

**DIGITAL EMC CO., LTD.**

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

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<http://www.digitalemcc.com>**CERTIFICATION OF COMPLIANCE****CAMOS CO., LTD.**

#424-9, Chongchon-2dong, Pupyong-ku, Incheon-si, Korea

Dates of Tests: October 12 ~ 19, 2007

Test Report S/N: DR50110710J

Test Site : DIGITAL EMC CO., LTD.

FCC ID

U6CCAMOS-BHS700D

APPLICANT

CAMOS CO., LTD.

FCC Classification : **Frequency Hopping Spread Spectrum (FHSS)**
Device name : **Bluetooth 2 Channel Headset**
Manufacturer : **CAMOS CO., LTD.**
FCC ID : **U6CCAMOS-BHS700D**
Model name : **BHS-700D**
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 : **M1 Port : 4.11dBm Conducted**
M2 Port : 5.02dBm Conducted
Data of issue : **October 23, 2007**

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

<http://www.digitalemc.com> E-mail : Harveysung@digitalemc.com

Tel: +82-31-321-2664 Fax: +82-31-321-1664

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

October 23, 2007

Won-Jung LEE



Data

Name

Signature

Report Reviewed By: manager

October 23, 2007

Harvey Sung



Data

Name

Signature

Ordering party:

Company name : CAMOS CO., LTD.

Address : #424-9, Chongchon-2dong, Pupyong-ku

City/town : Incheon-si

Country : Korea

Zip code : 403-858

Date of order : October 10, 2007

2. Information about test item

U6CCAMOS-BHS700D

2.1 Equipment information

Equipment model no.	BHS-700D
Equipment serial no.	Identical prototype
Type of equipment	Bluetooth Headset
Frequency band	2402 ~ 2480 MHz
Type of Modulation	GFSK
Channel Access Protocol	Frequency Hopping
Channel Spacing	1.0 MHz
Type of antenna	Chip Antenna

Note1. This Device has two same Bluetooth Modules which can be simultaneous operation. (M1 and M2)

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	: 5.0 VDC

2.4 Ancillary Equipment

Equipment	Model No.	Serial No.	Manufacturer
Adaptor	3A-041WU05	N/A	Seung Bo ElecomCo., 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	Test Condition	Status (note 1)
I. Test Items				
15.247(a)	Carrier Frequency Separation	> 25 kHz	Conducted	C
	Number of Hopping Frequencies	> 75 hops		C
	20 dB Bandwidth	< 1 MHz		C
	Dwell Time	0.4 seconds within a 30 second period per any frequency		C
15.247(b)	Transmitter Output Power	< 1Watt		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

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:

- M1 Port

Frequency of marker #1 (MHz)	Frequency of marker #2 (MHz)	Test Results	
		Carrier Frequency Separation (MHz)	Result
2441.009	2442.008	0.999	Complies

- M2 Port

Frequency of marker #1 (MHz)	Frequency of marker #2 (MHz)	Test Results	
		Carrier Frequency Separation (MHz)	Result
2441.006	2442.005	0.999	Complies

- See next pages for actual measured spectrum plots.

Minimum Standard:

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

Measurement Setup

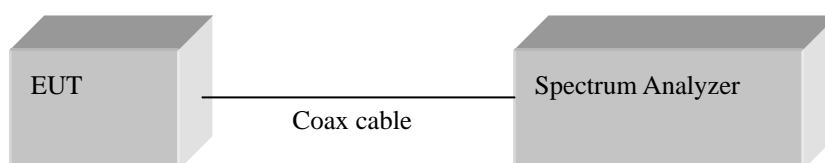
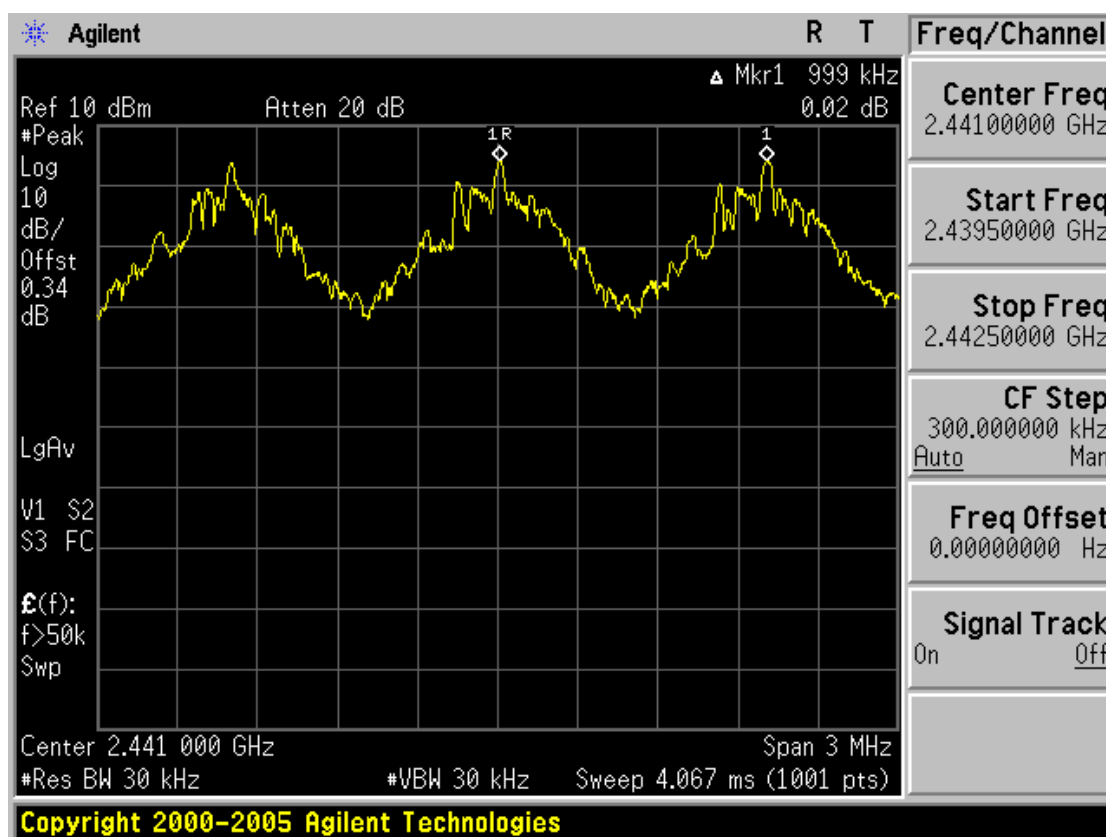
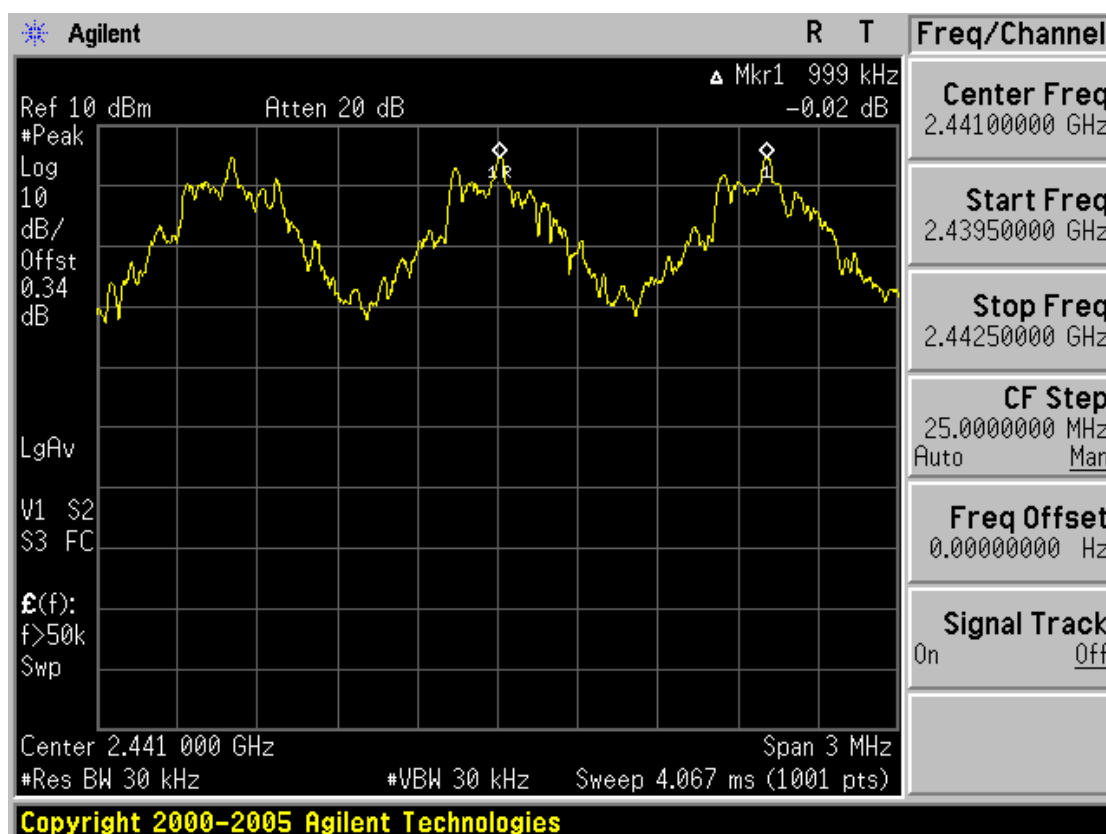


Figure 1: Measurement setup for the carrier frequency separation

Carrier Frequency Separation (M1 Port)



Carrier Frequency Separation (M2 Port)



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 FH 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 ≥ RBW)
- Detector function = peak
- Trace = max hold
- Span = 25MHz

Measurement Data: **Complies**

Total number of Hopping Channels	79
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- See next pages for actual measured spectrum plots.

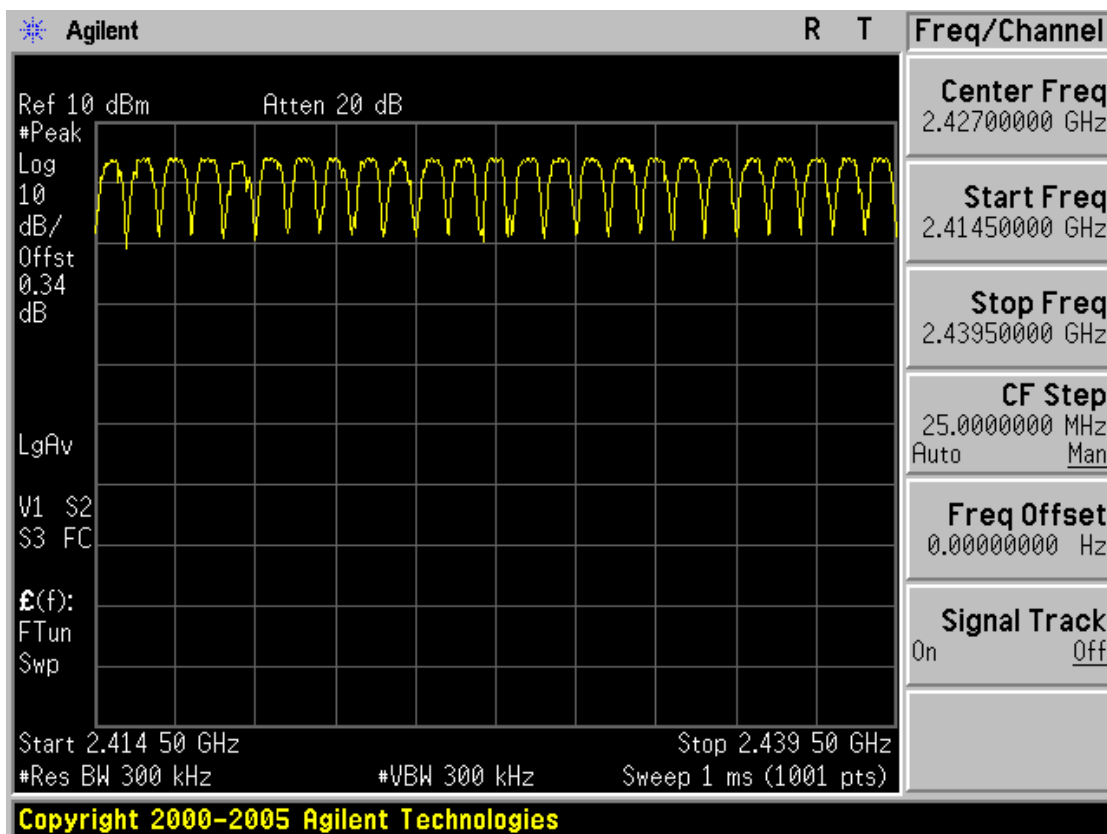
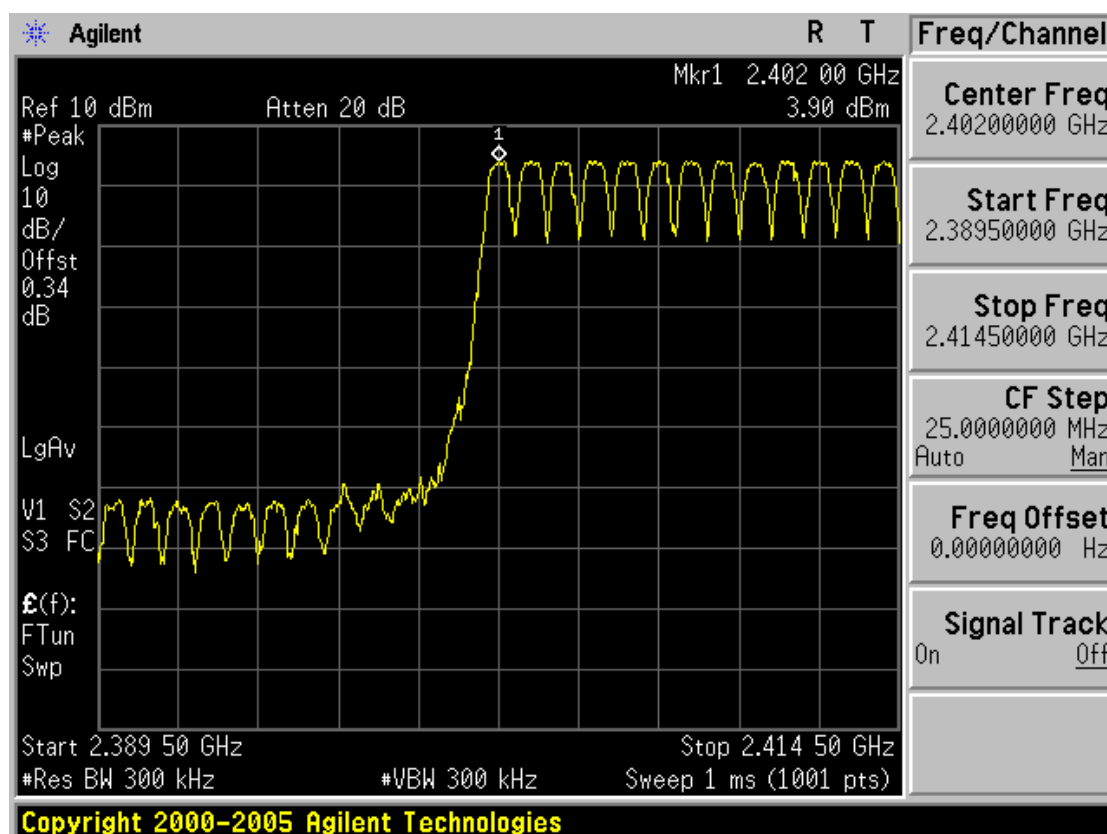
Minimum Standard:

At least 75 hopes

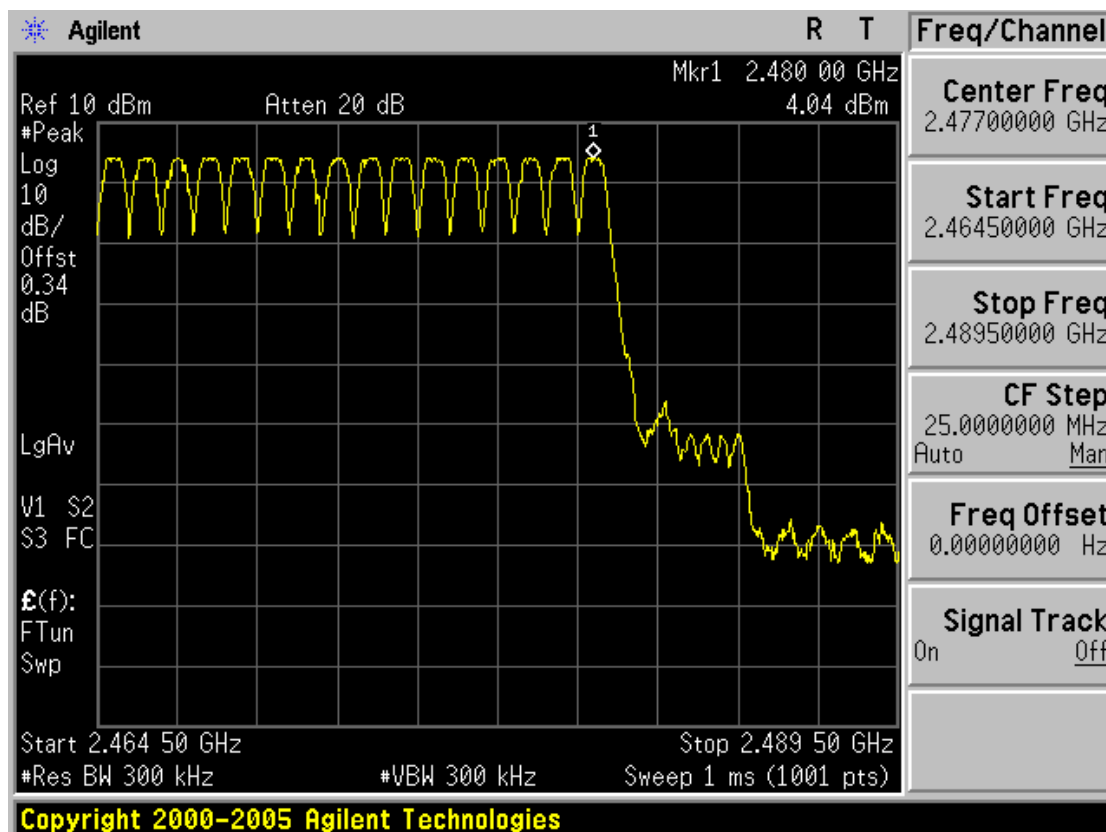
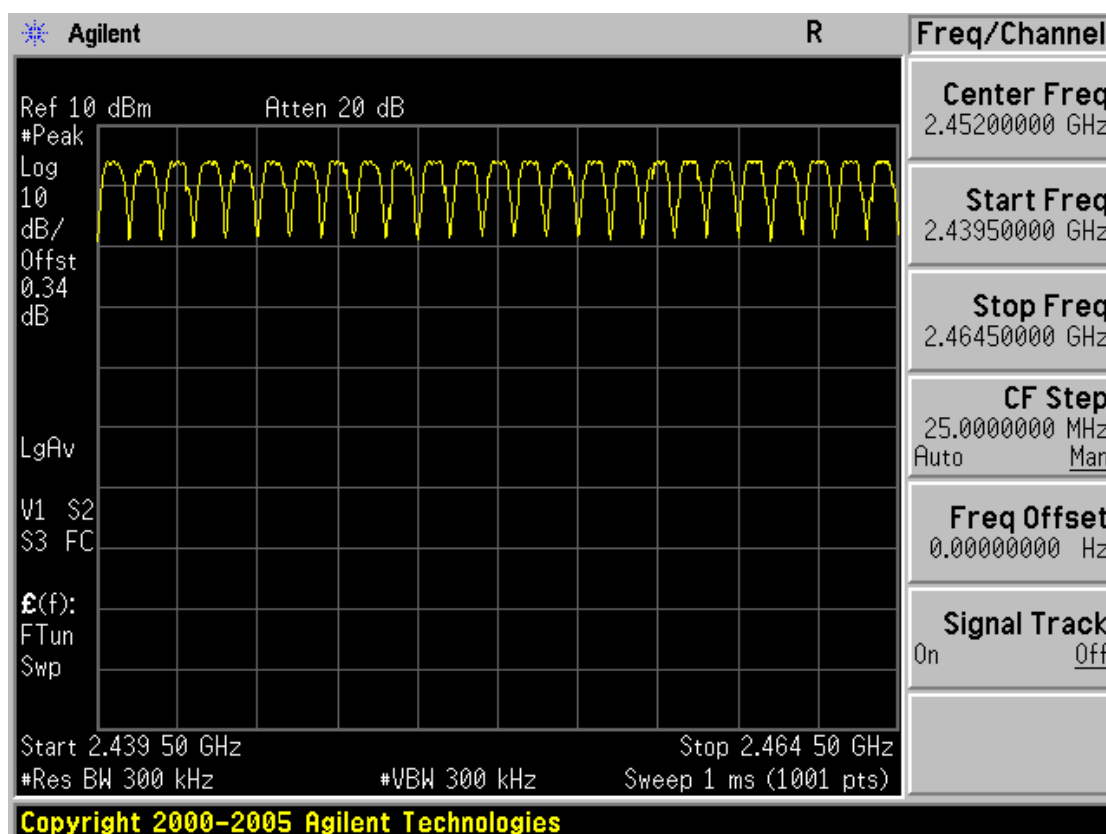
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

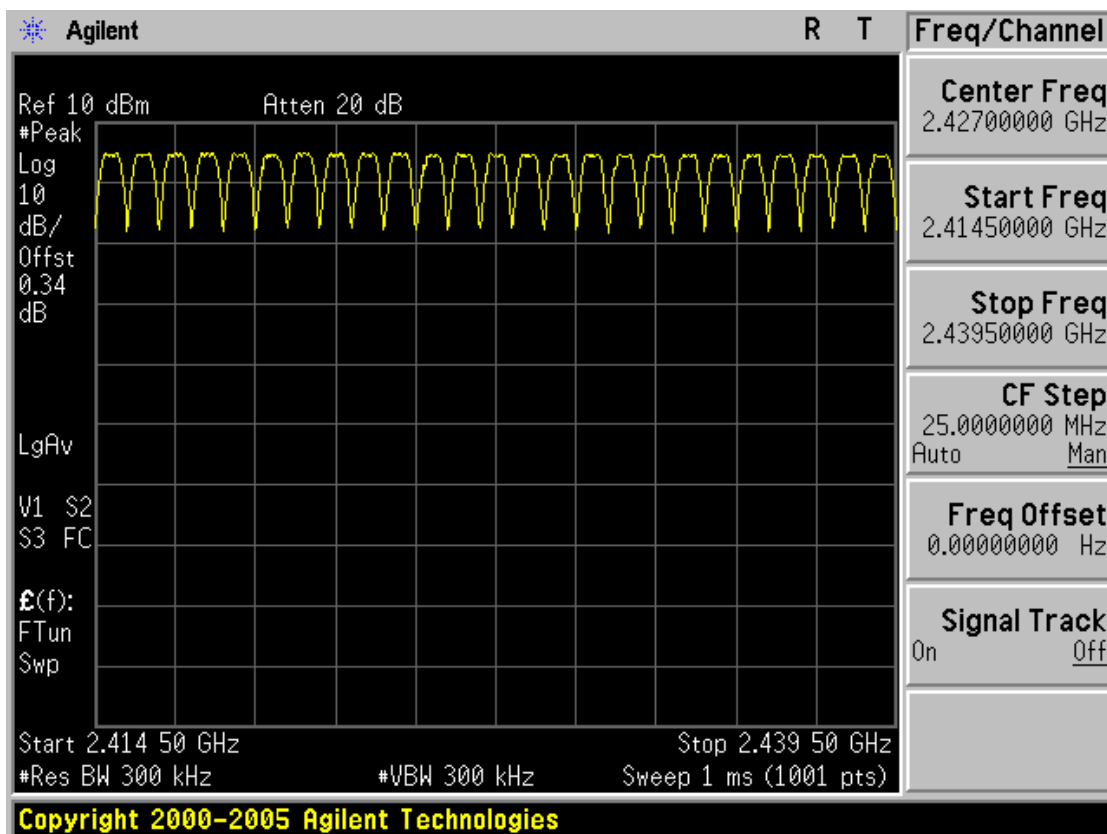
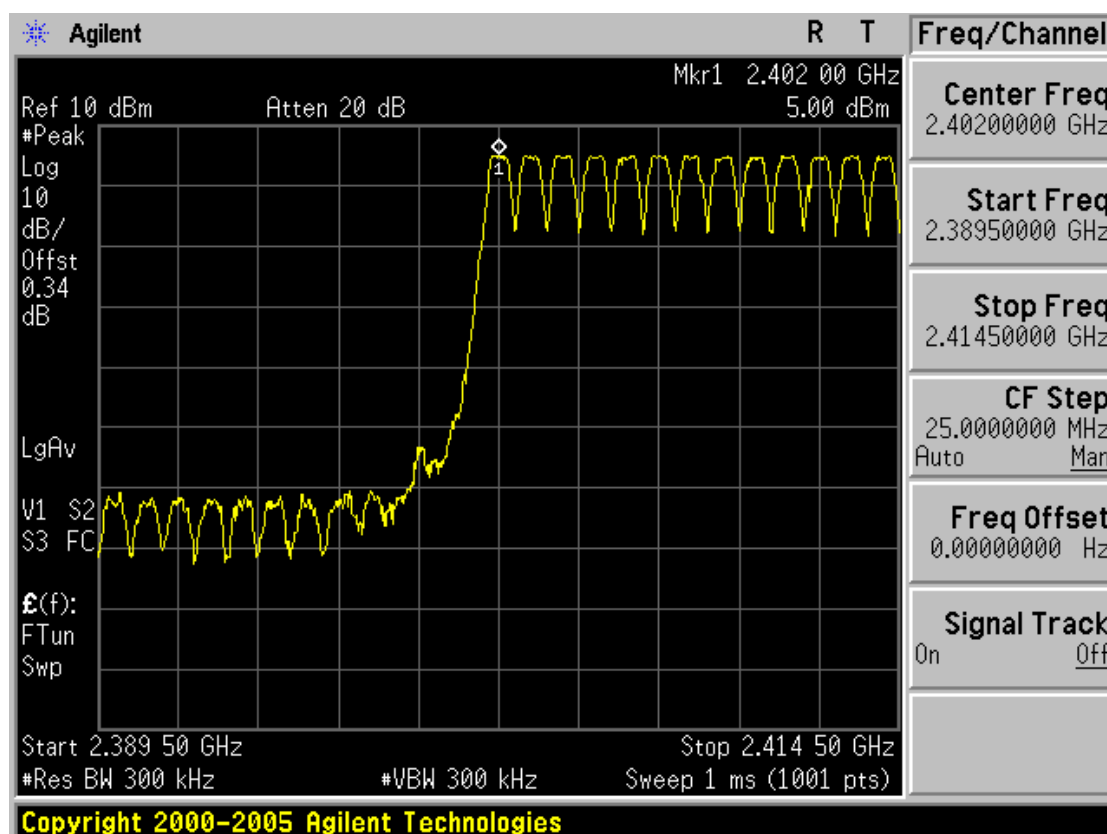
Number of Hopping Frequencies (M1 Port)



