APPLICATION FOR CERTIFICATION

On Behalf of

LG Electronics Inc.

Notebook PC

Model No.：LGX30

FCC ID：BEJ9QK-LGX30G01

Brand : LG

Prepared for : LG Electronics Inc.
19-1, Cheongho-ri, Jinwi-myeon,
Pyeongtaek-si, Gyeonggi-do,
451-713 Korea

Prepared By : AUDIX Technology Corporation
EMC Department
No. 53-11, Tin-Fu Tsun, Lin-Kou,
Taipei, Taiwan.

Tel : (02) 2609-9301, 2609-2133
Fax: (02) 2609-9303

File Number : EM982313B
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Date of Test : Nov. 12 ~ 28, 2009
Date of Report : Dec. 10, 2009

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TEST REPORT CERTIFICATION

Applicant	:	LG Electronics Inc.
Manufacturer #1	:	LG Electronics De Sao Paulo Ltda
Manufacturer #2	:	LG Electronics Inc.
Manufacturer #3	:	MSI Electronics (Kunshan) Co., Ltd.
EUT Description	:	Notebook PC
FCC ID	:	**BEJ9QK-LGX30G01**
		(A) MODEL NO. : LGX30
		(B) SERIAL NO. : N/A
		(C) BRAND : LG
		(D) POWER SUPPLY : DC 20V, 2A
		(E) TEST VOLTAGE : AC 120V/60Hz (Via AC Adapter)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C, July 2008
ANSI C63.4/2003
FCC Public Notice DA 00-705, Mar. 2000

(FCC CFR 47 Part 15C, §15.205, §15.207, §15.209 and §15.247)

The device described above was tested by AUDIX Technology Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C limits.

The measurement results are contained in this test report and AUDIX Technology Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC official limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Technology Corporation.

Date of Test : Nov. 12 ~ 28, 2009 Date of Report : Dec. 10, 2009

Producer : Tina Huang
(Tina Huang/Administrator)

Review : Henning Chang
(Henning Chang/Supervisor)

Signatory : Ben Cheng
(Ben Cheng/Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Notebook PC (The EUT is built-in wireless LAN, Bluetooth module and Mobile Broadband Module, this report for Bluetooth, Wireless LAN and Mobile Broadband Module are tested in others report of EM-F980912 and EM-F980917)
Model Number	:	LGX30
Serial Number	:	N/A
Brand	:	LG
FCC ID	:	BEJ9QK-LGX30G01
Applicant	:	LG Electronics Inc. 19-1, Cheongho-ri, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, 451-713 Korea
Manufacturer #1	:	LG Electronics De Sao Paulo Ltda Av Dom Pedro 1 W7777 Distrito Industrial 12010-970 Taunbate- SP Brazil.
Manufacturer #2	:	LG Electronics Inc. 73 Hyang Jeong-Dong, Cheongju Plant Cheongju-Shi, Hungduk-Gu Chungbuk, Republic of Korea
Manufacturer #3	:	MSI Electronics (Kunshan) Co., Ltd. 88 E Quanjin Rd Kunshan Jiangsu 215300 China
Bluetooth Module	:	AzureWave, M/N AW-BT253
Fundamental Range	:	2400MHz - 2483.5MHz
Channel Number	:	79
Radio Technology	:	GFSK,π /4DQPSK, 8-DPSK
Antenna Gain	:	1.31dBi (Peak)

AC Adapter	:	SUNG HO, M/N SHA913L I/P: 100-240V~, 2A, 50/60Hz O/P: 20V, 20A, 40W DC Cord: Non-Shielded, Undetached, 1.5m Bonded a ferrite core AC Cord: Non-Shielded, Detached, 1.0m (2Pin)
Date of Receipt of Sample	:	Nov. 12, 2009
Date of Test	:	Nov. 12 ~ 28, 2009

Antenna Information

Antenna Part Number	Manufacture	Antenna Type
Bluetooth Antenna	MAG.LAYERS	Printed Antenna

Antenna	Antenna Peak Gain (dBi)			Antenna Average Gain (dBi)		
Frequency	**2.40GHz**	**2.45GHz**	**2.50GHz**	**2.40GHz**	**2.45GHz**	**2.50GHz**
XY Plane	-0.26	0.36	0.30	-3.81	-3.30	-3.24
XZ Plane	-0.69	-10.17	-0.14	-4.76	-4.33	-4.42
YZ Plane	0.4	**1.31**	1.26	-0.85	-0.26	-0.31

1.2. Tested Supporting System Details

【ONLY FOR CONDUCTED EMISSION & RADIATED EMISSION MEASUREMENT】

1.2.1. I-POD PLAYER #1

Model Number	:	A1204
Serial Number	:	4H722TDYVTE
FCC ID	:	By DoC
BSMI ID	:	R33057
Manufacturer	:	APPLE
USB Data Cable	:	Shielded, Undetachable, 1m

1.2.2. I-POD PLAYER #2

Model Number	:	A1204
Serial Number	:	4H722TNUVTE
FCC ID	:	By DoC
BSMI ID	:	R33057
Manufacturer	:	APPLE
USB Data Cable	:	Shielded, Undetachable, 1m

1.2.3. EARPHONE

Model Number	:	N/A
Serial Number	:	N/A
Manufacturer	:	APPLE
Earphone Cable	:	Non-Shielded, Detachable, 0.9m

1.2.4. SD CARD (INSTALL IN EUT)

Model Number	:	SDHC Card
Serial Number	:	BH0822813475D
Manufacturer	:	SanDisk
Capacity	:	4GB

1.3. Description of Test Facility

Name of Firm	:	**AUDIX Technology Corporation** EMC Department No. 53-11, Tin-Fu Tsun, Lin-Kou Hsiang, Taipei Hsien, Taiwan
Test Site (C3/Semi-AC)	:	**No. 3 Shielded Room** No. 67-4, Tin-Fu Tsun, Lin-Kou Hsiang Taipei Hsien, Taiwan **Semi-Anechoic Chamber** No. 53-11, Tin-Fu Tsun, Lin-Kou, Hsiang, Taipei Hsien, Taiwan May 14, 2009 Renewal on Federal Communication Commission Registration Number: 90993
NVLAP Lab. Code	:	200077-0
TAF Accreditation No	:	1724

1.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB), (V/m)
Conduction Test	150kHz~30MHz	± 1.73dB
Radiation Test (Distance: 3m)	30MHz~300MHz	±2.91dB
	300MHz~1000MHz	±2.94dB
	Above 1GHz	± 5.02dB

Remark **:** Uncertainty = $ku_c(y)$

Test Item	Uncertainty
20dB Bandwidth	± 0.2kHz
Carrier Frequency Separation	± 0.2kHz
Time Of Occupancy	± 0.03sec
Maximum peak Output power	± 0.52dBm
Band Edges	± 0.13dB

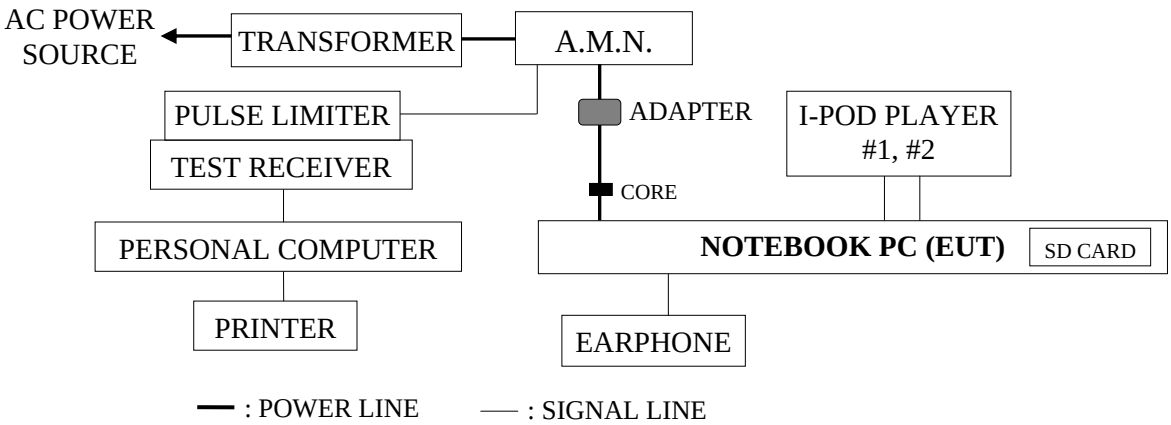
2. CONDUCTED EMISSION MEASUREMET

2.1. Test Equipment

The following test equipment was used during the conducted emission measurement：
(No. 3 Shielded Room)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R & S	ESCS30	100337	Apr. 03, 09’	Apr. 02, 10’
2.	A.M.N.	Kyoritsu	KNW-244C	8-1373-5	Jul. 28, 09’	Jul. 27, 10’
3.	L.I.S.N.	Kyoritsu	KNW-407	8-1370-9	Jun. 08, 09’	Jun. 07, 10’
4.	Pulse Limiter	R & S	ESH3Z2	100041	Feb. 20, 09’	Feb. 19, 10’

2.2. Block Diagram of Test Setup



2.3.Conducted Emission Limits (§15.107, Class B & §15.207)

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark1.: If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.
2.: The lower limit applies at the band edges.

2.4. Operating Condition of EUT

2.4.1. Set up the EUT and simulator as shown on 2.2.

2.4.2. Turn on the power of all equipment.

2.4.3. The Bluetooth Module was installed in the Notebook PC (EUT), the Notebook PC was running test program "Broacom BlueTool V 1.0.0.3" and to set the EUT on transmitting and receiving during all testing.

2.4.4. The other peripheral devices were driven and operated in turn during all testing.

2.5. Test Procedure

The EUT was put on table which was above the ground by 80cm and its AC adapter's power cord connected to the AC mains through an Artificial Mains Network (A.M.N.). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provided a 50 ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.)
Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions simulators of the interface cables should be manipulated according to FCC ANSI C63.4-2003 regulation, and the measurement guideline was according to FCC Public Notice DA 00-705.

The bandwidth of the R&S Test Receiver ESCS30 was set at 9kHz.

The frequency range from 150kHz to 30MHz was checked.

All the final readings from Test Receiver were measured with the Quasi-Peak detector and Average detector. Remark: If the Average limit is met when using a Quasi-Peak detector, the Average detector is unnecessary)

2.6. Conducted Emission Measurement Results

PASSED.
(All the emissions not reported below are too low against the prescribed limits.)

[Note: Three types of modulation (GFSK,π /4DQPSK, 8-DPSK) were evaluated but only the worst case (8-DPSK) was reported in this report.]

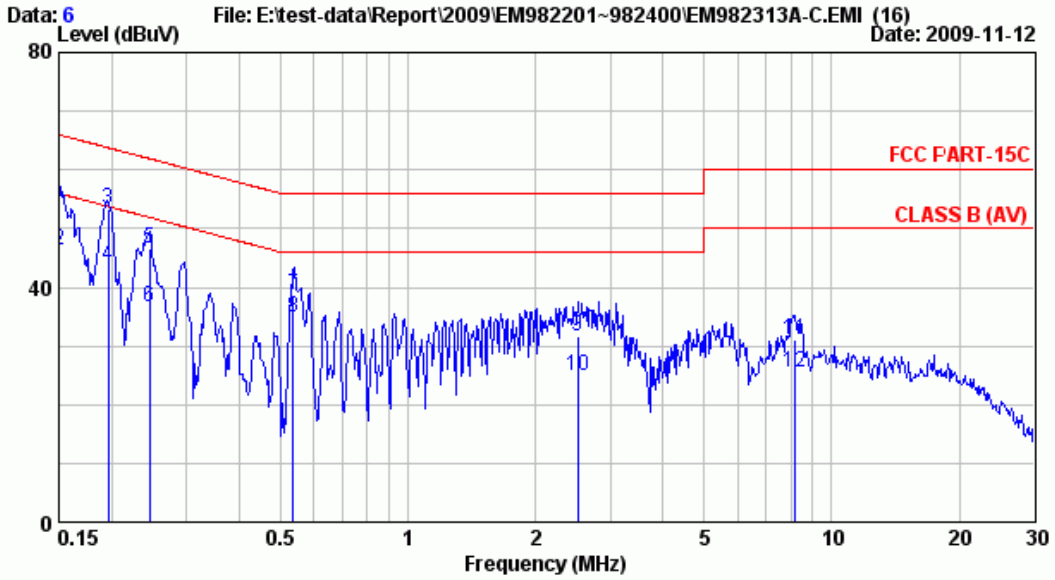
EUT was performed during this section testing and all the test results are attached in next pages.

EUT：Notebook PC M/N：LGX30

Test Date：Nov. 12, 2009 Temperature：23℃ Humidity：58%

Reference Test Data：Neutral # 6; Line # 5

AUDIX TECHNOLOGY Corp. EMC Laboratory
No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei County, Taiwan R.O.C. Post Code:24443
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:emc@audixtech.com



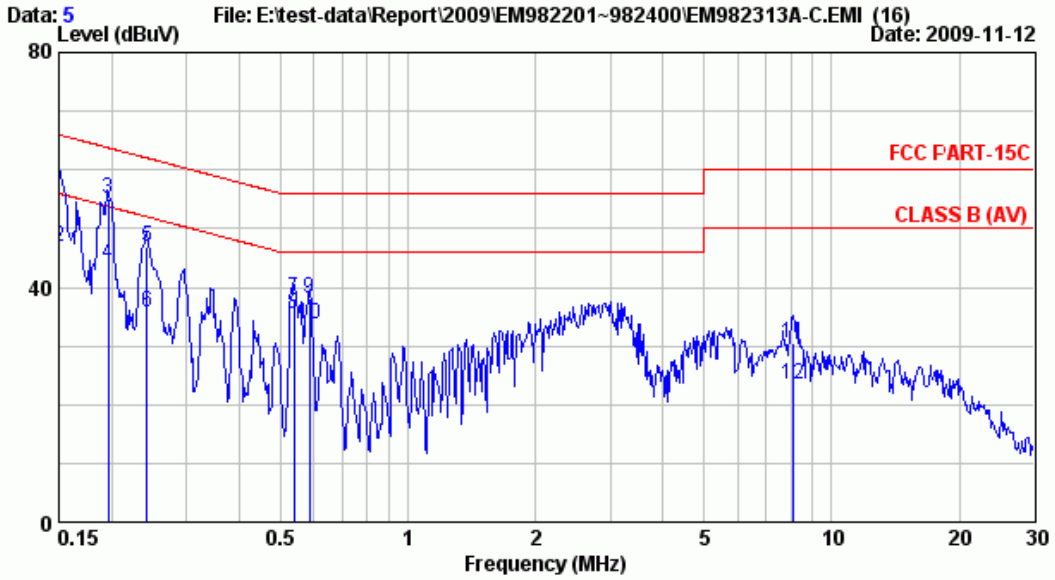
Site : NO.3 Shielded Room
Condition : KNW-244C
Limit : FCC PART-15C
Env. / Ins. : 23*C/58% ESCS 30 (337)
EUT : Notebook PC M/N:LGX30
Power Rating : 120Vac / 60Hz
Test Mode : Full System (1366*768/60)

Data : 6
Phase : NEUTRAL
Engineer: Mike-Kuo

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.150	0.14	0.20	55.96	56.30	66.00	9.69	QP
2	0.150	0.14	0.20	46.05	46.39	56.00	9.60	AVERAGE
3	0.196	0.10	0.20	53.10	53.40	63.79	10.38	QP
4	0.196	0.10	0.20	43.42	43.72	53.79	10.06	AVERAGE
5	0.245	0.10	0.20	46.22	46.52	61.91	15.39	QP
6	0.245	0.10	0.20	36.21	36.51	51.91	15.40	AVERAGE
7	0.537	0.10	0.20	38.46	38.76	56.00	17.24	QP
8	0.537	0.10	0.20	34.67	34.97	46.00	11.03	AVERAGE
9	2.514	0.20	0.40	31.18	31.78	56.00	24.22	QP
10	2.514	0.20	0.40	24.21	24.81	46.00	21.19	AVERAGE
11	8.188	0.28	0.60	30.12	31.00	60.00	29.00	QP
12	8.188	0.28	0.60	24.47	25.35	50.00	24.65	AVERAGE

Remarks: 1.Emission Level= LISN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasi-peak detector ,the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

AUDIX TECHNOLOGY Corp. EMC Laboratory
No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei County, Taiwan R.O.C. Post Code:24443
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:emc@audixtech.com



Site : NO.3 Shielded Room
Condition : KNW-244C
Limit : FCC PART-15C
Env. / Ins. : 23*C/58% ESCS 30 (337)
EUT : Notebook PC M/N:LGX30
Power Rating : 120Vac / 60Hz
Test Mode : Full System (1366*768/60)

Data : 5
Phase : LINE
Engineer: Mike-Kuo

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.150	0.14	0.20	58.16	58.50	66.00	7.50	QP
2	0.150	0.14	0.20	46.66	47.00	56.00	9.00	AVERAGE
3	0.197	0.10	0.20	54.80	55.10	63.76	8.65	QP
4	0.197	0.10	0.20	43.65	43.95	53.76	9.80	AVERAGE
5	0.242	0.10	0.20	46.56	46.86	62.02	15.16	QP
6	0.242	0.10	0.20	35.57	35.87	52.02	16.15	AVERAGE
7	0.539	0.10	0.20	37.76	38.06	56.00	17.94	QP
8	0.539	0.10	0.20	35.03	35.33	46.00	10.67	AVERAGE
9	0.585	0.10	0.20	37.94	38.24	56.00	17.76	QP
10	0.585	0.10	0.20	33.43	33.73	46.00	12.27	AVERAGE
11	8.114	0.35	0.60	29.58	30.53	60.00	29.47	QP
12	8.114	0.35	0.60	22.58	23.53	50.00	26.47	AVERAGE

Remarks: 1.Emission Level= LISN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasi-peak detector ,the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipment was used during the radiated emission measurement:

3.1.1. For Frequency Range 30MHz~1000MHz (at Semi-Anechoic Chamber)

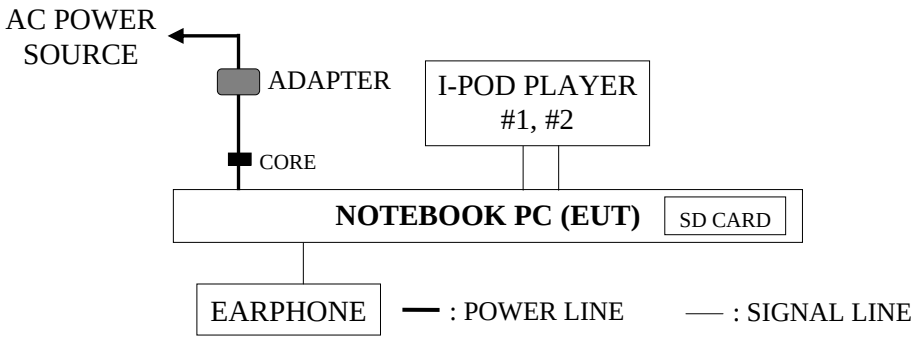
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8564EC	3946A00249	Oct. 27, 09’	Oct. 26, 10’
2.	Test Receiver	R & S	ESCS30	100265	Aug. 28, 09’	Aug. 27, 10’
3.	Pre-Amplifier	HP	8447D	2944A06305	Feb. 04, 09’	Feb. 03, 10’
4.	Biconical Antenna	CHASE	VBA6106A	1264	Mar. 20, 09’	Mar. 19, 10’
5.	Log Periodic Antenna	Schwarzbeck	UHALP9108-A	0810	Mar. 20, 09’	Mar. 19, 10’

3.1.2. For Frequency Above 1GHz (at Semi-Anechoic Chamber)

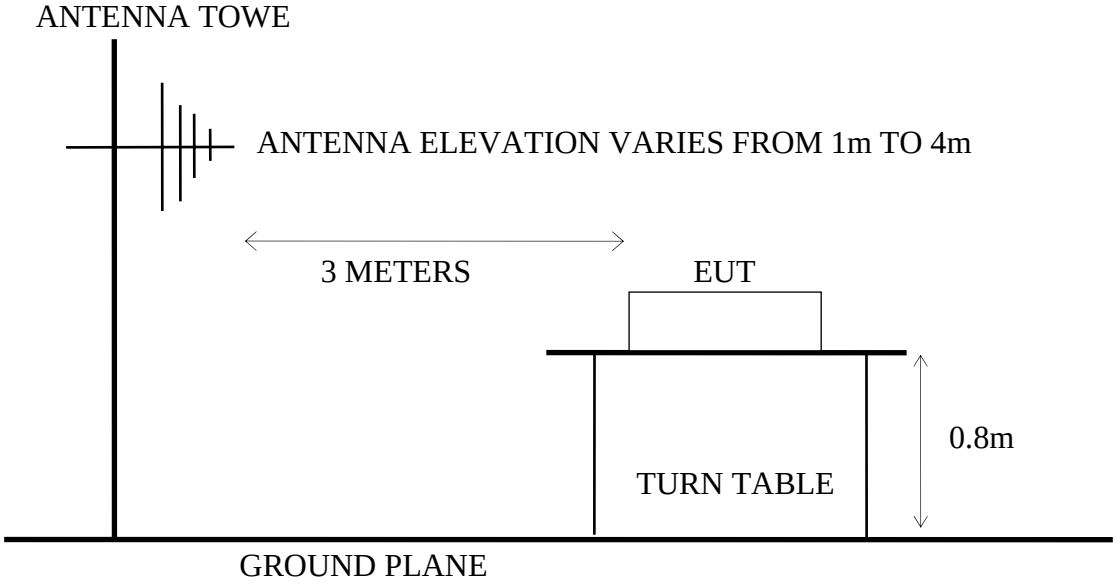
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8564EC	3946A00249	Oct. 27, 09’	Oct. 26, 10’
2.	Pre-Amplifier	HP	8449B	3008A01284	Jun. 17, 09’	Jun. 16, 10’
3.	Horn Antenna	EMCO	3115	9112-3775	May 15, 09’	May 14, 10’
4.	Horn Antenna	EMCO	3115	9609-4927	Jul. 09, 09’	Jul. 08, 10’

3.2. Block Diagram of Test Setup

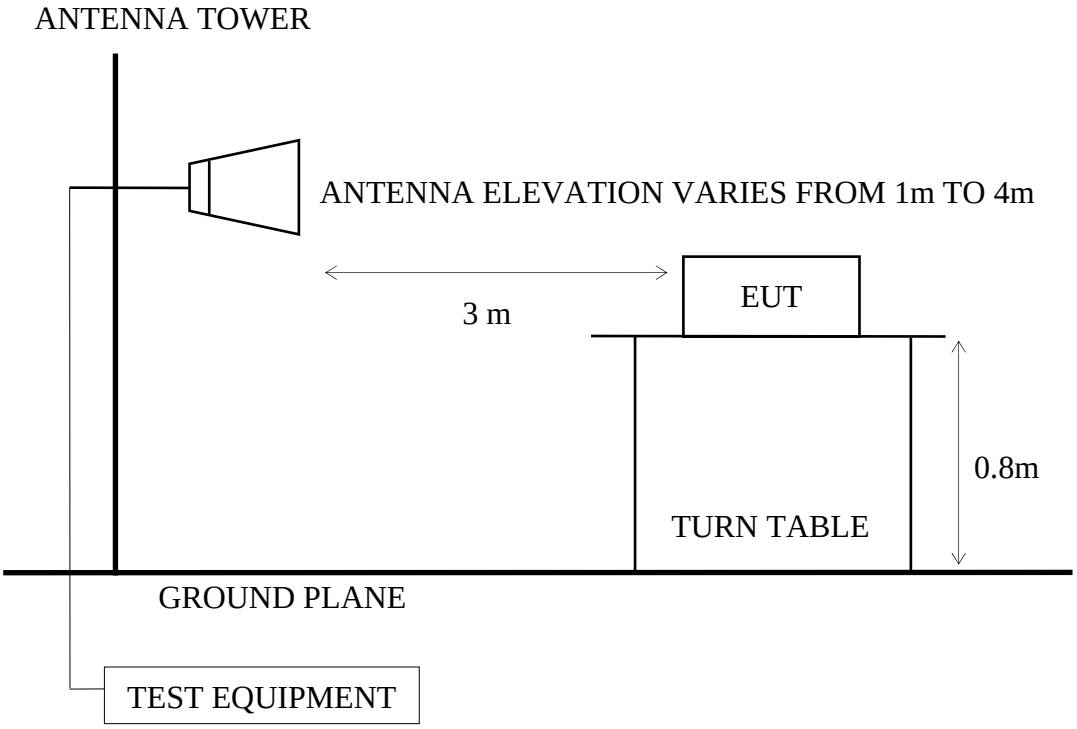
3.2.1. Block Diagram of connection between EUT and simulators



3.2.2. Semi-Anechoic Chamber (3m) Setup Diagram for 30-1000MHz



3.2.3. Semi-Anechoic Chamber (3m) Setup Diagram for above 1GHz



3.3. Radiated Emission Limits (§15.109, Class B & §15.209)

Frequency MHz	Distance Meters	Field Strengths Limits	
		μV/m	dBμV/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0
Above 1000	3	74.0 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark：
(1) Emission level (dBμV/m) = 20 log Emission level (μV/m)
(2) The tighter limit applies at the edge between two frequency bands.
(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.
(4) The limits in this table are based on CFR 47 Part 15.205(a)(b) and Part 15.209 (a).
(5) The over 1GHz limit, FCC limit is used based on CFR 47 Part 15.35 (b) and Part 15.205(b) & Part 15.209(e) and Part 15.207(c).

3.4. Operating Condition of EUT

3.4.1. Set up the EUT (Notebook PC) and simulator as shown on 3.2.1.

3.4.2. To turn on the power of all equipment.

3.4.3. The Bluetooth Module was installed in the Notebook PC (EUT), the Notebook PC was running test program “Broacom BlueTool V 1.0.0.3”.

3.4.4. Transmitting Mode : The EUT was set to continuously transmit signals at 2402MHz, 2441MHz and 2480MHz during the testing.

3.4.5. Receiver Mode : The EUT was set to continuously receive signals at 2441MHz during the testing.

3.5. Test Procedure

The EUT and its simulators were placed on a turn table which was 0.8 meter above the ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. 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 to 4 meters to find out the maximum emission level. Broadband antenna such as calibrated biconical and log-periodical antenna or horn antenna were used as a receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to FCC ANSI C63.4-2003 regulation, and the measurement guideline was according to FCC Public Notice DA 00-705.

The bandwidth of the R&S Test Receiver ESCS30 was set at 120kHz. (For 30MHz to 1000MHz)

The resolution bandwidth and video bandwidth of test spectrum analyzer is 1MHz for peak detection (PK) at frequency above 1GHz.

The resolution bandwidth of test spectrum analyzer is 1MHz and the video bandwidth is 10Hz for average detection (AV) at frequency above 1GHz.

The frequency range from 30MHz to 25GHz (Up to 10th harmonics from fundamental frequency) was checked. 30MHz to 1000MHz was measured with Qusai-Peak detector. Above 1GHz was measured with peak and average detector. For average reading in frequency from 5.5G to 25GHz, we checked it in 1 meter distance and with a shorter cable 2 meter instead of original's. There is no signal exist.

Note: The LGX30 build with 3.5G module, WiFi module and BT, it can be transmitted simultaneously. After evaluating, while 3.5 G module, WiFi and BT module transmit simultaneously is the worst case for radiation emission. The radiated spurious emission is performed in the worst case.

