TEST REPORT

Date: 2012-10-11
Report No.: 68.870.12.054.01F

Applicant:	Philips Consumer Lifestyle 5/F., Philips Electronics Building, 5Science Park East Avenue, Hong Kong Science Park, Shatin N.T., Hong Kong.	
Description of Samples:	Model name:	Wireless HD Baby Monitor
	Brand name:	PHILIPS
	Model no.:	B120#/** ("#" can be A-Z consist or blank denoting the various accessories or different style packaging used,"/**" can be "/07,/17,/37" denoting for different shipment country)
	FCCID:	BOUB120
Date Samples Received:	2012-09-06	
Date Tested:	2012-09-06 to 2012-09-10	
Investigation Requested:	FCC Part 15 Subpart C, Section 15.247	
Conclusions:	The submitted product COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.	
Remarks:	----	

Checked by:

John Zhi
Project Engineer
Wireless & Telecom department

Approved by:-

Jeff Pong
Operation Manager
Wireless & Telecom department

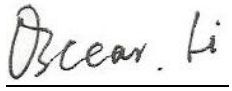
CONTENT:

1.0 General Details

1.1 Test Laboratory

Global United Technology Services Co., Ltd.
1st Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

EMC Laboratory registered by FCC with
FCC Registration Number: 600491

Test By: 
Osccar Li

1.2 Applicant Details

Applicant

Philips Consumer Lifestyle
5/F., Philips Electronics Building, 5Science Park East Avenue, Hong Kong Science Park, Shatin N.T., Hong Kong.

Manufacturers

Philips Consumer Lifestyle
5/F., Philips Electronics Building, 5Science Park East Avenue, Hong Kong Science Park, Shatin N.T., Hong Kong.

Factory

(1)Action Asia (Shenzhen) Co. Ltd.
(2)Action Industries (Malaysia) Sdn. Bhd.
(1)Dede Industrial Park Jianan Rd,FuyongHI-Tech Park ,Shenzhen, China
(2)2480, TINGKAT PERUSAHAAN ENAM, PRAI FREE TRADE ZONE,13600 PERAI, PENANG, MALAYSIA.

1.3 Equipment Under Test [EUT]

Description of EUT

Product Description:	Wireless HD Baby Monitor
Model No.:	B120#/** ("#" can be A-Z consist or blank denoting the various accessories or different style packaging used,"/**" can be "/07,/17,/37" denoting for different shipment country)
Brand Name:	PHILIPS
FCCID:	BOUB120
Rating:	DC5V, 1.5A powered by AC/DC adapter Model: HNx050150a("x" can be "B" or "D" to indicate different output wire type(USB or DC jack), "a" can be "A", "B", "C", "E", "J", "K", "U", "X" to indicate different countries fixed plug portion or exchangeable plug and all plastic painting color as non-conductive type)
Operated Frequency:	2412 -2462 MHz
No. of Operated Channel:	11 (802.11b/g/nHT20) 7 (802.11nHT40)
Data Rate:	802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0-7, up to 150Mbps
Modulation:	BPSK, QPSK, CCK and OFDM (BPSK/QPSK/16-QAM/ 64-QAM)
Accessories and Auxiliary Equipments:	AC/DC power adaptor.
Manufacture of Antenna:	SHENZHEN BENTLEY TECHNOLOGY CO., LTD
Antenna Gain:	3.3dBi
Antenna Model:	ANT2401A

General Operation of EUT

The Equipment Under Test (EUT) is a Wireless HD Baby Monitor System operated at 2.4GHz. This includes of an 802.11b/g/n module (transceiver).
As our client' declaration, B120#/** Utilize the identical circuit design, PCB layout, shielding and interface with (B120/37), differences are as below:
"#" can be A-Z consist or blank denoting the various accessories or different style packaging used,
"/**" can be "/07,/17,/37" denoting for different shipment country.
The tested model is B120/37.

Description of Test Modes

The EUT has been tested under operating condition. Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.
IEEE802.11b: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 1Mbps data rate (worst case) are chosen for the final testing.
IEEE802.11g: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 6Mbps data rate (the worst case) are chosen for the final testing.
IEEE802.11nHT20: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with MCS0 data rate (worst case) are chosen for the final testing.
IEEE802.11nHT40: Channel 3(2422MHz), Channel 6(2437MHz) and Channel 9(2452MHz) with MCS0 data rate (the worst case) are chosen for the final testing.

1.4 Related Submittal(s) Grants

This is a signal application subject to Certificate Authorization.

2.0 Technical Details

2.1 Investigations Requested

Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15 and ANSI C63.4: 2003

2.2 Test Standards and Results Summary Tables

Test Condition	Test Requirement	Test Result	
		Pass	N/A
Number of Frequency Hopping	Section 15.247 (a1)	☐	☒
6dB Bandwidth Measurement	Section 15.247 (a2)	☒	☐
Power Spectral Density	Section 15.247 (e)	☒	☐
Pseudorandom Hopping Algorithm	Section 15.247 (a1)	☐	☒
Band Edge Measurement	Section 15.247	☒	☐
Maximum Output Power	Section 15.247 (b3)	☒	☐
Out of Band Emission	Section 15.247 (d)	☒	☐
Radiated Emission in Restricted Band	Section 15.247 (d)	☒	☐
Conducted Emission on AC Mains	Section 15.207	☒	☐
RF Exposure	Section 15.247 (i)	☒	☐
Antenna Requirement	Section 15.203	☒ See note 1	☐

Note 1 : The EUT uses a permanently attached antenna, which in accordance to Section 15.203, is considered sufficient to comply with the provisions of this section.

Remark: N/A - Not Applicable

3.0 Test Methodology

3.1 Radiated Emission

The sample was placed 0.8m above the ground plane on a standard emission test site *. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

3.2 Field Strength Calculation

The field strength at 3 m was established by adding the meter reading of the spectrum analyzer to the factors associated with antenna correction factor, cable loss, preamplifiers and filter attenuation.

The equation is expressed as follow:

FS = R + System Factor
System Factor = AF + CF + FA – PA

Where FS = Net Field Strength in dBuV/m at 3 meters.
R = Reading of Spectrum Analyzer / Test Receiver in dBuV.
AF = Antenna Factor in dB.
CF = Cable Attenuation Factor in dB.
FA = Filter Attenuation Factor in dB.
PA = Preamplifier Factor in dB.

FA and PA are only be used for the measuring frequency above 1 GHz.

3.3 Conducted Emissions

The test was performed in accordance with ANSI C63.4: 2003, with the following: initial measurements were performed in peak and average detection modes on the live line of personal computer, any emissions recorded within 30dB of the relevant limit lines were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

4.0 Test Results

4.1 6 dB Bandwidth Measurement

Test Requirement:	FCC part 15 section 15.247 (a2)
Test Date:	2012-09-07
Mode of Operation:	Transmitting continuously mode
Detector Function:	Max Hold

Result: PASS

Test Setup:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

For 802.11B Mode

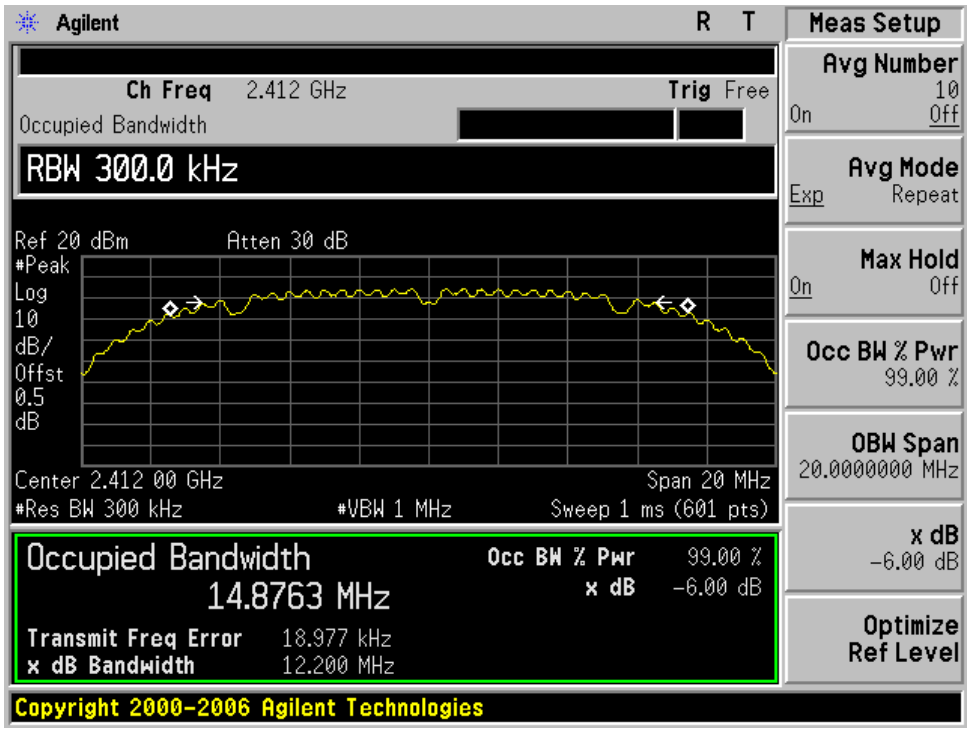
Channel	Measured frequency (MHz)	6dB Bandwidth (MHz)
Lowest	2412	12.200
Middle	2437	12.195
Highest	2462	12.192

This result is used for checking the systems using digital modulation techniques may operate in the 2400–2483.5 MHz.

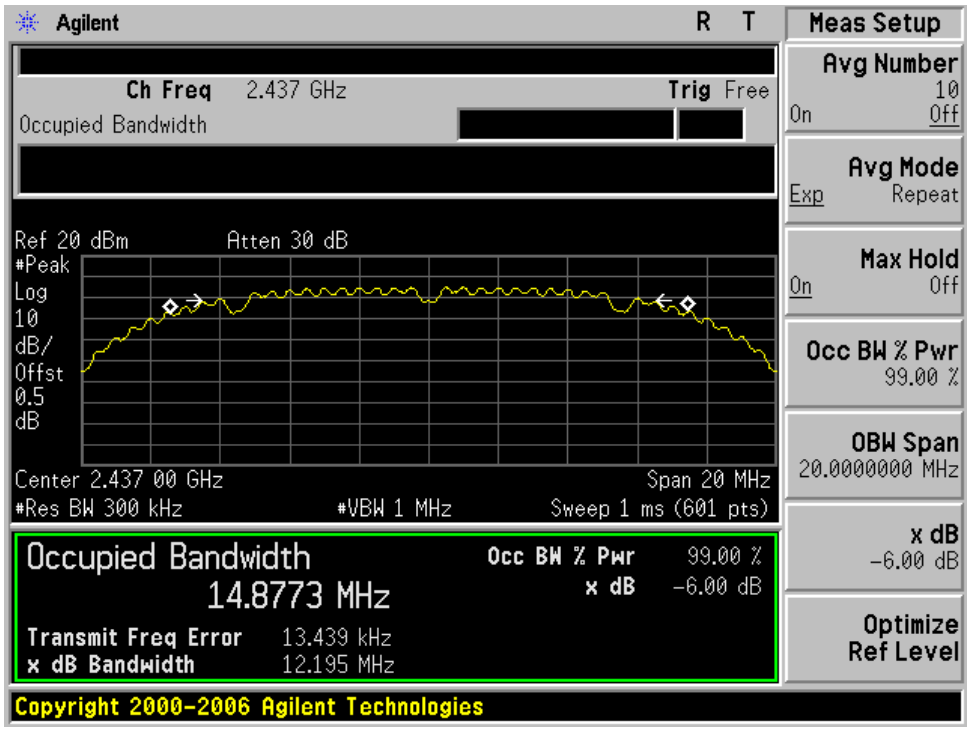
Limits for 6 dB bandwidth [Section 15.247 (a2)]:

The minimum 6 dB bandwidth shall be at least 500 kHz.

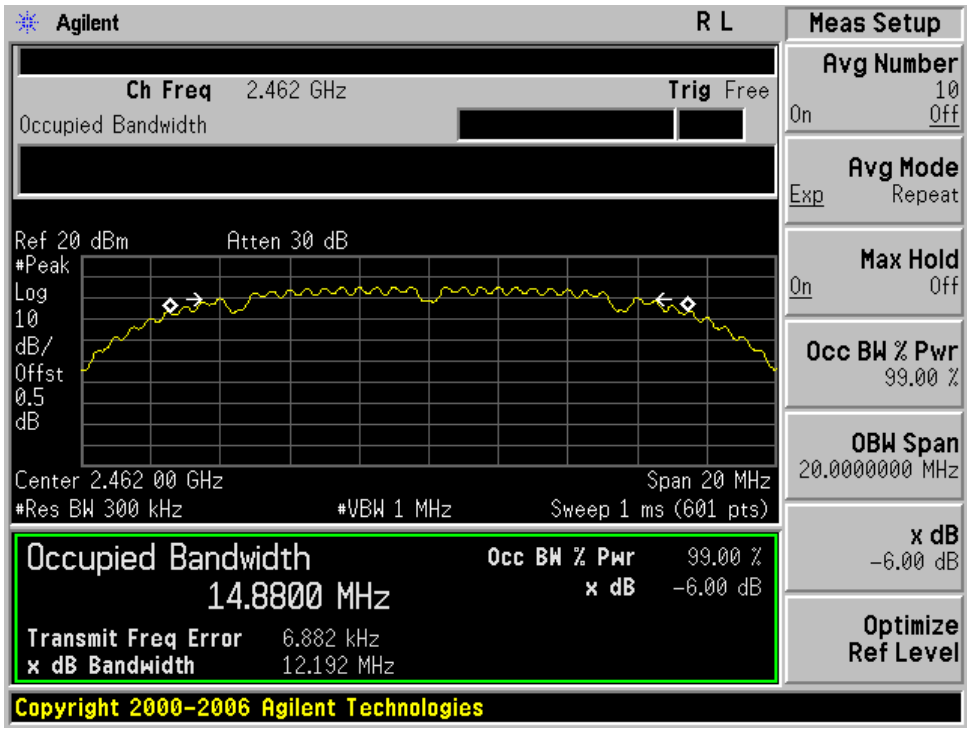
For 802.11B Mode
Result data graph shows 6 dB bandwidth, CF = 2.412GHz, BW = 12.200 MHz



Result data graph shows 6 dB bandwidth, CF = 2.437GHz, BW = 12.195MHz



Result data graph shows 6 dB bandwidth, CF = 2.462GHz, BW = 12.192MHz



For 802.11G Mode

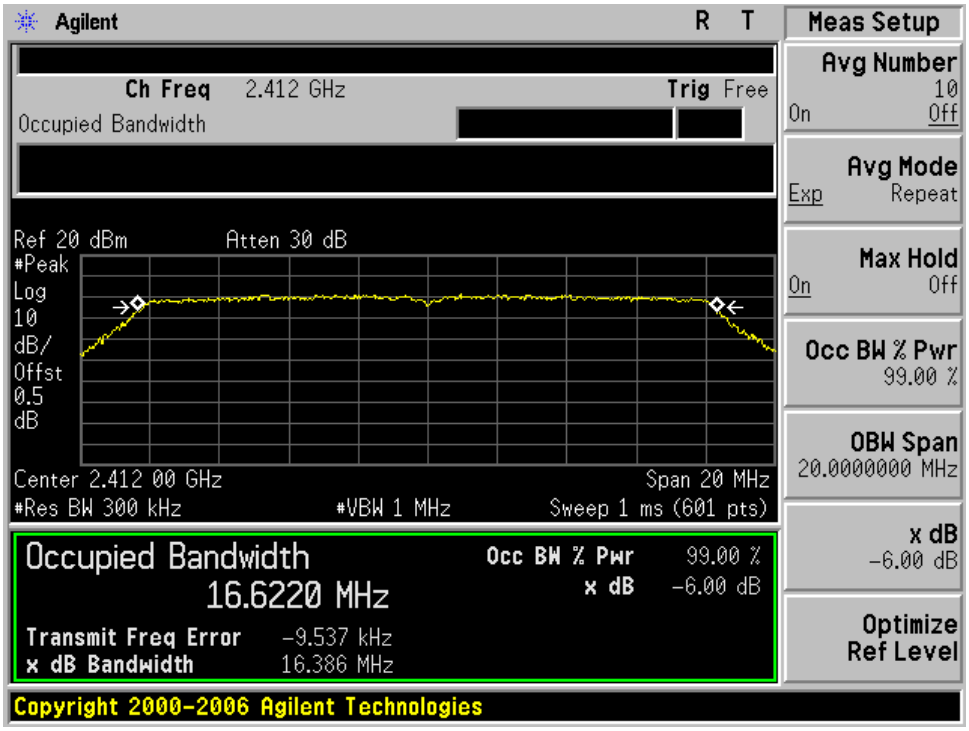
Channel	Measured frequency (MHz)	6dB Bandwidth (MHz)
Lowest	2412	16.386
Middle	2437	16.381
Highest	2462	16.386

This result is used for checking the systems using digital modulation techniques may operate in the 2400–2483.5 MHz.

