5.3.2 of ETSI EN 300 328 V1.8.1.

Test Method	
☑ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☑ Lowest, Middle and highest Channel	☐ Lowest and highest Channel
☐ Two Adjacent Hopping Channel	☐ Two Hopping Channel
Environmental conditions	
☐ Normal	☑ Normal and Extreme

4.3 TEST SETUP LAYOUT



4.4 TEST DEVIATION

There is no deviation with the original standard.

4.5 EUT OPERATION DURING TEST

The measurements shall be performed during continuously transmitting.

4.6 TEST RESULTS

Please refer to the Attachment A.

5. POWER SPECTRAL DENSITY

5.1 APPLIED PROCEDURES / LIMIT

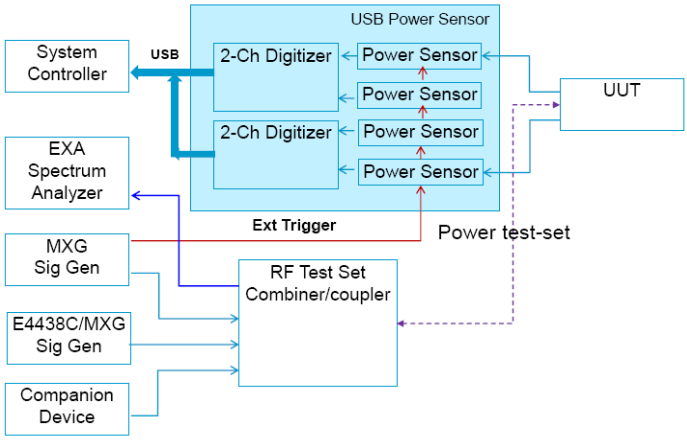
Clause	4.3.2.2
Test Item	Power Spectral Density
Limit	For equipment using wide band modulations other than FHSS, the maximum Power Spectral Density is limited to 10 dBm per MHz.

5.2 TEST PROCEDURES

Please refer to chapter 5.3.3 of ETSI EN 300 328 V1.8.1.

Test Method	
☑ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☑ Lowest, Middle and highest Channel	☐ Lowest and highest Channel
☐ Two Adjacent Hopping Channel	☐ Two Hopping Channel
Environmental conditions	
☑ Normal	☐ Normal and Extreme

5.3 TEST SETUP LAYOUT



5.4 TEST DEVIATION

There is no deviation with the original standard.

5.5 EUT OPERATION DURING TEST

The measurements shall be performed during continuously transmitting.

5.6 TEST RESULTS

Please refer to the Attachment B.

6. DUTY CYCLE, TX-SEQUENCE, TX-GAP

6.1 APPLIED PROCEDURES / LIMIT

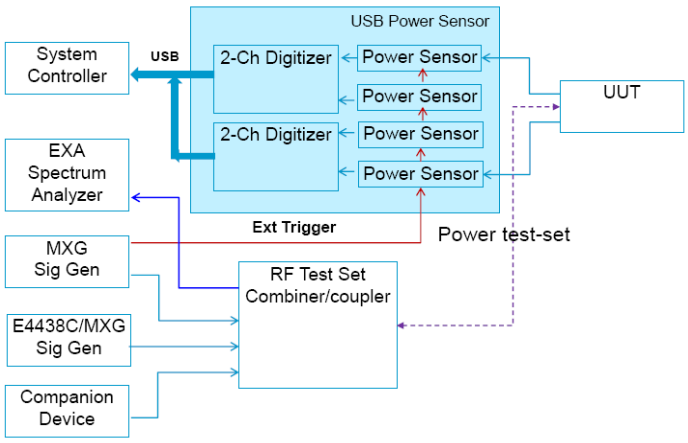
Clause	4.3.2.3
Test Item	Duty Cycle, Tx-sequence, Tx-gap
Limit	The Duty Cycle shall be equal to or less than the maximum value declared by the supplier. The maximum Tx-sequence Time and the minimum Tx-gap Time shall be according to the formula below: Maximum Tx-Sequence Time = Minimum Tx-gap Time = M where M is in the range of 3,5 ms to 10 ms.

6.2 TEST PROCEDURES

Please refer to chapter 5.3.2 of ETSI EN 300 328 V1.8.1.

Test Method	
☑ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☑ Lowest, Middle and highest Channel	☐ Lowest and highest Channel
☐ Two Adjacent Hopping Channel	☐ Two Hopping Channel
Environmental conditions	
☑ Normal	☐ Normal and Extreme

6.3 TEST SETUP LAYOUT



6.4 TEST DEVIATION

There is no deviation with the original standard.

6.5 EUT OPERATION DURING TEST

The measurements shall be performed during continuously transmitting.

6.6 TEST RESULTS

Please refer to the Attachment C.

7. MEDIUM UTILISATION (MU) FACTOR

7.1 APPLIED PROCEDURES / LIMIT

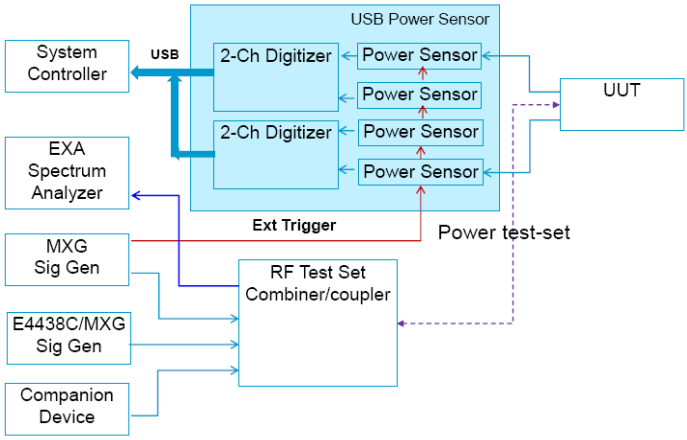
Clause	4.3.2.4
Test Item	Medium Utilisation (MU) factor
Limit	For non-adaptive equipment using wide band modulations other than FHSS, the maximum Medium Utilisation factor shall be 10 %.

7.2 TEST PROCEDURES

Please refer to chapter 5.3.2 of ETSI EN 300 328 V1.8.1.

Test Method	
☑ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☑ Lowest, Middle and highest Channel	☐ Lowest and highest Channel
☐ Two Adjacent Hopping Channel	☐ Two Hopping Channel
Environmental conditions	
☑ Normal	☐ Normal and Extreme

7.3 TEST SETUP LAYOUT



7.4 TEST DEVIATION

There is no deviation with the original standard.

7.5 EUT OPERATION DURING TEST

The measurements shall be performed during continuously transmitting.

7.6 TEST RESULTS

Please refer to the Attachment D.

8. ADAPTIVITY (ADAPTIVE EQUIPMENT USING MODULATIONS OTHER THAN FHSS)

8.1 APPLIED PROCEDURES / LIMIT

Clause	4.3.2.5
Test Item	Adaptivity (adaptive equipment using modulations other than FHSS)
Limit	**Non-LBT based Detect and Avoid** Equipment using a modulation other than FHSS and using the non-LBT based Detect and Avoid mechanism, shall comply with the following minimum set of requirements: 1) During normal operation, the equipment shall evaluate the presence of a signal on its current operating channel. If it is determined that a signal is present with a level above the detection threshold defined in 4). the channel shall be marked as 'unavailable'. 2) The channel shall remain unavailable for a minimum time equal to 1 s after which the channel may be considered again as an 'available' channel. 3) The total time during which an equipment has transmissions on a given channel without re-evaluating the availability of that channel, is defined as the Channel Occupancy Time. 4) The Channel Occupancy Time shall be less than 40 ms. Each such transmission sequence shall be followed with an Idle Period (no transmissions) of minimum 5 % of the Channel Occupancy Time with a minimum of 100 µs. After this, the procedure as in step 1 needs to be repeated. 5) The detection threshold shall be proportional to the transmit power of the transmitter: for a 20 dBm e.i.r.p. transmitter the detection threshold level (TL) shall be equal or lower than -70 dBm/MHz at the input to the receiver (assuming a 0 dBi receive antenna). For power levels below 20 dBm e.i.r.p., the detection threshold level may be relaxed to TL = -70 dBm/MHz + 20 - Pout e.i.r.p. (Pout in dBm).

Limit	**LBT based Detect and Avoid** The present document defines 2 types of adaptive equipment using wide band modulations other than FHSS and that uses an LBT based Detect and Avoid mechanism: Frame Based Equipment and Load Based Equipment. Adaptive equipment which is capable of operating as either Load Based Equipment or as Frame Based Equipment is allowed to switch dynamically between these types of operation. **a. Frame Based Equipment** Frame Based Equipment shall comply with the following requirements: 1) Before transmission, the equipment shall perform a Clear Channel Assessment (CCA) check using energy detect. The equipment shall observe the operating channel for the duration of the CCA observation time which shall be not less than 20 µs. The channel shall be considered occupied if the energy level in the channel exceeds the threshold given in step 5) below. If the equipment finds the channel to be clear, it may transmit immediately. The CCA time used by the equipment shall be declared by the supplier. 2) If the equipment finds the channel occupied, it shall not transmit on this channel during the next Fixed Frame Period. NOTE 1: The equipment is allowed to switch to a non-adaptive mode and to continue transmissions on this channel providing it complies with the requirements applicable to non-adaptive systems. See clause 4.3.2.5. Alternatively, the equipment is also allowed to continue transmissions on this channel providing it complies with the requirements 4.3.2.5.3. 3) The total time during which an equipment has transmissions on a given channel without re-evaluating the availability of that channel, is defined as the Channel Occupancy Time. The Channel Occupancy Time shall be in the range 1 ms to 10 ms followed by an Idle Period of at least 5 % of the Channel Occupancy Time used in the equipment for the current Fixed Frame Period. 4) An equipment, upon correct reception of a packet which was intended for this equipment can skip CCA and immediately (see note 2) proceed with the transmission of management and control frames (e.g. ACK and Block ACK frames are allowed but data frames are not allowed). A consecutive sequence of such transmissions by the equipment without a new CCA shall not exceed the maximum Channel Occupancy Time. NOTE 2: For the purpose of multi-cast, the ACK transmissions (associated with the same data packet) of the individual devices are allowed to take place in a sequence. 5) The energy detection threshold for the CCA shall be proportional to the transmit power of the transmitter: for a 20 dBm e.i.r.p. transmitter the CCA threshold level (TL) shall be equal or lower than -70 dBm/MHz at the input to the receiver (assuming a 0 dBi receive antenna). For power levels below 20 dBm e.i.r.p. the CCA threshold level may be relaxed to TL = -70 dBm/MHz + 20 - Pout e.i.r.p. (Pout in dBm).

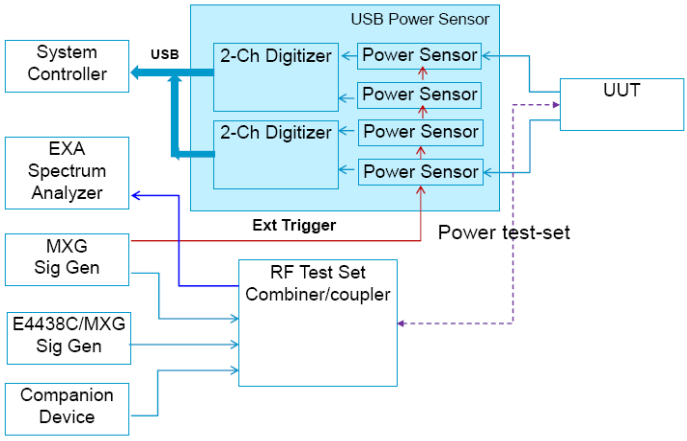
Limit	**b. Load Based Equipment** Load Based Equipment not using any of the mechanisms referenced above shall comply with the following minimum set of requirements: 1) Before a transmission or a burst of transmissions, the equipment shall perform a Clear Channel Assessment (CCA) check using energy detect. The equipment shall observe the operating channel for the duration of the CCA observation time which shall be not less than 20 µs. The channel shall be considered occupied if the energy level in the channel exceeds the threshold given in step 5) below. If the equipment finds the channel to be clear, it may transmit immediately. The CCA time used by the equipment shall be declared by the supplier. 2) If the equipment finds the channel occupied, it shall not transmit on this channel (see note 1). The equipment shall perform an Extended CCA check in which the channel is observed for the duration of a random factor R multiplied by the CCA observation time. R defines the number of clear idle slots resulting in a total Idle Period that needs to be observed before initiation of the transmission. The value of R shall be randomly selected in the range 1..q every time an Extended CCA is required and the value stored in a counter. The value of q is selected by the manufacturer in the range 4..32. This selected value shall be declared by the manufacturer (see clause 5.3.1 d). The counter is decremented every time a CCA slot is considered to be 'unoccupied'. When the counter reaches zero, the equipment may transmit. NOTE 1: The equipment is allowed to switch to a non-adaptive mode and to continue transmissions on this channel providing it complies with the requirements applicable to non-adaptive systems. See clause 5.3.2.5. Alternatively, the equipment is also allowed to continue transmissions on this channel providing it complies with the requirements 4.3.2.5.3. 3) The total time that an equipment makes use of a RF channel is defined as the Channel Occupancy Time. This Channel Occupancy Time shall be less than (13/32) × q ms, with q as defined in 2) above, after which the device shall perform the Extended CCA described in 1) above. 4) The equipment, upon correct reception of a packet which was intended for this equipment can skip CCA and immediately (see note 2) proceed with the transmission of management and control frames (e.g. ACK and Block ACK frames are allowed but data frames are not allowed). A consecutive sequence of transmissions by the equipment without a new CCA shall not exceed the maximum channel occupancy time as defined in 3) above. NOTE 2: For the purpose of multi-cast, the ACK transmissions (associated with the same data packet) of the individual devices are allowed to take place in a sequence. 5) The energy detection threshold for the CCA shall be proportional to the transmit power of the transmitter: for a 20 dBm e.i.r.p. transmitter the CCA threshold level (TL) shall be equal or lower than -70 dBm/MHz at the input to the receiver (assuming a 0 dBi receive antenna). For power levels below 20 dBm e.i.r.p., the CCA threshold level may be relaxed to TL = -70 dBm/MHz + 20 - Pout e.i.r.p. (Pout in dBm). **Short Control Signalling Transmissions** If implemented, Short Control Signalling Transmissions of adaptive equipment using wide band modulations other than FHSS shall have a maximum duty cycle of 10 % within an observation period of 50 ms.

8.2 TEST PROCEDURES

Please refer to chapter 5.3.7 of ETSI EN 300 328 V1.8.1.

Test Method	
☑ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☐ Lowest, Middle and highest Channel	☑ Lowest and highest Channel
☐ Two Adjacent Hopping Channel	☐ Two Hopping Channel
Environmental conditions	
☑ Normal	☐ Normal and Extreme

8.3 TEST SETUP LAYOUT



8.4 TEST DEVIATION

There is no deviation with the original standard.

8.5 EUT OPERATION DURING TEST

The measurements shall be performed during normal operation.

8.6 TEST RESULTS

Please refer to the Attachment E.

9. OCCUPIED CHANNEL BANDWIDTH

9.1 APPLIED PROCEDURES / LIMIT

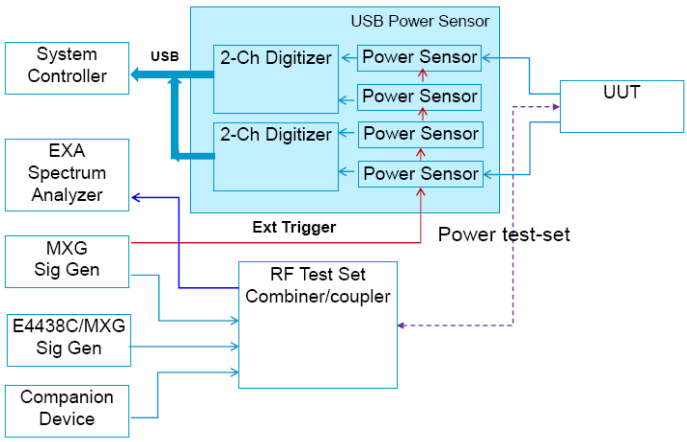
Clause	4.3.2.6
Test Item	Occupied Channel Bandwidth
Limit	The Occupied Channel Bandwidth shall fall completely within the band given in clause 1. In addition, for non-adaptive systems using wide band modulations other than FHSS and with e.i.r.p greater than 10 dBm, the occupied channel bandwidth shall be less than 20 MHz.

9.2 TEST PROCEDURES

Please refer to chapter 5.3.8 of ETSI EN 300 328 V1.8.1.

Test Method	
☑ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☐ Lowest, Middle and highest Channel	☑ Lowest and highest Channel
☐ Two Adjacent Hopping Channel	☐ Two Hopping Channel
Environmental conditions	
☑ Normal	☐ Normal and Extreme

9.3 TEST SETUP LAYOUT



9.4 TEST DEVIATION

There is no deviation with the original standard.

9.5 EUT OPERATION DURING TEST

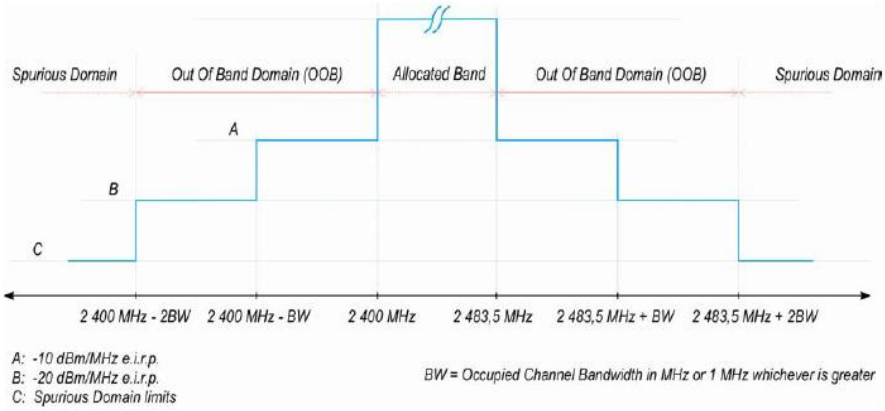
The measurements shall be performed during continuously transmitting.

9.6 TEST RESULTS

Please refer to the Attachment F.

10. TRANSMITTER UNWANTED EMISSIONS IN THE OUT-OF-BAND DOMAIN

10.1 APPLIED PROCEDURES / LIMIT

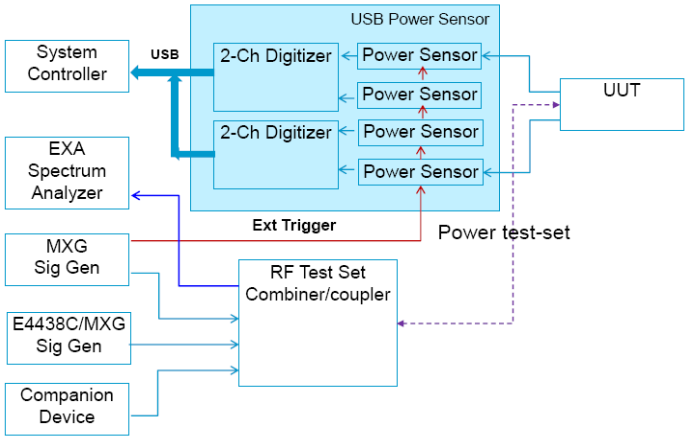
Clause	4.3.2.7
Test Item	Transmitter unwanted emissions in the out-of-band domain
Limit	The transmitter unwanted emissions in the out-of-band domain but outside the allocated band, shall not exceed the values provided by the mask in below figure. 

10.2 TEST PROCEDURES

Please refer to chapter 5.3.9 of ETSI EN 300 328 V1.8.1.

Test Method	
☑ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☐ Lowest, Middle and highest Channel	☑ Lowest and highest Channel
☐ Two Adjacent Hopping Channel	☐ Two Hopping Channel
Environmental conditions	
☐ Normal	☑ Normal and Extreme

10.3 TEST SETUP LAYOUT



10.4 TEST DEVIATION

There is no deviation with the original standard.

10.5 EUT OPERATION DURING TEST

The measurements shall be performed during continuously transmitting.

10.6 TEST RESULTS

Please refer to the Attachment G.

11. TRANSMITTER UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN

11.1 APPLIED PROCEDURES / LIMIT

<table>
<tr><td>Clause</td><td>4.3.2.8</td></tr>
<tr><td>Test Item</td><td>Transmitter unwanted emissions in the spurious domain</td></tr>
<tr><td>Limit</td><td>The transmitter unwanted emissions in the spurious domain shall not exceed the values given in below table.
<table>
<tr><th>Frequency range</th><th>Maximum power, e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz)</th><th>Bandwidth</th></tr>
<tr><td>30 MHz to 47 MHz</td><td>-36 dBm</td><td>100 kHz</td></tr>
<tr><td>47 MHz to 74 MHz</td><td>-54 dBm</td><td>100 kHz</td></tr>
<tr><td>74 MHz to 87,5 MHz</td><td>-36 dBm</td><td>100 kHz</td></tr>
<tr><td>87,5 MHz to 118 MHz</td><td>-54 dBm</td><td>100 kHz</td></tr>
<tr><td>118 MHz to 174 MHz</td><td>-36 dBm</td><td>100 kHz</td></tr>
<tr><td>174 MHz to 230 MHz</td><td>-54 dBm</td><td>100 kHz</td></tr>
<tr><td>230 MHz to 470 MHz</td><td>-36 dBm</td><td>100 kHz</td></tr>
<tr><td>470 MHz to 862 MHz</td><td>-54 dBm</td><td>100 kHz</td></tr>
<tr><td>862 MHz to 1 GHz</td><td>-36 dBm</td><td>100 kHz</td></tr>
<tr><td>1 GHz to 12,75 GHz</td><td>-30 dBm</td><td>1 MHz</td></tr>
</table></td></tr>
</table>

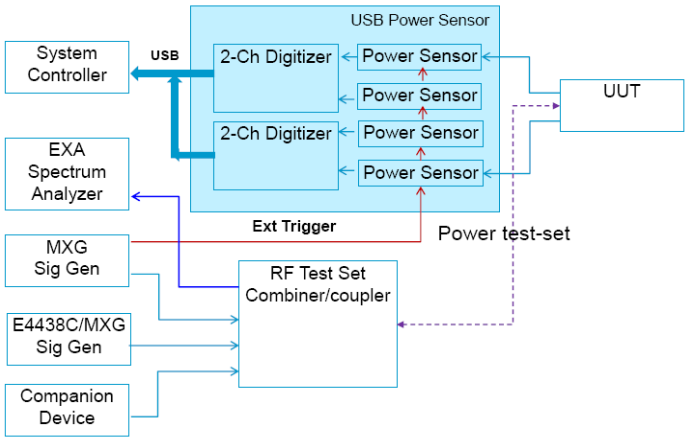
11.2 TEST PROCEDURES

Please refer to chapter 5.3.10 of ETSI EN 300 328 V1.8.1.

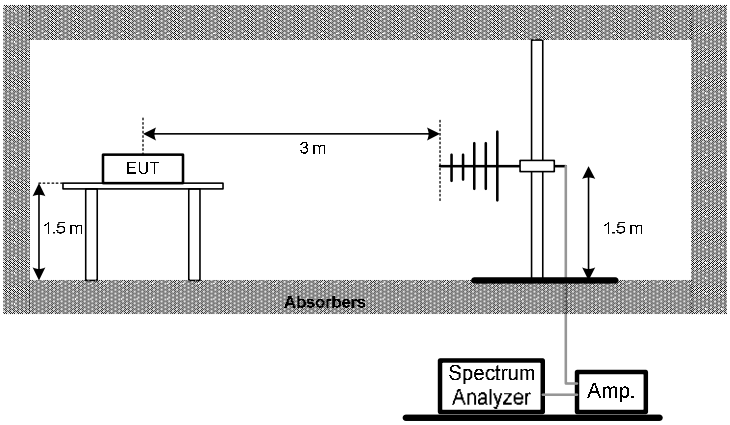
<table>
<tr><th colspan="2">Test Method</th></tr>
<tr><td>☑ Conducted Measurement</td><td>☑ Radiated Measurement</td></tr>
<tr><th colspan="2">Test Channels</th></tr>
<tr><td>☐ Lowest, Middle and highest Channel</td><td>☑ Lowest and highest Channel</td></tr>
<tr><td>☐ Two Adjacent Hopping Channel</td><td>☐ Two Hopping Channel</td></tr>
<tr><th colspan="2">Environmental conditions</th></tr>
<tr><td>☑ Normal</td><td>☐ Normal and Extreme</td></tr>
</table>

11.3 TEST SETUP LAYOUT

Conducted Measurement



Radiated Measurement



11.4 TEST DEVIATION

There is no deviation with the original standard.

11.5 EUT OPERATION DURING TEST

The measurements shall be performed during continuously transmitting.

11.6 TEST RESULTS

Please refer to the Attachment H

12. RECEIVER SPURIOUS EMISSIONS

12.1 APPLIED PROCEDURES / LIMIT

<table>
<tr><td>Clause</td><td>4.3.2.9</td></tr>
<tr><td>Test Item</td><td>Receiver spurious emissions</td></tr>
<tr><td>Limit</td><td>The spurious emissions of the receiver shall not exceed the values given in below table.
<table>
<tr><th>Frequency range</th><th>Maximum power, e.r.p.</th><th>Measurement bandwidth</th></tr>
<tr><td>30 MHz to 1 GHz</td><td>-57 dBm</td><td>100 kHz</td></tr>
<tr><td>1 GHz to 12,75 GHz</td><td>-47 dBm</td><td>1 MHz</td></tr>
</table></td></tr>
</table>

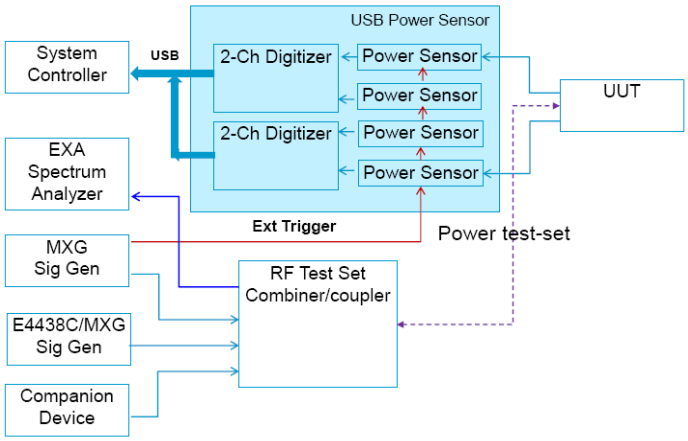
12.2 TEST PROCEDURES

Please refer to chapter 5.3.11 of ETSI EN 300 328 V1.8.1.

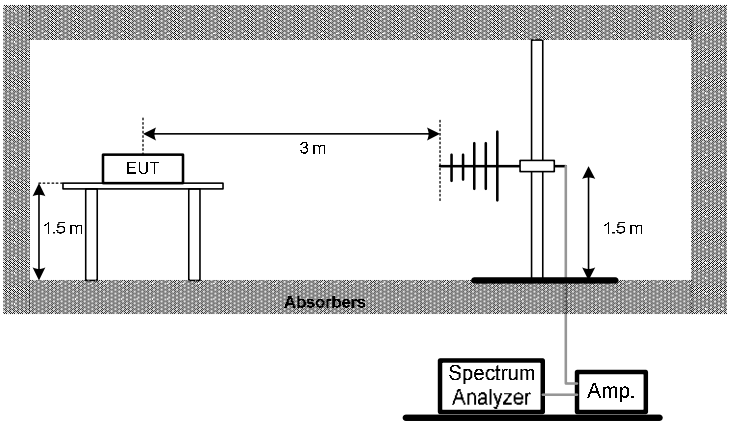
<table>
<tr><th colspan="2">Test Method</th></tr>
<tr><td>☑ Conducted Measurement</td><td>☑ Radiated Measurement</td></tr>
<tr><th colspan="2">Test Channels</th></tr>
<tr><td>☐ Lowe t, Middle and highest Channel</td><td>☑ Lowest and highest Channel</td></tr>
<tr><td>☐ Two Adjacent Hopping Channel</td><td>☐ Two Hopping Channel</td></tr>
<tr><th colspan="2">Environmental conditions</th></tr>
<tr><td>☑ Normal</td><td>☐ Normal and Extreme</td></tr>
</table>

12.3 TEST SETUP LAYOUT

Conducted Measurement



Radiated Measurement



12.4 TEST DEVIATION

There is no deviation with the original standard.

12.5 EUT OPERATION DURING TEST

The measurements shall be performed during continuously transmitting.

12.6 TEST RESULTS

Please refer to the Attachment I.

13. RECEIVER BLOCKING

13.1 APPLIED PROCEDURES / LIMIT

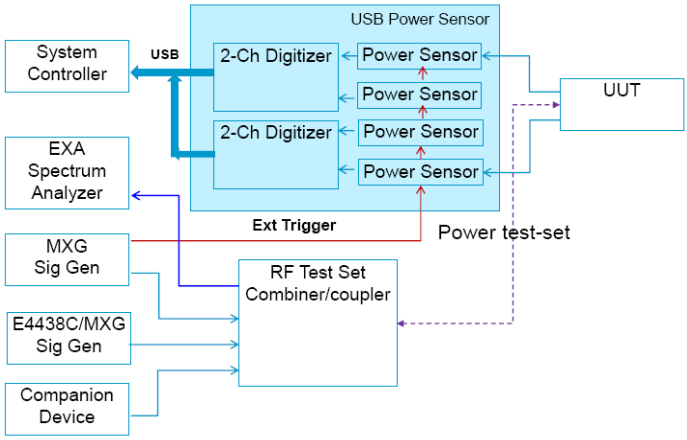
<table>
<tr><td>Clause</td><td>4.3.2.10</td></tr>
<tr><td>Test Item</td><td>Receiver Blocking</td></tr>
<tr><td>Limit</td><td>Adaptive equipment using wide band modulations other than FHSS, shall comply with the requirements defined in clauses 4.3.2.5.1 (non-LBT based DAA) or 4.3.2.5.2 (LBT based DAA) in the presence of a blocking signal with characteristics as provided in below table.
<table>
<tr><th>Equipment Type (LBT / non- LBT)</th><th>Wanted signal mean power from companion device</th><th>Blocking signal frequency [MHz]</th><th>Blocking signal power [dBm]</th><th>Type of interfering signal</th></tr>
<tr><td>LBT</td><td>sufficient to maintain the link (see note 2)</td><td rowspan="2">2 395 or 2 488,5 (see note 1)</td><td rowspan="2">-30</td><td rowspan="2">CW</td></tr>
<tr><td>Non-LBT</td><td>-30 dBm</td></tr>
<tr><td colspan="5">NOTE 1: The highest blocking frequency shall be used for testing the lowest operating channel, while the lowest blocking frequency shall be used for testing the highest operating channel.
NOTE 2: A typical value which can be used in most cases is -50 dBm/MHz.</td></tr>
</table>
</td></tr>
</table>

13.2 TEST PROCEDURES

Please refer to chapter 5.3.7 of ETSI EN 300 328 V1.8.1.

<table>
<tr><th colspan="2">Test Method</th></tr>
<tr><td>☑ Conducted Measurement</td><td>☐ Radiated Measurement</td></tr>
<tr><th colspan="2">Test Channels</th></tr>
<tr><td>☐ Lowest, Middle and highest Channel</td><td>☑ Lowest and highest Channel</td></tr>
<tr><td>☐ Two Adjacent Hopping Channel</td><td>☐ Two Hopping Channel</td></tr>
<tr><th colspan="2">Environmental conditions</th></tr>
<tr><td>☑ Normal</td><td>☐ Normal and Extreme</td></tr>
</table>

13.3 TEST SETUP LAYOUT



13.4 TEST DEVIATION

There is no deviation with the original standard.

13.5 EUT OPERATION DURING TEST

The measurements shall be performed during normal operation.

13.6 TEST RESULTS

Please refer to the Attachment E

14. INFORMATION AS REQUIRED BY EN 300 328 V1.8.1, CLAUSE 5.3.1

For Chip antenna

In accordance with EN 300 328, clause 5.3.1, the following information is provided by the supplier.

14.1 The type of modulation used by the equipment:

☐ FHSS

☒ other forms of modulation

14.2 In case of FHSS modulation:

(1) In case of non-Adaptive Frequency Hopping equipment:

The number of Hopping Frequencies: N/A

(2) In case of Adaptive Frequency Hopping Equipment:

The maximum number of Hopping Frequencies: N/A

The minimum number of Hopping Frequencies: N/A

(3) The Dwell Time: N/A

(4) The Minimum Channel Occupation Time: N/A

14.3 Adaptive / non-adaptive equipment:

☐ non-adaptive Equipment

☒ adaptive Equipment without the possibility to switch to a non-adaptive mode

☐ adaptive Equipment which can also operate in a non-adaptive mode

14.4 In case of adaptive equipment:

The Channel Occupancy Time implemented by the equipment: 0.32 ms

☒ The equipment has implemented an LBT based DAA mechanism

* In case of equipment using modulation different from FHSS:

☐ The equipment is Frame Based equipment

☒ The equipment is Load Based equipment

☐ The equipment can switch dynamically between Frame Based and Load Based equipment

The CCA time implemented by the equipment: Not less 20 µs

The value q is 32.

☐ The equipment has implemented an non-LBT based DAA mechanism

☐ The equipment can operate in more than one adaptive mode

14.5 The worst case operational mode for each of the following tests:

(1) RF Output Power: 15.27 dBm

(2) Power Spectral Density: 9.85 dBm

(3) Duty cycle, Tx-Sequence, Tx-gap: N/A

(4) Dwell time, Minimum Frequency Occupation & Hopping Sequence (only for FHSS equipment): N/A

(5) Hopping Frequency Separation (only for FHSS equipment) : N/A

(6) Medium Utilisation: N/A

(7) Adaptivity & Receiver Blocking: PASS

(8) Occupied Channel Bandwidth: 23.153 MHz

(9) Transmitter unwanted emissions in the OOB domain: -17.62 dBm

(10) Transmitter unwanted emissions in the spurious domain: -32.94 dBm

(11) Receiver spurious emissions: -65.26 dBm

14.6 The different transmit operating modes (tick all that apply):

☒ Operating mode 1: Single Antenna Equipment

☒ Equipment with only 1 antenna

☐ Equipment with 2 diversity antennas but only 1 antenna active at any moment in time

☐ Smart Antenna Systems with 2 or more antennas, but operating in a (legacy) mode where only 1 antenna is used. (e.g. IEEE 802.11™ [i.3] legacy mode in smart antenna systems)

☐ Operating mode 2: Smart Antenna Systems - Multiple Antennas without beam forming

☐ Single spatial stream / Standard throughput / (e.g. IEEE 802.11™ [i.3] legacy mode)

☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 1

☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 2

NOTE: Add more lines if more channel bandwidths are supported.

☐ Operating mode 3: Smart Antenna Systems - Multiple Antennas with beam forming

☐ Single spatial stream / Standard throughput (e.g. IEEE 802.11™ [i.3] legacy mode)

☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 1

☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 2

NOTE: Add more lines if more channel bandwidths are supported.

14.7 In case of Smart Antenna Systems:

(1) The number of Receive chains: N/A

(2) The number of Transmit chains: N/A

☐ symmetrical power distribution

☐ asymmetrical power distribution

In case of beam forming, the maximum beam forming gain: N/A

NOTE: Beam forming gain does not include the basic gain of a single antenna.

14.8 Operating Frequency Range(s) of the equipment:

(1) Operating Frequency Range 1: 2412 MHz to 2472 MHz

NOTE: Add more lines if more Frequency Ranges are supported.

14.9 Occupied Channel Bandwidth(s):

(1) Occupied Channel Bandwidth 1: 23.153 MHz

NOTE: Add more lines if more channel bandwidths are supported.

14.10 Type of Equipment (stand-alone, combined, plug-in radio device, etc.):

☒ Stand-alone

☐ Combined Equipment (Equipment where the radio part is fully integrated within another type of equipment)

☐ Plug-in radio device (Equipment intended for a variety of host systems)

☐ Other _____

14.11 The extreme operating conditions that apply to the equipment:

Operating temperature range: -20 ° C to 60 ° C

Details provided are for the: ☒ stand-alone equipment

☐ combined (or host) equipment

☐ test jig

14.12 The nominal voltages of the stand-alone radio equipment or the nominal voltages of the combined (host) equipment or test jig in case of plug-in devices:

Details provided are for the: ☒ stand-alone equipment
☐ combined (or host) equipment
☐ test jig

Supply voltage ☐ AC Mains State AC voltage _____ V
☒ DC State DC voltage 5 V

In case of DC, indicate the type of power source
☐ Internal Power Supply
☐ External Power Supply or AC/DC adapter
☐ Battery
☒ Other: Supplied from PC USB port.

14.13 Describe the test modes available which can facilitate testing:

The measurements shall be performed during continuously transmitting and normal operation.

14.14 The equipment type (e.g. Bluetooth®, IEEE 802.11™ [i.3], proprietary, etc.):

IEEE 802.11™ [i.3]

For Dipole antenna

In accordance with EN 300 328, clause 5.3.1, the following information is provided by the supplier.

14.15 The type of modulation used by the equipment:

☐ FHSS

☒ other forms of modulation

14.16 In case of FHSS modulation:

(1) In case of non-Adaptive Frequency Hopping equipment:

The number of Hopping Frequencies: N/A

(2) In case of Adaptive Frequency Hopping Equipment:

The maximum number of Hopping Frequencies: N/A

The minimum number of Hopping Frequencies: N/A

(3) The Dwell Time: N/A

(4) The Minimum Channel Occupation Time: N/A

14.17 Adaptive / non-adaptive equipment:

☐ non-adaptive Equipment

☒ adaptive Equipment without the possibility to switch to a non-adaptive mode

☐ adaptive Equipment which can also operate in a non-adaptive mode

14.18 In case of adaptive equipment:

The Channel Occupancy Time implemented by the equipment: 0.28 ms

☒ The equipment has implemented an LBT based DAA mechanism

* In case of equipment using modulation different from FHSS:

☐ The equipment is Frame Based equipment

☒ The equipment is Load Based equipment

☐ The equipment can switch dynamically between Frame Based and Load Based equipment

The CCA time implemented by the equipment: Not less 20 µs

The value q is 32.

☐ The equipment has implemented an non-LBT based DAA mechanism

☐ The equipment can operate in more than one adaptive mode

14.19 The worst case operational mode for each of the following tests:

(1) RF Output Power: 18.36 dBm

(2) Power Spectral Density: 9.97 dBm

(3) Duty cycle, Tx-Sequence, Tx-gap: N/A

(4) Dwell time, Minimum Frequency Occupation & Hopping Sequence (only for FHSS equipment): N/A

(5) Hopping Frequency Separation (only for FHSS equipment) : N/A

(6) Medium Utilisation: N/A

(7) Adaptivity & Receiver Blocking: PASS

(8) Occupied Channel Bandwidth: 30.090 MHz

(9) Transmitter unwanted emissions in the OOB domain: -17.92 dBm

(10) Transmitter unwanted emissions in the spurious domain: -59.34 dBm

(11) Receiver spurious emissions: -67.94 dBm

14.20 The different transmit operating modes (tick all that apply):

☒ Operating mode 1: Single Antenna Equipment

☒ Equipment with only 1 antenna

☐ Equipment with 2 diversity antennas but only 1 antenna active at any moment in time

☐ Smart Antenna Systems with 2 or more antennas, but operating in a (legacy) mode where only 1 antenna is used. (e.g. IEEE 802.11™ [i.3] legacy mode in smart antenna systems)

☐ Operating mode 2: Smart Antenna Systems - Multiple Antennas without beam forming

☐ Single spatial stream / Standard throughput / (e.g. IEEE 802.11™ [i.3] legacy mode)

☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 1

☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 2

NOTE: Add more lines if more channel bandwidths are supported.

☐ Operating mode 3: Smart Antenna Systems - Multiple Antennas with beam forming

☐ Single spatial stream / Standard throughput (e.g. IEEE 802.11™ [i.3] legacy mode)

☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 1

☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 2

NOTE: Add more lines if more channel bandwidths are supported.

14.21 In case of Smart Antenna Systems:

(1) The number of Receive chains: N/A

(2) The number of Transmit chains: N/A

☐ symmetrical power distribution

☐ asymmetrical power distribution

In case of beam forming, the maximum beam forming gain: N/A

NOTE: Beam forming gain does not include the basic gain of a single antenna.

14.22 Operating Frequency Range(s) of the equipment:

(1) Operating Frequency Range 1: 2412 MHz to 2472 MHz

NOTE: Add more lines if more Frequency Ranges are supported.

14.23 Occupied Channel Bandwidth(s):

(1) Occupied Channel Bandwidth 1: 30.090 MHz

NOTE: Add more lines if more channel bandwidths are supported.

14.24 Type of Equipment (stand-alone, combined, plug-in radio device, etc.):

☒ Stand-alone

☐ Combined Equipment (Equipment where the radio part is fully integrated within another type of equipment)

☐ Plug-in radio device (Equipment intended for a variety of host systems)

☐ Other _____

14.25 The extreme operating conditions that apply to the equipment:

Operating temperature range: -20 ° C to 60 ° C

Details provided are for the: ☒ stand-alone equipment

☐ combined (or host) equipment

☐ test jig

14.26 The nominal voltages of the stand-alone radio equipment or the nominal voltages of the combined (host) equipment or test jig in case of plug-in devices:

Details provided are for the: ☒ stand-alone equipment
☐ combined (or host) equipment
☐ test jig

Supply voltage ☐ AC Mains State AC voltage _____ V
☒ DC State DC voltage 5 V

In case of DC, indicate the type of power source
☐ Internal Power Supply
☐ External Power Supply or AC/DC adapter
☐ Battery
☒ Other: Supplied from PC USB port.

14.27 Describe the test modes available which can facilitate testing:

The measurements shall be performed during continuously transmitting and normal operation.