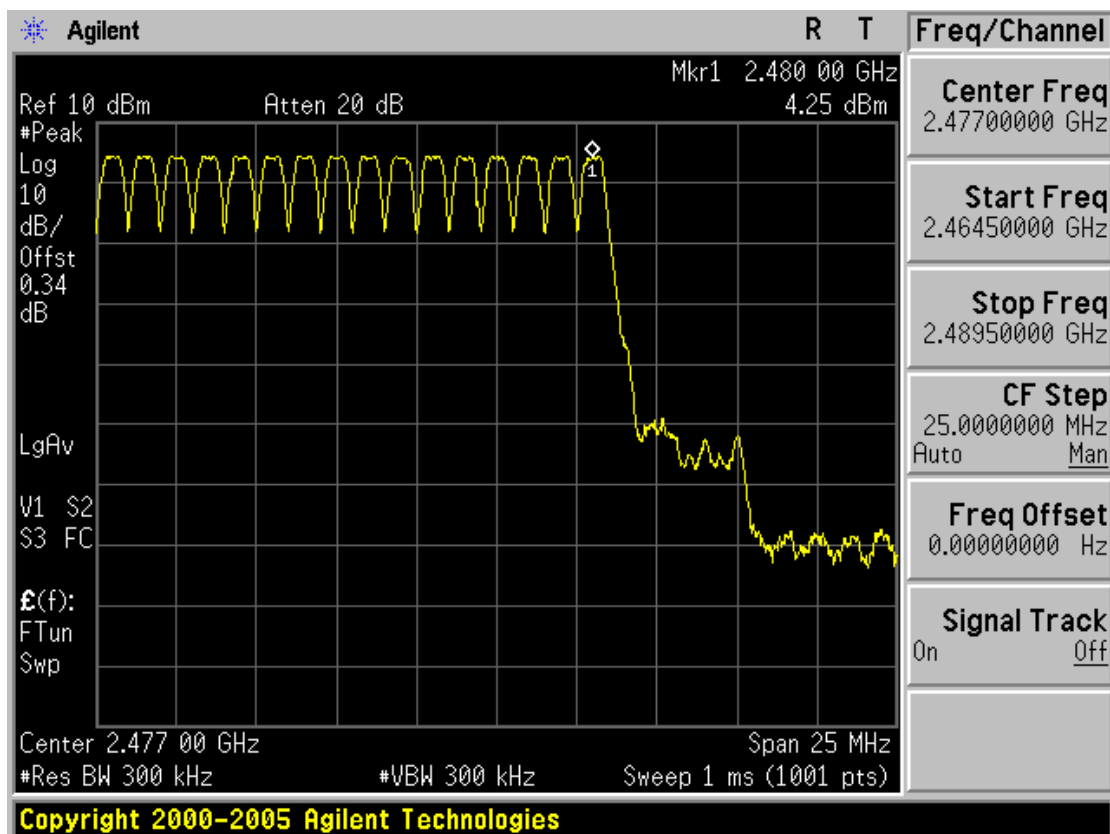
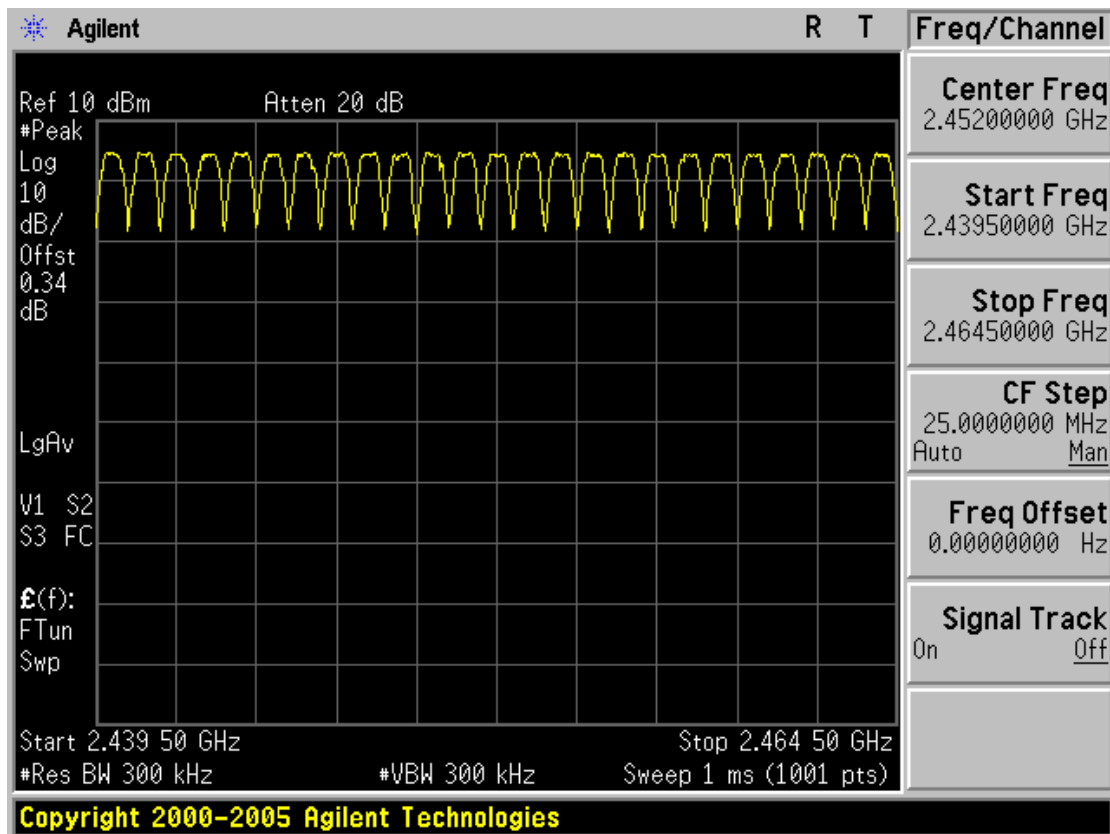
Number of Hopping Frequencies (M1 Port)



Number of Hopping Frequencies (M2 Port)



Number of Hopping Frequencies (M2 Port)



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:

- M1 Port

Frequency (MHz)	Channel No.	Test Results	
		Measured Bandwidth (MHz)	Result
2402	1	0.820	Complies
2441	40	0.820	Complies
2480	79	0.830	Complies

- M2 Port

Frequency (MHz)	Channel No.	Test Results	
		Measured Bandwidth (MHz)	Result
2402	1	0.855	Complies
2441	40	0.885	Complies
2480	79	0.880	Complies

- See next pages for actual measured spectrum plots.

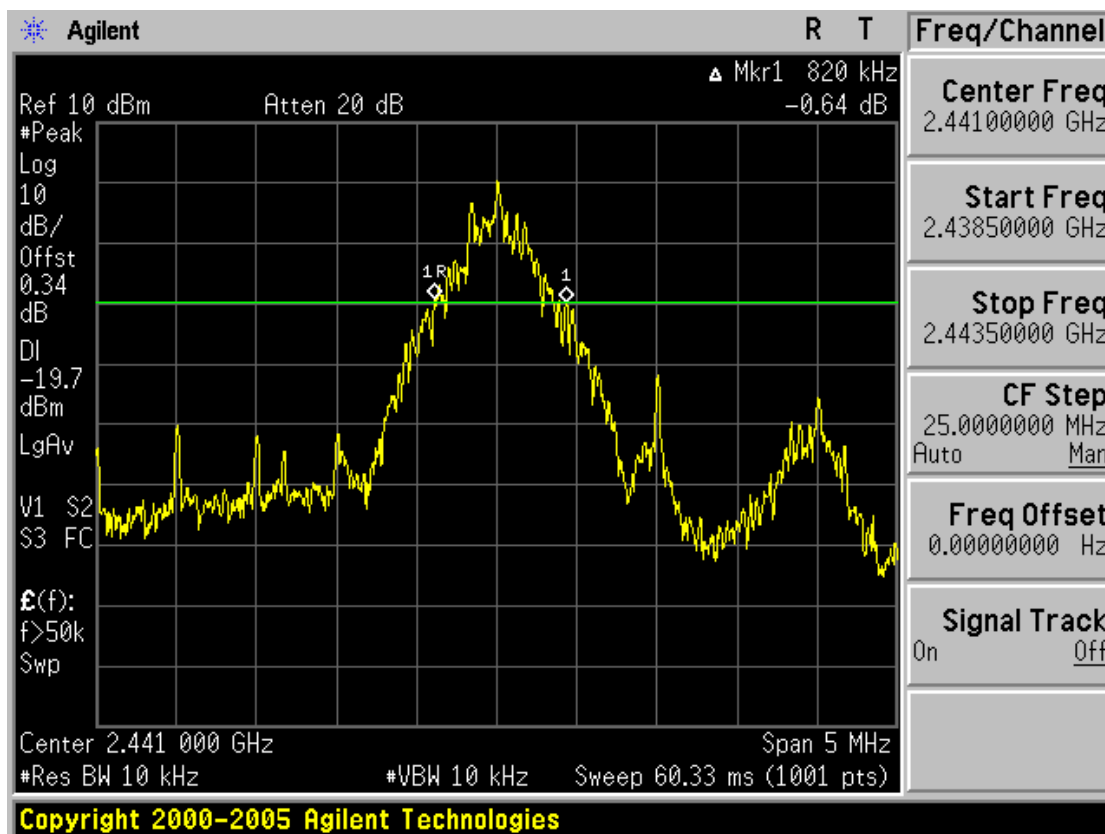
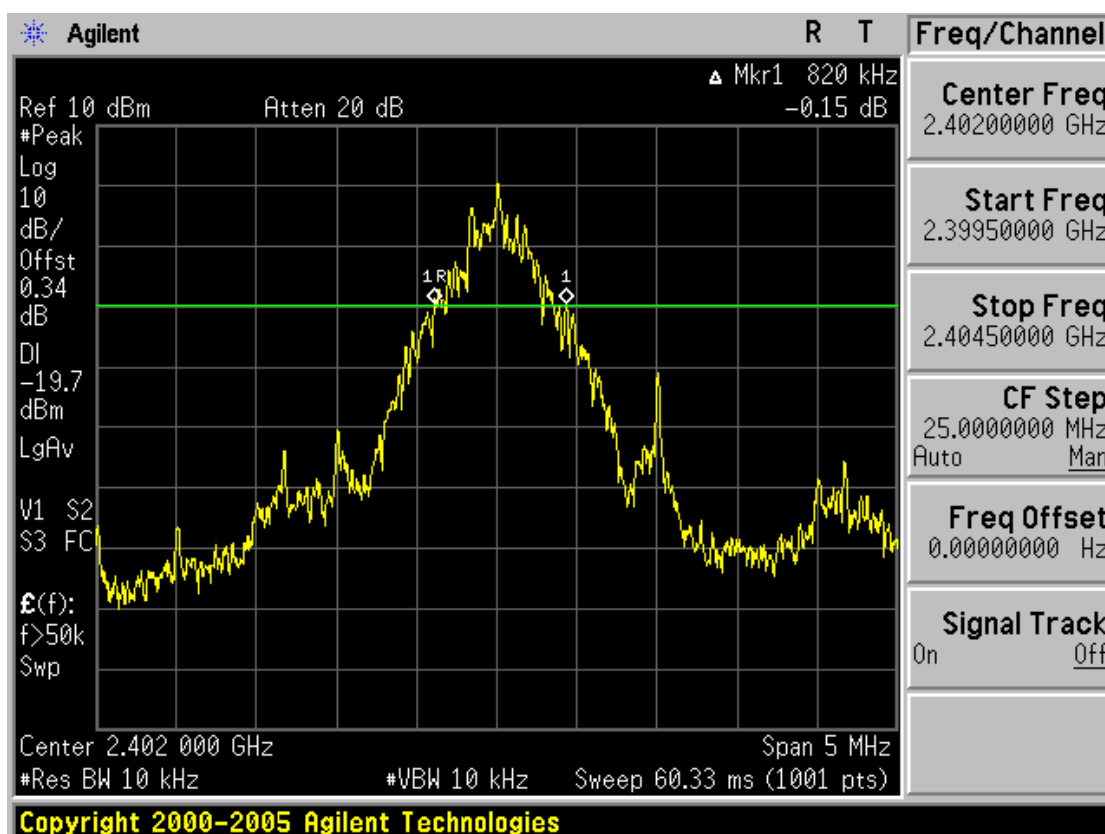
Minimum Standard:

The transmitter shall have a maximum 20dB bandwidth of 1 MHz.

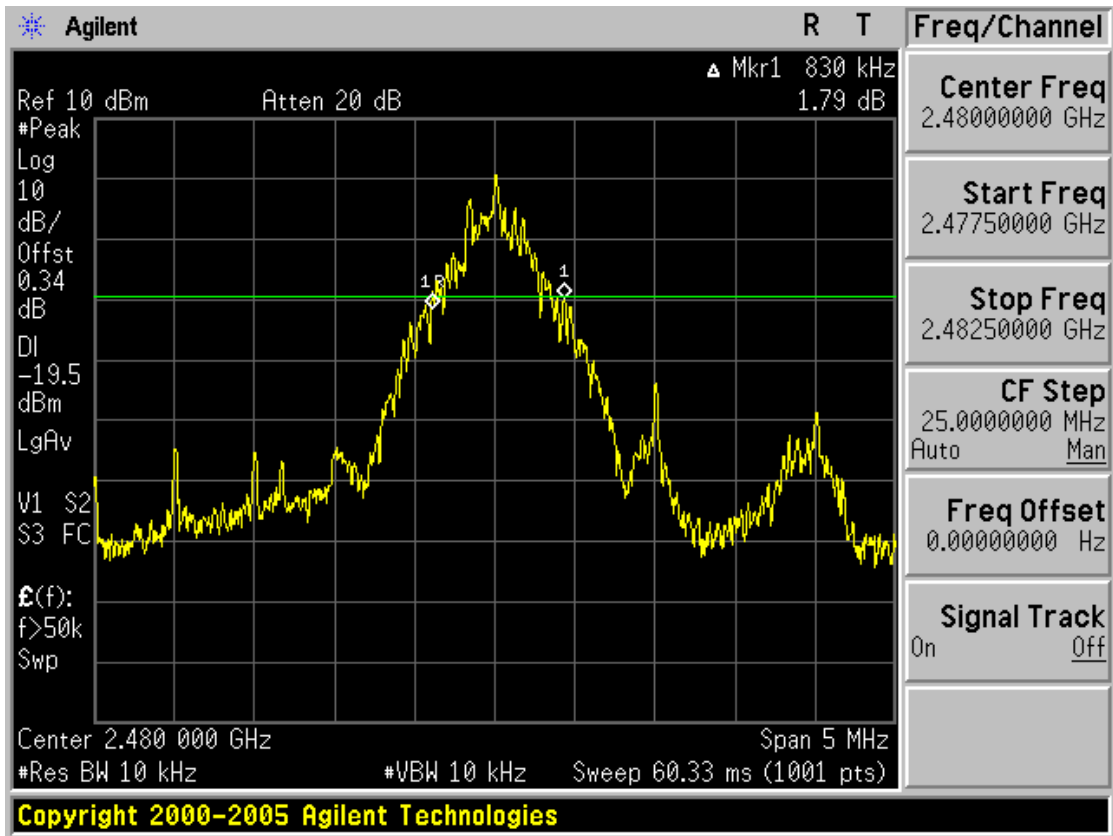
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