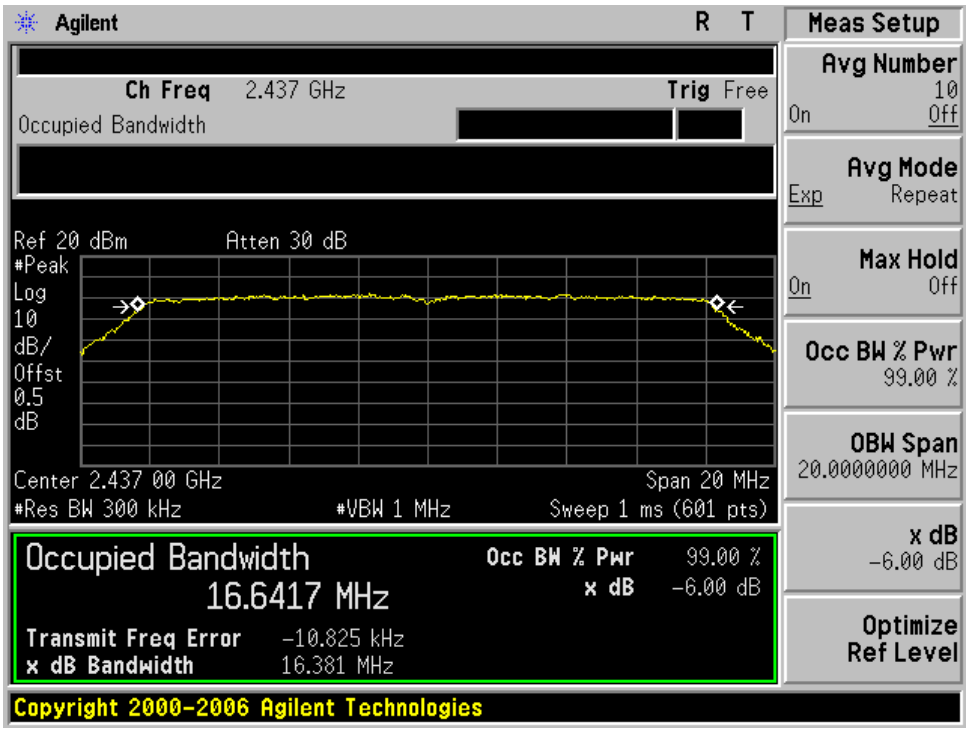
Limits for 6 dB bandwidth [Section 15.247 (a2)]:

The minimum 6 dB bandwidth shall be at least 500 kHz.

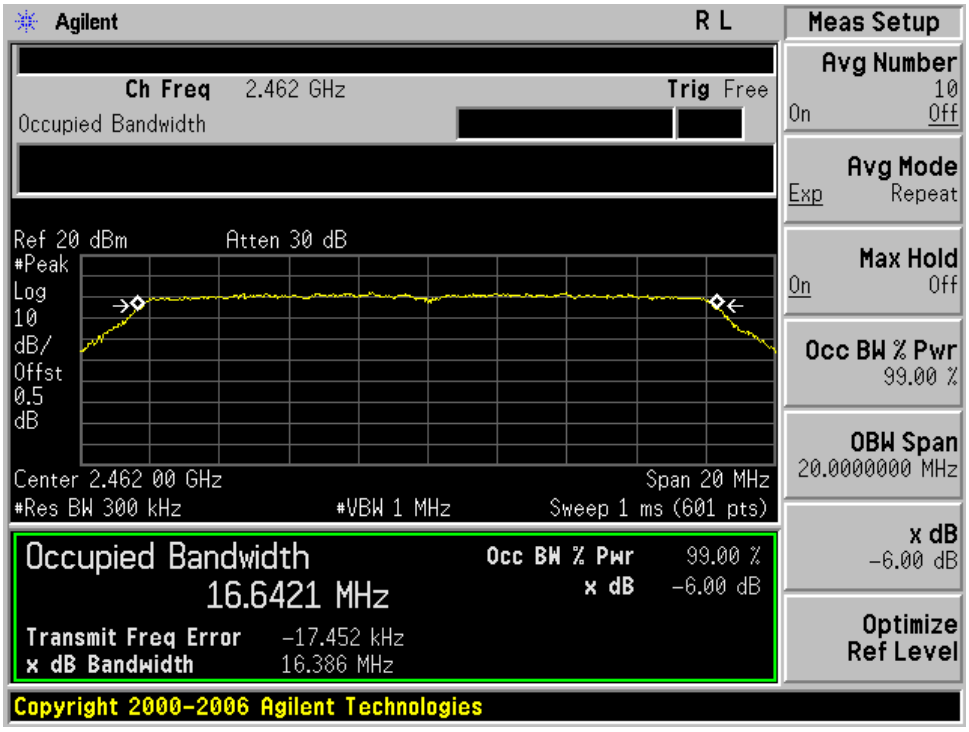
For 802.11G Mode
Result data graph shows 6 dB bandwidth, CF = 2.412GHz, BW = 16.386 MHz



Result data graph shows 6 dB bandwidth, CF = 2.437GHz, BW = 16.381MHz



Result data graph shows 6 dB bandwidth, CF = 2.462GHz, BW = 16.386MHz



For 802.11N HT20 Mode

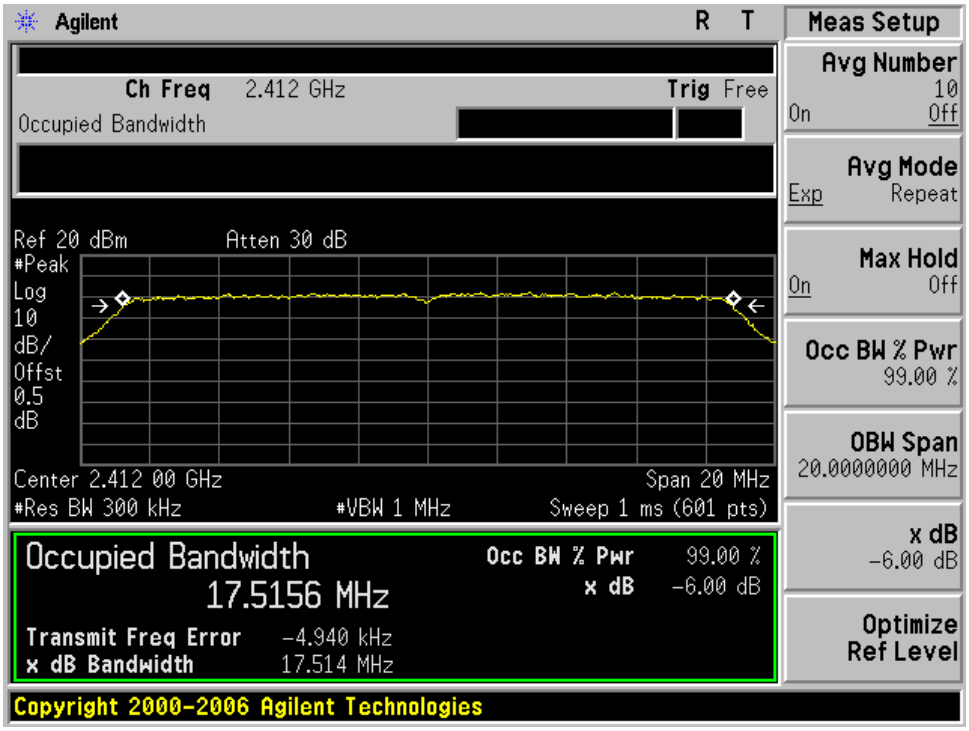
Channel	Measured frequency (MHz)	6dB Bandwidth (MHz)
Lowest	2412	17.514
Middle	2437	17.460
Highest	2462	17.467

This result is used for checking the systems using digital modulation techniques may operate in the 2400–2483.5 MHz.

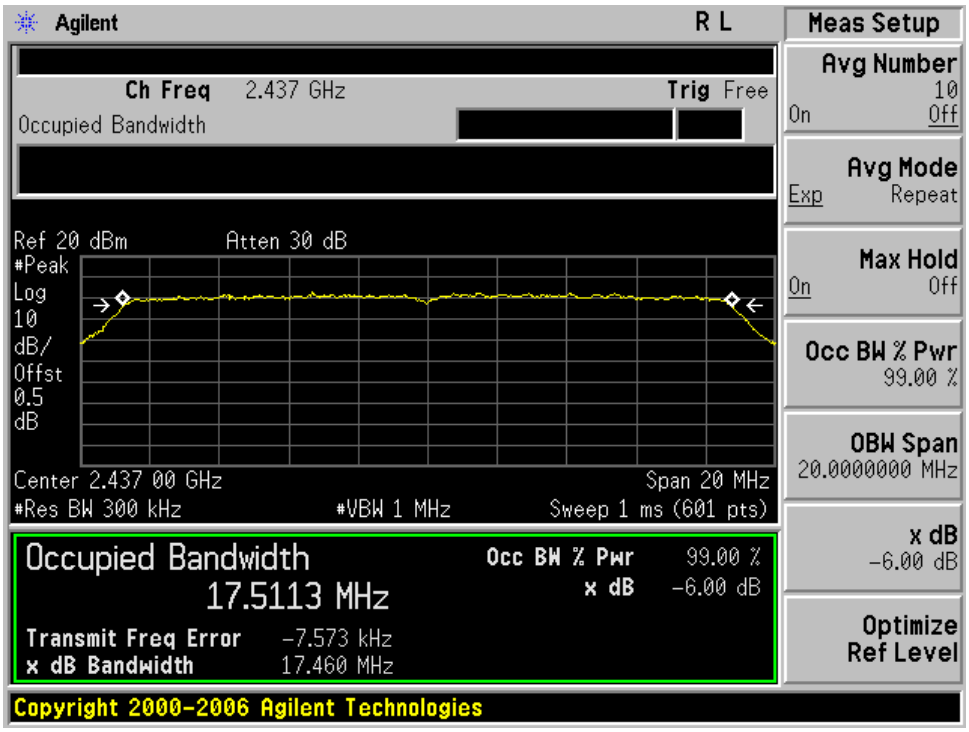
Limits for 6 dB bandwidth [Section 15.247 (a2)]:

The minimum 6 dB bandwidth shall be at least 500 kHz.

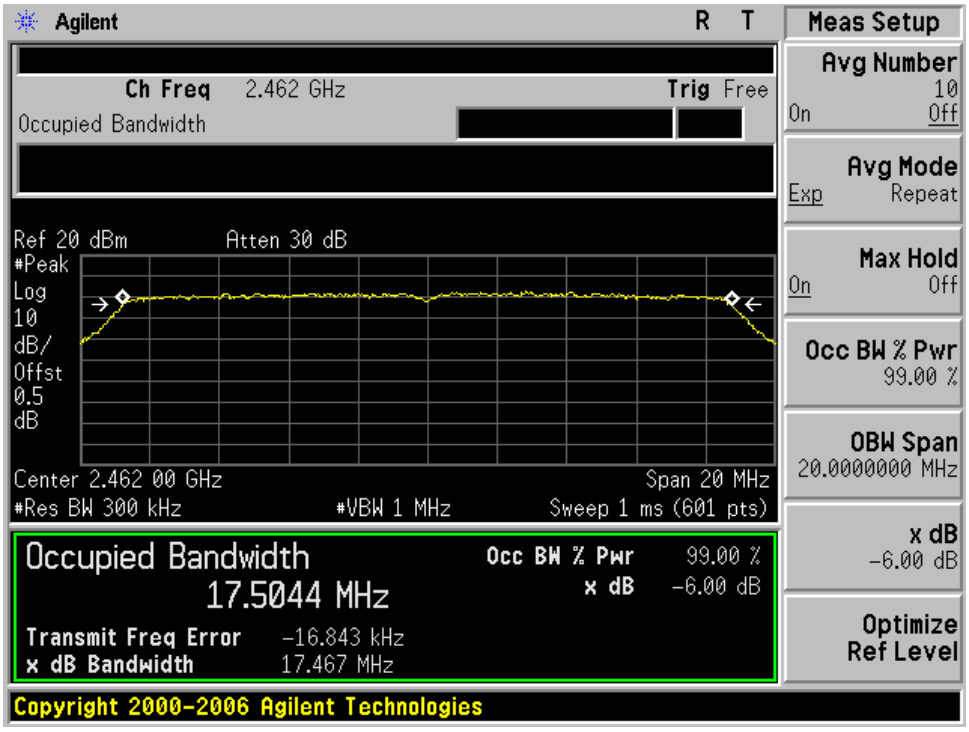
For 802.11N HT20 Mode
Result data graph shows 6 dB bandwidth, CF = 2.412GHz, BW = 17.723 MHz



Result data graph shows 6 dB bandwidth, CF = 2.437GHz, BW = 17.460MHz



Result data graph shows 6 dB bandwidth, CF = 2.462GHz, BW = 17.467MHz



For 802.11N HT40 Mode

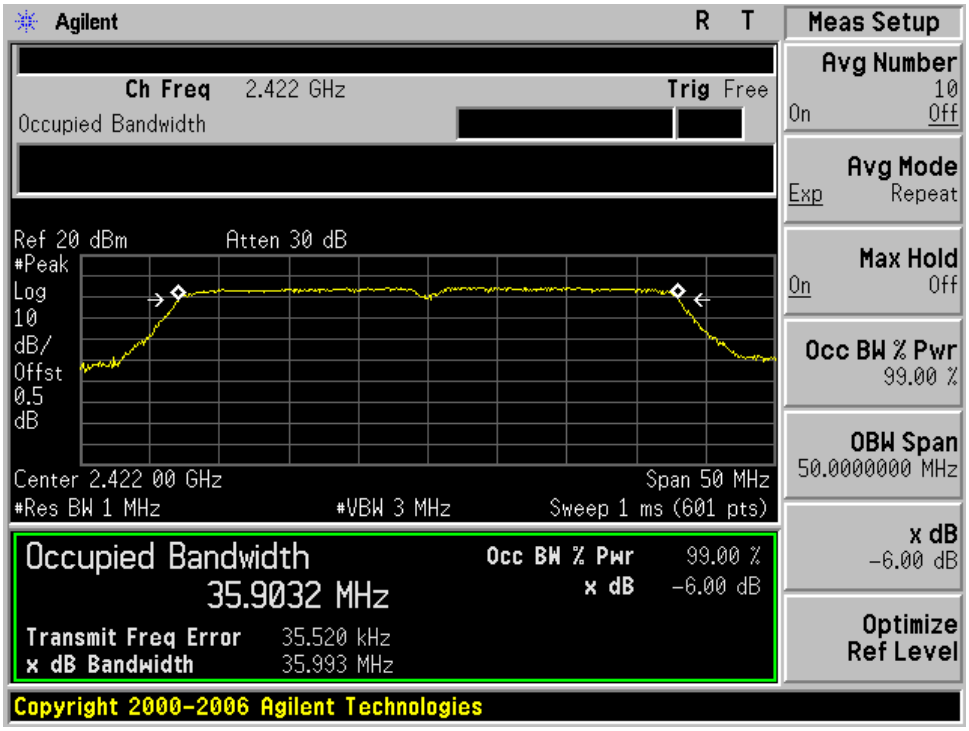
Channel	Measured frequency (MHz)	6dB Bandwidth (MHz)
Lowest	2422	35.993
Middle	2437	35.990
Highest	2452	36.038

This result is used for checking the systems using digital modulation techniques may operate in the 2400–2483.5 MHz.

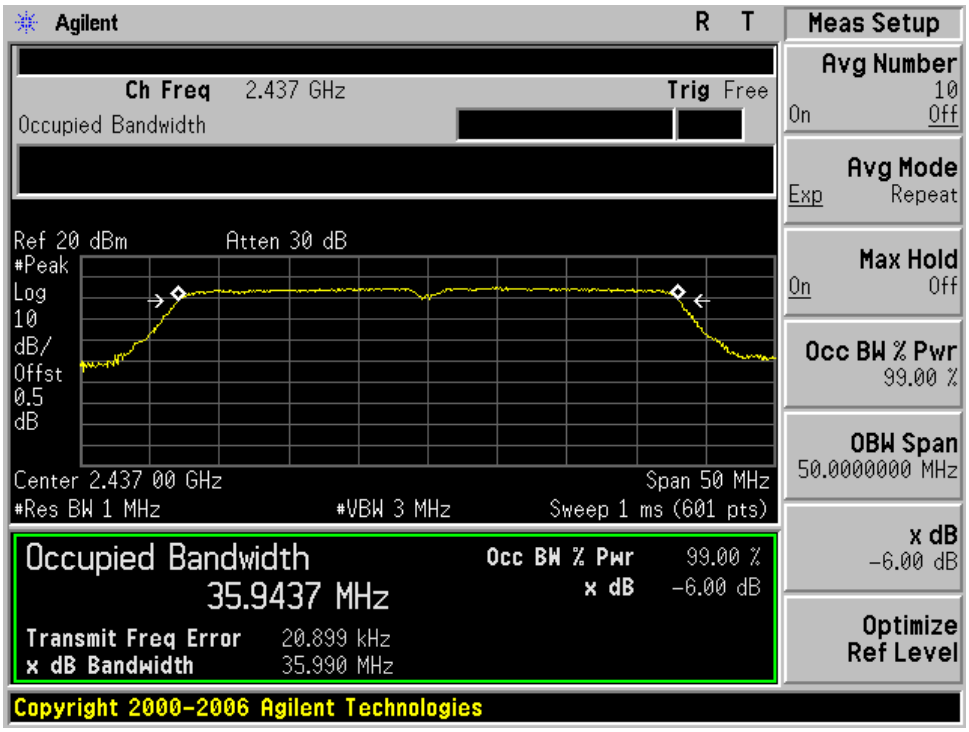
Limits for 6 dB bandwidth [Section 15.247 (a2)]:

The minimum 6 dB bandwidth shall be at least 500 kHz.

