

Application for FCC Certification
On behalf of

Glocom, Inc.

Product Name: Inmarsat BGAN LVUT

Model No.: GX-10

Serial No.: E2009041702

FCC ID: XP4GLGX10
(2.4GHz, 802.11b Mode)

Prepared For : Glocom, Inc.
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Report No. : ACI-F09095
Date of Test : May 05 – 13, 2009
Date of Report : Aug 17, 2009

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TEST REPORT FOR FCC CERTIFICATE

Applicant : Glocom, Inc.
Manufacturer : Glocom, Inc.
EUT Description : Inmarsat BGAN LVUT
(A) Model No. : GX-10
(B) Serial No. : E2009041702
(C) Power Supply : DC 24V

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2008
AND ANSI C63.4-2003*

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report also shows that the EUT (M/N: GX-10, S/N: E2009041702), which was tested on May 05 – 13, 2009 is technically compliance with the FCC limits.


This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : May 05 – 13, 2009 Date of Report : Aug 17, 2009

Producer : Zeno Gu
ZENO GU / Assistant

Review : Dio Yang
DIO YANG / Deputy Assistant Manager

 For and on behalf of
Audix Technology (Shanghai) Co., Ltd.

Signatory : Byron Kwo
Authorized Signature EMC BYRON KWO / Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description / Test Item	Test Standard	Results	Meets Limit
EMISSION			
Conducted Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C October 2008 AND ANSI C63.4:2003 AND KDB558074	N/A	15.207
Radiated Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C October 2008 AND ANSI C63.4:2003 AND KDB558074	Pass	15.209(a) 15.205(a)(c)
6 dB Bandwidth Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C October 2008 AND ANSI C63.4:2003 AND KDB558074	Pass	15.247(a)(2)
Maximum Peak Output Power Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C October 2008 AND ANSI C63.4:2003 AND KDB558074	Pass	15.247(b)(3)
Emission Limitations Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C October 2008 AND ANSI C63.4:2003 AND KDB558074	Pass	15.247(d)
Band Edge Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C October 2008 AND ANSI C63.4:2003 AND KDB558074	Pass	15.247(d)
Power Spectral Density Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C October 2008 AND ANSI C63.4:2003 AND KDB558074	Pass	15.247(e)

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description : Inmarsat BGAN LVUT

Type of EUT ☒ Production ☐ Pre-product ☐ Pro-type

Model Number : GX-10

Serial Number : E2009041702

Applicant : Glocom, Inc.
11717 Exploration Lane, Germantown,
MD 20876, USA

Manufacturer : Glocom, Inc.
11717 Exploration Lane, Germantown,
MD 20876, USA

Power Supply : DC 24V

Radio Tech : IEEE 802.11b

Freq. Band : 2412 MHz ~ 2462 MHz
Total 11 Channels

Tested Freq. : 2412 MHz (Channel 01)
2442 MHz (Channel 07)
2462 MHz (Channel 11)

Modulation : DSSS

Antenna Gain : 3dBi

2.2 Peripherals

2.2.1 Notebook PC

Manufacturer : IBM
Model Number : Thinkpad T40 Type 2373-75U
Serial Number : 99-0D1RT
Certificate : CE, IC, C-Tick, FCC DoC, BSMI

2.2.2 Program Control Telephone Exchange

Model Number : T1208f
Serial Number : 972046

2.2.3 Telephone #1

Manufacturer : Shanghai Yiren telecommunication
terminal co., ltd
Model Number : HA 8000(7) P/T
Serial Number : JACKCB03128
Certificate : CCC

2.2.4 Telephone #2

Manufacturer : Shanghai Yiren telecommunication
terminal co., ltd
Model Number : HA 8000(7) P/T
Serial Number : 0028503

2.3 Description of Test Facility

Site Description : Sept. 17, 1998 file on
(Semi-Anechoic Chamber) Apr 29, 2009 Renewed
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046, USA

Name of Firm : Audix Technology (Shanghai) Co., Ltd.

Site Location : 3 F 34 Bldg 680 Guiping Rd.,
Caohejing Hi-Tech Park,
Shanghai 200233, China

FCC registration Number : 91789

Accredited by NVLAP, Lab Code : 200371-0

2.4 Measurement Uncertainty

Radiated Emission Expanded Uncertainty : U = 3.02 dB
6 dB Bandwidth Expanded Uncertainty : U = 0.05 kHz
Maximum Peak Output Power Expanded Uncertainty : U = 0.30 dBm
Emission Limitations Expanded Uncertainty : U = 0.15 dB
Band Edge Expanded Uncertainty : U = 0.15 dB
Power Spectral Density Expanded Uncertainty : U = 0.15 dB

3 RADIATED EMISSION TEST

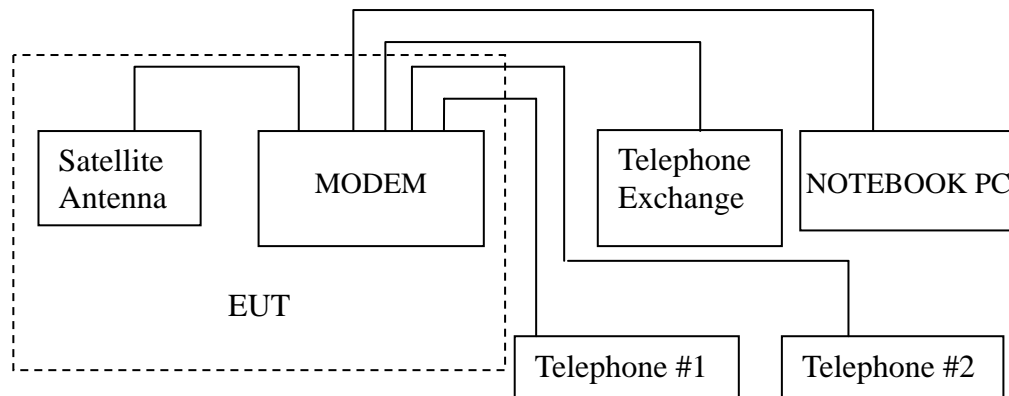
3.1 Test Equipment

The following test equipment are used during the radiated emission test in a semi-anechoic chamber:

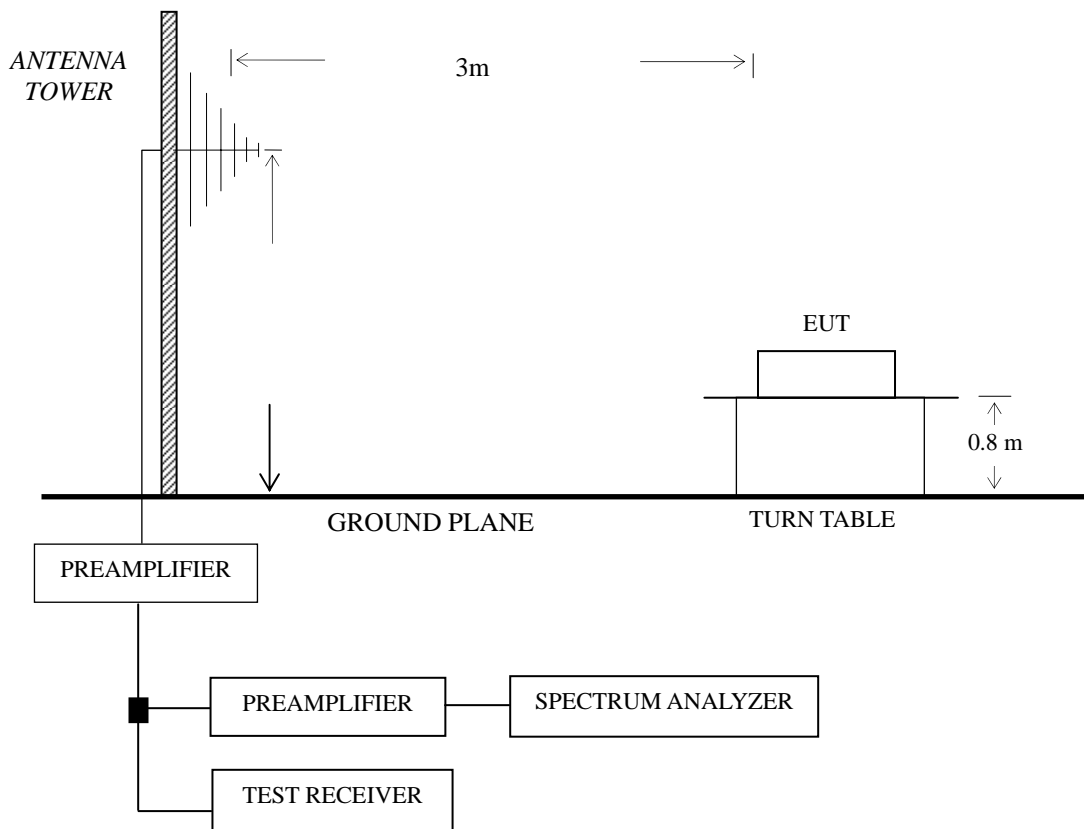
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Preamplifier	Agilent	8447D	2944A10548	Mar 19, 2009	Sep 19, 2009
2.	Preamplifier	HP	8449B	3008A00864	May 19, 2008	May 19, 2009
3.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2008	May 19, 2009
4.	Test Receiver	R&S	ESVS10	844594/001	Mar 07, 2009	Mar 07, 2010
5.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 14, 2008	May 14, 2010
6.	Horn Antenna	EMCO	3115	9607-4878	Oct 26, 2008	Oct 26, 2009
7.	Horn Antenna	EMCO	3116	00062643	Oct 26, 2008	Oct 26, 2009
8.	50 Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 19, 2009	Sep 19, 2009
9.	Software	Audix	E3	SET00200 9912M295-2	-	-

3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



3.2.2 Test Setup



■ : 50 ohm Coaxial Switch

3.3 Radiated Emission Limit [FCC Part 15 Subpart C 15.209(a)&15.205(a)(c)]

Frequency (MHz)	Distance (m)	Field strength limits (μV/m)	
		(μV/m)	dB(μV/m)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	500	54.0 (Average)
Above 1000	3	5000	74.0 (Peak)

NOTE 1 - Emission Level dB (μV/m) = 20 log Emission Level (μV/m)
 NOTE 2 - The tighter limit applies at the band edges.
 NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
 NOTE 4 - The limits shown are based on Quasi-peak value detector below or equal to 1GHz and Average value detector above 1GHz.
 NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT

3.4 Test Configuration

The EUT (listed in Sec.2.1) and the simulators (listed in Sec.2.2) were installed as shown on Sec.3.2 to meet FCC requirements and operating in a manner that tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipment.

3.5.3 Turn the EUT on the test mode (TX & RX) and then test.

3.6 Test Procedures

Radiated emission test applies to harmonics/spurs that fall in the restricted bands listed in Section 15.205. The maximum permitted average field strength is listed in Section 15.209. A pre-amp is necessary for this measurement. For measurement above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep: Auto. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.

The EUT was placed on a turntable that is 0.8 meter above ground. The turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (Calibrated Bilog Antenna) or Horn antenna was used as receiving antenna. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.4:2003 requirements during radiated emission test.

The bandwidth of Test Receiver R&S ESVS10 was set at 120 kHz from 30M to 1000MHz.

The bandwidth of Spectrum Analyzer Agilent E7405A was set at 1MHz above 1 GHz.

The frequency range from 30 MHz to 25 GHz (Up to 10th harmonics from fundamental frequency) was checked.

The EUT was tested under the following test modes:

Mode	Operation	Channel	Speed
1.	Transmitting	01	1 MHz
2.			2 MHz
3.			5.5 MHz
4.			11 MHz
5.		07	1 MHz
6.			2 MHz
7.			5.5 MHz
8.			11 MHz
9.		11	1 MHz
10.			2 MHz
11.			5.5 MHz
12.			11 MHz
13.	Receiving	--	--

All the test results are listed in Sec.3.7.

3.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

No.	Operation	Channel	Speed	Data Page	
1.	Transmitting	01	1 MHz	P13	
2.			2 MHz	P14	
3.			5.5 MHz	P15	
4.			11 MHz	P16	
5.		07	1 MHz	P17	
6.			2 MHz	P18	
7.			5.5 MHz	P19	
8.			11 MHz	P20	
9.		11	1 MHz	P21	
10.			2 MHz	P22	
11.			5.5 MHz	P23	
12.			11 MHz	P24	
13.	Receiving	--	--	P25	
14.	Transmitting	01	1 MHz	Band-Edge	P26
15.			2 MHz		
16.			5.5 MHz		
17.			11 MHz		
18.		11	1 MHz		
19.			2 MHz		
20.			5.5 MHz		
21.			11 MHz		

NOTE 1 - All reading are Quasi-Peak values below or equal to 1GHz and Peak values above 1GHz. For measurements above 1 GHz, the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.

NOTE 2 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 3 - The worst case is for Ch11 (2462MHz) 2MHz. The worst emission at horizontal polarization was detected at 829.50 MHz with corrected signal level of 42.74 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 125°. The worst emission at vertical polarization was detected at 829.28 MHz with corrected signal level of 40.94 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 295°.

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Test Mode : Ch01(2412MHz) 1MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	230.79	21.45	9.40	2.27	--	33.12	46.00	13.88
	414.12	20.19	14.88	3.06	--	38.13	46.00	8.87
	576.11	17.48	17.38	3.63	--	38.49	46.00	8.51
	690.57	19.00	18.70	4.08	--	41.78	46.00	5.22
	829.35	16.50	19.85	4.49	--	40.84	46.00	6.16
	875.84	16.20	20.32	4.62	--	41.14	46.00	5.86
	1090.58	46.71	24.54	3.93	37.45	37.73	74.00	36.27
	2201.35	44.72	28.28	5.77	35.49	43.28	74.00	30.72
	3168.50	42.75	30.90	7.14	34.58	46.21	74.00	27.79
	7311.00	38.73	35.47	11.93	34.48	51.65	74.00	22.35
Vertical	33.88	13.88	16.23	0.79	--	30.90	40.00	9.10
	41.64	18.76	11.47	0.88	--	31.11	40.00	8.89
	138.64	21.63	8.00	1.67	--	31.30	43.50	8.70
	230.79	22.77	9.40	2.27	--	34.44	46.00	12.56
	507.24	19.31	16.38	3.36	--	39.05	46.00	7.95
	829.28	16.60	19.85	4.49	--	40.94	46.00	6.06
	1327.45	41.89	25.53	4.47	36.88	35.01	74.00	38.99
	2814.41	41.20	30.04	6.67	34.95	42.96	74.00	31.04
	3299.34	40.54	31.19	7.26	34.41	44.58	74.00	29.42
	5697.37	41.81	34.11	10.26	34.58	51.60	74.00	22.40

TEST ENGINEER: RAVEN JIN

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Test Mode : Ch01(2412MHz) 2MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	230.79	21.23	9.40	2.27	--	32.90	46.00	13.10
	415.09	21.32	14.88	3.06	--	39.26	46.00	6.74
	507.24	19.61	16.38	3.36	--	39.35	46.00	6.65
	691.54	16.96	18.74	4.09	--	39.79	46.00	6.21
	829.45	18.30	19.85	4.49	--	42.64	46.00	3.36
	875.84	15.39	20.32	4.62	--	40.33	46.00	5.67
	1578.82	44.92	26.40	4.96	36.38	39.90	74.00	34.10
	1978.08	45.15	27.54	5.58	35.73	42.54	74.00	31.46
	4015.93	38.62	32.61	8.63	33.62	46.24	74.00	27.76
	7311.00	39.43	35.61	12.21	34.46	52.79	74.00	21.21
Vertical	33.88	13.03	16.23	0.79	--	30.05	40.00	9.95
	109.54	20.49	8.07	1.46	--	30.02	43.50	13.48
	138.64	20.94	8.00	1.67	--	30.61	43.50	12.89
	507.24	19.80	16.38	3.36	--	39.54	46.00	6.46
	599.39	16.37	17.70	3.72	--	37.79	46.00	8.21
	829.28	16.14	19.85	4.49	--	40.48	46.00	5.52
	1182.51	45.40	24.95	4.16	37.22	37.29	74.00	36.71
	2220.52	40.90	28.35	5.79	35.47	39.57	74.00	34.43
	3141.15	41.99	30.84	7.12	34.61	45.34	74.00	28.66
	7386.00	39.12	35.51	12.00	34.47	52.16	74.00	21.84

TEST ENGINEER: RAVEN JIN

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Test Mode : Ch01(2412MHz)
5.5MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	138.64	17.45	8.00	1.67	--	27.12	43.50	16.38
	230.79	21.54	9.40	2.27	--	33.21	46.00	12.79
	415.09	21.60	14.88	3.06	--	39.54	46.00	6.46
	691.55	19.00	18.74	4.09	--	41.83	46.00	4.17
	829.28	16.90	19.85	4.49	--	41.24	46.00	4.76
	875.84	15.47	20.32	4.62	--	40.41	46.00	5.59
	1382.26	45.07	25.73	4.57	36.76	38.61	74.00	35.39
	2173.00	45.17	28.20	5.75	35.51	43.61	74.00	30.39
	4874.00	38.81	33.92	10.10	34.64	48.19	74.00	25.81
	7236.00	41.28	34.86	11.37	34.50	53.01	74.00	20.99
Vertical	33.88	14.38	16.23	0.79	--	31.40	40.00	8.60
	109.54	20.51	8.07	1.46	--	30.04	43.50	13.46
	138.64	21.18	8.00	1.67	--	30.85	43.50	12.65
	230.79	22.15	9.40	2.27	--	33.82	46.00	12.18
	507.24	18.63	16.38	3.36	--	38.37	46.00	7.63
	829.28	15.55	19.85	4.49	--	39.89	46.00	6.11
	1103.26	43.86	24.60	3.97	37.41	35.02	74.00	38.98
	2896.95	41.09	30.25	6.83	34.88	43.29	74.00	30.71
	4874.00	40.02	33.03	9.80	34.25	48.60	74.00	25.40
	7236.00	39.83	35.01	11.47	34.50	51.81	74.00	22.19

TEST ENGINEER: RAVEN JIN

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Test Mode : Ch01(2412MHz)
11MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	230.79	21.94	9.40	2.27	--	33.61	46.00	12.39
	415.09	22.16	14.88	3.06	--	40.10	46.00	5.90
	507.24	19.34	16.38	3.36	--	39.08	46.00	6.92
	691.54	18.64	18.74	4.09	--	41.47	46.00	4.53
	829.50	17.50	19.85	4.49	--	41.84	46.00	4.16
	875.84	16.31	20.32	4.62	--	41.25	46.00	4.75
	1135.62	43.88	24.74	4.05	37.34	35.33	74.00	38.67
	2265.91	45.14	28.49	5.83	35.42	44.04	74.00	29.96
	4874.00	38.76	32.92	9.54	34.09	47.13	74.00	26.87
	7386.00	39.95	35.47	11.93	34.48	52.87	74.00	21.13
Vertical	33.88	13.51	16.23	0.79	--	30.53	40.00	9.47
	109.54	18.73	8.07	1.46	--	28.26	43.50	15.24
	138.64	18.32	8.00	1.67	--	27.99	43.50	15.51
	691.54	17.64	18.74	4.09	--	40.47	46.00	5.53
	829.28	16.58	19.85	4.49	--	40.92	46.00	5.08
	875.84	16.31	20.32	4.62	--	41.25	46.00	4.75
	1234.91	43.57	25.16	4.27	37.09	35.91	74.00	38.09
	2726.34	40.39	29.82	6.48	35.01	41.68	74.00	32.32
	4824.00	40.31	32.96	9.66	34.15	48.78	74.00	25.22
	7236.00	40.27	35.42	11.83	34.49	53.03	74.00	20.97

TEST ENGINEER: RAVEN JIN

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Test Mode : Ch07(2442MHz) 1MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	229.82	20.54	9.33	2.26	--	32.13	46.00	13.87
	415.09	19.27	14.88	3.06	--	37.21	46.00	8.79
	691.54	17.34	18.74	4.09	--	40.17	46.00	5.83
	783.69	16.89	19.40	4.36	--	40.65	46.00	5.35
	829.35	18.00	19.85	4.49	--	42.34	46.00	3.66
	875.84	15.51	20.32	4.62	--	40.45	46.00	5.55
	1231.35	43.17	25.15	4.26	37.10	35.48	74.00	38.52
	2896.95	41.59	30.25	6.83	34.88	43.79	74.00	30.21
	4824.00	39.50	33.69	10.01	34.71	48.49	74.00	25.51
	7311.00	38.34	35.51	12.00	34.47	51.38	74.00	22.62
Vertical	33.88	13.78	16.23	0.79	--	30.80	40.00	9.20
	109.54	20.96	8.07	1.46	--	30.49	43.50	13.01
	138.64	21.46	8.00	1.67	--	31.13	43.50	12.37
	230.79	21.62	9.40	2.27	--	33.29	46.00	12.71
	507.24	18.96	16.38	3.36	--	38.70	46.00	7.30
	829.28	15.97	19.85	4.49	--	40.31	46.00	5.69
	1672.78	42.88	26.70	5.14	36.21	38.51	74.00	35.49
	2285.64	45.02	28.55	5.85	35.40	44.02	74.00	29.98
	4874.00	39.32	32.95	9.63	34.14	47.76	74.00	26.24
	5813.81	41.58	34.23	10.36	34.55	51.62	74.00	22.38

TEST ENGINEER: RAVEN JIN

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Test Mode : Ch07(2442MHz) 2MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	230.79	21.20	9.40	2.27	--	32.87	46.00	13.13
	415.09	19.79	14.88	3.06	--	37.73	46.00	8.27
	552.83	17.00	17.10	3.53	--	37.63	46.00	8.37
	691.54	17.90	18.74	4.09	--	40.73	46.00	5.27
	829.28	16.70	19.85	4.49	--	41.04	46.00	4.96
	875.84	15.47	20.32	4.62	--	40.41	46.00	5.59
	1578.00	44.55	26.40	4.96	36.38	39.53	74.00	34.47
	2089.75	40.52	27.91	5.67	35.60	38.50	74.00	35.50
	4874.00	39.88	32.96	9.66	34.15	48.35	74.00	25.65
	6358.79	40.27	34.74	11.15	34.50	51.66	74.00	22.34
Vertical	33.88	14.69	16.23	0.79	--	31.71	40.00	8.29
	138.64	22.19	8.00	1.67	--	31.86	43.50	11.64
	230.79	22.01	9.40	2.27	--	33.68	46.00	12.32
	507.24	17.57	16.38	3.36	--	37.31	46.00	8.69
	691.54	14.95	18.74	4.09	--	37.78	46.00	8.22
	829.28	15.54	19.85	4.49	--	39.88	46.00	6.12
	1135.62	43.28	24.74	4.05	37.34	34.73	74.00	39.27
	1687.35	42.88	26.74	5.17	36.18	38.61	74.00	35.39
	4874.00	40.43	32.60	8.60	33.60	48.03	74.00	25.97
	7311.00	41.60	34.32	10.44	34.52	51.84	74.00	22.16

TEST ENGINEER: RAVEN JIN

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Test Mode : Ch07(2442MHz)
5.5MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	138.64	18.07	8.00	1.67	--	27.74	43.50	15.76
	230.79	20.66	9.40	2.27	--	32.33	46.00	13.67
	415.09	20.38	14.88	3.06	--	38.32	46.00	7.68
	691.54	18.36	18.74	4.09	--	41.19	46.00	4.81
	829.28	18.17	19.85	4.49	--	42.51	46.00	3.49
	875.84	16.18	20.32	4.62	--	41.12	46.00	4.88
	1158.83	43.12	24.84	4.11	37.28	34.79	74.00	39.21
	1861.59	40.64	27.24	5.46	35.91	37.43	74.00	36.57
	4824.00	40.31	32.96	9.66	34.15	48.78	74.00	25.22
	7236.00	42.74	34.29	10.41	34.53	52.91	74.00	21.09
Vertical	33.88	15.05	16.23	0.79	--	32.07	40.00	7.93
	138.64	21.78	8.00	1.67	--	31.45	43.50	12.05
	184.23	19.90	8.30	1.99	--	30.19	43.50	13.31
	230.79	21.90	9.40	2.27	--	33.57	46.00	12.43
	599.39	18.45	17.70	3.72	--	39.87	46.00	6.13
	829.28	16.54	19.85	4.49	--	40.88	46.00	5.12
	1682.48	42.89	26.73	5.16	36.19	38.59	74.00	35.41
	3105.04	42.32	30.75	7.09	34.66	45.50	74.00	28.50
	4924.00	40.12	33.16	9.84	34.44	48.68	74.00	25.32
	5119.52	40.32	33.53	9.95	34.76	49.04	74.00	24.96