3.6. Radiated Emission Measurement Results

PASSED. (All the emissions not reported below are too low against the prescribed limits.)

EUT：Notebook PC M/N：LGX30

Test Date：Nov. 28, 2009 Temperature：23℃ Humidity：50%

For Frequency Range 30MHz-1000MHz:

[Note: Three types of modulation (8-DPSK,π /4DQPSK, GFSK) were evaluated but only the worst case (8-DPSK) was reported in this report.]

The EUT with the following test modes were tested during the testing and all the test results are listed in section 3.6.1.

No.	Test Mode and Frequency		Reference Test Data No.	
			Horizontal	Vertical
1.	Transmitting	2402MHz (CH0)	# 1	# 2
2.		2441MHz (CH39)	# 2	# 1
3.		2480MHz (CH78)	# 1	# 2
4.	Receiving	2441MHz (CH39)	# 2	# 1

* Type of modulation: 8-DPSK.

* All above final readings were measured with Quasi-Peak detector.

For Frequency Range above 1GHz:

[Note: Three types of modulation (8-DPSK,π /4DQPSK, GFSK) were evaluated but only the worst case (8-DPSK) was reported in this report.]

The EUT with the following test modes were tested during the testing and all the test results are listed in section 3.6.2.

No.	Test Mode and Frequency		Reference Test Data No.	
			Horizontal	Vertical
1.	Transmitting	2402MHz (CH0)	# 4, 10	# 3, 9
2.		2441MHz (CH39)	# 3, 9	# 4, 10
3.		2480MHz (CH78)	# 4, 9	# 3, 10
4.	Receiving	2441MHz (CH39)	# 3, 9	# 4, 10

* Type of modulation: 8-DPSK.

For Restricted Bands:

[Note: Three types of modulation (8-DPSK,π /4DQPSK, GFSK) were evaluated but only two types of modulation (8-DPSK and GFSK) were reported in this report.]

The EUT was tested in restricted bands and all the test results are listed in section 3.6.3. (The restricted bands defined in part 15.205(a))

No.	Test Mode and Frequency		Reference Test Data No.	
			Horizontal	Vertical
1.	Transmitting	2402MHz (CH0)	# 10, 11	# 9 , 12
2.		2480MHz (CH78)	# 15, 14	# 16, 13

* Type of modulation: 8-DPSK.

No.	Test Mode and Frequency		Reference Test Data No.	
			Horizontal	Vertical
1.	Transmitting	2402MHz (CH0)	# 2, 3	# 1 , 4
2.		2480MHz (CH78)	# 7, 6	# 8, 5

* Type of modulation: GFSK.

3.6.1. Frequency Range 30MHz-1000MHz Measurement Result

```
Site no.      : A/C Chamber                  Data no.   : 1
Dis. / Ant.   : 3m   VBA6106A/UHALP9108A     Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C
Env. / Ins.   : 8564EC  23*C/50%             Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2402(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	190.050	21.51	2.92	3.27	27.70	43.50	15.80	
2	267.650	24.79	3.70	1.89	30.38	46.00	15.62	
3	365.620	16.65	4.50	3.85	25.00	46.00	21.00	
4	534.400	19.57	7.00	0.22	26.79	46.00	19.21	
5	565.440	20.49	6.60	-0.16	26.93	46.00	19.07	
6	996.120	24.67	7.71	-1.90	30.47	54.00	23.53	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                  Data no.   : 2
Dis. / Ant.   : 3m   VBA6106A/UHALP9108A     Ant. pol.  : VERTICAL
Limit         : FCC PART-15C
Env. / Ins.   : 8564EC  23*C/50%             Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2402(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	192.960	21.66	3.00	3.88	28.54	43.50	14.96	
2	367.560	16.83	4.46	3.51	24.80	46.00	21.20	
3	534.400	19.57	7.00	2.93	29.50	46.00	16.50	
4	567.380	20.97	6.50	1.10	28.57	46.00	17.43	
5	697.360	23.32	6.50	-2.10	27.72	46.00	18.28	
6	796.300	24.04	6.90	-0.45	30.49	46.00	15.51	
7	999.030	24.76	7.80	-2.88	29.68	54.00	24.32	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 2
Dis. / Ant.   : 3m   VBA6106A/UHALP9108A       Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2441(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	191.990	21.60	3.00	1.85	26.46	43.50	17.04	
2	266.680	24.74	3.70	1.11	29.55	46.00	16.45	
3	365.620	16.65	4.50	5.34	26.49	46.00	19.51	
4	534.400	19.57	7.00	-0.24	26.33	46.00	19.67	
5	565.440	20.49	6.60	-1.40	25.69	46.00	20.31	
6	996.120	24.67	7.71	-2.72	29.66	54.00	24.34	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 1
Dis. / Ant.   : 3m   VBA6106A/UHALP9108A       Ant. pol.  : VERTICAL
Limit         : FCC PART-15C
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2441(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	144.460	20.31	2.60	3.67	26.59	43.50	16.91	
2	197.810	22.02	3.00	2.45	27.48	43.50	16.02	
3	367.560	16.83	4.46	4.24	25.53	46.00	20.47	
4	435.460	17.41	5.30	1.97	24.68	46.00	21.32	
5	534.400	19.57	7.00	0.89	27.46	46.00	18.54	
6	800.180	24.14	6.90	-2.34	28.69	46.00	17.31	
7	996.120	24.67	7.71	-1.74	30.63	54.00	23.37	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 1
Dis. / Ant.   : 3m   VBA6106A/UHALP9108A       Ant. pol.  : VERTICAL
Limit         : FCC PART-15C
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2480(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	146.400	20.47	2.50	3.56	26.53	43.50	16.97	
2	197.810	22.02	3.00	3.47	28.49	43.50	15.01	
3	365.620	16.65	4.50	4.25	25.40	46.00	20.60	
4	534.400	19.57	7.00	0.79	27.36	46.00	18.64	
5	565.440	20.49	6.60	0.03	27.12	46.00	18.88	
6	999.030	24.76	7.80	-1.73	30.83	54.00	23.17	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : @AC Chamber                    Data no.   : 2
Dis. / Ant.   : 3m   VBA6106A/UHALP9108A       Ant. pol.  : VERTICAL
Limit         : FCC PART-15C
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2480(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	146.400	20.47	2.50	4.47	27.44	43.50	16.06	
2	197.810	22.02	3.00	2.46	27.48	43.50	16.02	
3	367.560	16.83	4.46	4.03	25.32	46.00	20.68	
4	435.460	17.41	5.30	4.48	27.19	46.00	18.81	
5	534.400	19.57	7.00	0.82	27.39	46.00	18.61	
6	800.180	24.14	6.90	-0.95	30.08	46.00	15.92	
7	996.120	24.67	7.71	-1.96	30.41	54.00	23.59	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 2
Dis. / Ant.   : 3m   VBA6106A/UHALP9108A       Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : RX2441(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	189.080	21.46	2.90	3.91	28.27	43.50	15.23	
2	267.650	24.79	3.70	1.36	29.85	46.00	16.15	
3	365.620	16.65	4.50	3.95	25.10	46.00	20.90	
4	534.400	19.57	7.00	0.26	26.83	46.00	19.17	
5	565.440	20.49	6.60	-0.59	26.50	46.00	19.50	
6	996.120	24.67	7.71	-0.67	31.70	54.00	22.30	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 1
Dis. / Ant.   : 3m   VBA6106A/UHALP9108A       Ant. pol.  : VERTICAL
Limit         : FCC PART-15C
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : RX2441(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	160.950	20.82	2.70	3.90	27.42	43.50	16.08	
2	191.020	21.55	3.00	5.27	29.82	43.50	13.68	
3	365.620	16.65	4.50	4.53	25.68	46.00	20.32	
4	498.510	18.79	6.50	1.93	27.22	46.00	18.78	
5	565.440	20.49	6.60	2.09	29.18	46.00	16.82	
6	796.300	24.04	6.90	-1.48	29.46	46.00	16.54	
7	999.030	24.76	7.80	-2.99	29.57	54.00	24.43	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

3.6.2. Frequency Range Above 1GHz Measurement Results

Test Mode: Transmitting Mode, Frequency: 2402MHz (CH0)

```
Site no.      : A/C Chamber                    Data no.   : 4
Dis. / Ant.   : 3m   3115(3775)                Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2402(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1062.160	24.49	4.31	16.23	45.03	74.00	28.97	Peak
2	1216.720	24.93	4.61	15.23	44.77	74.00	29.23	Peak
3	1502.320	25.77	5.43	15.80	47.00	74.00	27.00	Peak
4	1599.760	26.10	6.14	14.31	46.55	74.00	27.45	Peak
5	2132.320	27.84	6.03	11.84	45.70	74.00	28.30	Peak
6	2661.520	28.83	6.73	10.16	45.73	74.00	28.27	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 3
Dis. / Ant.   : 3m   3115(3775)                Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2402(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	1065.520	24.49	4.32	18.70	47.51	74.00	26.49	Peak
2	1330.960	25.22	4.93	22.66	52.80	74.00	21.20	Peak
3	1502.320	25.77	5.43	19.23	50.43	74.00	23.57	Peak
4	1599.760	26.10	6.14	16.14	48.38	74.00	25.62	Peak
5	2128.960	27.82	6.02	11.28	45.13	74.00	28.87	Peak
6	2661.520	28.83	6.73	11.90	47.47	74.00	26.53	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(3775)
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : 8564EC 23*C/50%
EUT : LG NB PC M/N:LGX30
Power Rating : 120Vac/60Hz
Test Mode : TX2402(BT-8DPSK)

Data no. : 10
Ant. pol. : HORIZONTAL
Engineer : Jarwei Wang

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1062.160	24.49	4.31	12.25	41.05	54.00	12.95	Average
2	1216.720	24.93	4.61	11.08	40.62	54.00	13.38	Average
3	1502.320	25.77	5.43	11.42	42.62	54.00	11.38	Average
4	1599.760	26.10	6.14	10.86	43.10	54.00	10.90	Average
5	2132.320	27.84	6.03	7.50	41.37	54.00	12.63	Average
6	2661.520	28.83	6.73	6.19	41.75	54.00	12.25	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(3775)
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : 8564EC 23*C/50%
EUT : LG NB PC M/N:LGX30
Power Rating : 120Vac/60Hz
Test Mode : TX2402(BT-8DPSK)

Data no. : 9
Ant. pol. : VERTICAL
Engineer : Jarwei Wang

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1065.520	24.49	4.32	12.56	41.37	54.00	12.63	Average
2	1330.960	25.22	4.93	15.48	45.62	54.00	8.38	Average
3	1502.320	25.77	5.43	11.93	43.12	54.00	10.88	Average
4	1599.760	26.10	6.14	11.23	43.47	54.00	10.53	Average
5	2128.960	27.82	6.02	7.94	41.78	54.00	12.22	Average
6	2661.520	28.83	6.73	7.19	42.75	54.00	11.25	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Test Mode: Transmitting Mode, Frequency: 2441MHz (CH39)

```
Site no.      : A/C Chamber                    Data no.  : 3
Dis. / Ant.   : 3m   3115(3775)                Ant. pol. : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%               Engineer  : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2441(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1065.520	24.49	4.32	15.87	44.68	74.00	29.32	Peak
2	1502.320	25.77	5.43	15.22	46.42	74.00	27.58	Peak
3	1599.760	26.10	6.14	14.89	47.13	74.00	26.87	Peak
4	2128.960	27.82	6.02	12.10	45.95	74.00	28.05	Peak
5	2392.720	28.10	6.34	10.00	44.44	74.00	29.56	Peak
6	2669.920	28.83	6.74	9.73	45.31	74.00	28.69	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.  : 4
Dis. / Ant.   : 3m   3115(3775)                Ant. pol. : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%               Engineer  : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2441(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1062.160	24.49	4.31	18.43	47.23	74.00	26.77	Peak
2	1330.960	25.22	4.93	18.16	48.30	74.00	25.70	Peak
3	1594.720	26.10	6.12	16.89	49.11	74.00	24.89	Peak
4	2128.960	27.82	6.02	13.24	47.09	74.00	26.91	Peak
5	2397.760	28.10	6.35	13.37	47.82	74.00	26.18	Peak
6	2666.560	28.83	6.73	10.65	46.21	74.00	27.79	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 9
Dis. / Ant.   : 3m   3115(3775)                Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2441(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1065.520	24.49	4.32	11.55	40.35	54.00	13.65	Average
2	1502.320	25.77	5.43	11.48	42.68	54.00	11.32	Average
3	1599.760	26.10	6.14	9.79	42.02	54.00	11.98	Average
4	2128.960	27.82	6.02	9.00	42.84	54.00	11.16	Average
5	2392.720	28.10	6.34	6.32	40.75	54.00	13.25	Average
6	2669.920	28.83	6.74	5.49	41.07	54.00	12.93	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 10
Dis. / Ant.   : 3m   3115(3775)                Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2441(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1062.160	24.49	4.31	12.74	41.54	54.00	12.46	Average
2	1330.960	25.22	4.93	12.91	43.05	54.00	10.95	Average
3	1594.720	26.10	6.12	11.62	43.85	54.00	10.15	Average
4	2128.960	27.82	6.02	9.20	43.05	54.00	10.95	Average
5	2397.760	28.10	6.35	9.00	43.45	54.00	10.55	Average
6	2666.560	28.83	6.73	6.92	42.48	54.00	11.52	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Test Mode: Transmitting Mode, Frequency: 2480MHz (CH78)

```
Site no.      : A/C Chamber                    Data no.   : 4
Dis. / Ant.   : 3m   3115(3775)                Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2480(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1065.520	24.49	4.32	15.48	44.29	74.00	29.71	Peak
2	1502.320	25.77	5.43	15.13	46.33	74.00	27.67	Peak
3	1594.720	26.10	6.12	13.24	45.46	74.00	28.54	Peak
4	2123.920	27.82	6.01	9.92	43.75	74.00	30.25	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 3
Dis. / Ant.   : 3m   3115(3775)                Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2480(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1065.520	24.49	4.32	18.61	47.42	74.00	26.58	Peak
2	1325.920	25.22	4.91	15.21	45.34	74.00	28.66	Peak
3	1502.320	25.77	5.43	16.51	47.71	74.00	26.29	Peak
4	1594.720	26.10	6.12	17.47	49.69	74.00	24.31	Peak
5	2132.320	27.84	6.03	11.52	45.38	74.00	28.62	Peak
6	2661.520	28.83	6.73	12.39	47.96	74.00	26.04	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 9
Dis. / Ant.   : 3m   3115(3775)                Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2480(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1065.520	24.49	4.32	12.17	40.98	54.00	13.02	Average
2	1502.320	25.77	5.43	11.34	42.54	54.00	11.46	Average
3	1594.720	26.10	6.12	9.63	41.85	54.00	12.15	Average
4	2123.920	27.82	6.01	5.61	39.45	54.00	14.55	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 10
Dis. / Ant.   : 3m   3115(3775)                Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2480(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1065.520	24.49	4.32	13.24	42.05	54.00	11.95	Average
2	1325.920	25.22	4.91	10.65	40.78	54.00	13.22	Average
3	1502.320	25.77	5.43	10.59	41.78	54.00	12.22	Average
4	1594.720	26.10	6.12	11.52	43.74	54.00	10.26	Average
5	2132.320	27.84	6.03	6.16	40.03	54.00	13.97	Average
6	2661.520	28.83	6.73	7.79	43.36	54.00	10.64	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Test Mode: Receiving Mode, Frequency: 2441MHz (CH39)

```
Site no.      : A/C Chamber                    Data no.   : 3
Dis. / Ant.   : 3m   3115(3775)                Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : RX2441(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1062.160	24.49	4.31	14.68	43.48	74.00	30.52	Peak
2	1334.320	25.27	4.94	13.33	43.54	74.00	30.46	Peak
3	1502.320	25.77	5.43	13.93	45.13	74.00	28.87	Peak
4	1599.760	26.10	6.14	13.22	45.46	74.00	28.54	Peak
5	2132.320	27.84	6.03	10.76	44.62	74.00	29.38	Peak
6	2392.720	28.10	6.34	10.14	44.58	74.00	29.42	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 4
Dis. / Ant.   : 3m   3115(3775)                Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : RX2441(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1065.520	24.49	4.32	16.28	45.09	74.00	28.91	Peak
2	1334.320	25.27	4.94	18.36	48.57	74.00	25.43	Peak
3	1599.760	26.10	6.14	14.27	46.51	74.00	27.49	Peak
4	1863.520	27.17	6.57	10.86	44.59	74.00	29.41	Peak
5	2128.960	27.82	6.02	10.34	44.19	74.00	29.81	Peak
6	2401.120	28.10	6.35	13.02	47.47	74.00	26.53	Peak
7	2659.840	28.83	6.73	12.06	47.63	74.00	26.37	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 9
Dis. / Ant.   : 3m   3115(3775)                Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : RX2441(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1062.160	24.49	4.31	9.25	38.05	54.00	15.95	Average
2	1334.320	25.27	4.94	10.14	40.34	54.00	13.66	Average
3	1502.320	25.77	5.43	10.25	41.45	54.00	12.55	Average
4	1599.760	26.10	6.14	9.41	41.65	54.00	12.35	Average
5	2132.320	27.84	6.03	6.52	40.38	54.00	13.62	Average
6	2392.720	28.10	6.34	5.74	40.18	54.00	13.82	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

```
Site no.      : A/C Chamber                    Data no.   : 10
Dis. / Ant.   : 3m   3115(3775)                Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : 8564EC  23*C/50%               Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : RX2441(BT-8DPSK)
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	1065.520	24.49	4.32	12.27	41.08	54.00	12.92	Average
2	1334.320	25.27	4.94	12.34	42.55	54.00	11.45	Average
3	1599.760	26.10	6.14	9.76	42.00	54.00	12.00	Average
4	1863.520	27.17	6.57	7.02	40.75	54.00	13.25	Average
5	2128.960	27.82	6.02	6.78	40.62	54.00	13.38	Average
6	2401.120	28.10	6.35	8.01	42.45	54.00	11.55	Average
7	2659.840	28.83	6.73	8.31	43.88	54.00	10.12	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

3.6.3.Restricted Bands Measurement Results

Date of Test： Nov. 28, 2009 Temperature： 23℃

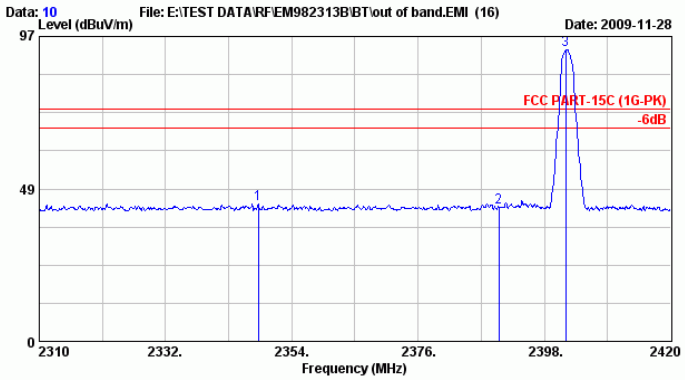
EUT： Notebook PC Humidity： 50%

Test Mode： Transmitting Mode, Frequency: 2402MHz (CH0), 8-DPSK

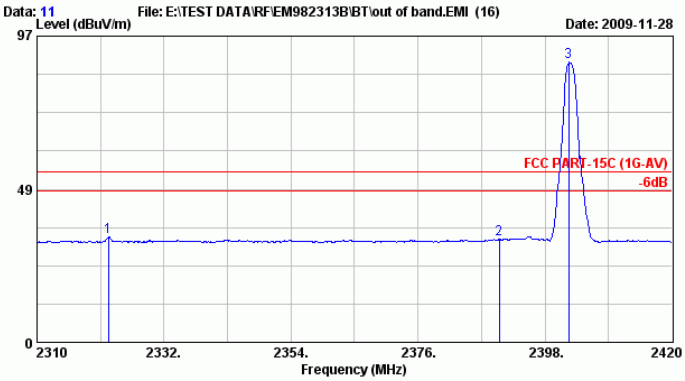
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
Peak *	2348.170	28.04	6.29	9.31	43.64	74.00	30.36
Average *	2322.320	28.03	6.25	-0.95	33.33	54.00	20.67

Remark ： 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
2. Low frequency section (spurious in the restricted band 2310-2390MHz).
3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

AUDIX TECHNOLOGY Corp. EMC Laboratory
No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei County, Taiwan R.O.C. Post Code:24443
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:ttemc@ttemc.com.tw




```
Site no.      : A/C Chamber                Data no.   : 10
Dis. / Ant.   : 3m   3115(3775)            Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%           Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2402(BT-8DPSK)
```




```
Site no.      : A/C Chamber                Data no.   : 11
Dis. / Ant.   : 3m   3115(3775)            Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : 8564EC  23*C/50%           Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2402(BT-8DPSK)
```

Date of Test： Nov. 28, 2009 Temperature： 23℃

EUT： Notebook PC Humidity： 50%

Test Mode： Transmitting Mode, Frequency: 2402MHz (CH0), 8-DPSK

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
Peak *	2388.870	28.10	6.34	15.83	50.27	74.00	23.73
Average *	2322.320	28.03	6.25	-0.13	34.15	54.00	19.85

Remark ：
1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
2. Low frequency section (spurious in the restricted band 2310-2390MHz).
3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

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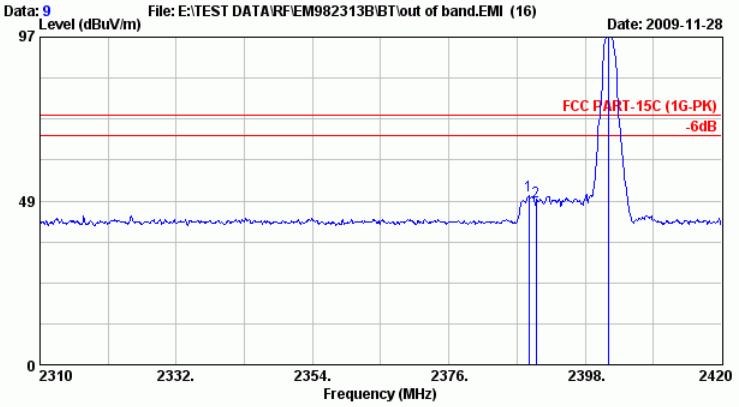
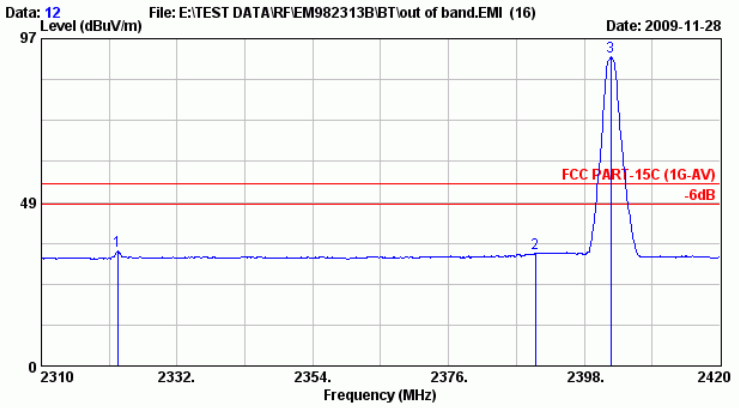
AUDIX TECHNOLOGY Corp. EMC Laboratory
No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei County, Taiwan R.O.C. Post Code:24443
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:ttemc@ttemc.com.tw




```
Site no.      : A/C Chamber                Data no.   : 9
Dis. / Ant.   : 3m   3115(3775)            Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%           Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2402(BT-8DPSK)
```




```
Site no.      : A/C Chamber                Data no.   : 12
Dis. / Ant.   : 3m   3115(3775)            Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : 8564EC  23*C/50%           Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2402(BT-8DPSK)
```

Date of Test： Nov. 28, 2009 Temperature： 23℃

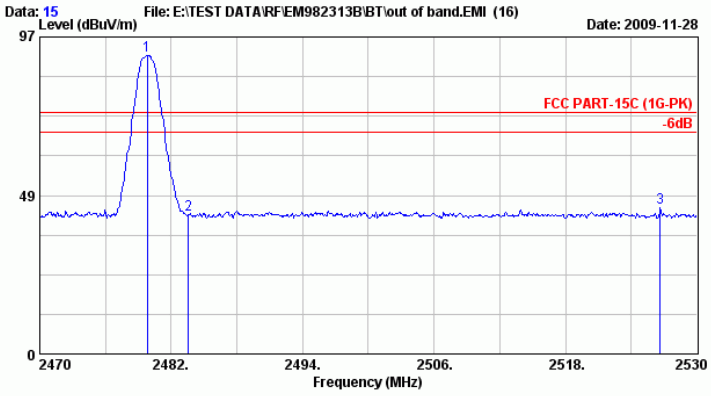
EUT： Notebook PC Humidity： 50%

Test Mode： Transmitting Mode, Frequency: 2480MHz (CH78), 8-DPSK

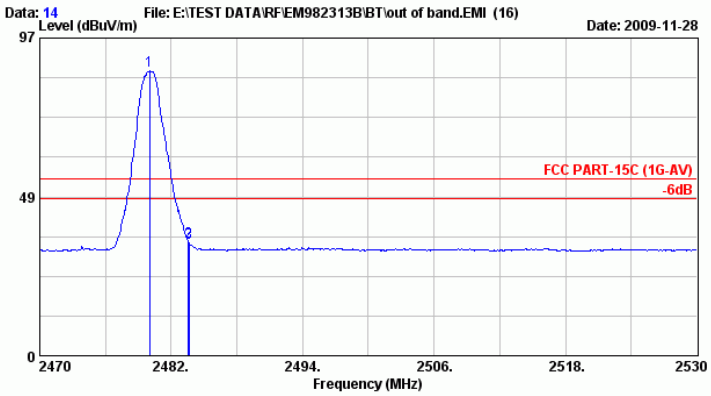
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
Peak *	2483.560	28.18	6.45	7.86	42.49	74.00	31.51
Average *	2483.560	28.18	6.45	0.28	34.91	54.00	19.09

Remark ： 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
2. Low frequency section (spurious in the restricted band 2310-2390MHz).
3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

AUDIX TECHNOLOGY Corp. EMC Laboratory
No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei County, Taiwan R.O.C. Post Code:24443
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:ttemc@ttemc.com.tw




```
Site no.      : A/C Chamber                Data no.   : 15
Dis. / Ant.   : 3m   3115(3775)            Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%           Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2480(BT-8DPSK)
```




```
Site no.      : A/C Chamber                Data no.   : 14
Dis. / Ant.   : 3m   3115(3775)            Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : 8564EC  23*C/50%           Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2480(BT-8DPSK)
```

Date of Test： Nov. 28, 2009 Temperature： 23℃

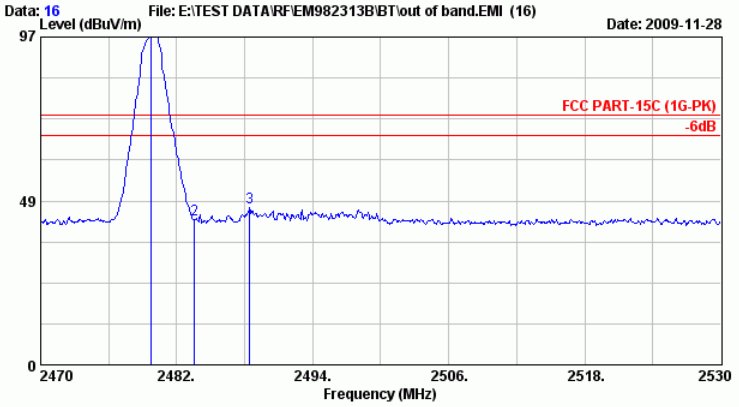
EUT： Notebook PC Humidity： 50%

Test Mode： Transmitting Mode, Frequency: 2480MHz (CH78), 8-DPSK

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
Peak *	2483.560	28.18	6.45	8.235	42.87	74.00	31.13
Average *	2483.560	28.18	6.45	5.18	39.81	54.00	14.19

