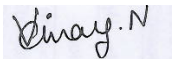
Produkte
Products

Prüfbericht - Nr.: *Test Report No.:*	**02423009 001**		**Seite 1 von 40** *Page 1 of 40*
Auftraggeber: *Client:*	**Bioscrypt Inc.** **50 Acadia Ave.,Suite 200,** **Markham, ON L3R 0B3** **Canada**		
Gegenstand der Prüfung: *Test item:*	**4GSCW**		
Bezeichnung: *Identification:*	**4G Secure Control**	**Serien-Nr.:** *Serial No.*	**Engineering Sample**
Wareneingangs-Nr.: *Receipt No.:*	**1403013194**	**Eingangsdatum:** *Date of receipt:*	**2010-01-28**
Prüfort: *Testing location:*	**Refer Page 4 of 40 for test facilities**		
Prüfgrundlage: *Test specification:*	**FCC 15, Subpart C**		
Prüfergebnis: *Test Result:*	**Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).** *The test item passed the test specification(s).*		
Prüflaboratorium: *Testing Laboratory:*	**TÜV Rheinland (India) Pvt. Ltd.** Alpha Tower, Sigma Soft Tech Park, # 7, Whitefield Main Road, Varthur Kodi, Bangalore – 560066, India		

geprüft / *tested by:*

Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*
2010-02-05	Vinay N Test Engineer	

kontrolliert / *reviewed by:*

Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*
2010-02-05	Varma Kalyan Manager	

Sonstiges / *Other Aspects:* **FCC ID : QC4-4GSCW**

Abkürzungen:				***Abbreviations:***			
	P(ass)	=	***entspricht Prüfgrundlage***		***P(ass)***	=	***passed***
	F(ail)	=	***entspricht nicht Prüfgrundlage***		***F(ail)***	=	***failed***
	N/A	=	***nicht anwendbar***		***N/A***	=	***not applicable***
	N/T	=	***nicht getestet***		***N/T***	=	***not tested***

Test Result Summary

Clause	Test Item	Result
15.247(b) (3)	Conducted Peak RF Output Power Test	Pass
15.247 (a) (2)	6dB Bandwidth	Pass
15.247 (e)	Power Spectral Density	Pass
15.247 (d)	Band-edge Compliance	Pass
15.209	Spurious Radiated Emissions	Pass

Content

List of Test and Measurement Instruments

TUV Rheinland India Pvt Ltd,Bangalore

List of Test and Measurements

Equipment	Manufacturer	Type	S/N	Calibration Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100661	17.02.2011
Environmental Test Chamber	Votsch	VC^{3}4100	595661131110010	03.07.2011

Wipro Technologies, Bangalore

List of Test and Measurements

Equipment	Manufacturer	Type	S/N	Calibration Due Date
EMI Test Receiver	Rohde & Schwarz	ESIB40	100306	24.07.2011
Hybrid Log Periodic Antenna	TDK	HLP3003C	130334	17.02.2011
Broadband Horn Antenna	Schwarzbeck Mess-Electronik	BBHA9170	9170-344,2007	14.02.2011
Double Ridged Horn Antenna	Schwarzbeck Mess-Electronik	BBHA9120D	2008	14.08.2011
Pre-Amplifier	TDK-RFSolution	PA-02	100008	15.02.2011

Testing Facilities

1) TÜV Rheinland India Pvt. Ltd.
   #7, Whitefield Main Road,
   Alpha Tower, Sigma Soft Tech park,
   Varthur Kodi, Bangalore, India

2) Wipro Technologies
   Survey No. 70, 77, 78 / 8A, Dodda Kannelli,
   Sarjapur Road, Bangalore – 560 035
   India

General Product Information

Product Function and Intended Use

A Secure Door Control module for single door access control applications. The 4G Secure control is an input/output door control module used in combination with 4G V-Flex Lite and 4G CR-Pass etc. The module is placed on secure side of the door and adds security for single door access locations. Communication between 4G device and the 4G Secure control module is Secured RS 485 for

Additional security 4G Secure control can be also communicated through Ethernet or WLAN (option)

Ratings and System Details

Operating Frequency	2412 -2462 MHz
No. of channel	11
Channel Spacing	5MHz
Transmitted Power	802.11b : 11.45 dBm 802.11g : 10.86dBm
Modulation Type	DBPSK,DQPSK,CCK,BPSK,QPSK, 16QAM, & 64QAM
Data Rate	802.11b Mode : 1,2, 5.5 &11 Mbps 802.11g Mode: 6,9,12,18,24 36,48 & 54 Mbps
Antenna Type	Swivel
Number of antenna	One
Antenna Gain	5dBi
Supply Voltage	12 – 24V DC, 0.5 – 0.25A
Dimensions	100 x 111 x 31 mm
Environmental	Operating Temperature: 0°C to 50°C Relative Humidity : - Not more than 80%

Test Conditions: 12-24 VDC

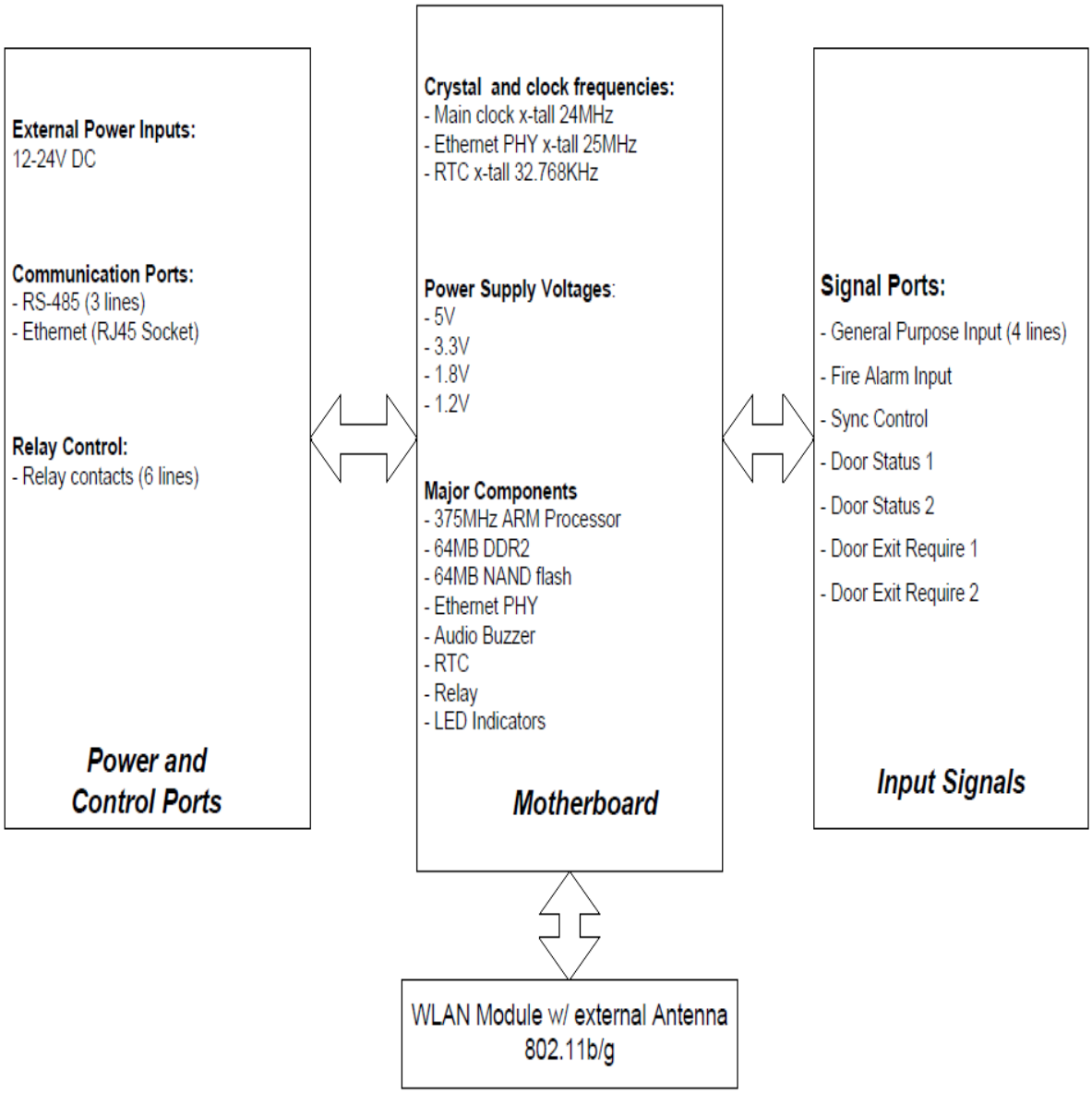
Environmental conditions:

Temperature: +23 º C **RH:** 62%

Operation Descriptions

4G Secure control provides Secured RS-485 communication between 4G lite device and access control device. Secured control device can be used in communication with any 4G lite devices (up to quantity of 4) for control up 2 Physical doors. The secure control device is placed on the Secure side of the installation. Secure control must be placed in area that is accessible only by an administrator and not by users during normal operation. 4G Secure control can also be communicated through Ethernet or WLAN (option)

Block Diagram:



Test Set-up and Operation Mode

Principle of Configuration Selection

The test was performed under continuous transmission to obtain the maximum emissions.

Test Operation and Test Software

A keypad embedded on PCB was used to enable the continuous transmission and changing channels (low/mid/high) on the EUT for the tests in this report.

Special Accessories and Auxiliary Equipment

The EUT was tested together with the following additional accessory:

- A Cisco Router was used to configure the EUT in to required channels and the Data rates

Countermeasures to achieve EMC Compliance

- None

Test Measurement Combinations.

Pre-Scan has been conducted to determine the worst case mode from all possible combination between available modulations, data rate.
Following channels and Date rates (with corresponding Modulation type) are selected for the final tests as listed below.

Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
802.11b	1 to 11	1,6,11	DQPSK	2
802.11g	1 to 11	1,6,11	16QAM	36

Ancillary Equipment

The EUT was tested while connected to the following representative configuration of ancillary equipment necessary to exercise the ports during tests

Equipment One	
Description	Wireless-N Home Router
Brand name	LINKSYS by Cisco
Model Number	WRT120N
Serial number	JUT00K217451

Table of carrier frequencies

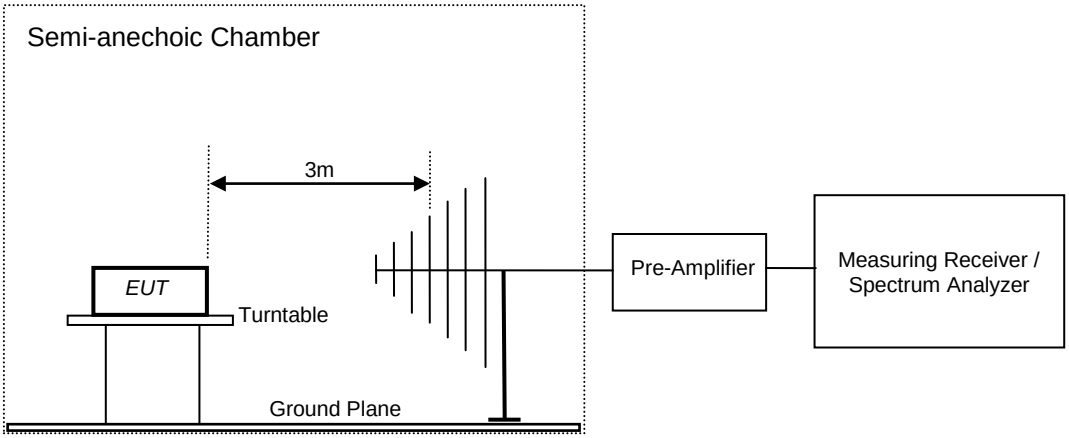
Frequency Band	Channel No.	Frequency (MHz)
2400-2483.5 MHz	01	2412
	02	2417
	03	2422
	04	2427
	05	2432
	06	2437
	07	2442
	08	2447
	09	2452
	10	2457
	11	2462

Test Methodology

Radiated Emission Test

The radiated emission measurement was performed according to the procedures in ANSI C63.4-2003. The equipment under test (EUT) was placed at the middle of the 80 cm high turntable, and the EUT is 3 meters far from the measuring antenna. The turntable was rotated 360° for obtaining the maximum emission. The height of the measuring antennas was scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained. The measurement above 1000MHz was performed by horn antenna. The measurement below 30MHz was performed by loop antenna.

The EUT was rotated around the X-, Y-, and Z-Axis and the results from worst case axis are recorded.