TEST ENGINEER: RAVEN JIN

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Test Mode : Ch07(2442MHz)
11MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	138.64	16.02	8.00	1.67	--	25.69	43.50	17.81
	230.79	18.68	9.40	2.27	--	30.35	46.00	15.65
	415.09	19.78	14.88	3.06	--	37.72	46.00	8.28
	691.54	17.83	18.74	4.09	--	40.66	46.00	5.34
	783.69	16.38	19.40	4.36	--	40.14	46.00	5.86
	829.40	17.80	19.85	4.49	--	42.14	46.00	3.86
	1182.51	43.22	24.95	4.16	37.22	35.11	74.00	38.89
	2905.33	41.33	30.27	6.84	34.87	43.57	74.00	30.43
	3703.72	41.00	32.03	7.91	33.92	47.02	74.00	26.98
	4924.00	40.37	33.28	9.87	34.61	48.91	74.00	25.09
Vertical	33.88	15.15	16.23	0.79	--	32.17	40.00	7.83
	138.64	20.20	8.00	1.67	--	29.87	43.50	13.63
	230.79	20.41	9.40	2.27	--	32.08	46.00	13.92
	507.24	19.26	16.38	3.36	--	39.00	46.00	7.00
	599.39	17.24	17.70	3.72	--	38.66	46.00	7.34
	829.28	15.40	19.85	4.49	--	39.74	46.00	6.26
	1346.77	41.98	25.60	4.51	36.84	35.25	74.00	38.75
	1995.31	41.61	27.59	5.59	35.70	39.09	74.00	34.91
	4924.00	43.88	31.11	7.22	34.45	47.76	74.00	26.24
	7386.00	39.49	35.37	11.73	34.49	52.10	74.00	21.90

TEST ENGINEER: RAVEN JIN

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Test Mode : Ch11(2462MHz) 1MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	230.79	18.66	9.40	2.27	--	30.33	46.00	15.67
	415.09	19.21	14.88	3.06	--	37.15	46.00	8.85
	507.24	16.97	16.38	3.36	--	36.71	46.00	9.29
	691.54	17.05	18.74	4.09	--	39.88	46.00	6.12
	829.28	15.96	19.85	4.49	--	40.30	46.00	5.70
	875.84	14.79	20.32	4.62	--	39.73	46.00	6.27
	1494.46	44.61	26.13	4.79	36.54	38.99	74.00	35.01
	2246.34	44.61	28.43	5.81	35.44	43.41	74.00	30.59
	3619.06	41.78	31.86	7.70	34.02	47.32	74.00	26.68
	7311.00	40.24	35.25	11.58	34.50	52.57	74.00	21.43
Vertical	33.88	13.09	16.23	0.79	--	30.11	40.00	9.89
	109.54	20.82	8.07	1.46	--	30.35	43.50	13.15
	138.64	21.65	8.00	1.67	--	31.32	43.50	12.18
	507.24	18.51	16.38	3.36	--	38.25	46.00	7.75
	599.39	18.01	17.70	3.72	--	39.43	46.00	6.57
	829.28	16.29	19.85	4.49	--	40.63	46.00	5.37
	1138.90	43.24	24.76	4.06	37.33	34.73	74.00	39.27
	1978.08	43.15	27.54	5.58	35.73	40.54	74.00	33.46
	3233.26	44.25	31.05	7.20	34.49	48.01	74.00	25.99
	5119.52	42.32	33.53	9.95	34.76	51.04	74.00	22.96

TEST ENGINEER: RAVEN JIN

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Test Mode : Ch11(2462MHz) 2MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	138.64	17.05	8.00	1.67	--	26.72	43.50	16.78
	415.09	19.65	14.88	3.06	--	37.59	46.00	8.41
	644.98	16.73	18.08	3.90	--	38.71	46.00	7.29
	691.54	17.88	18.74	4.09	--	40.71	46.00	5.29
	829.50	18.40	19.85	4.49	--	42.74	46.00	3.26
	875.84	14.62	20.32	4.62	--	39.56	46.00	6.44
	1382.26	44.78	25.73	4.57	36.76	38.32	74.00	35.68
	2272.47	44.09	28.51	5.84	35.42	43.02	74.00	30.98
	4824.00	39.53	33.24	9.86	34.57	48.06	74.00	25.94
	7386.00	39.37	35.42	11.83	34.49	52.13	74.00	21.87
Vertical	33.88	13.77	16.23	0.79	--	30.79	40.00	9.21
	109.54	20.54	8.07	1.46	--	30.07	43.50	13.43
	138.64	21.98	8.00	1.67	--	31.65	43.50	11.85
	507.24	17.51	16.38	3.36	--	37.25	46.00	8.75
	599.39	16.55	17.70	3.72	--	37.97	46.00	8.03
	829.28	16.60	19.85	4.49	--	40.94	46.00	5.06
	1639.27	43.02	26.59	5.07	36.27	38.41	74.00	35.59
	1706.97	43.22	26.80	5.21	36.16	39.07	74.00	34.93
	3396.10	42.78	31.40	7.33	34.29	47.22	74.00	26.78
	6414.17	40.12	34.79	11.25	34.50	51.66	74.00	22.34

TEST ENGINEER: RAVEN JIN

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Test Mode : Ch11(2462MHz) 5.5MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	138.64	16.97	8.00	1.67	--	26.64	43.50	16.86
	415.09	19.12	14.88	3.06	--	37.06	46.00	8.94
	691.54	17.46	18.74	4.09	--	40.29	46.00	5.71
	783.69	16.43	19.40	4.36	--	40.19	46.00	5.81
	829.45	18.20	19.85	4.49	--	42.54	46.00	3.46
	875.84	15.10	20.32	4.62	--	40.04	46.00	5.96
	1308.40	41.70	25.46	4.43	36.92	34.67	74.00	39.33
	2922.17	41.23	30.31	6.87	34.86	43.55	74.00	30.45
	4086.18	39.14	32.67	8.80	33.71	46.90	74.00	27.10
	7311.00	38.03	36.08	12.78	34.40	52.49	74.00	21.51
Vertical	33.88	13.54	16.23	0.79	--	30.56	40.00	9.44
	109.54	20.50	8.07	1.46	--	30.03	43.50	13.47
	138.64	21.80	8.00	1.67	--	31.47	43.50	12.03
	230.79	20.65	9.40	2.27	--	32.32	46.00	13.68
	599.39	16.70	17.70	3.72	--	38.12	46.00	7.88
	829.28	15.79	19.85	4.49	--	40.13	46.00	5.87
	1153.00	46.00	24.81	4.10	37.28	37.63	74.00	36.37
	2220.52	39.90	28.35	5.79	35.47	38.57	74.00	35.43
	4874.00	40.53	32.81	9.20	33.91	48.63	74.00	25.37
	7311.00	37.72	36.08	12.78	34.40	52.18	74.00	21.82

TEST ENGINEER: RAVEN JIN

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Test Mode : Ch11(2462MHz) 11MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	138.64	16.16	8.00	1.67	--	25.83	43.50	17.67
	230.79	17.50	9.40	2.27	--	29.17	46.00	16.83
	415.09	18.91	14.88	3.06	--	36.85	46.00	9.15
	691.54	17.16	18.74	4.09	--	39.99	46.00	6.01
	829.50	17.50	19.85	4.49	--	41.84	46.00	4.16
	875.84	14.96	20.32	4.62	--	39.90	46.00	6.10
	1172.30	41.29	24.90	4.14	37.24	33.09	74.00	40.91
	1706.97	42.85	26.80	5.21	36.16	38.70	74.00	35.30
	3227.00	43.71	31.02	7.19	34.50	47.42	74.00	26.58
	4924.00	39.44	33.89	10.09	34.65	48.77	74.00	25.23
Vertical	33.88	14.53	16.23	0.79	--	31.55	40.00	8.45
	109.54	19.84	8.07	1.46	--	29.37	43.50	14.13
	138.64	22.02	8.00	1.67	--	31.69	43.50	11.81
	507.24	17.35	16.38	3.36	--	37.09	46.00	8.91
	599.39	16.94	17.70	3.72	--	38.36	46.00	7.64
	829.28	15.75	19.85	4.49	--	40.09	46.00	5.91
	1152.15	44.96	24.81	4.10	37.29	36.58	74.00	37.42
	2077.71	46.34	27.87	5.66	35.61	44.26	74.00	29.74
	4015.93	39.61	32.61	8.63	33.62	47.23	74.00	26.77
	5780.30	39.80	34.19	10.33	34.56	49.76	74.00	24.24

TEST ENGINEER: RAVEN JIN

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Test Mode : Receiving

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	206.54	16.29	8.85	2.13	--	27.27	43.50	16.23
	415.09	19.12	14.88	3.06	--	37.06	46.00	8.94
	644.98	16.65	18.08	3.90	--	38.63	46.00	7.37
	691.54	17.42	18.74	4.09	--	40.25	46.00	5.75
	829.35	17.50	19.85	4.49	--	41.84	46.00	4.16
	875.84	15.04	20.32	4.62	--	39.98	46.00	6.02
	1578.82	43.68	26.40	4.96	36.38	38.66	74.00	35.34
	2421.66	44.15	28.97	5.95	35.28	43.79	74.00	30.21
	4874.00	39.76	32.92	9.54	34.09	48.13	74.00	25.87
	6414.17	41.02	34.79	11.25	34.50	52.56	74.00	21.44
Vertical	33.88	13.54	16.23	0.79	--	30.56	40.00	9.44
	109.54	20.74	8.07	1.46	--	30.27	43.50	13.23
	138.64	21.53	8.00	1.67	--	31.20	43.50	12.30
	599.39	17.34	17.70	3.72	--	38.76	46.00	7.24
	783.69	15.60	19.40	4.36	--	39.36	46.00	6.64
	829.28	15.11	19.85	4.49	--	39.45	46.00	6.55
	1231.35	42.93	25.15	4.26	37.10	35.24	74.00	38.76
	1877.80	41.35	27.28	5.48	35.88	38.23	74.00	35.77
	3280.33	44.21	31.15	7.24	34.42	48.18	74.00	25.82
	5697.37	40.77	34.11	10.26	34.58	50.56	74.00	23.44

TEST ENGINEER: RAVEN JIN

Band edge

EUT : Inmarsat BGAN LVUT Temperature : 22°C

Model No. : GX-10 Humidity : 60%RH

Serial No. : E2009041702 Date of Test : May 13, 2009

Channel	Speed (MHz)	Frequency (MHz)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Detector
Ch01	1	2412.00	104.89	--	--	Peak
		2390.00	63.19	74.00	10.81	Peak
		2390.00	40.13	54.00	13.87	Average
	2	2412.00	103.65	--	--	Peak
		2390.00	62.87	74.00	11.13	Peak
		2390.00	40.24	54.00	13.76	Average
	5.5	2412.00	102.62	--	--	Peak
		2390.00	61.04	74.00	12.96	Peak
		2390.00	39.97	54.00	14.03	Average
	11	2412.00	102.03	--	--	Peak
		2390.00	62.99	74.00	11.01	Peak
		2390.00	41.02	54.00	12.98	Average
Ch11	1	2462.00	98.69	--	--	Peak
		2483.50	60.90	74.00	13.10	Peak
		2483.50	39.57	54.00	14.49	Average
	2	2462.00	101.02	--	--	Peak
		2483.50	61.03	74.00	12.97	Peak
		2483.50	40.63	54.00	13.37	Average
	5.5	2462.00	100.39	--	--	Peak
		2483.50	62.84	74.00	11.16	Peak
		2483.50	40.49	54.00	13.51	Average
	11	2462.00	101.56	--	--	Peak
		2483.50	61.91	74.00	12.09	Peak
		2483.50	40.88	54.00	13.12	Average

TEST ENGINEER: RAVEN JIN

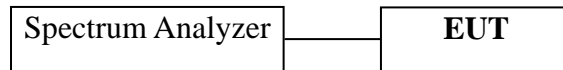
4 6 dB BANDWIDTH MEASUREMENT

4.1 Test Equipment

The following test equipment was used during the Emission Bandwidth measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2008	May 19, 2009

4.2 Block Diagram of Test Setup



4.3 Specification Limits (§15.247(a)(2))

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

4.4 Operating Condition of EUT

The test program “Perl” was used to enable the EUT to transmit and receive data at different channel frequency individually.

4.5 Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 100 kHz RBW and 100 kHz VBW. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB. The test procedure is defined in KDB558074.

4.6 Test Results

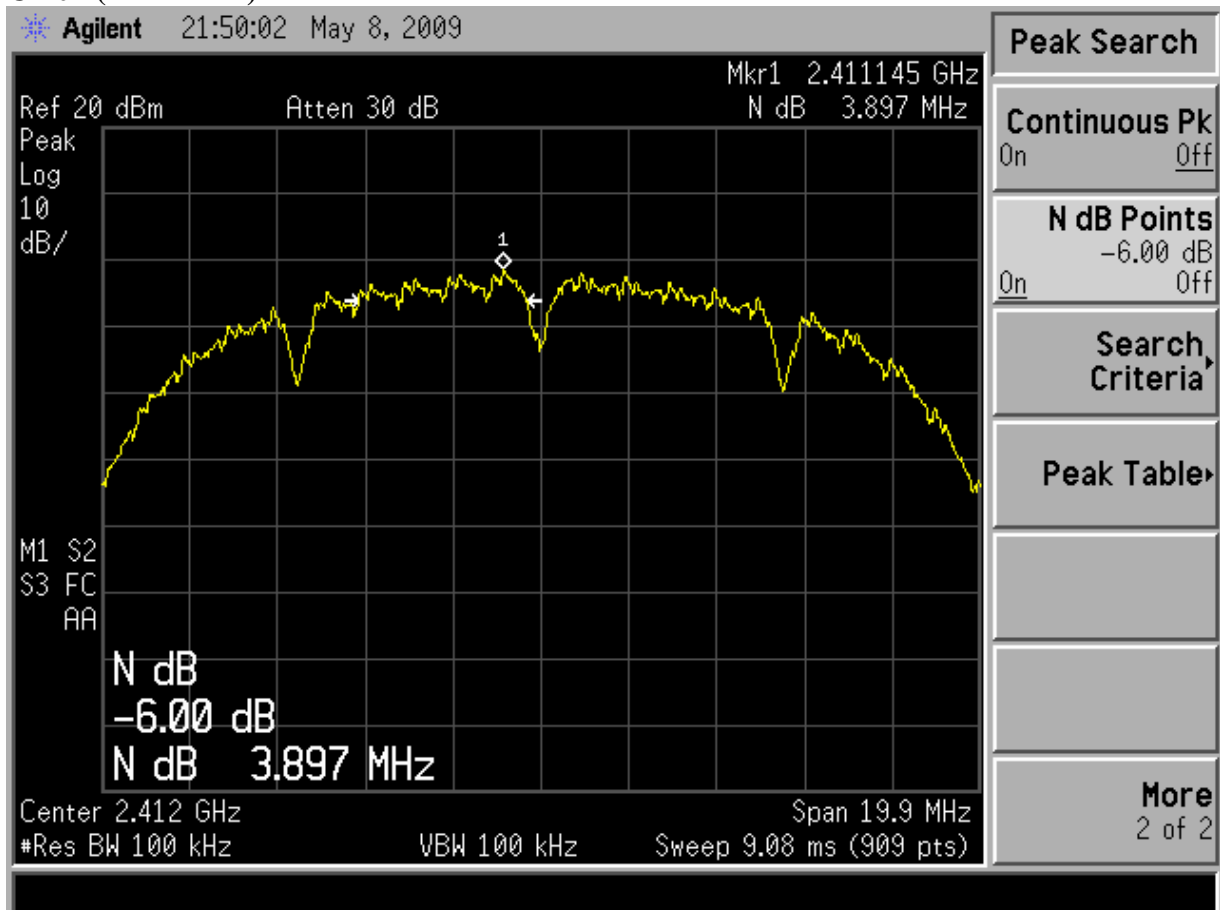
PASSED.

All the test results are attached in next pages.

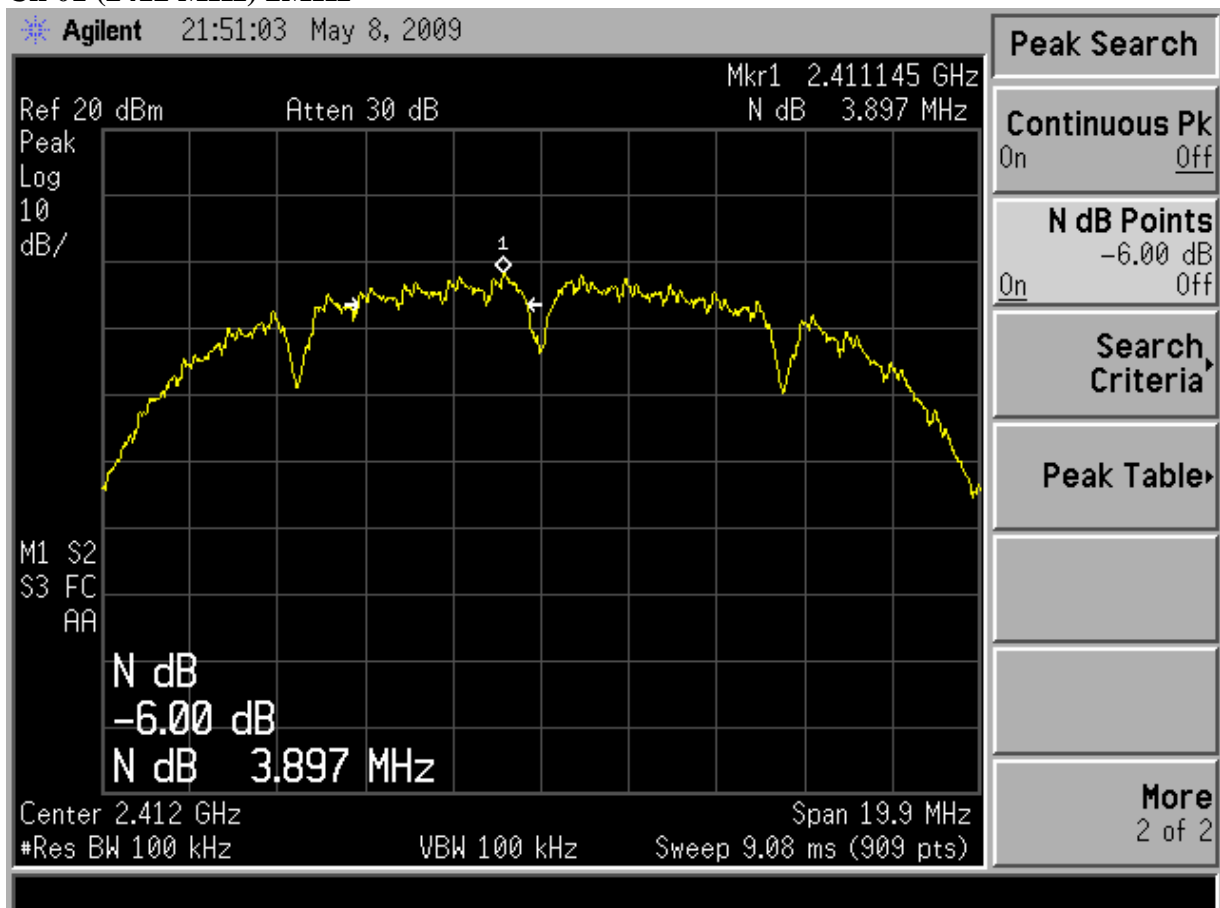
(Test Date : May 08, 2009 Temperature : 24°C Humidity : 52 %)

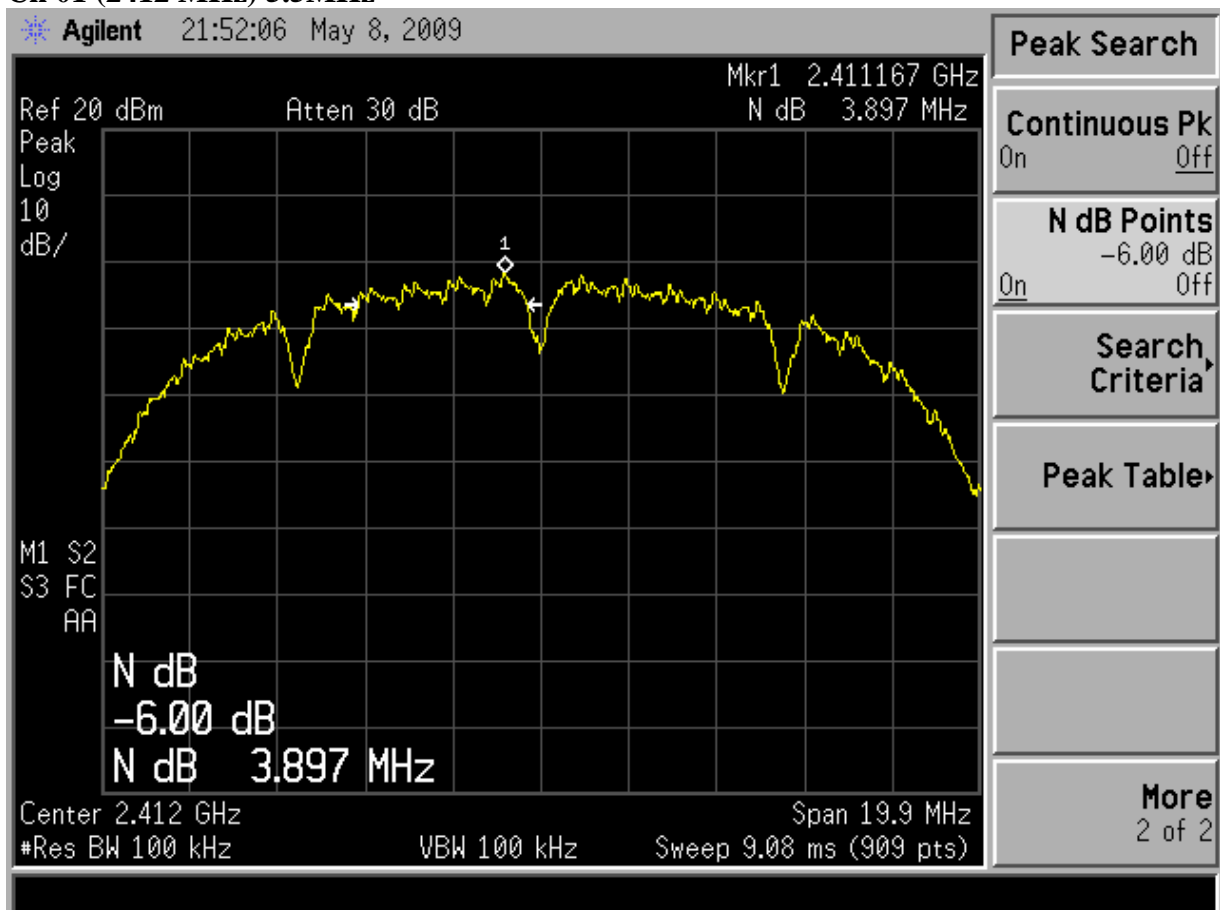
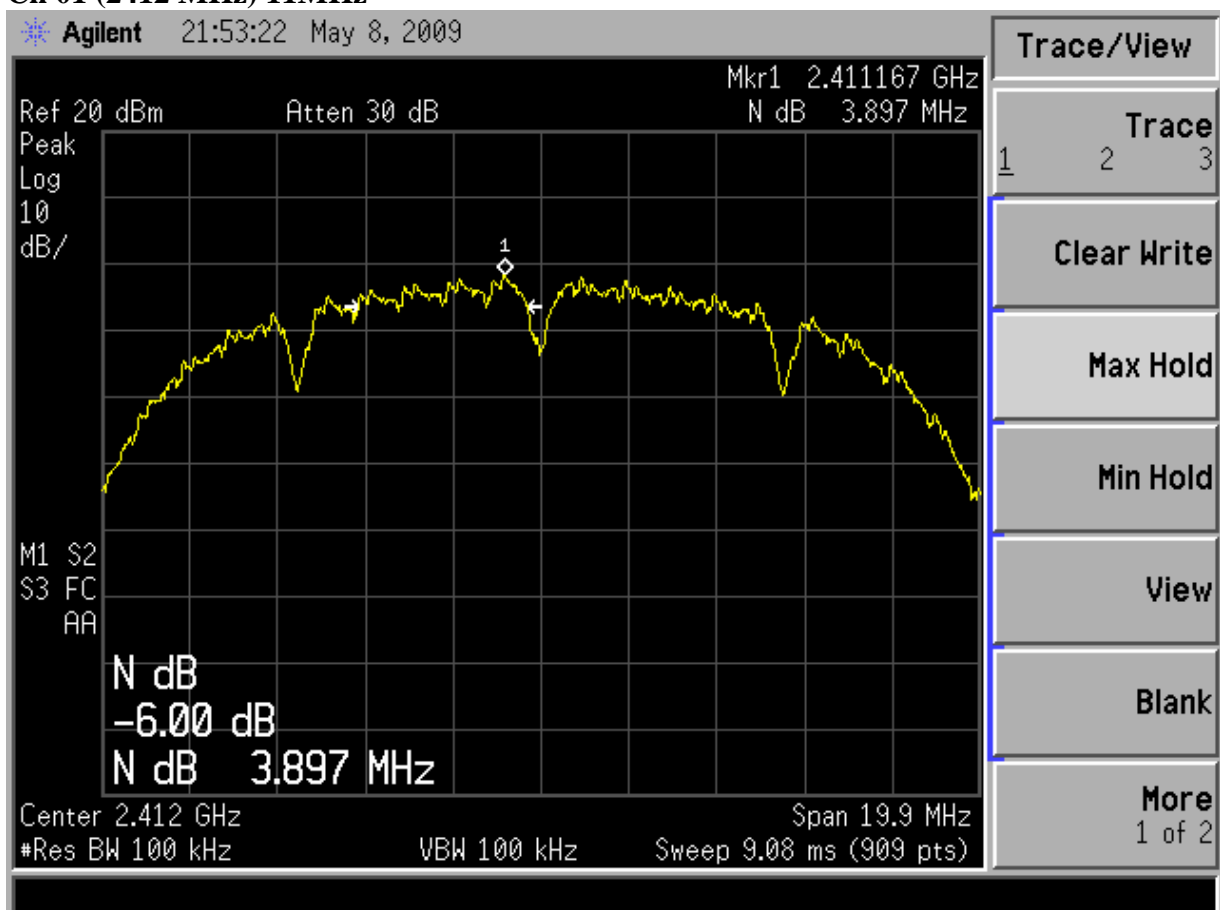
Channel	Frequency	Speed	6dB Bandwidth	Limit
01	2412 MHz	1MHz	3.897MHz	0.5MHz
		2MHz	3.897MHz	0.5MHz
		5.5MHz	3.897MHz	0.5MHz
		11MHz	3.897MHz	0.5MHz
07	2442 MHz	1MHz	3.897MHz	0.5MHz
		2MHz	3.897MHz	0.5MHz
		5.5MHz	3.897MHz`	0.5MHz
		11MHz	3.894MHz	0.5MHz
11	2462MHz	1MHz	3.894MHz	0.5MHz
		2MHz	3.894MHz	0.5MHz
		5.5MHz	3.894MHz	0.5MHz
		11MHz	3.894MHz	0.5MHz