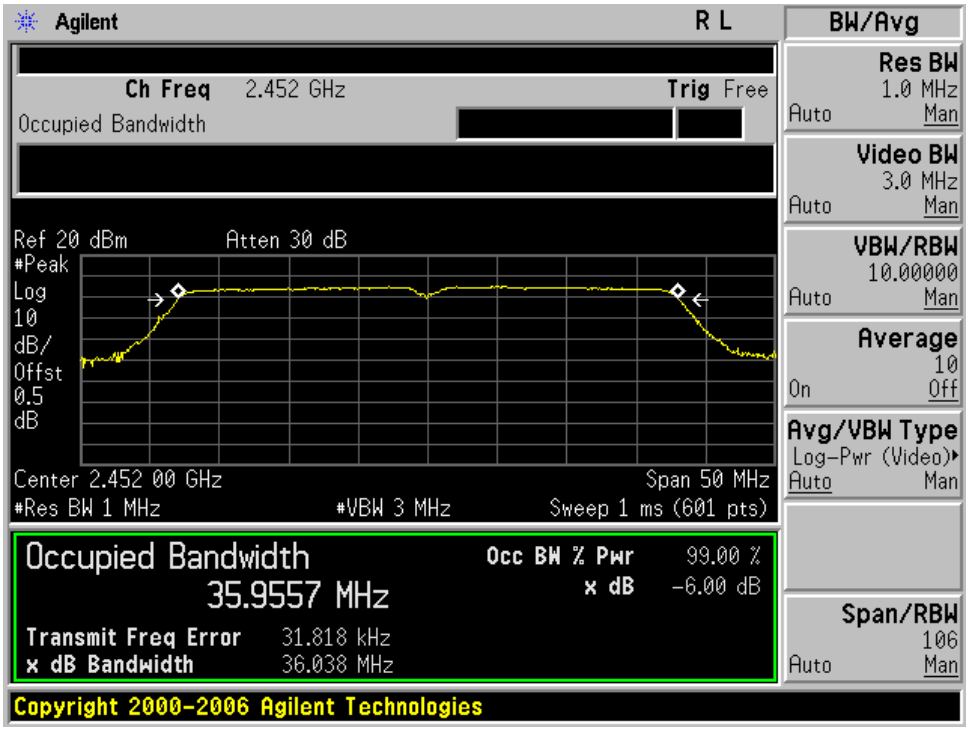
For 802.11N HT40 Mode
Result data graph shows 6 dB bandwidth, CF = 2.422GHz, BW = 35.993 MHz



Result data graph shows 6 dB bandwidth, CF = 2.437GHz, BW = 35.990MHz



Result data graph shows 6 dB bandwidth, CF = 2.452GHz, BW = 36.038MHz



4.2 Power Spectral Density

Test Requirement: FCC part 15 section 15.247 (e)
Test Date: 2012-09-07
Mode of Operation: Transmitting continuously mode
Detector Function: Peak

Result : PASS

Measured Result :

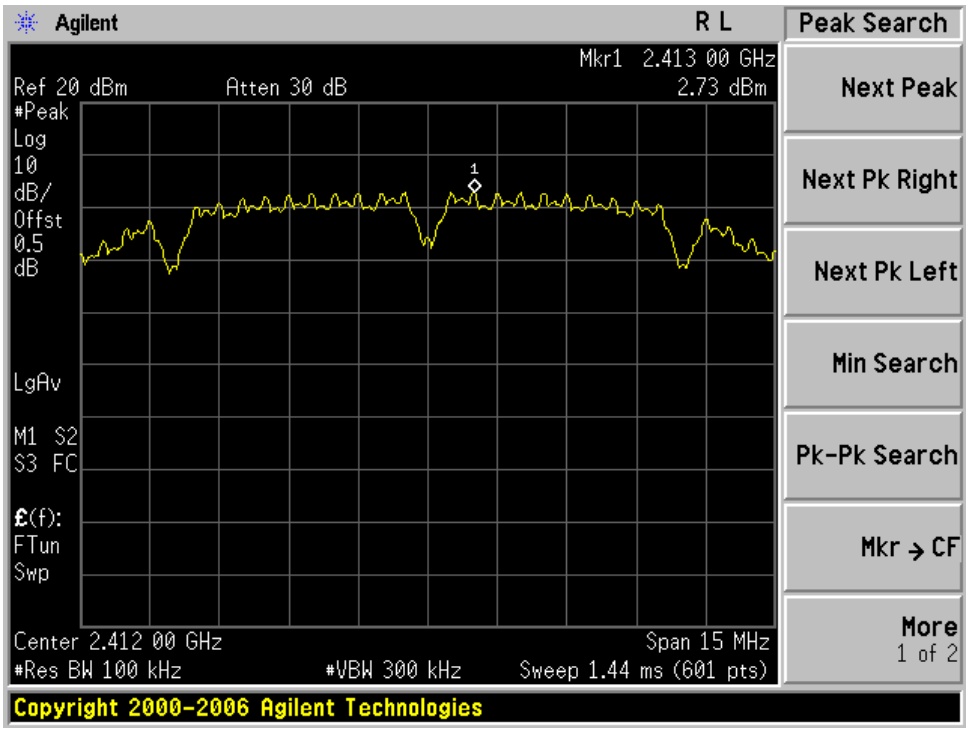
Test mode	Test channel	Reading dBm/100kHz	Corrected dBm/3kHz	Limit dBm/3kHz
802.11B	Low channel (2412MHz)	2.73	-12.47	8
	Middle channel (2437MHz)	3.30	-11.90	8
	High channel (2462MHz)	4.41	-10.79	8
802.11G	Low channel (2412MHz)	-0.96	-16.16	8
	Middle channel (2437MHz)	0.33	-14.87	8
	High channel (2462MHz)	-0.21	-15.41	8
802.11N HT20	Low channel (2412MHz)	-0.53	-15.73	8
	Middle channel (2437MHz)	-0.41	-15.61	8
	High channel (2462MHz)	0.56	-14.64	8
802.11N HT40	Low channel (2422MHz)	-3.38	-18.58	8
	Middle channel (2437MHz)	-3.15	-18.35	8
	High channel (2452MHz)	-2.96	-18.16	8

Note: 1. Scale the observed power level in 100kHz to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (3 kHz/100 kHz = -15.2 dB).
2. Above testing data has been considered with 0.5dB cable loss which between antenna port and spectrum.

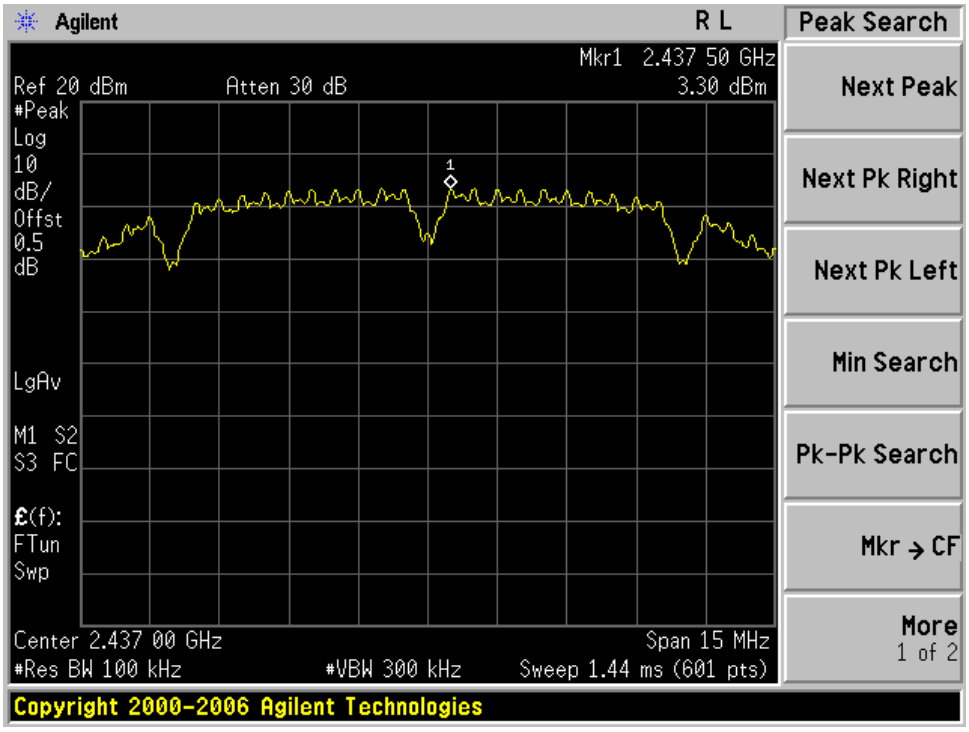
Limits for power spectral density [Section 15.247 (e)]:

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

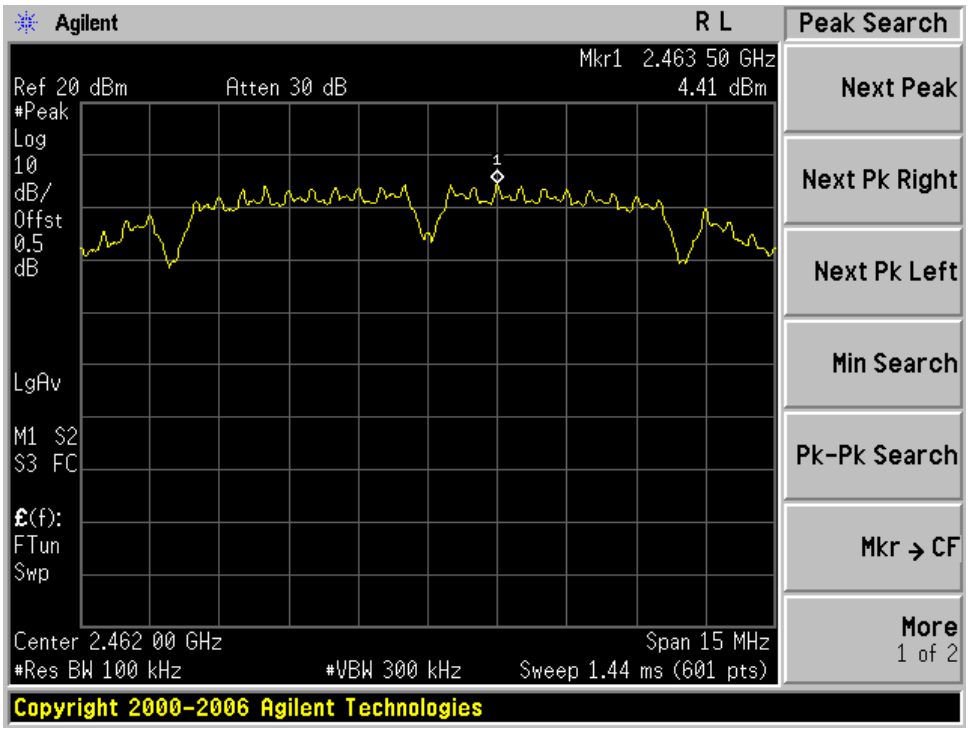
For 802.11B Mode
Result data graph shows Low channel power spectrum density is 2.73dBm at 100 KHz RBW



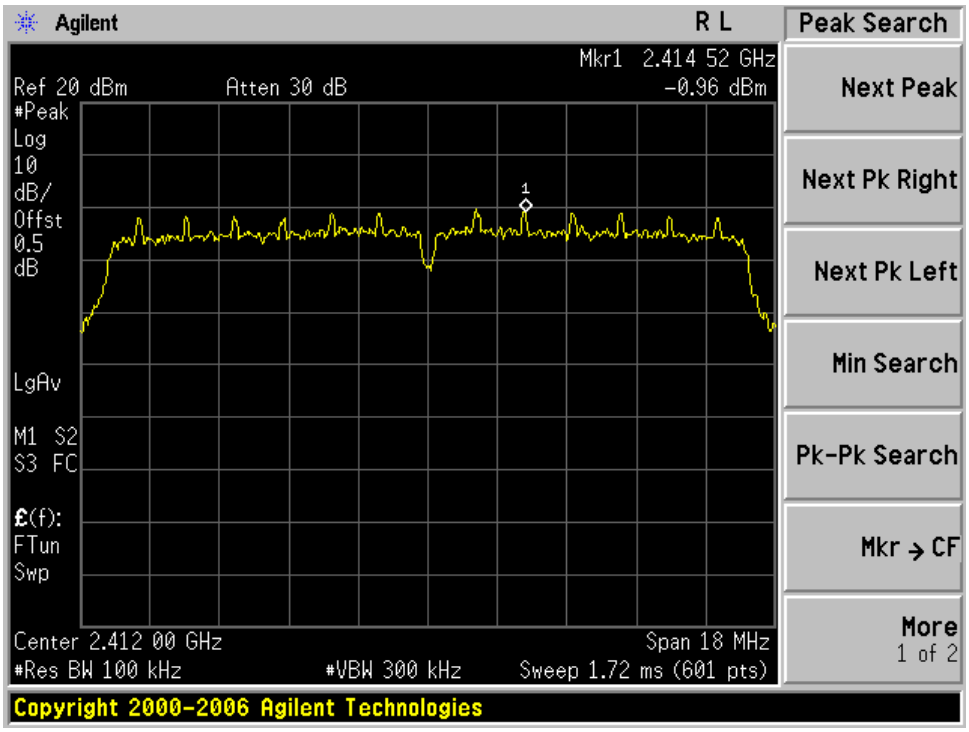
Result data graph shows middle channel power spectrum density is 3.30dBm at 100 KHz RBW



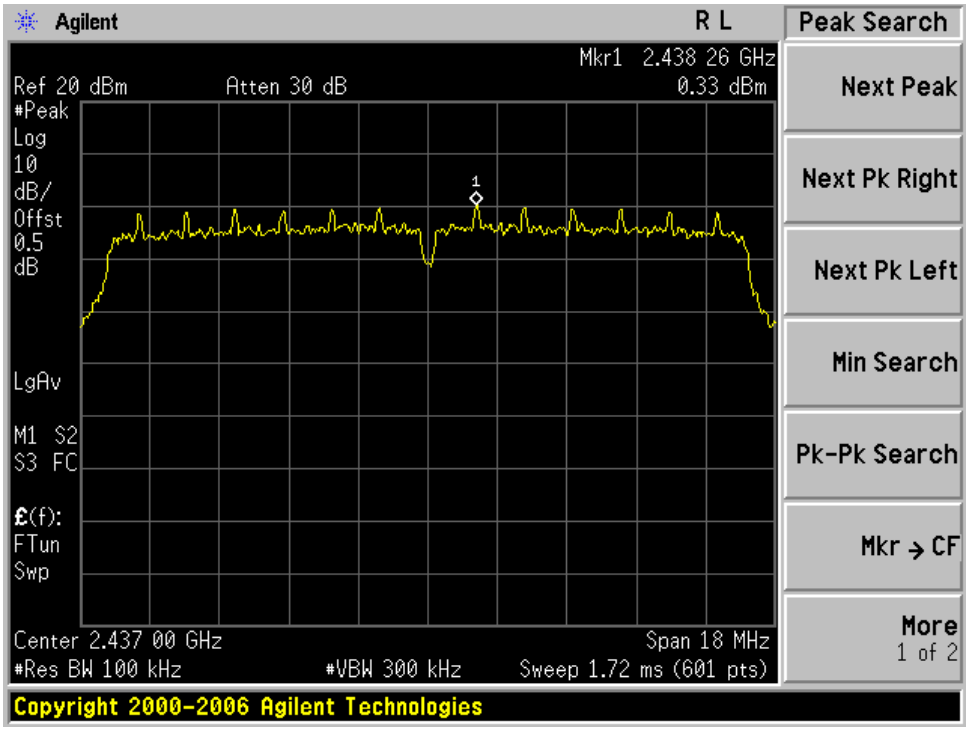
Result data graph shows high channel power spectrum density is 4.41dBm at 100 KHz RBW



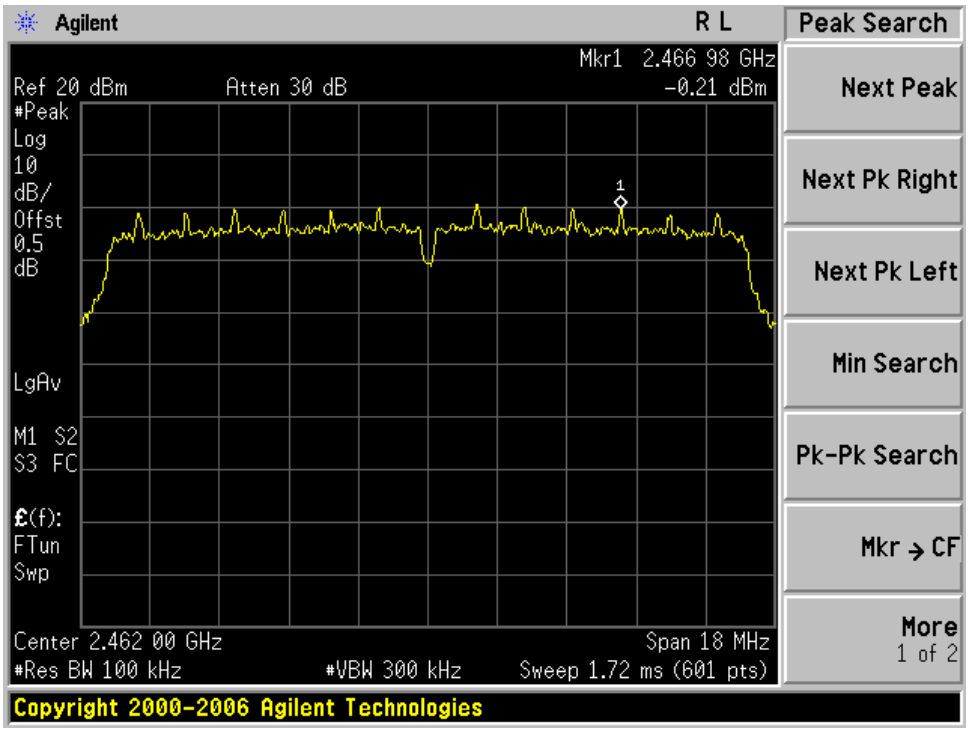
For 802.11G Mode
Result data graph shows Low channel power spectrum density is -15.73dBm at 100 KHz RBW