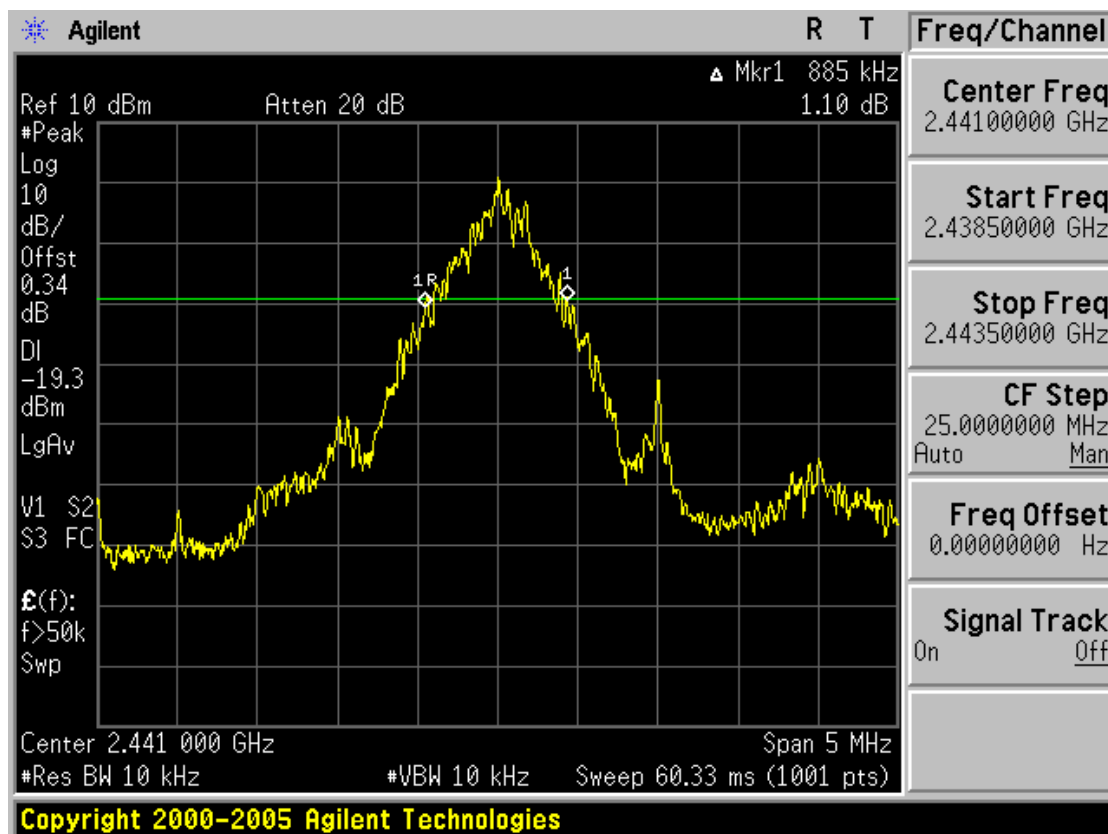
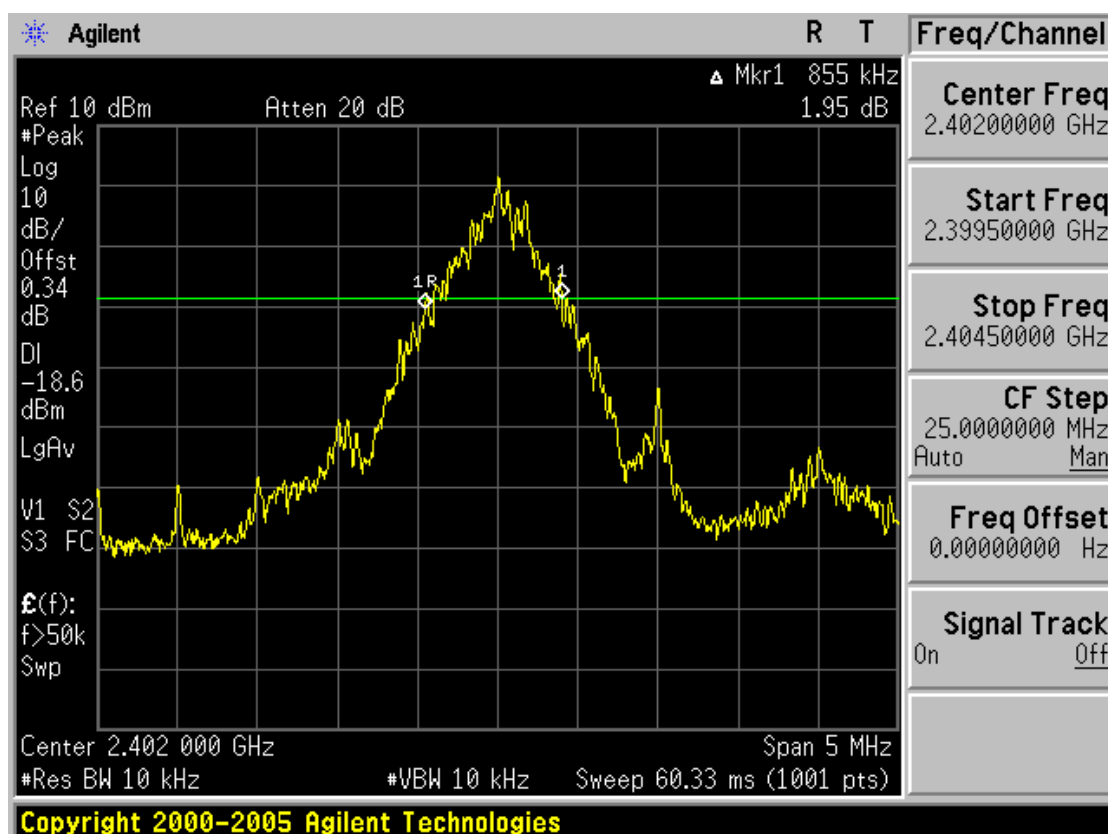
20 dB Bandwidth (M1 Port)



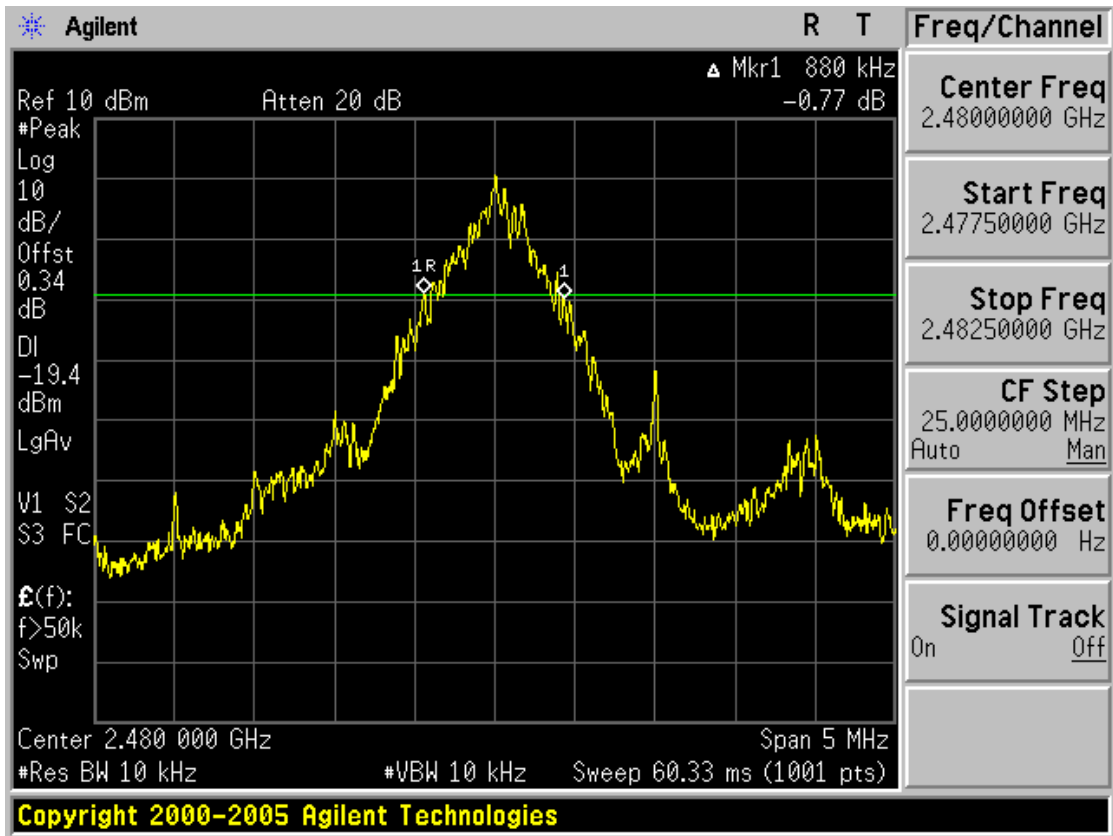
20 dB Bandwidth (M1 Port)



20 dB Bandwidth (M2 Port)



20 dB Bandwidth (M2 Port)



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:

- M1 Port

Packet Type	Burst duration in one hop (us)	Test Results	
		Dwell Time (ms)	Result
DH 1	420	134.446	Complies
DH 3	1674	269.782	Complies
DH 5	2920	310.951	Complies

- M2 Port

Packet Type	Burst duration in one hop (us)	Test Results	
		Dwell Time (ms)	Result
DH 1	415	132.846	Complies
DH 3	1674	269.782	Complies
DH 5	2920	310.951	Complies

- See next pages for actual measured spectrum plots.

Minimum Standard:

0.4 seconds within a 30 second period per any frequency

Measurement Setup

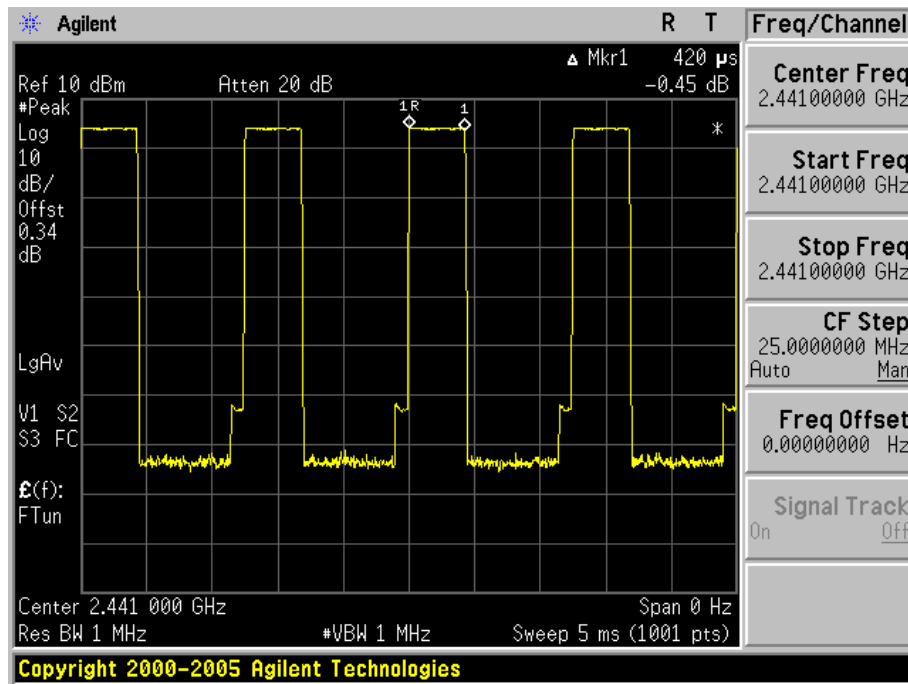
Same as the Chapter 3.2.1 (Figure 1)

Time of Occupancy for Packet Type DH 1

The system makes worst case 1600 hops per second or 1 time slot has a length of 625 us with 79 channels. A DH 1 Packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case $1600/2 = 800$ hops per second with 79 channels. So you have each channel $800/79 = 10.13$ times per second and so for a period of $0.4 \times 79 = 31.6$ seconds you have $10.13 \times 31.6 = 320.11$ times of appearance.

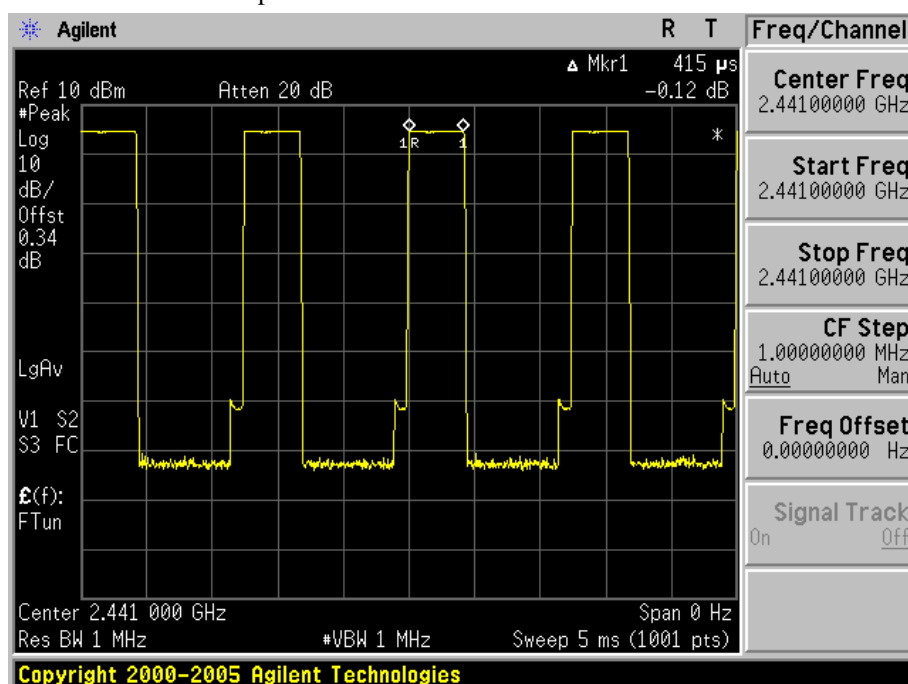
In case of **M1 port**, each Tx-time per appearance is 420 us

So we have $320.11 \times 420\text{us} = 134.446$ ms per 31.6 seconds.



