FCC Test Report

FCC EVALUATION REPORT FOR CERTIFICATE	
Project Reference No.	273927
Product	Tablet PC
Brand Name	N/A
Model	W850
Alternate Model	N/A
Tested according to	FCC Rules and Regulations Part 15 Subpart C 2013, 15.247 558074 D01 DTS Meas Guidance v03 ANSI C63.4-2009

Tested in period	2014-12-25 to 2014-12-30
Issued date	2014-12-31
Name and address of the Test House	Nemko Nemko Shanghai Ltd Shenzhen Branch Unit CD, Floor 10, Tower 2, Kefa Road 8#, Hi-Technology Park, Nanshan District, Shenzhen, China Phone : +86 755 8221 0420 Fax : +86 755 8221 3363
Tested by	 2014-12-31 ***Zone Peng*** ***date***
Verified by	 2014-12-31 ***Daria Liu*** ***date***

Contents of This Report

1. Client Information

1.1 Applicant

Company Name:	South Holdings Industrial Limited
Company Address:	Building 1, Hao'er JiaShiTai Industrial Park, FengTang Rd., Tangwei, FuYong Town, Bao'an District, Shenzhen, 518103, China

1.2 Manufacturer

Company Name:	South Holdings Industrial Limited
Company Address:	Building 1, Hao'er JiaShiTai Industrial Park, FengTang Rd., Tangwei, FuYong Town, Bao'an District, Shenzhen, 518103, China

1.3 Scope

●Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission under FCC part 15.247.

2. Equipment under Test (EUT)

2.1 Identification of EUT

Category:	IEEE 802.11b/g /n WLAN
Name:	Tablet PC
Model Name:	W850
Alternate model:	N/A
Brand name:	N/A
Adapter :	AC/DC Adapter:KA24-0503000US Input:100-240V~, 50/60Hz, 0.55A max.Class II Output:5Vdc,3000mA
Remark:	This report 273927 is on the basis of the report 274749, The model:W850, FCC ID:2ACEK-W850, trademark: N/A is electrically identical to the model:W850, FCC ID:2ACEK-W850-1, trademark:XTRATECH, only FCC ID number and trademark are different. Additional test is not need, all data are from the report 274749.

2.2 Detail spec:

Operation Frequency：2412 MHz -2462MHz [for 802.11b; 802.11g; 802.11n (H20)]
Operation Frequency：2422 MHz -2452MHz [for 802.11n (H40)]

Type of Spectrum : DSSS ,OFDM
Category: 802.11b; 802.11g; 802.11n (H20); 802.11n (H40)

Antenna Type：Integral Antenna
Antenna Number : 1
Antenna gain : 1.31dBi
Modulation type: BPSK,QPSK,16-QAM.64-QAM

Data rate: up to 150Mbps

Operation Frequency：2412 MHz - 2462MHz
Max PK Output power: 18.15 dBm

Operation Frequency： 2422 MHz - 2452MHz
Max PK Output power: 14.61dBm

2.3 Additional Information Related to Testing

For 802.11b ,g ,n(H20)
CH LOW:2412MHz
CH MID:2437MHz
CH HIGH:2462MHz

For 802.11n(H40)
CH LOW:2422MHz
CH MID:2437MHz
CH HIGH:2452MHz

IEEE 802.11b : 1Mbps data rate
IEEE 802.11g : 6Mbps data rate
IEEE 802.11n H20 : MSC0
IEEE 802.11n H40 : MSC0

Remark: Only the worse case found by prescan is listed

3. General Test Conditions

3.1 Location

Global United Technology Services Co., Ltd. -- Nemko ELA 632

2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

FCC Registration No.:600491

IC Registration No.9079A-2

Note: all test are witnessed by NEMKO engineer

3.2 Operating Environment

All tests and measurements were performed in a shielded enclosure or a controlled environment suitable for the tests conducted. The climatic conditions in the test area are automatically controlled and recorded continuously.

Parameters	Recording during test	Accepted deviation
Ambient temperature	20-21°C	15 – 35 ºC
Relative humidity	45-50%	30 - 60%
Atmospheric pressure	101.1 kPa -101.2kPa	86-106kPa

3.3 Operating During Test

Test mode

TM1 : 120VAC 60Hz TX MODE continuous transmitter (duty cycle >98%)

Remark : Input voltage have been adjusted from 85% to 115% ,no influence of Fundamental emission found .

3.4 Test Equipment

The test equipments used in testing are calibrated on a regular basis. For most of the testing equipments accredited calibration is conducted once a year. For certain equipment the calibration interval is longer. Between the calibrations all test equipment are controlled and verified on a regular basis. The test equipments used are defined in each test section of this report.

A.E. used during testing:

1. HDMI cable: detachable, shielded with electric conductivity fabric and 2 magnetic core fixed at both end of the HDMI line (1m).
2. Earphone: detachable, un-shield with a magnetic core at the jack end (0.8m).
   manufacture: Aoni, model no: MP-105 (FCC VOC)
3. AC power cable: detachable, un-shield (1.5m)
3. Monitor: manufacture: AOC, model no: V22T (FCC DOC)
4: SD CARD: manufacture:Sony, model no: SR-32C4 (FCC DOC)
5: USB cable: detachable, shielded (0.2m)

4. Measurement Uncertainty

The Measurement Uncertainties stated were calculated in accordance with the requirements of NIST Technical Note 1297 with the confidence level of 95 %.

Conducted Emission : 0.15~30MHz 3.45dB

Radiated Emission: 30MHz~1000MHz 4.50dB

1GHz-18GHz 4.70dB

5. Radiated Electromagnetic Disturbances

5.1 Test Procedure

The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. An antenna was located 3m from the EUT on an adjustable mast.

The EUT were rotated 0 to 360 degree and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. The test result are reported as below.

For below 1GHz

RBW=120 kHz; VBW=300KHz.QP detector,The frequency range from 30MHz to 1000MHz is checked.

For above 1GHz. The frequency range from 1GHz to 25GHz(10^{th} harmonics) is checked.

RBW=1MHz ; VBW=1MHz,PK detector for peak emissions measurement above 1GHz

RBW=1MHz ; VBW=3MHz, RMS detector for average emissions measure above 1GHz

5.2 Measurement Equipment

	Equipment	Calibration due	Type	Serial No.	Manufacturer
☒	EMI Test Receiver	Jul. 04 2015	ESU26	GTS203	R&S
☒	BiConiLog Antenna	Feb. 26 2015	VULB9163	GTS214	SCHWARZBECK
☒	Horn Antenna	Feb. 25 2015	BBHA9120D	GTS215	SCHWARZBECK
☒	Coaxial Cable	Apr. 01 2015	N/A	GTS213	GTS
☒	Coaxial Cable	Apr. 01 2015	N/A	GTS211	GTS
☒	Coaxial Cable	Apr. 01 2015	N/A	GTS211	GTS
☒	Coaxial cable	Apr. 01 2015	N/A	GTS210	GTS
☒	Amplifier	Jul. 04 2015	8347A	GTS204	HP

5.3 Test Result

Remark: If PK value is lower than AV limit , only show PK diagram as below.

From 18GHz to 25GHz, Spurious Emission can not be found .

For restriction band test :Only list the restriction band test which there found emission.

For other restriction band: no emission found.

For Radiated emission test : The EUT have been tested at X,Y,Z axial direction, Only list the worse mode.

Mode	Freq range		Test ANT polarity	Diagram	Test Result
TX MODE	30MHz-1GHz:		H	5-1	Pass
	30MHz-1GHz:		V	5-2	Pass
Mode	**Freq range**	**Channel**	**Test ANT polarity**	**Diagram**	**Test Result**
802.11b	1GHz-18GHz:	CHLOW	H	5-3	Pass
	1GHz-18GHz:	CHLOW	V	5-4	Pass
	1GHz-18GHz:	CHMID	H	5-5	Pass
	1GHz-18GHz:	CHMID	V	5-6	Pass
	1GHz-18GHz:	CH HIGH	H	5-7	Pass
	1GHz-18GHz:	CH HIGH	V	5-8	Pass
Mode	**Freq range**	**Channel**	**Test ANT polarity**	**Diagram**	**Test Result**
802.11g	1GHz-18GHz:	CHLOW	H	5-9	Pass
	1GHz-18GHz:	CHLOW	V	5-10	Pass
	1GHz-18GHz:	CHMID	H	5-11	Pass
	1GHz-18GHz:	CHMID	V	5-12	Pass
	1GHz-18GHz:	CH HIGH	H	5-13	Pass
	1GHz-18GHz:	CH HIGH	V	5-14	Pass
Mode	**Freq range**	**Channel**	**Test ANT polarity**	**Diagram**	**Test Result**
802.11n (H20)	1GHz-18GHz:	CHLOW	H	5-15	Pass
	1GHz-18GHz:	CHLOW	V	5-16	Pass
	1GHz-18GHz:	CHMID	H	5-17	Pass
	1GHz-18GHz:	CHMID	V	5-18	Pass
	1GHz-18GHz:	CH HIGH	H	5-19	Pass
	1GHz-18GHz:	CH HIGH	V	5-20	Pass
Mode	**Freq range**	**Channel**	**Test ANT polarity**	**Diagram**	**Test Result**
802.11n (H40)	1GHz-18GHz:	CHLOW	H	5-21	Pass
	1GHz-18GHz:	CHLOW	V	5-22	Pass
	1GHz-18GHz:	CHMID	H	5-23	Pass
	1GHz-18GHz:	CHMID	V	5-24	Pass
	1GHz-18GHz:	CH HIGH	H	5-25	Pass
	1GHz-18GHz:	CH HIGH	V	5-26	Pass

NOTES:

1.All modes were measured and only the worst case emission was reported.

2. H =Horizontal V=Vertical

3. Emission = Reading +Antenna Factor + Cable Loss –Amp Factor

4. Emission level dB μ V = 20 log Emission level μ V/m

5. The lower limit shall apply at the transition frequencies

6. All the emissions appearing within 15.205 Restricted bands shall not exceed the limits shown in (15.209 limit)#.

7. Unwanted emissions not falling within restricted frequency bands shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits;

Remark :

The limit of " # "of 3 meter distance is

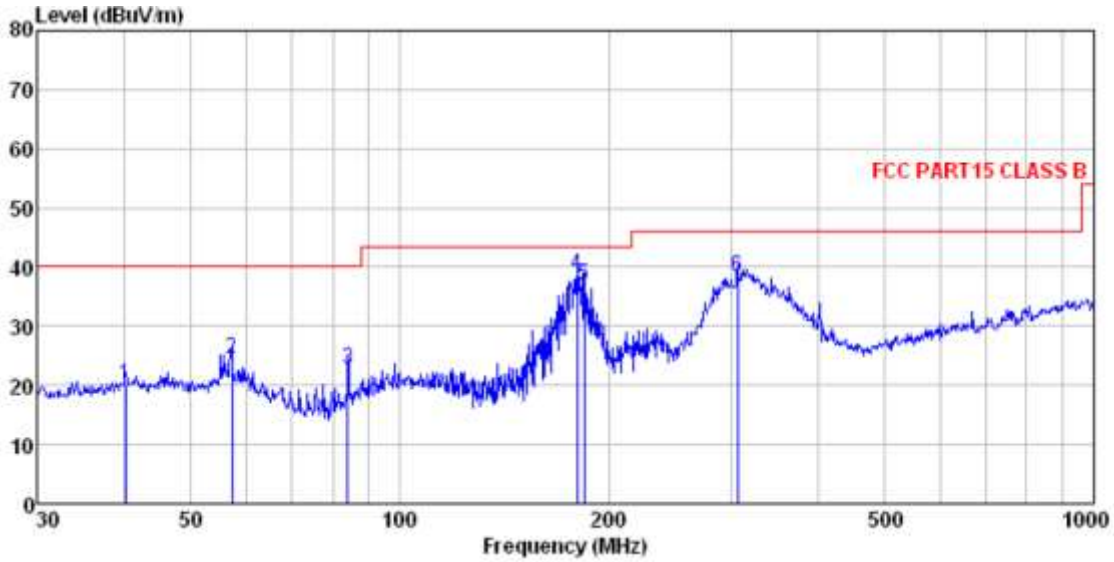
Frequency MHz	Distance m	Field strength		Distance m	Field strength
		μV/m	dBμV/m(QP)		dBμV/m(QP)
30-88	3	100	40.0	10	30.0
88-216	3	150	43.5	10	33.5
216-960	3	200	46.0	10	36.0
960-1000	3	500	54.0	10	44.0
Above 1000	3	74.0 dBμV/m (PK) 54.0 dBμV/m (AV)		/	/

15.205 Restricted bands:

MHz	MHz	MHz	GHz
0.090–0.110	16.42–16.423	399.9–410	4.5–5.15
[1]0.495–0.505	16.69475–16.69525	608–614	5.35–5.46
2.1735–2.1905	16.80425–16.80475	960–1240	7.25–7.75
4.125–4.128	25.5–25.67	1300–1427	8.025–8.5
4.17725–4.17775	37.5–38.25	1435–1626.5	9.0–9.2
4.20725–4.20775	73–74.6	1645.5–1646.5	9.3–9.5
6.215–6.218	74.8–75.2	1660–1710	10.6–12.7
6.26775–6.26825	108–121.94	1718.8–1722.2	13.25–13.4
6.31175–6.31225	123–138	2200–2300	14.47–14.5
8.291–8.294	149.9–150.05	2310–2390	15.35–16.2
8.362–8.366	156.52475–156.52525	2483.5–2500	17.7–21.4
8.37625–8.38675	156.7–156.9	2690–2900	22.01–23.12
8.41425–8.41475	162.0125–167.17	3260–3267	23.6–24.0
12.29–12.293	167.72–173.2	3332–3339	31.2–31.8
12.51975–12.52025	240–285	3345.8–3358	36.43–36.5
12.57675–12.57725	322–335.4	3600–4400	[2]
13.36–13.41.			

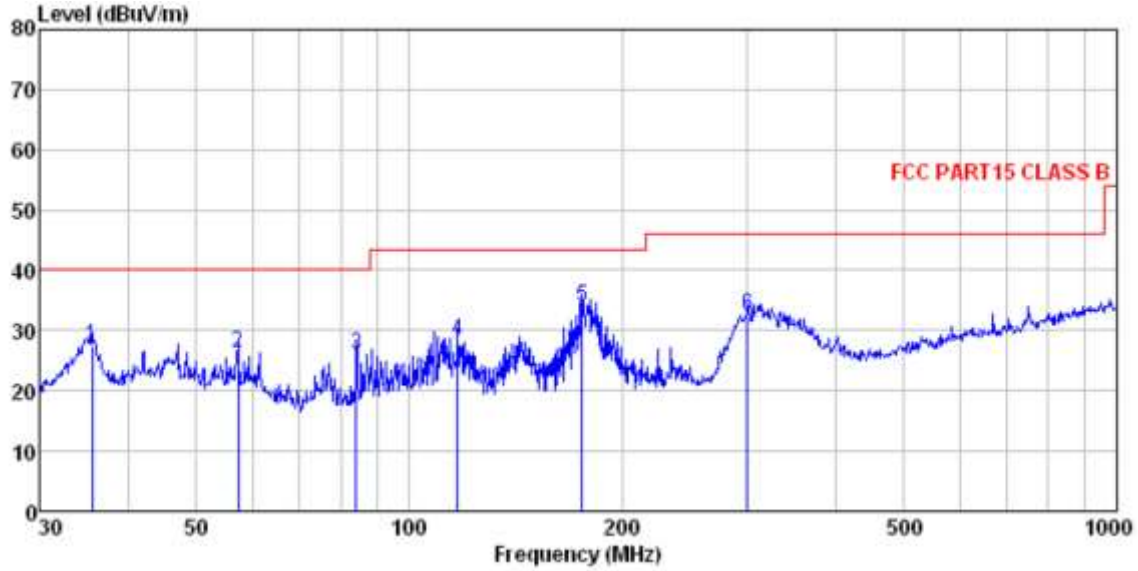
[1]Until February 1, 1999, this restricted band shall be 0.490–0.510 MHz.
[2]Above 38.6

5.3.1 Diagram 5-1



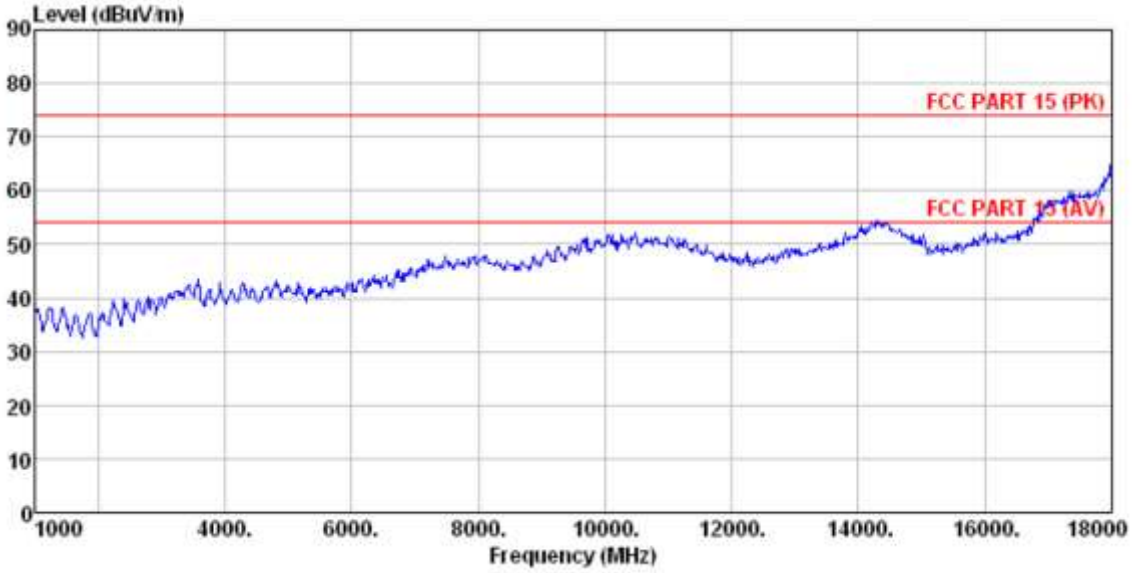
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	40.276	35.86	15.58	0.66	32.06	20.04	40.00	-19.96	QP
2	57.191	40.69	14.87	0.84	31.94	24.46	40.00	-15.54	QP
3	84.110	41.34	12.02	1.06	31.74	22.68	40.00	-17.32	QP
4	180.017	57.39	11.68	1.74	32.08	38.73	43.50	-4.77	QP
5	184.490	55.27	12.08	1.76	32.10	37.01	43.50	-6.49	QP
6	306.754	53.11	15.15	2.39	32.16	38.49	46.00	-7.51	QP

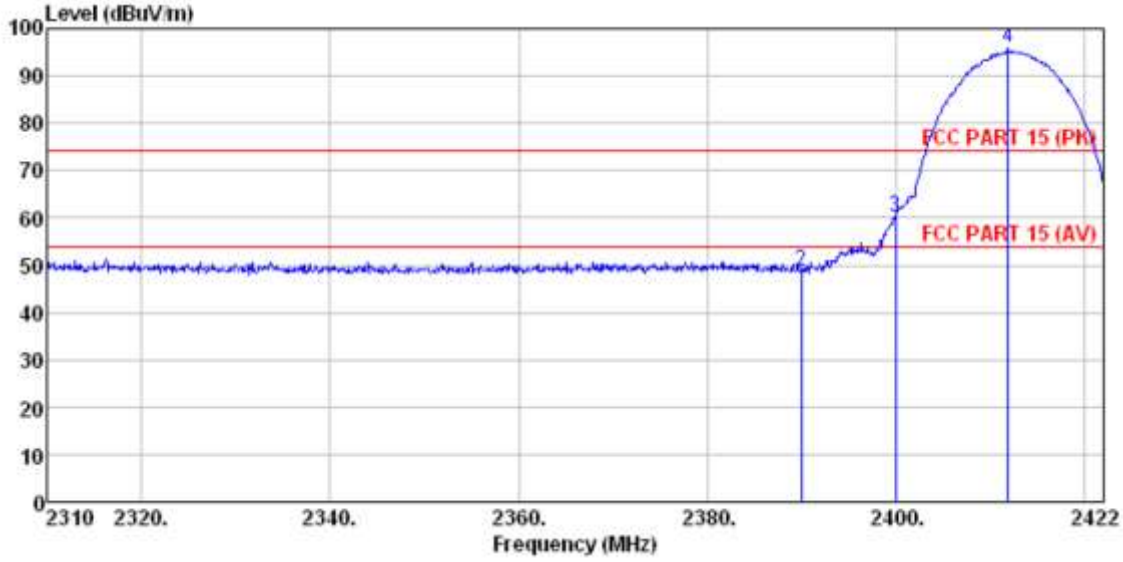
5.3.2 Diagram 5-2



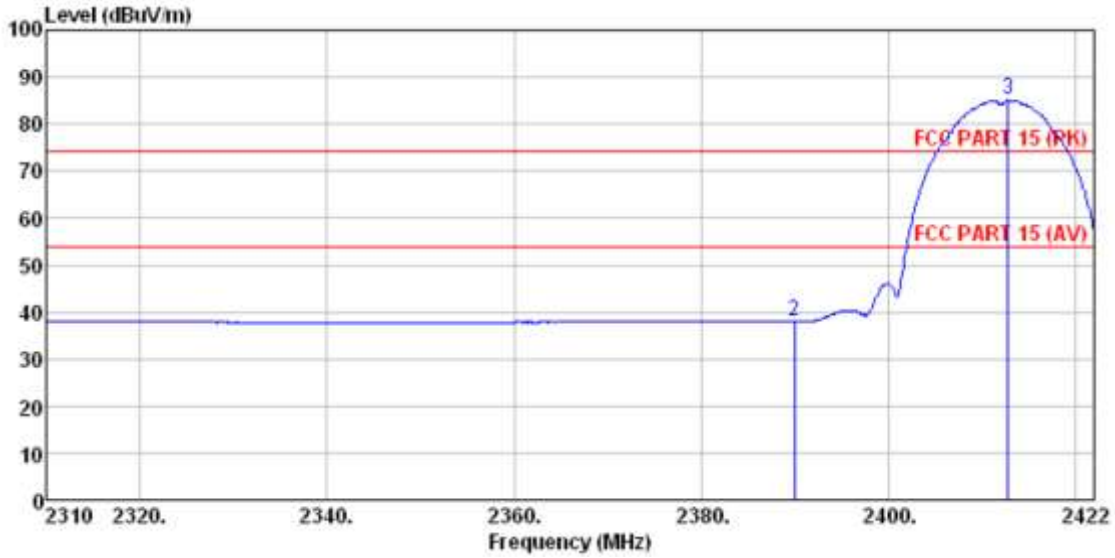
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	35.624	44.39	14.49	0.62	32.06	27.44	40.00	-12.56	QP
2	57.191	42.52	14.87	0.84	31.94	26.29	40.00	-13.71	QP
3	84.110	44.73	12.02	1.06	31.74	26.07	40.00	-13.93	QP
4	116.950	45.82	13.00	1.34	31.84	28.32	43.50	-15.18	QP
5	175.652	52.89	11.36	1.72	32.07	33.90	43.50	-9.60	QP
6	300.367	47.23	15.06	2.36	32.17	32.48	46.00	-13.52	QP

5.3.3 Diagram 5-3



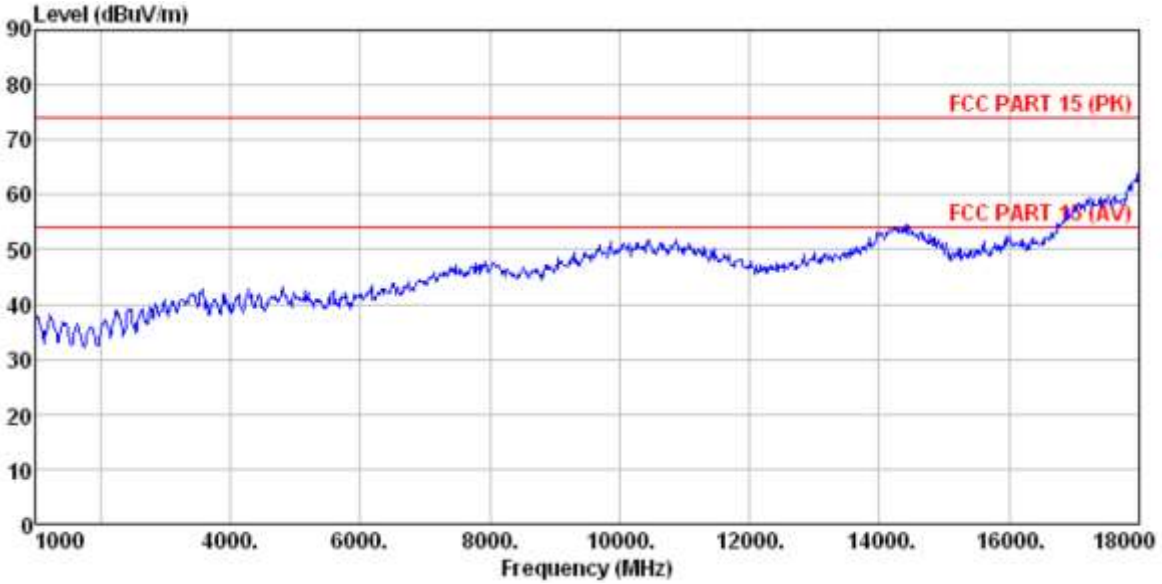


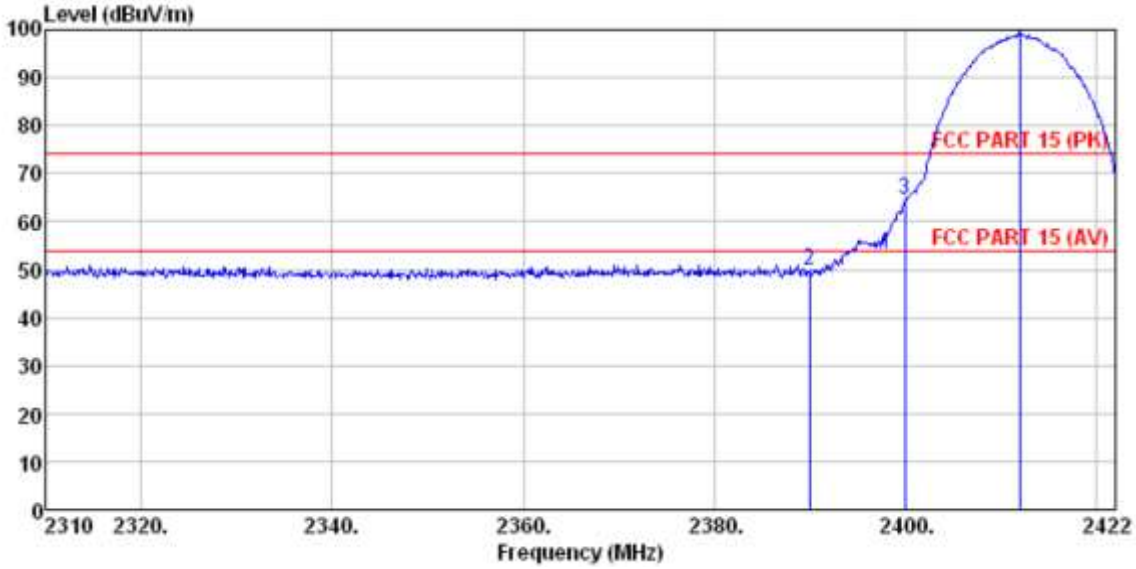
		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1		2310.000	47.32	27.91	5.30	30.37	50.16	74.00	-23.84	Peak
2		2390.000	45.76	27.59	5.38	30.18	48.55	74.00	-25.45	Peak
3		2400.000	57.45	27.58	5.39	30.18	60.24	74.00	-13.76	Peak
4	*	2411.920	92.93	27.55	5.41	30.12	95.77			Peak



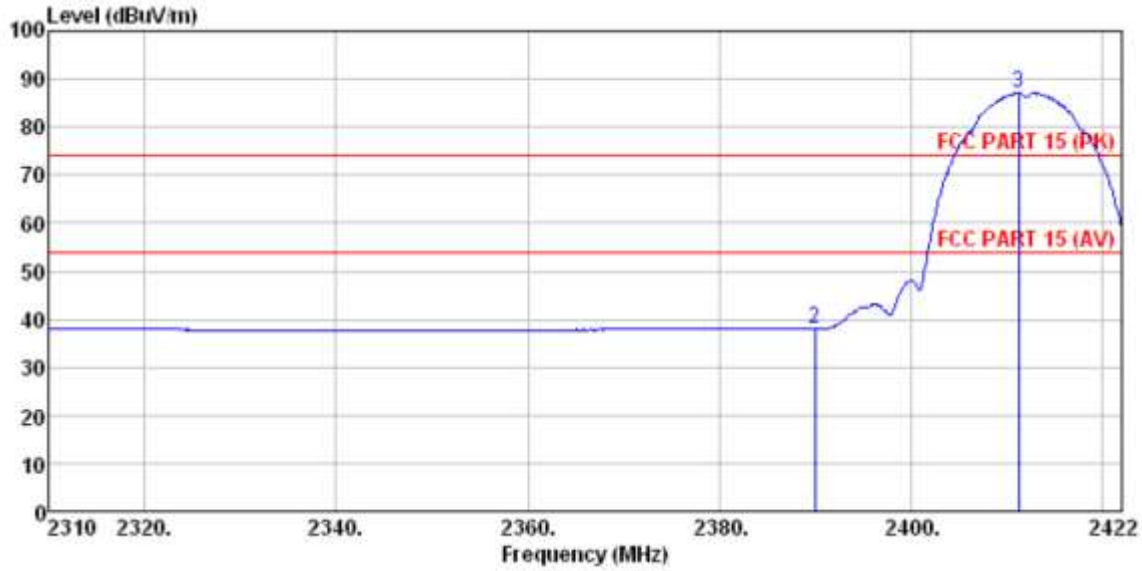
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	35.27	27.91	5.30	30.37	38.11	54.00	-15.89	Average
2	2390.000	35.07	27.59	5.38	30.18	37.86	54.00	-16.14	Average
3 *	2412.816	82.22	27.55	5.41	30.12	85.06			Average

5.3.4 Diagram 5-4



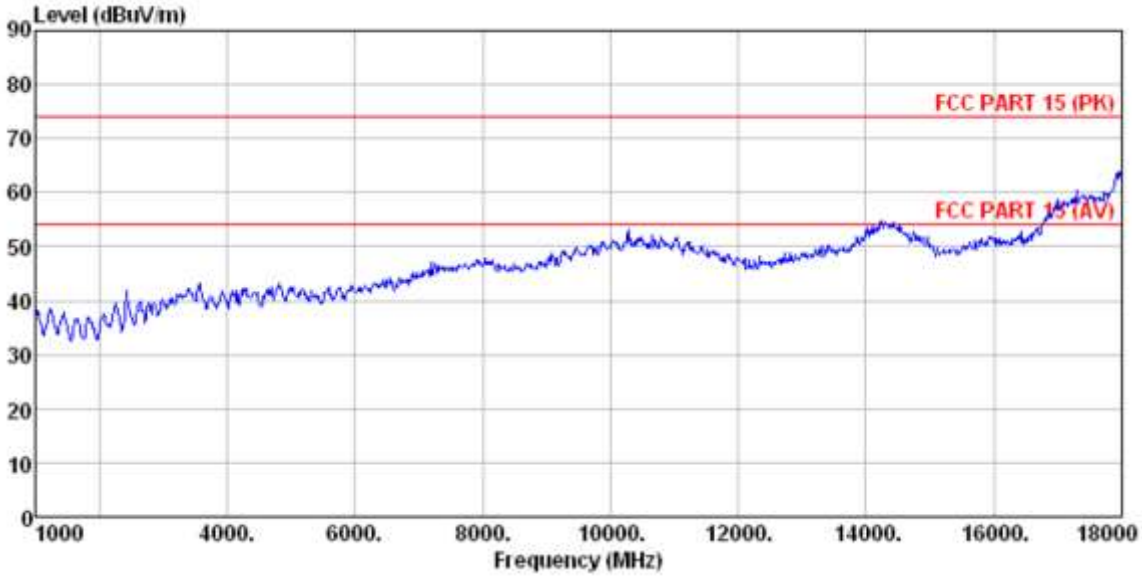


		Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1		2310.000	46.64	27.91	5.30	30.37	49.48	74.00	-24.52	Peak
2		2390.000	46.91	27.59	5.38	30.18	49.70	74.00	-24.30	Peak
3		2400.000	61.81	27.58	5.39	30.18	64.60	74.00	-9.40	Peak
4	*	2412.032	96.84	27.55	5.41	30.12	99.68			Peak

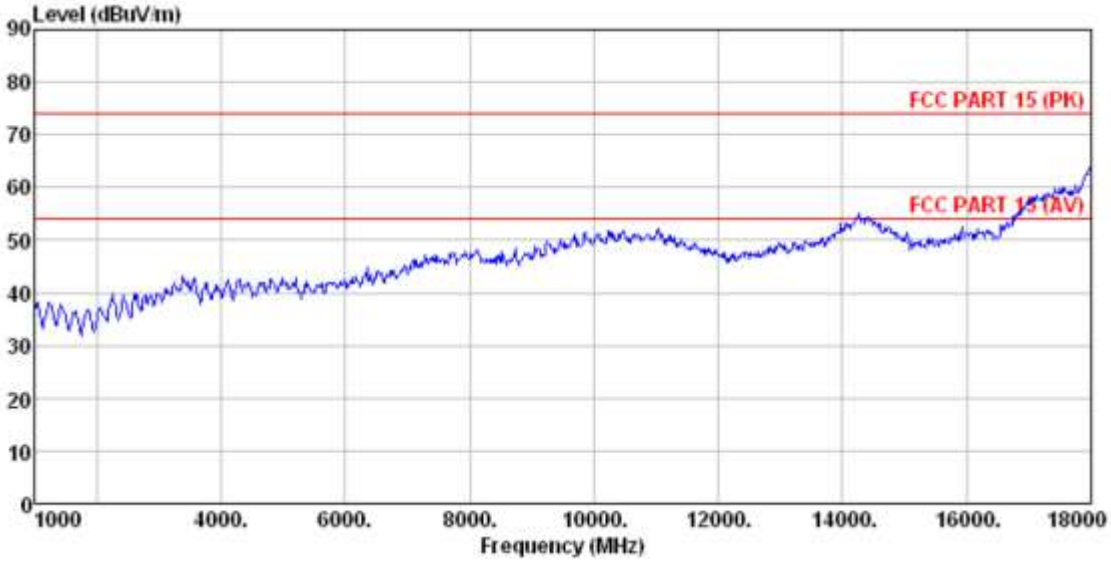


	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	35.19	27.91	5.30	30.37	38.03	54.00	-15.97	Average
2	2390.000	35.11	27.59	5.38	30.18	37.90	54.00	-16.10	Average
3 *	2411.248	84.33	27.55	5.41	30.12	87.17			Average