14.28 The equipment type (e.g. Bluetooth®, IEEE 802.11™ [i.3], proprietary, etc.):

IEEE 802.11™ [i.3]

15. MEASUREMENT INSTRUMENTS LIST

RF Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Sensor	Agilent	U2021XA	MY53020007	Jul. 23, 2015
2	Power Sensor	Agilent	U2021XA	MY53130004	Jul. 23, 2015
3	Power Sensor	Agilent	U2021XA	MY53260025	Jul. 23, 2015
4	Power Sensor	Agilent	U2021XA	MY53180019	Jul. 22, 2015
5	Test Cable	N/A	CL-CB12-001	N/A	Oct. 22, 2015
6	Test Cable	N/A	CL-CB12-004	N/A	Oct. 22, 2015
7	Test Cable	N/A	CL-CB12-006	N/A	Oct. 22, 2015
8	Const Temp. & Humidity Chamber	Giant Force	ITH-1200-40-CP-AR	IAA1210-003	Aug.01, 2015

Power Spectral density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 28, 2016
2	Test Cable	N/A	CL-CB12-001	N/A	Oct. 22, 2015

Adaptivity & Receiver Blocking					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 28, 2016
2	MXG Vector Signal Generator	Agilent	N5172B	MY51350711	Mar. 28, 2016
3	MXG Analog Signal Generator	Agilent	N5181A	MY 51100502	Nov. 29, 2015
4	Microflex Cable	NA	NA	1m	Jan. 17, 2016
5	RF Switch	E-INSTRUMENT	ETF-022	TW5451001	Mar. 28, 2016
6	POWER SPLITTER	Mimi-Circuits	ZFRSC-183-S+	SF601301339-1	Mar. 10, 2016
7	POWER SPLITTER	Mimi-Circuits	ZFRSC-183-S+	SF601301339-2	Mar. 17, 2016
8	COUPLER	Mimi-Circuits	ZADC-10-63-S+	SF631801334	Mar. 10, 2016

Occupied Channel Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 28, 2016
2	Test Cable	N/A	CL-CB12-001	N/A	Oct. 22, 2015

Transmitter unwanted Out Of Band domain					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 28, 2016
2	Test Cable	N/A	CL-CB12-001	N/A	Oct. 22, 2015
3	Const Temp. & Humidity Chamber	GIANT FORCE	ITH-1200-40-CP-AR	IAA1210-003	Aug.01, 2015

Transmitter unwanted spurious					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 28, 2016
2	Test Cable	N/A	CL-CB12-001	N/A	Oct. 22, 2015

Receiver Spurious emission					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 28, 2016
2	Test Cable	N/A	CL-CB12-001	N/A	Oct. 22, 2015

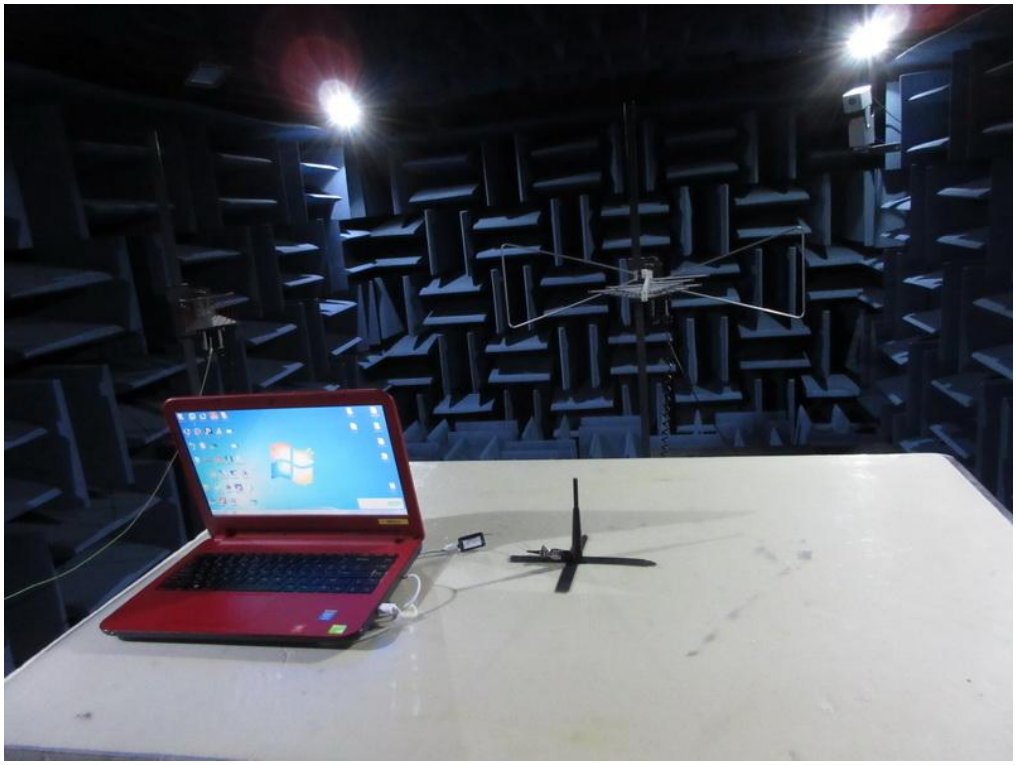
Transmitter and Receiver Spurious Emission					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 28, 2016
2	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC012645B	980221	Oct. 22, 2015
3	Amplifier	Agilent	8449B	3008A02274	Nov. 02, 2015
4	Double Ridged Guide Antenna	ETS·LINDGREN	3115	00075846	Mar. 28, 2016
5	Antenna	SCHWARZBECK	VULB 9160	9160-3231	Mar. 28, 2016
6	Test Cable	N/A	CL-CB12-001	N/A	Oct. 22, 2015
7	Test Cable	N/A	CL-CB12-004	N/A	Oct. 22, 2015
8	Test Cable	N/A	CL-CB12-006	N/A	Oct. 22, 2015
9	Controller	CT	SC100	N/A	N/A

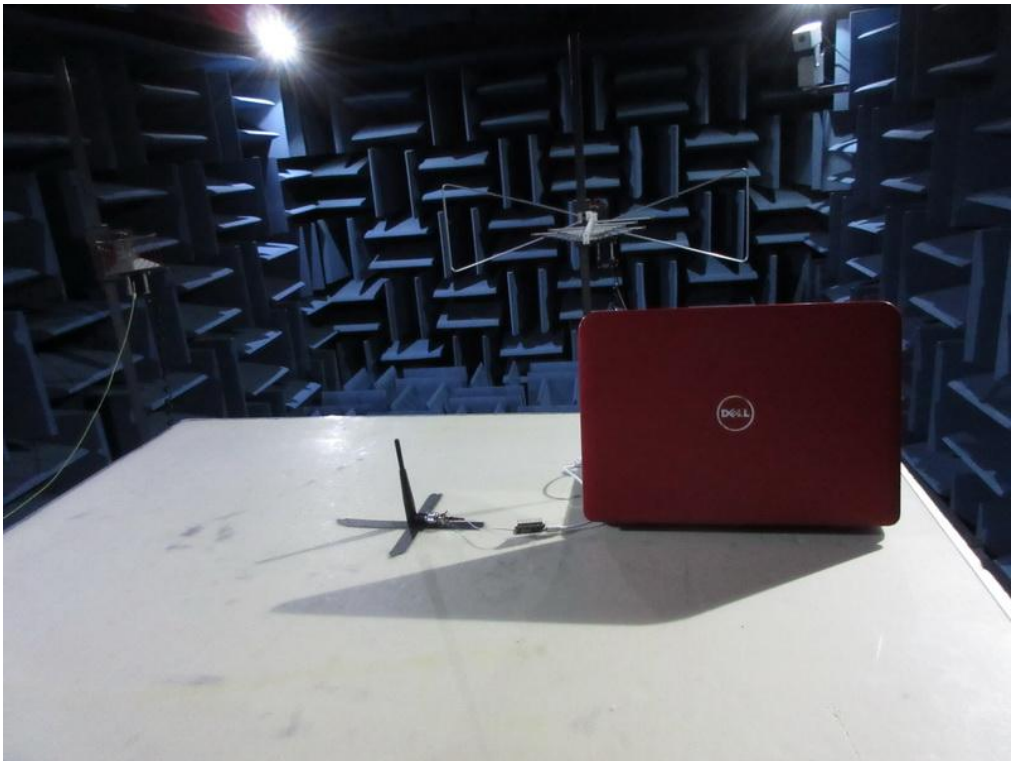
Remark: “N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

16. EUT TEST PHOTO

For Chip antenna

For Dipole antenna





ATTACHMENT A - RF OUTPUT POWER

For Chip antenna

Test Mode: 802.11b Mode							
Test Conditions		EIRP Power (dBm)			Number Of Bursts		
		CH01	CH07	CH13	CH01	CH07	CH13
T nom (°C)	20	17.87	17.41	17.37	11.00	11.00	11.00
T min (°C)	-20	17.85	17.39	17.35	11.00	11.00	11.00
T max (°C)	60	17.86	17.40	17.36	11.00	11.00	11.00
Max EIRP Power		17.87			11.00		
Limits		20dBm (-10dBW)			⩾10		
Result		Complies			Complies		

Test Mode: 802.11g Mode							
Test Conditions		EIRP Power (dBm)			Number Of Bursts		
		CH01	CH07	CH13	CH01	CH07	CH13
T nom (°C)	20	15.68	15.63	15.38	11.00	11.00	11.00
T min (°C)	-20	15.66	15.61	15.36	11.00	11.00	11.00
T max (°C)	60	15.65	15.60	15.35	11.00	11.00	11.00
Max EIRP Power		15.68			11.00		
Limits		20dBm (-10dBW)			⩾10		
Result		Complies			Complies		

Test Mode: 802.11n 20M Mode							
Test Conditions		EIRP Power (dBm)			Number Of Bursts		
		CH01	CH07	CH13	CH01	CH07	CH13
T nom (°C)	20	14.32	14.48	14.60	11.00	11.00	11.00
T min (°C)	-20	14.30	14.46	14.58	11.00	11.00	11.00
T max (°C)	60	14.29	14.45	14.57	11.00	11.00	11.00
Max EIRP Power		14.60			11.00		
Limits		20dBm (-10dBW)			⩾10		
Result		Complies			Complies		

Note: EIRP Power = output power conducted + G ant

For Dipole antenna

Test Mode: 802.11b Mode							
Test Conditions		EIRP Power (dBm)			Number Of Bursts		
		CH01	CH07	CH13	CH01	CH07	CH13
T nom (°C)	20	17.71	18.36	18.07	11.00	11.00	11.00
T min (°C)	-20	17.69	18.34	18.05	11.00	11.00	11.00
T max (°C)	60	17.70	18.35	18.06	11.00	11.00	11.00
Max EIRP Power		18.36			11.00		
Limits		20dBm (-10dBW)			⩾10		
Result		Complies			Complies		

Test Mode: 802.11g Mode							
Test Conditions		EIRP Power (dBm)			Number Of Bursts		
		CH01	CH07	CH13	CH01	CH07	CH13
T nom (°C)	20	16.82	16.52	16.78	11.00	11.00	11.00
T min (°C)	-20	16.80	16.50	16.76	11.00	11.00	11.00
T max (°C)	60	16.79	16.49	16.75	11.00	11.00	11.00
Max EIRP Power		16.82			11.00		
Limits		20dBm (-10dBW)			⩾10		
Result		Complies			Complies		

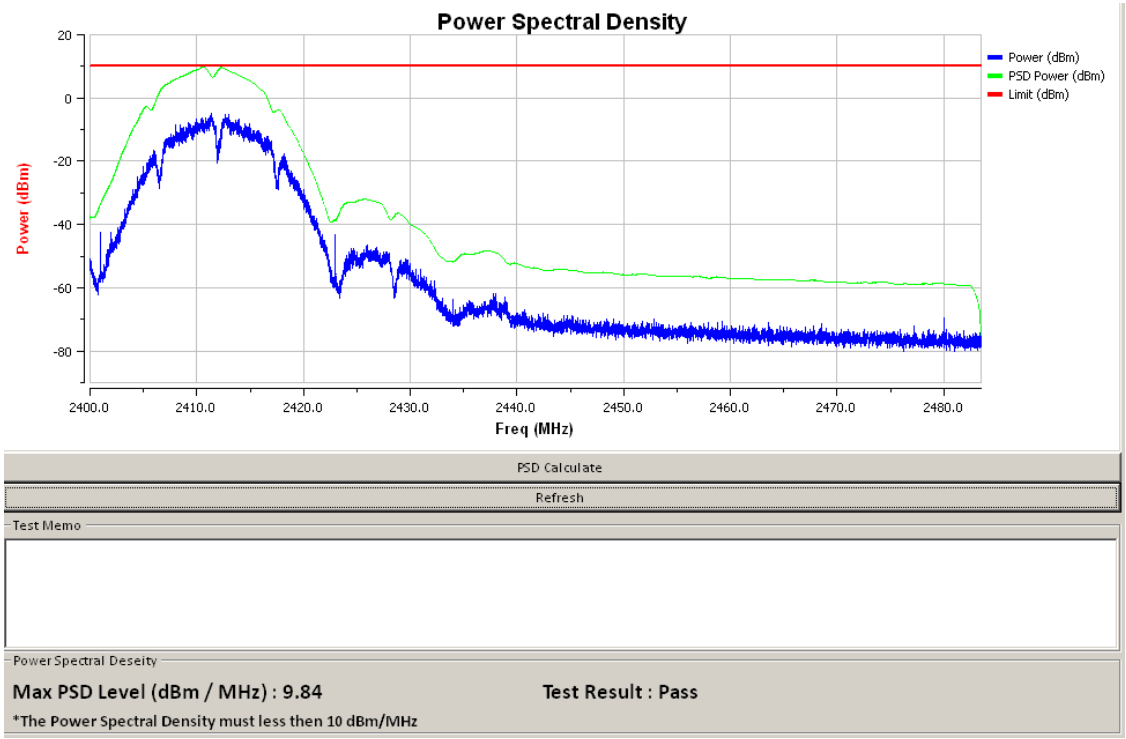
Test Mode: 802.11n 20M Mode							
Test Conditions		EIRP Power (dBm)			Number Of Bursts		
		CH01	CH07	CH13	CH01	CH07	CH13
T nom (°C)	20	15.82	16.13	15.85	11.00	11.00	11.00
T min (°C)	-20	15.80	16.11	15.83	11.00	11.00	11.00
T max (°C)	60	15.79	16.10	15.82	11.00	11.00	11.00
Max EIRP Power		16.13			11.00		
Limits		20dBm (-10dBW)			⩾10		
Result		Complies			Complies		

Note: EIRP Power = output power conducted + G ant

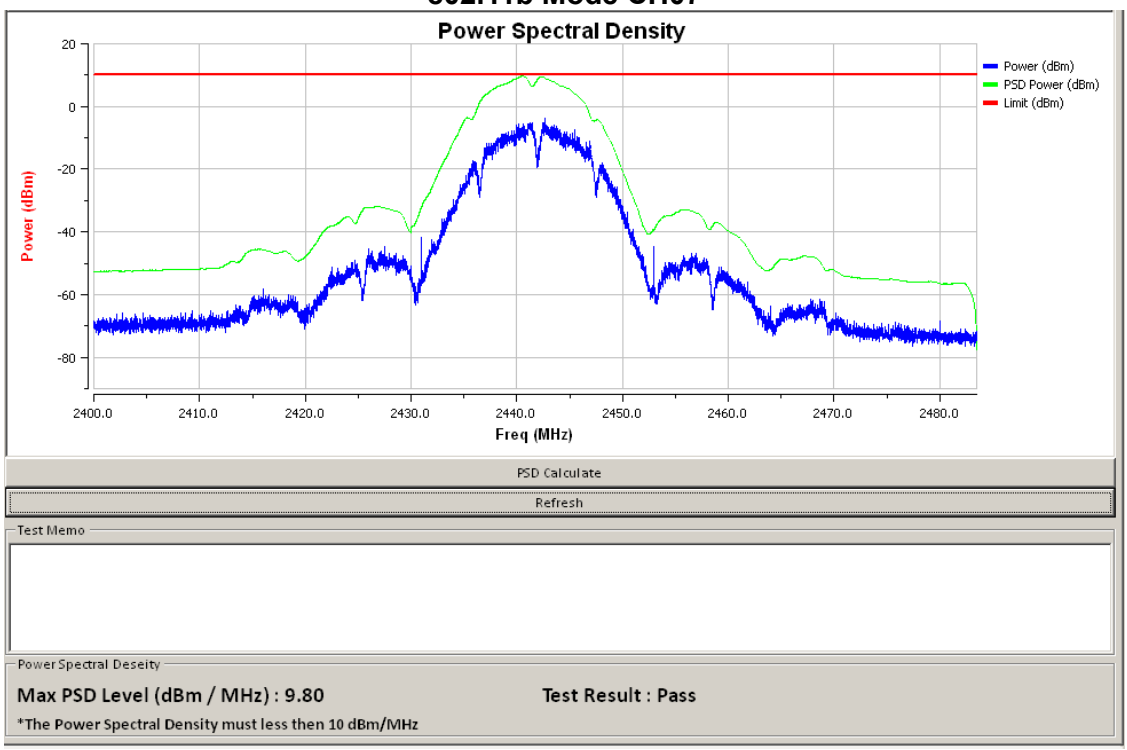
ATTACHMENT B - POWER SPECTRAL DENSITY

For Chip antenna

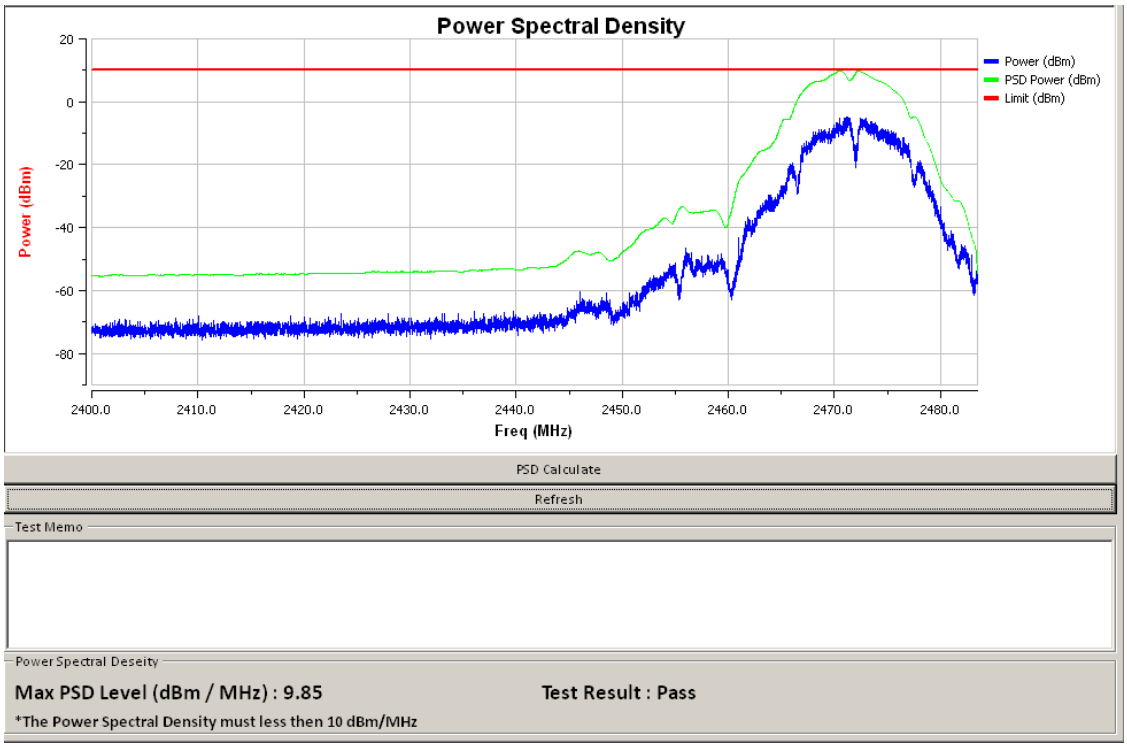
802.11b Mode CH01



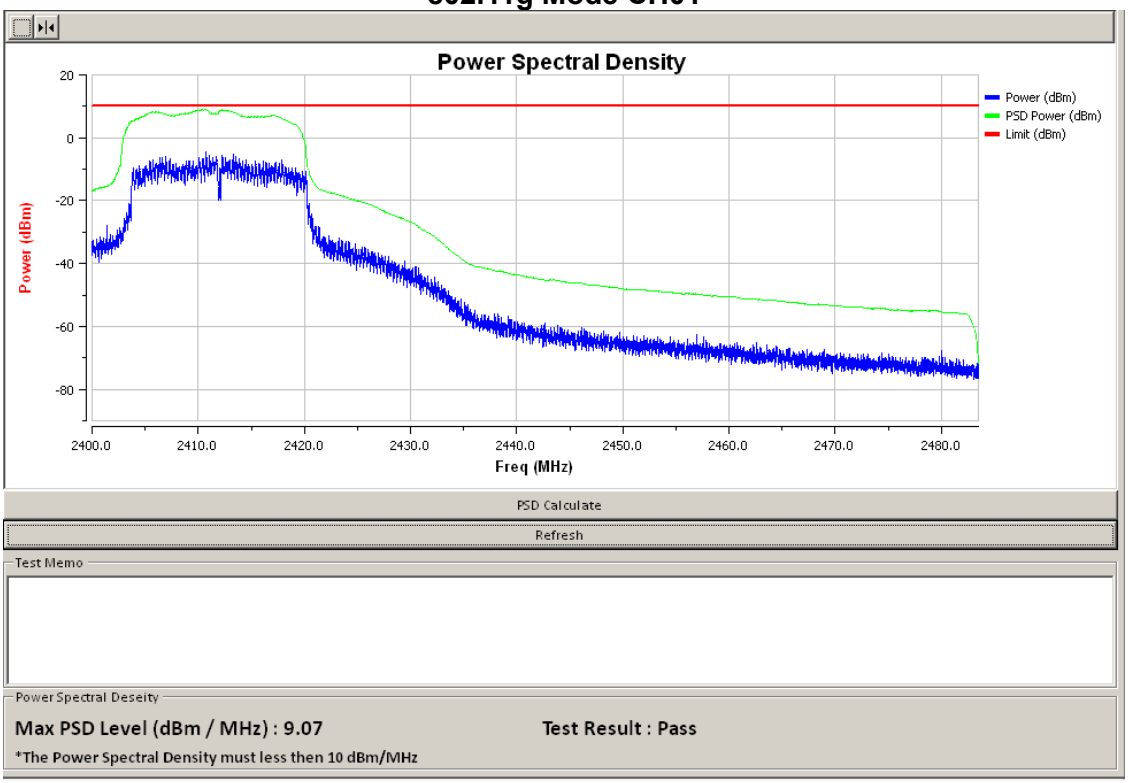
802.11b Mode CH07



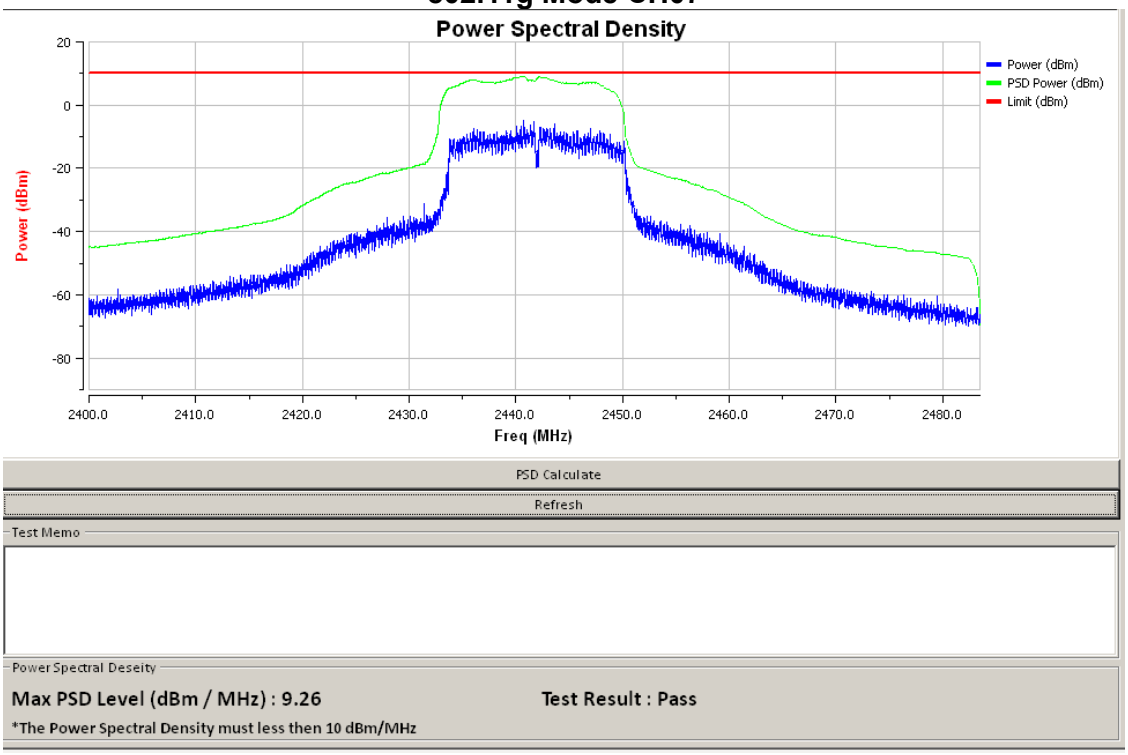
802.11b Mode CH13



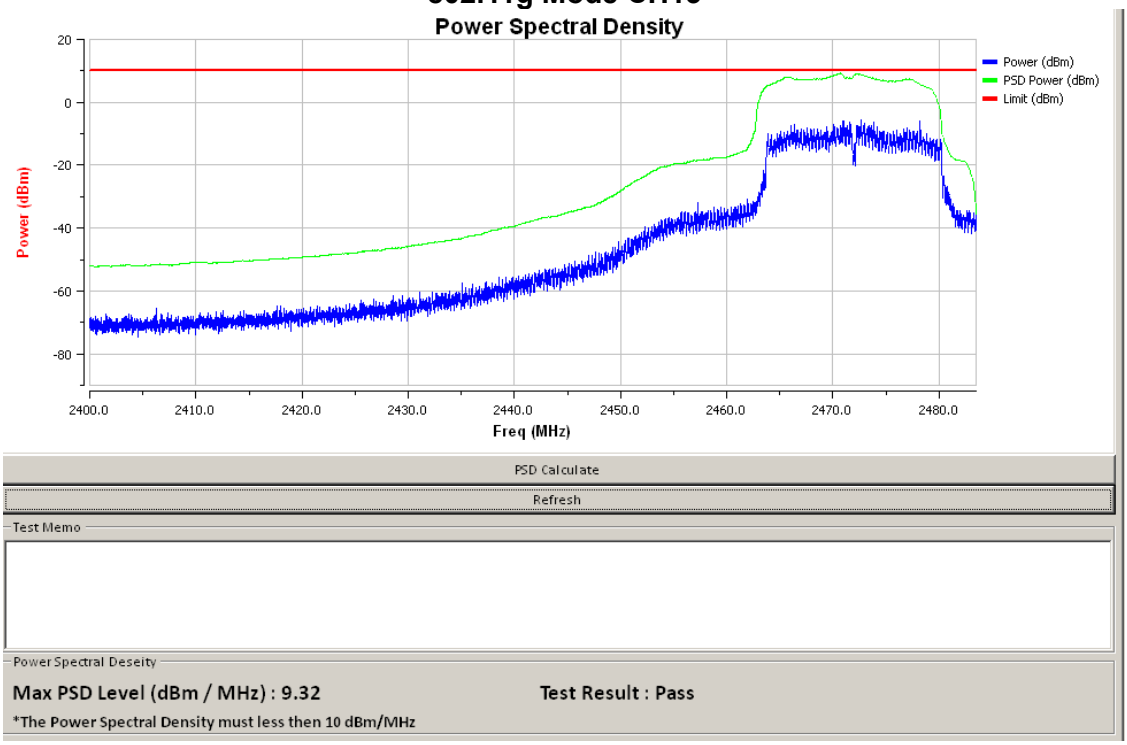
802.11g Mode CH01



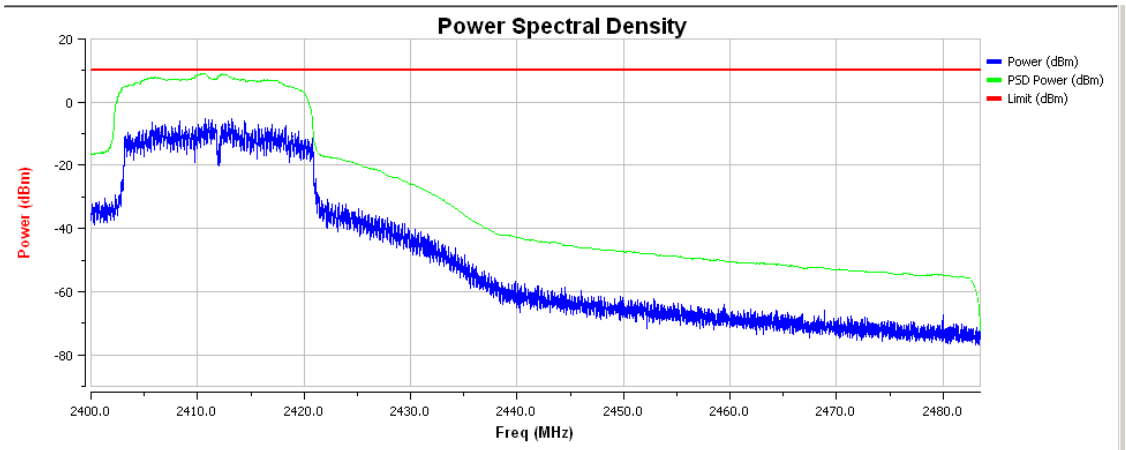
802.11g Mode CH07



802.11g Mode CH13



802.11n 20M Mode CH01



PSD Calculate

Refresh

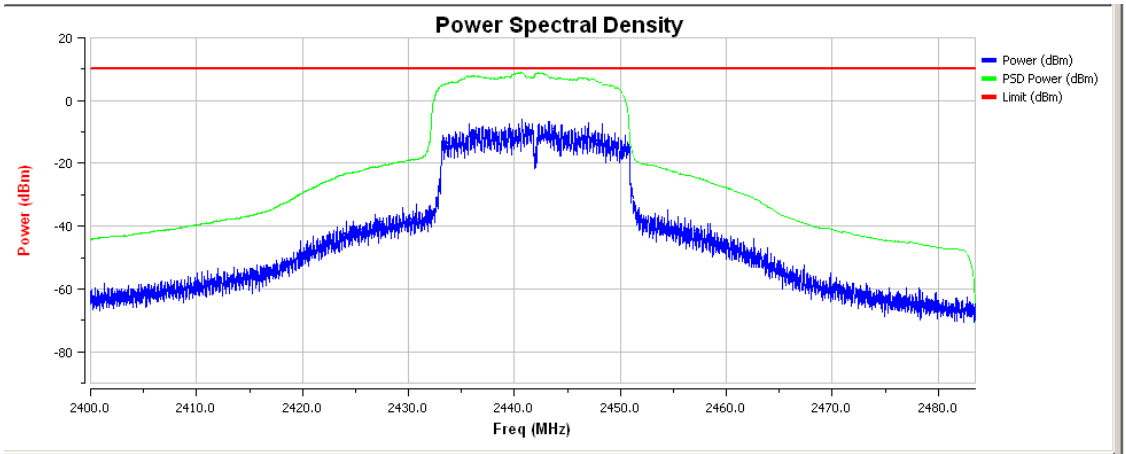
Test Memo

Power Spectral Deseity

Max PSD Level (dBm / MHz) : 9.21 **Test Result : Pass**

*The Power Spectral Density must less then 10 dBm/MHz

802.11n 20M Mode CH07



PSD Calculate

Refresh

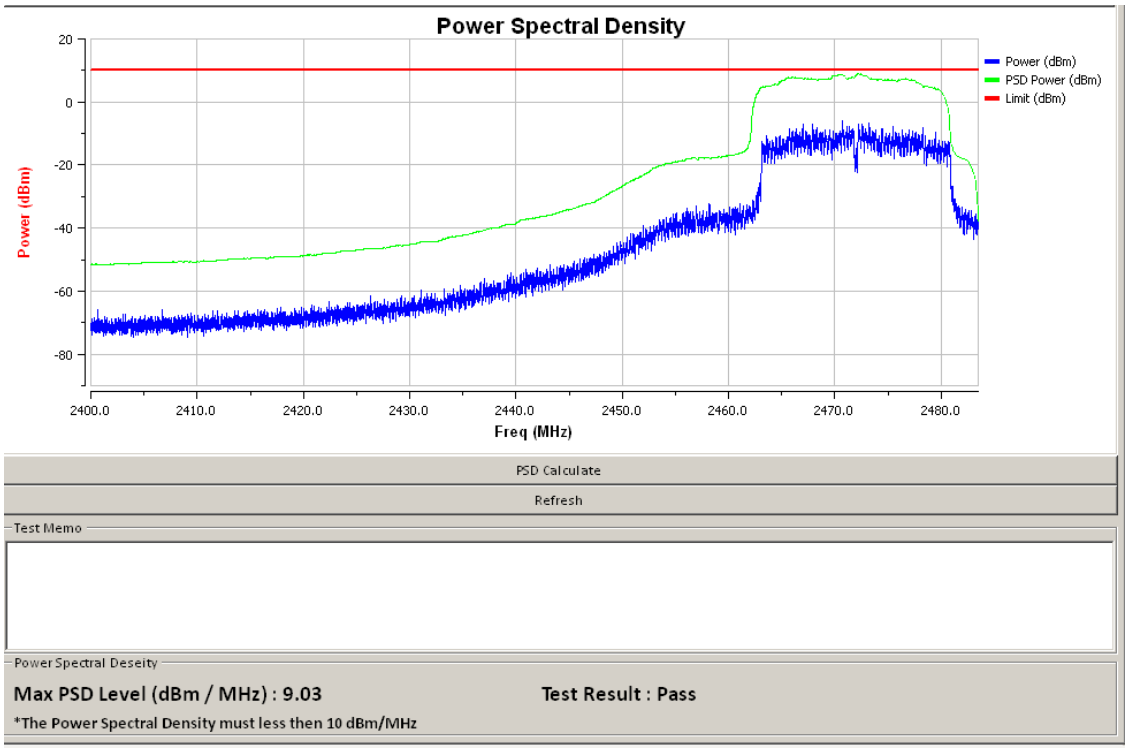
Test Memo

Power Spectral Deseity

Max PSD Level (dBm / MHz) : 9.07 **Test Result : Pass**

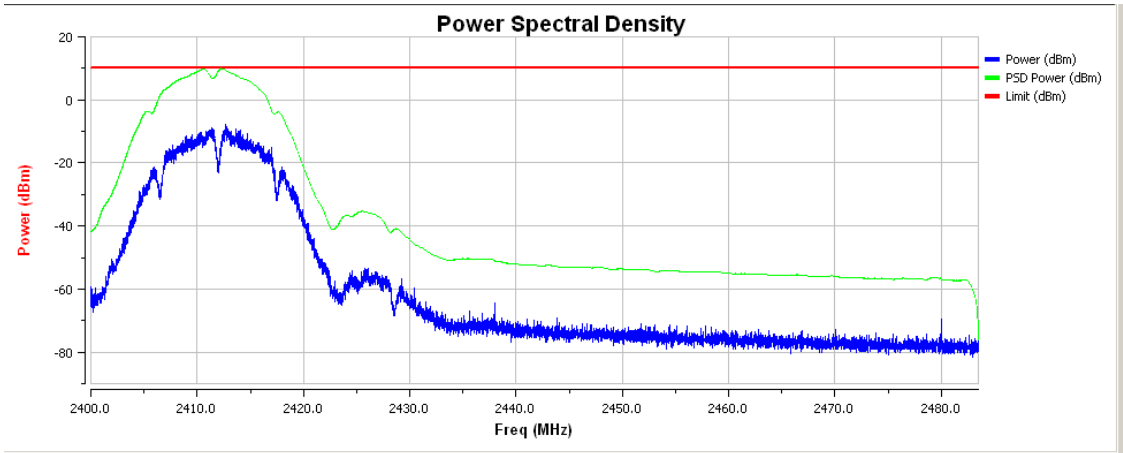
*The Power Spectral Density must less then 10 dBm/MHz

802.11n 20M Mode CH13



For Dipole antenna

802.11b Mode CH01



PSD Calculate

Refresh

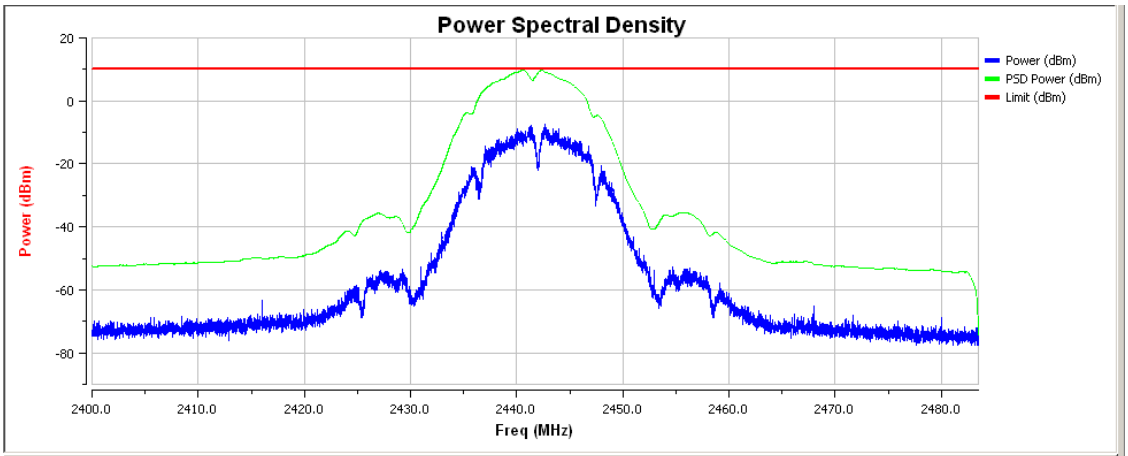
Test Memo

Power Spectral Deseity

Max PSD Level (dBm / MHz) : 9.97 Test Result : Pass

*The Power Spectral Density must less then 10 dBm/MHz

802.11b Mode CH07



PSD Calculate

Refresh

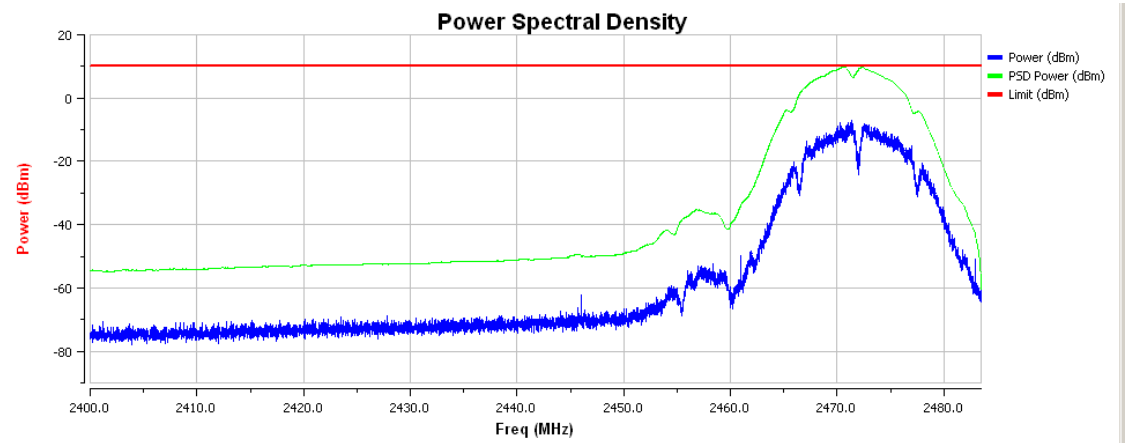
Test Memo

Power Spectral Deseity

Max PSD Level (dBm / MHz) : 9.82 Test Result : Pass

*The Power Spectral Density must less then 10 dBm/MHz

802.11b Mode CH13



PSD Calculate

Refresh

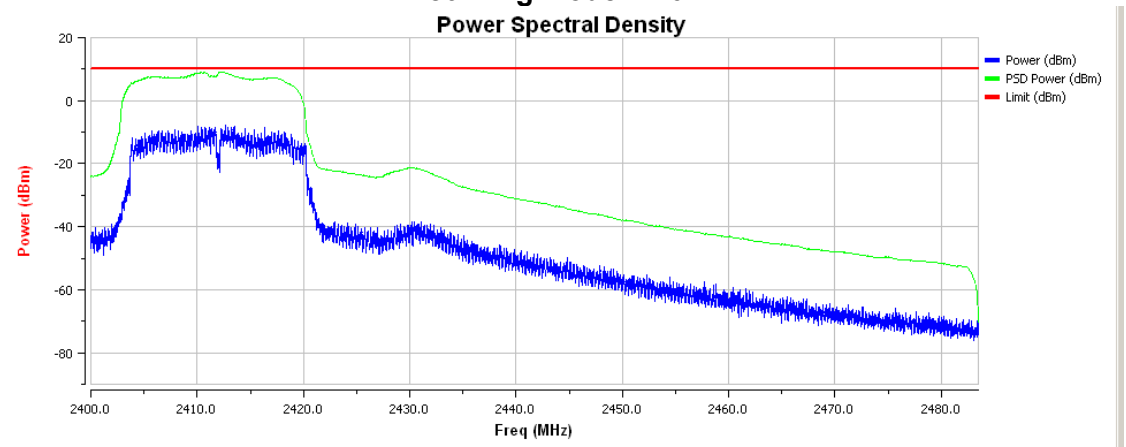
Test Memo

Power Spectral Deseity

Max PSD Level (dBm / MHz) : 9.88 Test Result : Pass

*The Power Spectral Density must less then 10 dBm/MHz

802.11g Mode CH01



PSD Calculate

Refresh

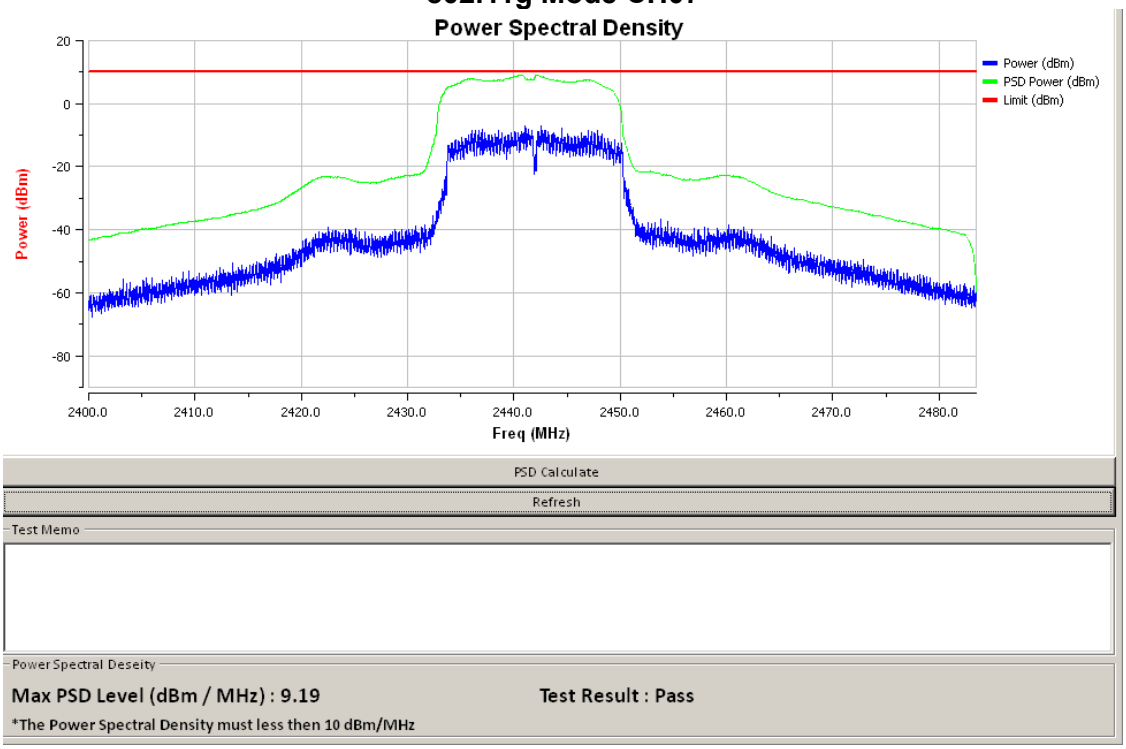
Test Memo

Power Spectral Deseity

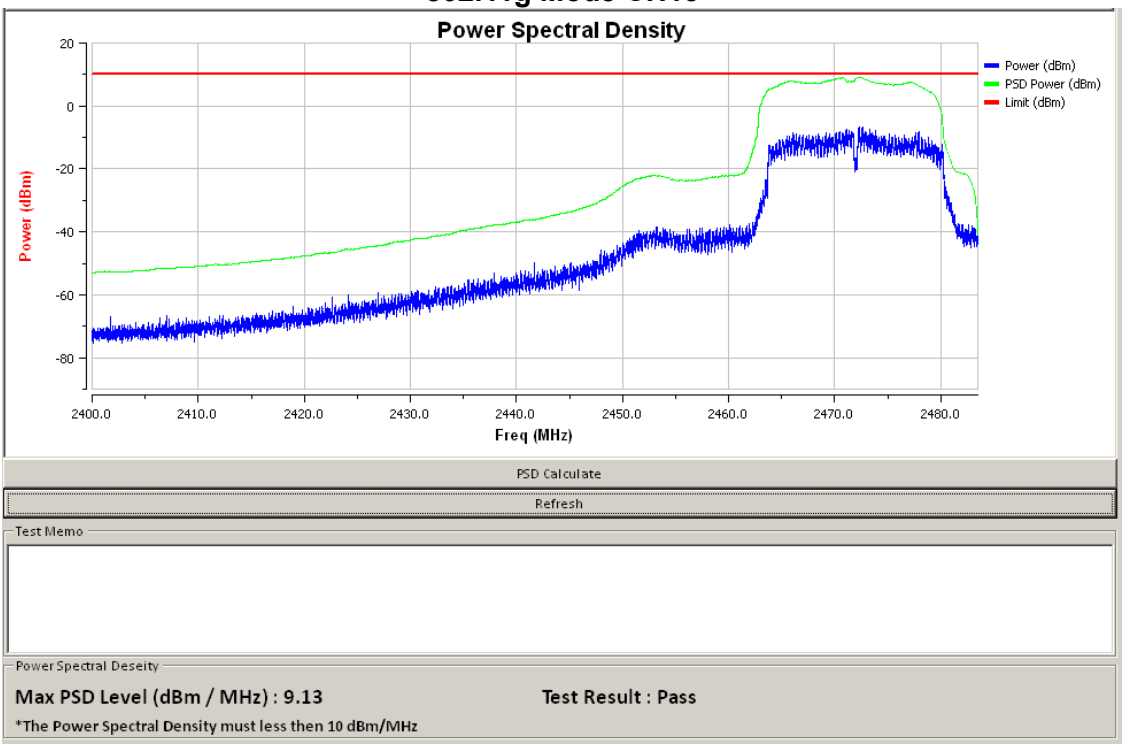
Max PSD Level (dBm / MHz) : 9.22 Test Result : Pass

*The Power Spectral Density must less then 10 dBm/MHz

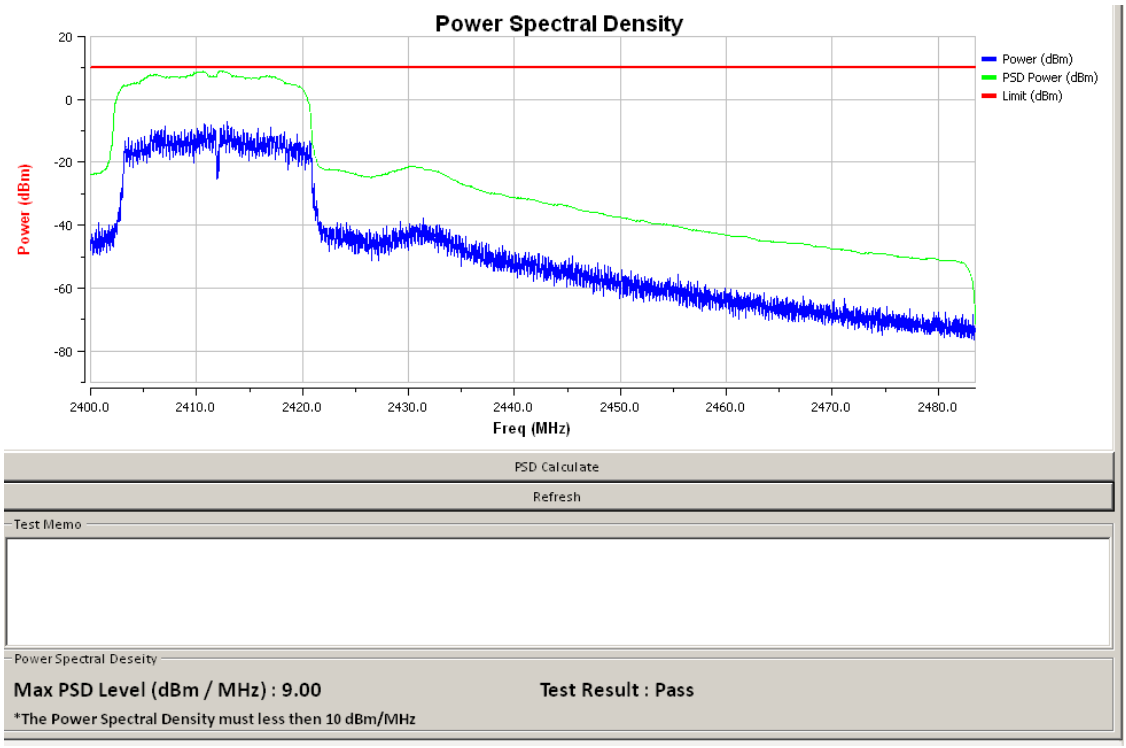
802.11g Mode CH07



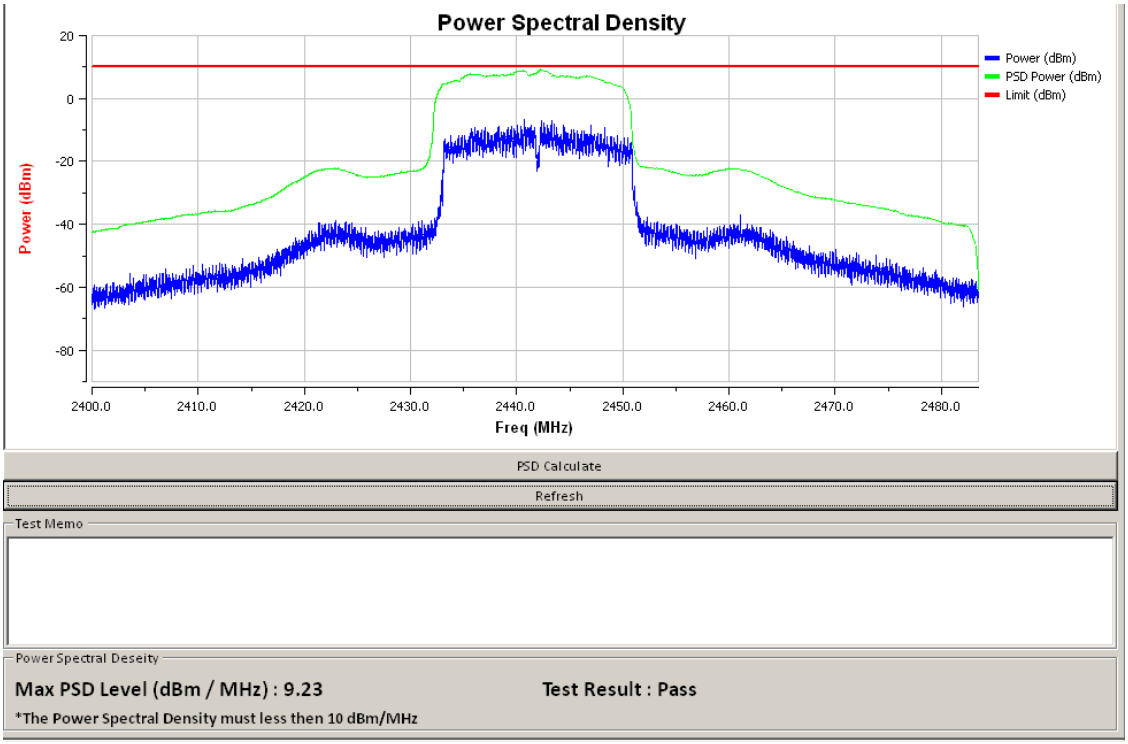
802.11g Mode CH13



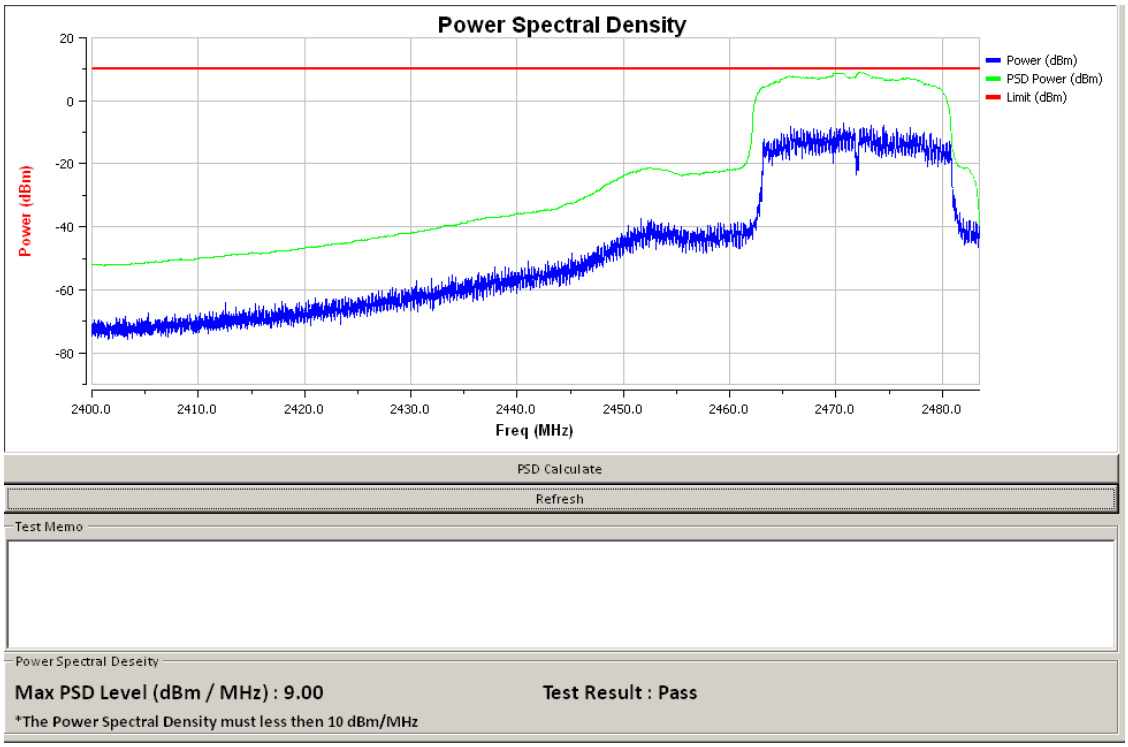
802.11n 20M Mode CH01



802.11n 20M Mode CH07



802.11n 20M Mode CH13



ATTACHMENT C - DUTY CYCLE, TX-SEQUENCE, TX-GAP

Test Mode: N/A

Note: “N/A” denotes test is not applicable to this device.