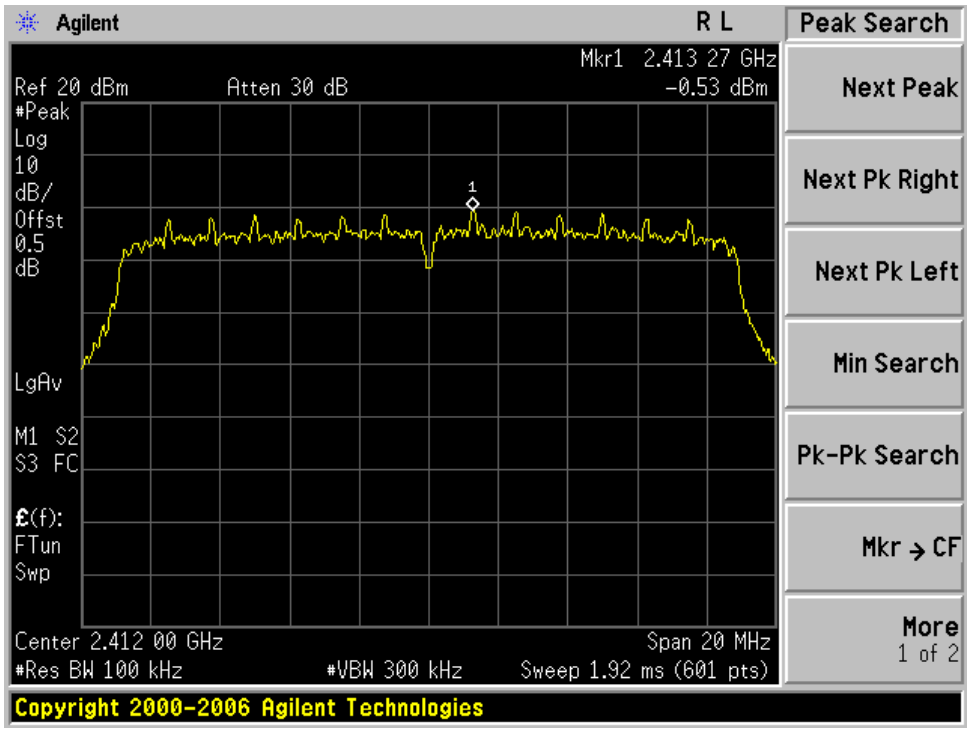
Result data graph shows middle channel power spectrum density is 0.33dBm at 100 KHz RBW



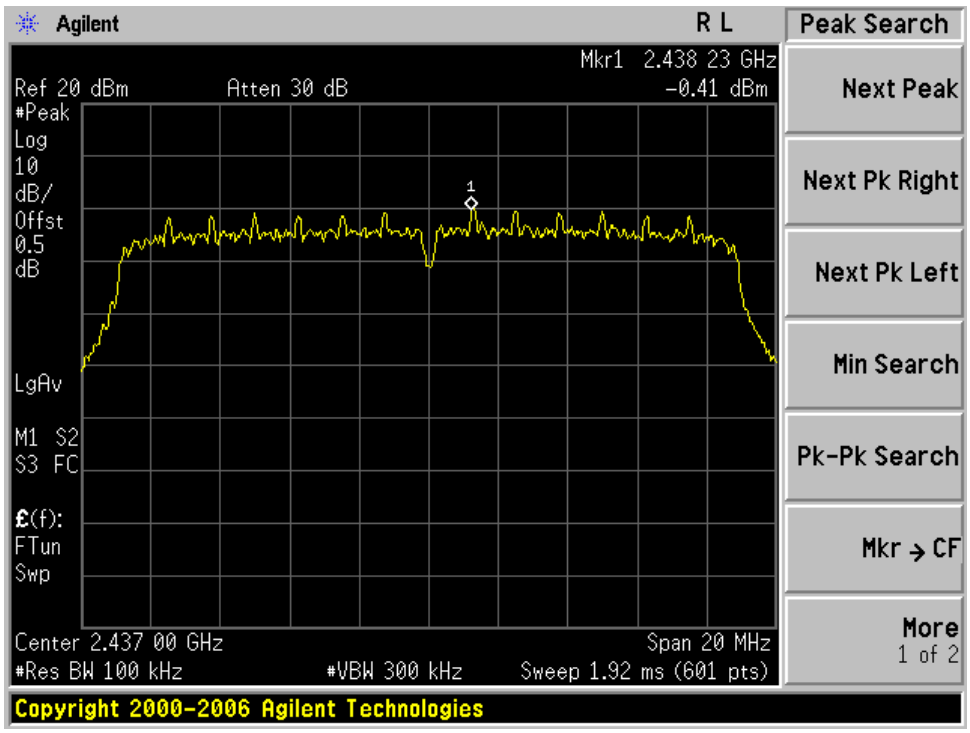
Result data graph shows high channel power spectrum density is -0.21dBm at 100 KHz RBW



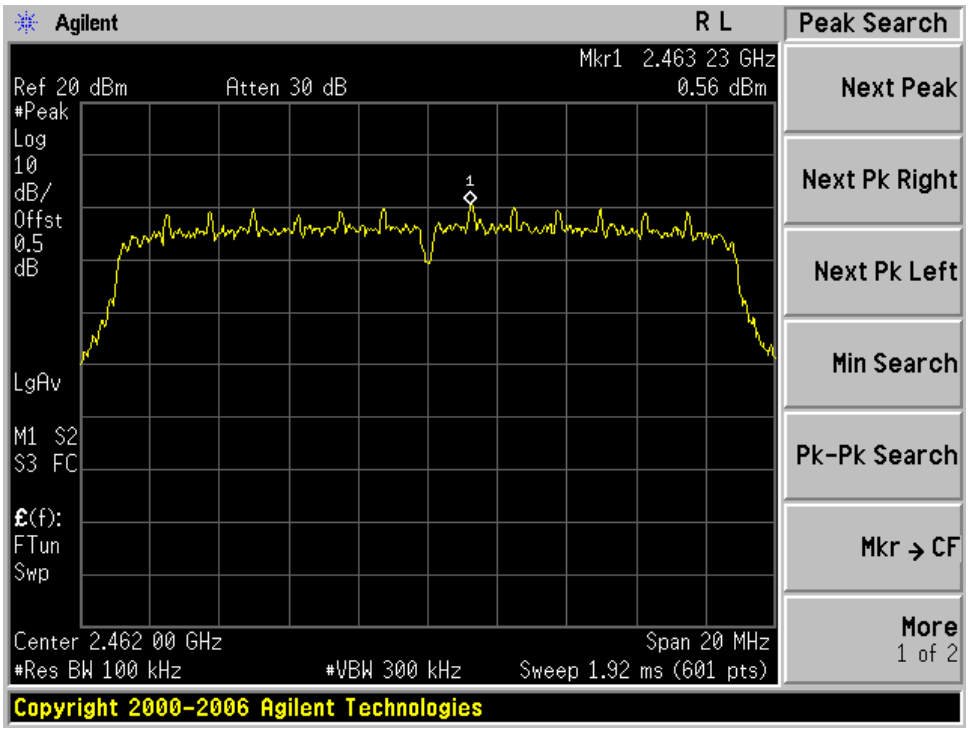
For 802.11HT20 Mode
Result data graph shows Low channel power spectrum density is -0.53dBm at 100 KHz RBW



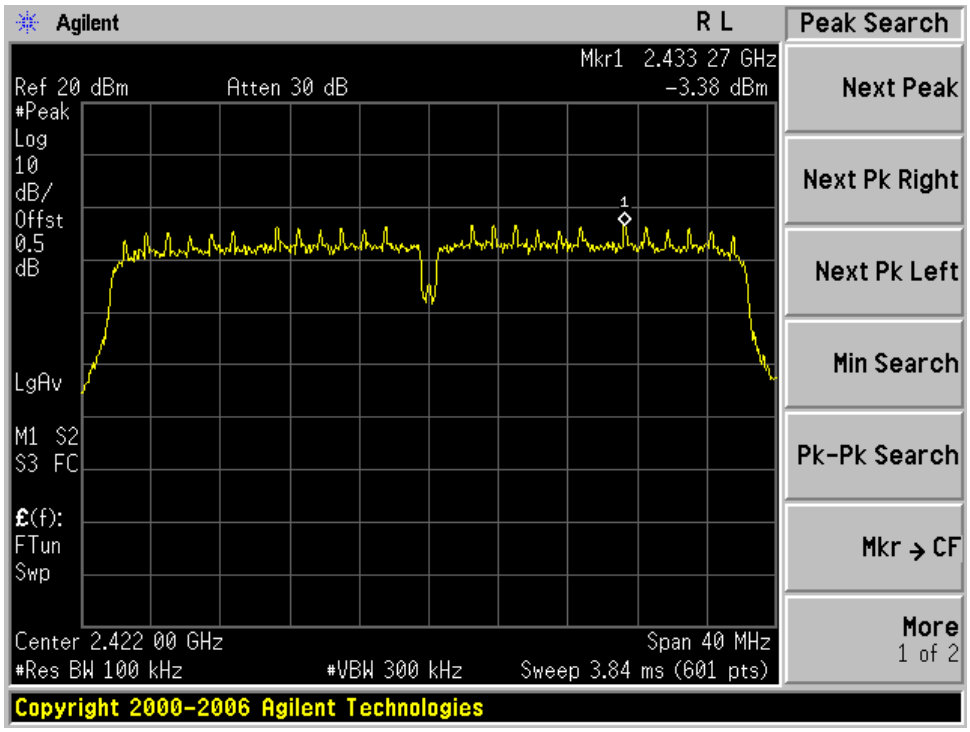
Result data graph shows middle channel power spectrum density is -0.41dBm at 100 kHz RBW



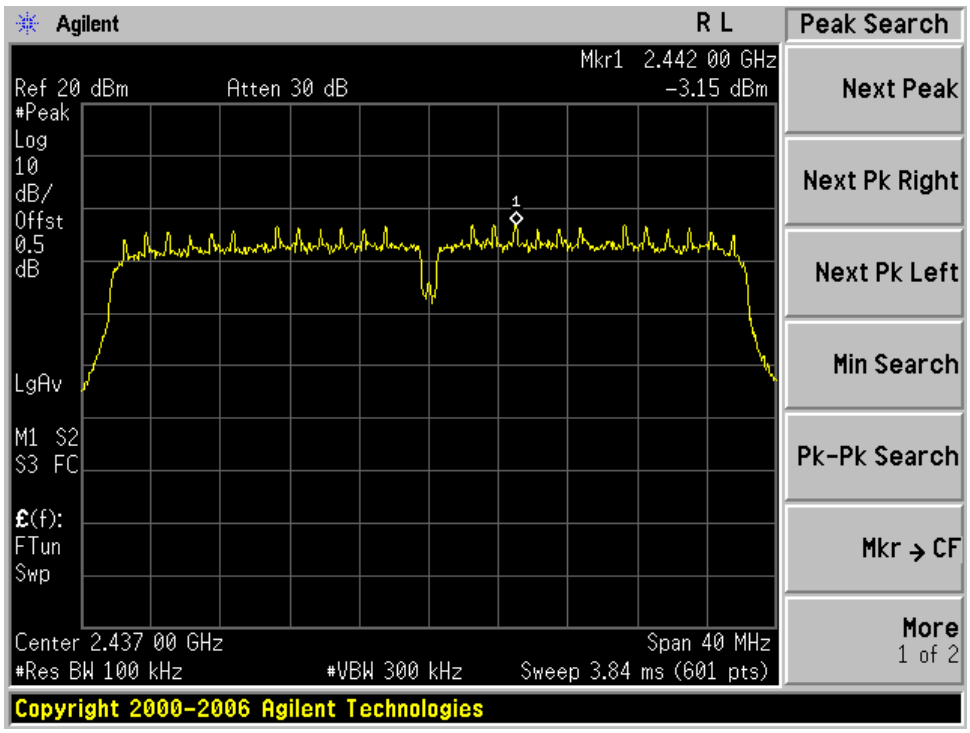
Result data graph shows high channel power spectrum density is 0.56dBm at 100 KHz RBW



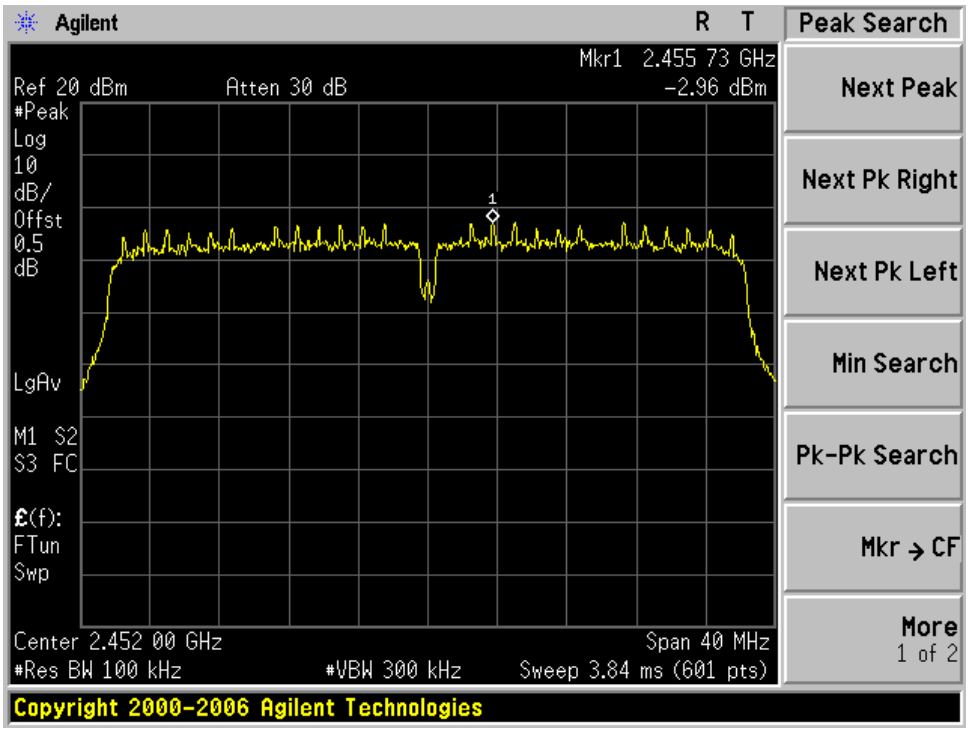
For 802.11HT40 Mode
Result data graph shows Low channel power spectrum density is -3.38dBm at 100 KHz RBW



Result data graph shows middle channel power spectrum density is -3.15dBm at 100 KHz RBW



Result data graph shows high channel power spectrum density is -2.96dBm at 100 KHz RBW



4.3 Band Edge Measurement

Test Requirement:	FCC part 15 section 15.247
Test Date:	2012-09-07
Mode of Operation:	Transmitting continuously mode.
Detector Function:	Max Hold

Result: PASS

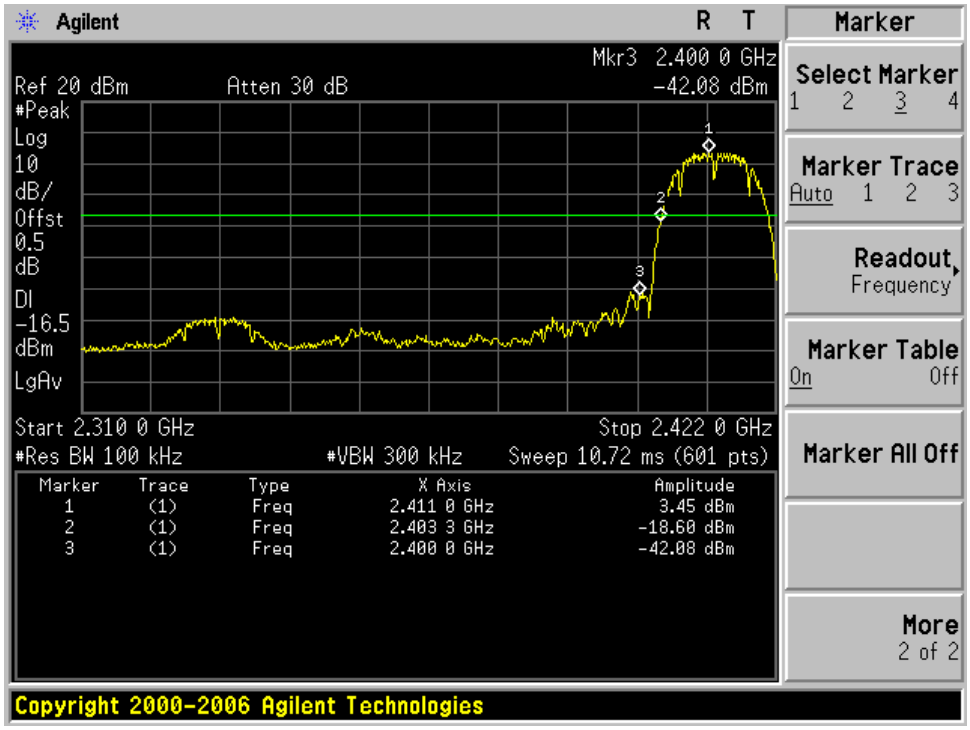
Measured Result :

Refer to the diagram and table, it shows the frequency of lower band edge and upper band edge is 2.412GHz and 2.462GHz separately.