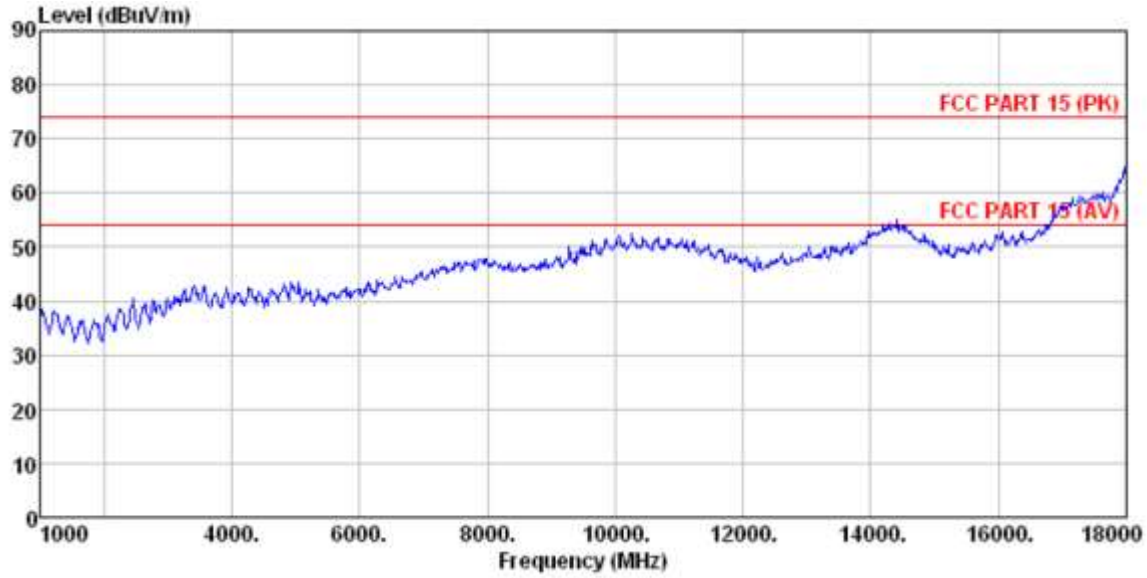
5.3.5 Diagram 5-5

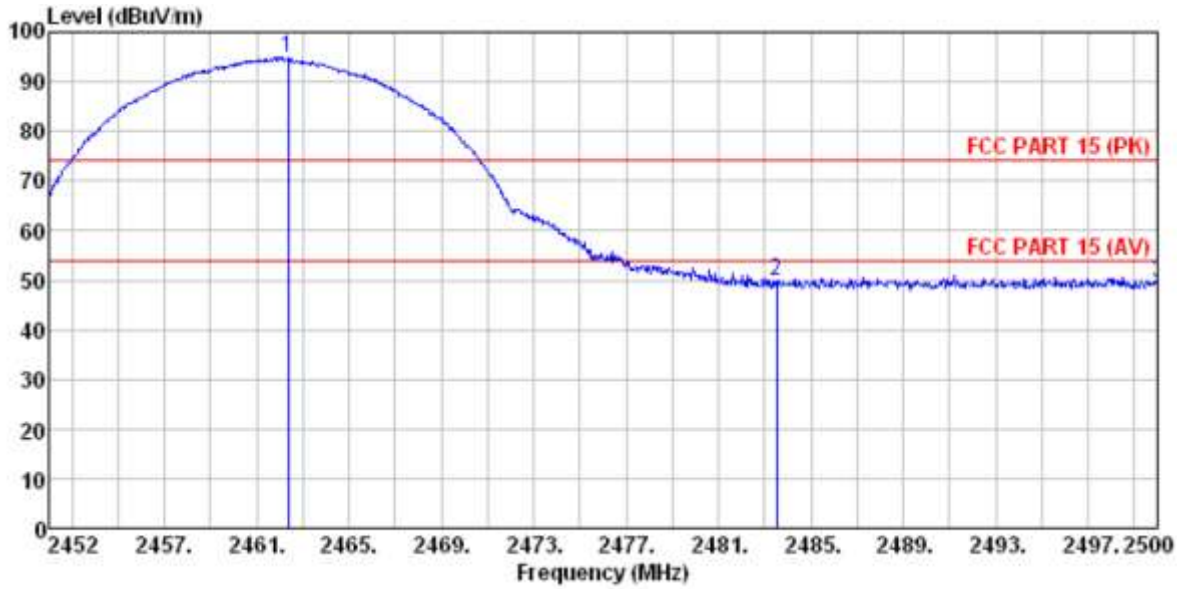


5.3.6 Diagram 5-6

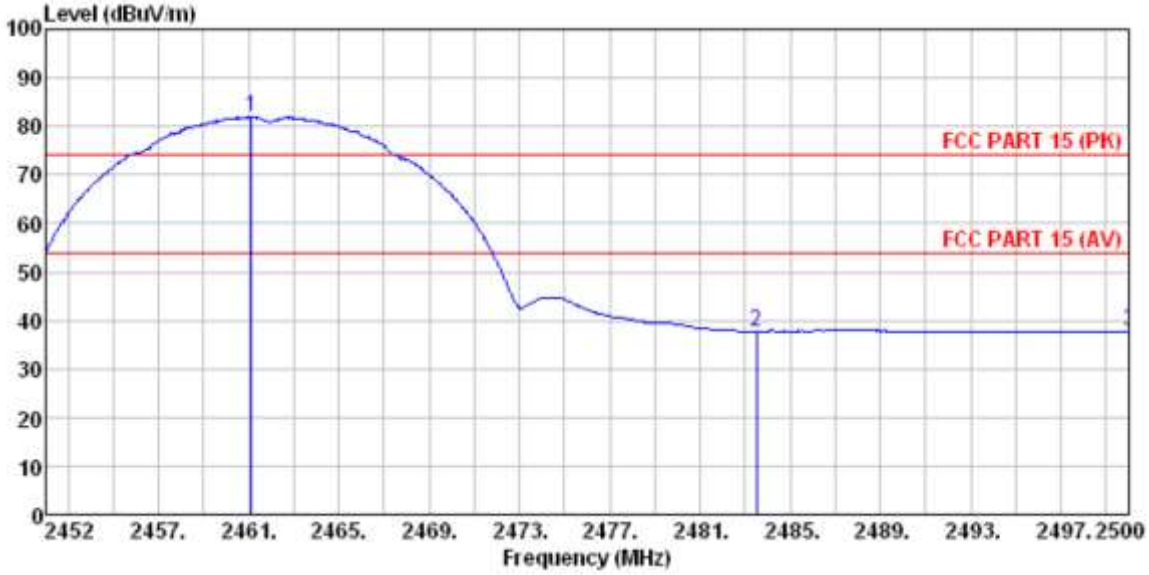


5.3.7 Diagram 5-7



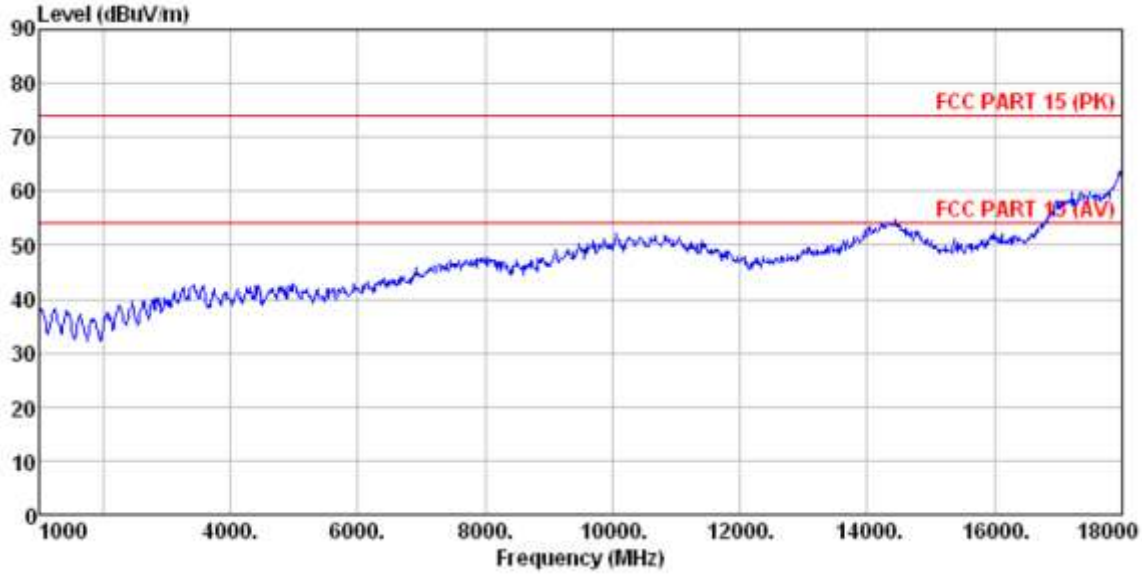


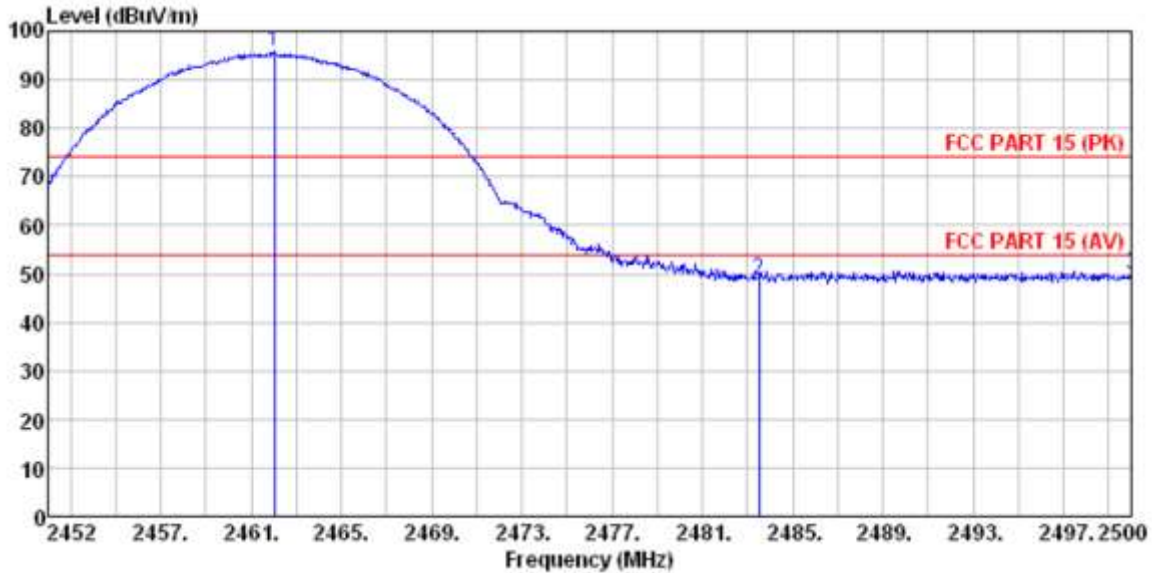
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2462.368	91.93	27.49	5.45	29.99	94.88			Peak
2	2483.500	46.68	27.53	5.47	29.93	49.75	74.00	-24.25	Peak
3	2500.000	46.43	27.55	5.49	29.93	49.54	74.00	-24.46	Peak



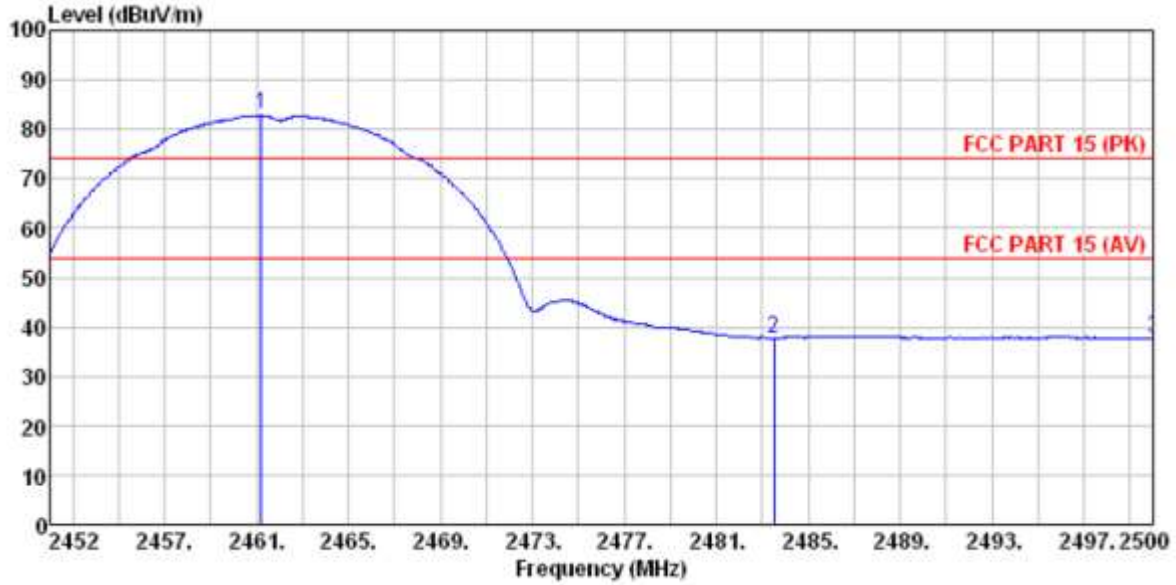
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2461.120	79.07	27.49	5.45	29.99	82.02			Average
2	2483.500	34.70	27.53	5.47	29.93	37.77	54.00	-16.23	Average
3	2500.000	34.63	27.55	5.49	29.93	37.74	54.00	-16.26	Average

5.3.8 Diagram 5-8



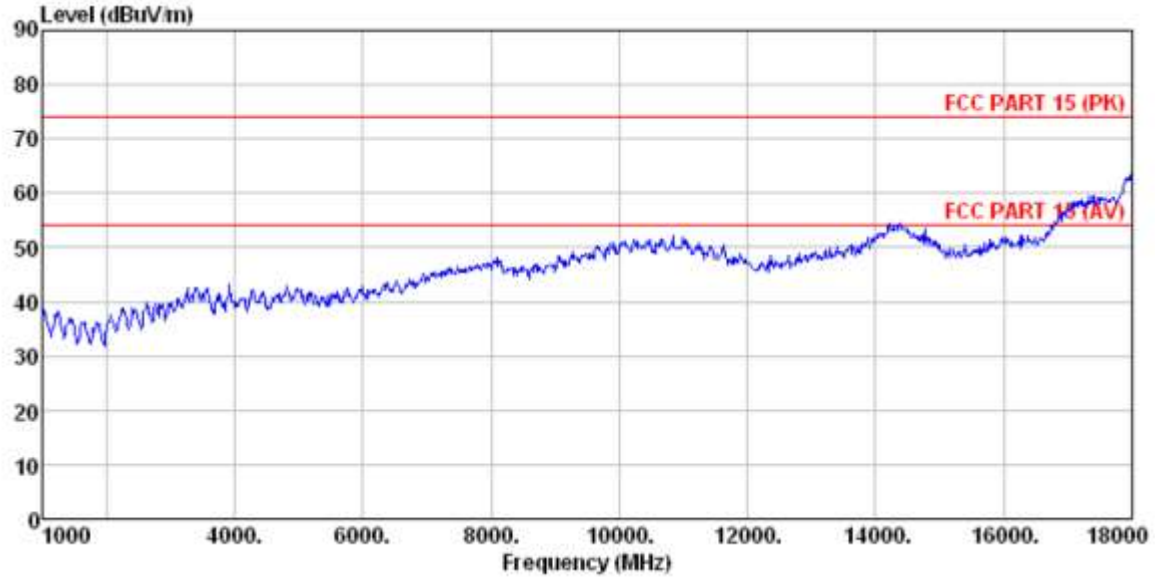


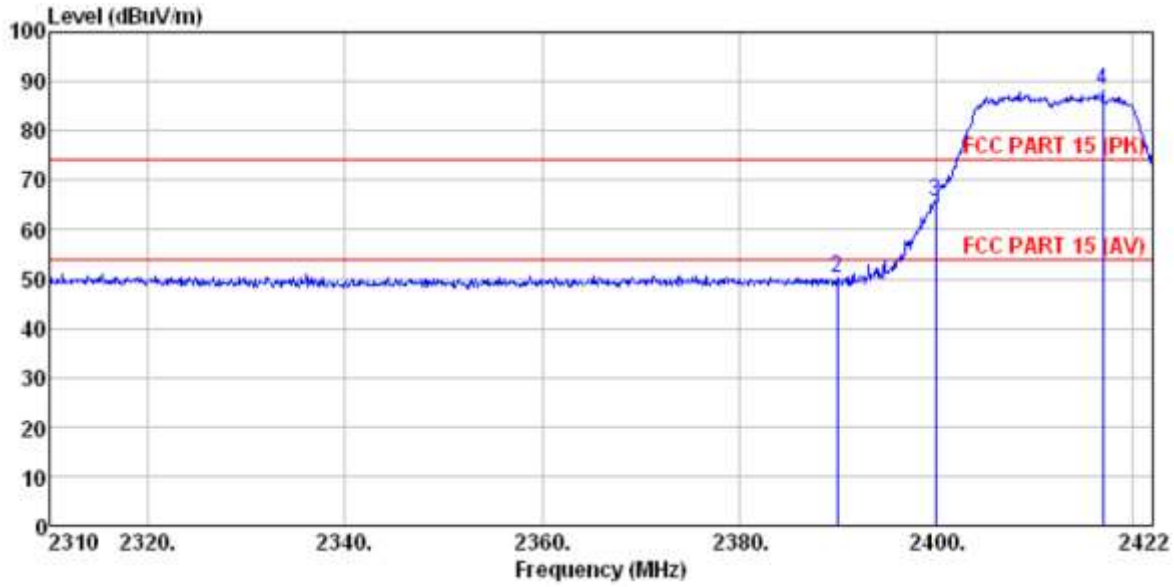
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2462.032	92.86	27.49	5.45	29.99	95.81			Peak
2	2483.500	45.57	27.53	5.47	29.93	48.64	74.00	-25.36	Peak
3	2500.000	46.60	27.55	5.49	29.93	49.71	74.00	-24.29	Peak



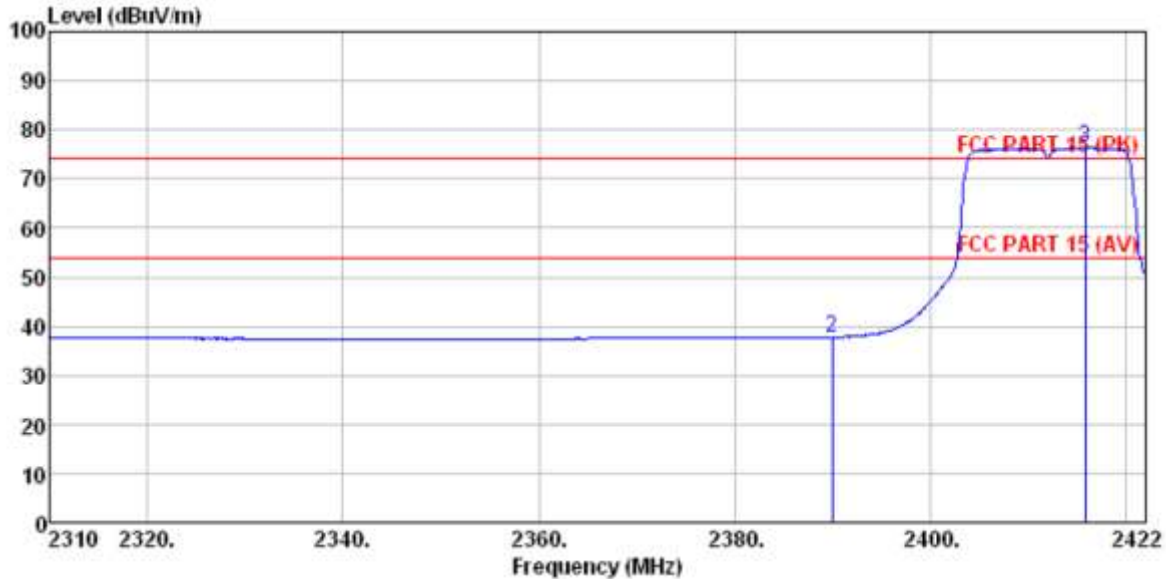
	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2461.216	79.90	27.49	5.45	29.99	82.85			Average
2	2483.500	34.73	27.53	5.47	29.93	37.80	54.00	-16.20	Average
3	2500.000	34.65	27.55	5.49	29.93	37.76	54.00	-16.24	Average

5.3.9 Diagram 5-9



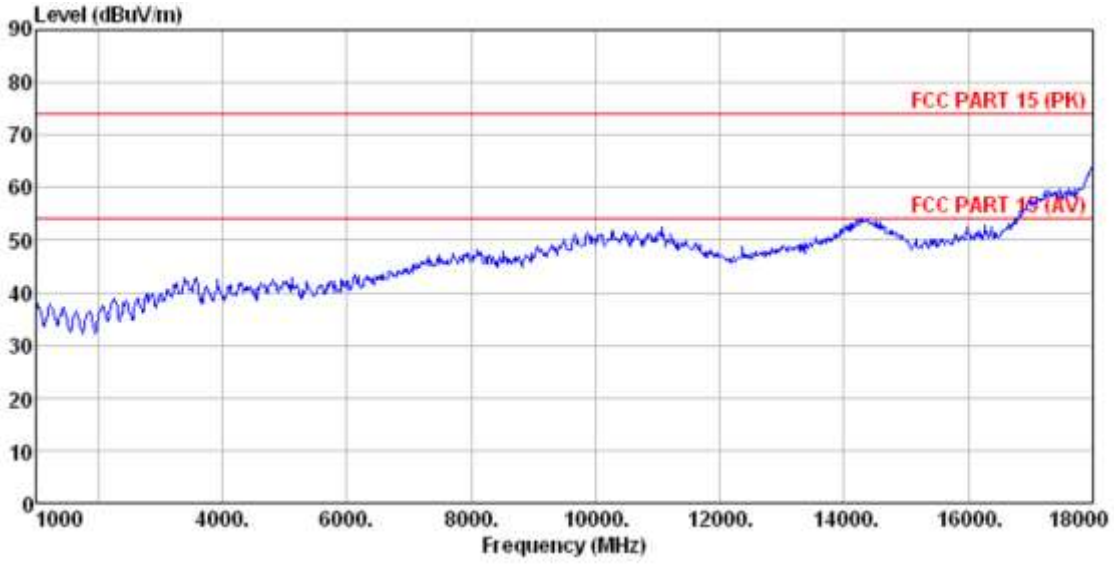


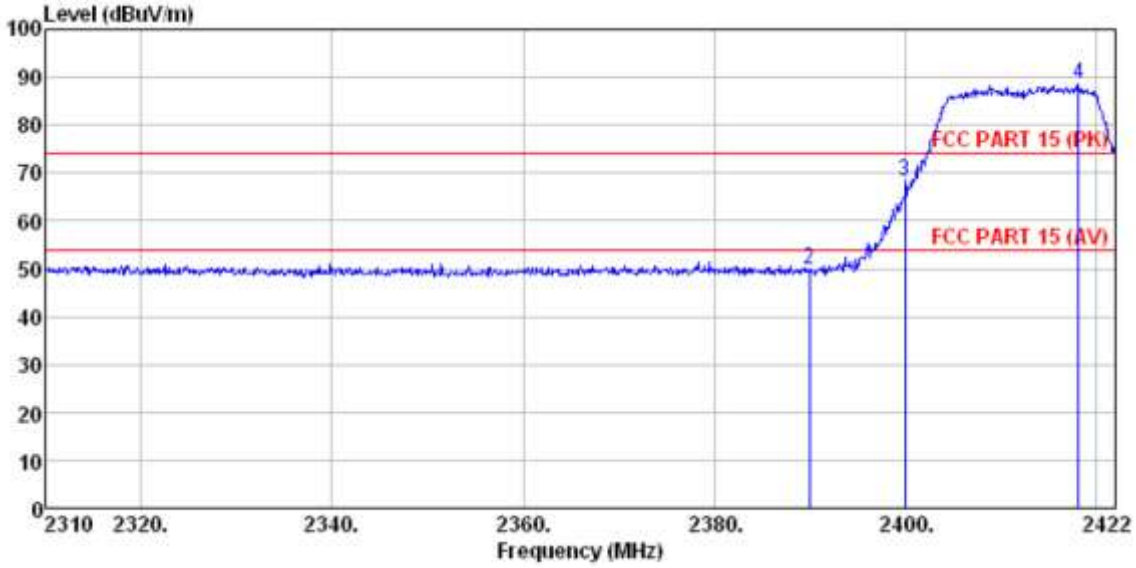
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	46.65	27.91	5.30	30.37	49.49	74.00	-24.51	Peak
2	2390.000	47.25	27.59	5.38	30.18	50.04	74.00	-23.96	Peak
3	2400.000	63.04	27.58	5.39	30.18	65.83	74.00	-8.17	Peak
4 *	2416.960	85.20	27.55	5.41	30.12	88.04			Peak



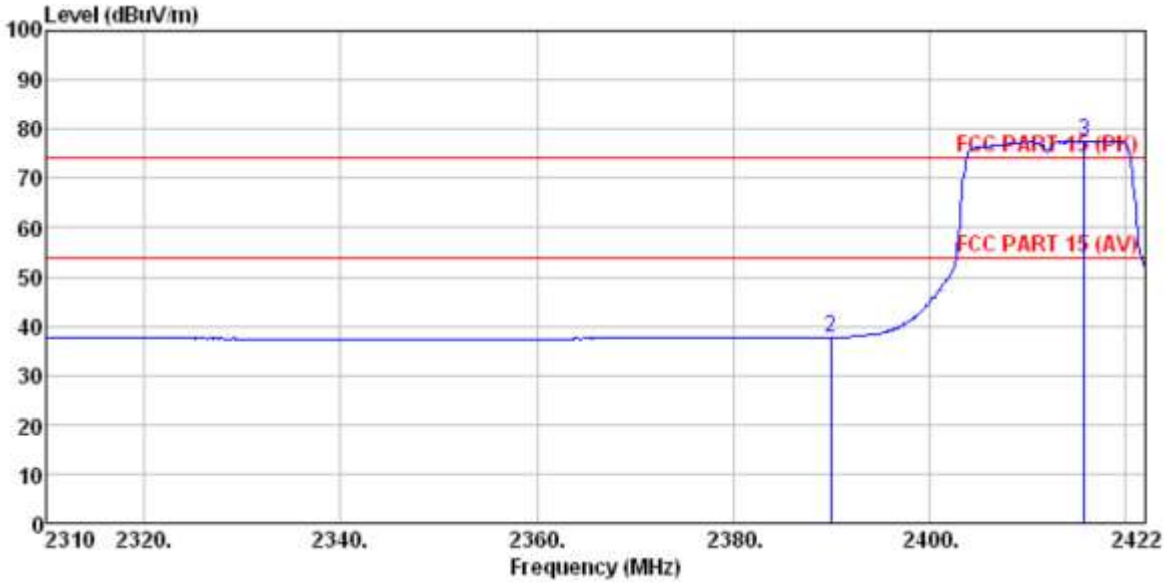
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	34.88	27.91	5.30	30.37	37.72	54.00	-16.28	Average
2	2390.000	34.86	27.59	5.38	30.18	37.65	54.00	-16.35	Average
3 *	2415.840	73.45	27.55	5.41	30.12	76.29			Average

5.3.10 Diagram 5-10



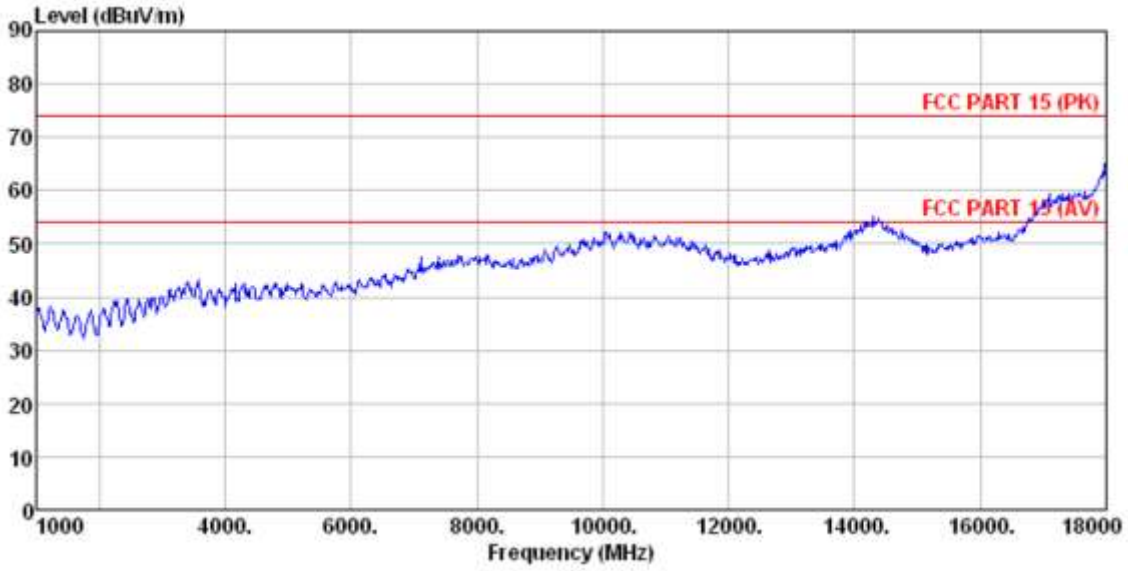


		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1		2310.000	46.64	27.91	5.30	30.37	49.48	74.00	-24.52	Peak
2		2390.000	47.19	27.59	5.38	30.18	49.98	74.00	-24.02	Peak
3		2400.000	65.50	27.58	5.39	30.18	68.29	74.00	-5.71	Peak
4	*	2418.192	85.70	27.54	5.41	30.12	88.53			Peak

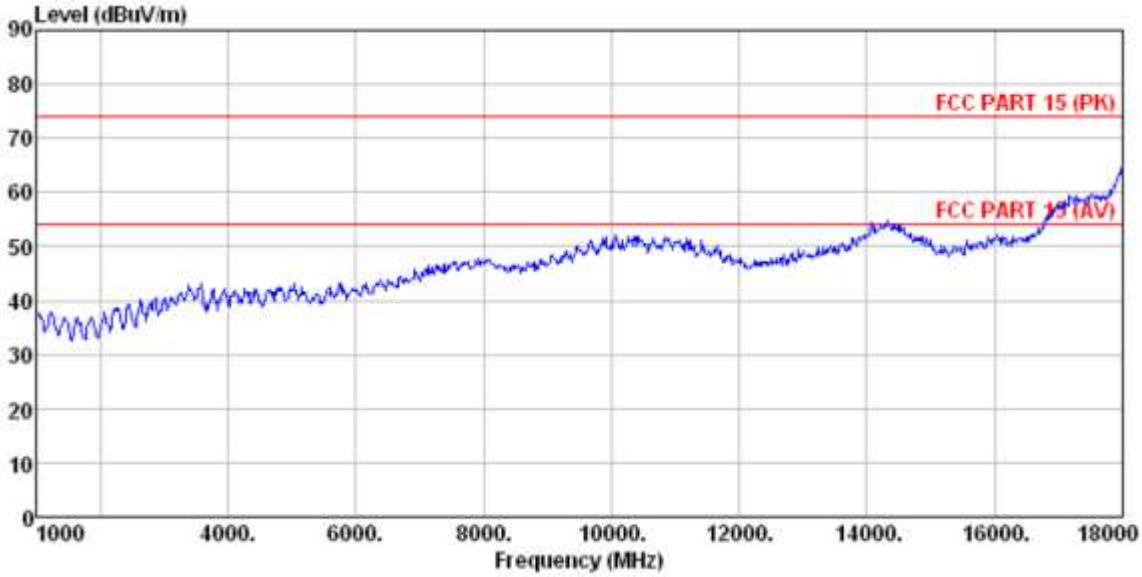


	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	34.89	27.91	5.30	30.37	37.73	54.00	-16.27	Average
2	2390.000	34.83	27.59	5.38	30.18	37.62	54.00	-16.38	Average
3 *	2415.728	74.83	27.55	5.41	30.12	77.67			Average

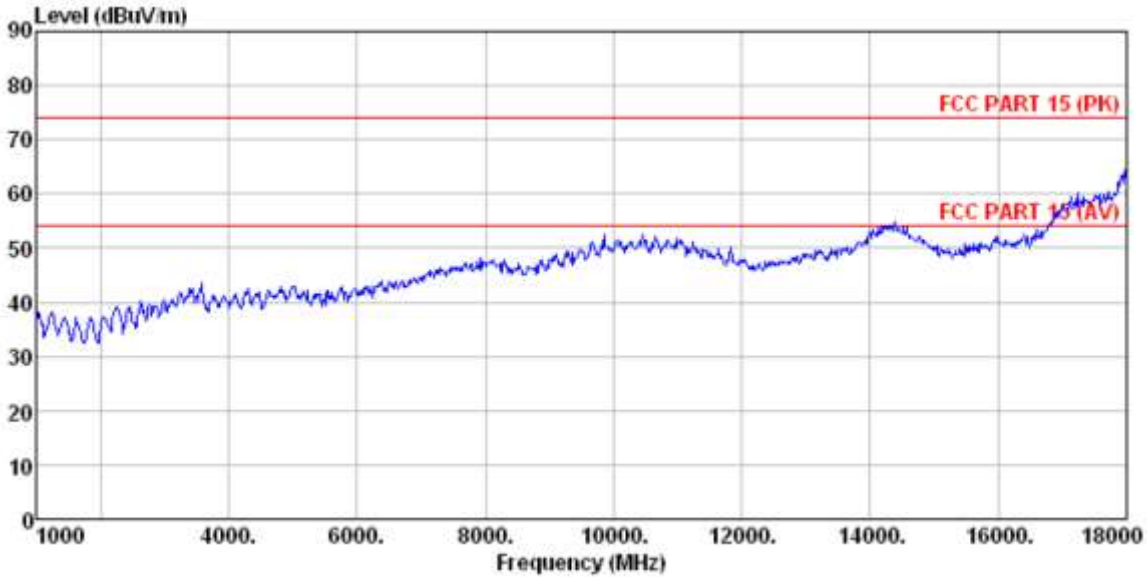
5.3.11 Diagram 5-11

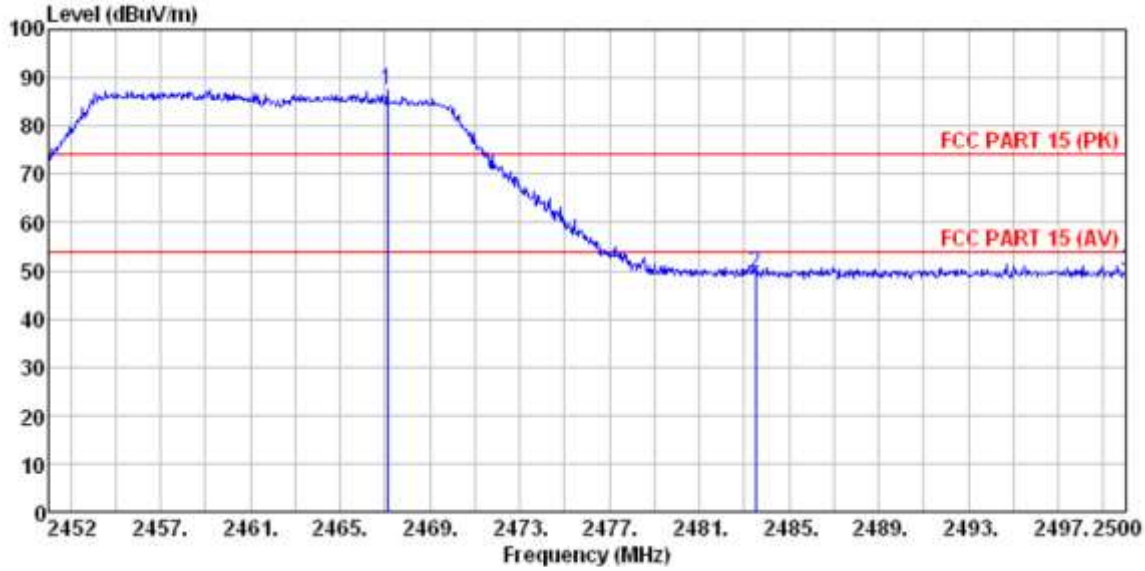


5.3.12 Diagram 5-12

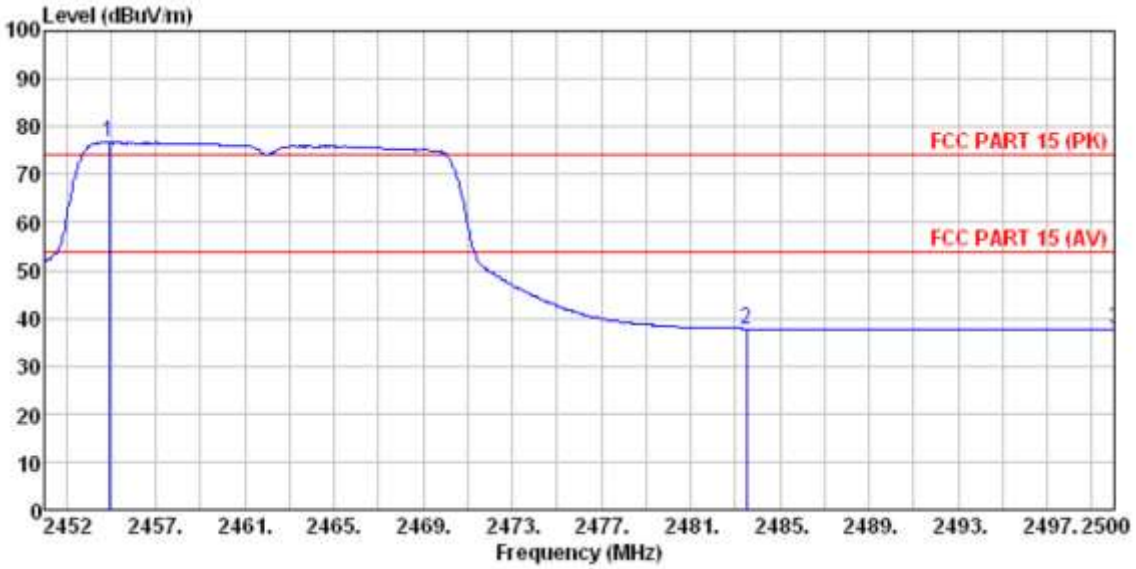


5.3.13 Diagram 5-13



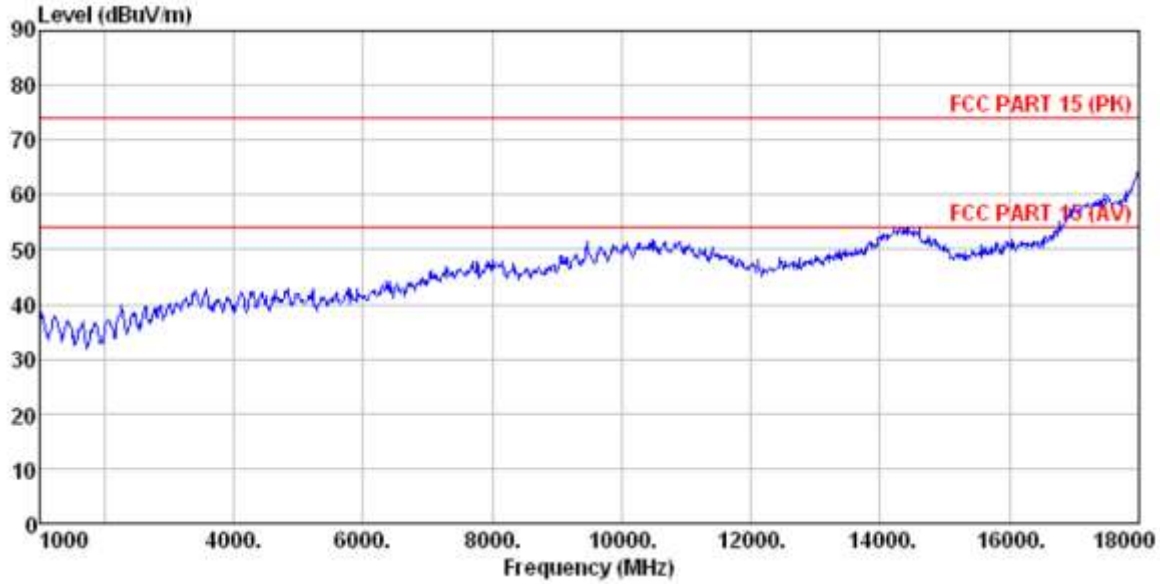


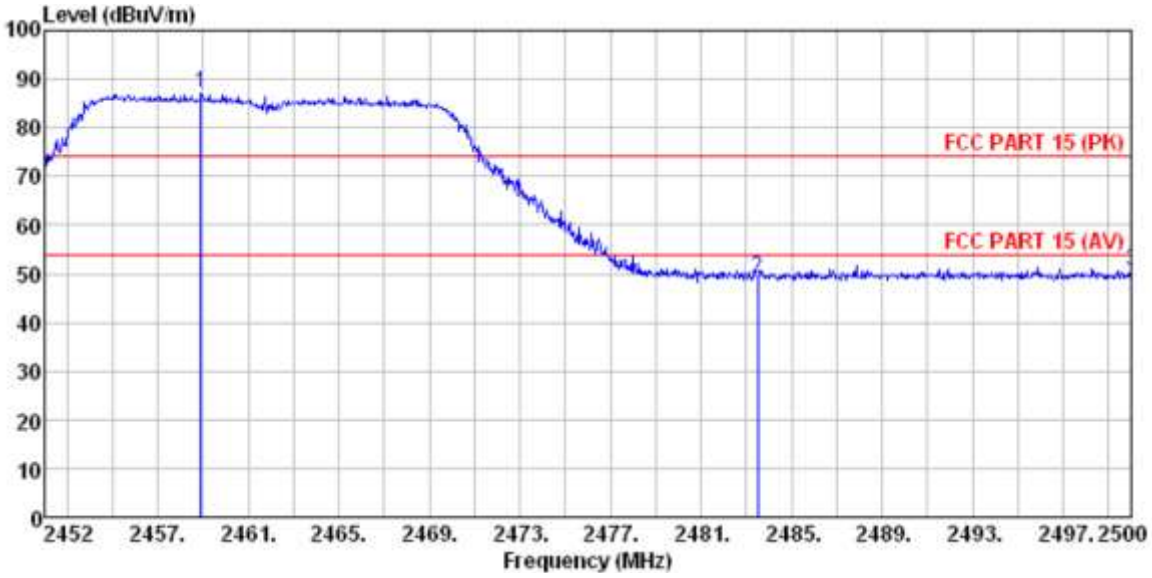
		Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	*	2467.120	84.47	27.50	5.45	29.99	87.43			Peak
2		2483.500	46.28	27.53	5.47	29.93	49.35	74.00	-24.65	Peak
3		2500.000	46.71	27.55	5.49	29.93	49.82	74.00	-24.18	Peak