ATTACHMENT D - MEDIUM UTILISATION (MU) FACTOR

Test Mode: N/A

Note: “N/A” denotes test is not applicable to this device.

ATTACHMENT E - ADAPTIVITY AND RECEIVER BLOCKING

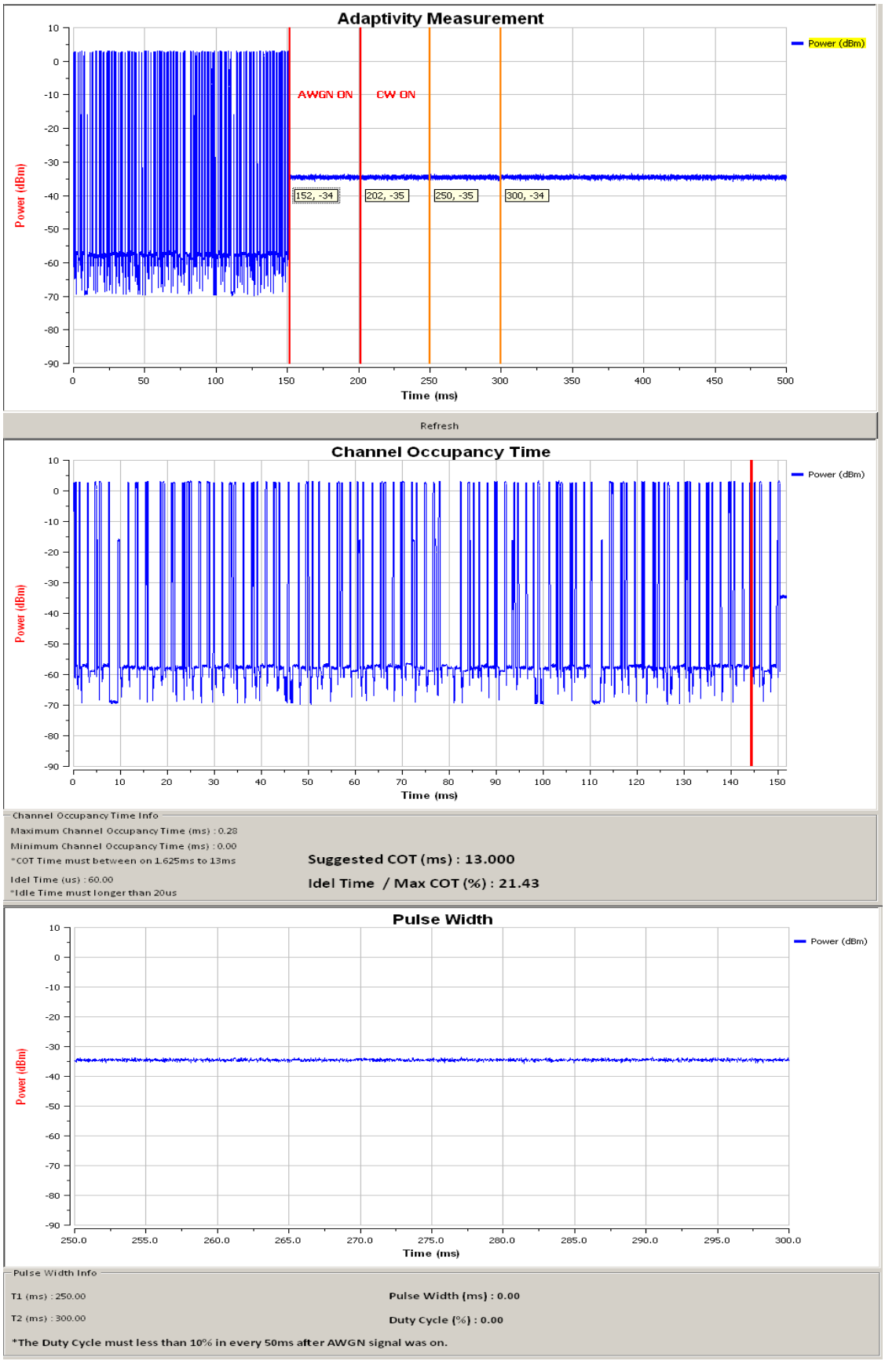
1. List of measurements

UUT Operational Mode	Frame Based Equipment	
	Load Based Equipment (CCA using 'energy detect')	√
	Load Based Equipment (CCA not using any of the mechanisms referenced)	

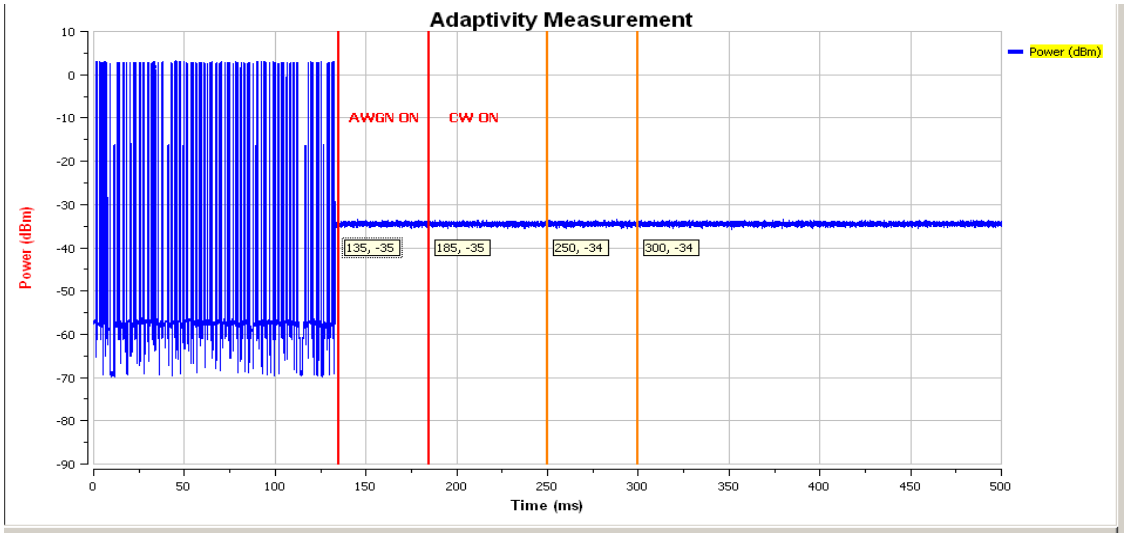
Clause	Test Parameter	Remarks	Pass / Fail
4.3.2.5.2.2.1	Adaptive (Frame Based Equipment)	Not Applicable	N/A
4.3.2.5.2.2.2	Adaptive (Load Based Equipment)	Applicable	Pass
4.3.2.5.3	Short Control Signaling Transmissions	Applicable	Pass
4.3.2.10	Receiver Blocking	Applicable	Pass

For Chip antenna

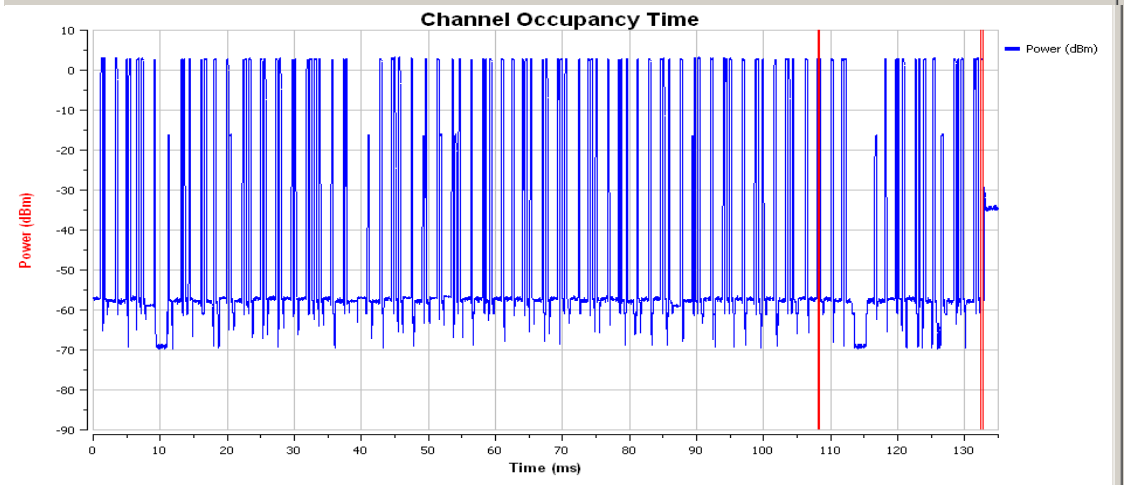
802.11b Mode CH01



802.11b Mode CH13



Refresh



Channel Occupancy Time Info

Maximum Channel Occupancy Time (ms) : 0.28

Minimum Channel Occupancy Time (ms) : 0.00

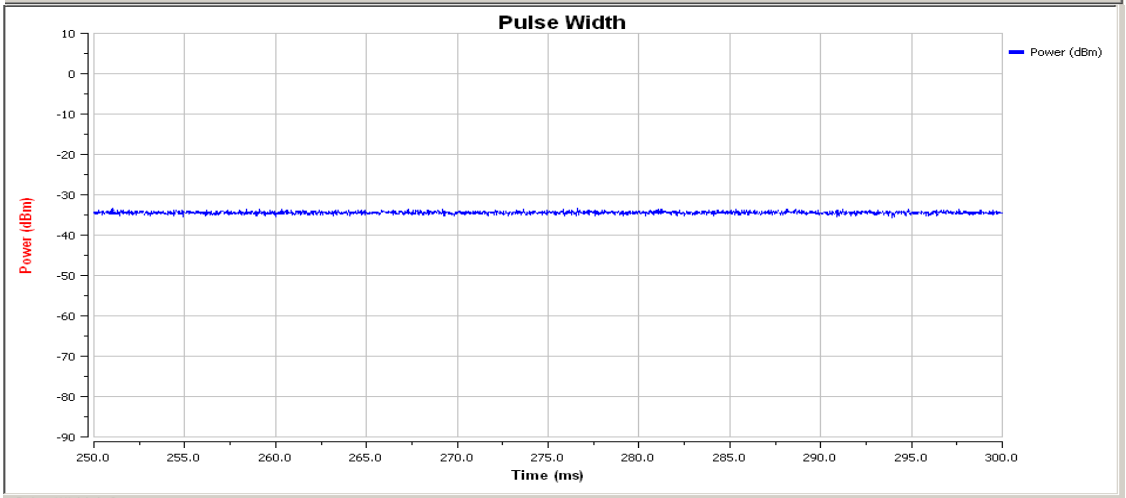
*COT Time must between on 1.625ms to 13ms

Idel Time (us) : 60.00

*Idle Time must longer than 20us

Suggested COT (ms) : 13.000

Idel Time / Max COT (%) : 21.43



Pulse Width Info

T1 (ms) : 250.00

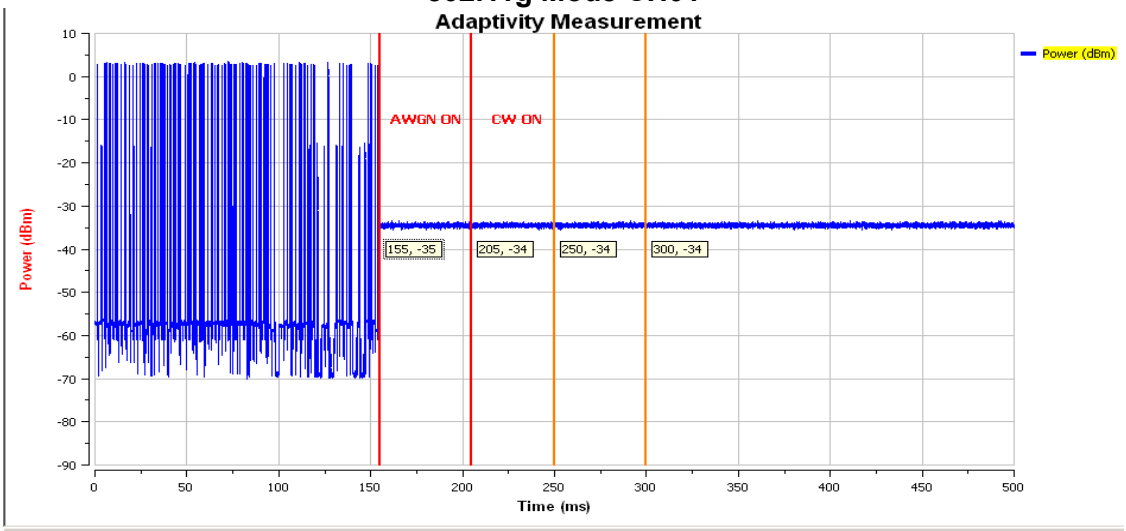
T2 (ms) : 300.00

Pulse Width (ms) : 0.00

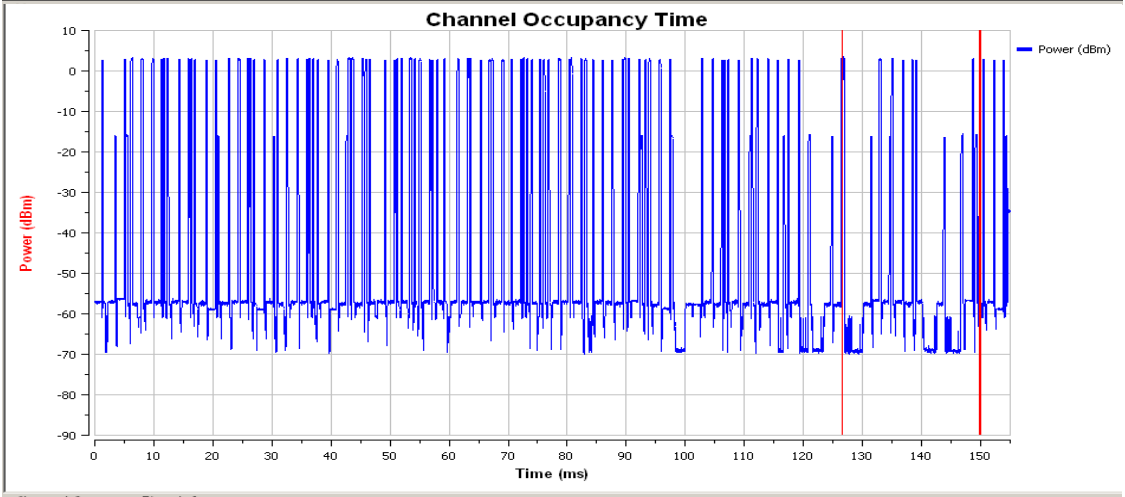
Duty Cycle (%) : 0.00

***The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.**

802.11g Mode CH01



Refresh



Channel Occupancy Time Info

Maximum Channel Occupancy Time (ms) : 0.28

Minimum Channel Occupancy Time (ms) : 0.00

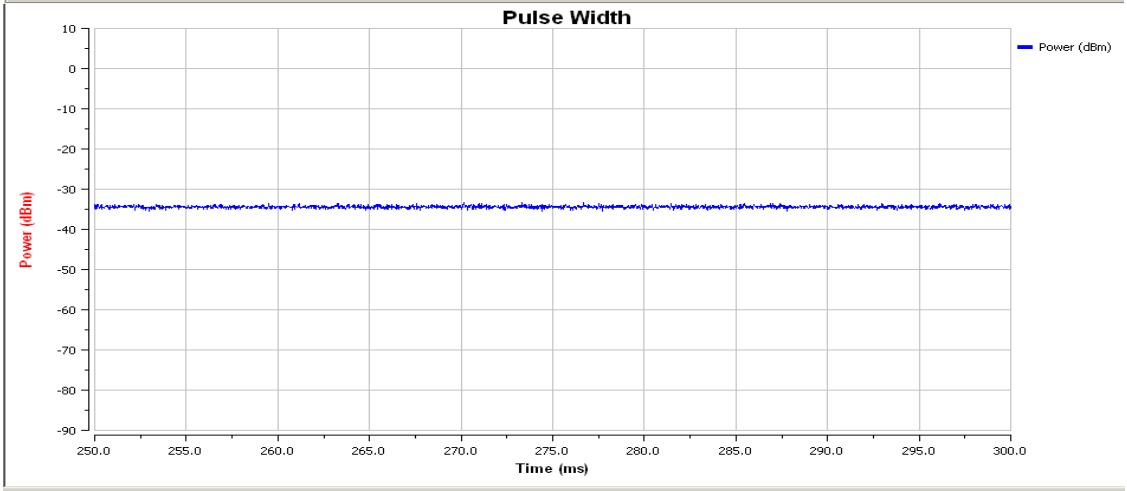
*COT Time must between on 1.625ms to 13ms

Idel Time (us) : 60.00

*Idle Time must longer than 20us

Suggested COT (ms) : 13.000

Idel Time / Max COT (%) : 21.43



Pulse Width Info

T1 (ms) : 250.00

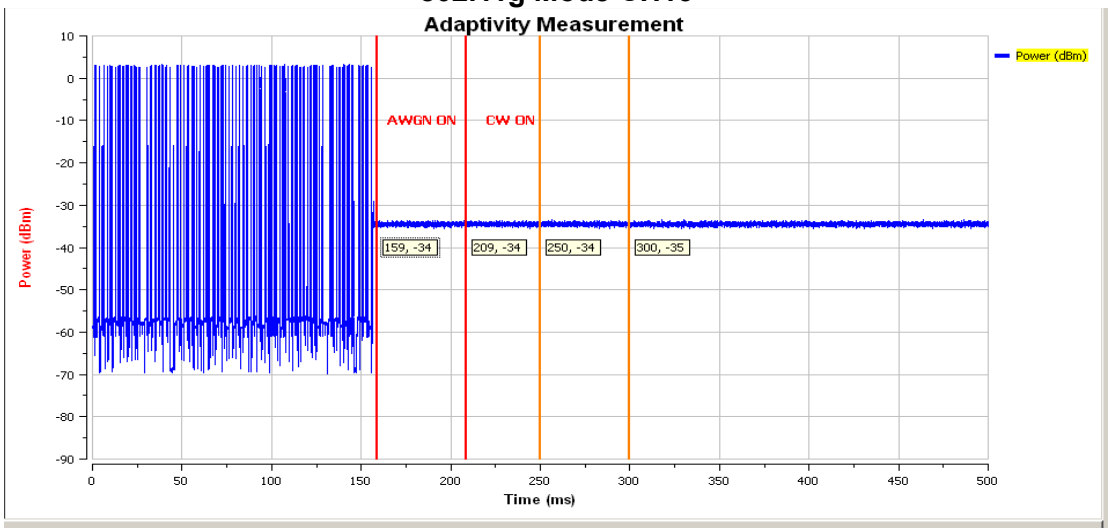
T2 (ms) : 300.00

Pulse Width (ms) : 0.00

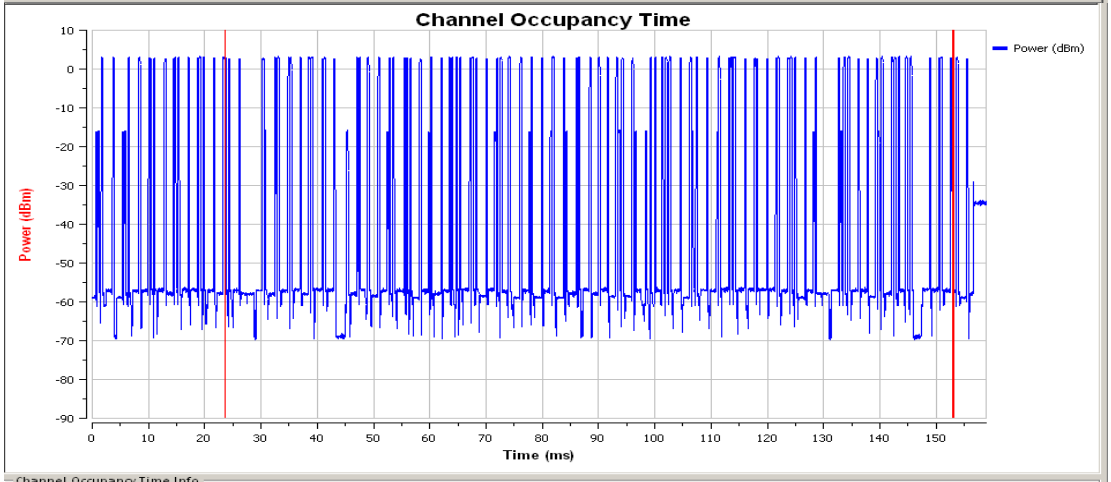
Duty Cycle (%) : 0.00

***The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.**

802.11g Mode CH13



Refresh



Channel Occupancy Time Info

Maximum Channel Occupancy Time (ms) : 0.28

Minimum Channel Occupancy Time (ms) : 0.00

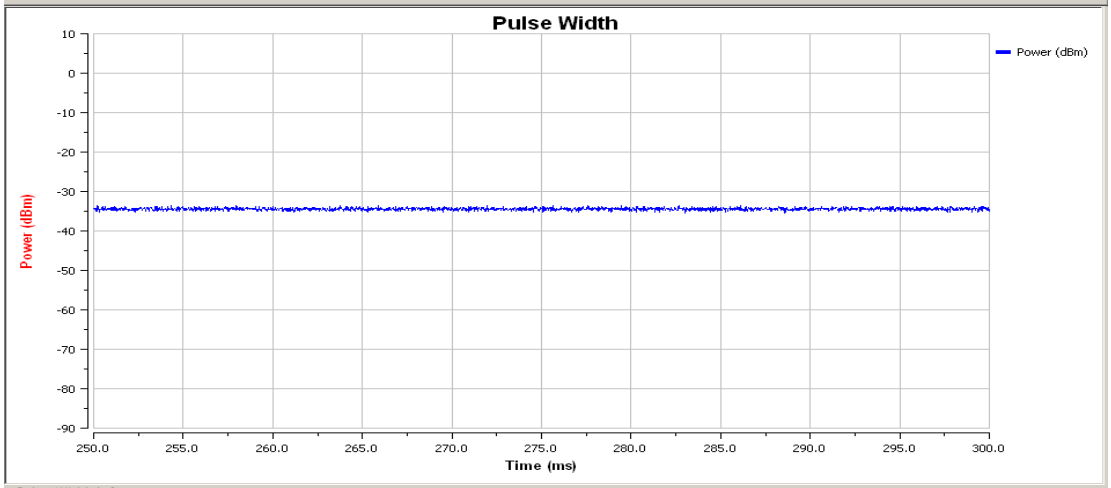
*COT Time must between on 1.625ms to 13ms

Idel Time (us) : 40.00

*Idle Time must longer than 20us

Suggested COT (ms) : 13.000

Idel Time / Max COT (%) : 14.28



Pulse Width Info

T1 (ms) : 250.00

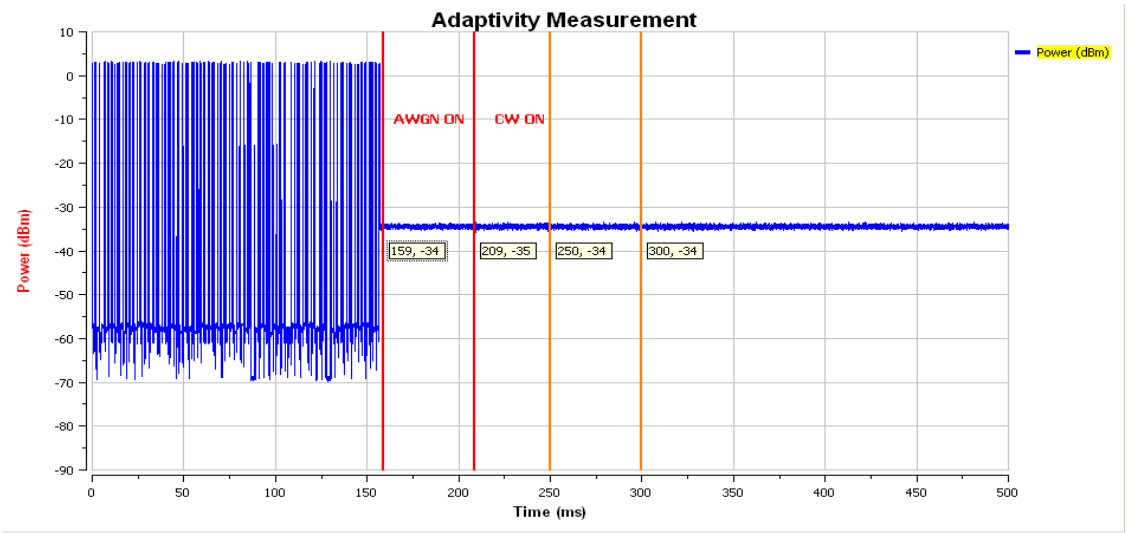
T2 (ms) : 300.00

Pulse Width (ms) : 0.00

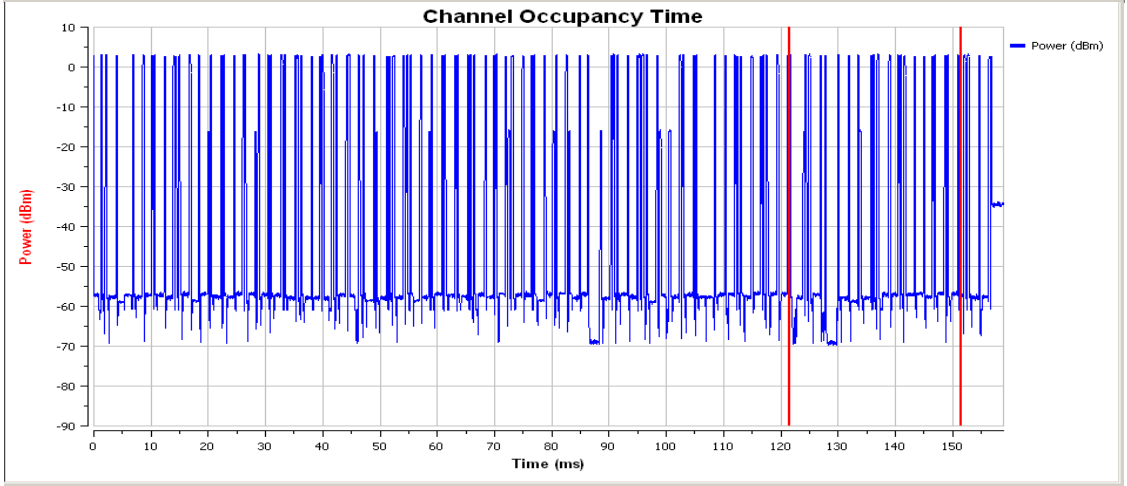
Duty Cycle (%) : 0.00

***The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.**

802.11n 20M Mode CH01



Refresh



Channel Occupancy Time Info

Maximum Channel Occupancy Time (ms) : 0.28

Minimum Channel Occupancy Time (ms) : 0.00

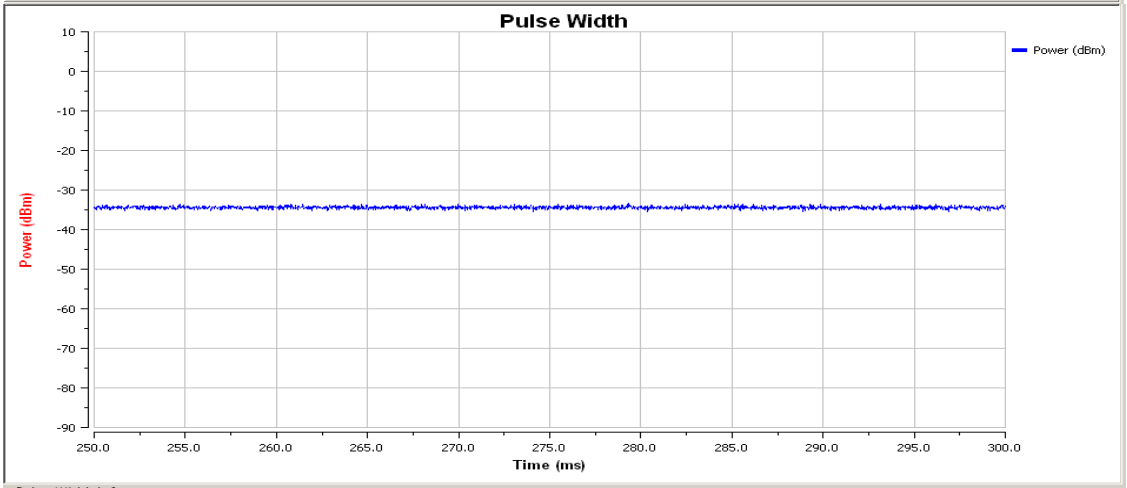
*COT Time must between on 1.625ms to 13ms

Idel Time (us) : 60.00

*Idle Time must longer than 20us

Suggested COT (ms) : 13.000

Idel Time / Max COT (%) : 21.43



Pulse Width Info

T1 (ms) : 250.00

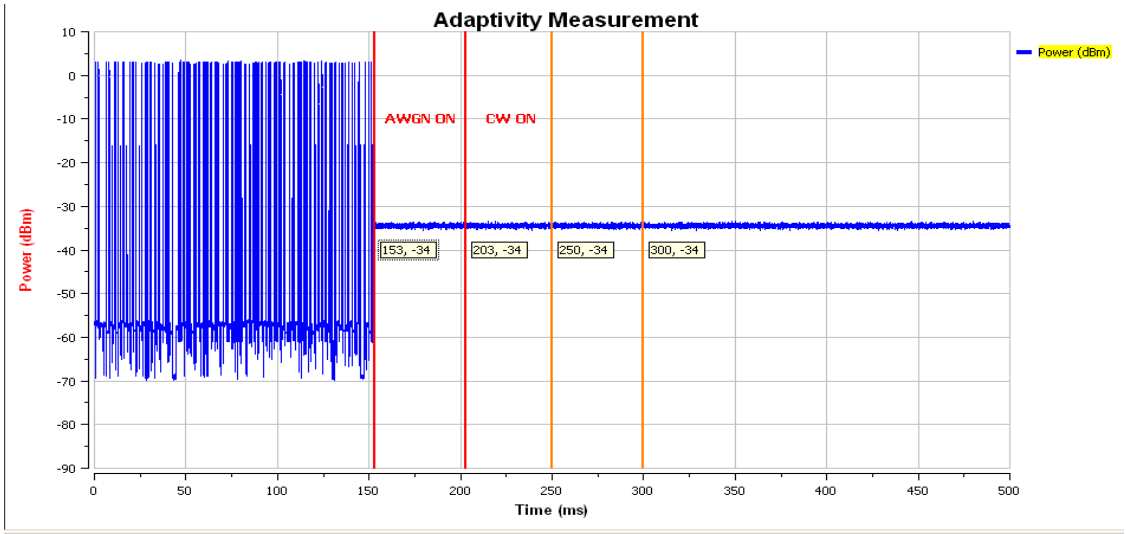
T2 (ms) : 300.00

Pulse Width (ms) : 0.00

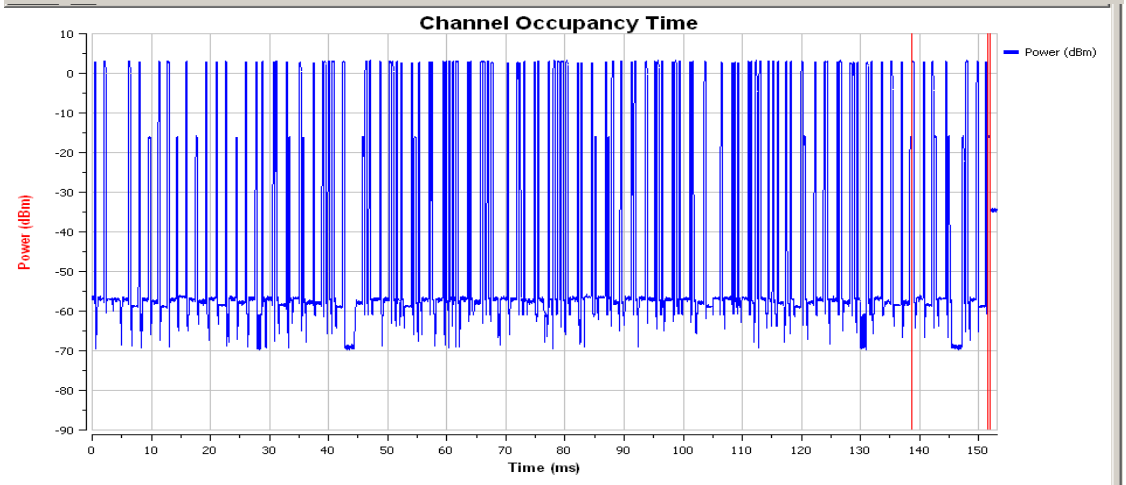
Duty Cycle (%) : 0.00

***The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.**

802.11n 20M Mode CH13



Refresh



Channel Occupancy Time Info

Maximum Channel Occupancy Time (ms) : 0.32

Minimum Channel Occupancy Time (ms) : 0.00

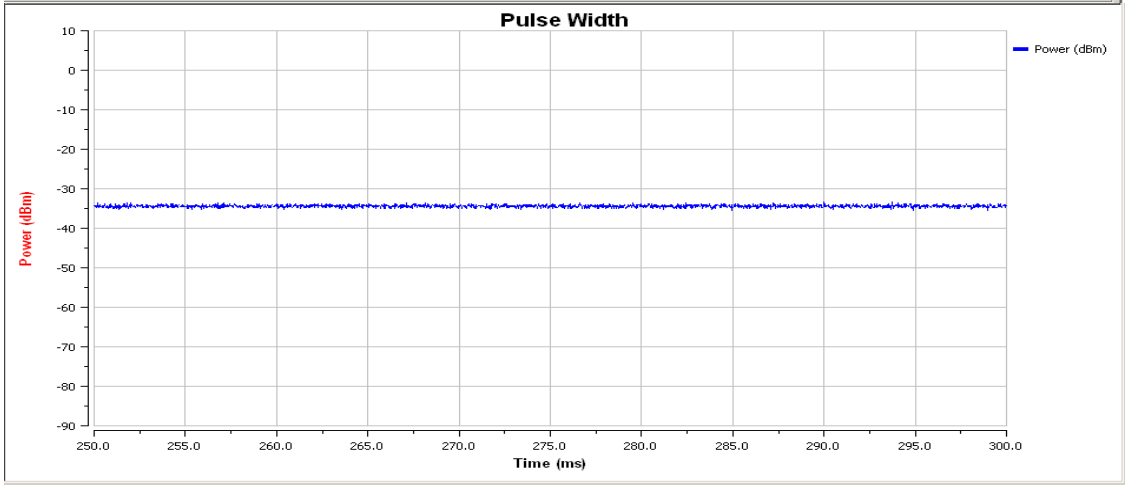
*COT Time must between on 1.625ms to 13ms

Idel Time (us) : 79.99

*Idle Time must longer than 20us

Suggested COT (ms) : 13.000

Idel Time / Max COT (%) : 25.00



Pulse Width Info

T1 (ms) : 250.00

T2 (ms) : 300.00

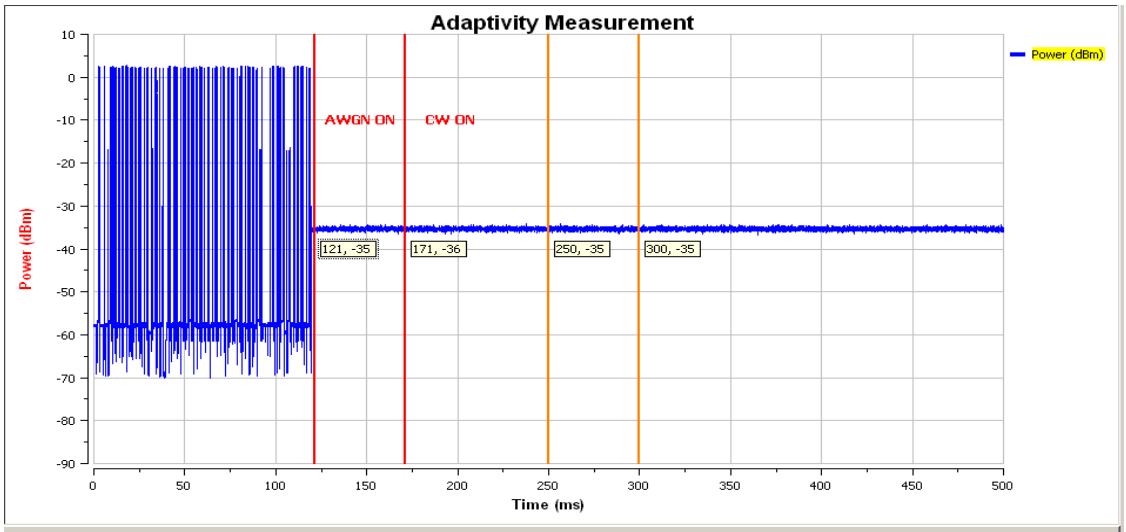
Pulse Width (ms) : 0.00

Duty Cycle (%) : 0.00

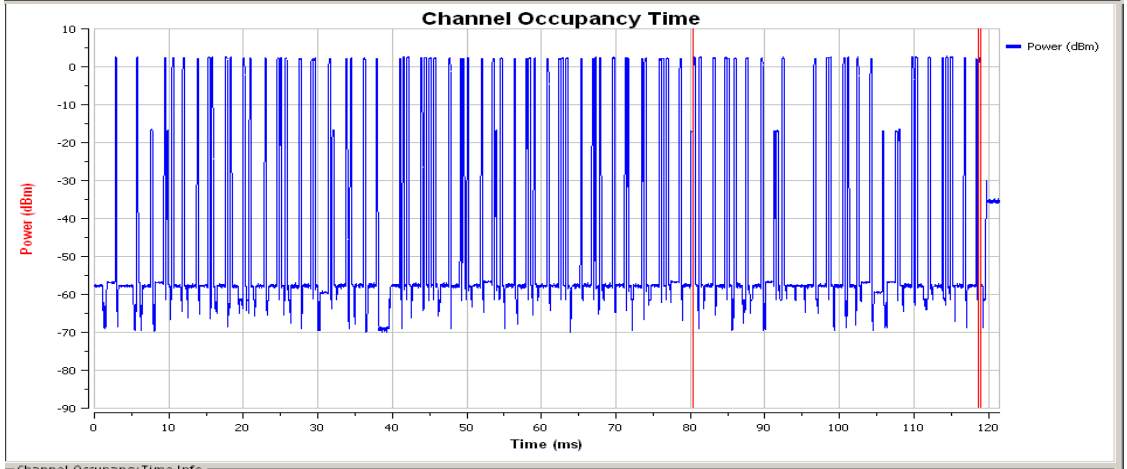
*The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.

For Dipole antenna

802.11b Mode CH01



Refresh



Channel Occupancy Time Info

Maximum Channel Occupancy Time (ms) : 0.28

Minimum Channel Occupancy Time (ms) : 0.00

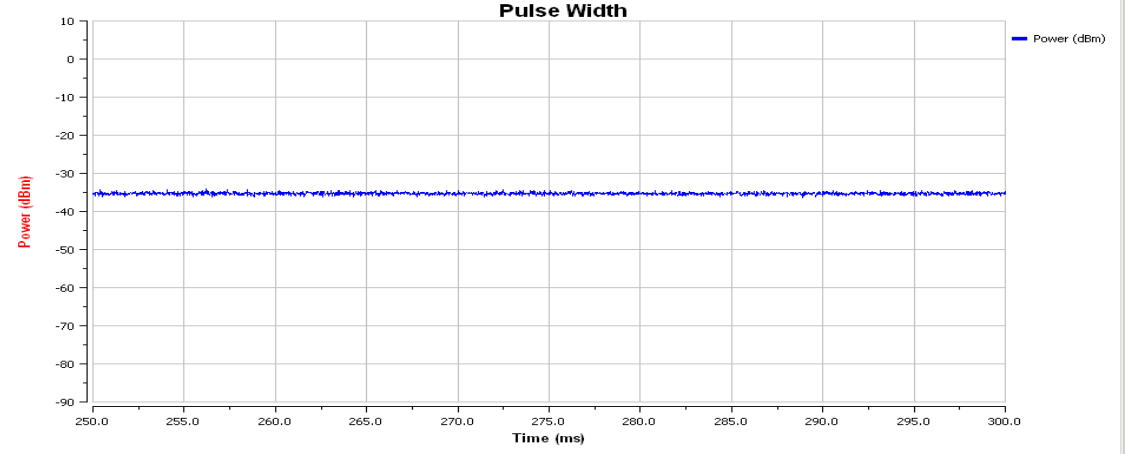
*COT Time must between on 1.625ms to 13ms

Idel Time (us) : 60.00

*Idle Time must longer than 20us

Suggested COT (ms) : 12.188

Idel Time / Max COT (%) : 21.43



Pulse Width Info

T1 (ms) : 250.00

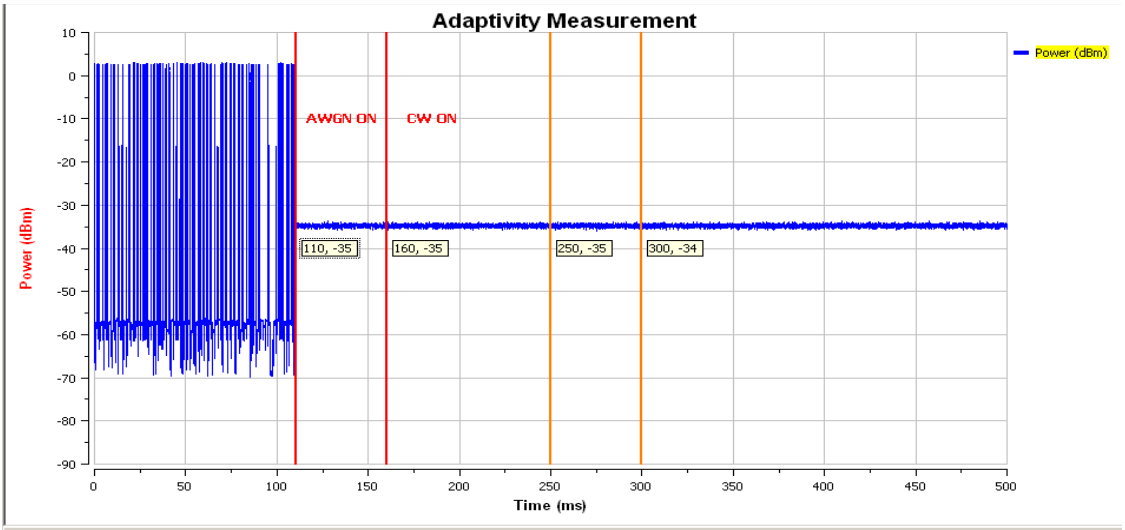
T2 (ms) : 300.00

Pulse Width (ms) : 0.00

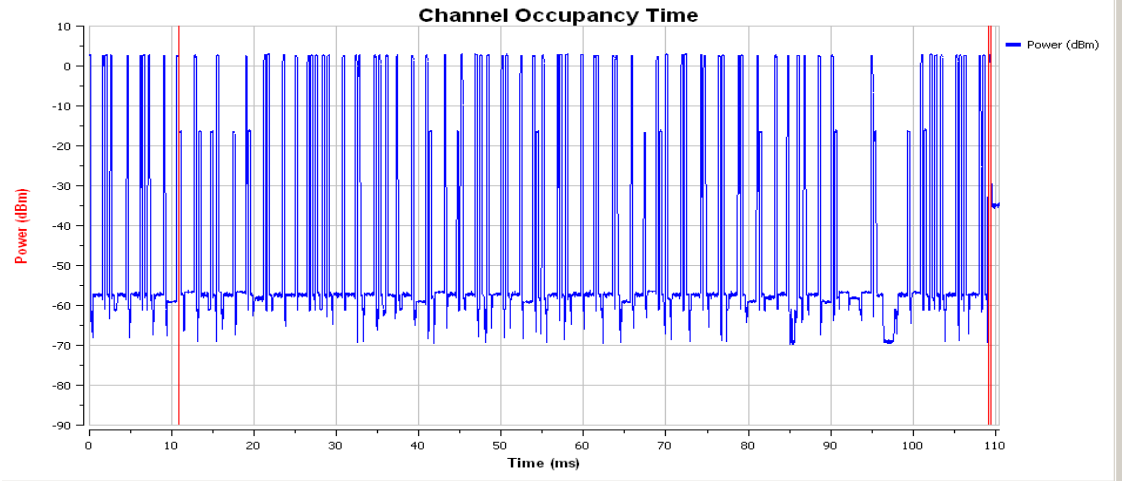
Duty Cycle (%) : 0.00

*The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.