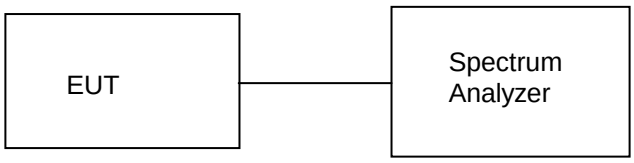
Test Results

Conducted Peak Output Power **Section 15.247(b)(3)**

Result **Pass**

Test Specification	FCC 15.247 (b)(3)
Measurement Bandwidth (RBW)	10 MHz
Detector	Peak
Requirement	<1 watt (30dBm) for systems using digital Modulation

Test Method:

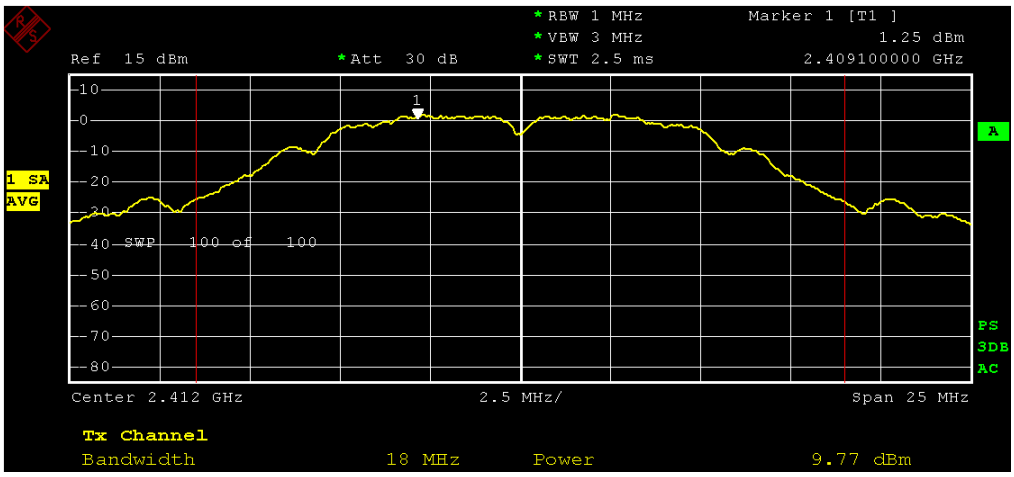


Test Result:

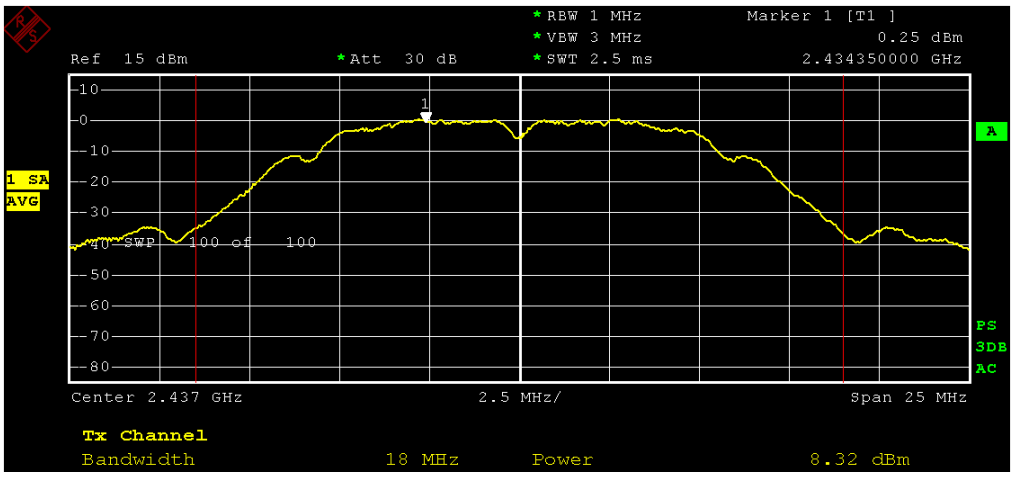
802.11b Mode

Cable Loss: 1.68dB

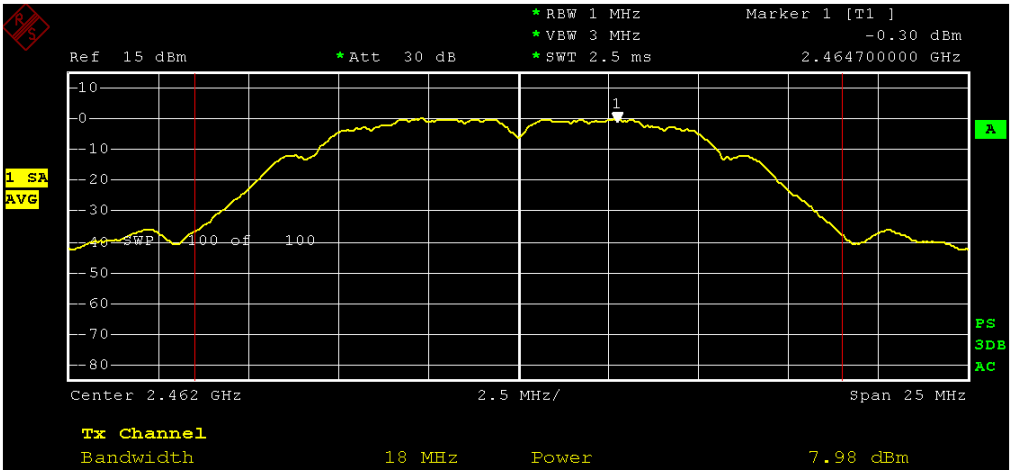
Channel	Frequency (MHz)	Measured RF Output power (dBm)	Cable Loss (dB)	Total Output power (dBm)	Limit (dBm)
Low	2412	09.77	1.68	11.45	30
Mid	2437	08.32	1.68	10.00	30
High	2462	07.98	1.68	09.66	30



Channel Frequency: 2412 MHz



Channel Frequency: 2437 MHz

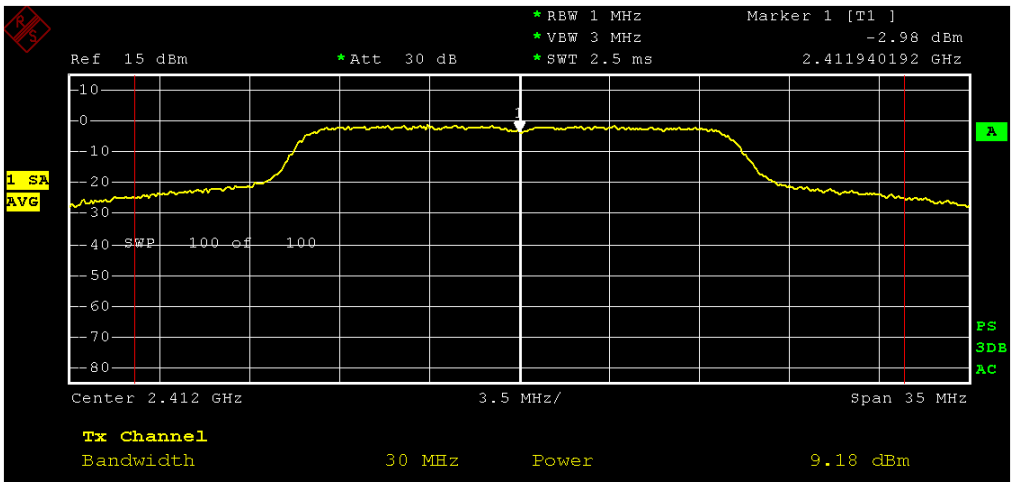


Channel Frequency: 2462 MHz

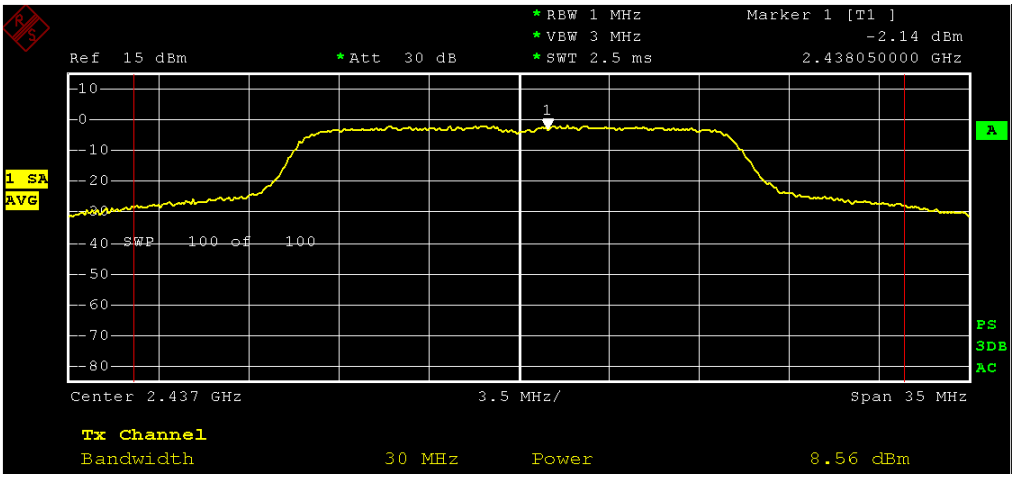
802.11g Mode

Cable Loss: 1.68dB

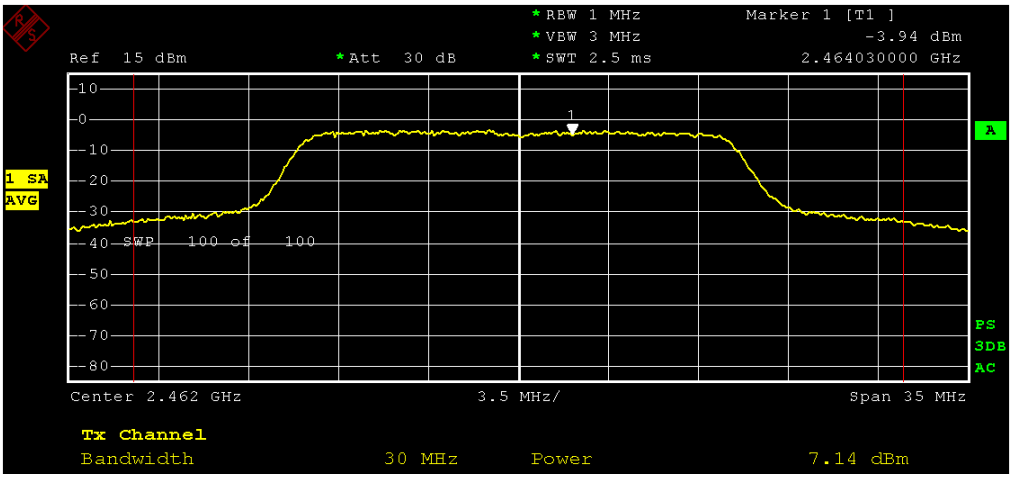
Channel	Frequency (MHz)	Measured RF Output power (dBm)	Cable Loss (dB)	Total Output power (dBm)	Limit (dBm)
Low	2412	9.18	1.68	10.86	30
Mid	2437	8.56	1.68	10.24	30
High	2462	7.14	1.68	08.82	30



Channel Frequency: 2412 MHz



Channel Frequency: 2437 MHz



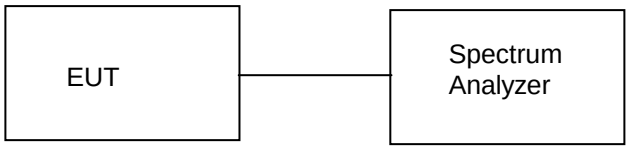
Channel Frequency: 2462 MHz

6 dB Bandwidth **Section 15.247(a)(2)**

Result **Pass**

Test Specification FCC Part 15 Section 15.247 (a) (2)
Detector Function Peak
Requirement The minimum 6 dB bandwidth shall be at least 500 kHz.

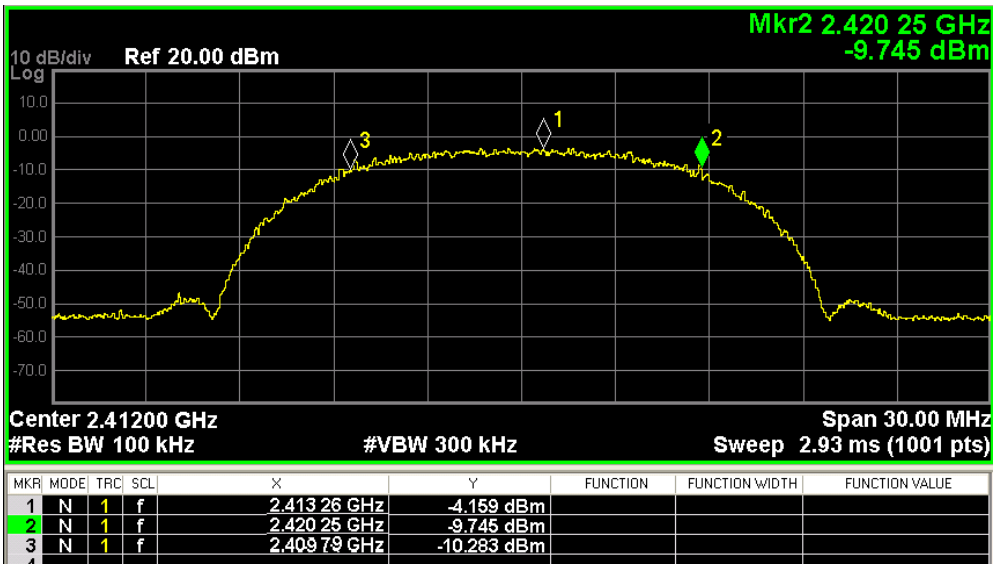
Test Method:

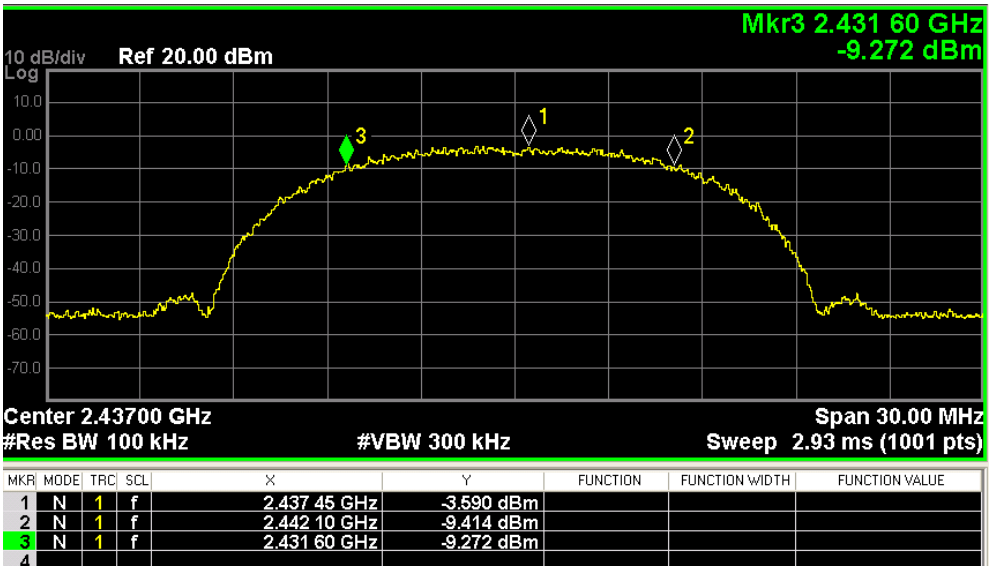


Test Result:

802.11b Mode
Cable Loss: 1.68dB

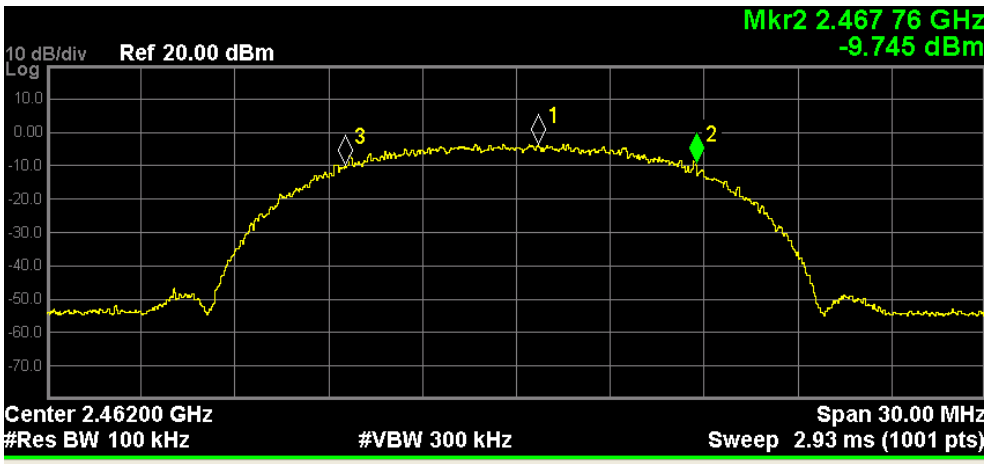
Carrier Frequency (MHz)	Lower Frequency (MHz)	Upper Frequency (MHz)	6 dB Bandwidth (MHz)	99% OBW
2412	2409.79	2420.25	10.46	13.60
2437	2431.60	2442.10	10.50	13.89
2462	2456.54	2467.76	11.22	13.55





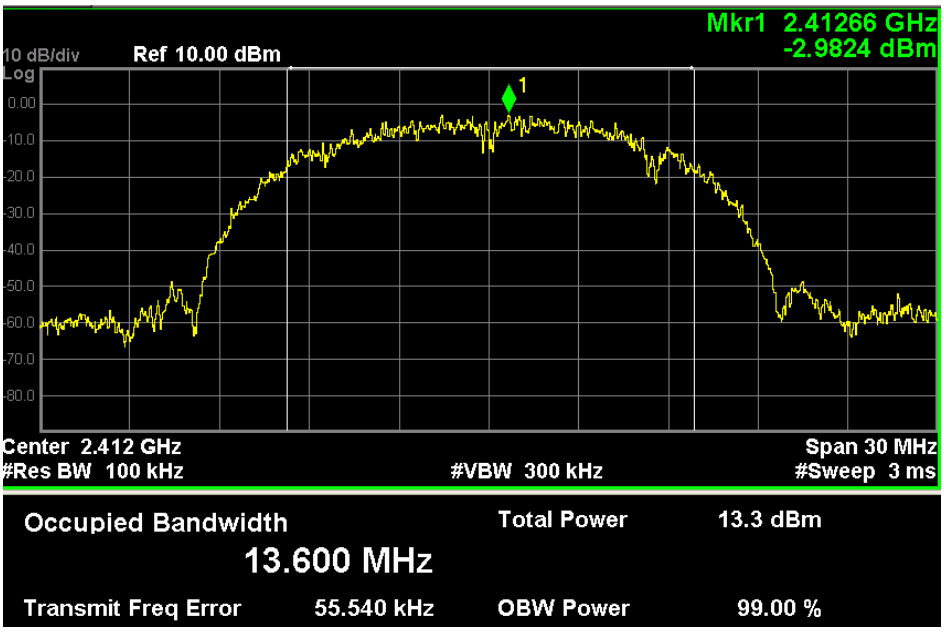
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.437 45 GHz	-3.590 dBm			
2	N	1	f	2.442 10 GHz	-9.414 dBm			
3	N	1	f	2.431 60 GHz	-9.272 dBm			
4								

Channel Frequency 2437 MHz

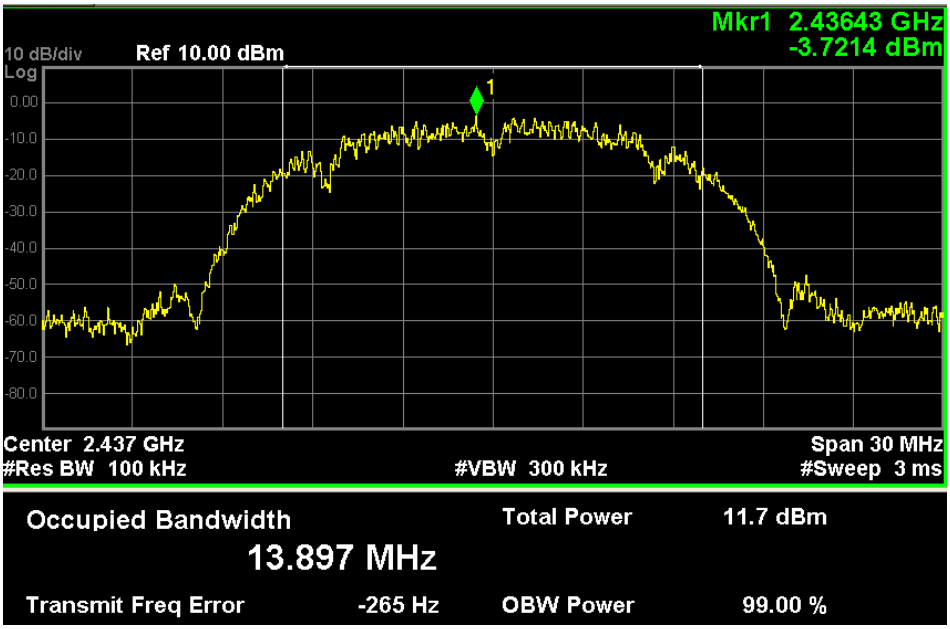


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.462 72 GHz	-4.159 dBm			
2	N	1	f	2.467 76 GHz	-9.745 dBm			
3	N	1	f	2.456 54 GHz	-10.283 dBm			
4								