Remark ： 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
2. Low frequency section (spurious in the restricted band 2483.5-2500MHz).
3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

AUDIX TECHNOLOGY Corp. EMC Laboratory
No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei County, Taiwan R.O.C. Post Code:24443
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:ttemc@ttemc.com.tw




```
Site no.      : A/C Chamber                Data no.   : 16
Dis. / Ant.   : 3m   3115(3775)            Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%           Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2480(BT-8DPSK)
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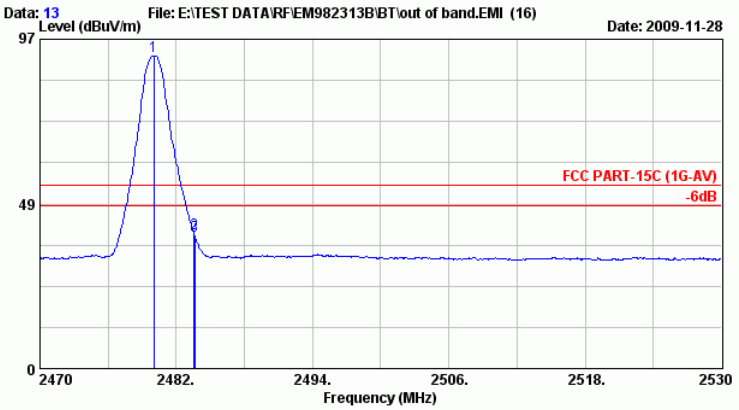


```
Site no.      : A/C Chamber                Data no.   : 13
Dis. / Ant.   : 3m   3115(3775)            Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : 8564EC  23*C/50%           Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2480(BT-8DPSK)
```

Date of Test： Nov. 28, 2009 Temperature： 23℃

EUT： Notebook PC Humidity： 50%

Test Mode： Transmitting Mode, Frequency: 2402MHz (CH0), GFSK

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
Peak *	2388.320	28.10	6.34	10.76	45.20	74.00	28.80
Average *	2322.320	28.03	6.25	-0.71	33.57	54.00	20.43

Remark ：
1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
2. Low frequency section (spurious in the restricted band 2310-2390MHz).
3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

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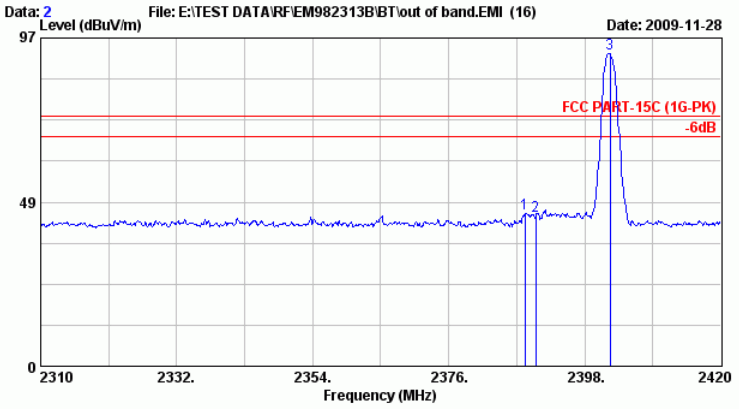
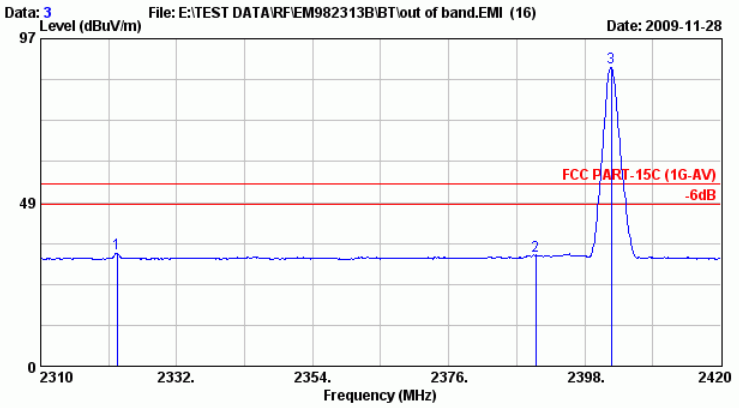
No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei County, Taiwan R.O.C. Post Code:24443
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:ttemc@ttemc.com.tw




```
Site no.      : A/C Chamber                Data no.   : 2
Dis. / Ant.   : 3m   3115(3775)            Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%           Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2402(BT-GFSK)
```




```
Site no.      : A/C Chamber                Data no.   : 3
Dis. / Ant.   : 3m   3115(3775)            Ant. pol.  : HORIZONTAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : 8564EC  23*C/50%           Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2402(BT-GFSK)
```

Date of Test： Nov. 28, 2009 Temperature： 23℃

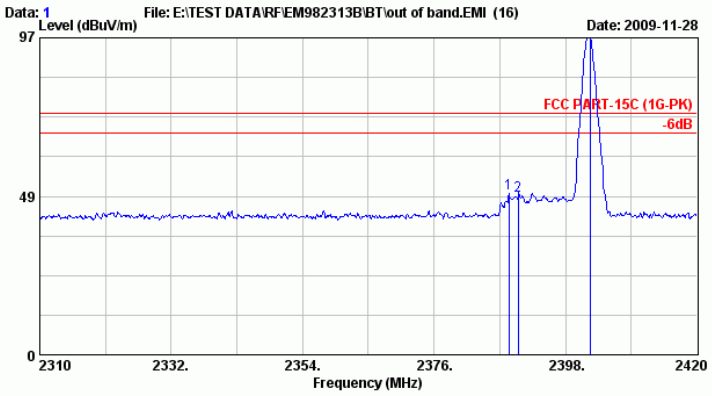
EUT： Notebook PC Humidity： 50%

Test Mode： Transmitting Mode, Frequency: 2402MHz (CH0), GFSK

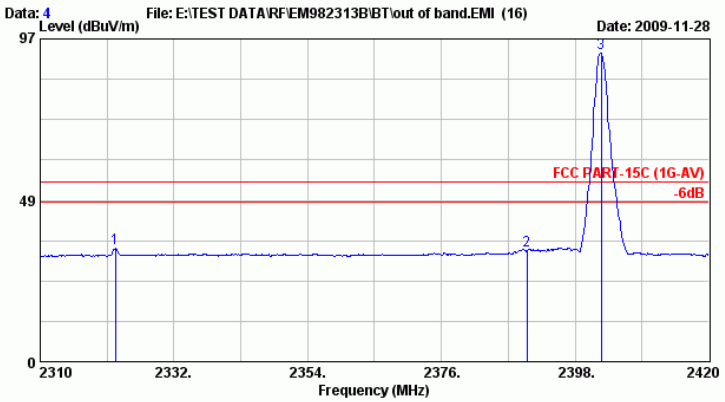
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
Peak *	2388.540	28.10	6.34	14.78	49.22	74.00	24.78
Average *	2322.320	28.03	6.25	-0.04	34.24	54.00	19.76

Remark ： 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
2. Low frequency section (spurious in the restricted band 2310-2390MHz).
3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

AUDIX TECHNOLOGY Corp. EMC Laboratory
No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei County, Taiwan R.O.C. Post Code:24443
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:ttemc@ttemc.com.tw



Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(3775)
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : 8564EC 23*C/50%
EUT : LG NB PC M/N:LGX30
Power Rating : 120Vac/60Hz
Test Mode : TX2402(BT-GFSK)
Data no. : 1
Ant. pol. : VERTICAL
Engineer : Jarwei Wang



Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(3775)
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : 8564EC 23*C/50%
EUT : LG NB PC M/N:LGX30
Power Rating : 120Vac/60Hz
Test Mode : TX2402(BT-GFSK)
Data no. : 4
Ant. pol. : VERTICAL
Engineer : Jarwei Wang

Date of Test： Nov. 28, 2009 Temperature： 23℃

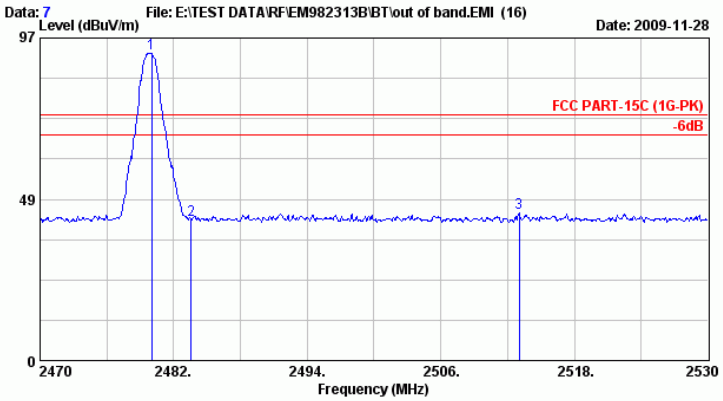
EUT： Notebook PC Humidity： 50%

Test Mode： Transmitting Mode, Frequency: 2480MHz (CH78), GFSK

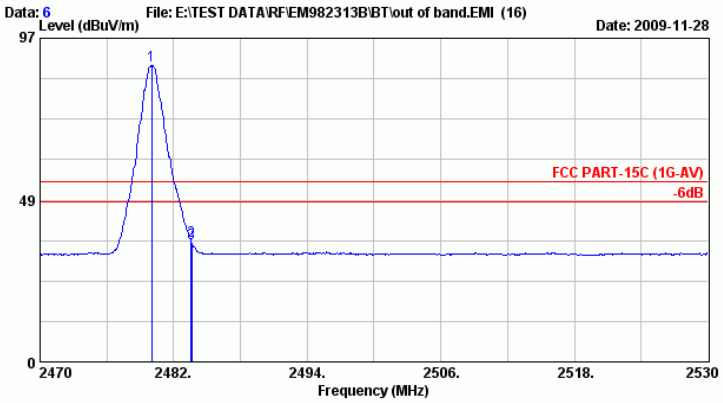
	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
Peak *	2483.560	28.18	6.45	7.80	42.43	74.00	31.57
Average *	2483.560	28.18	6.45	1.50	36.13	54.00	17.87

Remark ： 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
2. Low frequency section (spurious in the restricted band 2310-2390MHz).
3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

AUDIX TECHNOLOGY Corp. EMC Laboratory
No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei County, Taiwan R.O.C. Post Code:24443
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:ttemc@ttemc.com.tw



Site no. : A/C Chamber Data no. : 7
Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : 8564EC 23*C/50% Engineer : Jarwei Wang
EUT : LG NB PC M/N:LGX30
Power Rating : 120Vac/60Hz
Test Mode : TX2480(BT-GFSK)



Site no. : A/C Chamber Data no. : 6
Dis. / Ant. : 3m 3115(3775) Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : 8564EC 23*C/50% Engineer : Jarwei Wang
EUT : LG NB PC M/N:LGX30
Power Rating : 120Vac/60Hz
Test Mode : TX2480(BT-GFSK)

Date of Test： Nov. 28, 2009 Temperature： 23℃

EUT： Notebook PC Humidity： 50%

Test Mode： Transmitting Mode, Frequency: 2480MHz (CH78), GFSK

	Emission Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
Peak *	2483.560	28.18	6.45	8.63	43.26	74.00	30.74
Average *	2483.560	28.18	6.45	3.51	38.14	54.00	15.86

Remark ： 1. Emission Level = Antenna Factor + Cable Loss + Meter Reading.
2. Low frequency section (spurious in the restricted band 2310-2390MHz).
3. '*' The field strength of emission appearing within Part 15.205(a) shall not exceed the limits shown in section 15.209.

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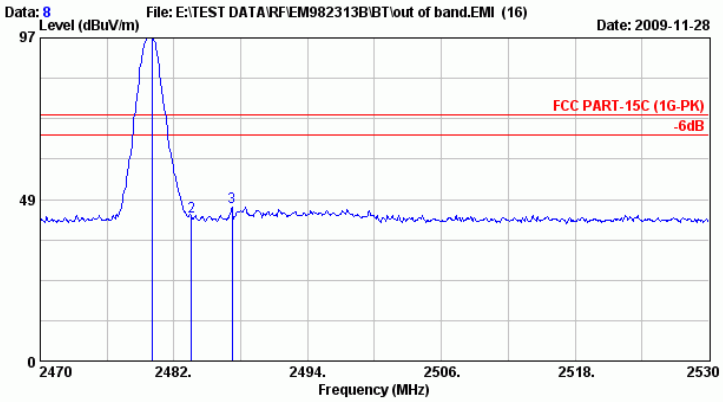
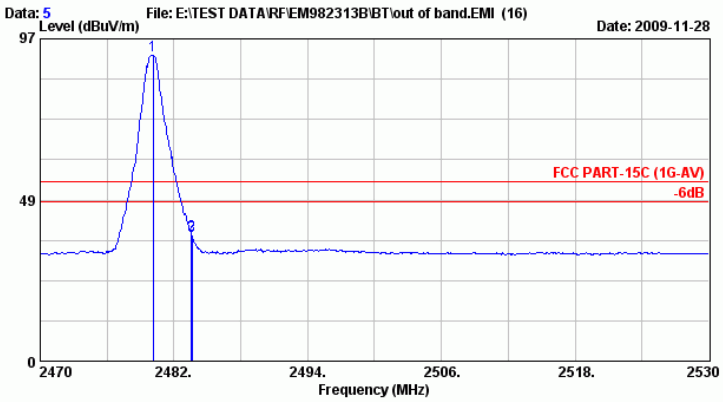
AUDIX TECHNOLOGY Corp. EMC Laboratory
No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei County, Taiwan R.O.C. Post Code:24443
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:ttemc@ttemc.com.tw




```
Site no.      : A/C Chamber                Data no.   : 8
Dis. / Ant.   : 3m   3115(3775)            Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-PK)
Env. / Ins.   : 8564EC  23*C/50%           Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2480(BT-GFSK)
```