802.11b Mode CH13



Refresh



Channel Occupancy Time Info

Maximum Channel Occupancy Time (ms) : 0.28

Minimum Channel Occupancy Time (ms) : 0.00

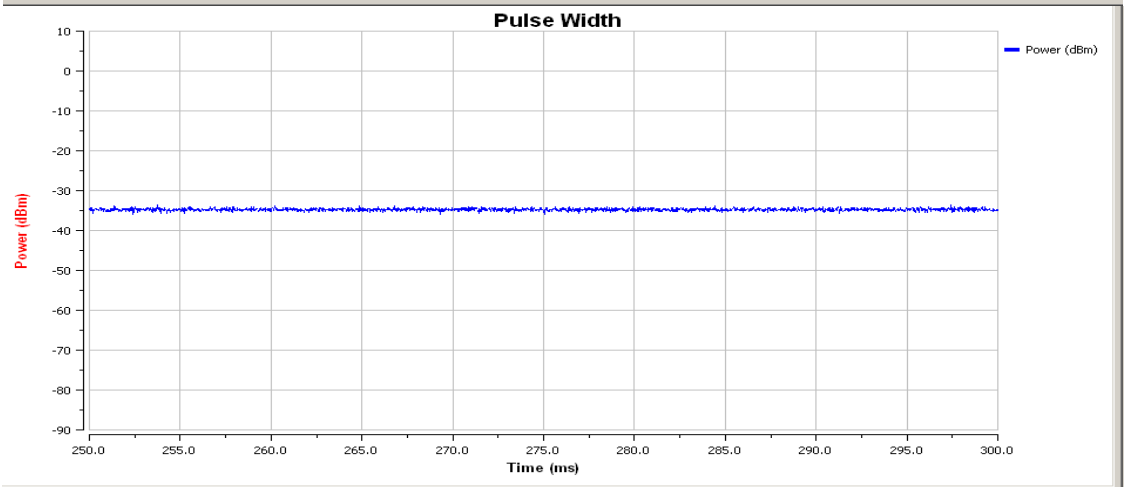
*COT Time must between on 1.625ms to 13ms

Idel Time (us) : 60.00

*Idle Time must longer than 20us

Suggested COT (ms) : 12.188

Idel Time / Max COT (%) : 21.43



Pulse Width Info

T1 (ms) : 250.00

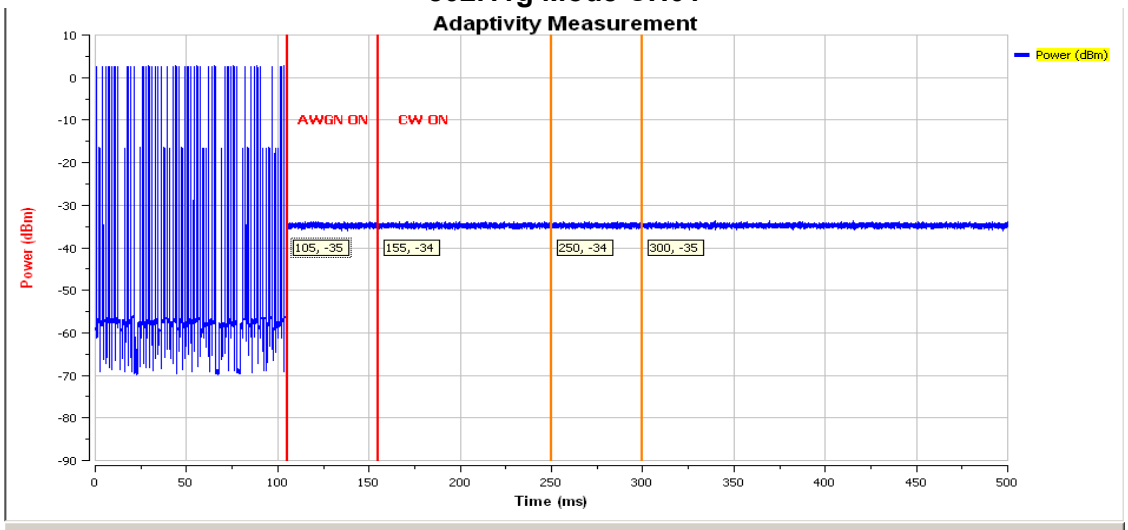
T2 (ms) : 300.00

Pulse Width (ms) : 0.00

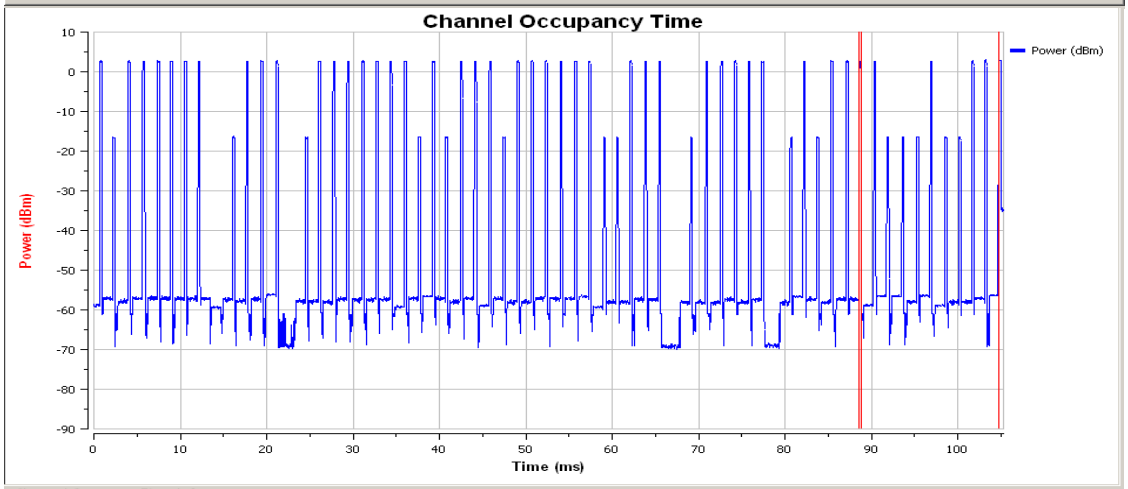
Duty Cycle (%) : 0.00

***The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.**

802.11g Mode CH01



Refresh



Channel Occupancy Time Info

Maximum Channel Occupancy Time (ms) : 0.26

Minimum Channel Occupancy Time (ms) : 0.00

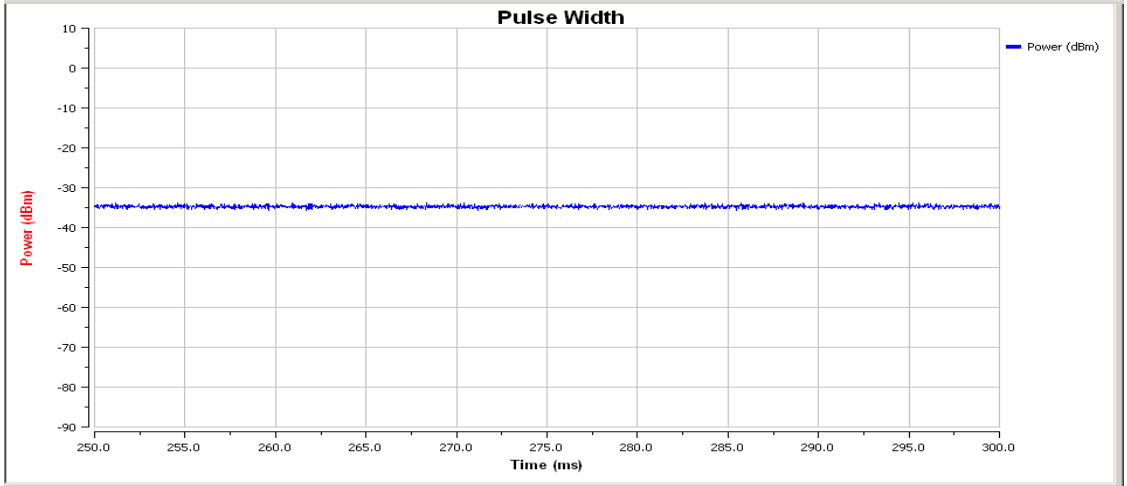
*COT Time must between on 1.625ms to 13ms

Idel Time (us) : 100.00

*Idle Time must longer than 20us

Suggested COT (ms) : 12.188

Idel Time / Max COT (%) : 38.46



Pulse Width Info

T1 (ms) : 250.00

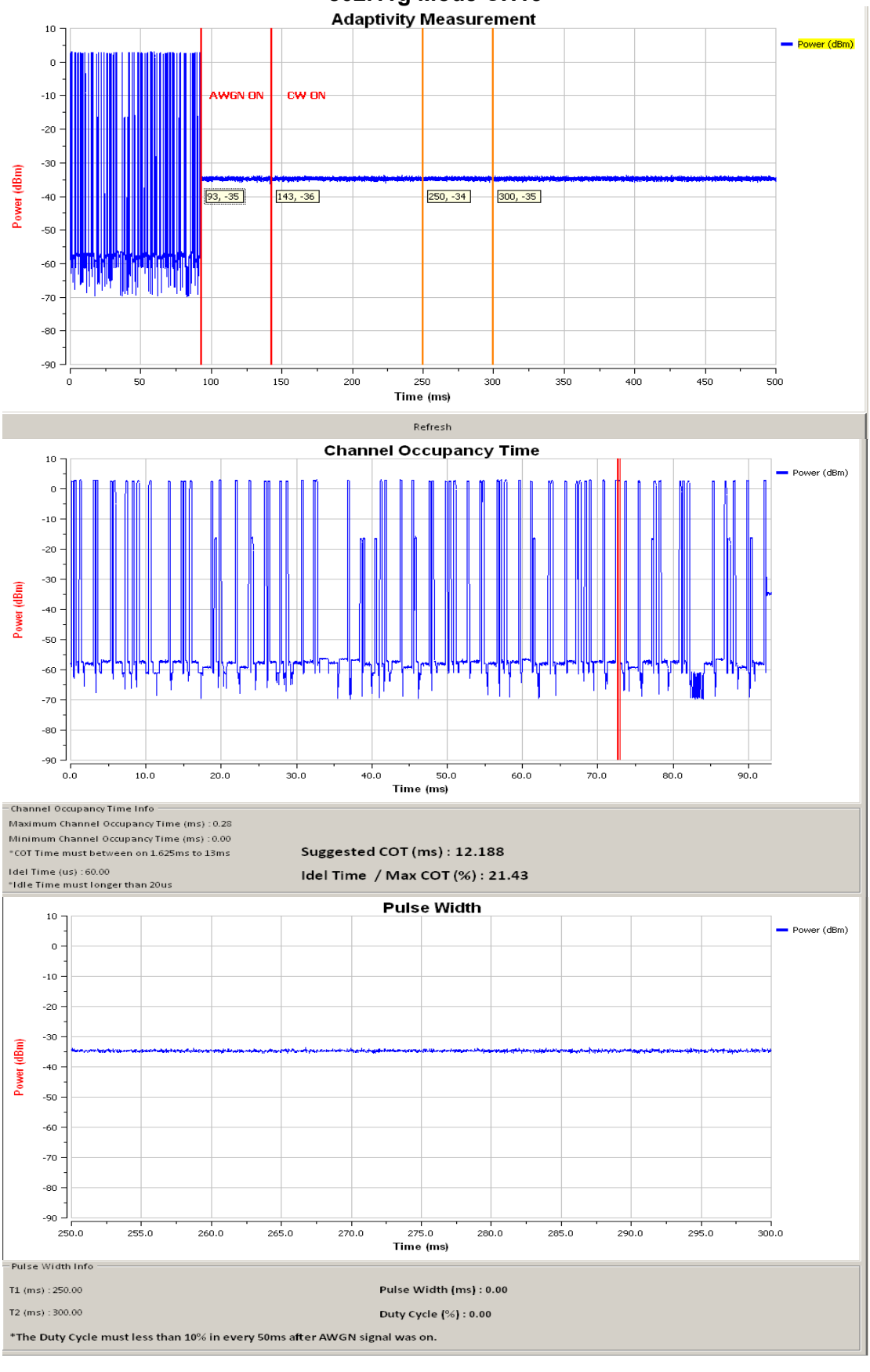
T2 (ms) : 300.00

Pulse Width (ms) : 0.00

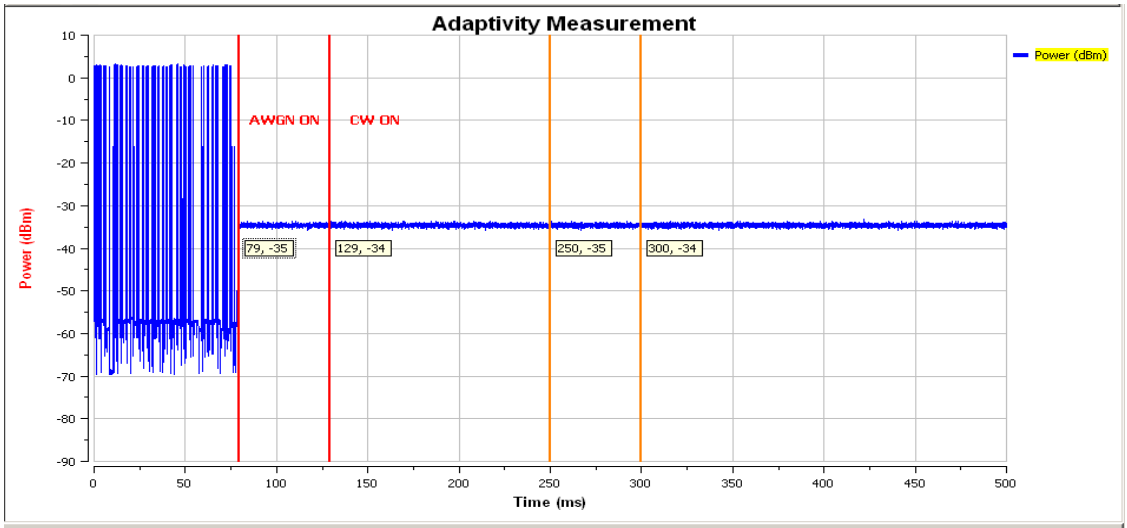
Duty Cycle (%) : 0.00

*The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.

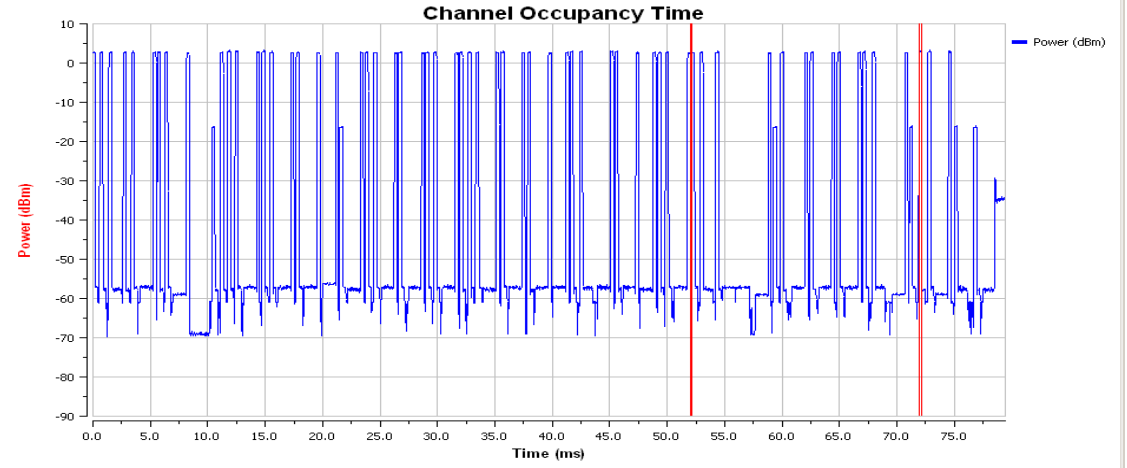
802.11g Mode CH13



802.11n 20M Mode CH01



Refresh



Channel Occupancy Time Info

Maximum Channel Occupancy Time (ms) : 0.28

Minimum Channel Occupancy Time (ms) : 0.00

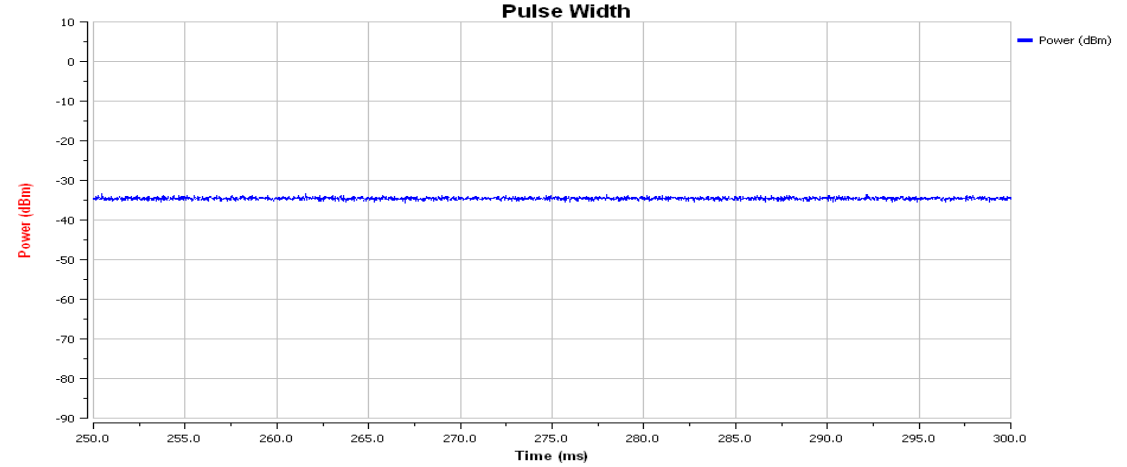
*COT Time must between on 1.625ms to 13ms

Idel Time (us) : 100.00

*Idle Time must longer than 20us

Suggested COT (ms) : 12.188

Idel Time / Max COT (%) : 35.71



Pulse Width Info

T1 (ms) : 250.00

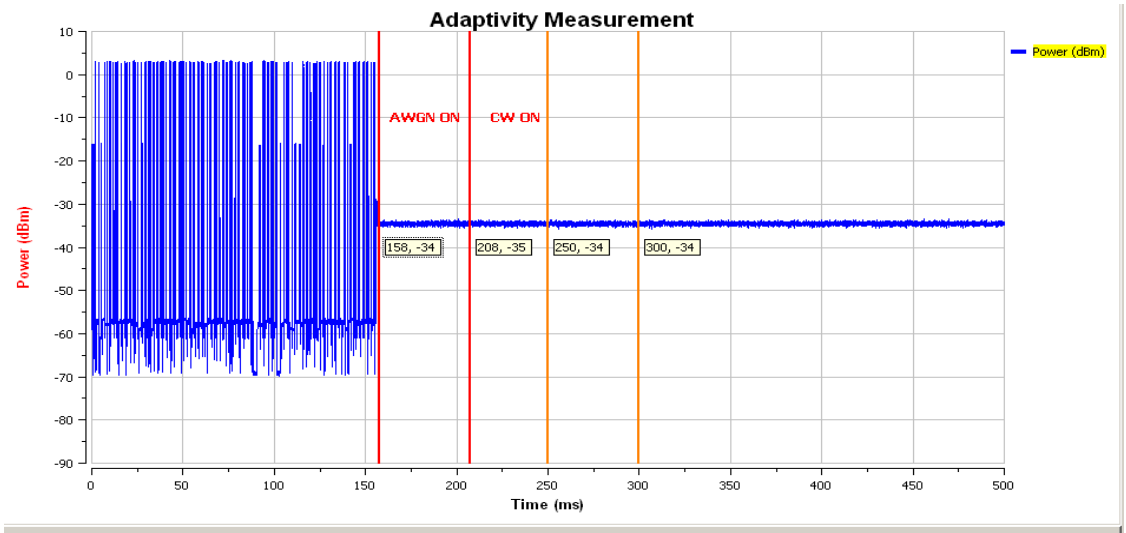
T2 (ms) : 300.00

Pulse Width (ms) : 0.00

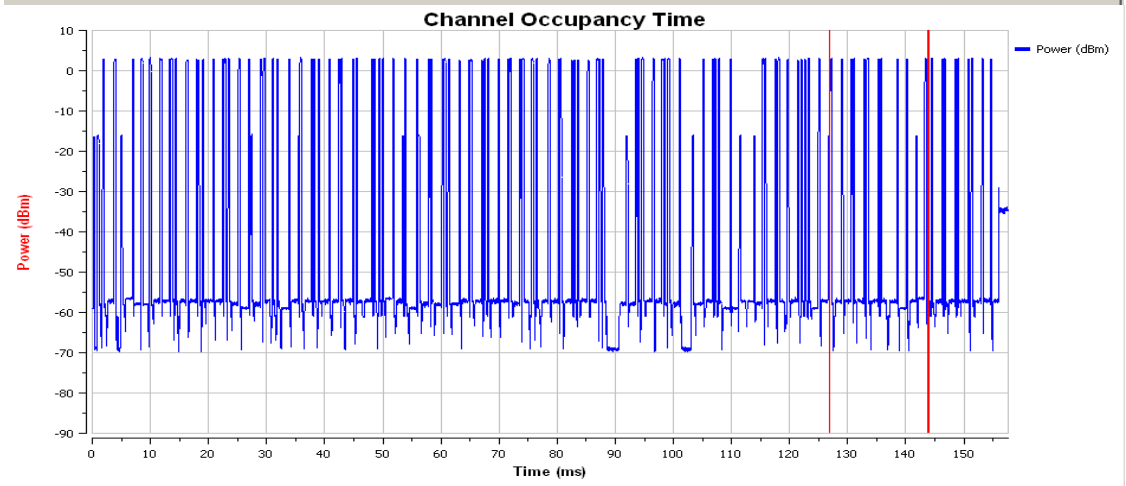
Duty Cycle (%) : 0.00

***The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.**

802.11n 20M Mode CH13



Refresh



Channel Occupancy Time Info

Maximum Channel Occupancy Time (ms) : 0.28

Minimum Channel Occupancy Time (ms) : 0.00

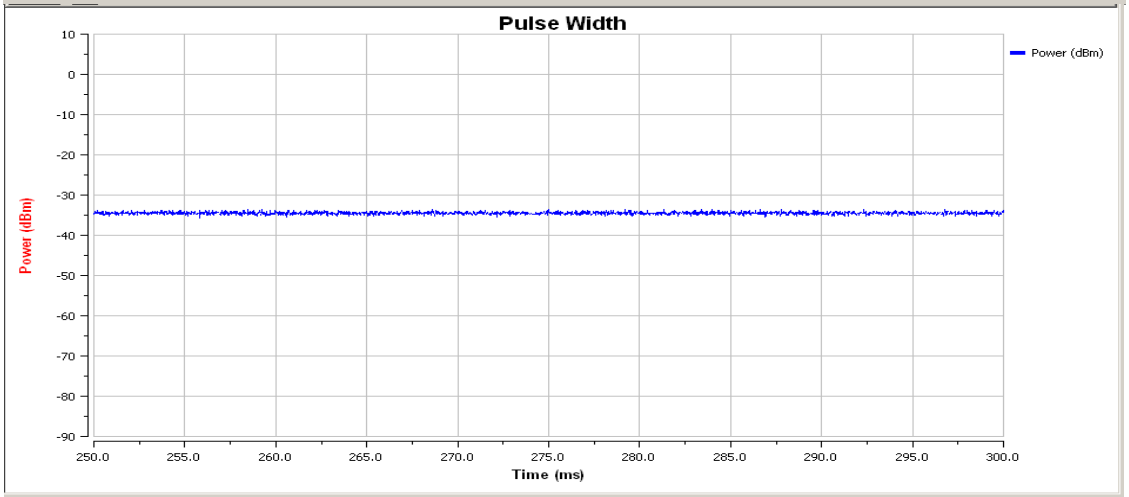
*COT Time must between on 1.625ms to 13ms

Idel Time (us) : 60.00

*Idle Time must longer than 20us

Suggested COT (ms) : 12.188

Idel Time / Max COT (%) : 21.43



Pulse Width Info

T1 (ms) : 250.00

T2 (ms) : 300.00

Pulse Width (ms) : 0.00

Duty Cycle (%) : 0.00

*The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.

2. Test results of Receiver Blocking

802.11b Mode

Channel	Wanted signal mean power from companion device (dBm/MHz)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Pass/Fail
01	-50	2488.5	-30	Pass
13	-50	2395	-30	Pass

802.11g Mode

Channel	Wanted signal mean power from companion device (dBm/MHz)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Pass/Fail
01	-50	2488.5	-30	Pass
13	-50	2395	-30	Pass

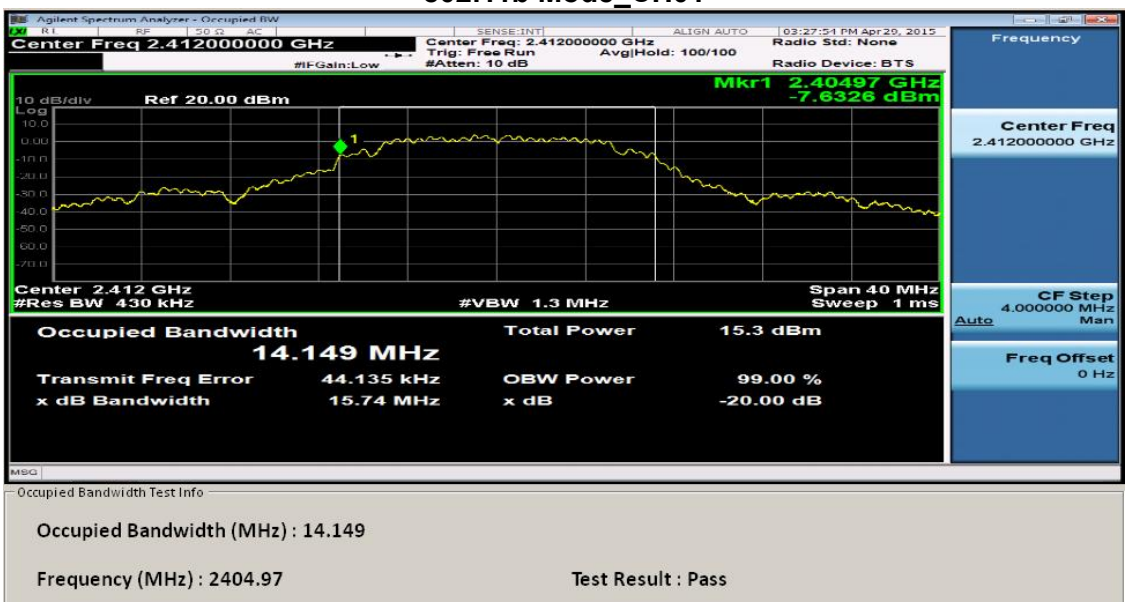
802.11n 20M Mode

Channel	Wanted signal mean power from companion device (dBm/MHz)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	Pass/Fail
01	-50	2488.5	-30	Pass
13	-50	2395	-30	Pass