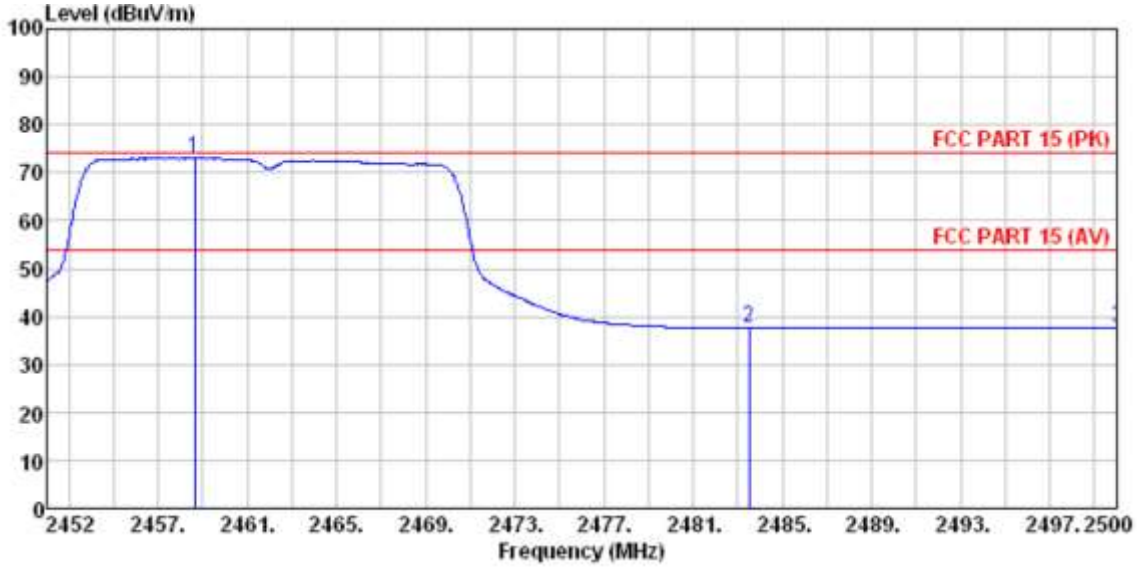
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2454.928	73.85	27.47	5.45	29.99	76.78			Average
2	2483.500	34.72	27.53	5.47	29.93	37.79	54.00	-16.21	Average
3	2500.000	34.55	27.55	5.49	29.93	37.66	54.00	-16.34	Average

5.3.14 Diagram 5-14



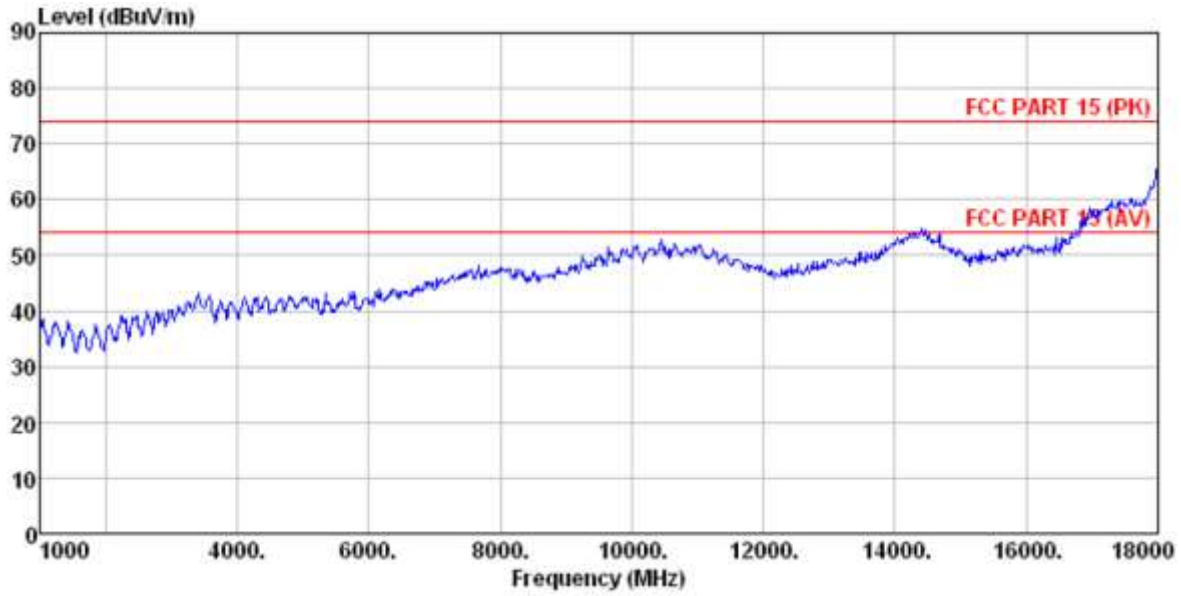


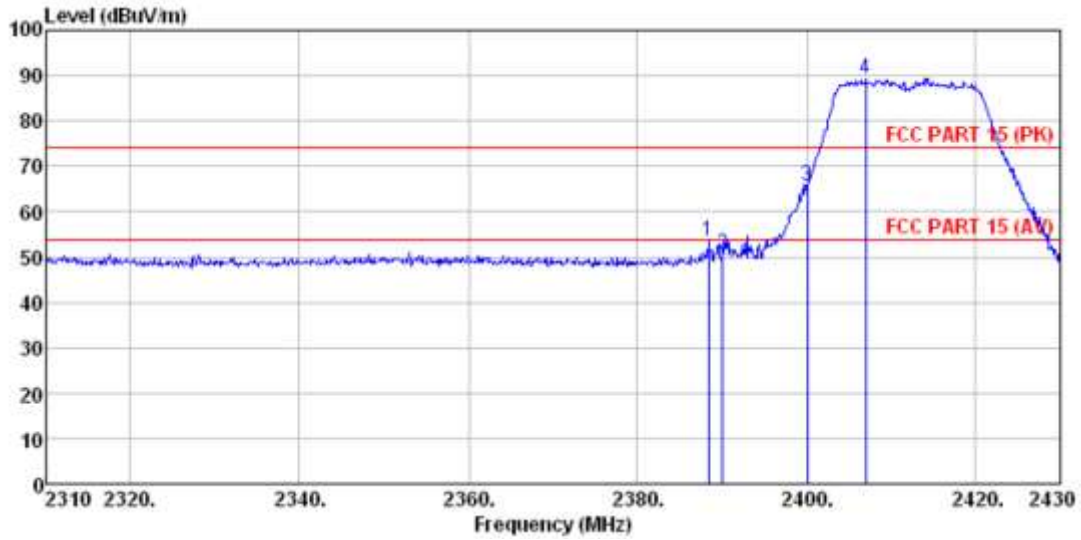
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2458.912	84.01	27.47	5.45	29.99	86.94			Peak
2	2483.500	46.11	27.53	5.47	29.93	49.18	74.00	-24.82	Peak
3	2500.000	47.44	27.55	5.49	29.93	50.55	74.00	-23.45	Peak



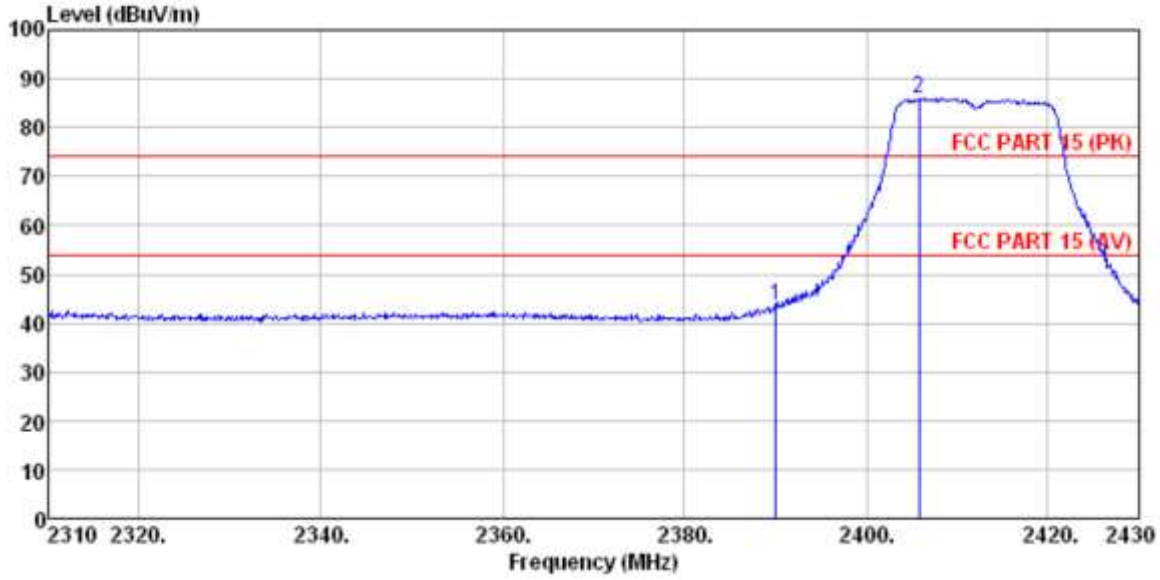
		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	*	2458.624	70.16	27.47	5.45	29.99	73.09			Average
2		2483.500	34.55	27.53	5.47	29.93	37.62	54.00	-16.38	Average
3		2500.000	34.48	27.55	5.49	29.93	37.59	54.00	-16.41	Average

5.3.15 Diagram 5-15



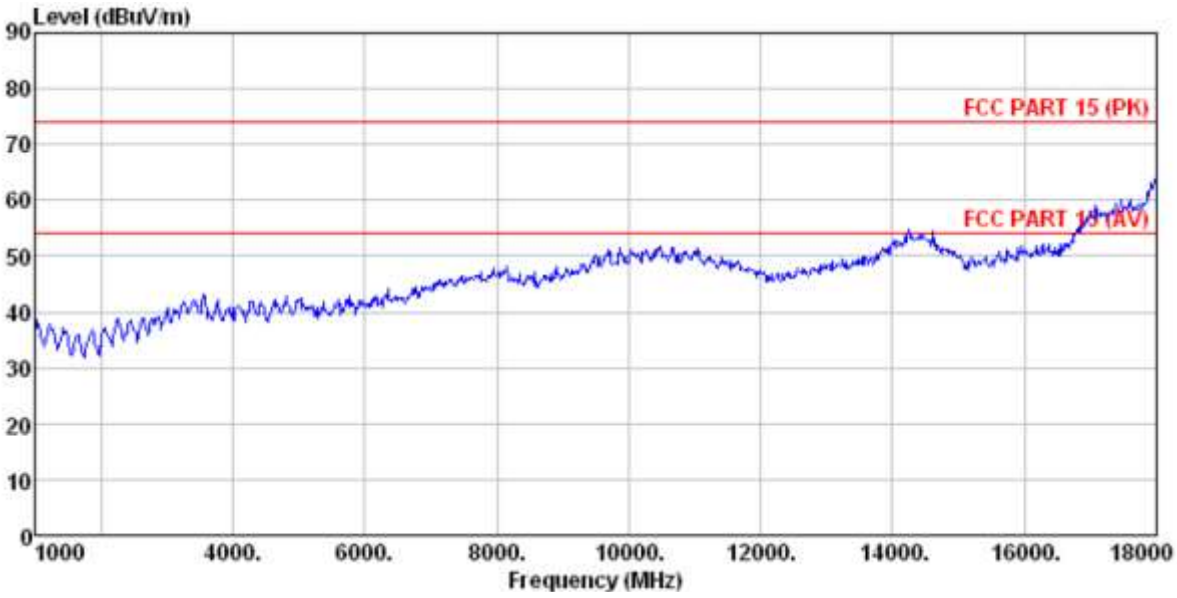


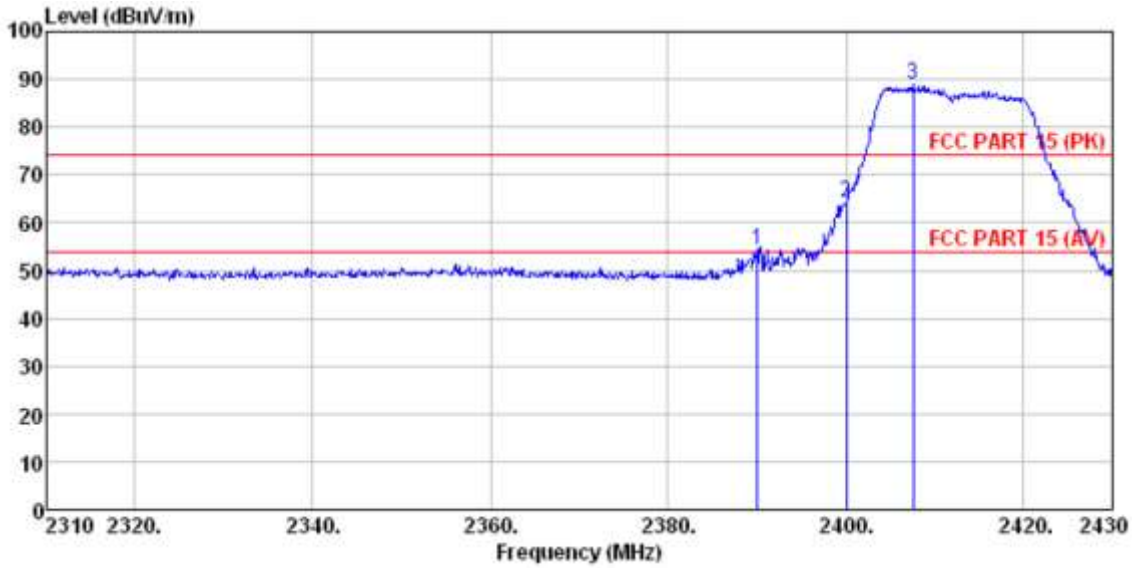
		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1		2388.360	50.52	27.61	5.38	30.18	53.33	74.00	-20.67	Peak
2		2390.000	47.58	27.59	5.38	30.18	50.37	74.00	-23.63	Peak
3		2400.000	62.99	27.58	5.39	30.18	65.78	74.00	-8.22	Peak
4	*	2406.960	86.53	27.57	5.40	30.12	89.38			Peak



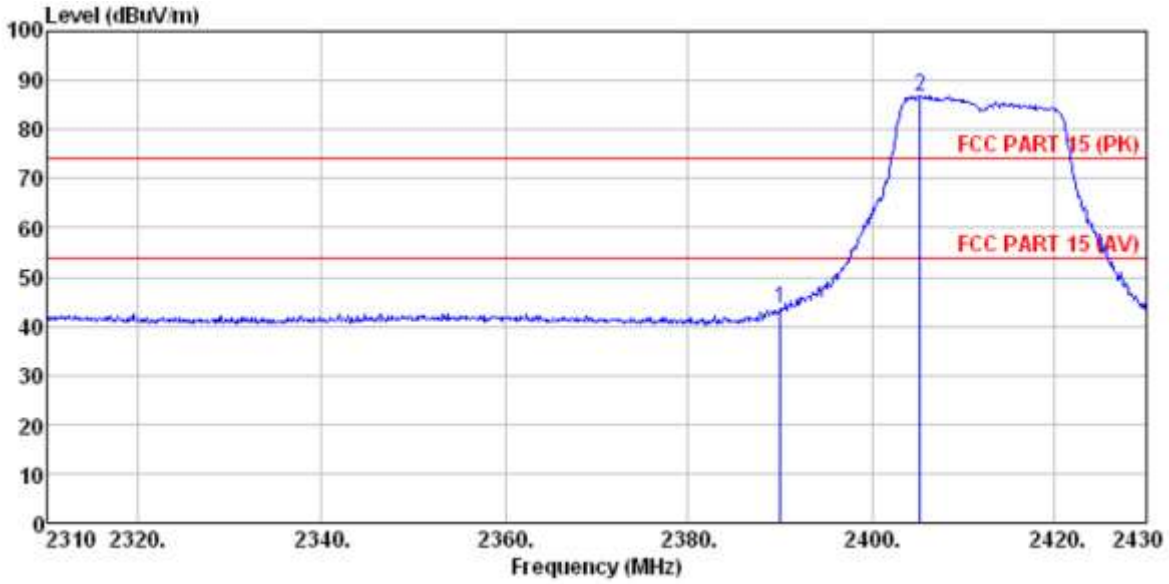
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	40.65	27.59	5.38	30.18	43.44	54.00	-10.56	Average
2 *	2405.760	83.20	27.57	5.40	30.12	86.05			Average

5.3.16 Diagram 5-16



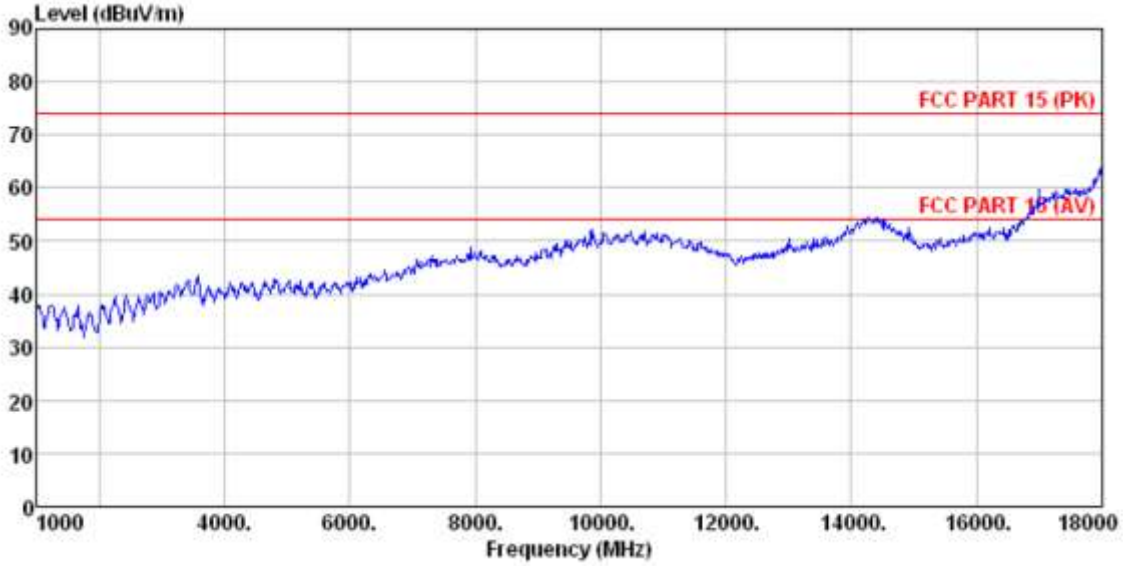


		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1		2390.000	51.31	27.59	5.38	30.18	54.10	74.00	-19.90	Peak
2		2400.000	61.50	27.58	5.39	30.18	64.29	74.00	-9.71	Peak
3	*	2407.560	86.11	27.57	5.40	30.12	88.96			Peak

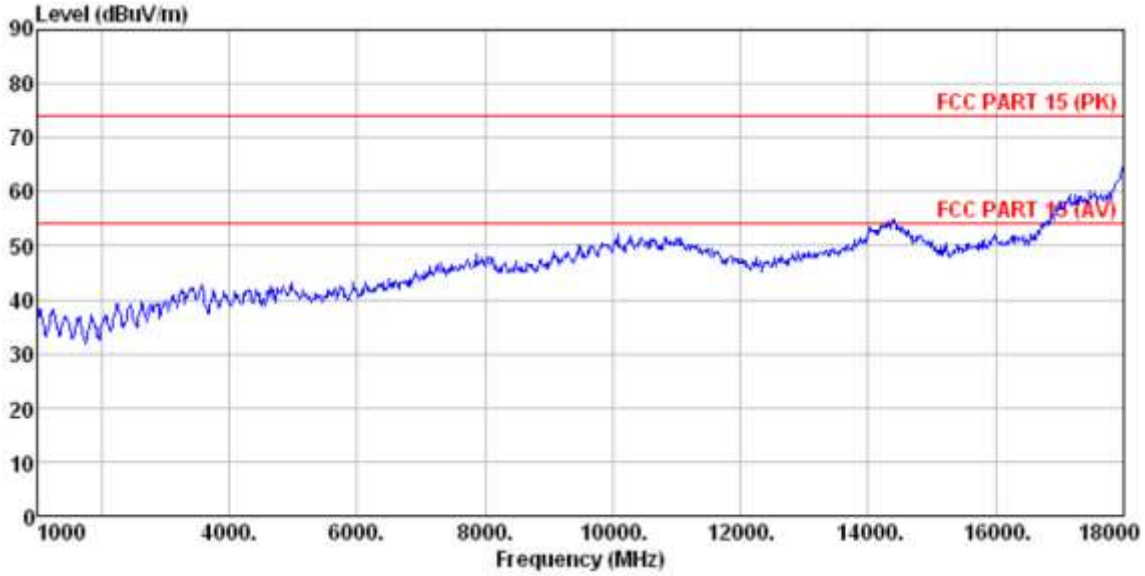


	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	40.59	27.59	5.38	30.18	43.38	54.00	-10.62	Average
2 *	2405.280	84.01	27.57	5.40	30.12	86.86			Average

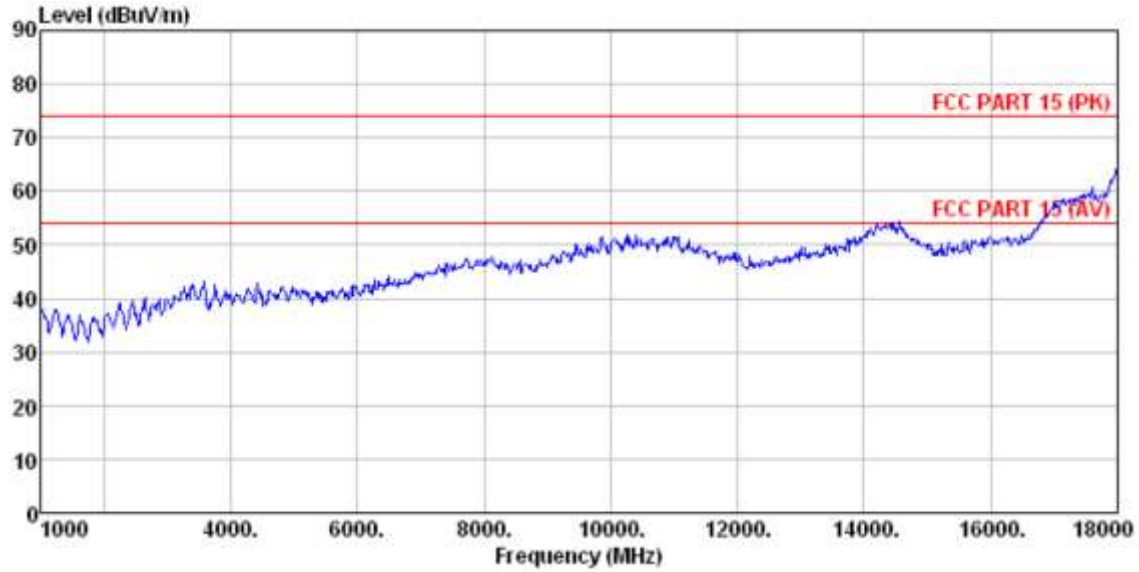
5.3.17 Diagram 5-17

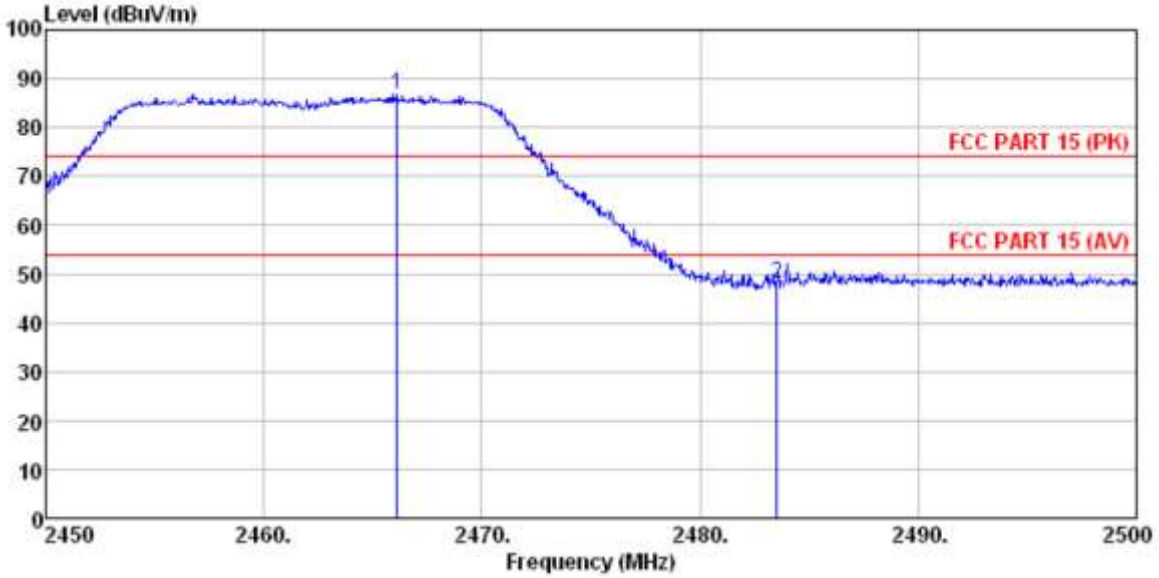


5.3.18 Diagram 5-18

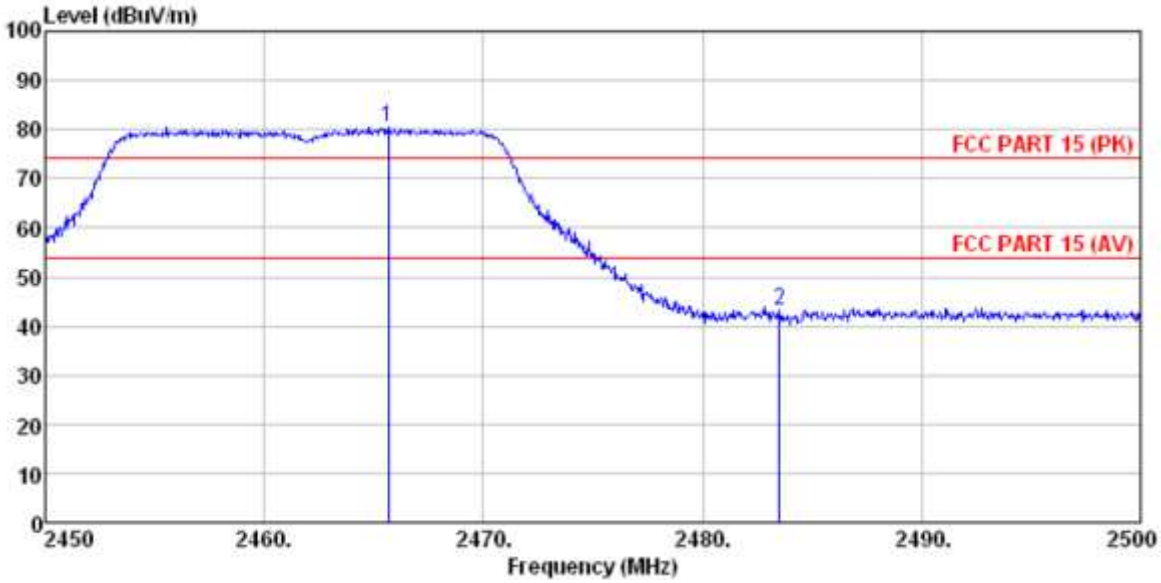


5.3.19 Diagram 5-19



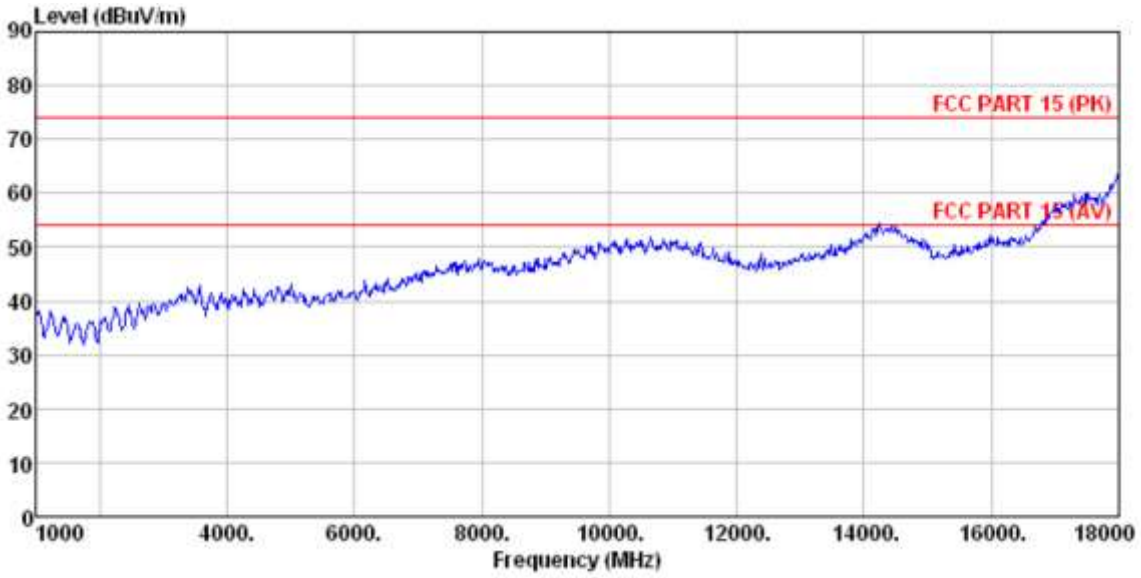


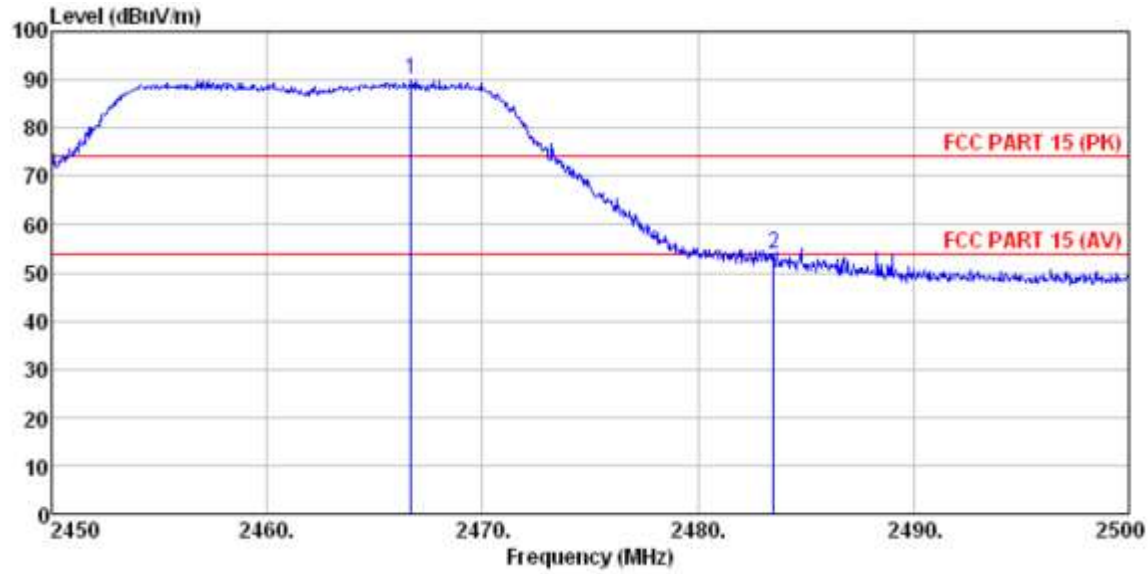
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2466.100	83.74	27.49	5.45	29.99	86.69			Peak
2	2483.500	44.85	27.53	5.47	29.93	47.92	74.00	-26.08	Peak



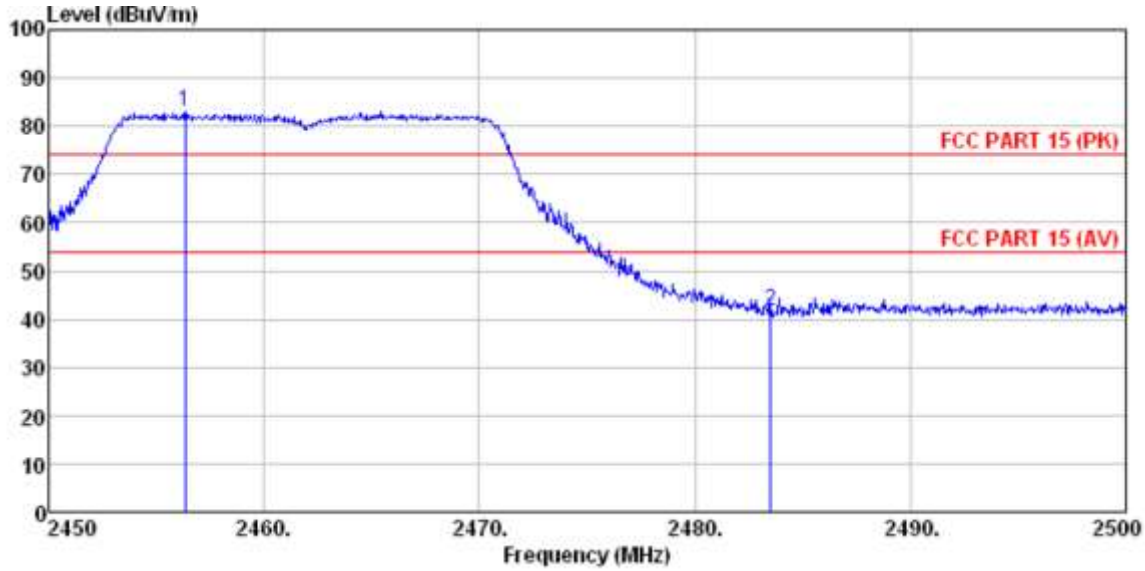
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2465.650	77.63	27.49	5.45	29.99	80.58			Average
2	2483.500	40.13	27.53	5.47	29.93	43.20	54.00	-10.80	Average