```
Site no.      : A/C Chamber                Data no.   : 5
Dis. / Ant.   : 3m   3115(3775)            Ant. pol.  : VERTICAL
Limit         : FCC PART-15C (1G-AV)
Env. / Ins.   : 8564EC  23*C/50%           Engineer   : Jarwei Wang
EUT           : LG NB PC M/N:LGX30
Power Rating  : 120Vac/60Hz
Test Mode     : TX2480(BT-GFSK)
```

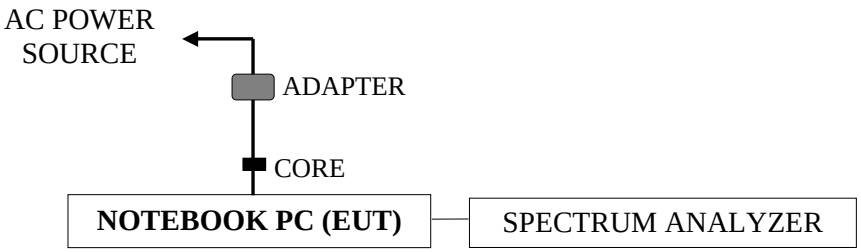
4. 20dB BANDWIDTH MEASUREMENT

4.1. Test Equipment

The following test equipment was used during the 20dB bandwidth measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Jul. 23, 09’	Jul. 22, 10’

4.2. Block Diagram of Test Setup



4.3. Specification Limits (§15.247(a)(1))

Alternatively, frequency hopping systems operating in the 2400-2483.5MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

4.4. Operating Condition of EUT

4.4.1. Set up the EUT and simulator as shown on 4.2.

4.4.2. To turn on the power of all equipment.

4.4.3. The EUT (Notebook PC) was on transmitting frequency function during the testing.

4.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The RBW of the fundamental frequency was measure by spectrum analyzer 1% of the 20dB bandwidth and the setting equal to RBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.
The measurement guideline was according to FCC Public Notice DA 00-705.

4.6. Test Results

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

[Note: Three types of modulation (8-DPSK,π /4DQPSK, GFSK) were evaluated but only two types of modulation (8-DPSK and GFSK) were reported in this report.]

EUT：Notebook PC M/N：LGX30

Test Date : Nov. 28, 2009 Temperature : 26 ℃ Humidity : 55 %

4.6.1.Type of Modulation: 8-DPSK

No.	Channel	Test Frequency	**20dB Bandwidth**	**2/3 (20dB Bandwidth)**
1.	0	2402MHz	**1.350MHz**	**0.900MHz**
2.	39	2441MHz	**1.355MHz**	**0.903MHz**
3.	78	2480MHz	**1.360MHz**	**0.906MHz**

The maximum two-thirds of the 20dB bandwidth shall be at maximum 0.906MHz.

4.6.2.Type of Modulation: GFSK

No.	Channel	Test Frequency	**20dB Bandwidth**	**2/3 (20dB Bandwidth)**
1.	0	2402MHz	**930kHz**	**620kHz**
2.	39	2441MHz	**930kHz**	**620kHz**
3.	78	2480MHz	**930kHz**	**620kHz**

The maximum two-thirds of the 20dB bandwidth shall be at maximum 1.286MHz.

Figure 1: 8-DPSK, Channel 0, Frequency: 2402MHz

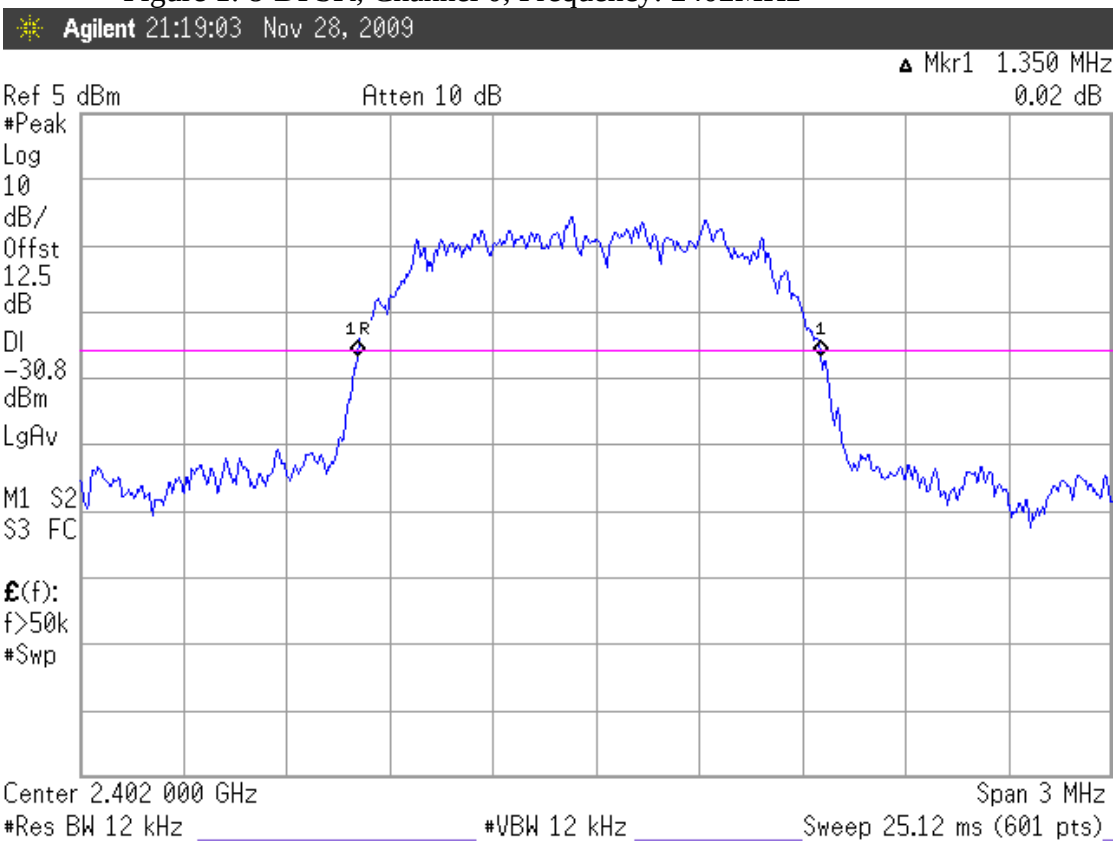


Figure 2: 8-DPSK, Channel 39, Frequency: 2441MHz

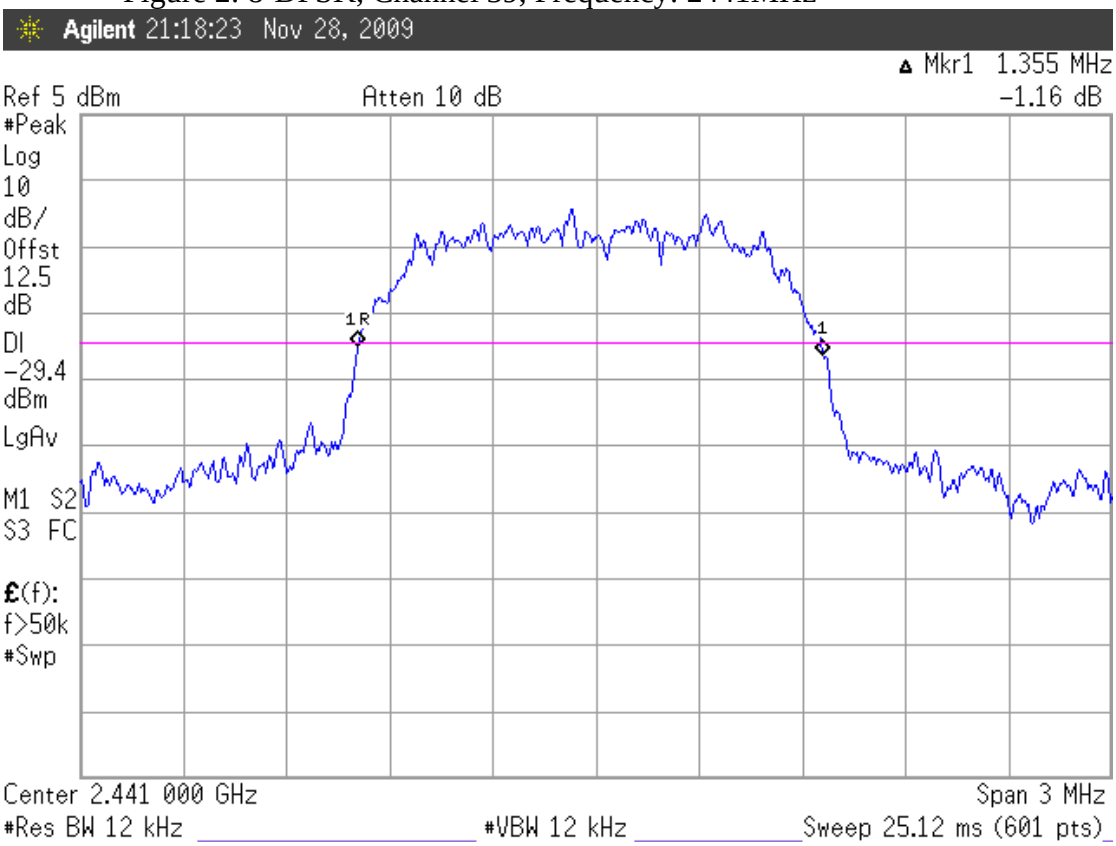


Figure 3: 8-DPSK, Channel 78, Frequency: 2480MHz

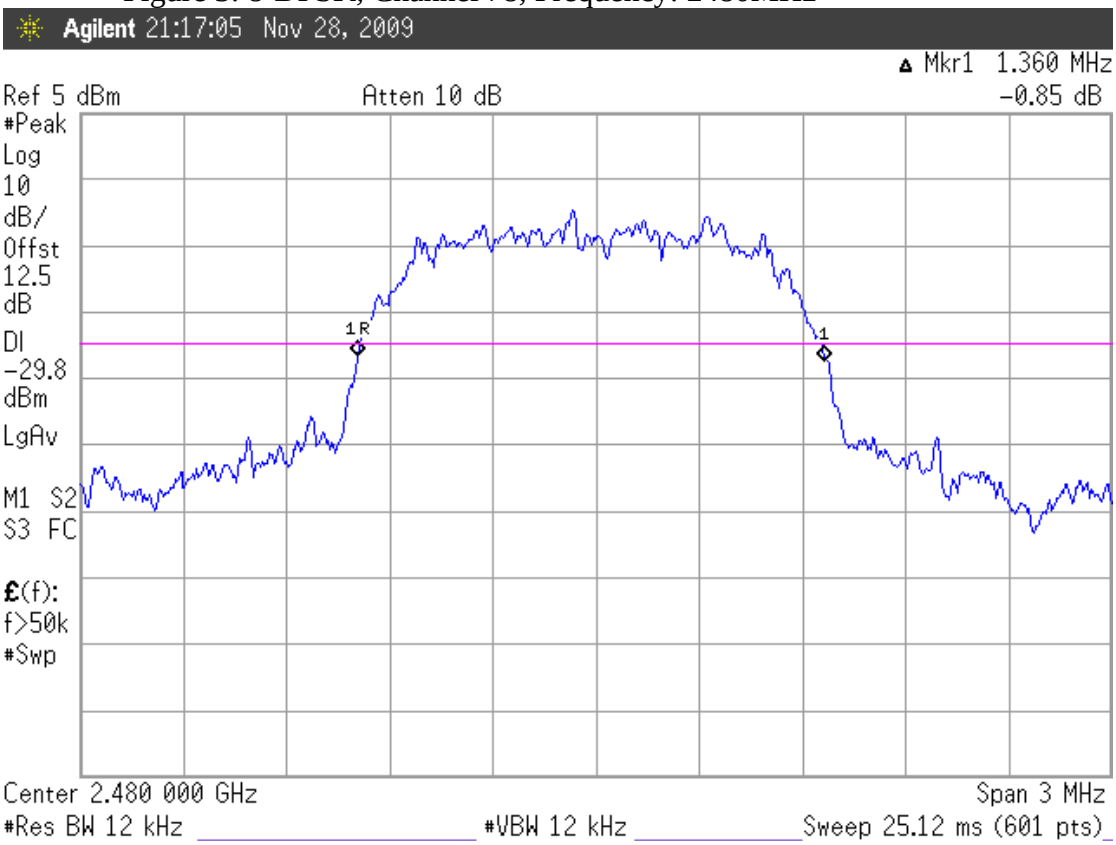


Figure 4: GFSK, Channel 0, Frequency: 2402MHz

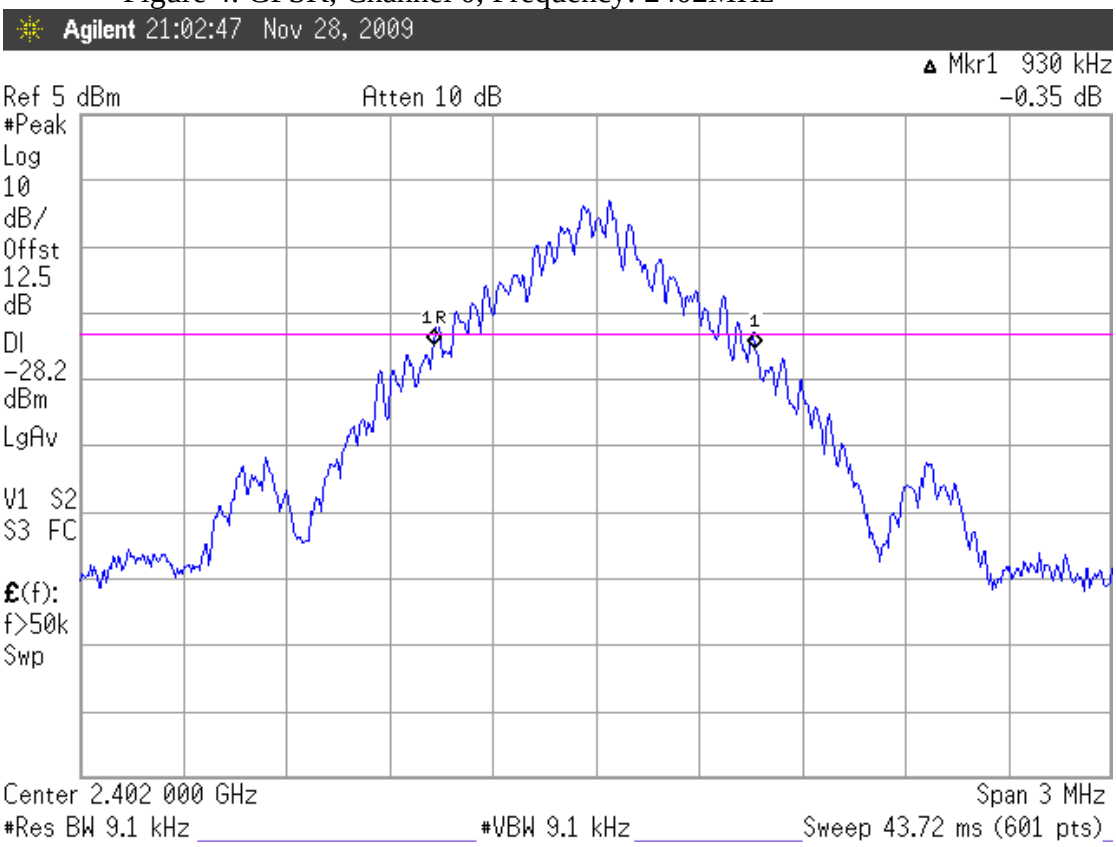


Figure 5: GFSK, Channel 39, Frequency: 2441MHz

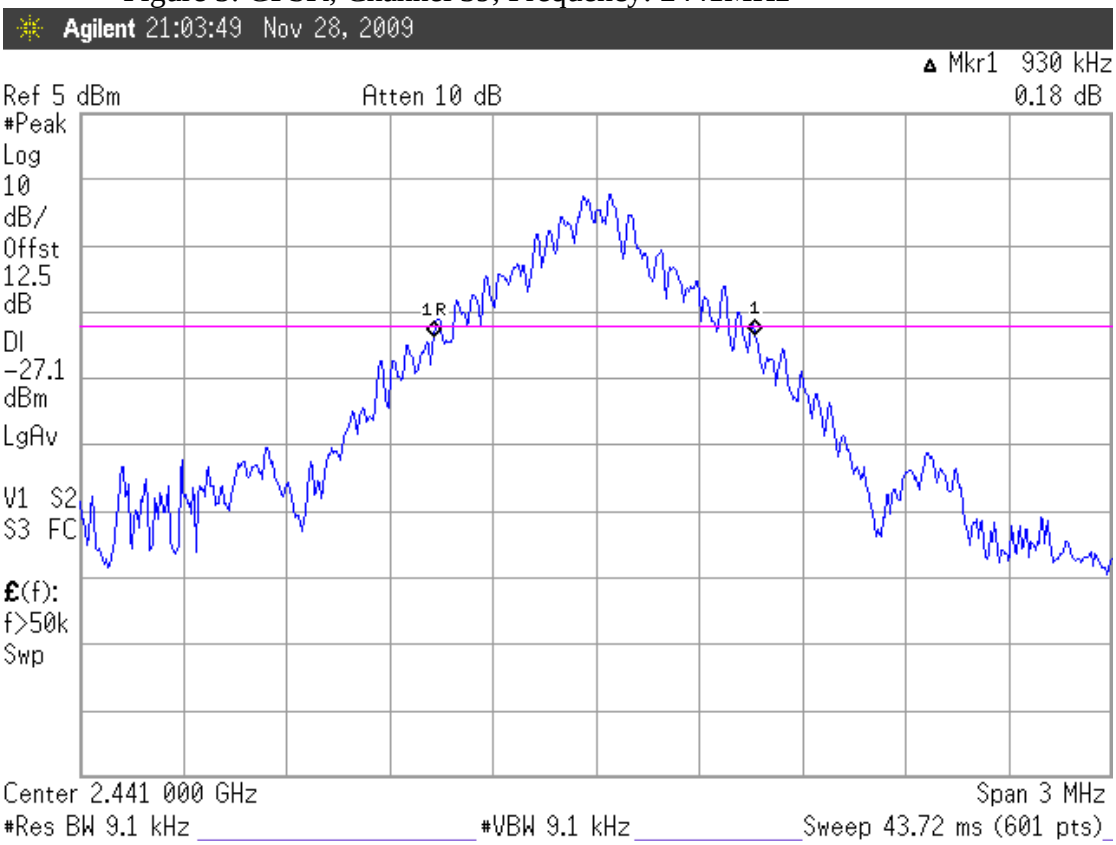
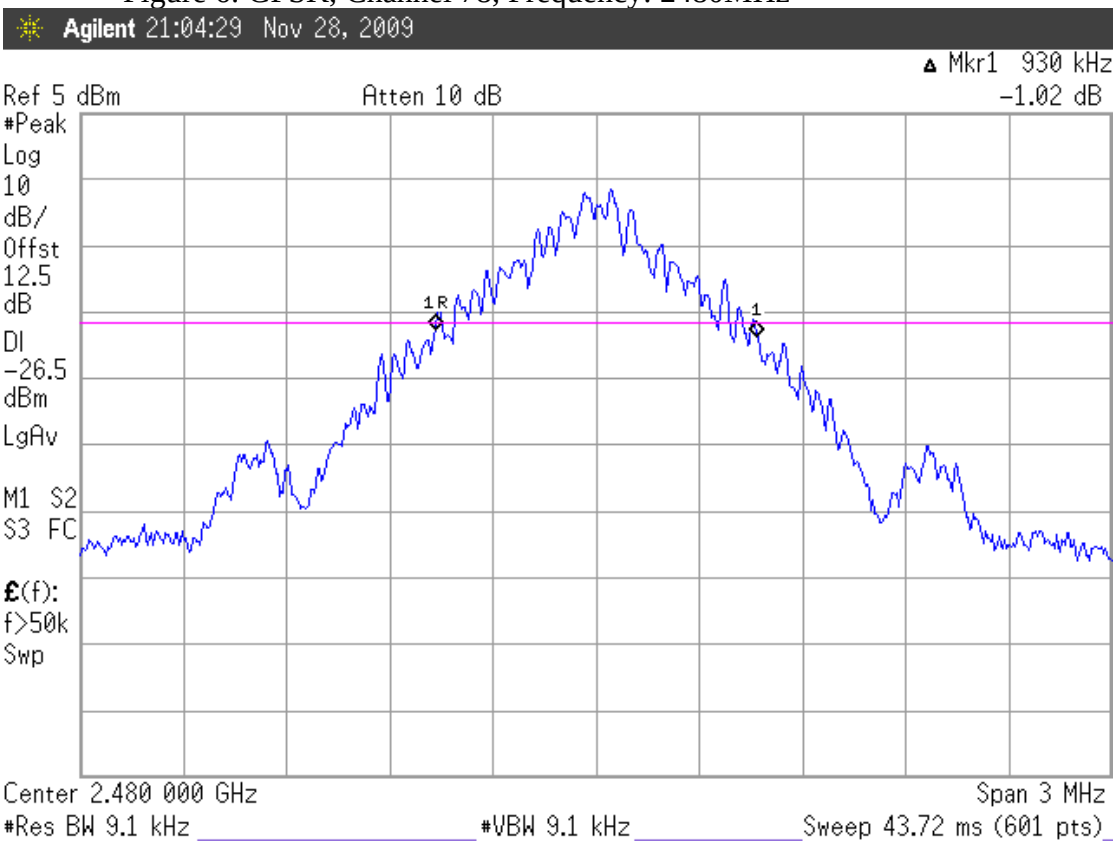


Figure 6: GFSK, Channel 78, Frequency: 2480MHz



5. CARRIER FREQUENCY SEPARATION MEASUREMENT

5.1. Test Equipment

The following test equipment was used during the carrier frequency separation measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Jul. 23, 09’	Jul. 22, 10’

5.2. Block Diagram of Test Setup

The same as section.4.2.

5.3. Specification Limits (§15.247(a)(1))

Alternatively, frequency hopping systems operating in the 2400-2483.5MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output no greater than 125mW.

5.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

5.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The channel separation was measure by spectrum analyzer with RBW equal to 1% of the span. The video bandwidth not to be smaller than resolution bandwidth, the peak was mark on adjacent bandwidth, the between of peak is carrier frequency separation.
The measurement guideline was according to FCC Public Notice DA 00-705.

5.6. Test Results

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