ATTACHMENT F - OCCUPIED CHANNEL BANDWIDTH

For Chip antenna

802.11b Mode_CH01

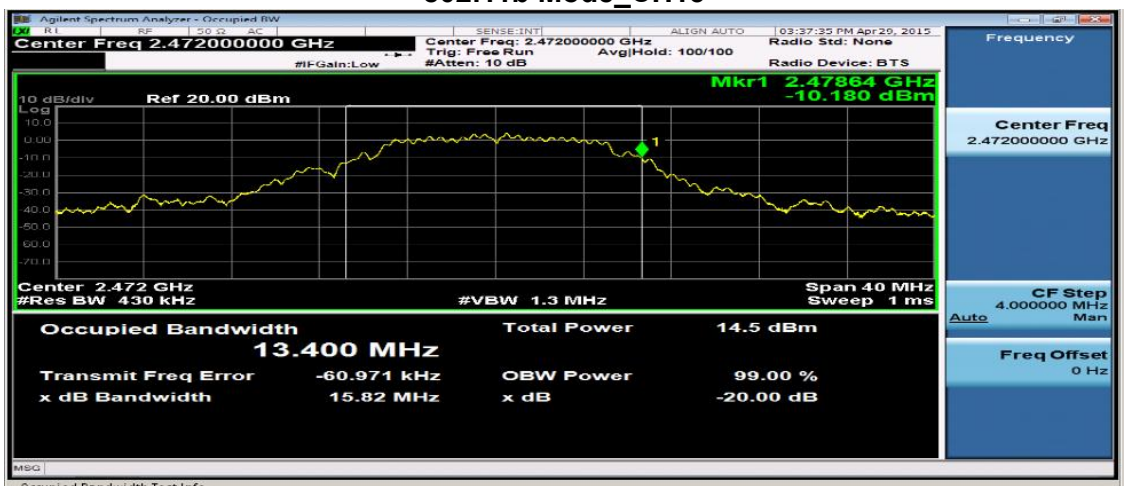


Occupied Bandwidth Test Info

Occupied Bandwidth (MHz) : 14.149

Frequency (MHz) : 2404.97 Test Result : Pass

802.11b Mode_CH13

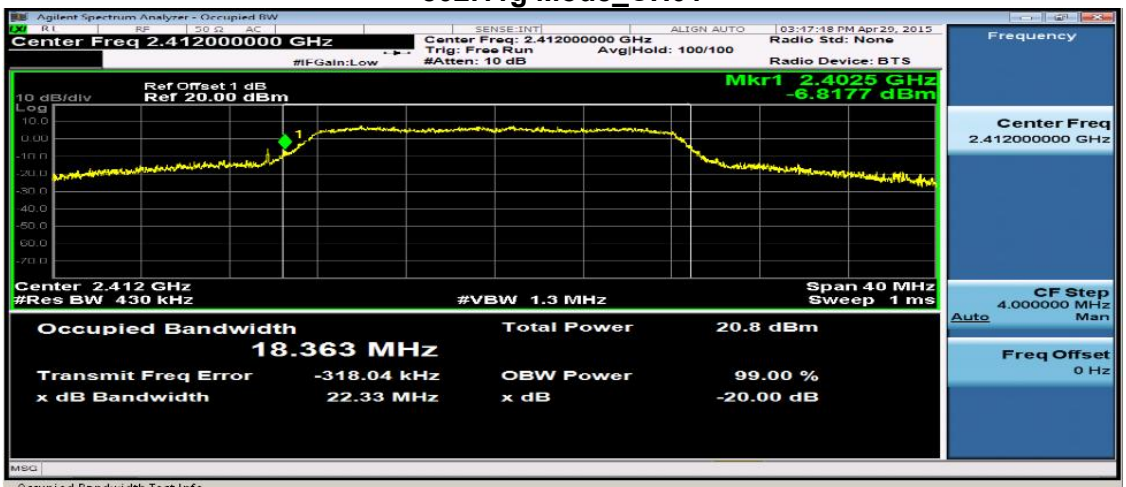


Occupied Bandwidth Test Info

Occupied Bandwidth (MHz) : 13.400

Frequency (MHz) : 2478.64 Test Result : Pass

802.11g Mode_CH01



Occupied Bandwidth Test Info

Occupied Bandwidth (MHz) : 18.363

Frequency (MHz) : 2402.50 Test Result : Pass

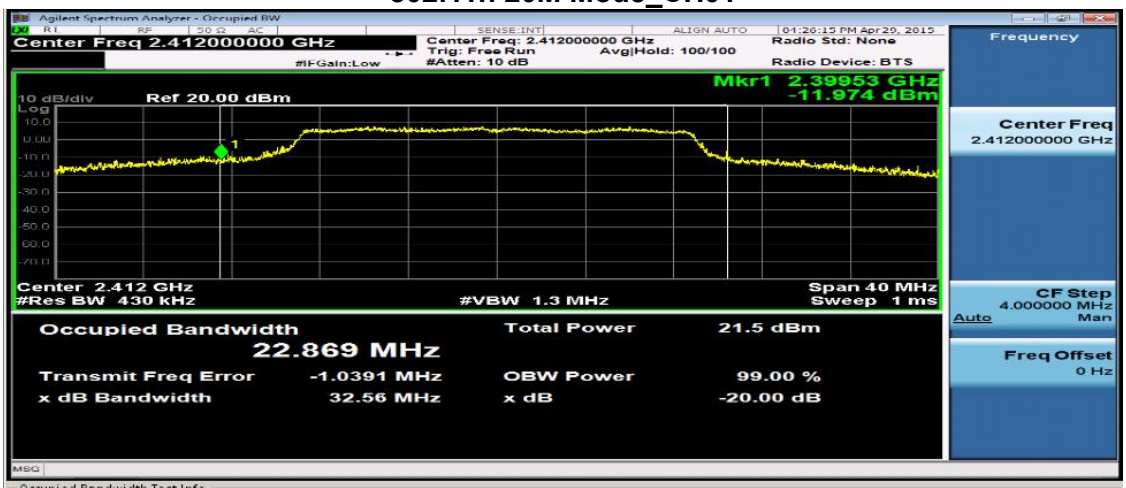
802.11g Mode_CH13

Occupied Bandwidth Test Info

Occupied Bandwidth (MHz) : 23.153

Frequency (MHz) : 2482.69 Test Result : Pass

802.11n 20M Mode_CH01

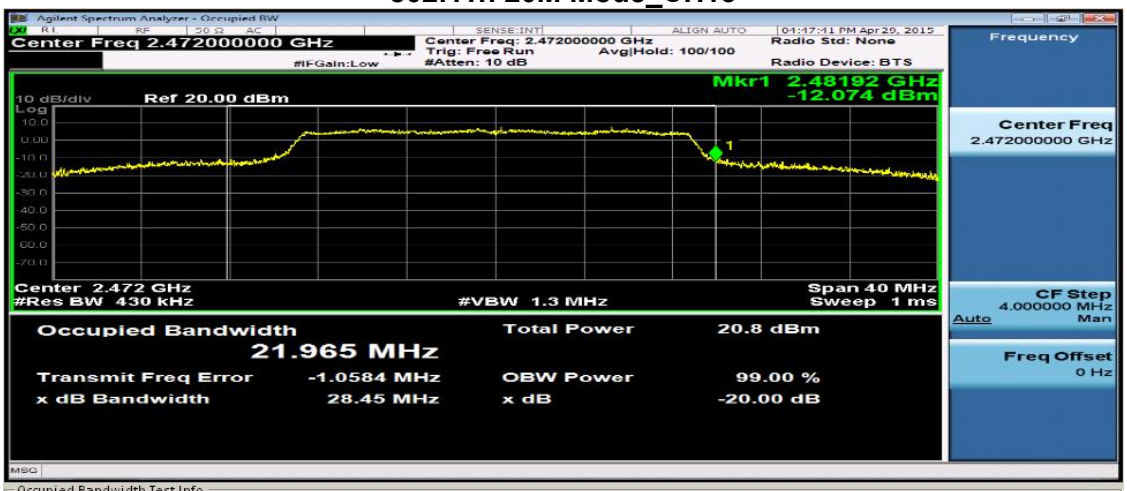


Occupied Bandwidth Test Info

Occupied Bandwidth (MHz) : 22.869

Frequency (MHz) : 2399.53 Test Result : Pass

802.11n 20M Mode_CH13



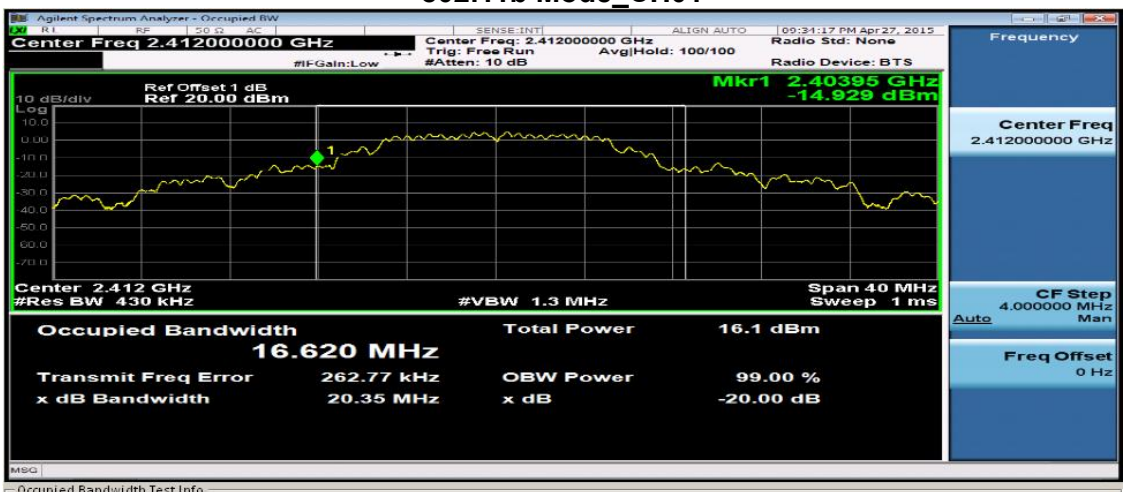
Occupied Bandwidth Test Info

Occupied Bandwidth (MHz) : 21.965

Frequency (MHz) : 2481.92 Test Result : Pass

For Dipole antenna

802.11b Mode_CH01

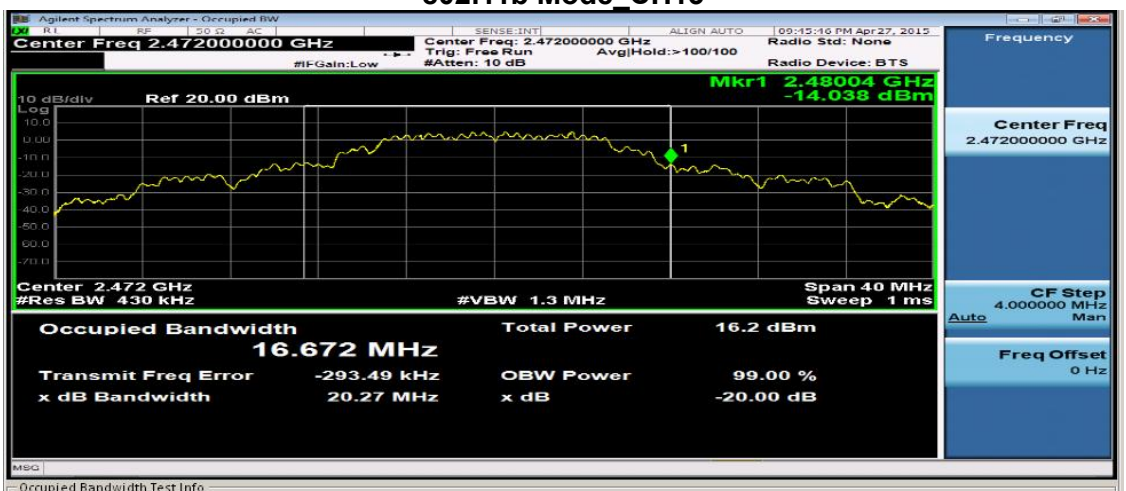


Occupied Bandwidth Test Info

Occupied Bandwidth (MHz) : 16.620

Frequency (MHz) : 2403.95 Test Result : Pass

802.11b Mode_CH13

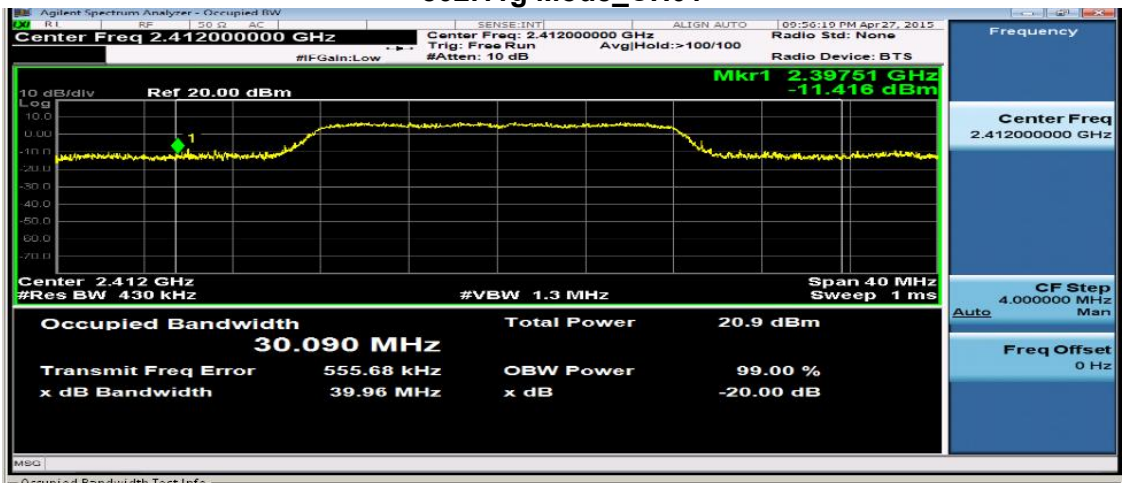


Occupied Bandwidth Test Info

Occupied Bandwidth (MHz) : 16.672

Frequency (MHz) : 2480.04 Test Result : Pass

802.11g Mode_CH01

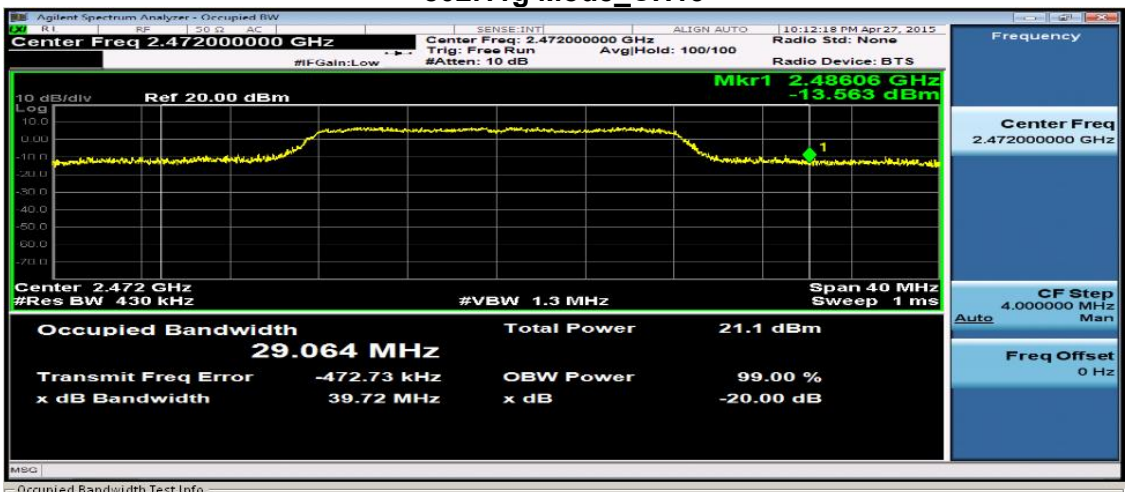


Occupied Bandwidth Test Info

Occupied Bandwidth (MHz) : 30.090

Frequency (MHz) : 2397.51 Test Result : Pass

802.11g Mode_CH13

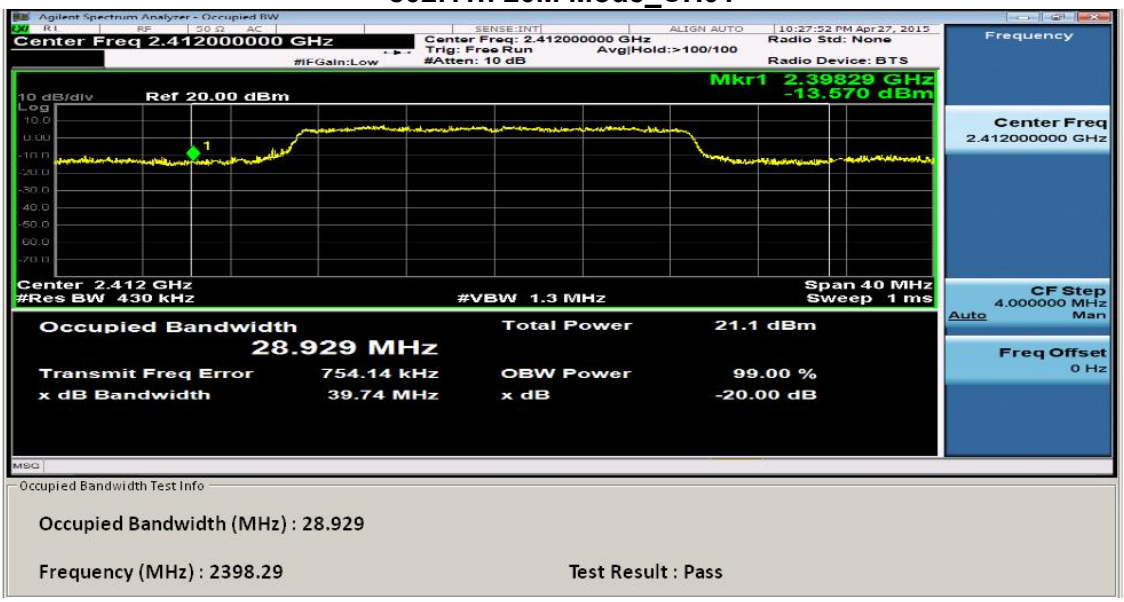


Occupied Bandwidth Test Info

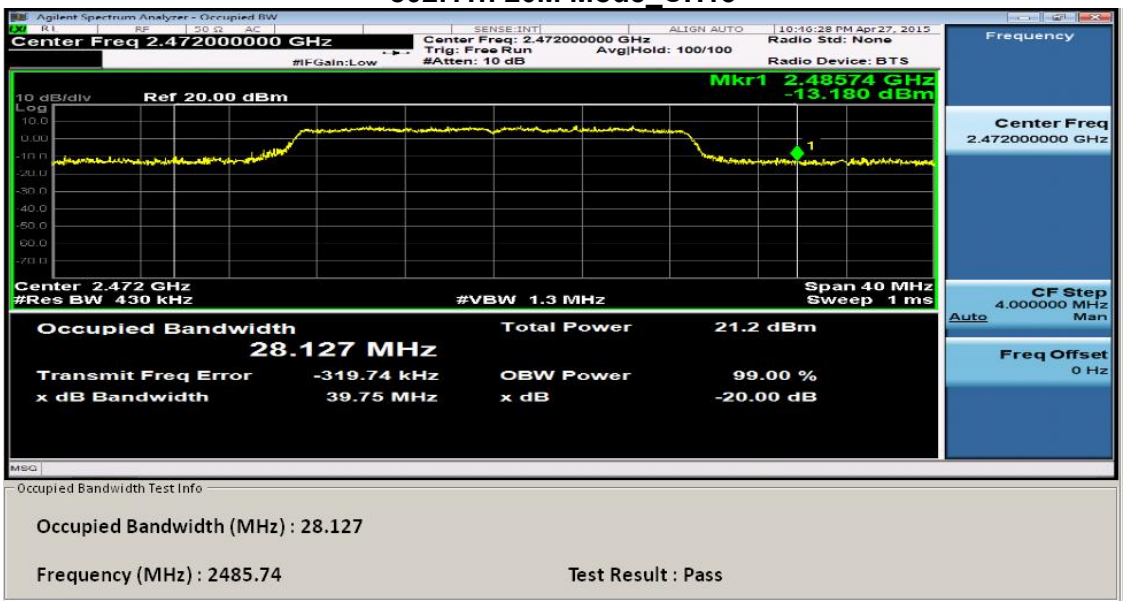
Occupied Bandwidth (MHz) : 29.064

Frequency (MHz) : 2486.06 Test Result : Pass

802.11n 20M Mode_CH01



802.11n 20M Mode_CH13

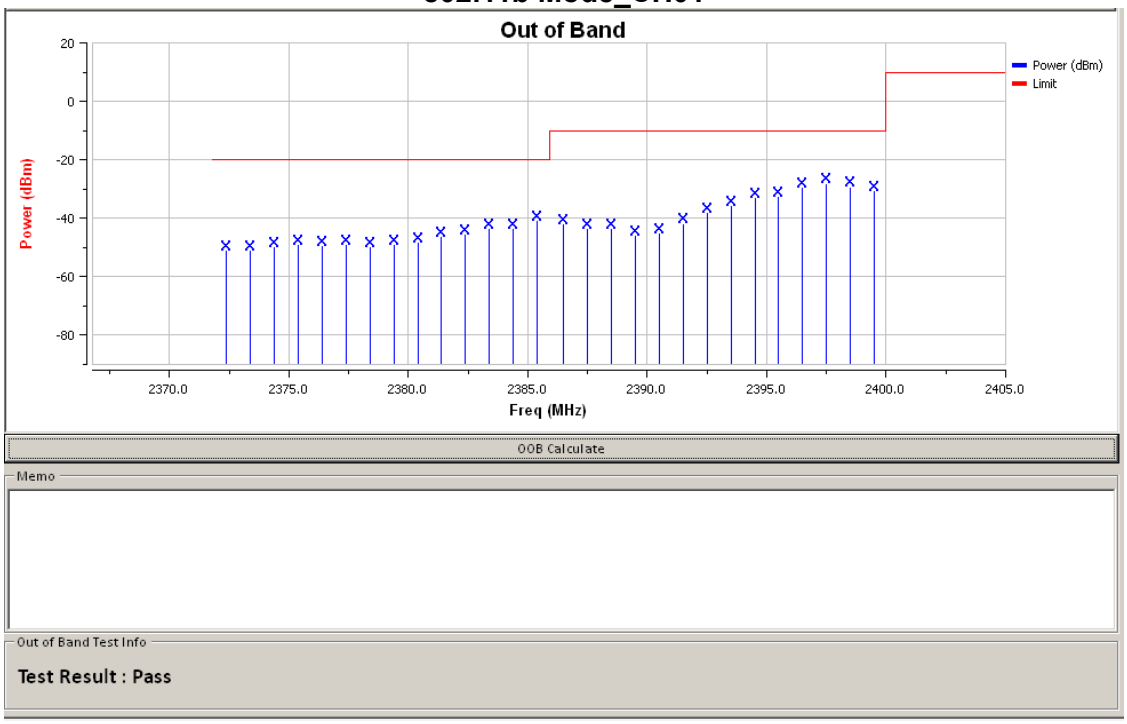


ATTACHMENT G - TRANSMITTER UNWANTED EMISSIONS IN THE OOB DOMAIN

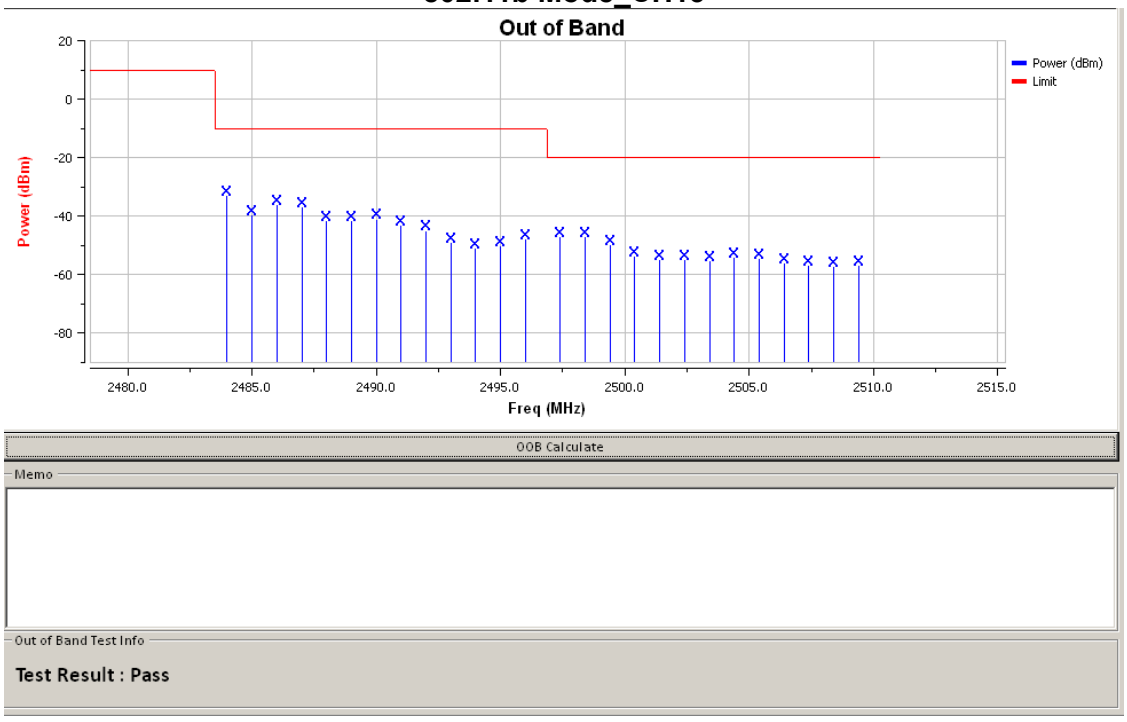
For Chip antenna

Normal Temperature

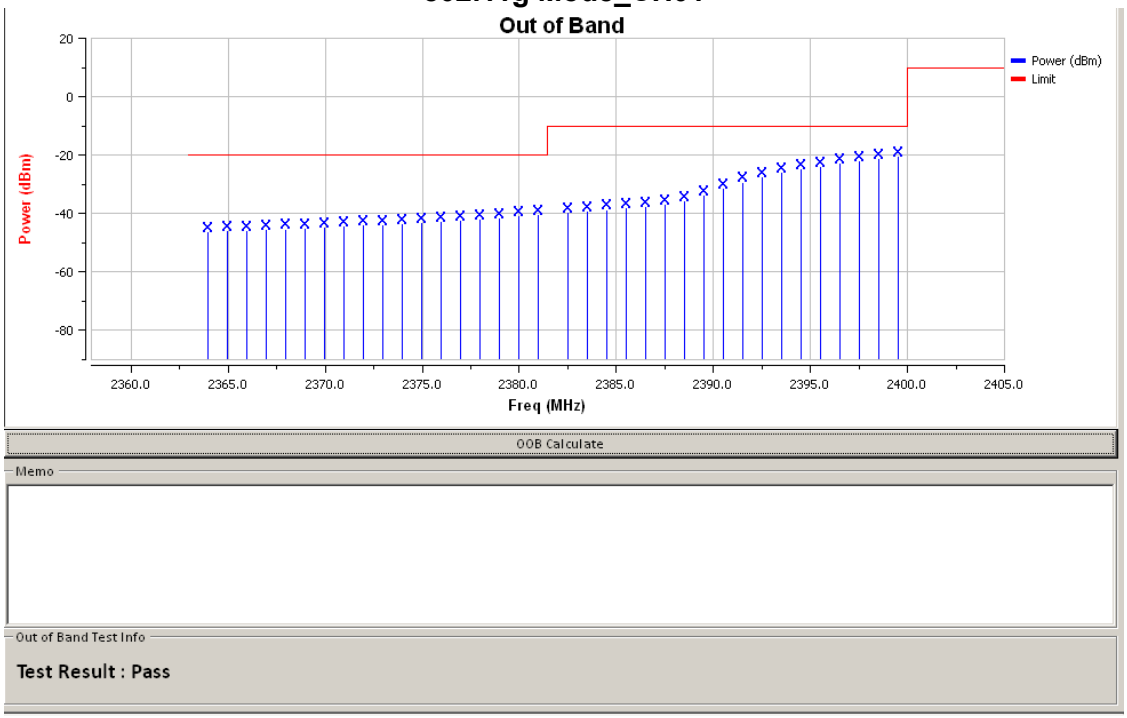
802.11b Mode_CH01



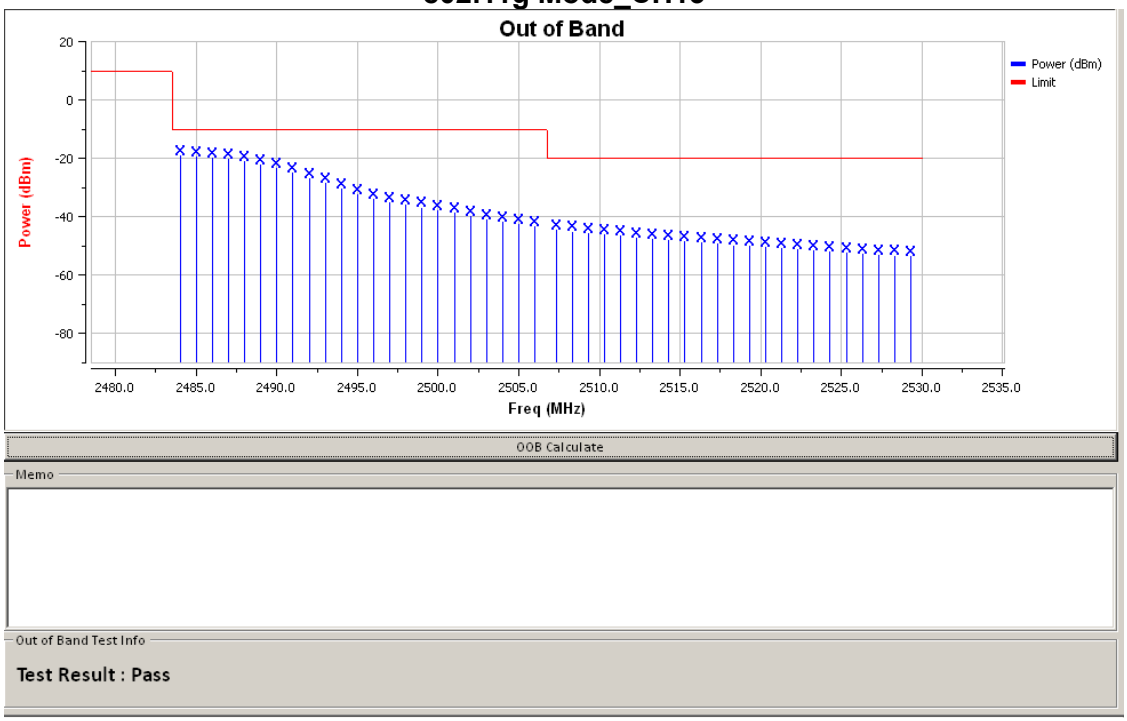
802.11b Mode_CH13



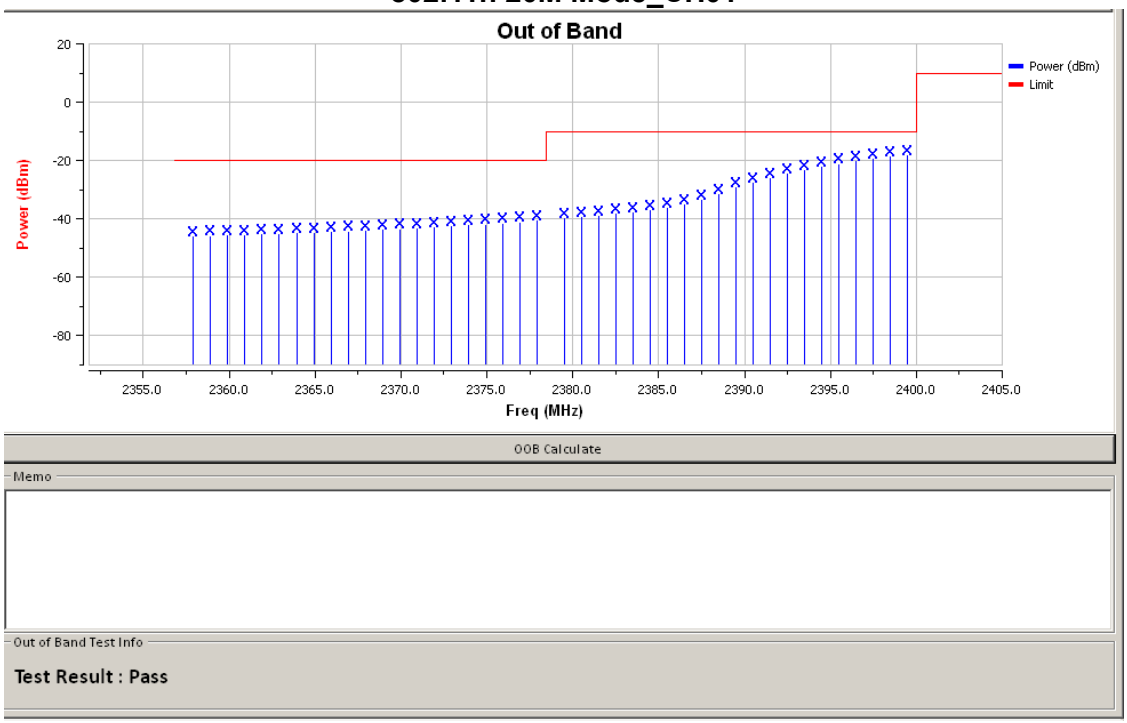
802.11g Mode_CH01



802.11g Mode_CH13



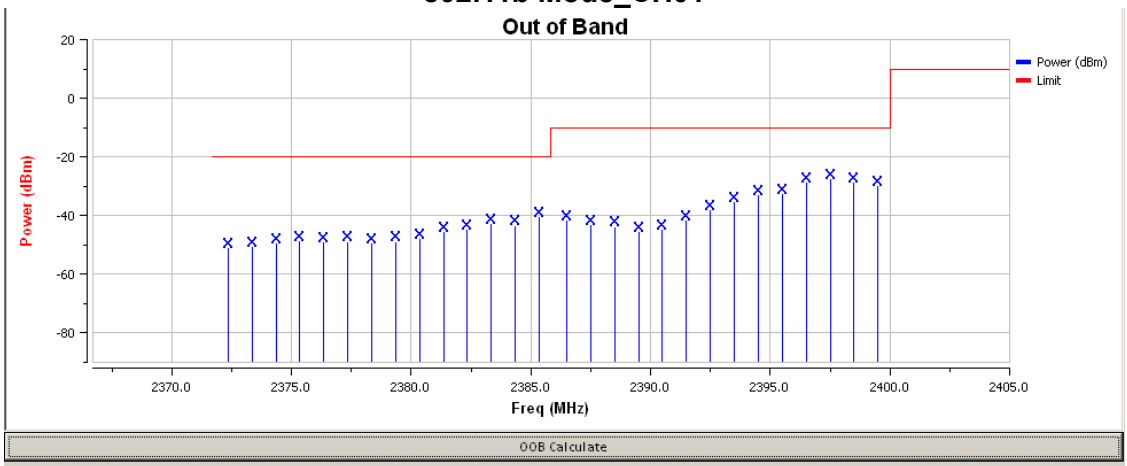
802.11n 20M Mode_CH01



802.11n 20M Mode_CH13

High Temperature

802.11b Mode_CH01



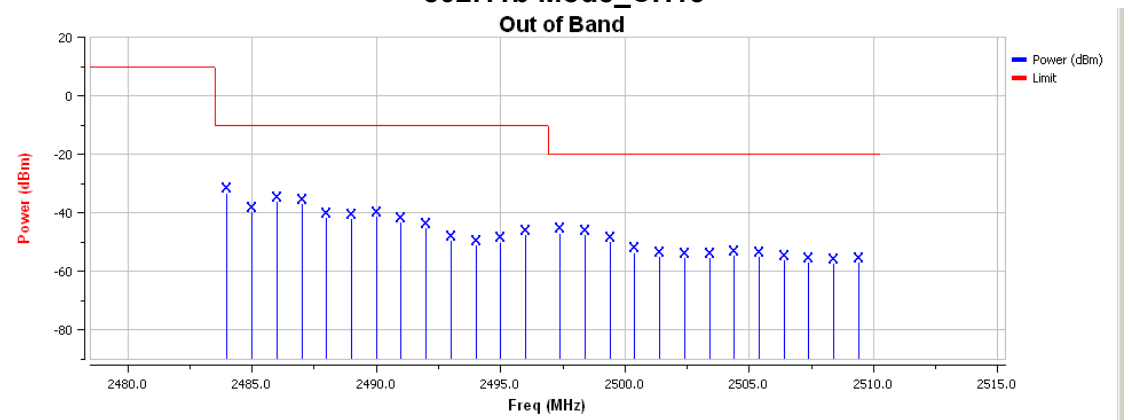
OOB Calculate

Memo

Out of Band Test Info

Test Result : Pass

802.11b Mode_CH13



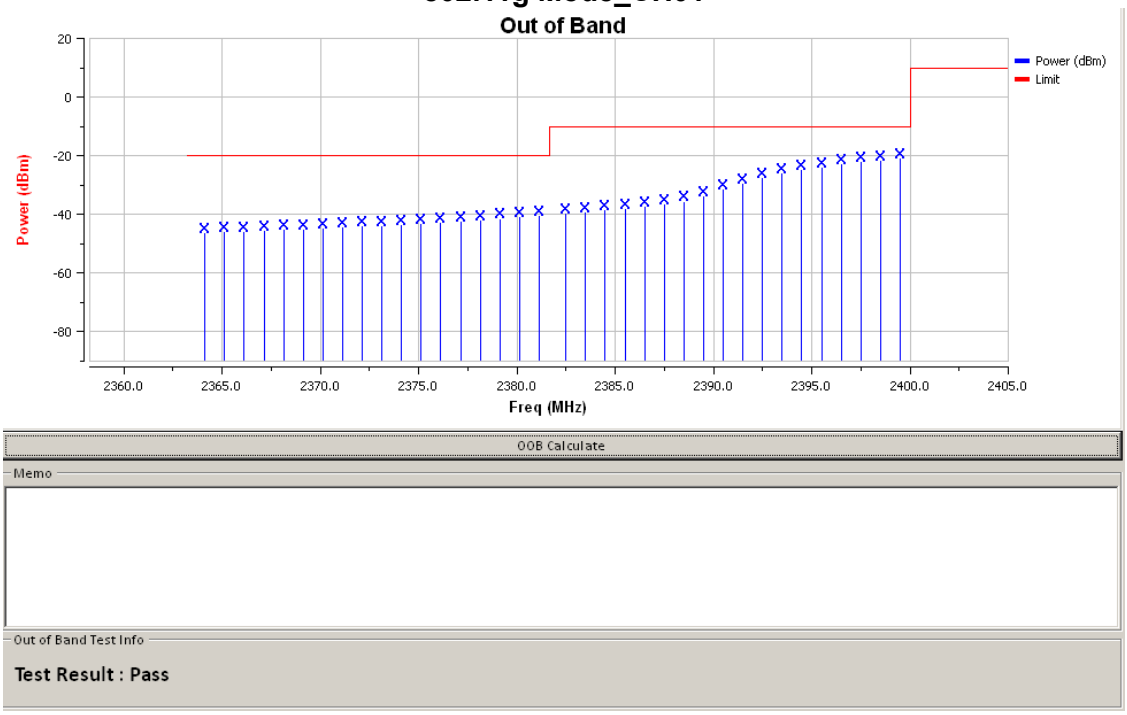
OOB Calculate

Memo

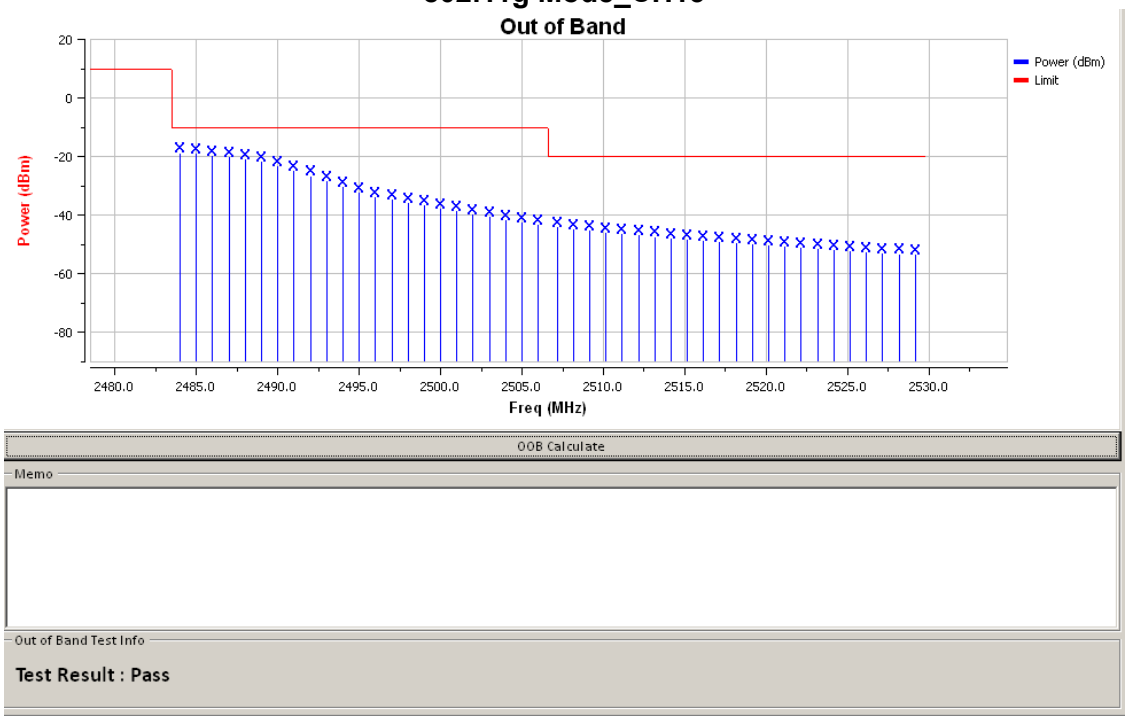
Out of Band Test Info

Test Result : Pass

802.11g Mode_CH01

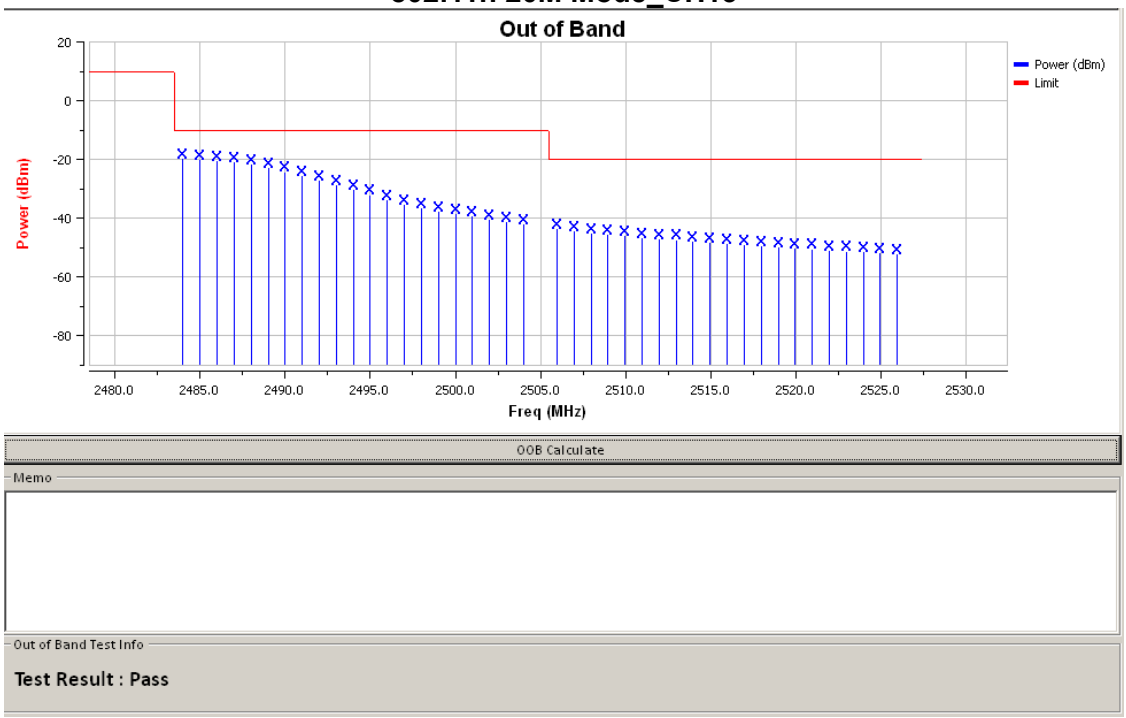


802.11g Mode_CH13



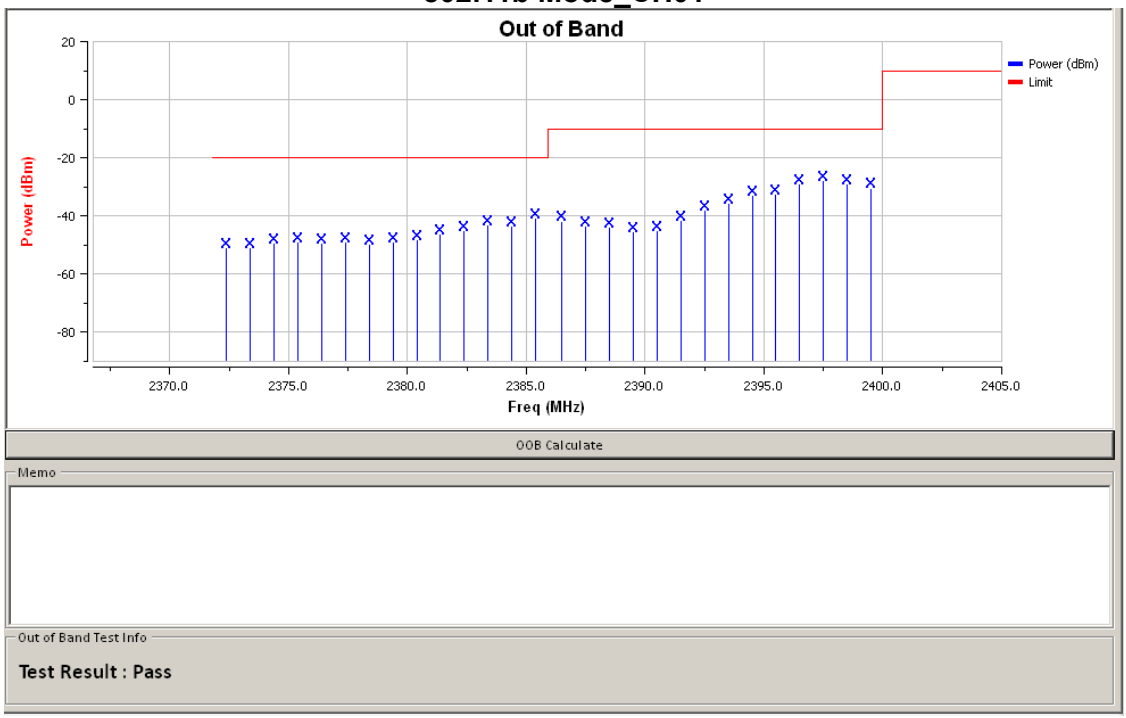
802.11n 20M Mode_CH01

802.11n 20M Mode_CH13

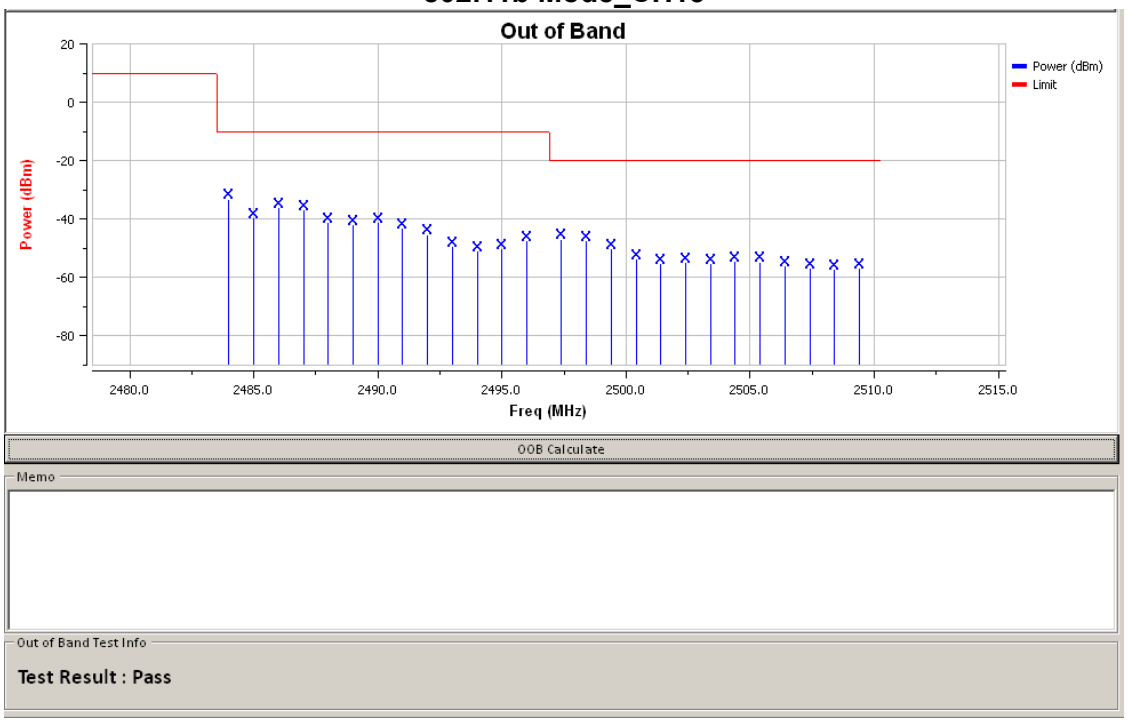


Low Temperature

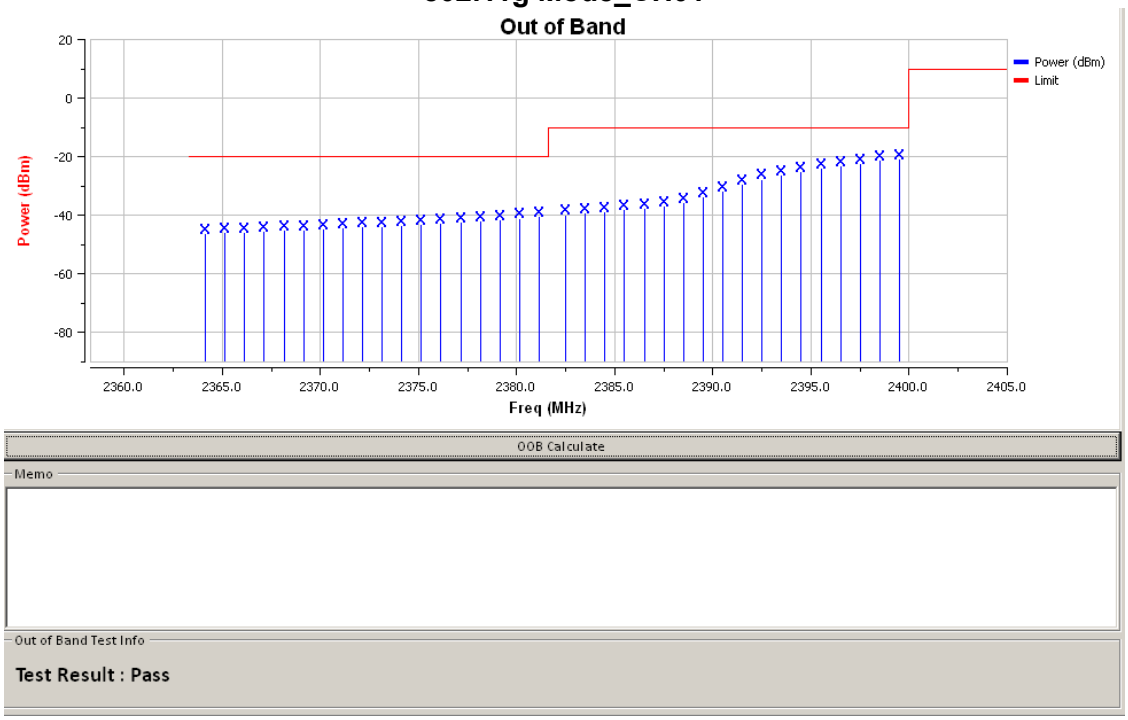
802.11b Mode_CH01



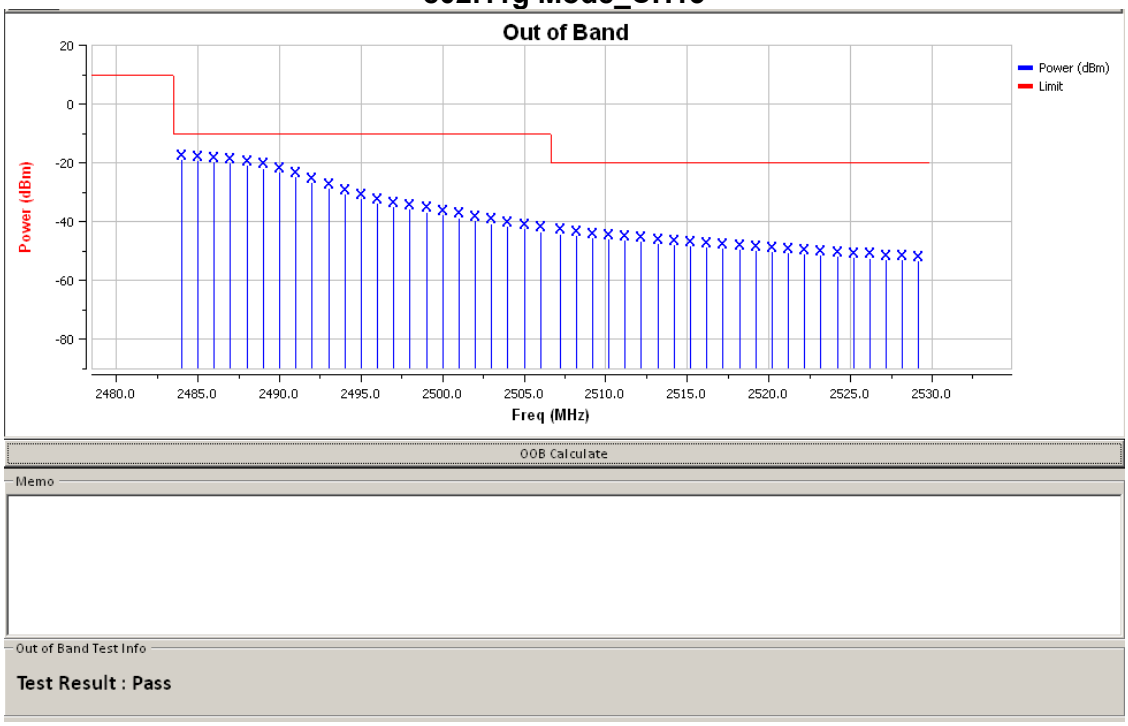
802.11b Mode_CH13



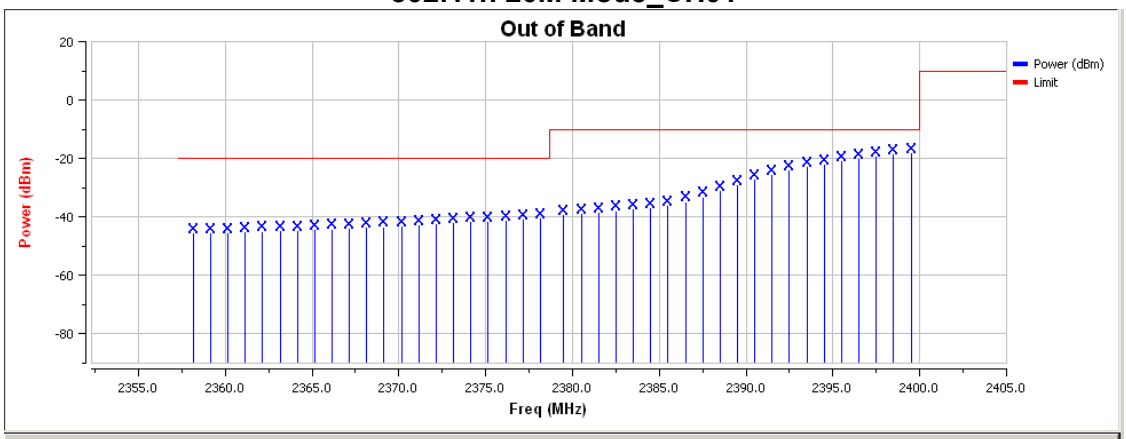
802.11g Mode_CH01



802.11g Mode_CH13



802.11n 20M Mode_CH01



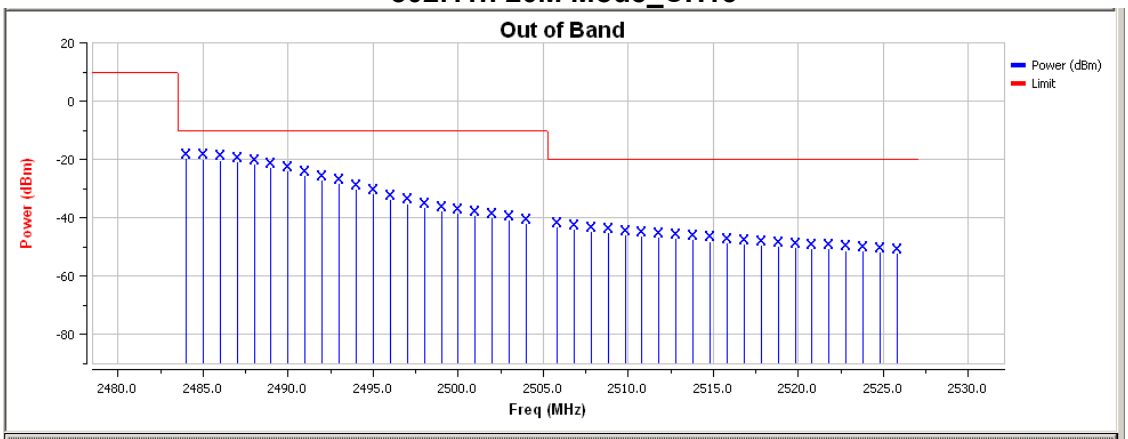
OOB Calculate

Memo

Out of Band Test Info

Test Result : Pass

802.11n 20M Mode_CH13



OOB Calculate

Memo

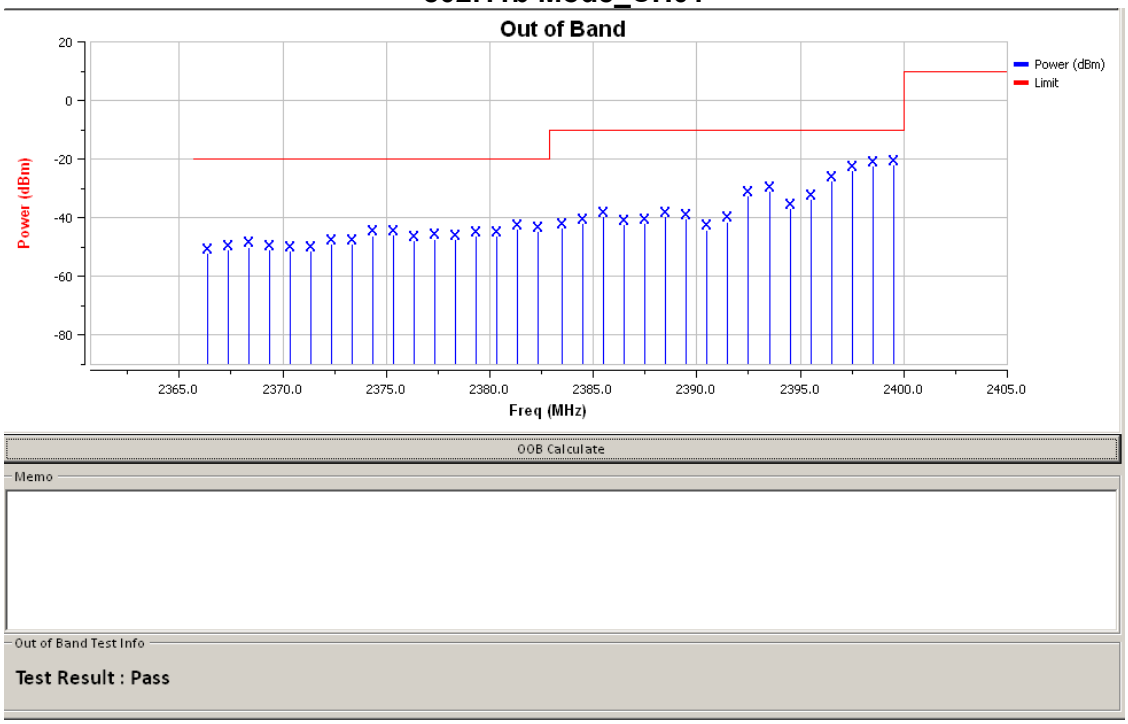
Out of Band Test Info

Test Result : Pass

For Dipole antenna

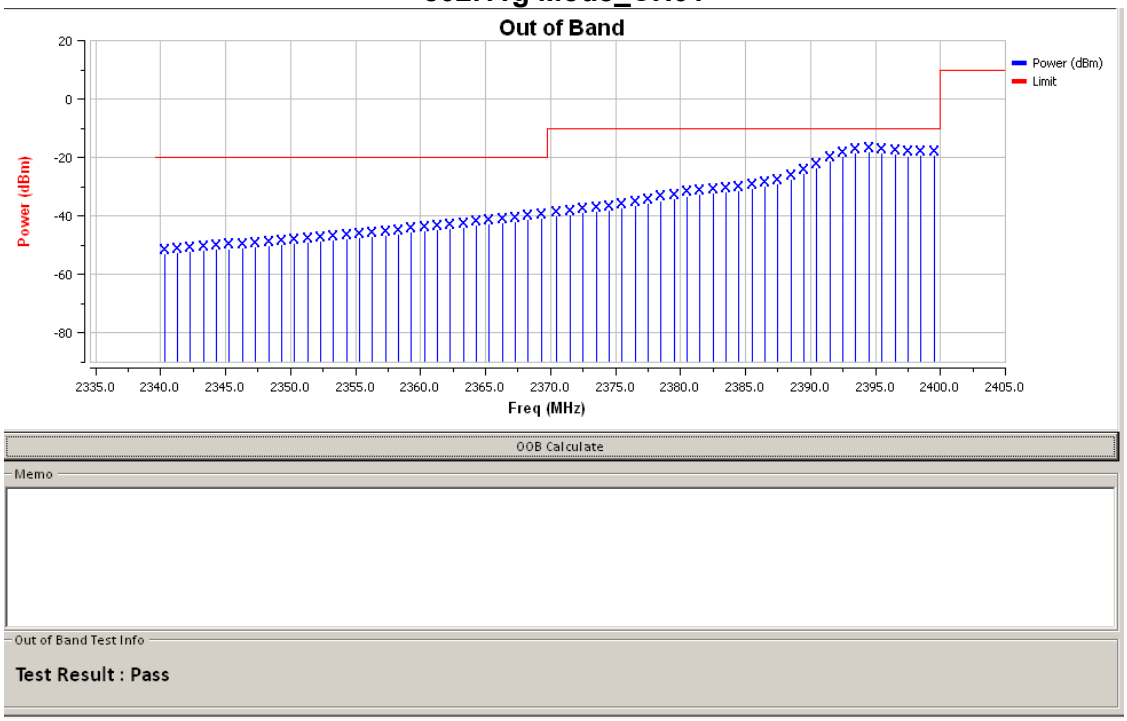
Normal Temperature

802.11b Mode_CH01

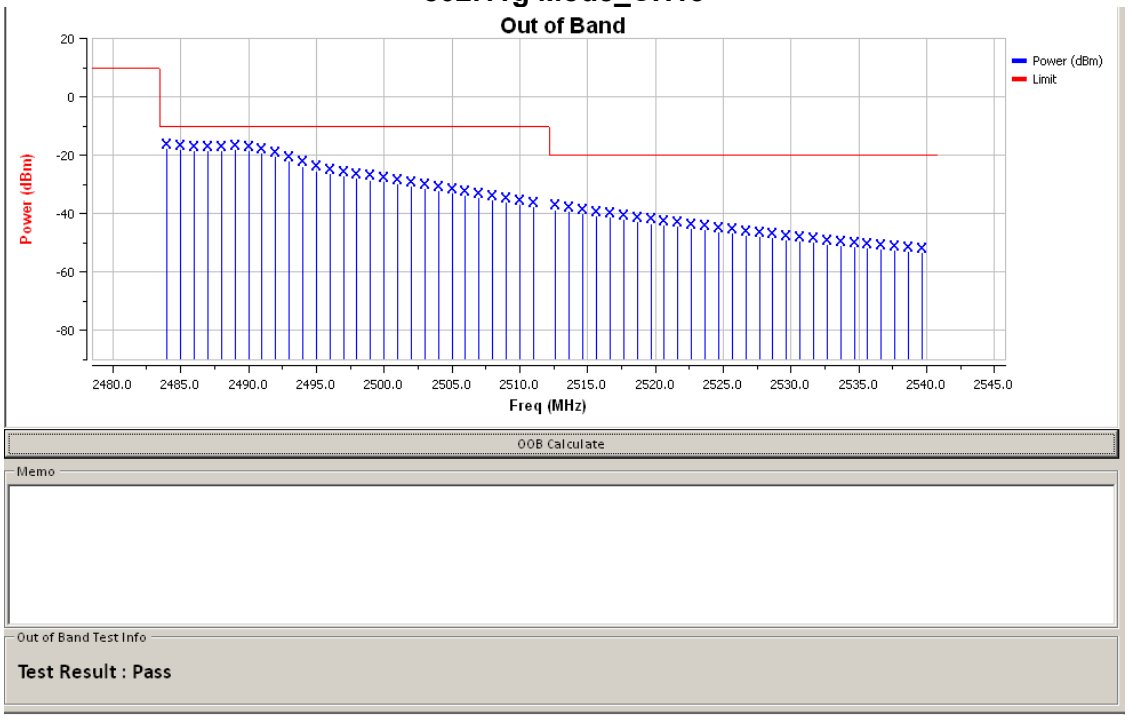


802.11b Mode_CH13

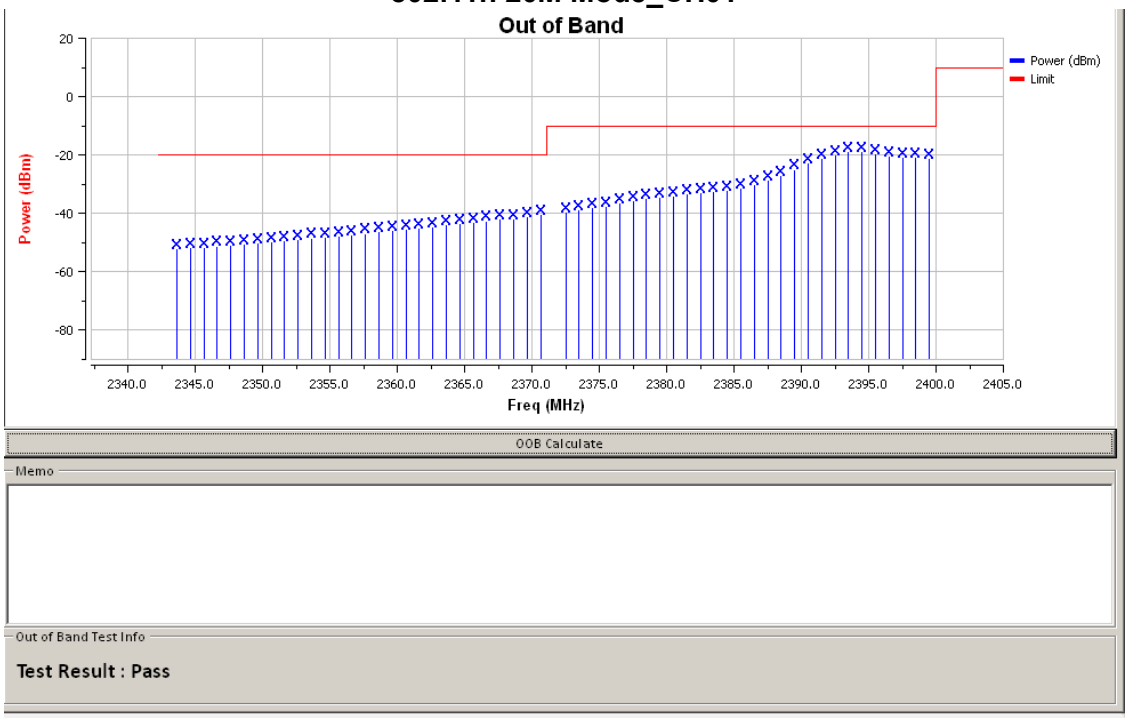
802.11g Mode_CH01



802.11g Mode_CH13



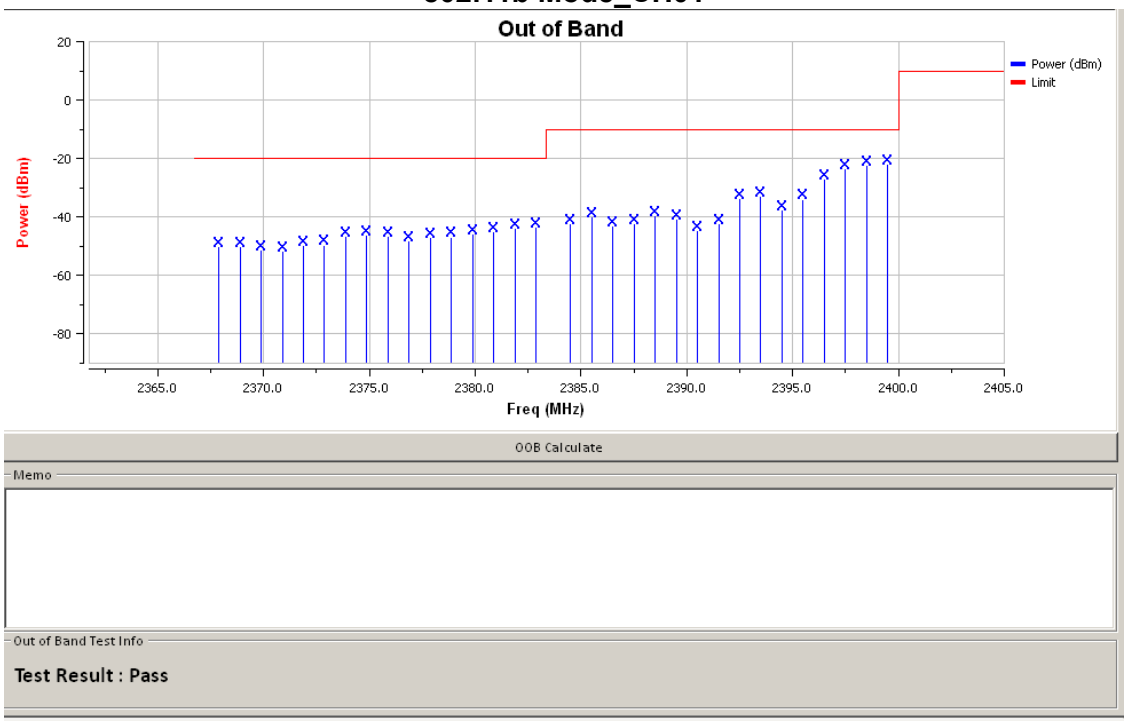
802.11n 20M Mode_CH01



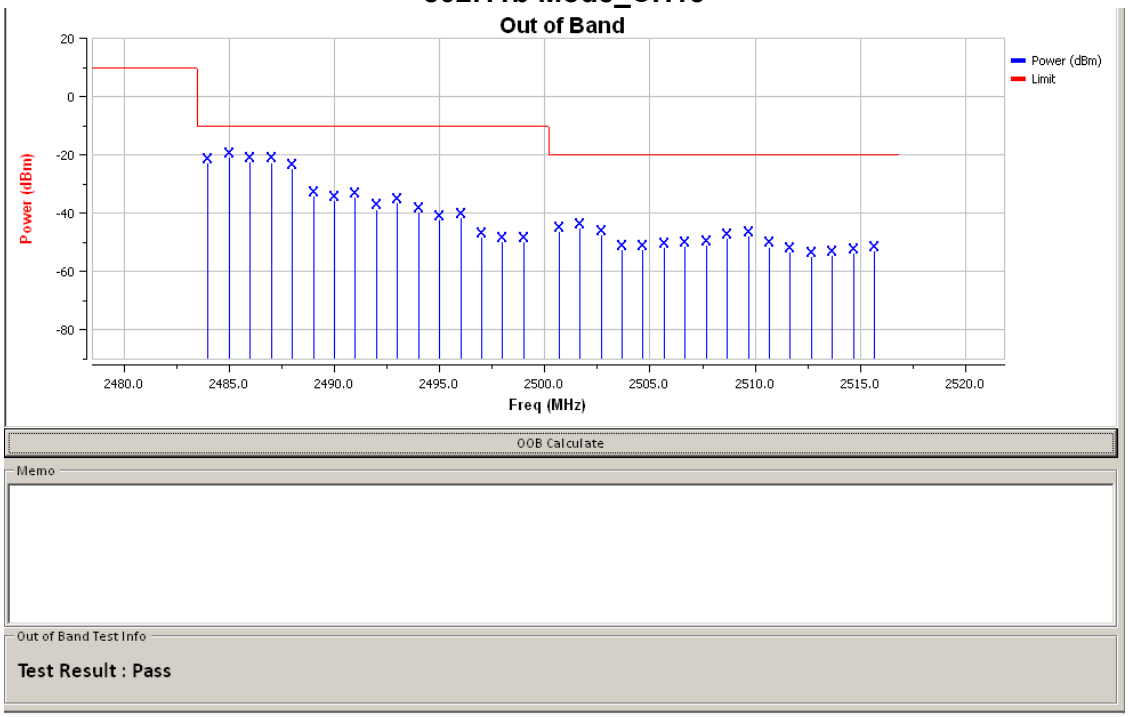
802.11n 20M Mode_CH13

High Temperature

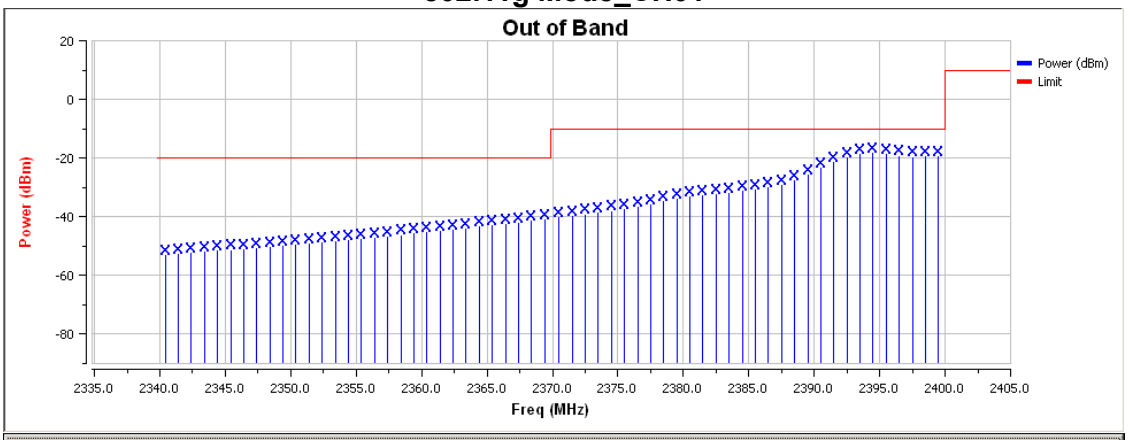
802.11b Mode_CH01



802.11b Mode_CH13



802.11g Mode_CH01



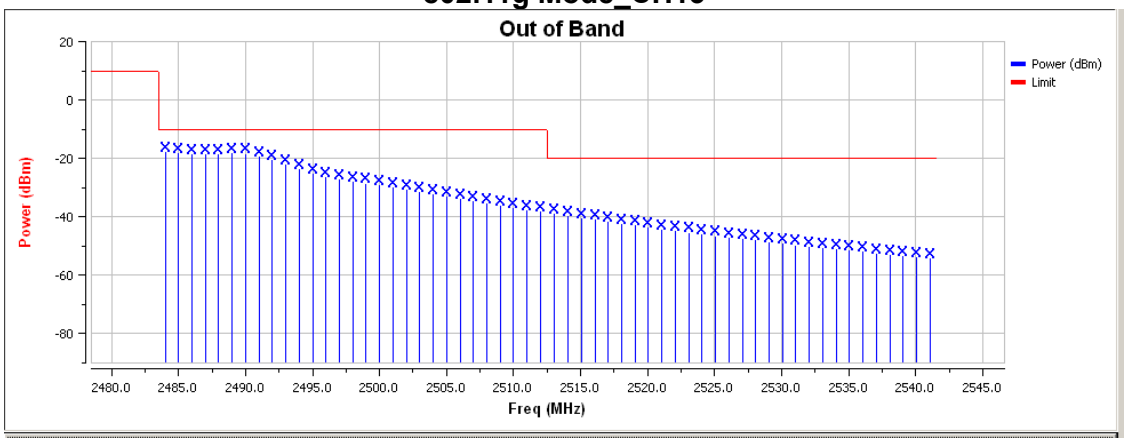
OOB Calculate

Memo

Out of Band Test Info

Test Result : Pass

802.11g Mode_CH13



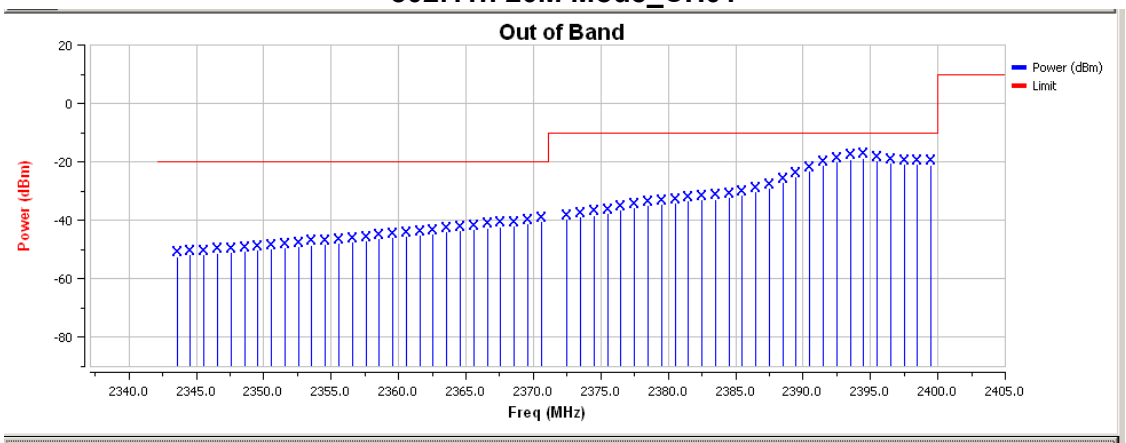
OOB Calculate

Memo

Out of Band Test Info

Test Result : Pass

802.11n 20M Mode_CH01



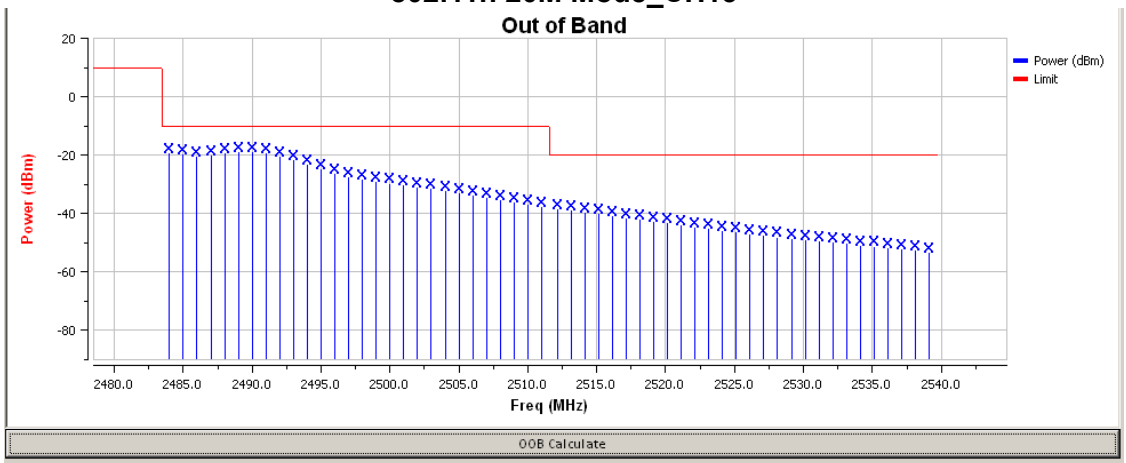
OOB Calculate

Memo

Out of Band Test Info

Test Result : Pass

802.11n 20M Mode_CH13



OOB Calculate

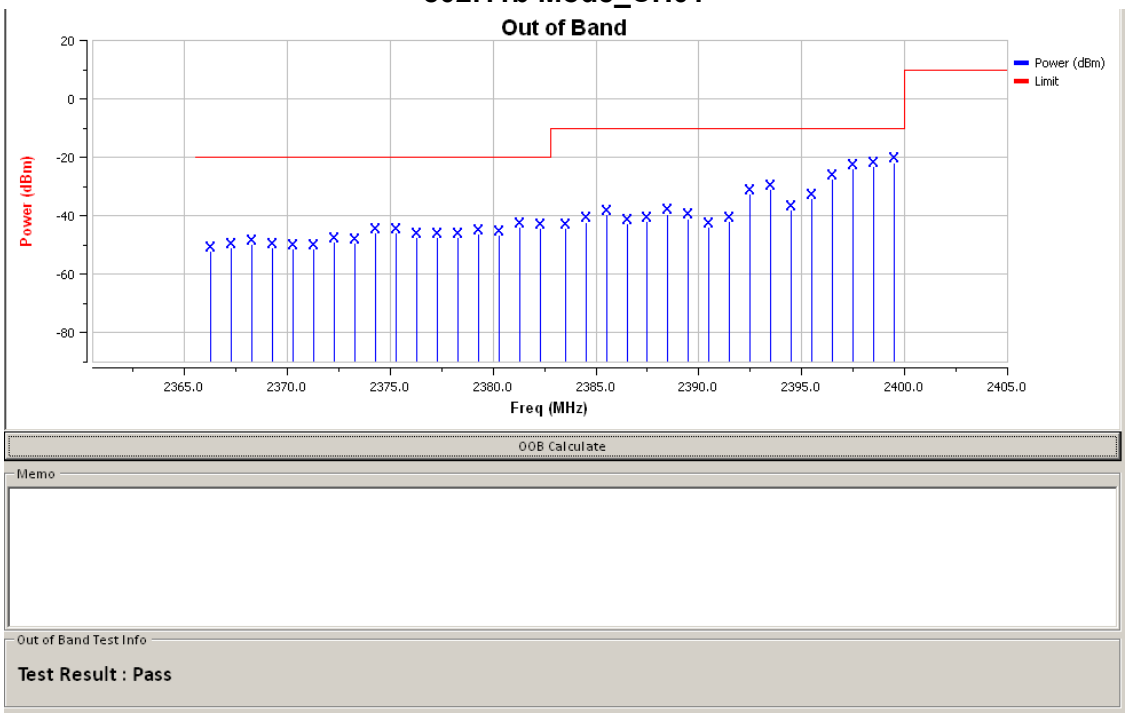
Memo

Out of Band Test Info

Test Result : Pass

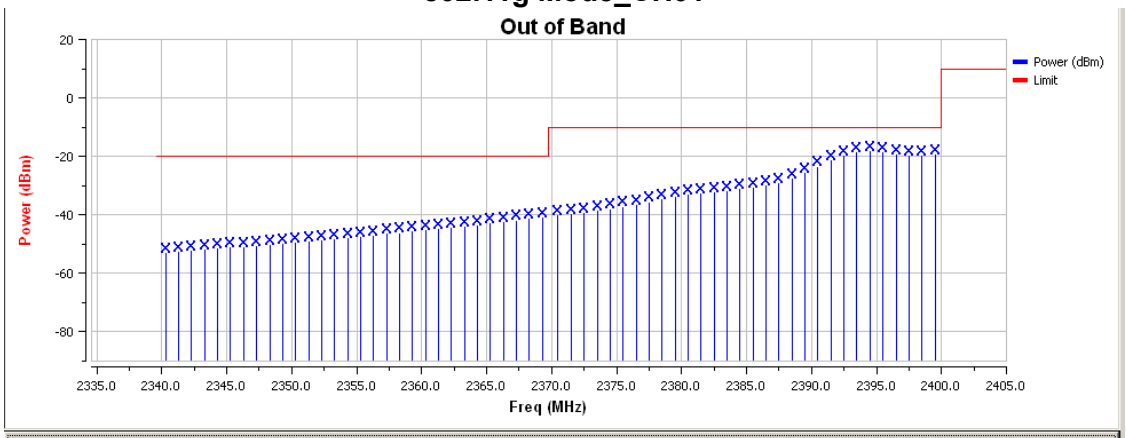
Low Temperature

802.11b Mode_CH01



802.11b Mode_CH13

802.11g Mode_CH01



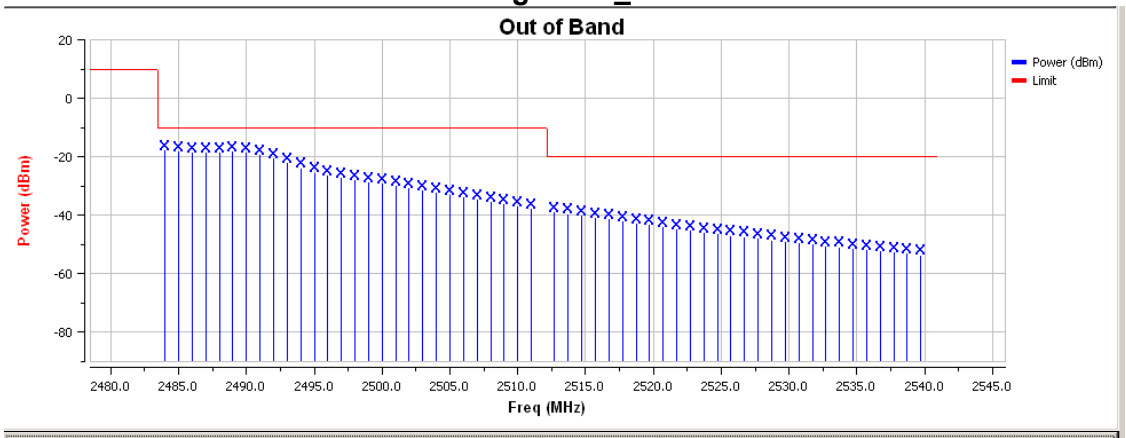
OOB Calculate

Memo

Out of Band Test Info

Test Result : Pass

802.11g Mode_CH13



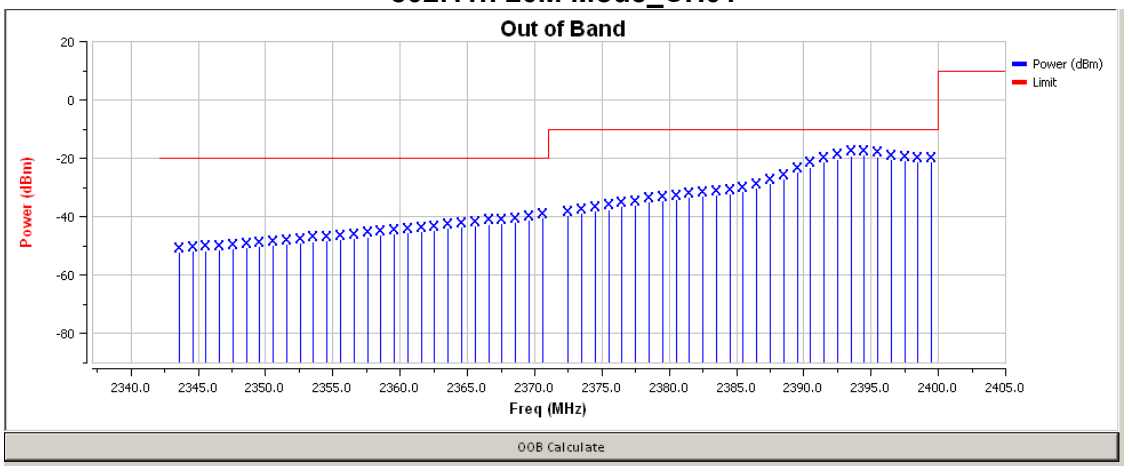
OOB Calculate

Memo

Out of Band Test Info

Test Result : Pass

802.11n 20M Mode_CH01



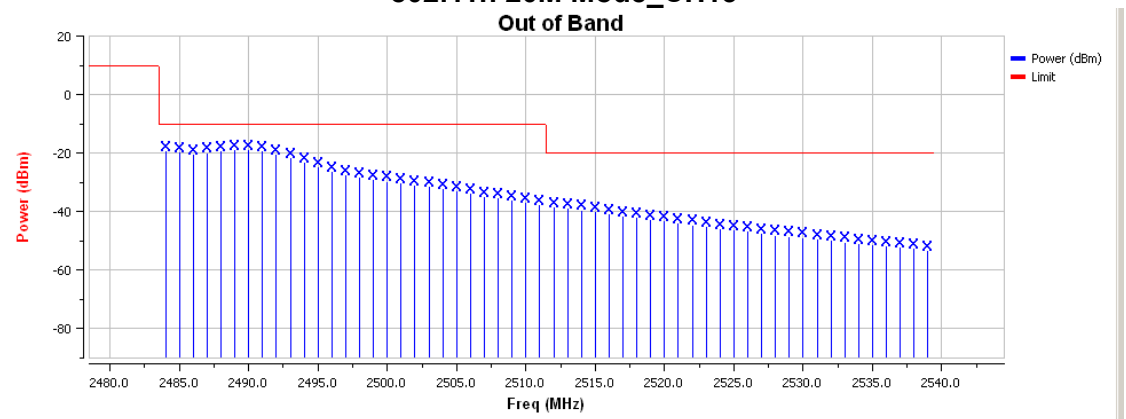
OOB Calculate

Memo

Out of Band Test Info

Test Result : Pass

802.11n 20M Mode_CH13



