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CERTIFICATION OF COMPLIANCE

LG Electronics USA.

1000 Sylvan Avenue Englewood Cliffs New Jersey.
 United States

Dates of Tests: May 28 ~ June 04, 2008

Test Report S/N: DR50110806K

Test Site : DIGITAL EMC CO., LTD.

FCC ID

BEJVS8610-DC

APPLICANT

LG Electronics USA.

FCC Equipment Class	:	Part 15 Spread Spectrum Transmitter(DSS)
Device name	:	Bluetooth Handsfree DTC
Manufacturer	:	LG Electronics Inc.
FCC ID	:	BEJVS8610-DC
Model name	:	VX8610-DC
Test Device Serial number	:	Identical prototype
FCC Rule Part(s)	:	FCC Part 15.247 Subpart C ANSI C-63.4-2003
Frequency Range	:	2402 ~ 2480 MHz
Max. Output power	:	5.32 dBm Conducted (Normal Mode, 1Mbps) 5.17 dBm Conducted (EDR Mode, 2Mbps) 5.17 dBm Conducted (EDR Mode, 3Mbps)
Data of issue	:	June 9, 2008

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.



NVLAP LAB CODE 200559-0

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1. General information

This report contains the result of tests performed by:

DIGITAL EMC CO., LTD.

Address : 683-3, Yubang-Dong, Yongin-Si, Kyunggi-Do, Korea. 449-080

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Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the "General requirements for the competent of calibration and testing laboratory".

This laboratory is accredited by NVLAP for NVLAP Lab. Code : 200559-0.

Test operator: engineer

June 9, 2008

D.C.Cha



Data

Name

Signature

Report Reviewed By: manager

June 9, 2008

Harvey Sung



Data

Name

Signature

Ordering Party:

- Company name : LG Electronics USA.
- Address : 1000 Sylvan Avenue Englewood Cliffs
- City/town : New Jersey
- Country : United States
- Date of order : May 27, 2008

2. Information about test item

BEJVX8610-DC

2.1 Equipment information

Equipment model no.	VX8610-DC
Equipment serial no.	Identical prototype
Type of equipment	Bluetooth Handsfree DTC
Frequency band	2402 ~ 2480 MHz
Type of Modulation	GFSK, $\Pi/4$ -DQPSK, 8-DPSK
Spread Spectrum	Frequency Hopping Spread Spectrum
Channel Spacing	1.0 MHz
Type of antenna	Chip Antenna

2.2 Tested frequency

Frequency	TX	RX
Low frequency	2402MHz	2402MHz
Middle frequency	2441MHz	2441MHz
High frequency	2480MHz	2480MHz

2.3 Tested environment

Temperature	: 15 ~ 35 (°C)
Relative humidity content	: 20 ~ 75 %
Air pressure	: 86 ~ 103 kPa
Details of power supply	: 5.1 V DC from AC/DC Adaptor

2.4 Ancillary Equipment

Equipment	Model No.	Serial No.	Manufacturer
Adapter	STA-P51WR	RA67087374	SUNLIN Electronics Co., Ltd.
-	-	-	-

2.5 EMI Suppression Device(s)/Modifications

EMI suppression device(s) added and/or modifications made during testing

-> None

3. Test Report

3.1 Summary of tests

FCC Part Section(s)	Parameter	Limit (Using in 2400 ~ 2483.5MHz)	Test Condition	Status (note 1)
I. Test Items				
15.247(a)	Carrier Frequency Separation	>= 20dB BW or >= Two-Thirds of the 20dB BW	Conducted	C
	Number of Hopping Frequencies	>= 15 hops		C
	20 dB Bandwidth	None		C
	Dwell Time	=< 0.4S		C
15.247(b)	Transmitter Output Power	=< 1Watt , if CHs >= 75 Others =<0.125W		C
15.247(c)	Band-edge /Conducted	The radiated emission to any 100 kHz of outband shall be at least 20dB below the highest inband spectral density.		C
	Conducted Spurious Emissions			C
15.205 15.209	Radiated Emissions	FCC 15.209 Limits	Radiated	C
15.207	AC Conducted Emissions	EN 55022	AC Line Conducted	C
Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable				

The sample was tested according to the following specification:

FCC Parts 15.247; ANSI C-63.4-2003, DA00-705

3.2 Transmitter requirements

3.2.1 Carrier Frequency Separation

Procedure:

The carrier frequency separation was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function enabled.

After the trace being stable, the reading value between the peaks of the adjacent channels using the marker-delta function was recorded as the measurement results.

The spectrum analyzer is set to:

Span = 3 MHz (wide enough to capture the peaks of two adjacent channels)

RBW = 30 kHz (1% of the span or more) Sweep = auto

VBW = 30 kHz

Detector function = peak

Trace = max hold

Measurement Data:

MODE	Frequency of marker #1 (MHz)	Frequency of marker #2 (MHz)	Test Results	
			Carrier Frequency Separation (MHz)	Result
Normal 1Mbps	2440.067	2441.069	1.002	Comply
EDR 2Mbps	2437.040	2438.040	1.000	Comply
EDR 3Mbps	2439.990	2440.990	1.000	Comply

- See next pages for actual measured spectrum plots.

Minimum Standard:

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Alternatively, 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, provided the systems operate with an output power no greater than 125 mW

Measurement Setup

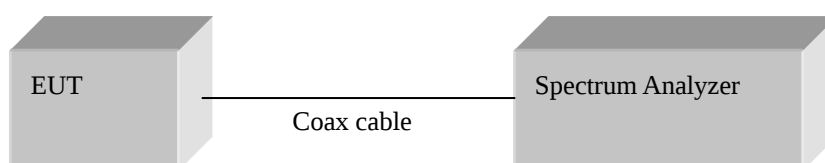
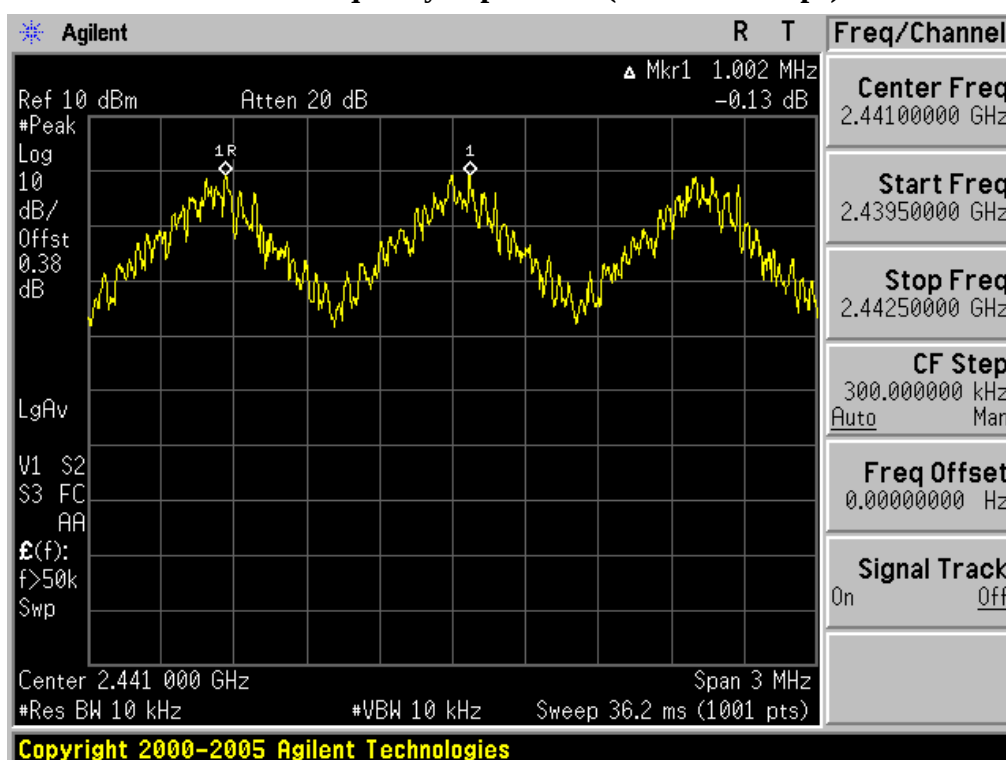
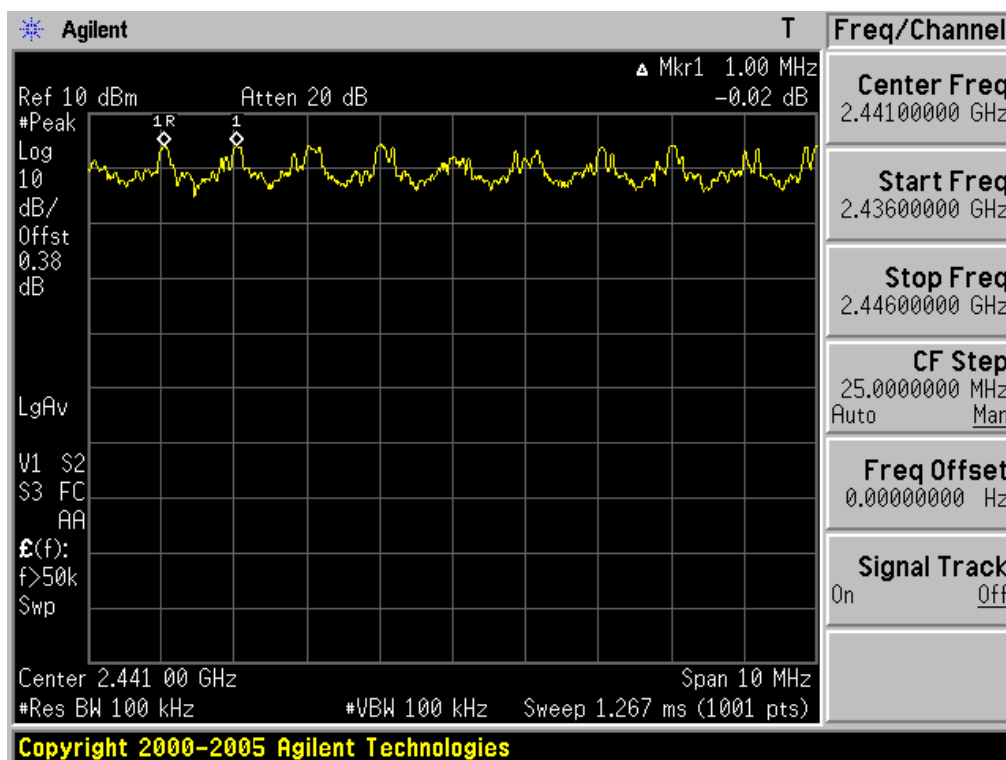


Figure 1: Measurement setup for the carrier frequency separation

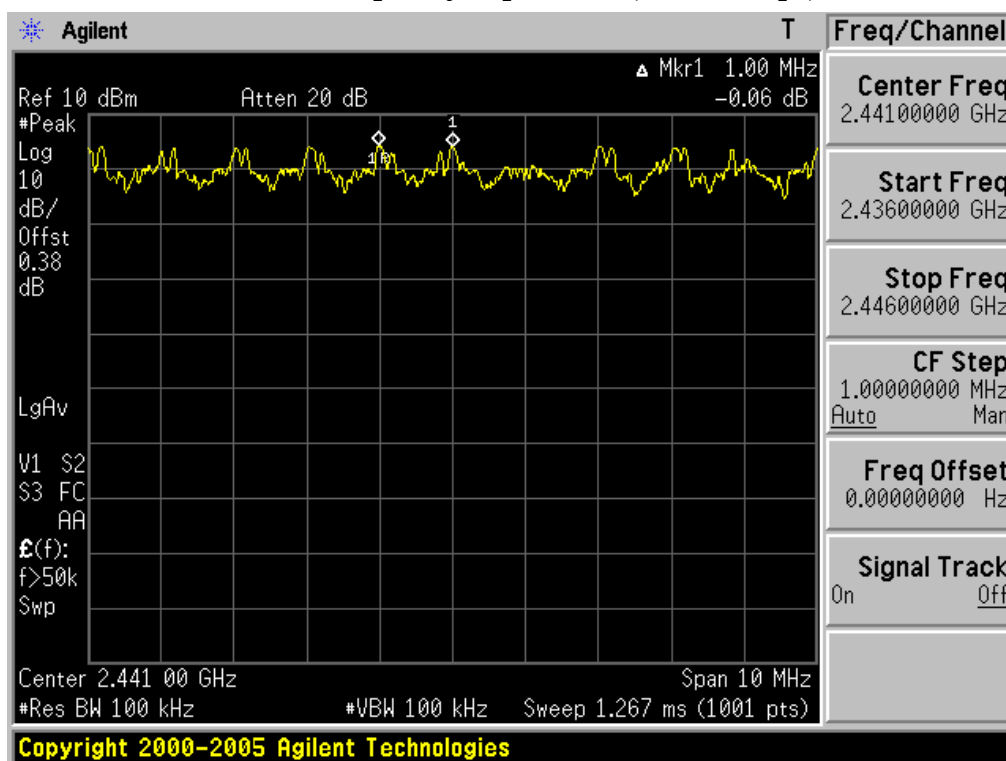
Carrier Frequency Separation (Normal 1Mbps)



Carrier Frequency Separation (EDR 2Mbps)



Carrier Frequency Separation (EDR 3Mbps)



3.2.2 Number of Hopping Frequencies

Procedure:

The number of hopping frequencies was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function enabled.

To get higher resolution, four frequency ranges within the 2400 ~ 2483.5 MHz band were examined.

The spectrum analyzer is set to:

Frequency range 1: Start = 2389.5MHz, Stop = 2414.5 MHz

2: Start = 2414.5MHz, Stop = 2439.5 MHz

3: Start = 2439.5MHz, Stop = 2464.5 MHz

4: Start = 2464.5MHz, Stop = 2489.5 MHz

RBW = 300 kHz (1% of the span or more) Sweep = auto

VBW = 300 kHz (VBW $\geq$ RBW) Detector function = peak

Trace = max hold Span = 25MHz

Measurement Data: **Complies**

Total number of Hopping Channels	79 (Normal, EDR)
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- See next pages for actual measured spectrum plots.

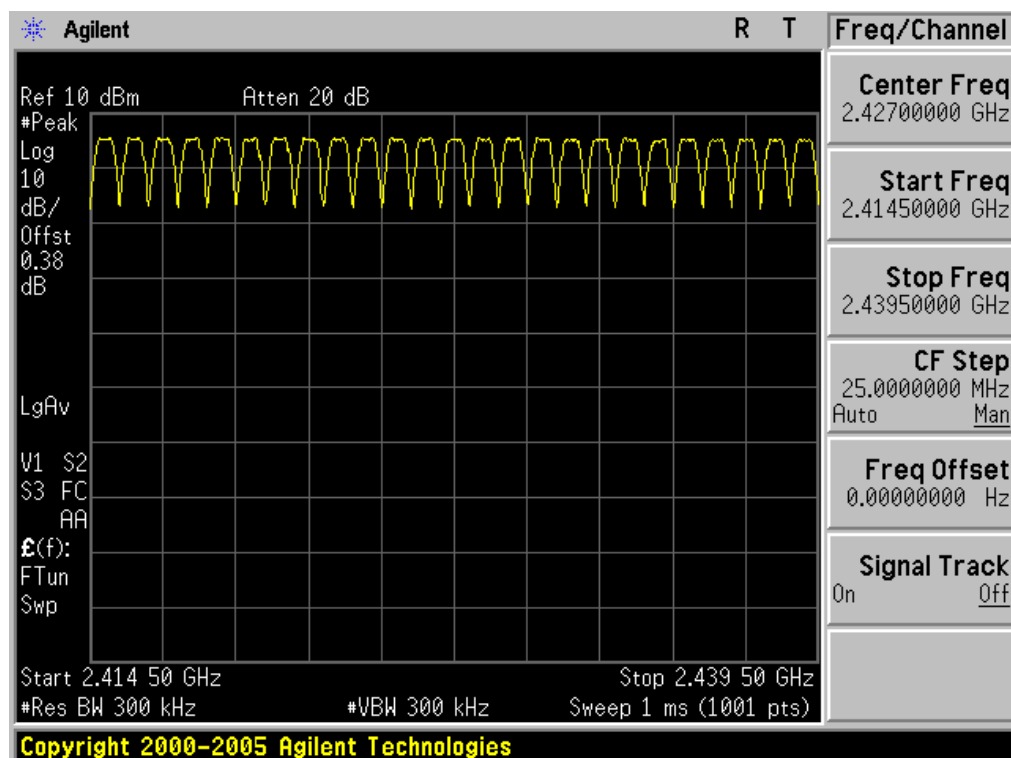
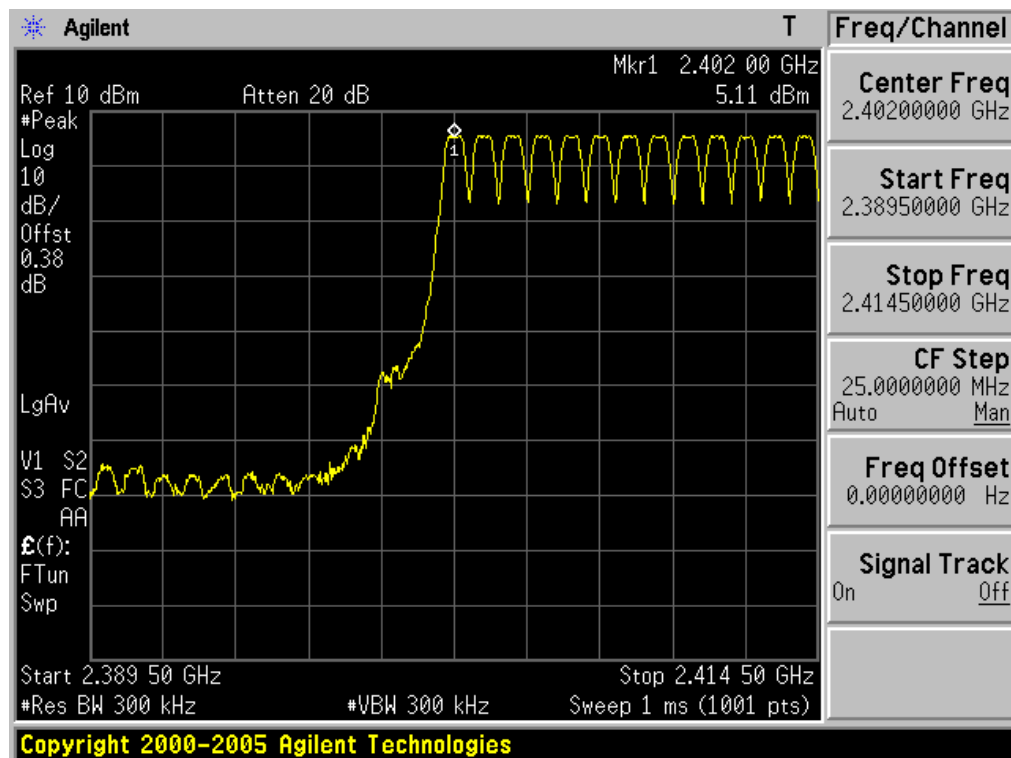
Minimum Standard:

At least 15 hopes

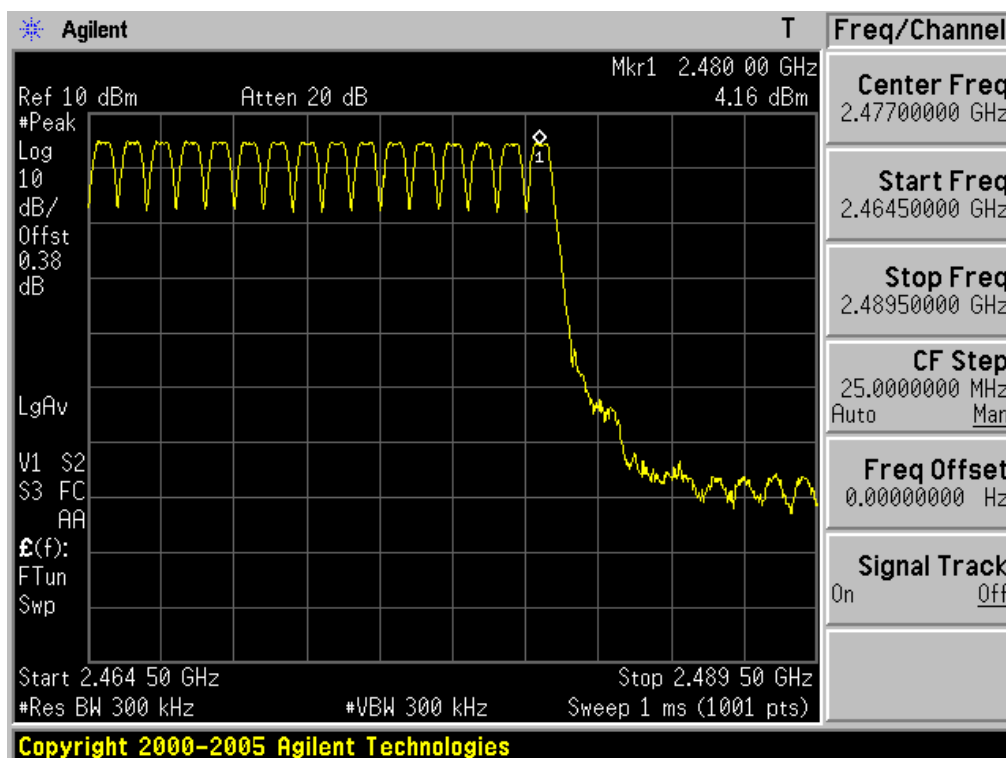
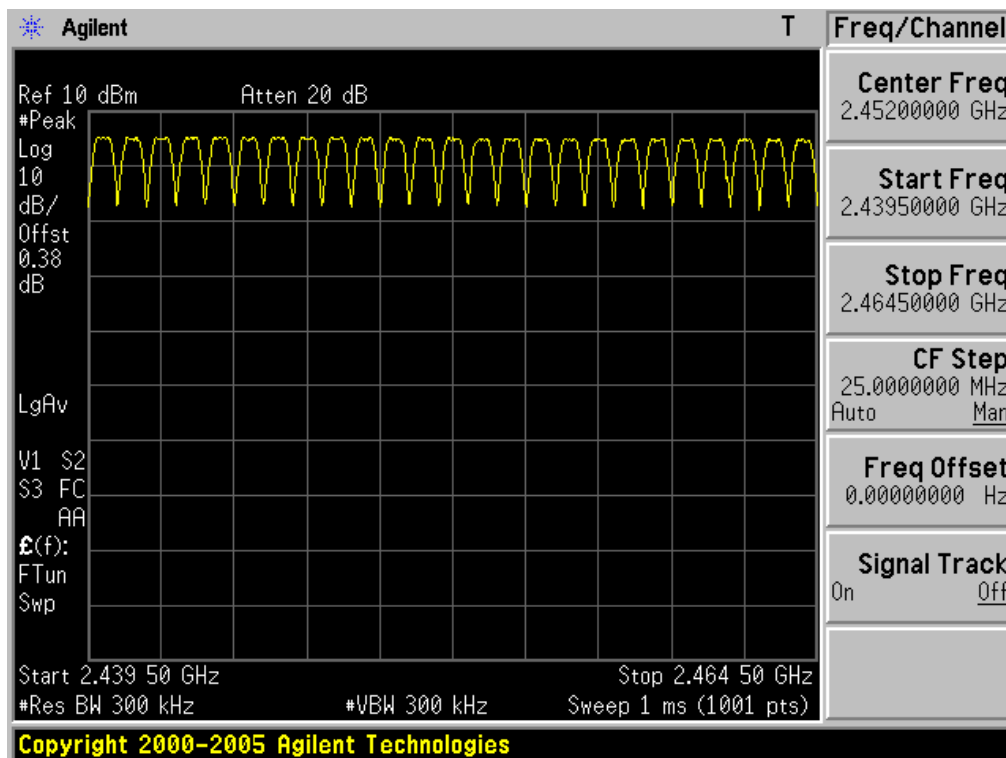
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

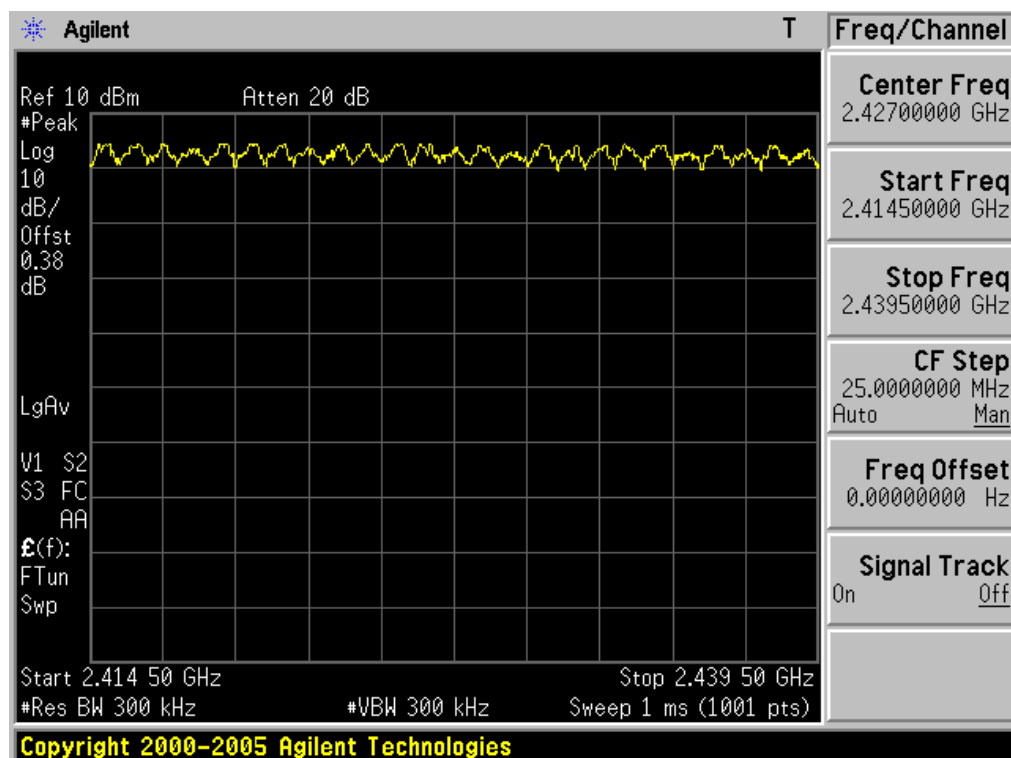
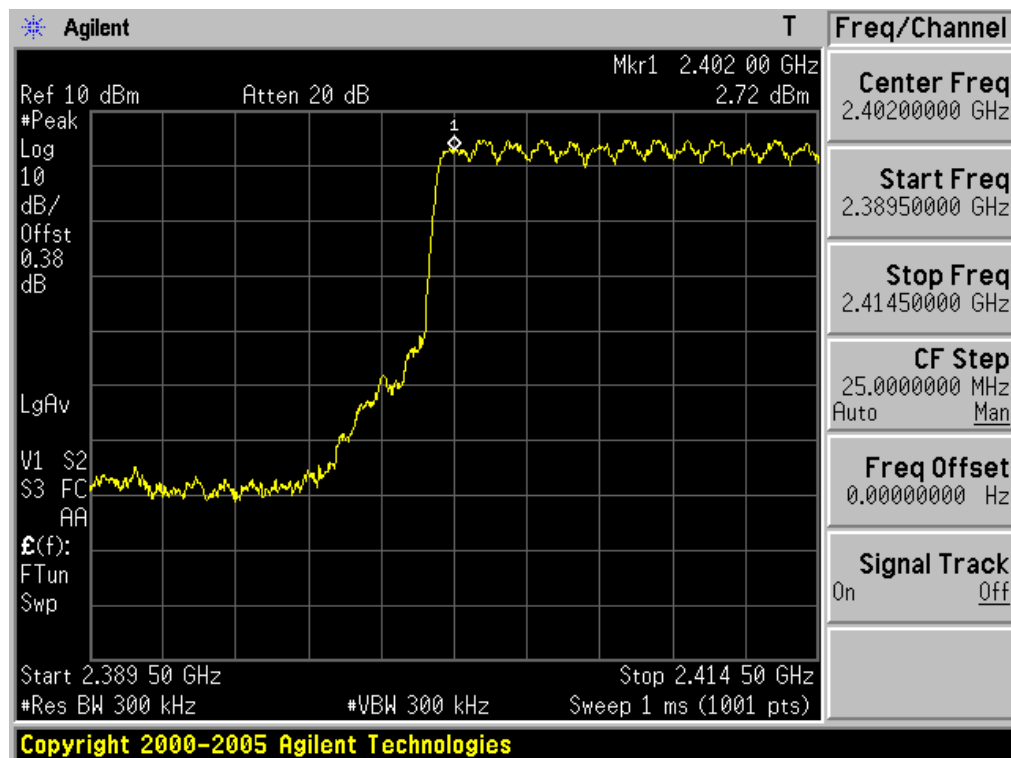
Number of Hopping Frequencies (Normal 1Mbps)



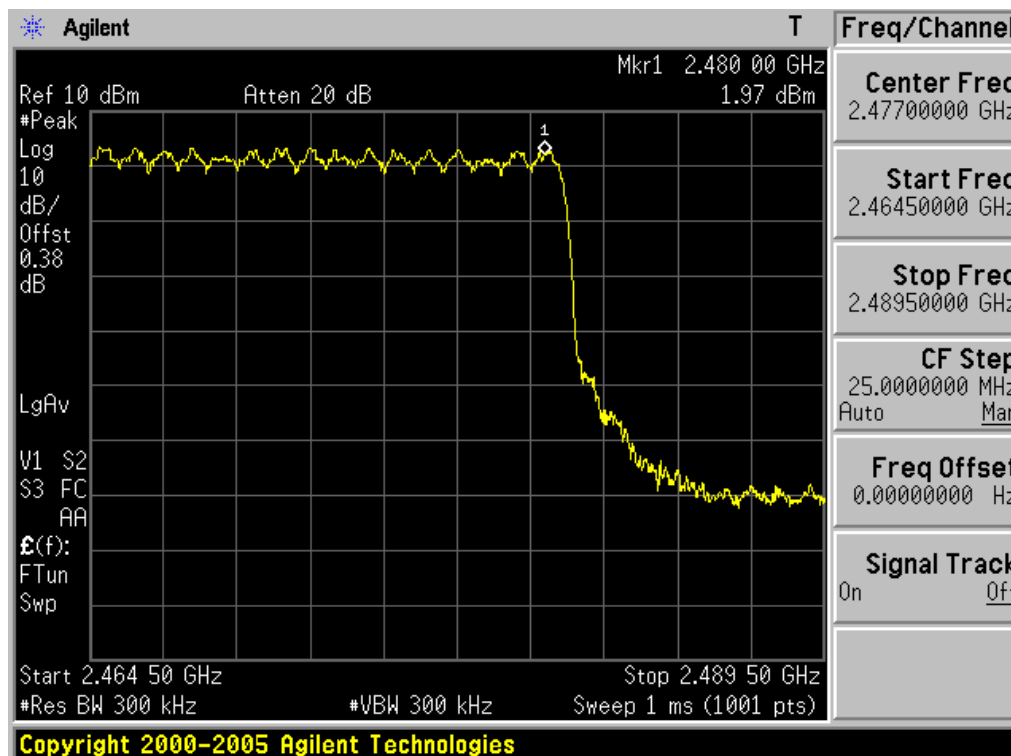
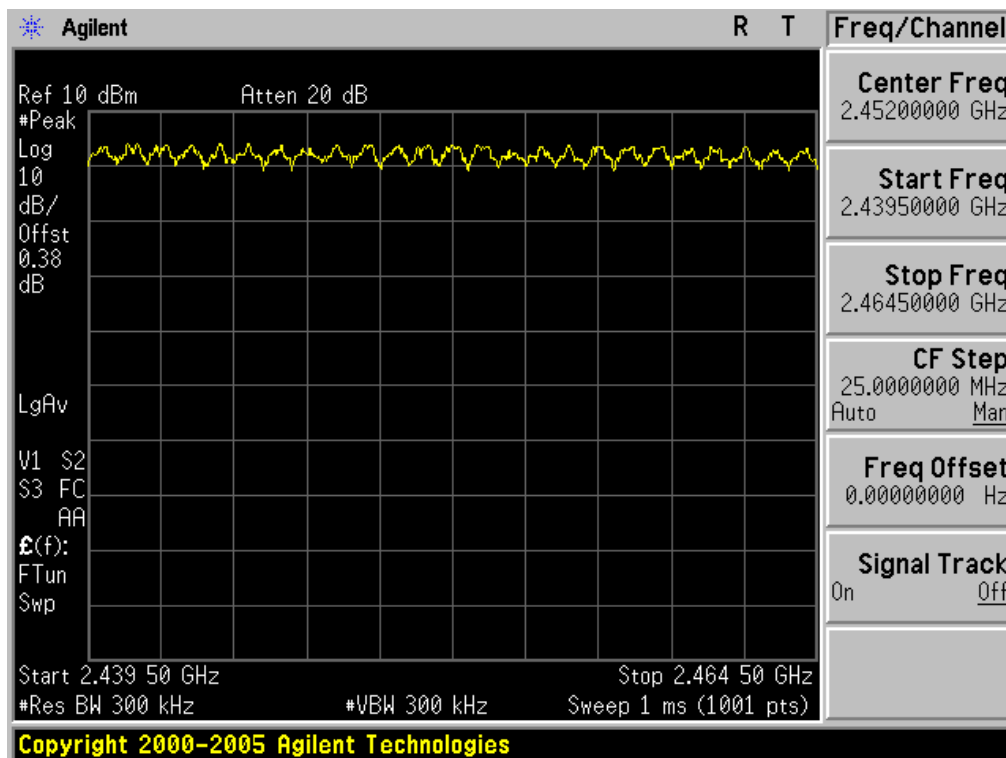
Number of Hopping Frequencies (Normal 1Mbps)