5.3.20 Diagram 5-20



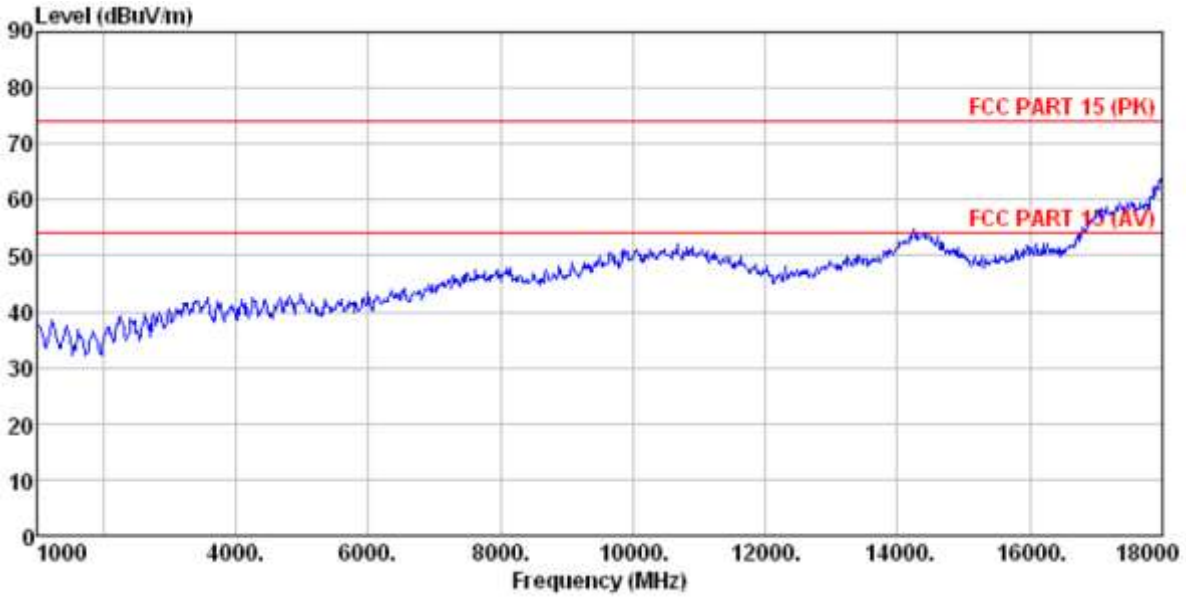


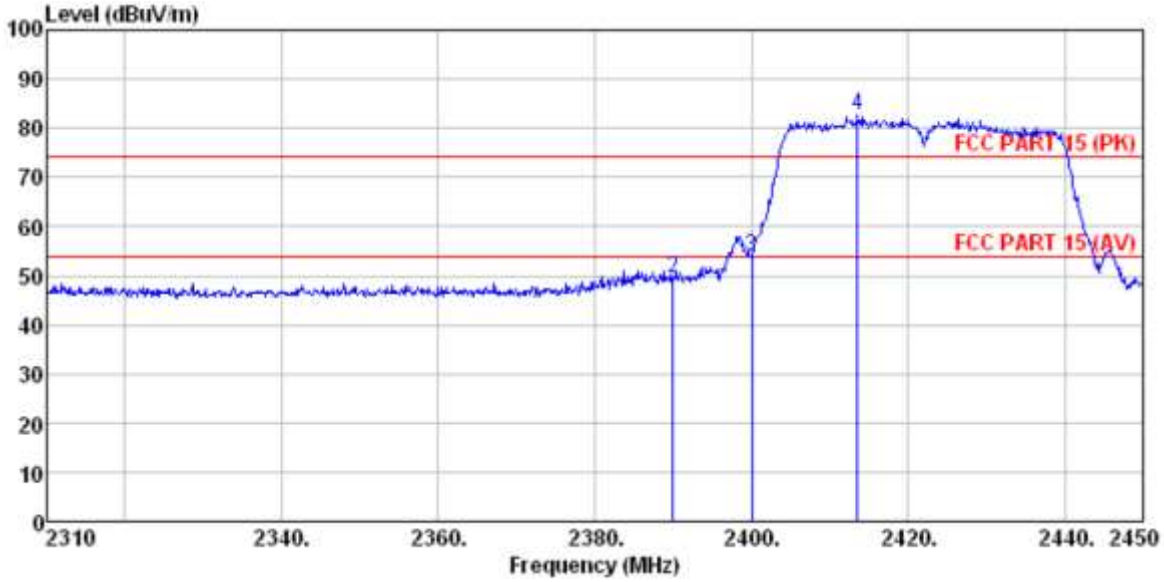
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2466.700	86.93	27.49	5.45	29.99	89.88			Peak
2	2483.500	50.65	27.53	5.47	29.93	53.72	74.00	-20.28	Peak



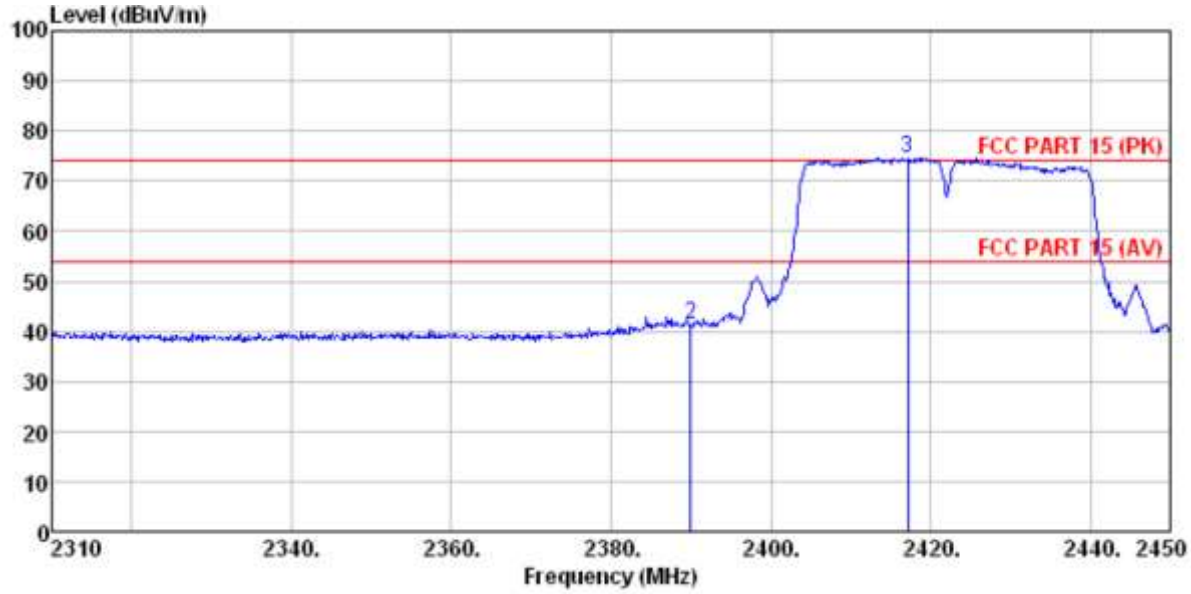
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2456.350	80.05	27.47	5.45	29.99	82.98			Average
2	2483.500	38.70	27.53	5.47	29.93	41.77	54.00	-12.23	Average

5.3.21 Diagram 5-21



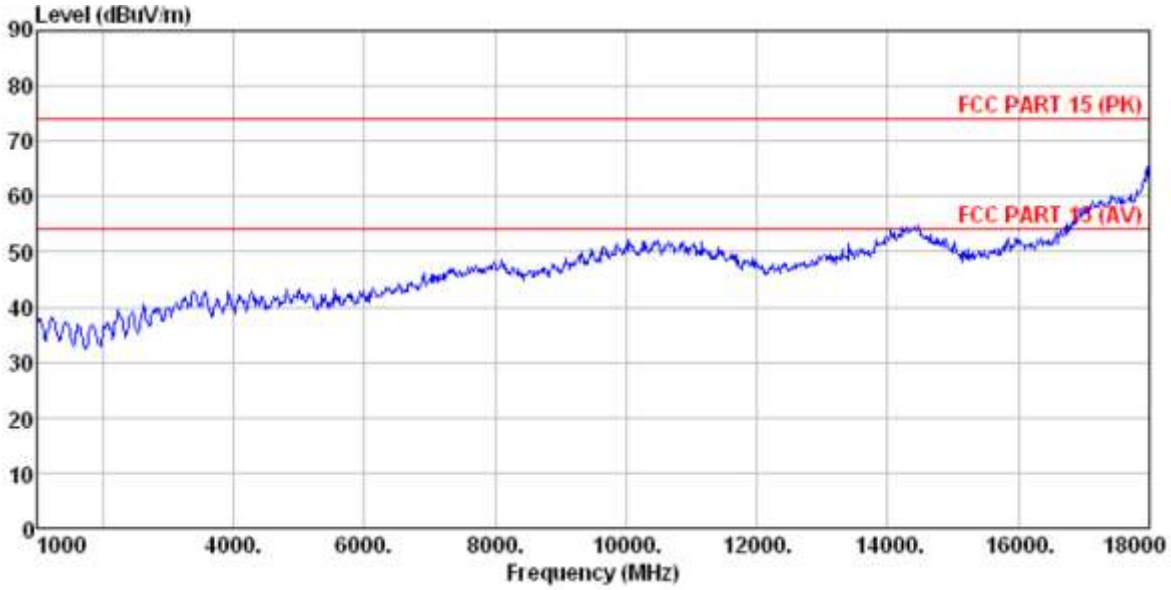


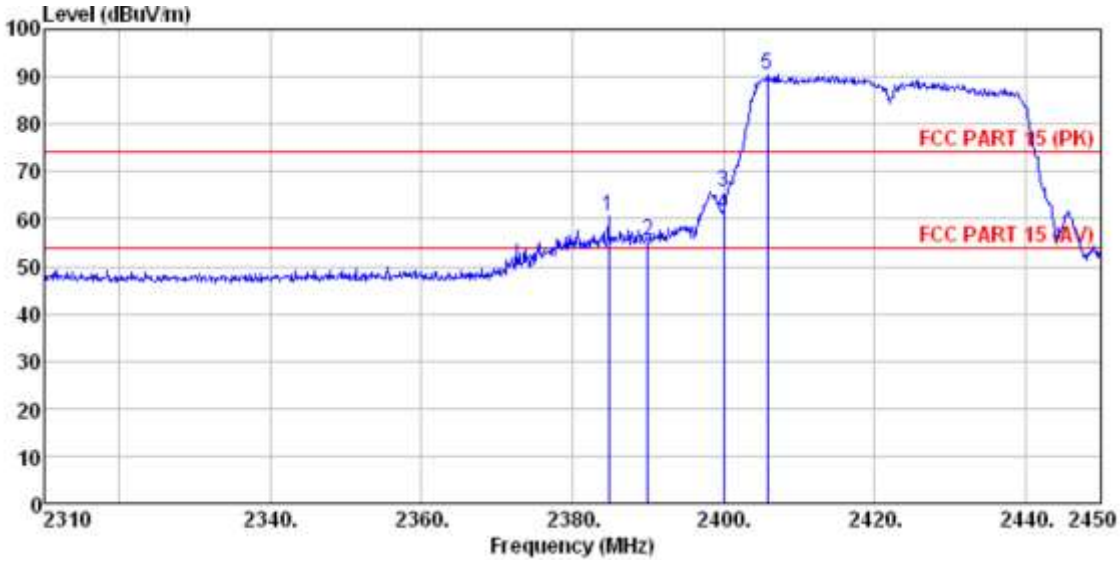
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	44.48	27.91	5.30	30.37	47.32	74.00	-26.68	Peak
2	2390.000	46.71	27.59	5.38	30.18	49.50	74.00	-24.50	Peak
3	2400.000	51.06	27.58	5.39	30.18	53.85	74.00	-20.15	Peak
4 *	2413.600	79.87	27.55	5.41	30.12	82.71			Peak



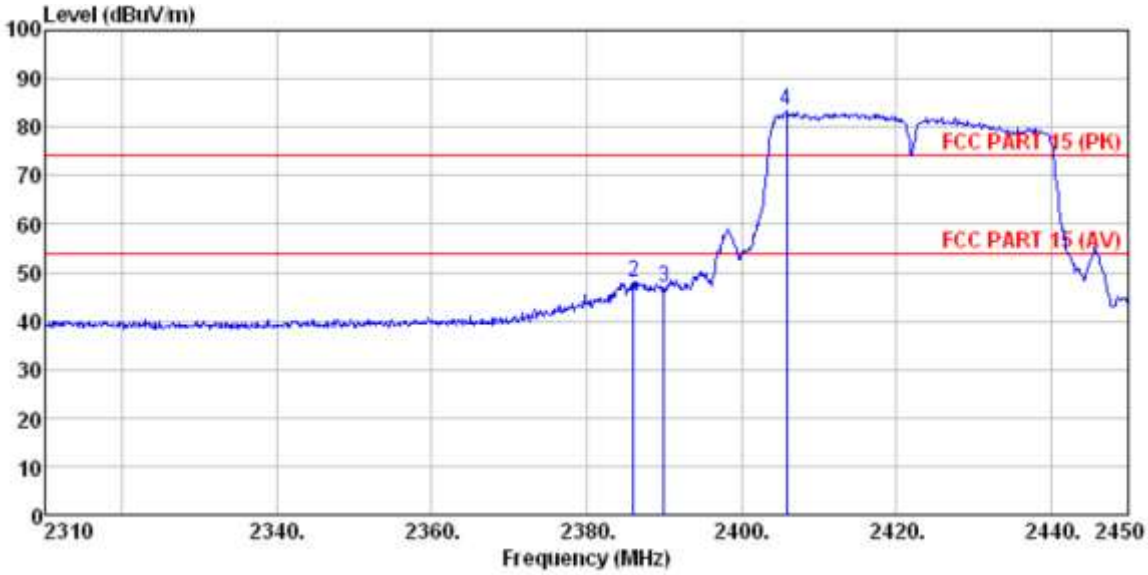
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2310.000	36.06	27.91	5.30	30.37	38.90	54.00	-15.10	Average
2	2390.000	38.44	27.59	5.38	30.18	41.23	54.00	-12.77	Average
3 *	2417.100	71.77	27.55	5.41	30.12	74.61			Average

5.3.22 Diagram 5-22



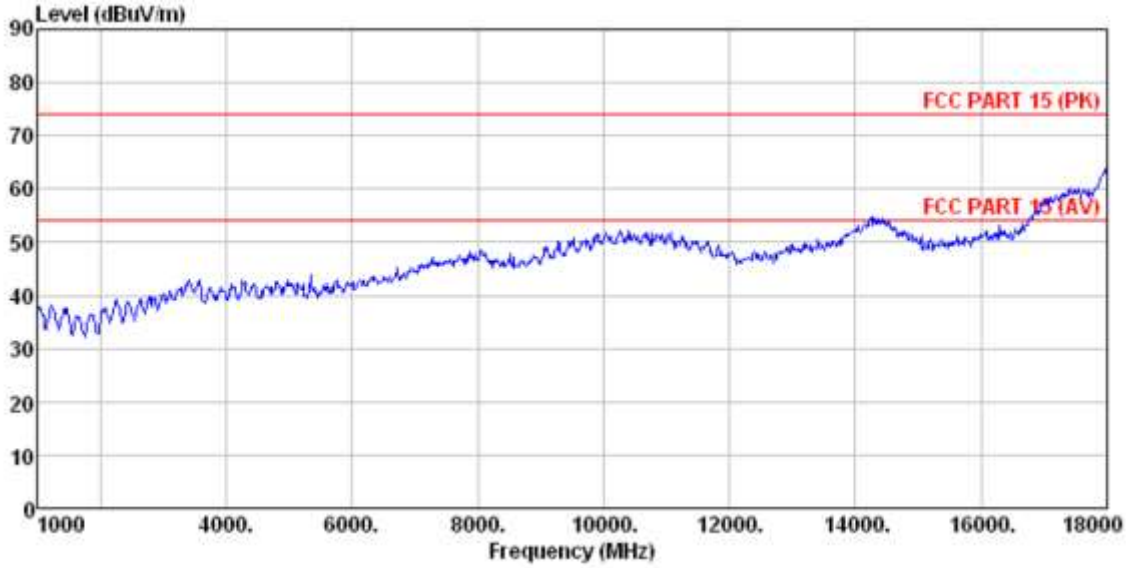


		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1		2384.760	57.77	27.61	5.38	30.18	60.58	74.00	-13.42	Peak
2		2390.000	52.39	27.59	5.38	30.18	55.18	74.00	-18.82	Peak
3		2400.000	62.74	27.58	5.39	30.18	65.53	74.00	-8.47	Peak
4		2400.020	58.17	27.58	5.39	30.18	60.96	74.00	-13.04	Peak
5	*	2405.760	87.43	27.57	5.40	30.12	90.28			Peak

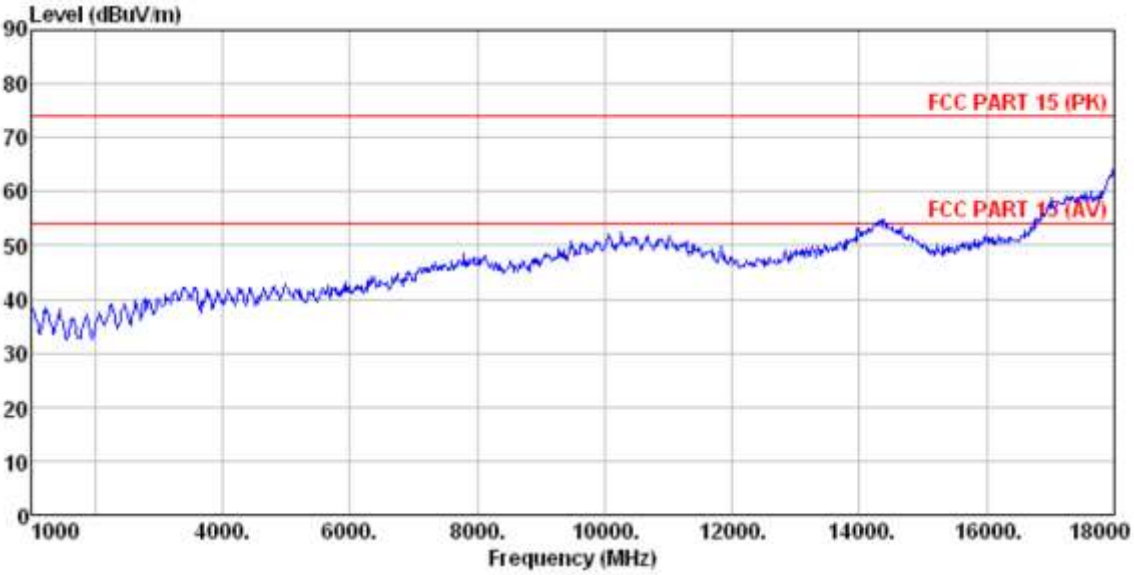


		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1		2310.000	36.71	27.91	5.30	30.37	39.55	54.00	-14.45	Average
2		2386.020	45.09	27.61	5.38	30.18	47.90	54.00	-6.10	Average
3		2390.000	43.95	27.59	5.38	30.18	46.74	54.00	-7.26	Average
4	*	2405.760	80.55	27.57	5.40	30.12	83.40			Average

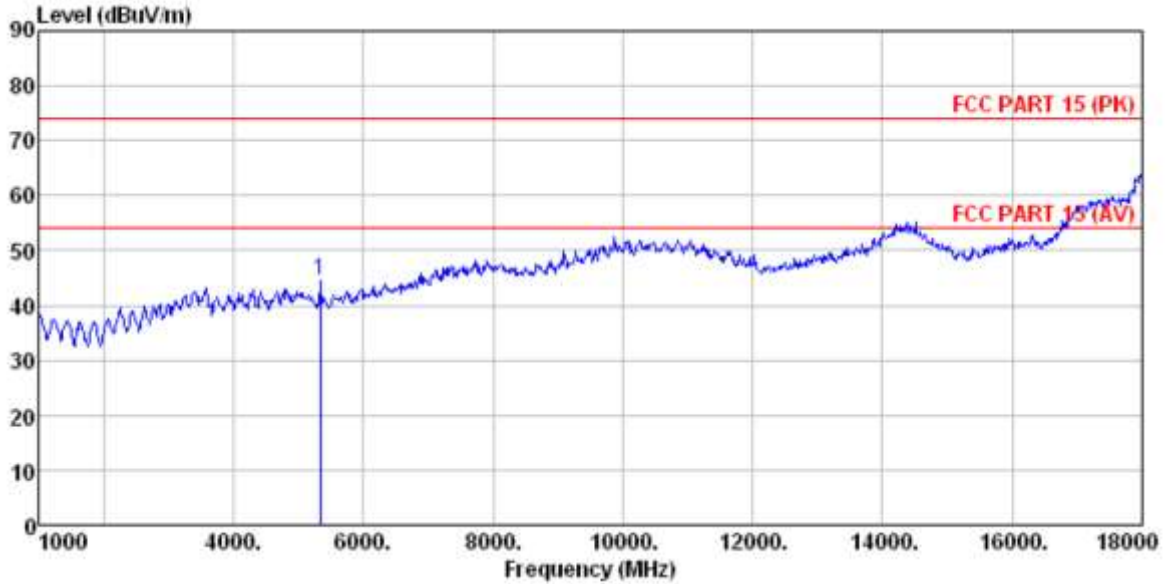
5.3.23 Diagram 5-23



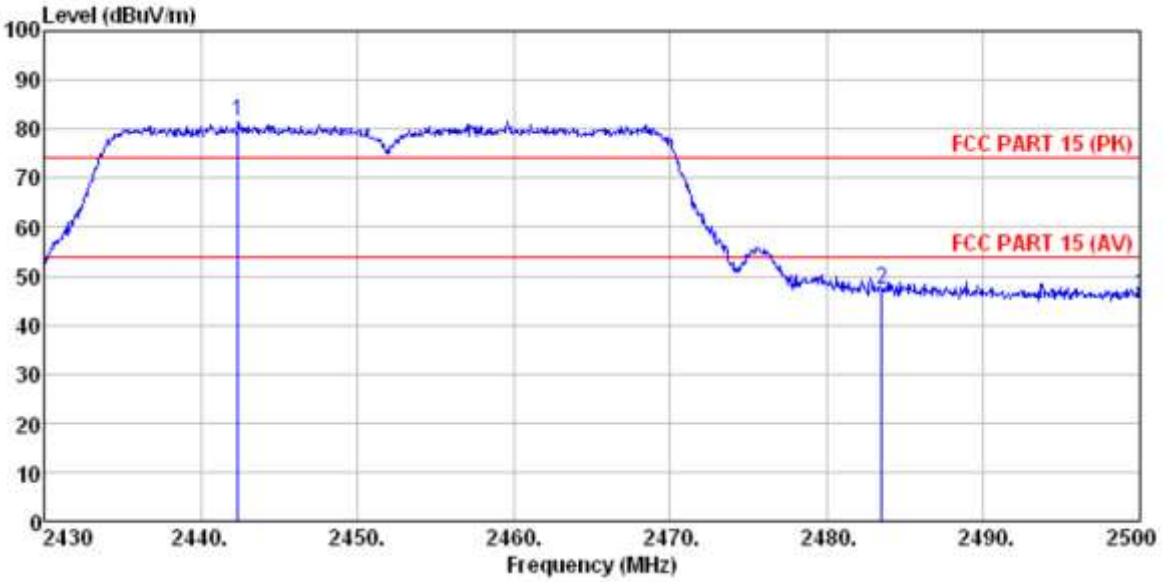
5.3.24 Diagram 5-24



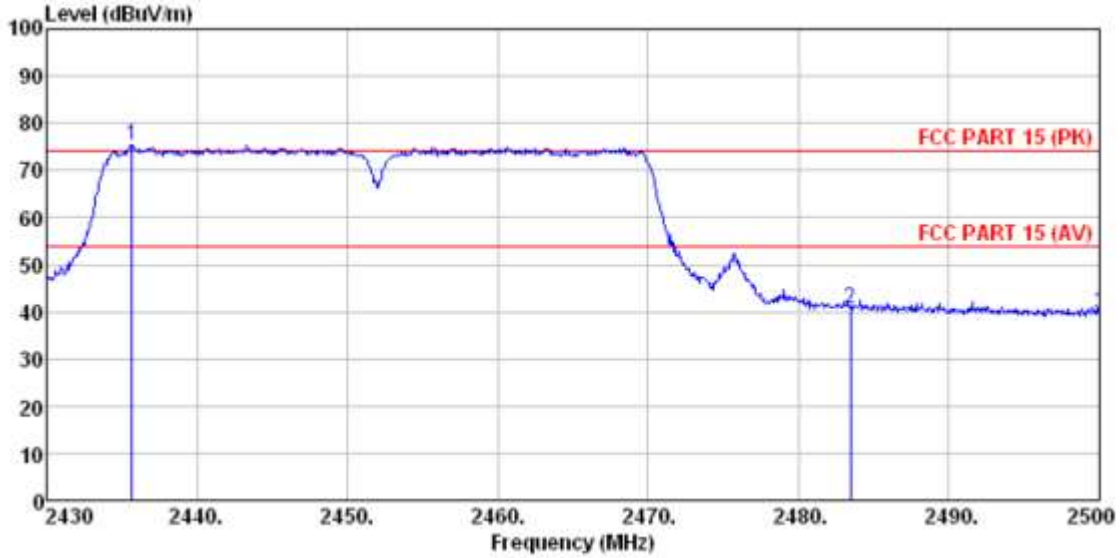
5.3.25 Diagram 5-25



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	5335.000	35.84	31.73	9.26	32.35	44.48	74.00	-29.52	Peak

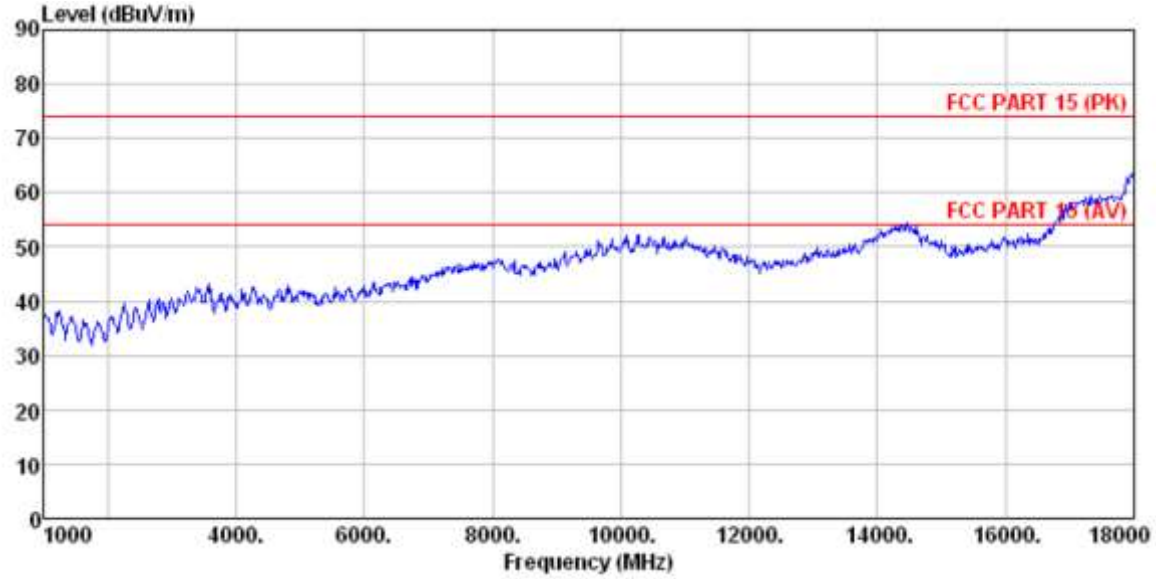


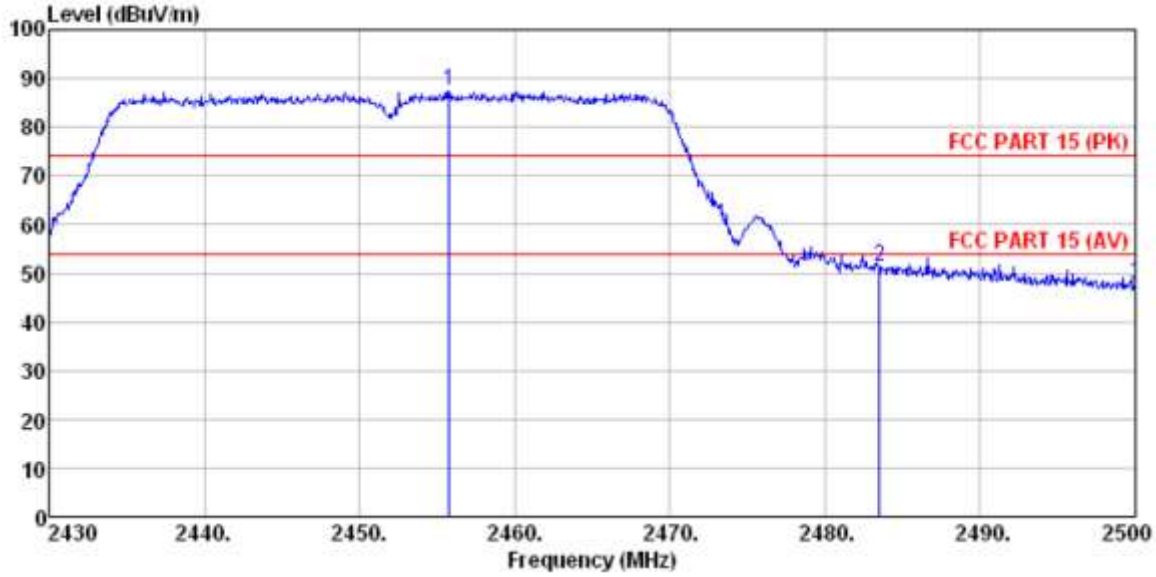
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2442.390	78.76	27.48	5.43	30.06	81.61			Peak
2	2483.500	44.08	27.53	5.47	29.93	47.15	74.00	-26.85	Peak
3	2500.000	42.71	27.55	5.49	29.93	45.82	74.00	-28.18	Peak



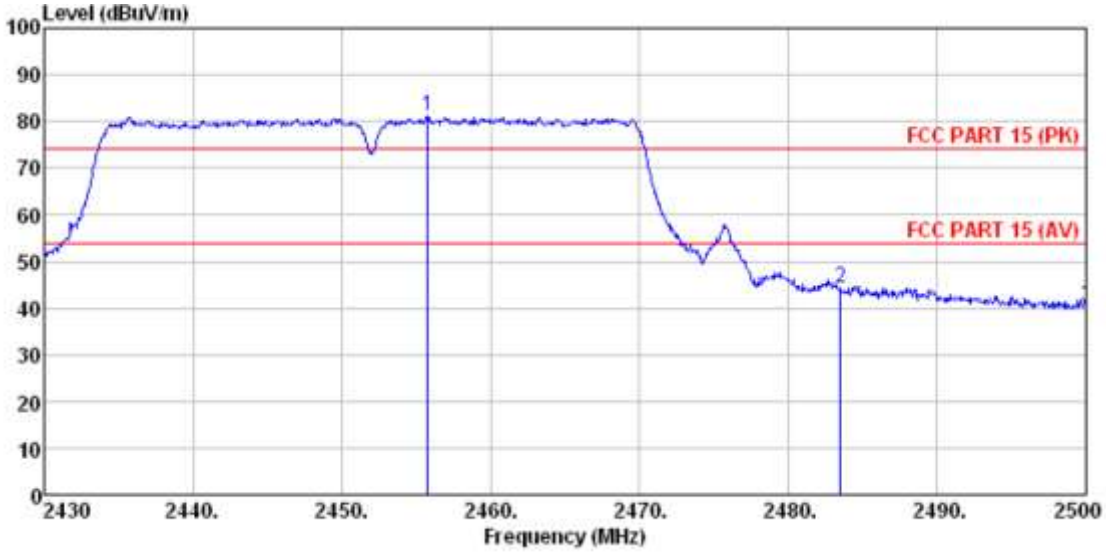
		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	*	2435.670	72.51	27.50	5.43	30.06	75.38			Average
2		2483.480	37.69	27.53	5.47	29.93	40.76	54.00	-13.24	Average
3		2500.000	36.35	27.55	5.49	29.93	39.46	54.00	-14.54	Average

5.3.26 Diagram 5-26





		Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	*	2455.760	84.60	27.47	5.45	29.99	87.53			Peak
2		2483.500	48.23	27.53	5.47	29.93	51.30	74.00	-22.70	Peak
3		2500.000	44.50	27.55	5.49	29.93	47.61	74.00	-26.39	Peak



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2455.760	78.09	27.47	5.45	29.99	81.02	54.00	27.02	Average
2	2483.500	41.24	27.53	5.47	29.93	44.31	54.00	-9.69	Average
3	2500.000	37.06	27.55	5.49	29.93	40.17	54.00	-13.83	Average

6. 6dB Bandwidth test

6.1 Test Procedure

6dB Bandwidth:

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

The transmitter output was connected to a spectrum analyzer. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 KHz RBW and 300 KHz VBW. The 6dB bandwidth is defined as the total spectrum with the power of which is lower than peak power for 6dB.

1. Set resolution bandwidth (RBW) = 100 kHz.
2. Set the video bandwidth (VBW) _ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.2 Measurement Equipment

	Equipment	Calibration due	Type	Serial No.	Manufacturer
☒	Spectrum Analyzer	Dec. 04 2015	E4440A	GTS533	Agilent

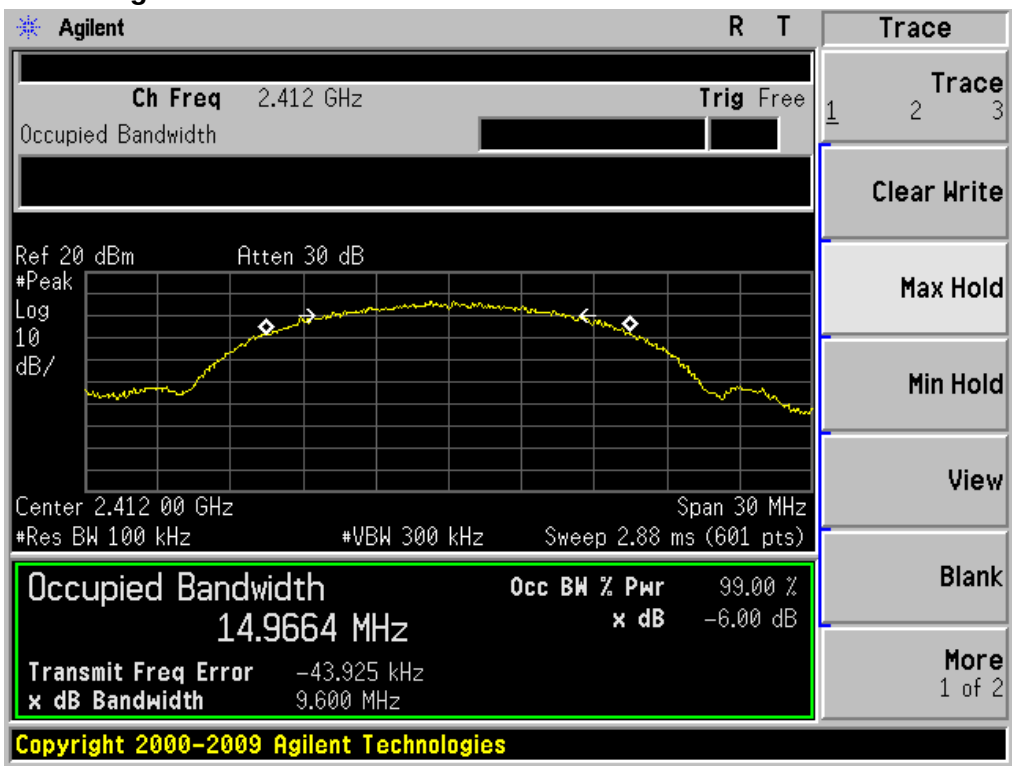
6.3 Test Result

Remark : Conducted measurement.