OOB Calculate

Memo

Out of Band Test Info

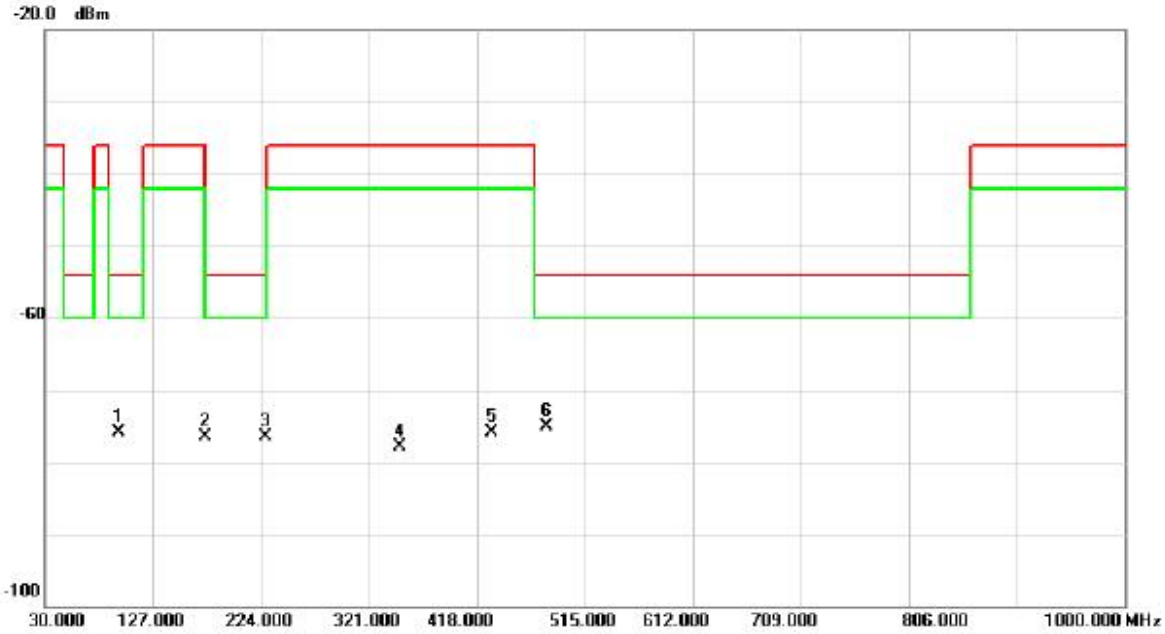
Test Result : Pass

ATTACHMENT H - TRANSMITTER UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN

For Chip antenna

Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11b)

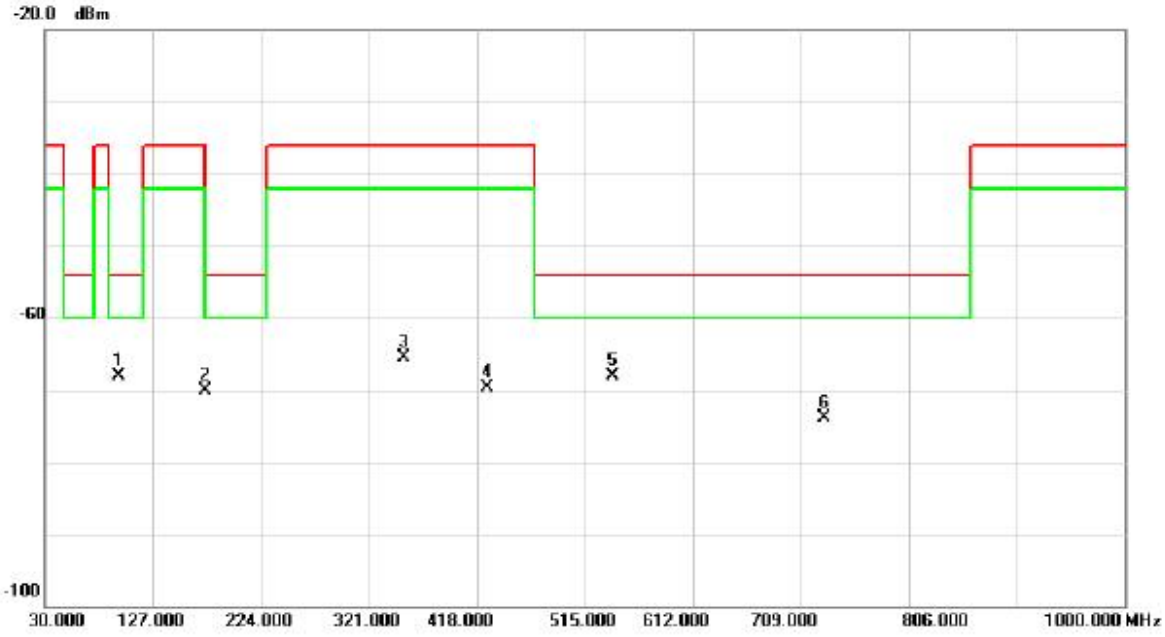
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		95.9600	-72.75	-3.14	-75.89	-54.00	-21.89	peak	
2		173.5600	-76.60	0.20	-76.40	-36.00	-40.40	peak	
3		227.8800	-76.54	0.08	-76.46	-54.00	-22.46	peak	
4		348.1600	-80.06	2.15	-77.91	-36.00	-41.91	peak	
5		431.5800	-80.43	4.48	-75.95	-36.00	-39.95	peak	
6	*	480.0800	-81.49	6.38	-75.11	-54.00	-21.11	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11b)

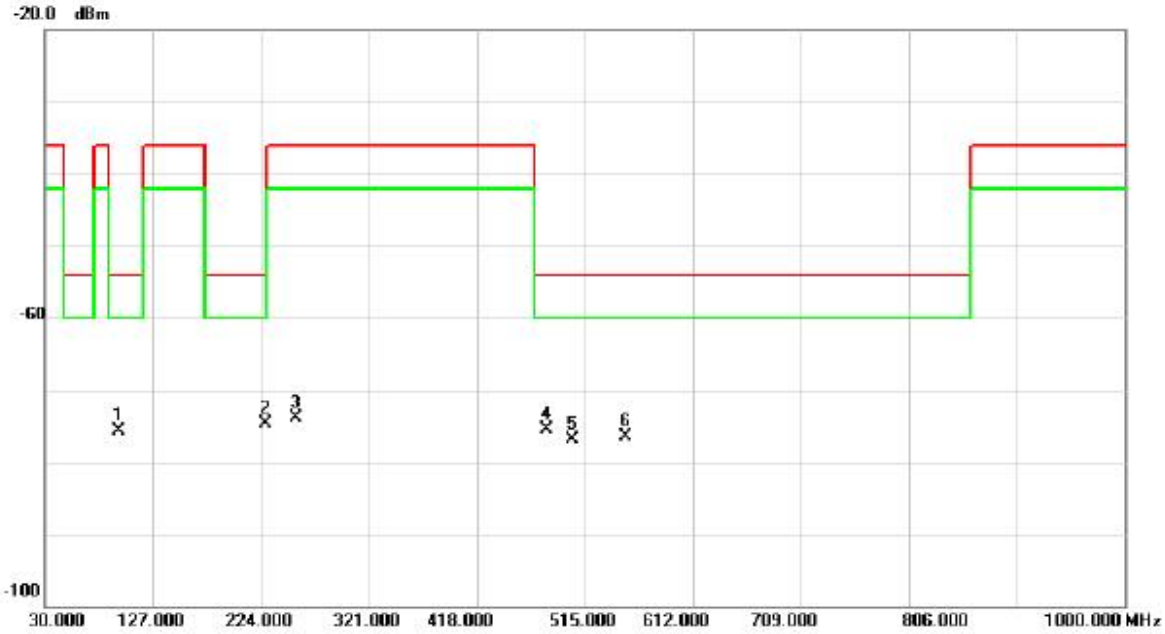
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		95.9600	-62.30	-5.81	-68.11	-54.00	-14.11	peak	
2		173.5600	-68.43	-1.71	-70.14	-36.00	-34.14	peak	
3		353.0100	-68.90	3.30	-65.60	-36.00	-29.60	peak	
4		427.7000	-75.66	6.01	-69.65	-36.00	-33.65	peak	
5	*	540.2200	-76.09	8.09	-68.00	-54.00	-14.00	peak	
6		730.3400	-87.17	13.25	-73.92	-54.00	-19.92	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11b)

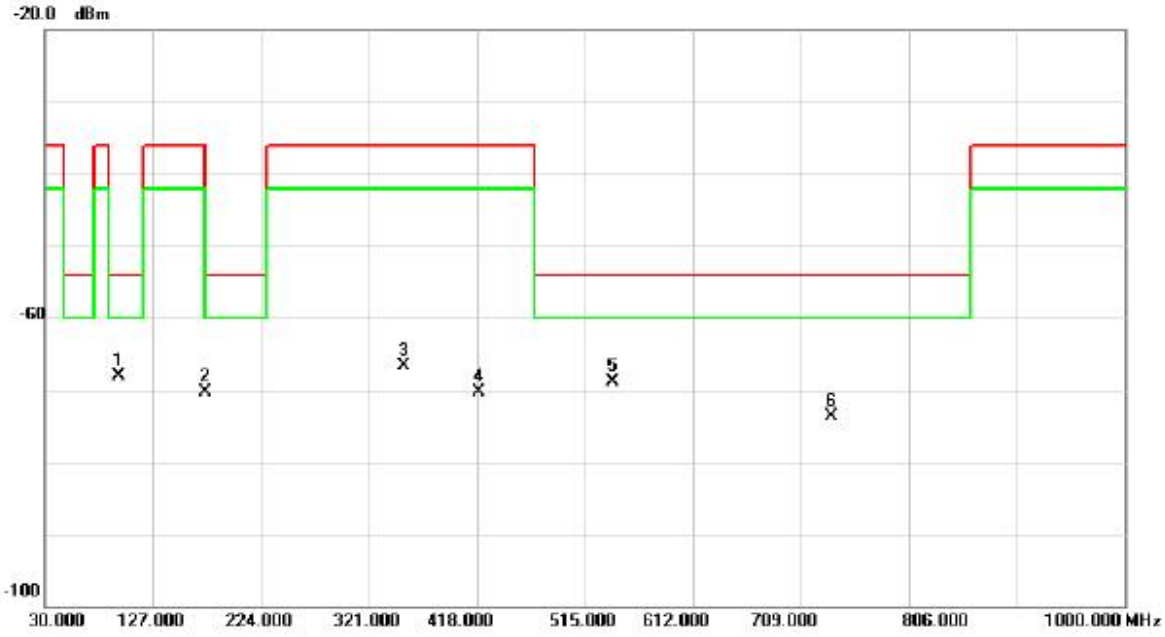
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		95.9600	-72.61	-3.14	-75.75	-54.00	-21.75	peak	
2	*	227.8800	-74.75	0.08	-74.67	-54.00	-20.67	peak	
3		255.0400	-74.36	0.45	-73.91	-36.00	-37.91	peak	
4		480.0800	-81.81	6.38	-75.43	-54.00	-21.43	peak	
5		504.3300	-84.49	7.54	-76.95	-54.00	-22.95	peak	
6		551.8600	-83.91	7.50	-76.41	-54.00	-22.41	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11b)

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	95.9600	-62.34	-5.81	-68.15	-54.00	-14.15	peak	
2		173.5600	-68.65	-1.71	-70.36	-36.00	-34.36	peak	
3		353.0100	-70.08	3.30	-66.78	-36.00	-30.78	peak	
4		419.9400	-77.15	6.88	-70.27	-36.00	-34.27	peak	
5		540.2200	-76.97	8.09	-68.88	-54.00	-14.88	peak	
6		736.1600	-86.83	13.10	-73.73	-54.00	-19.73	peak	

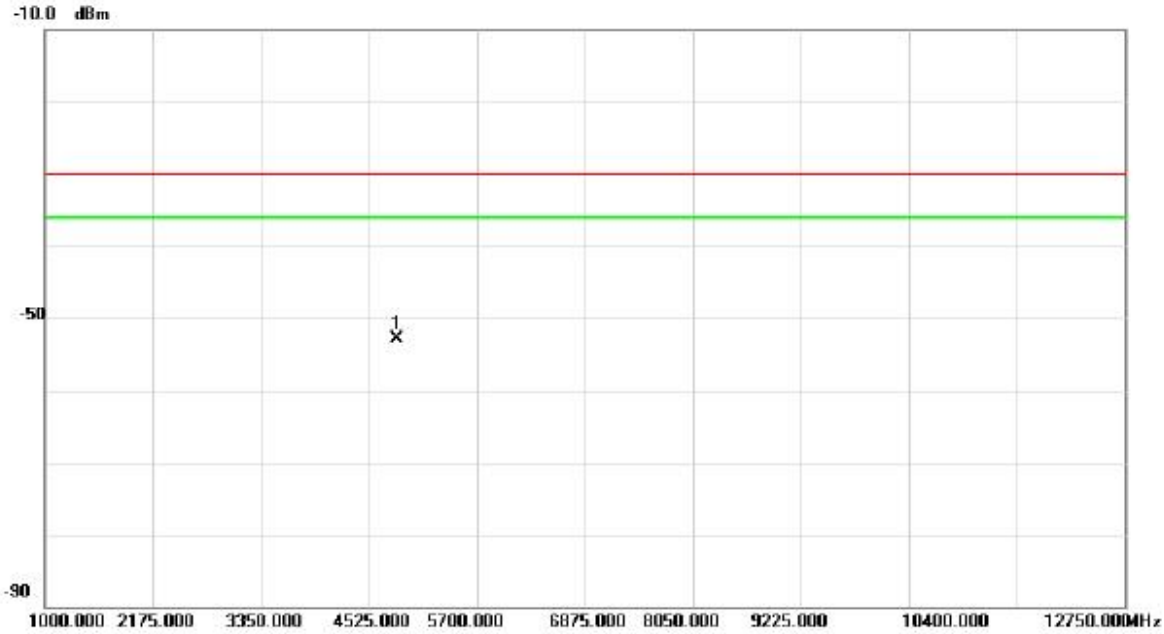
Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11b)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4824.000	-60.84	7.01	-53.83	-30.00	-23.83	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11b)

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4823.500	-59.19	6.37	-52.82	-30.00	-22.82	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11b)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4944.000	-48.92	7.26	-41.66	-30.00	-11.66	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11b)

Horizontal

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4943.900	-44.52	6.38	-38.14	-30.00	-8.14	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11g)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4825.800	-41.14	7.02	-34.12	-30.00	-4.12	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11g)

Horizontal

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4823.900	-51.85	6.37	-45.48	-30.00	-15.48	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11g)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4942.700	-41.10	7.26	-33.84	-30.00	-3.84	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11g)

Horizontal

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4942.700	-46.89	6.38	-40.51	-30.00	-10.51	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11n 20M)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4823.500	-40.51	7.01	-33.50	-30.00	-3.50	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11n 20M)

Horizontal

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4823.500	-39.31	6.37	-32.94	-30.00	-2.94	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11n 20M)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4943.900	-47.72	7.26	-40.46	-30.00	-10.46	peak	

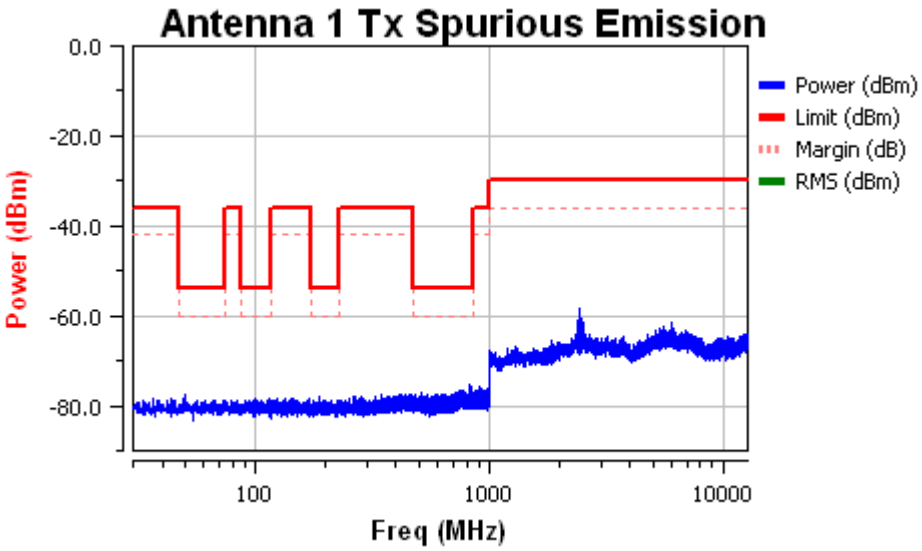
Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11n 20M)

Horizontal

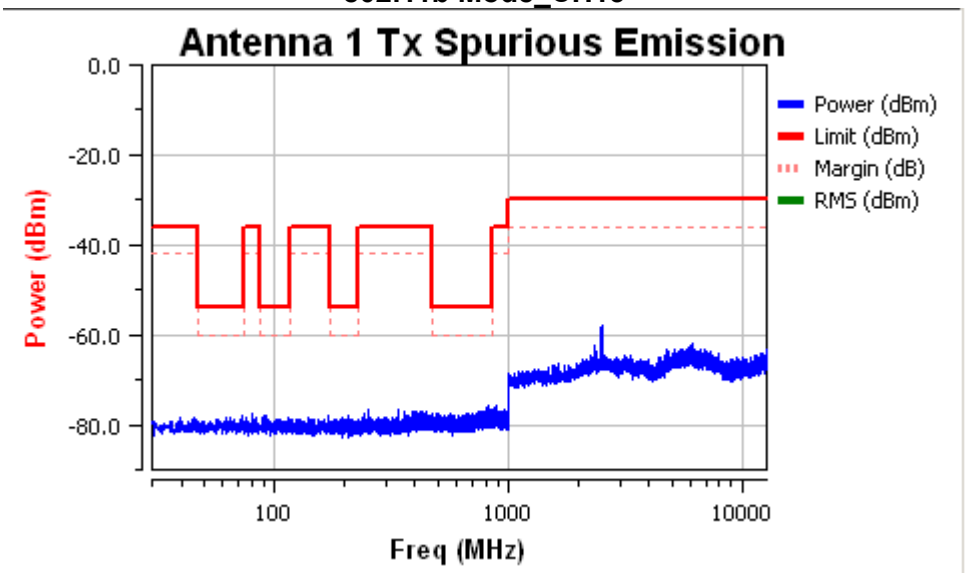
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4942.600	-41.74	6.38	-35.36	-30.00	-5.36	peak	

For Dipole antenna

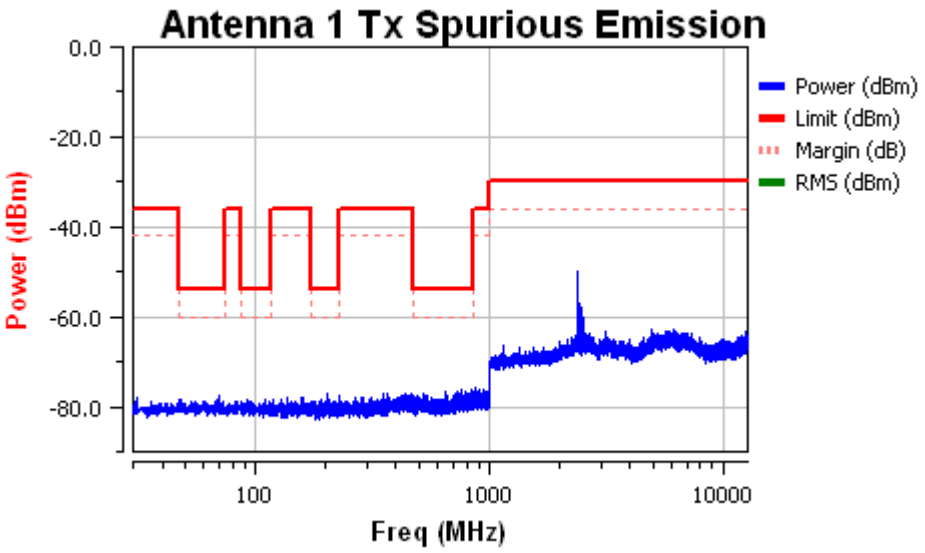
802.11b Mode_CH01



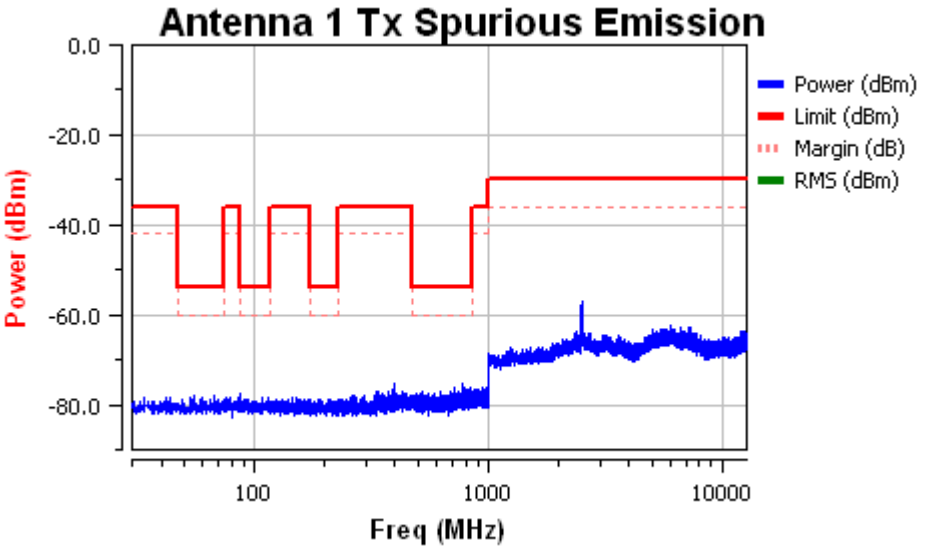
802.11b Mode_CH13



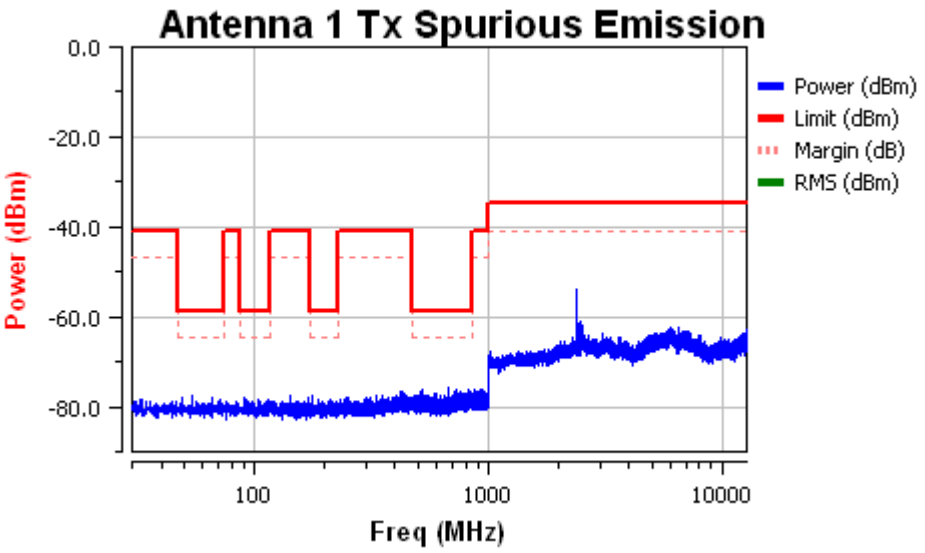
802.11g Mode_CH01



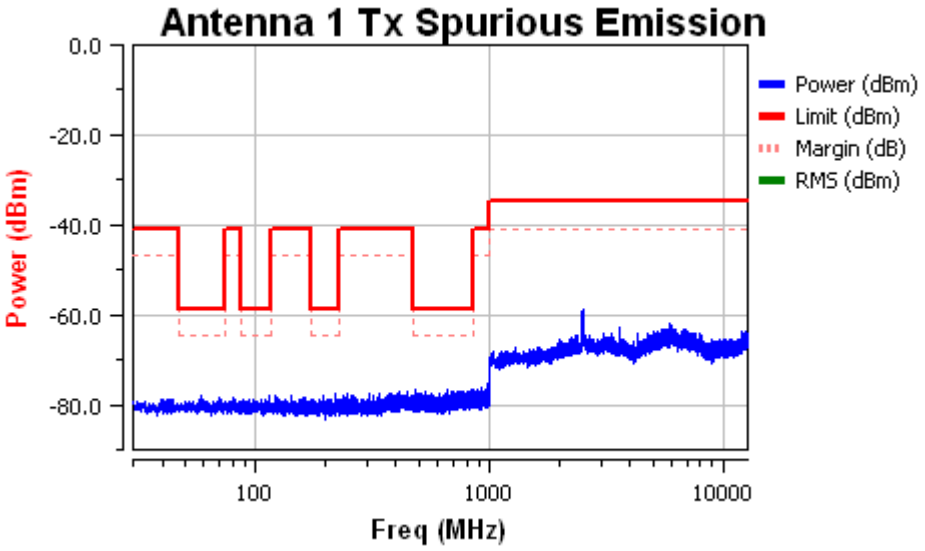
802.11g Mode_CH13



802.11n 20M Mode_CH01



802.11n 20M Mode_CH13



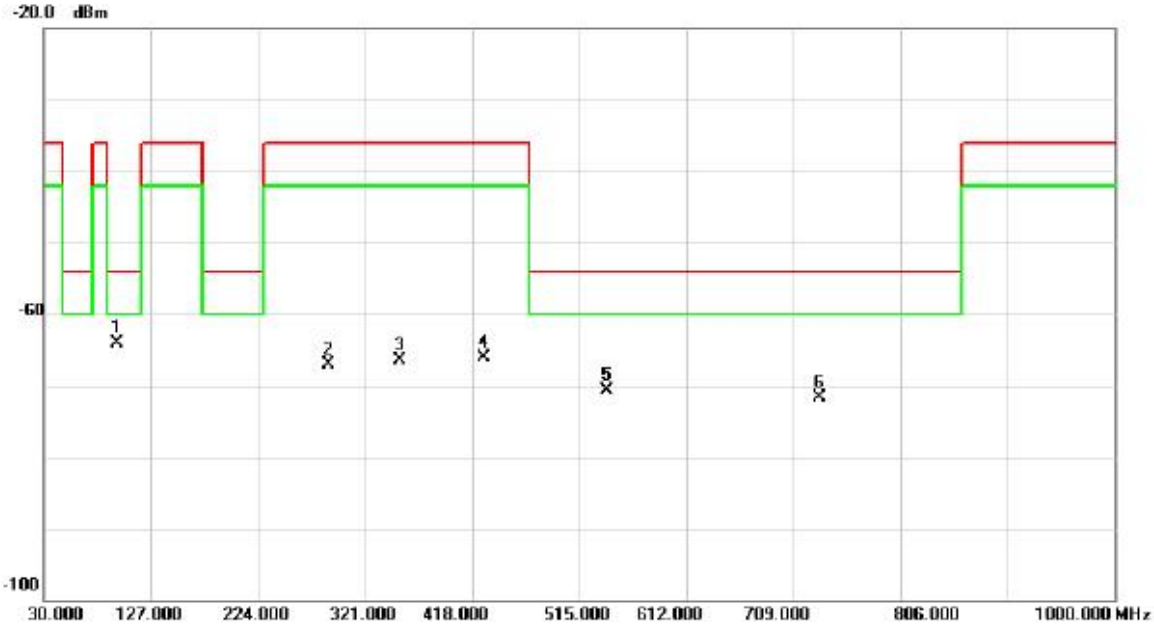
Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11b)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		48.4300	-74.36	1.03	-73.33	-54.00	-19.33	peak	
2	*	95.9600	-64.93	-3.14	-68.07	-54.00	-14.07	peak	
3		428.6700	-77.90	4.52	-73.38	-36.00	-37.38	peak	
4		499.4800	-78.95	7.52	-71.43	-54.00	-17.43	peak	
5		856.4400	-86.01	14.25	-71.76	-54.00	-17.76	peak	
6		950.5300	-82.29	14.59	-67.70	-36.00	-31.70	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11b)