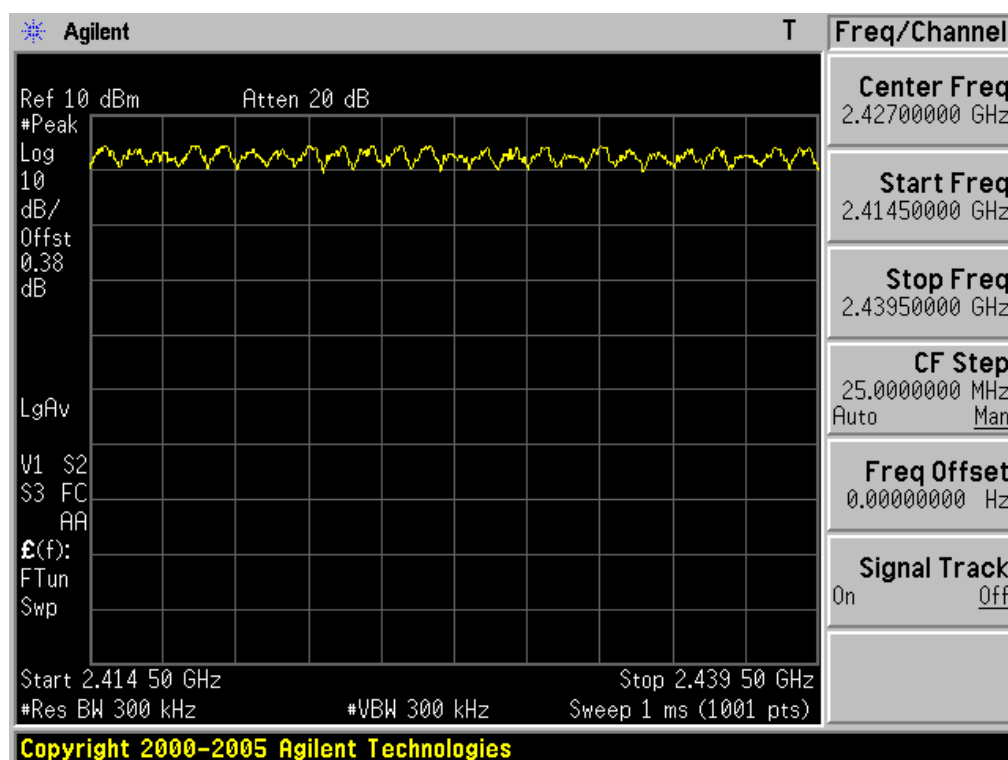
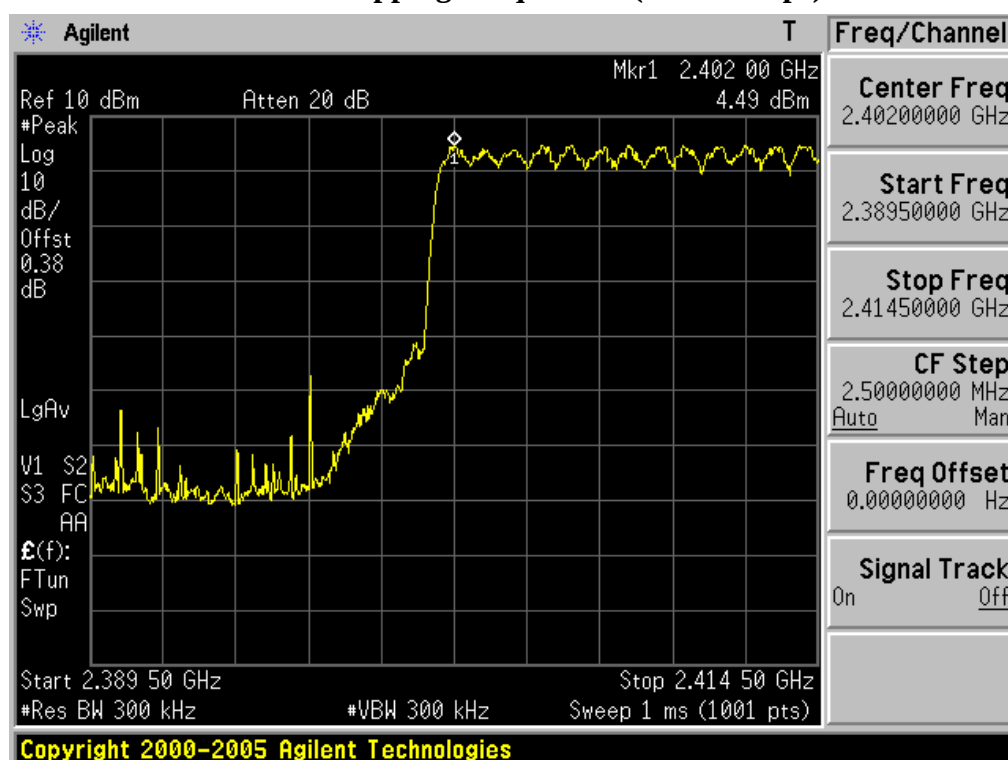
Number of Hopping Frequencies (EDR 2Mbps)



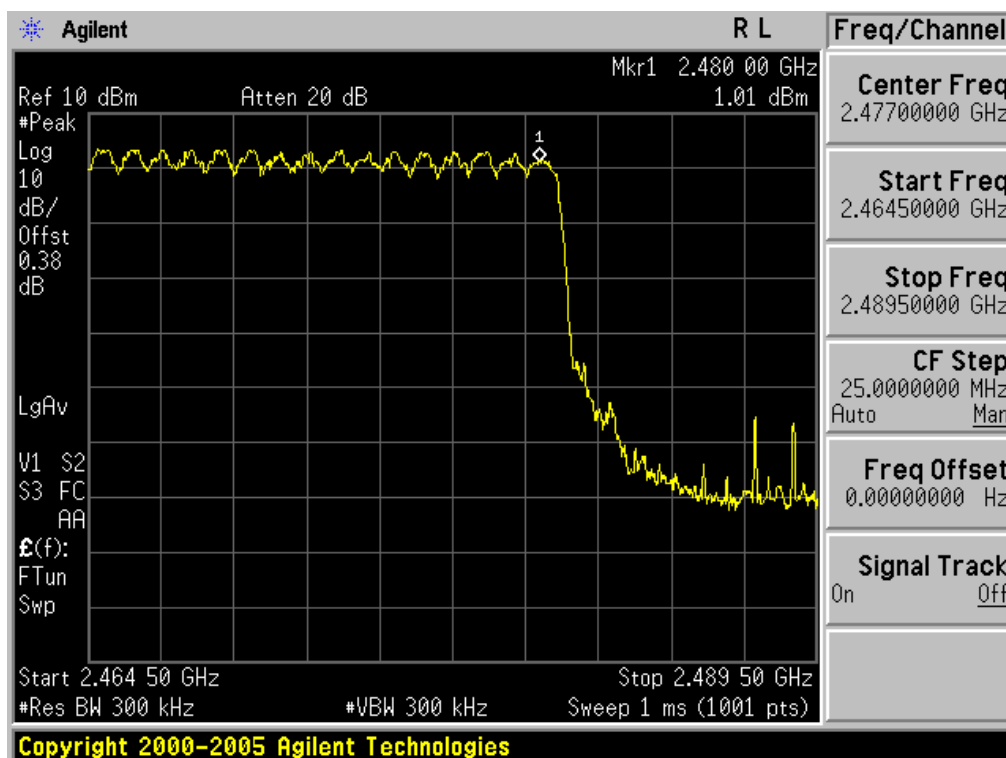
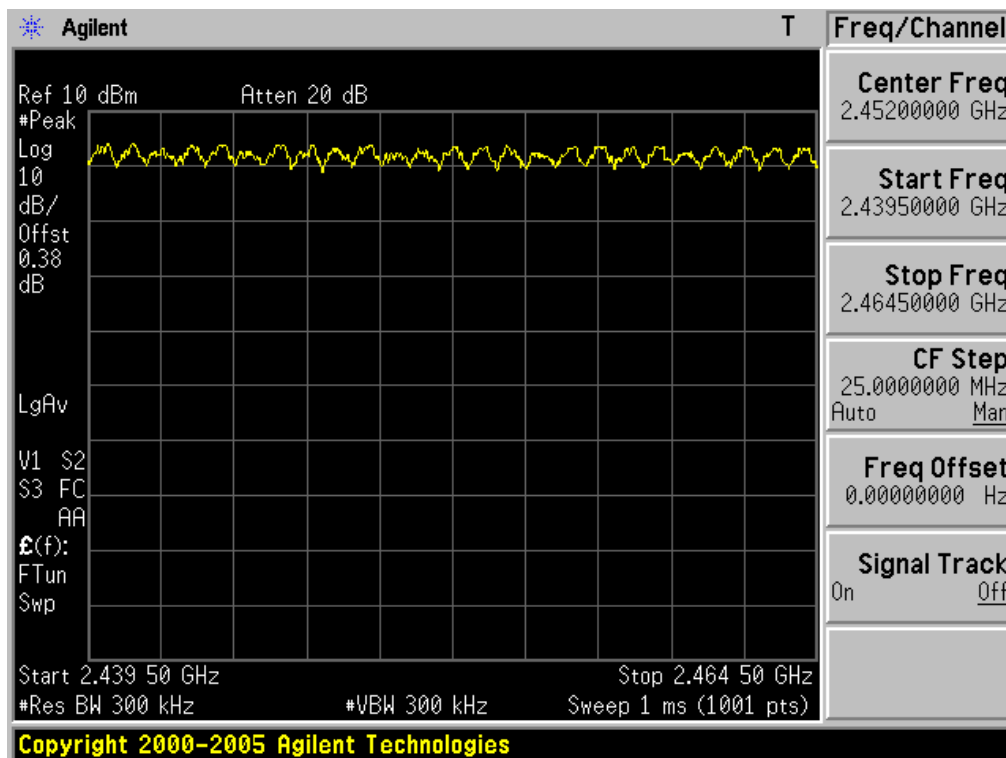
Number of Hopping Frequencies (EDR 2Mbps)



Number of Hopping Frequencies (EDR 3Mbps)



Number of Hopping Frequencies (EDR 3Mbps)



3.2.3 20 dB Bandwidth

Procedure:

The bandwidth at 20 dB below the highest inband spectral density was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function disabled at the highest, middle and the lowest available channels..

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 20dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 20 dB bandwidth of the emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

Span = 2 MHz (approximately 2 or 3 times of the 20 dB bandwidth)

RBW = 10 kHz (1% of the 20dB bandwidth or more) Sweep = auto

VBW = 30 kHz (VBW $\geq$ RBW) Detector function = peak

Trace = max hold

Measurement Data:

MODE	Frequency (MHz)	Channel No.	Test Results	
			Measured Bandwidth (MHz)	Result
Normal 1Mbps	2402	1	0.930	Comply
	2441	40	0.935	Comply
	2480	79	0.930	Comply
EDR 2Mbps	2402	1	1.260	Comply
	2441	40	1.280	Comply
	2480	79	1.320	Comply
EDR 3Mbps	2402	1	1.250	Comply
	2441	40	1.270	Comply
	2480	79	1.295	Comply

- See next pages for actual measured spectrum plots.

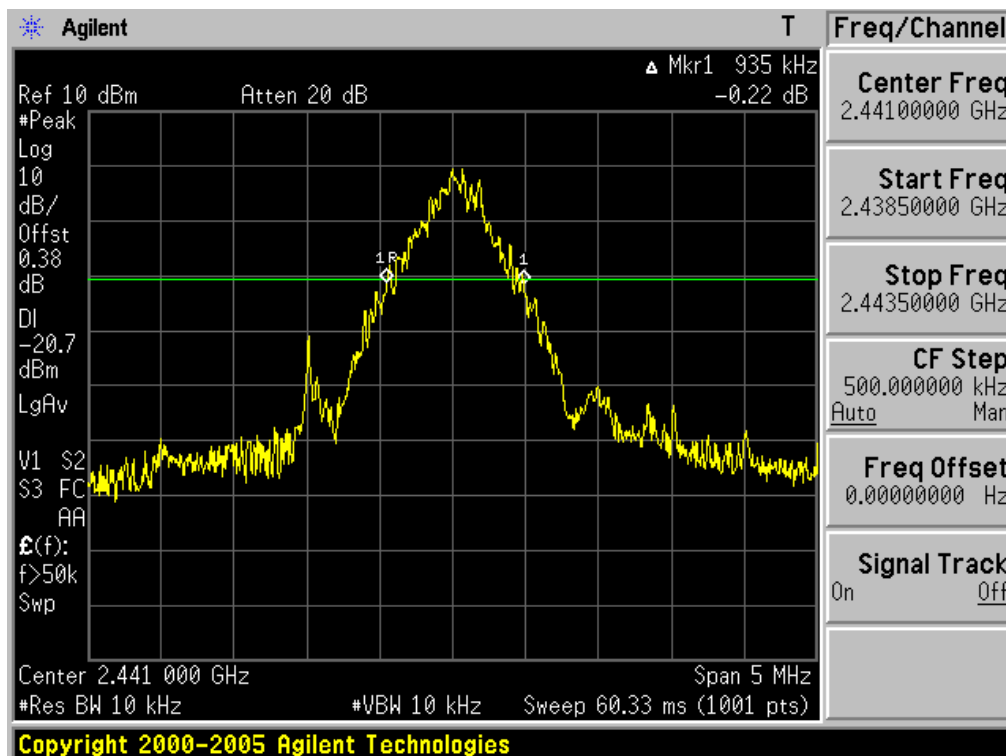
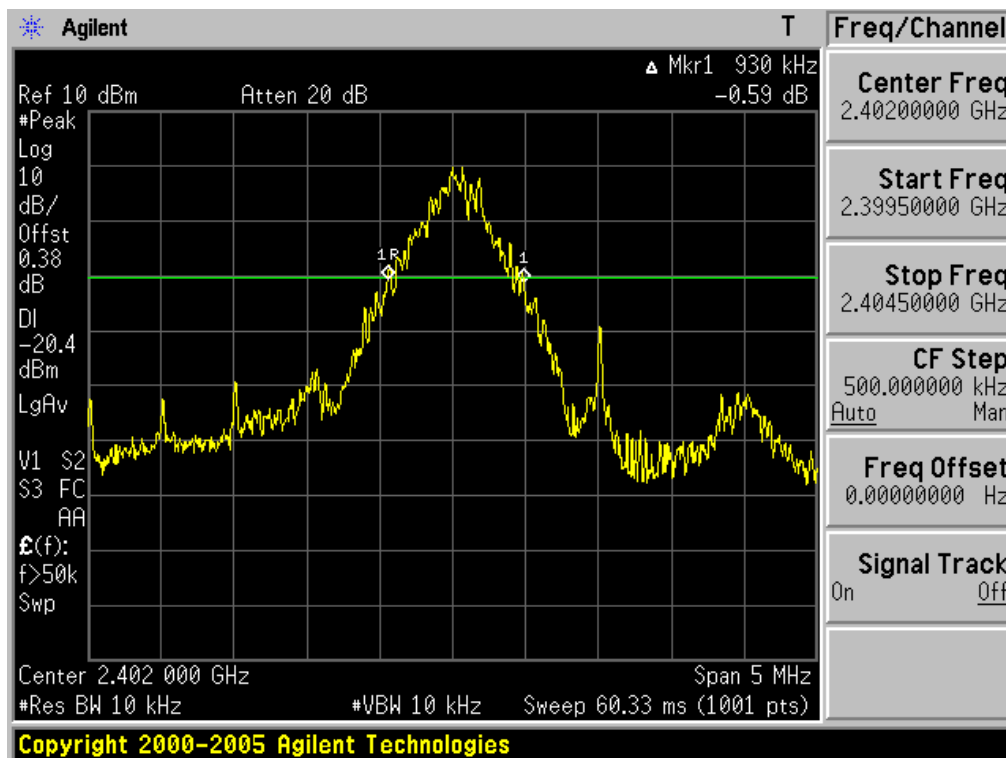
Minimum Standard:

None

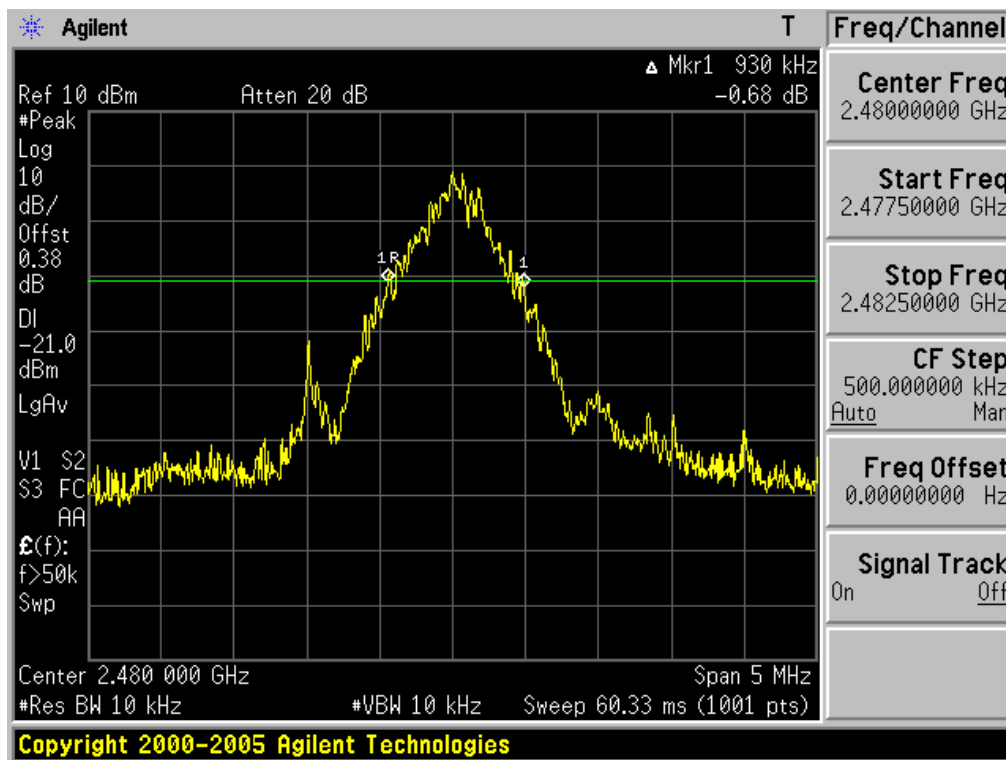
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

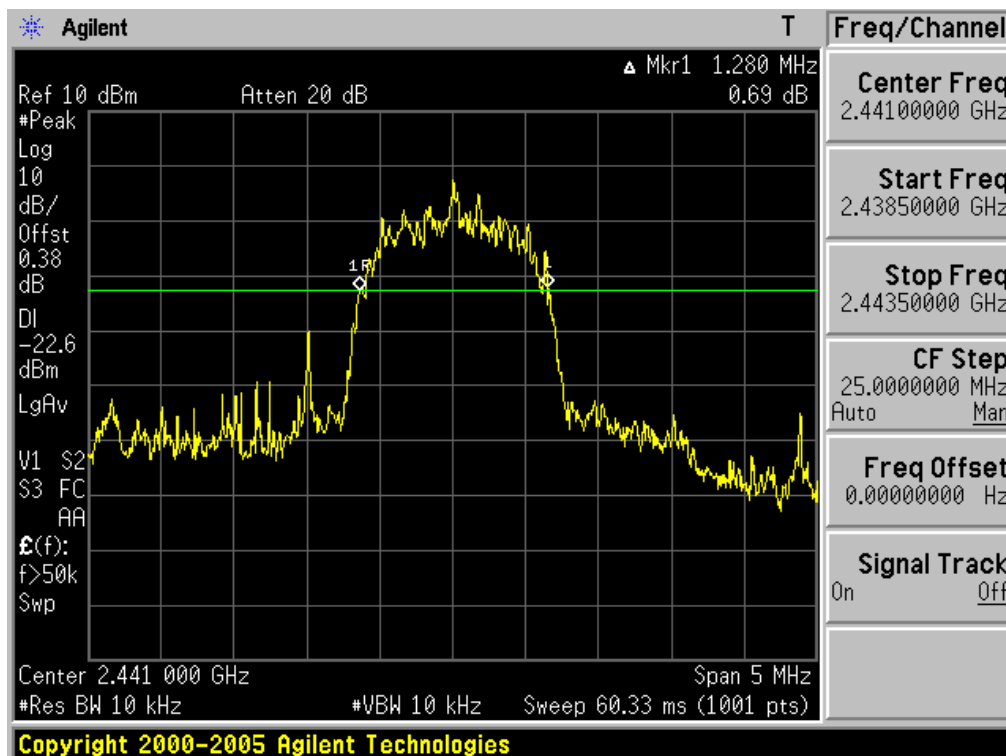
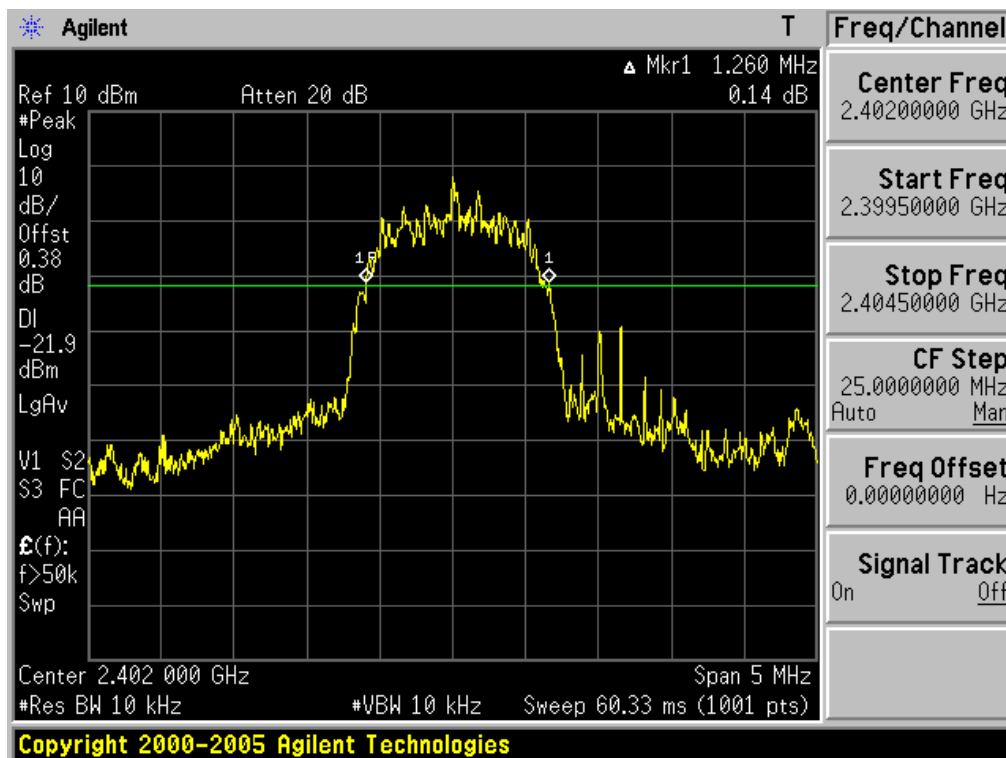
20 dB Bandwidth (Normal 1Mbps)



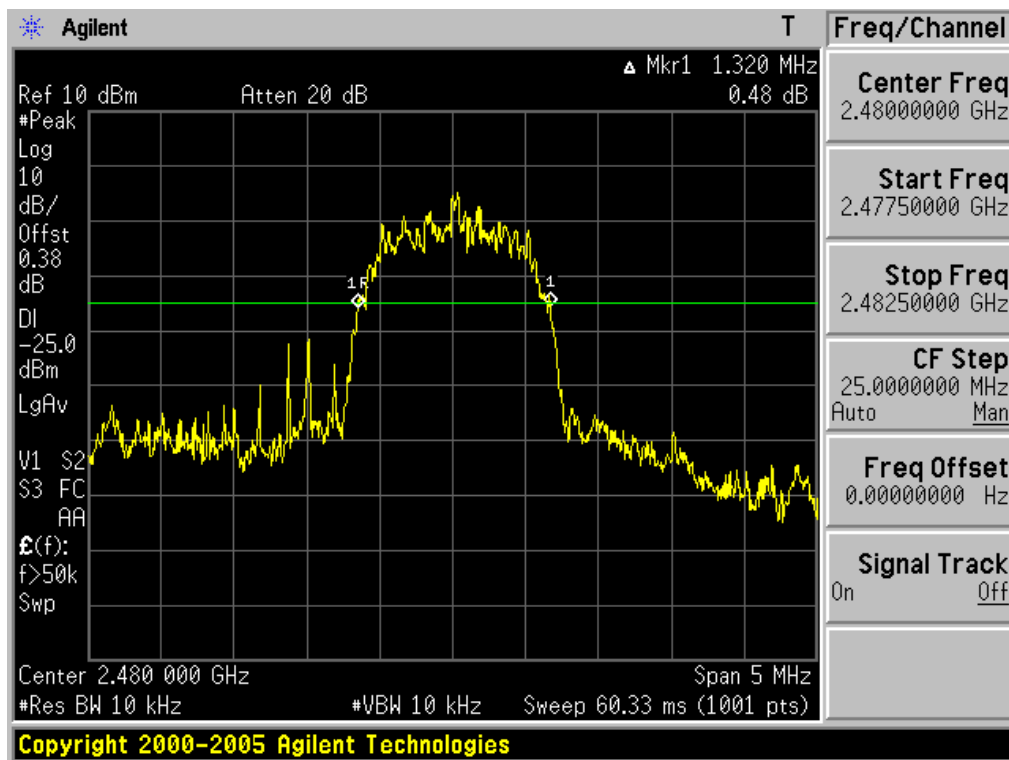
20 dB Bandwidth (Normal 1Mbps)



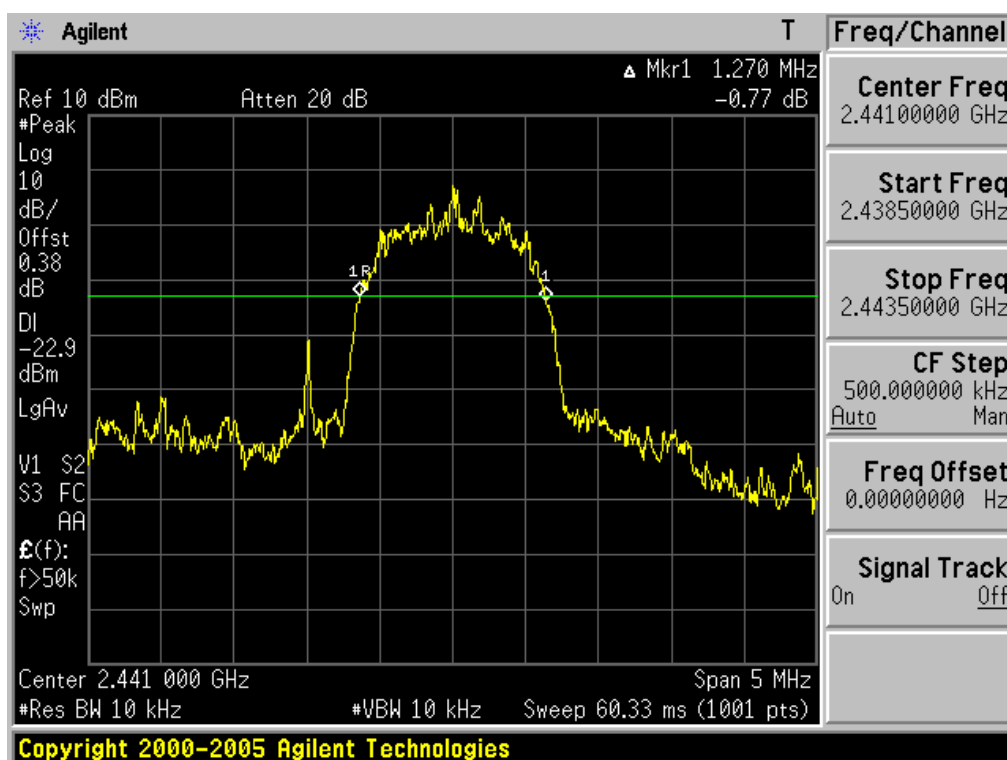
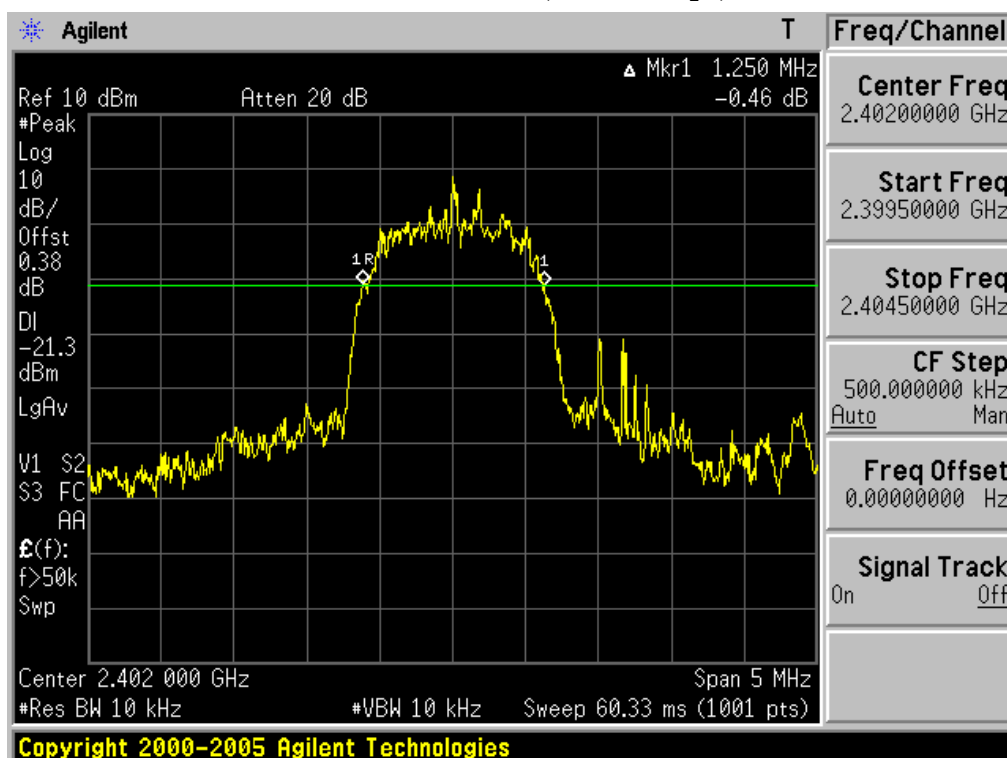
20 dB Bandwidth (EDR 2Mbps)



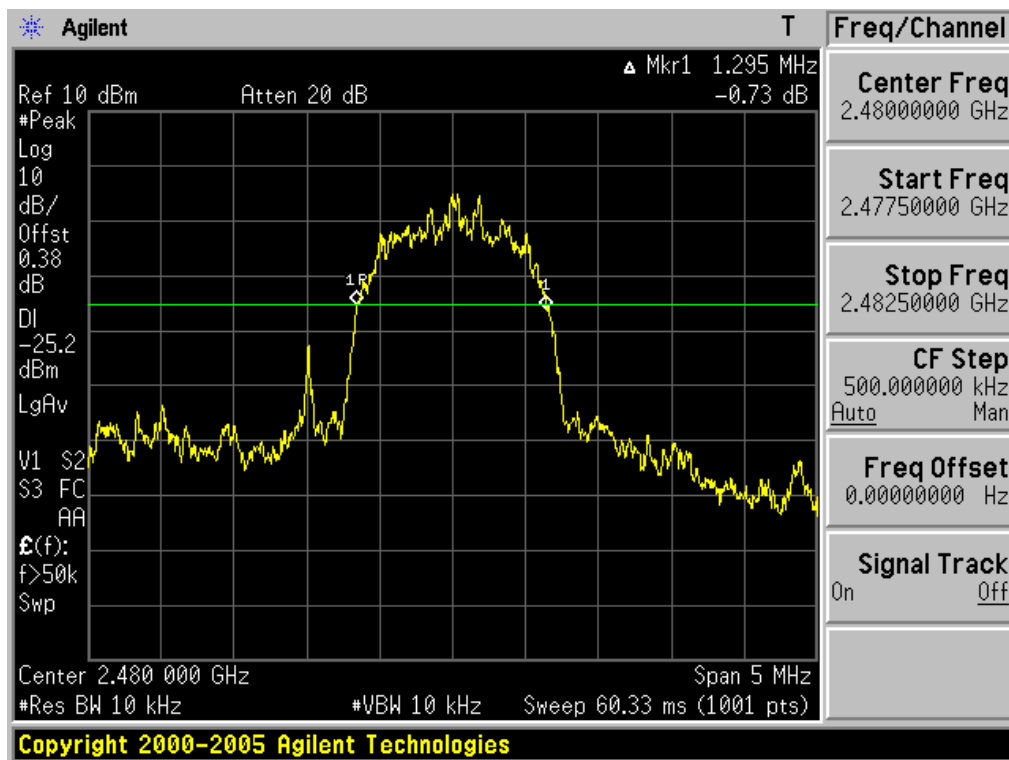
20 dB Bandwidth (EDR 2Mbps)



20 dB Bandwidth (EDR 3Mbps)



20 dB Bandwidth (EDR 3Mbps)



3.2.4 Time of Occupancy (Dwell Time)

Procedure:

The dwell time was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function enabled.

The spectrum analyzer is set to:

Center frequency = 2441 MHz

Span = zero

RBW = 1 MHz

VBW = 1 MHz (VBW $\geq$ RBW)

Trace = max hold

Detector function = peak

Measurement Data: See next pages for actual measured spectrum plots.