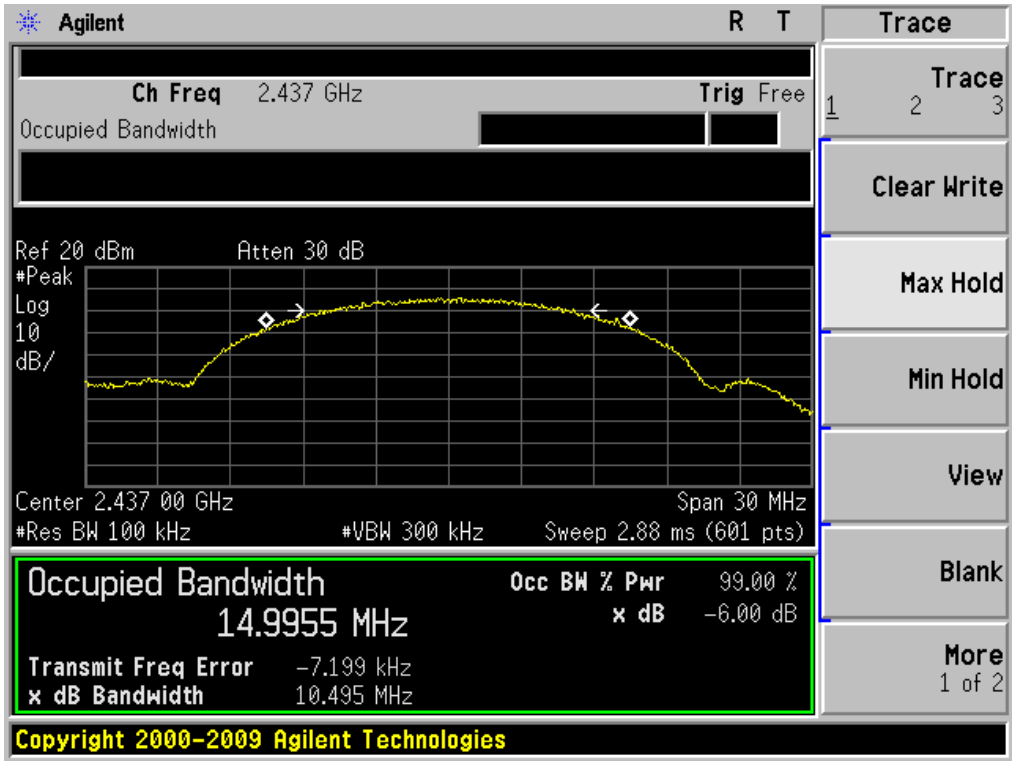
6dB Bandwidth:

802.11b				
Channel	Diagram	6dB bandwidth MHz	>Limit kHz	Result
low	6-1	9.600	500	PASS
mid	6-2	10.495	500	PASS
high	6-3	10.269	500	PASS
802.11g				
Channel	Diagram	6dB bandwidth MHz	>Limit kHz	Result
low	6-4	16.439	500	PASS
mid	6-5	16.429	500	PASS
high	6-6	16.462	500	PASS
802.11n H20				
Channel	Diagram	6dB bandwidth MHz	>Limit kHz	Result
low	6-7	17.650	500	PASS
mid	6-8	17.650	500	PASS
high	6-9	17.651	500	PASS
802.11n H40				
Channel	Diagram	6dB bandwidth MHz	>Limit kHz	Result
low	6-10	35.587	500	PASS
mid	6-11	35.534	500	PASS
high	6-12	35.511	500	PASS

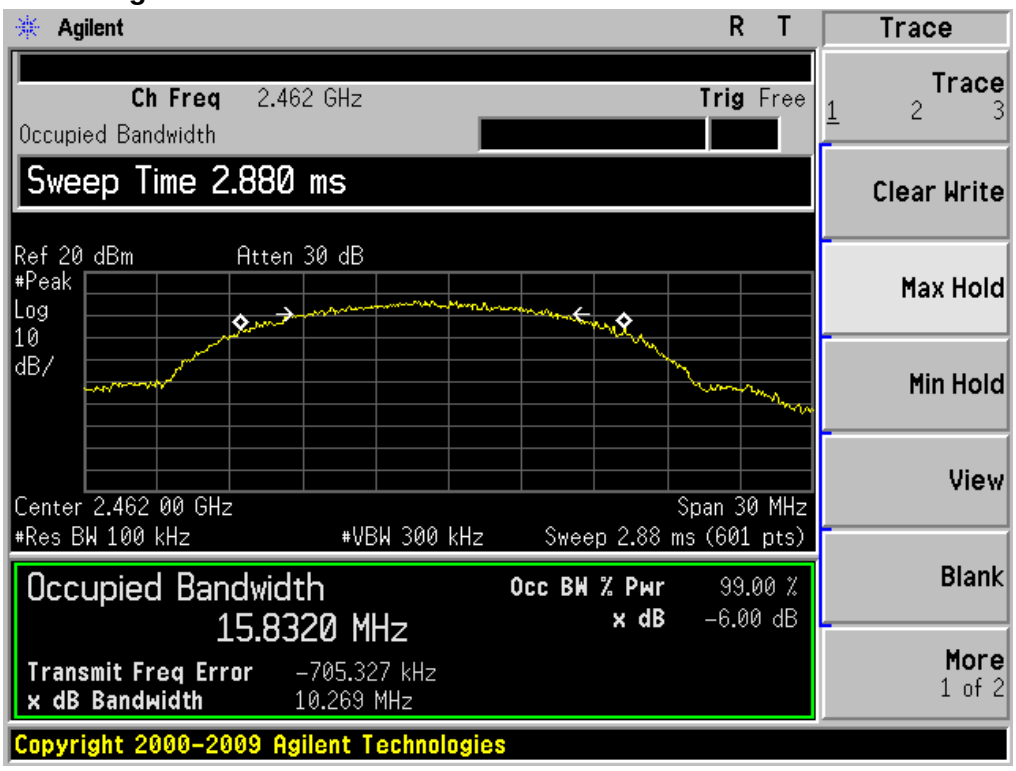
6.3.1 Diagram 6-1



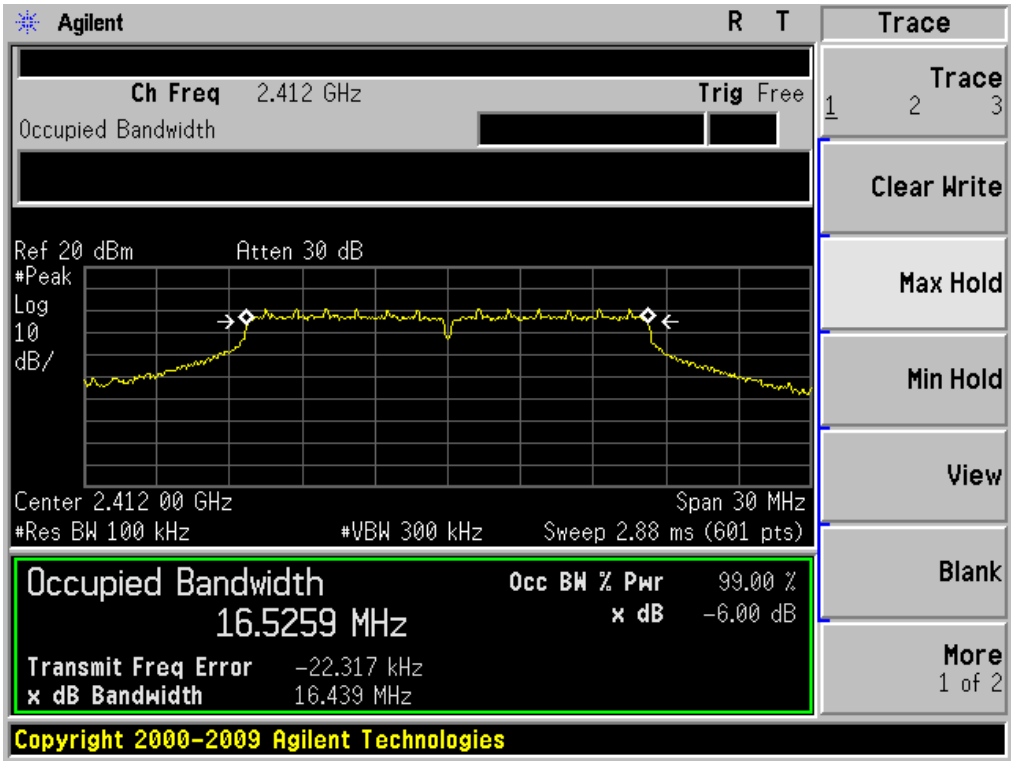
6.3.2 Diagram 6-2



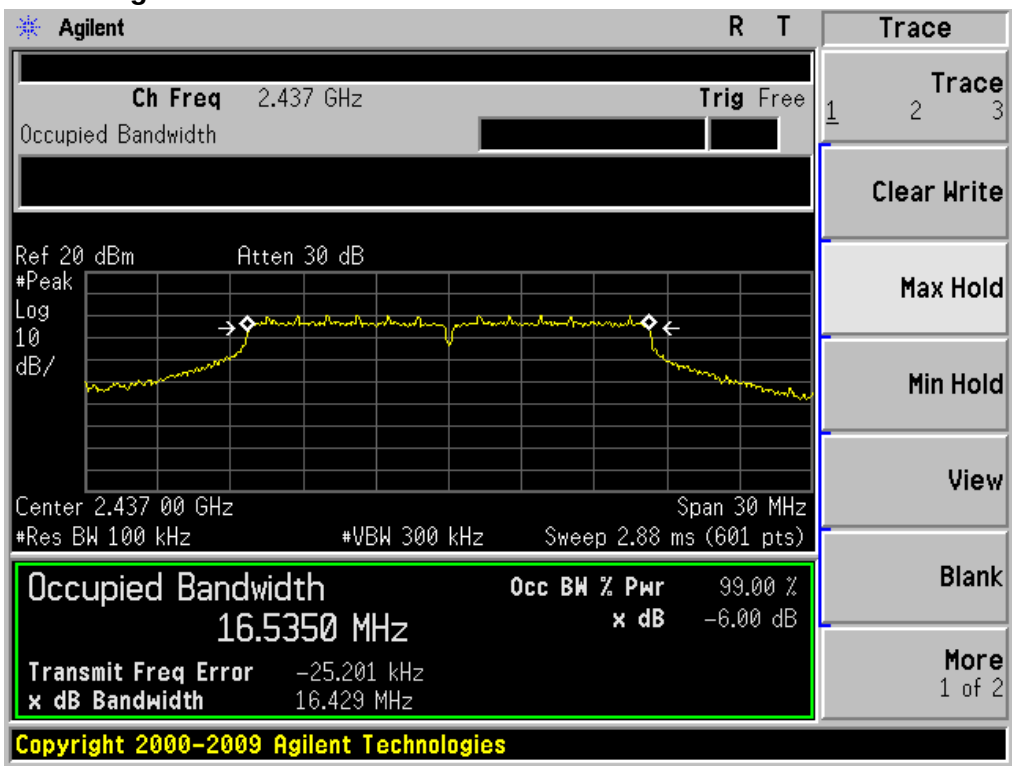
6.3.3 Diagram 6-3



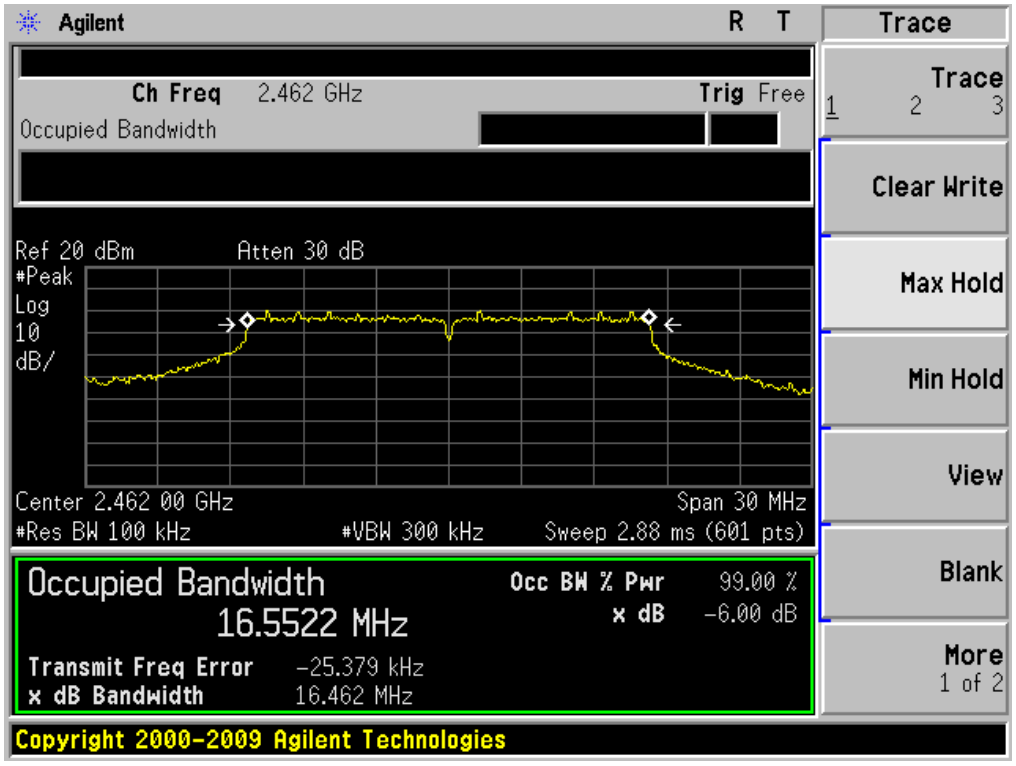
6.3.4 Diagram 6-4



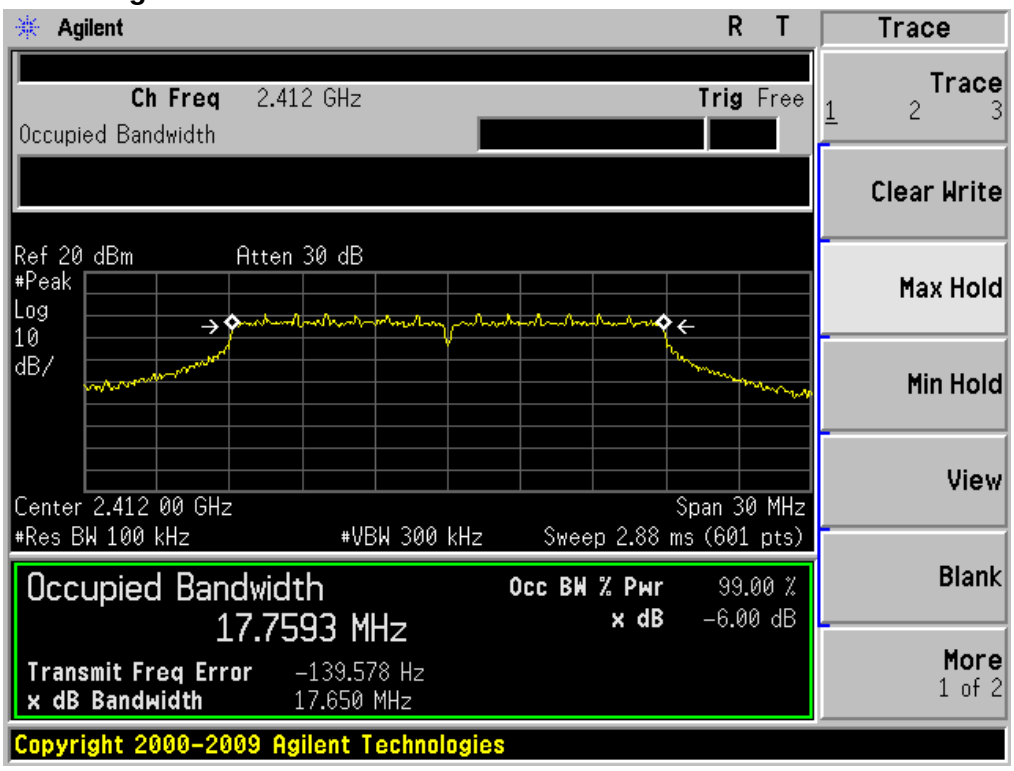
6.3.5 Diagram 6-5



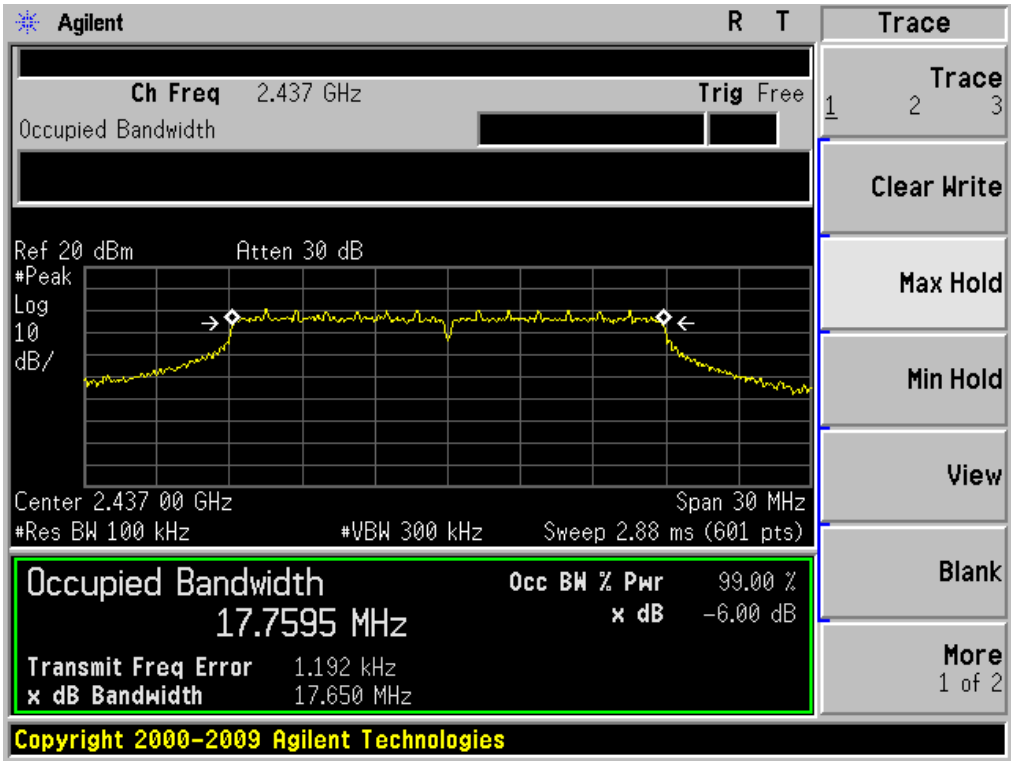
6.3.6 Diagram 6-6



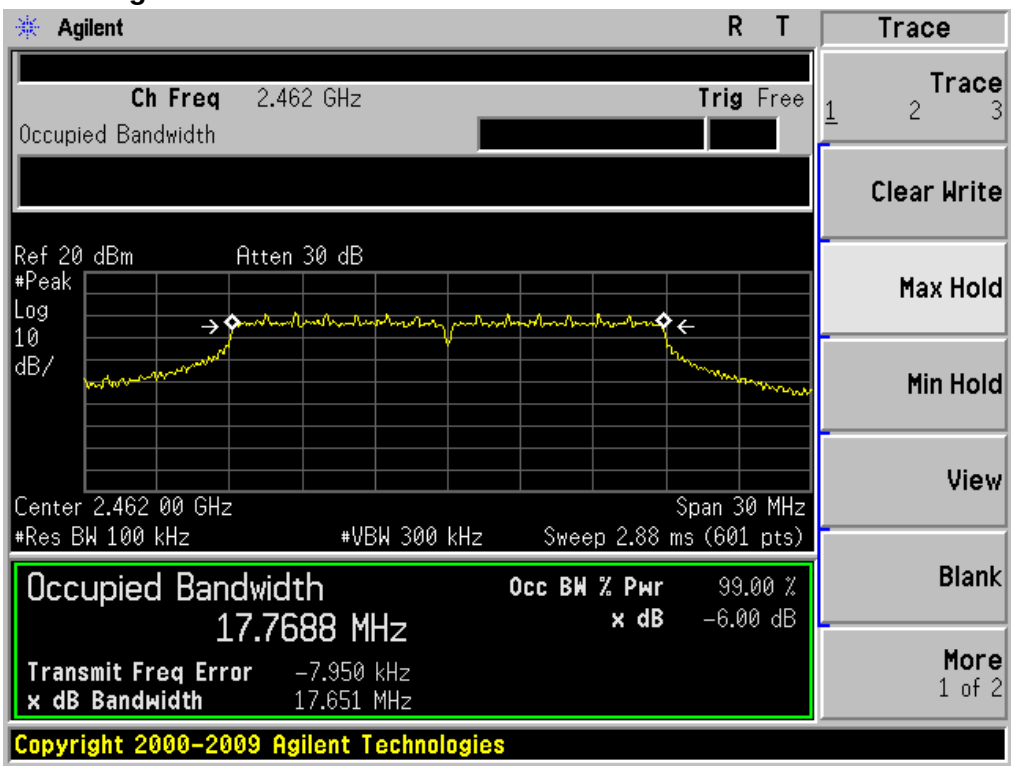
6.3.7 Diagram 6-7



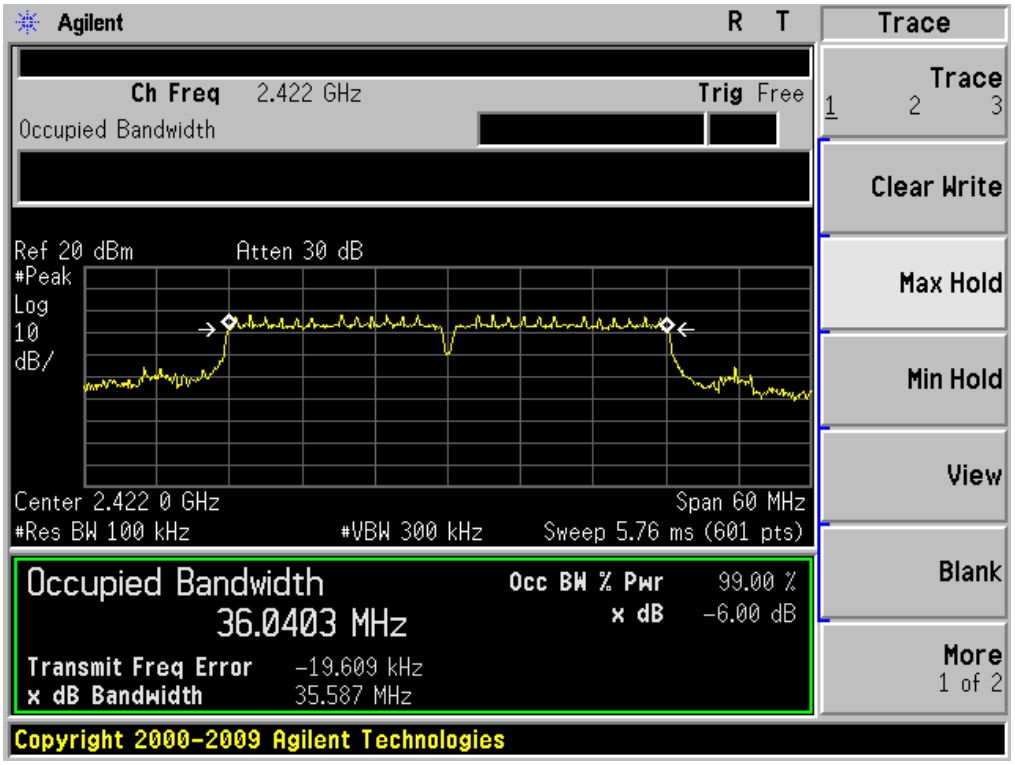
6.3.8 Diagram 6-8



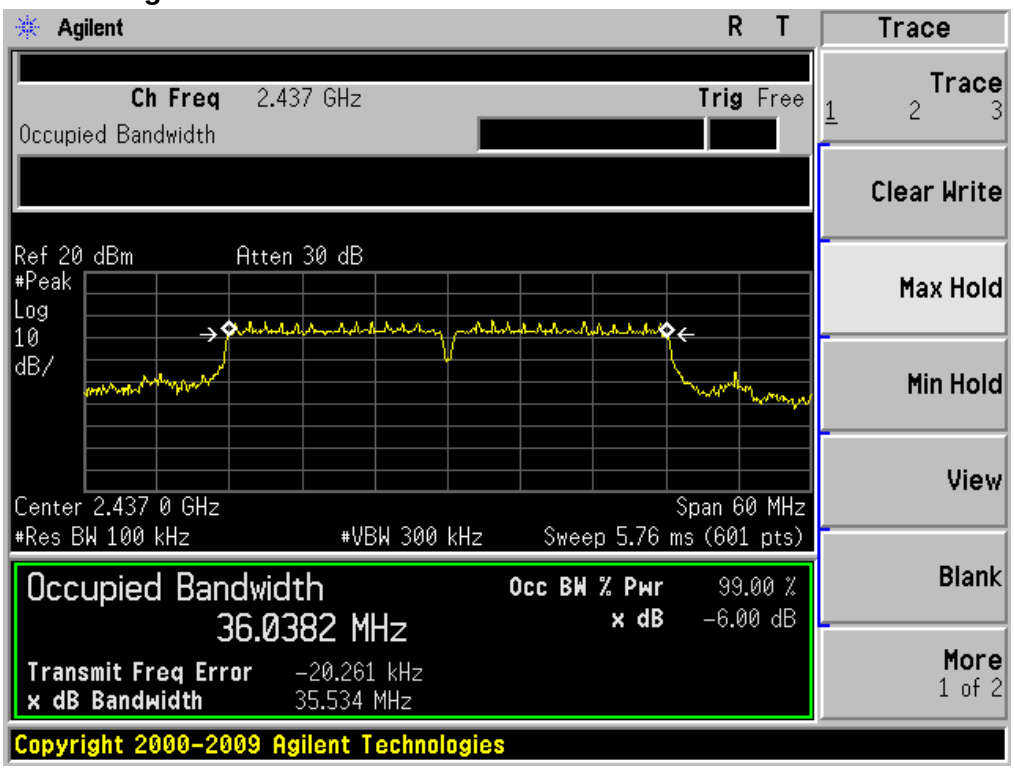
6.3.9 Diagram 6-9



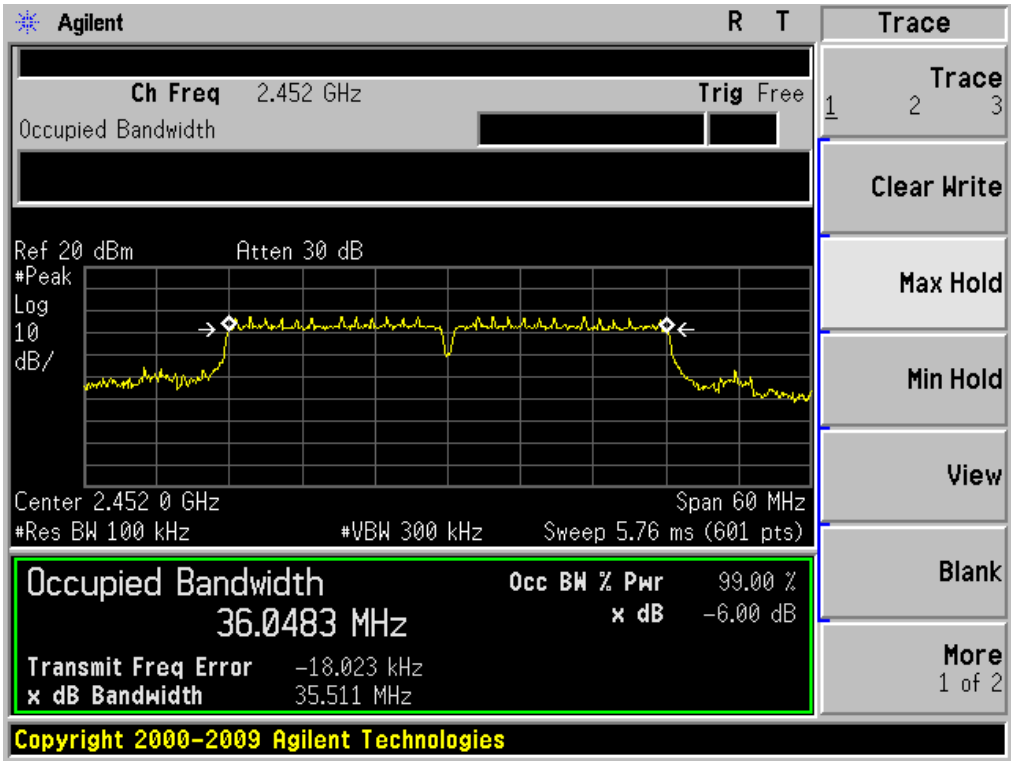
6.3.10 Diagram 6-10



6.3.11 Diagram 6-11



6.3.12 Diagram 6-12



7. Band Edge Compliance Test

7.1 Test Procedure

In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in 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.

7.2 Measurement Equipment

	Equipment	Calibration due	Type	Serial No.	Manufacturer
☒	Spectrum Analyzer	Dec. 04 2015	E4440A	GTS533	Agilent

7.3 Test Result

Conducted measurement

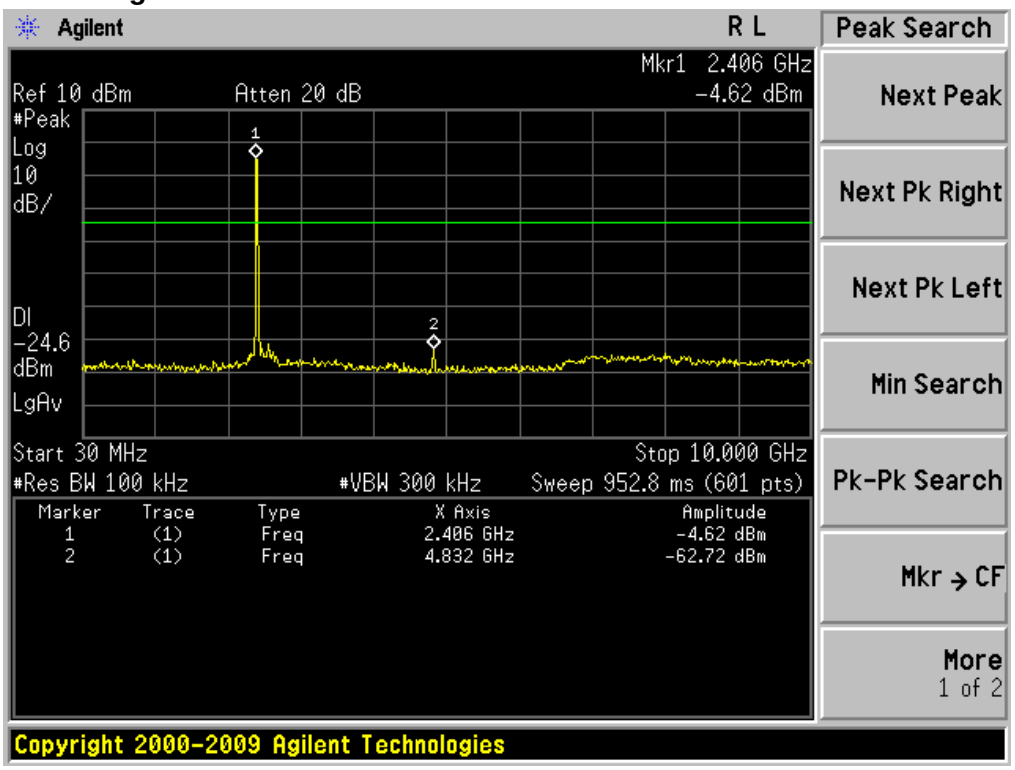
PK detector

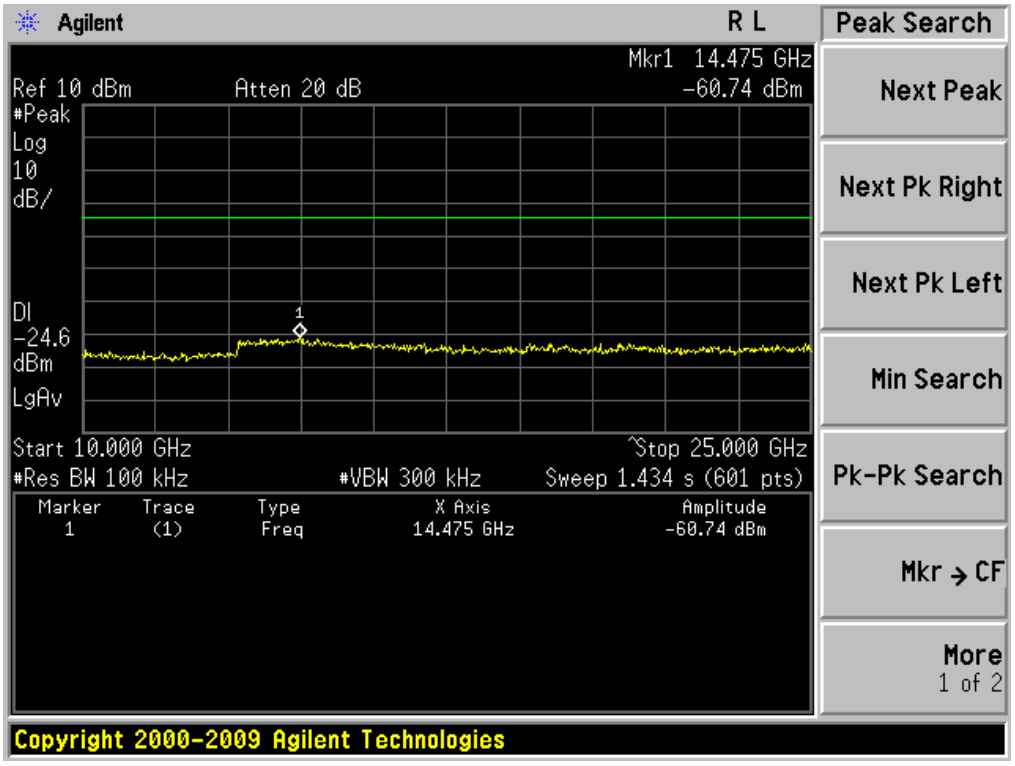
Max hold

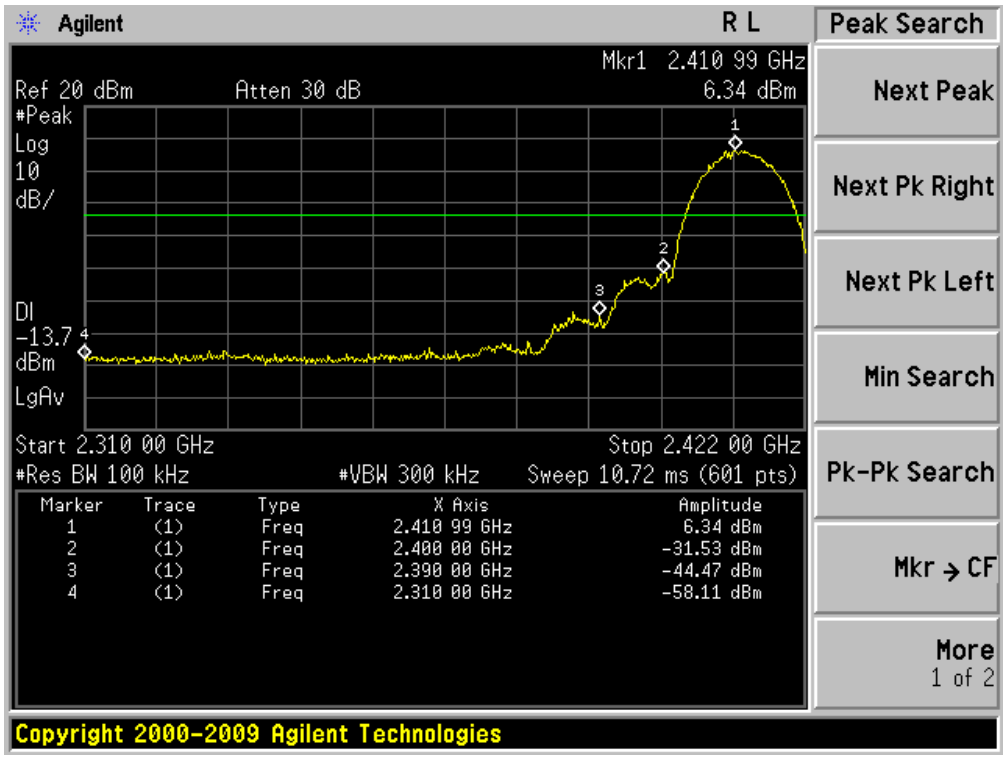
RMB100kHz VBW 300kHz

Mode	Channel	Test Data	Test Result
802.11.b	CH LOW	Diagram 7-1	Pass
	CH MID	Diagram 7-2	Pass
	CH HIGH	Diagram 7-3	Pass
802.11.g	CH LOW	Diagram 7-4	Pass
	CH MID	Diagram 7-5	Pass
	CH HIGH	Diagram 7-6	Pass
802.11.n H20	CH LOW	Diagram 7-7	Pass
	CH MID	Diagram 7-8	Pass
	CH HIGH	Diagram 7-9	Pass
802.11.n H40	CH LOW	Diagram 7-10	Pass
	CH MID	Diagram 7-11	Pass
	CH HIGH	Diagram 7-12	Pass