In case of **M2 port**, each Tx-time per appearance is 415 us

So we have $320.11 \times 415\text{us} = 132.846$ ms per 31.6 seconds.

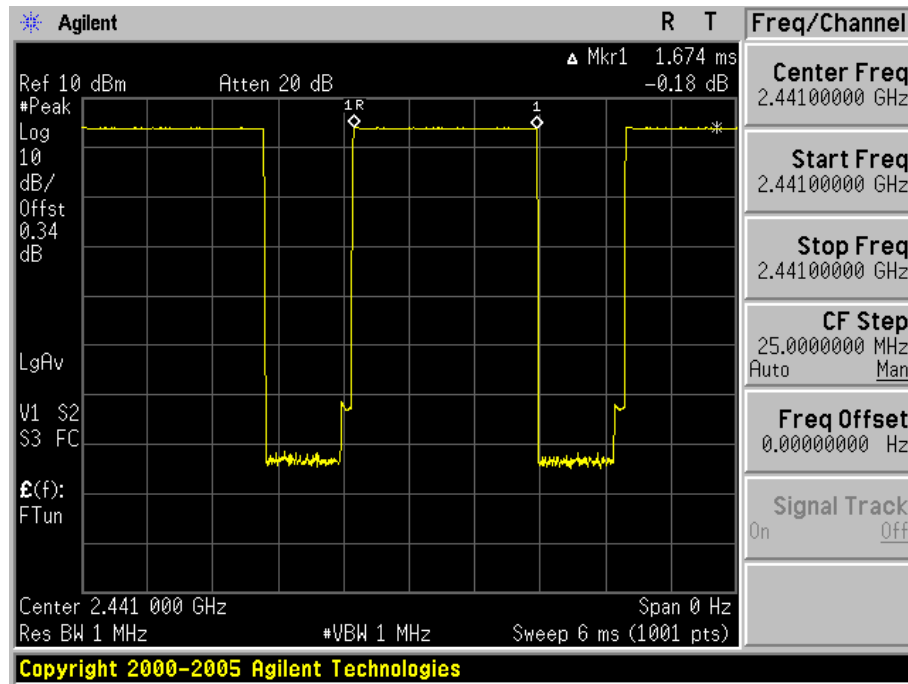


Time of Occupancy for Packet Type DH 3

The system makes worst case 1600 hops per second or 1 time slot has a length of 625 us with 79 channels. A DH 3 Packet need 3 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case $1600/4 = 400$ hops per second with 79 channels. So you have each channel $400/79 = 5.1$ times per second and so for a period of $0.4 \times 79 = 31.6$ seconds you have $5.1 \times 31.6 = 161.16$ times of appearance.

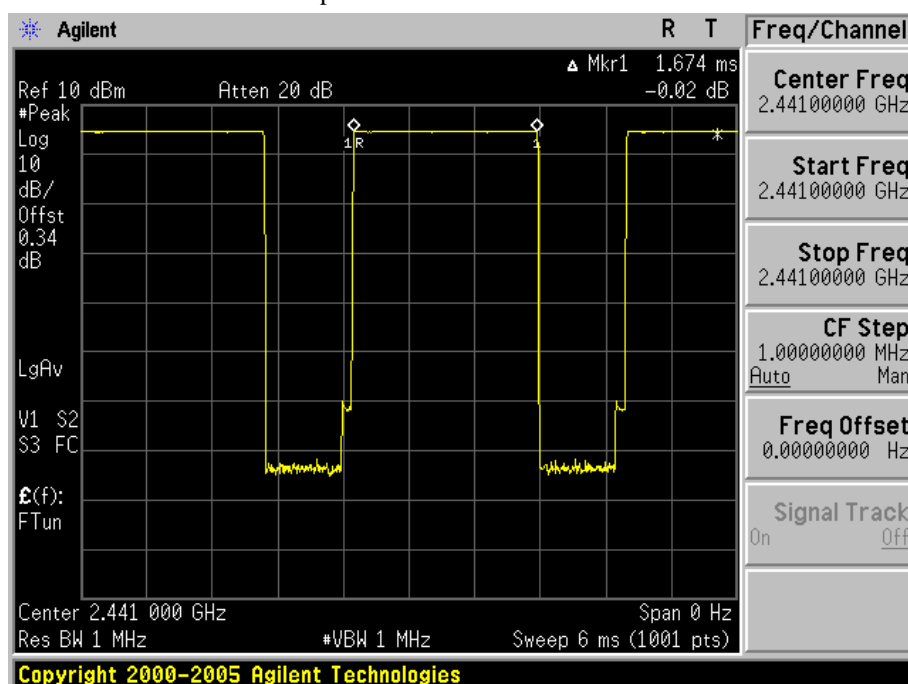
In case of **M1 port**, each Tx-time per appearance is 1.674 ms

So we have $161.16 \times 1.674 \text{ ms} = 269.782 \text{ ms}$ per 31.6 seconds.



In case of **M2 port**, each Tx-time per appearance is 1.674 ms

So we have $161.16 \times 1.674 \text{ ms} = 269.782 \text{ ms}$ per 31.6 seconds.

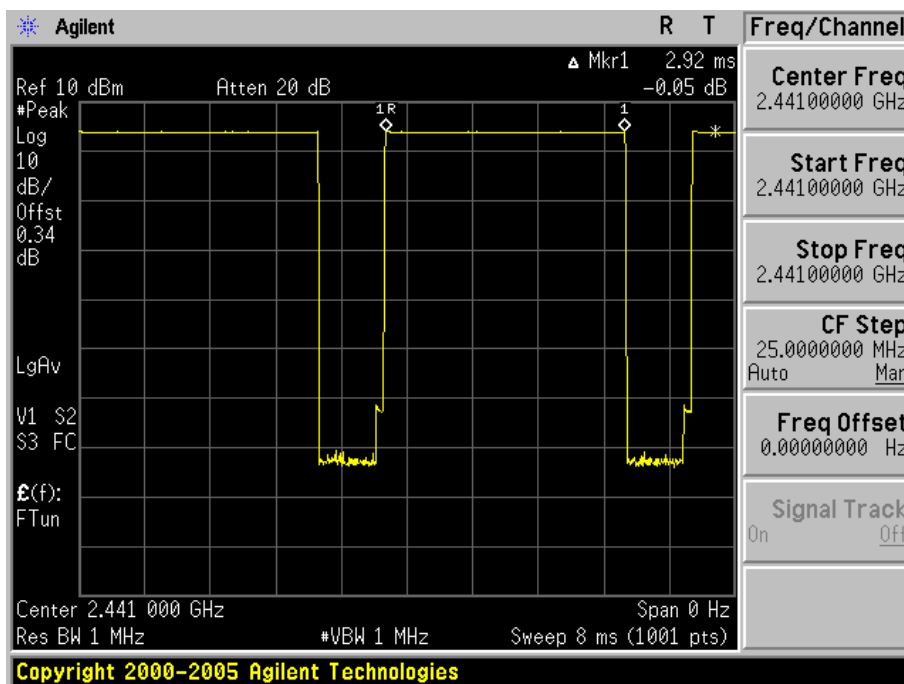


Time of Occupancy for Packet Type DH 5

The system makes worst case 1600 hops per second or 1 time slot has a length of 625 us with 79 channels. A DH 5 Packet need 5 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case $1600/6 = 266.67$ hops per second with 79 channels. So you have each channel $266.67/79 = 3.37$ times per second and so for a period of $0.4 \times 79 = 31.6$ seconds you have $3.37 \times 31.6 = 106.49$ times of appearance.

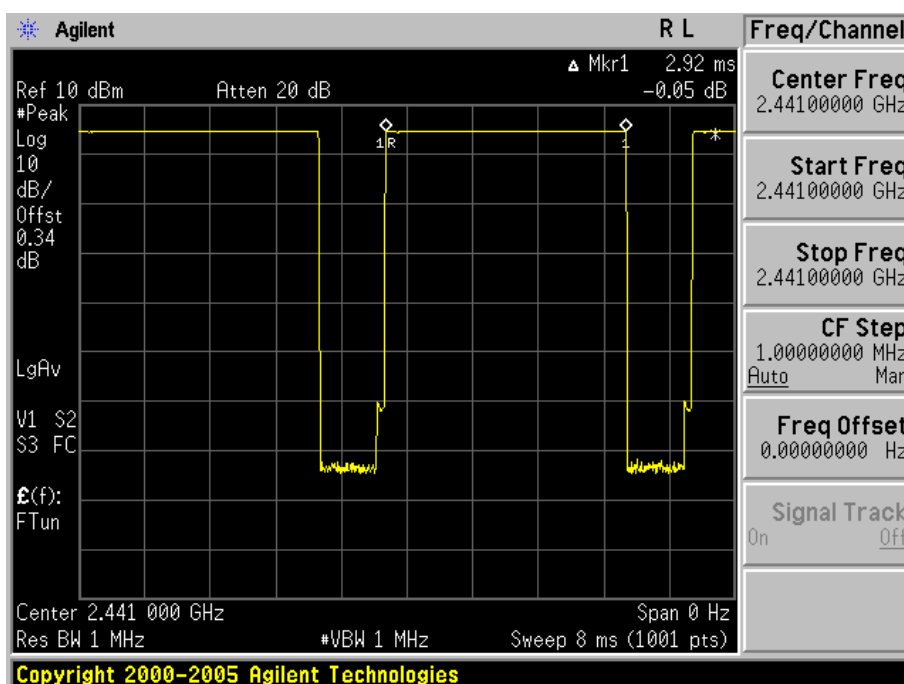
In case of **M1 port**, each Tx-time per appearance is 2.92 ms

So we have $106.49 \times 2.92 \text{ ms} = 310.951 \text{ ms}$ per 31.6 seconds.



In case of **M2 port**, each Tx-time per appearance is 2.92 ms

So we have $106.49 \times 2.92 \text{ ms} = 310.951 \text{ ms}$ per 31.6 seconds.



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:

- M1 Port

Frequency (MHz)	Ch.	Test Results		
		dBm	mW	Result
2402	1	3.90	2.455	Complies
2441	40	3.96	2.489	Complies
2480	79	4.11	2.576	Complies

- M2 Port

Frequency (MHz)	Ch.	Test Results		
		dBm	mW	Result
2402	1	5.02	3.177	Complies
2441	40	4.64	2.911	Complies
2480	79	4.29	2.685	Complies