MODE	Packet Type	Burst On Time (ms)	Period (ms)	Number of hopping Channels	DWELL TIME (s)	Result
Normal 1Mbps	DH 1	0.396	1.251	79	0.127	Comply
	DH 3	1.134	2.502	79	0.181	Comply
	DH 5	2.904	3.756	79	0.309	Comply
EDR 2Mbps	DH 1	0.411	1.251	79	0.131	Comply
	DH 3	1.650	2.502	79	0.264	Comply
	DH 5	2.904	3.756	79	0.309	Comply
EDR 3Mbps	DH 1	0.411	1.251	79	0.131	Comply
	DH 3	1.650	2.502	79	0.264	Comply
	DH 5	2.904	3.744	79	0.310	Comply

Note : Each new transmission event begins on the next channel in the hopping sequence after the final channel used in the previous transmission event. $DWELL\ TIME = (0.4 \times \text{Number of hopping Channels}) \times \text{Burst On time} / (\text{period} \times \text{Number of hopping Channels})$

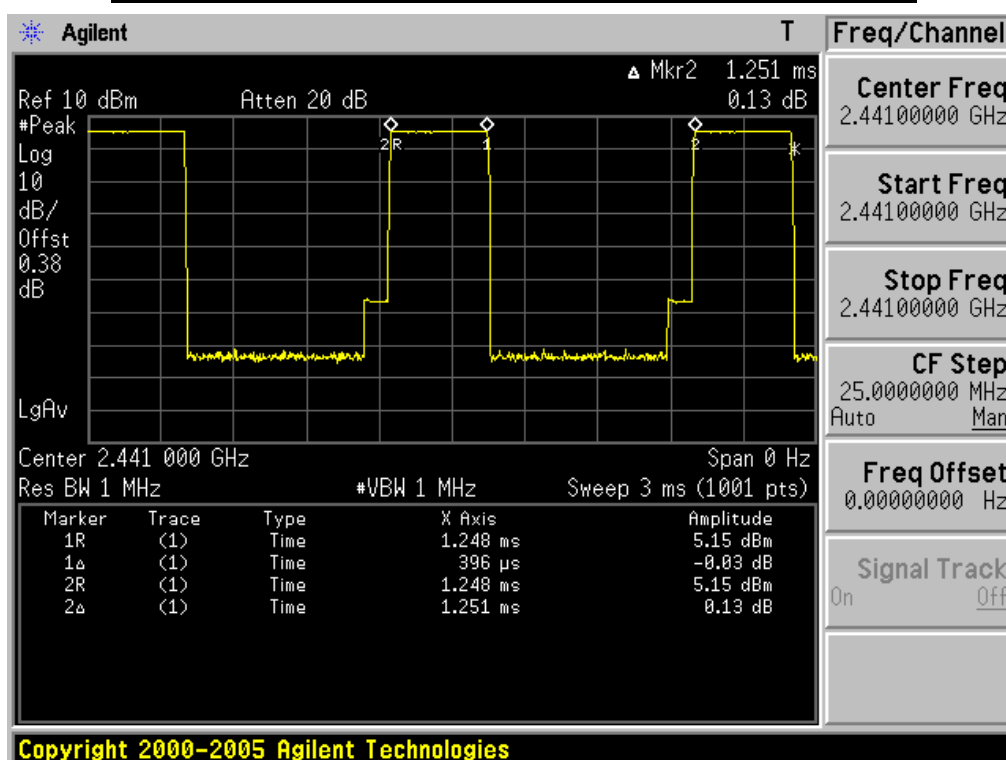
Minimum Standard:

No greater than 0.4 seconds

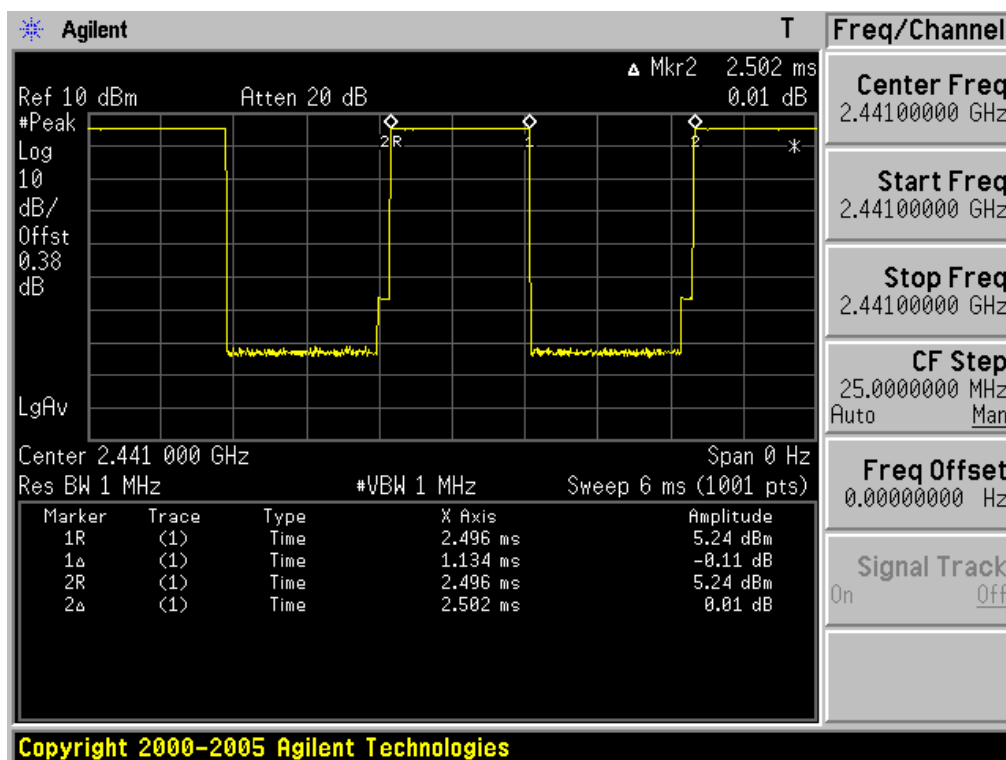
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

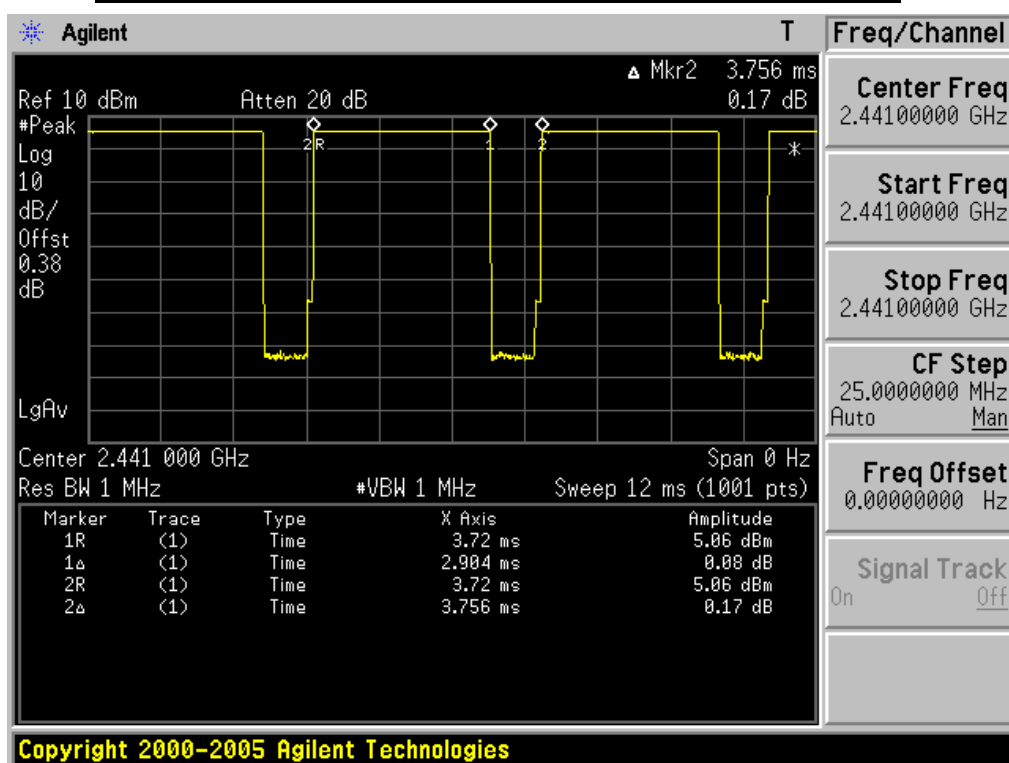
Time of Occupancy for Packet Type DH 1 (Normal 1Mbps)



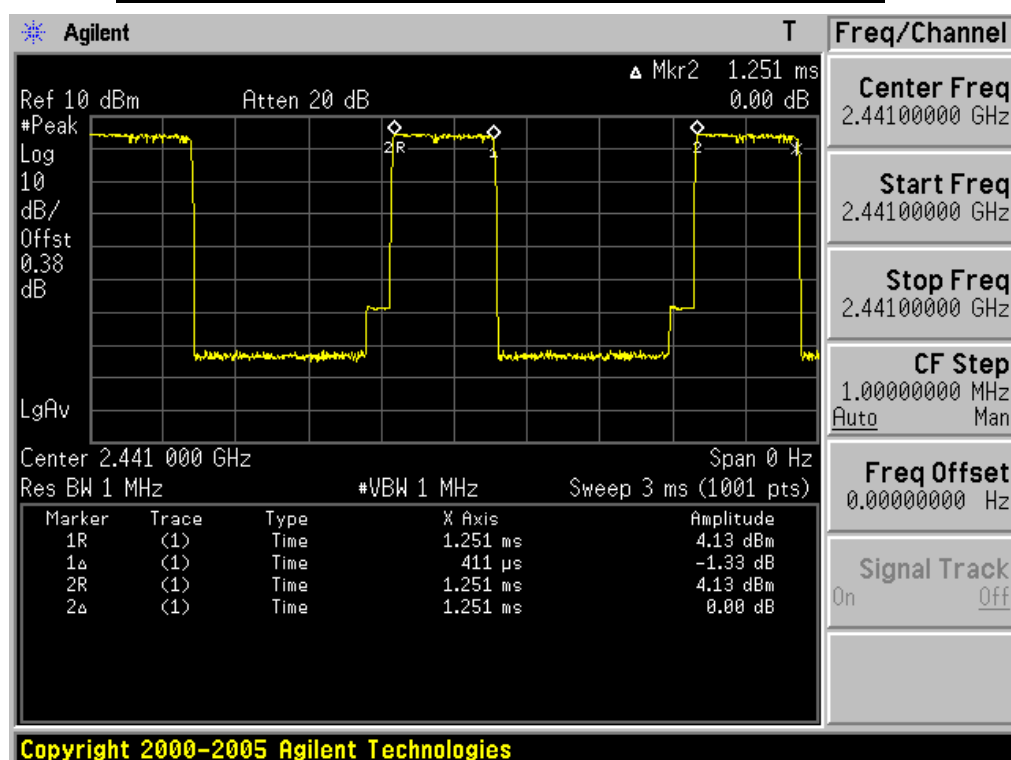
Time of Occupancy for Packet Type DH 3 (Normal 1Mbps)



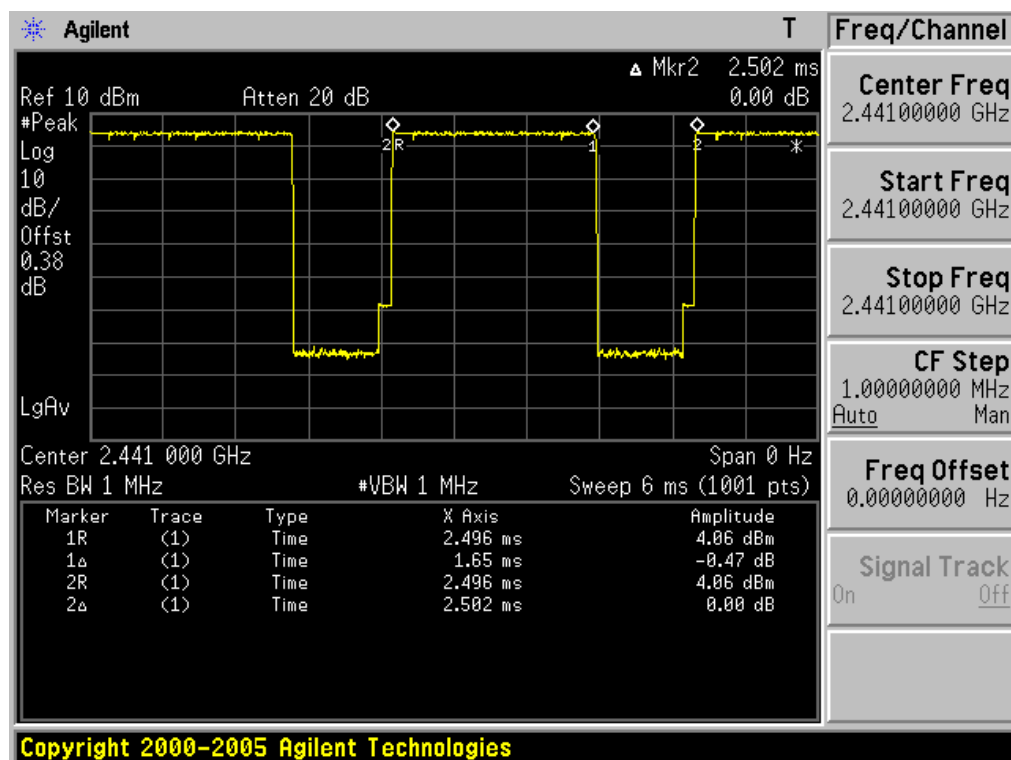
Time of Occupancy for Packet Type DH 5 (Normal 1Mbps)



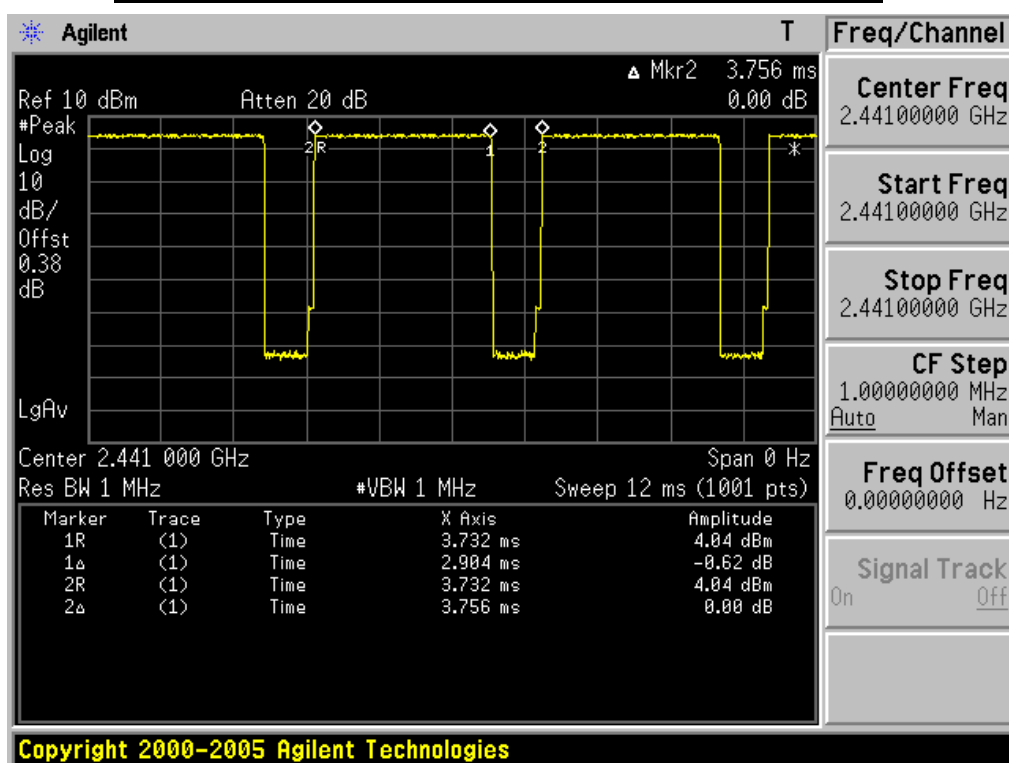
Time of Occupancy for Packet Type DH 1 (EDR 2Mbps)



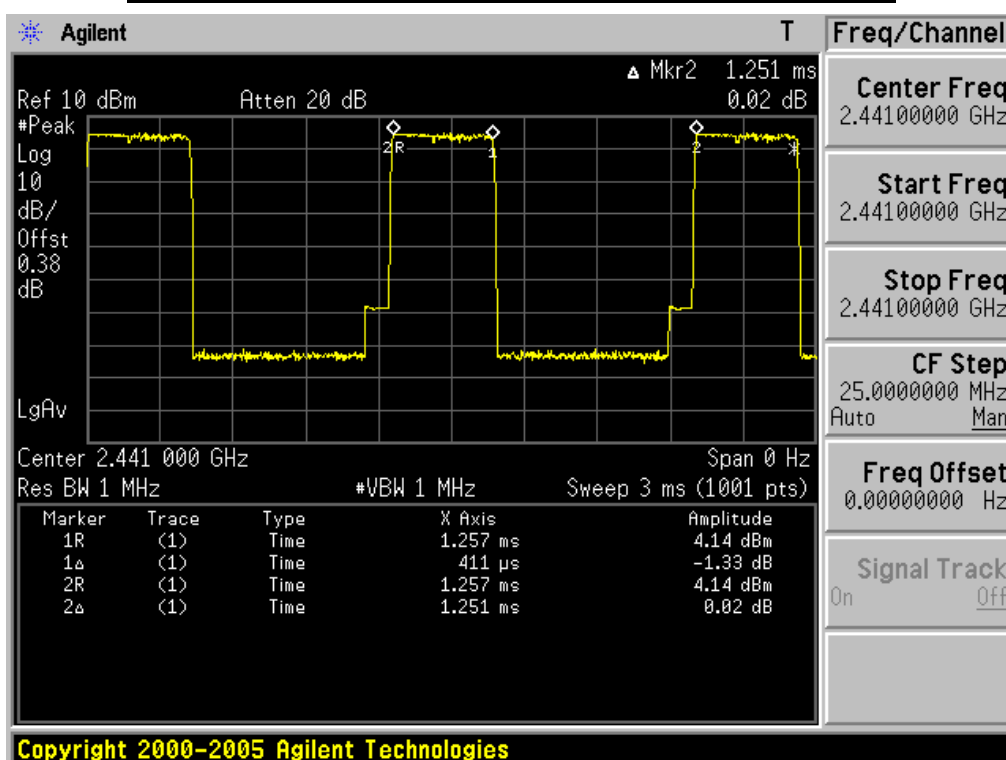
Time of Occupancy for Packet Type DH 3 (EDR 2Mbps)



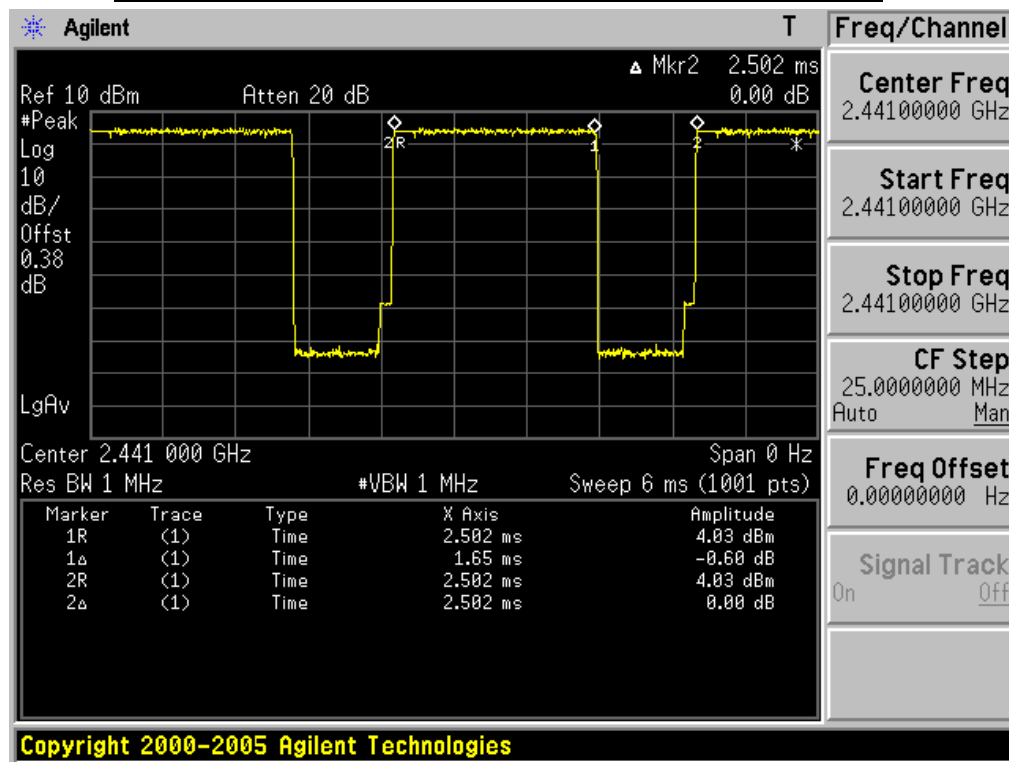
Time of Occupancy for Packet Type DH 5 (EDR 2Mbps)



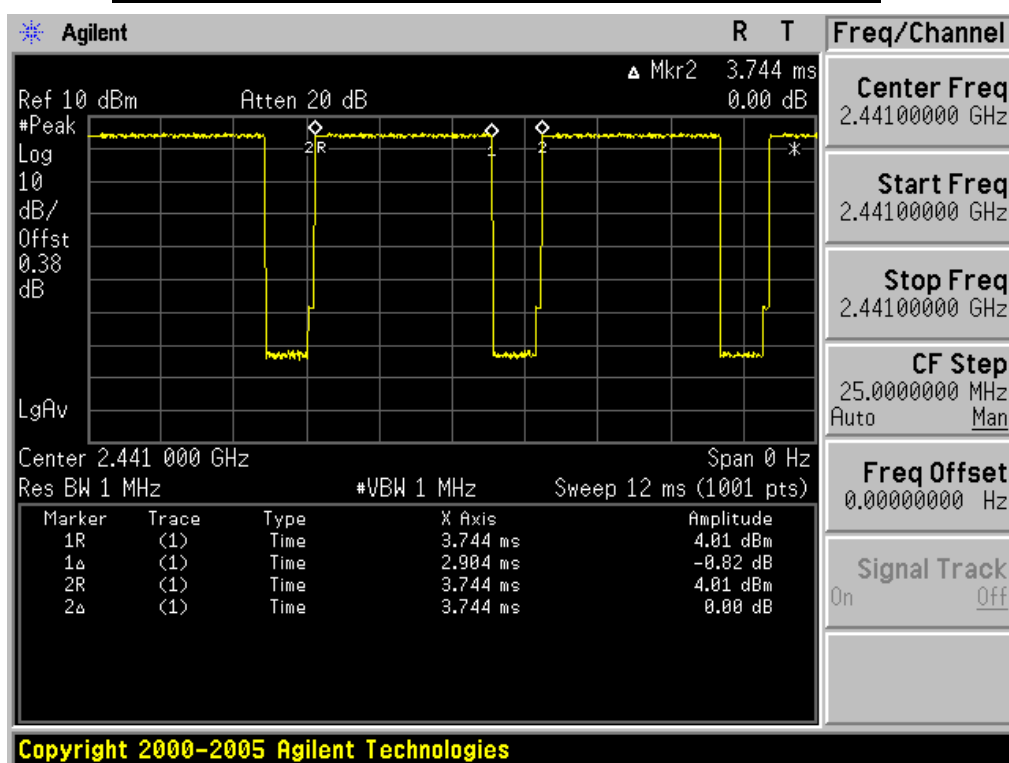
Time of Occupancy for Packet Type DH 1 (EDR 3Mbps)



Time of Occupancy for Packet Type DH 3 (EDR 3Mbps)



Time of Occupancy for Packet Type DH 5 (EDR 3Mbps)



3.2.5 Peak Output Power

Procedure:

The peak output power was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function disabled at the highest, middle and the lowest available channels..

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

Span = 5 MHz (approximately 5 times of the 20 dB bandwidth)

RBW = 1 MHz (greater than the 20dB bandwidth of the emission being measured)

VBW = 1 MHz (VBW $\geq$ RBW)

Detector function = peak

Trace = max hold

Sweep = auto

Measurement Data:

MODE	Frequency (MHz)	Ch.	Test Results		
			dBm	mW	Result
Normal 1Mbps	2402	1	5.32	3.404	Comply
	2441	40	5.28	3.373	Comply
	2480	79	4.49	2.812	Comply
EDR 2Mbps	2402	1	5.17	3.289	Comply
	2441	40	4.61	2.891	Comply
	2480	79	3.51	2.244	Comply
EDR 3Mbps	2402	1	5.17	3.289	Comply
	2441	40	4.61	2.891	Comply
	2480	79	3.55	2.265	Comply

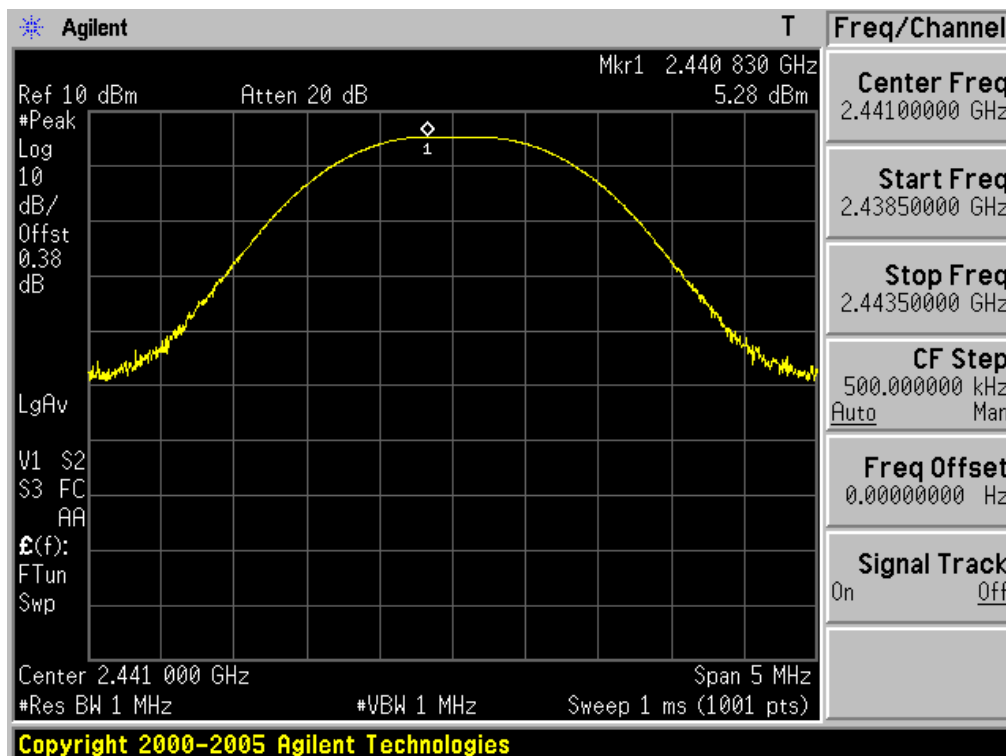
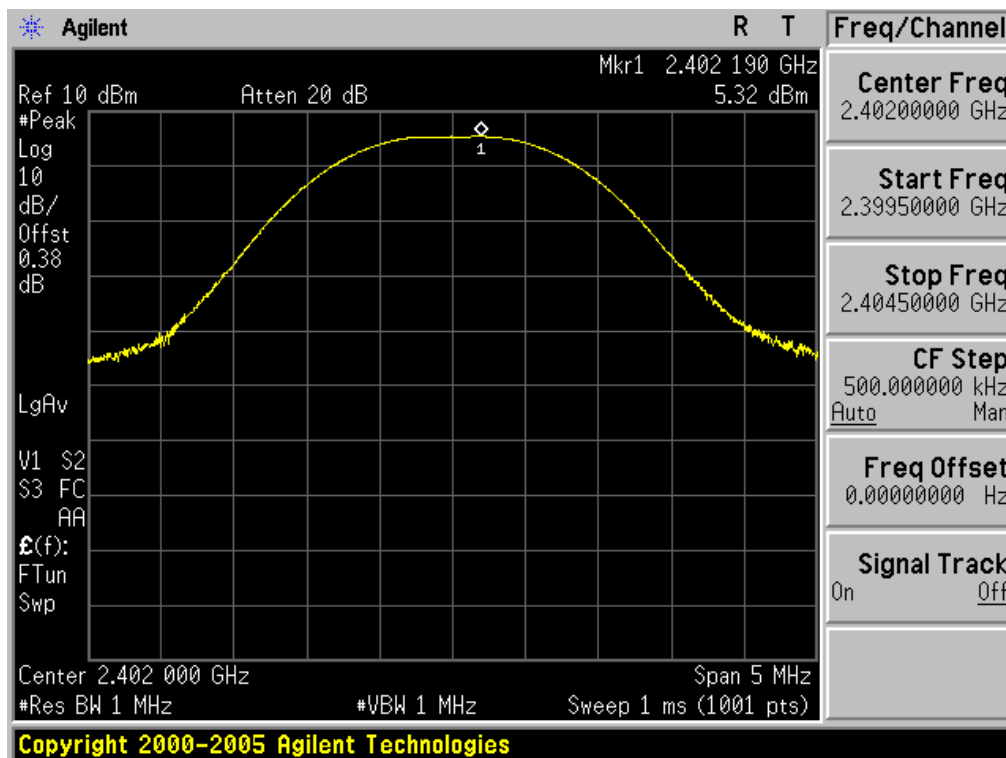
- See next pages for actual measured spectrum plots.

Minimum Standard:	For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 Watt . For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 Watts
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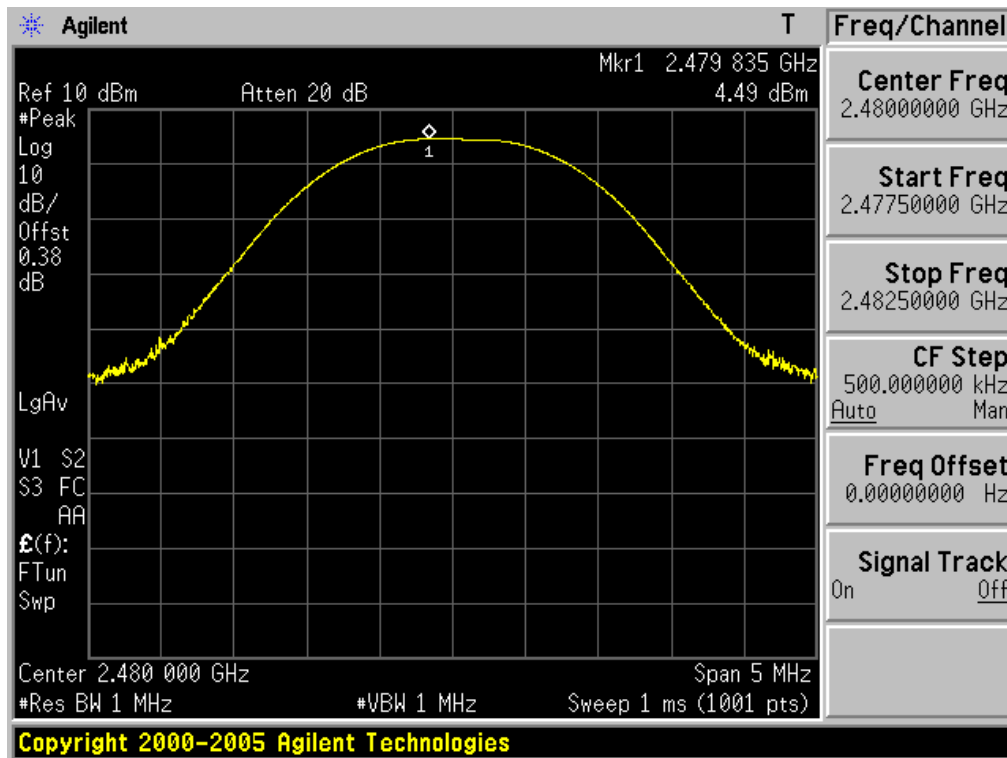
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

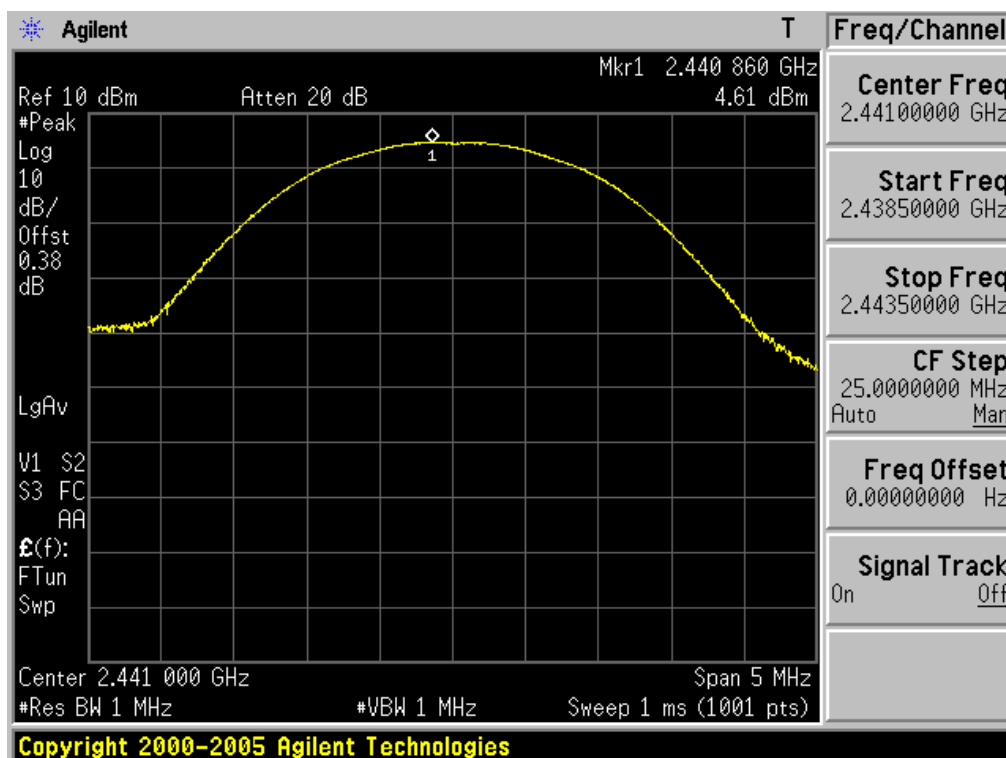
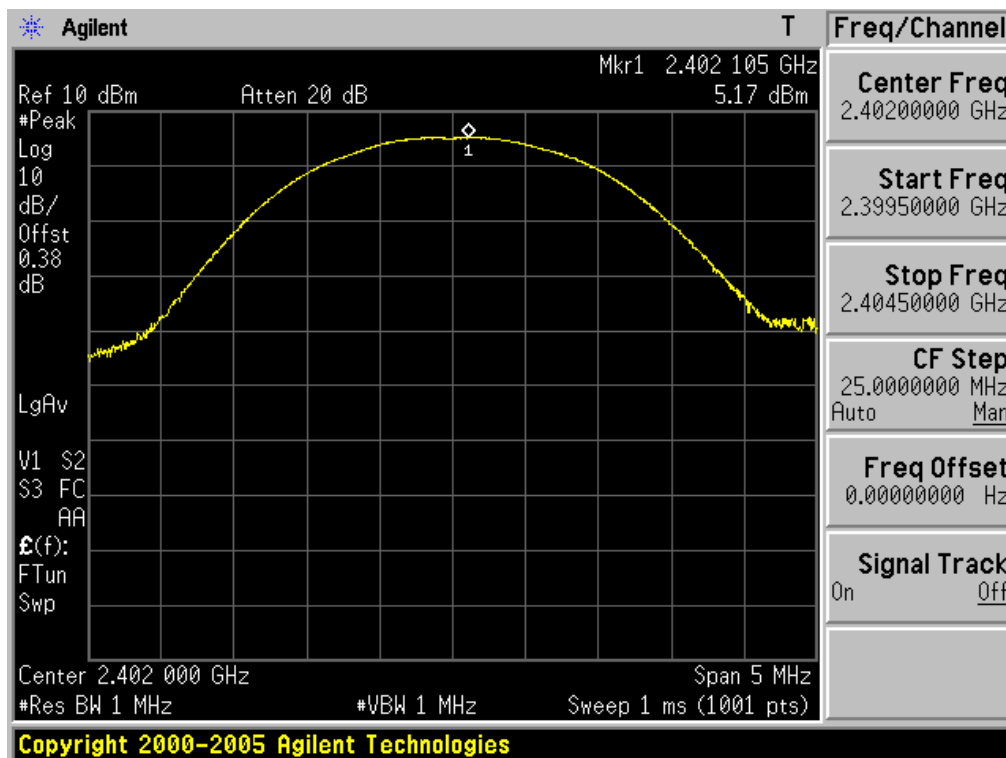
Peak Output Power (Normal 1Mbps)