7.3.1 Diagram 7-1






Agilent
R L
Peak Search
Mkr1 2.410 99 GHz
Ref 20 dBm
Atten 30 dB
6.34 dBm
#Peak
Log
10
dB/
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
Dl
-13.7
dBm
LgAv
Start 2.310 00 GHz
Stop 2.422 00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 10.72 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.410 99 GHz 6.34 dBm
2 (1) Freq 2.400 00 GHz -31.53 dBm
3 (1) Freq 2.390 00 GHz -44.47 dBm
4 (1) Freq 2.310 00 GHz -58.11 dBm
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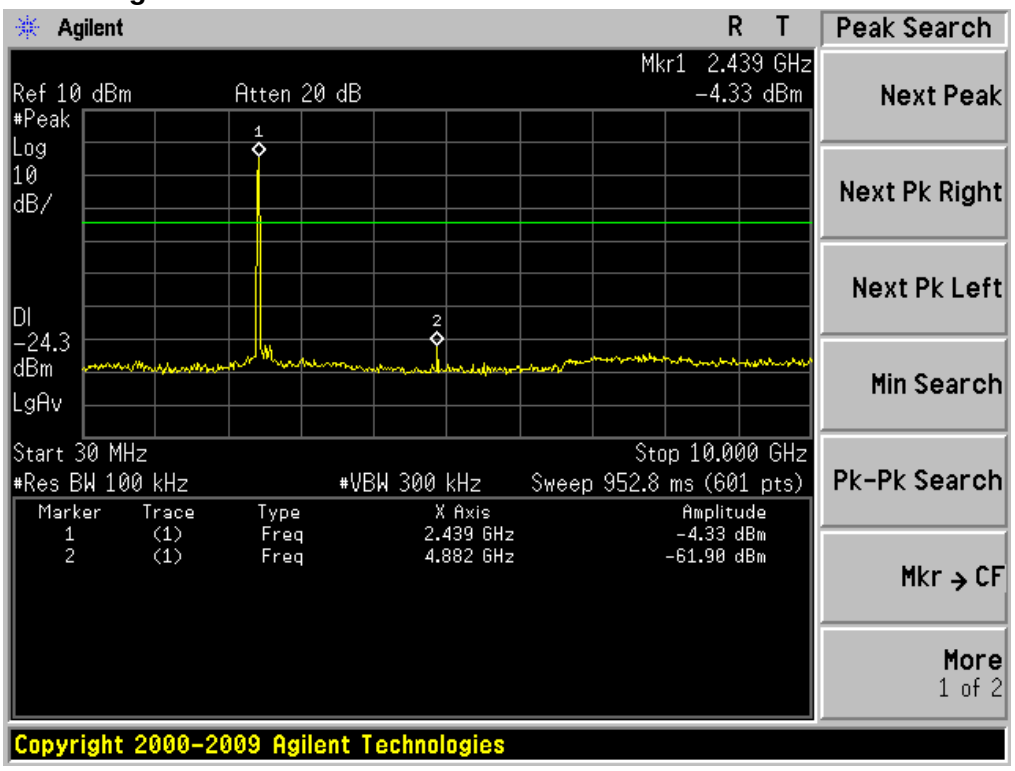
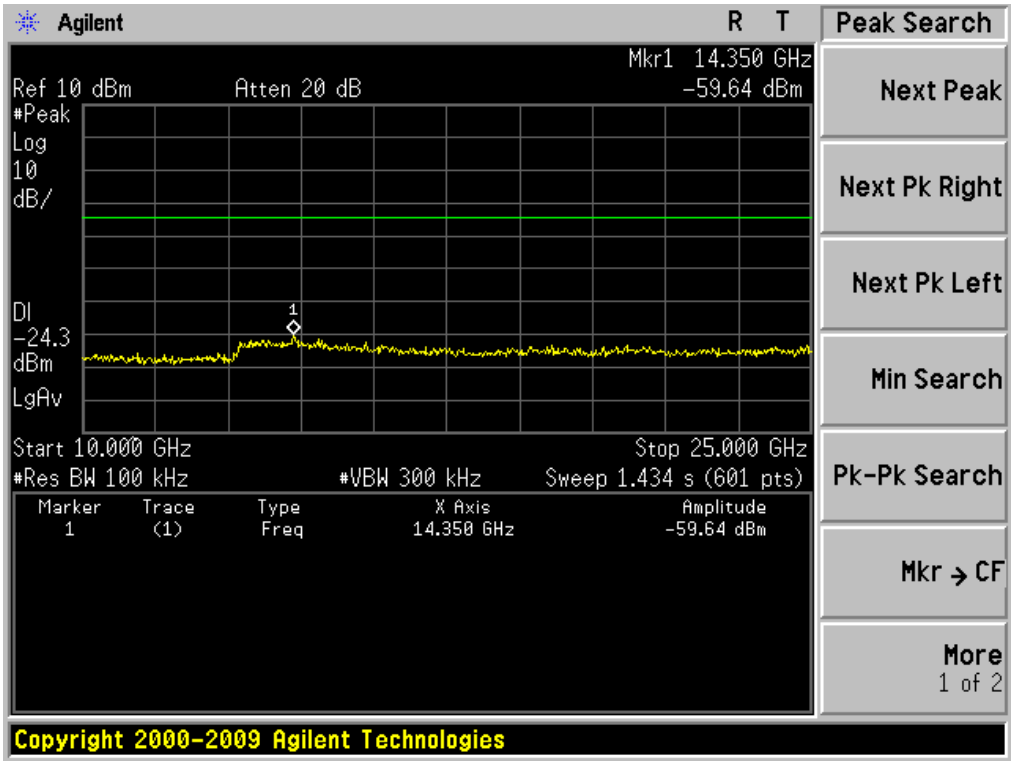
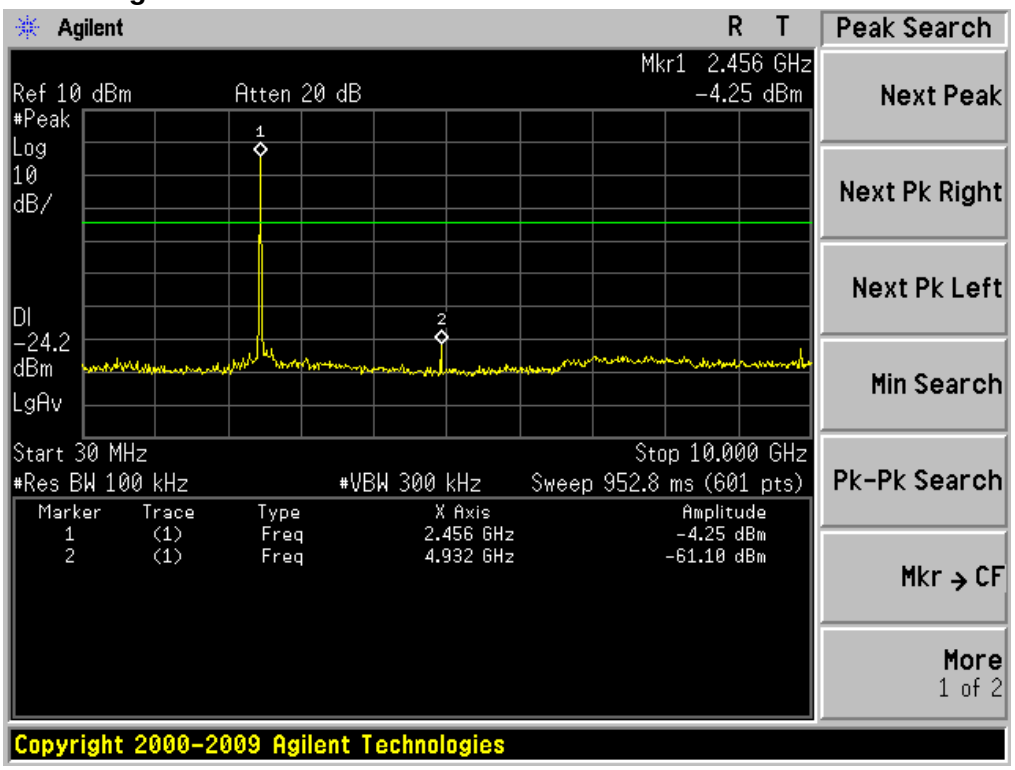
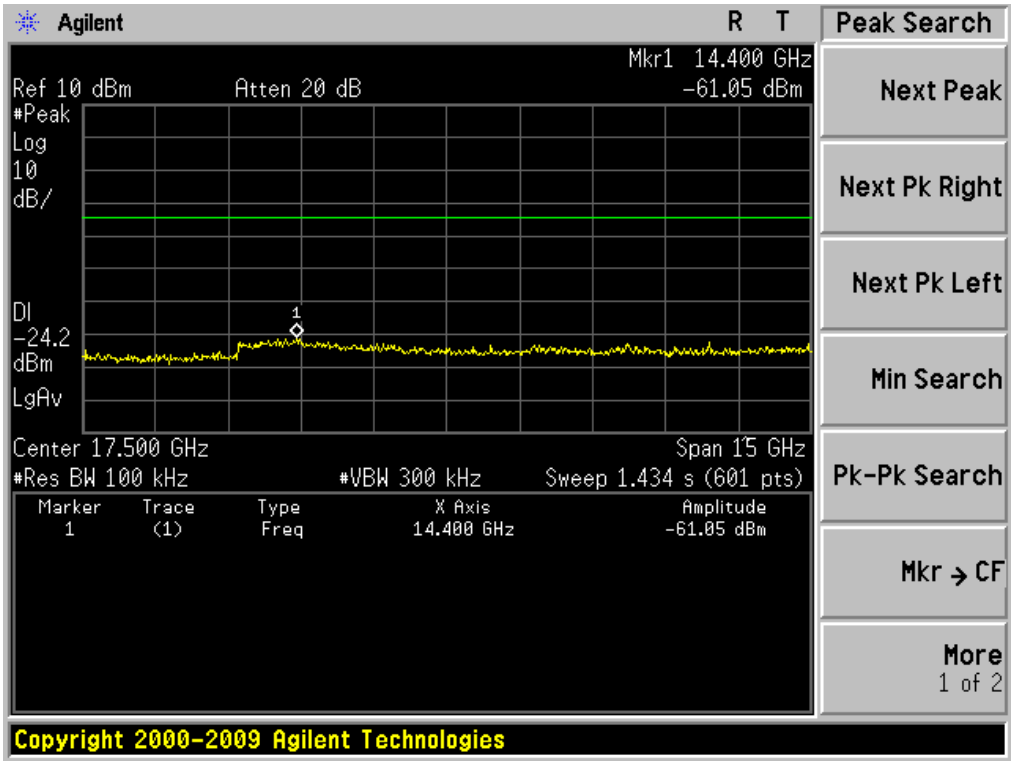
7.3.2 Diagram 7-2

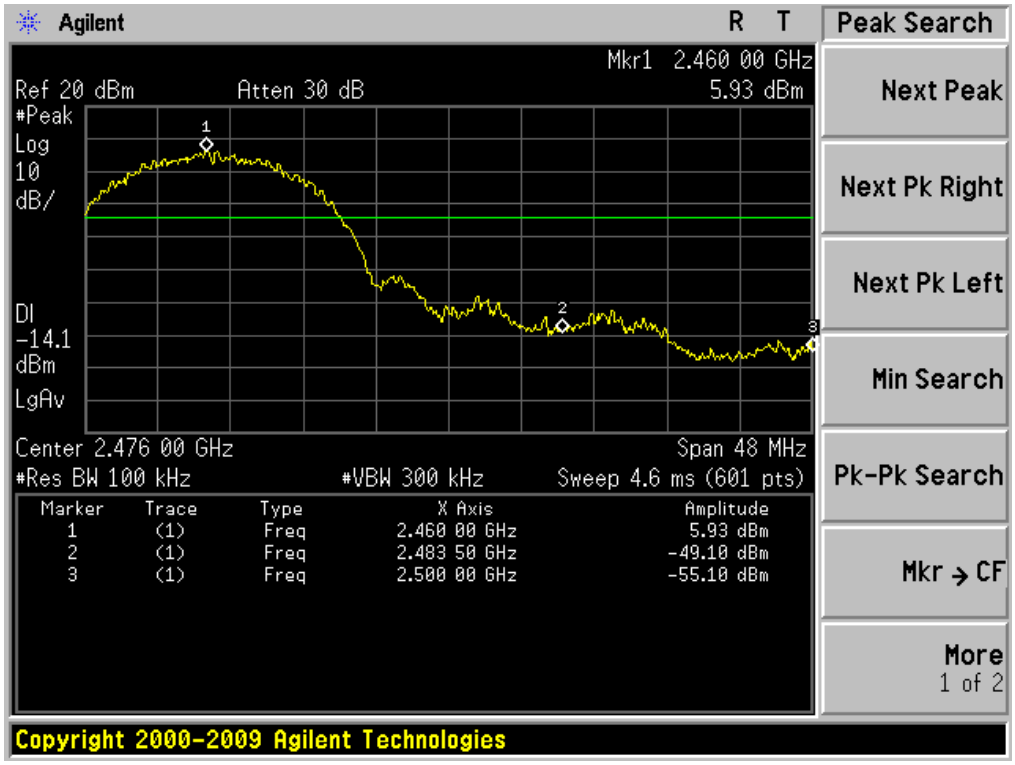




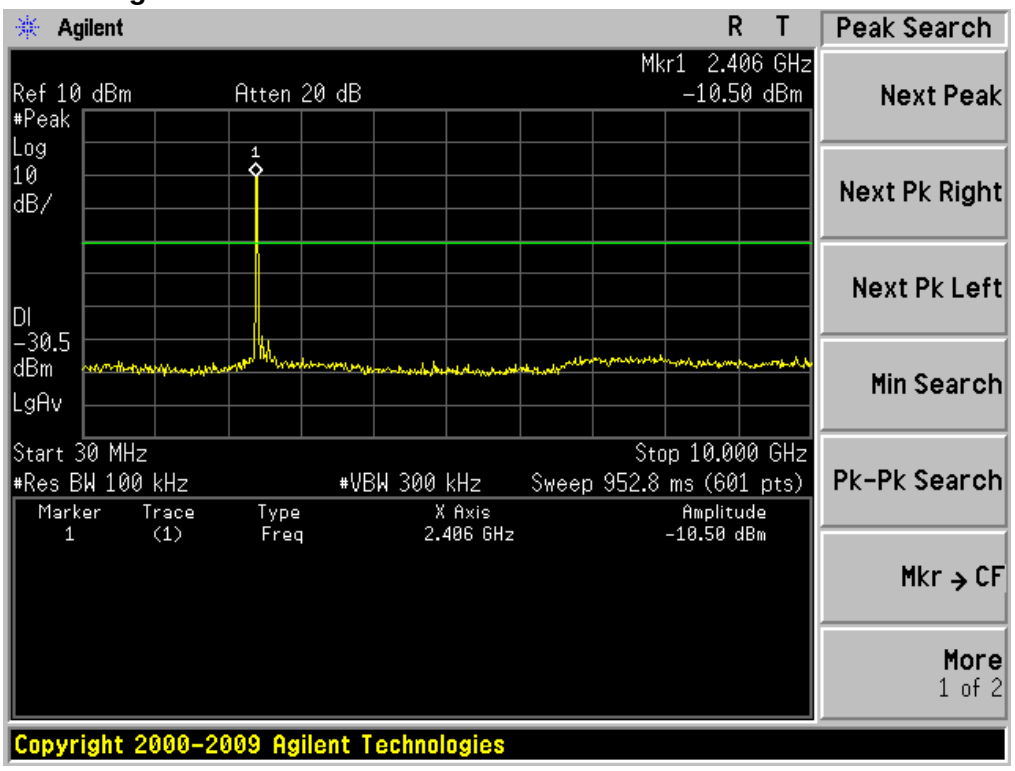
7.3.3 Diagram 7-3

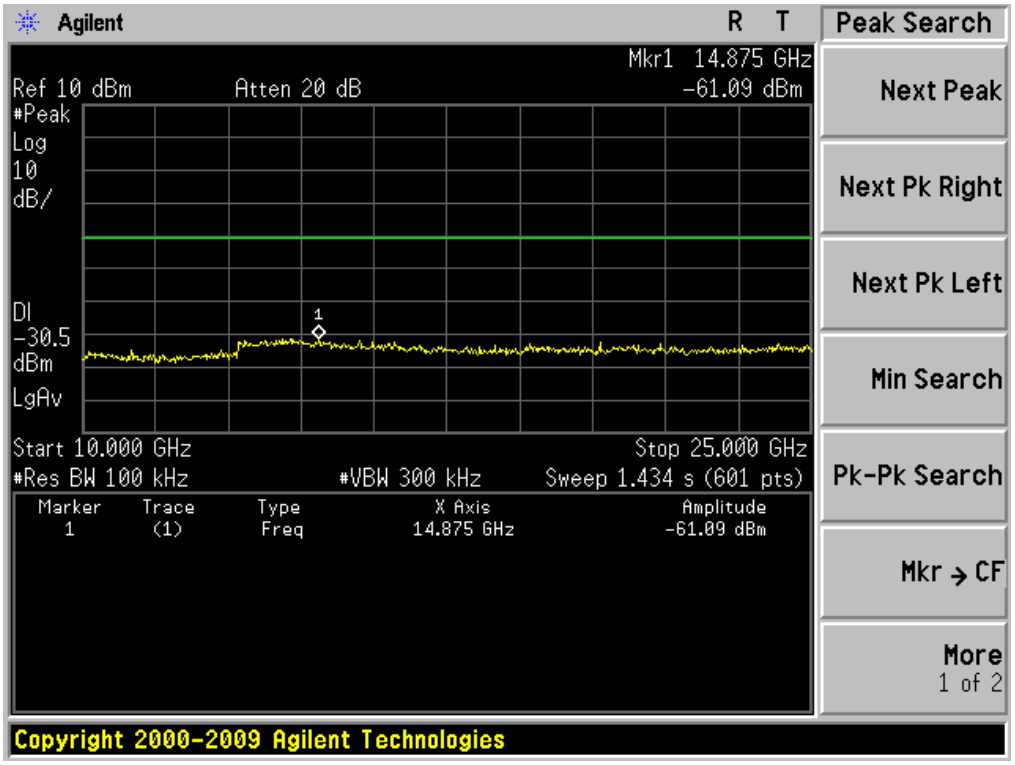


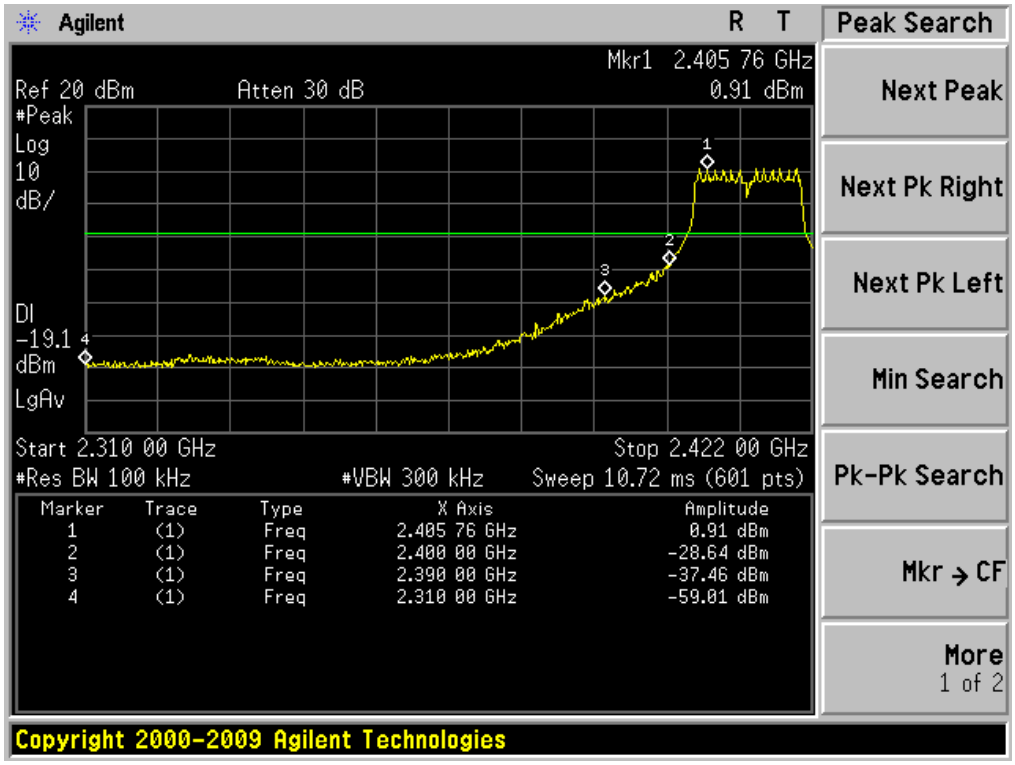



Agilent
R T
Peak Search
Mkr1 2.460 00 GHz
Ref 20 dBm
Atten 30 dB
5.93 dBm
Next Peak
#Peak
Log
10
dB/
Next Pk Right
Next Pk Left
DI
-14.1
dBm
LgAv
Min Search
Center 2.476 00 GHz
Span 48 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 4.6 ms (601 pts)
Pk-Pk Search
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.460 00 GHz 5.93 dBm
2 (1) Freq 2.483 50 GHz -49.10 dBm
3 (1) Freq 2.500 00 GHz -55.10 dBm
Mkr → CF
More
1 of 2
Copyright 2000-2009 Agilent Technologies

7.3.4 Diagram 7-4






Agilent
R T
Peak Search
Mkr1 2.405 76 GHz
Ref 20 dBm
Atten 30 dB
0.91 dBm
#Peak
Log
10
dB/
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
Dl
-19.1
dBm
LgAv
Start 2.310 00 GHz
Stop 2.422 00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 10.72 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.405 76 GHz 0.91 dBm
2 (1) Freq 2.400 00 GHz -28.64 dBm
3 (1) Freq 2.390 00 GHz -37.46 dBm
4 (1) Freq 2.310 00 GHz -59.01 dBm
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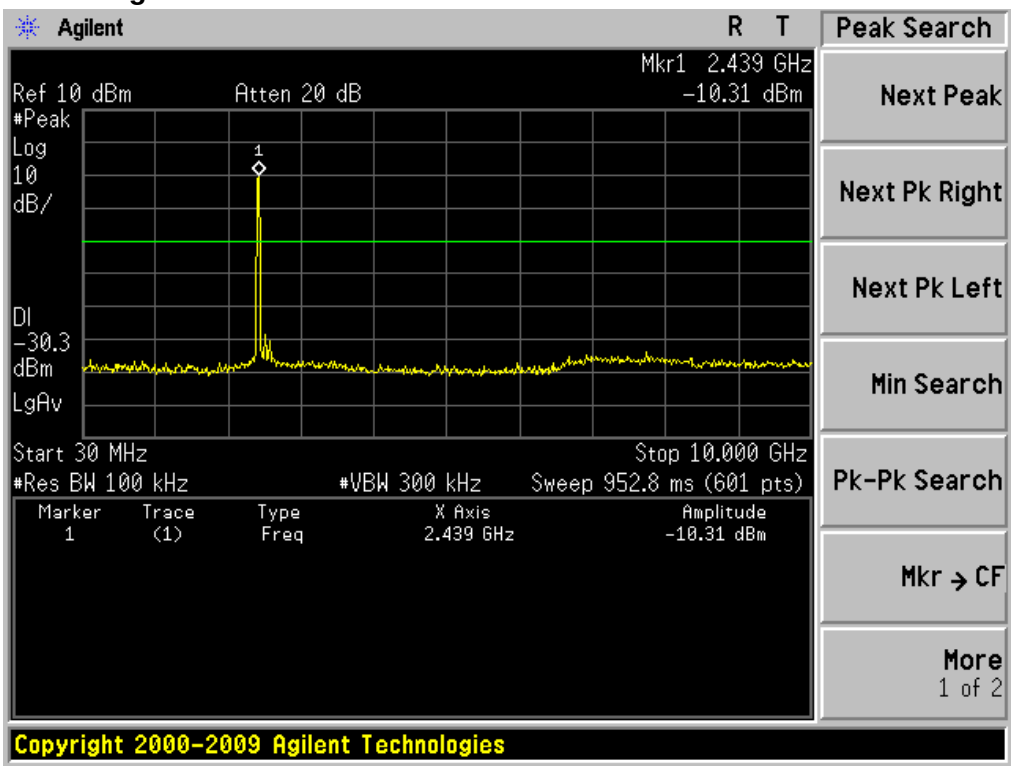
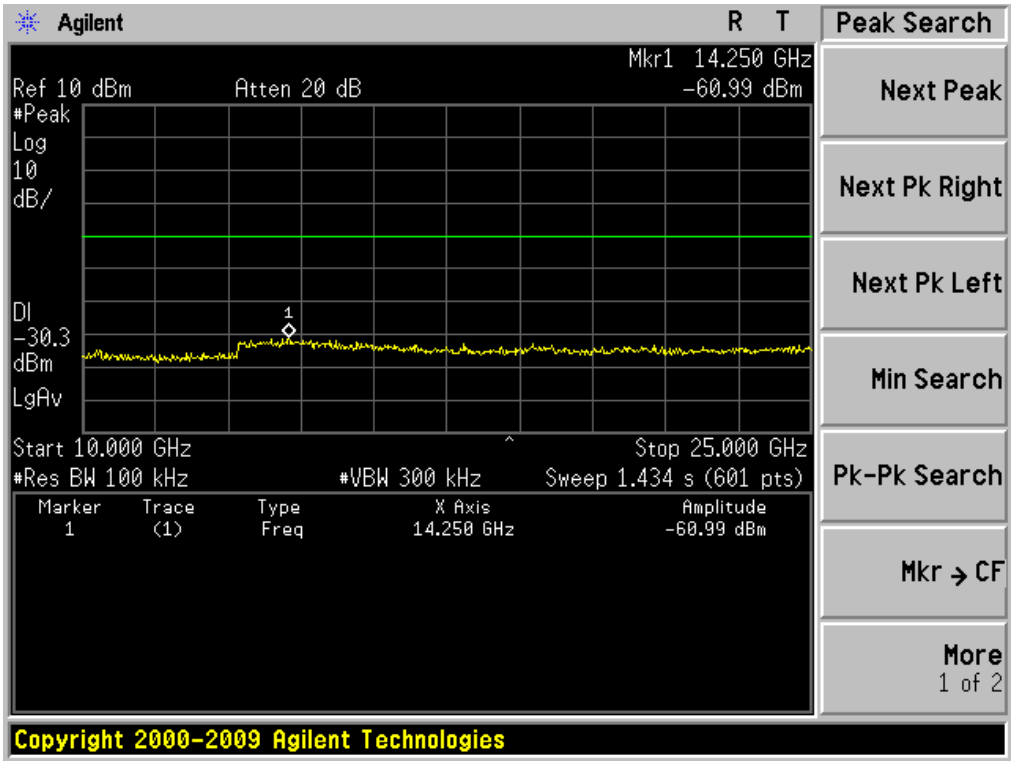
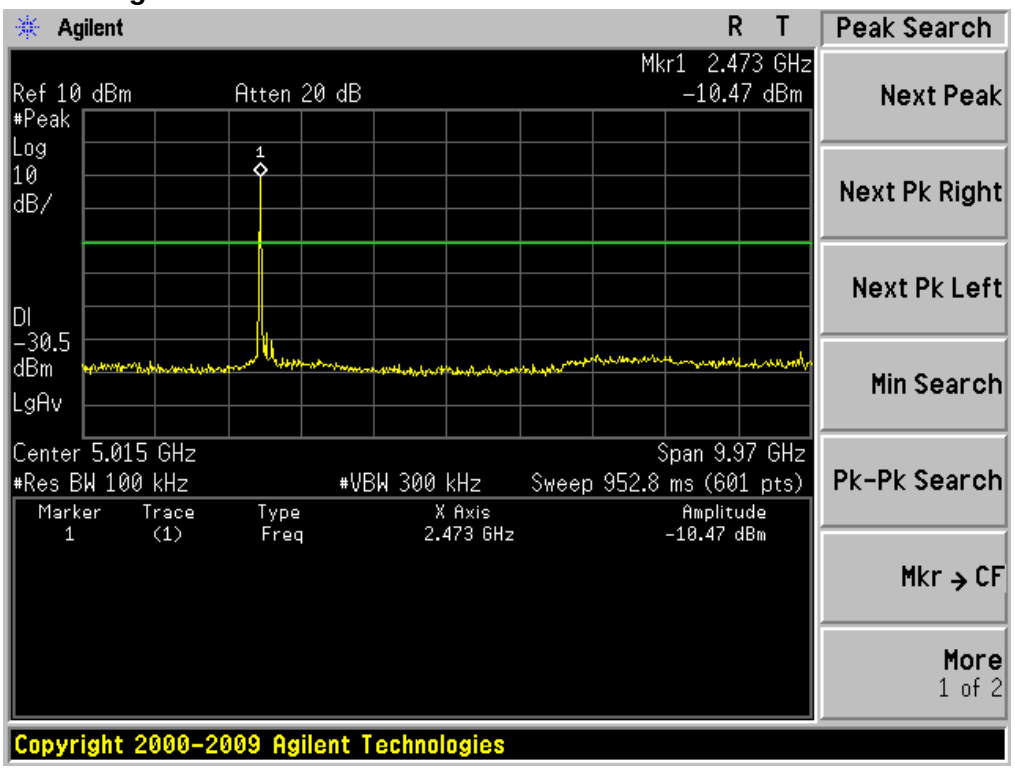
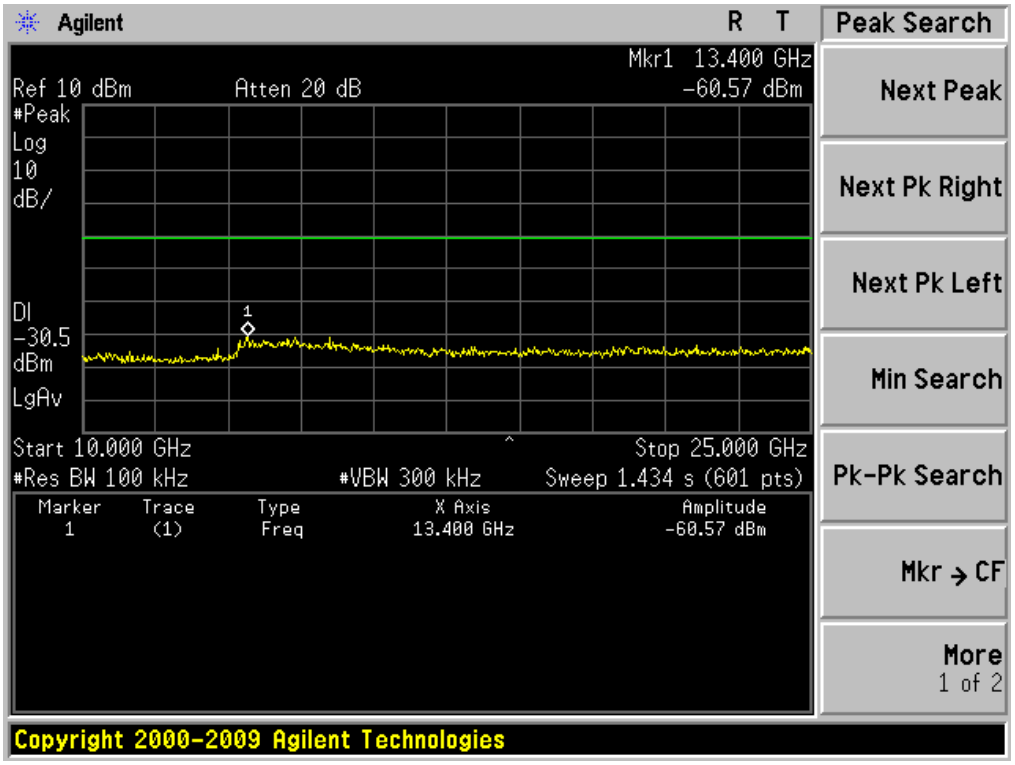
7.3.5 Diagram 7-5

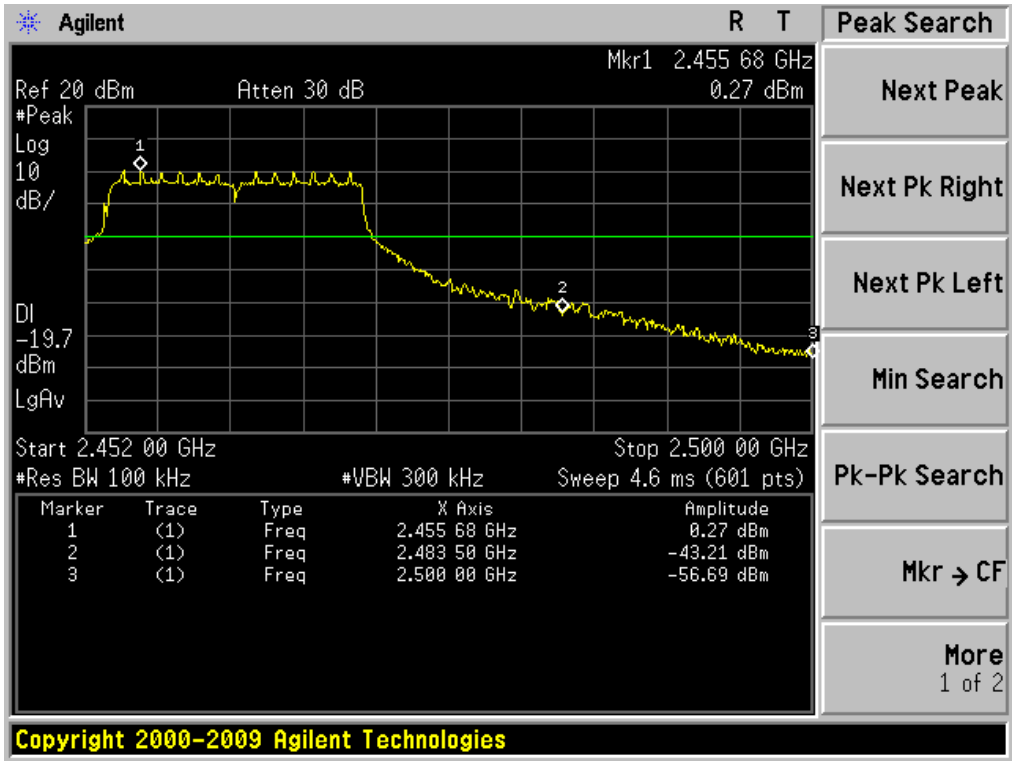




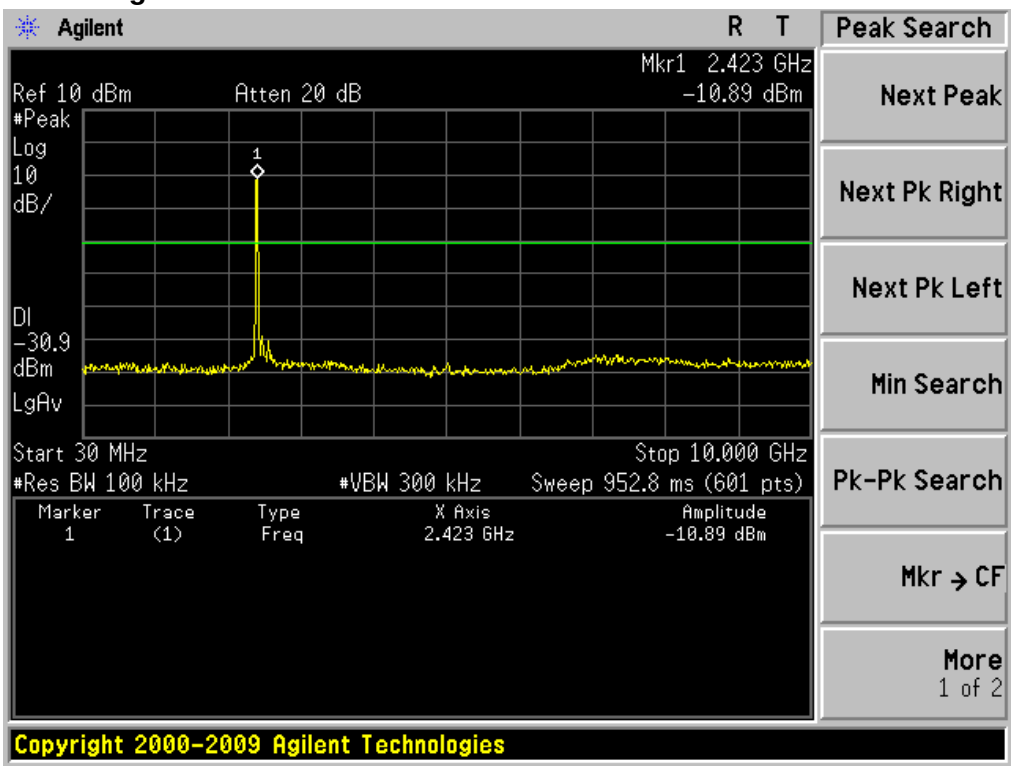
7.3.6 Diagram 7-6

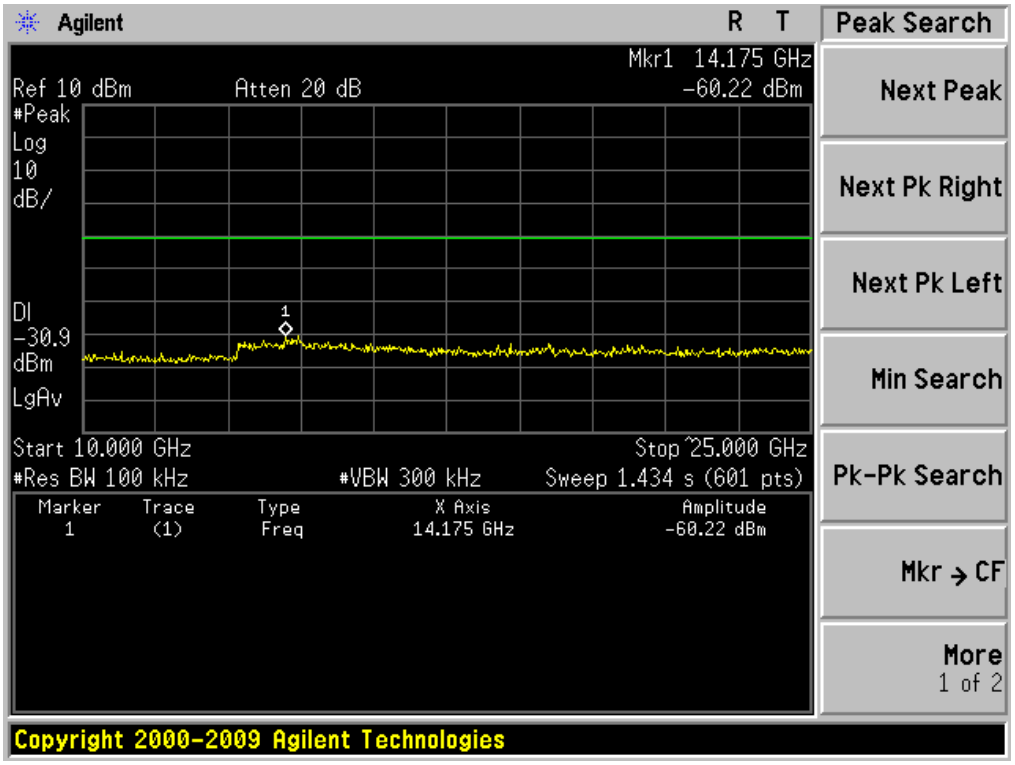


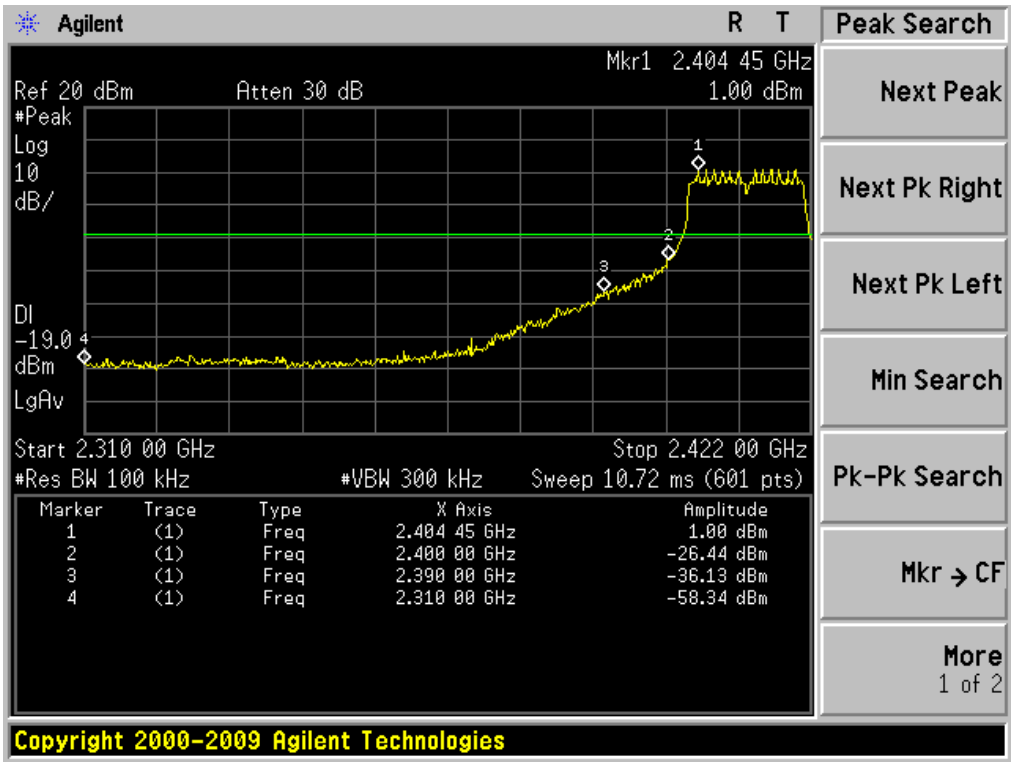



Agilent
R T
Peak Search
Mkr1 2.455 68 GHz
Ref 20 dBm
Atten 30 dB
0.27 dBm
#Peak
Log
10
dB/
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
Dl
-19.7
dBm
LgAv
Start 2.452 00 GHz
Stop 2.500 00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 4.6 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.455 68 GHz 0.27 dBm
2 (1) Freq 2.483 50 GHz -43.21 dBm
3 (1) Freq 2.500 00 GHz -56.69 dBm
Copyright 2000-2009 Agilent Technologies