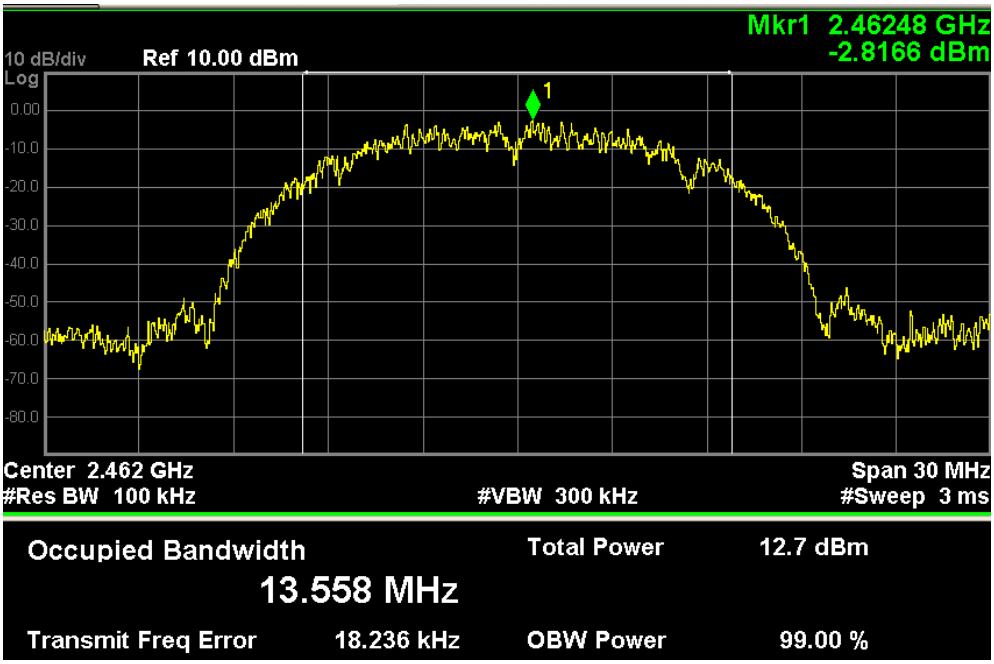
Channel Frequency 2462 MHz



OBW: Channel Frequency 2412 MHz



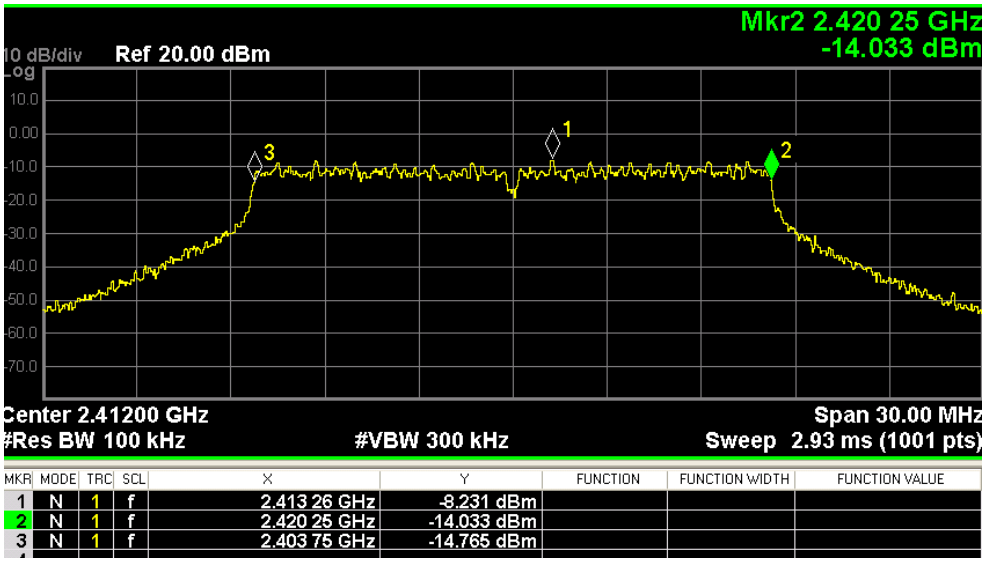
OBW: Channel Frequency 2437 MHz



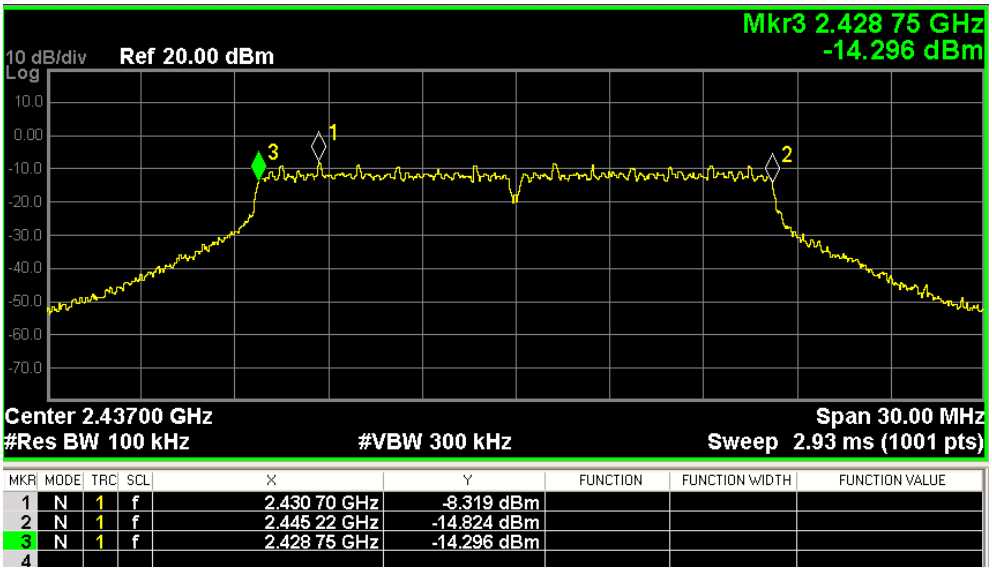
OBW: Channel Frequency 2462 MHz

802.11g Mode
Cable Loss: 1.68dB

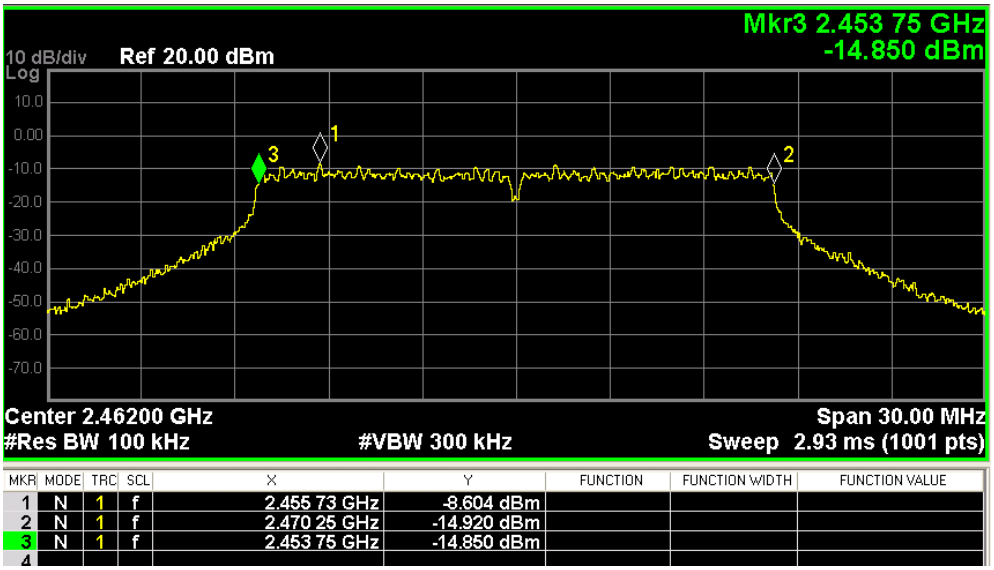
Carrier Frequency (MHz)	Lower Frequency (MHz)	Upper Frequency (MHz)	6 dB Bandwidth (MHz)	99% OBW
2412	2403.75	2420.75	17.00	16.40
2437	2428.75	2445.22	16.47	16.37
2462	2453.75	2470.25	16.50	16.38



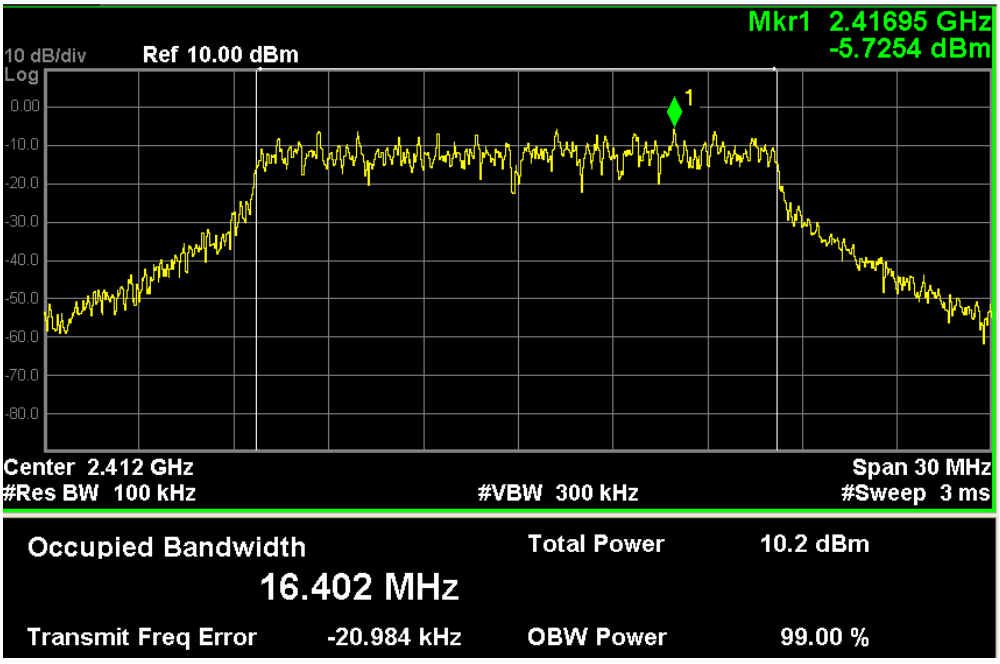
Channel Frequency 2412 MHz



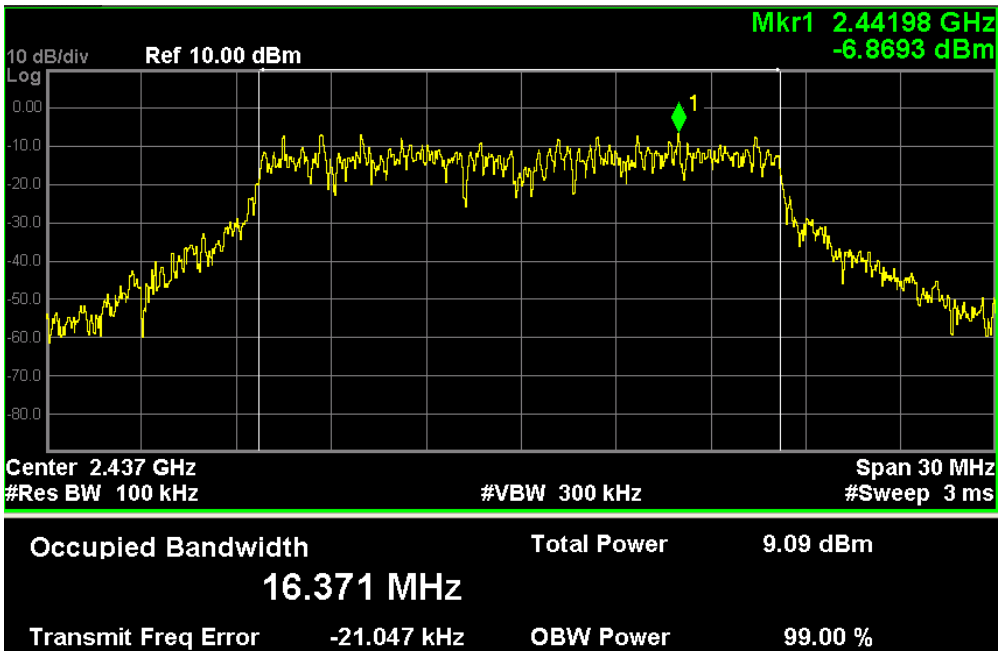
Channel Frequency 2437 MHz



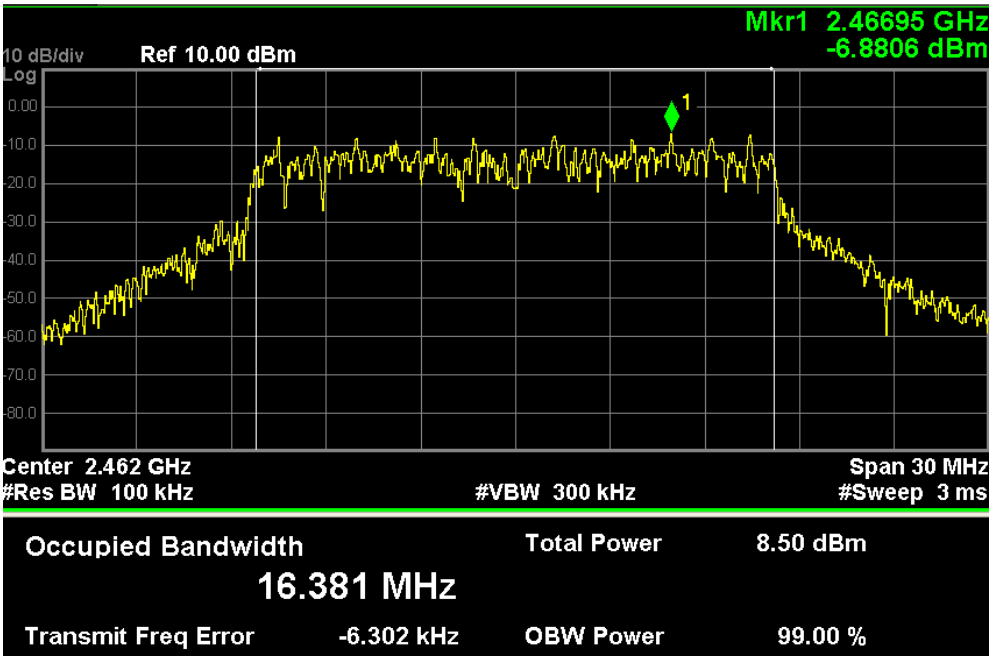
Channel Frequency 2462 MHz



OBW: Channel Frequency 2412 MHz



OBW: Channel Frequency 2437 MHz



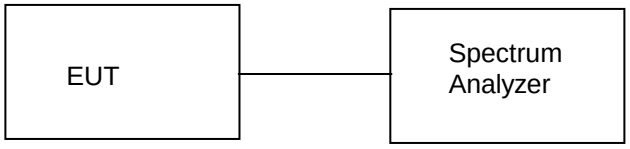
OBW: Channel Frequency 2462 MHz

Power Spectral Density **Section 15.247(e)**

Result **Pass**

Test Specification	FCC Part 15 Section 15.247 (e)
Detector Function	Peak
Requirement	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.

Test Method:



Note:

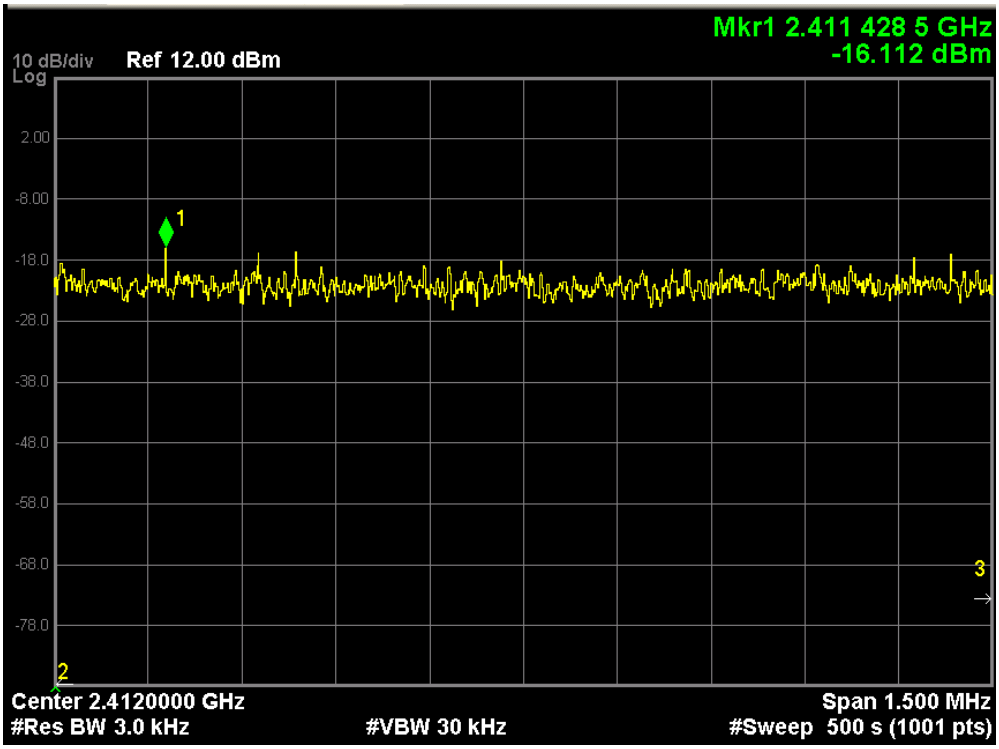
The duty cycle used for the test below is 35%. The corresponding correction factor of 4.5 dB is been added to the Emission results

Test Result:

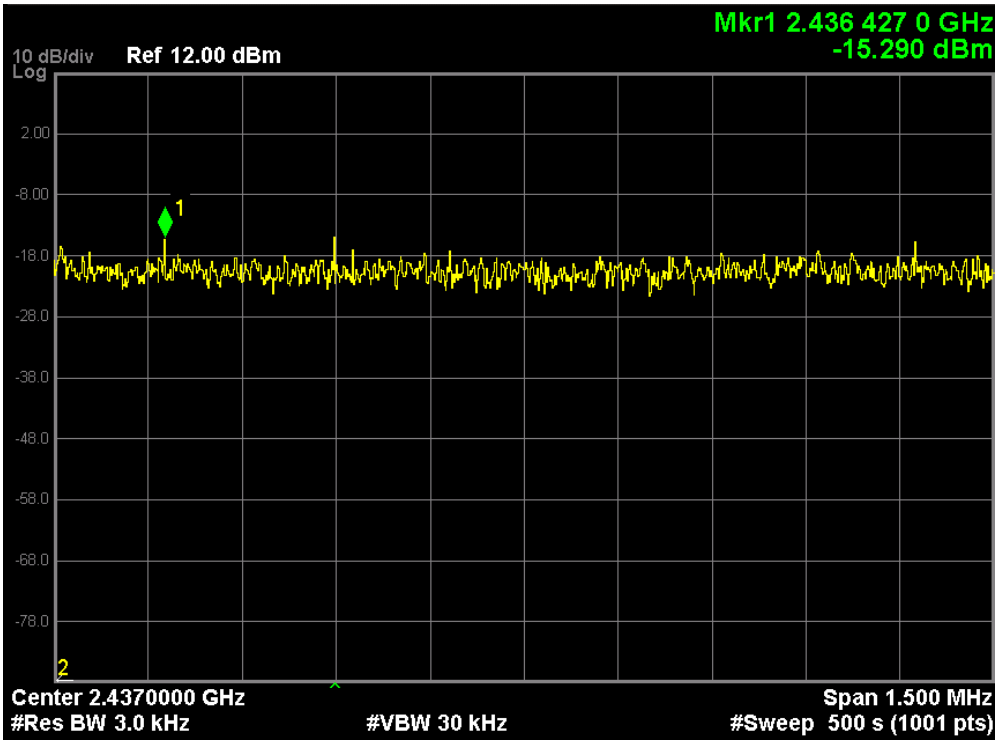
802.11b Mode

Cable Loss: 1.68dB

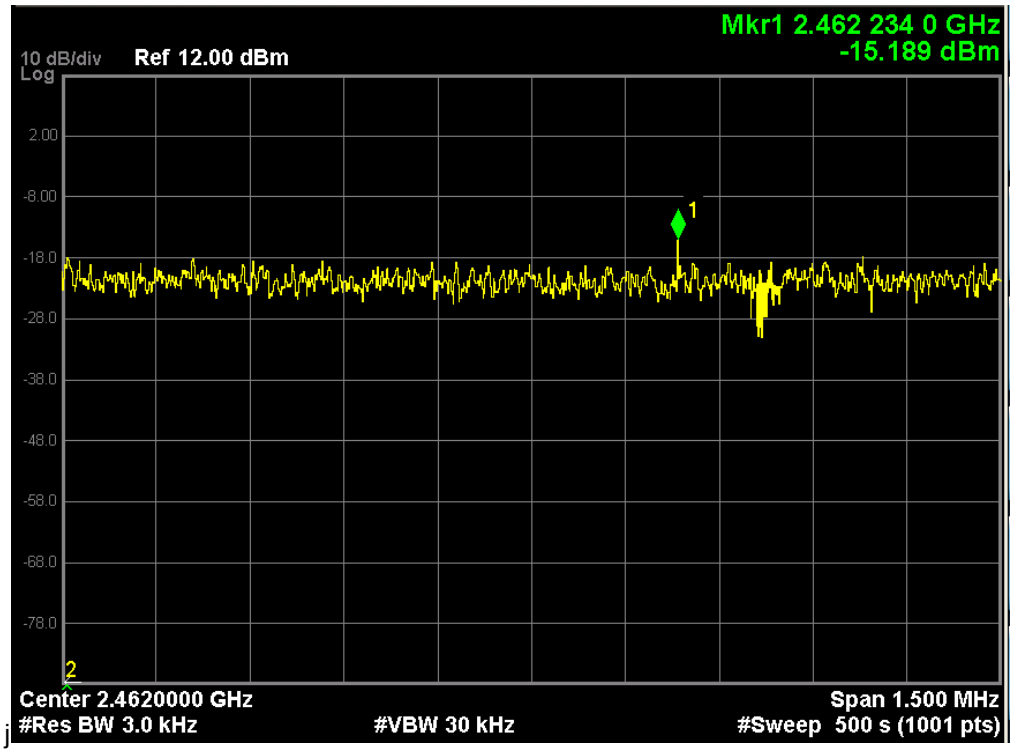
Frequency (MHz)	Measured RF Output power (dBm)	Cable Loss (dB)	PSD (dBm)	Limit (dBm)
2412	-16.11	1.68	-9.93	8.00
2437	-15.29	1.68	-9.11	8.00
2462	-15.18	1.68	-9.08	8.00



Channel Frequency 2412MHz



Channel Frequency 2437 MHz

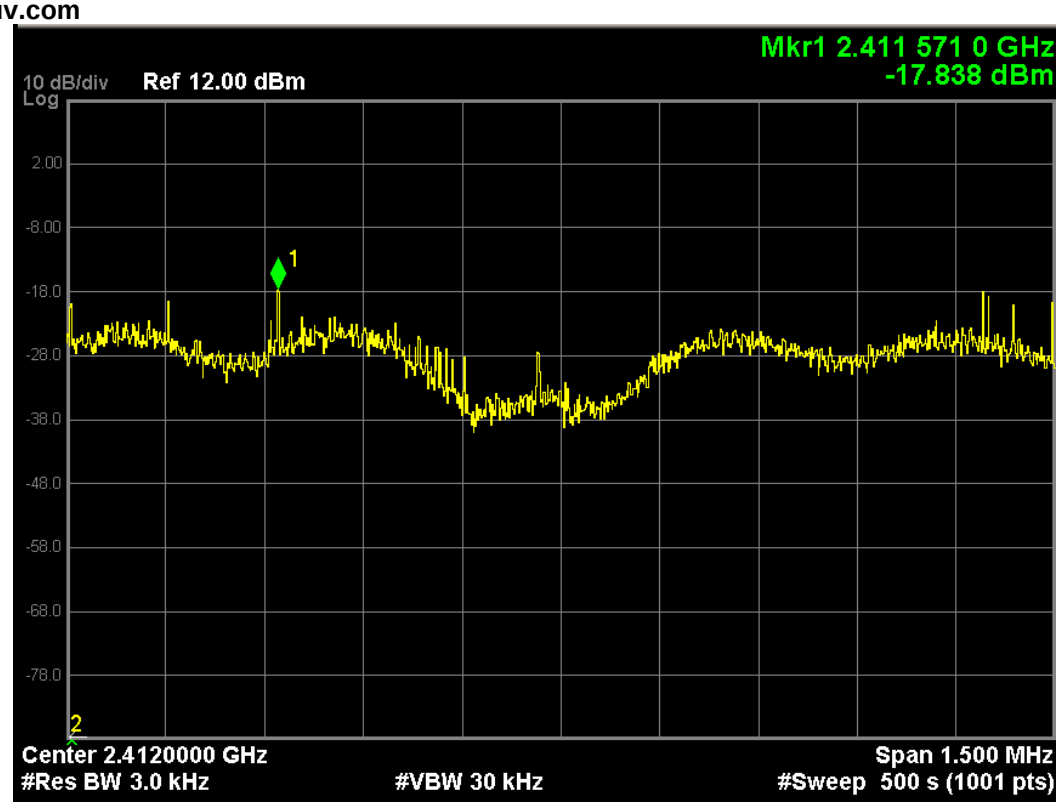


Channel Frequency 2462 MHz

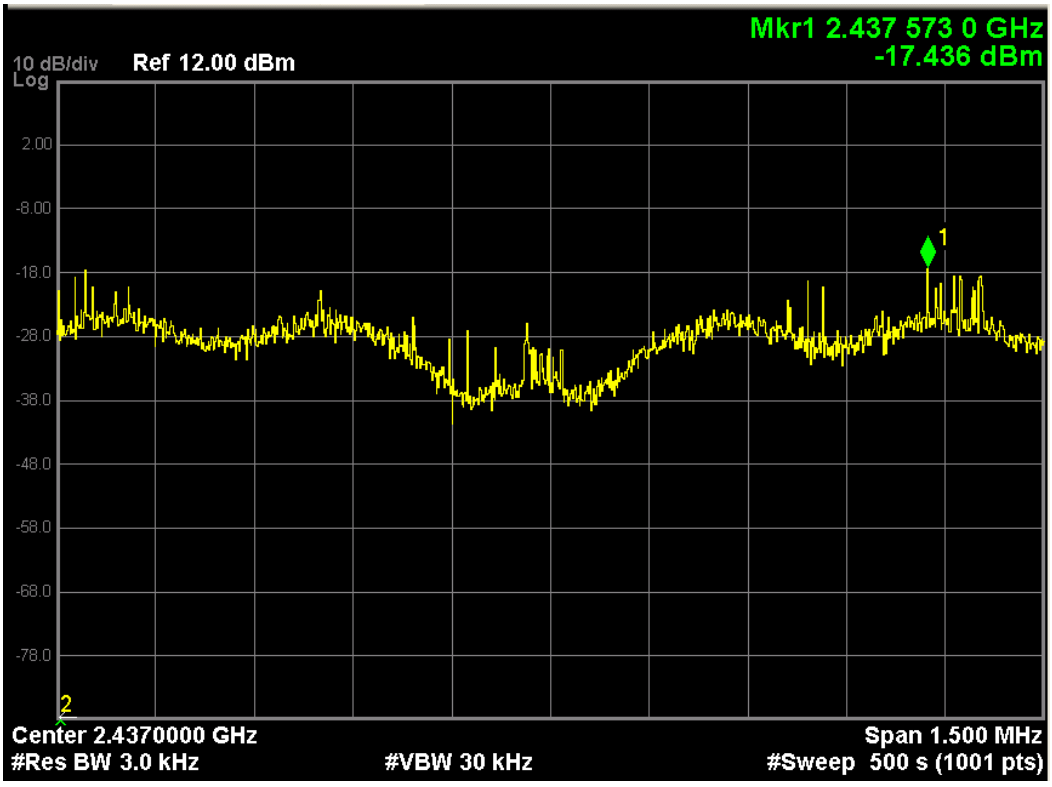
802.11g Mode

Cable Loss: 1.28dB

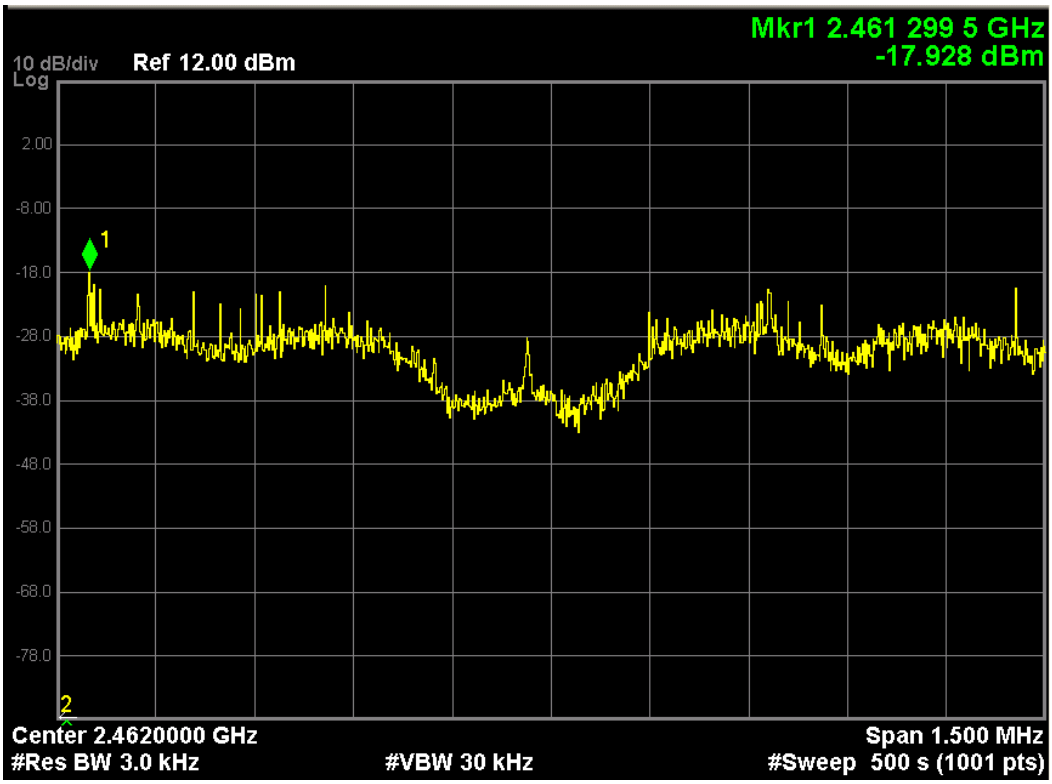
Frequency (MHz)	Measured RF Output power (dBm)	Cable Loss (dB)	PSD (dBm)	Limit (dBm)
2412	-17.83	1.68	-11.65	8.00
2437	-17.43	1.68	-11.25	8.00
2462	-17.92	1.68	-11.74	8.00



Channel Frequency 2412 MHz



Channel Frequency 2437 MHz



Channel Frequency 2462 MHz

Band-edge Compliance **Section 15.247 (d)**

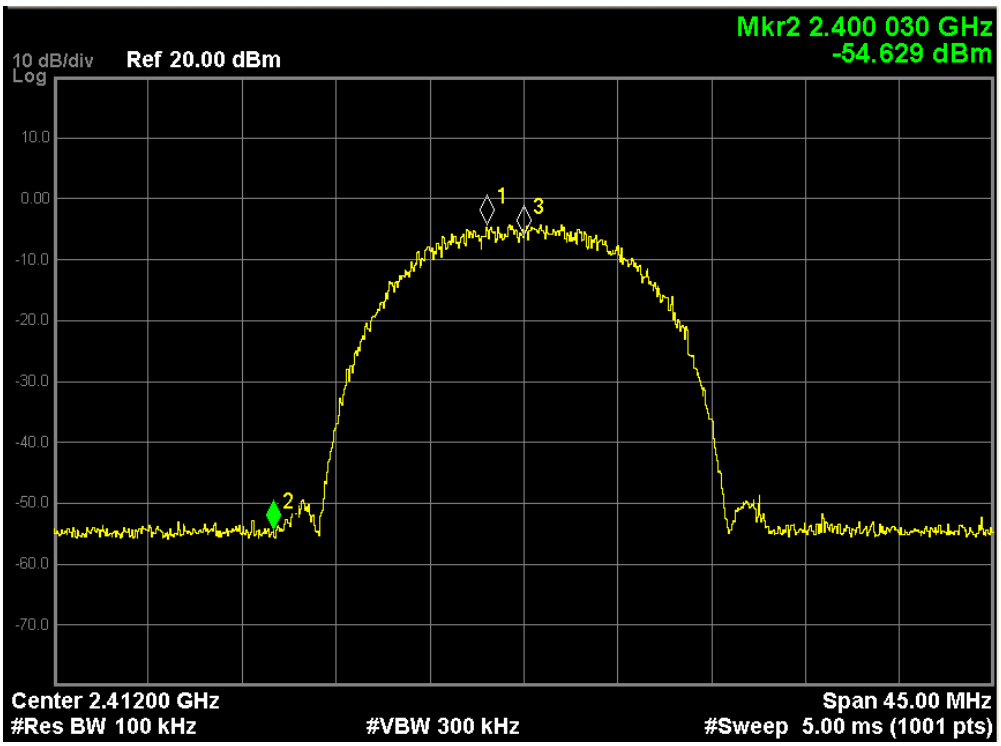
Result **Pass**

Test Specification	FCC Part 15, Subpart C
Detector Function	Peak
Requirement	In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