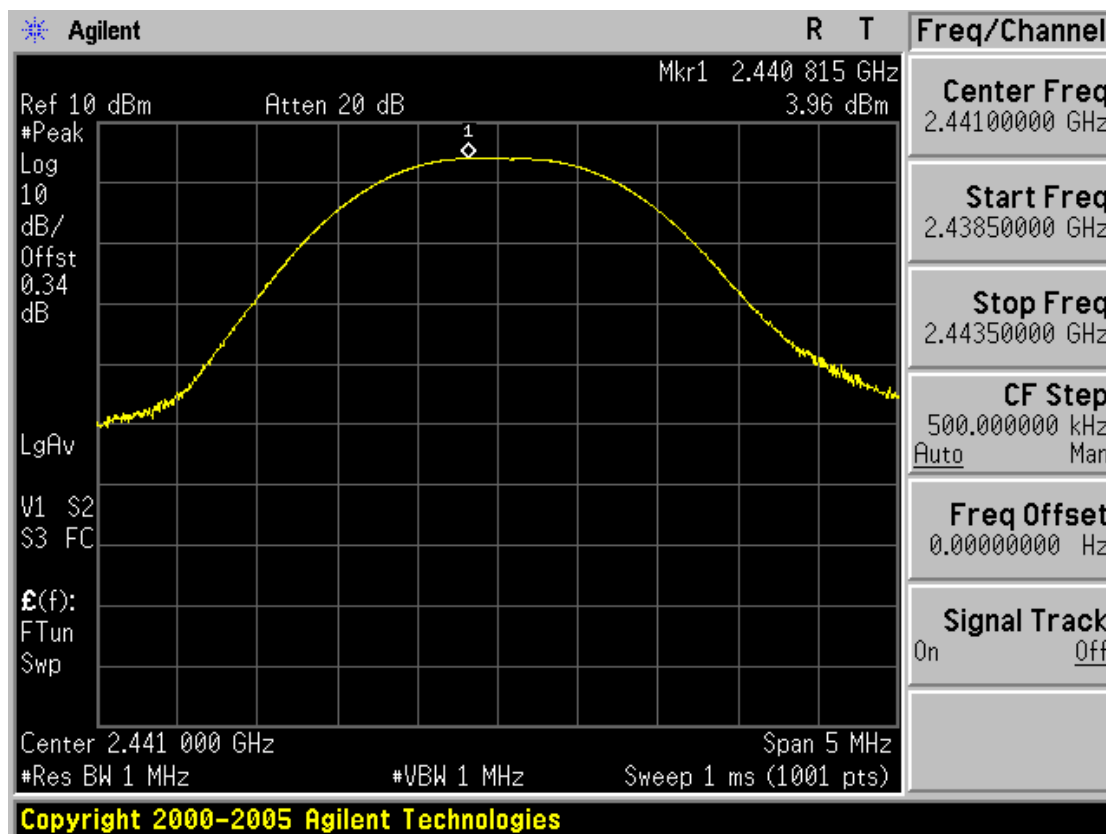
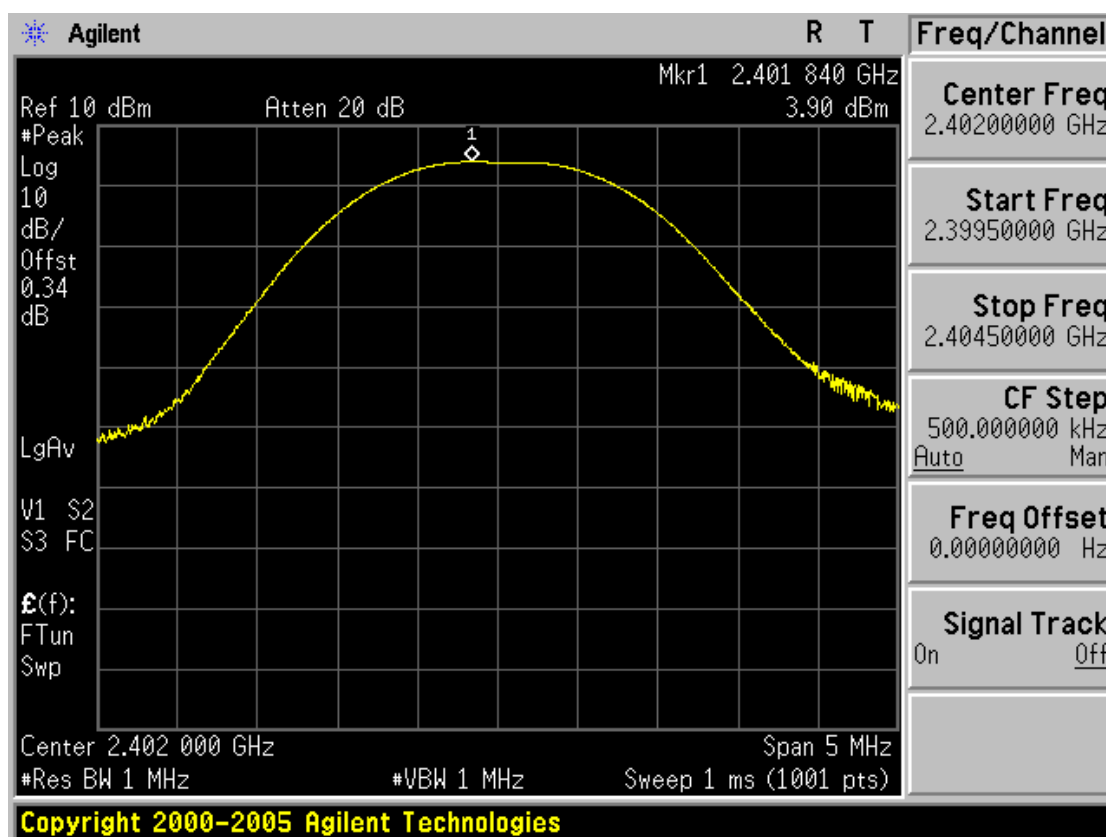
- See next pages for actual measured spectrum plots.

Minimum Standard:	< 1W
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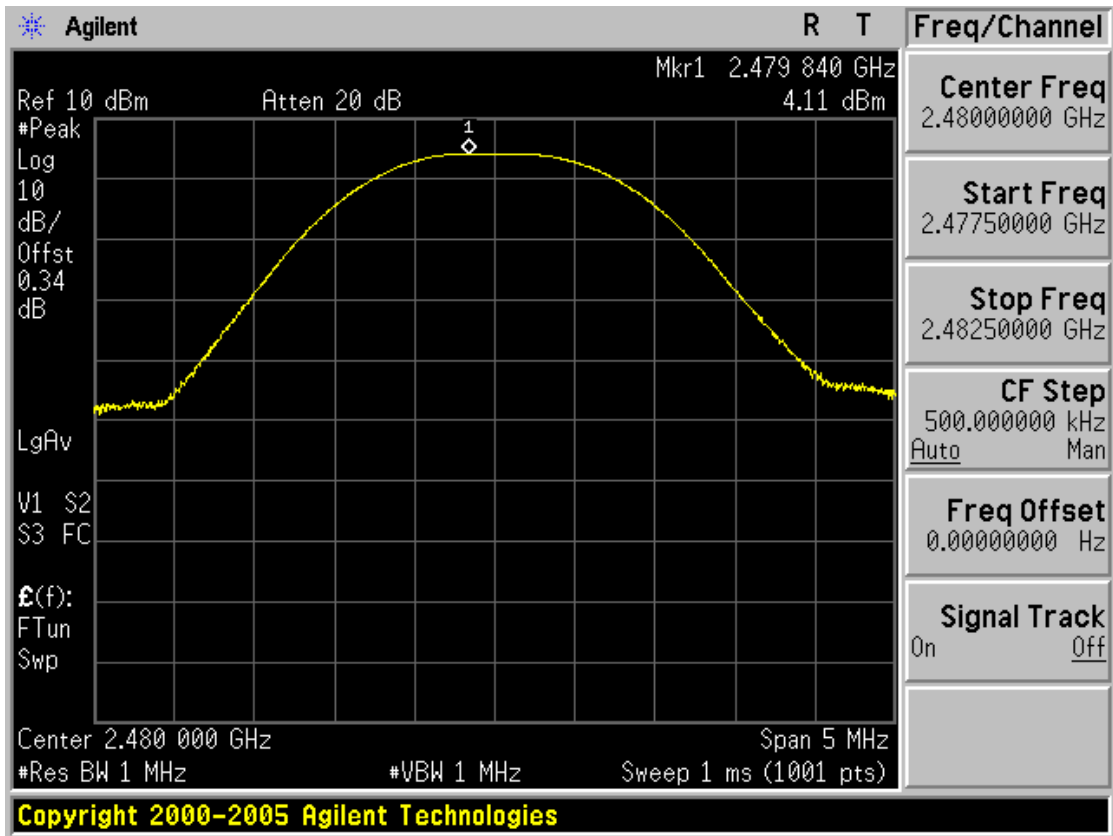
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

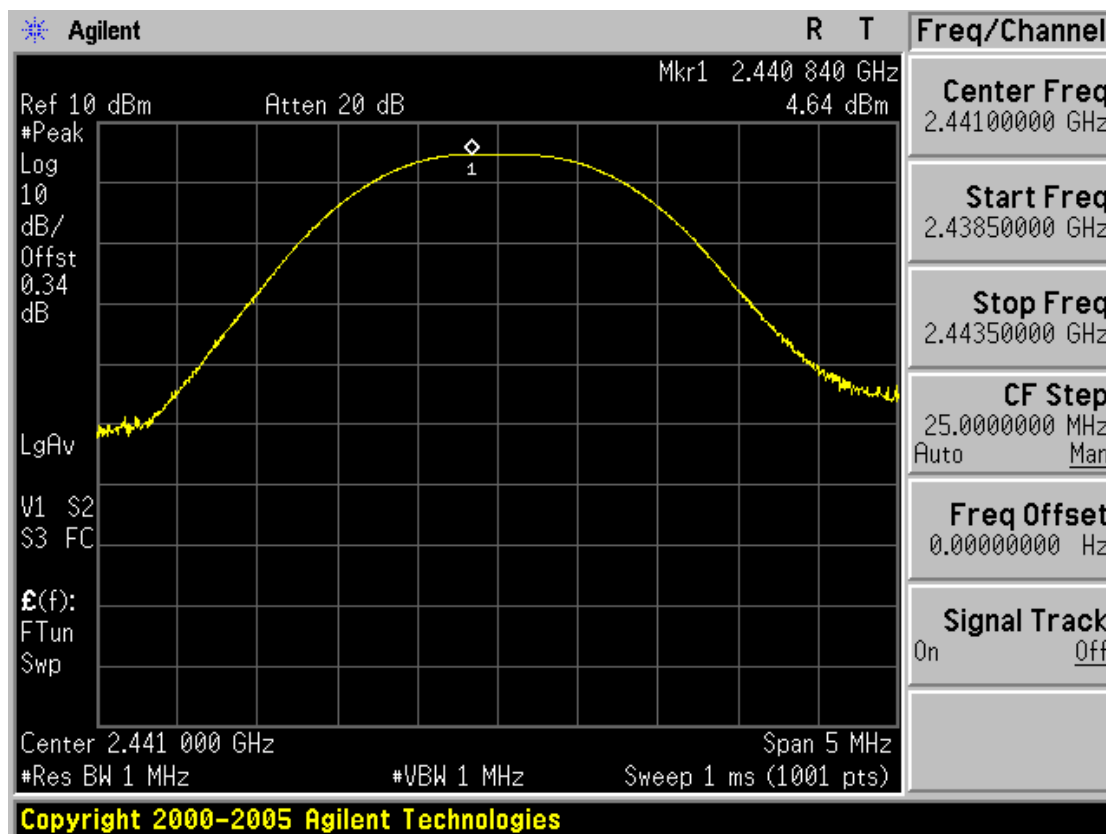
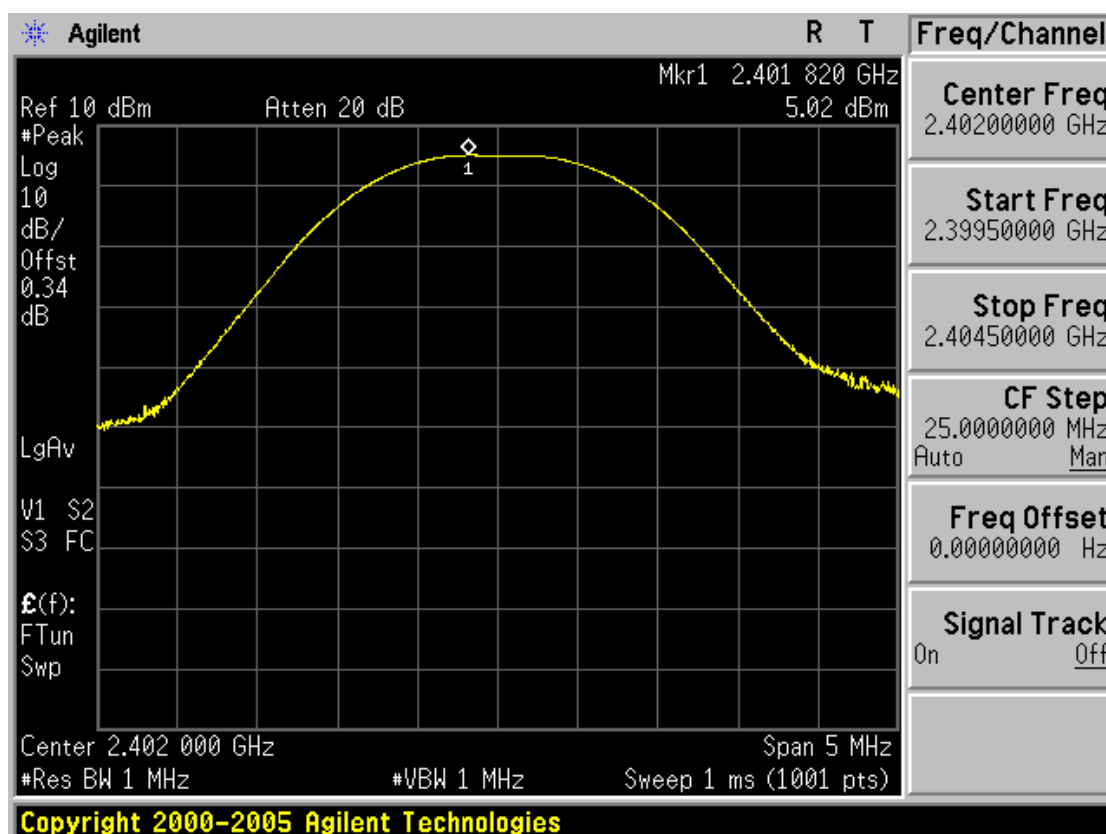
Peak Output Power (M1 Port)



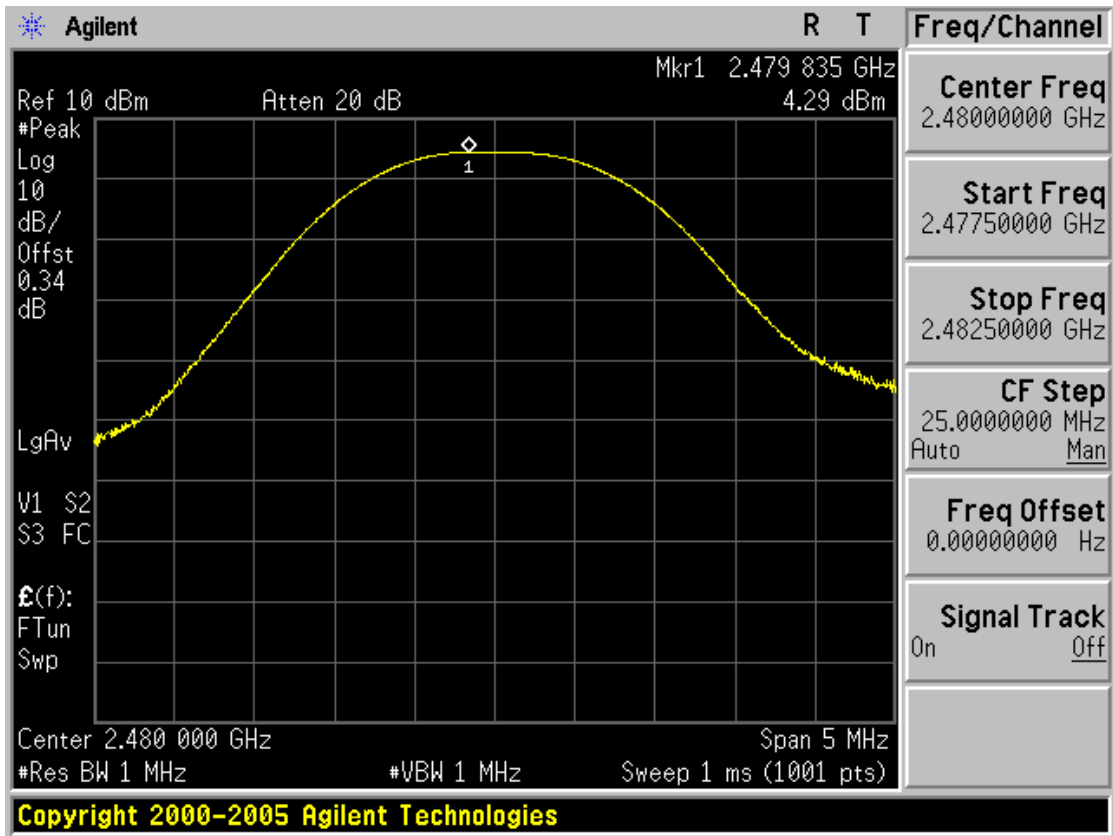
Peak Output Power (M1 Port)