[Note: Three types of modulation (8-DPSK,π /4DQPSK, GFSK) were evaluated but only two types of modulation (8-DPSK and GFSK) were reported in this report.]

EUT：Notebook PC M/N：LGX30

Test Date : Nov. 28, 2009 Temperature : 26 ℃ Humidity : 55 %

5.6.1.Type of Modulation: 8-DPSK

1. 2402MHz adjacent channel of carrier frequency separation: 1.005MHz。
2. 2441MHz adjacent channel of right carrier frequency separation: 1.005MHz。
3. 2441MHz adjacent channel of left carrier frequency separation: 1.005MHz。
4. 2480MHz adjacent channel of carrier frequency separation: 1.000MHz。

[Above values have met the requirement as specified in section 4.3: frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.]

5.6.2.Type of Modulation: GFSK

1. 2402MHz adjacent channel of carrier frequency separation: 1.000MHz。
2. 2441MHz adjacent channel of right carrier frequency separation: 1.005MHz。
3. 2441MHz adjacent channel of left carrier frequency separation: 1.005MHz。
4. 2480MHz adjacent channel of carrier frequency separation: 1.005MHz。

[Above values have met the requirement as specified in section 4.3: frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.]

Figure 1: 8-DPSK, 2402MHz adjacent channel of carrier frequency separation

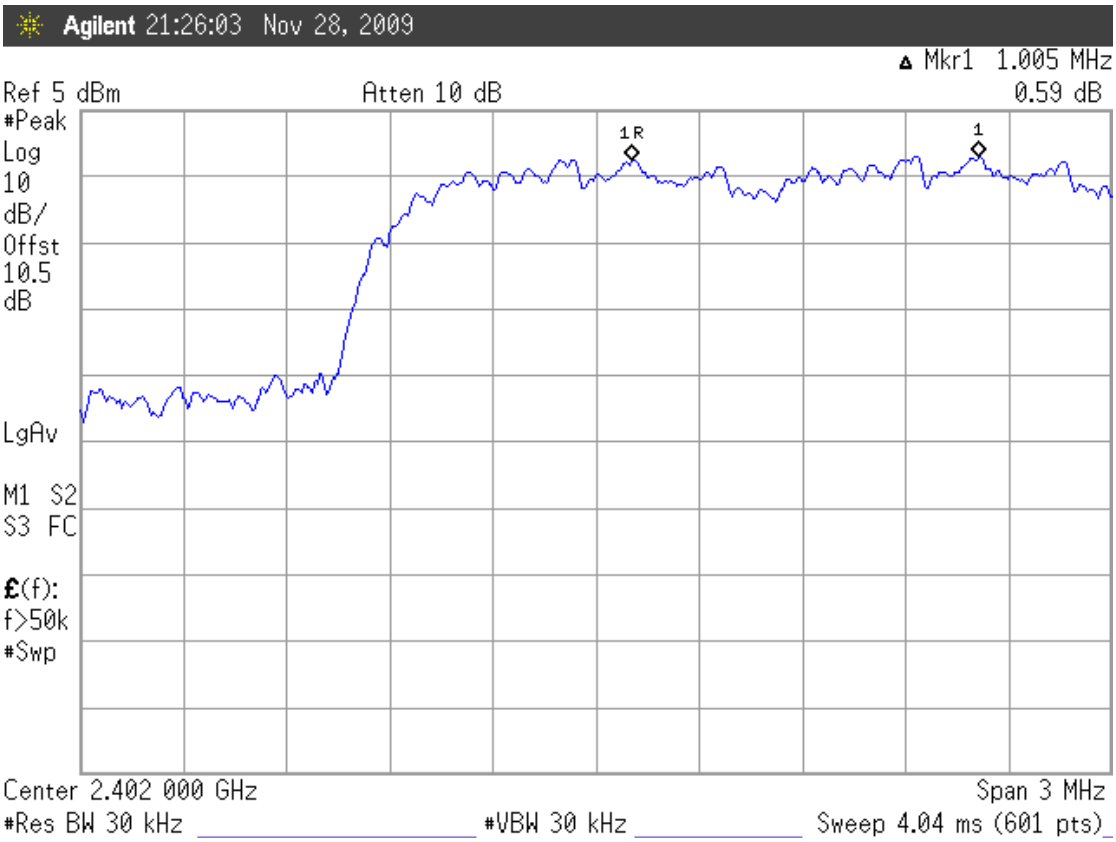


Figure 2: 8-DPSK, 2441MHz adjacent channel of right carrier frequency separation

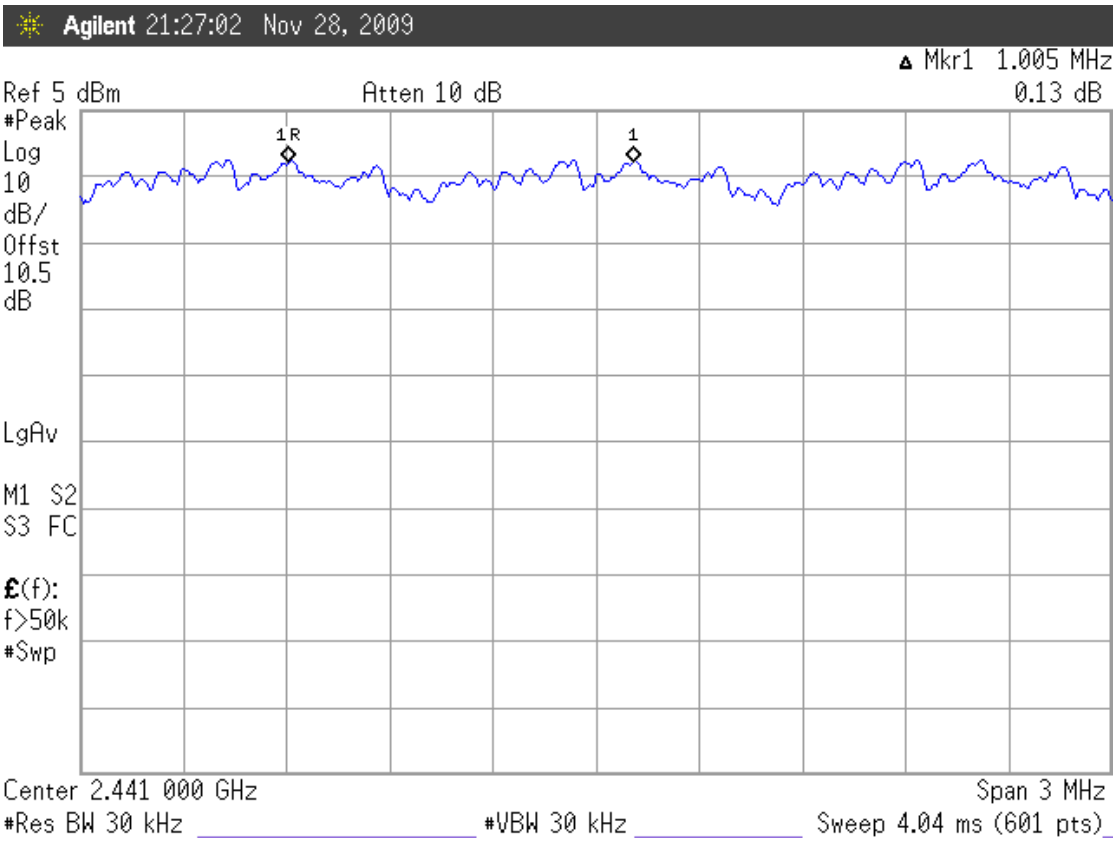


Figure 3: 8-DPSK, 2441MHz adjacent channel of left carrier frequency separation

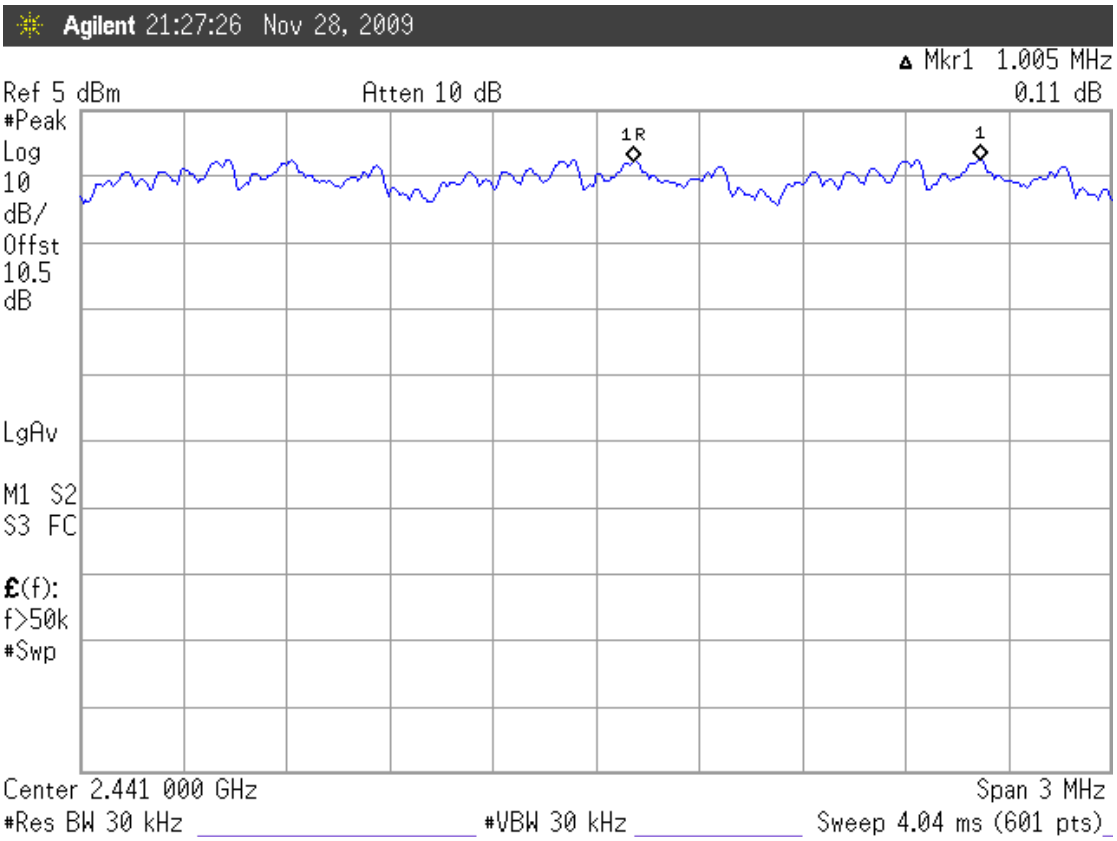


Figure 4: 8-DPSK, 2480MHz adjacent channel of carrier frequency separation

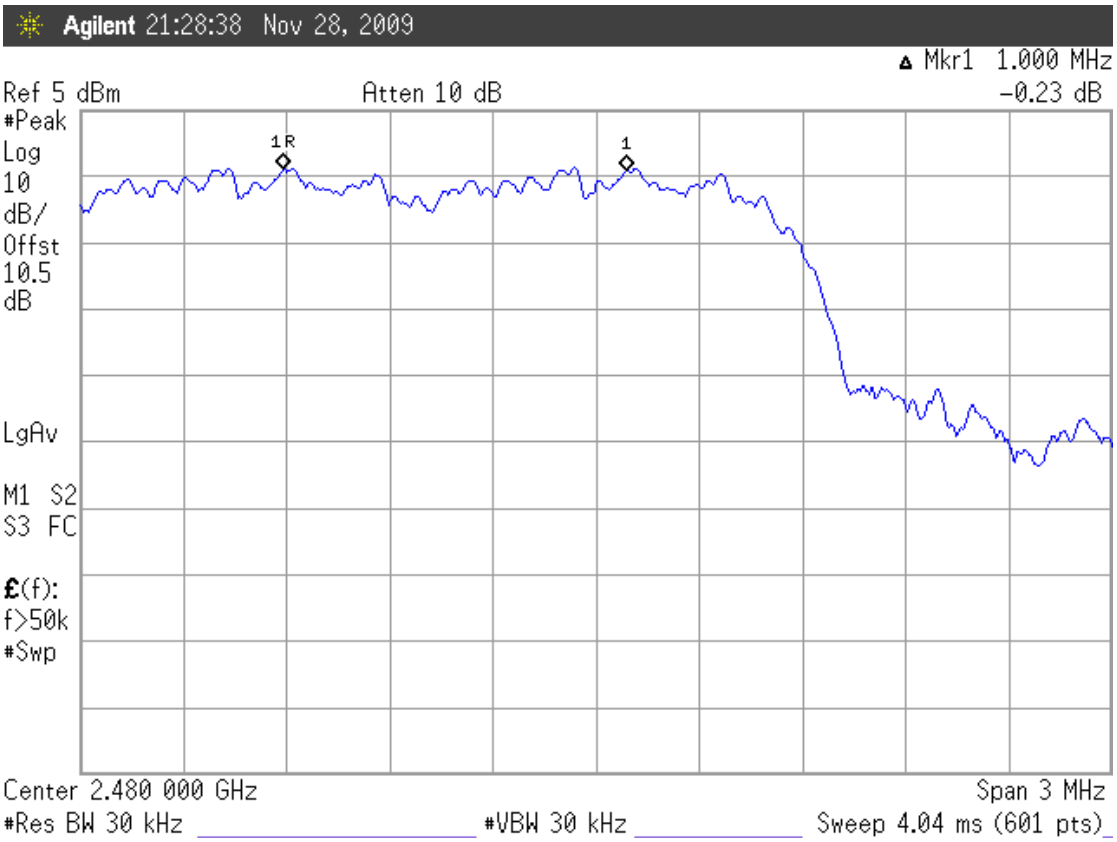


Figure 5: GFSK, 2402MHz adjacent channel of carrier frequency separation

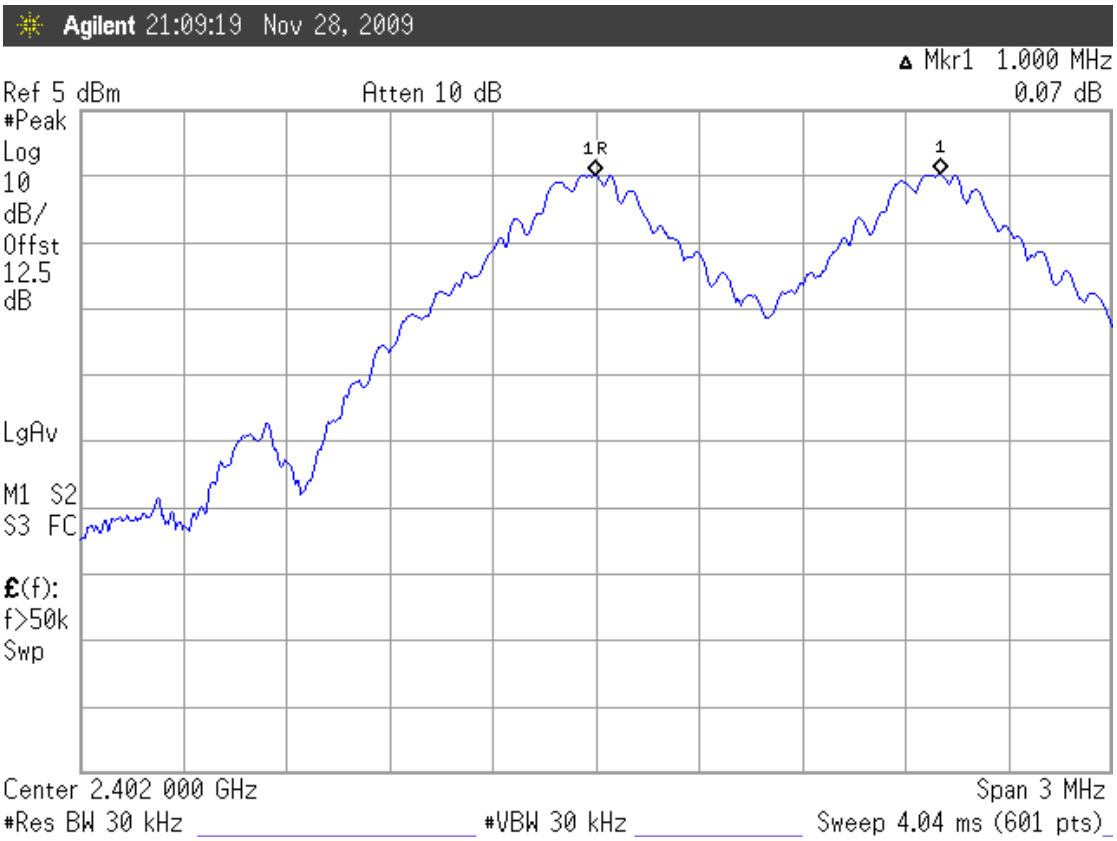


Figure 6: GFSK, 2441MHz adjacent channel of right carrier frequency separation

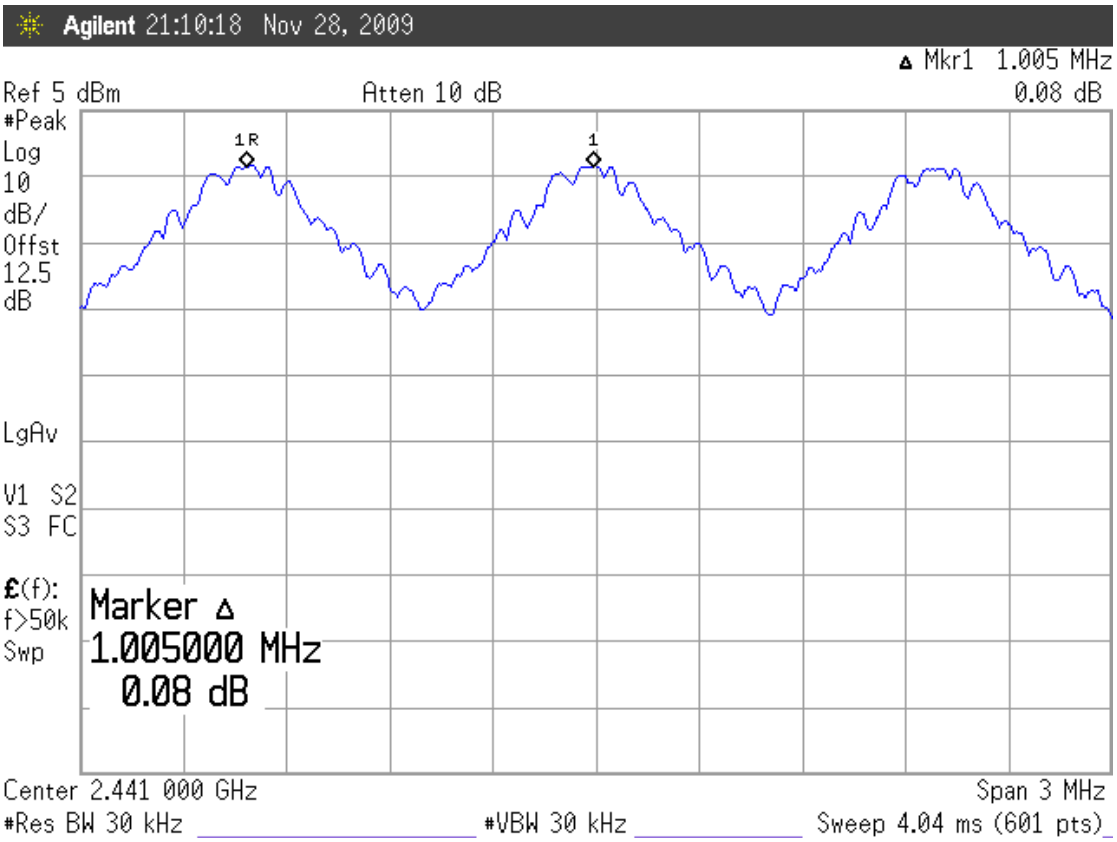


Figure 7: GFSK, 2441MHz adjacent channel of left carrier frequency separation

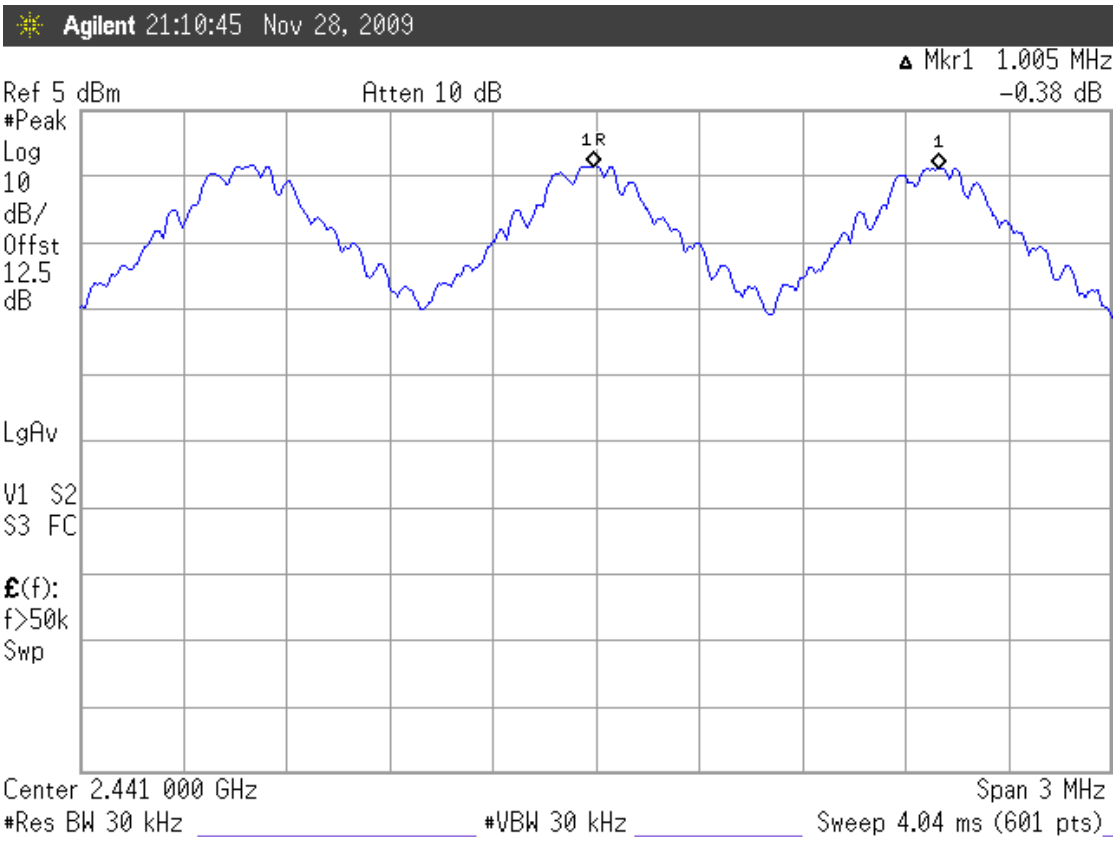
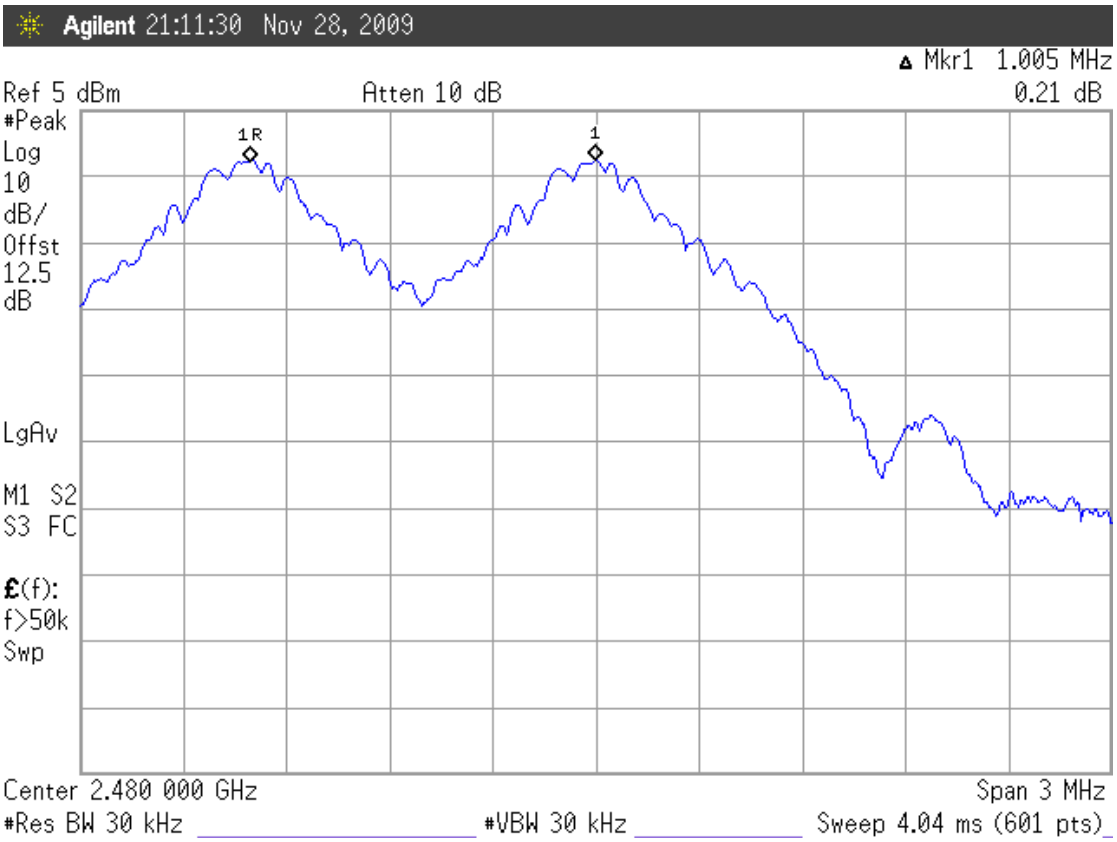


Figure 8: GFSK, 2480MHz adjacent channel of carrier frequency separation



6. TIME OF OCCUPANCY MEASUREMENT

6.1. Test Equipment

The following test equipment was used during the time of occupancy measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Jul. 23, 09’	Jul. 22, 10’

6.2. Block Diagram of Test Setup

The same as section.4.2.

6.3. Specification Limits (§15.247(a)(1)(iii))

Frequency hopping systems in the 2400-2483.5MHz shall use at least 15 non-overlapping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by number of hopping channels employed.

6.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

6.5. Test Procedure

The EUT was connected to the notebook. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 1MHz RBW and 1MHz VBW. VBW≥RBW ; Span=zero span.
Centred on a hopping channel sweep=as necessary to capture the entire dwell time per hopping channel ; Detector function=peak ; Trace=Max hold
The measurement guideline was according to FCC Public Notice DA 00-705.

6.6. Test Results

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

[Note: Three types of modulation (8-DPSK,π /4DQPSK, GFSK) were evaluated but only two types of modulation (8-DPSK and GFSK) were reported in this report.]

EUT：Notebook PC M/N：LGX30

Test Date : Nov. 28, 2009 Temperature : 26 ℃ Humidity : 55 %

6.6.1. Type of Modulation：8-DPSK, Test Frequency：2441MHz

Duty cycle: 79channels*0.4 seconds = 31.6 seconds

3DH1 : A The system makes worst case 1600 hops per second or 1 time slot has a length of 625us with 79 channels. A DH1 packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 800 hops per second with 79 channels. So you have each channel 10.13 time per second and so for 31.6 seconds you have 320 time of appearance.

Each Tx-time per appearance is 383.3us.