Ch 01 (2412 MHz) 1MHz

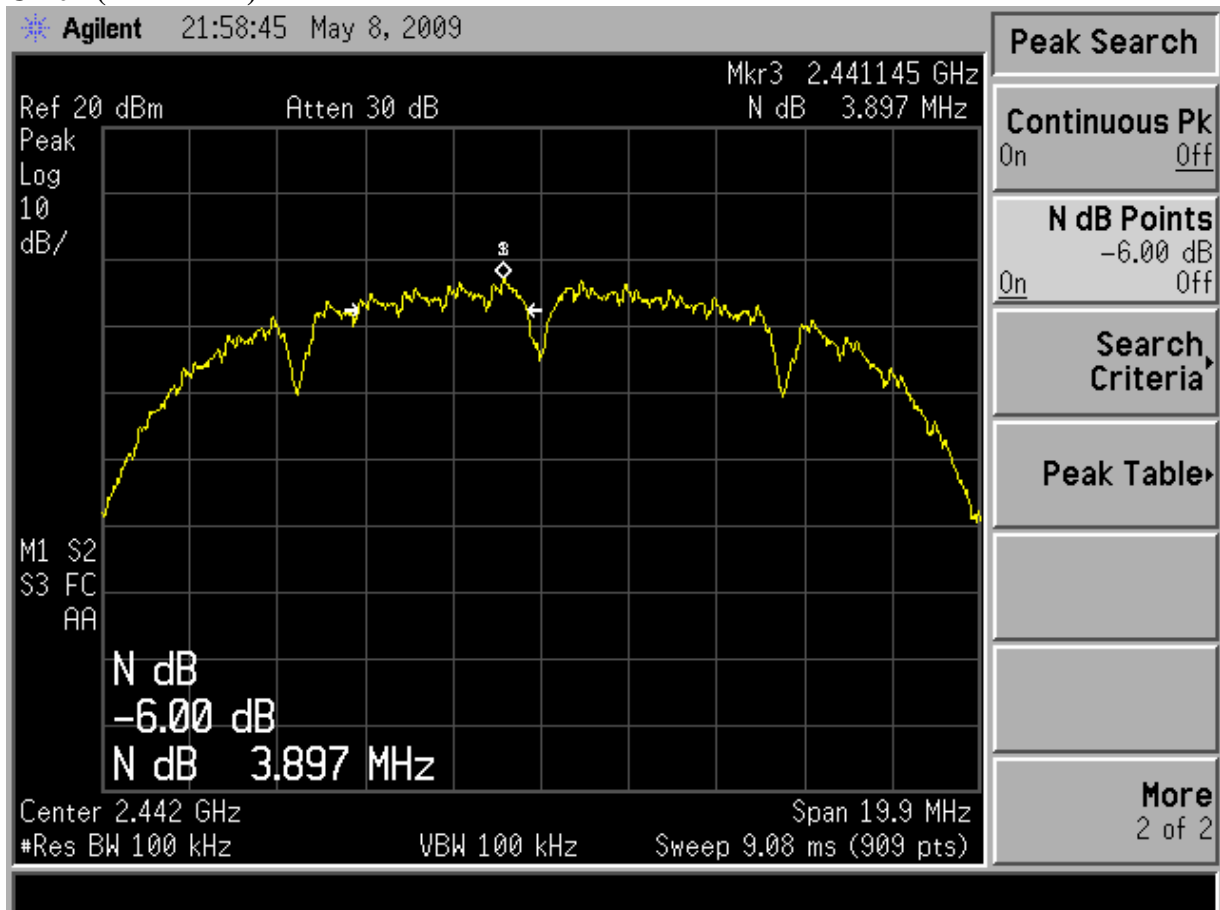


Ch 01 (2412 MHz) 2MHz

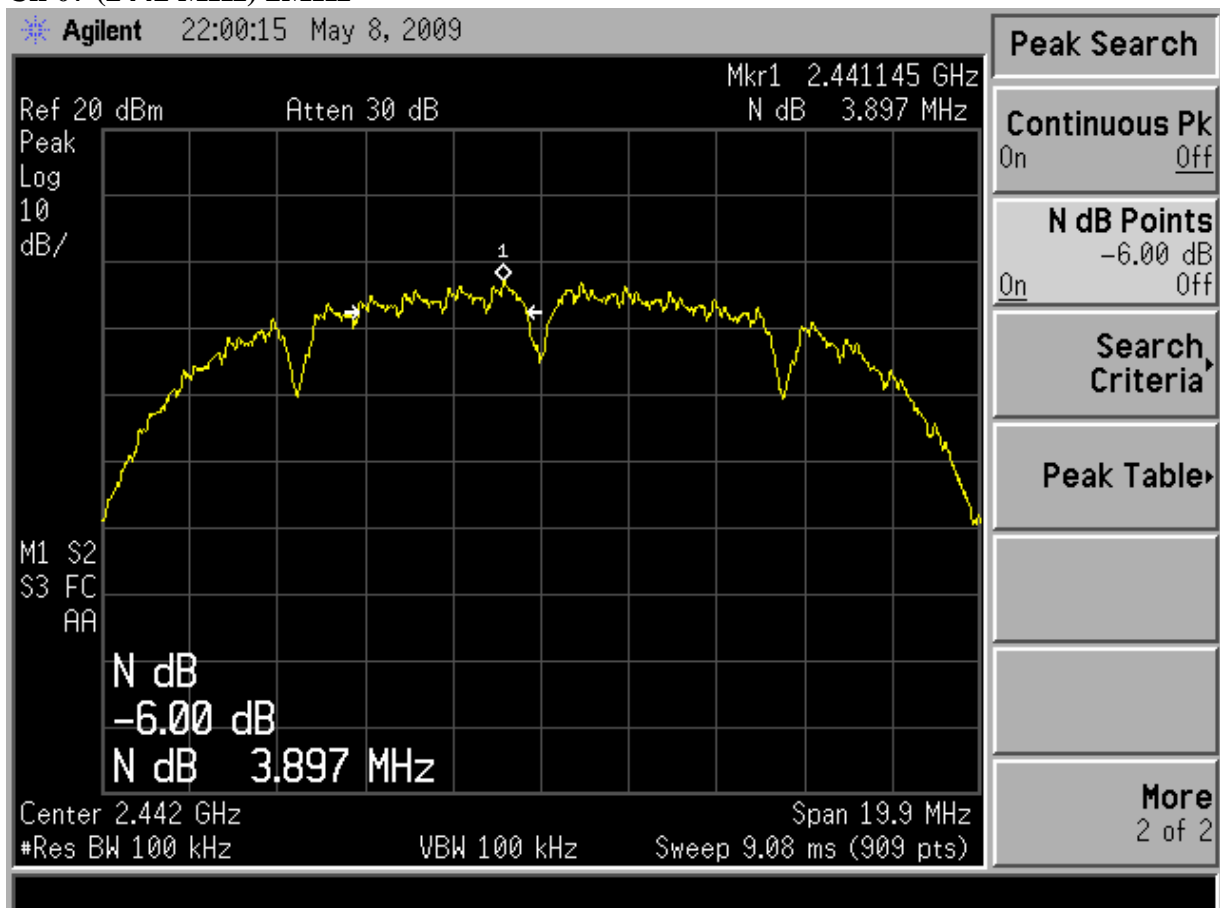


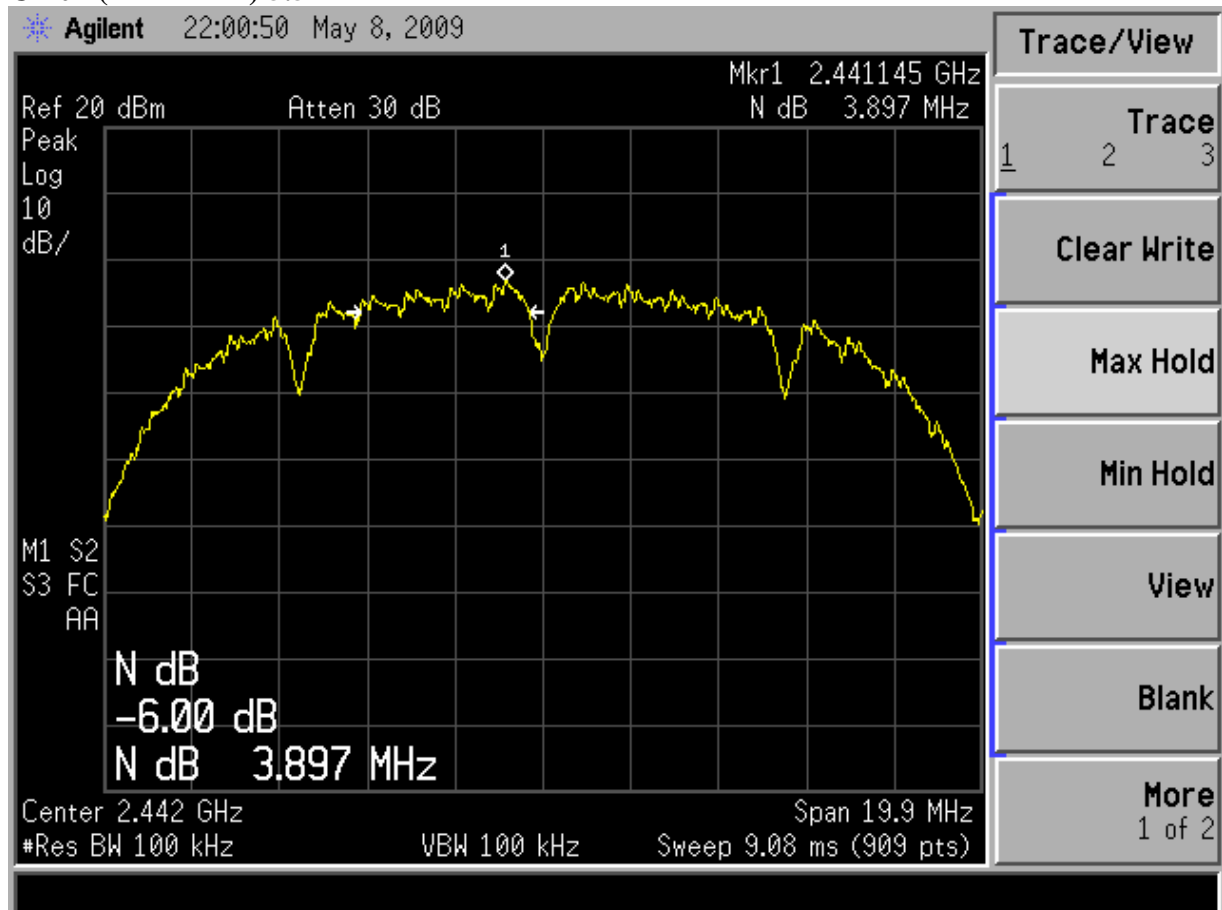
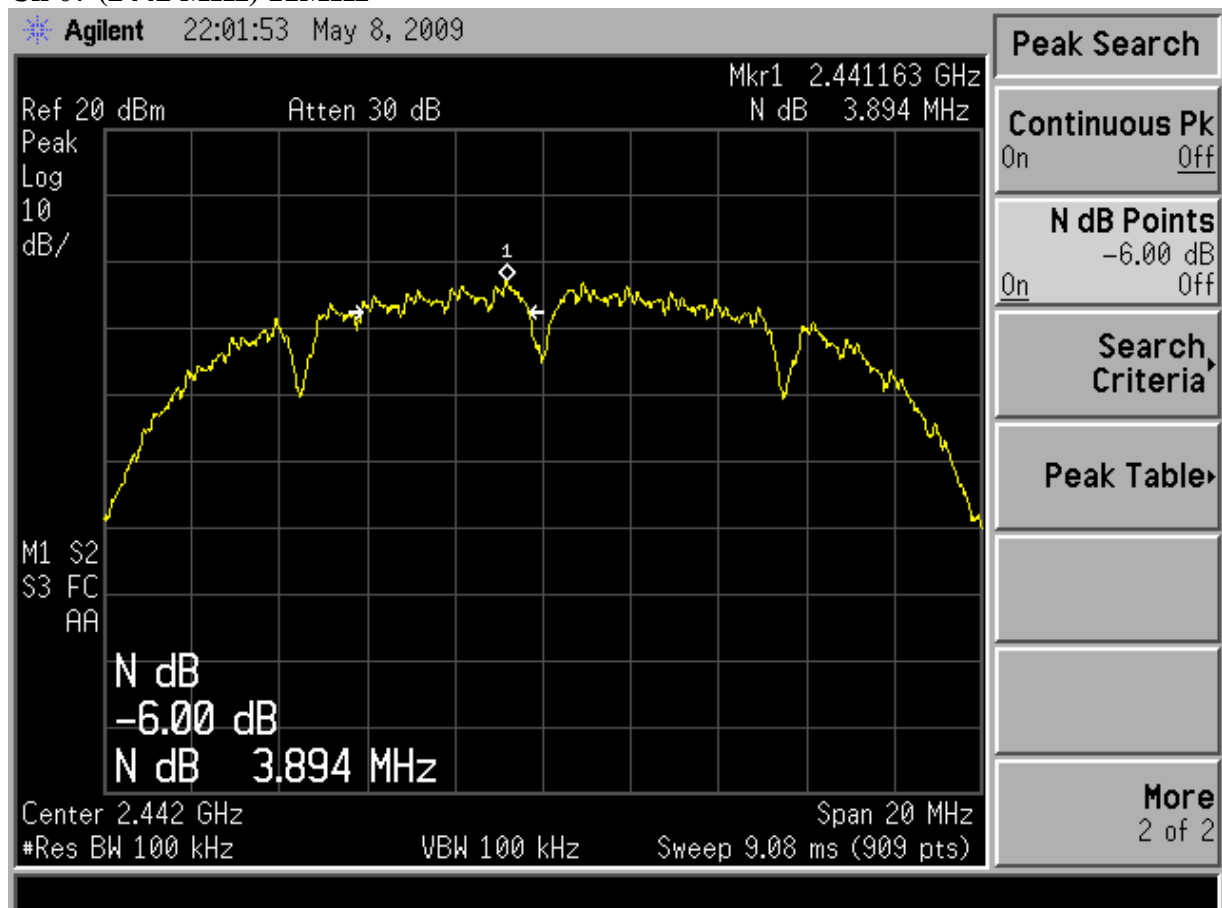
Ch 01 (2412 MHz) 5.5MHz**Ch 01 (2412 MHz) 11MHz**