Peak Output Power (M2 Port)



Peak Output Power (M2 Port)



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: **Complies**

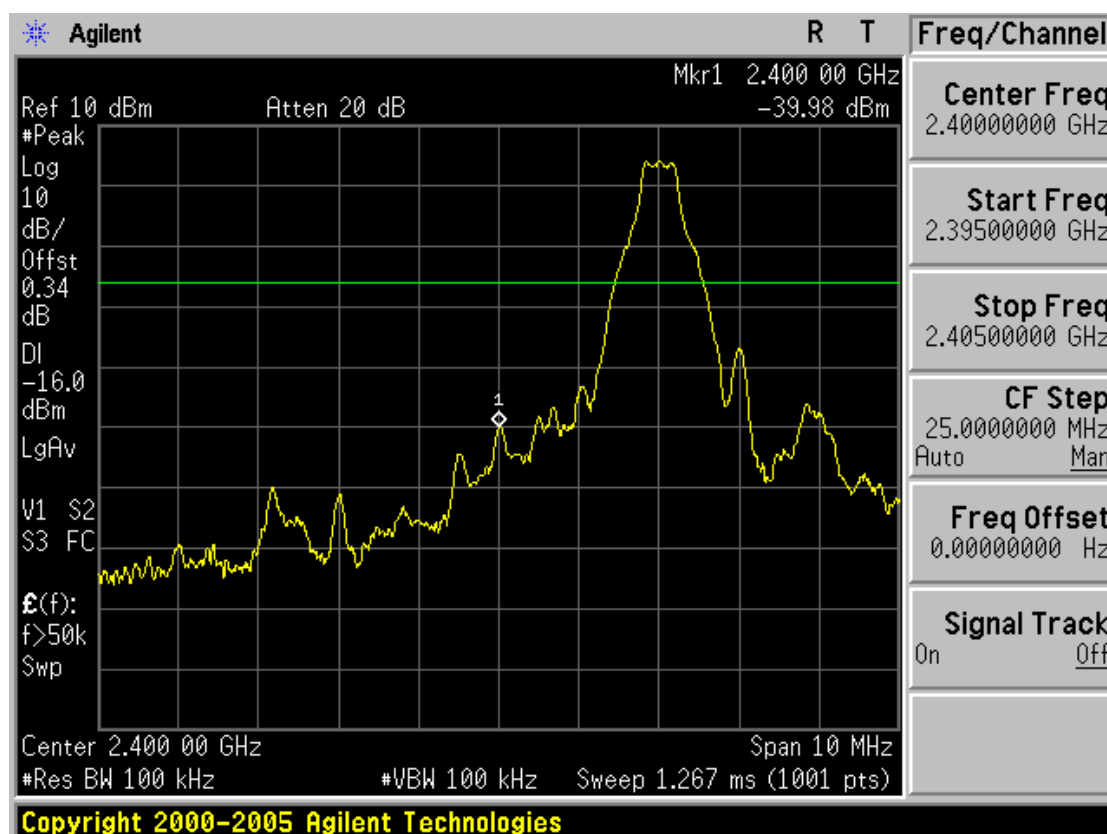
- All conducted emission in any 100kHz bandwidth outside of the spread spectrum band was at least 20dB lower than the highest inband spectral density. Therefore the applying equipment meets the requirement.
- See next pages for actual measured spectrum plots.

Minimum Standard:	> 20 dBc
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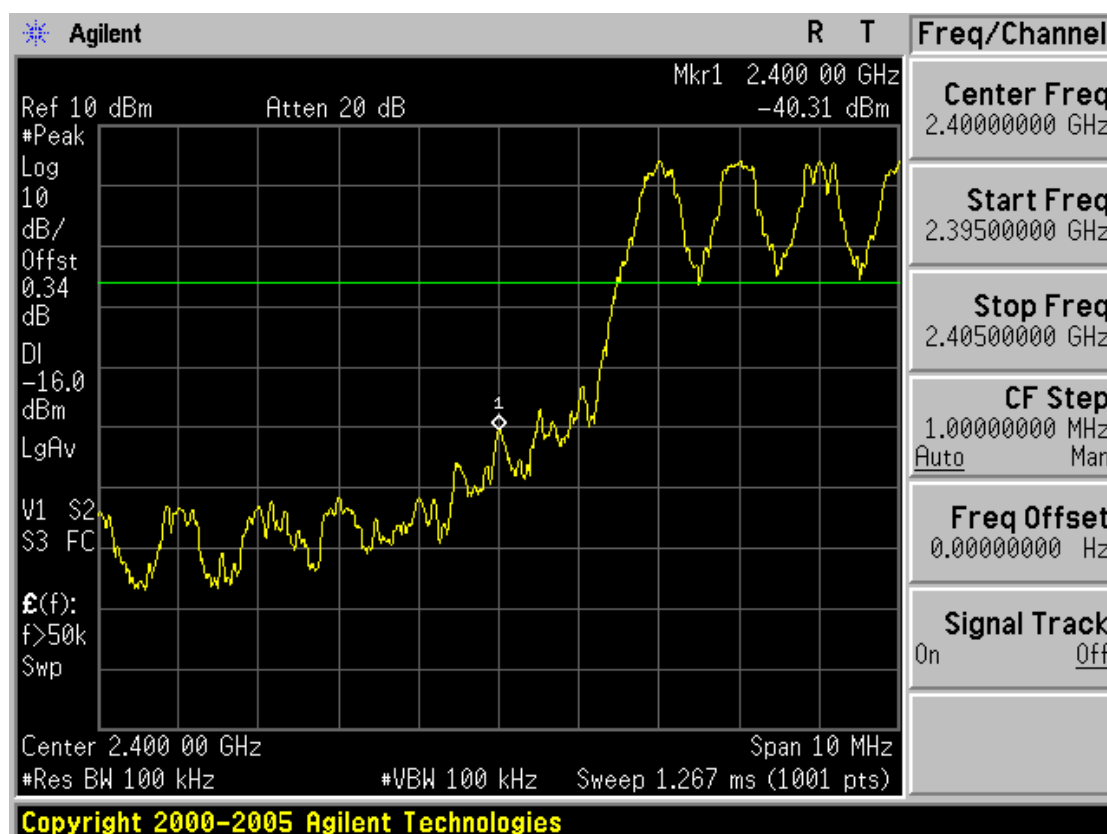
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

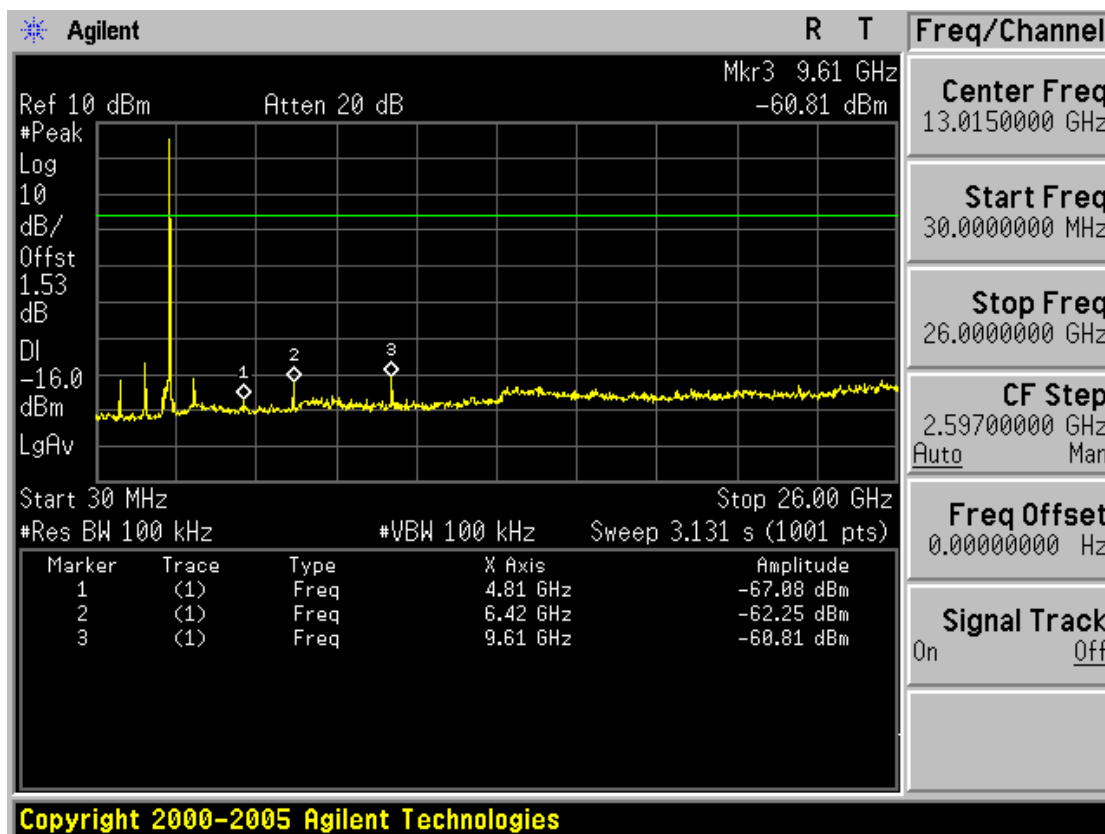
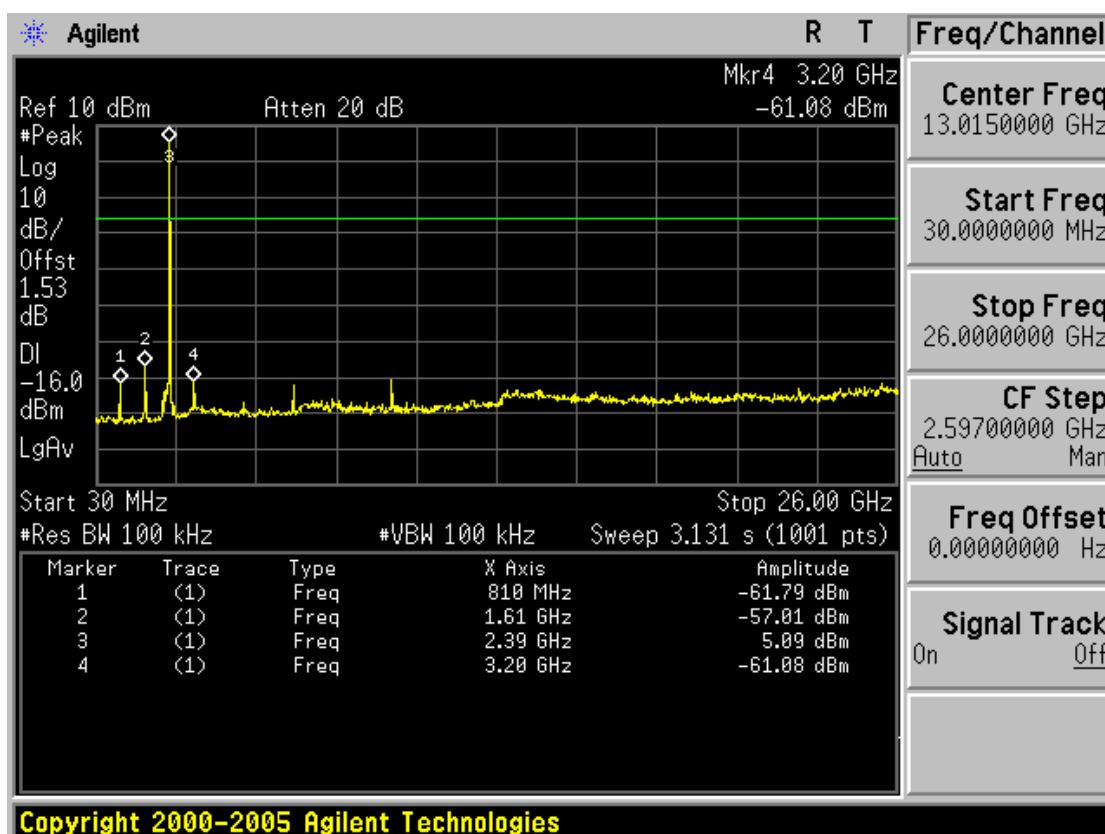
Low band with hopping disabled (M1 Port)