10.13 time*31.6 seconds* 0.3833ms = 122.697ms (<400ms)

B. For each 5 seconds of 51 channels appearance, the longest time of occupancy for each of 31.6 seconds is:

51 channels*31.6 seconds/5* 0.3833ms = 123.545ms (<400ms)

3DH3 : A The system makes worst case 1600 hops per second or 1 time slot has a length of 625us with 79 channels. A DH3 packet need 3 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 400 hops per second with 79 channels. So you have each channel 5.1 time per second and so for 31.6 seconds you have 161 time of appearance.

Each Tx-time per appearance is 1629us.

5.1 time*31.6 seconds* 1.629ms = 263.741ms (<400ms)

B. For each 5 seconds of 25 channels appearance, the longest time of occupancy for each of 31.6 seconds is:

25 channels*31.6 seconds/5* 1.629ms = 258.041ms (<400ms)

3DH5 : A The system makes worst case 1600 hops per second or 1 time slot has a length of 625us with 79 channels. A DH5 packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 266.7 hops per second with 79 channels. So you have each channel 3.37 time per second and so for 31.6 seconds you have 106 time of appearance.

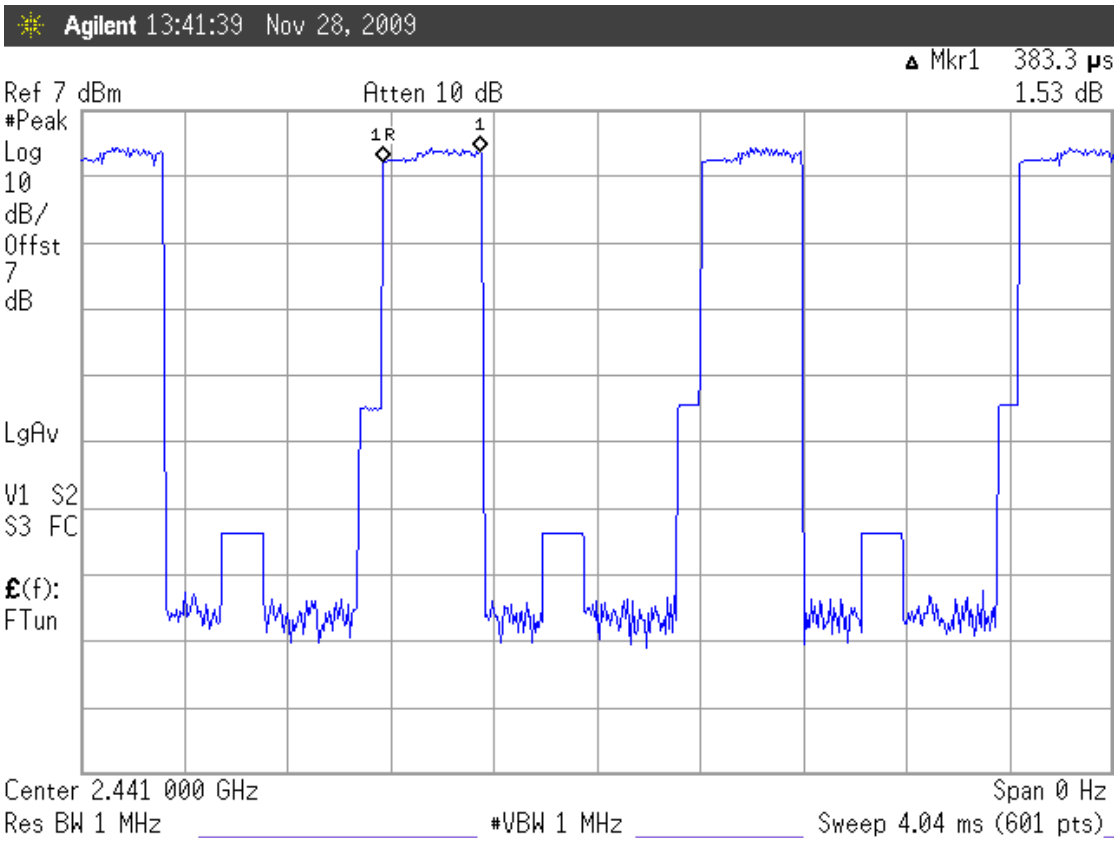
Each Tx-time per appearance is 2889us.

3.37 time*31.6 seconds* 2.889ms = 307.655ms (<400ms)

B. For each 5 seconds of 17 channels appearance, the longest time of occupancy for each of 31.6 seconds is:

17 channels*31.6 seconds/5* 2.889ms = 310.394ms (<400ms)

Figure 1: 8-DPSK, 2441MHz, 3DH1



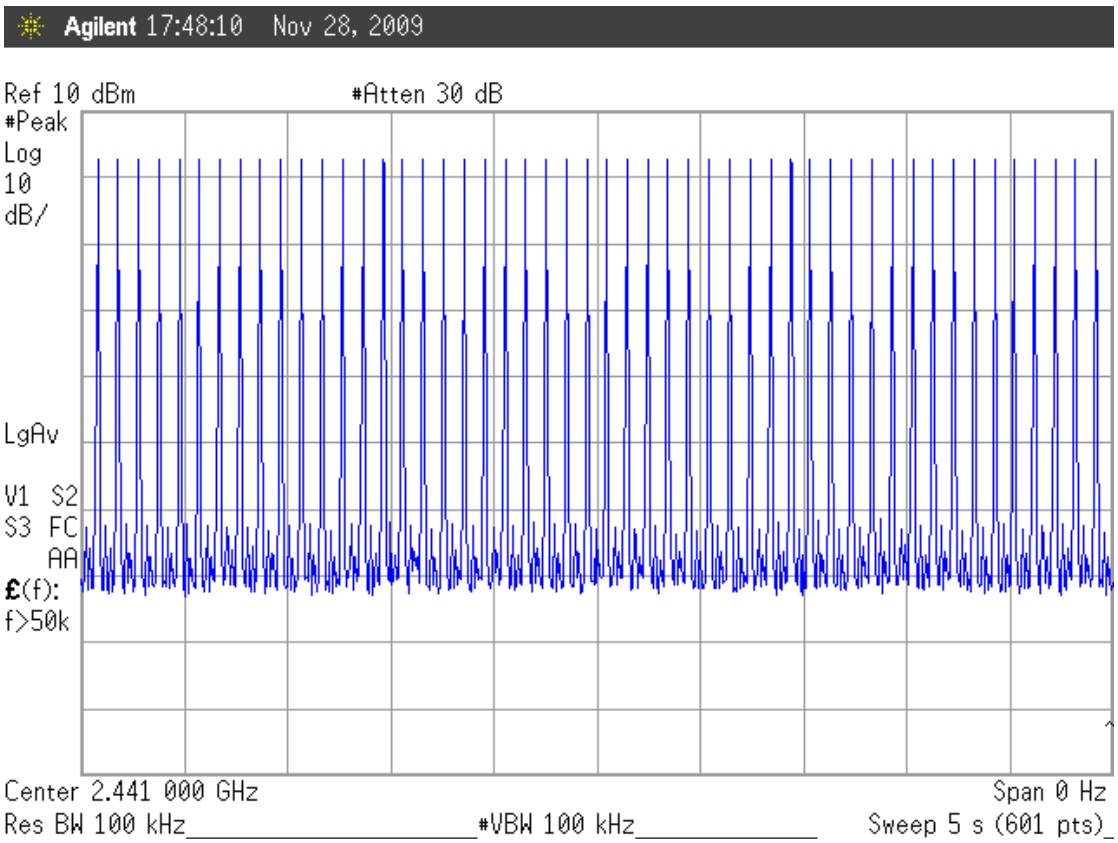
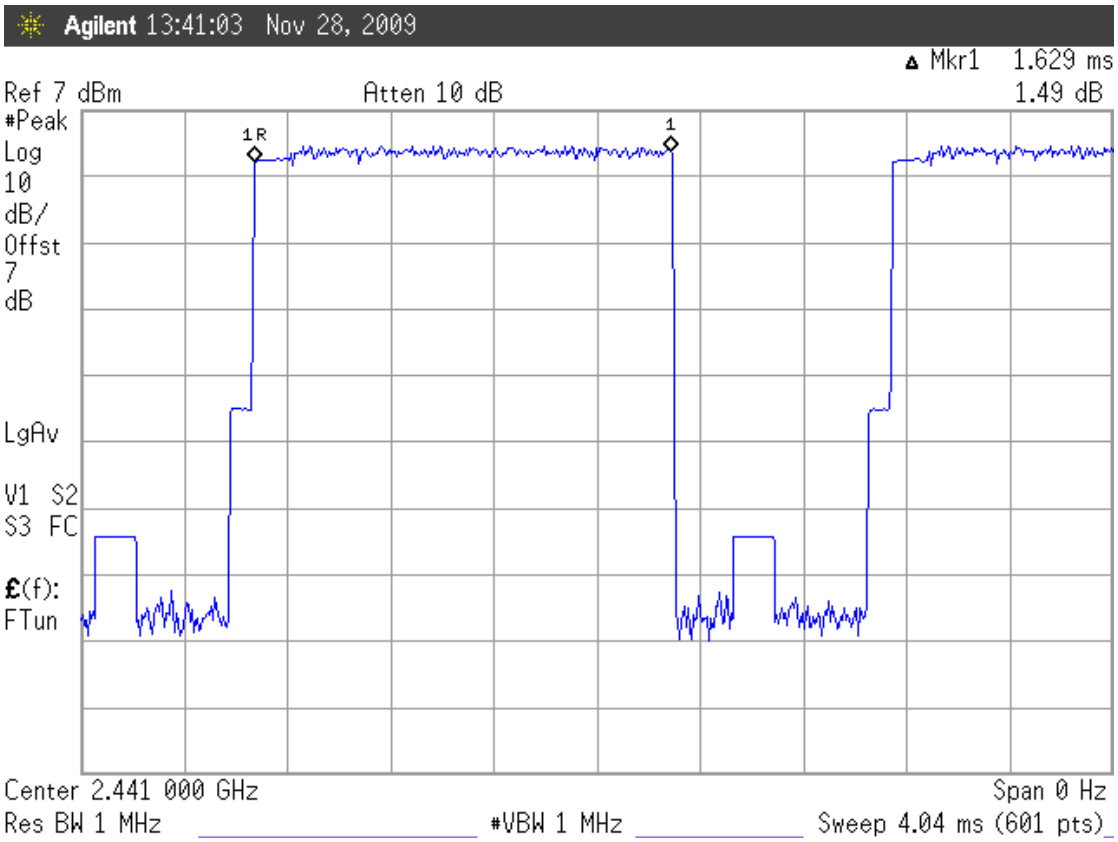


Figure 2: 8-DPSK, 2441MHz, 3DH3



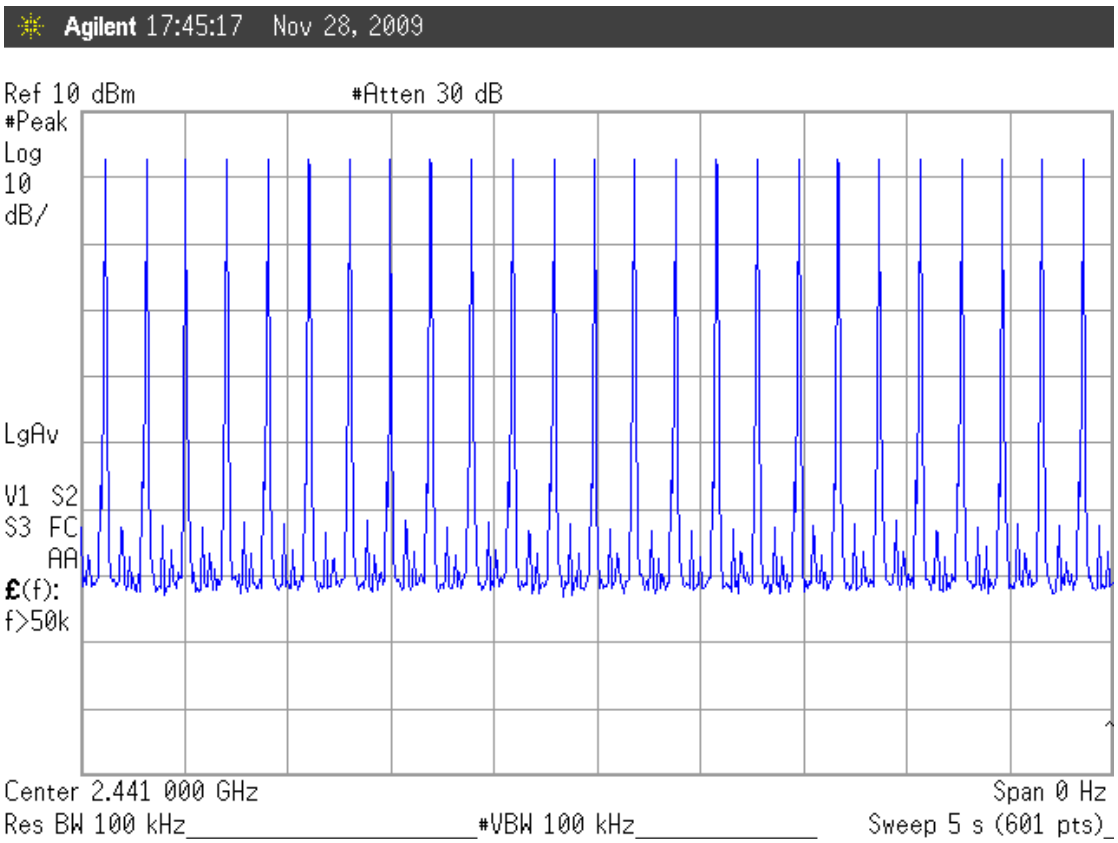
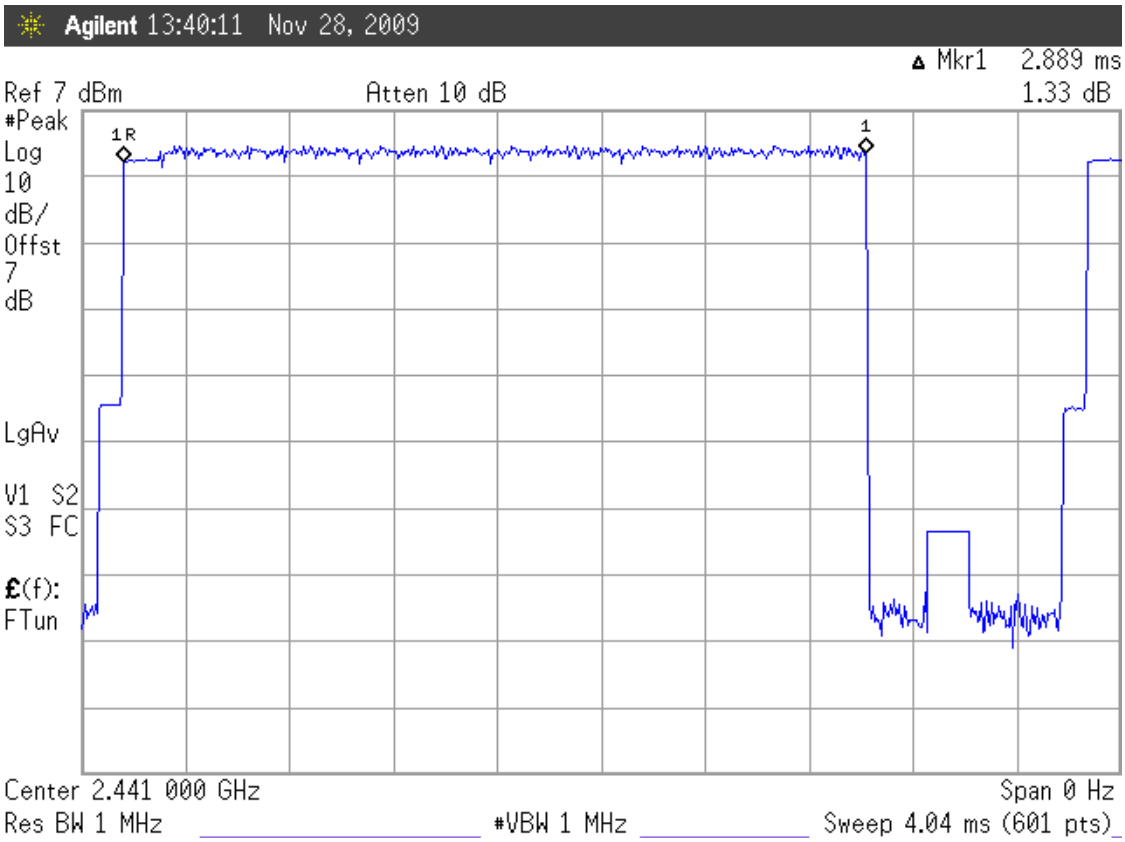
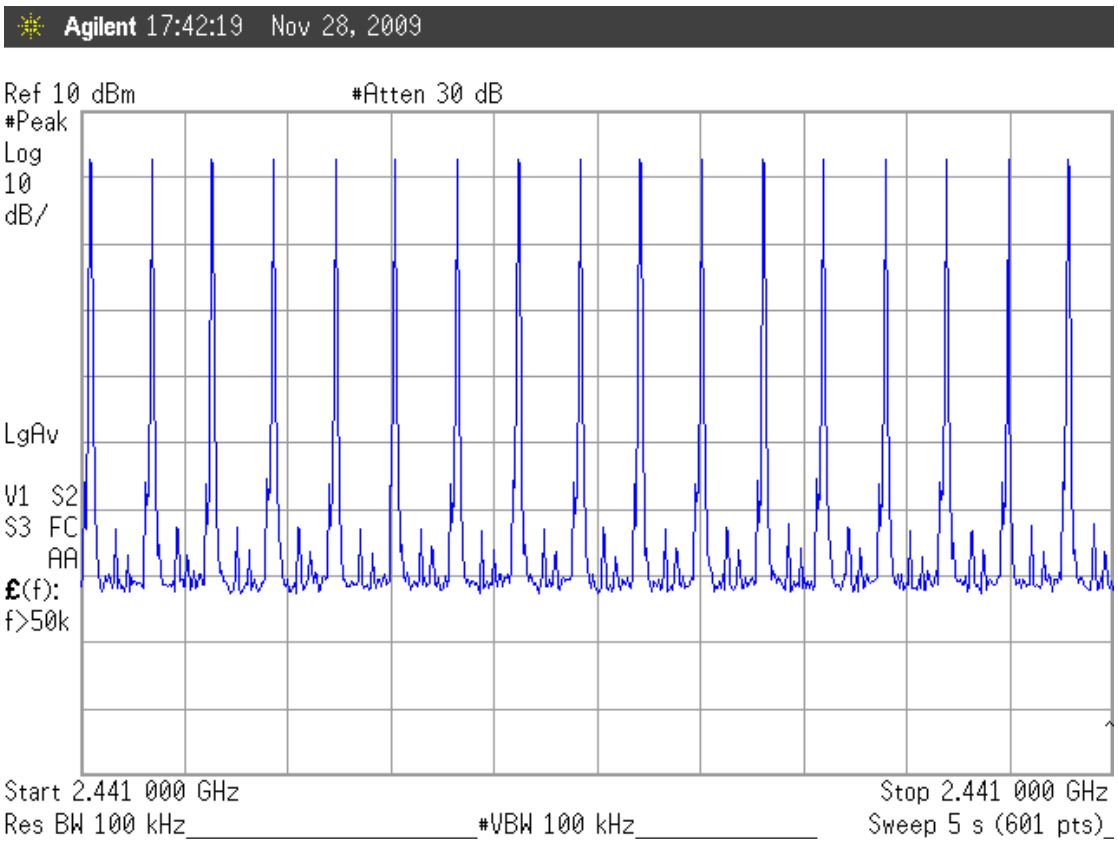


Figure 3: 8-DPSK, 2441MHz, 3DH5





6.6.2. Type of Modulation：GFSK, Test Frequency：2441MHz

Duty cycle: 79channels*0.4 seconds = 31.6 seconds

DH1 : A The system makes worst case 1600 hops per second or 1 time slot has a length of 625us with 79 channels. A DH1 packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 800 hops per second with 79 channels. So you have each channel 10.13 time per second and so for 31.6 seconds you have 320 time of appearance.

Each Tx-time per appearance is 383.3us.

10.13 time*31.6 seconds* 0.3833ms = 122.697ms (<400ms)

B. For each 5 seconds of 51 channels appearance, the longest time of occupancy for each of 31.6 seconds is:

51 channels*31.6 seconds/5* 0.3833ms = 123.545ms (<400ms)

DH3 : A The system makes worst case 1600 hops per second or 1 time slot has a length of 625us with 79 channels. A DH3 packet need 3 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 400 hops per second with 79 channels. So you have each channel 5.1 time per second and so for 31.6 seconds you have 161 time of appearance.

Each Tx-time per appearance is 1633us.

5.1 time*31.6 seconds* 1.633ms = 263.741ms (<400ms)

B. For each 5 seconds of 25 channels appearance, the longest time of occupancy for each of 31.6 seconds is:

25 channels*31.6 seconds/5* 1.633ms = 258.041ms (<400ms)

DH5 : A The system makes worst case 1600 hops per second or 1 time slot has a length of 625us with 79 channels. A DH5 packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 266.7 hops per second with 79 channels. So you have each channel 3.37 time per second and so for 31.6 seconds you have 106 time of appearance.

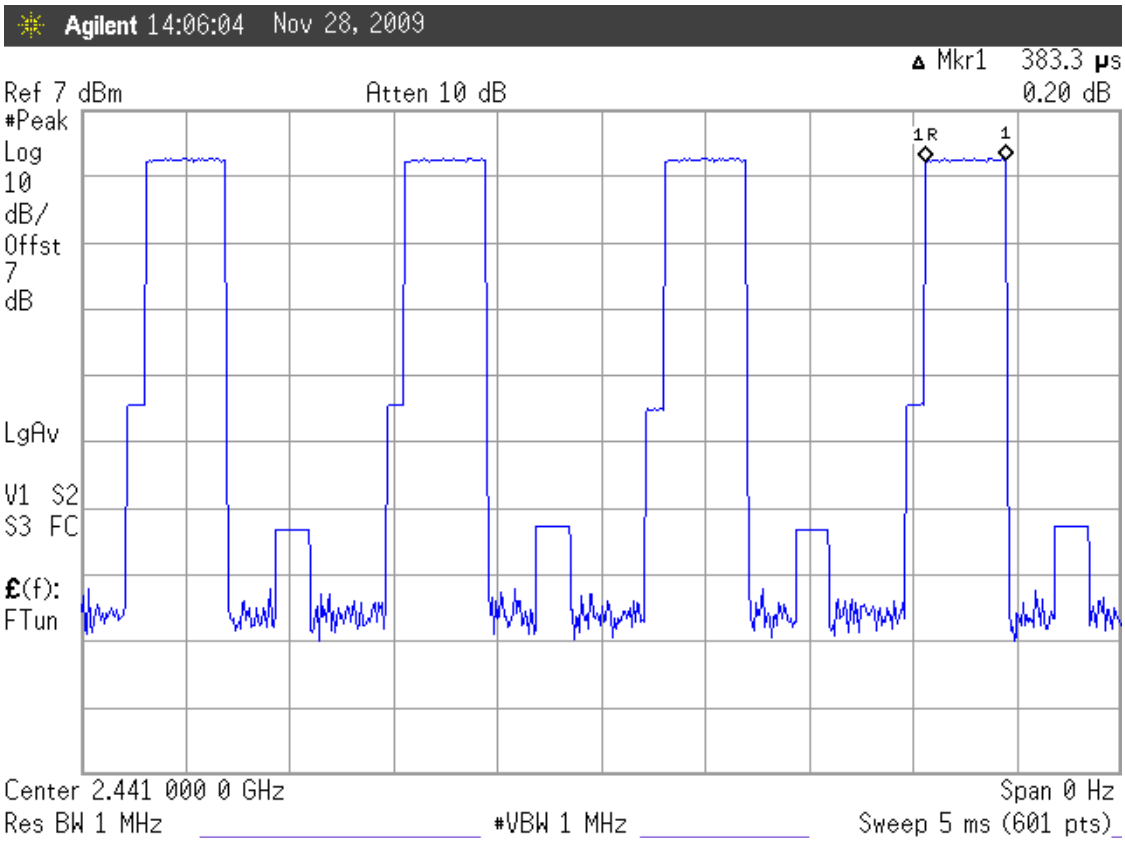
Each Tx-time per appearance is 2833us.

3.37 time*31.6 seconds* 2.833ms = 301.691ms (<400ms)

B. For each 5 seconds of 17 channels appearance, the longest time of occupancy for each of 31.6 seconds is:

17 channels*31.6 seconds/5* 2.833ms = 304.377ms (<400ms)

Figure 1: GFSK, 2441MHz, DH1



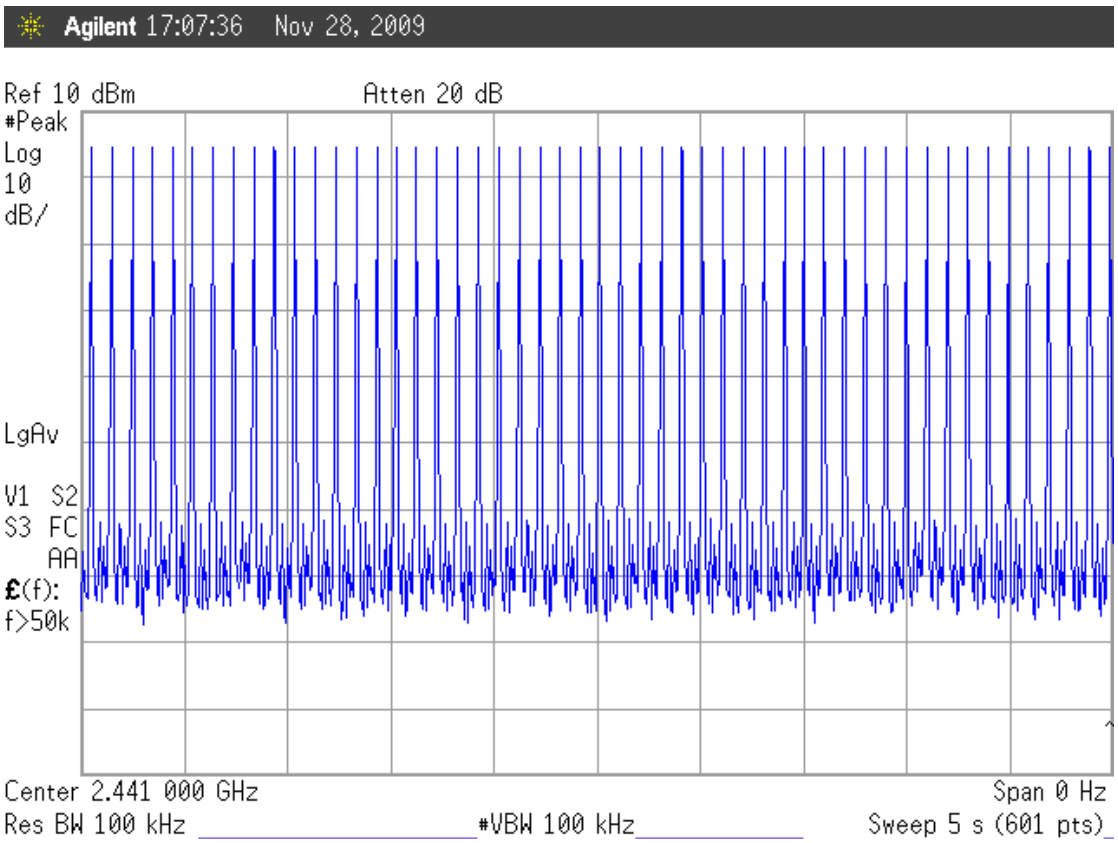
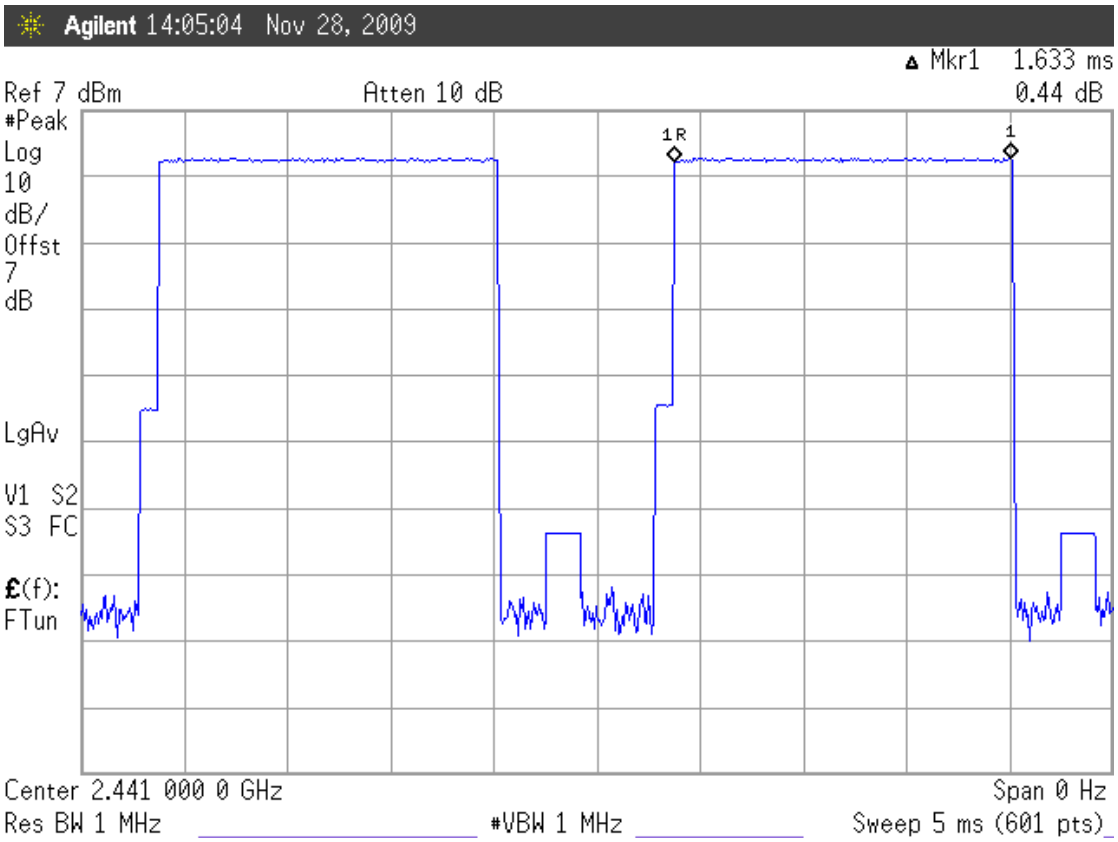


Figure 2: GFSK, 2441MHz, DH3



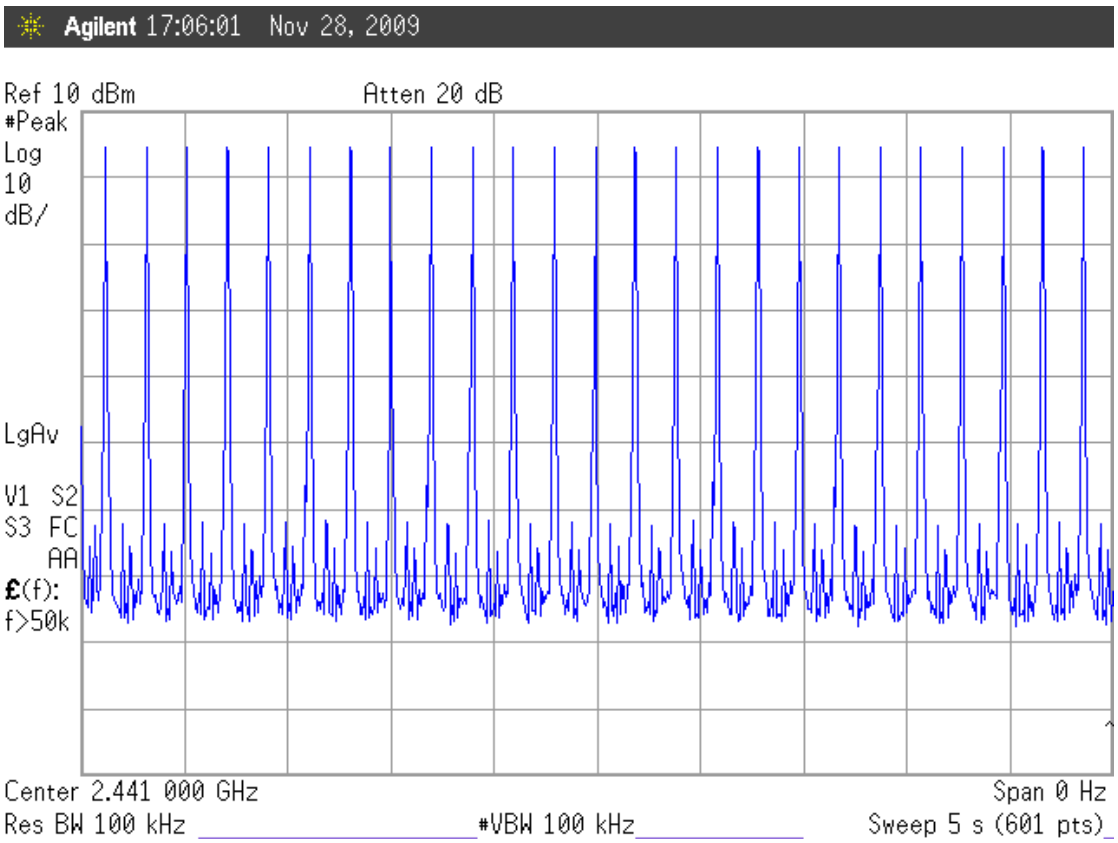