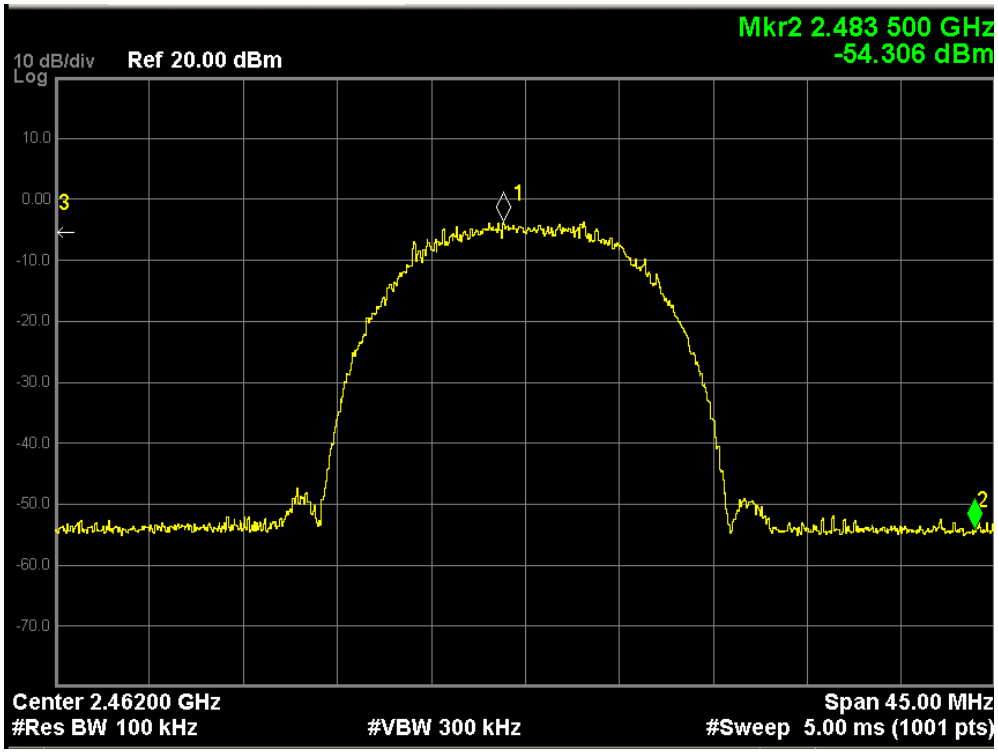
Test Result:

802.11b Mode

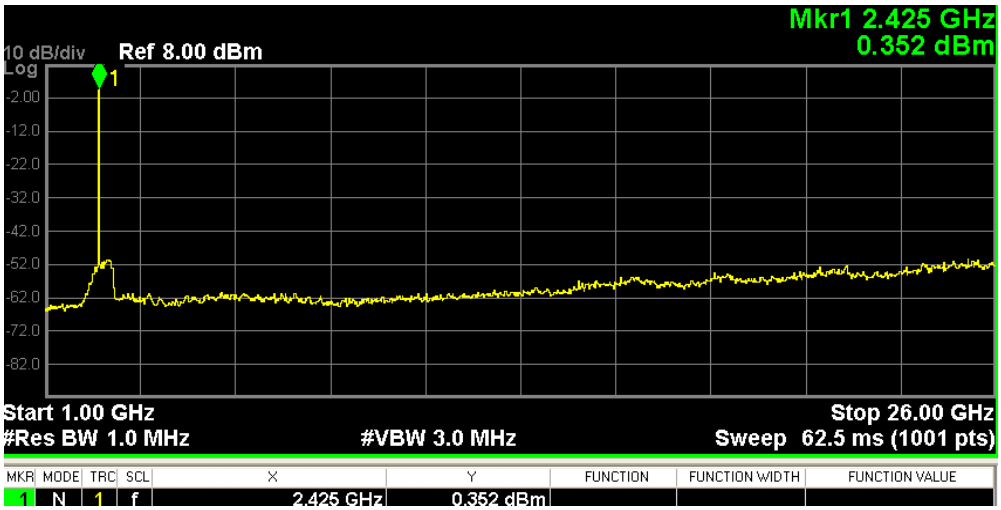
Channel	Fundamental Frequency (MHz)	Value at Band Edge		Limit (dB)	Remarks
		Frequency (MHz)	Value (dB)		
Low	2412	2400.0	-54.62	-20	Pass
High	2462	2483.5	-54.30	-20	Pass