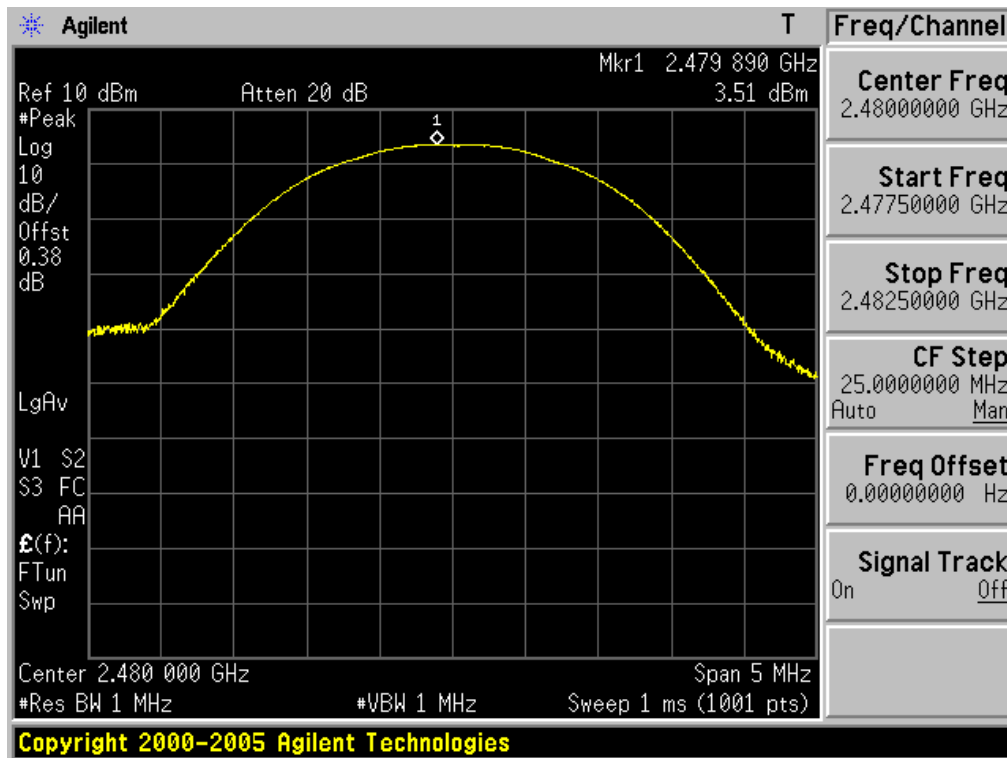
Peak Output Power (Normal 1Mbps)



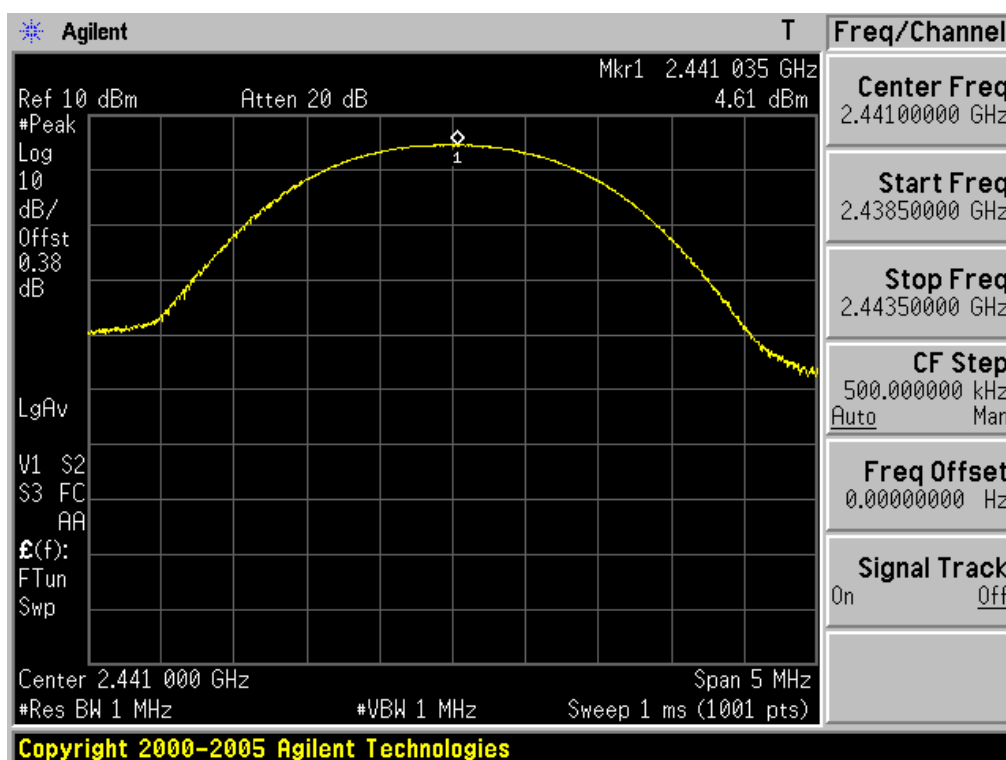
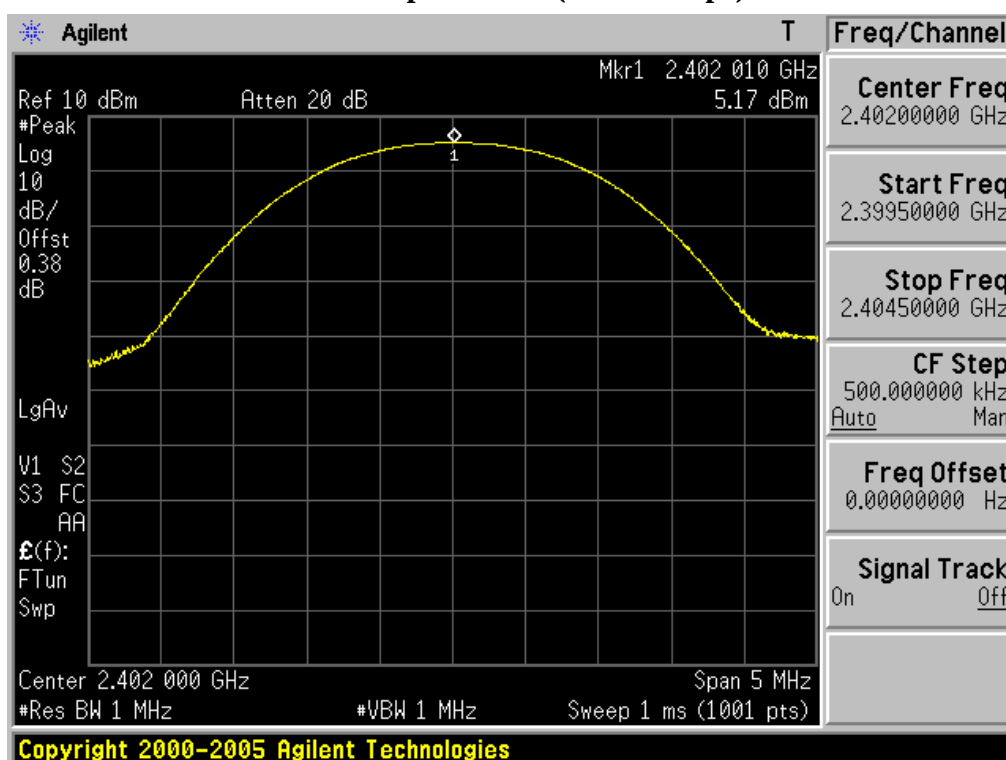
Peak Output Power (EDR 2Mbps)



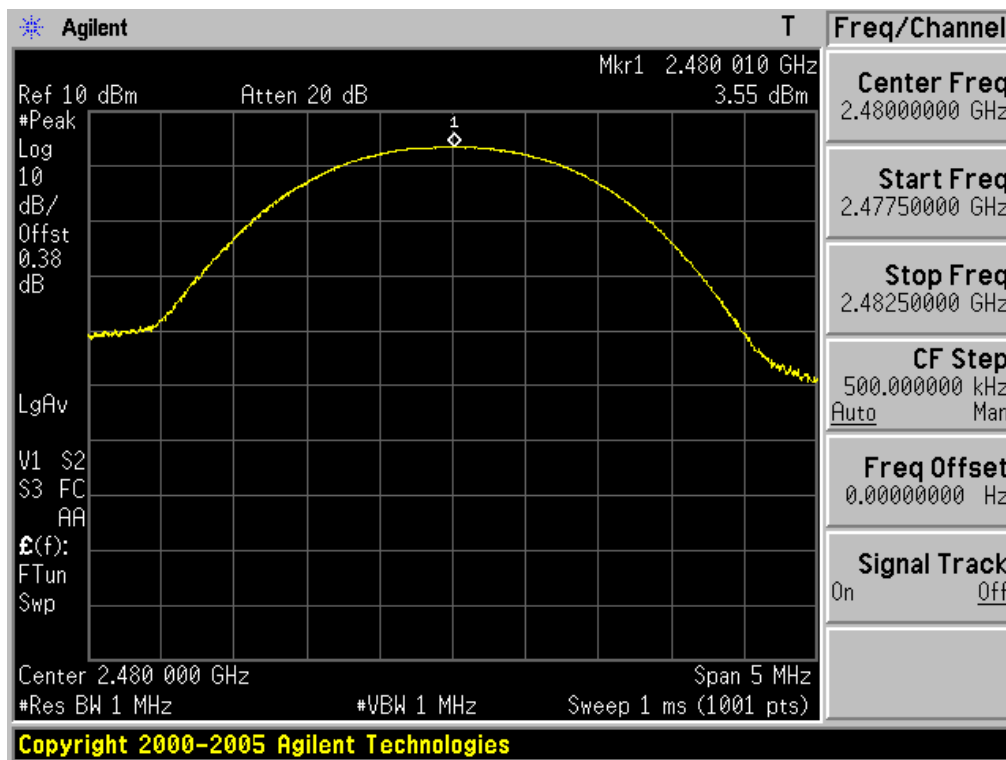
Peak Output Power (EDR 2Mbps)



Peak Output Power (EDR 3Mbps)



Peak Output Power (EDR 3Mbps)



3.2.6 Conducted Spurious Emissions

Procedure:

The bandwidth at 20dB down from the highest inband spectral density is measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function disabled at the highest, middle and the lowest available channels.

After the trace being stable, Use the marker-to-peak function to measure 20 dB down both sides of the intentional emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz

VBW = 100 kHz

Span = 100 MHz

Detector function = peak

Trace = max hold

Sweep = auto

Measurement Data: **Comply**

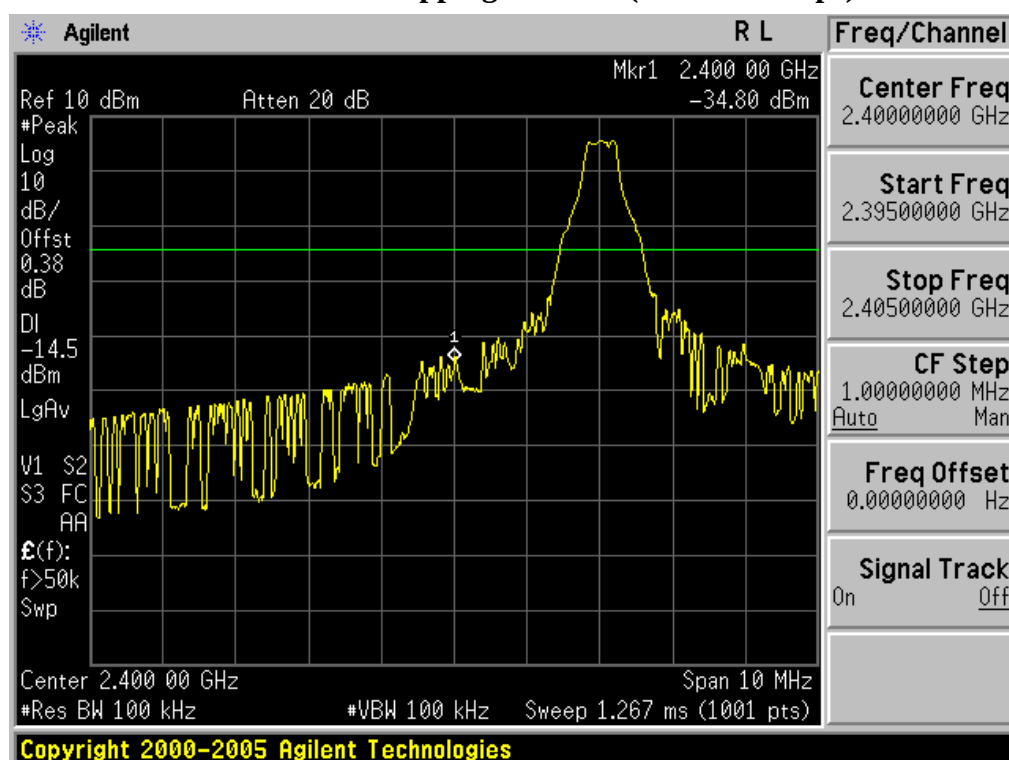
- All conducted emission in any 100kHz bandwidth outside of the spread spectrum band was at least 20dB lower than the highest inband spectral density..
- See next pages for actual measured spectrum plots.

Minimum Standard:	> 20 dBc
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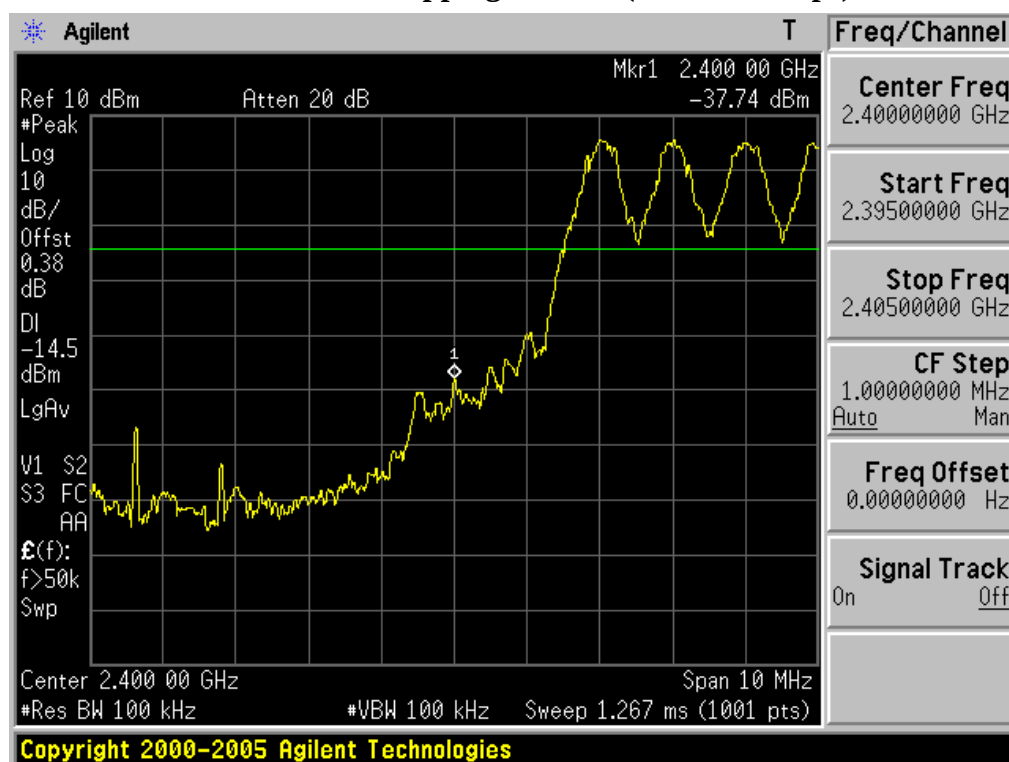
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

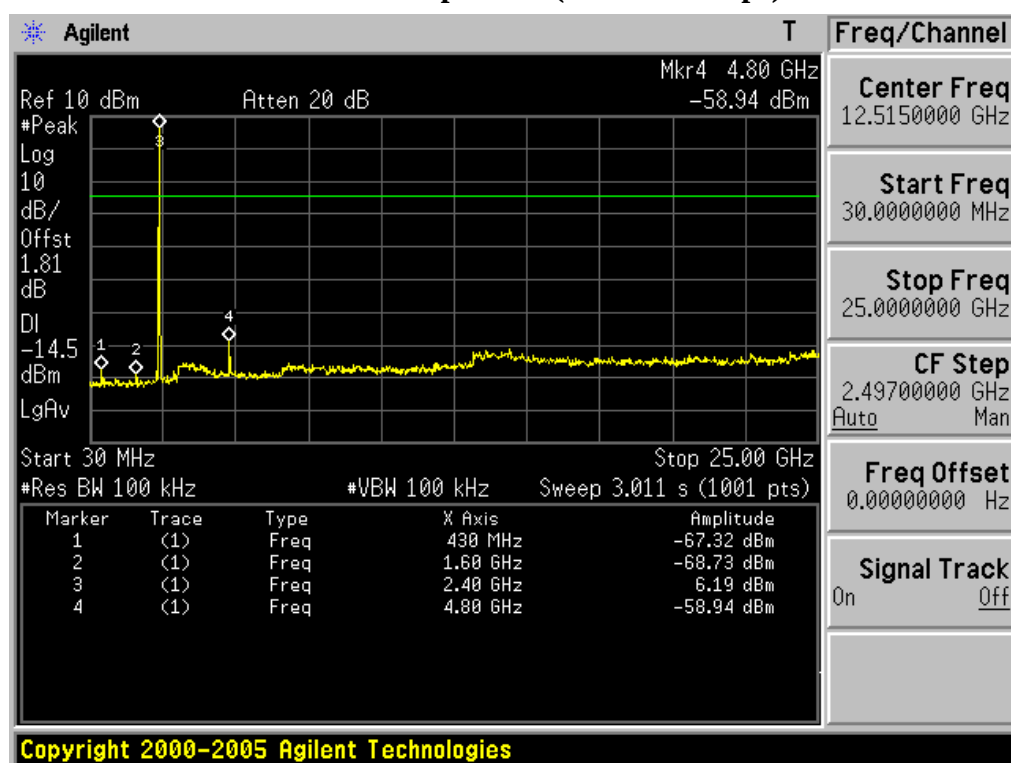
Low band with hopping disabled (Normal 1Mbps)



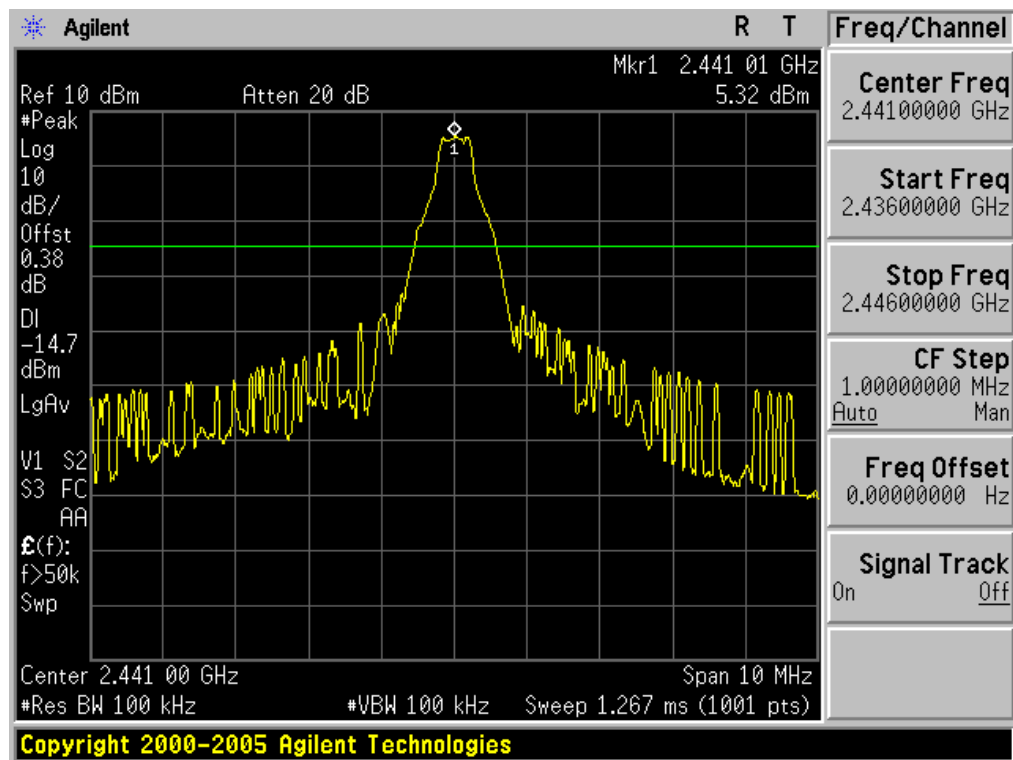
Low band with hopping enabled (Normal 1Mbps)



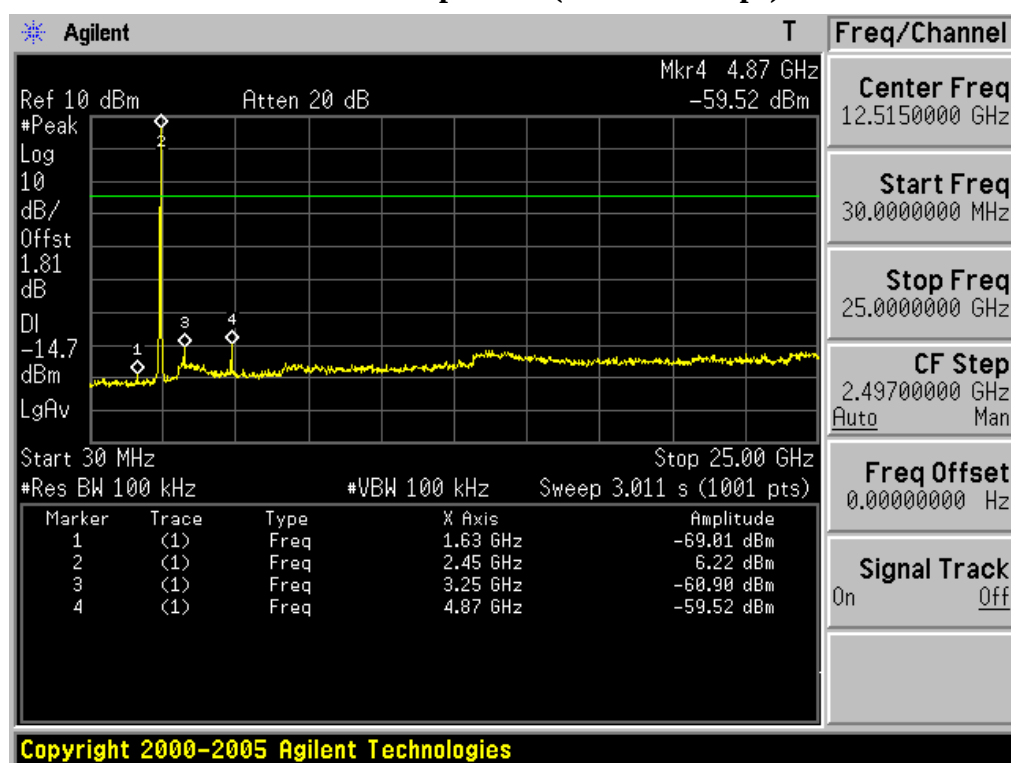
Low channel spurious (Normal 1Mbps)



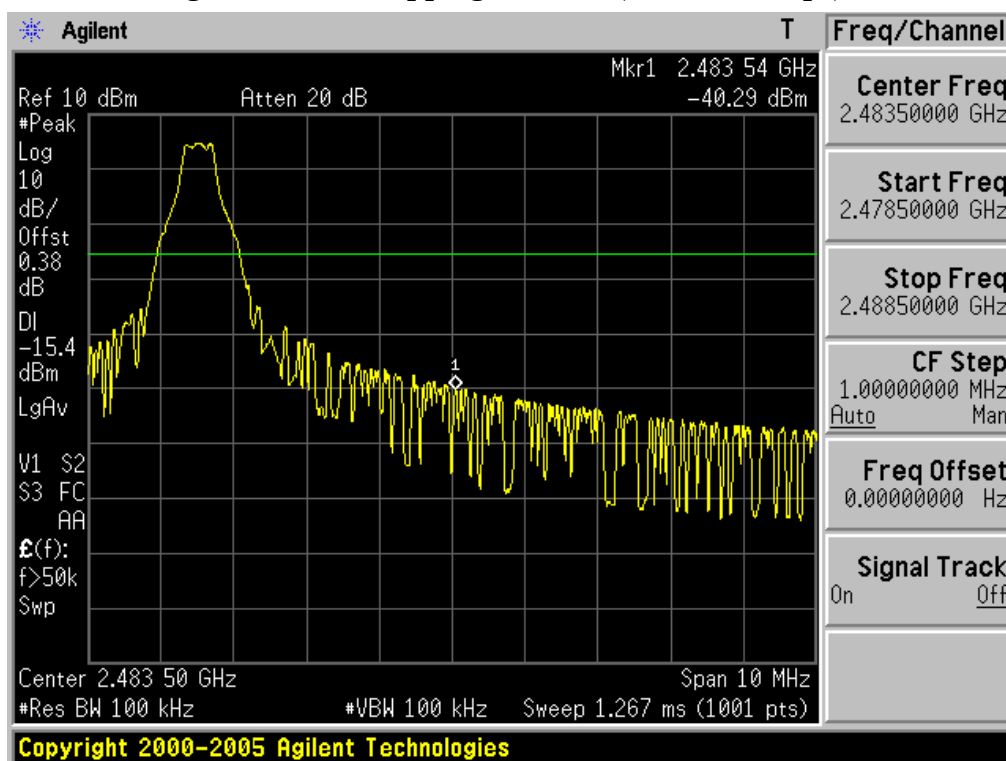
Mid channel ref (Normal 1Mbps)



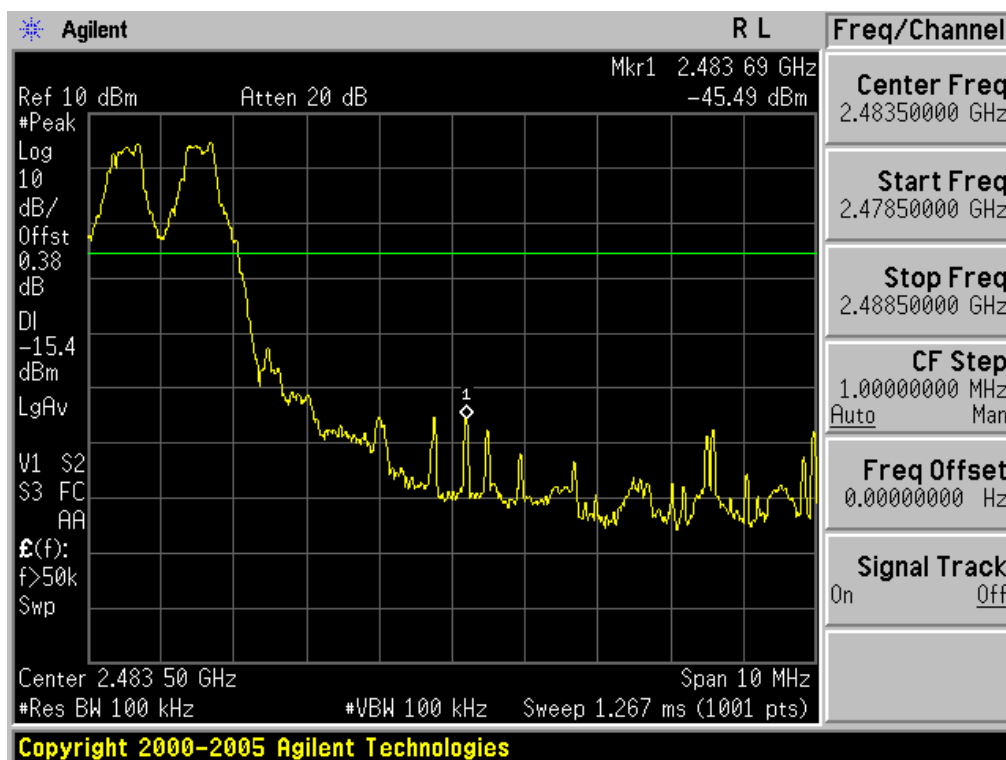
Mid channel spurious (Normal 1Mbps)



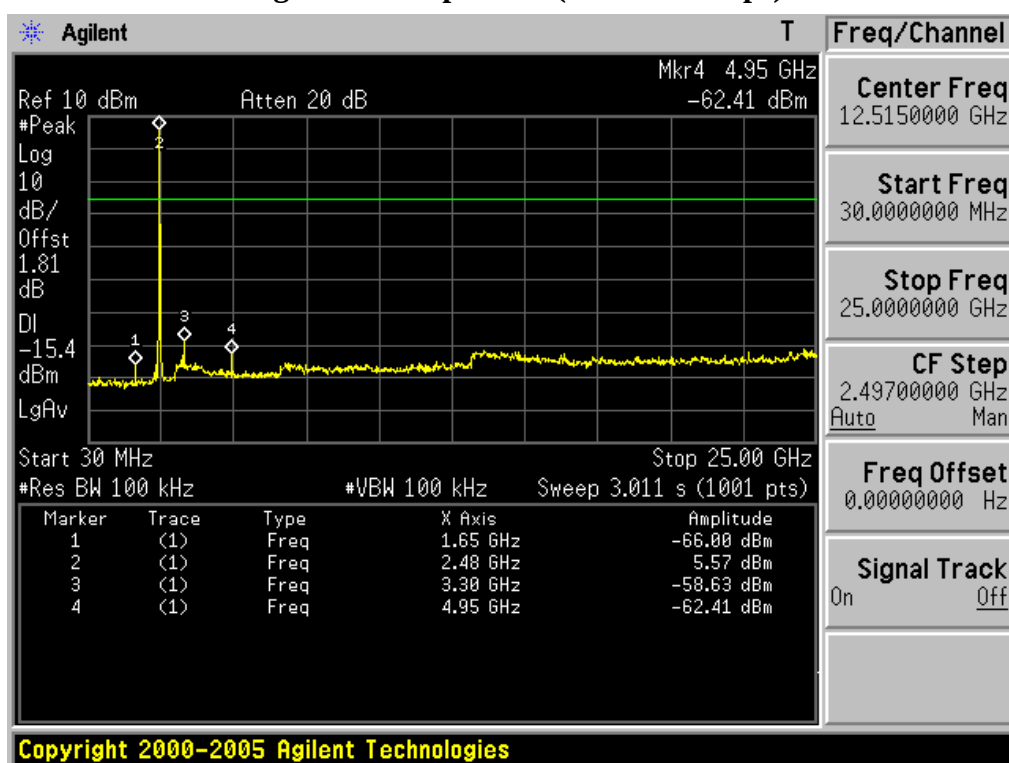
High band with hopping disabled (Normal 1Mbps)



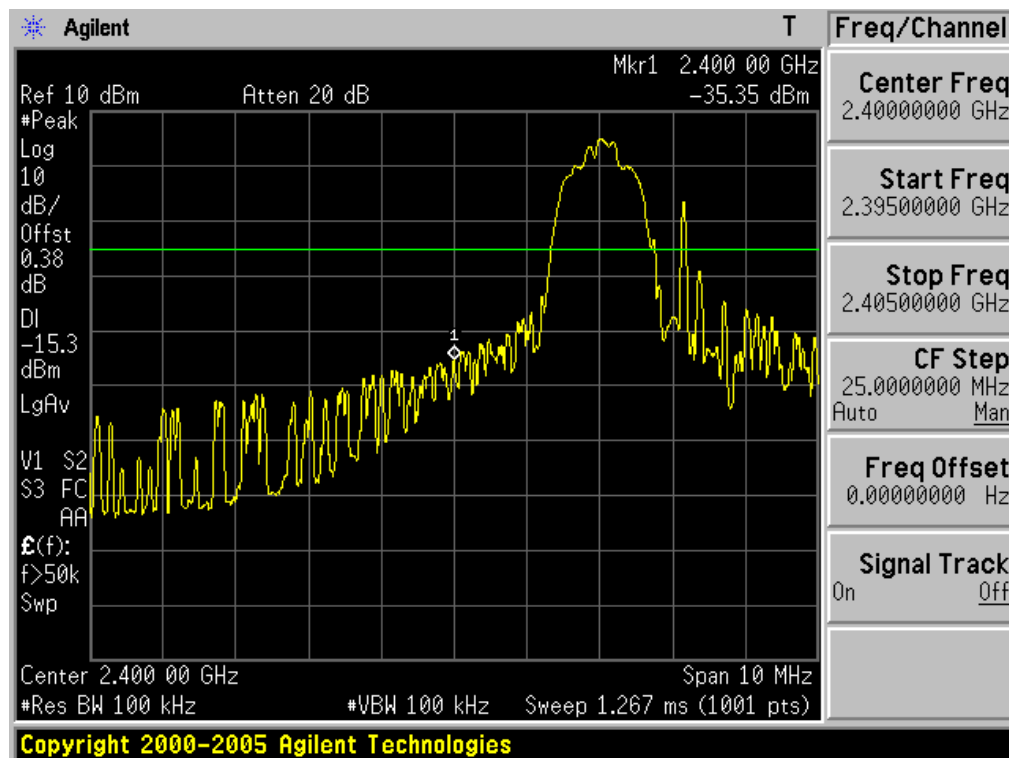
High band with hopping enabled (Normal 1Mbps)