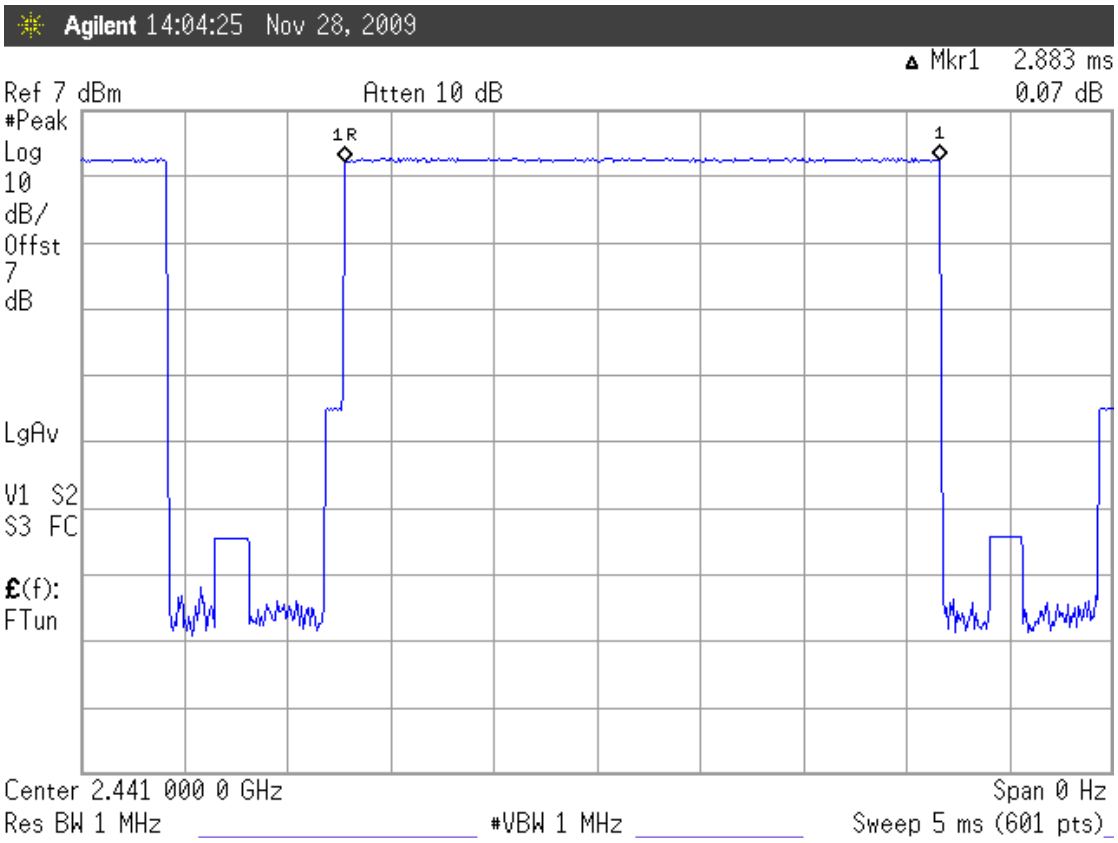
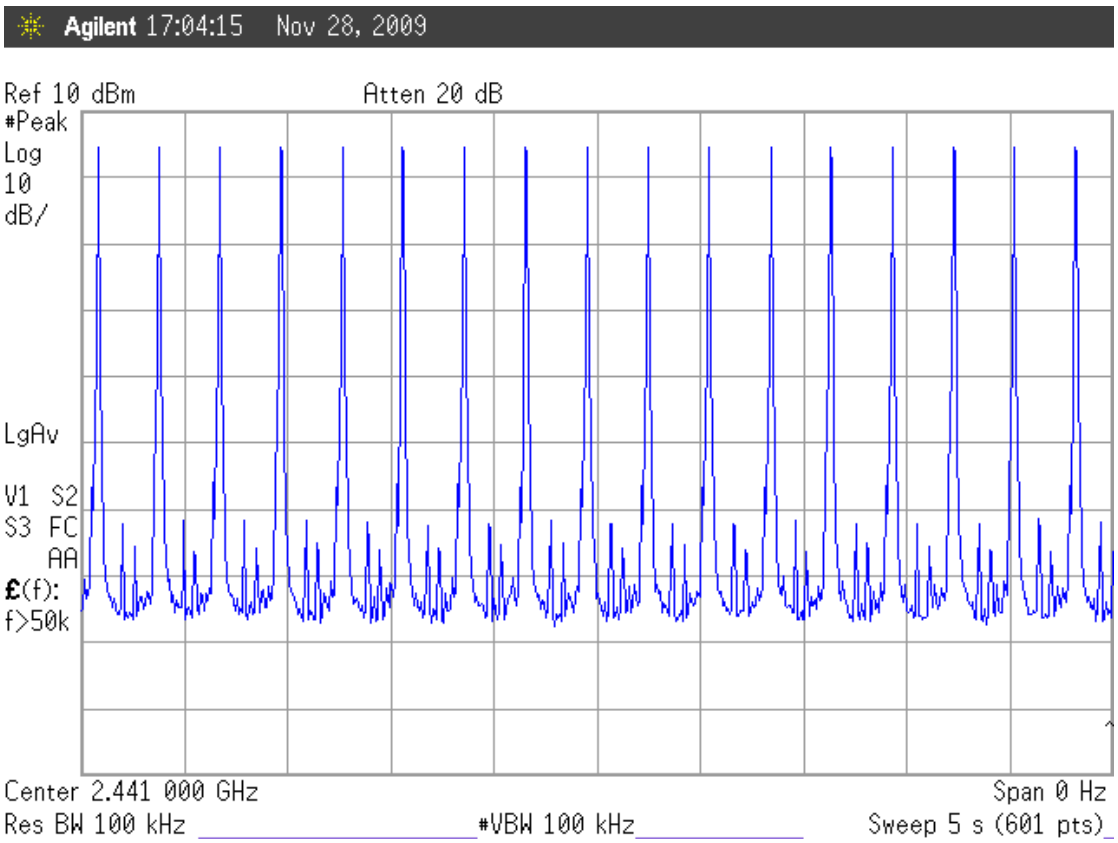


Figure 3: GFSK, 2441MHz, DH5





7. NUMBER OF HOPPING CHANNELS MEASUREMENT

7.1. Test Equipment

The following test equipment was used during the number of hopping channels measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Jul. 23, 09’	Jul. 22, 10’

7.2. Block Diagram of Test Setup

The same as section.4.2.

7.3. Specification Limits (§15.247(a)(1)(iii))

Frequency hopping systems which use fewer than 20 hopping frequencies may employ intelligent hopping techniques to avoid interference to other transmissions. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 non-overlapping channels.

7.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

7.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 100kHz RBW and 100kHz VBW. Sweep=Auto ; Detector function=peak ; Trace=Max hold
The measurement guideline was according to FCC Public Notice DA 00-705.

7.6. Test Results

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

[Note: Three types of modulation (8-DPSK,π /4DQPSK, GFSK) were evaluated but only two types of modulation (8-DPSK and GFSK) were reported in this report.]

EUT：Notebook PC M/N：LGX30

Test Date : Nov. 28, 2009 Temperature : 26 ℃ Humidity : 55 %

7.6.1.Type of Modulation: 8-DPSK

The number hopping channel is 79.

7.6.2.Type of Modulation: GFSK

The number hopping channel is 79.

Figure 1: 8-DPSK

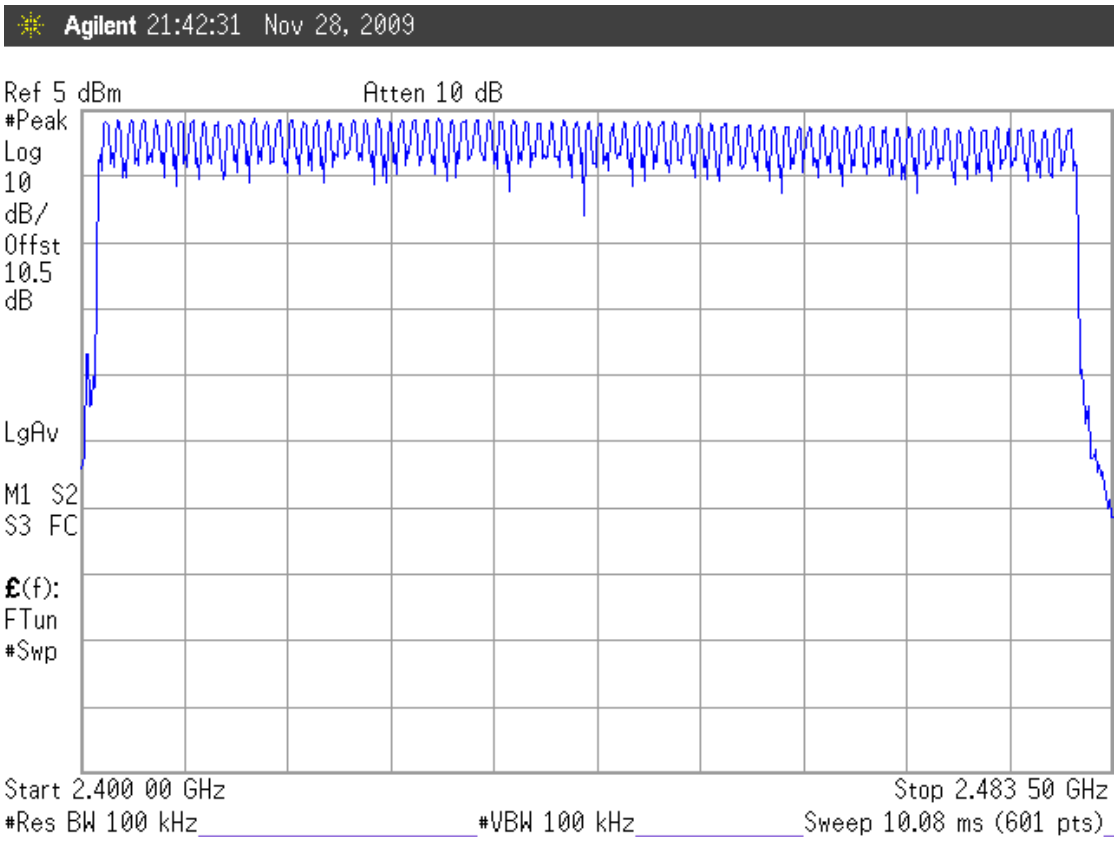
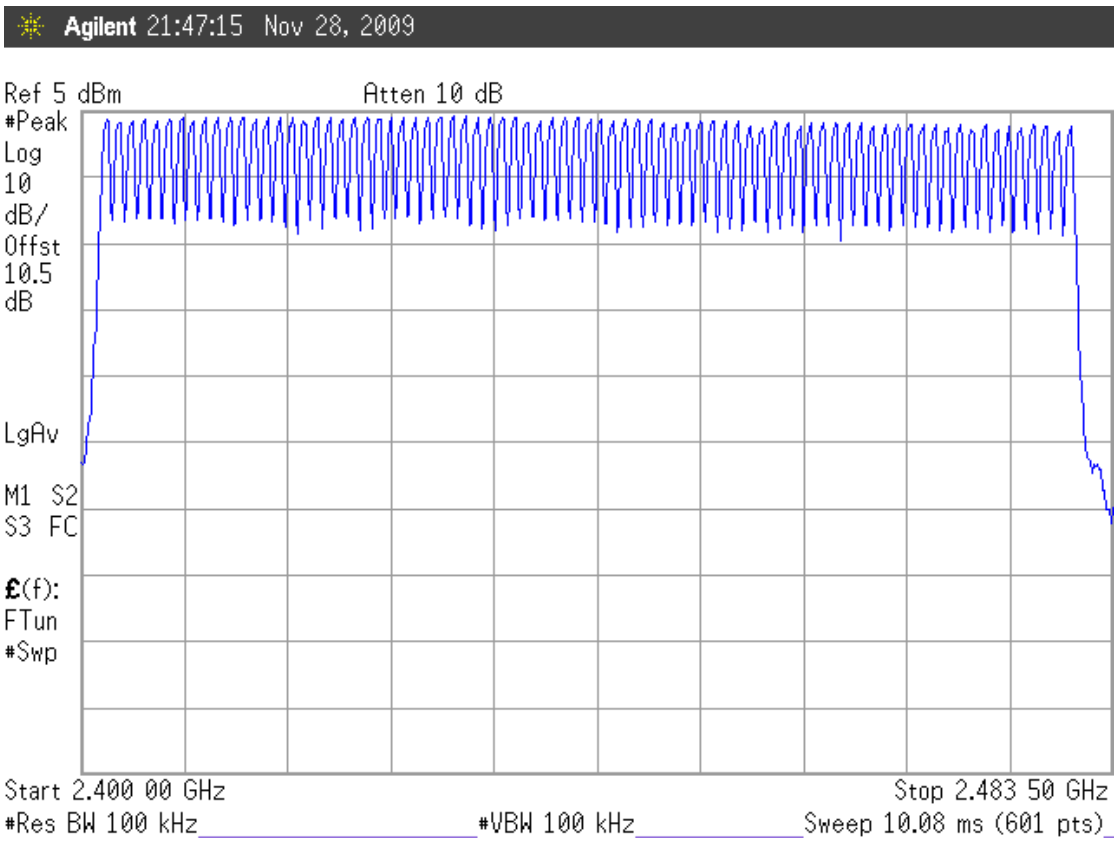


Figure 2: GFSK



8. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

8.1. 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.	Spectrum Analyzer	Agilent	E4446A	US44300366	Jul. 23, 09’	Jul. 22, 10’

8.2. Block Diagram of Test Setup

The same as section.4.2.

8.3. Specification Limits (§15.247(b)-(1))

The Limits of maximum Peak Output Power for frequency hopping systems in 2400-2483.5MHz is: 0.125Watt. (21dBm)

8.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in 4.4 except the test set up replaced by section 8.2.

8.5. Test Procedure

The transmitter output was connected to the spectrum analyzer.
Span can encompass the waveform
RBW=1MHz
VBW=3MHz
Sweep=Auto
The measurement guideline was according to FCC Public Notice DA 00-705.

8.6. Test Results

PASSED. All the test results are listed below.

[Note: Three types of modulation (8-DPSK,π /4DQPSK, GFSK) were evaluated but only two types of modulation (8-DPSK and GFSK) were reported in this report.]

EUT：Notebook PC M/N：LGX30

Test Date : Nov. 28, 2009 Temperature : 26 ℃ Humidity : 55 %

8.6.1.Type of Modulation: 8-DPSK

No.	Channel	Test Frequency	**Peak Output Power**	Limit
1.	0	2402MHz	**0.58dBm**	21dBm
2.	39	2441MHz	**1.70dBm**	21dBm
3.	78	2480MHz	**2.23dBm**	21dBm

8.6.2.Type of Modulation: GFSK

No.	Channel	Test Frequency	**Peak Output Power**	Limit
1.	0	2402MHz	**-1.32dBm**	21dBm
2.	39	2441MHz	**0.07dBm**	21dBm
3.	78	2480MHz	**0.31dBm**	21dBm

Figure 1: 8-DPSK, Channel 0, Frequency: 2402MHz

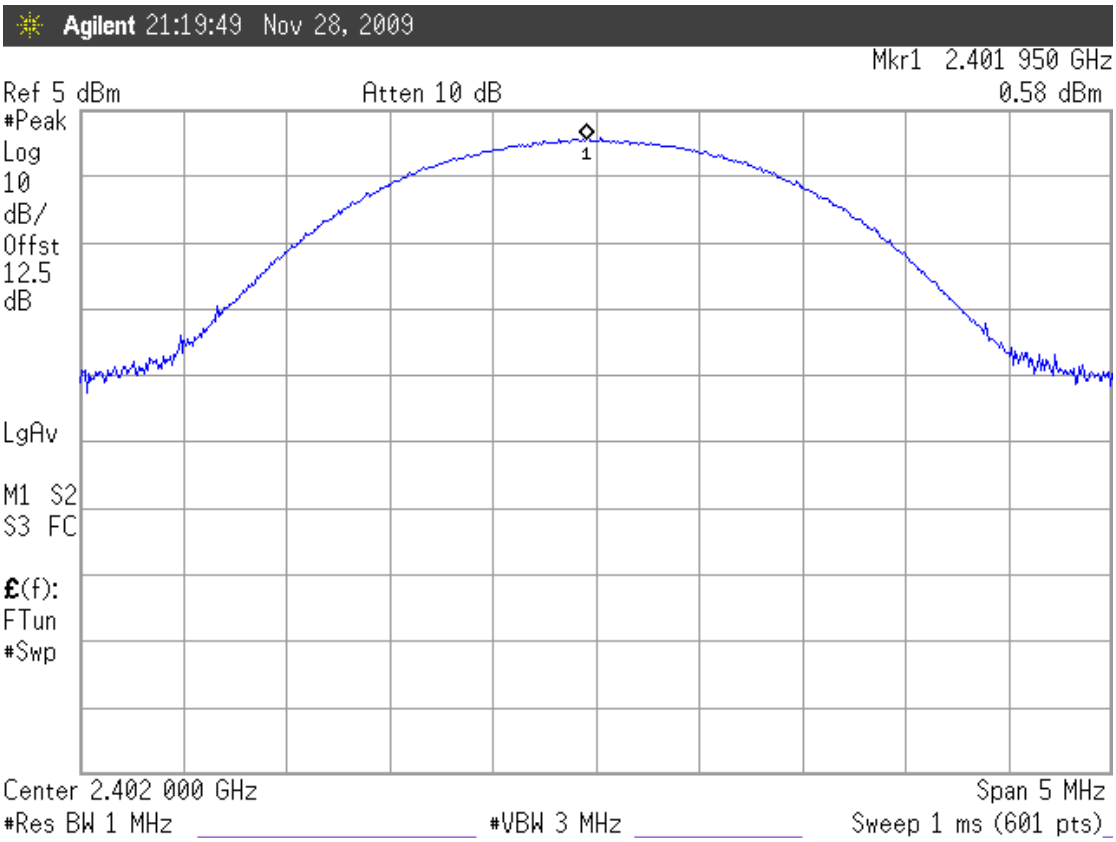


Figure 2: 8-DPSK, Channel 39, Frequency: 2441MHz

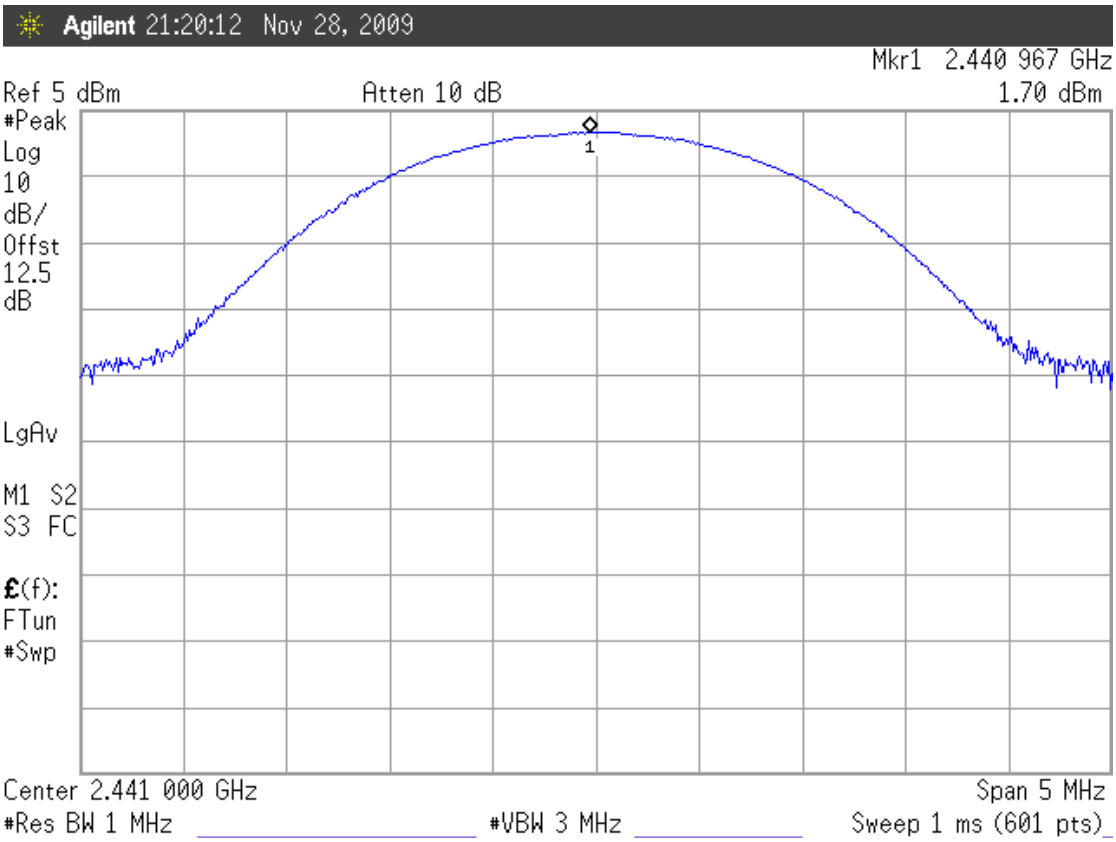


Figure 3: 8-DPSK, Channel 78, Frequency: 2480MHz

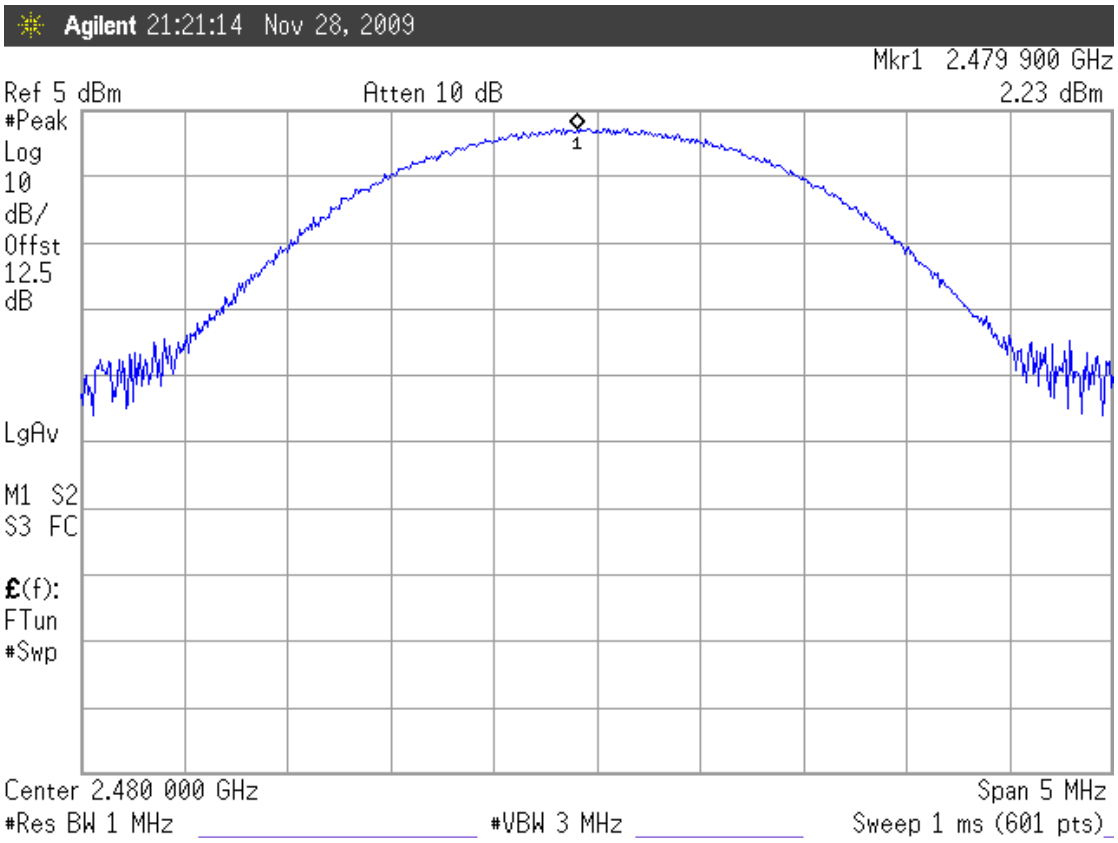


Figure 4: GFSK, Channel 0, Frequency: 2402MHz

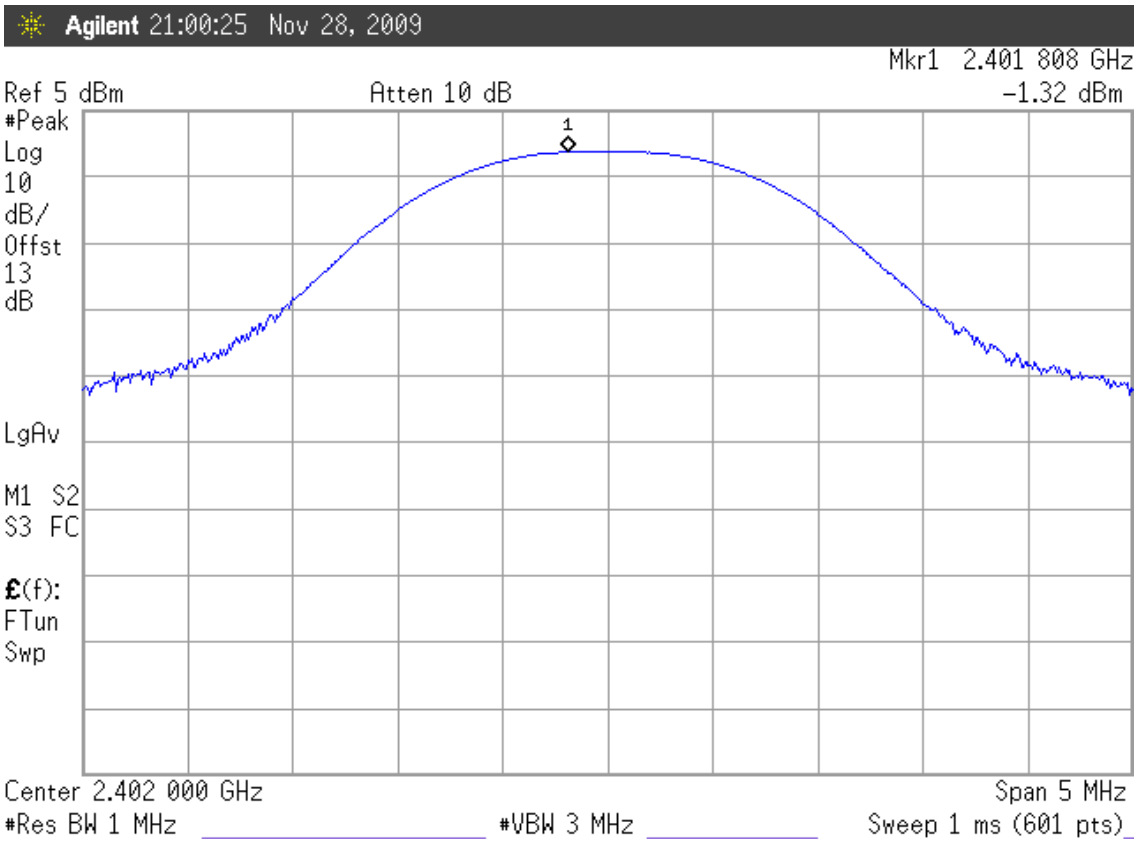


Figure 5: GFSK, Channel 39, Frequency: 2441MHz

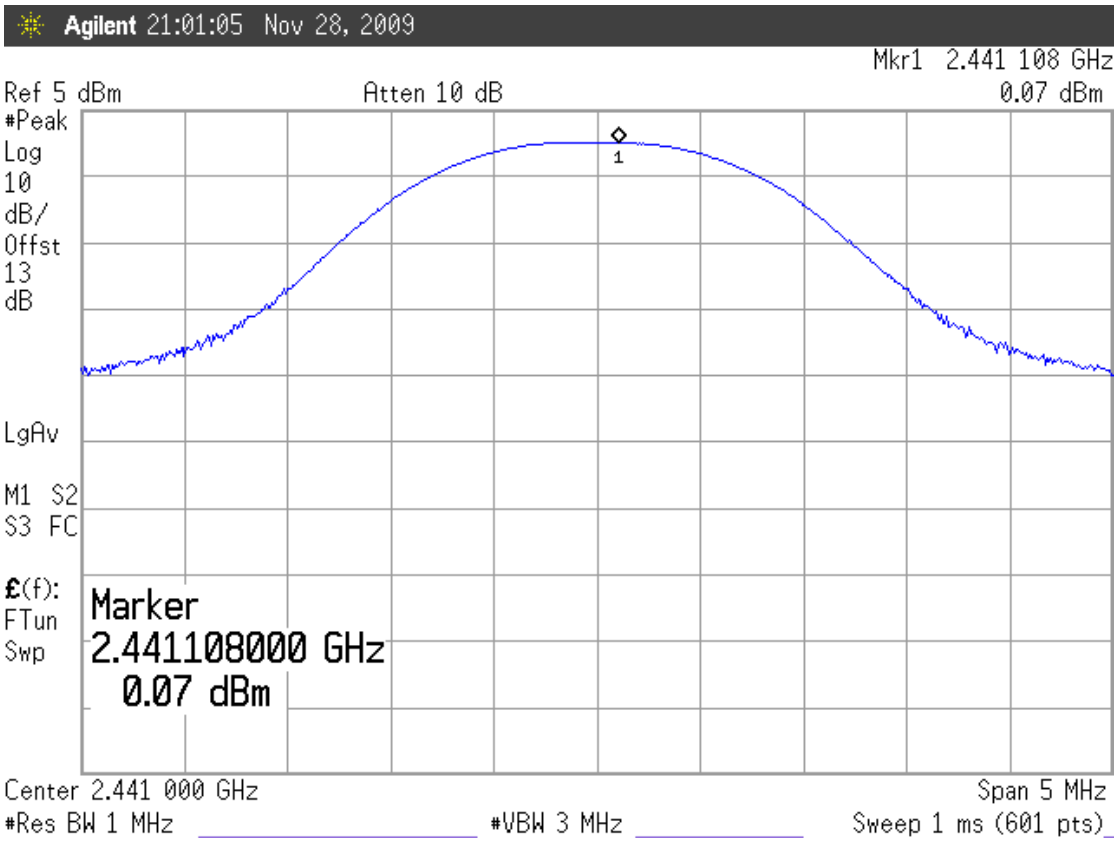
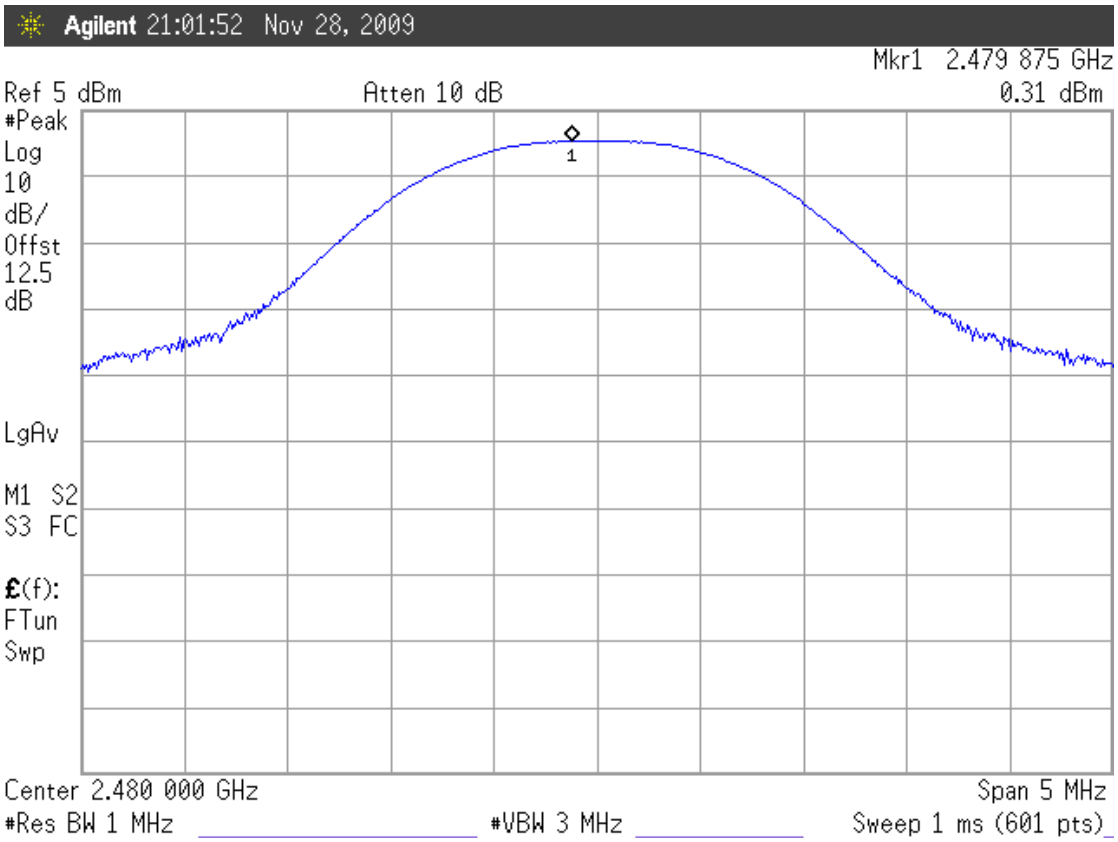


Figure 6: GFSK, Channel 78, Frequency: 2480MHz



9. EMISSION LIMITATIONS MEASUREMENT

9.1. Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Jul. 23, 09’	Jul. 22, 10’

9.2. Block Diagram of Test Setup

The same as section.4.2.

9.3. Specification Limits (§15.247(c))

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. 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 §3.6.3)