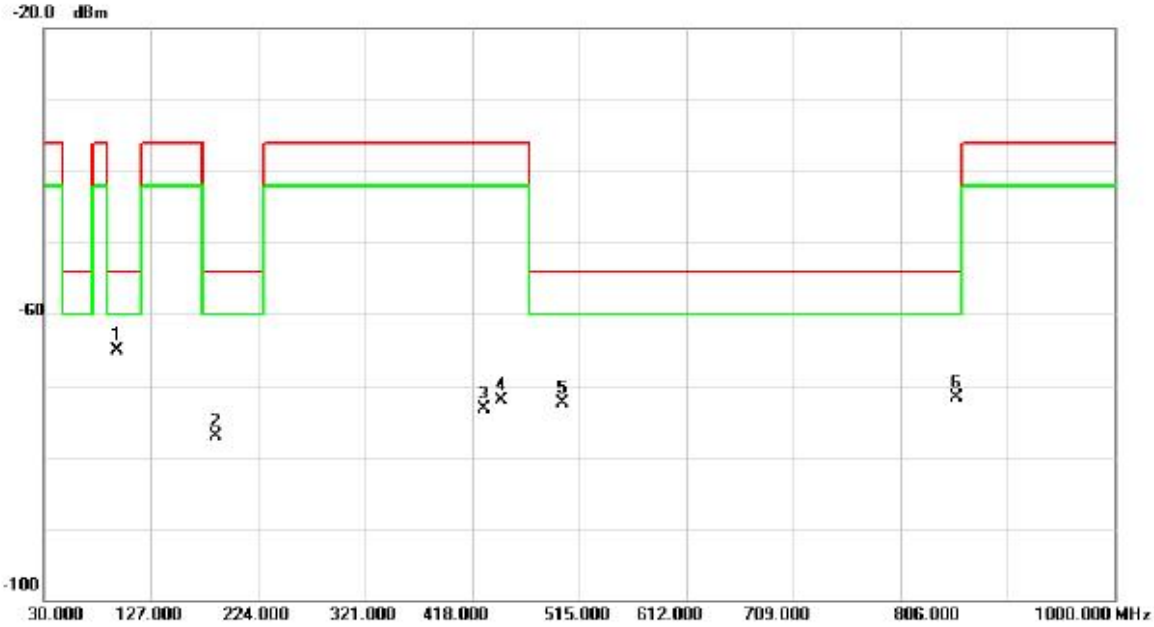
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	95.9600	-58.37	-5.81	-64.18	-54.00	-10.18	peak	
2		288.0200	-68.85	1.76	-67.09	-36.00	-31.09	peak	
3		353.0100	-69.80	3.30	-66.50	-36.00	-30.50	peak	
4		428.6700	-72.01	5.90	-66.11	-36.00	-30.11	peak	
5		540.2200	-78.74	8.09	-70.65	-54.00	-16.65	peak	
6		732.2800	-84.91	13.20	-71.71	-54.00	-17.71	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11b)

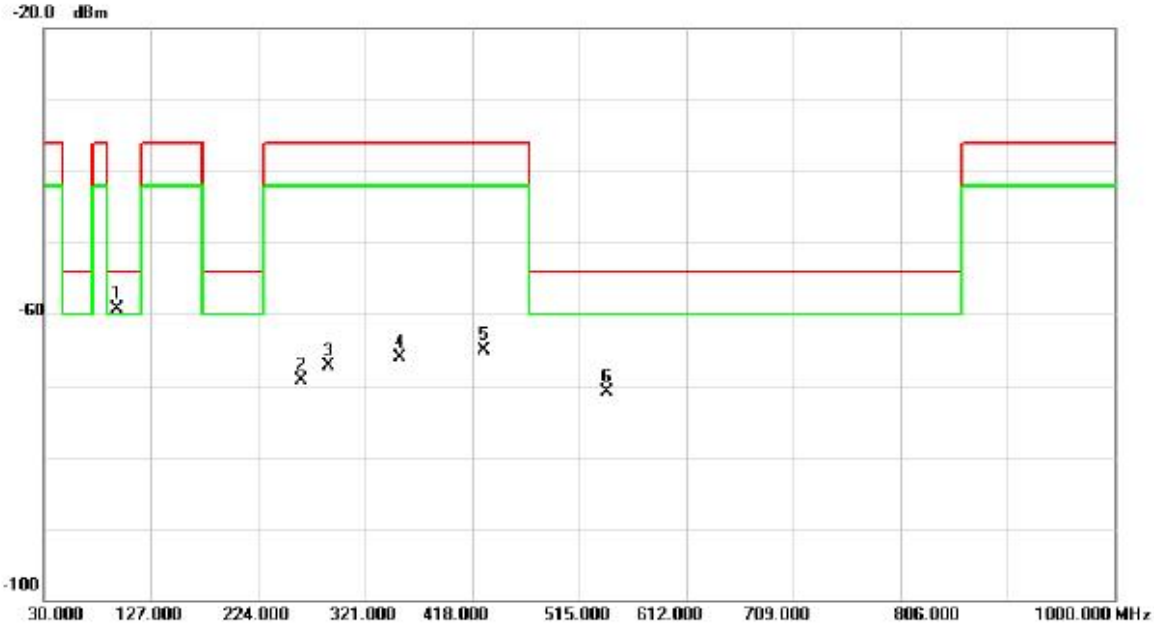
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	95.9600	-61.94	-3.14	-65.08	-54.00	-11.08	peak	
2		185.2000	-76.56	-0.57	-77.13	-54.00	-23.13	peak	
3		428.6700	-77.82	4.52	-73.30	-36.00	-37.30	peak	
4		444.1900	-76.72	4.67	-72.05	-36.00	-36.05	peak	
5		499.4800	-80.12	7.52	-72.60	-54.00	-18.60	peak	
6		856.4400	-85.95	14.25	-71.70	-54.00	-17.70	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11b)

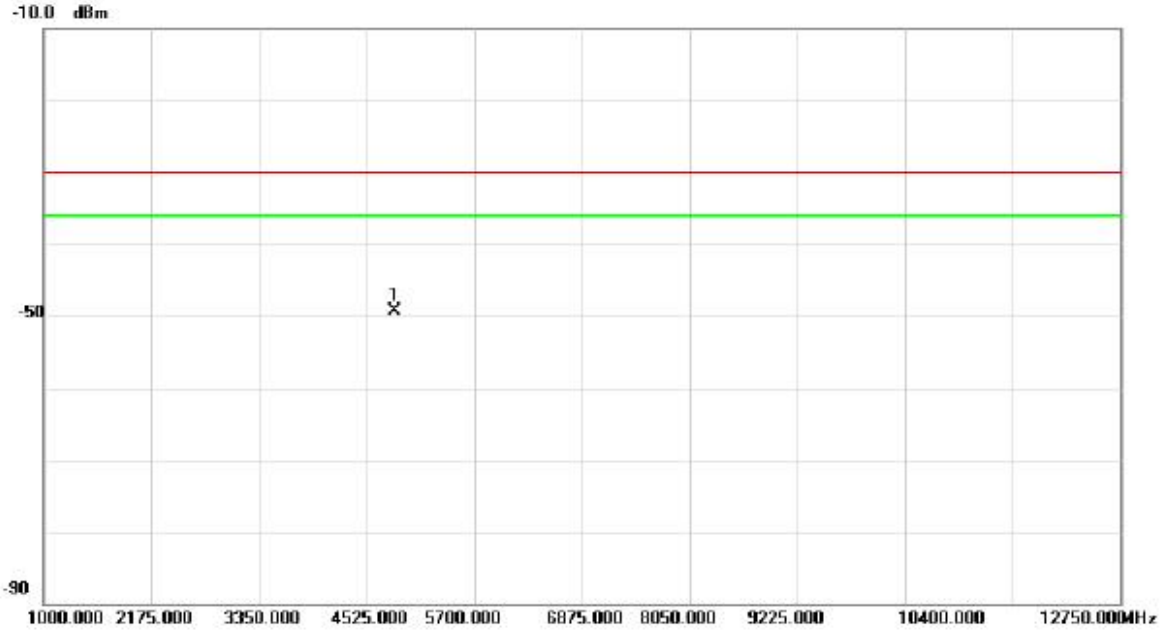
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	95.9600	-53.53	-5.81	-59.34	-54.00	-5.34	peak	
2		263.7700	-71.63	2.34	-69.29	-36.00	-33.29	peak	
3		288.0200	-69.14	1.76	-67.38	-36.00	-31.38	peak	
4		352.0400	-69.44	3.25	-66.19	-36.00	-30.19	peak	
5		428.6700	-71.02	5.90	-65.12	-36.00	-29.12	peak	
6		540.2200	-78.99	8.09	-70.90	-54.00	-16.90	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11b)

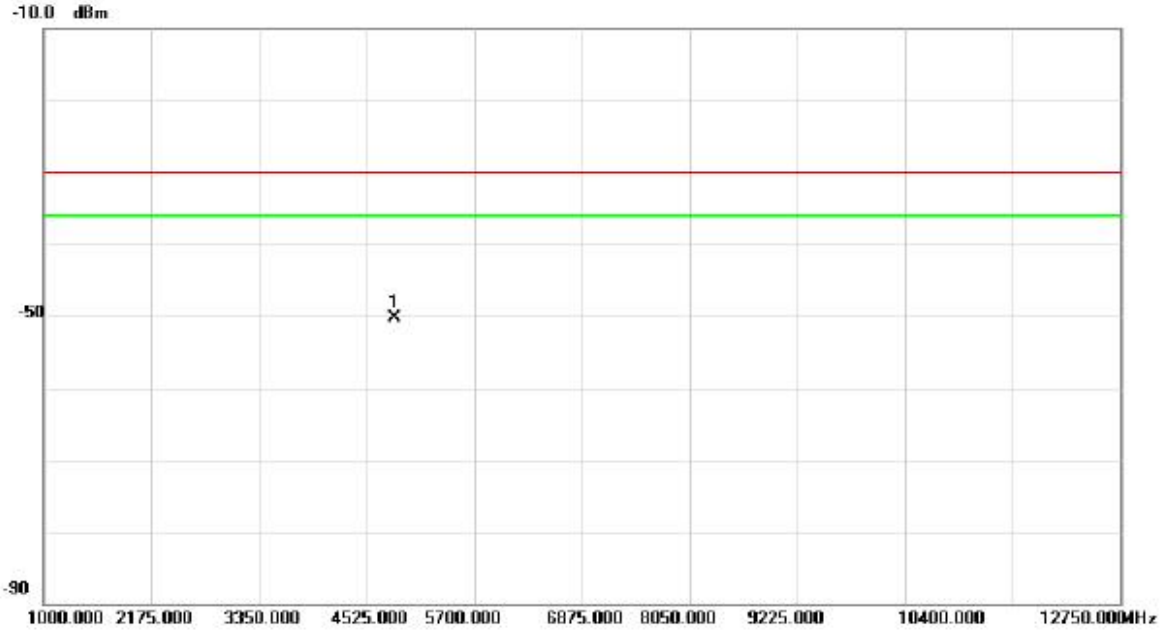
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4824.000	-56.33	7.01	-49.32	-30.00	-19.32	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11b)

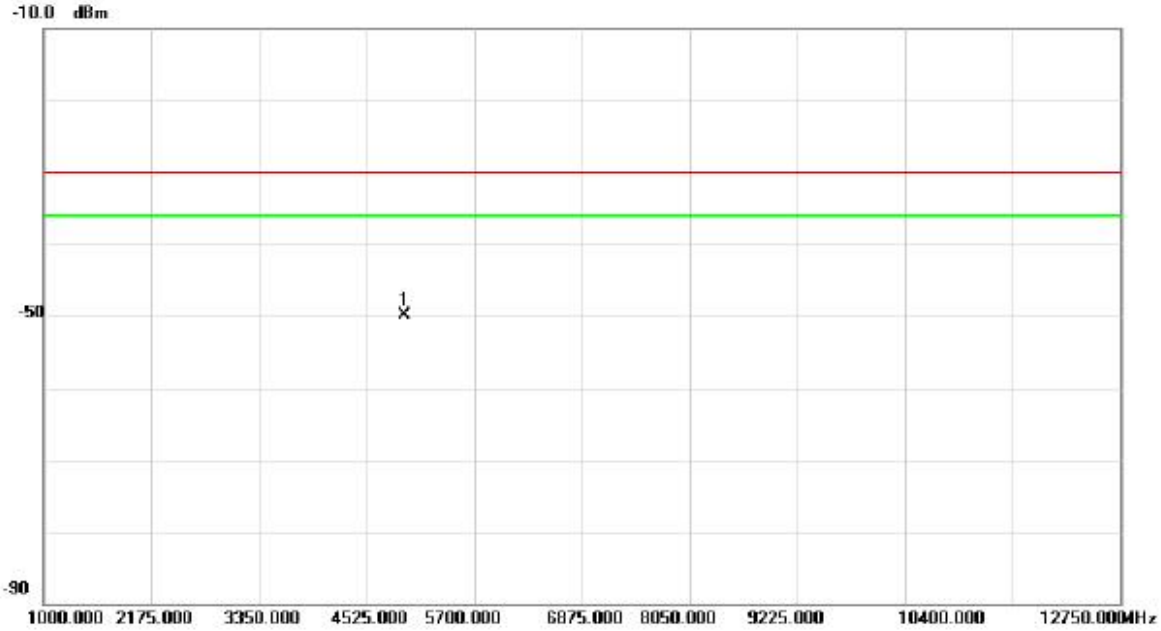
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4824.000	-57.33	7.01	-50.32	-30.00	-20.32	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11b)

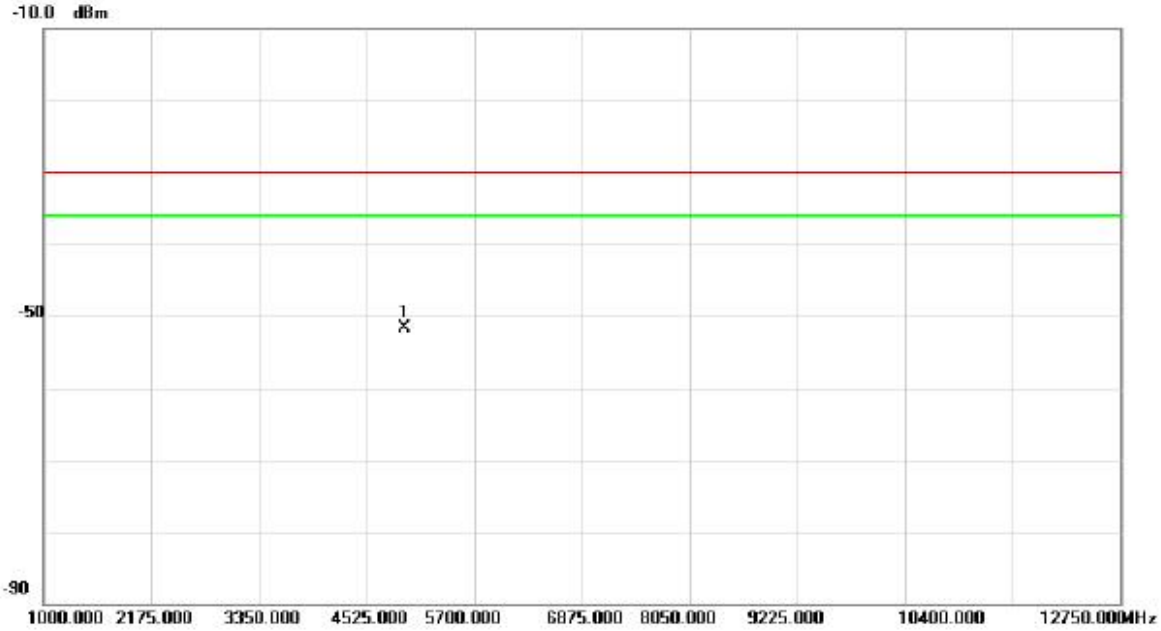
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4944.000	-57.24	7.26	-49.98	-30.00	-19.98	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11b)

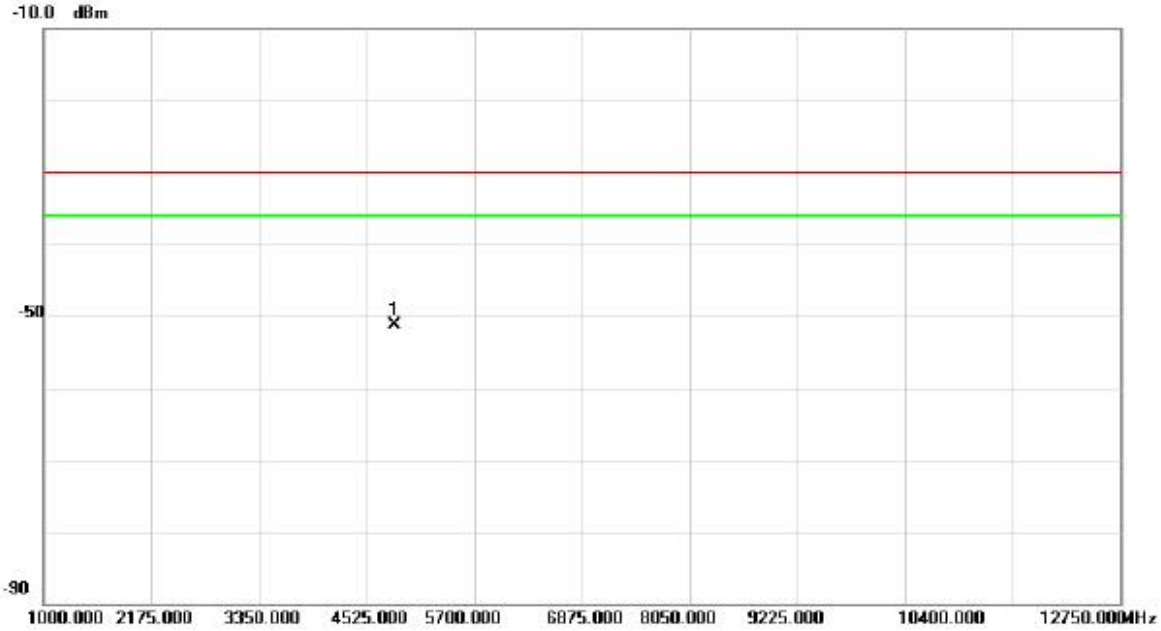
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4944.000	-58.17	6.38	-51.79	-30.00	-21.79	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11g)

Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4823.480	-58.21	7.01	-51.20	-30.00	-21.20	peak	

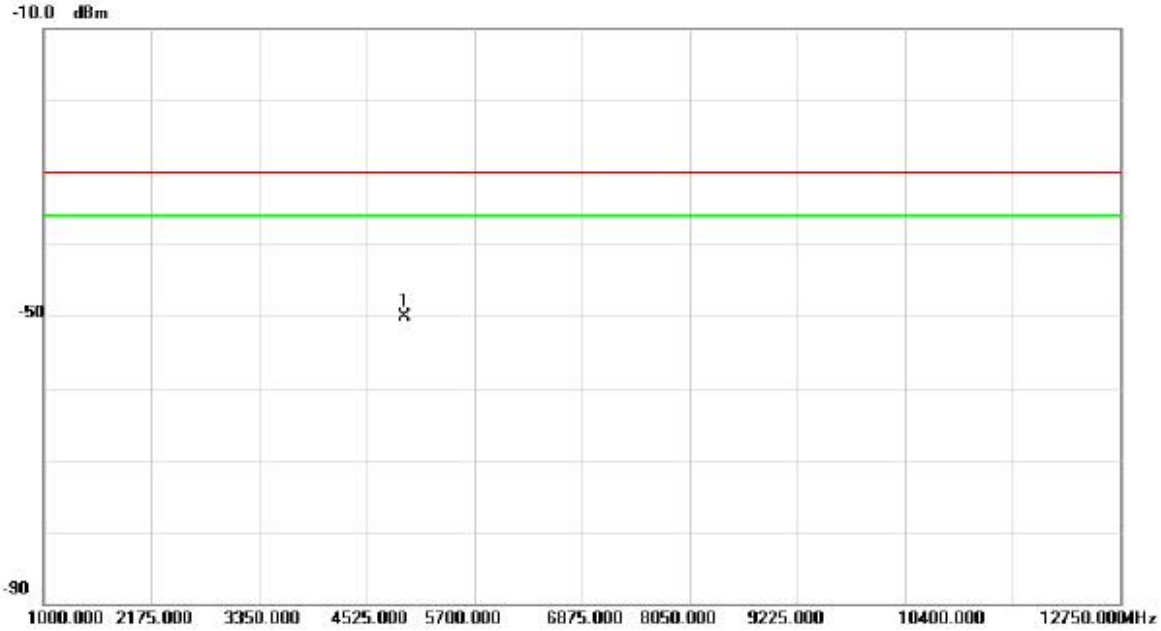
Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11g)

Horizontal

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4823.480	-51.90	6.37	-45.53	-30.00	-15.53	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11g)

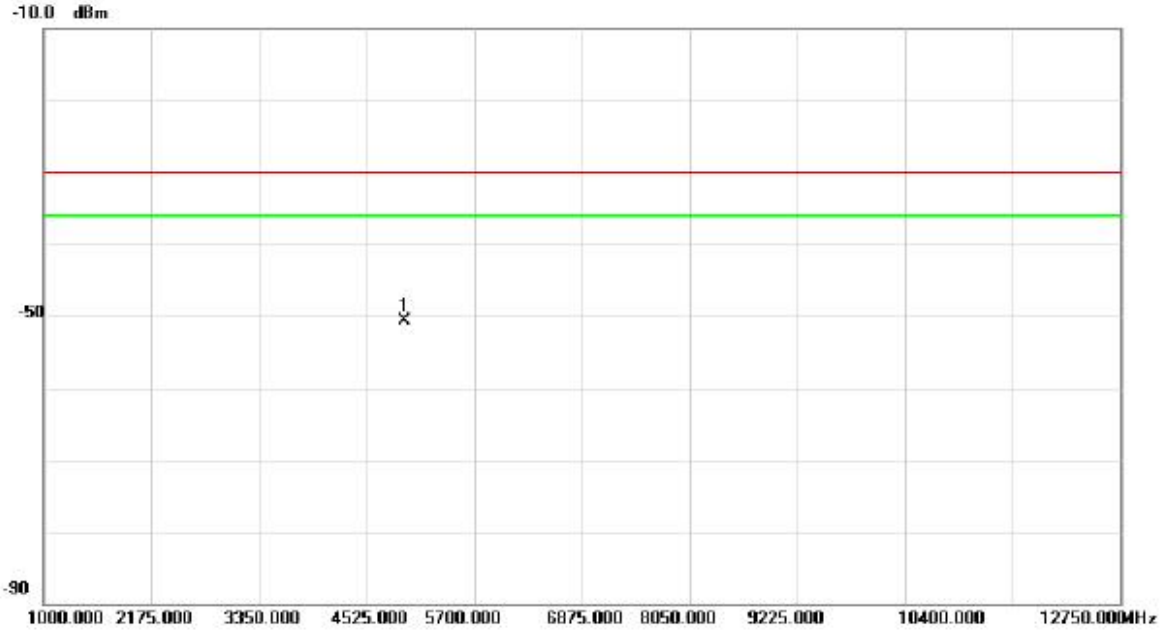
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4944.100	-57.28	7.26	-50.02	-30.00	-20.02	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11g)

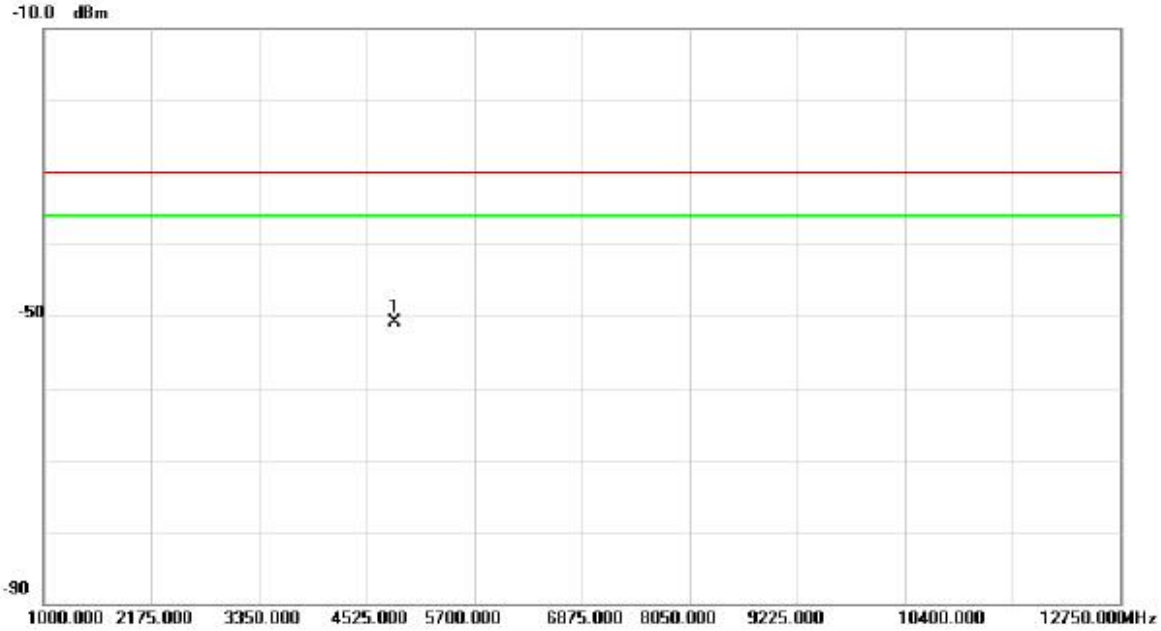
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4944.100	-57.08	6.38	-50.70	-30.00	-20.70	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11n 20M)

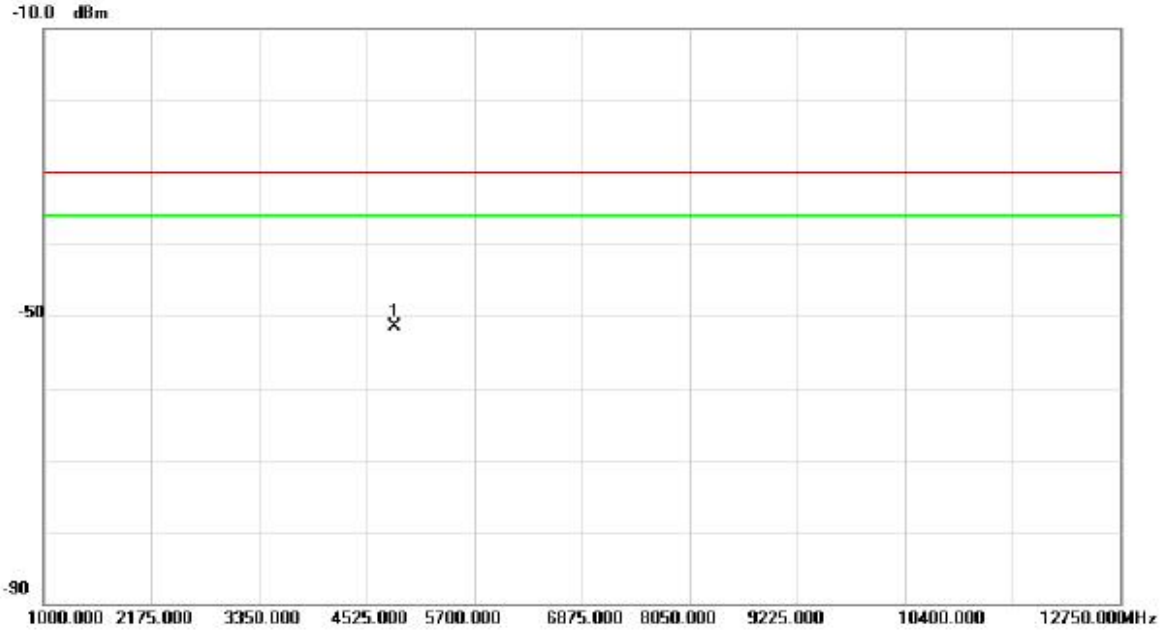
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4824.540	-57.91	7.02	-50.89	-30.00	-20.89	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2412 MHz (11n 20M)

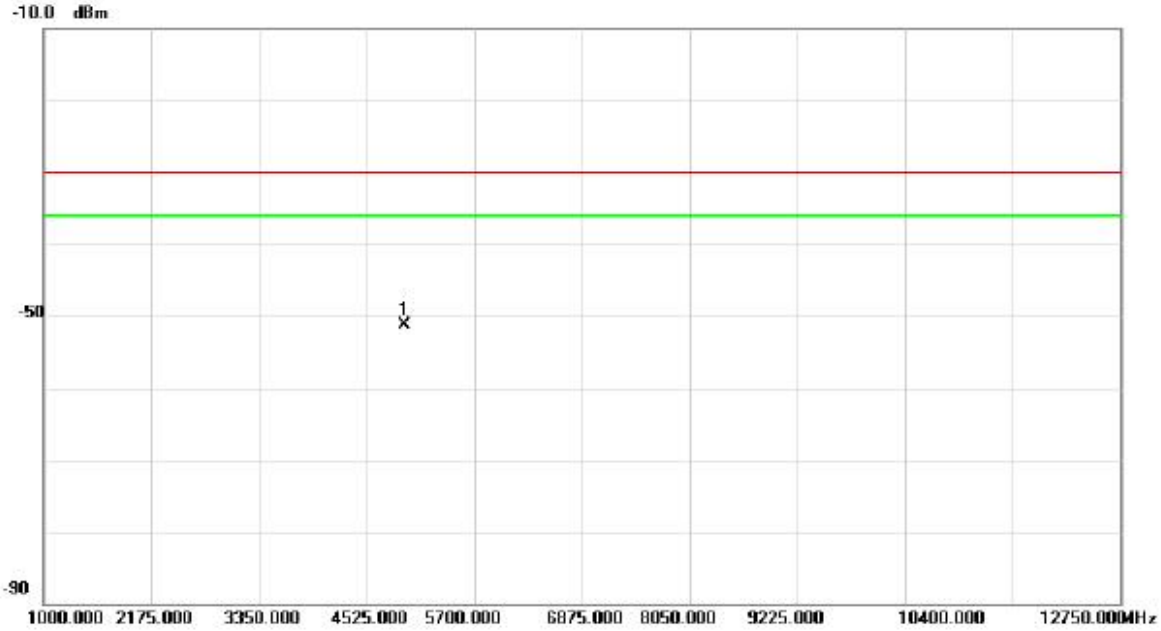
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4824.540	-57.90	6.37	-51.53	-30.00	-21.53	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11n 20M)

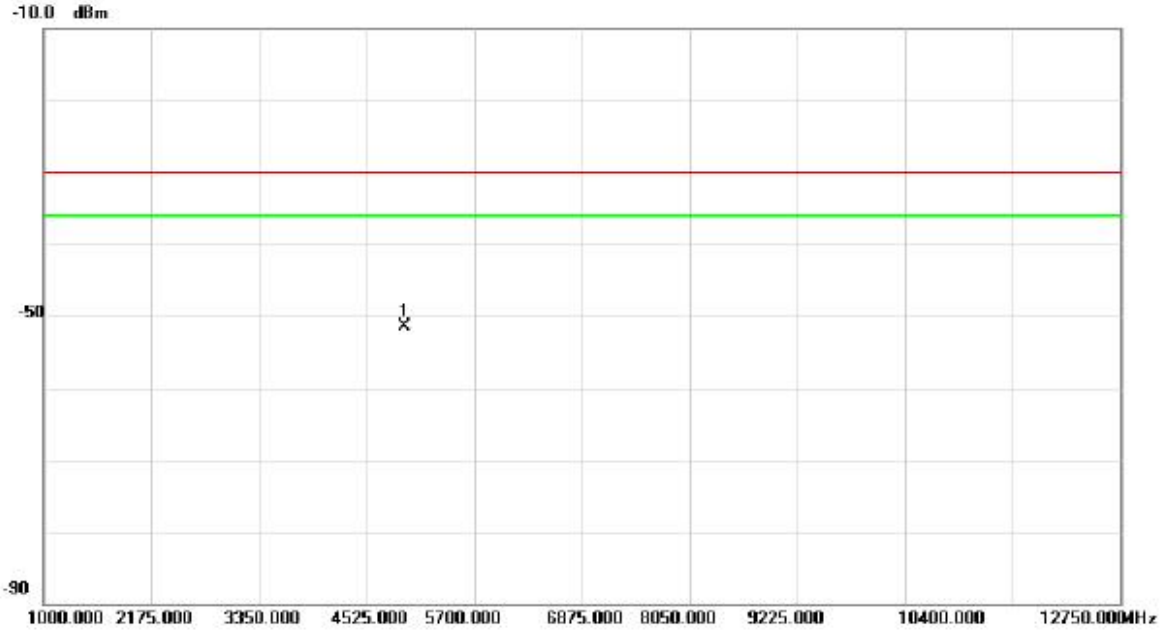
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4944.100	-58.59	7.26	-51.33	-30.00	-21.33	peak	

Orthogonal Axis	X
Test Mode:	TX Mode 2472 MHz (11n 20M)

Horizontal



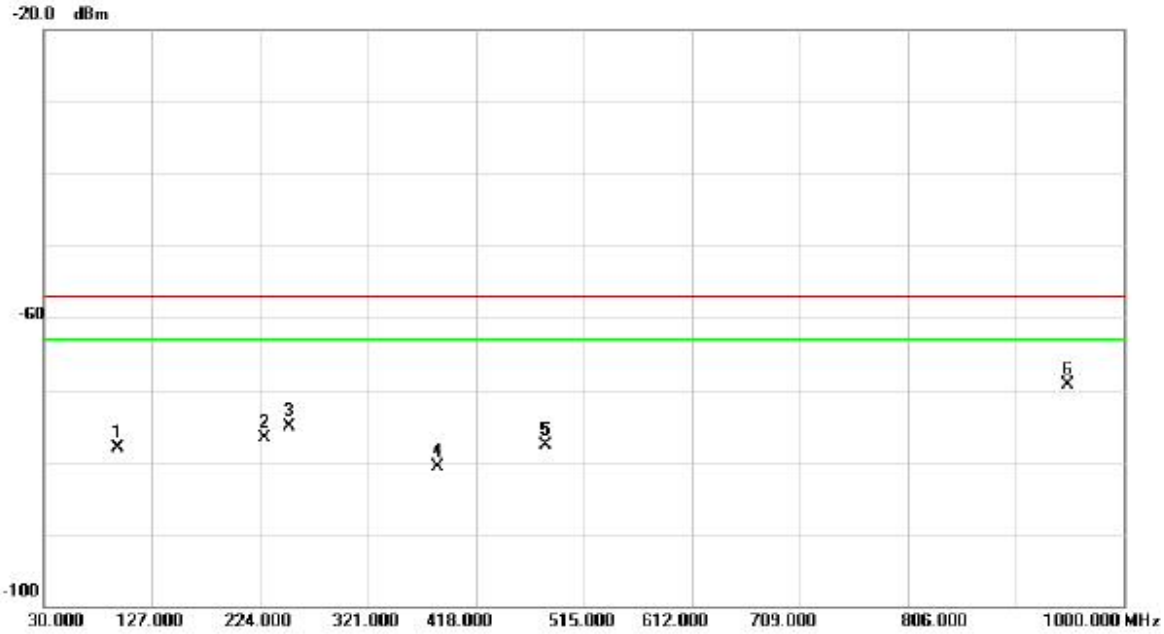
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	4944.100	-57.95	6.38	-51.57	-30.00	-21.57	peak	

ATTACHMENT I - RECEIVER SPURIOUS EMISSIONS

For Chip antenna

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11b)

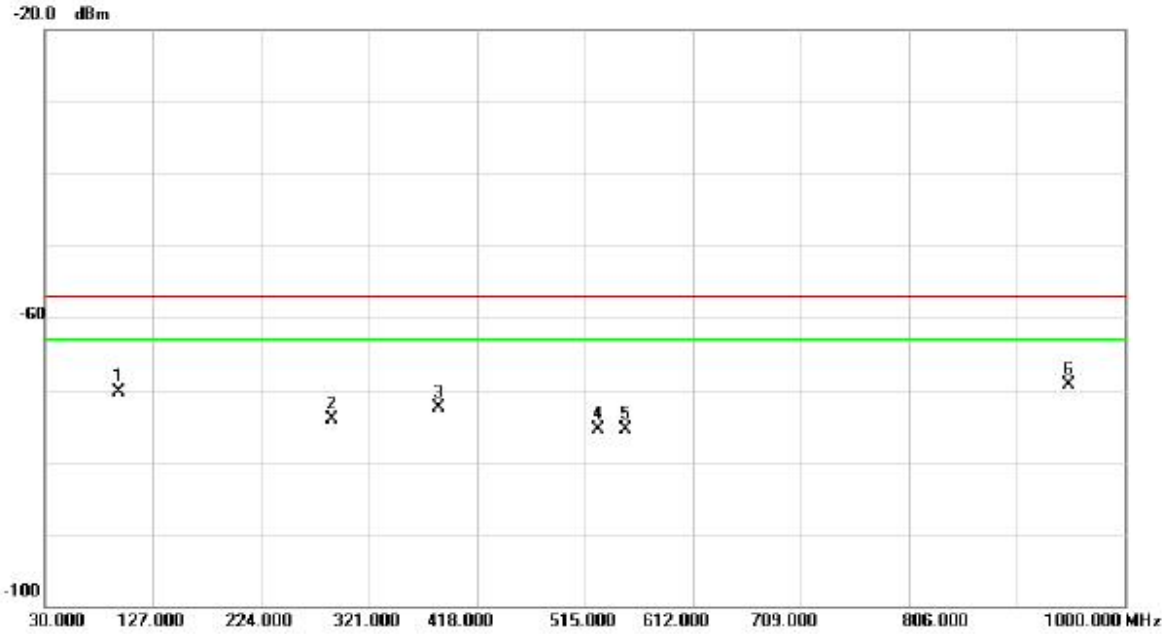
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		95.9600	-72.73	-5.29	-78.02	-57.00	-21.02	peak	
2		227.8800	-74.55	-2.07	-76.62	-57.00	-19.62	peak	
3		250.1900	-73.06	-1.99	-75.05	-57.00	-18.05	peak	
4		384.0500	-82.46	1.74	-80.72	-57.00	-23.72	peak	
5		480.0800	-82.01	4.23	-77.78	-57.00	-20.78	peak	
6	*	950.5300	-81.66	12.44	-69.22	-57.00	-12.22	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11b)

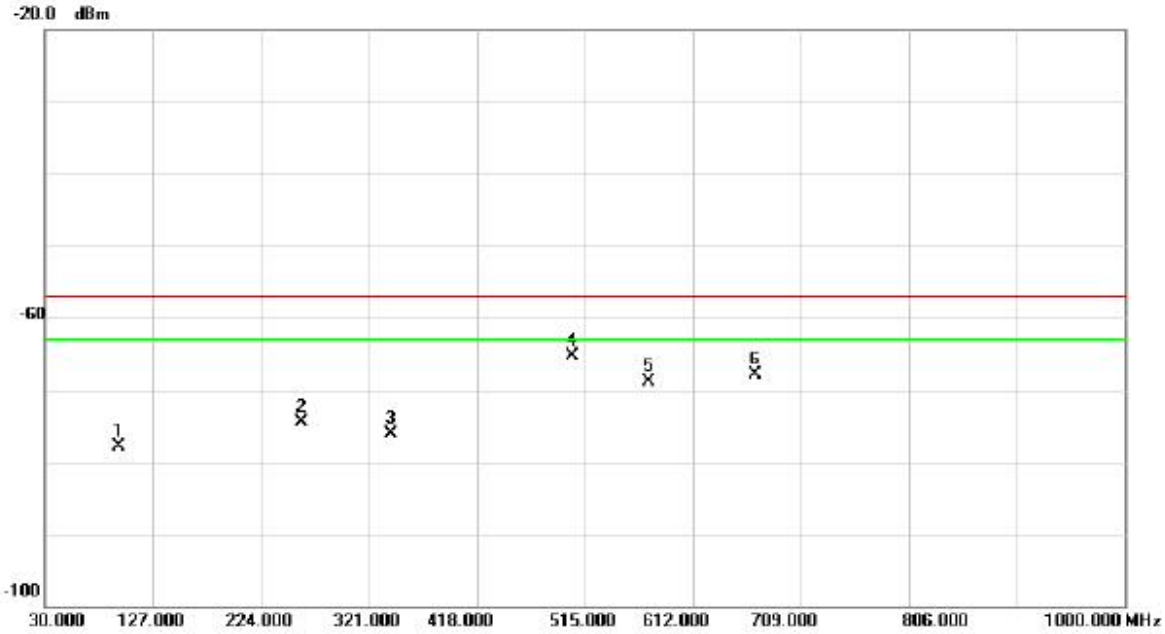
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		95.9600	-62.27	-7.96	-70.23	-57.00	-13.23	peak	
2		288.0200	-73.62	-0.39	-74.01	-57.00	-17.01	peak	
3		384.0500	-76.36	3.91	-72.45	-57.00	-15.45	peak	
4		527.6100	-81.34	5.93	-75.41	-57.00	-18.41	peak	
5		551.8600	-81.41	5.99	-75.42	-57.00	-18.42	peak	
6	*	950.5300	-82.09	12.80	-69.29	-57.00	-12.29	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11b)

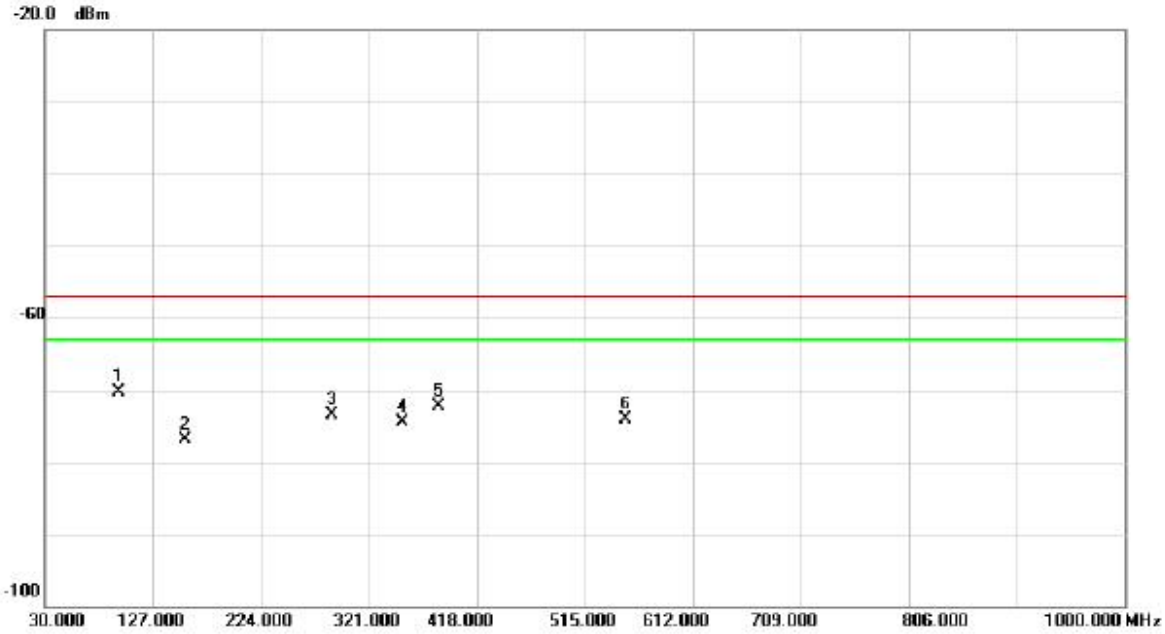
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		95.9600	-72.68	-5.29	-77.97	-57.00	-20.97	peak	
2		260.8600	-73.15	-1.29	-74.44	-57.00	-17.44	peak	
3		341.3700	-75.65	-0.39	-76.04	-57.00	-19.04	peak	
4	*	504.3300	-70.65	5.39	-65.26	-57.00	-8.26	peak	
5		572.2300	-74.73	5.86	-68.87	-57.00	-11.87	peak	
6		668.2600	-76.09	8.10	-67.99	-57.00	-10.99	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11b)

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	95.9600	-62.27	-7.96	-70.23	-57.00	-13.23	peak	
2		156.1000	-78.01	1.18	-76.83	-57.00	-19.83	peak	
3		288.0200	-73.12	-0.39	-73.51	-57.00	-16.51	peak	
4		351.0700	-75.45	1.04	-74.41	-57.00	-17.41	peak	
5		384.0500	-76.30	3.91	-72.39	-57.00	-15.39	peak	
6		551.8600	-80.11	5.99	-74.12	-57.00	-17.12	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11b)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2398.250	-56.36	-2.89	-59.25	-47.00	-12.25	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11b)

Horizontal

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1810.750	-59.04	-3.98	-63.02	-47.00	-16.02	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11b)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2398.250	-58.09	-2.89	-60.98	-47.00	-13.98	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11b)

Horizontal

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2022.250	-58.70	-2.48	-61.18	-47.00	-14.18	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11g)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2398.250	-56.58	-2.89	-59.47	-47.00	-12.47	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11g)

Horizontal

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2280.750	-65.88	-1.54	-67.42	-47.00	-20.42	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11g)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2398.250	-56.53	-2.89	-59.42	-47.00	-12.42	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11g)

Horizontal

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2398.250	-64.01	-1.11	-65.12	-47.00	-18.12	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11n 20M)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2398.250	-58.13	-2.89	-61.02	-47.00	-14.02	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11n 20M)

Horizontal

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2398.250	-63.98	-1.11	-65.09	-47.00	-18.09	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11n 20M)

Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2398.250	-58.76	-2.89	-61.65	-47.00	-14.65	peak	

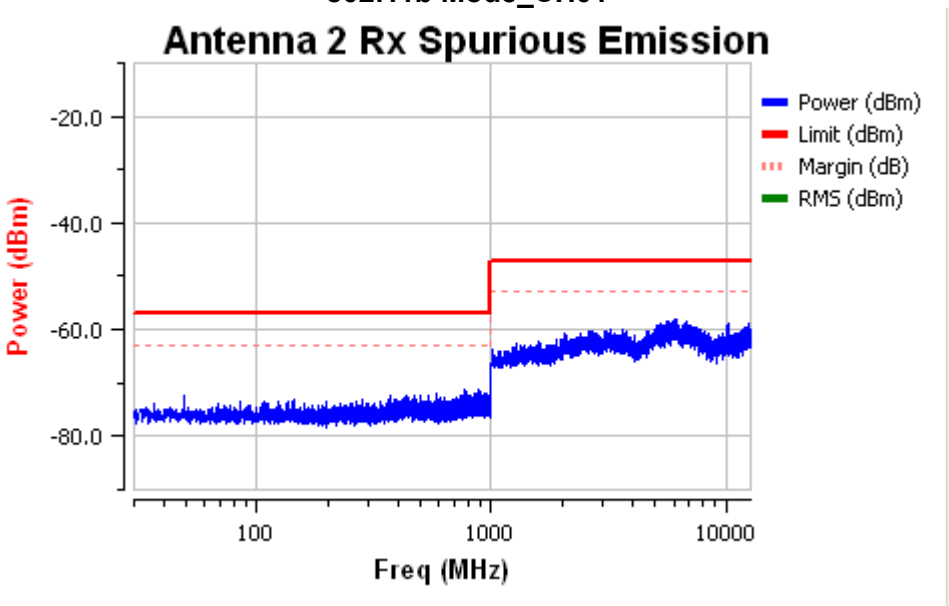
Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11n 20M)

Horizontal

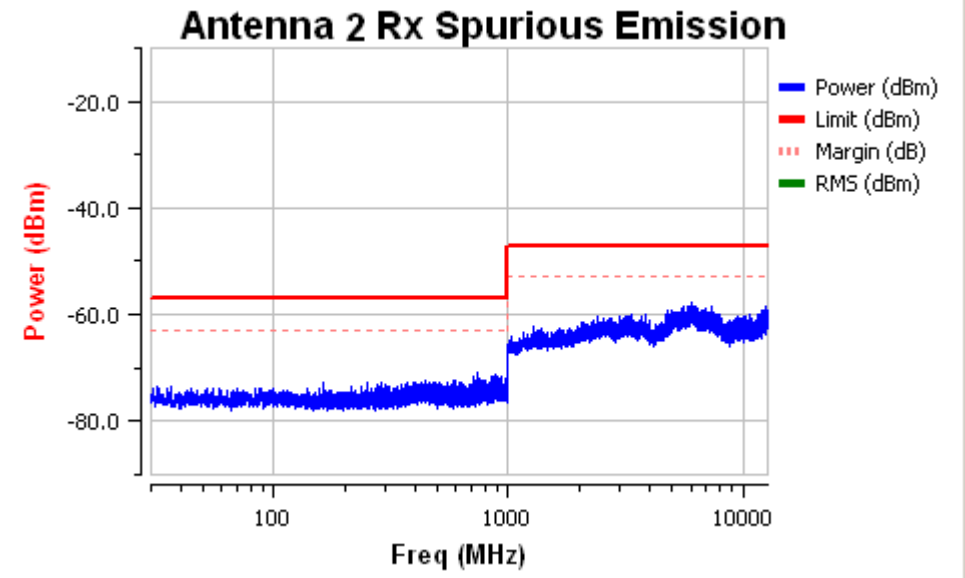
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1599.250	-61.09	-5.57	-66.66	-47.00	-19.66	peak	