Ch 07 (2442 MHz) 1MHz

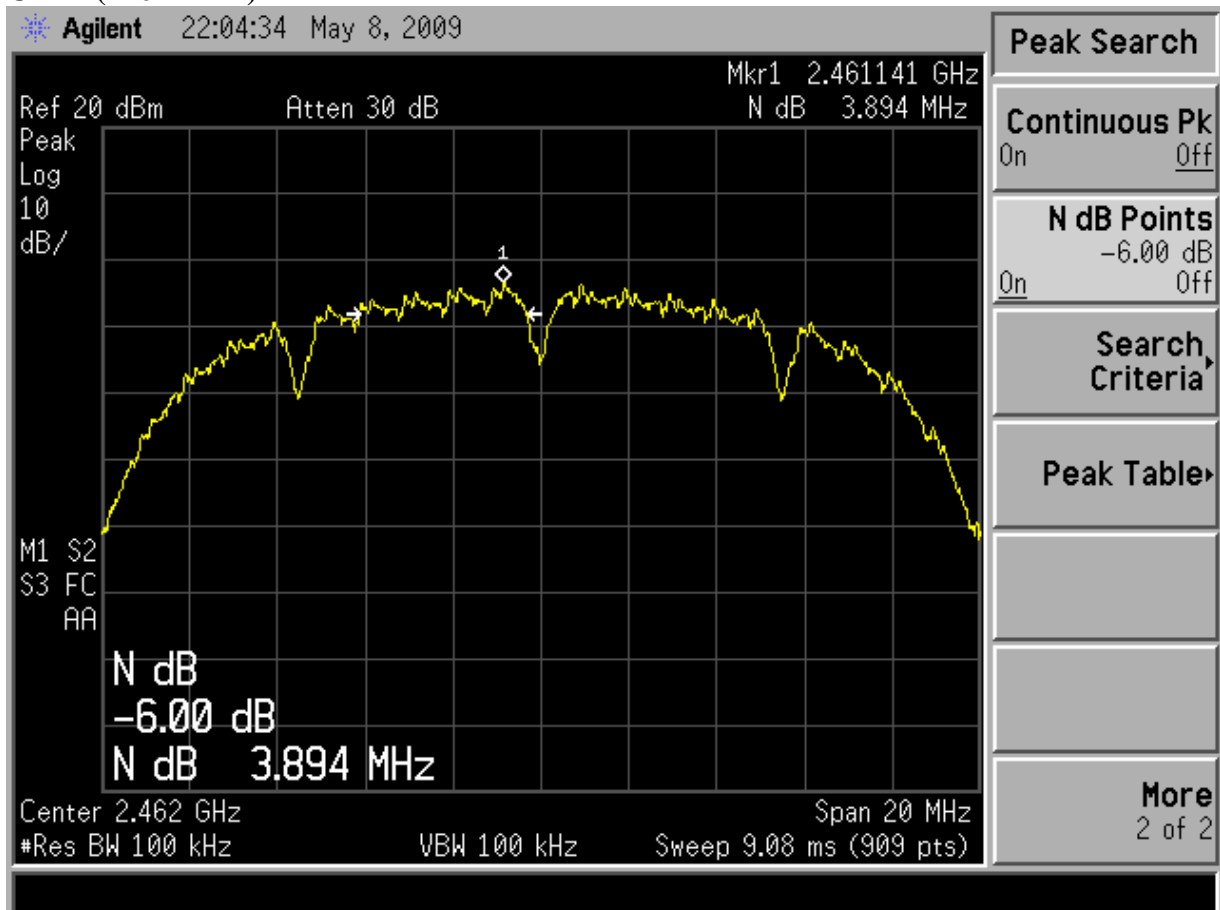


Ch 07 (2442 MHz) 2MHz

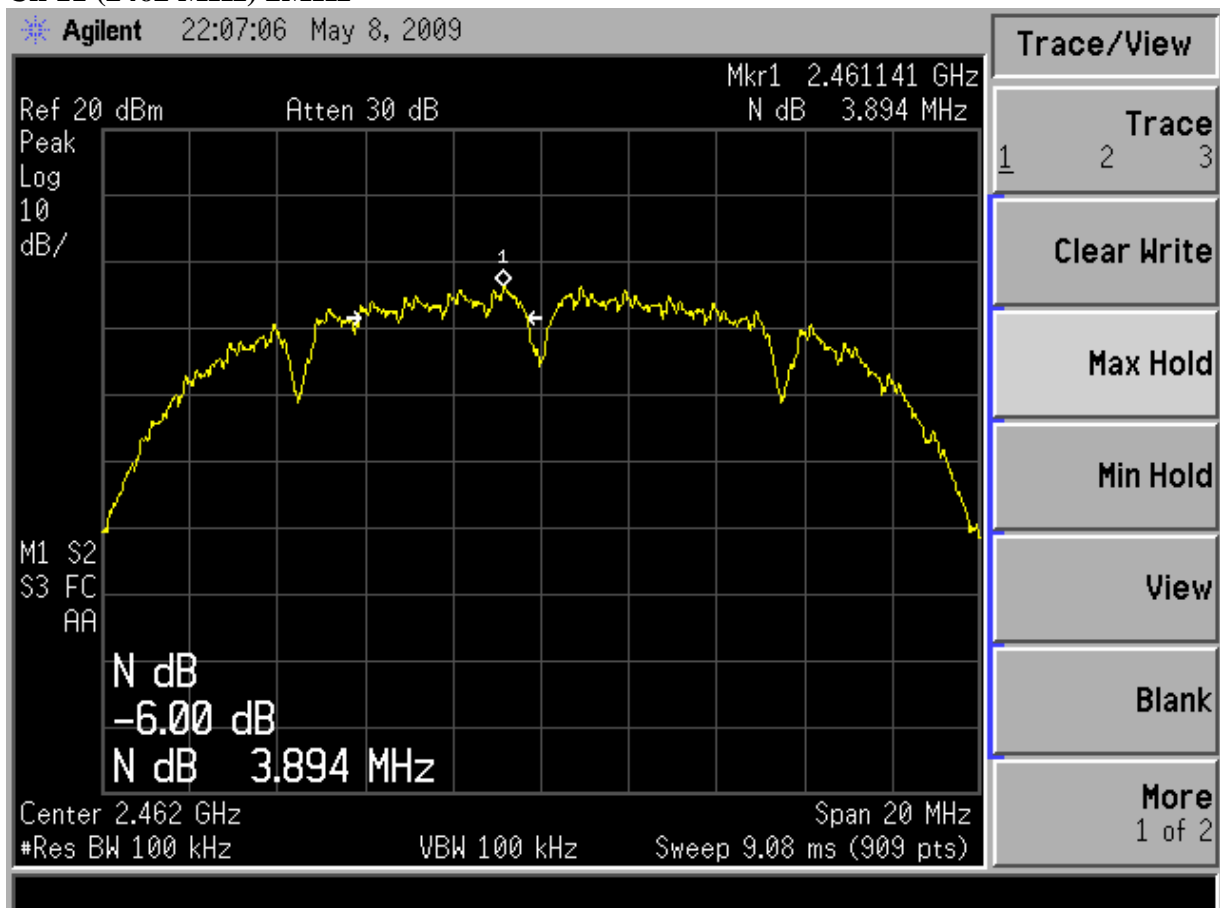


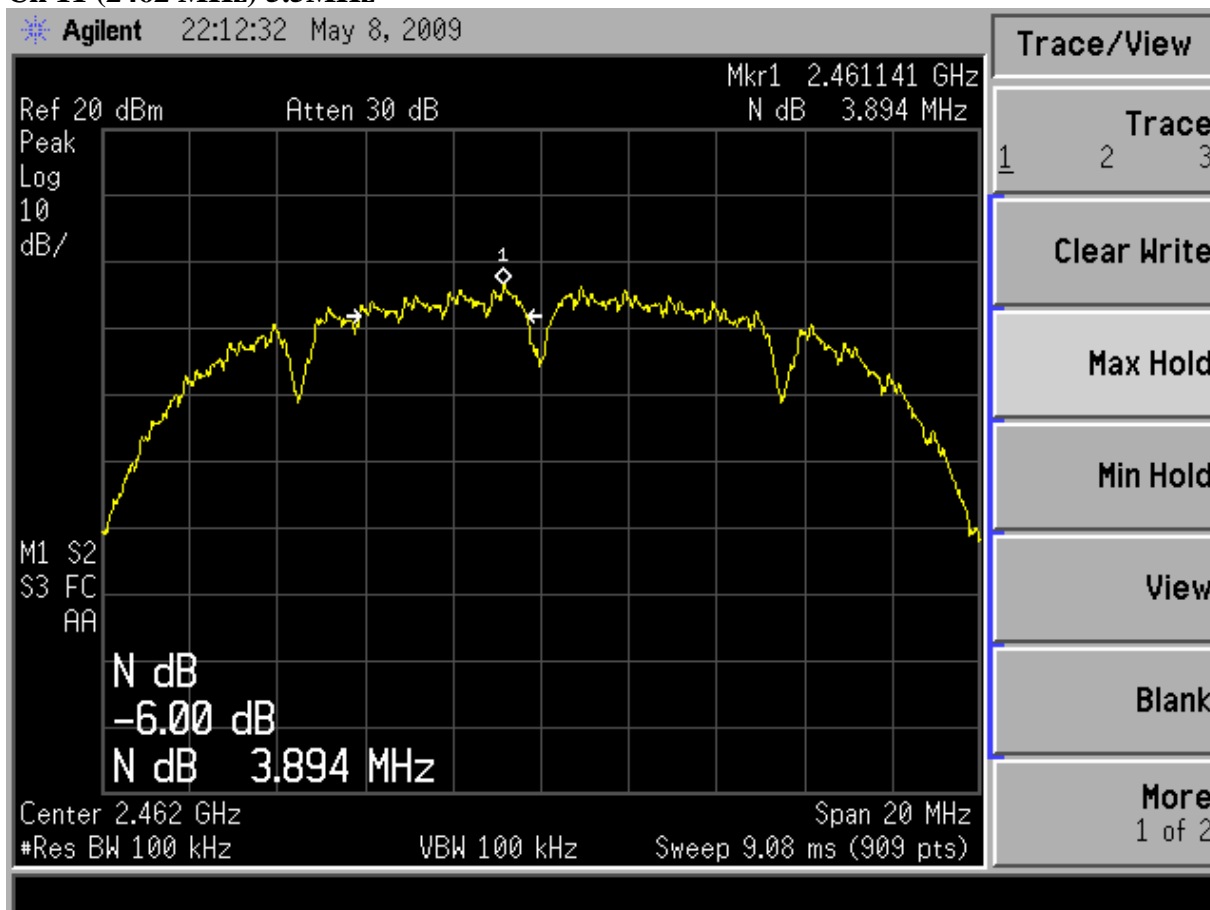
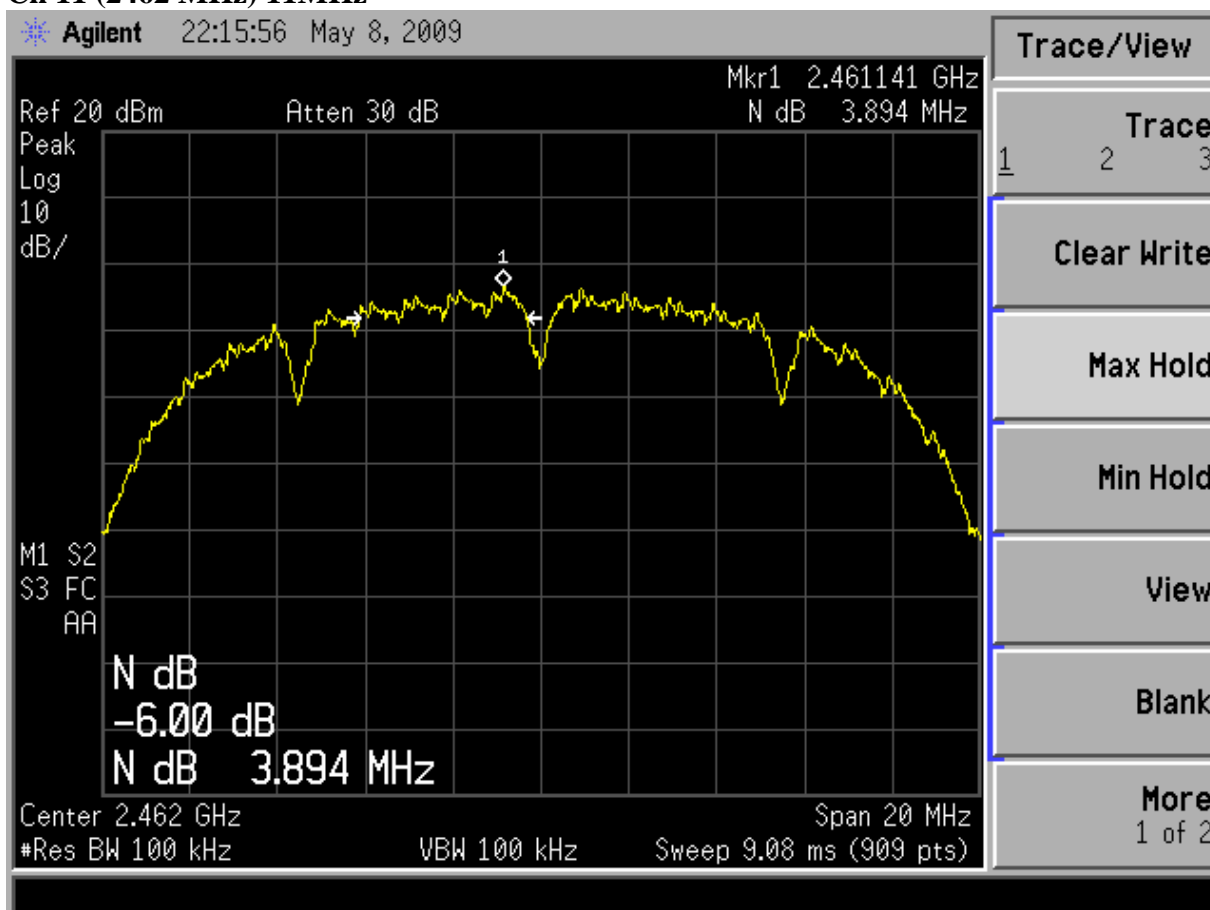
Ch 07 (2442 MHz) 5.5MHz**Ch 07 (2442 MHz) 11MHz**

Ch 11 (2462 MHz) 1MHz



Ch 11 (2462 MHz) 2MHz



Ch 11 (2462 MHz) 5.5MHz**Ch 11 (2462 MHz) 11MHz**

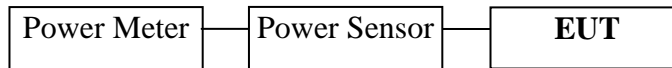
5 MAXIMUM PEAK OUTPUT POWER MEASUREMENT

5.1 Test Equipment

The following test equipment was used during the maximum peak output power measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Power Meter	Anritsu	ML2487A	6K00003245	Aug 05, 2008	Aug 05, 2009
2.	Power Sensor	Anritsu	MA2491A	32489	Aug 05, 2008	Aug 05, 2009

5.2 Block Diagram of Test Setup



5.3 Specification Limits ((§15.247(b)(3))

The Limits of maximum Peak Output Power for digital modulation in 2400-2483.5 MHz is: 1 Watt. (30 dBm)

5.4 Operating Condition of EUT

The test program “Perl” was used to enable the EUT to transmit and receive data at different channel frequency individually.

5.5 Test Procedure

This is an RF conducted test. Use a direct connection between the antenna port of the transmitter and the power meter, through suitable attenuation. We use Power Output Option 1 (which defined in KDB558074) to measure the power output. Power Output Option 1 is a peak measurement. The transmitter output was connected to the power meter that was designed to detect peak value automatically.

5.6 Test Results

PASSED. All the test results are listed below.

(Test date: May 07, 2009 Temperature : 24 °C Humidity : 52 %)

Channel	Frequency	Speed	Peak Output Power	Limit
01	2412 MHz	1 Mbps	11.63 dBm	30 dBm
		2 Mbps	11.65 dBm	30 dBm
		5.5 Mbps	11.62 dBm	30 dBm
		11 Mbps	11.64 dBm	30 dBm
07	2442 MHz	1 Mbps	9.78 dBm	30 dBm
		2 Mbps	9.77 dBm	30 dBm
		5.5 Mbps	9.8 dBm	30 dBm
		11 Mbps	9.77 dBm	30 dBm
11	2462 MHz	1 Mbps	8.93 dBm	30 dBm
		2 Mbps	8.9 dBm	30 dBm
		5.5 Mbps	8.91 dBm	30 dBm
		11 Mbps	8.91 dBm	30 dBm

6 EMISSION LIMITATIONS MEASUREMENT

6.1 Test Equipment

The following test equipment was used during the emission limitations test :

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2008	May 19, 2009

6.2 Block Diagram of Test Setup

The same as Section. 4.2.

6.3 Specification Limits (§15.247(d))

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (See Section 15.205(c)).(※This test result attaching to Section. 4.7)

6.4 Operating Condition of EUT

The test program “Perl” was used to enable the EUT to transmit and receive data at different channel frequency individually.

6.5 Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 100 kHz RBW and 100 kHz VBW.

6.6 Test Results

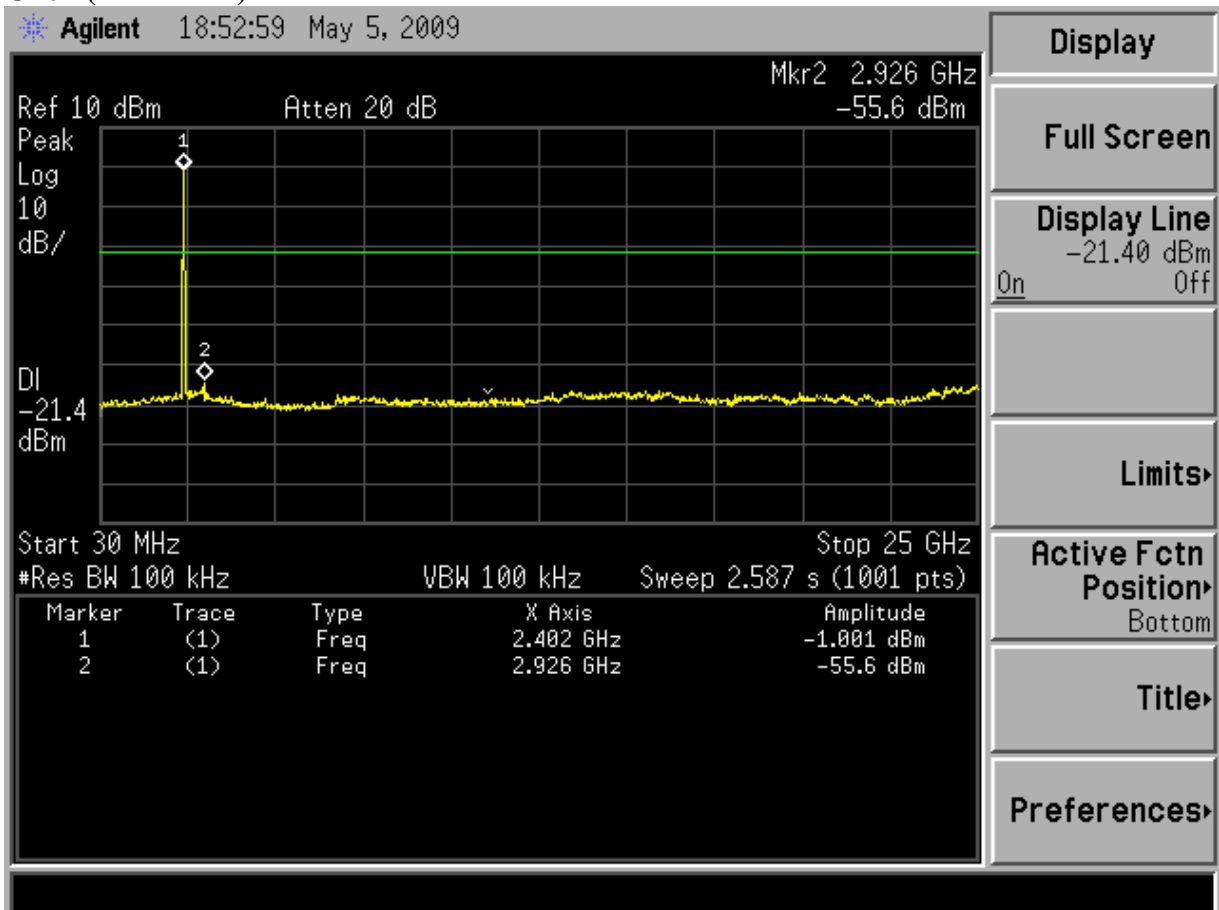
PASSED. The testing data was attached in the next pages.

(Test date: May 05, 2009 Temperature : 24 °C Humidity : 52 %)

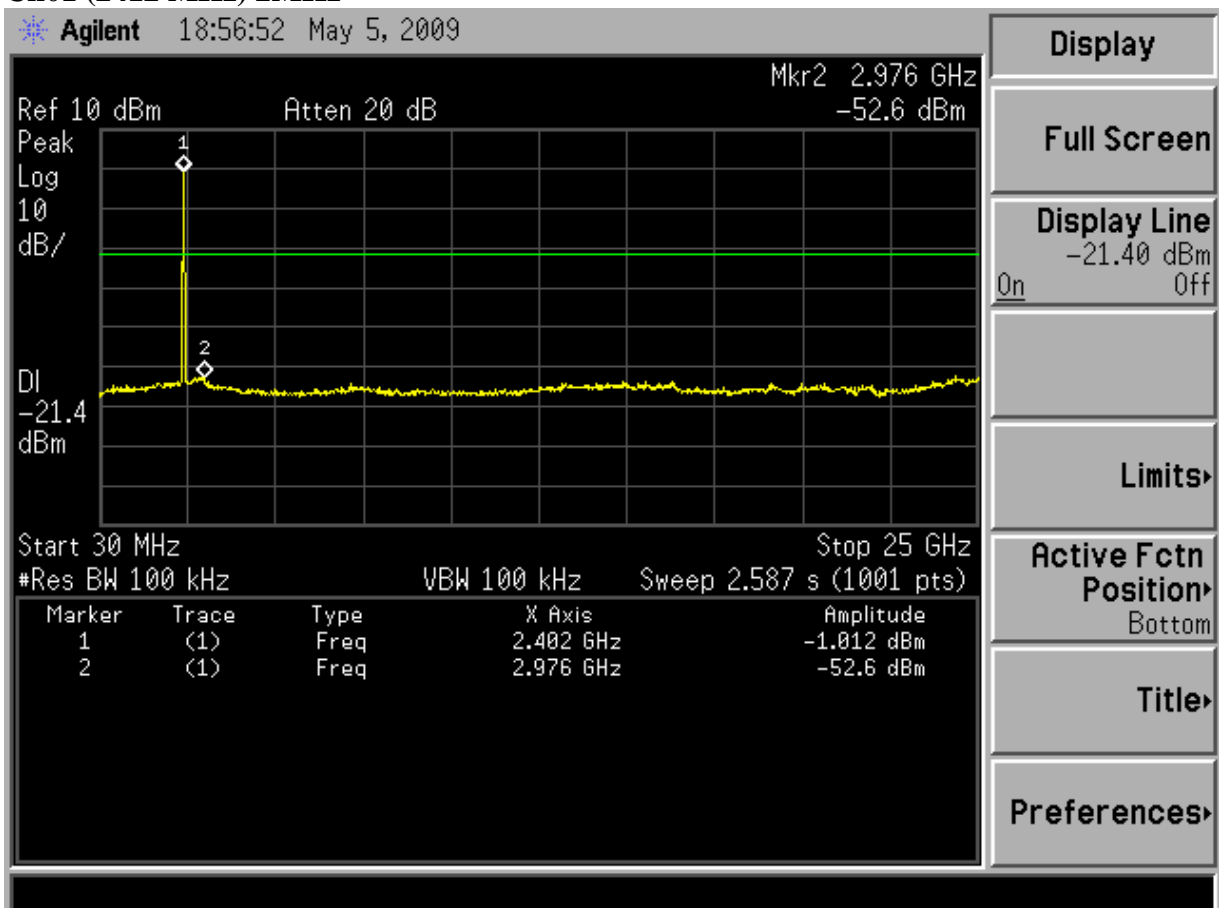
Channel	Speed (Mbps)	Highest level of desired power (dBm)	Max Value			Limit (dB)
			Freq. (GHz)	Level (dBm)	Result (dB)	
01	1	-1.001	2.926	-55.600	54.599	20
	2	-1.012	2.976	-52.600	51.588	20
	5.5	-0.973	2.951	-52.530	51.557	20
	11	-1.019	2.976	-51.440	50.421	20
07	1	-2.557	2.951	-52.200	49.643	20
	2	-2.492	2.951	-51.800	49.308	20
	5.5	-2.607	2.976	-52.600	49.993	20
	11	-2.413	2.951	-52.700	50.287	20
11	1	-3.891	2.852	-52.060	48.169	20
	2	-3.922	2.827	-51.990	48.068	20
	5.5	-3.852	2.976	-52.670	48.818	20
	11	-3.860	2.951	-52.520	48.660	20

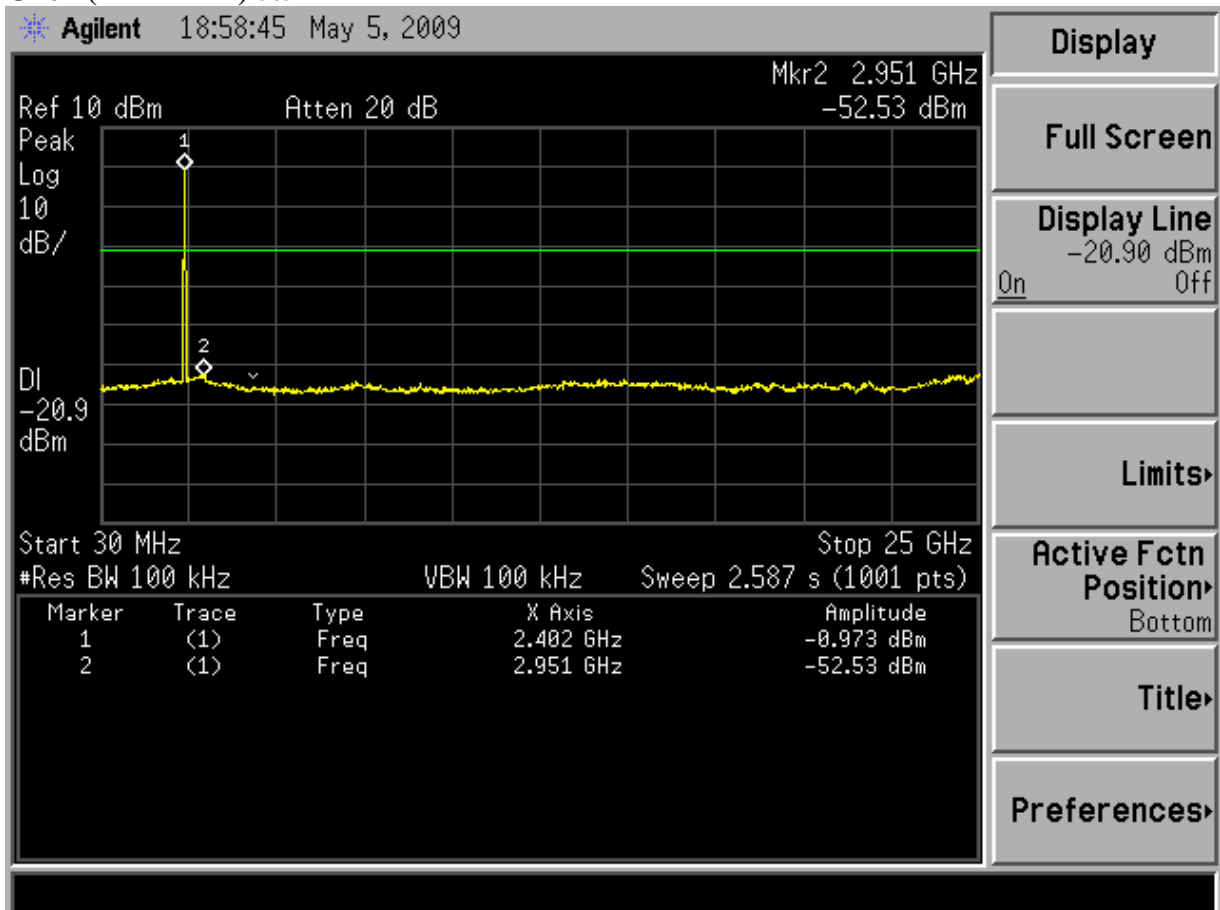
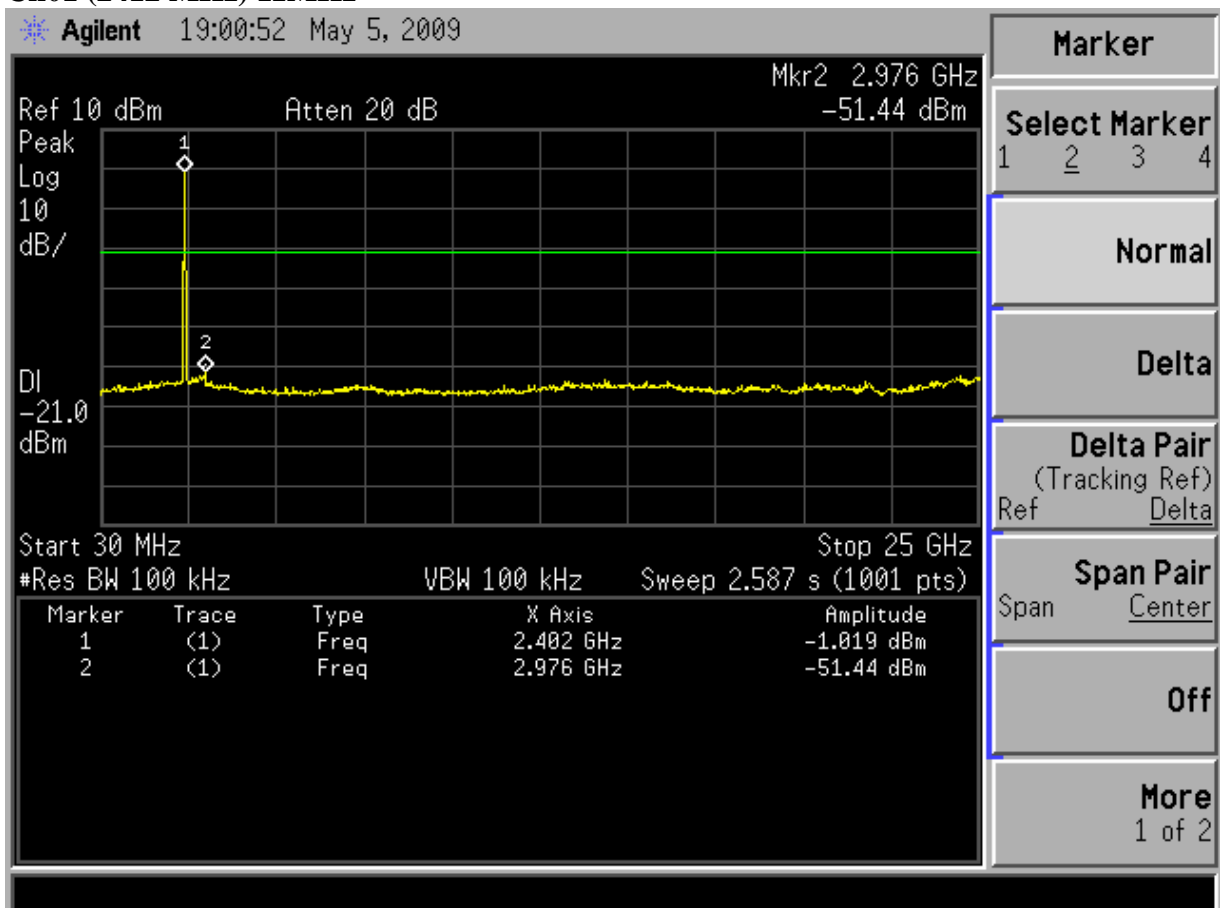
Note: The peak above the limit line is the carrier frequency.