7.3.7 Diagram 7-7






Agilent
R T
Peak Search
Mkr1 2.404 45 GHz
Ref 20 dBm
Atten 30 dB
1.00 dBm
#Peak
Log
10
dB/
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
Dl
-19.0
dBm
LgAv
Start 2.310 00 GHz
Stop 2.422 00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 10.72 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.404 45 GHz 1.00 dBm
2 (1) Freq 2.400 00 GHz -26.44 dBm
3 (1) Freq 2.390 00 GHz -36.13 dBm
4 (1) Freq 2.310 00 GHz -58.34 dBm
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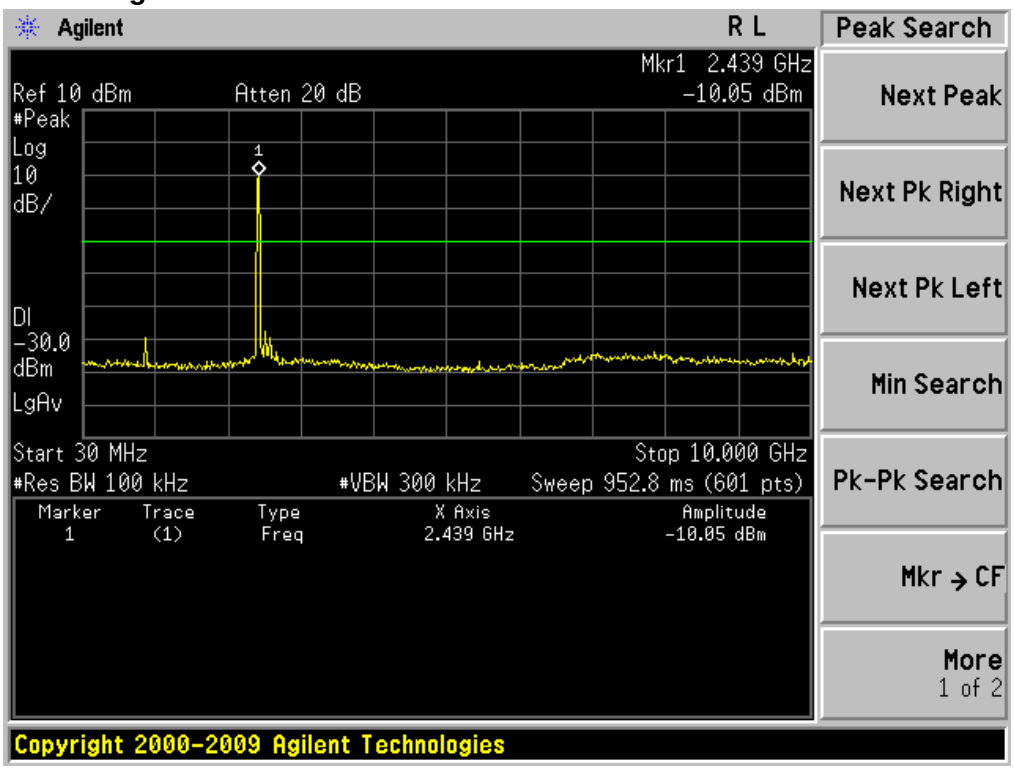
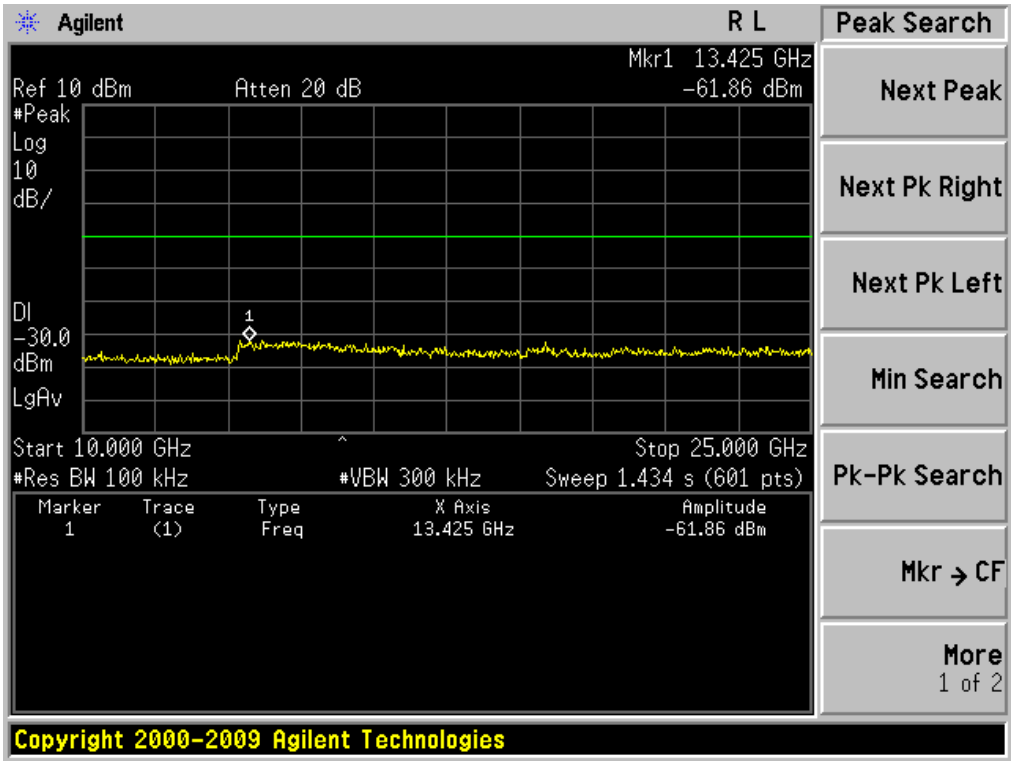
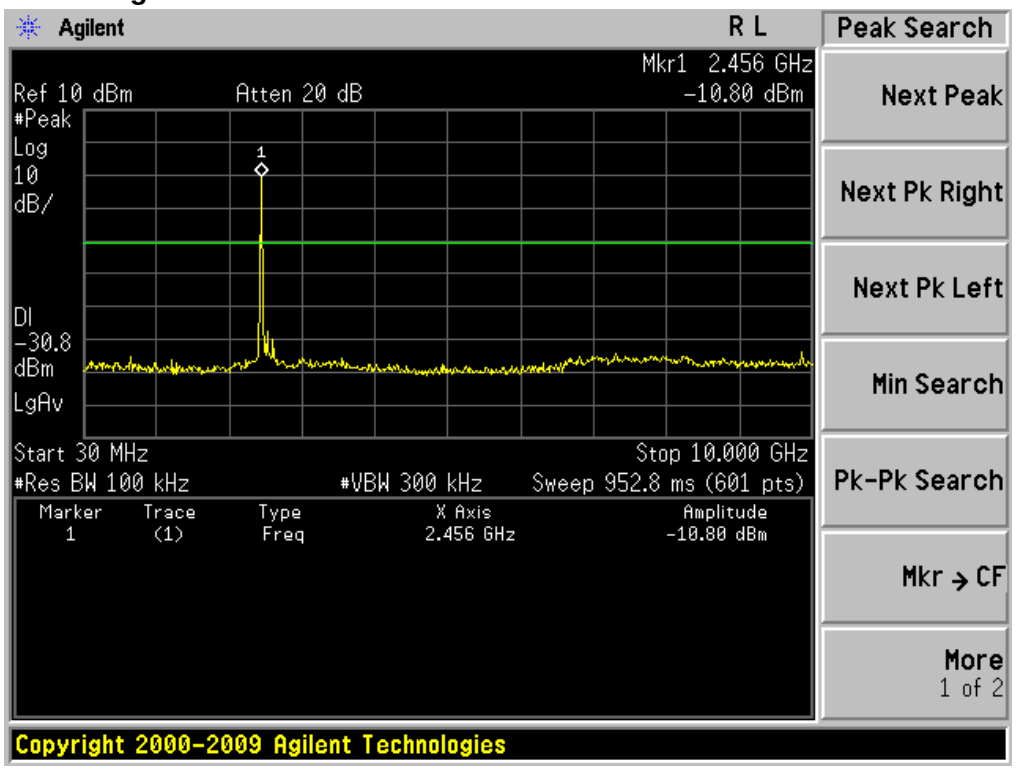
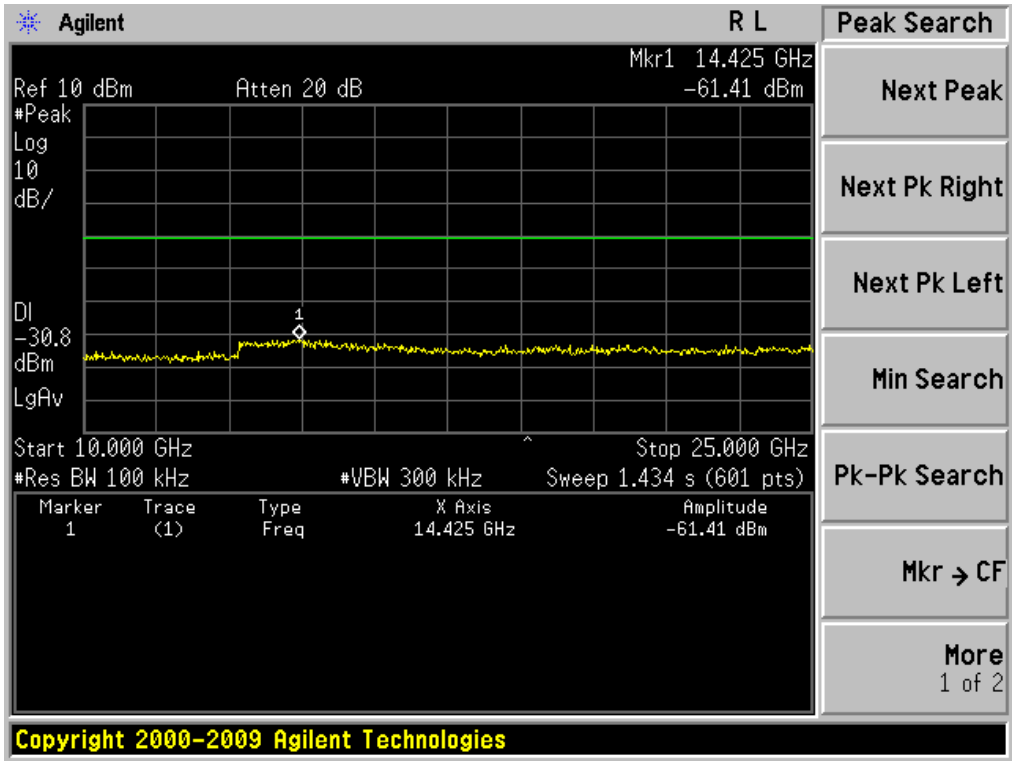
7.3.8 Diagram 7-8

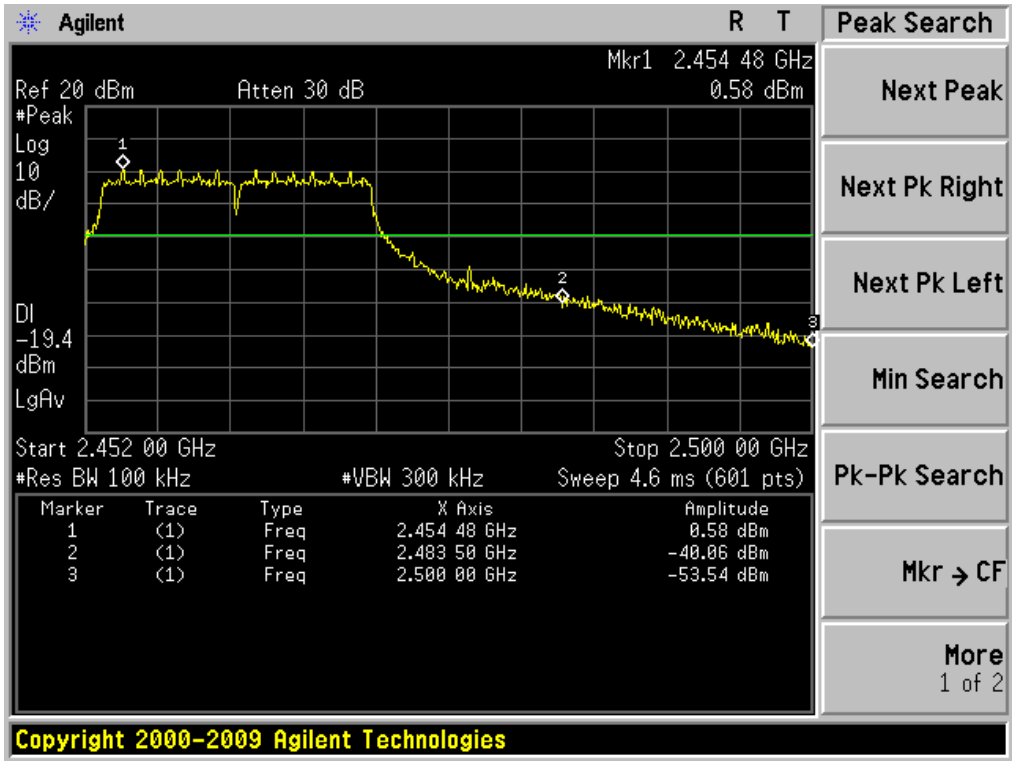




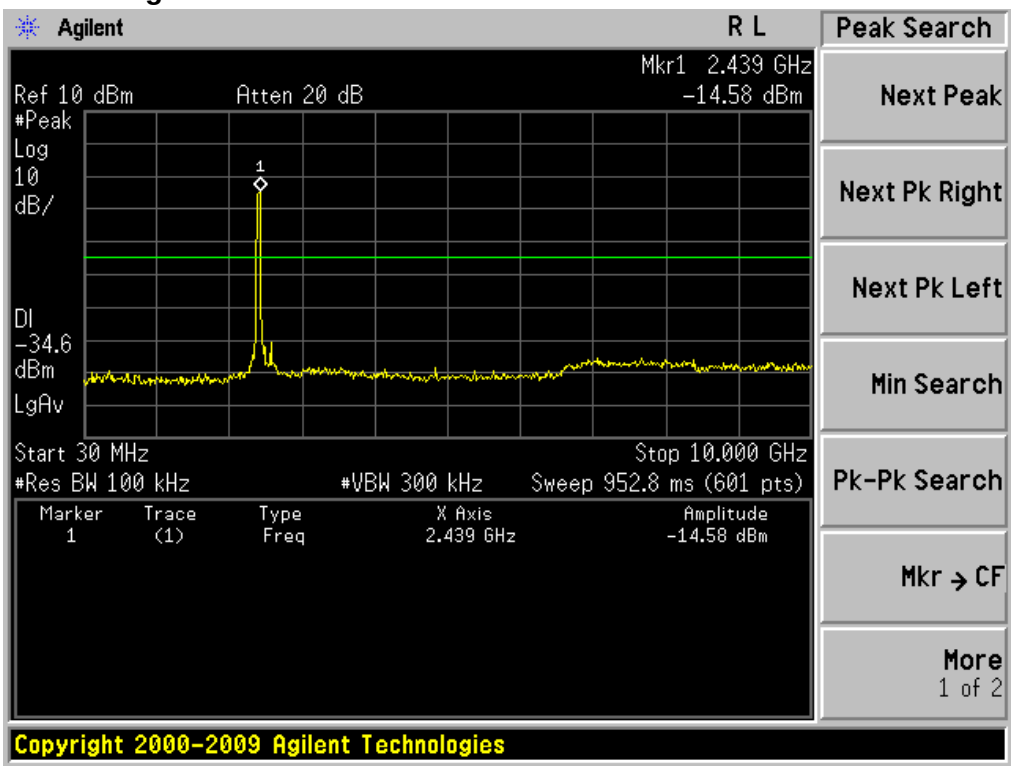
7.3.9 Diagram 7-9

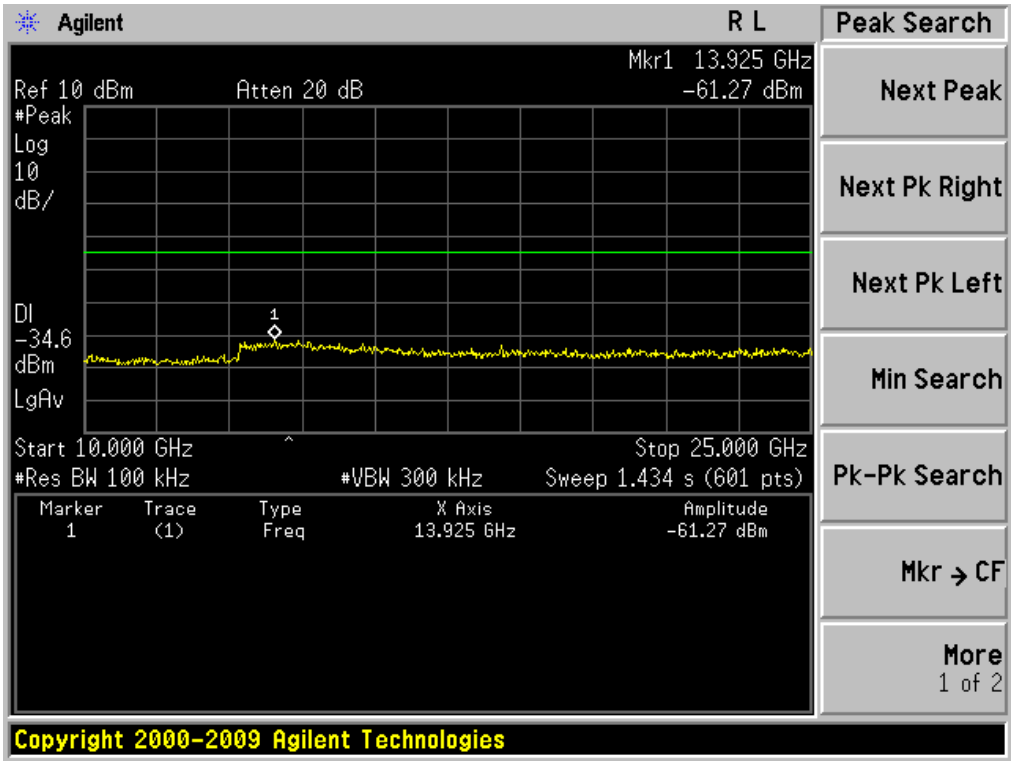


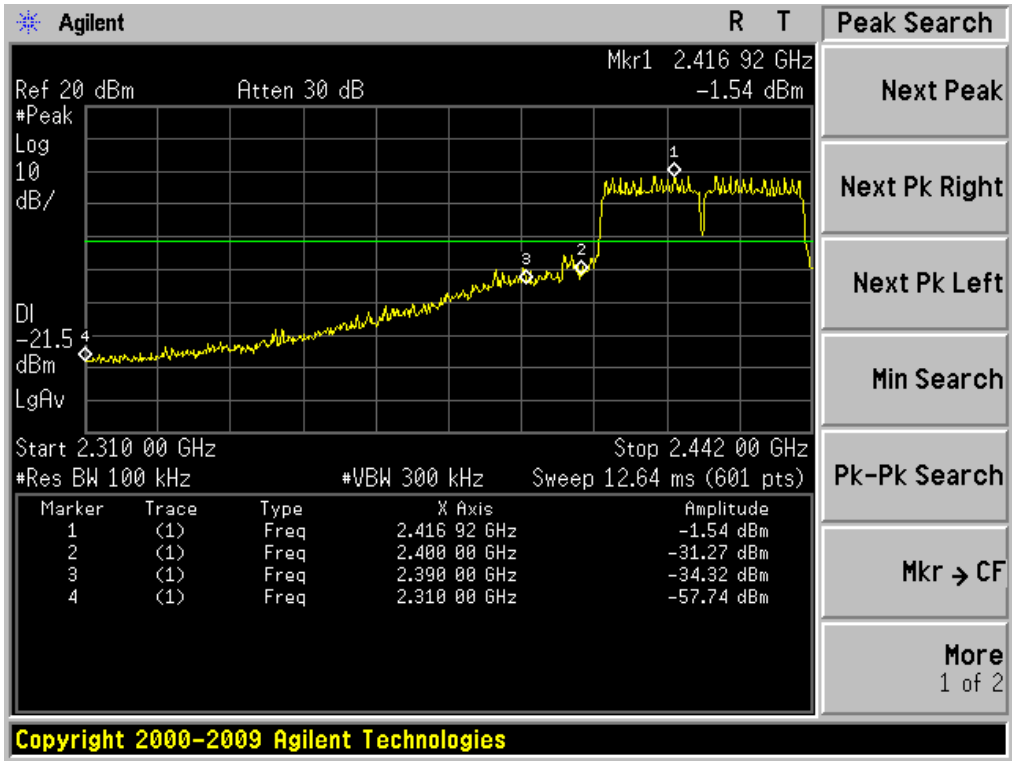



Agilent
R T
Peak Search
Mkr1 2.454 48 GHz
Ref 20 dBm
Atten 30 dB
0.58 dBm
#Peak
Log
10
dB/
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
Dl
-19.4
dBm
LgAv
Start 2.452 00 GHz
Stop 2.500 00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 4.6 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.454 48 GHz 0.58 dBm
2 (1) Freq 2.483 50 GHz -40.06 dBm
3 (1) Freq 2.500 00 GHz -53.54 dBm
Copyright 2000-2009 Agilent Technologies

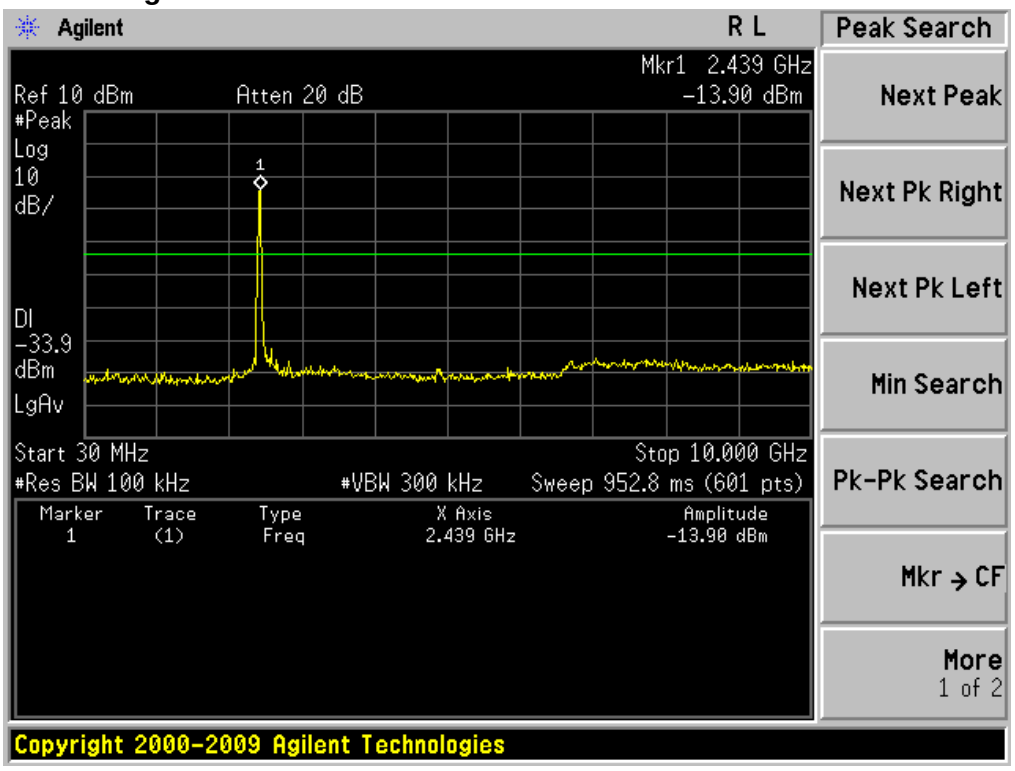
7.3.10 Diagram 7-10

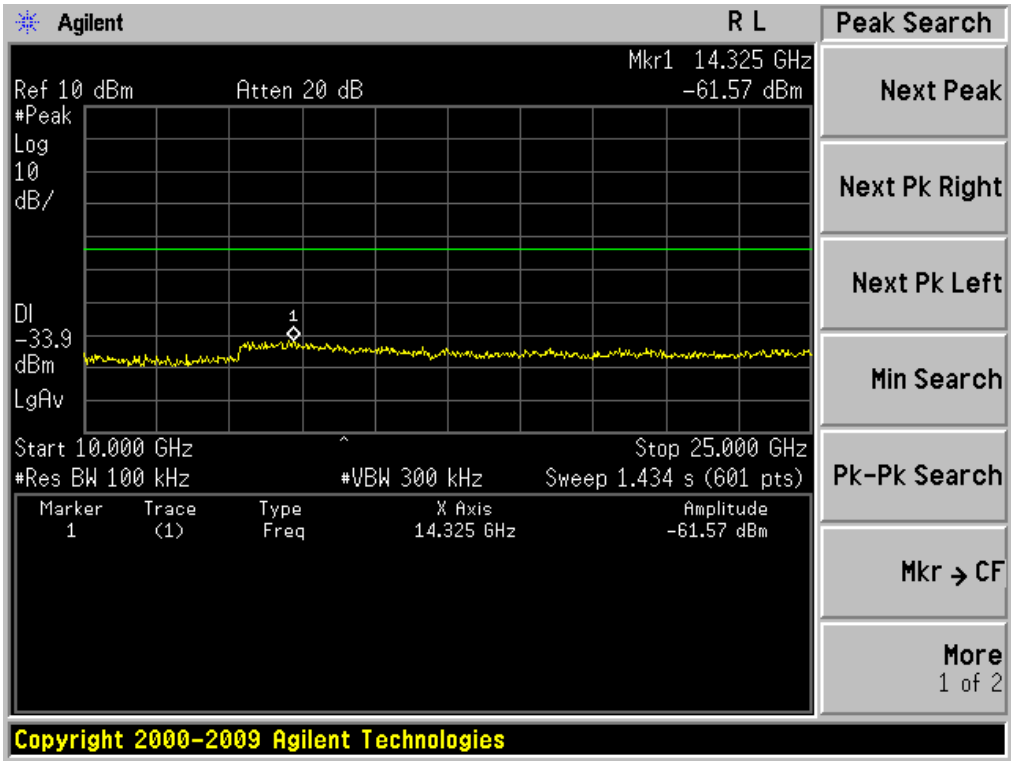




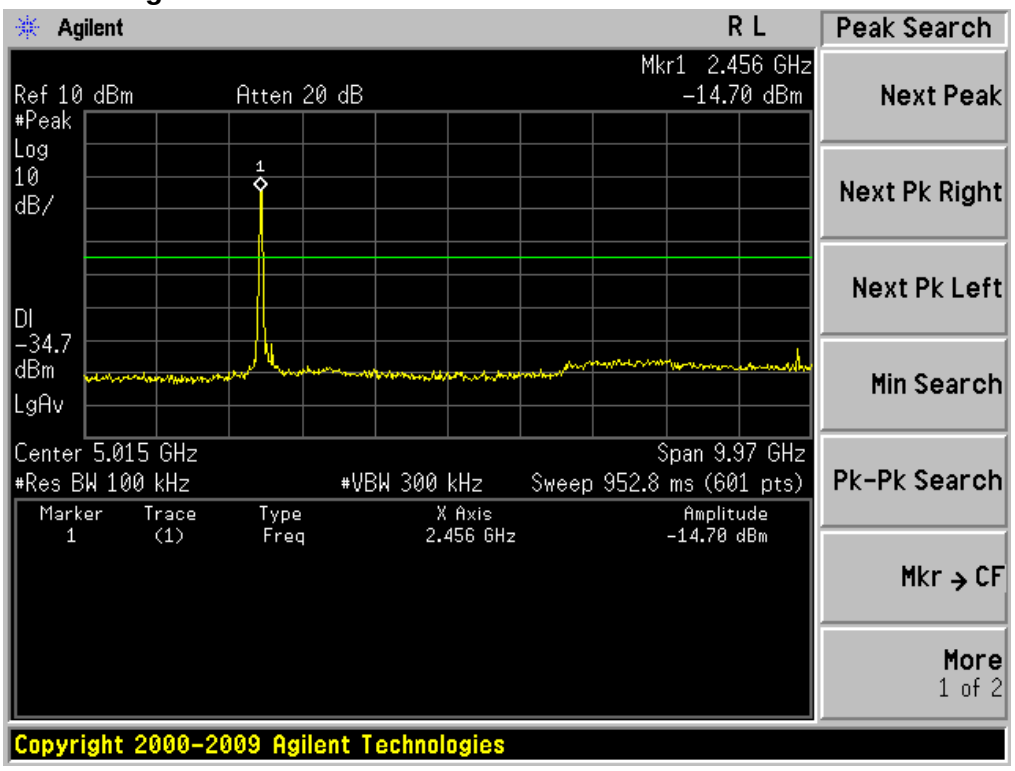

Agilent
R T
Peak Search
Mkr1 2.416 92 GHz
Ref 20 dBm
Atten 30 dB
-1.54 dBm
#Peak
Log
10
dB/
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
Dl
-21.5
dBm
LgAv
Start 2.310 00 GHz
Stop 2.442 00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 12.64 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.416 92 GHz -1.54 dBm
2 (1) Freq 2.400 00 GHz -31.27 dBm
3 (1) Freq 2.390 00 GHz -34.32 dBm
4 (1) Freq 2.310 00 GHz -57.74 dBm
Copyright 2000-2009 Agilent Technologies

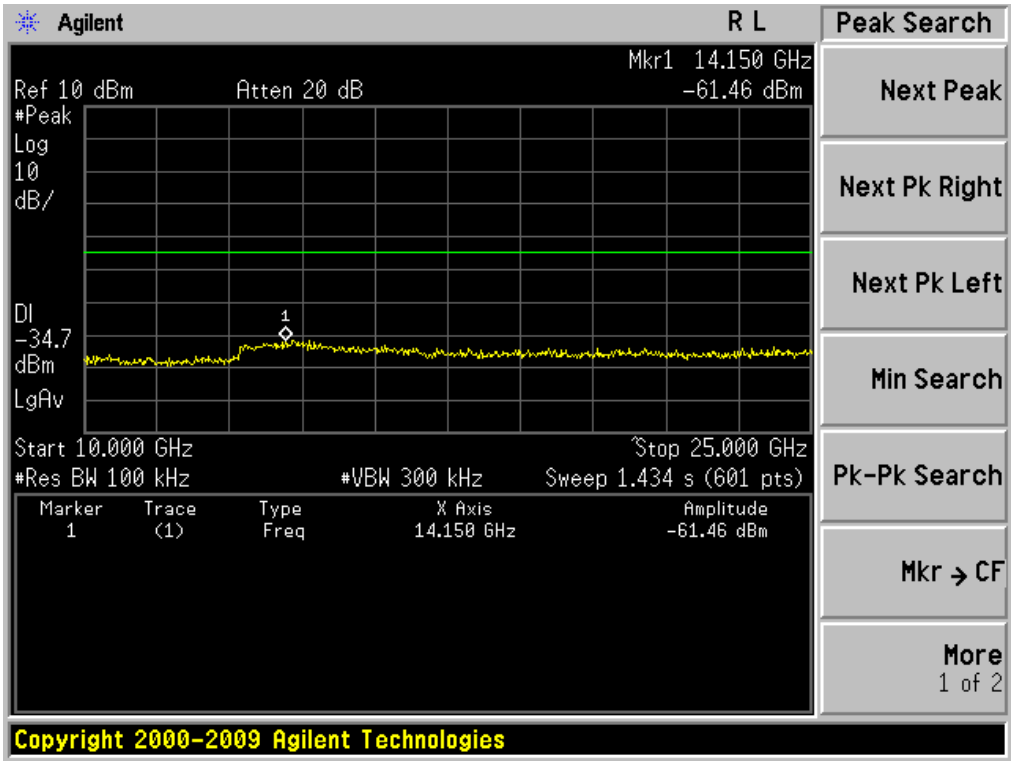
7.3.11 Diagram 7-11

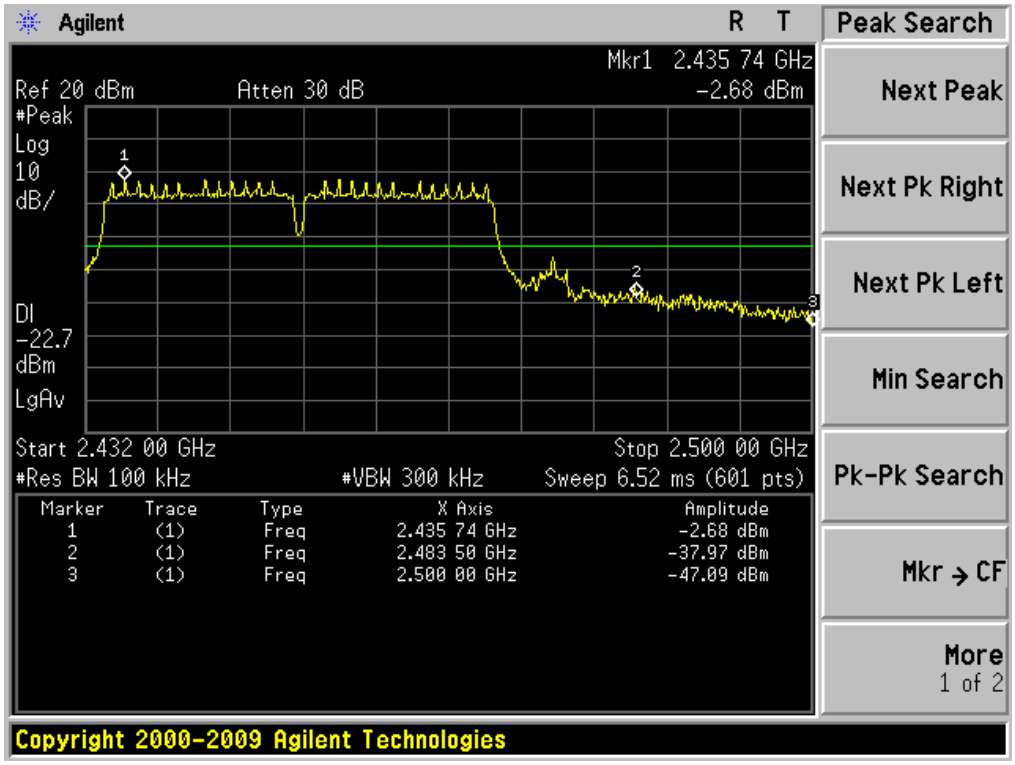




7.3.12 Diagram 7-12






Agilent
R T
Peak Search
Mkr1 2.435 74 GHz
Ref 20 dBm
Atten 30 dB
-2.68 dBm
#Peak
Log
10
dB/
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
DI
-22.7
dBm
LgAv
Start 2.432 00 GHz
Stop 2.500 00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 6.52 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.435 74 GHz -2.68 dBm
2 (1) Freq 2.483 50 GHz -37.97 dBm
3 (1) Freq 2.500 00 GHz -47.09 dBm
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8. Power Spectral Density Test

8.1 Test Procedure

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

The transmitter output was connected to a spectrum analyzer. The maximum power density level was measured by spectrum analyzer with RBW >3kHz and Detector: PK

Cable loss and attenuator loss have been added in Spectrum setting offset .