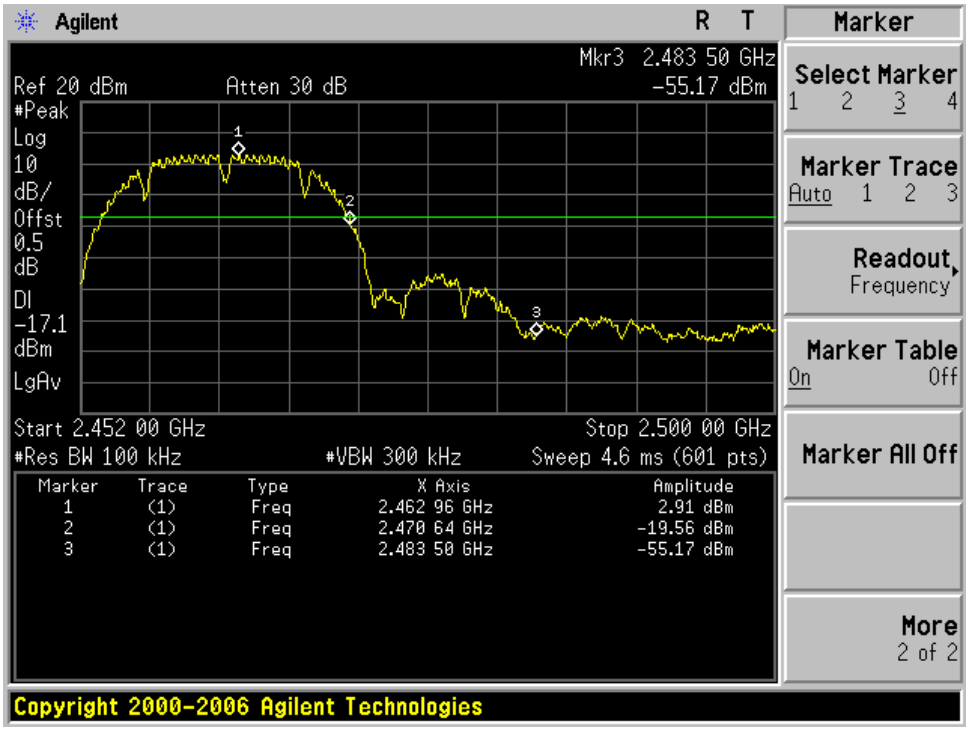
Limits of Band Edge for Carrier Frequencies Operated within the Bands [Section 15.247]:

The carrier frequencies should operate within 2400-2483.5MHz.

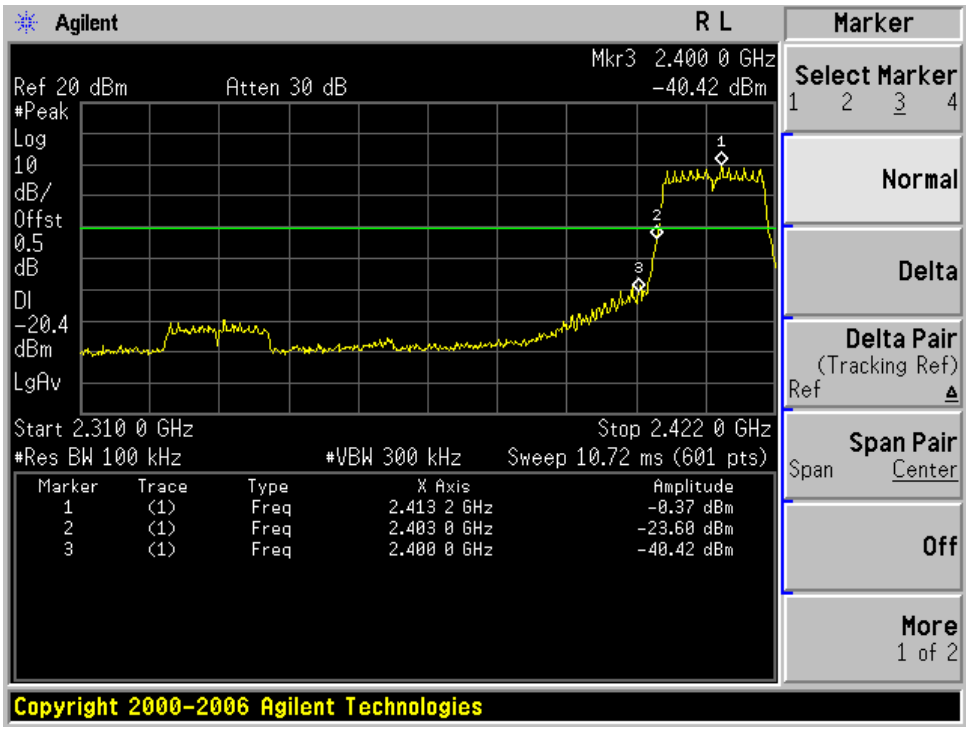
Result data graph shows the frequency of lowest channel.
For 802.11B Low Channel Mode



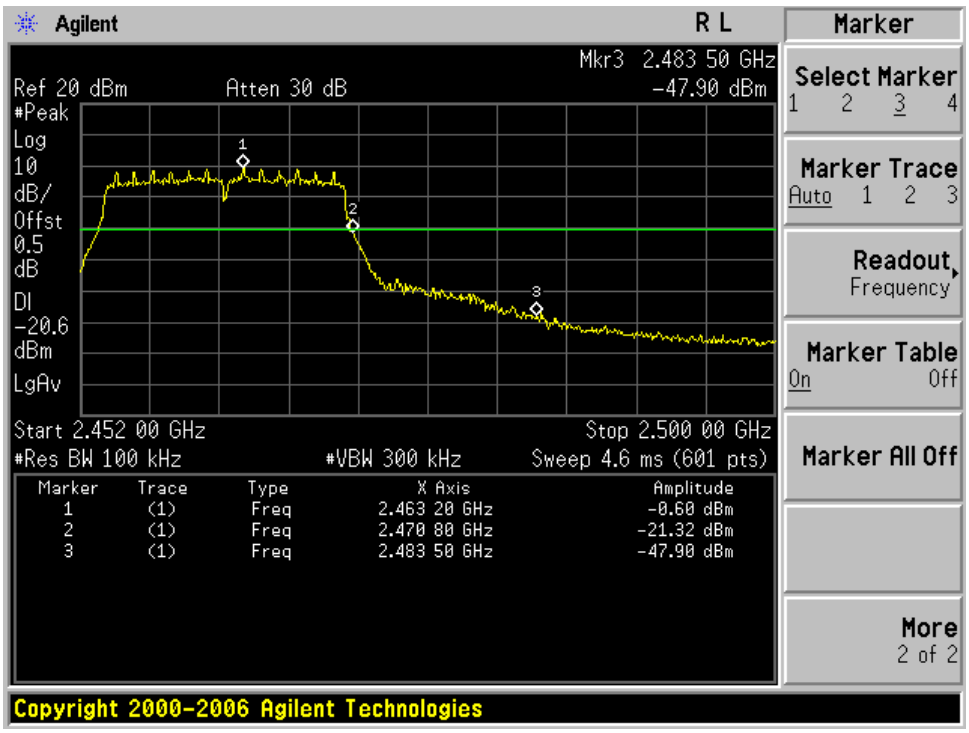
For 802.11B High Channel Mode



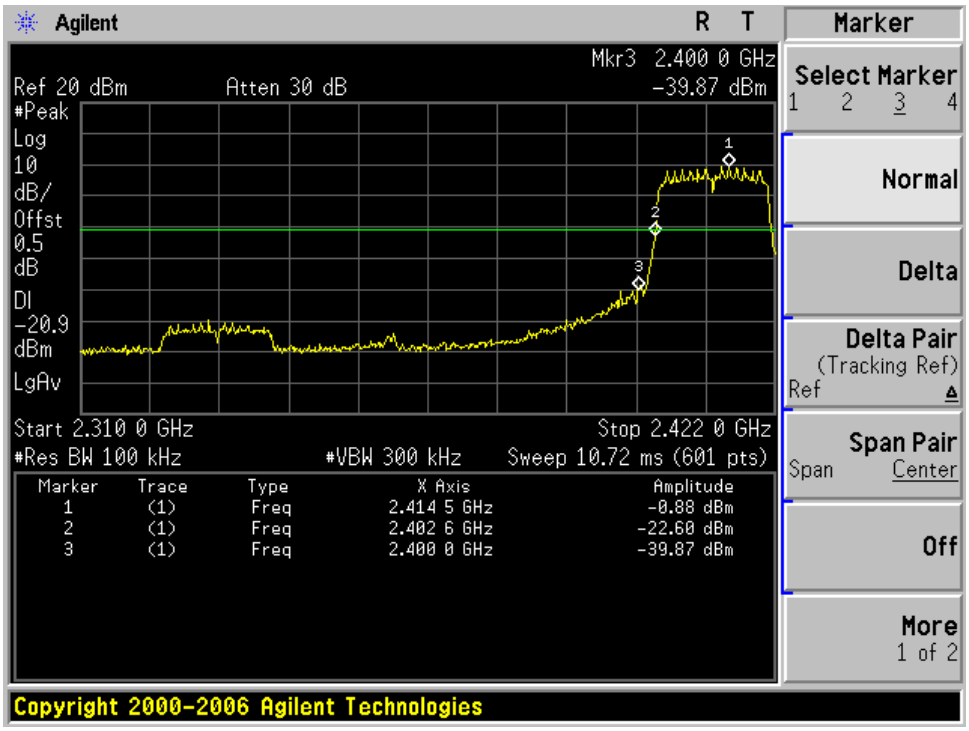
For 802.11G Low Channel Mode



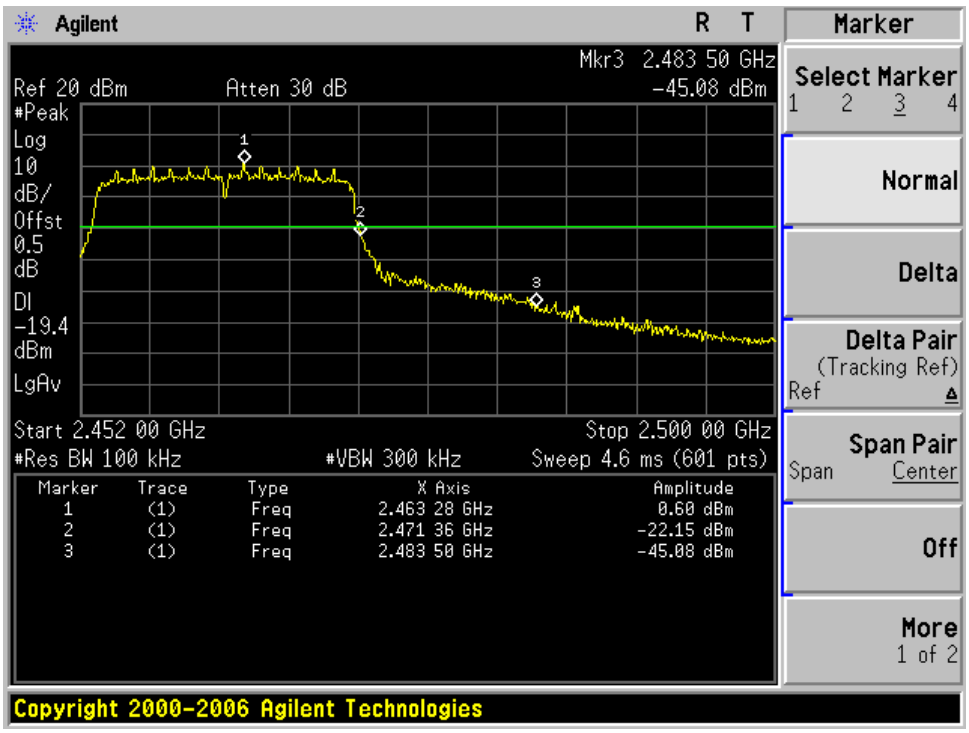
For 802.11B High Channel Mode



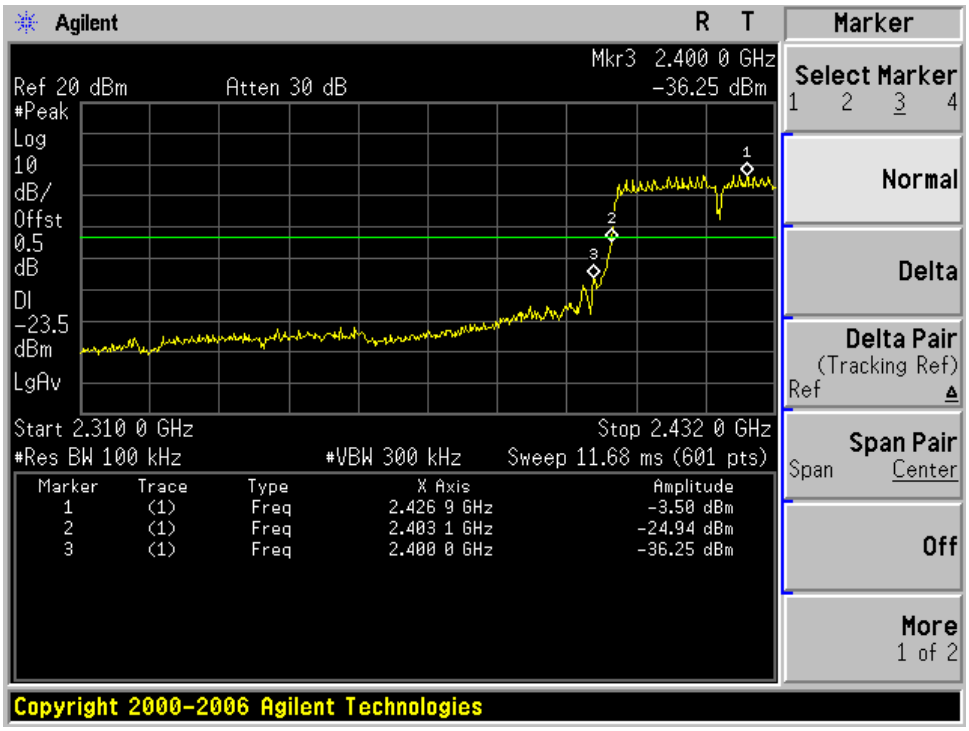
For 802.11N HT20 Low Channel Mode



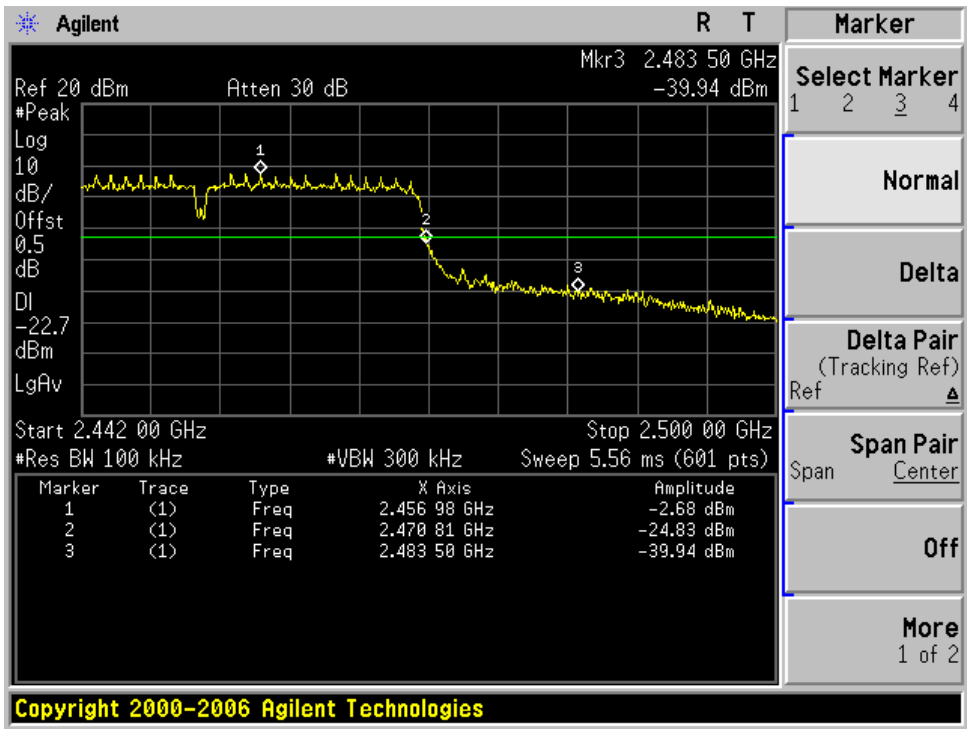
For 802.11N HT20 High Channel Mode



For 802.11N HT40 Low Channel Mode



For 802.11N HT40 High Channel Mode



4.4 Maximum Output Power

Test Requirement:	FCC part 15 section 15.247 (b3)
Test Method:	ANSI C63.4:2003
Test Date:	2012-09-07
Mode of Operation:	Transmitting continuously mode
Detector Function:	Peak
Measurement BW:	RBW 1MHz ; VBW 3MHz

Test Procedure :

According to section 15.247(b)-power output of the KDB-558074 (2012), the measurement procedure PK2 was used, the following is the measurement procedure.