Ch01 (2412 MHz) 1MHz

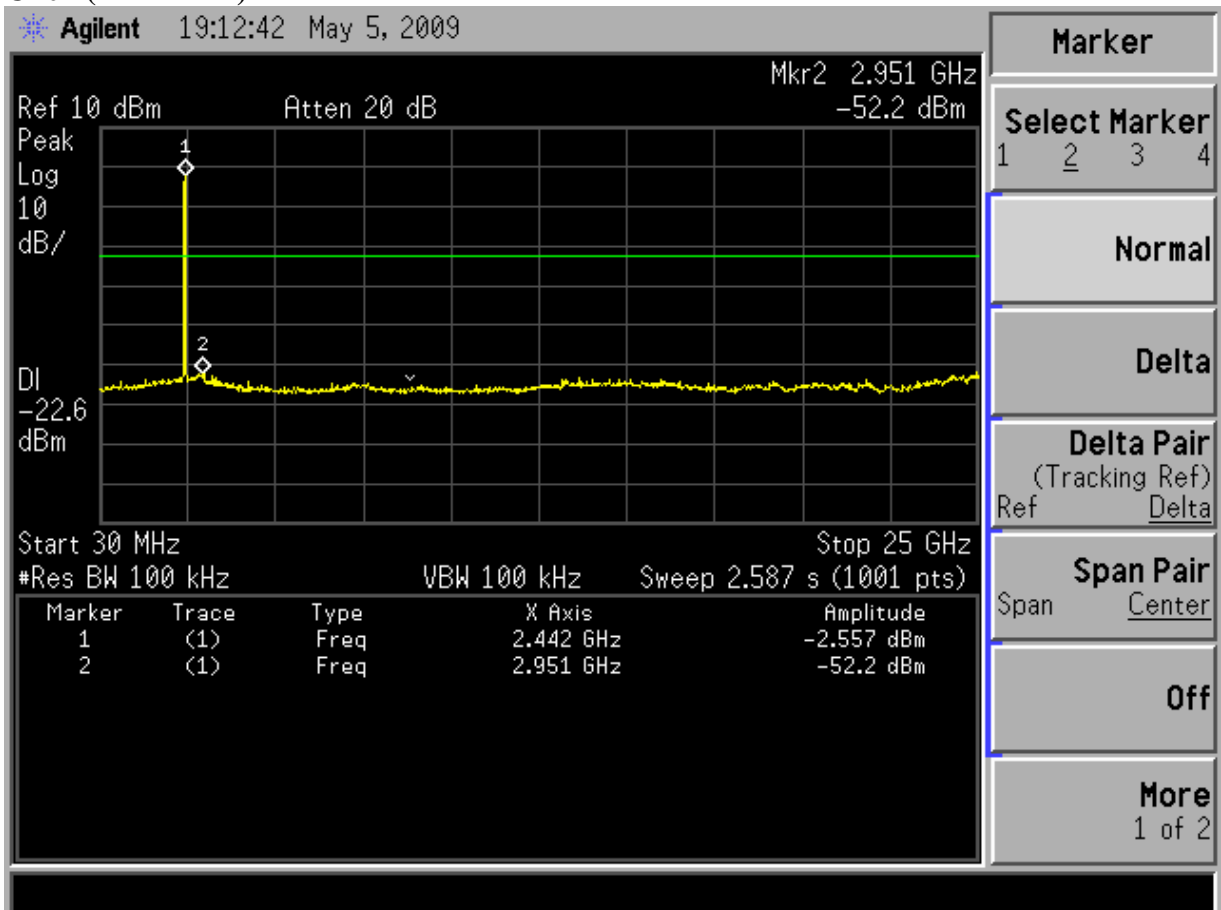


Ch01 (2412 MHz) 2MHz

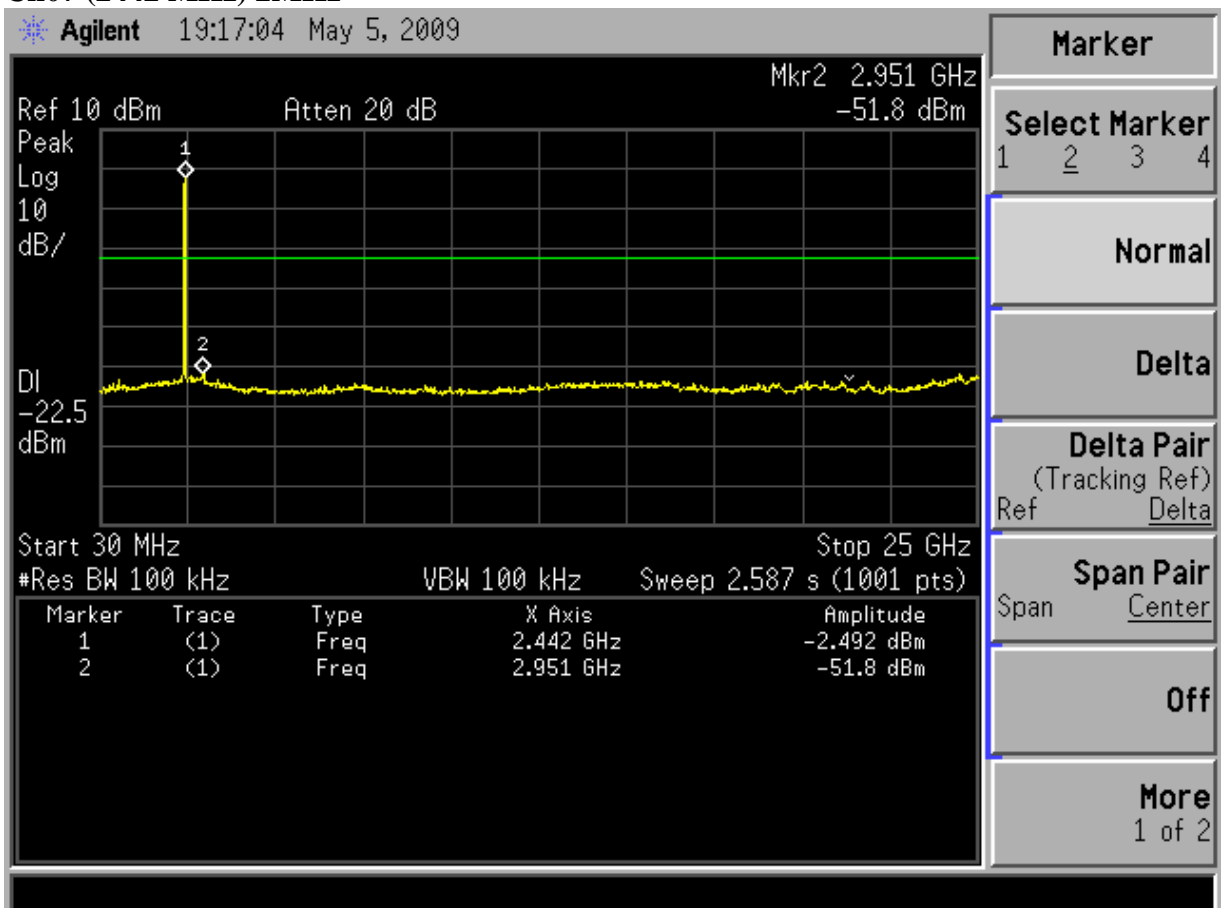


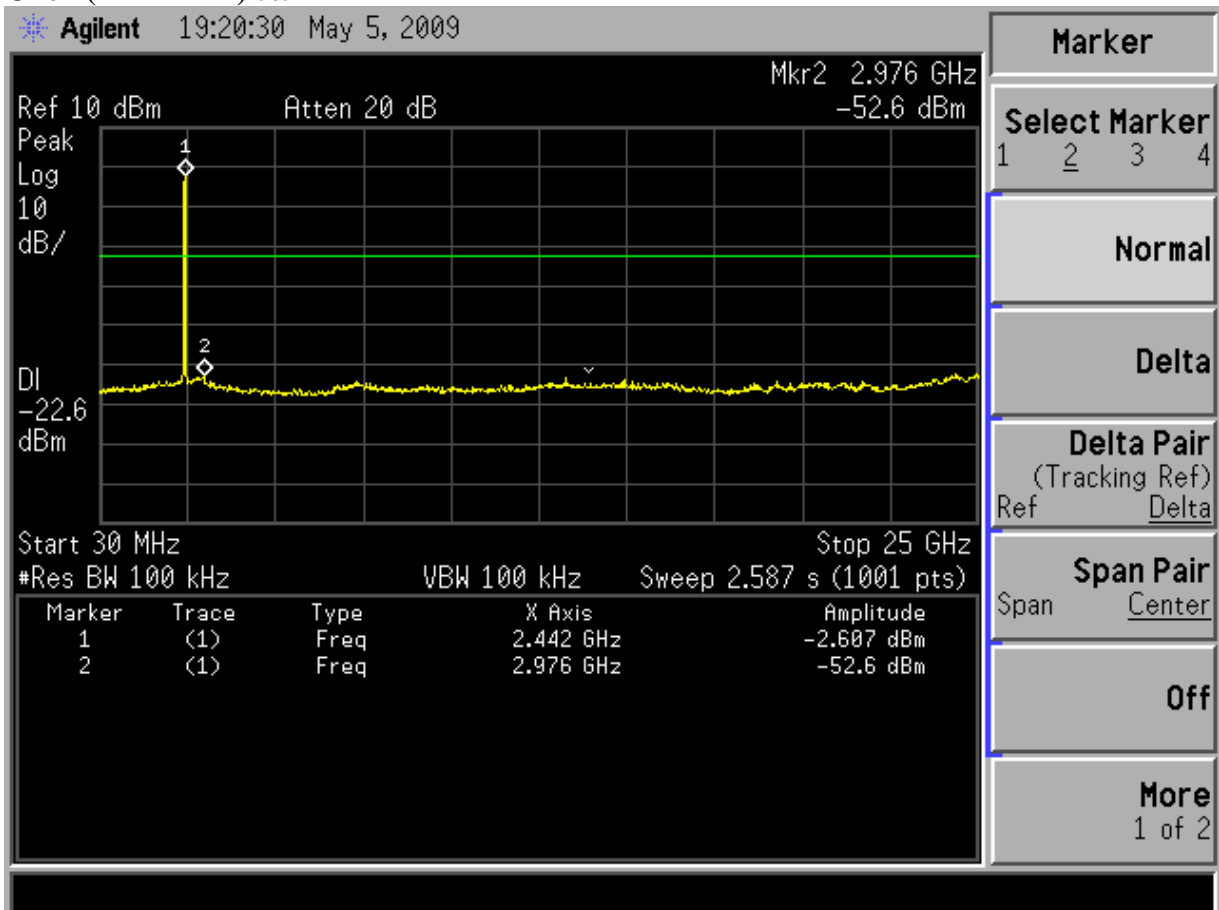
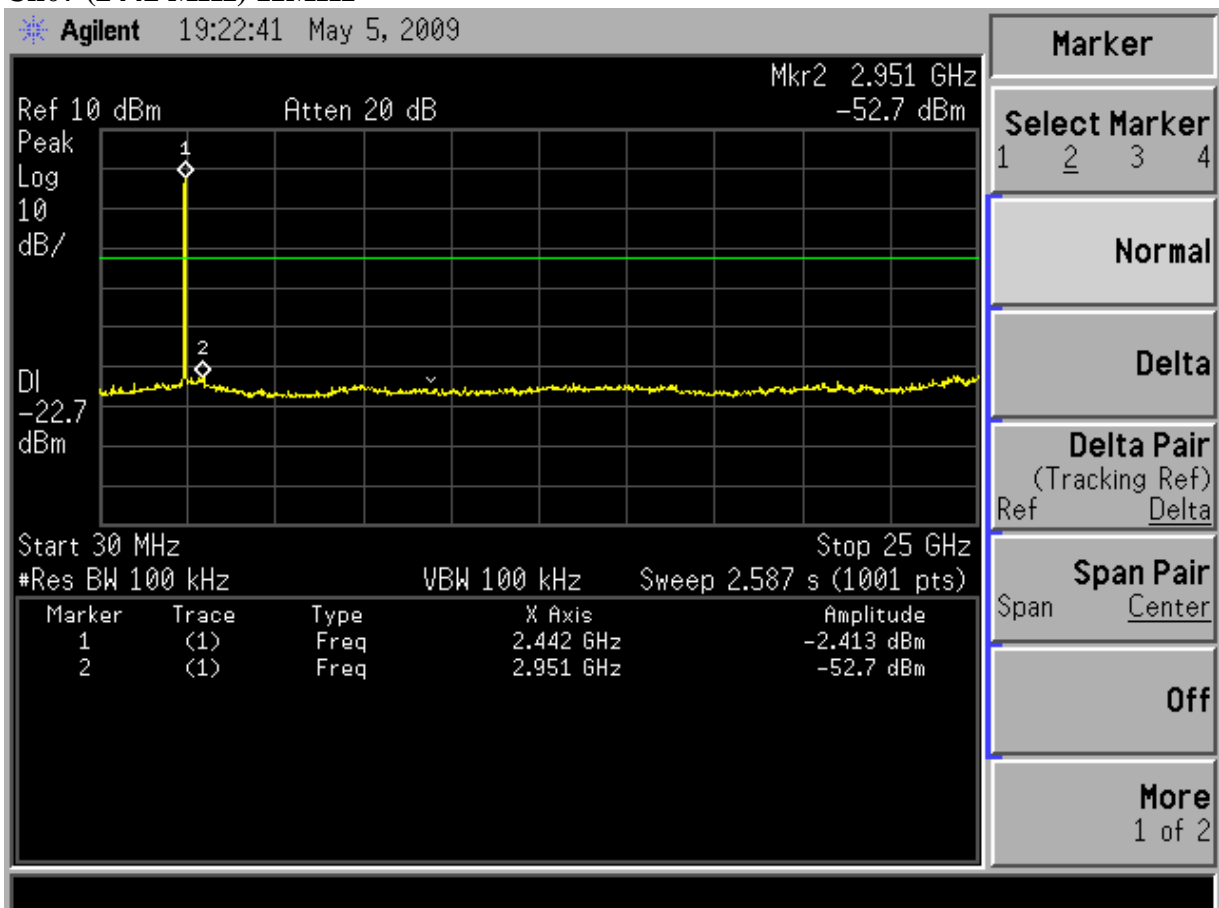
Ch01 (2412 MHz) 5.5MHz**Ch01 (2412 MHz) 11MHz**

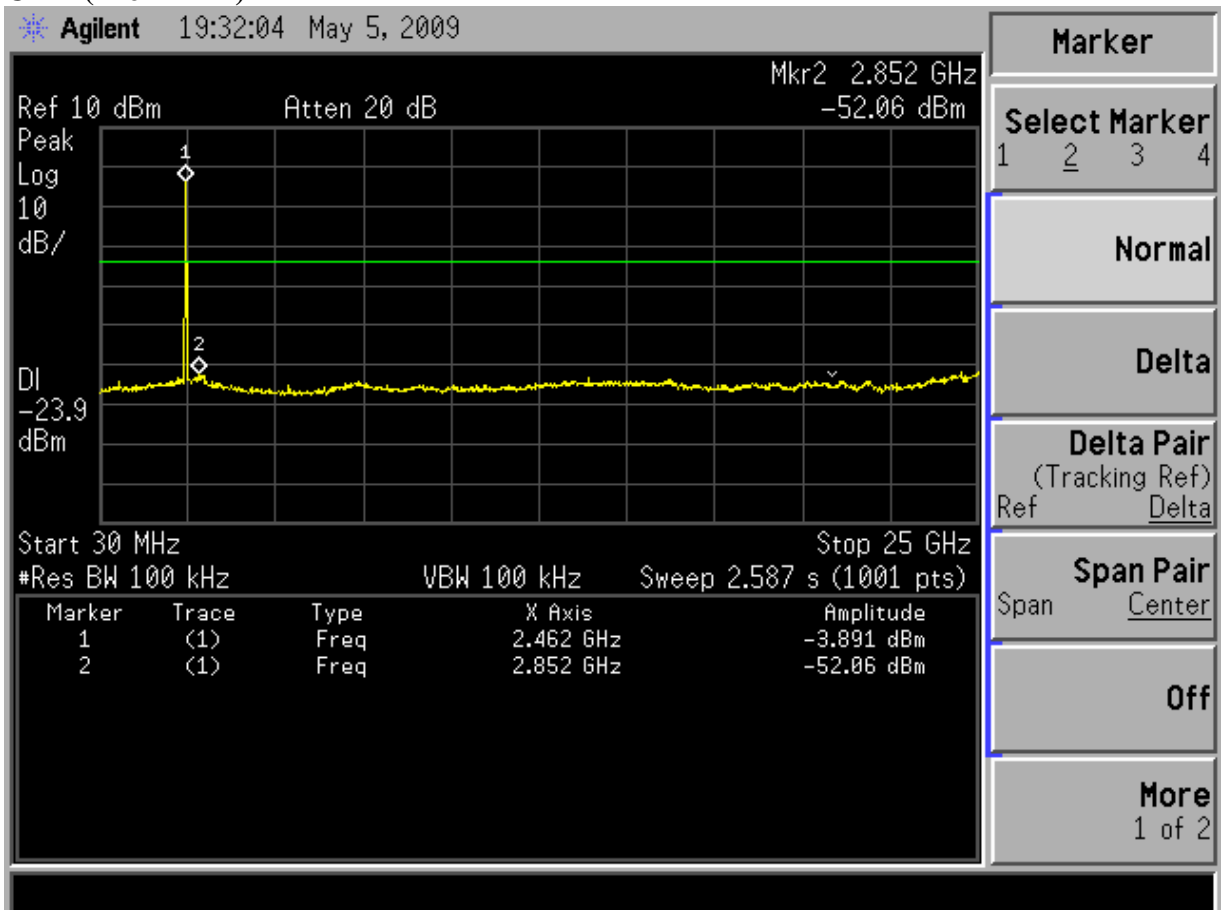
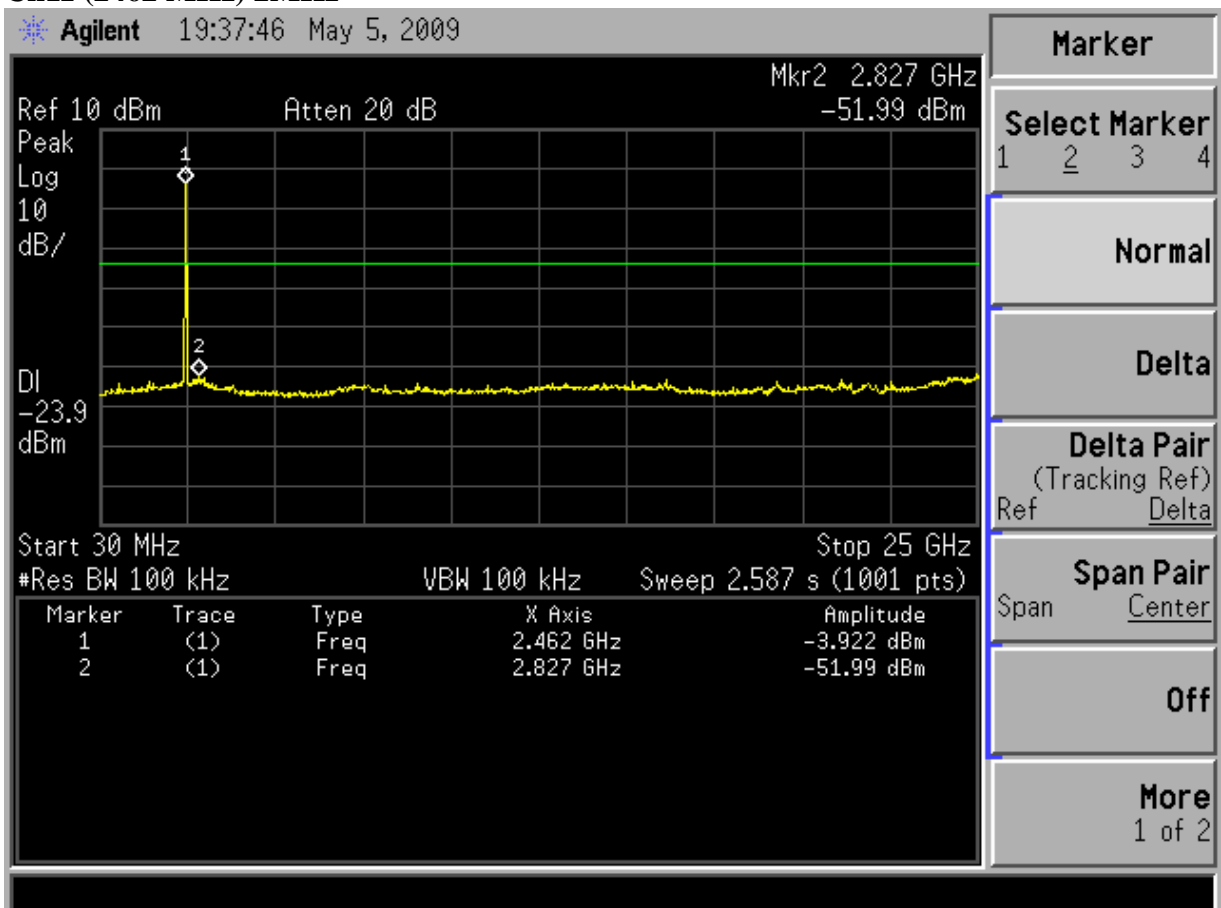
Ch07 (2442 MHz) 1MHz