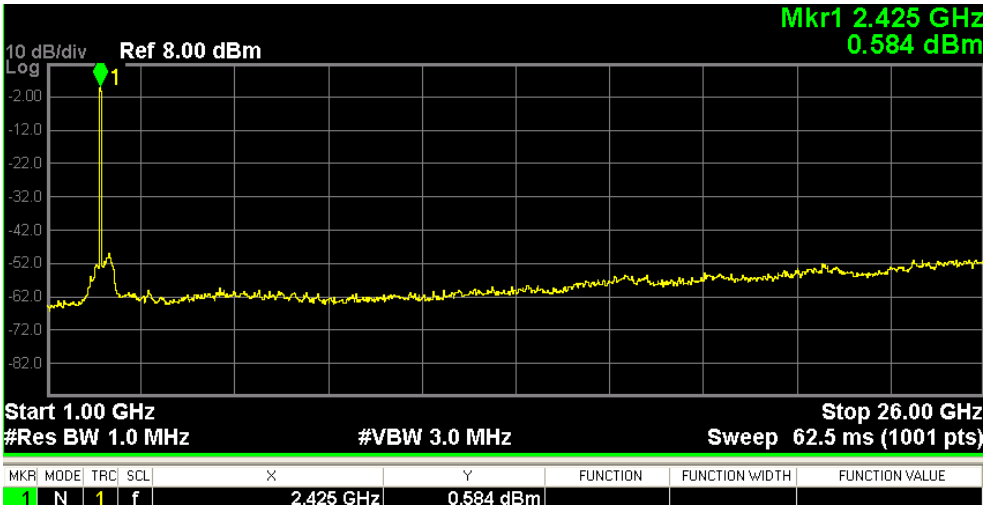
Channel Frequency 2412 MHz



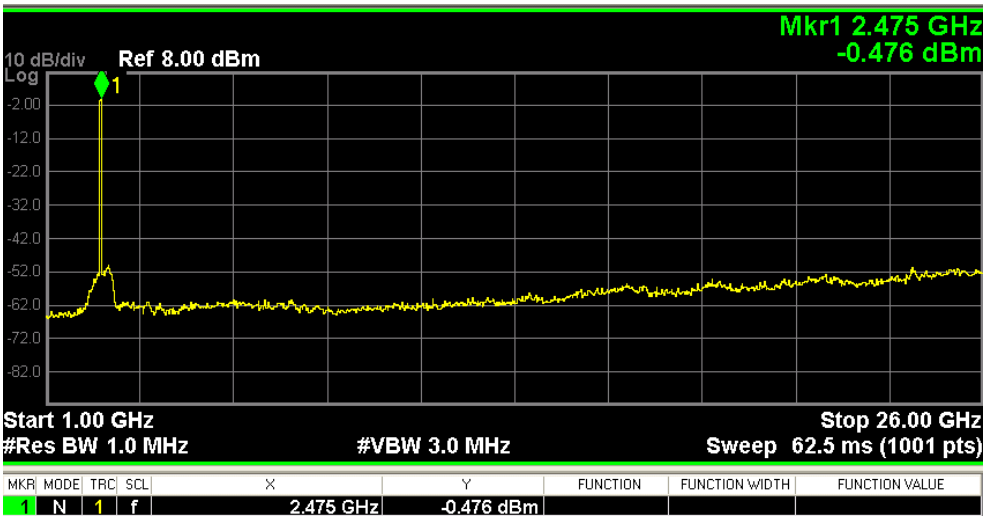
Channel Frequency 2462 MHz



Channel Low 2412MHz



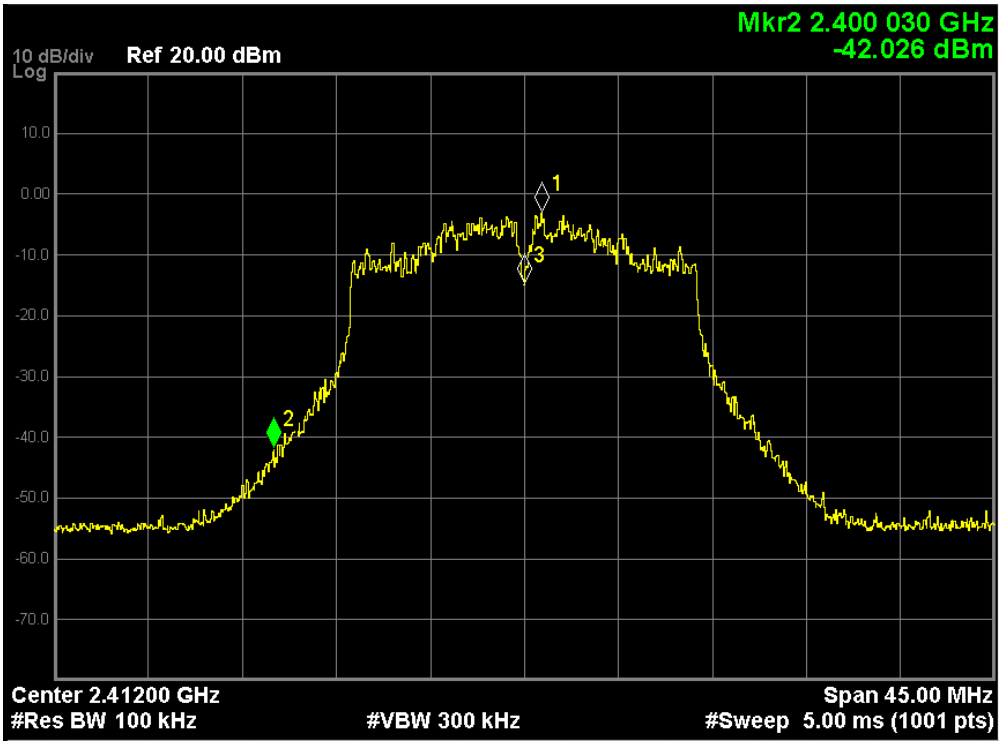
Channel Mid 2437MHz



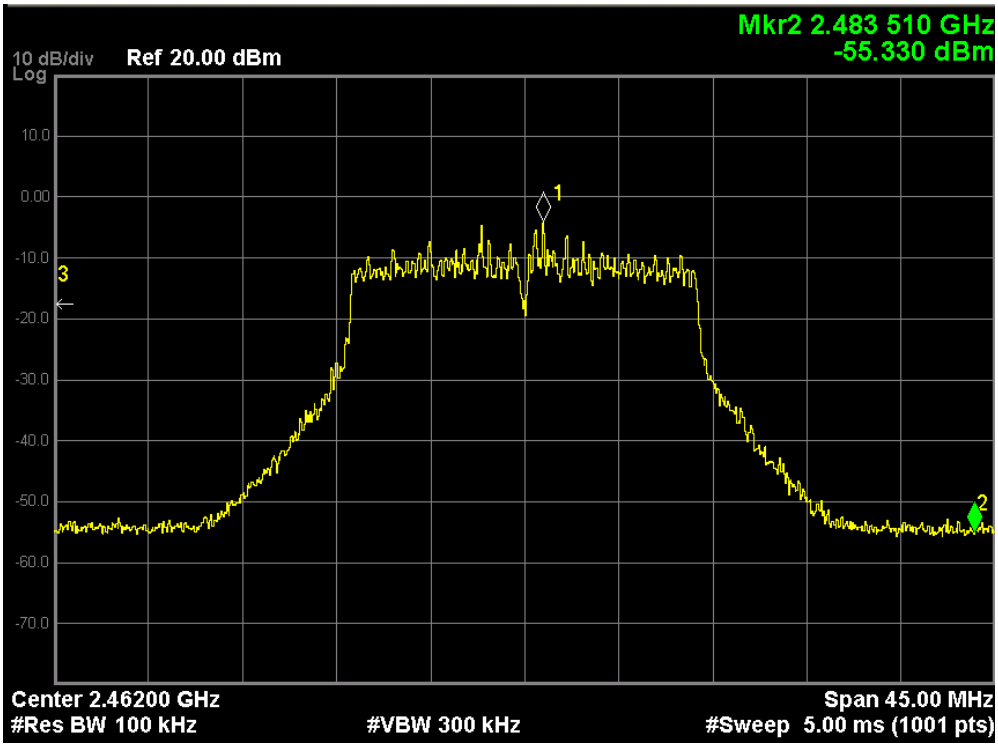
Channel High 2462MHz

802.11g Mode

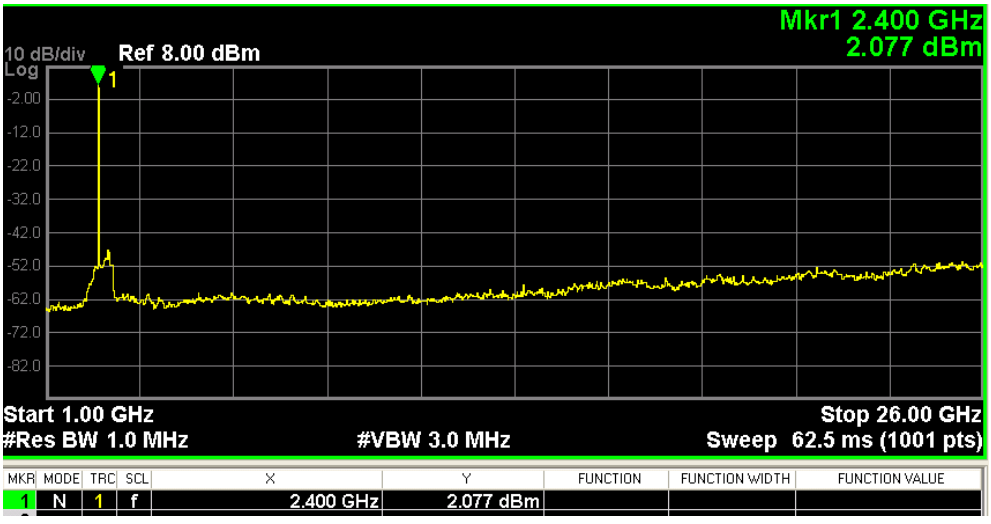
Channel	Fundamental Frequency (MHz)	Value at Band Edge		Limit (dB)	Remarks
		Frequency (MHz)	Value (dB)		
Low	2412	2400.0	-42.06	-20	Pass
High	2462	2483.5	-55.33	-20	Pass



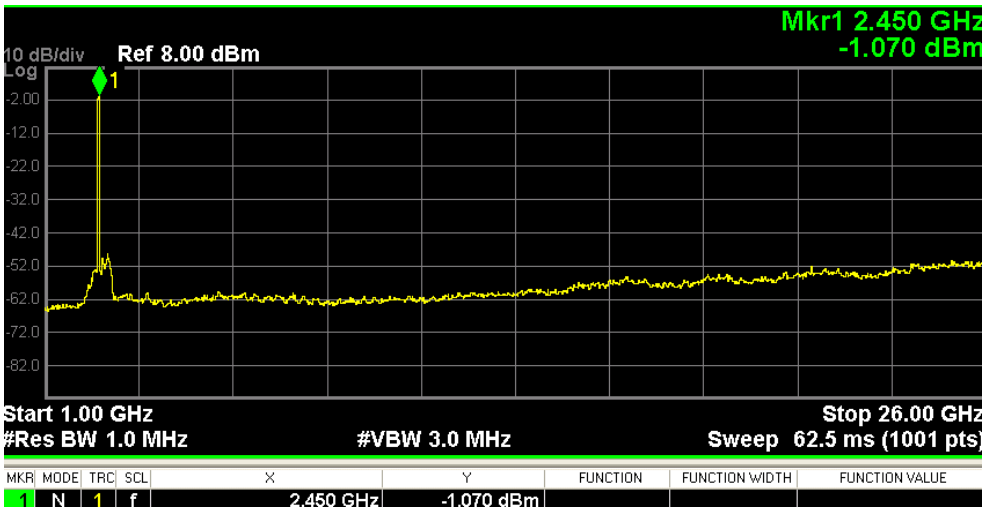
Channel Frequency 2412 MHz



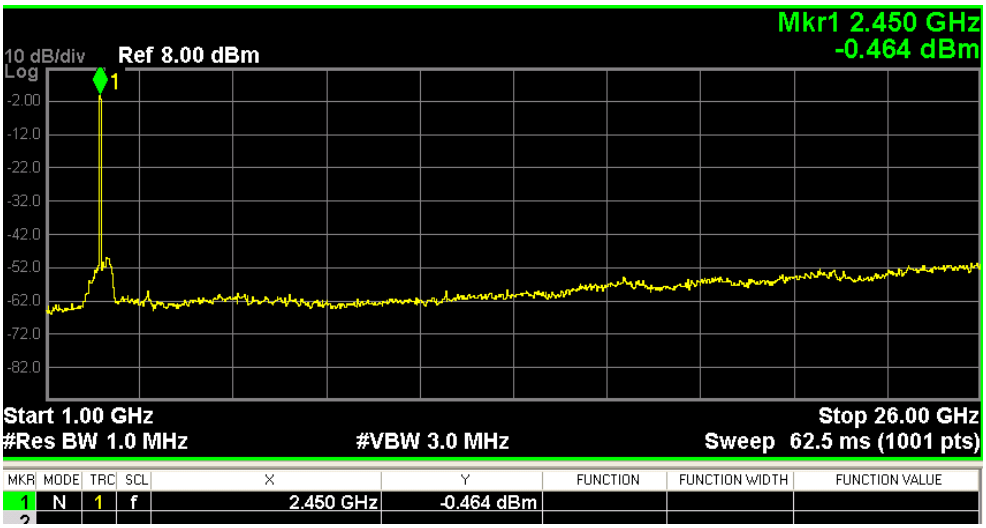
Channel Frequency 2462 MHz



Channel Mid 2412MHz



Channel Mid 2437MHz



Channel Mid 2462MHz

Spurious Radiated Emissions **Section 15.209**

Result **Pass**

Test Specification	F CC 15.207
Test Method	ANSI C63.4-2003
Measurement Location	Semi Anechoic Chamber
Supply Voltage	12 -24 VDC
Measuring Frequency Range	12MHz – 10GHz(Up to 10th harmonic of the highest fundamental frequency)
Measuring Distance	3m
Detection	QP for frequency below 1GHz, Average for frequency above 1GHz
Requirement	As per bellowed mentioned in table

Limit for Radiated Emission of Section 15.209:

Frequency (MHz)	Field strength (μV) at 3m range	Field strength (dBμV/m) at 3m range
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

Remark: * the limit shows in the table above of frequency range 1.705-30MHz are at 30 meter range, which corresponds to 49.5dBμV/m at 3m range by extrapolation calculation and the measurement of loop antenna.

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

Note:

The Observed duty cycle is 35%. The corresponding correction factor of 9 dB is been added to the Emission results

Test Results
802.11b Mode 1Mbps

Channel (MHz)	Antenna Polarization	Spurious Emission (MHz)	Field strength (dBµV/m)	Limit (dBm)	Margin (dbm)
2412	H	229.20	29.30	46.00	-16.70
		231.45	29.52	46.00	-16.48
		240.40	28.63	46.00	-17.37
		2390.00 (P)	NF	74.00	-
		2390.00(Av)	NF	54.00	-
		2412.00 (P)	77.00	*	-
		2412.00 (Av)	59.33	*	-
		4824.00 (P)	53.12	74.00	-20.88
		4824.00 (Av)	32.12	54.00	-21.88
	V	78.95	29.13	40.00	-10.87
		229.25	30.34	46.00	-15.66
		600.00	32.96	46.00	-13.04
		2390.00 (P)	NF	74.00	-
		2390.00(Av)	NF	54.00	-
		2412.00 (P)	80.02	*	-
		2412.00 (Av)	59.54	*	-
		4824.00 (P)	55.25	74.00	-18.75
		4824.00 (Av)	33.26	54.00	-20.74
2437	H	229.20	29.30	46.00	-16.70
		231.45	29.52	46.00	-16.48
		238.06	29.06	46.00	-16.94
		2437.00 (P)	68.16	*	-
		2437.00 (Av)	53.66	*	-
		4874.00 (P)	46.61	74.00	-27.39
		4874.00 (Av)	33.80	54.00	-20.02
	V	78.95	29.13	40.00	-10.87
		229.25	30.34	46.00	-15.66
		231.45	27.20	46.00	-18.80
		2437.00 (P)	69.72	*	-
		2437.00 (Av)	62.39	*	-
		4874.00 (P)	47.16	74.00	-26.84
		4874.00 (Av)	36.46	54.00	-17.54
2462	H	229.30	28.45	46.00	-17.55
		231.45	29.43	46.00	-16.57
		236.00	28.69	46.00	-17.31
		599.65	26.25	46.00	-19.75
		2462.00 (P)	69.82	*	-
		2462.00 (Av)	54.73	*	-
		2483.50 (P)	NF	74.00	-
		2483.50 (Av)	NF	54.00	-
		4924.00(P)	46.95	74.00	-27.05
		4924.00(Av)	33.63	54.00	--20.37
	V	78.95	29.13	40.00	-10.87
		229.25	30.34	46.00	-15.66
		600.00	32.24	46.00	-13.76
		2462.00 (P)	71.72	*	-
		2462.00 (Av)	64.65	*	-
		2483.50 (P)	NF	74.00	-
		2483.50 (Av)	NF	54.00	-
		4924.00(P)	46.11	74.00	-27.89
		4924.00(Av)	41.96	54.00	-12.04

* →Operating Frequency
NF--> Noise Floor And 2390 MHz & 2483.50 MHz are Restricted Bands
Noise floor = 35.25 dBuV/m (Peak) at 2390 MHz
24.38 dBuV/m (Average) at 2390 MHz
38.54 dBuV/m (Peak) at 2483.5 MHz
30.38 dBuV/m (Average) at 2483.5 MHz

2Mbps

Channel (MHz)	Antenna Polarization	Spurious Emission (MHz)	Field strength (dBµV/m)	Limit (dBm)	Margin (dbm)
2412	H	229.25	28.72	46.00	-17.28
		233.80	29.27	46.00	-16.73
		600.00	27.42	46.00	-18.58
		2390.00 (P)	NF	74.00	-
		2390.00(Av)	NF	54.00	-
		2412.00 (P)	68.77	*	-
		2412.00 (Av)	50.74	*	-
		4824.00 (P)	58.25	74.00	-15.75
		4824.00 (Av)	43.83	54.00	-10.17
	V	79.80	28.31	40.00	-11.69
		229.25	29.05	46.00	-16.95
		600.01	32.84	46.00	-13.16
		2390.00 (P)	NF	74.00	-
		2390.00(Av)	NF	54.00	-
		2412.00 (P)	71.50	*	-
		2412.00 (Av)	60.35	*	-
		4824.00 (P)	60.98	74.00	-13.02
		4824.00 (Av)	37.17	54.00	-16.83
2437	H	229.25	28.72	46.00	-17.28
		233.80	29.27	46.00	-16.73
		236.05	29.47	46.00	-16.53
		2437.00 (P)	69.20	*	-
		2437.00 (Av)	54.90	*	-
		4874.00 (P)	45.91	74.00	-28.09
		4874.00 (Av)	39.43	54.00	-14.57
	V	79.80	28.31	40.00	-11.69
		229.25	29.05	46.00	-16.95
		236.05	25.05	46.00	-20.95
		2437.00 (P)	69.72	*	-
		2437.00 (Av)	59.29	*	-
		4874.00 (P)	50.77	74.00	-23.23
		4874.00 (Av)	40.36	54.00	-13.64
2462	H	229.30	28.95	46.00	-17.05
		231.50	28.80	46.00	-17.20
		238.20	27.90	46.00	-18.10
		2462.00 (P)	69.23	*	-
		2462.00 (Av)	55.32	*	-
		2483.50 (P)	NF	74.00	-
		2483.50 (Av)	NF	54.00	-
		4924.00(P)	45.95	74.00	-28.05
		4924.00(Av)	36.53	54.00	-17.47
	V	229.25	29.19	46.00	-16.81
		231.55	28.71	46.00	-17.29

		600.00	32.12	46.00	-13.88
		2462.00 (P)	71.72	*	-
		2462.00 (Av)	53.44	*	-
		2483.50 (P)	NF	74.00	-
		2483.50 (Av)	NF	54.00	-
		4924.00(P)	46.11	74.00	-27.89
		4924.00(Av)	36.60	54.00	-17.40

* →Operating Frequency
NF--> Noise Floor And 2390 MHz & 2483.50 MHz are Restricted Bands
Noise floor = 35.25 dBuV/m (Peak) at 2390 MHz
24.38 dBuV/m (Average) at 2390 MHz
38.54 dBuV/m (Peak) at 2483.5 MHz
30.38 dBuV/m (Average) at 2483.5 MHz