1. Set span to a value that is 5-30 % greater than the EBW (entire emission bandwidth).

2. Set RBW = 1 MHz, Set VBW =3 MHz.

3. Detector = peak.

4. Trace mode = max hold; allow the trace to fully stabilize.

5. Use the spectrum analyzer's integrated band power measurement function with band limits set equal to the EBW band edges (for some analyzers, this may require a manual override to ensure use of peak detector). If the spectrum analyzer does not have a band power function, sum the spectrum levels (in linear power units) at 1 MHz intervals extending across the EBW of the spectrum.

Result : PASS

Transmitting Mode: Transmits continuously

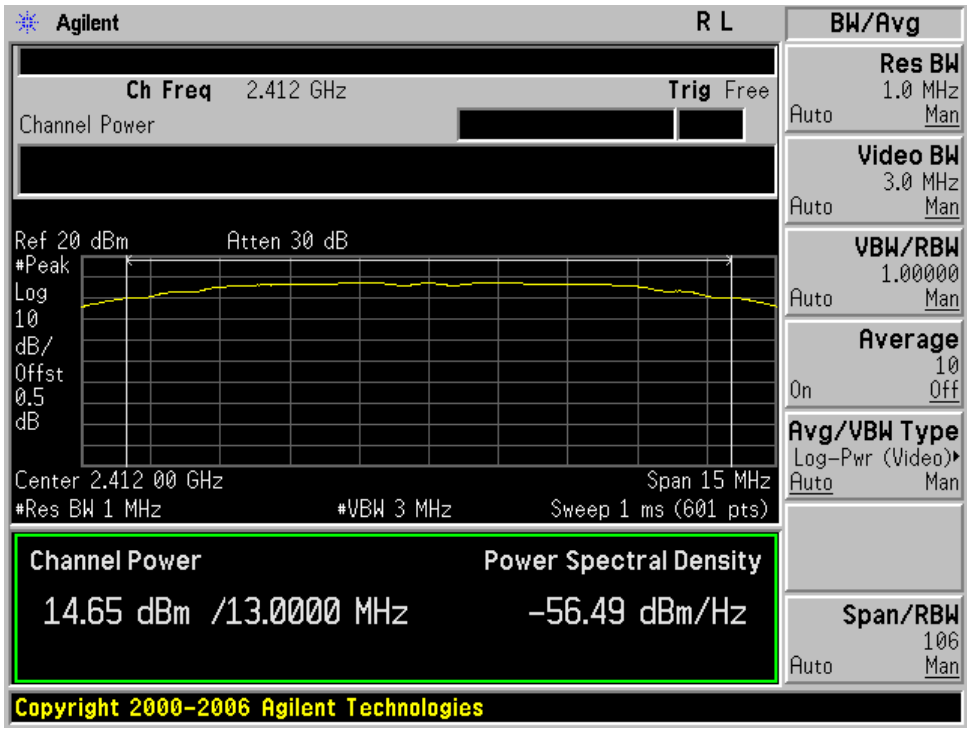
Test mode	Frequency MHz	Output Power dBm	Output Power mW	Limit mW
802.11b 1Mbps	2412	14.65	29.17	1000
	2437	16.79	47.75	1000
	2462	16.81	47.97	1000
802.11g 6Mbps	2412	12.95	19.72	1000
	2437	14.29	26.85	1000
	2462	14.31	26.98	1000
802.11n HT20 MCS0	2412	12.74	18.80	1000
	2437	13.06	20.23	1000
	2462	13.33	21.53	1000
802.11n HT40 MCS0	2422	12.80	19.05	1000
	2437	13.75	23.71	1000
	2452	12.26	16.83	1000

Note: Above testing data is base on the cable loss which between antenna port and spectrum is 0.5dB

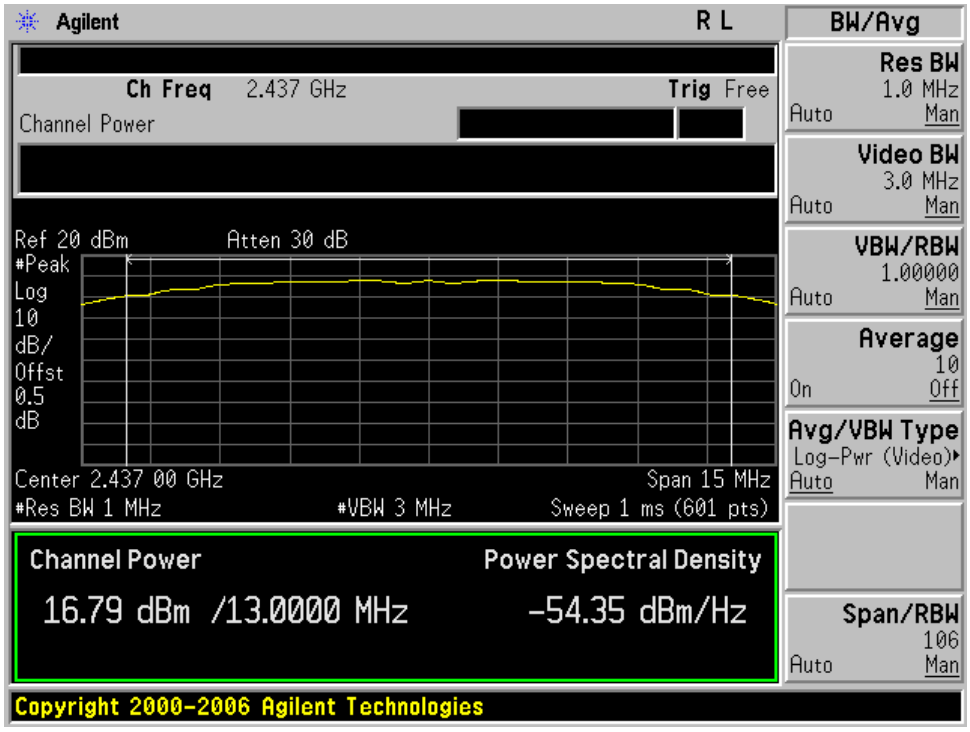
Limits for Maximum Output Power [Section 15.247 (b3)]:

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

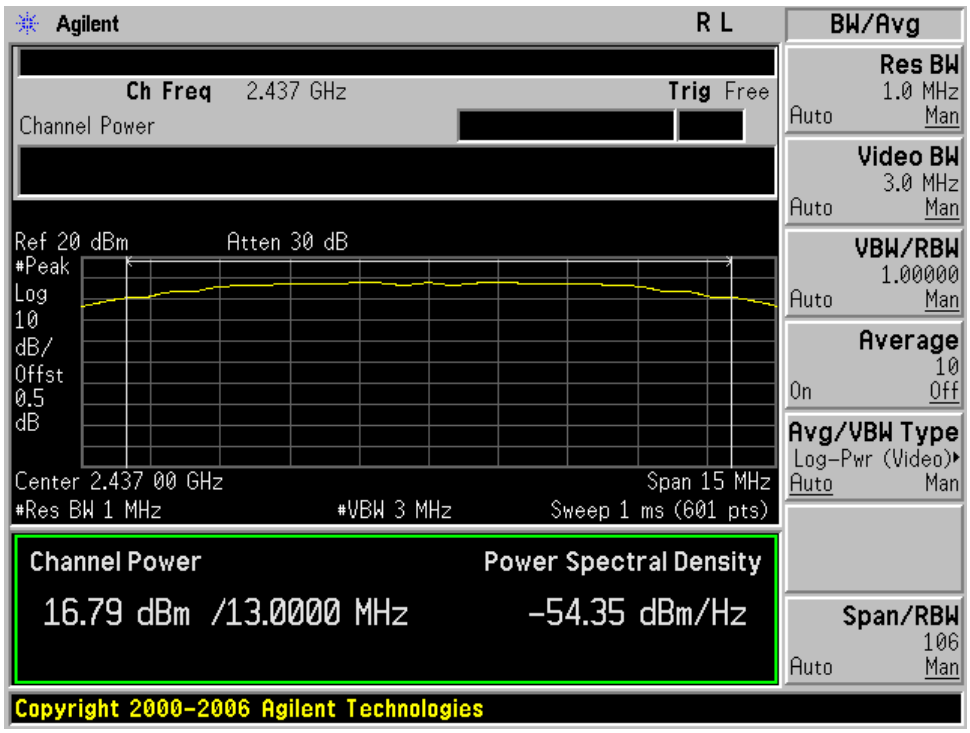
For 802.11B Mode
Result data graph shows Low channel conducted power = 14.65dBm



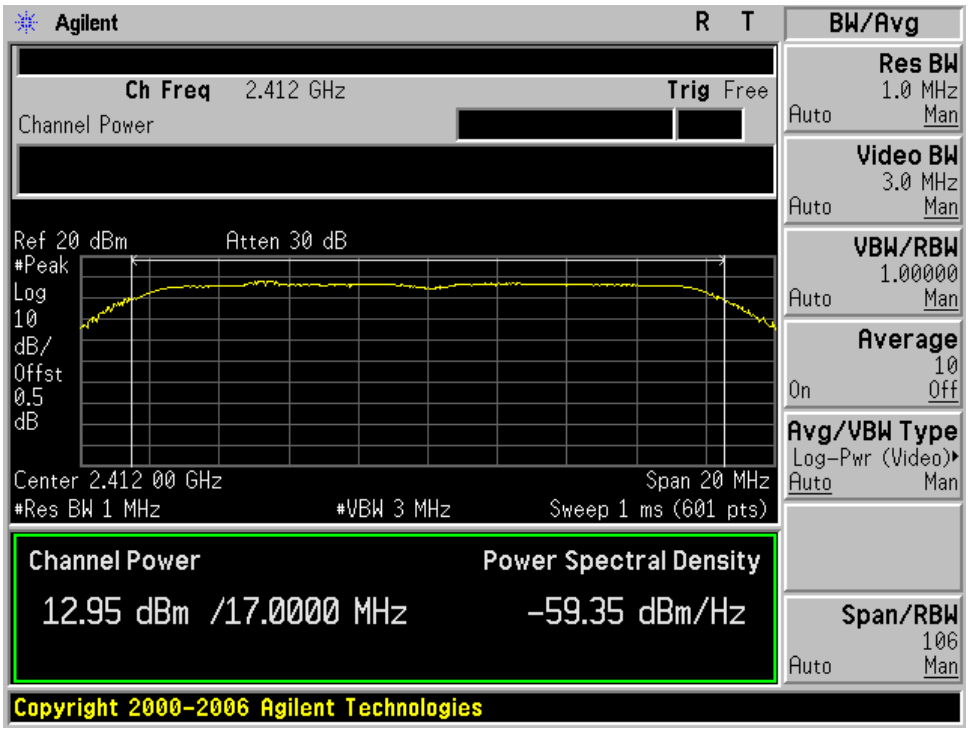
Result data graph shows middle channel conducted power = 16.79dBm



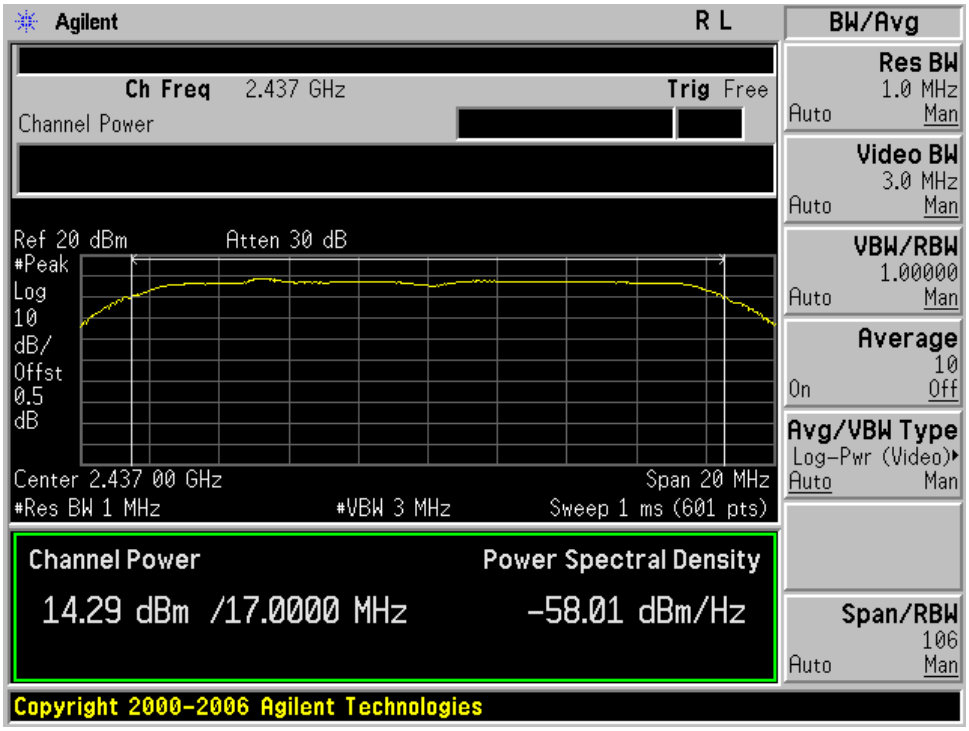
Result data graph shows high channel conducted power = 16.81dBm



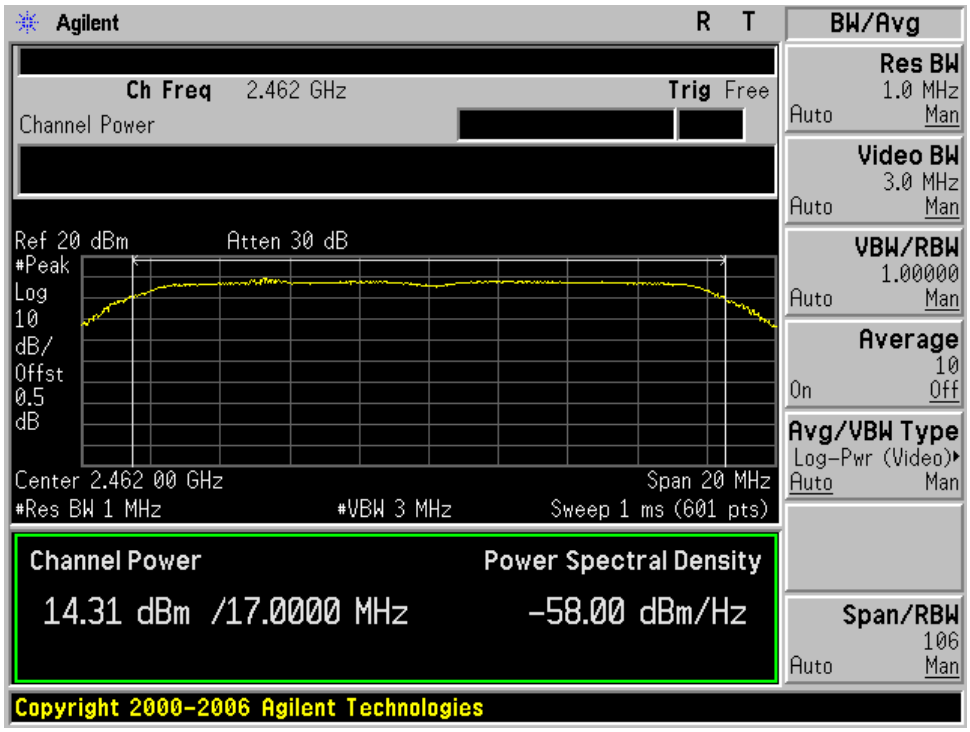
For 802.11G Mode
Result data graph shows Low channel conducted power = 12.95dBm



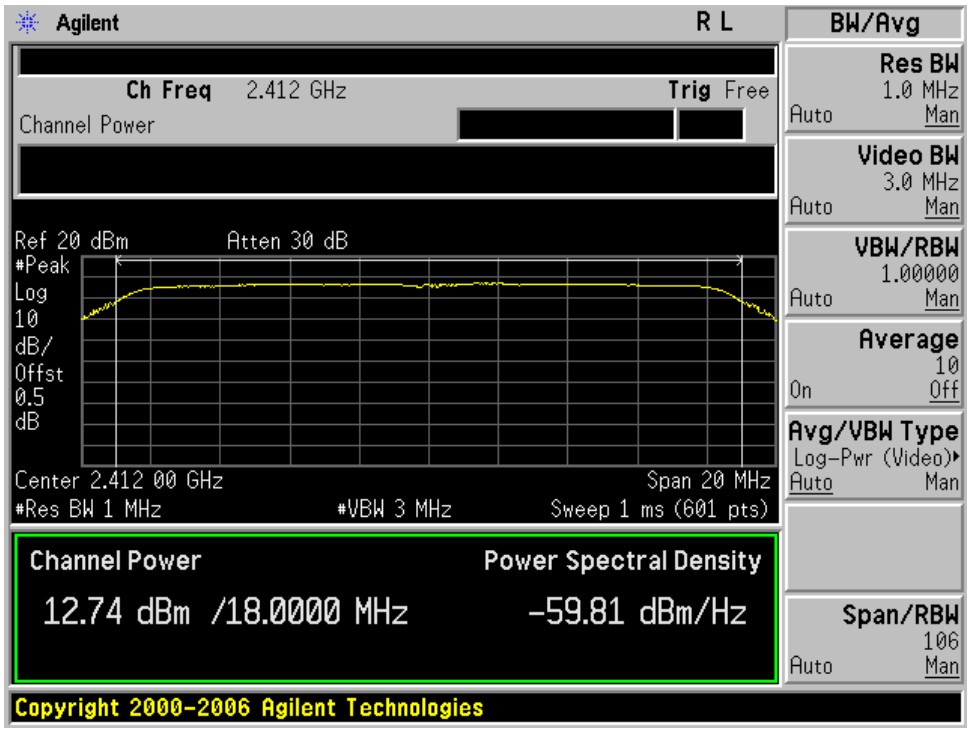
Result data graph shows middle channel conducted power = 14.29dBm