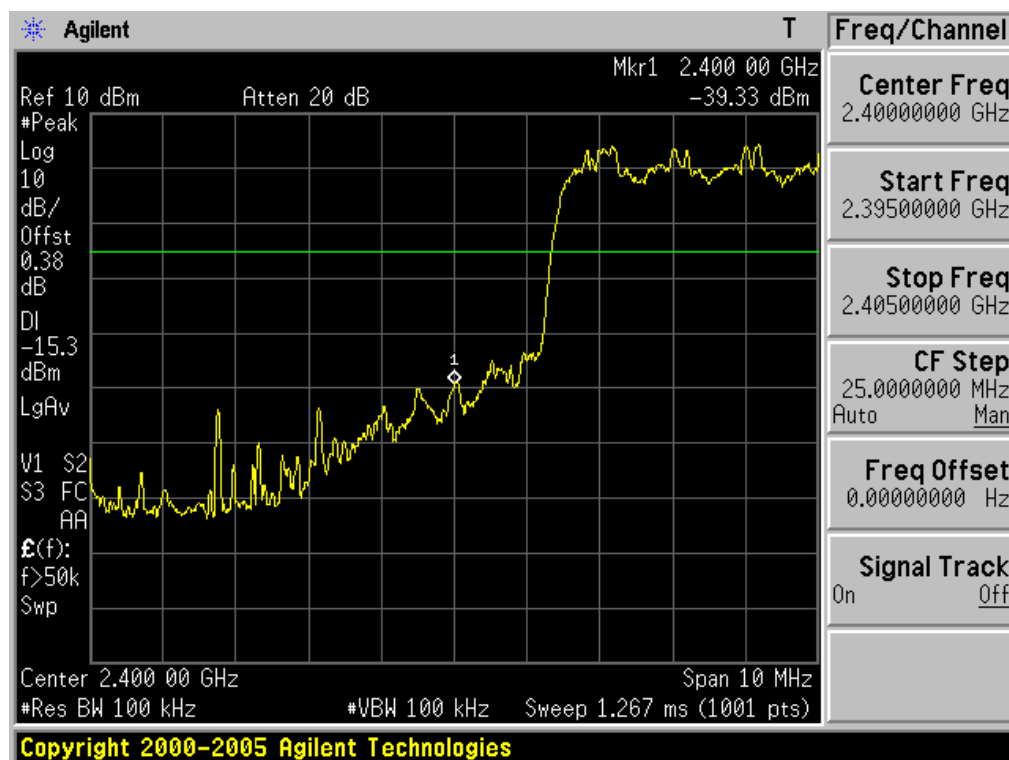
High channel spurious (Normal 1Mbps)



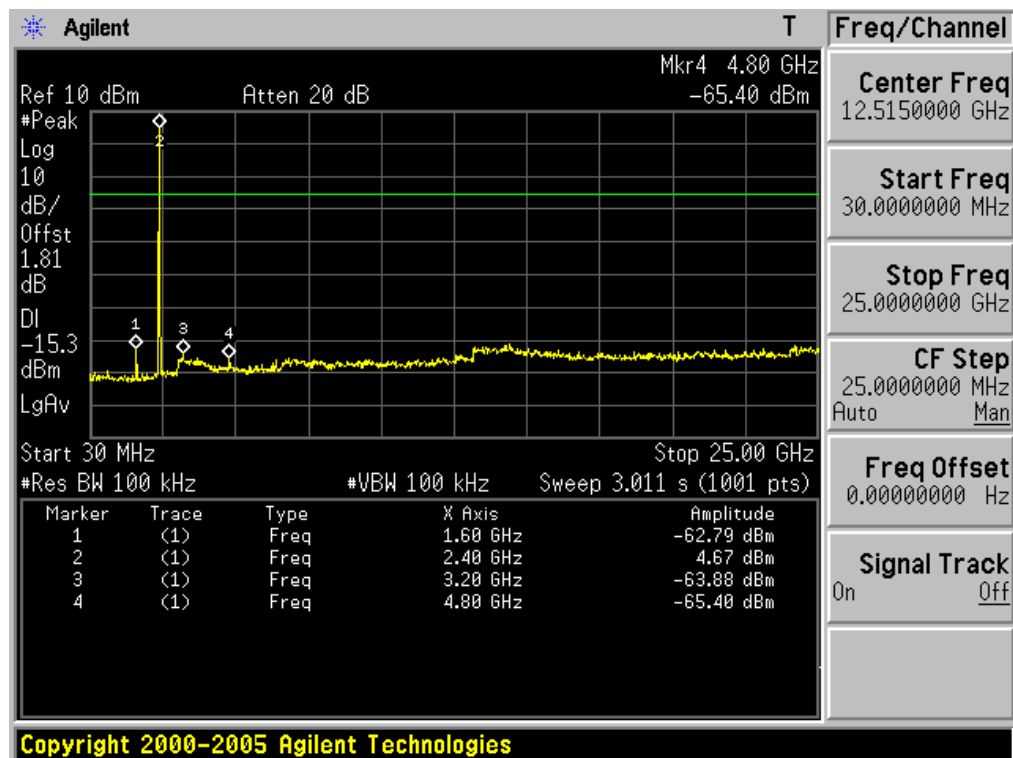
Low band with hopping disabled (EDR 2Mbps)



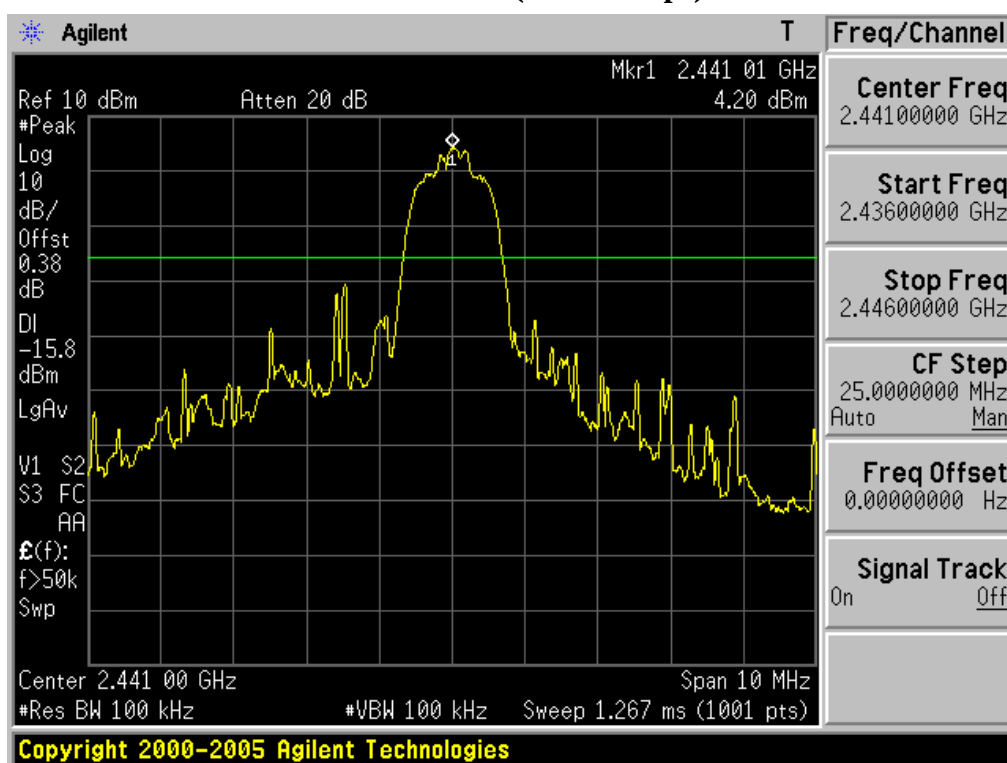
Low band with hopping enabled (EDR 2Mbps)



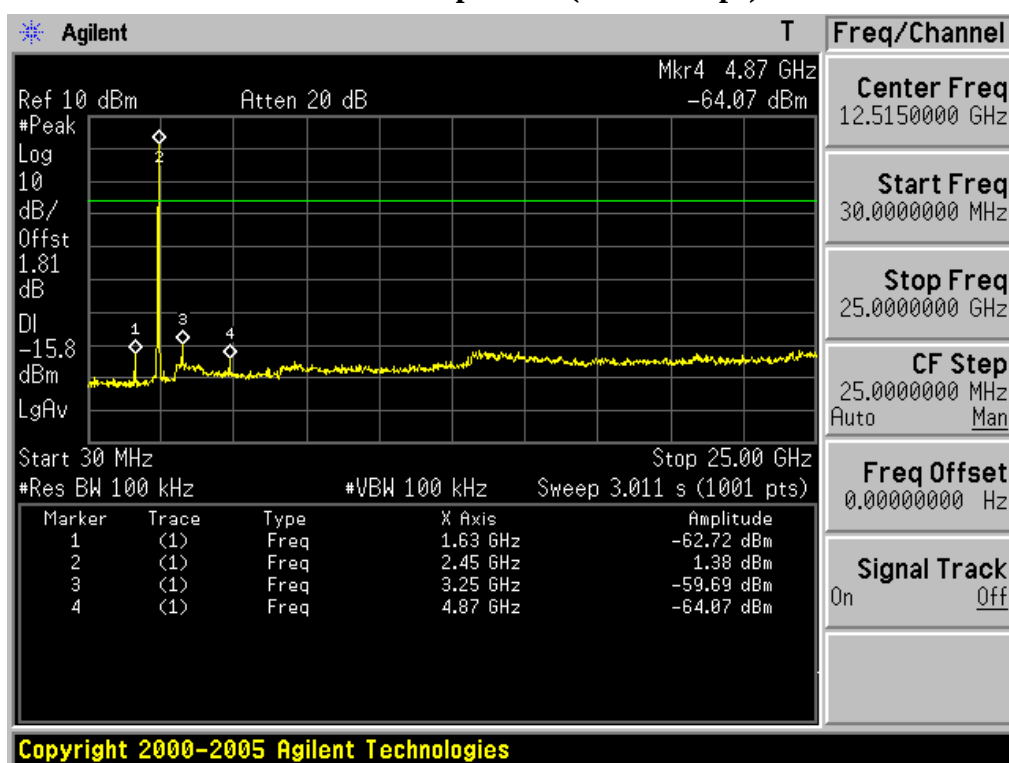
Low channel spurious (EDR 2Mbps)



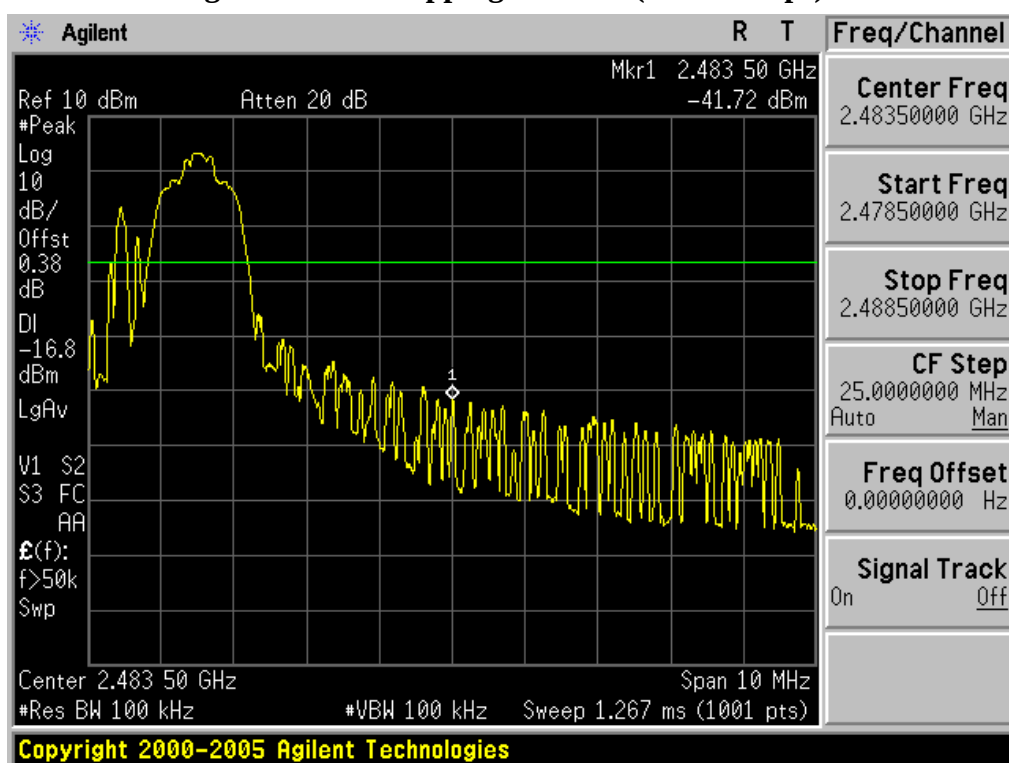
Mid channel ref (EDR 2Mbps)



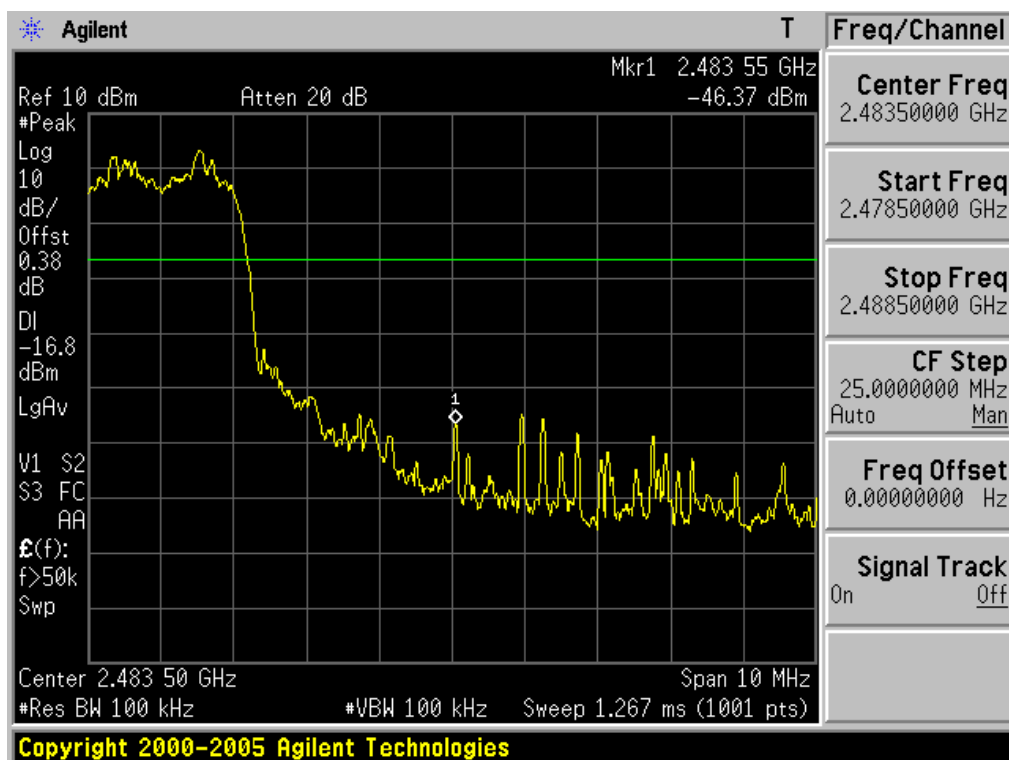
Mid channel spurious (EDR 2Mbps)



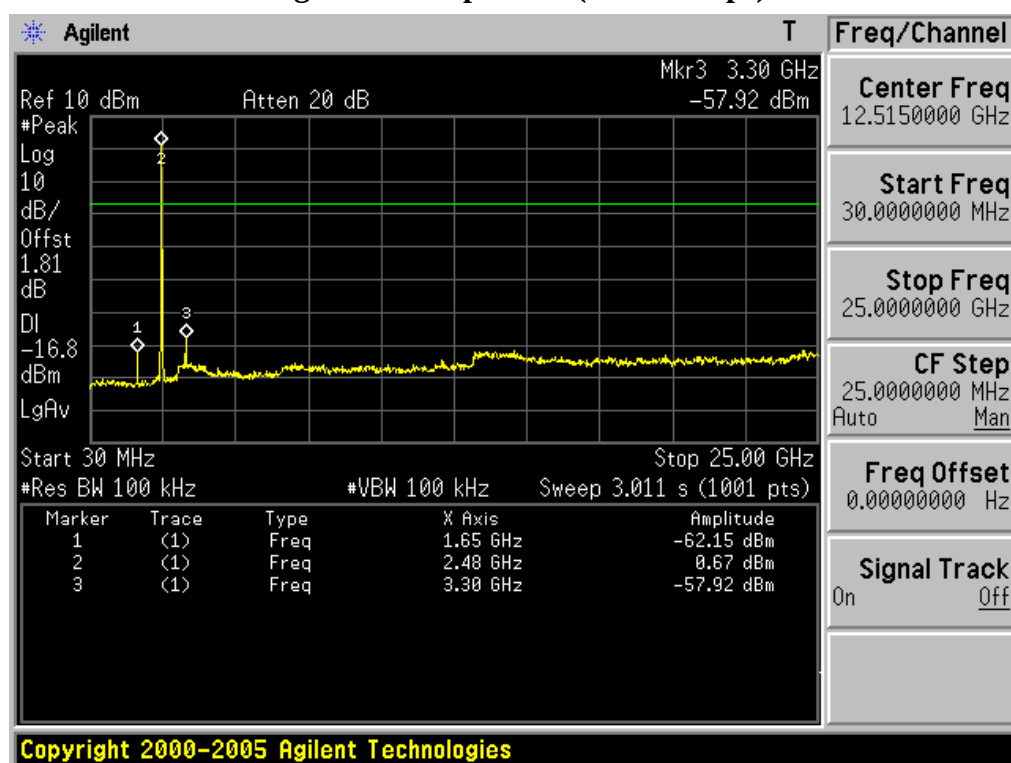
High band with hopping disabled (EDR 2Mbps)



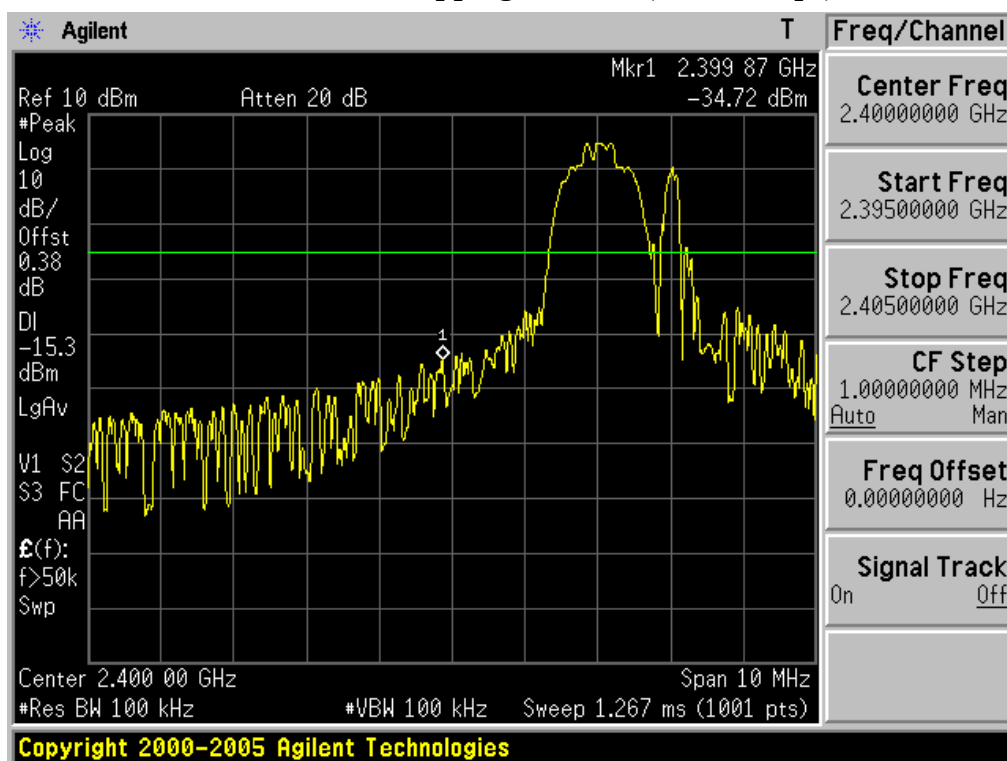
High band with hopping enabled (EDR 2Mbps)



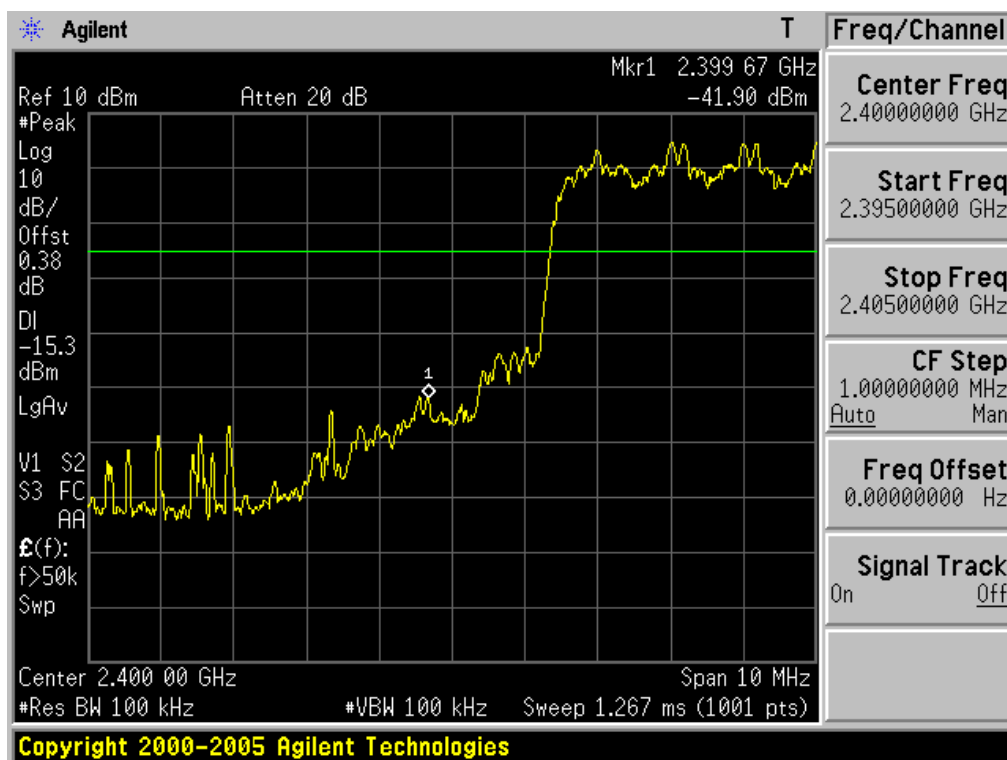
High channel spurious (EDR 2Mbps)



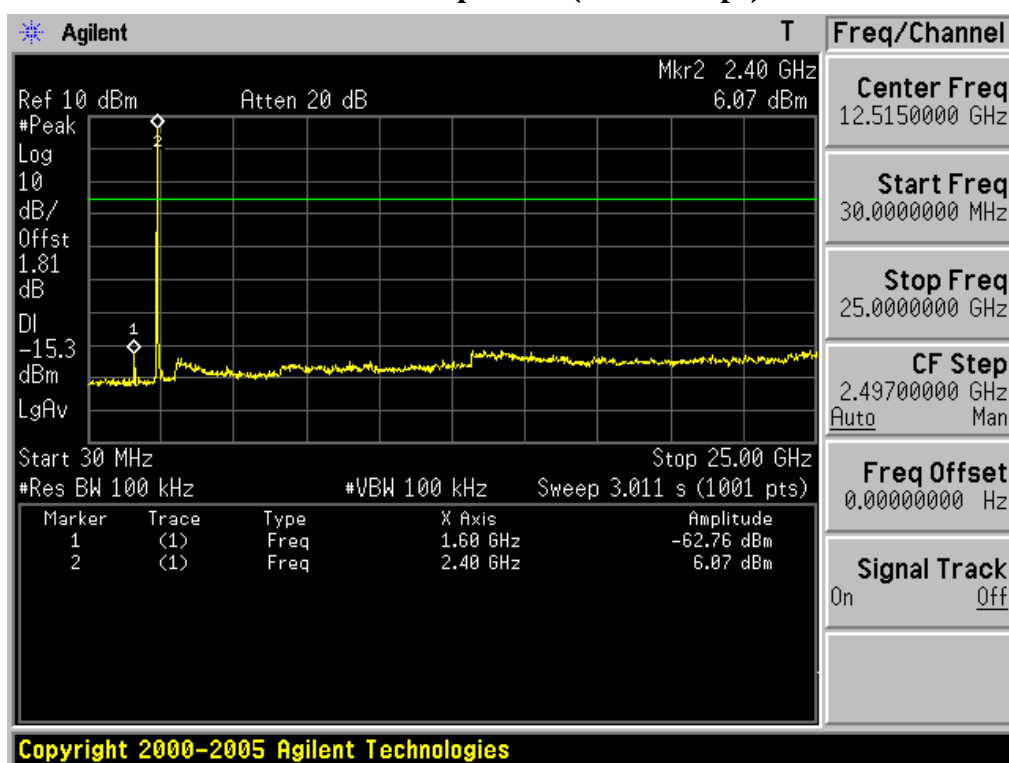
Low band with hopping disabled (EDR 3Mbps)



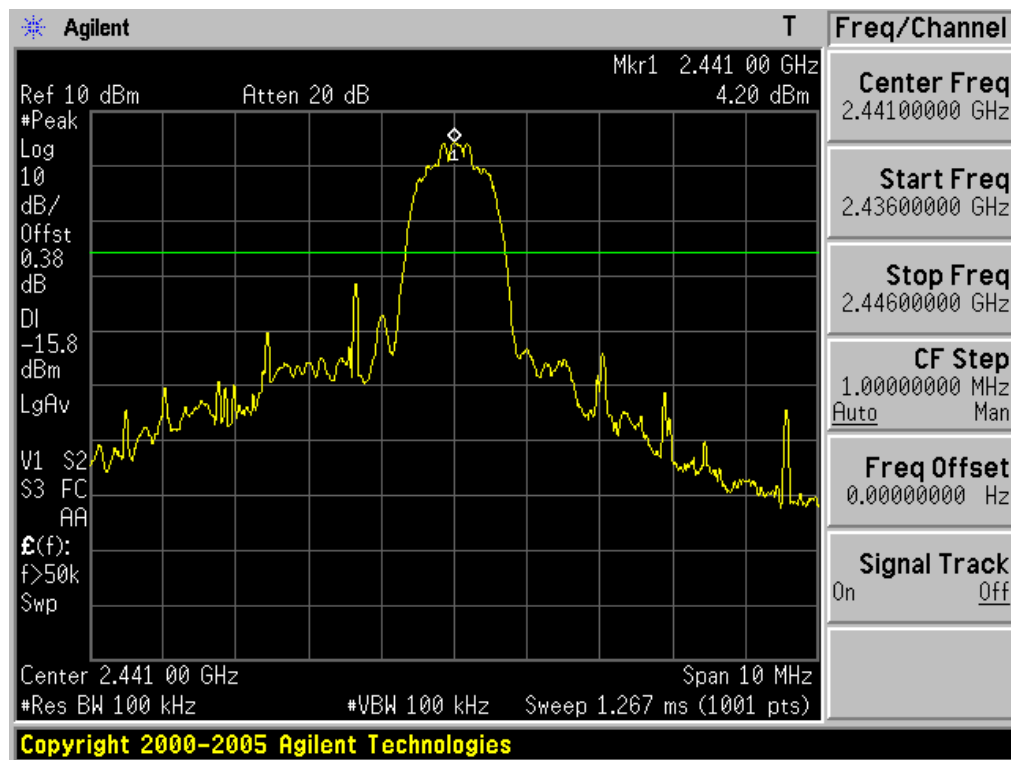
Low band with hopping enabled (EDR 3Mbps)



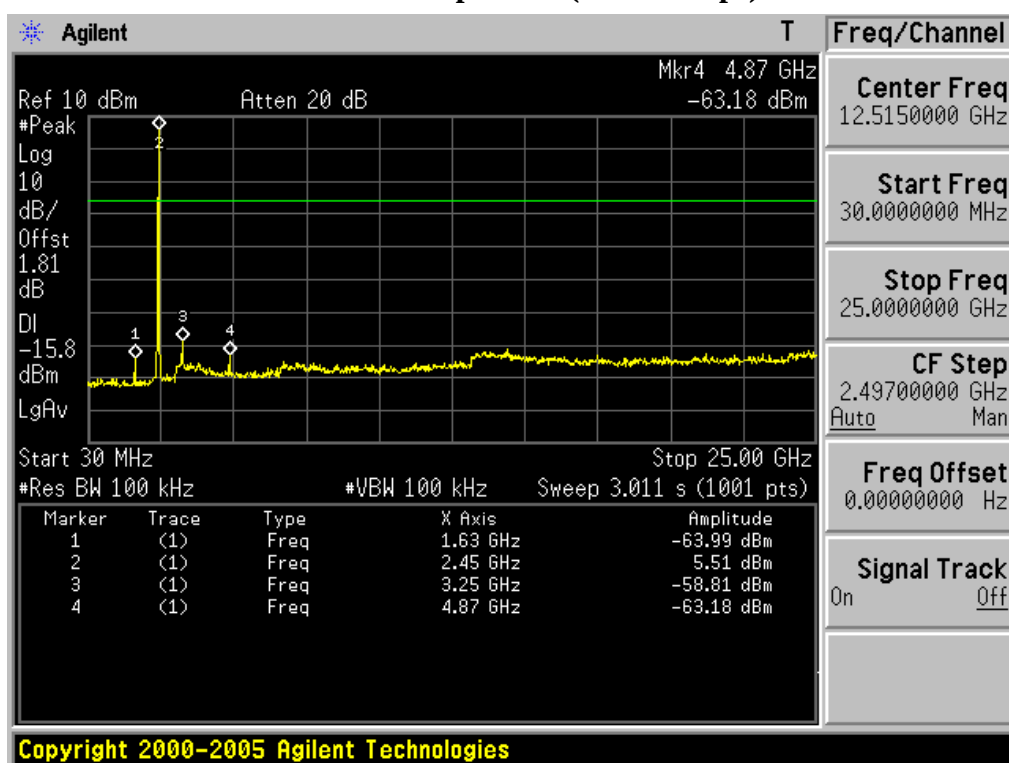
Low channel spurious (EDR 3Mbps)



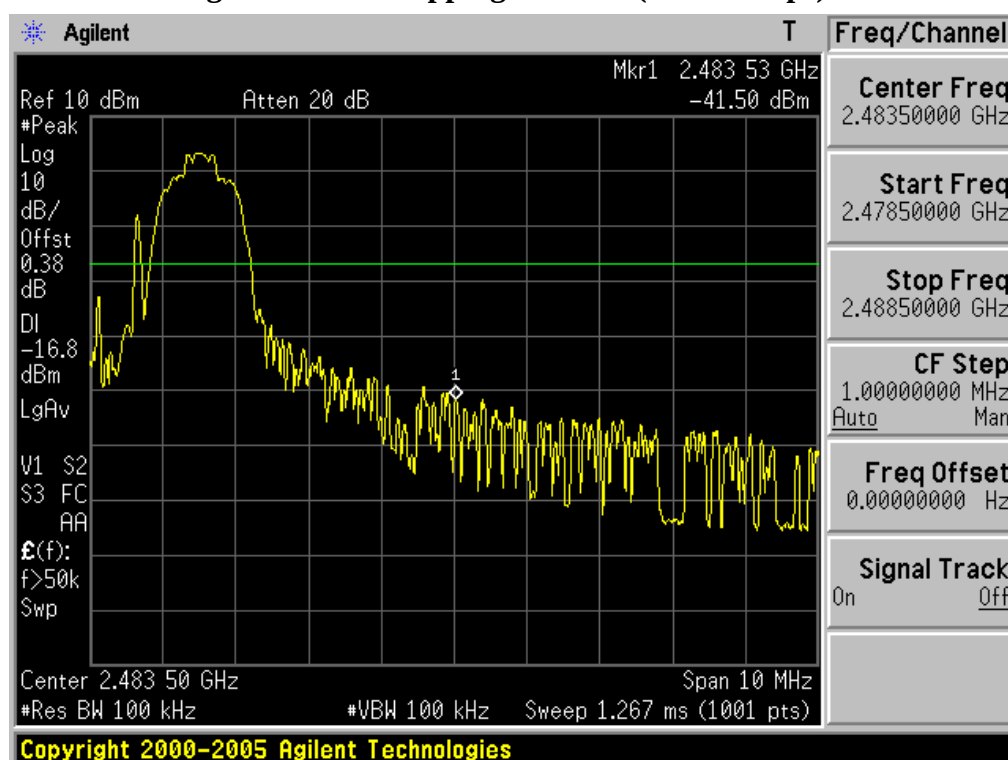
Mid channel ref (EDR 3Mbps)



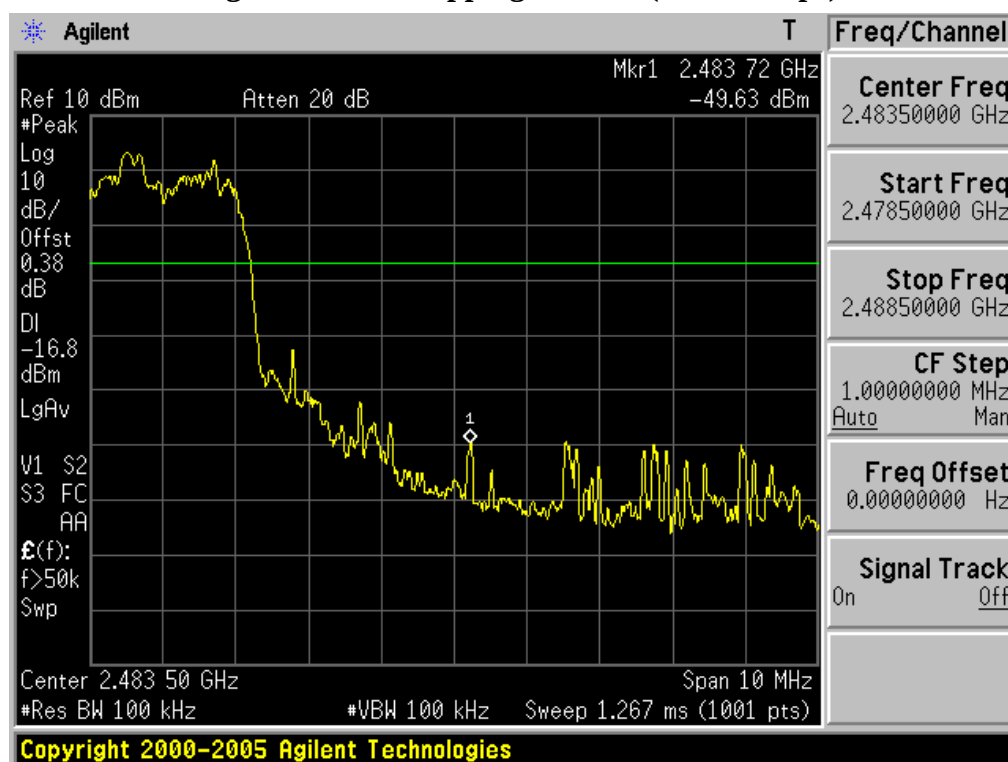
Mid channel spurious (EDR 3Mbps)



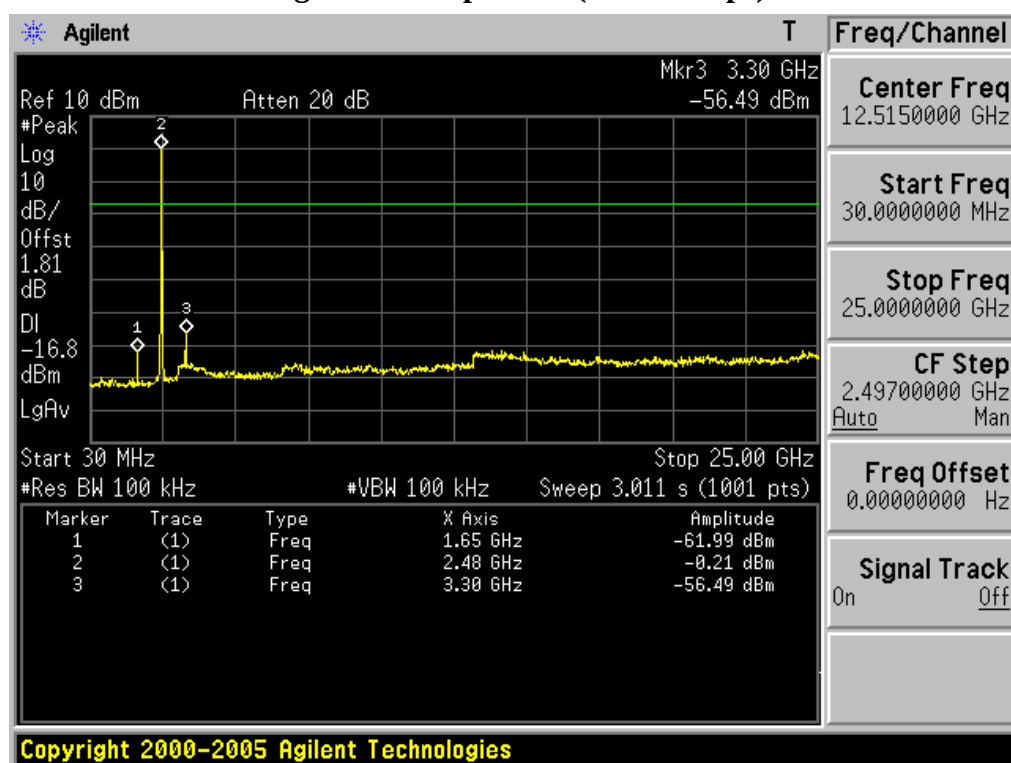
High band with hopping disabled (EDR 3Mbps)



High band with hopping enabled (EDR 3Mbps)



High channel spurious (EDR 3Mbps)



3.2.7 Radiated Emissions

Procedure:

The EUT was placed on a 0.8m high wooden table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated testing, measurements were performed in OATS. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

The spectrum analyzer is set to:

Center frequency = the worst channel

Frequency Range = 30 MHz ~ 10th harmonic.