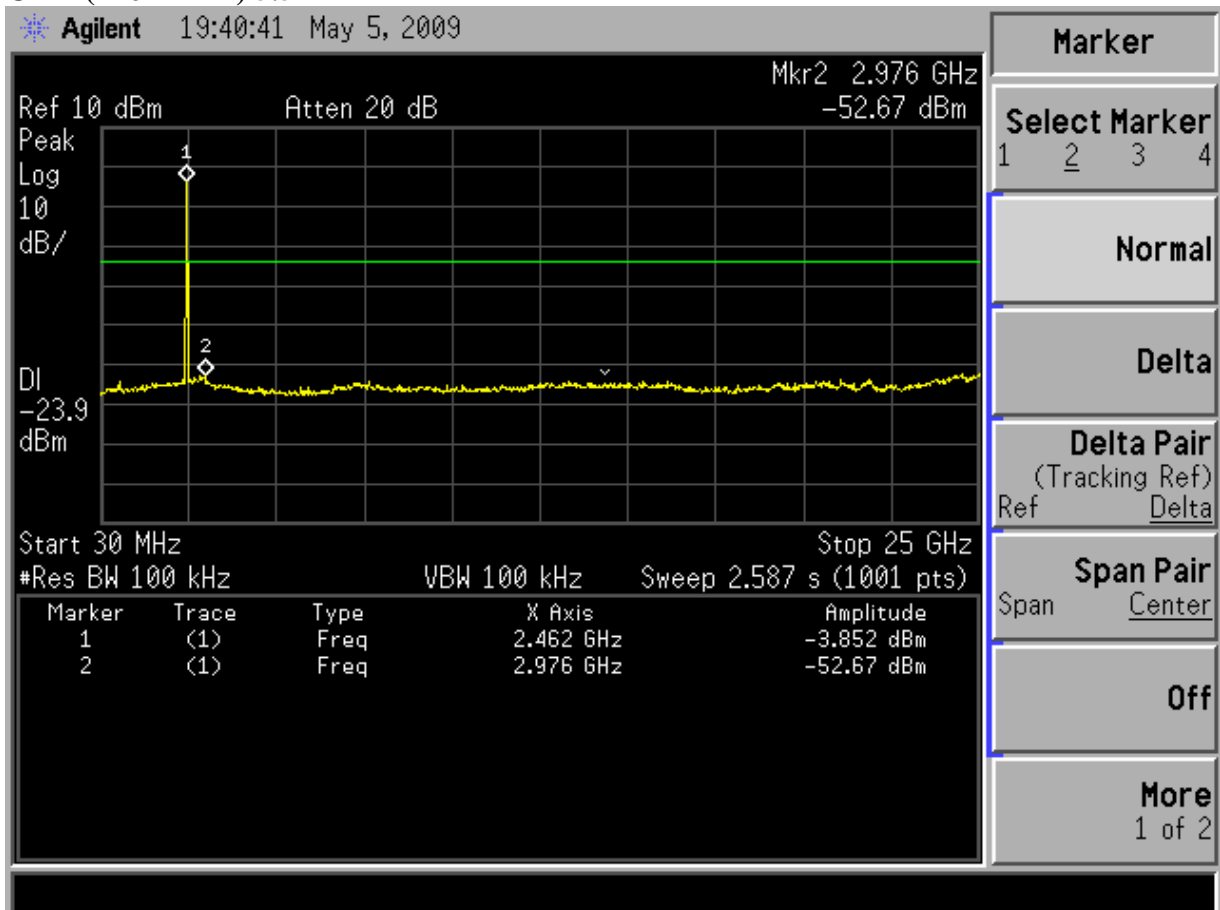
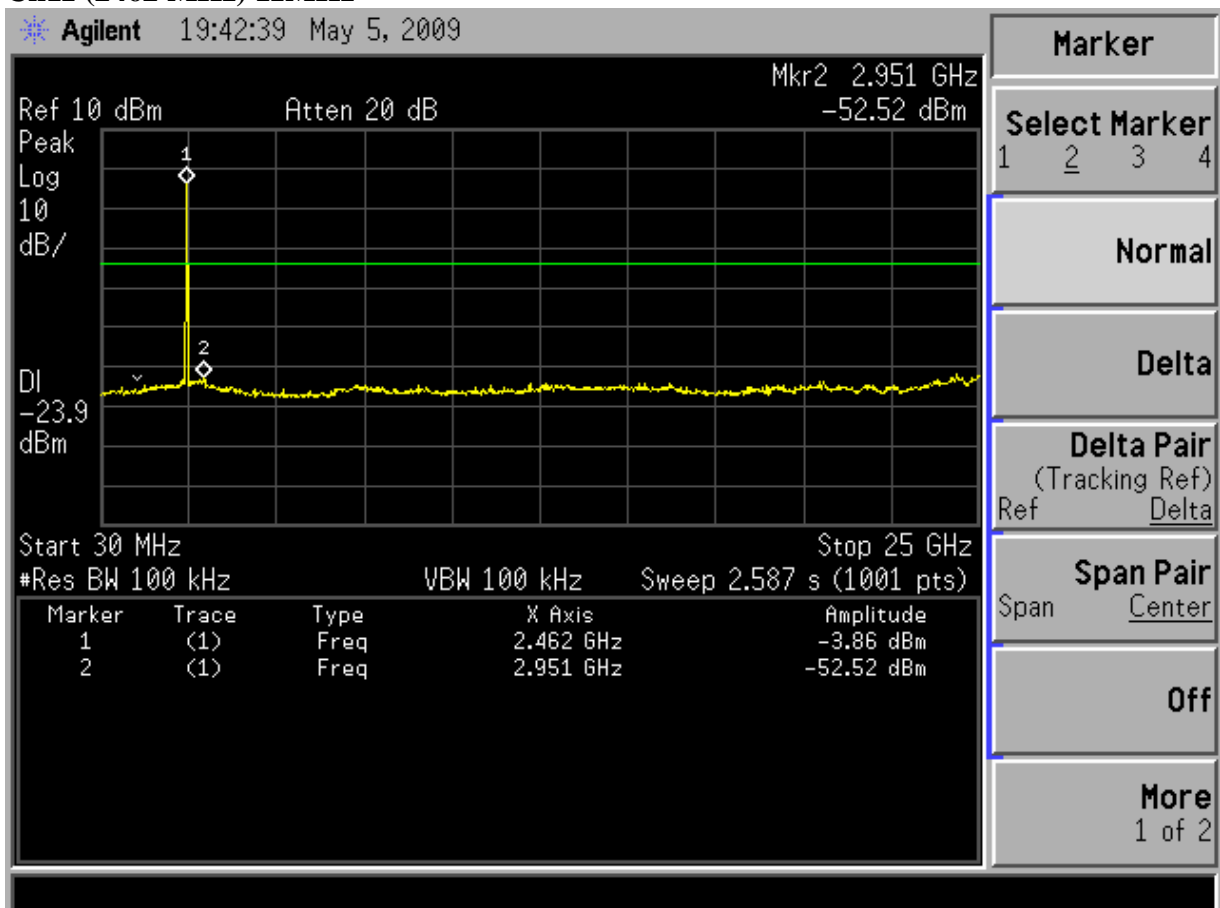


Ch07 (2442 MHz) 2MHz



Ch07 (2442 MHz) 5.5MHz**Ch07 (2442 MHz) 11MHz**

Ch11 (2462 MHz) 1MHz**Ch11 (2462 MHz) 2MHz**

Ch11 (2462 MHz) 5.5MHz**Ch11 (2462 MHz) 11MHz**

7 BAND EDGES MEASUREMENT

7.1 Test Equipment

The following test equipment was used during the band edges measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2008	May 19, 2009

7.2 Block Diagram of Test Setup

The same as section.4.2.

7.3 Specification Limits (§15.247(d))

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz 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.

7.4 Operating Condition of EUT

The test program “Perl” was used to enable the EUT to transmit and receive data at different channel frequency individually.

7.5 Test Procedure

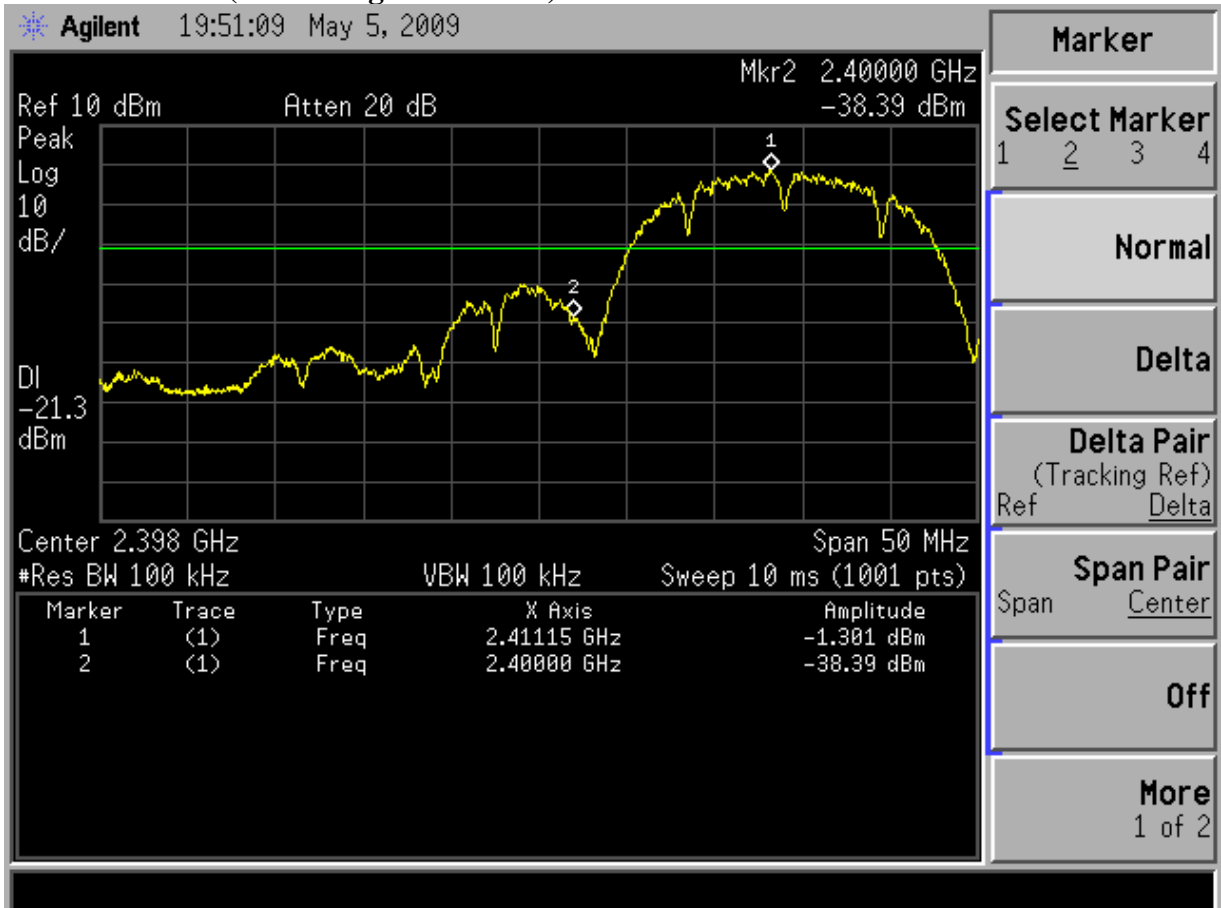
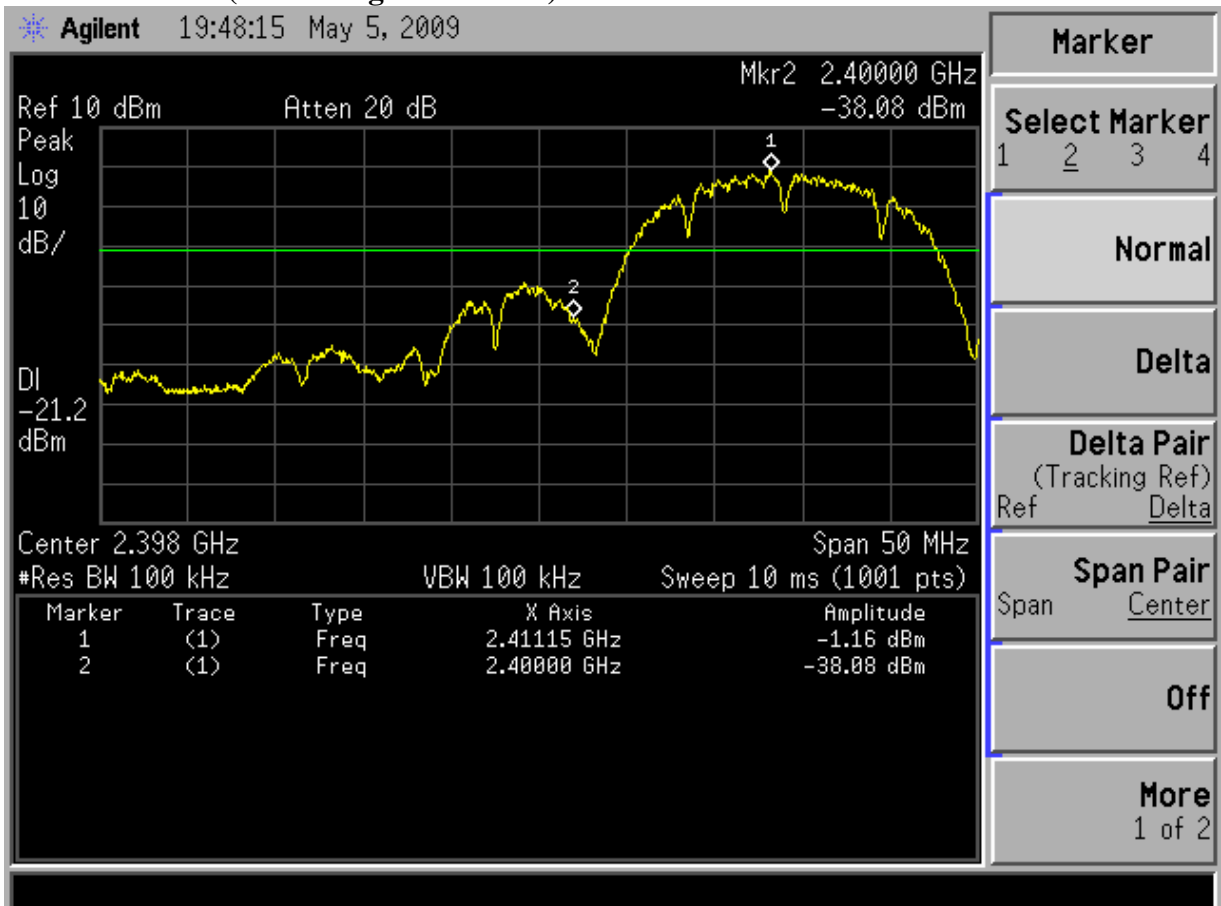
The transmitter output was connected to the spectrum analyzer. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100 kHz bandwidth from band edge.

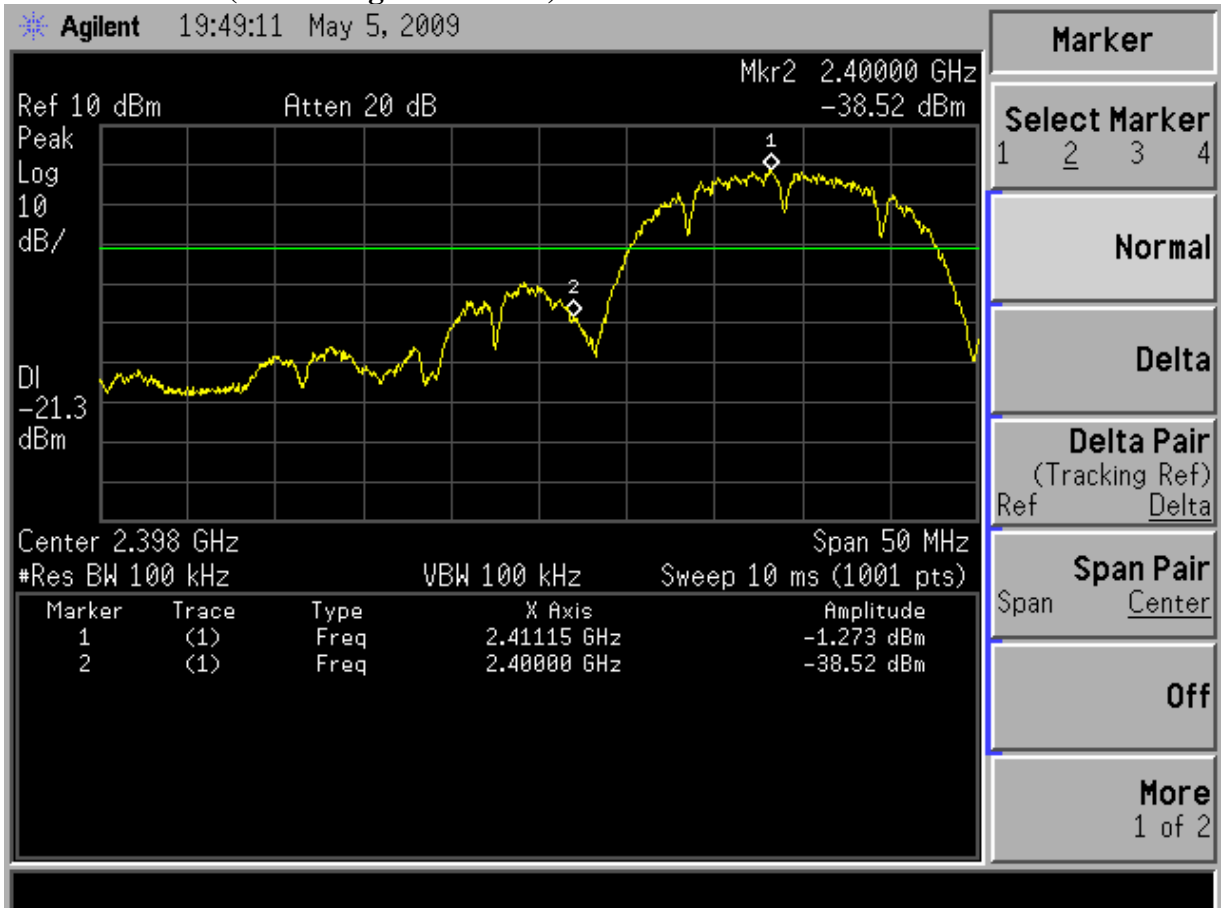
7.6 Test Results

PASSED. All the test results are attached in next pages.

(Test date: May 05, 2009 Temperature : 24°C Humidity : 52 %)

Location	Channel	Frequency	Speed	Delta Marker	Result
Below band edge	01	2400 MHz	1 MHz	37.089 dB	More than 20 dB below the highest level of the desired power
			2 MHz	36.92 dB	
			5.5 MHz	37.247 dB	
			11 MHz	36.506 dB	
Upper band edge	11	2483.5 MHz	1 MHz	46.155 dB	
			2 MHz	45.597 dB	
			5.5 MHz	45.501 dB	
			11 MHz	46.584 dB	

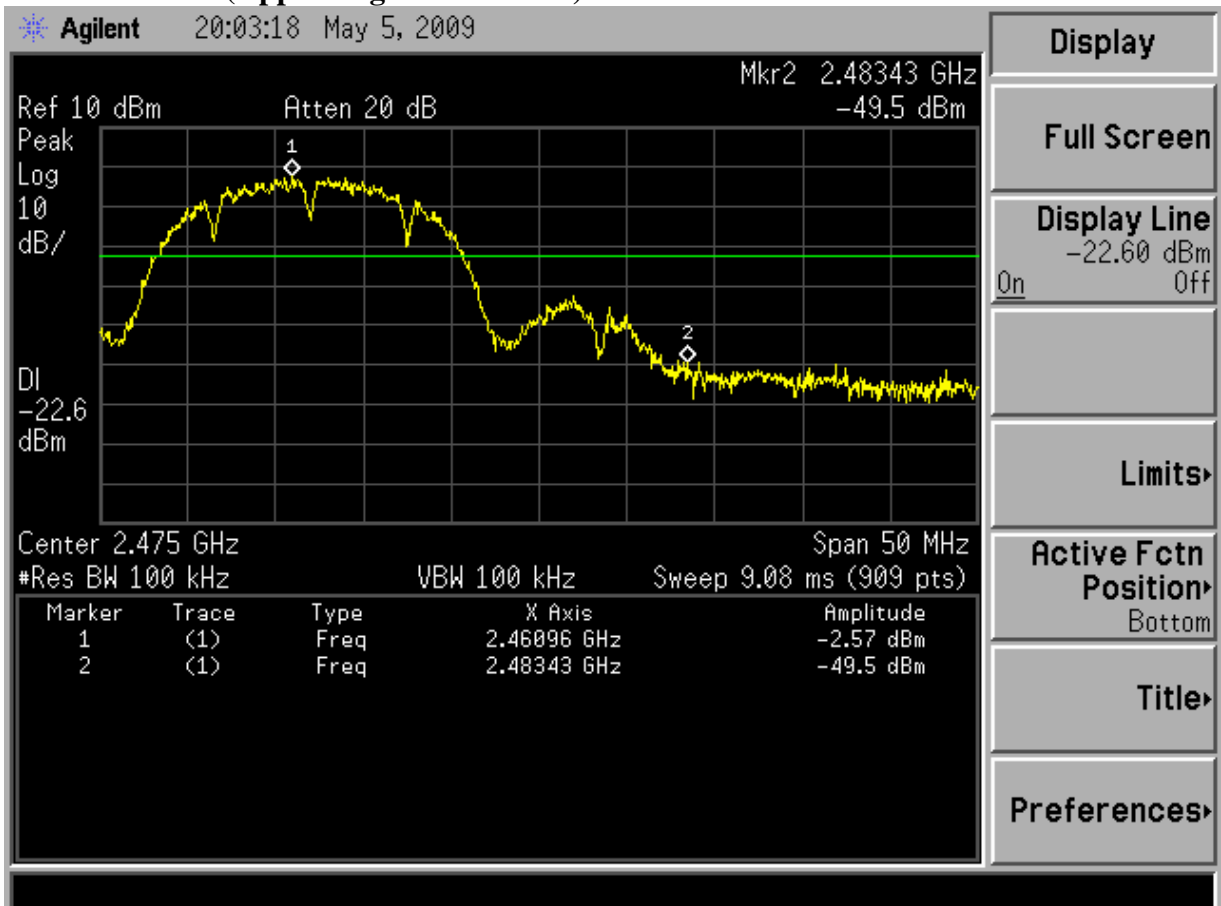
Ch01 2412MHz (Below Edge 2400 MHz) 1MHz**Ch01 2412MHz (Below Edge 2400 MHz) 2MHz**

Ch01 2412MHz (Below Edge 2400 MHz) 5.5MHz**Ch01 2412MHz (Below Edge 2400 MHz) 11MHz**

Ch11 2462MHz (Upper Edge 2483.5 MHz) 1MHz



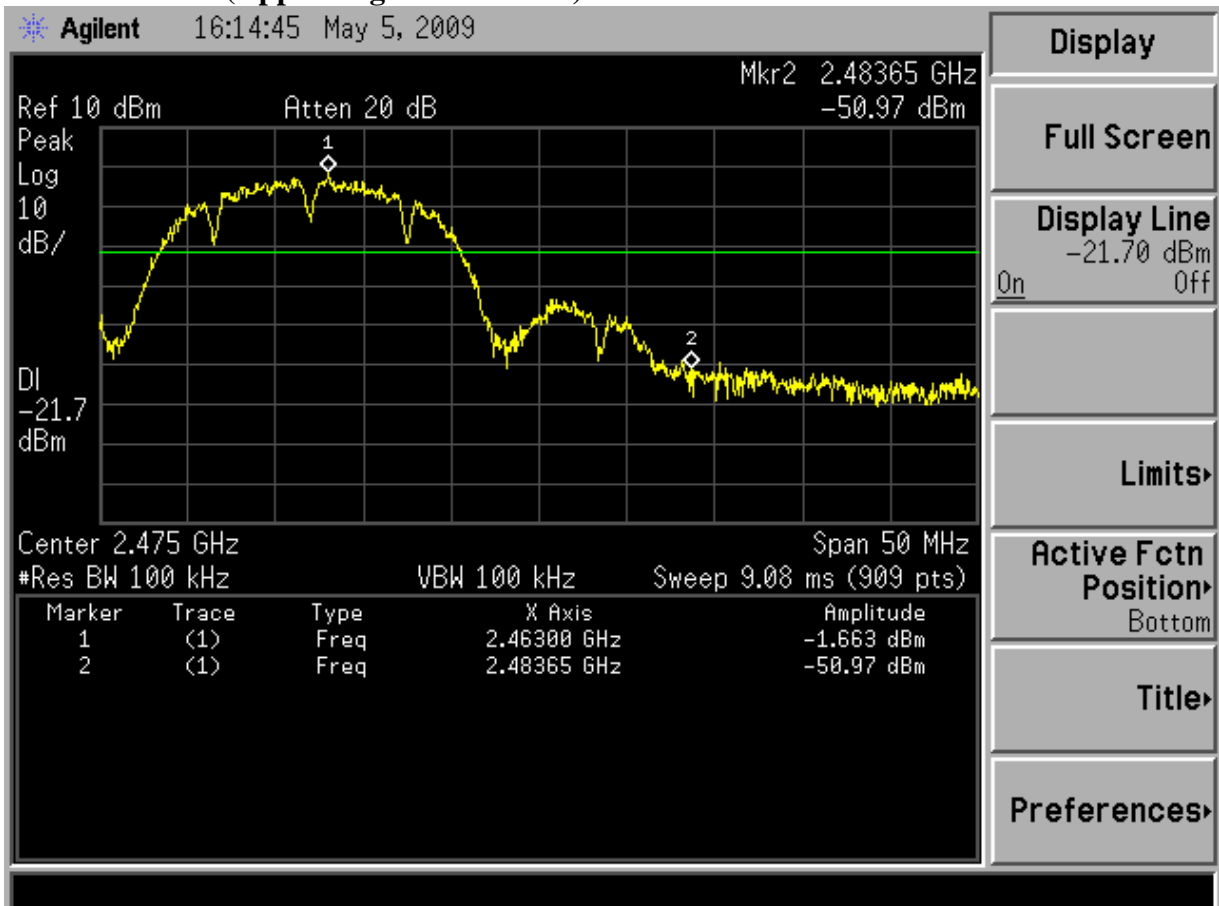
Ch11 2462MHz (Upper Edge 2483.5 MHz) 2MHz



Ch11 2462MHz (Upper Edge 2483.5 MHz) 5.5MHz



Ch11 2462MHz (Upper Edge 2483.5 MHz) 11MHz



8 POWER SPECTRAL DENSITY MEASUREMENT

8.1 Test Equipment

The following test equipment was used during the power spectral density measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2008	May 19, 2009

8.2 Block Diagram of Test Setup

The same as section.4.2.