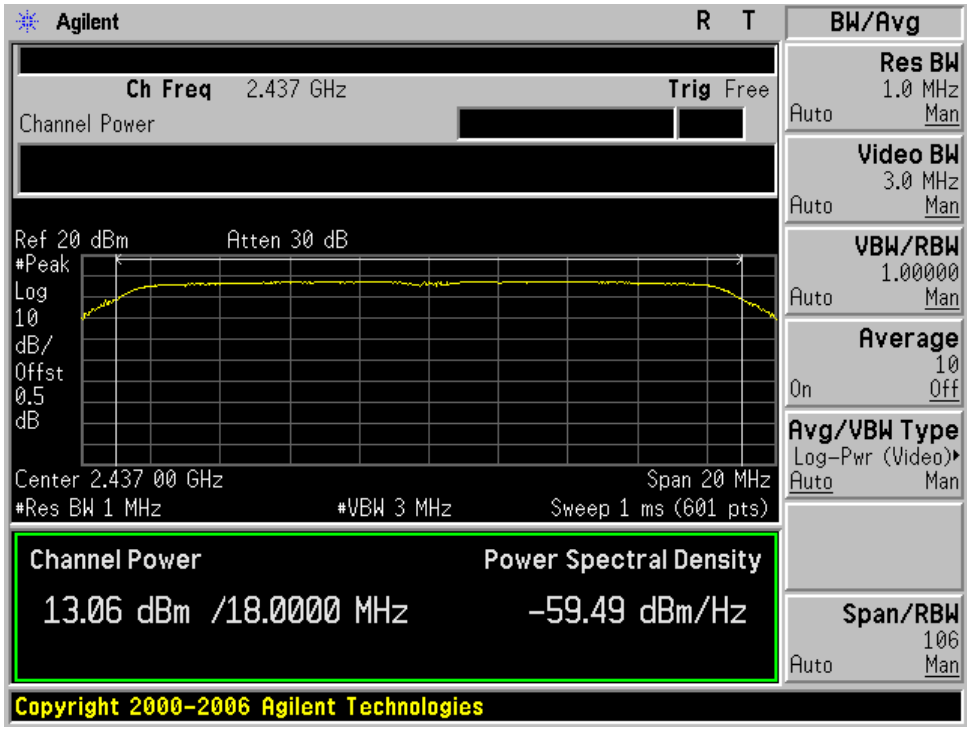
Result data graph shows high channel conducted power = 14.31dBm



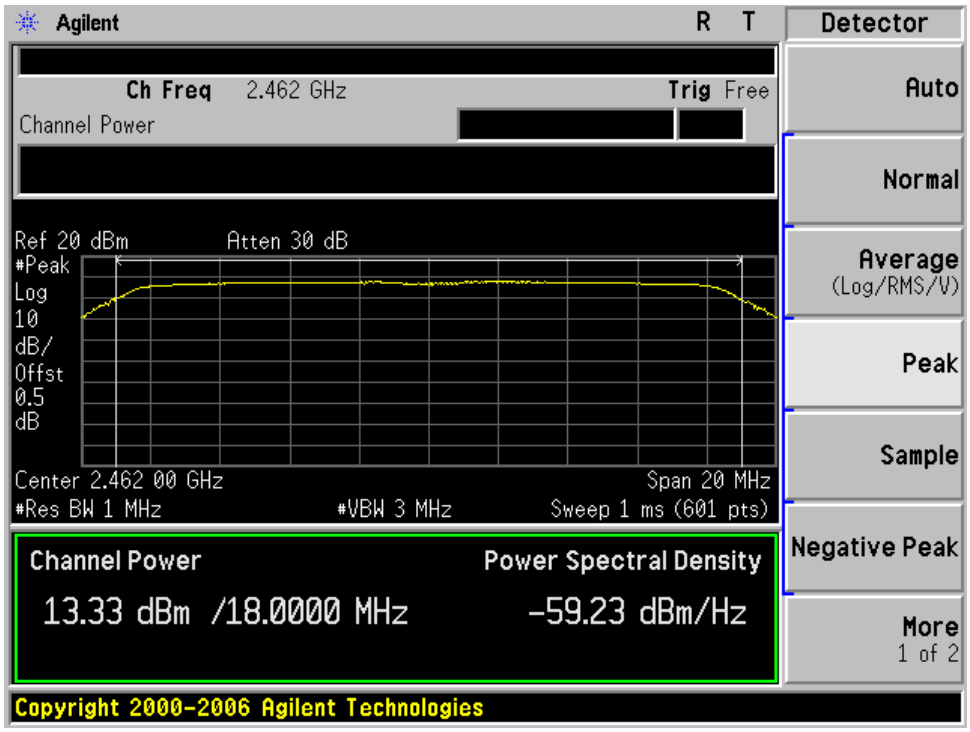
For 802.11N HT20 Mode
Result data graph shows Low channel conducted power = 12.74dBm



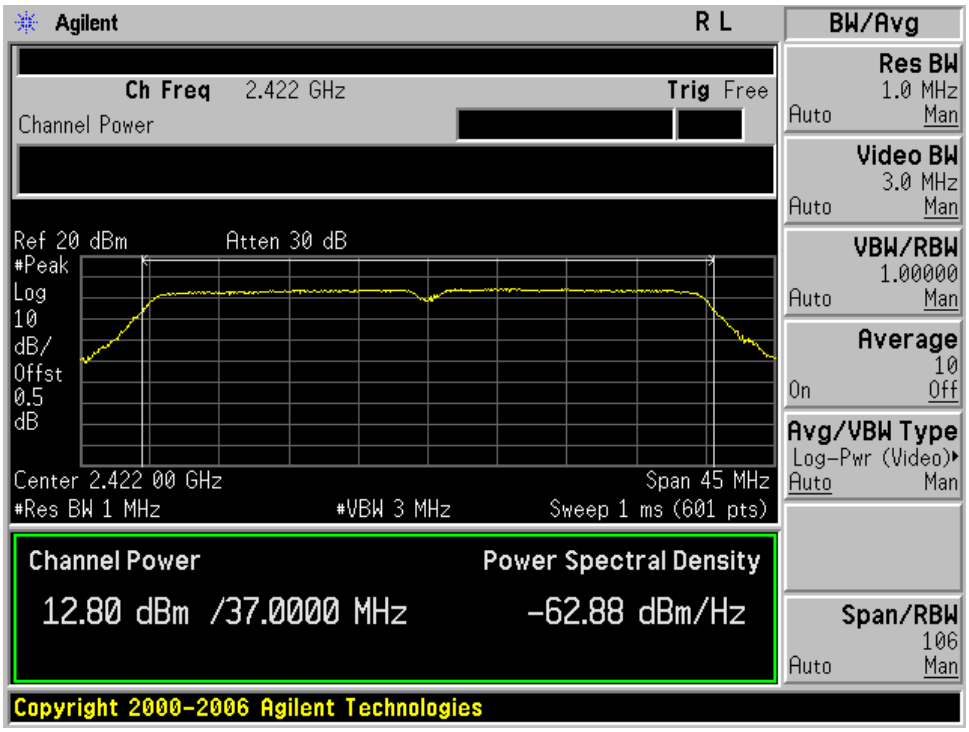
Result data graph shows middle channel conducted power = 13.06dBm



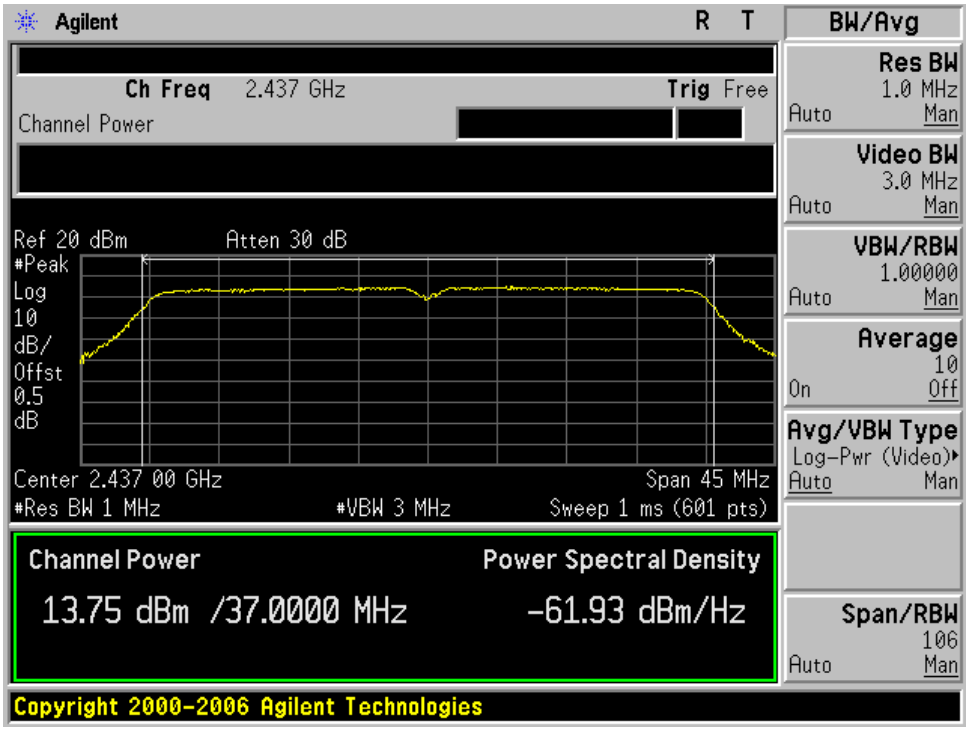
Result data graph shows high channel conducted power = 13.33dBm



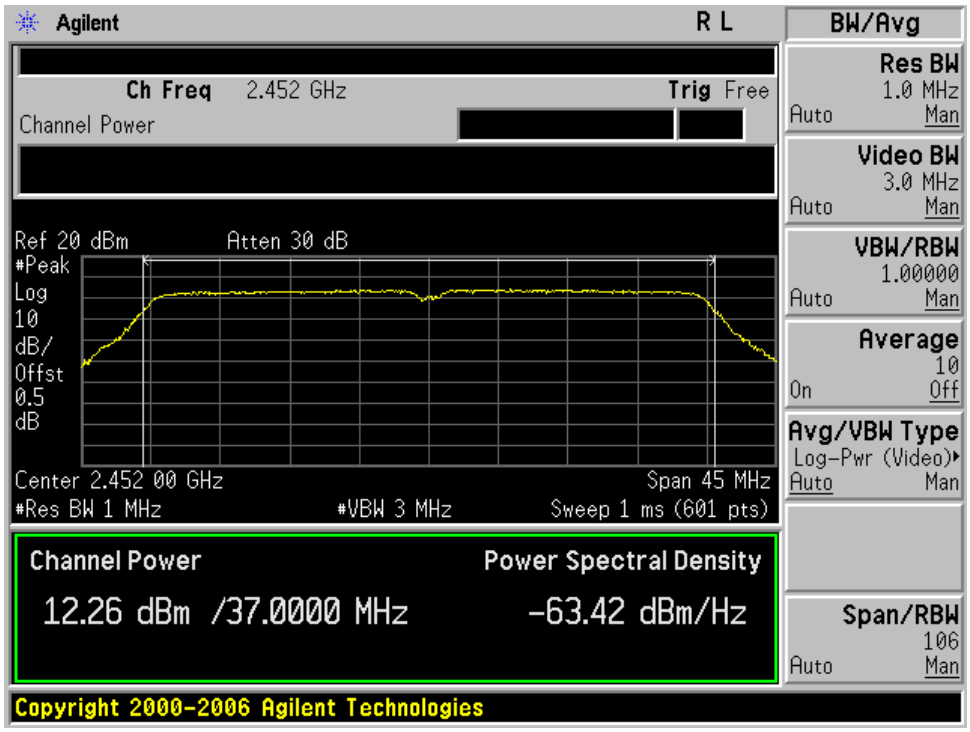
For 802.11N HT40 Mode
Result data graph shows Low channel conducted power = 12.80dBm



Result data graph shows middle channel conducted power = 13.75dBm



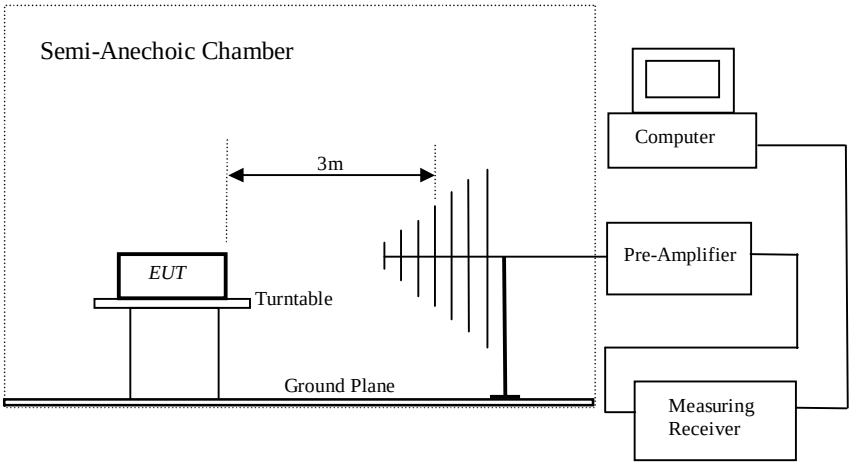
Result data graph shows high channel conducted power = 12.26dBm



4.5 Out of Band Emissions and Emissions in Restricted Bands

Test Requirement:	FCC part 15 section 15.247 (d)
Test Method:	ANSI C63.4:2003
Test Date:	2012-09-08
Mode of Operation:	Transmitting continuously mode
Detector Function:	Peak
Measurement BW:	RBW 100KHz ; VBW 300KHz

Test Setup:



Result : PASS

Out of Frequency Band Emissions:

For out of band emissions that are close to or exceed 20dB attenuation requirement, and emission falls into restricted band, radiated emission was performed in order to show compliance with the general radiated emission requirement.

Result Summary:

Refer to the emission data graph, result shows that the significant emissions detected are with more than 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.

Limits for Out of Frequency Band Emission [Section 15.247 (d)]:

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power. Attenuation below the general limits specified in Section 15.209(a) is not required.

Limit for Radiated Emission Falling in Restricted Bands [Section 15.209]:

Frequency (MHz)	Field Strength [μV/m]	Field Strength [dBμV/m]
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

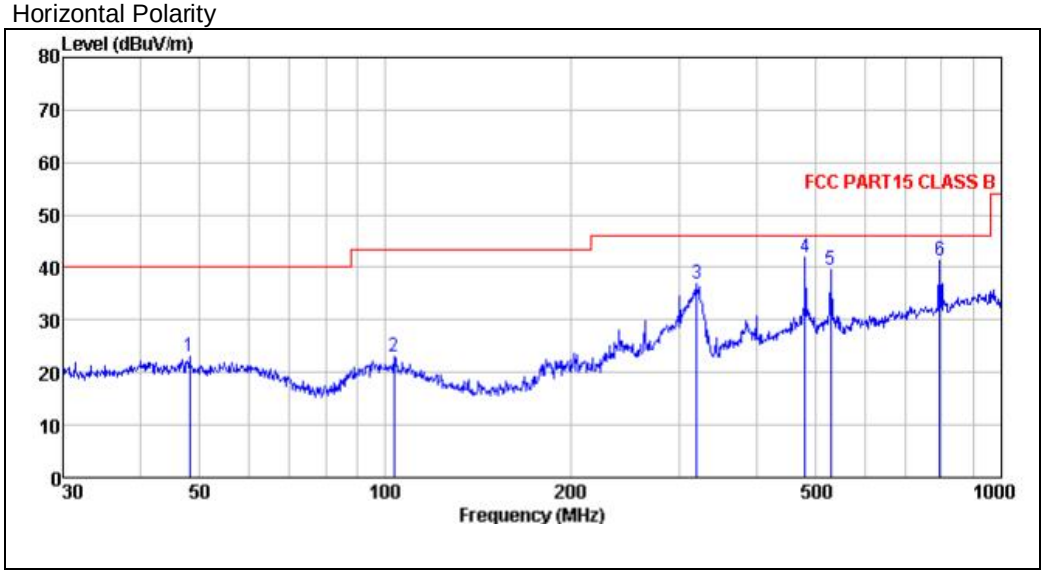
Radiated emissions, which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209.