RBW = 120 kHz (30MHz ~ 1 GHz)

= 1 MHz (1 GHz ~ 10th harmonic)

Trace = max hold

VBW ≥ RBW (Peak)

VBW = 10Hz (Average)

Sweep = auto

Measurement Data: **Comply**

- Refer to the next page.

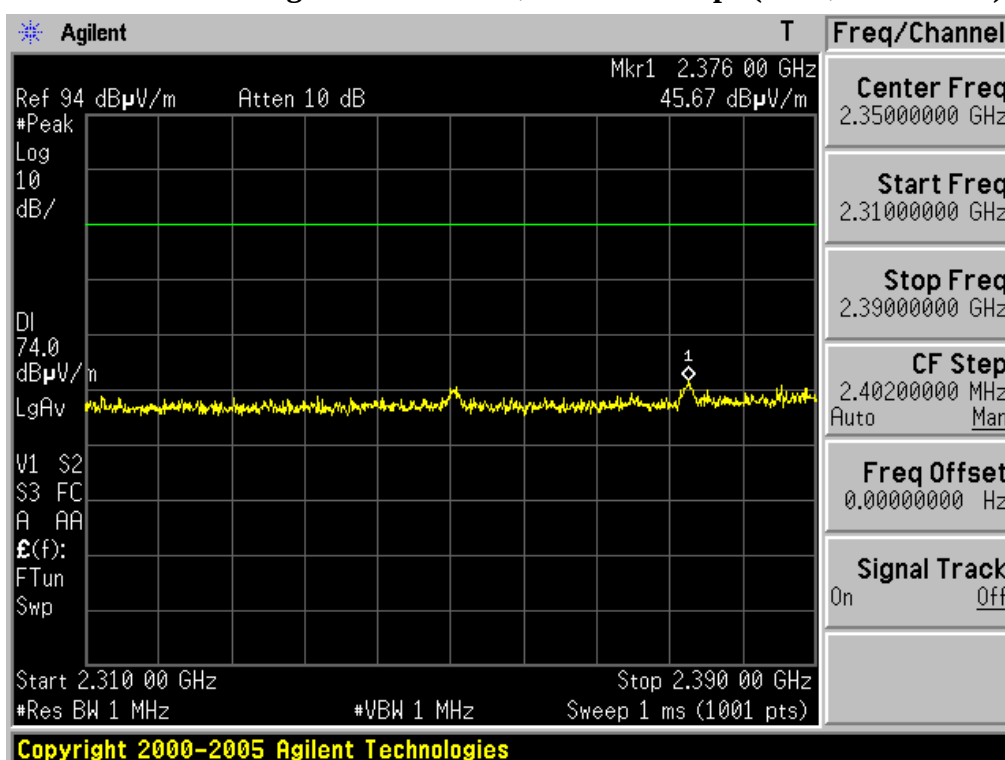
Minimum Standard: FCC Part 15.205 (a), 15.205(b), 15.209(a) and (b)

Limit : FCC P15.209(a)

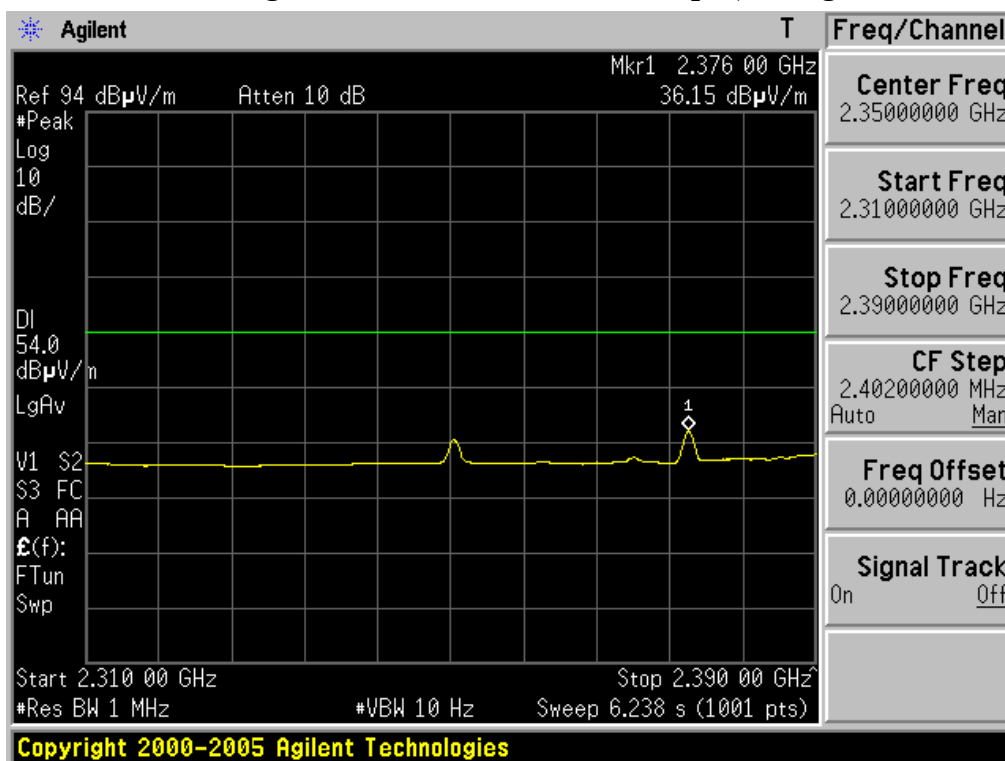
Frequency (MHz)	Limit (uV/m) @ 3m
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

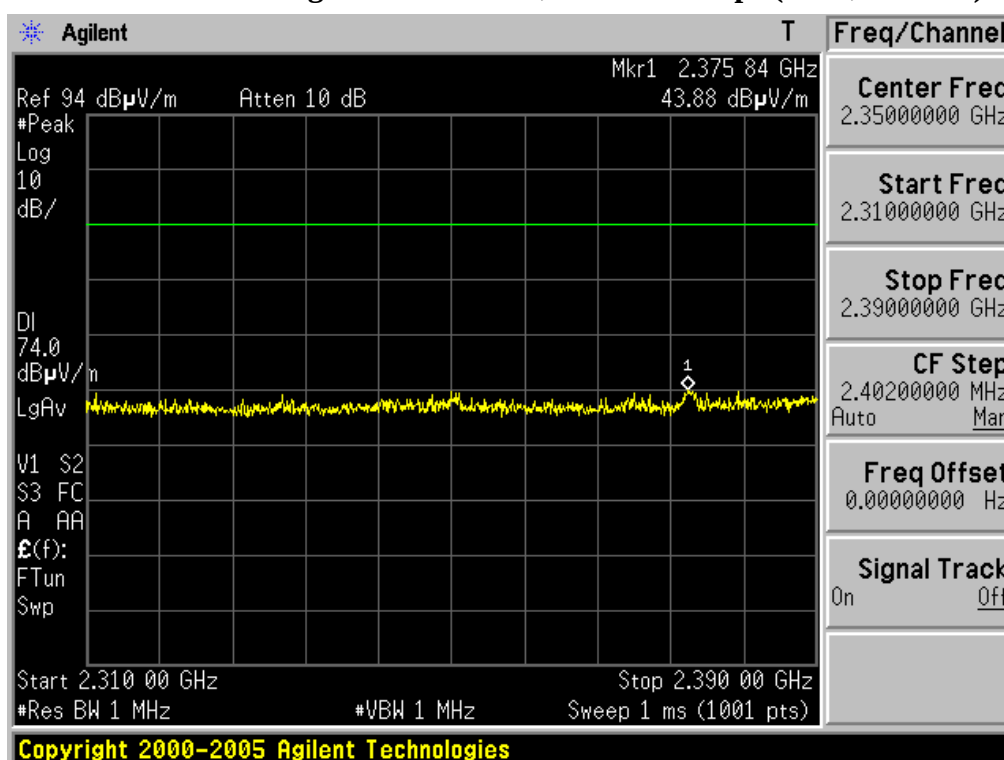
Restricted Band Edge: Low Channel, Normal 1Mbps (Peak, Horizontal)



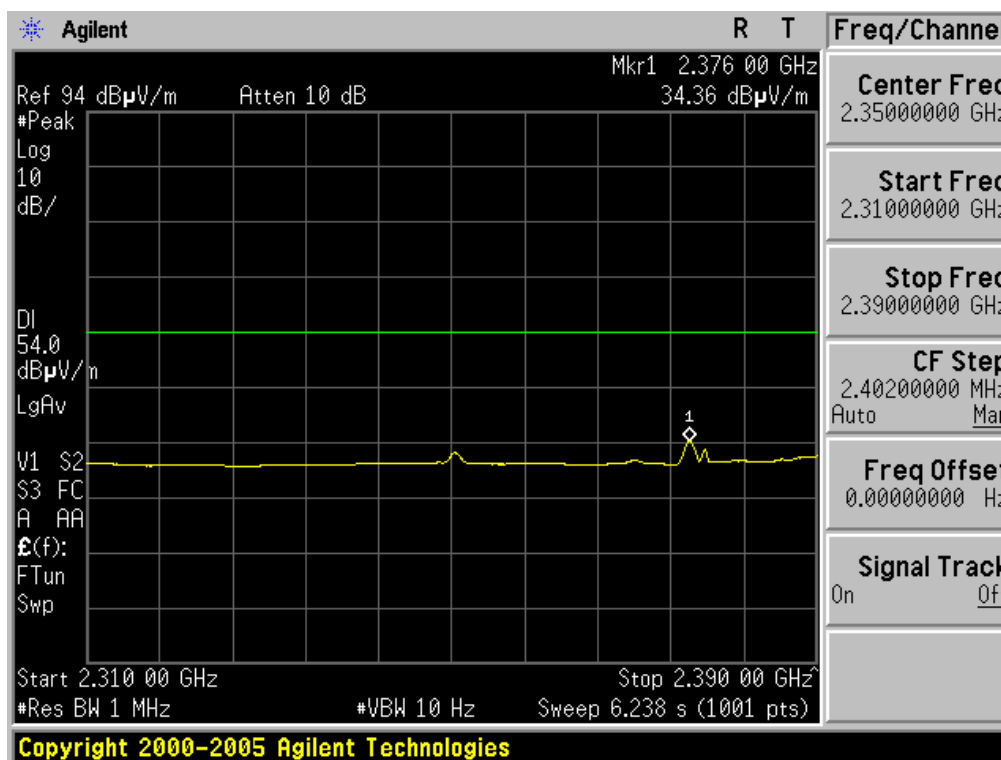
Restricted Band Edge: Low Channel, Normal 1Mbps (Average, Horizontal)



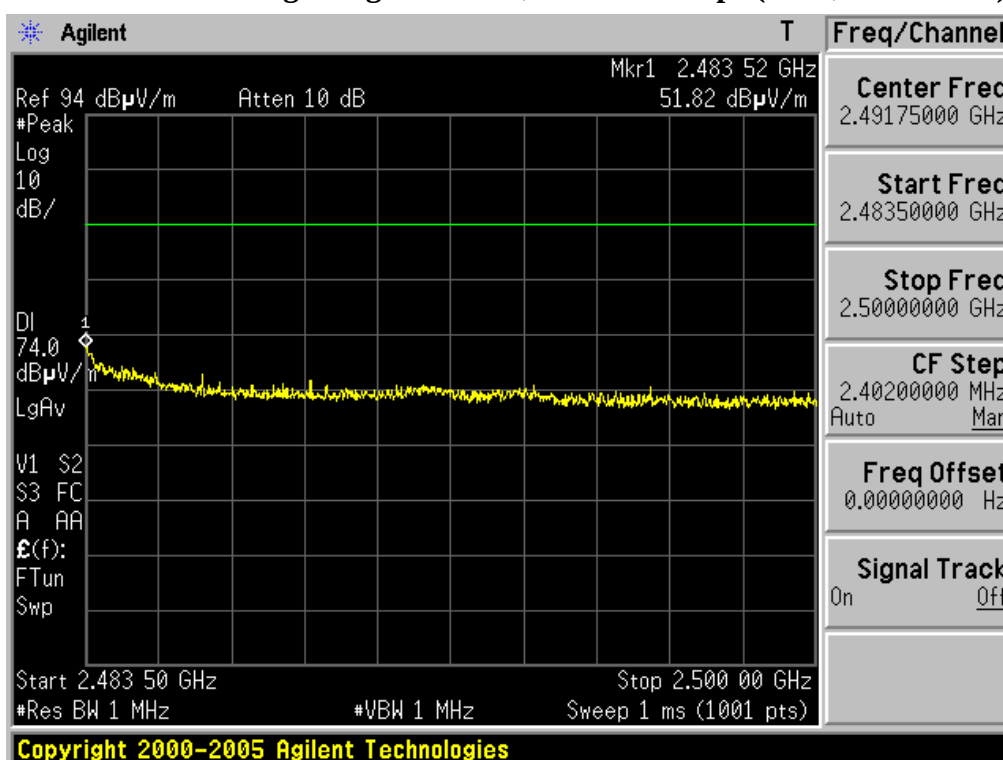
Restricted Band Edge: Low Channel, Normal 1Mbps (Peak, Vertical)



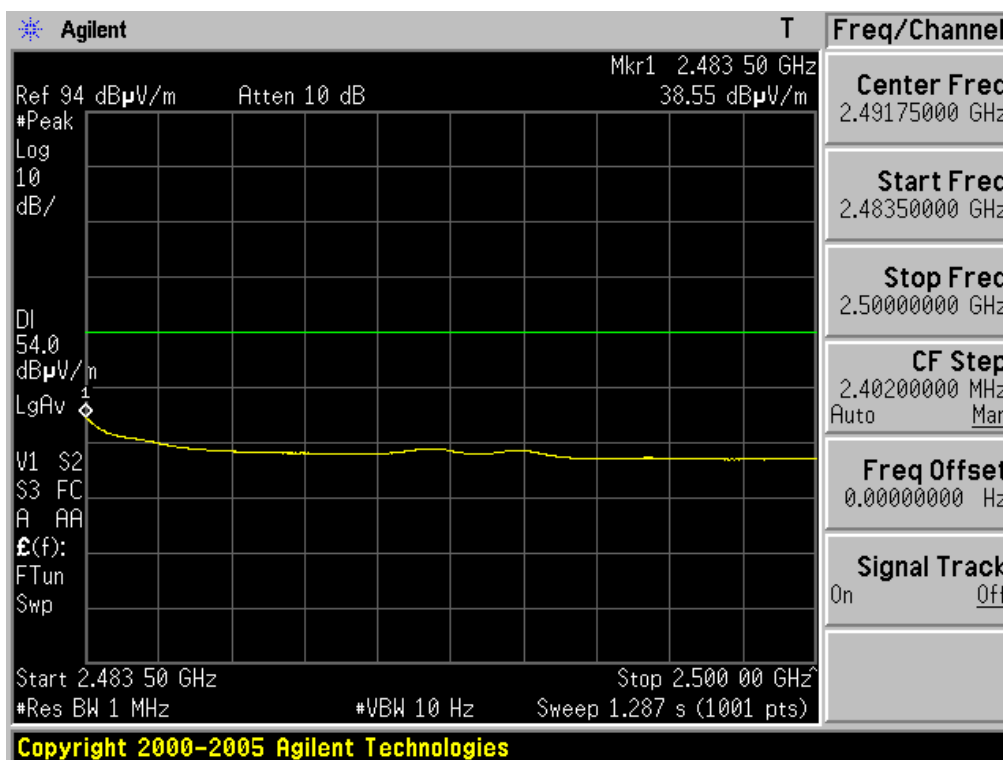
Restricted Band Edge: Low Channel, Normal 1Mbps (Average, Vertical)



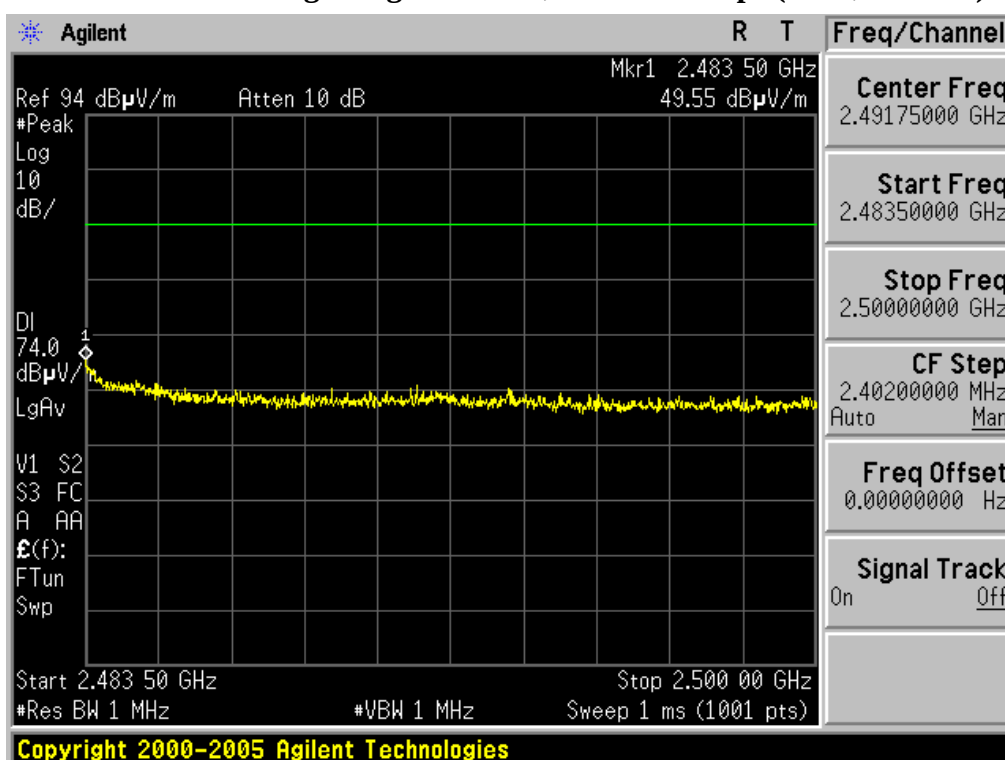
Restricted Band Edge: High Channel, Normal 1Mbps (Peak, Horizontal)



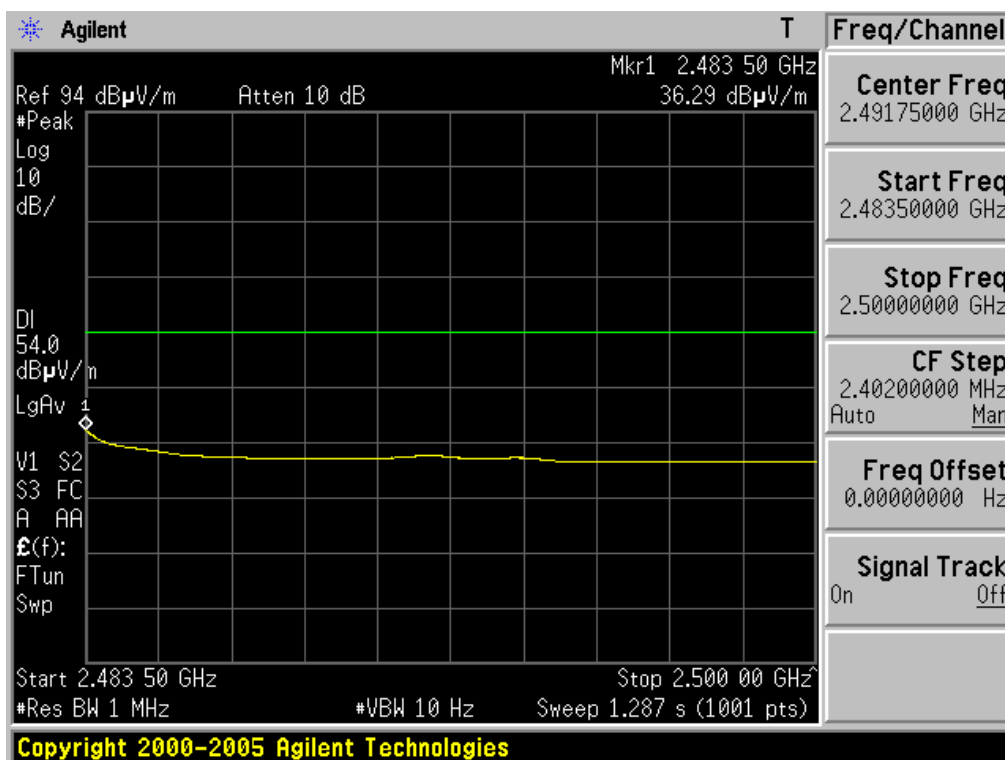
Restricted Band Edge: High Channel, Normal 1Mbps (Average, Horizontal)



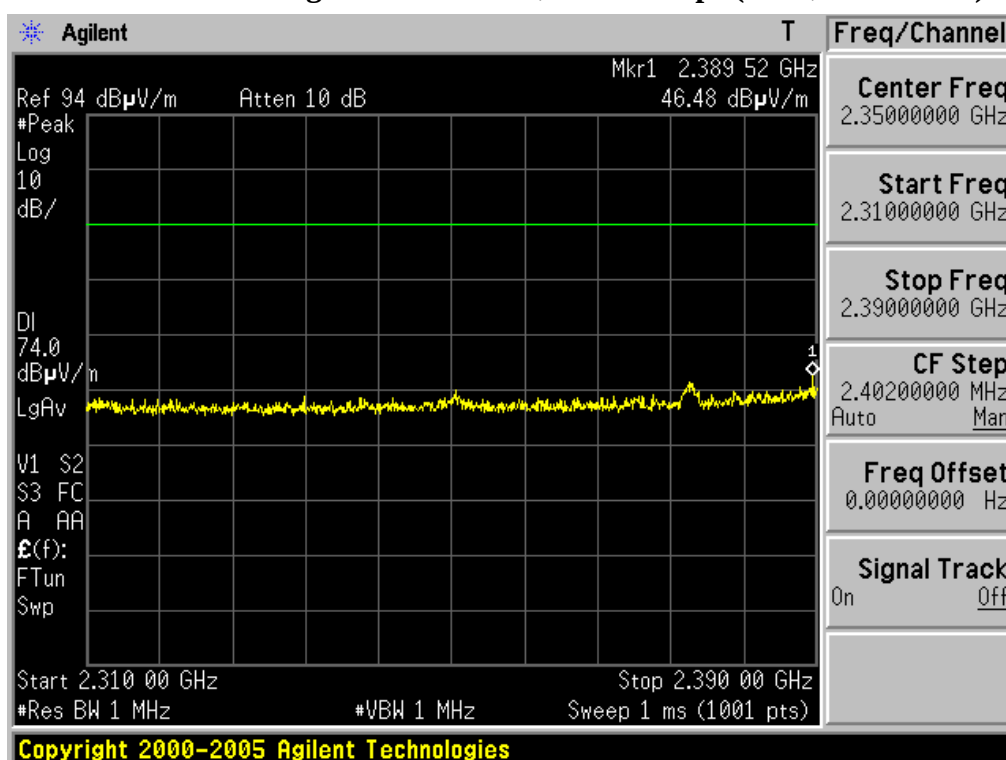
Restricted Band Edge: High Channel, Normal 1Mbps (Peak, Vertical)



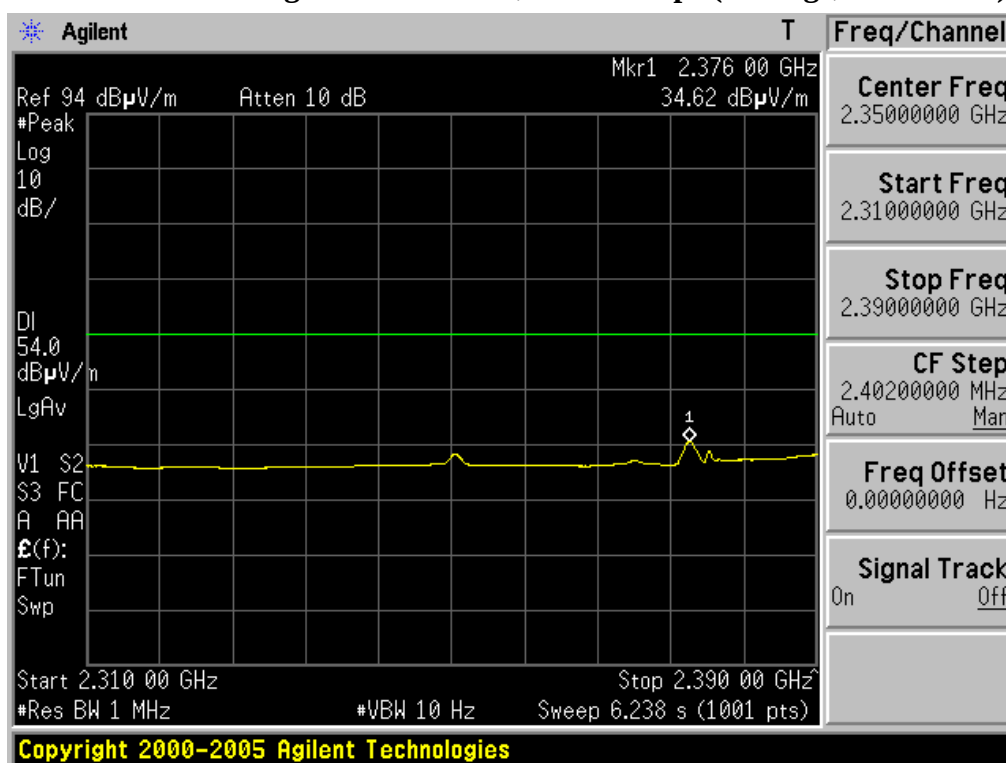
Restricted Band Edge: High Channel, Normal 1Mbps (Average, Vertical)



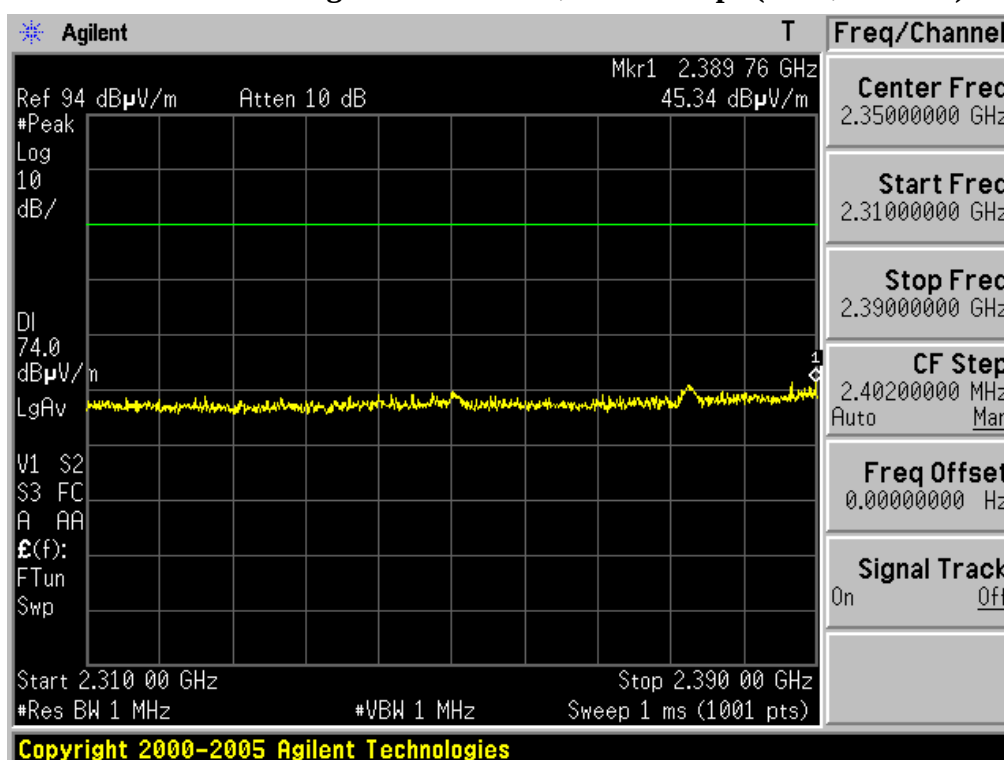
Restricted Band Edge: Low Channel, EDR 2Mbps (Peak, Horizontal)



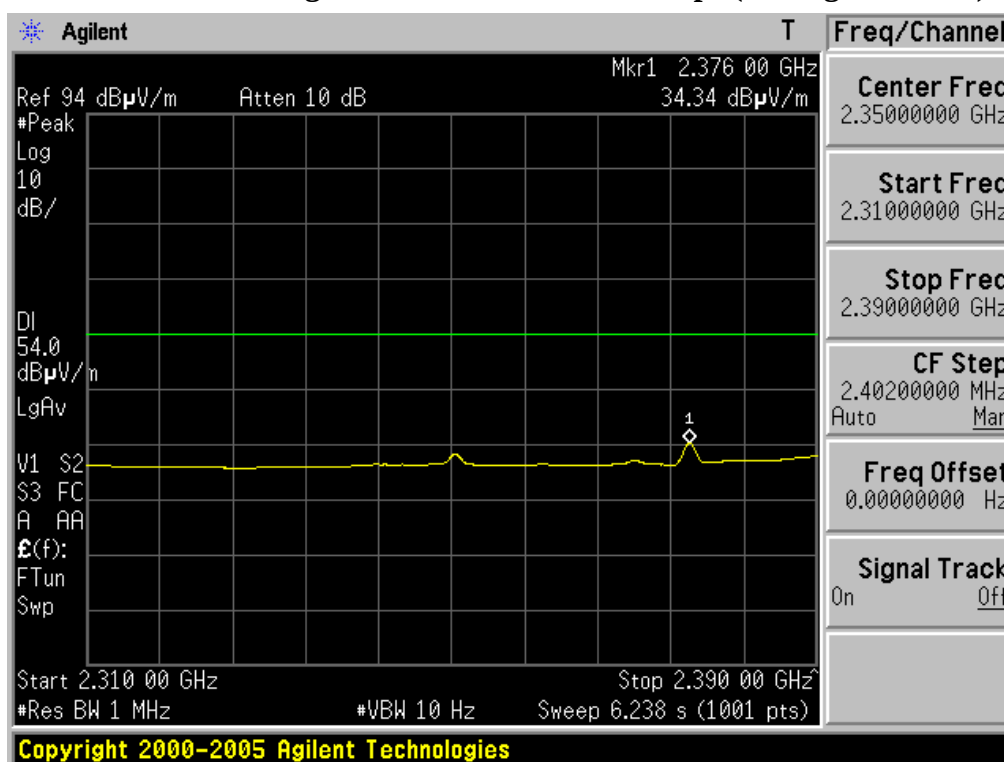
Restricted Band Edge: Low Channel, EDR 2Mbps (Average, Horizontal)



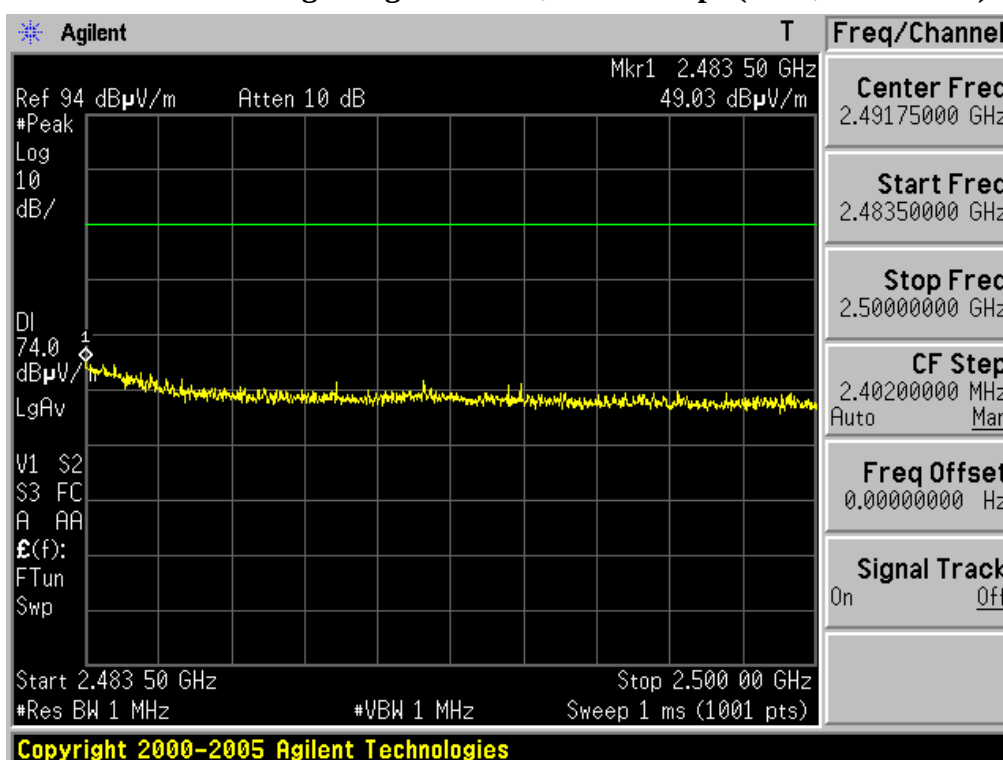
Restricted Band Edge: Low Channel, EDR 2Mbps (Peak, Vertical)