9.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

9.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. Set both RBW and VBW of spectrum analyzer to 100kHz with frequency range from 30MHz to 25GHz. The measurement guideline was according to FCC Public Notice DA 00-705.

9.6. Test Results

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

[Note: Three types of modulation (8-DPSK,π /4DQPSK, GFSK) were evaluated but only two types of modulation (8-DPSK and GFSK) were reported in this report.]

EUT：Notebook PC M/N：LGX30

Test Date : Nov. 28, 2009 Temperature : 26 ℃ Humidity : 55 %

9.6.1. Type of Modulation: 8-DPSK

1. 2402MHz: During 30MHz~25GHz bandwidth. In the 4.82GHz, the –60.20dBm is max value that is lower than 20dB of primary channel.
2. 2441MHz: During 30MHz~25GHz bandwidth. In the 4.90GHz, the –59.81dBm is max value that is lower than 20dB of primary channel.
3. 2480MHz: During 30MHz~25GHz bandwidth. In the 4.94GHz, the –57.35dBm is max value that is lower than 20dB of primary channel.

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

9.6.2. Type of Modulation: GFSK

1. 2402MHz: During 30MHz~25GHz bandwidth. In the 4.82GHz, the –53.76dBm is max value that is lower than 20dB of primary channel.
2. 2441MHz: During 30MHz~25GHz bandwidth. In the 4.90GHz, the –55.72dBm is max value that is lower than 20dB of primary channel.
3. 2480MHz: During 30MHz~25GHz bandwidth. In the 4.94GHz, the –59.44dBm is max value that is lower than 20dB of primary channel.

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

Figure 1: 8-DPSK, Channel 0, Frequency: 2402MHz

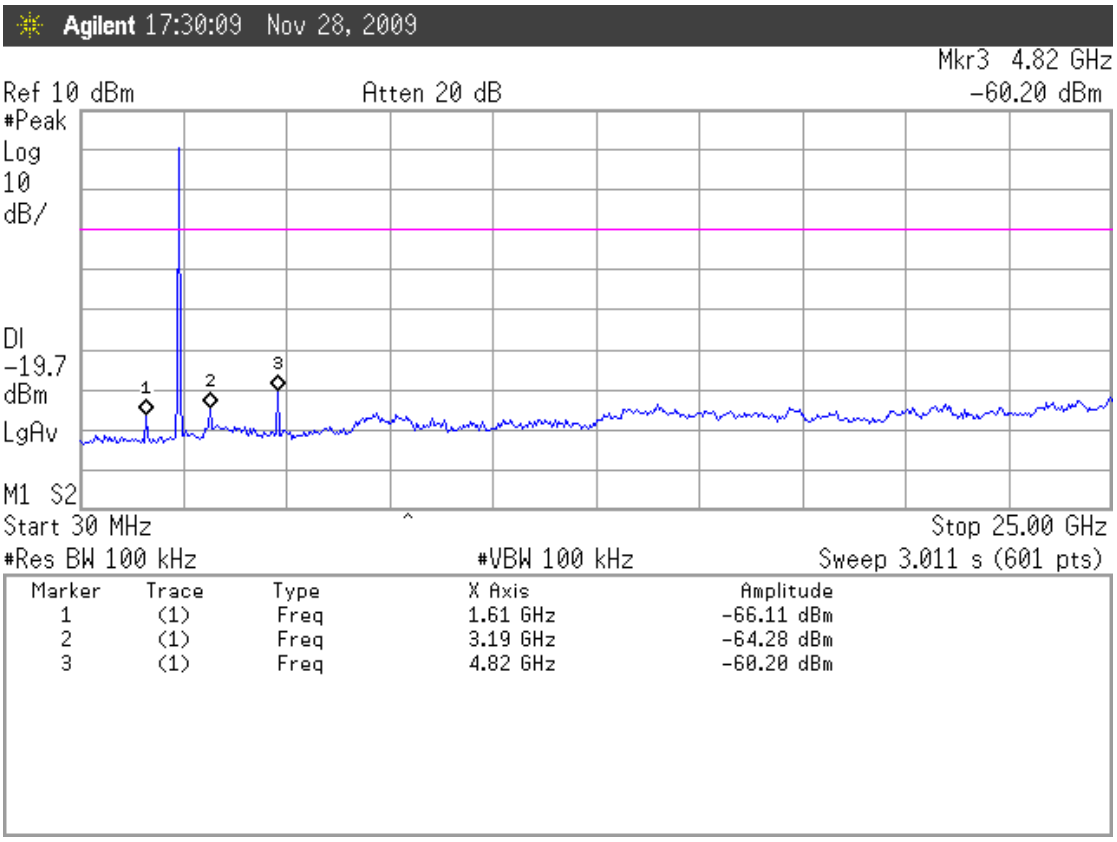


Figure 2: 8-DPSK, Channel 39, Frequency: 2441MHz

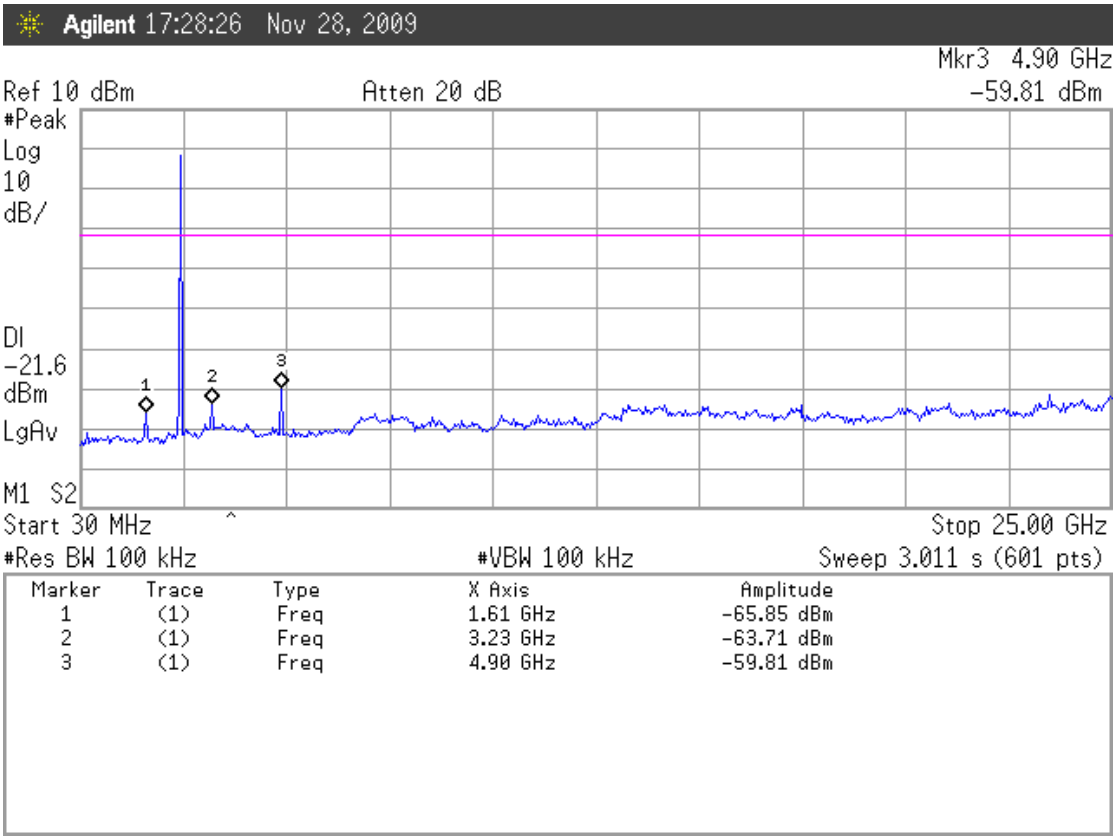


Figure 3: 8-DPSK, Channel 78, Frequency: 2480MHz

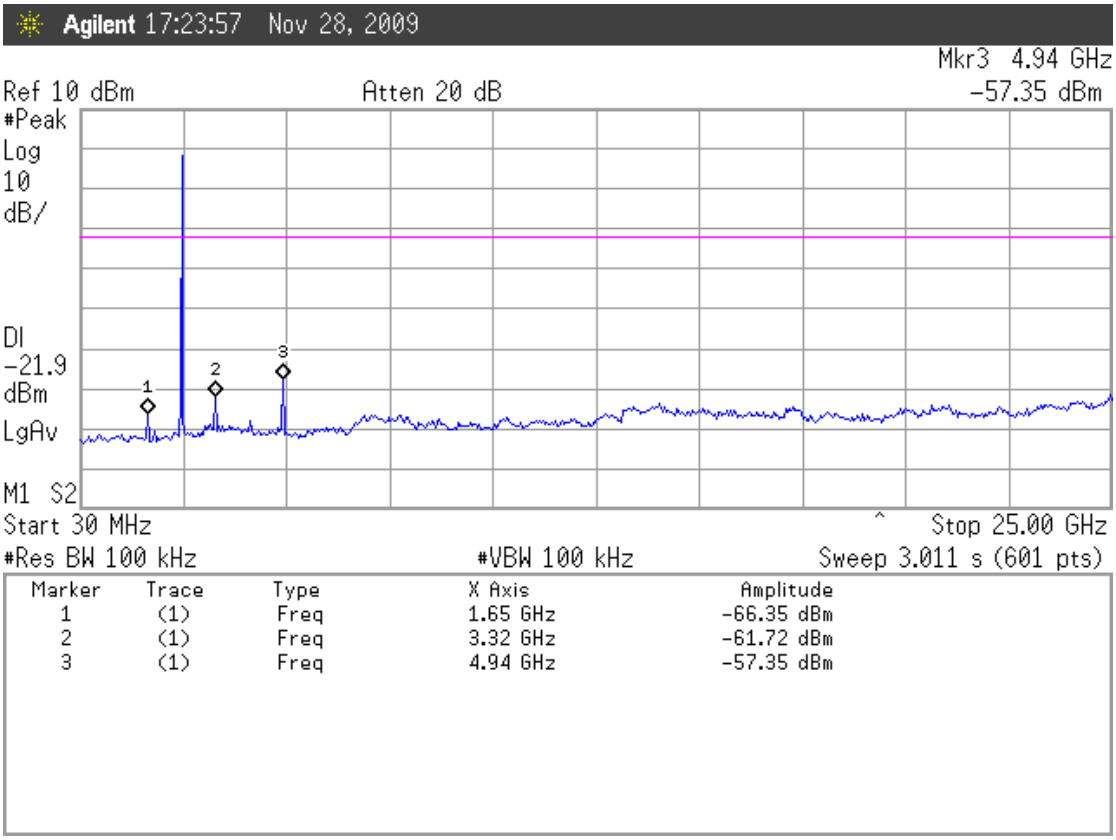


Figure 4: GFSK, Channel 0, Frequency: 2402MHz

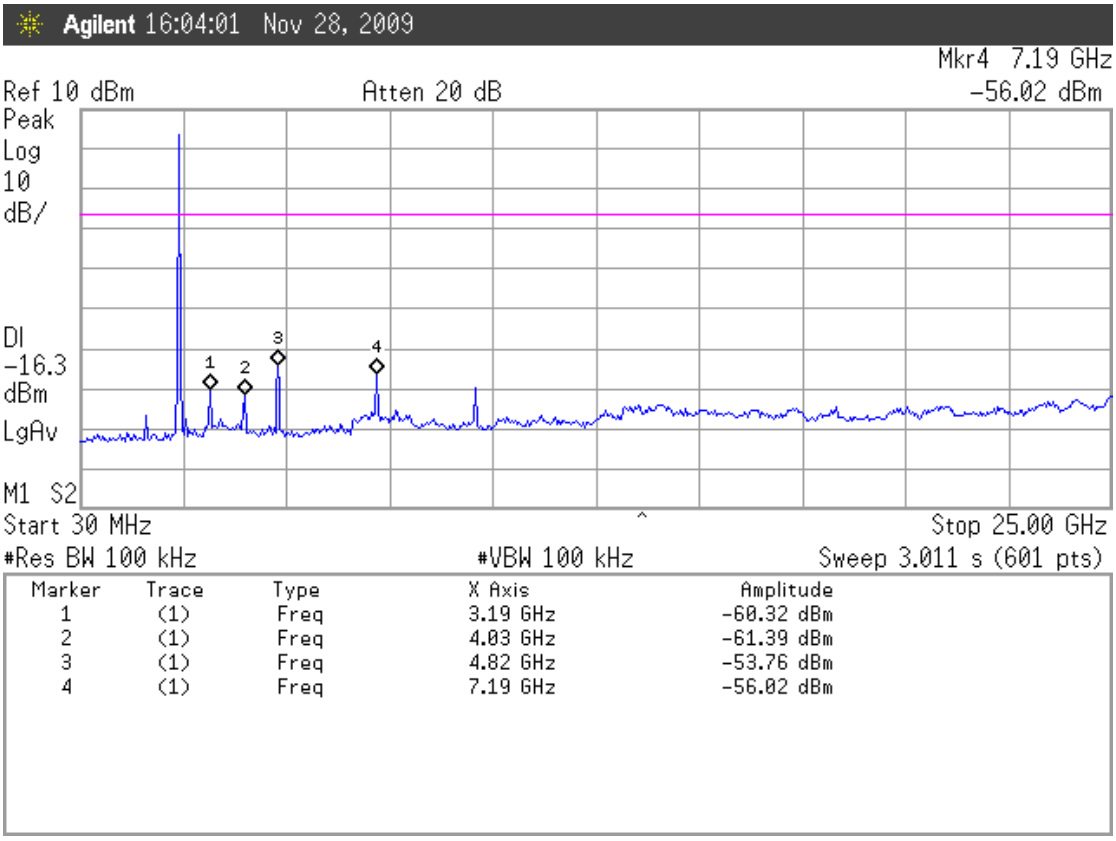


Figure 5: GFSK, Channel 39, Frequency: 2441MHz

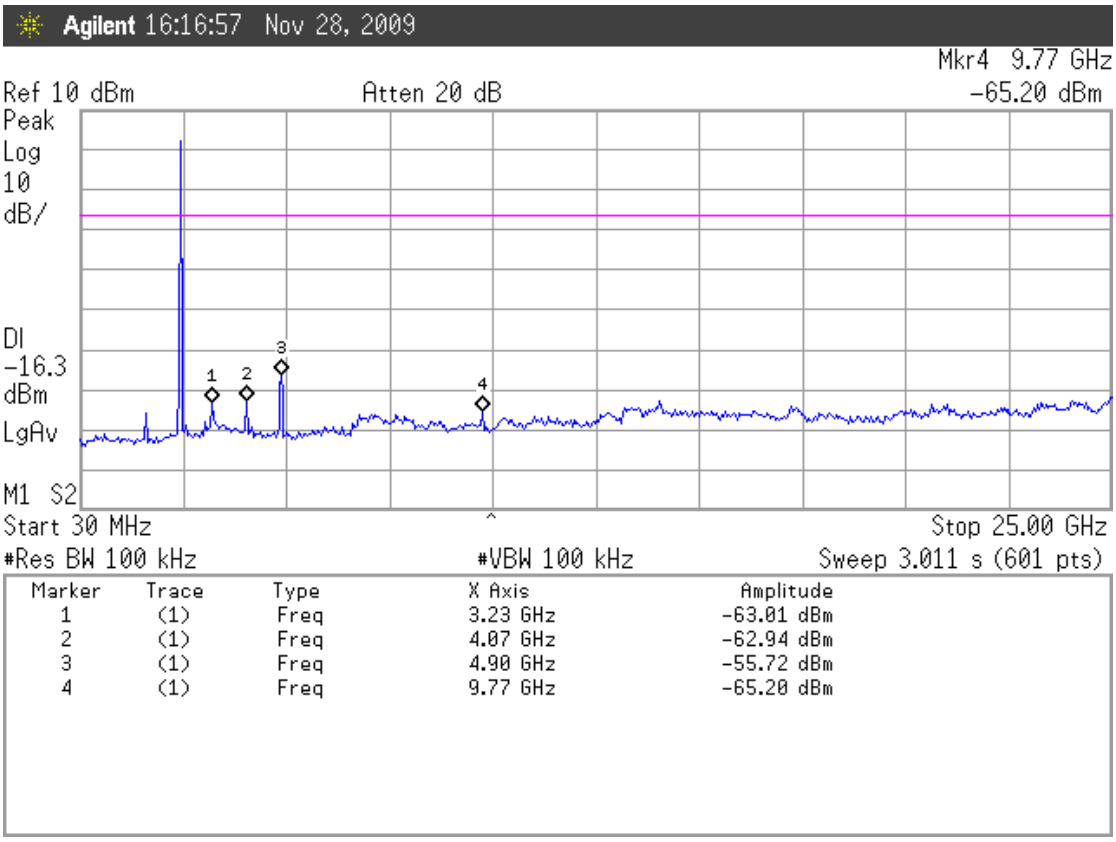
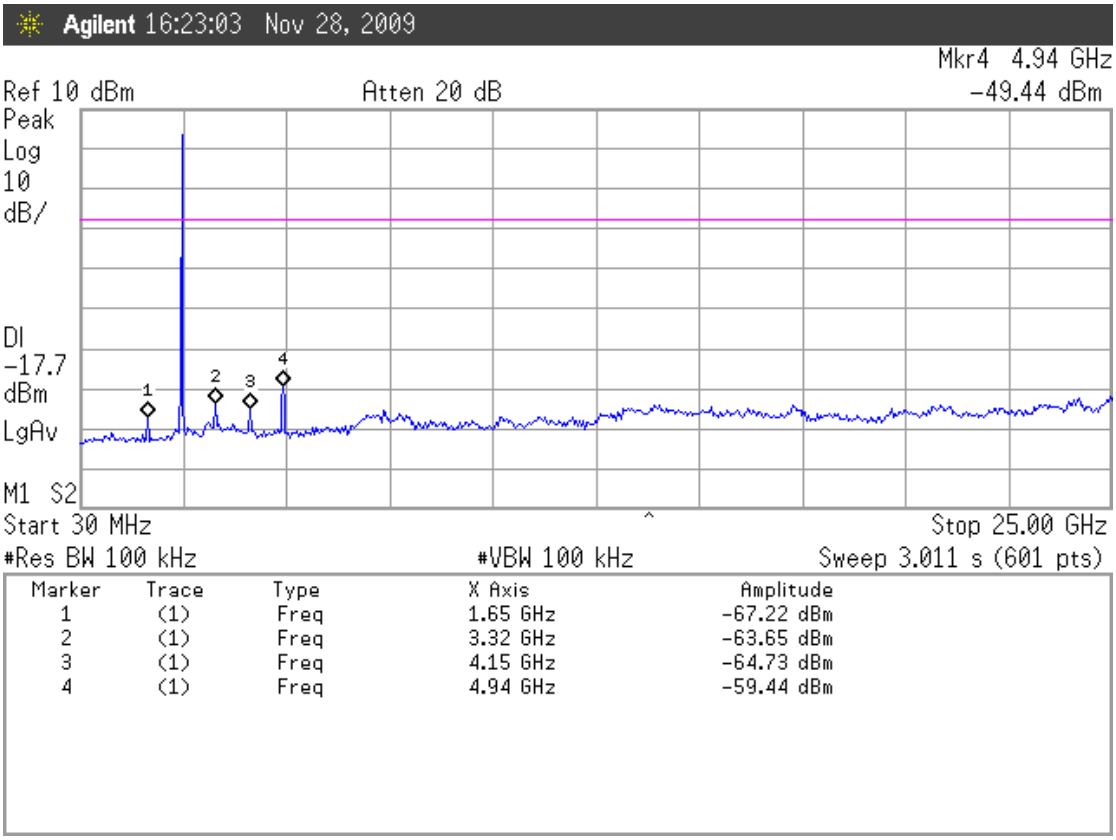


Figure 6: GFSK, Channel 78, Frequency: 2480MHz



10. BAND EDGES MEASUREMENT

10.1. 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	E4446A	US44300366	Jul. 23, 09’	Jul. 22, 10’

10.2. Block Diagram of Test Setup

The same as section.4.2.

10.3. Specification Limits (§15.247(c))

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. 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 §3.6.3)

10.4. Operating Condition of EUT

Same as carrier frequency separation measurement which was listed in section 4.4.

10.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100kHz bandwidth from band edge.
The measurement guideline was according to FCC Public Notice DA 00-705.

10.6. Test Results

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

[Note: Three types of modulation (8-DPSK,π /4DQPSK, GFSK) were evaluated but only two types of modulation (8-DPSK and GFSK) were reported in this report.]

EUT：Notebook PC M/N：LGX30

Test Date : Nov. 28, 2009 Temperature : 26 ℃ Humidity : 55 %

10.6.1. Type of Modulation: 8-DPSK

1. Upper Band edge : The highest emission level is -43.44dBm on 2.39996GHz。
2. Below Band edge: The highest emission level is -54.11dBm on 2.48352GHz。

10.6.2. Type of Modulation: GFSK

1. Upper Band edge : The highest emission level is -58.55dBm on 2.39994GHz。
2. Below Band edge: The highest emission level is -57.34dBm on 2.48352GHz。

Figure 1: 8-DPSK, Upper Band edge

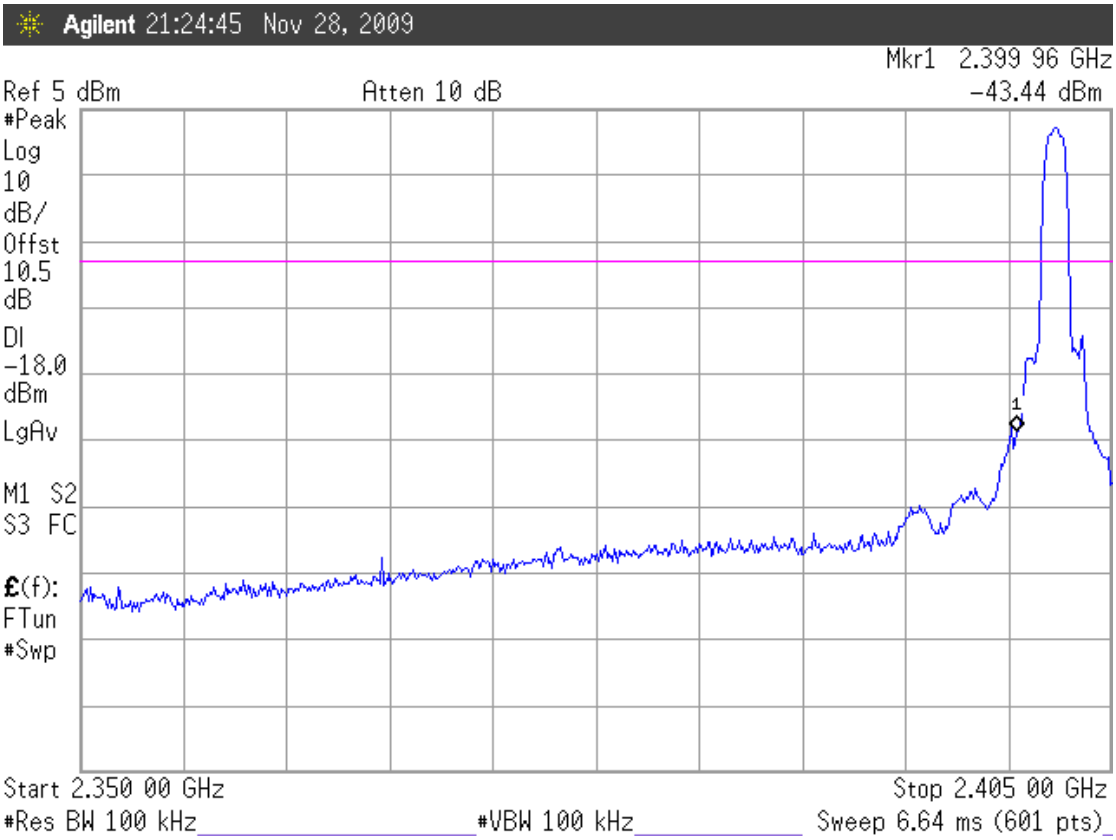


Figure 2: 8-DPSK, Below Band edge

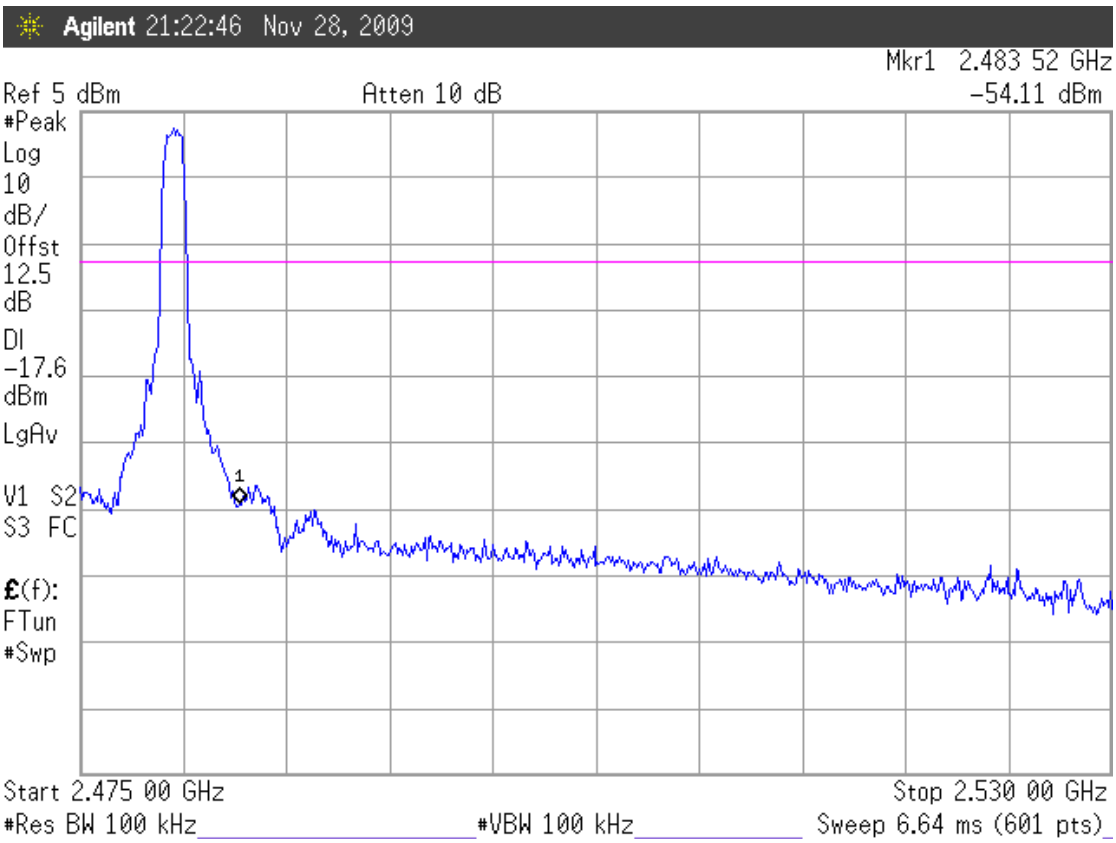


Figure 3: GFSK, Upper Band edge

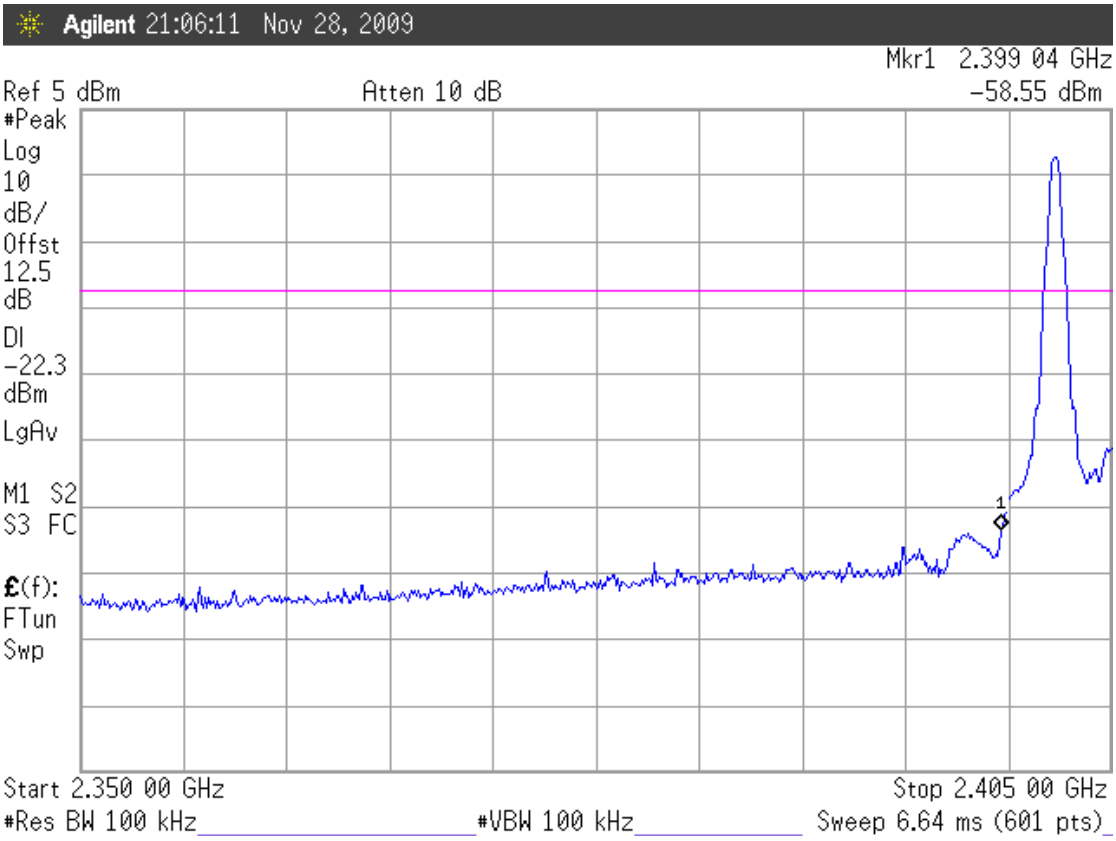
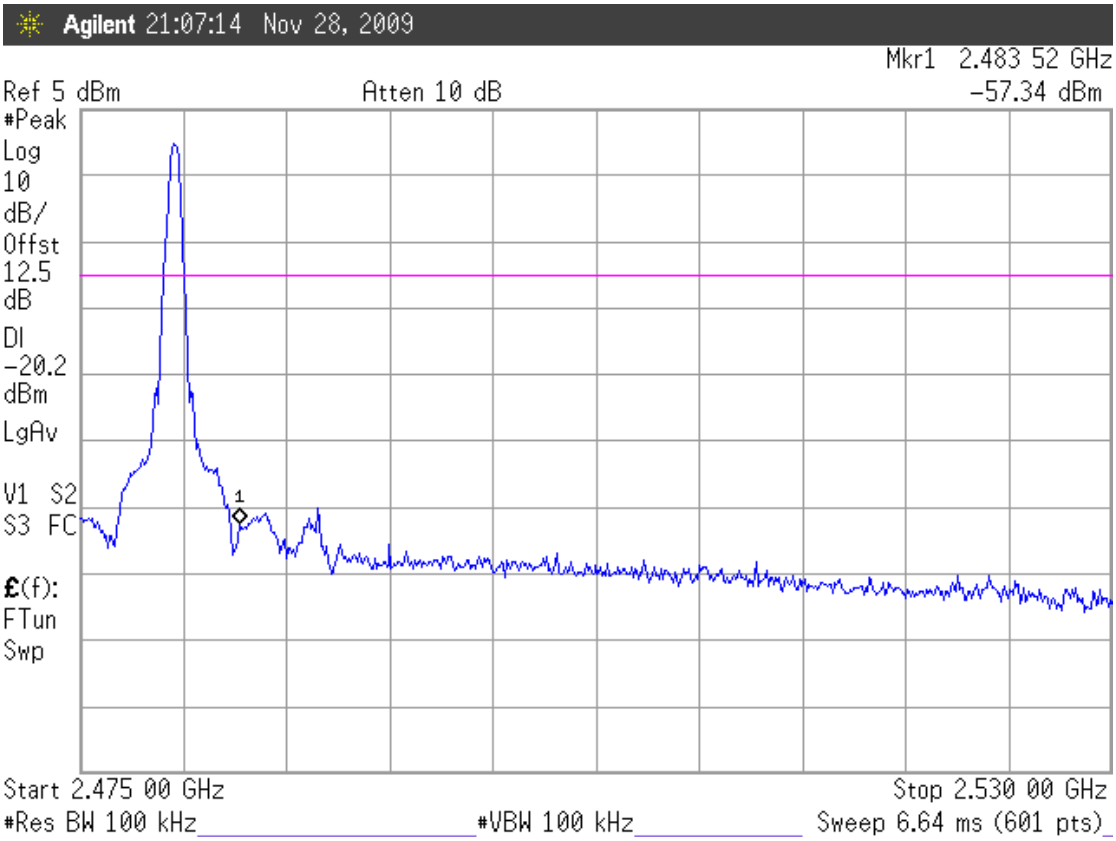


Figure 4: GFSK, Below Band edge



11. DEVIATION TO TEST SPECIFICATIONS

【NONE】