8.3 Specification Limits (§15.247(e))

The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band.

8.4 Operating Condition of EUT

The test program “Perl” was used to enable the EUT to transmit and receive data at different channel frequency individually.

8.5 Test Procedure

The same method of determining the conducted output power shall be used to determine the power spectral density. If a peak output is measured, then a peak power spectral density measurement is required. Use PSD Option 1 (which defined in KDB558074) if Power output Option 1 was used.

PSD Option 1:

Locate and zoom in on emission peak(s) within the passband. Set RBW = 3kHz, VBW > RBW, sweep = (SPAN/3kHz). The peak level measured must be no greater than +8 dBm.

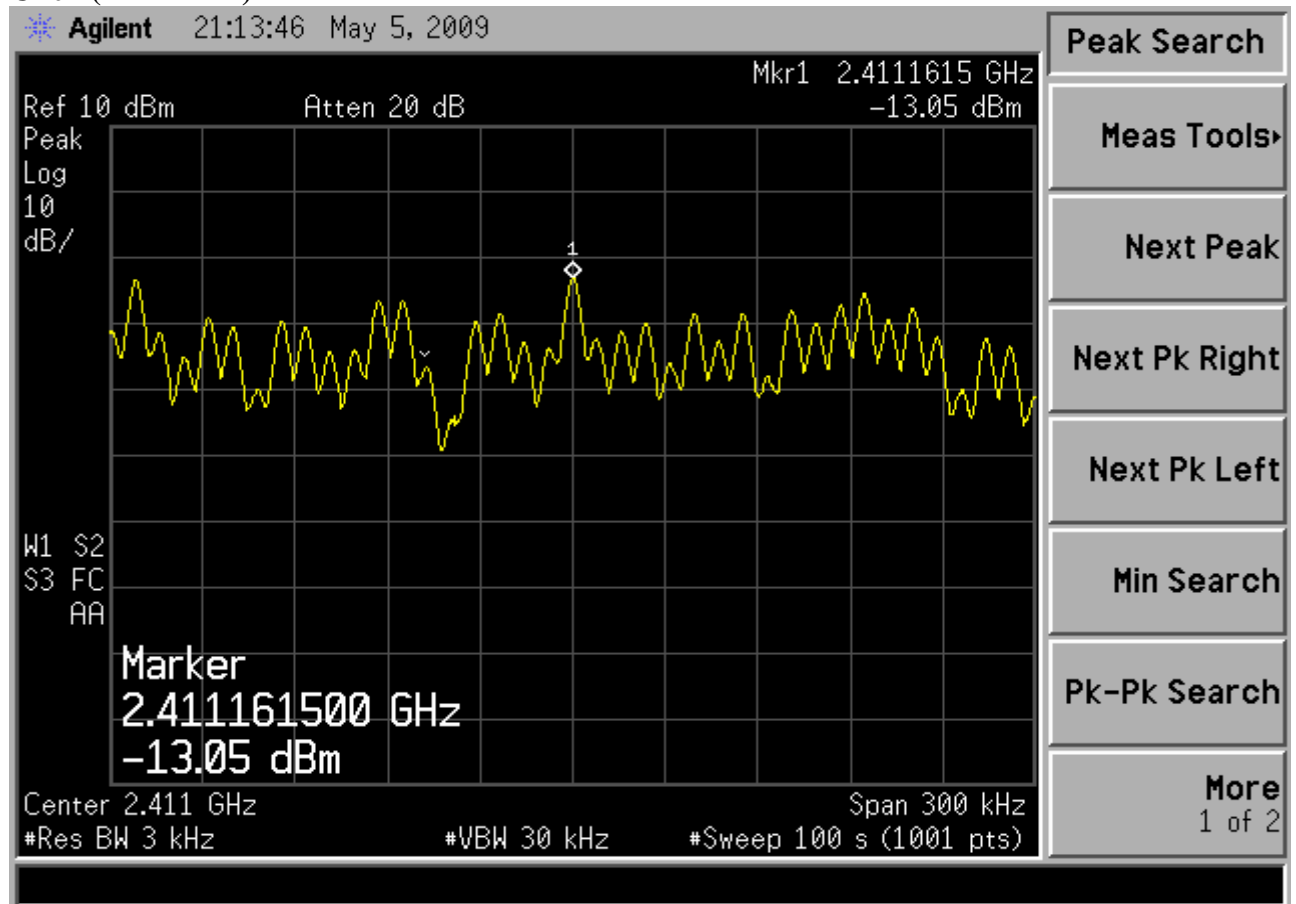
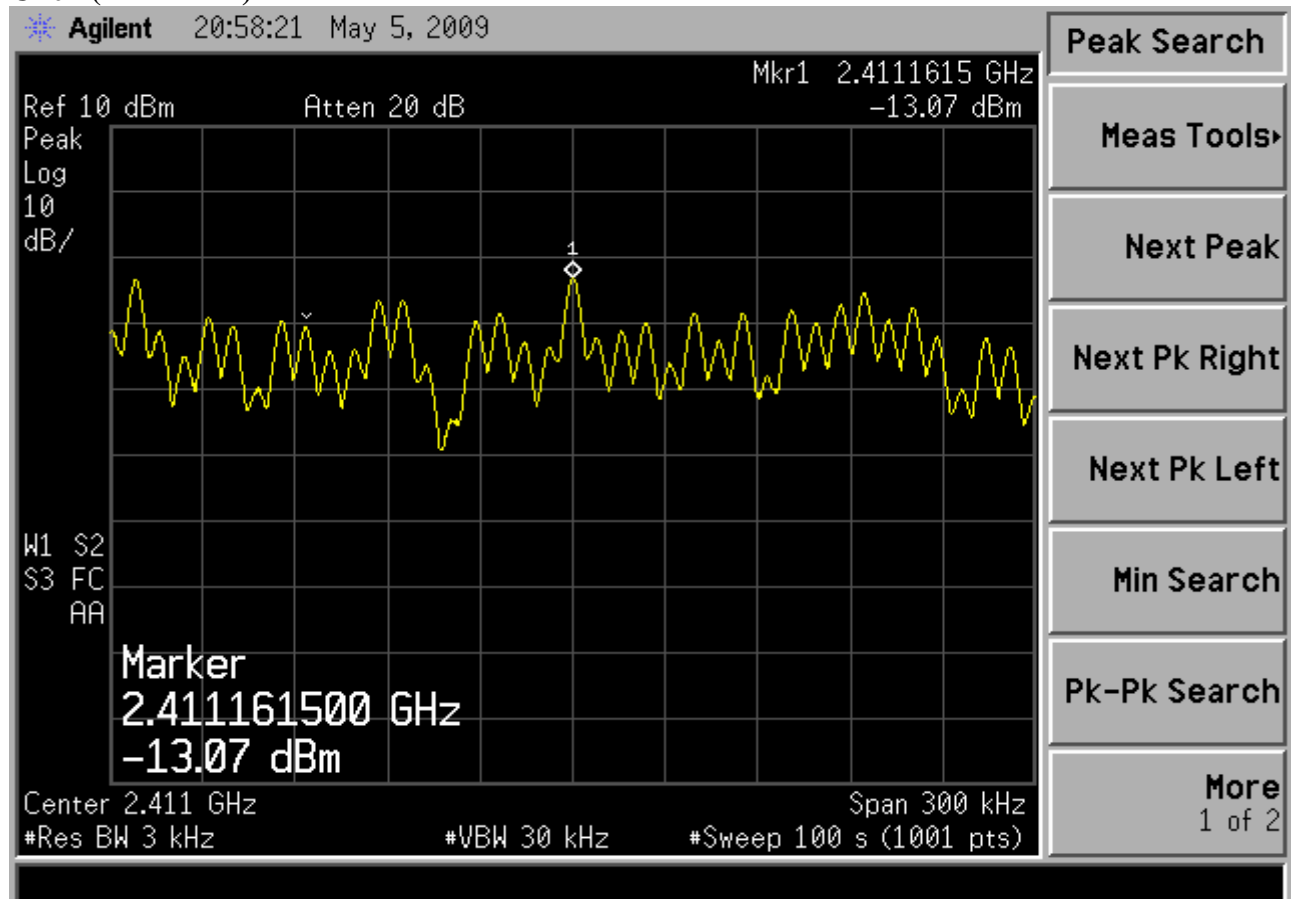
The transmitter output was connected to the spectrum analyzer. The fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time = span/3 kHz.

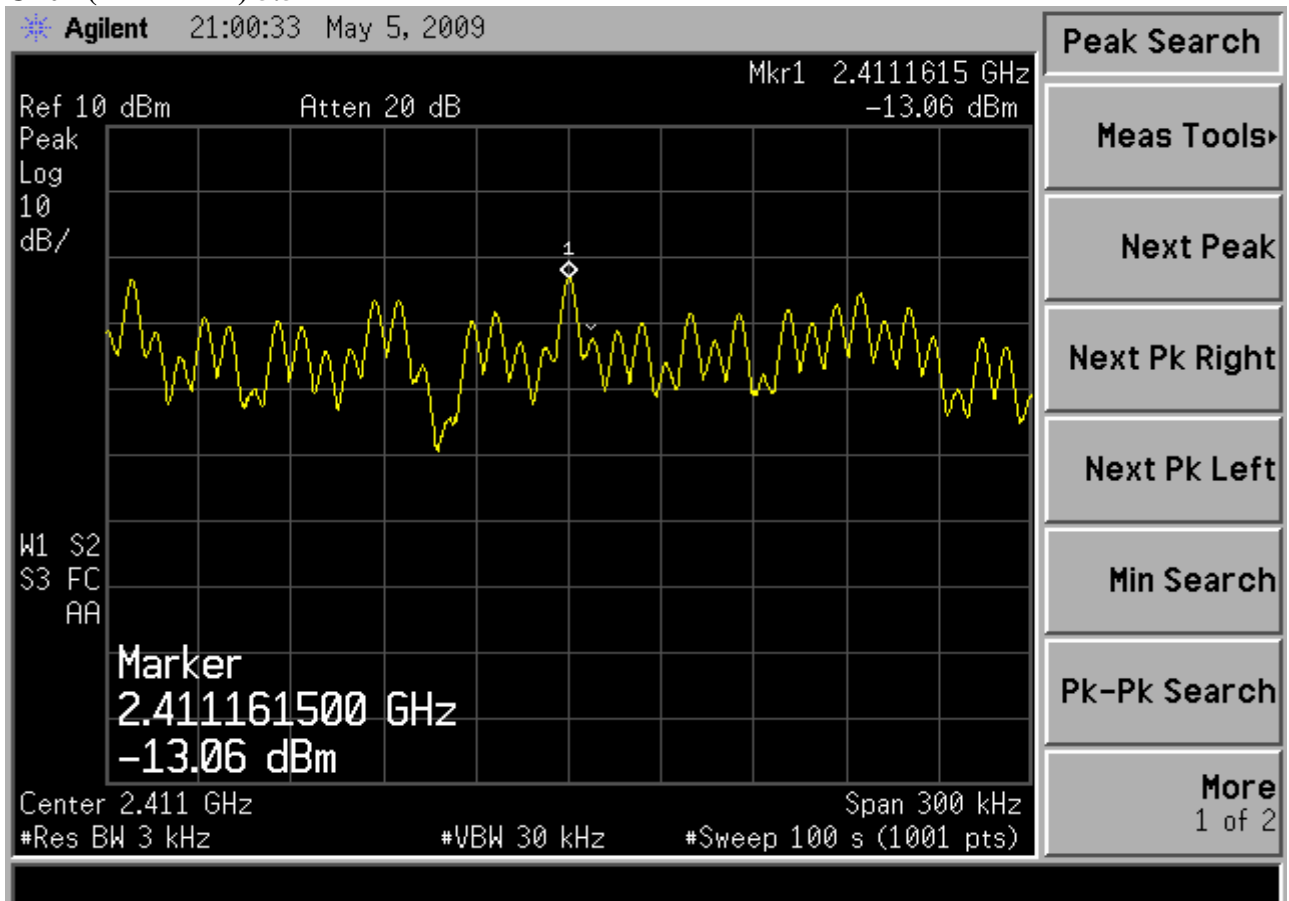
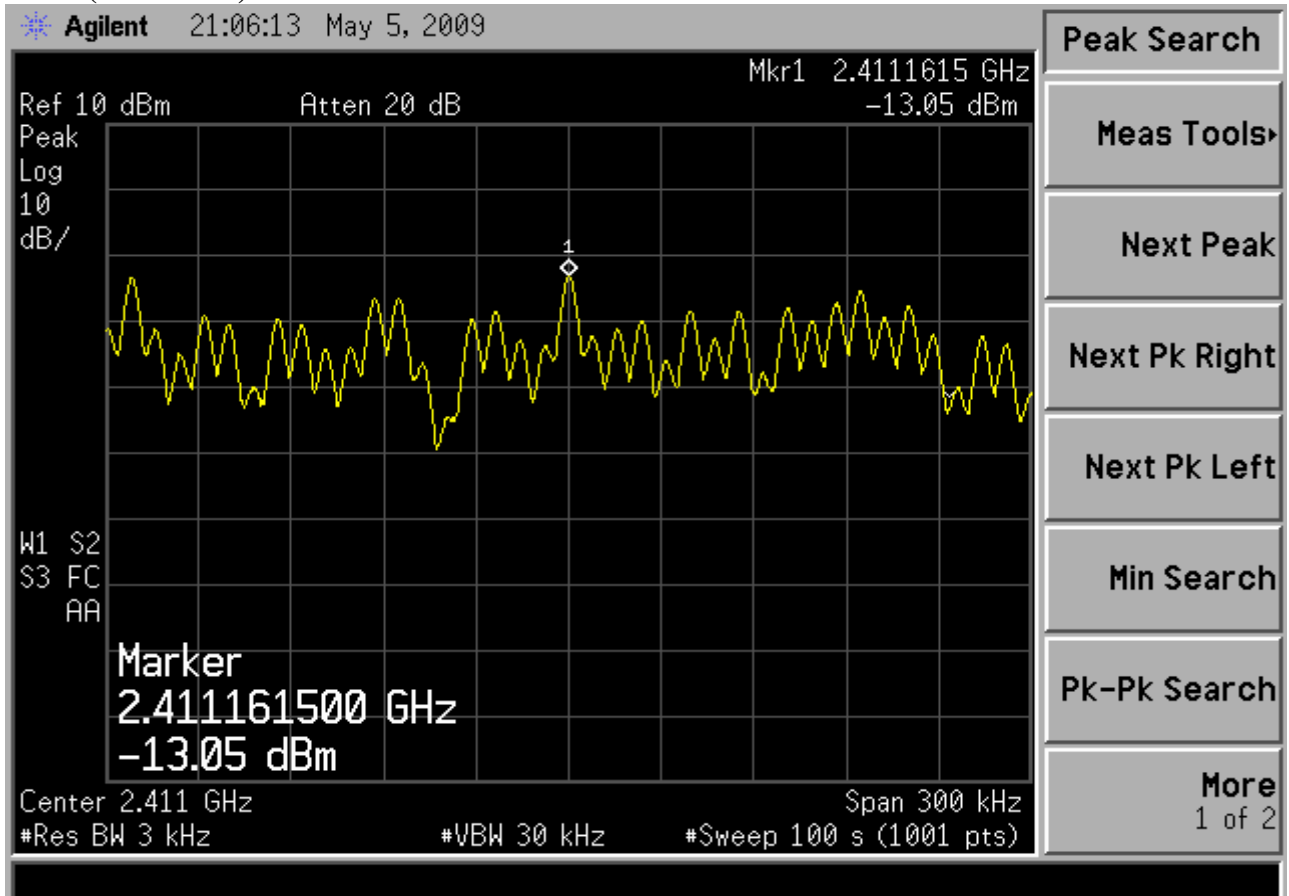
8.6 Test Results

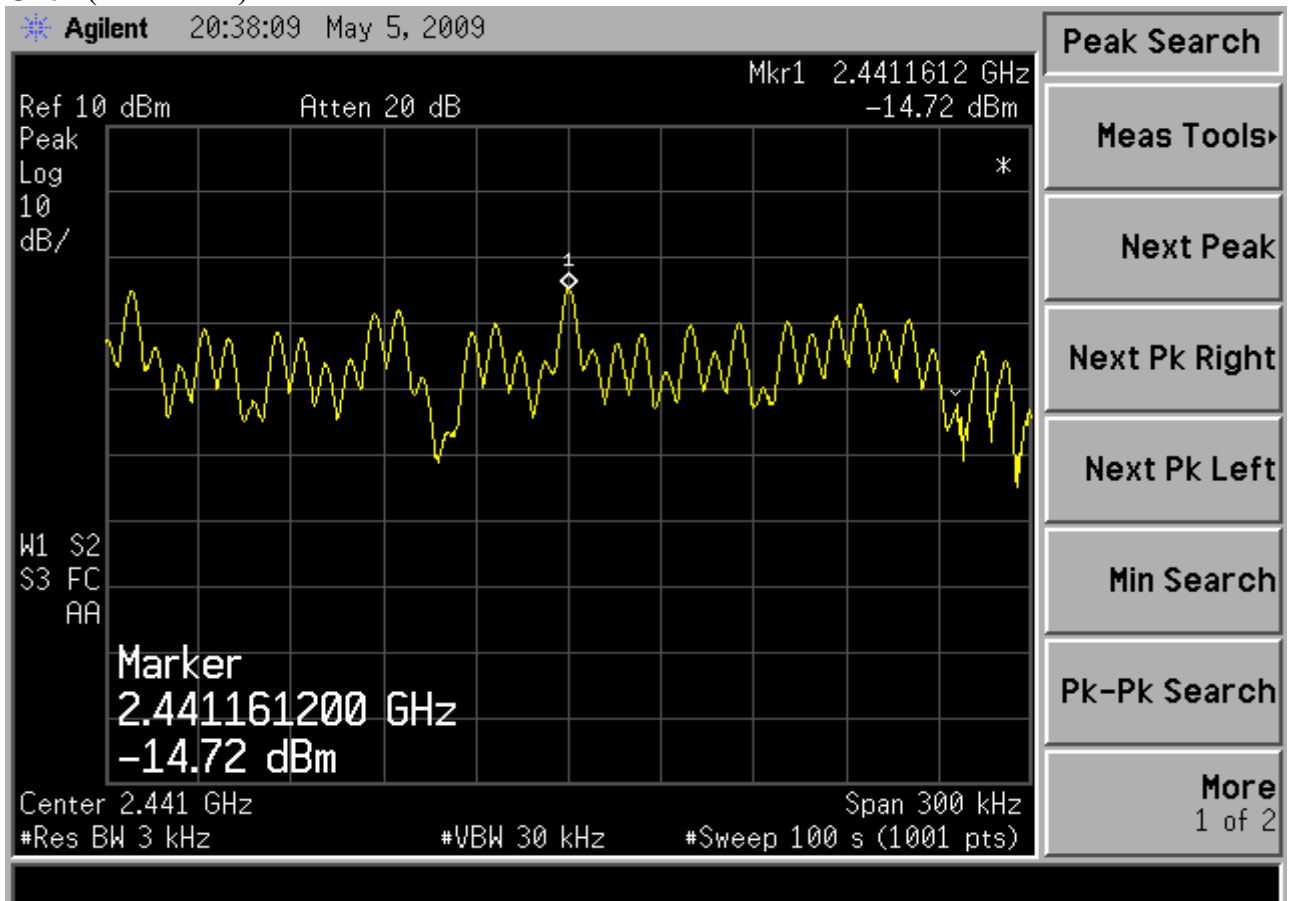
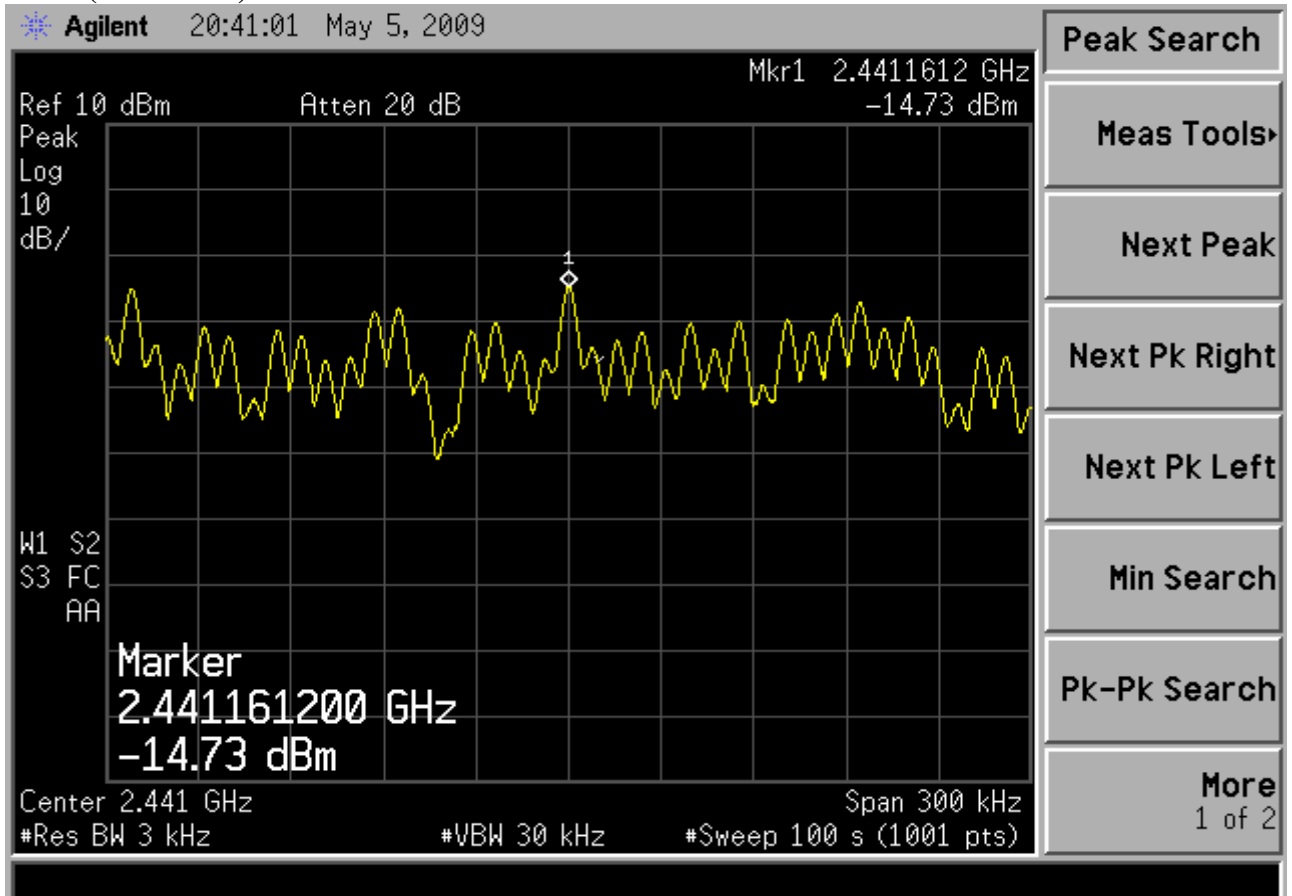
PASSED. All the test results are attached in next pages.