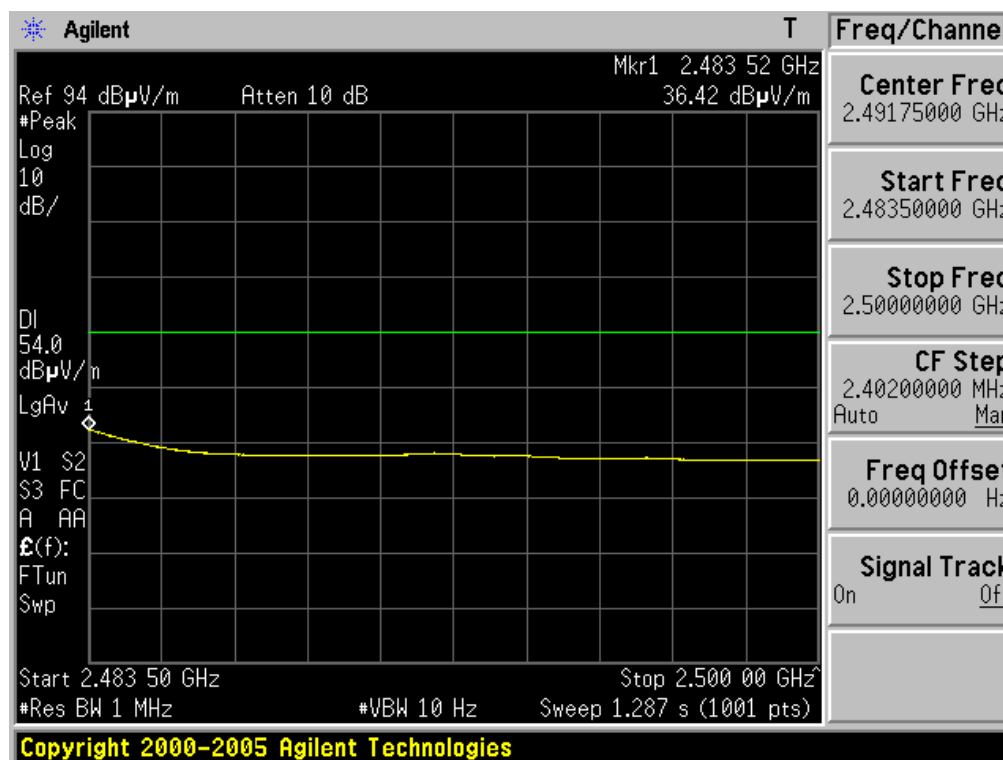
Restricted Band Edge: Low Channel, EDR 2Mbps (Average, Vertical)



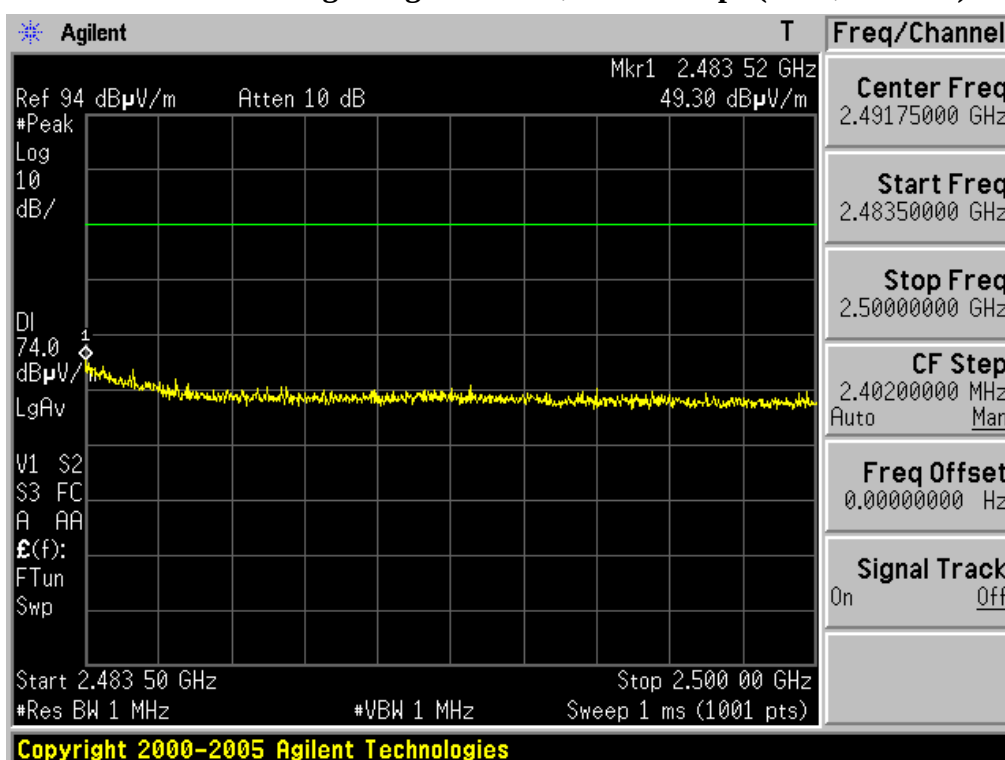
Restricted Band Edge: High Channel, EDR 2Mbps (Peak, Horizontal)



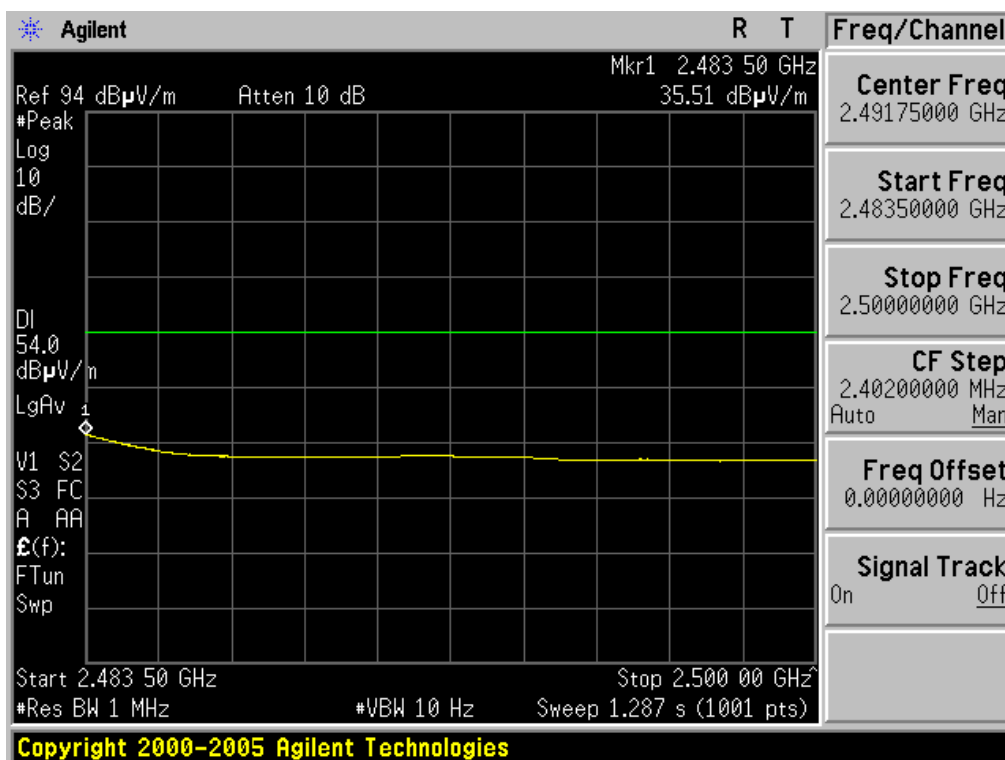
Restricted Band Edge: High Channel, EDR 2Mbps (Average, Horizontal)



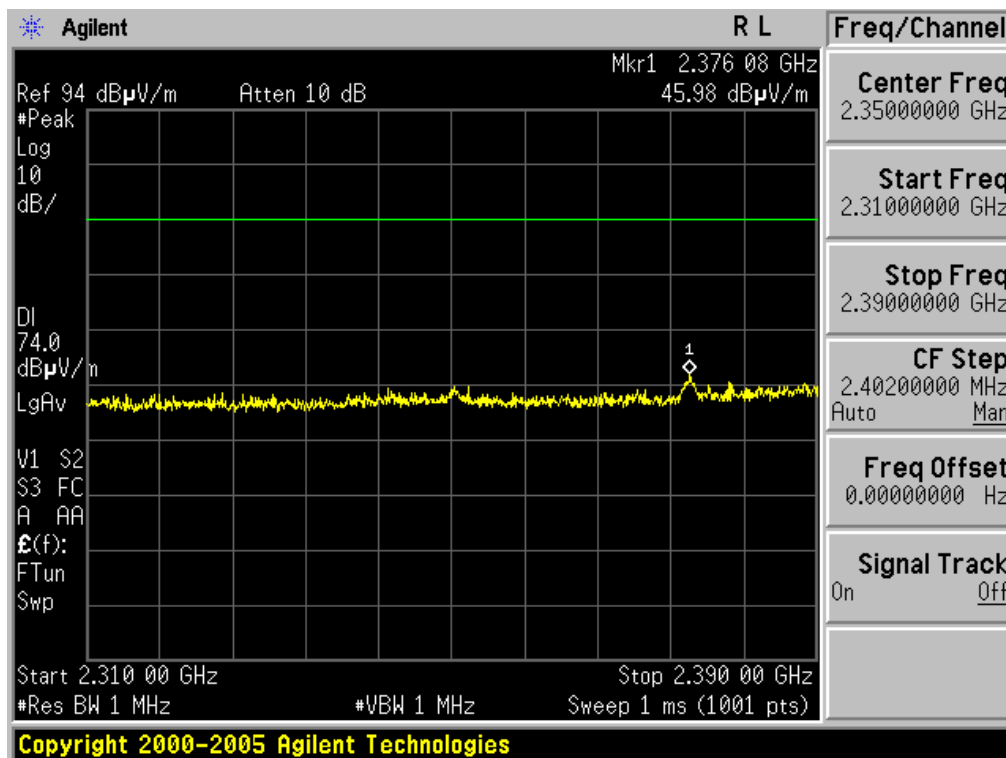
Restricted Band Edge: High Channel, EDR 2Mbps (Peak, Vertical)



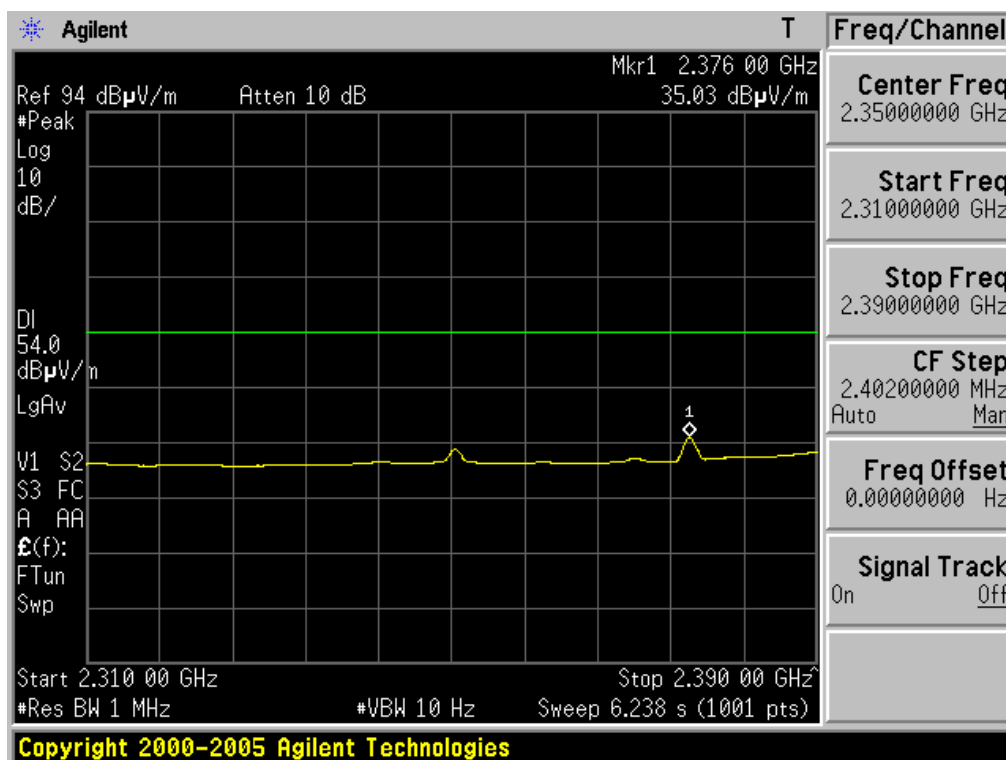
Restricted Band Edge: High Channel, EDR 2Mbps (Average, Vertical)



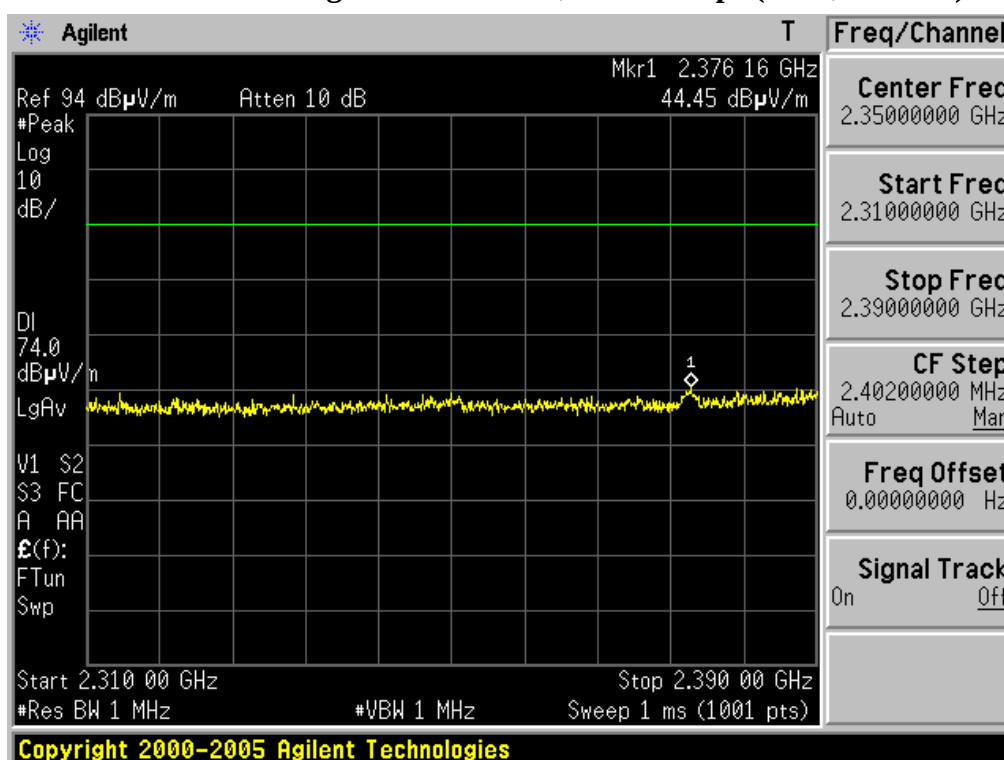
Restricted Band Edge: Low Channel, EDR 3Mbps (Peak, Horizontal)



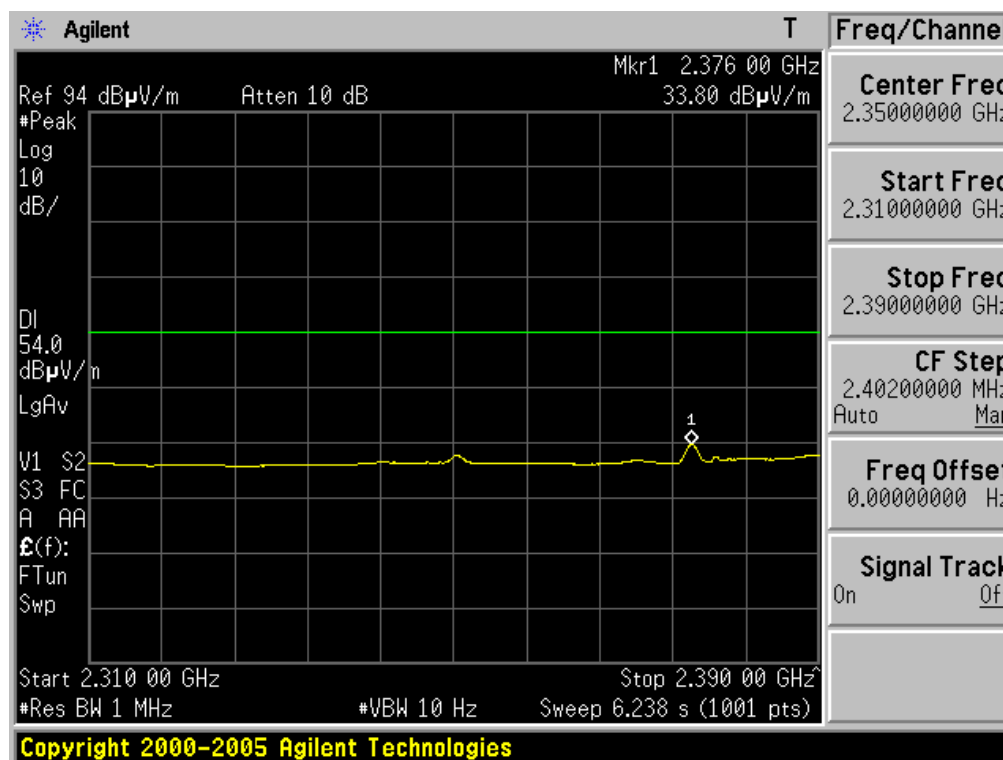
Restricted Band Edge: Low Channel, EDR 3Mbps (Average, Horizontal)



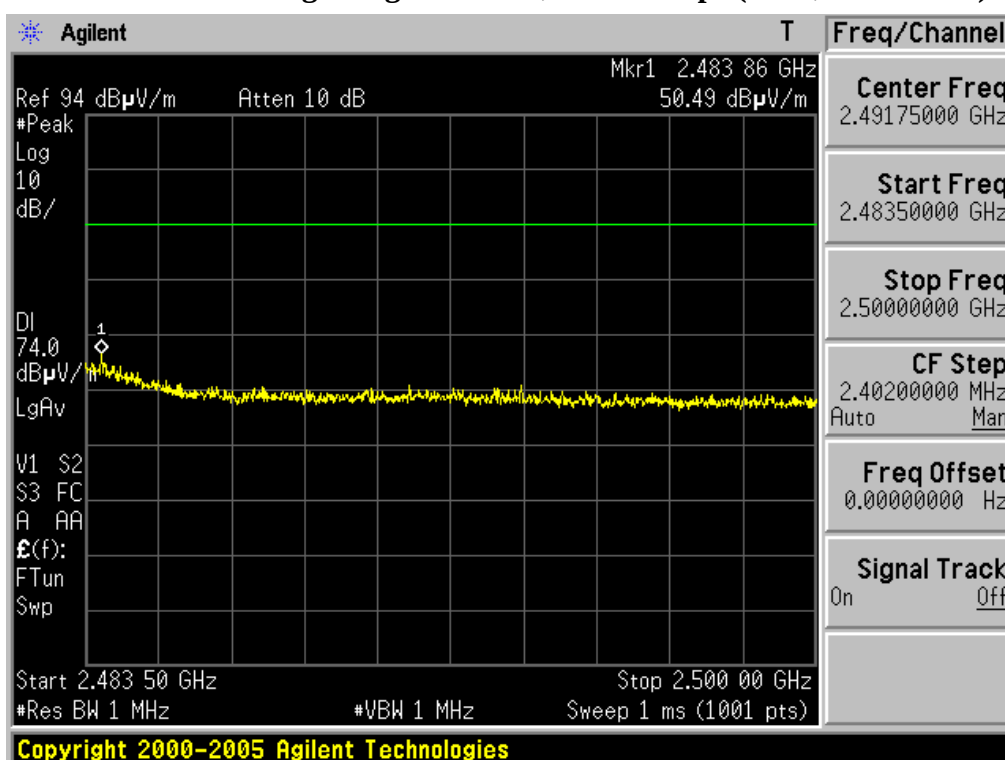
Restricted Band Edge: Low Channel, EDR 3Mbps (Peak, Vertical)



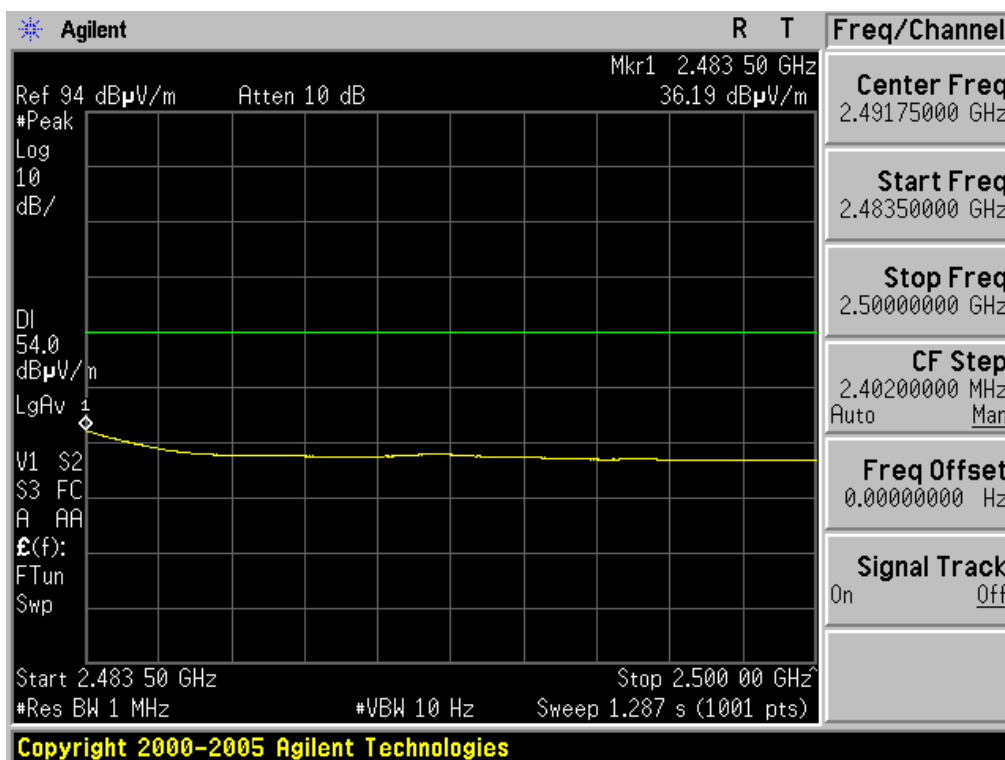
Restricted Band Edge: Low Channel, EDR 3Mbps (Average, Vertical)



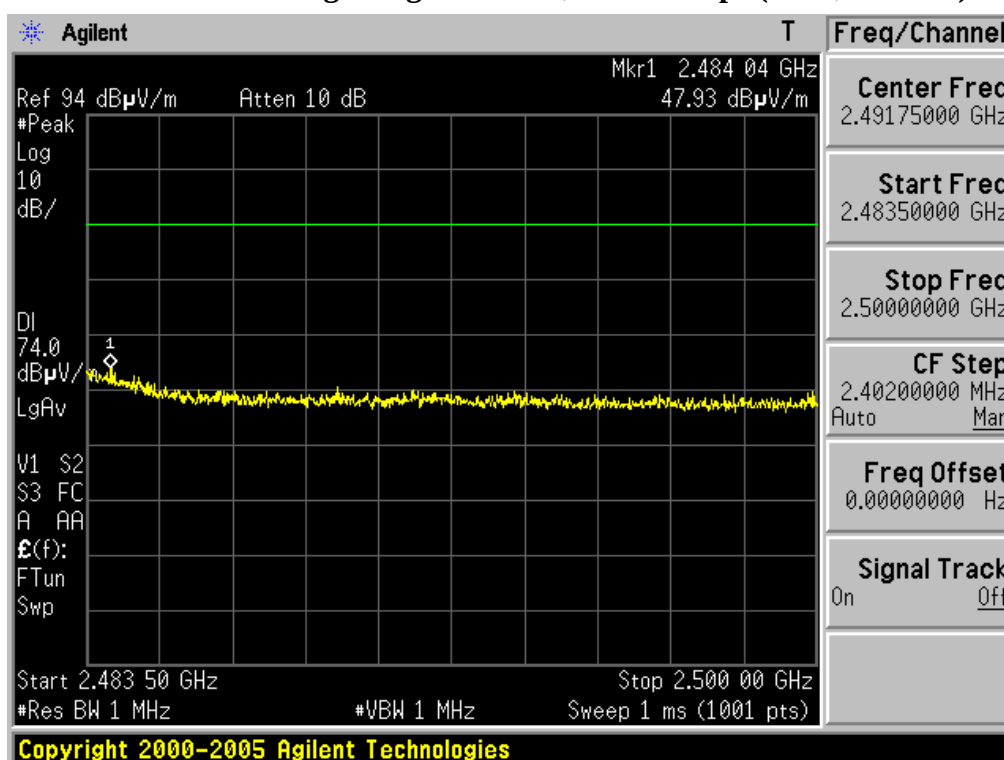
Restricted Band Edge: High Channel, EDR 3Mbps (Peak, Horizontal)



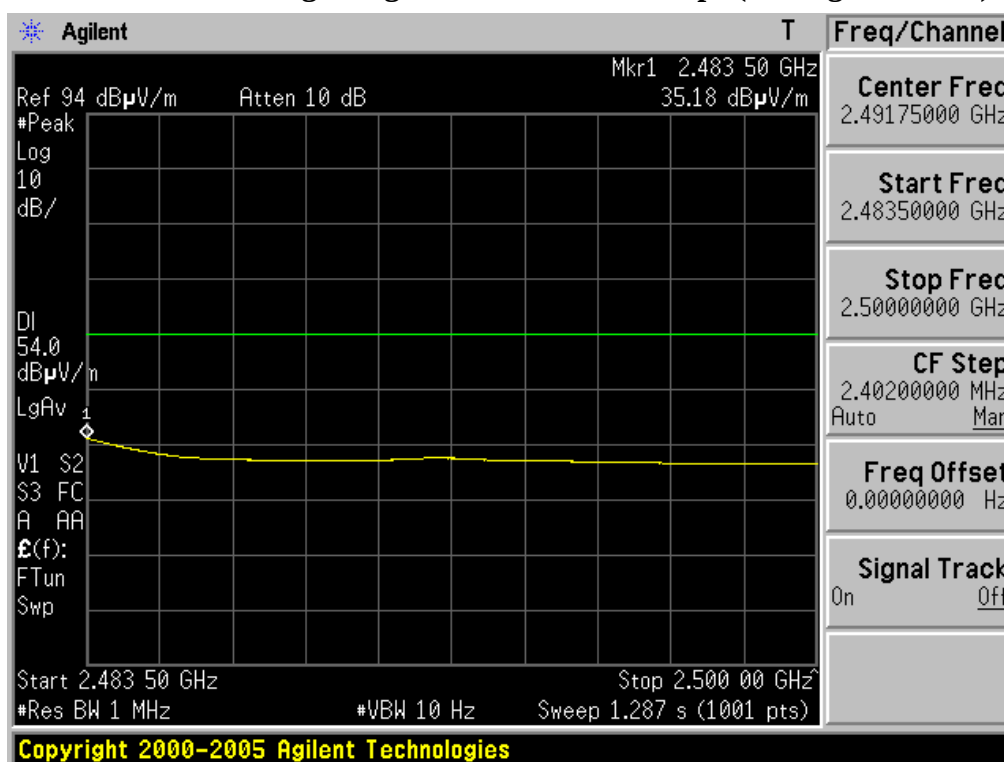
Restricted Band Edge: High Channel, EDR 3Mbps (Average, Horizontal)



Restricted Band Edge: High Channel, EDR 3Mbps (Peak, Vertical)



Restricted Band Edge: High Channel, EDR 3Mbps (Average, Vertical)



- Normal, 1Mbps

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2402MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
4804	Hor	-	49.02	40.64	5.62	-	54.64	46.26	-	74.00	54.00	-	19.36	7.74
4804	Ver	-	48.28	38.90	5.62	-	53.90	44.52	-	74.00	54.00	-	20.10	9.48
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2441MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
4882	Hor	-	50.05	42.05	5.80	-	55.85	47.85	-	74.00	54.00	-	18.15	6.15
4882	Ver	-	49.52	41.40	5.80	-	55.32	47.20	-	74.00	54.00	-	18.68	6.80
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2480MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
4960	Hor	-	49.51	42.13	6.45	-	55.96	48.58	-	74.00	54.00	-	18.04	5.42
4960	Ver	-	50.11	42.54	6.45	-	56.56	48.99	-	74.00	54.00	-	17.44	5.01
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note.

1. No other spurious and harmonic emissions were detected at a level greater than 20dB below limit.
2. If peak result meet AV limit, AV measurement is omitted.
3. Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain

– EDR, 2Mbps

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2402MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
4804	Hor	-	47.51	35.69	5.62	-	53.13	41.31	-	74.00	54.00	-	20.87	12.69
4804	Ver	-	45.50	33.84	5.62	-	51.12	39.46	-	74.00	54.00	-	22.88	14.54
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2441MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
4882	Hor	-	46.08	33.57	5.80	-	51.88	39.37	-	74.00	54.00	-	22.12	14.63
4882	Ver	-	46.53	33.95	5.80	-	52.33	39.75	-	74.00	54.00	-	21.67	14.25
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2480MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
4960	Hor	-	45.86	32.48	6.45	-	52.31	38.93	-	74.00	54.00	-	21.69	15.07
4960	Ver	-	46.35	32.60	6.45	-	52.80	39.05	-	74.00	54.00	-	21.20	14.95
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note.

- No other spurious and harmonic emissions were detected at a level greater than 20dB below limit.
- If peak result meet AV limit, AV measurement is omitted.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain

– EDR, 3Mbps

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2402MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
4804	Hor	-	46.75	35.31	5.62	-	52.37	40.93	-	74.00	54.00	-	21.63	13.07
4804	Ver	-	45.88	34.45	5.62	-	51.50	40.07	-	74.00	54.00	-	22.50	13.93
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2441MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
4882	Hor	-	46.06	33.92	5.80	-	51.86	39.72	-	74.00	54.00	-	22.14	14.28
4882	Ver	-	45.25	32.43	5.80	-	51.05	38.23	-	74.00	54.00	-	22.95	15.77
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2480MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
4960	Hor	-	45.94	32.35	6.45	-	52.39	38.80	-	74.00	54.00	-	21.61	15.20
4960	Ver	-	44.69	32.07	6.45	-	51.14	38.52	-	74.00	54.00	-	22.86	15.48
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note.

7. No other spurious and harmonic emissions were detected at a level greater than 20dB below limit.
8. If peak result meet AV limit, AV measurement is omitted.
9. Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain

3.2.8 AC Line Conducted Emissions

Procedure:

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. While the measurement, EUT had its hopping function disabled at the middle channels in line with Section 15.31(m). Emissions closest to the limit are measured in the quasi-peak and average detector mode with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

Measurement Data: **Comply**

- Refer to the next page.