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result : PASS

All Emission and Emissions Fall into Restricted Band were recorded as below:

Below 1GHz emissions
Horizontal Polarity

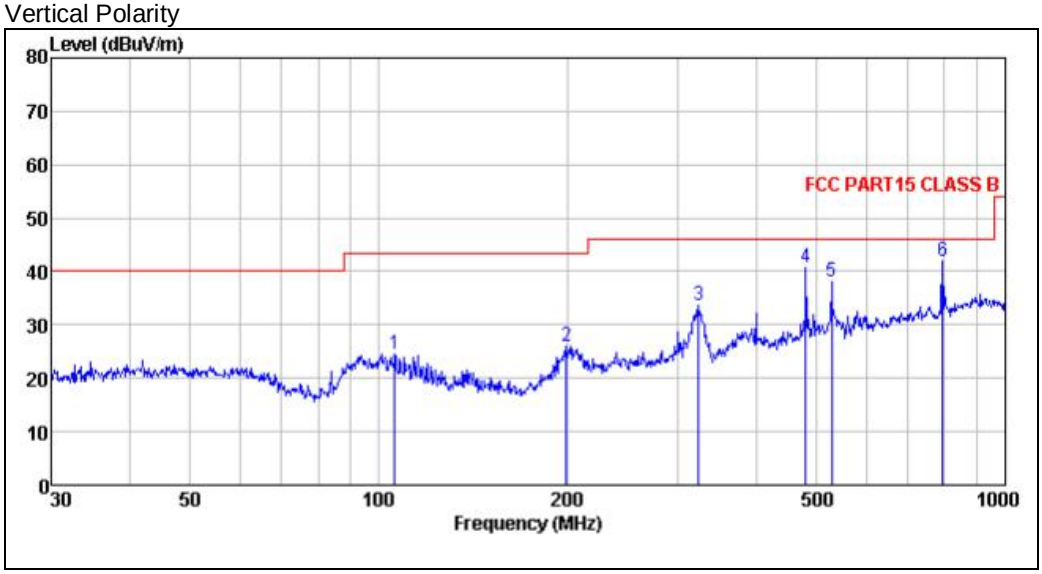


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	48.163	37.64	-14.76	22.88	40.00	-17.12	QP
2	103.442	37.69	-14.72	22.97	43.50	-20.53	QP
3	319.937	50.18	-13.32	36.86	46.00	-9.14	QP
4	480.528	52.25	-10.33	41.92	46.00	-4.08	QP
5	528.246	48.45	-8.78	39.67	46.00	-6.33	QP
6	793.396	45.16	-3.92	41.24	46.00	-4.76	QP

Result : PASS

All Emission and Emissions Fall into Restricted Band were recorded as below:

Below 1GHz emissions
Vertical Polarity

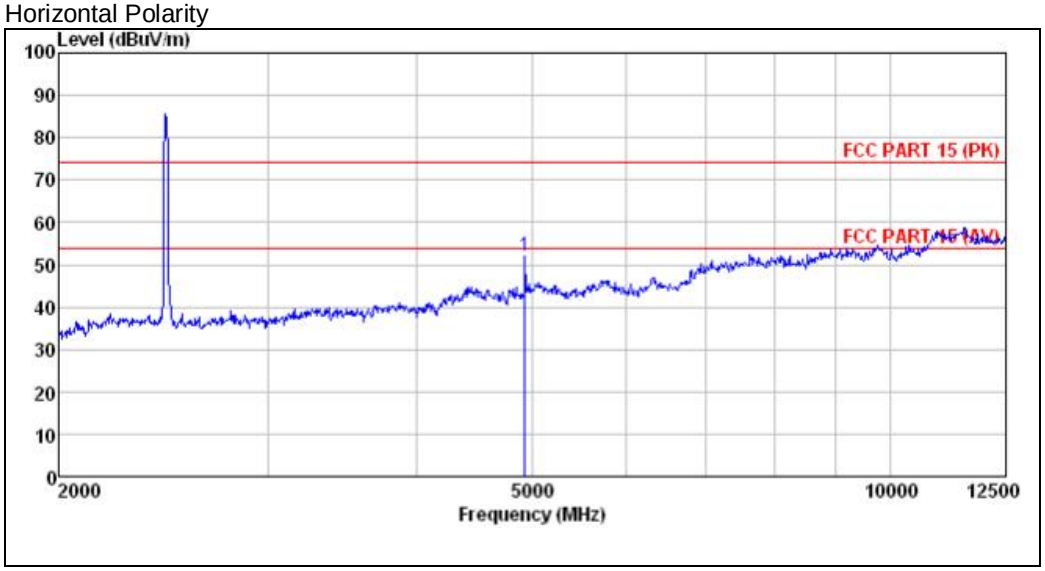


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	106.013	39.86	-15.27	24.59	43.50	-18.91	QP
2	199.286	42.65	-16.70	25.95	43.50	-17.55	QP
3	*324.456	46.90	-13.31	33.59	46.00	-12.41	QP
4	480.528	51.03	-10.33	40.70	46.00	-5.30	QP
5	528.246	46.88	-8.78	38.10	46.00	-7.90	QP
6	793.396	45.75	-3.92	41.83	46.00	-4.17	QP

Result : PASS

All Emission and Emissions Fall into Restricted Band were recorded as below:

Above 1GHz Emission test data
Horizontal Polarity



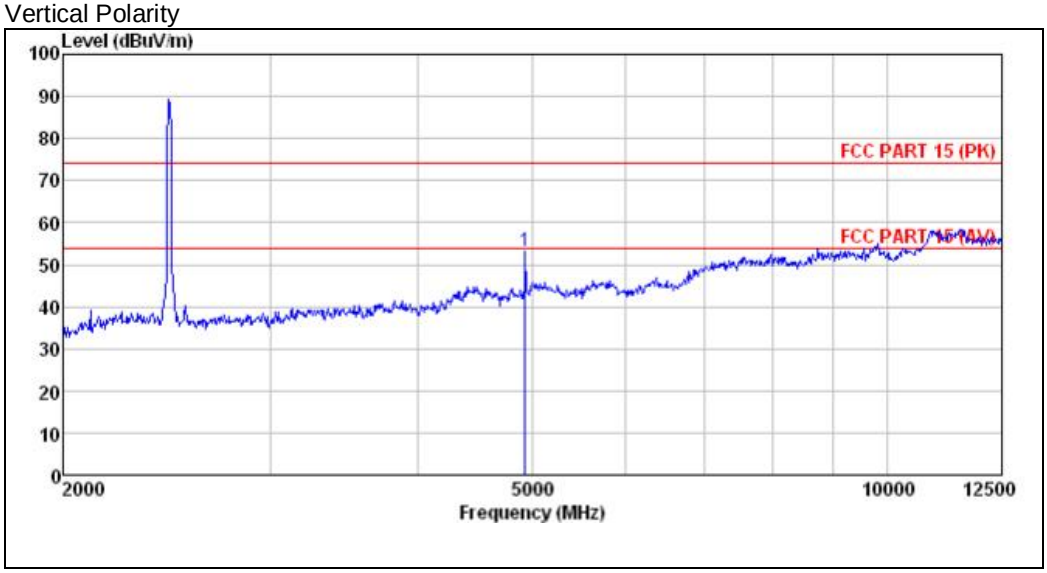
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	*4927.231	35.59	-16.55	52.14	74.00	-21.86	peak

Remark: Only background noise was measured from 12.5GHz-26GHz.

Result : PASS

All Emission and Emissions Fall into Restricted Band were recorded as below:

Above 1GHz Emission test data
Vertical Polarity



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	*4927.231	36.75	-4.62	53.30	74.00	-20.70	peak

Remark: Only background noise was measured from 12.5GHz-26GHz.

Result Summary:

1) Communication mode: All other emissions are more than 20dB below FCC part 15.209 limits.
2) No further spurious emissions found between 30 MHz and lowest internal used/generated frequency and from 30MHz to 1GHz.
3) Test data is base on the worst case highest channel's emission data graph from 30MHz-26GHz.

Remarks:

1. " * " Radiated emissions which fall in the restricted bands as defined in Section 15.205(a).

2. Emission level with more than 20dB below the FCC required limit is not mentioned in table.

3. Delta to Limit = Field strength (dBµV/m) – Limit (dBµV/m).

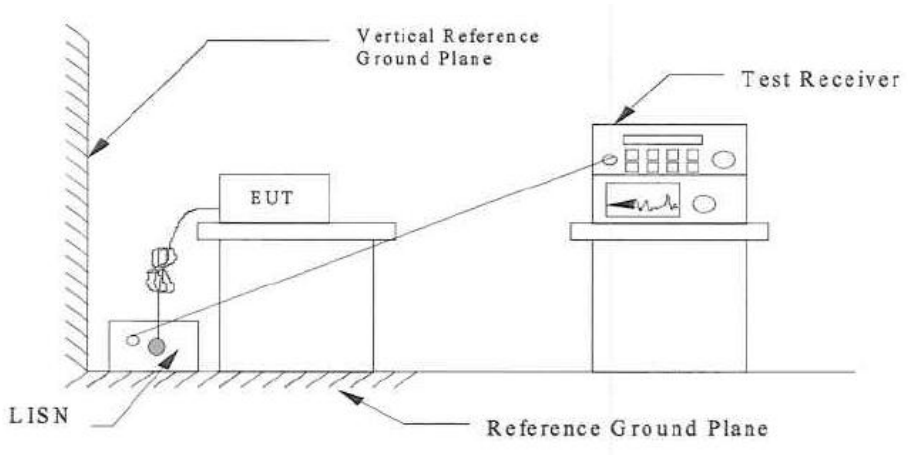
4. Calculated measurement uncertainty: 9kHz -30MHz: 2.58dB.
30MHz -1GHz: 2.58dB.
1GHz -18GHz: 2.58dB.

4.6 Conducted Emissions (0.15MHz to 30MHz)

Test Requirement:	FCC part 15 Section 15.207 Class B
Test Method:	ANSI C63.4:2003
Test Date:	2012-09-10
Mode of Operation:	Transmitting continuously mode
Detector Function:	CISPR Quasi Peak
Measurement BW:	100 kHz
Worst Case Channel:	Highest Channel

Results : PASS

Test Setup:



Limits for Conducted Emission [Section 15.207]:

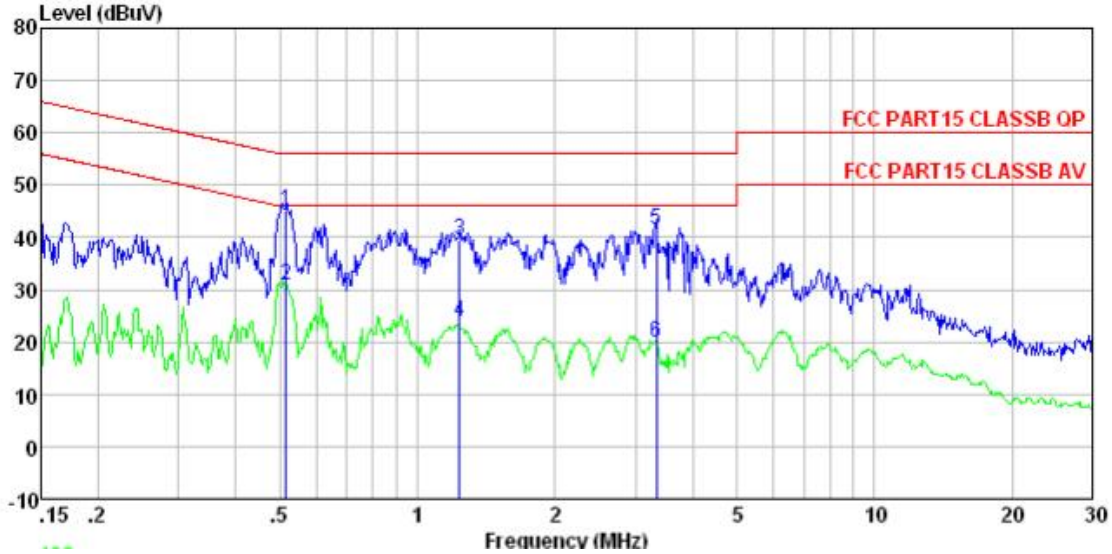
Frequency Range [MHz]	Quasi-Peak Limit [dBμV]	Average Limit [dBμV]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

* Decreases with the logarithm of the frequency.

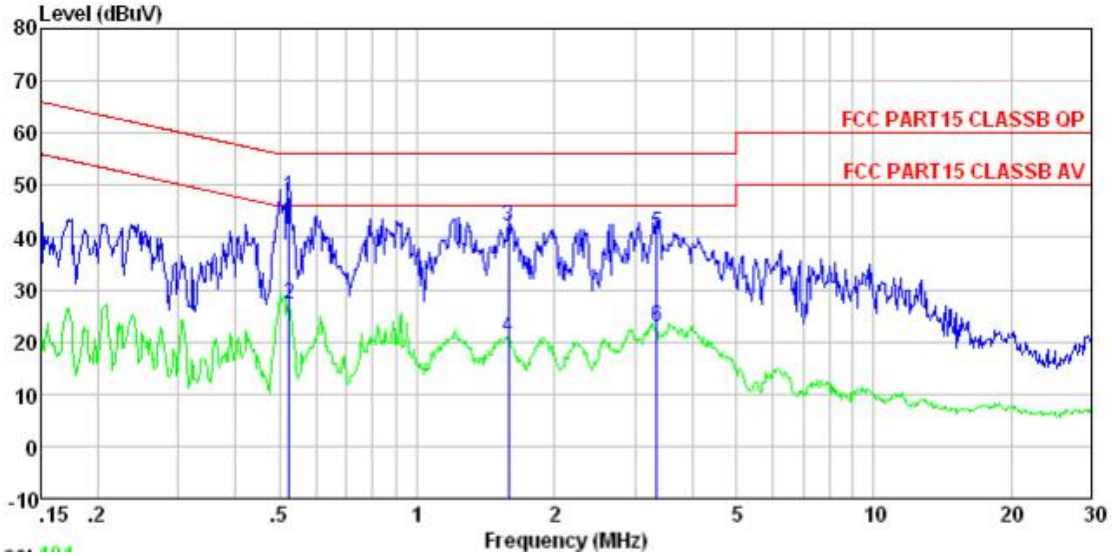
Remarks:
Calculated measurement uncertainty: ±1.54dB

Result data graph shows the conducted emission (Line and Neutral).

Line Port



Neutral Port



Result data table shows the conducted emission (Live and Neutral).

Frequency (MHz)	Detector (QP/AV)	Phase	Result (dBµV)	Limit (dBµV)	Margin
0.516	QP	L	45.02	56.00	-10.98
0.516	AV	L	30.94	46.00	-15.06
1.236	QP	L	39.57	56.00	-16.43
1.236	AV	L	23.88	46.00	-22.12
3.328	QP	L	41.55	56.00	-14.45
3.328	AV	L	19.84	46.00	-26.16
0.524	QP	N	47.64	56.00	-8.36
0.524	AV	N	27.22	46.00	-18.78
1.585	QP	N	42.05	56.00	-13.95
1.585	AV	N	20.80	46.00	-25.20
3.346	QP	N	40.76	56.00	-15.24
3.346	AV	N	22.97	46.00	-23.03

5.0 RF Exposure Compliance Requirement

Test Requirement: FCC part 15 section 15.247 (i)
Test Method: FCC part 15 section 1.1307 (b1)
OET Bulletin 65, Edition 01-01

Results: PASS

Systems operation under the provision of this section shall be operated in a manner that ensures the public is not exposed to radio frequency energy levels in excess of the Commission's guideline,
The EUT is considered as a mobile device according to OET Bulletin 65, Edition 01-01, therefore distance to human body of min. 20cm is determined.

Frequency Band:	2.412GHz ~2.462GHz
Device Category:	☐ Portable (< 20cm separation) ☒ Mobile (>20cm separation) ☐ Others :
Exposure Classification:	☐ Occupational/ Controlled exposure ☒ General Population / Uncontrolled exposure
Max Transmit Power	47.97mW
Antenna Gain	3.3dBi (Numeric gain:1.70)
Evaluation Applied:	☒ MPE Evaluation ☐ SAR Evaluation

MPE calculation:

The maximum radiated power (EIRP) = the maximum output power+ antenna gain
= 16.81dBm+3.3dBi
=19.11dBm
=102.57mW

The power density at 20cm from the antenna: = EIRP / $4\pi R^2$
= 0.02mW / cm^2

Limits for General Population/Uncontrolled Exposure [OET Bulletin 65, Edition 01-01]:

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	$(180/f^2)$*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

6.0 List of Measurement Equipment

Radiated Emission

Manufacturer	Equipment	Model No.	Serial No.	Cal. Date	Due Date
ZhongYu Electron	3m Semi- Anechoic Chamber	9.0(L)*6.0(W)* 6.0(H)	GTS250	Mar. 30 2011	Mar. 29 2013
ZhongYu Electron	Control Room	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
R&S	ESU EMI Test Receiver	ESU26	GTS203	Jul. 07 2012	Jul. 06 2013
SCHWARZBECK	BiConiLog Antenna	VULB9163	GTS214	Mar. 10 2012	Mar. 09 2013
SCHWARZBECK	Double -ridged waveguide horn	9120D	GTS208	Mar. 10 2012	Mar. 09 2013
HP	RF Amplifier	8347A	GTS204	Jul. 07 2012	Jul. 06 2013
HP	Preamplifier	8349B	GTS206	Jul. 07 2012	Jul. 06 2013
AUDIX	EMI Test Software	E3	N/A	N/A	N/A

Line Conducted

Manufacturer	Equipment	Model No.	Serial No.	Cal. Date	Due Date
ZhongYu Electron	Shielding Room	7.3(L)x3.1(W)x 2.9(H)	GTS252	Sep. 08 2011	Sep. 07 2013
R&S	EMI Test Receiver	ESCS30	GTS223	Jul. 07 2012	Jul. 06 2013
R&S	Pulse Limiter	ESH3-Z2	GTS224	Jul. 07 2012	Jul. 06 2013
ANRITSU CORP	Coaxial Switch	MP59B	GTS225	Jul. 07 2012	Jul. 06 2013
SCHWARZBECK MESS	Artificial Mains Network	NSLK8127	GTS226	Jul. 07 2012	Jul. 06 2013
AUDIX	EMI Test Software	E3	N/A	N/A	N/A
KTJ	Thermo meter	TA328	GTS233	Jul. 27 2012	Jul. 26 2013

N/A Not Applicable or Not Available