11 Mbps

Channel (MHz)	Antenna Polarization	Spurious Emission (MHz)	Field strength (dBµV/m)	Limit (dBm)	Margin (dbm)
2412	H	229.30	29.34	46.00	-16.66
		233.75	30.01	46.00	-15.99
		240.50	28.24	46.00	-17.76
		600.00	26.97	46.00	-19.03
		2390.00 (P)	NF	74.00	
		2390.00(Av)	NF	54.00	
		2412.00 (P)	70.98	*	-
		2412.00 (Av)	54.12	*	-
		4824.00 (P)	46.17	74.00	-27.83
		4824.00 (Av)	35.59	54.00	-18.41
	V	229.30	30.03	46.00	-15.97
		231.55	29.07	46.00	-16.93
		600.00	32.35	46.00	-13.65
		2390.00 (P)	NF	74.00	
		2390.00(Av)	NF	54.00	
		2412.00 (P)	71.50	*	-
		2412.00 (Av)	52.47	*	-
		4824.00 (P)	45.77	74.00	-28.23
		4824.00 (Av)	33.56	54.00	-20.44
2437	H	229.30	29.34	46.00	-16.66
		233.75	30.01	46.00	-15.99
		2437.00 (P)	71.20	*	-
		2437.00 (Av)	61.93	*	-
		4874.00 (P)	45.91	74.00	-28.09
		4874.00 (Av)	39.46	54.00	-14.54
	V	229.30	30.03	46.00	-15.97
		231.55	29.07	46.00	-16.93
		2437.00 (P)	71.72	*	-
		2437.00 (Av)	59.29	*	-
		4874.00 (P)	59.77	74.00	-14.23
		4874.00 (Av)	40.36	54.00	-13.64
2462	H	231.50	30.28	46.00	-15.72
		240.60	28.77	46.00	-17.23
		2462.00 (P)	70.32	*	-
		2462.00 (Av)	55.62	*	-

		2483.50 (P)	NF	74.00	
		2483.50 (Av)	NF	54.00	
		4924.00(P)	46.16	74.00	-27.84
		4924.00(Av)	40.02	54.00	-13.98
	V	229.30	29.70	46.00	-16.30
		231.55	28.67	46.00	-17.33
		600.05	32.61	46.00	-13.39
		677.70	27.34	46.00	-18.66
		2462.00 (P)	71.58	*	-
		2462.00 (Av)	57.46	*	-
		2483.50 (P)	NF	74.00	
		2483.50 (Av)	NF	54.00	
		4924.00(P)	45.79	74.00	-28.21
		4924.00(Av)	35.50	54.00	-18.50

* →Operating Frequency
NF--> Noise Floor and 2390 MHz & 2483.50 MHz are Restricted Bands
Noise floor = 35.25 dBuV/m (Peak) at 2390 MHz
24.38 dBuV/m (Average) at 2390 MHz
38.54 dBuV/m (Peak) at 2483.5 MHz
30.38 dBuV/m (Average) at 2483.5 MHz

802.11g Mode

9Mbps

Channel (MHz)	Antenna Polarization	Spurious Emission (MHz)	Field strength (dBµV/m)	Limit (dBm)	Margin (dbm)
2412	H	229.25	29.58	46.00	-16.42
		233.85	29.04	46.00	-16.96
		600.02	27.23	46.00	-18.77
		2390.00 (P)	NF	74.00	
		2390.00(Av)	NF	54.00	
		2412.00 (P)	67.63	*	-
		2412.00 (Av)	52.28	*	-
		4824.00 (P)	45.79	74.00	-28.21
		4824.00 (Av)	32.51	54.00	-19.49
	V	229.35	29.28	46.00	-16.72
		231.55	28.12	46.00	-17.88
		600.05	32.73	46.00	-13.27
		2390.00 (P)	NF	74.00	
		2390.00(Av)	NF	54.00	
		2412.00 (P)	71.50	*	-
		2412.00 (Av)	62.83	*	-
		4824.00 (P)	45.65	74.00	-28.35
		4824.00 (Av)	33.54	54.00	-20.46
2437	H	229.25	29.58	46.00	-16.42
		233.85	29.04	46.00	-16.96
		2437.00 (P)	71.20	*	-
		2437.00 (Av)	59.93	*	-
		4874.00 (P)	45.91	74.00	-28.09
		4874.00 (Av)	39.43	54.00	-14.57
	V	229.35	29.28	46.00	-16.72
		231.55	28.12	46.00	-17.88
		2437.00 (P)	71.72	*	-

		2437.00 (Av)	59.29	*	-
		4874.00 (P)	59.77	74.00	-14.23
		4874.00 (Av)	44.36	54.00	-09.64
2462	H	220.05	22.22	46.00	-23.78
		229.25	27.28	46.00	-18.72
		231.52	28.15	46.00	-17.85
		600.20	31.62	46.00	-14.38
		2462.00 (P)	71.11	*	-
		2462.00 (Av)	60.6	*	-
		2483.50 (P)	NF	74.00	
		2483.50 (Av)	NF	54.00	
		4924.00(P)	46.34	74.00	-36.66
		4924.00(Av)	41.02	54.00	-12.98
	V	229.25	26.65	46.00	-19.35
		231.55	28.12	46.00	-17.88
		600.32	31.25	46.00	-14.75
		2462.00 (P)	71.63	*	-
		2462.00 (Av)	62.46	*	-
		2483.50 (P)	NF	74.00	
		2483.50 (Av)	NF	54.00	
		4924.00(P)	62.13	74.00	-11.87
		4924.00(Av)	43.50	54.00	-10.50

* →Operating Frequency
NF--> Noise Floor And 2390 MHz & 2483.50 MHz are Restricted Bands
Noise floor = 35.25 dBuV/m (Peak) at 2390 MHz
24.38 dBuV/m (Average) at 2390 MHz
38.54 dBuV/m (Peak) at 2483.5 MHz
30.38 dBuV/m (Average) at 2483.5 MHz

18Mbps

Channel (MHz)	Antenna Polarization	Spurious Emission (MHz)	Field strength (dBµV/m)	Limit (dBm)	Margin (dbm)
2412	H	78.40	22.77	40.00	-17.23
		238.05	28.47	46.00	-17.53
		600.02	34.54	46.00	-11.46
		2390.00 (P)	NF	74.00	
		2390.00(Av)	NF	54.00	
		2412.00 (P)	67.52	*	-
		2412.00 (Av)	52.62	*	-
		4824.00 (P)	44.85	74.00	-29.15
		4824.00 (Av)	35.48	54.00	-18.52
	V	79.30	30.15	40.00	-09.85
		600.20	31.67	46.00	-14.33
		2390.00 (P)	NF	74.00	
		2390.00(Av)	NF	54.00	
		2412.00 (P)	70.74	*	-
		2412.00 (Av)	54.80	*	-
		4824.00 (P)	44.56	74.00	-29.44
		4824.00 (Av)	34.55	54.00	-19.45
2437	H	78.40	21.10	40.00	-18.90
		240.25	26.82	46.00	-19.18
		2437.00 (P)	71.75	*	-
		2437.00 (Av)	64.45	*	-

		4874.00 (P)	45.91	74.00	-28.09
		4874.00 (Av)	39.43	54.00	-14.57
	V	79.50	28.10	40.00	-11.90
		600.35	30.15	46.00	-15.85
		2437.00 (P)	69.72	*	-
		2437.00 (Av)	51.21	*	-
		4874.00 (P)	57.42	74.00	-16.58
		4874.00 (Av)	40.36	54.00	-13.64
2462	H	78.40	22.77	40.00	-17.23
		238.05	25.47	46.00	-20.53
		2462.00 (P)	70.48	*	-
		2462.00 (Av)	55.60	*	-
		2483.50 (P)	NF	74.00	
		2483.50 (Av)	NF	54.00	
		4924.00(P)	44.54	74.00	-29.46
		4924.00(Av)	38.25	54.00	-15.75
	V	79.30	30.15	40.00	-09.85
		600.20	30.67	46.00	-15.33
		2462.00 (P)	71.20	*	-
		2462.00 (Av)	54.46	*	-
		2483.50 (P)	NF	74.00	
		2483.50 (Av)	NF	54.00	
		4924.00(P)	62.13	74.00	-11.87
		4924.00(Av)	35.50	54.00	-18.50

* →Operating Frequency
NF--> Noise Floor And 2390 MHz & 2483.50 MHz are Restricted Bands
Noise floor = 35.25 dBuV/m (Peak) at 2390 MHz
24.38 dBuV/m (Average) at 2390 MHz
38.54 dBuV/m (Peak) at 2483.5 MHz
30.38 dBuV/m (Average) at 2483.5 MHz

36Mbps

Channel (MHz)	Antenna Polarization	Spurious Emission (MHz)	Field strength (dBµV/m)	Limit (dBm)	Margin (dbm)
2412	H	233.75	27.09	46.00	-18.91
		240.05	26.44	46.00	-19.56
		600.15	34.83	46.00	-11.17
		2390.00 (P)	NF	74.00	
		2390.00(Av)	NF	54.00	
		2412.00 (P)	67.38	*	-
		2412.00 (Av)	51.28	*	-
		4824.00 (P)	46.04	74.00	-27.96
		4824.00 (Av)	33.52	54.00	-20.48
	V	240.50	21.22	46.00	-24.78
		600.10	31.69	46.00	-14.31
		2390.00 (P)	NF	74.00	
		2390.00(Av)	NF	54.00	
		2412.00 (P)	71.50	*	-
		2412.00 (Av)	56.58	*	-
		4824.00 (P)	45.80	74.00	-28.20
		4824.00 (Av)	33.49	54.00	-20.51

2437	H	233.75	27.09	46.00	-18.91
		240.05	24.44	46.00	-21.56
		2437.00 (P)	71.20	*	-
		2437.00 (Av)	59.93	*	-
		4874.00 (P)	45.91	74.00	-28.09
		4874.00 (Av)	39.43	54.00	-14.57
	V	240.50	21.22	46.00	-24.78
		600.10	31.48	46.00	-14.52
		2437.00 (P)	71.72	*	-
		2437.00 (Av)	59.29	*	-
		4874.00 (P)	55.77	74.00	-18.23
		4874.00 (Av)	34.36	54.00	-19.64
2462	H	238.20	27.61	46.00	-18.39
		240.50	26.44	46.00	-19.56
		600.10	33.72	46.00	-12.28
		2462.00 (P)	60.80	*	-
		2462.00 (Av)	57.29	*	-
		2483.50 (P)	NF	74.00	
		2483.50 (Av)	NF	54.00	
		4924.00(P)	46.75	74.00	-27.25
		4924.00 (Av)	33.41	54.00	-20.59
	V	240.50	21.22	46.00	-24.78
		600.35	28.04	46.00	-17.96
		2462.00 (P)	71.63	*	-
		2462.00 (Av)	52.80	*	-
		2483.50 (P)	NF	74.00	
		2483.50 (Av)	NF	54.00	
		4924.00(P)	45.83	74.00	-28.17
		4924.00(Av)	39.87	54.00	-14.13

* →Operating Frequency
NF--> Noise Floor and 2390 MHz & 2483.50 MHz are Restricted Bands
Noise floor = 35.25 dBuV/m (Peak) at 2390 MHz
24.38 dBuV/m (Average) at 2390 MHz
38.54 dBuV/m (Peak) at 2483.5 MHz
30.38 dBuV/m (Average) at 2483.5 MHz

54Mbps

Channel (MHz)	Antenna Polarization	Spurious Emission (MHz)	Field strength (dBµV/m)	Limit (dBm)	Margin (dbm)
2412	H	233.80	26.83	46.00	-19.17
		600.05	34.44	46.00	-11.56
		2390.00 (P)	NF	74.00	
		2390.00(Av)	NF	54.00	
		2412.00 (P)	69.55	*	-
		2412.00 (Av)	51.55	*	-
		4824.00 (P)	54.73	74.00	-19.27
		4824.00 (Av)	33.5	54.00	-20.5
	V	238.30	22.21	46.00	-23.79
		600.05	31.62	46.00	-14.38
		2390.00 (P)	NF	74.00	
		2390.00(Av)	NF	54.00	
		2412.00 (P)	71.24	*	-
		2412.00 (Av)	62.88	*	-
		4824.00 (P)	59.41	74.00	-14.59

		4824.00 (Av)	33.46	54.00	-20.54
2437	H	233.80	25.83	46.00	-20.17
		600.05	32.44	46.00	-13.56
		2437.00 (P)	71.20	*	-
		2437.00 (Av)	55.93	*	-
		4874.00 (P)	45.91	74.00	-28.09
		4874.00 (Av)	39.43	54.00	-14.57
	V	238.30	20.21	46.00	-25.79
		600.05	33.62	46.00	-12.38
		2437.00 (P)	71.72	*	-
		2437.00 (Av)	56.36	*	-
		4874.00 (P)	55.77	74.00	-18.23
		4874.00 (Av)	34.36	54.00	-17.64
2462	H	241.50	28.58	46.00	-17.42
		600.05	32.56	46.00	-13.44
		2462.00 (P)	71.11	*	-
		2462.00 (Av)	59.33	*	-
		2483.50 (P)	NF	74.00	
		2483.50 (Av)	NF	54.00	
		4924.00(P)	56.74	74.00	-26.26
		4924.00(Av)	36.23	54.00	-17.77
	V	600.00	30.98	46.00	-15.02
		2462.00 (P)	71.63	*	-
		2462.00 (Av)	32.32	*	-
		2483.50 (P)	NF	74.00	
		2483.50 (Av)	NF	54.00	
		4924.00(P)	68.12	74.00	-16.80
		4924.00(Av)	33.52	54.00	-20.48

*** →Operating Frequency**

NF→ Noise Floor and 2390 MHz & 2483.50 MHz are Restricted Bands

Noise floor = 35.25 dBuV/m (Peak) at 2390 MHz
24.38 dBuV/m (Average) at 2390 MHz
38.54 dBuV/m (Peak) at 2483.5 MHz
30.38 dBuV/m (Average) at 2483.5 MHz