Minimum Standard: FCC Part 15.207(a)/EN 55022

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency

Measurement Setup

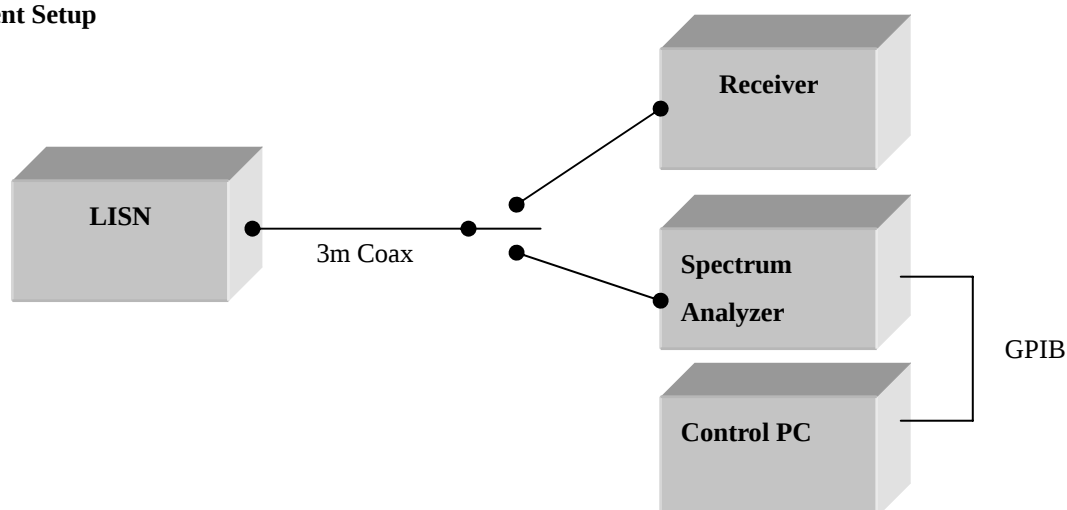
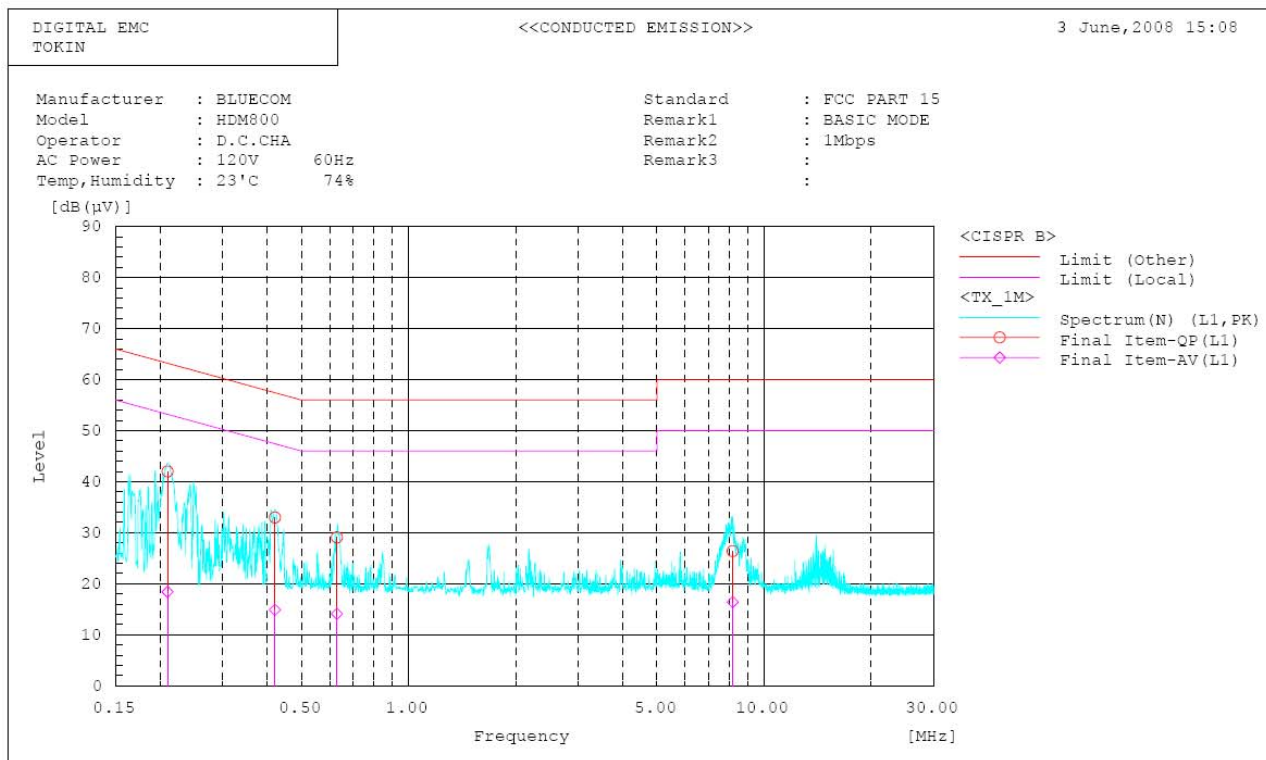
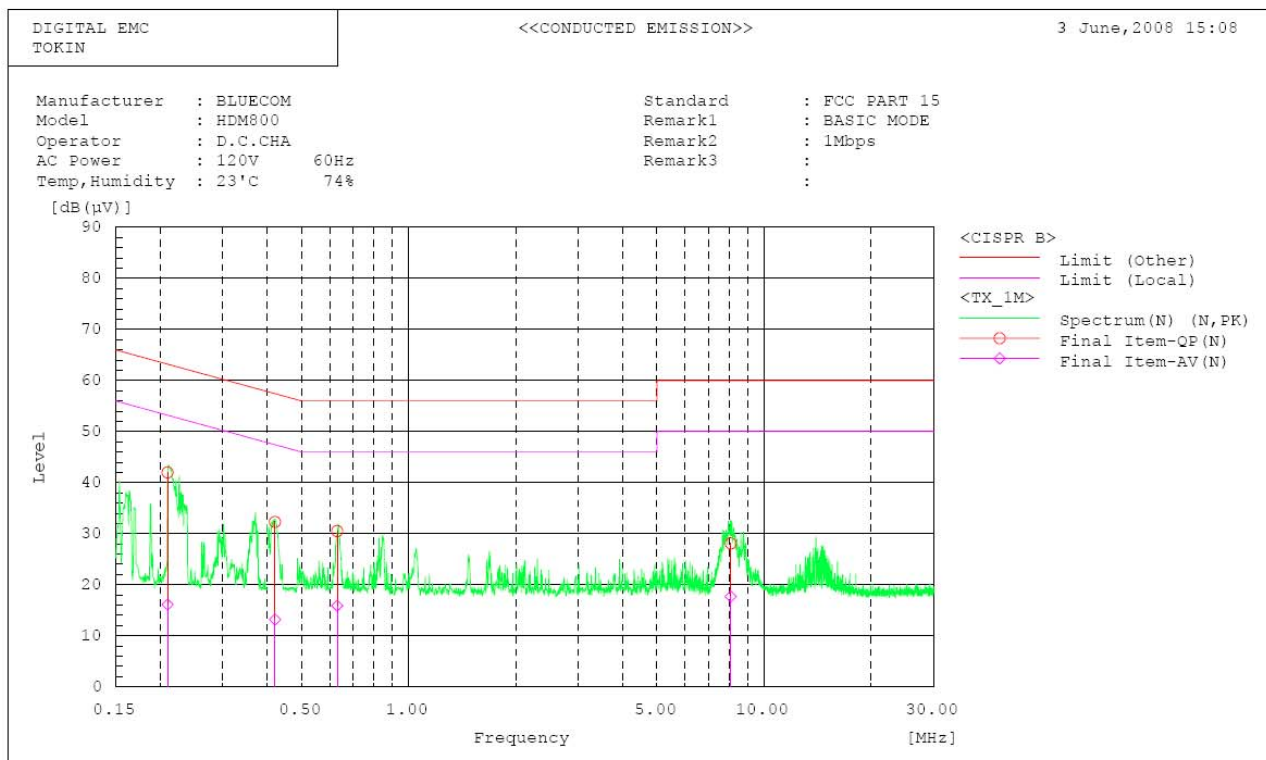


Figure 2: Measurement setup for AC Conducted Emission

- Normal, 1Mbps



```

***** DIGITAL EMC *****
<<CONDUCTED EMISSION>>
3 June, 2008 18:08

Standard      : FCC PART 15
Manufacturer  : BLUECOM
Model         : HDM800
Operator      : D.C.CHA
AC Power      : 120V      60Hz
Temp, Humidity : 23'C     74%
Remark1       : BASIC MODE
Remark2       : 1Mbps
Remark3       :

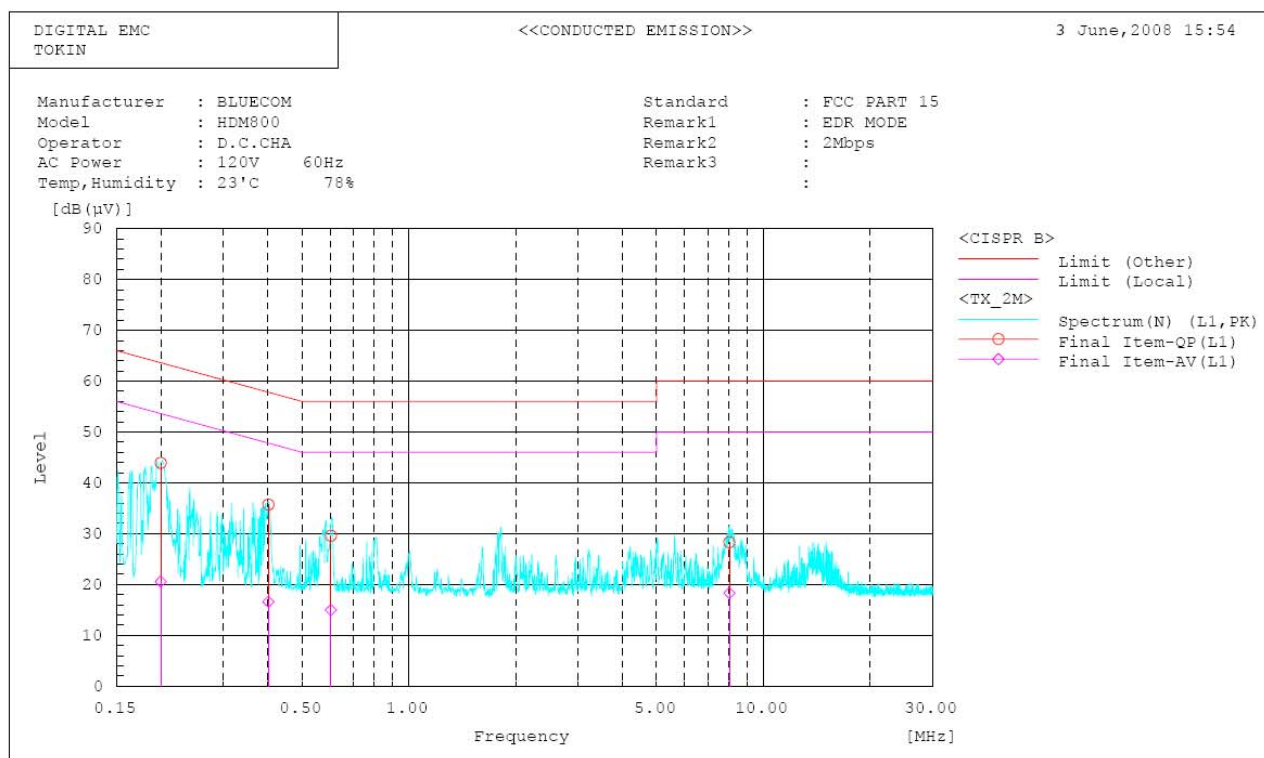
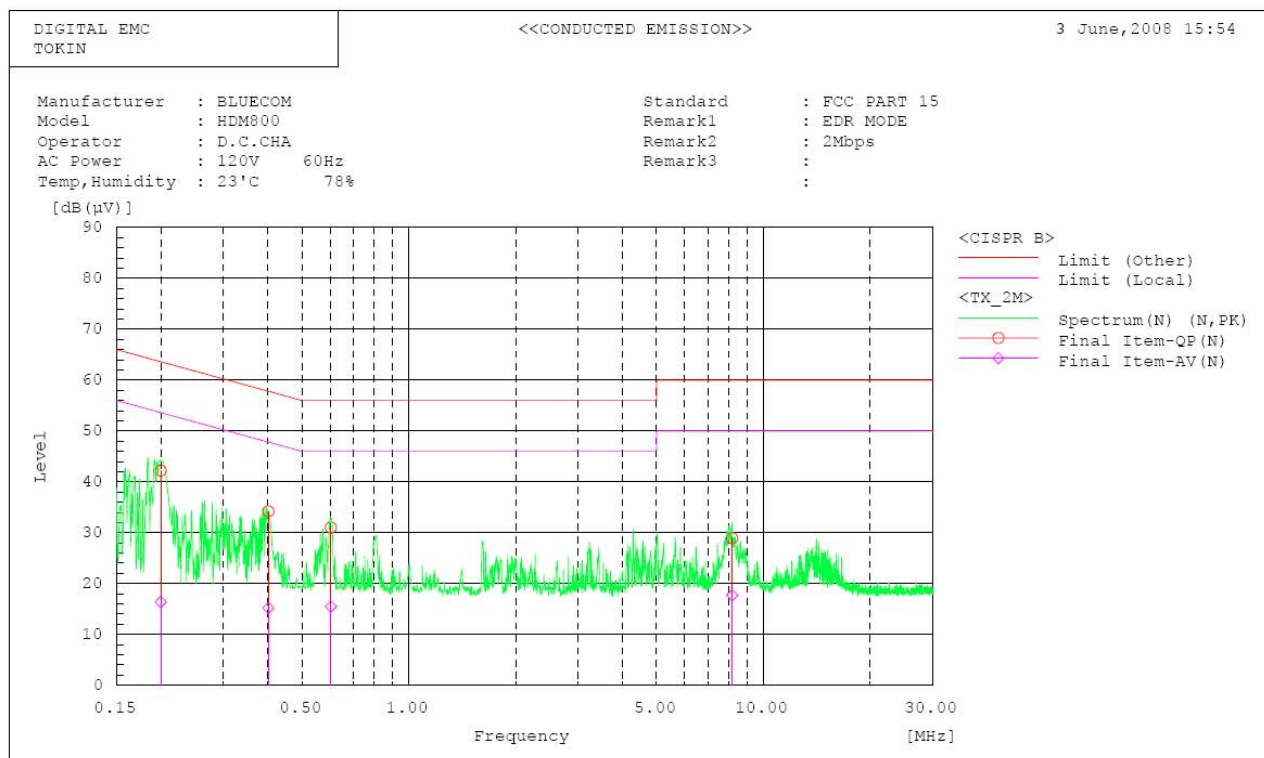
*****
Final Result

--- N Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     QP      AV      [dB]  [dB(μV)] [dB(μV)] [dB(μV)] [dB(μV)] [dB]    [dB]
1    0.210      41.9     16.0    0.1   42.0     16.1   63.2    53.2    21.2    37.1
2    0.421      32.2     13.1    0.1   32.3     13.2   57.4    47.4    25.1    34.2
3    0.630      30.4     15.8    0.1   30.5     15.9   56.0    46.0    25.5    30.1
4    8.058      27.7     17.3    0.4   28.1     17.7   60.0    50.0    31.9    32.3

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     QP      AV      [dB]  [dB(μV)] [dB(μV)] [dB(μV)] [dB(μV)] [dB]    [dB]
1    0.210      41.8     18.2    0.2   42.0     18.4   63.2    53.2    21.2    34.8
2    0.421      32.8     14.7    0.2   33.0     14.9   57.4    47.4    24.4    32.5
3    0.629      28.9     13.9    0.2   29.1     14.1   56.0    46.0    26.9    31.9
4    8.157      28.9     15.9    0.5   26.4     16.4   60.0    50.0    33.6    33.6

```

- EDR, 2Mbps



***** DIGITAL EMC *****
<<CONDUCTED EMISSION>>

3 June, 2008 16:54

Standard : FCC PART 15
Manufacturer : BLUECOM
Model : HDM800
Operator : D.C.CHA
AC Power : 120V 60Hz
Temp, Humidity : 23°C 78%
Remark1 : EDR MODE
Remark2 : 2Mbps
Remark3 :
:

Final Result

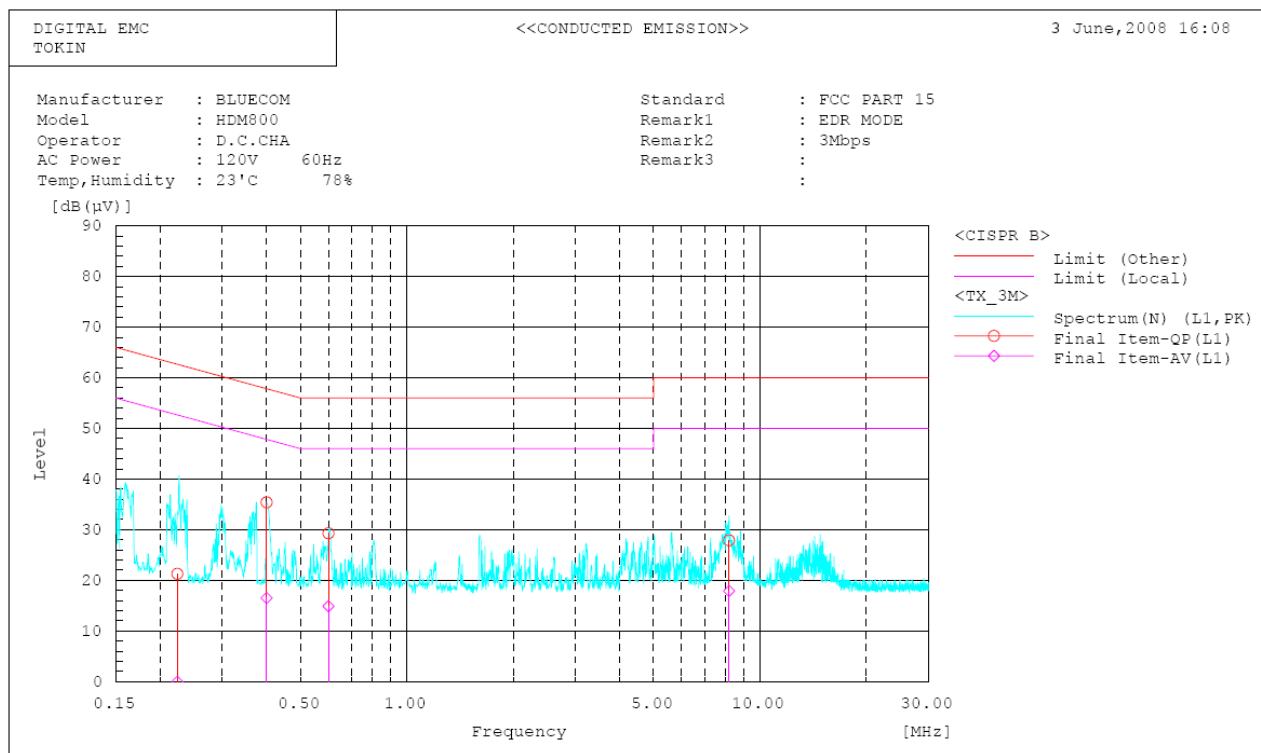
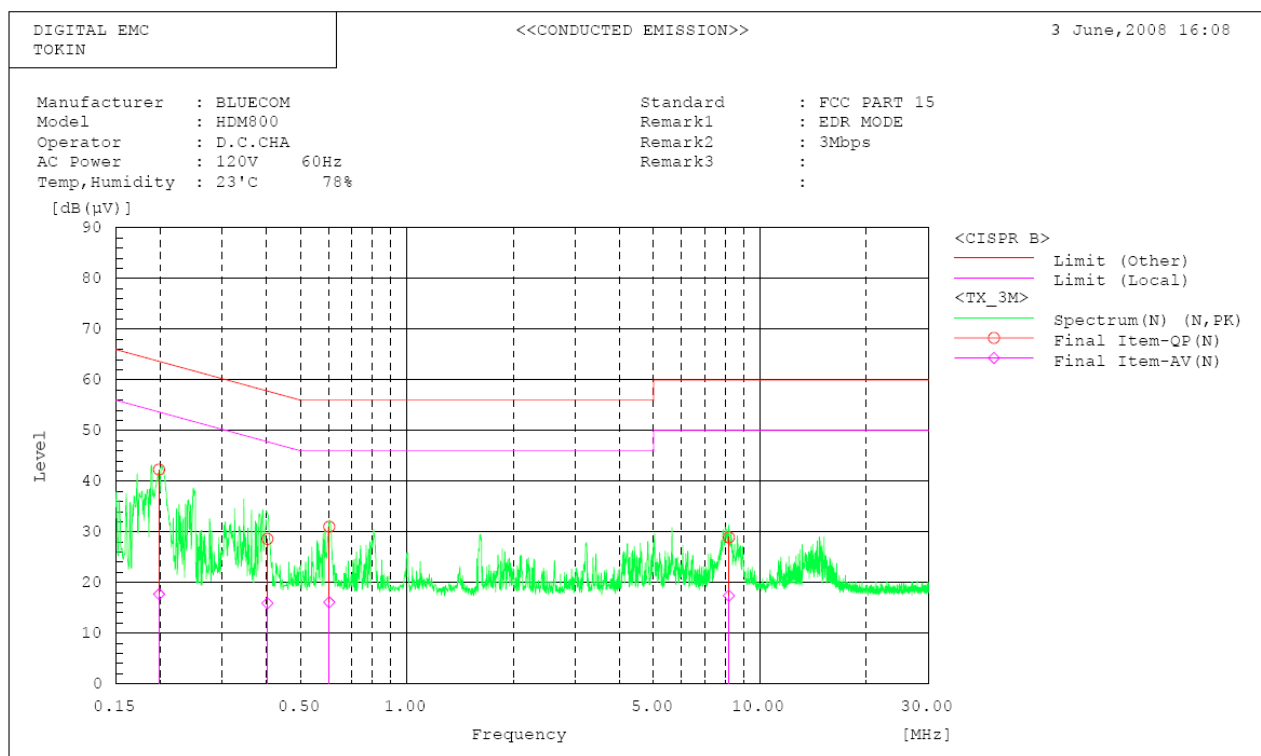
--- N Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB(μV)]	[dB(μV)]		[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.200	42.1	16.3	0.1	42.2	16.4	63.6	53.6	21.4	37.2	
2	0.402	34.1	15.1	0.1	34.2	15.2	57.8	47.8	23.6	32.6	
3	0.603	30.9	15.4	0.1	31.0	15.5	56.0	46.0	25.0	30.5	
4	8.166	28.5	17.3	0.4	28.9	17.7	60.0	50.0	31.1	32.3	

--- L1 Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB(μV)]	[dB(μV)]		[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.200	43.7	20.4	0.2	43.9	20.6	63.6	53.6	19.7	33.0	
2	0.402	35.5	16.4	0.2	35.7	16.6	57.8	47.8	22.1	31.2	
3	0.603	29.4	14.8	0.2	29.6	15.0	56.0	46.0	26.4	31.0	
4	8.017	27.8	17.8	0.5	28.3	18.3	60.0	50.0	31.7	31.7	

- EDR, 3Mbps



***** DIGITAL EMC *****
<<CONDUCTED EMISSION>>

3 June, 2008 16:08

Standard : FCC PART 15
Manufacturer : BLUECOM
Model : HDM800
Operator : D.C.CHA
AC Power : 120V 60Hz
Temp, Humidity : 23°C 78%
Remark1 : EDR MODE
Remark2 : 5Mbps
Remark3 :
:

Final Result

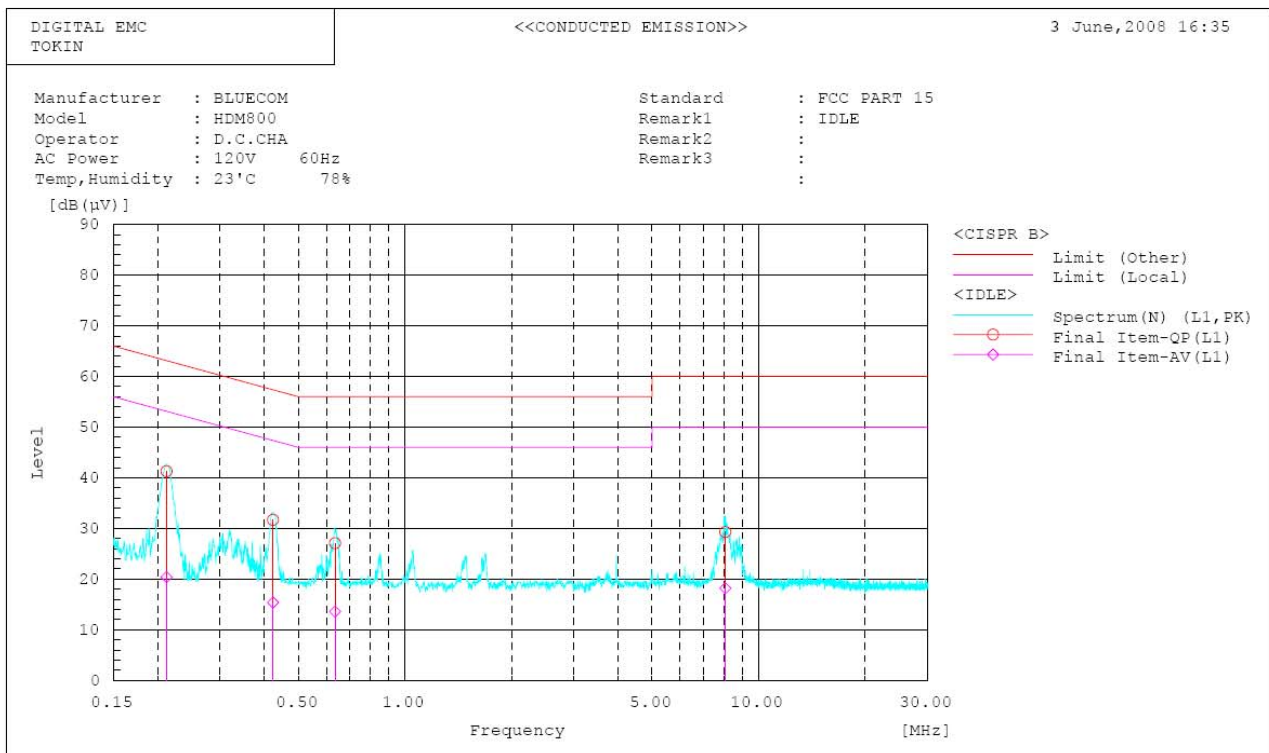
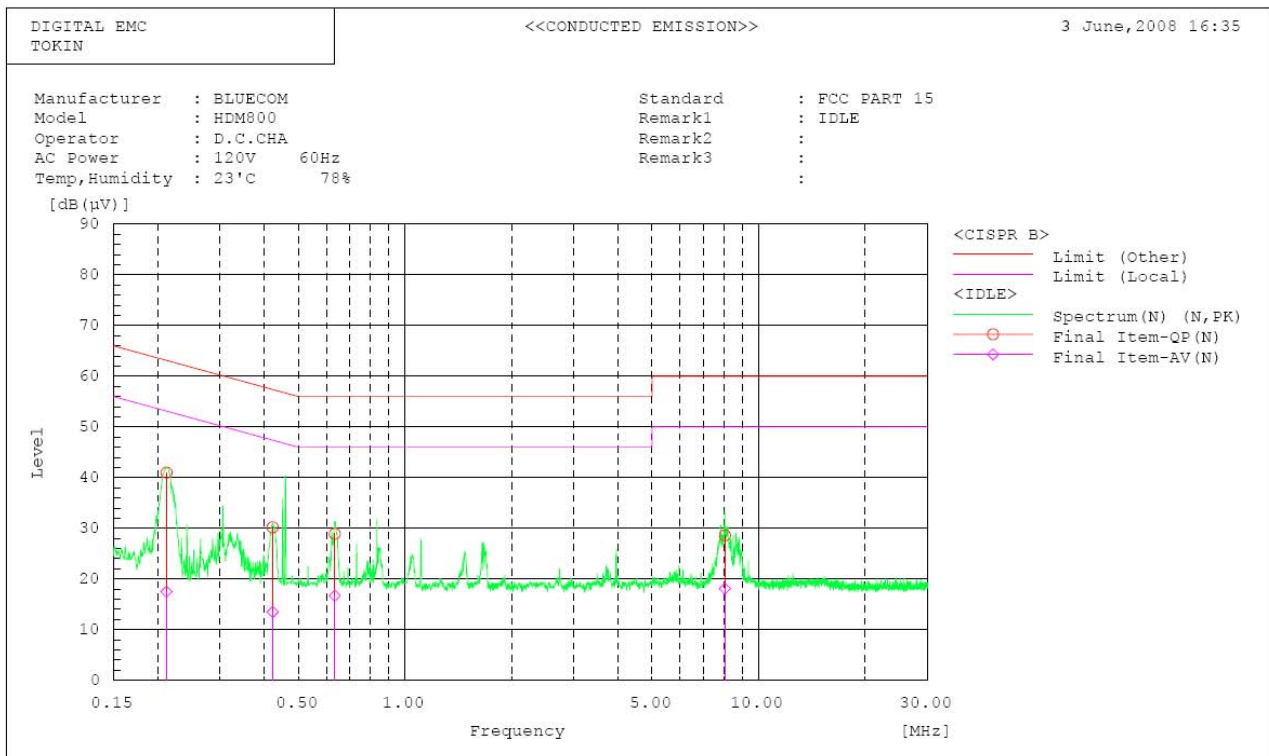
--- N Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB(μV)]	[dB(μV)]		[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.199	42.2	17.6	0.1	42.2	17.7	62.7	52.7	21.4	36.0	
2	0.403	28.8	18.8	0.1	28.6	18.9	57.8	47.8	29.2	31.9	
3	0.603	30.9	16.0	0.1	31.0	16.1	56.0	46.0	25.0	29.9	
4	8.165	28.5	17.0	0.4	28.9	17.4	60.0	50.0	31.1	32.6	

--- L1 Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB(μV)]	[dB(μV)]		[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.224	21.1	0.0	0.2	21.3	0.0	62.7	52.7	41.4	0.0	
2	0.401	35.2	16.3	0.2	35.4	16.5	57.8	47.8	22.4	31.3	
3	0.600	29.1	14.7	0.2	29.3	14.9	56.0	46.0	26.7	31.1	
4	8.174	27.4	17.4	0.5	27.9	17.9	60.0	50.0	32.1	32.1	

- IDLE



***** DIGITAL EMC *****
 <<CONDUCTED EMISSION>>

3 June, 2008 16:35

Standard : FCC PART 15
 Manufacturer : BLUECOM
 Model : HDM800
 Operator : D.C.CHA
 AC Power : 120V 60Hz
 Temp, Humidity : 23°C 78%
 Remark1 : IDLE
 Remark2 :
 Remark3 :

Final Result

--- N Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB(μV)]	[dB(μV)]		[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.212	40.9	17.4	0.1	41.0	17.5	62.1	52.1	22.1	35.6	
2	0.423	30.1	13.4	0.1	30.2	13.5	57.4	47.4	27.2	33.9	
3	0.634	28.8	16.6	0.1	28.9	16.7	56.0	46.0	27.1	29.3	
4	8.029	28.2	17.7	0.4	28.6	18.1	60.0	50.0	31.4	31.9	

--- L1 Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB(μV)]	[dB(μV)]		[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.212	41.1	20.2	0.2	41.3	20.4	62.1	52.1	21.8	32.7	
2	0.424	31.5	15.2	0.2	31.7	15.4	57.4	47.4	25.7	32.0	
3	0.635	26.9	13.4	0.2	27.1	13.6	56.0	46.0	28.9	32.4	
4	8.052	28.6	17.7	0.5	29.3	18.2	60.0	50.0	30.7	31.8	

APPENDIX

TEST EQUIPMENT FOR TESTS

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment.

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	Next.Due.Date (dd/mm/yy)	S/N
01	Spectrum Analyzer	Agilent	E4404B	21/03/08	21/03/09	US41061134
02	Spectrum Analyzer	Agilent	E4440A	15/11/07	15/11/08	MY45304199
03	Spectrum Analyzer	H.P	8563E	09/10/07	09/10/09	3551A04634
04	Spectrum Analyzer	Rohde Schwarz	FSP	06/09/07	06/09/08	100385
05	Spectrum Analyzer	H.P	8591E	26/04/08	26/04/09	3649A05889
06	EMI TEST RECEIVER	R&S	ESU	11/01/08	11/01/09	100014
07	EMI TEST RECEIVER	R&S	ESCI	13/05/08	13/05/09	100364
08	Power Meter	H.P	EMP-442A	10/07/07	10/07/08	GB37170413
09	Power Sensor	H.P	8481A	11/07/07	11/07/08	3318A96566
10	Frequency Counter	H.P	5342A	06/09/07	06/09/08	2119A04450
11	Signal Generator	Rohde Schwarz	SMR20	02/04/08	02/04/09	101251
12	Signal Generator	H.P	ESG-3000A	10/07/07	10/07/08	US37230529
13	Vector Signal Generator	Rohde Schwarz	SMJ100A	17/01/08	17/01/09	100148
14	Audio Analyzer	H.P	8903B	10/07/07	10/07/08	3011A09448
15	Modulation Analyzer	H.P	8901B	14/07/07	14/07/08	3028A03029
16	Oscilloscope	Tektronix	TDS3052	02/11/07	02/11/08	B016821
17	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	18/07/07	18/07/09	GB43461134
18	Universal Radio communication Tester	Rohde Schwarz	CMU 200	02/04/08	02/04/09	107631
19	Bluetooth Tester	TESCOM	TC-3000A	02/11/07	02/11/08	3000A4A0121
20	Power Splitter	WEINSCHL	1593	05/10/07	05/10/08	332
21	Power Splitter	Anritsu	K241B	19/10/07	19/10/08	020611
22	BAND Reject Filter	Microwave Circuits	N0308372	18/10/07	18/10/08	3125-01DC0312
23	BAND Reject Filter	Wainwright	WRCG1750	18/10/07	18/10/08	SN2
24	AC Power supply	DAEKWANG	5KVA	20/03/08	20/03/09	N/A
25	DC Power Supply	H.P	6622A	20/03/08	20/03/09	465487
26	HORN ANT	ETS	3115	10/08/07	10/08/08	6419
27	HORN ANT	ETS	3115	09/10/07	09/10/08	21097
28	HORN ANT	A.H.Systems	SAS-574	20/08/07	20/08/08	154
29	HORN ANT	A.H.Systems	SAS-574	20/08/07	20/08/08	155

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	Next.Due.Date (dd/mm/yy)	S/N
30	Dipole Antenna	Schwarzbeck	VHA9103	19/12/07	19/12/08	2116
31	Dipole Antenna	Schwarzbeck	VHA9103	19/12/07	19/12/08	2117
32	Dipole Antenna	Schwarzbeck	UHA9105	20/12/07	20/12/08	2261
33	Dipole Antenna	Schwarzbeck	UHA9105	20/12/07	20/12/08	2262
34	TEMP & HUMIDITY Chamber	JISCO	J-RHC2	02/10/07	02/10/08	021031
35	Log Periodic Antenna	Schwarzbeck	UHALP9108A1	01/10/07	01/10/08	1098
36	Biconical Antenna	Schwarzbeck	VHA9103	01/10/07	01/10/08	2233
37	Digital Multimeter	H.P	34401A	20/03/08	20/03/09	3146A13475
38	Attenuator (10dB)	WEINSCHL	23-10-34	05/10/07	05/10/08	BP4386
39	Attenuator (10dB)	WEINSCHL	23-10-34	30/01/08	30/01/09	BP4387
40	High-Pass Filter	ANRITSU	MP526D	08/10/07	08/10/08	MP27756
41	Attenuator (3dB)	Agilent	8491B	12/07/07	12/07/08	58177
42	20dB Attenuator	Aeroflex/Weinschel	86-20-11	25/10/07	25/10/08	432
43	10dB Attenuator	Aeroflex/Weinschel	86-10-11	25/10/07	25/10/08	446
44	10dB Attenuator	Aeroflex/Weinschel	86-10-11	25/10/07	25/10/08	408
45	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0088CAN	05/07/07	05/07/08	788
46	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0185CAN	05/07/07	05/07/08	790
47	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0215CAN	05/07/07	05/07/08	112
48	Amplifier (25dB)	Agilent	8447D	21/05/08	21/05/09	2944A10144
49	Amplifier (30dB)	Agilent	8449B	25/10/07	25/10/08	3008A01590
50	Amplifier (22dB)	H.P	8447E	27/02/08	27/02/09	2945A02865
51	Position Controller	TOKIN	5901T	N/A	N/A	14173
52	Driver	TOKIN	5902T2	N/A	N/A	14174
53	RFI/FIELD Intensity Meter	Kyorits	KNW-2402	06/09/07	06/09/08	4N-170-3
54	LISN	Kyorits	KNW-407	30/08/07	30/08/08	8-317-8
55	LISN	Kyorits	KNW-242	06/10/07	06/10/08	8-654-15
56	CVCFC	NF Electronic	4400	N/A	N/A	344536 4420064
57	Software	ToYo EMI	EP5/RE	N/A	N/A	Ver 2.0.800
58	Software	ToYo EMI	EP5/CE	N/A	N/A	Ver 2.0.801
59	Software	AUDIX	e3	N/A	N/A	Ver 3.0
60	Software	Agilent	Benchlink	N/A	N/A	A.01.09 021211