For Dipole antenna

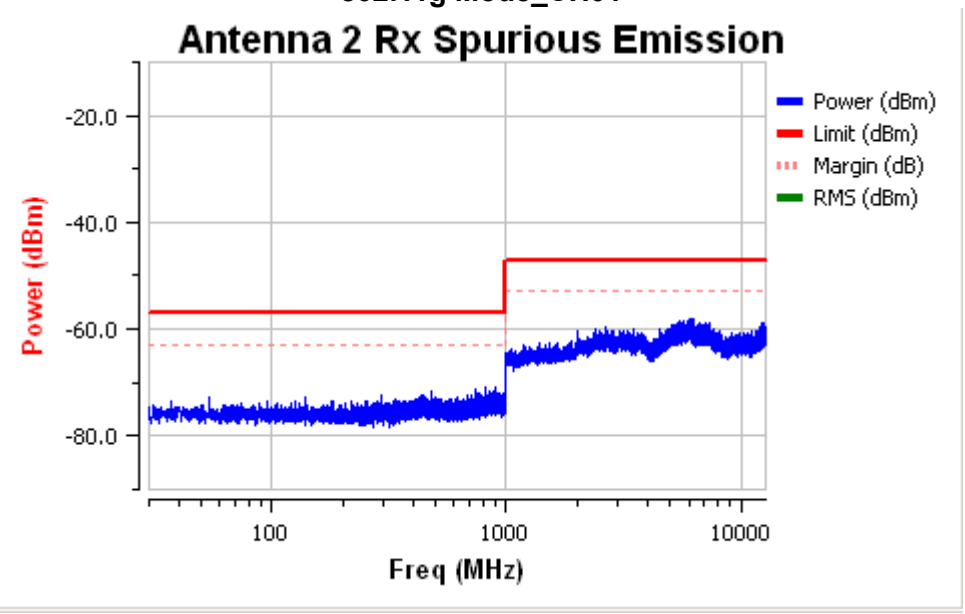
802.11b Mode_CH01



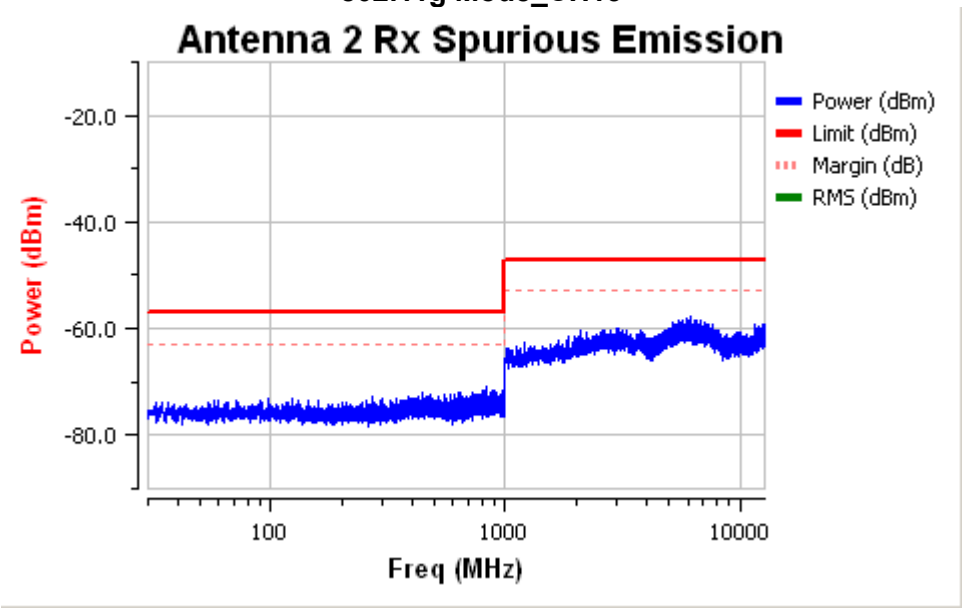
802.11b Mode_CH13



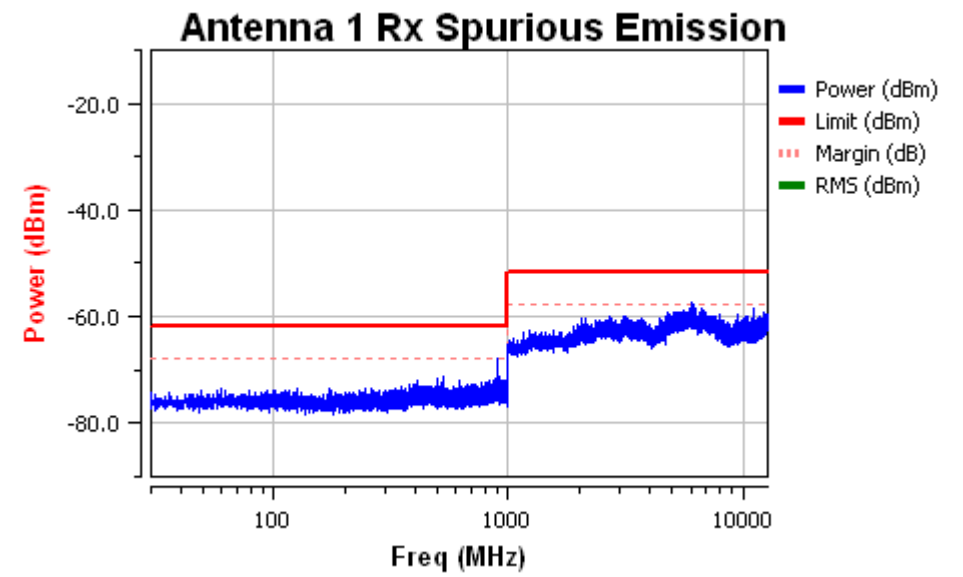
802.11g Mode_CH01



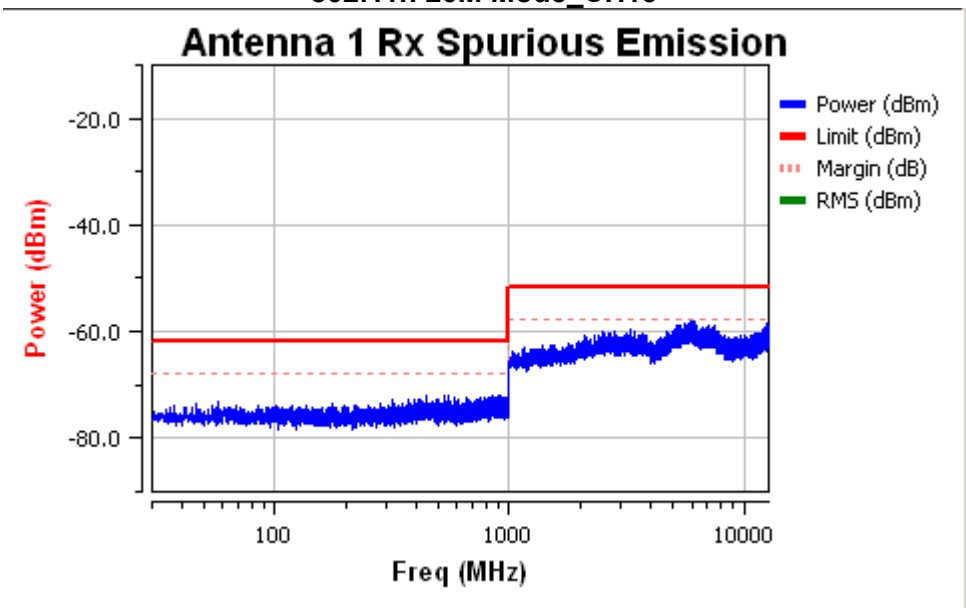
802.11g Mode_CH13



802.11n 20M Mode_CH01

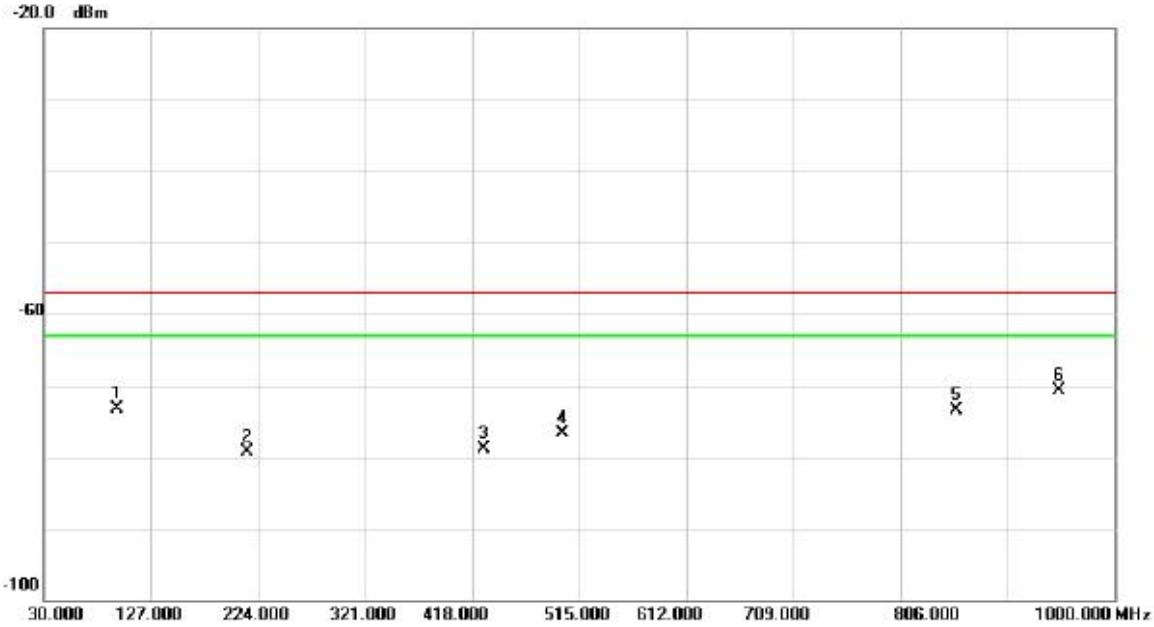


802.11n 20M Mode_CH13



Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11b)

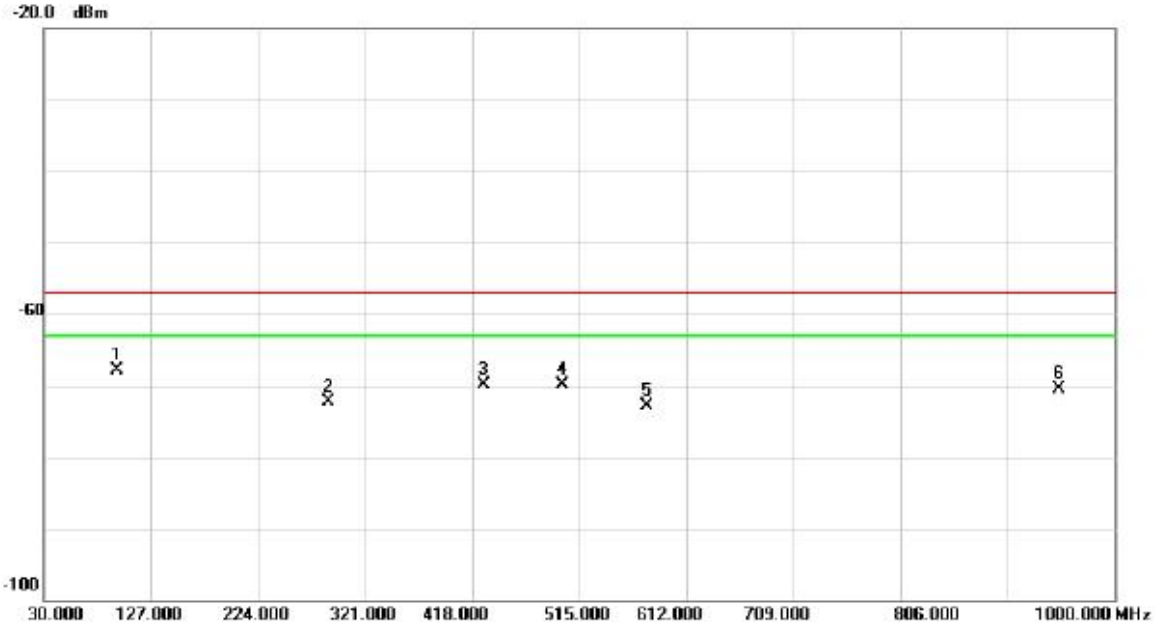
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		95.9600	-68.07	-5.29	-73.36	-57.00	-16.36	peak	
2		214.3000	-75.08	-4.17	-79.25	-57.00	-22.25	peak	
3		428.6700	-81.34	2.37	-78.97	-57.00	-21.97	peak	
4		499.4800	-82.12	5.37	-76.75	-57.00	-19.75	peak	
5		856.4400	-85.67	12.10	-73.57	-57.00	-16.57	peak	
6	*	950.5300	-83.08	12.44	-70.64	-57.00	-13.64	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11b)

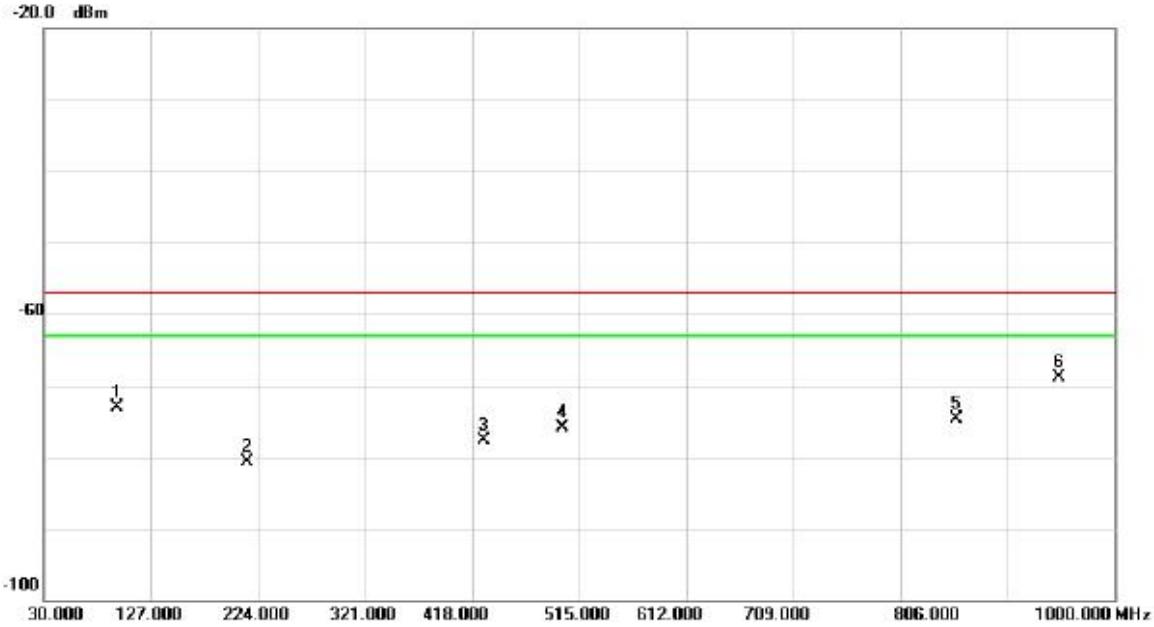
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	95.9600	-59.98	-7.96	-67.94	-57.00	-10.94	peak	
2		288.0200	-72.00	-0.39	-72.39	-57.00	-15.39	peak	
3		428.6700	-73.70	3.75	-69.95	-57.00	-12.95	peak	
4		499.4800	-75.82	5.87	-69.95	-57.00	-12.95	peak	
5		576.1100	-79.33	6.49	-72.84	-57.00	-15.84	peak	
6		950.5300	-83.29	12.80	-70.49	-57.00	-13.49	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11b)

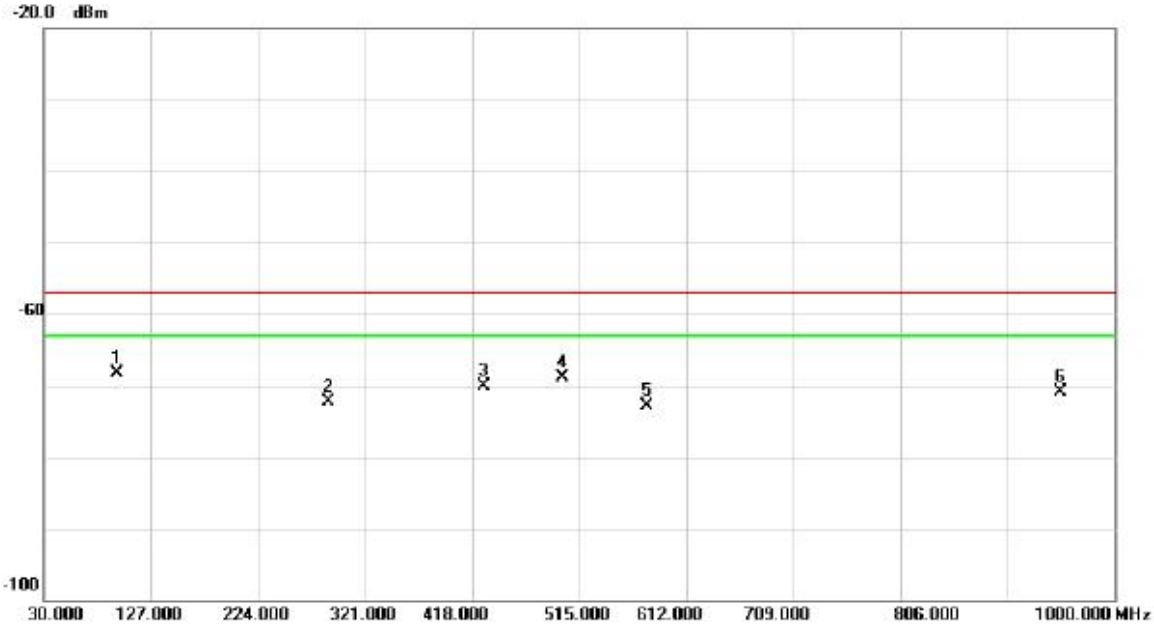
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		95.9600	-67.81	-5.29	-73.10	-57.00	-16.10	peak	
2		214.3000	-76.63	-4.17	-80.80	-57.00	-23.80	peak	
3		428.6700	-80.17	2.37	-77.80	-57.00	-20.80	peak	
4		499.4800	-81.27	5.37	-75.90	-57.00	-18.90	peak	
5		856.4400	-86.72	12.10	-74.62	-57.00	-17.62	peak	
6	*	950.5300	-81.30	12.44	-68.86	-57.00	-11.86	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11b)

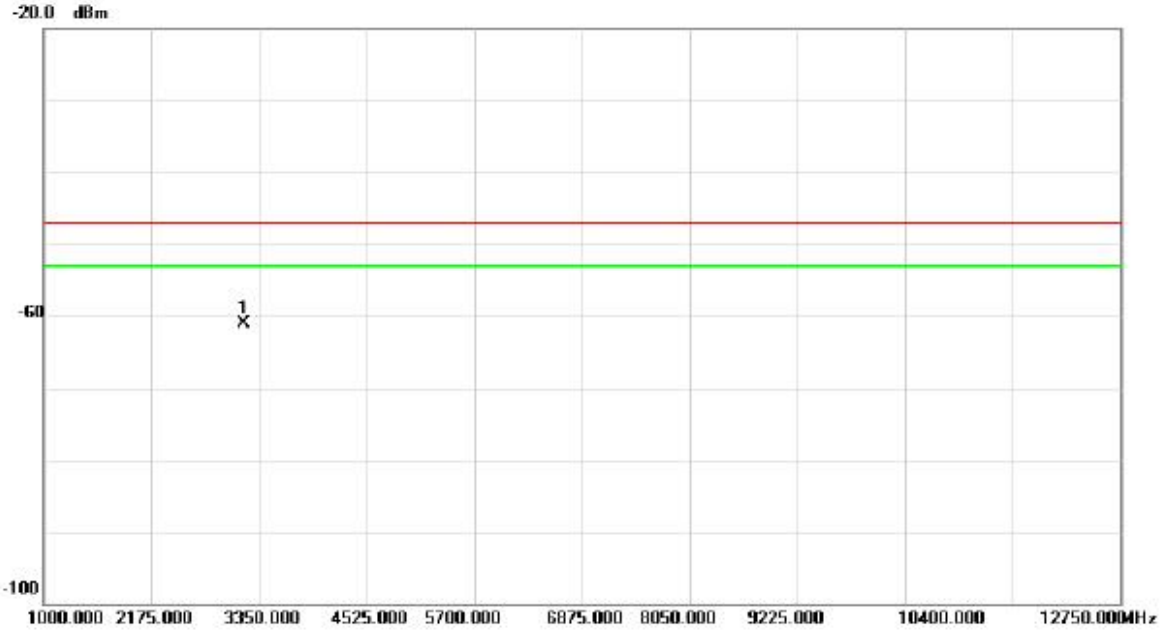
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	95.9600	-60.33	-7.96	-68.29	-57.00	-11.29	peak	
2		288.0200	-71.86	-0.39	-72.25	-57.00	-15.25	peak	
3		428.6700	-73.76	3.75	-70.01	-57.00	-13.01	peak	
4		499.4800	-74.77	5.87	-68.90	-57.00	-11.90	peak	
5		576.1100	-79.31	6.49	-72.82	-57.00	-15.82	peak	
6		951.5000	-83.78	12.80	-70.98	-57.00	-13.98	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11b)

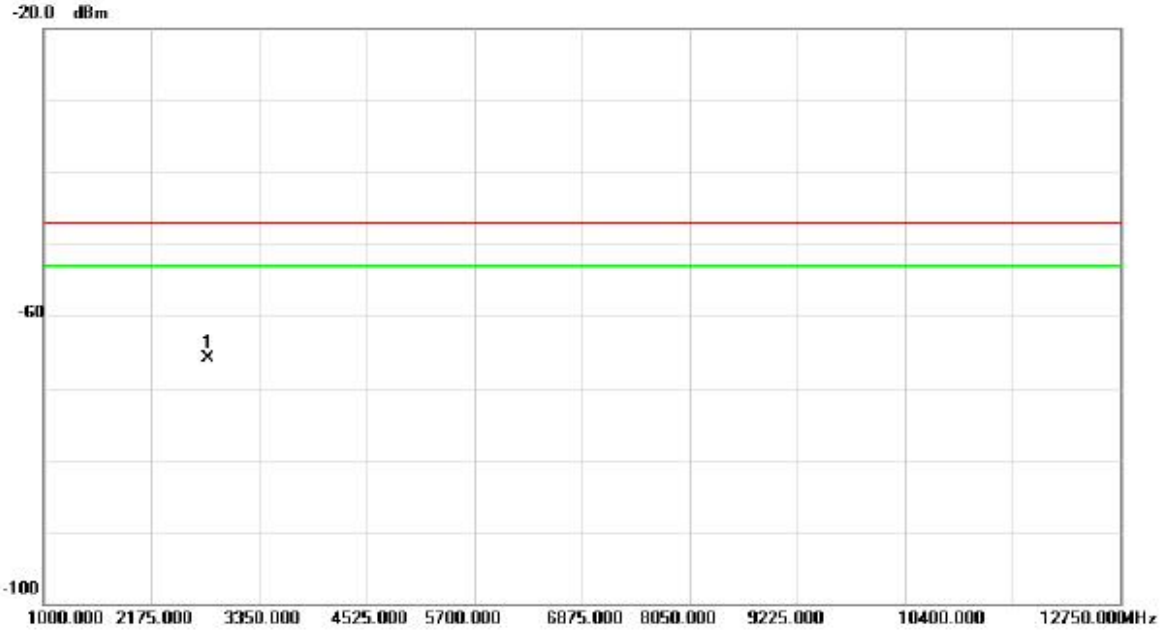
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	3185.500	-63.86	2.71	-61.15	-47.00	-14.15	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11b)

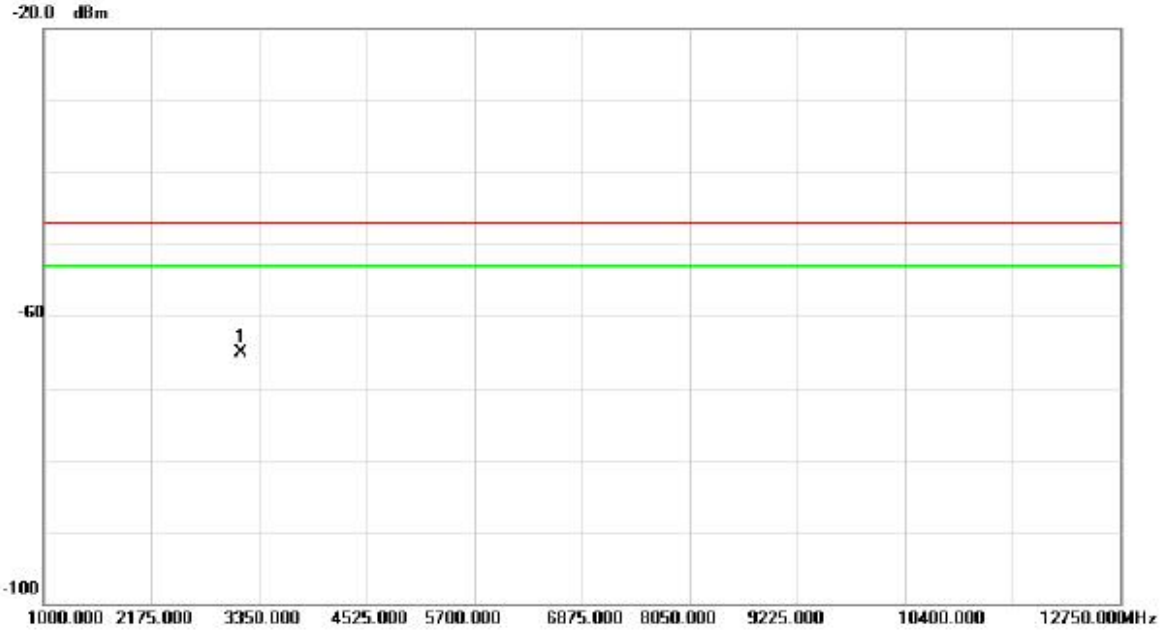
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2786.000	-67.78	1.91	-65.87	-47.00	-18.87	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11b)

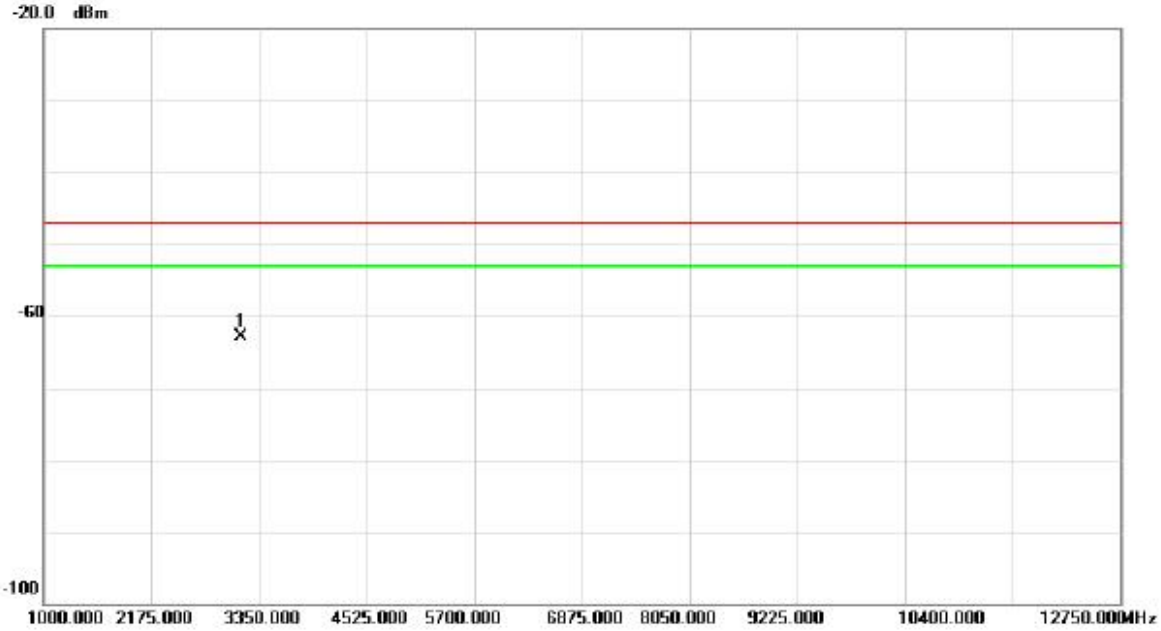
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	3150.250	-67.70	2.51	-65.19	-47.00	-18.19	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11b)

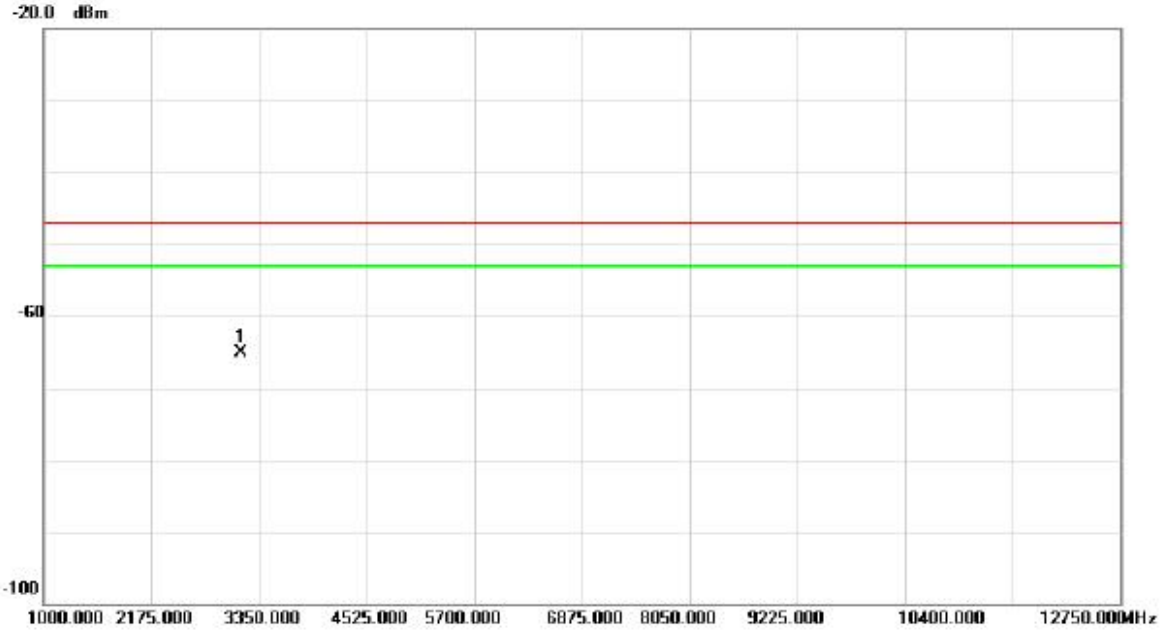
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	3150.250	-67.59	4.72	-62.87	-47.00	-15.87	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11g)

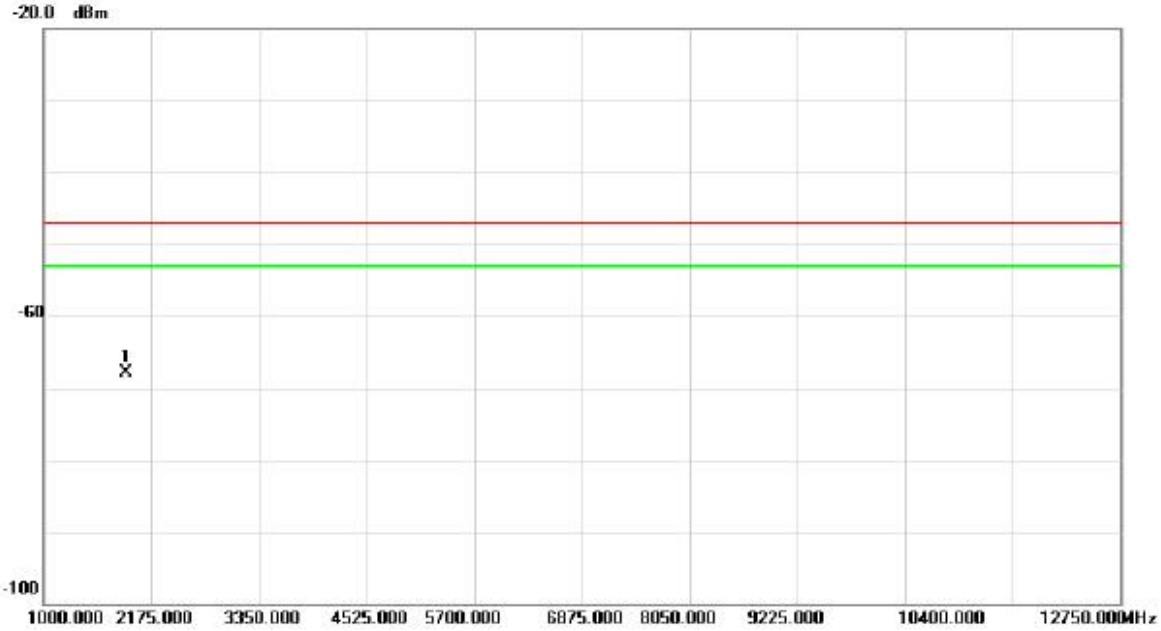
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	3150.250	-67.62	2.51	-65.11	-47.00	-18.11	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11g)

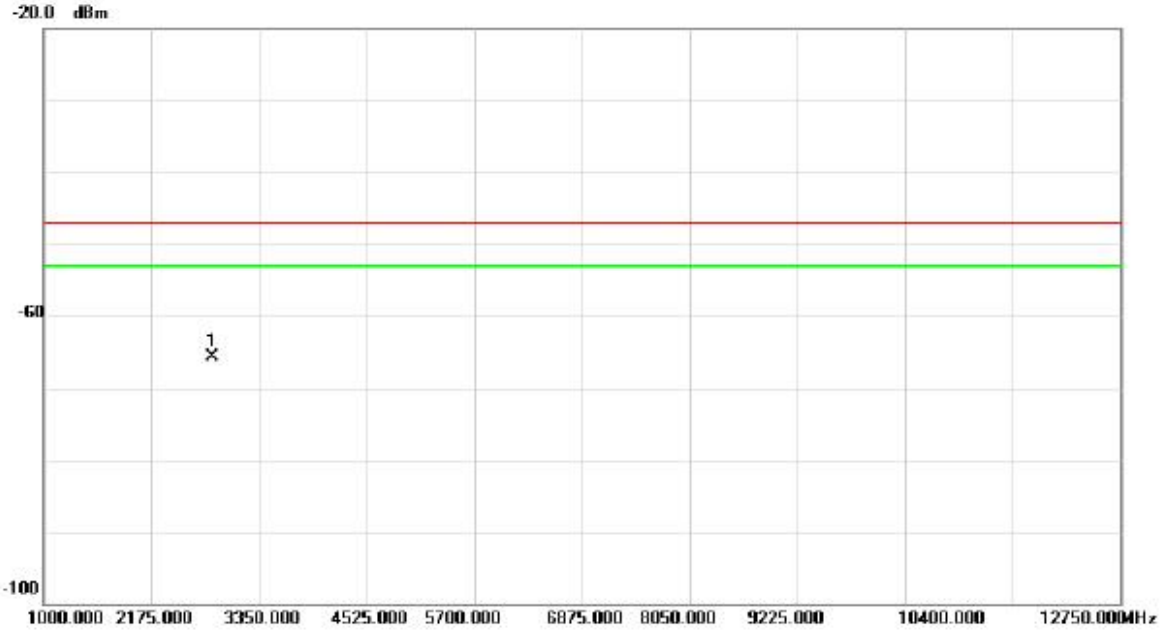
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1904.750	-64.70	-3.28	-67.98	-47.00	-20.98	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11g)

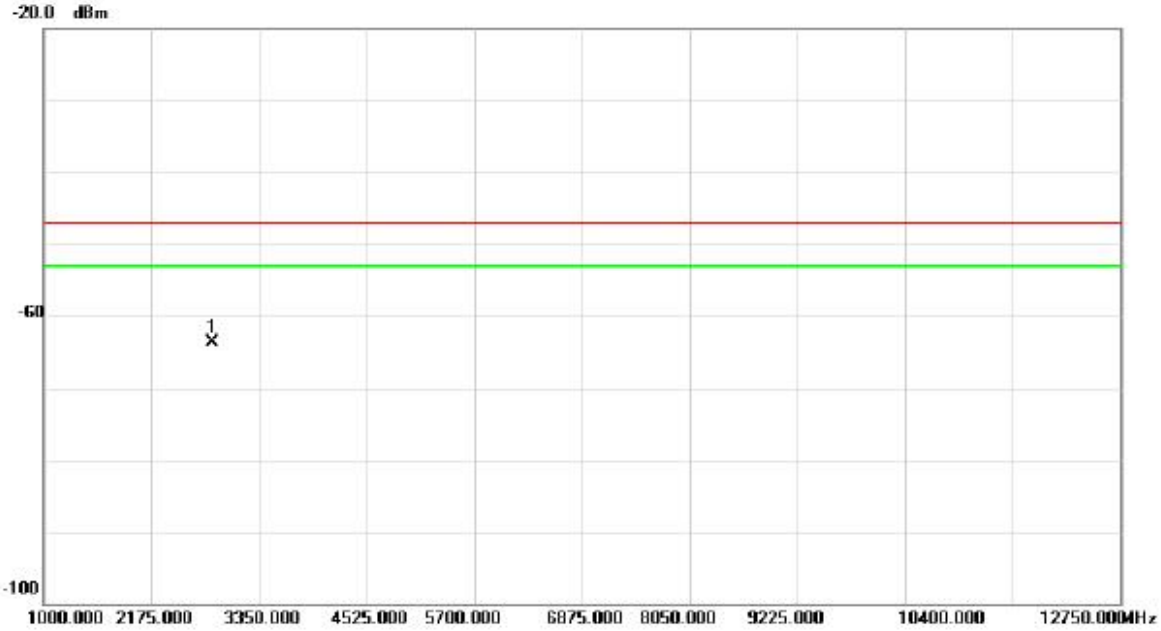
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2844.750	-66.02	0.32	-65.70	-47.00	-18.70	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11g)

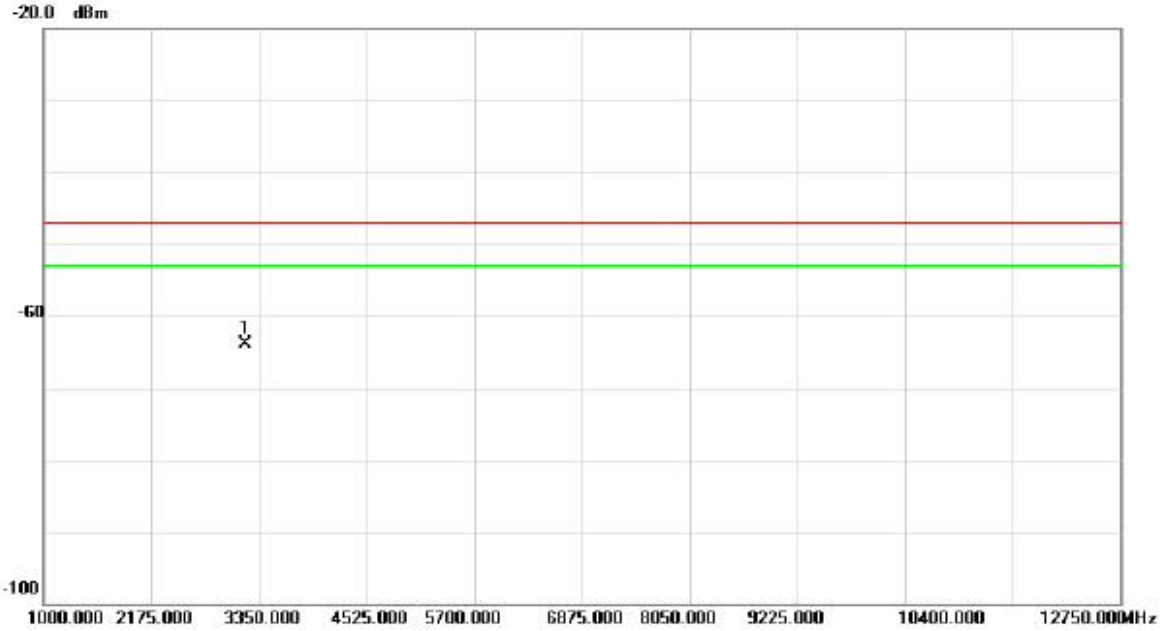
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2844.750	-66.19	2.46	-63.73	-47.00	-16.73	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11n 20M)

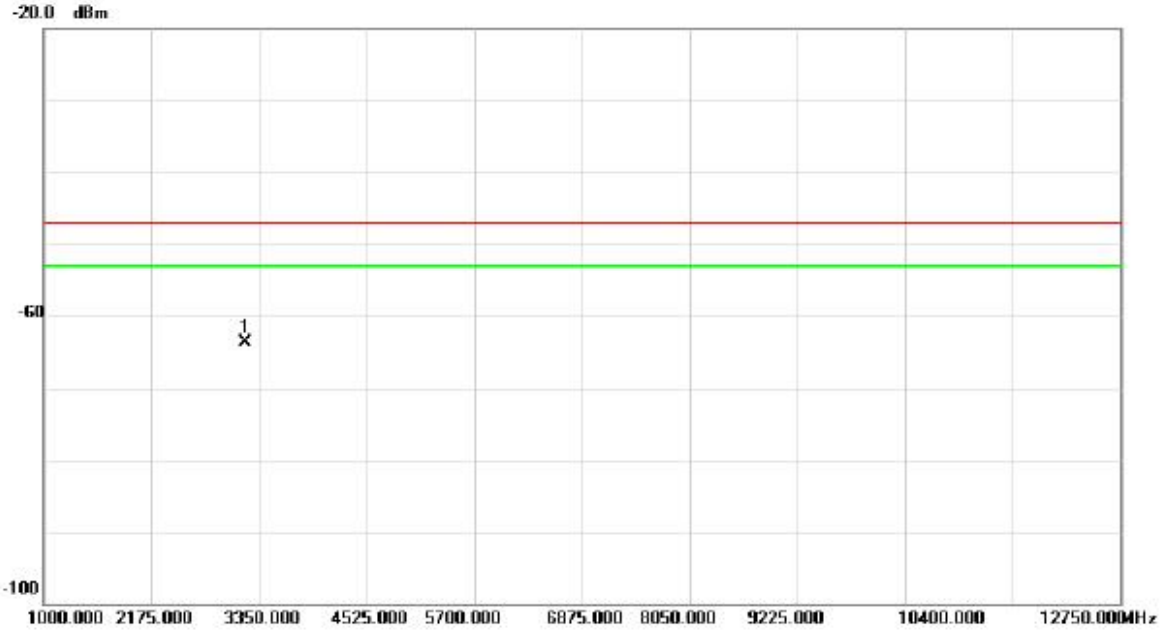
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	3197.250	-66.63	2.78	-63.85	-47.00	-16.85	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2412 MHz (11n 20M)

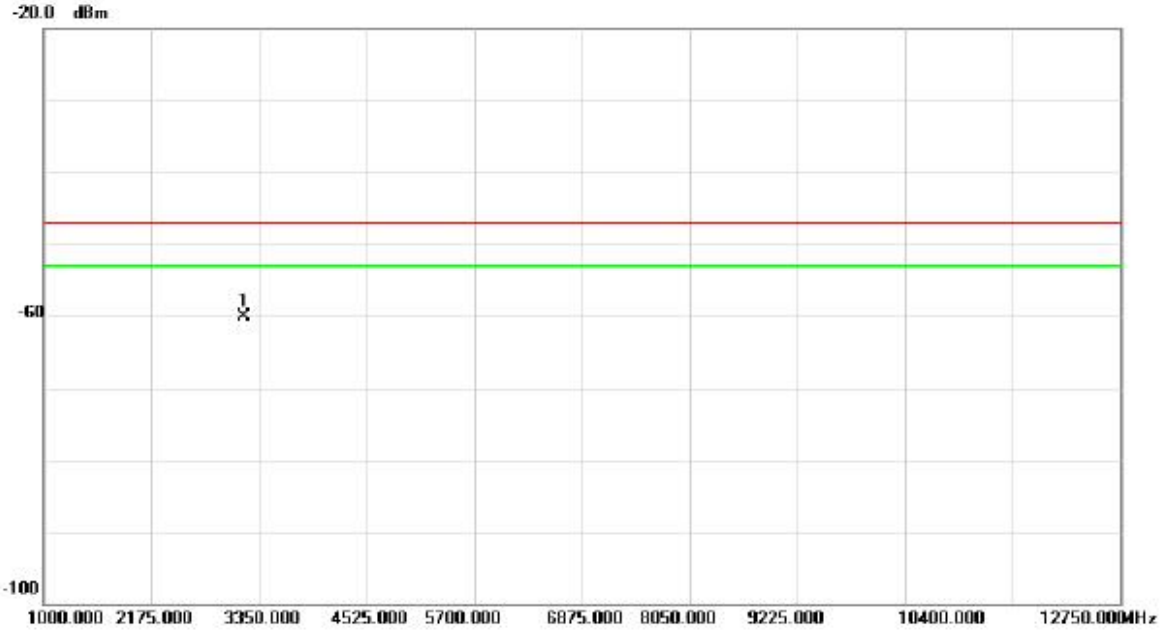
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	3197.250	-68.77	4.98	-63.79	-47.00	-16.79	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11n 20M)

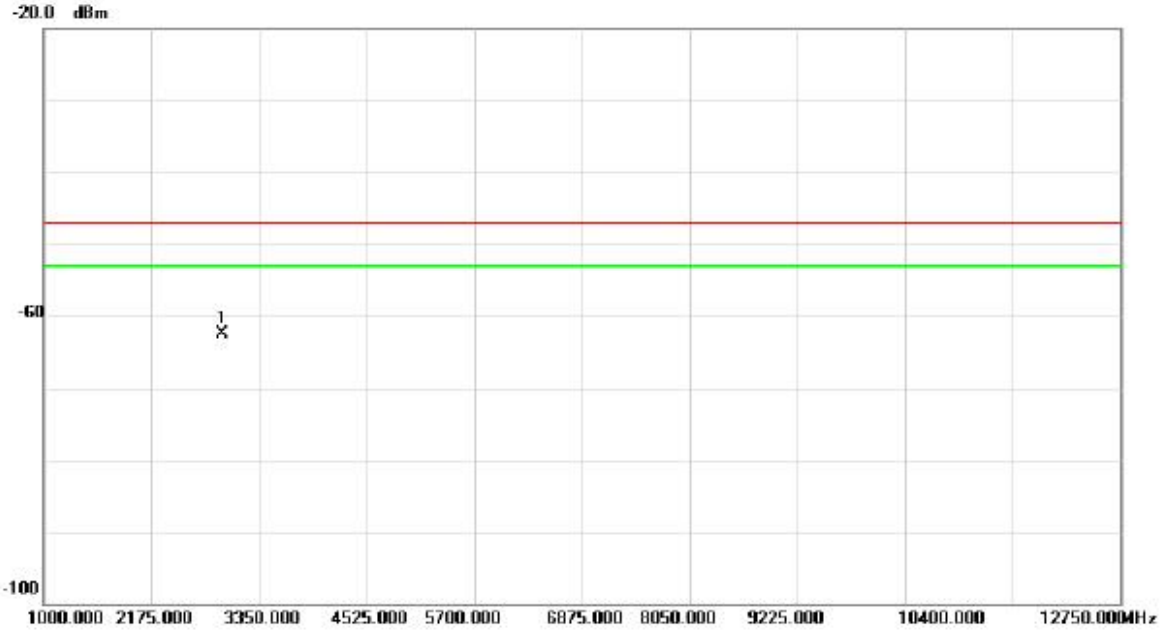
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	3185.500	-62.77	2.71	-60.06	-47.00	-13.06	peak	

Orthogonal Axis	X
Test Mode:	RX Mode 2472 MHz (11n 20M)

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2950.500	-65.87	3.44	-62.43	-47.00	-15.43	peak	