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW >=3 kHz.
4. Set the VBW>= 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

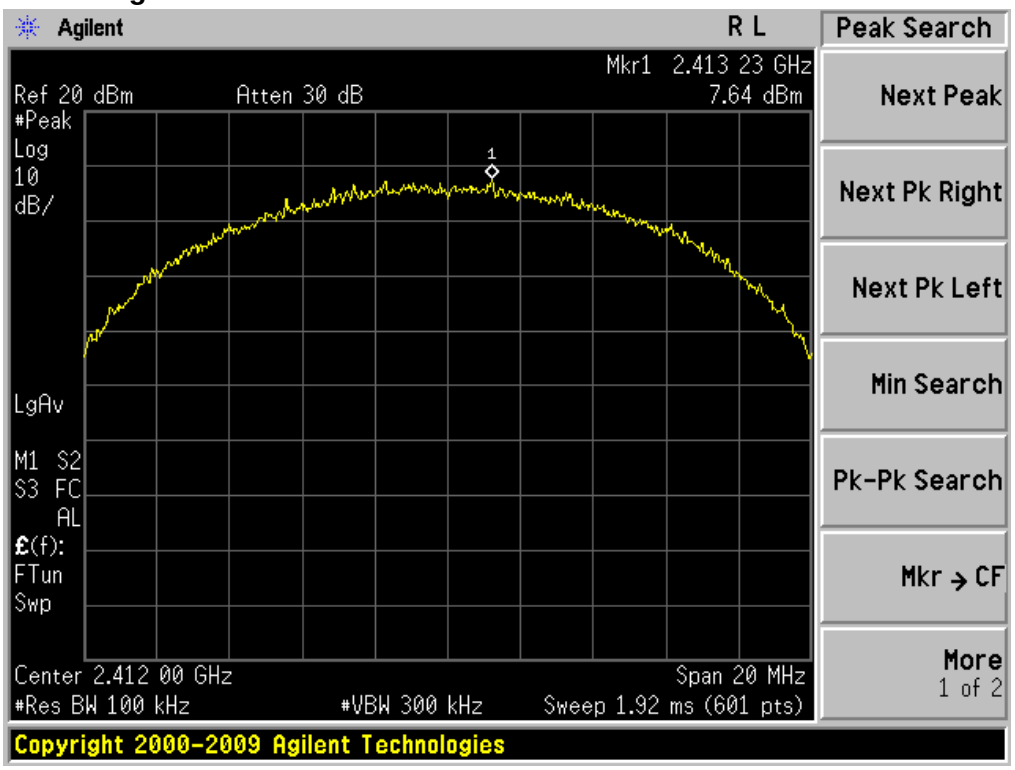
8.2 Measurement Equipment

	Equipment	Calibration due	Type	Serial No.	Manufacturer
☒	Spectrum Analyzer	Dec. 04 2015	E4440A	GTS533	Agilent

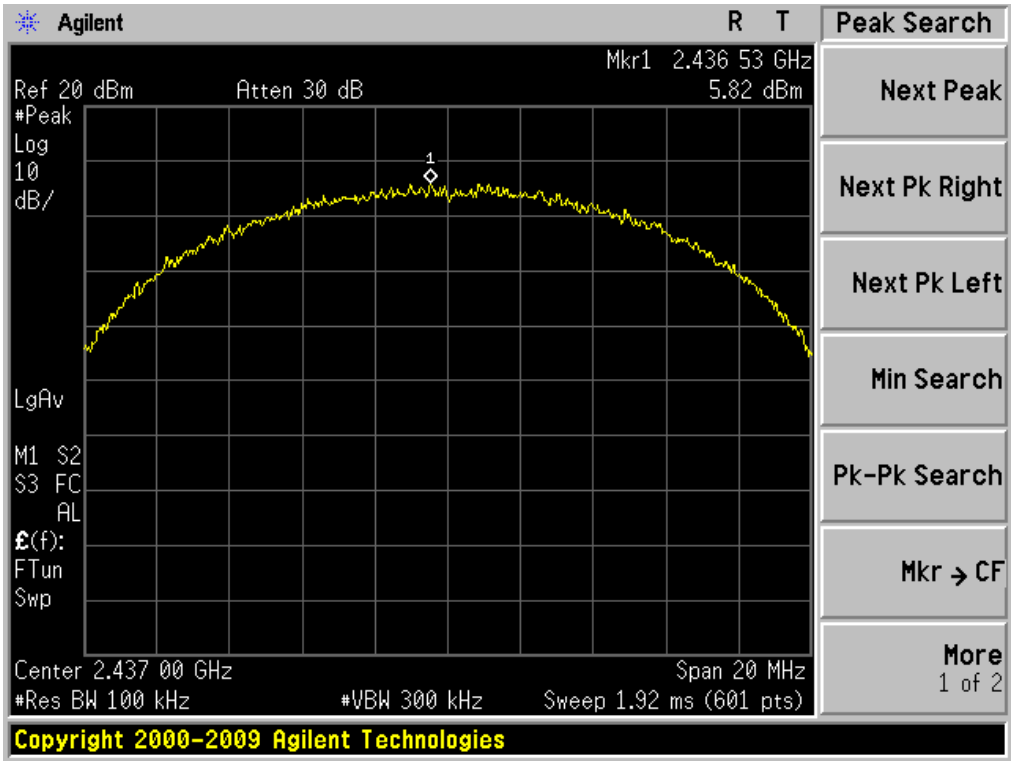
8.3 Test Result

Mode	Channel	Diagram	Result (dBm)	<Limit (dBm)	Result
802.11b	low	8-1	7.64	8	Pass
802.11b	mid	8-2	5.82	8	Pass
802.11b	high	8-3	6.77	8	Pass
802.11g	low	8-4	0.94	8	Pass
802.11g	mid	8-5	0.52	8	Pass
802.11g	high	8-6	0.26	8	Pass
802.11n H20	low	8-7	0.96	8	Pass
802.11n H20	mid	8-8	0.49	8	Pass
802.11n H20	high	8-9	0.34	8	Pass
802.11n H40	low	8-10	-1.90	8	Pass
802.11n H40	mid	8-11	-2.53	8	Pass
802.11n H40	high	8-12	-2.52	8	Pass

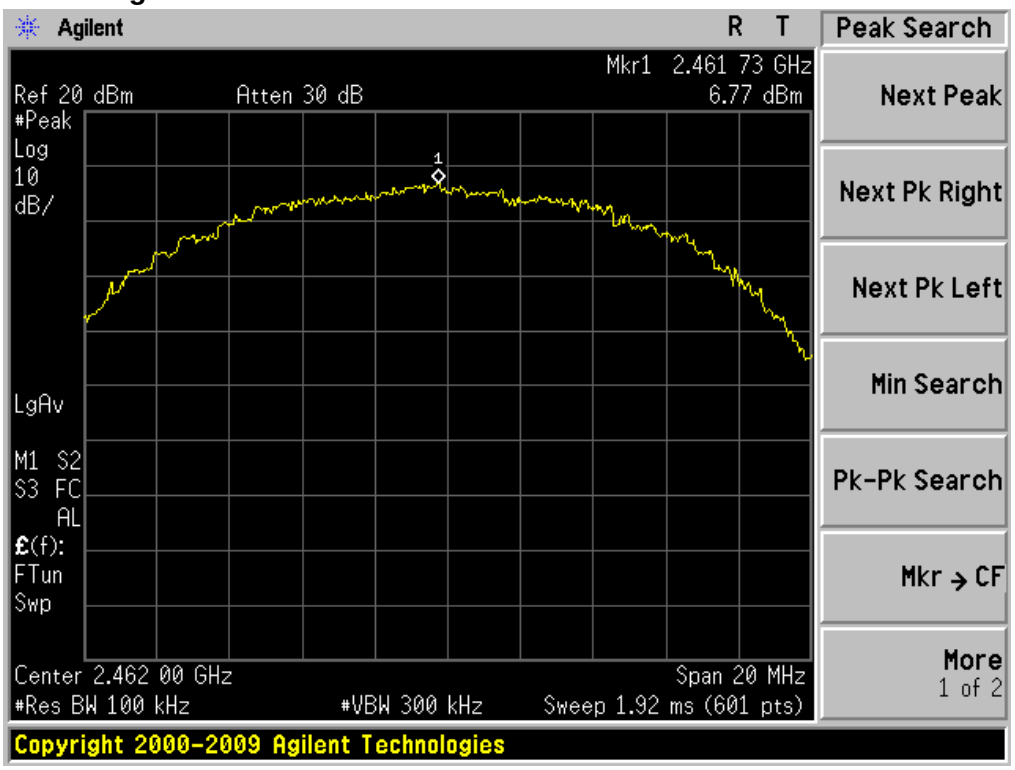
8.3.1 Diagram 8-1



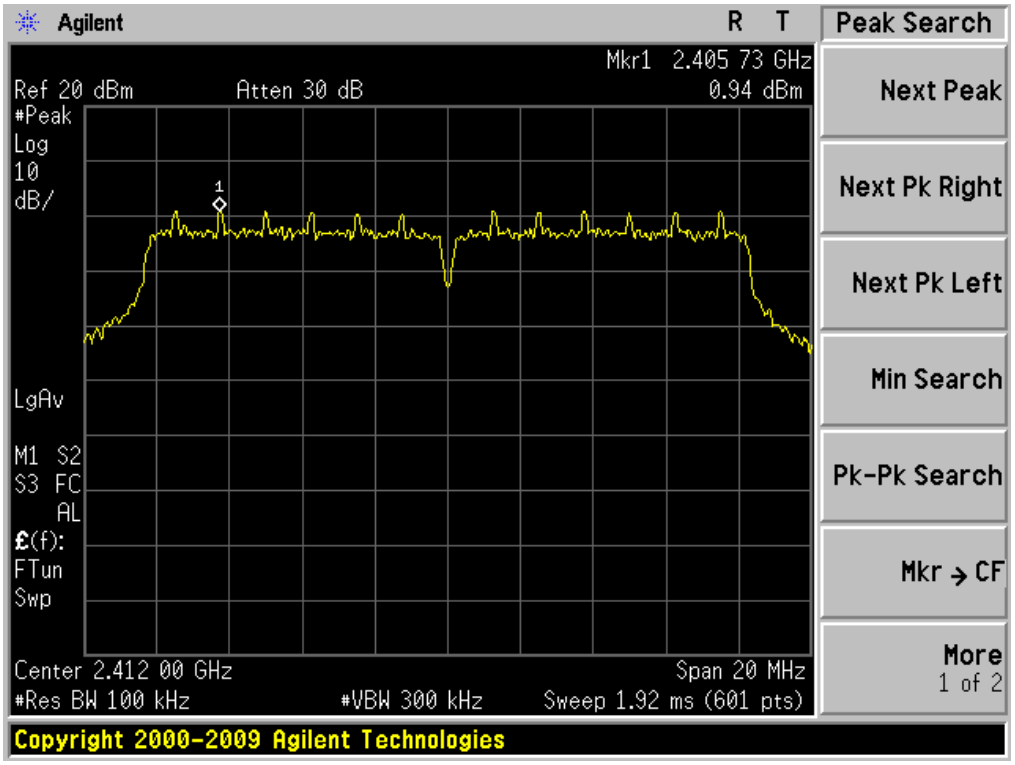
8.3.2 Diagram 8-2



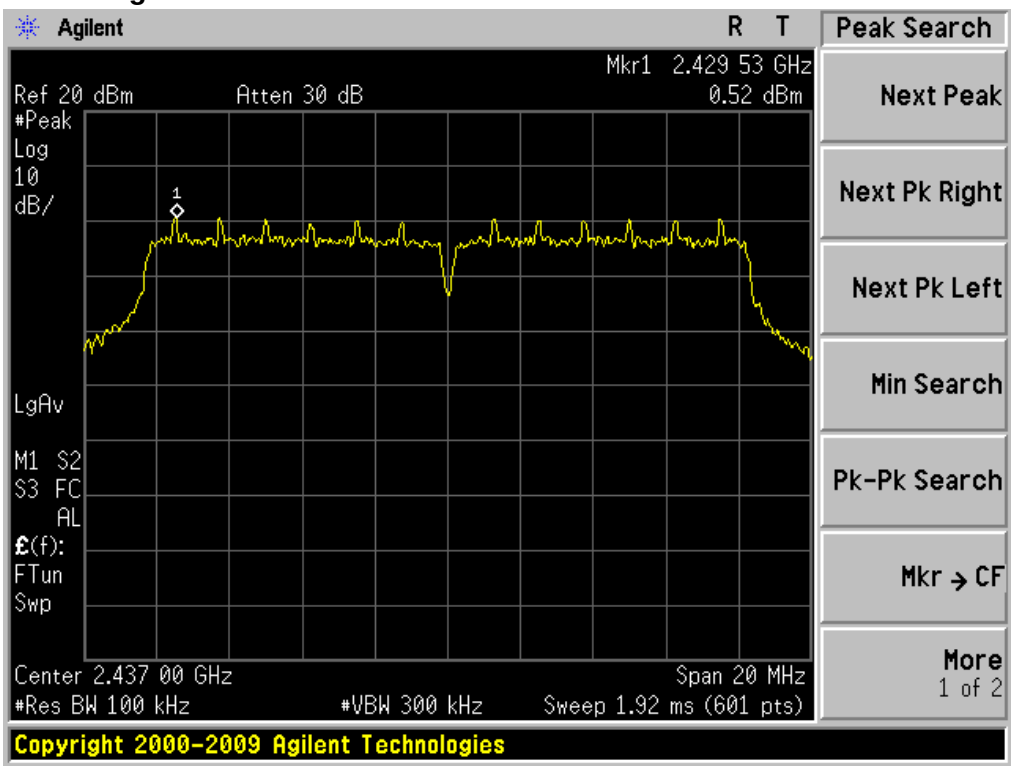
8.3.3 Diagram 8-3



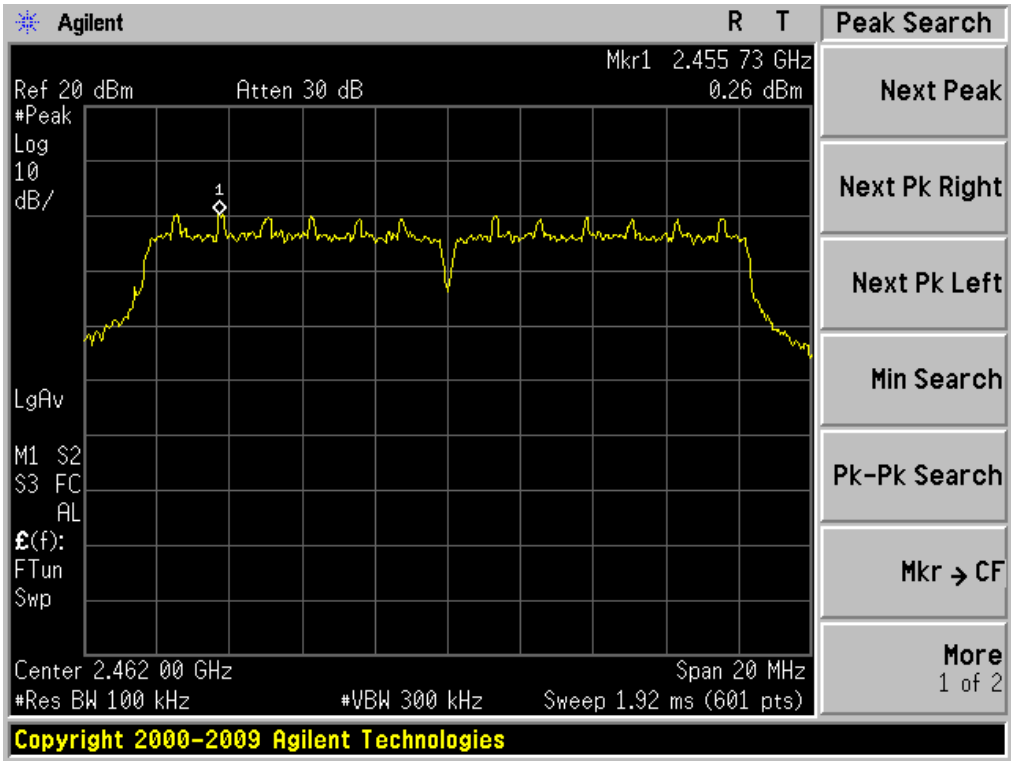
8.3.4 Diagram 8-4



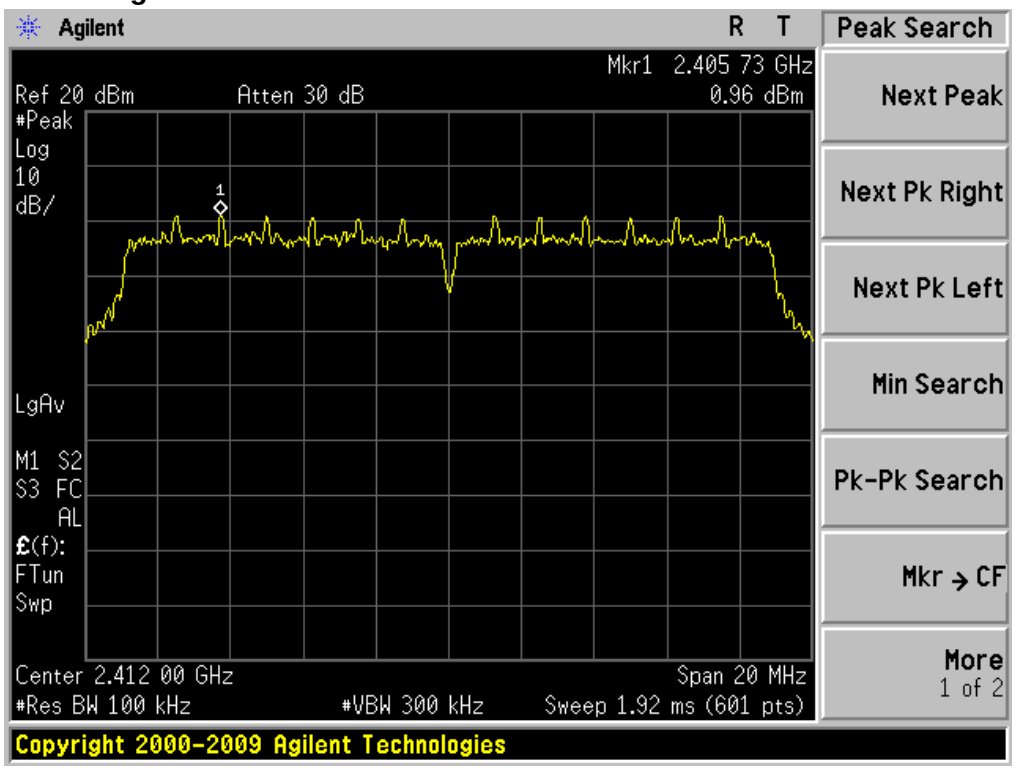
8.3.5 Diagram 8-5



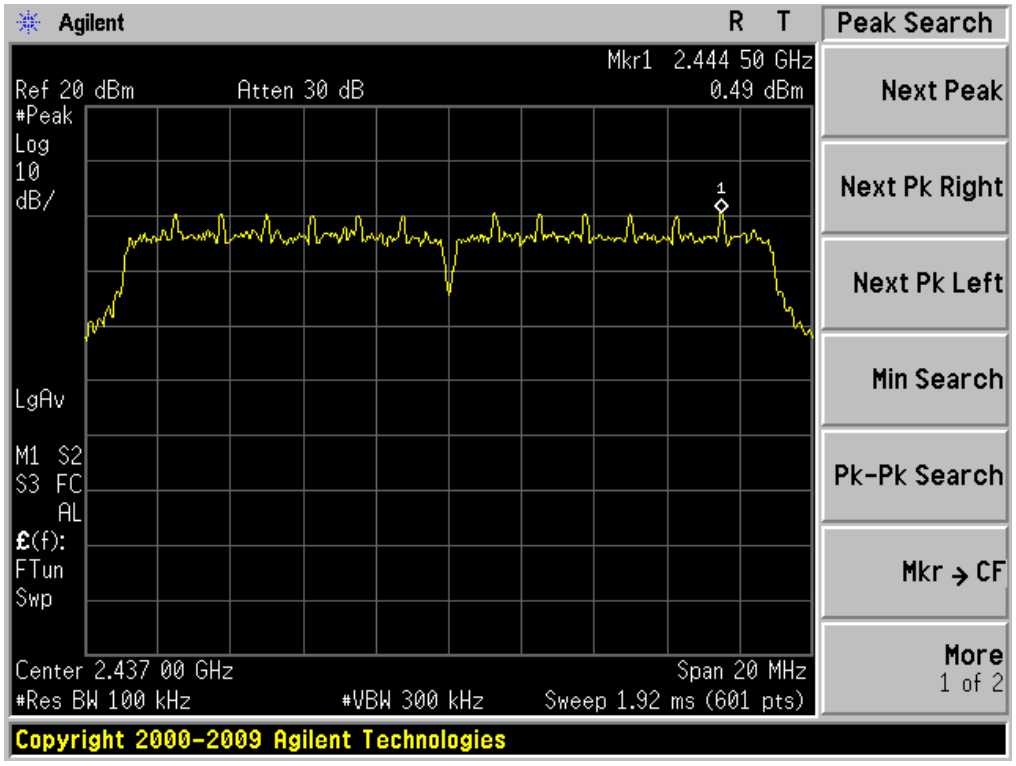
8.3.6 Diagram 8-6



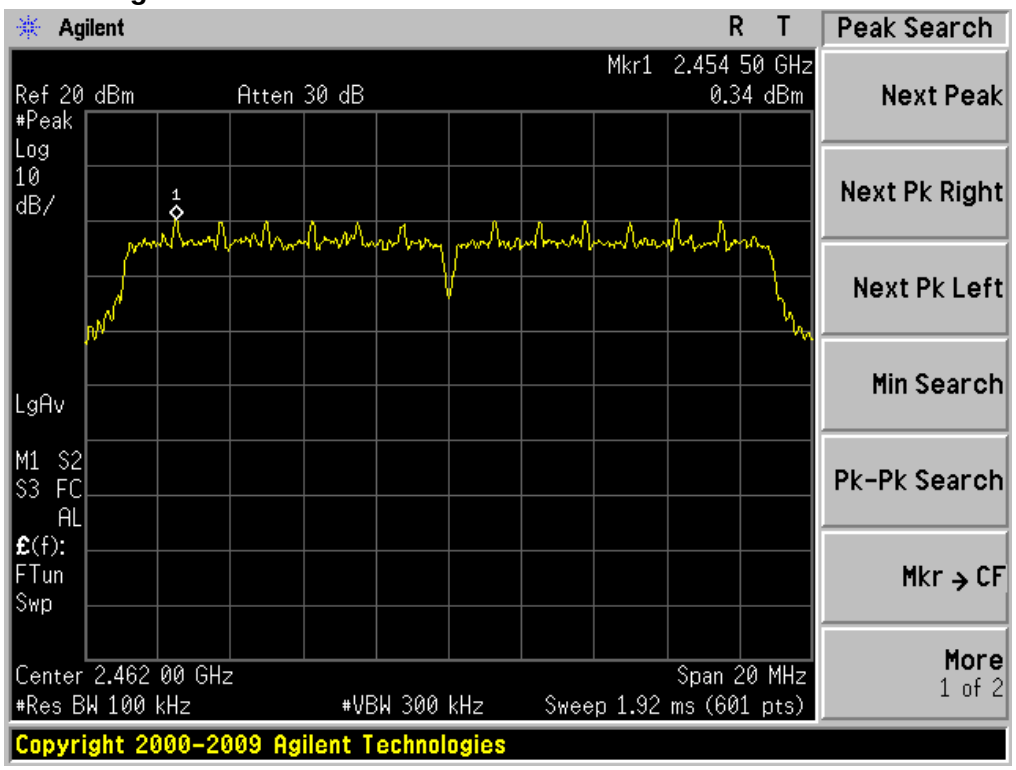
8.3.7 Diagram 8-7



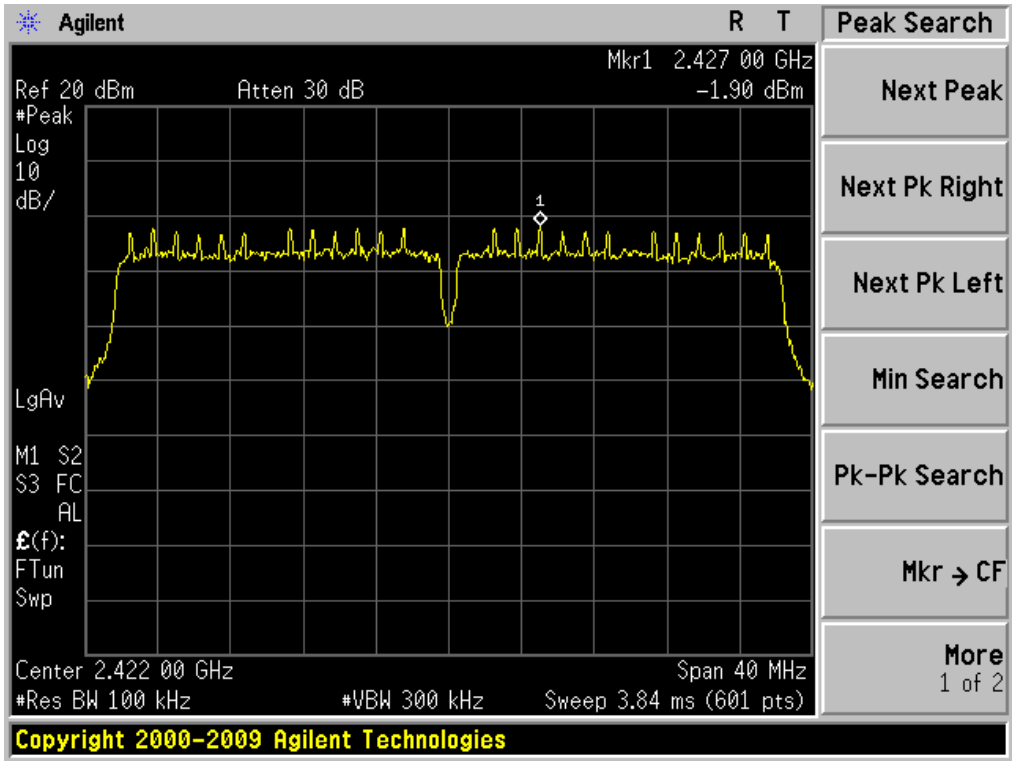
8.3.8 Diagram 8-8



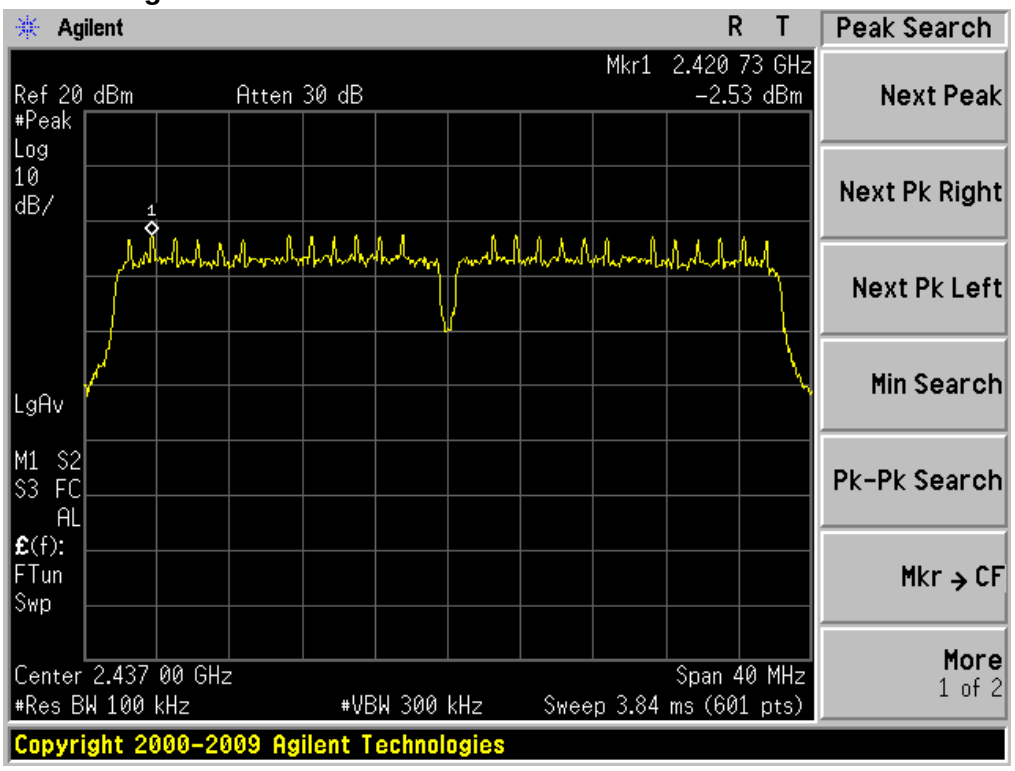
8.3.9 Diagram 8-9



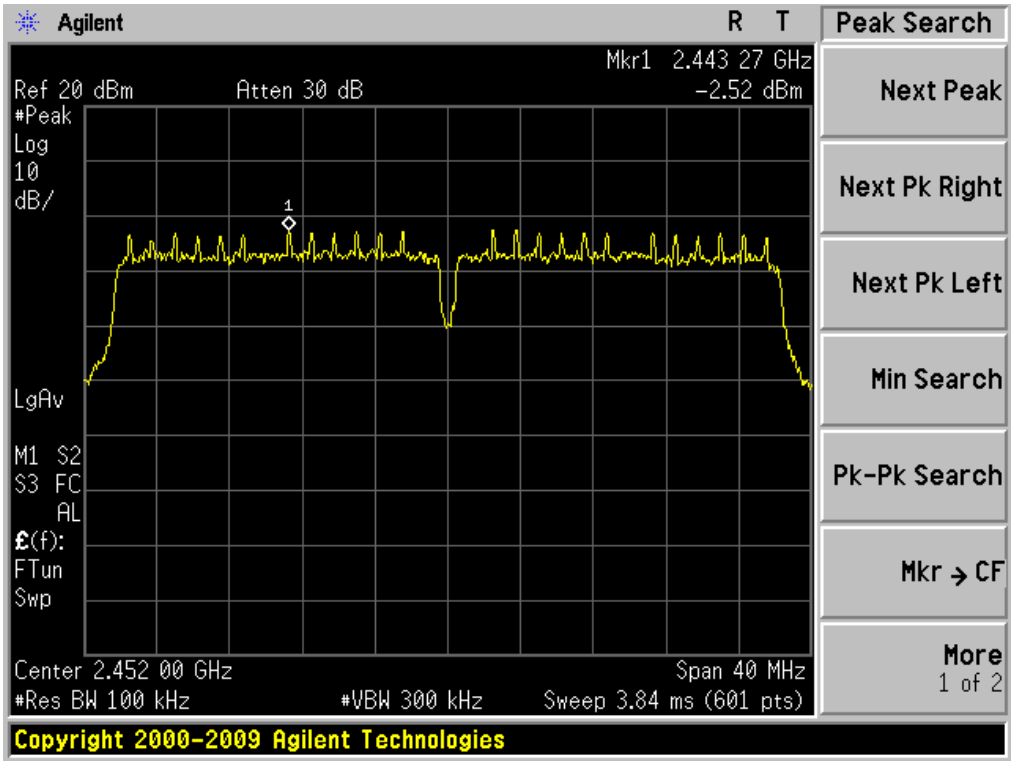
8.3.10 Diagram 8-10



8.3.11 Diagram 8-11



8.3.12 Diagram 8-12



9. Peak Output Power Test

9.1 Test Procedure

For systems using digital modulation in the 2400—2483.5MHz, The Peak out put power shall not exceed 1W(30dBm)

The transmitter output was connected to a PK power meter ,Cable loss have been added in power meter setting offset .

9.2 Measurement Equipment

	Equipment	Calibration due	Type	Serial No.	Manufacturer
☒	Power Meter	July 01 2015	ML2495A	GTS540	Anritsu
☒	Power Sensor	July 01 2015	MA2411B	GTS541	Anritsu

9.3 Test Result

PEAK Output power : PASS

Test Mode	CH	Peak output Power （dBm）	Limit (dBm)
11b	CH1	**18.15**	30
	CH6	17.93	30
	CH11	17.57	30
11g	CH1	15.61	30
	CH6	15.31	30
	CH11	15.52	30
11n HT20	CH1	15.98	30
	CH6	15.56	30
	CH11	15.71	30
11n HT40	CH1	**14.61**	30
	CH4	14.56	30
	CH7	14.49	30

Average Output power ：

Test Mode	CH	Peak output Power （dBm）	Limit (dBm)
11b	CH1	15.03	30
	CH6	14.85	30
	CH11	14.97	30
11g	CH1	11.21	30
	CH6	11.08	30
	CH11	11.65	30
11n HT20	CH1	11.32	30
	CH6	11.01	30
	CH11	11.16	30

11n HT40	CH1	11.12	30
	CH4	10.9	30
	CH7	11.04	30

10 POWER LINE CONDUCTED EMISSION TEST

10.1 Test Procedure

An intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 Ω line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5–30	60	50
*-Decreases with the logarithm of the frequency.		

10.2 Measurement Equipment

	Equipment	Calibration due	Type	Serial No.	Manufacturer
☒	Shielding Room	Jul. 04 2015	7.0(L)x3.0(W)x3.0(H)	GTS252	ZhongYu Electron
☒	EMI Test Receiver	Jul. 04 2015	ESCS30	1102.4500K30	Rohde & Schwarz
☒	10dB Pulse Limita	Jul. 04 2015	N/A	GTS224	Rohde & Schwarz
☒	LISN	Jul. 04 2015	NSLK 8127	8127549	SCHWARZBECK
☒	Coaxial Cable	Apr. 01 2015	N/A	N/A	GTS

10.3 Test Result

The EUT was placed on a non-metallic table, 80cm above the ground plane. The other peripheral devices power cord connected to the power mains through another line impedance stabilization network.In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2003 on conducted Emission test.

Preview measurements:
0.15 MHz to 30 MHz
Receiver settings: PK&AV detector
RBW:9 kHz

Final measurement:
0.15 MHz to 30 MHz
Receiver settings:QP&AV detector

Test mode	Power Line	Test Data	Test Result
TM1	Line	Diagram 10-1	Pass
	Neutral	Diagram 10-2	Pass

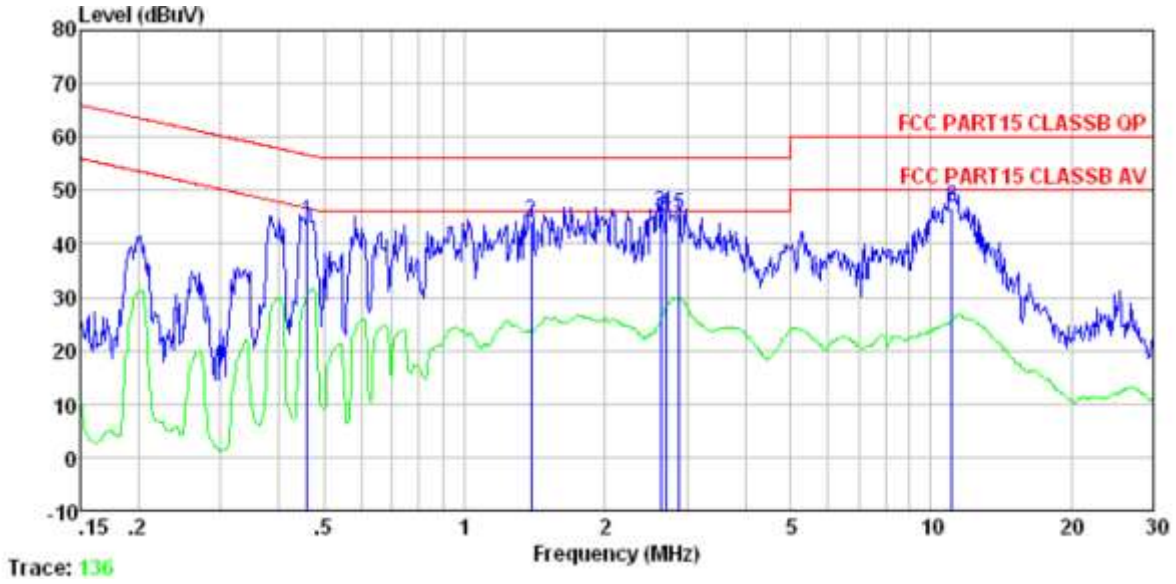
NOTES:

1. Measurements using CISPR quasi-peak mode & average mode.

2. All modes of operation were investigated and the worst -case emission are reported. See attached Plots.

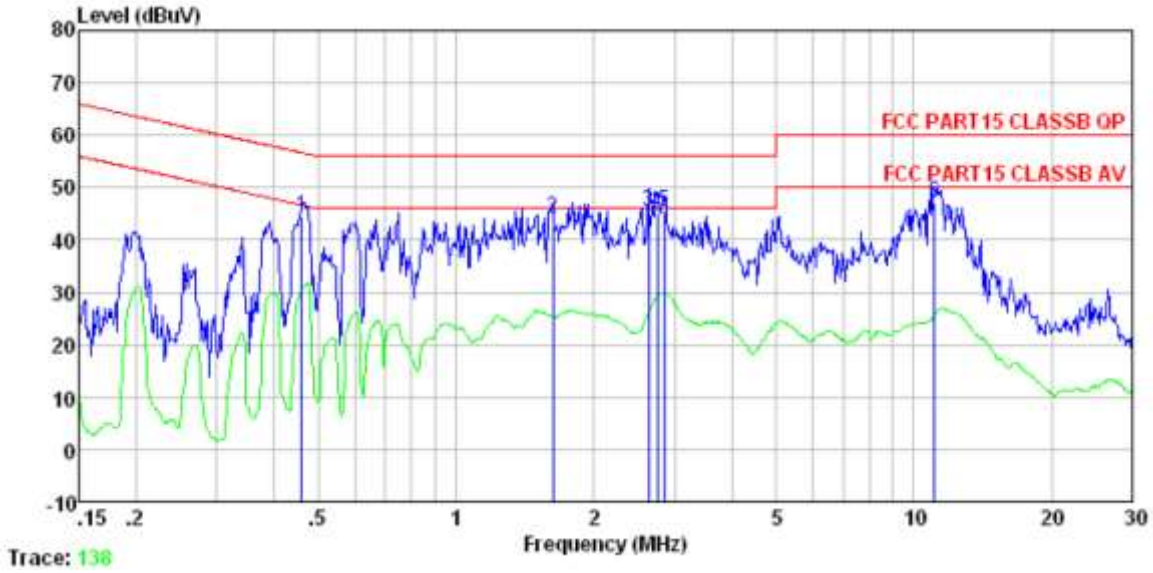
3: If PK value is lower than AV limit then QP and AV value are deemed to be complied with rules and only diagram will be shown as below.

10.3.1 Diagram 10-1



	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.461	44.00	0.06	0.11	44.17	56.67	-12.50	QP
2	1.388	43.76	0.09	0.13	43.98	56.00	-12.02	QP
3	2.636	45.46	0.10	0.15	45.71	56.00	-10.29	QP
4	2.721	45.60	0.10	0.15	45.85	56.00	-10.15	QP
5	2.884	45.27	0.11	0.15	45.53	56.00	-10.47	QP
6	11.080	46.40	0.29	0.20	46.89	60.00	-13.11	QP

10.3.2 Diagram 10-2



	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.461	44.12	0.12	0.11	44.35	56.67	-12.32	QP
2	1.628	43.83	0.12	0.14	44.09	56.00	-11.91	QP
3	2.636	45.33	0.14	0.15	45.62	56.00	-10.38	QP
4	2.750	44.96	0.14	0.15	45.25	56.00	-10.75	QP
5	2.854	45.31	0.15	0.15	45.61	56.00	-10.39	QP
6	11.080	46.56	0.34	0.20	47.10	60.00	-12.90	QP

11. Antenna requirement

11.1 Requirement

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

11.2 Result

The antenna used for this product is Internal Patch antenna that no antenna other than that furnished by the responsible party shall be used with the device, The maximum peak gain of this antenna is 1.31dBi.

*****END OF REPORT*****