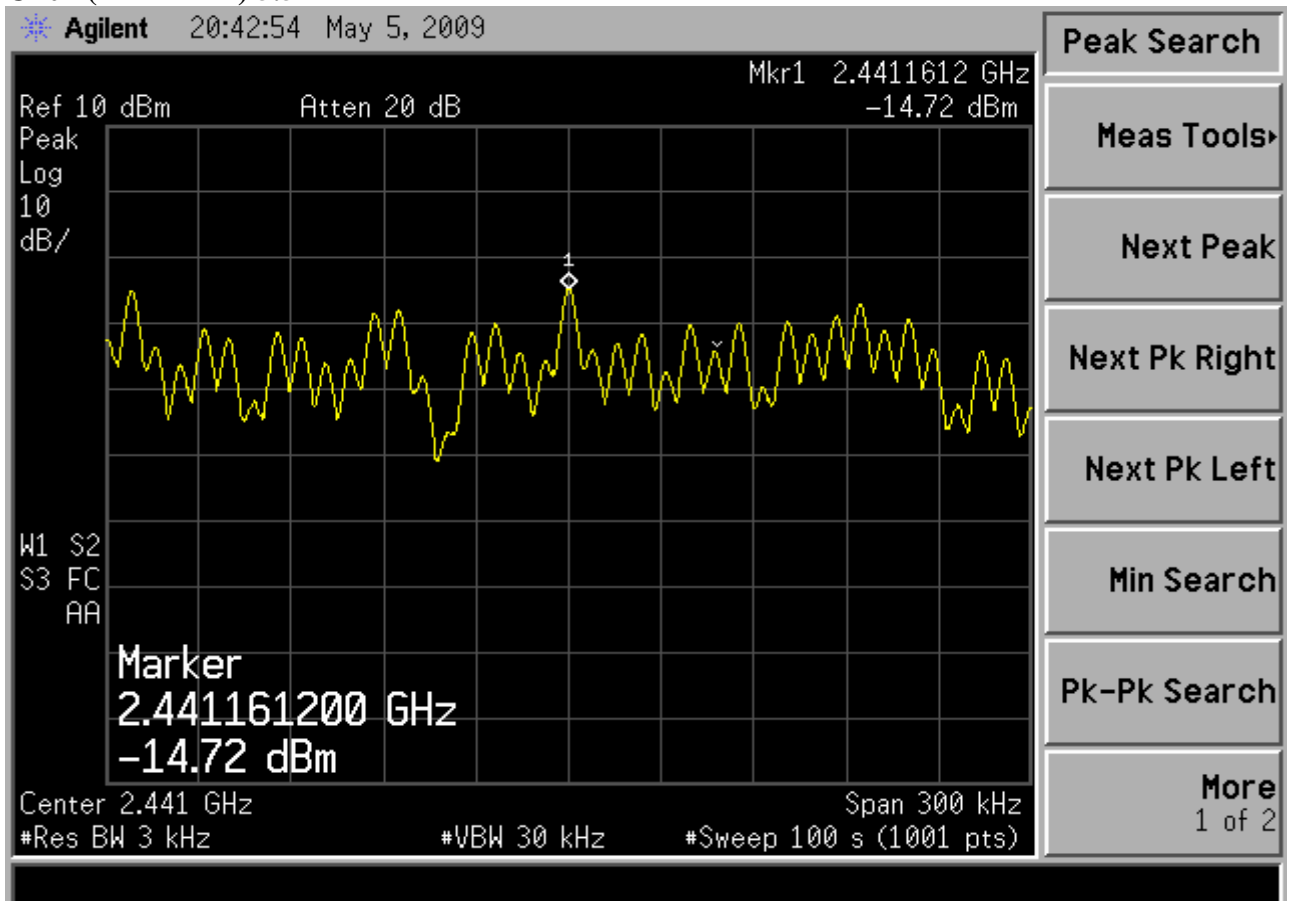
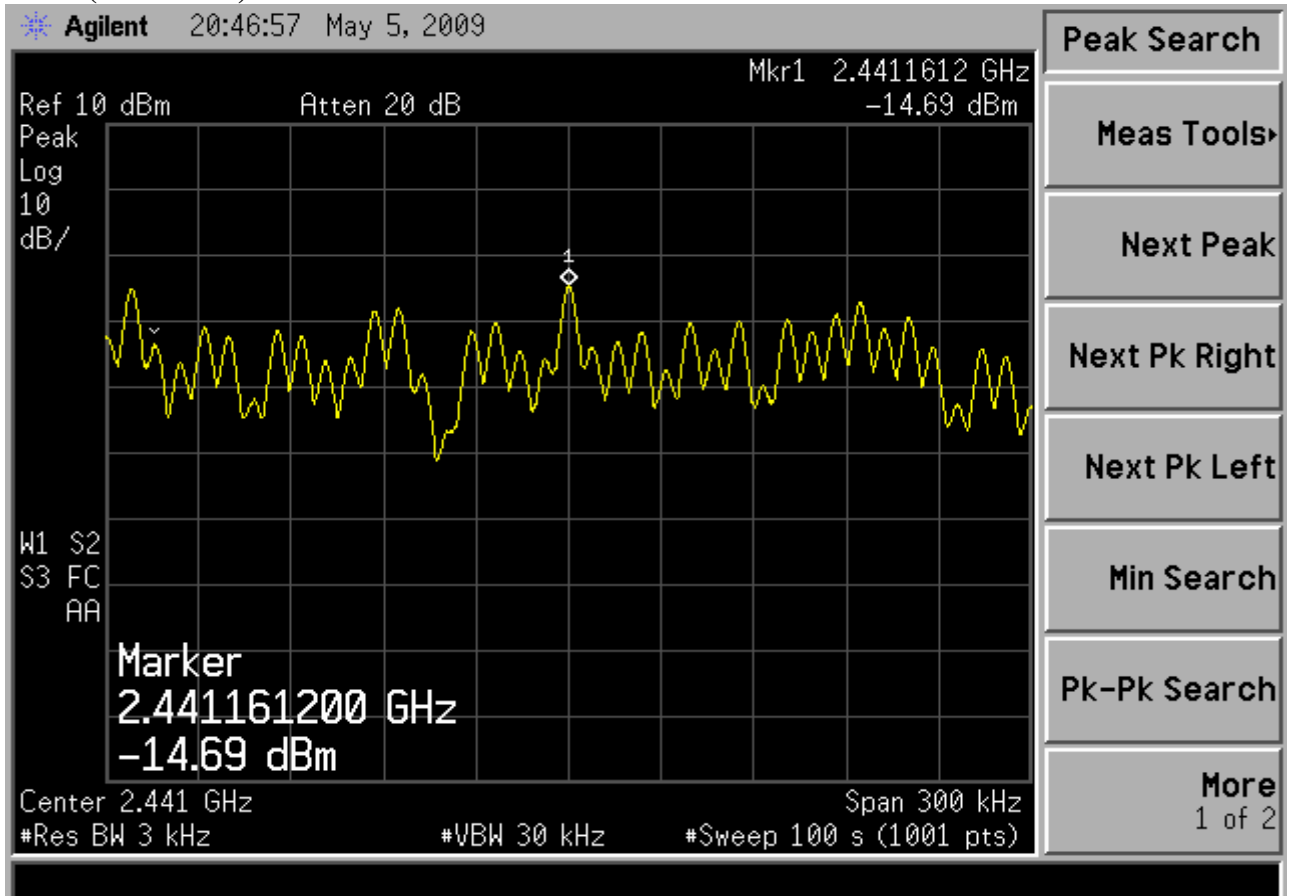
(Test date: May 05, 2009 Temperature : 24°C Humidity : 52 %)

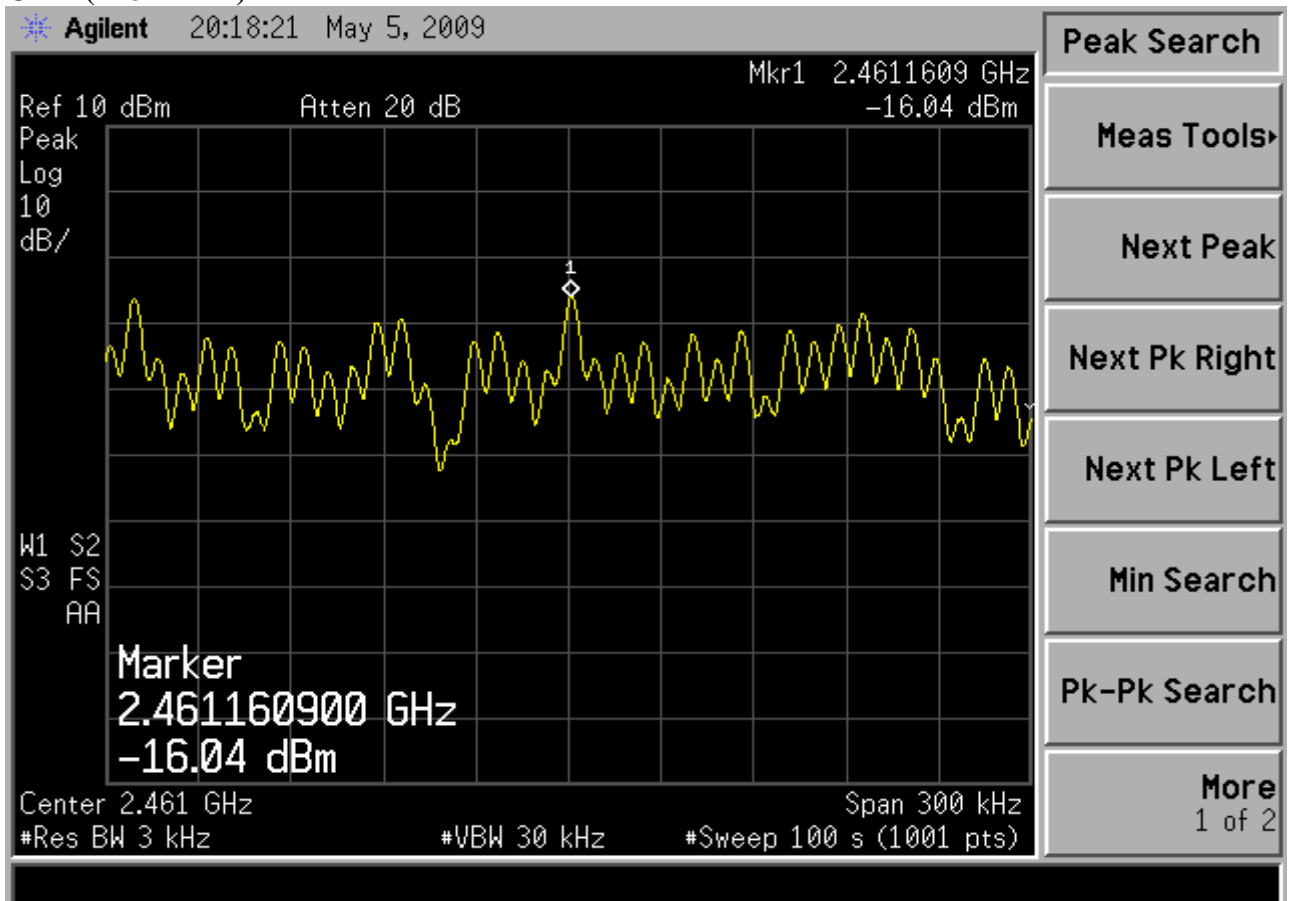
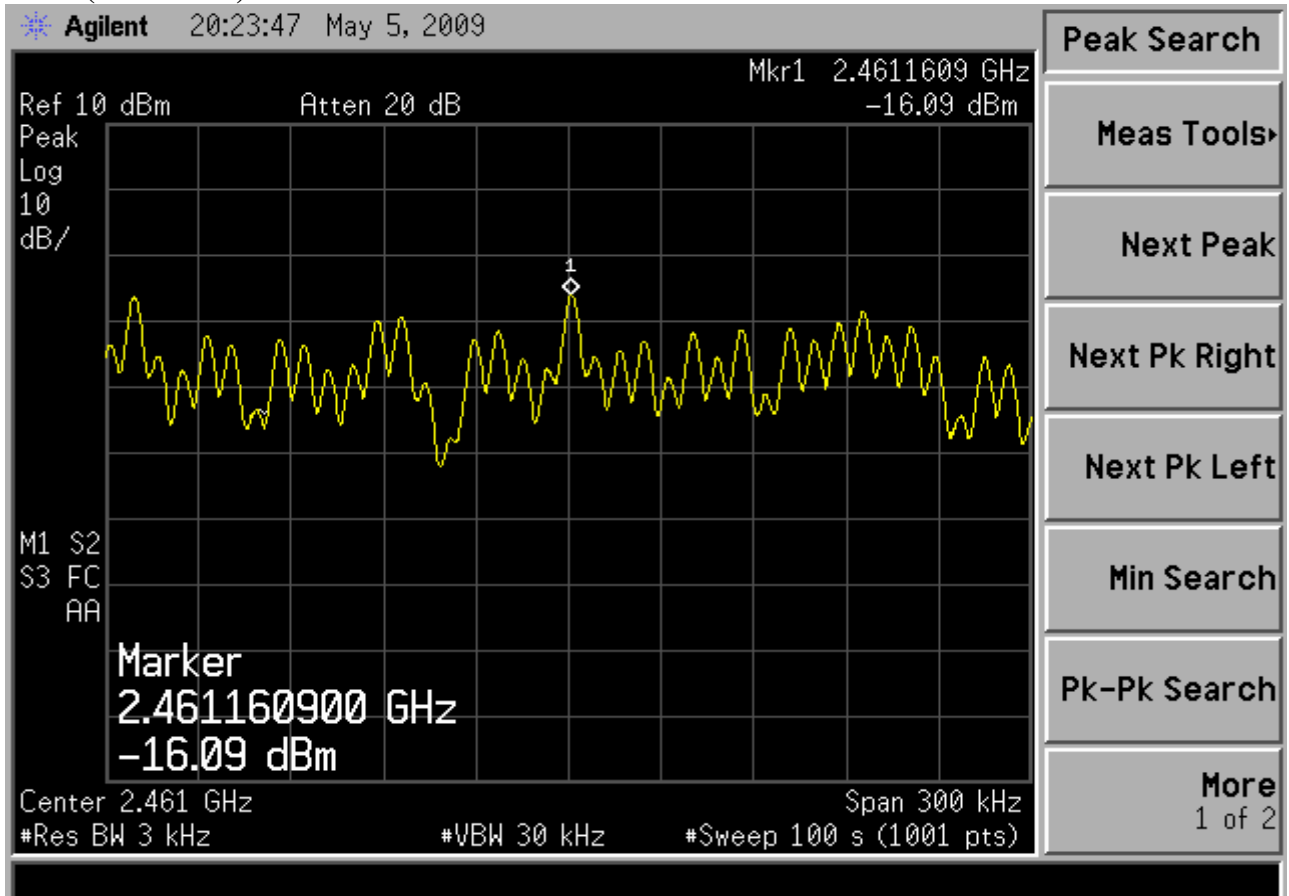
Channel	Speed	Power Spectral Density	Limit
01	1 MHz	-13.05 dBm	8dBm
	2 MHz	-13.07 dBm	8dBm
	5.5 MHz	-13.06 dBm	8dBm
	11 MHz	-13.05 dBm	8dBm
07	1 MHz	-14.72 dBm	8dBm
	2 MHz	-14.73 dBm	8dBm
	5.5 MHz	-14.72 dBm	8dBm
	11 MHz	-14.69 dBm	8dBm
11	1 MHz	-16.04 dBm	8dBm
	2 MHz	-16.09 dBm	8dBm
	5.5 MHz	-16.07 dBm	8dBm
	11 MHz	-15.95 dBm	8dBm

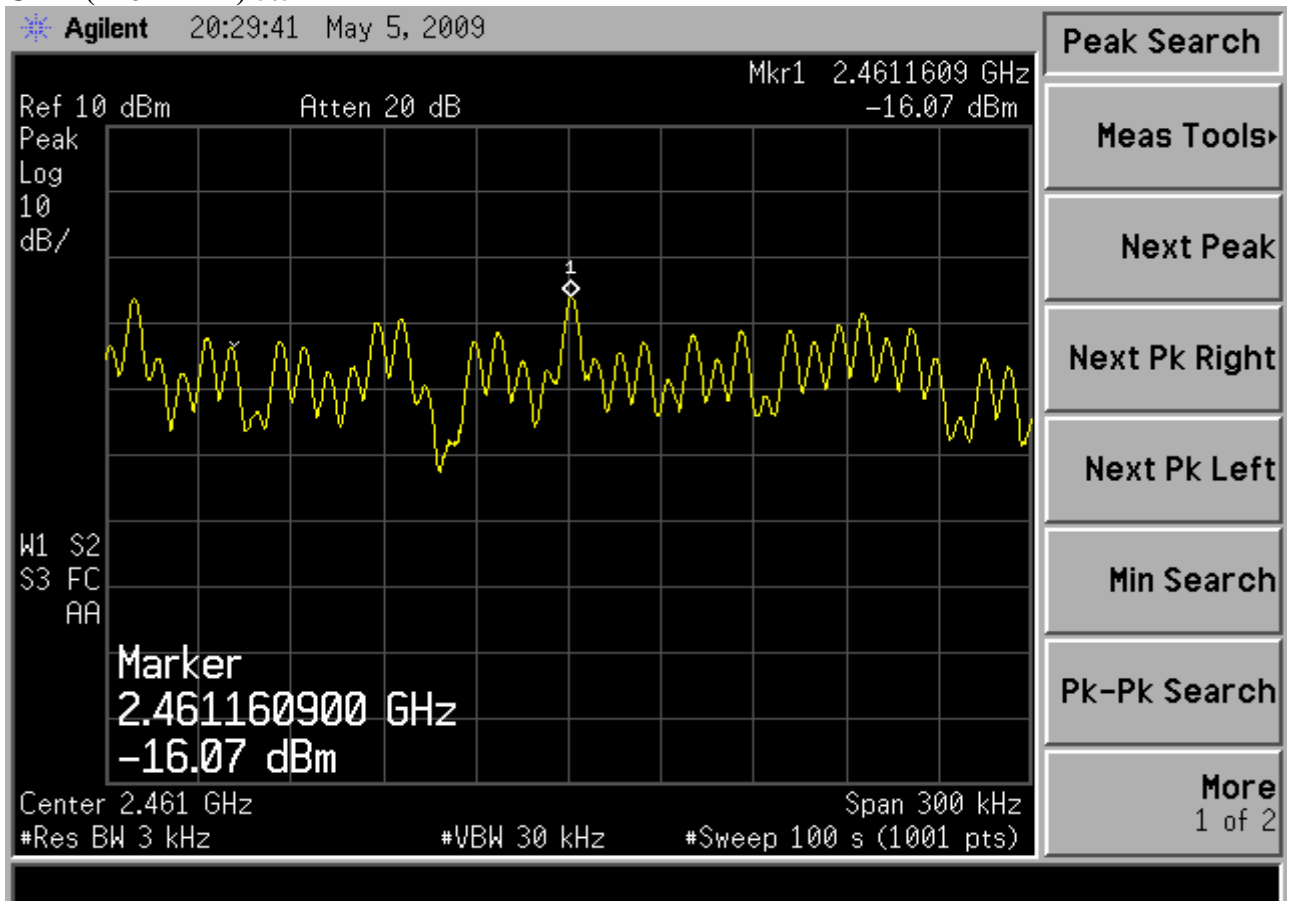
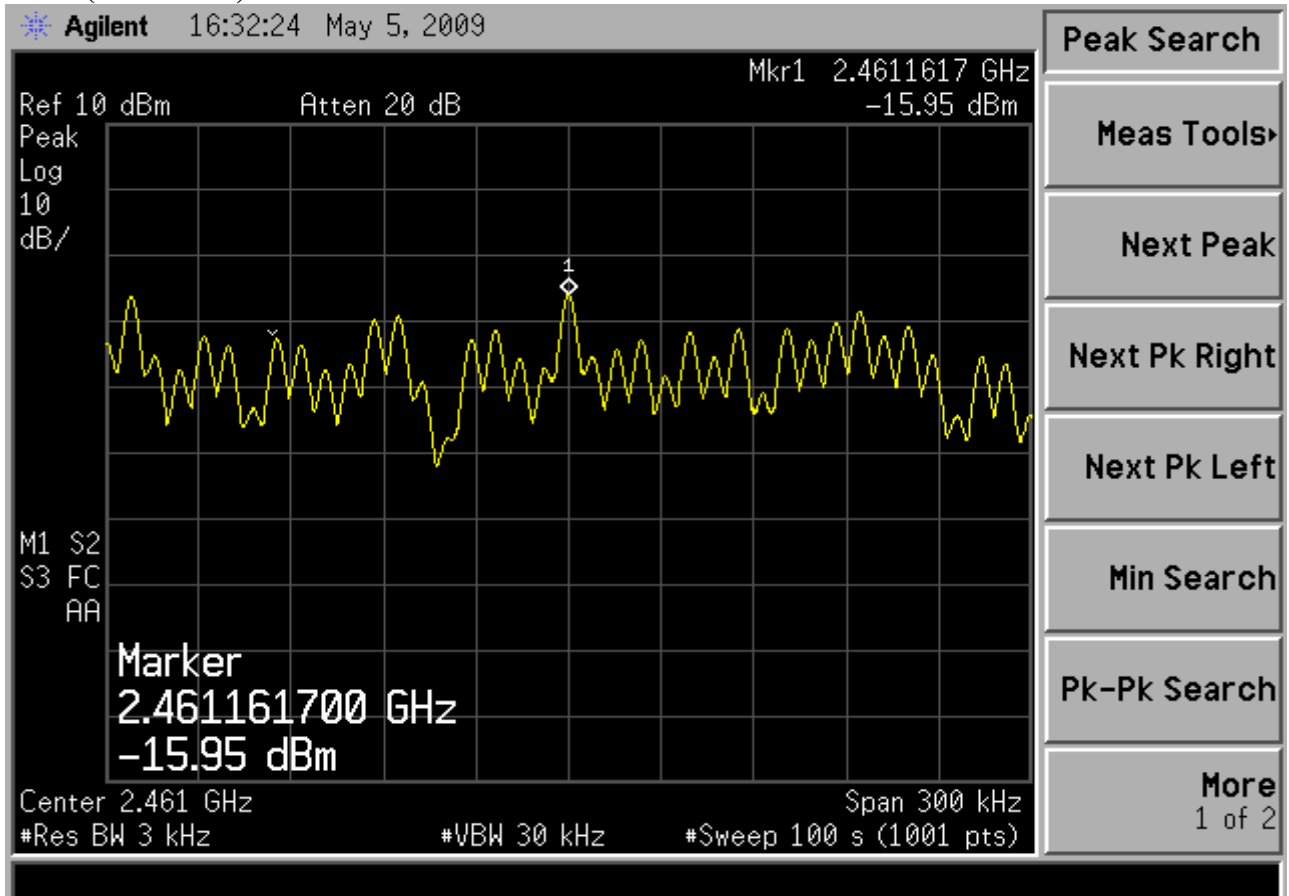
Ch01 (2412 MHz) 1MHz**Ch01 (2412 MHz) 2MHz**

Ch01 (2412 MHz) 5.5MHz**Ch01 (2412 MHz) 11MHz**

Ch07 (2442 MHz) 1MHz**Ch07 (2442 MHz) 2MHz**

Ch07 (2442 MHz) 5.5MHz**Ch07 (2442 MHz) 11MHz**

Ch11 (2462 MHz) 1MHz**Ch11 (2462 MHz) 2MHz**

Ch11 (2462 MHz) 5.5MHz**Ch11 (2462 MHz) 11MHz**

9 DEVIATION TO TEST SPECIFICATIONS

None.