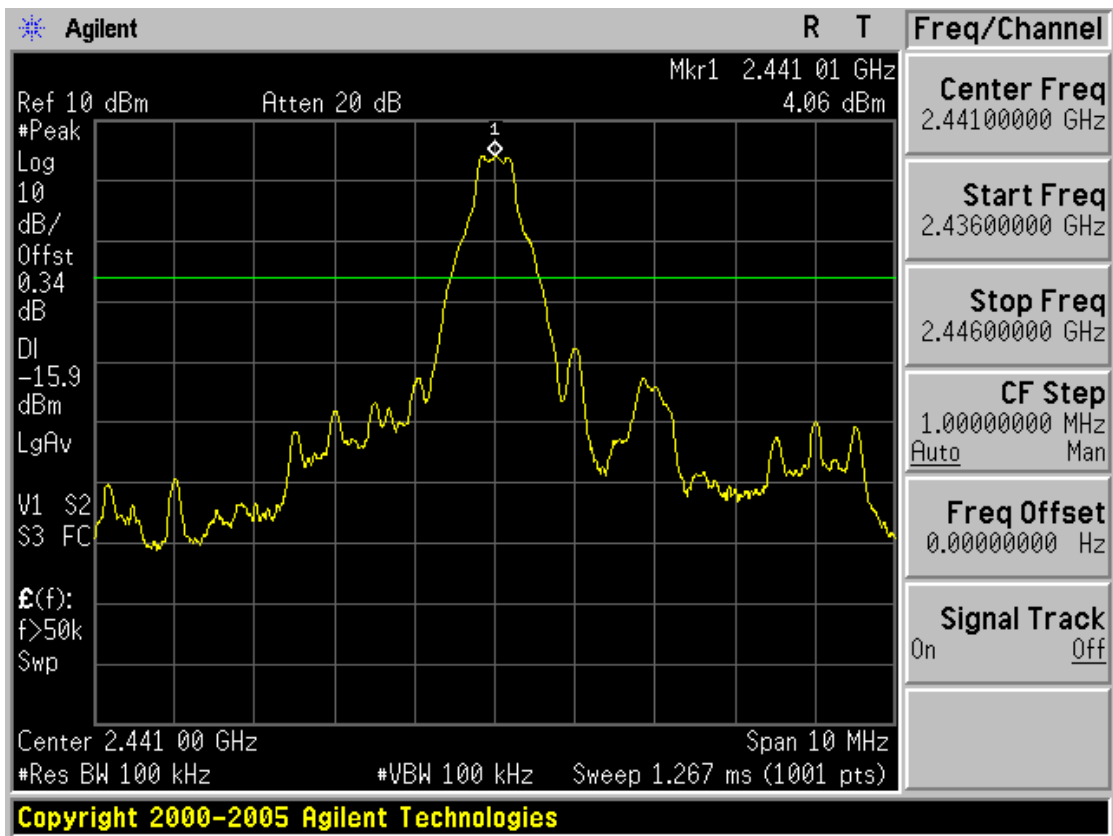
Low band with hopping enabled (M1 Port)



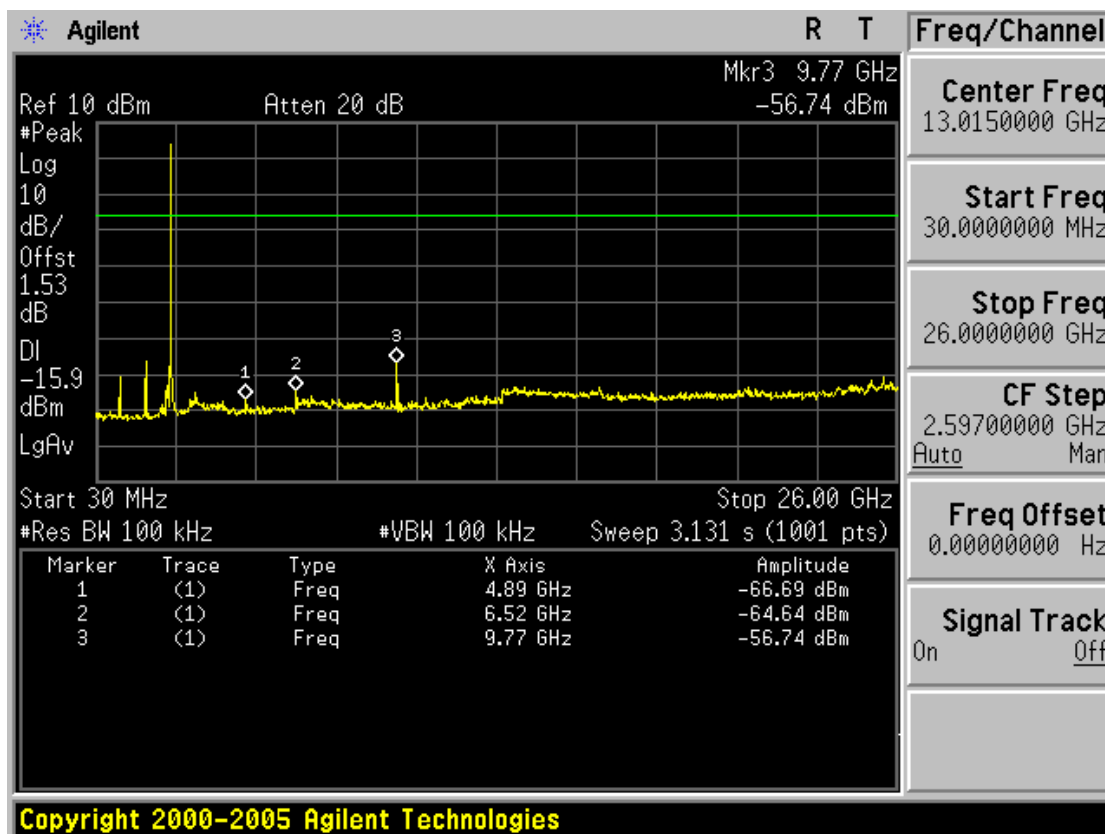
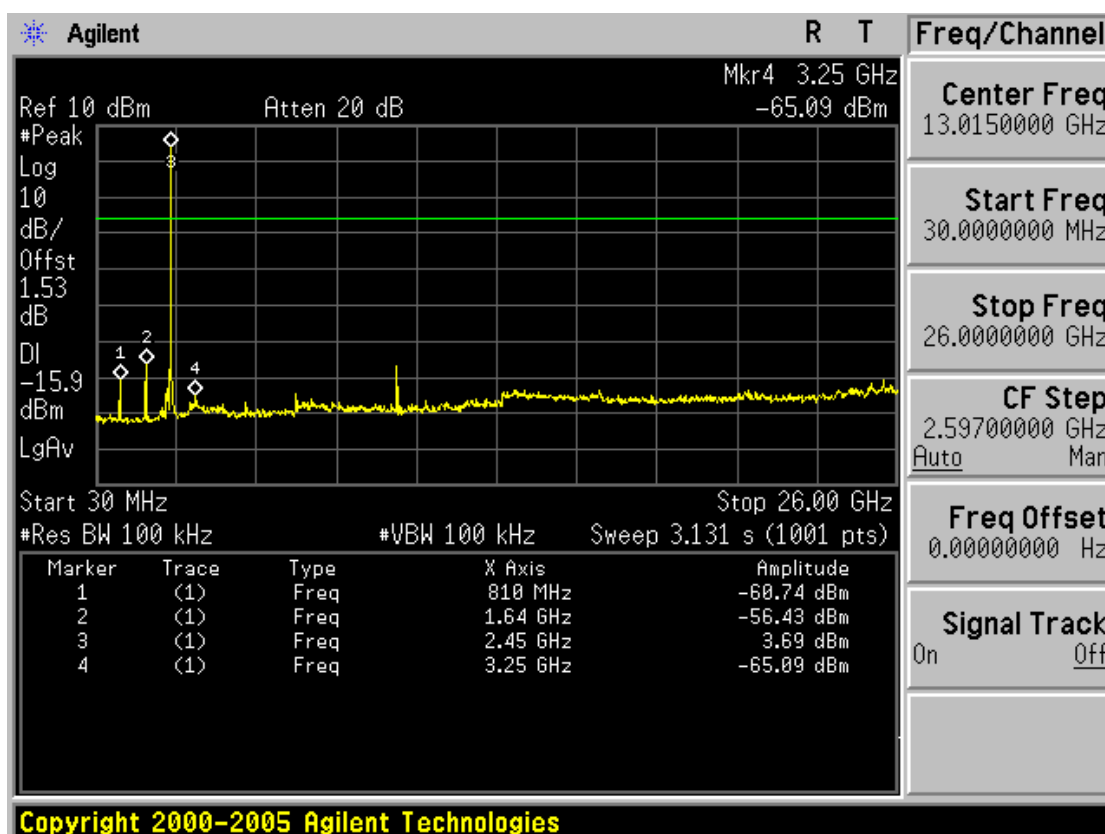
Low channel spurious (M1 Port)



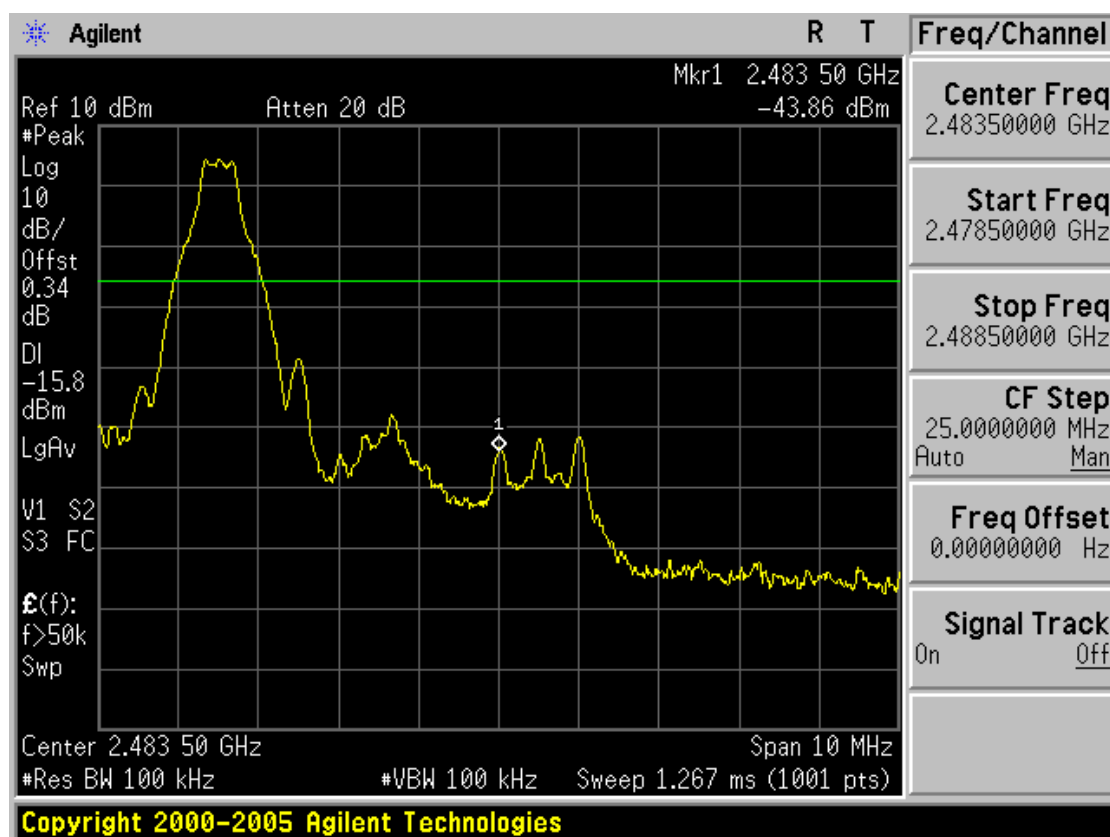
Mid channel ref (M1 Port)



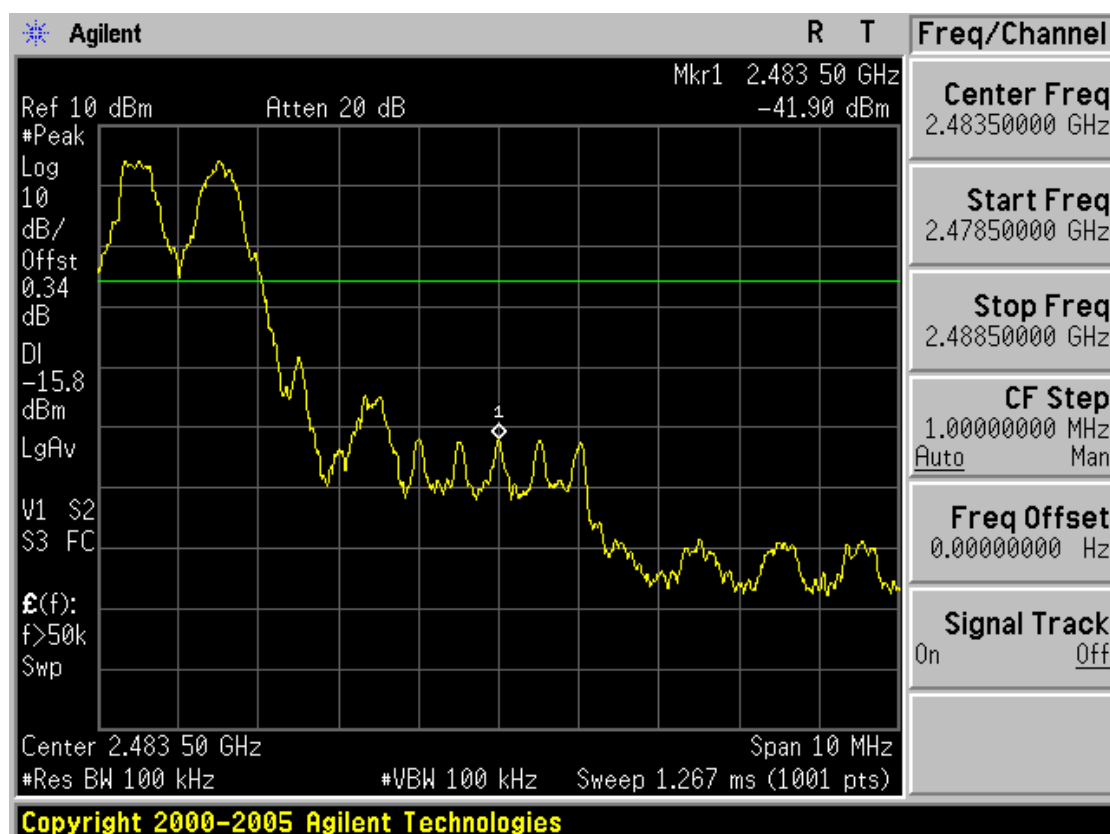
Mid channel spurious (M1 Port)



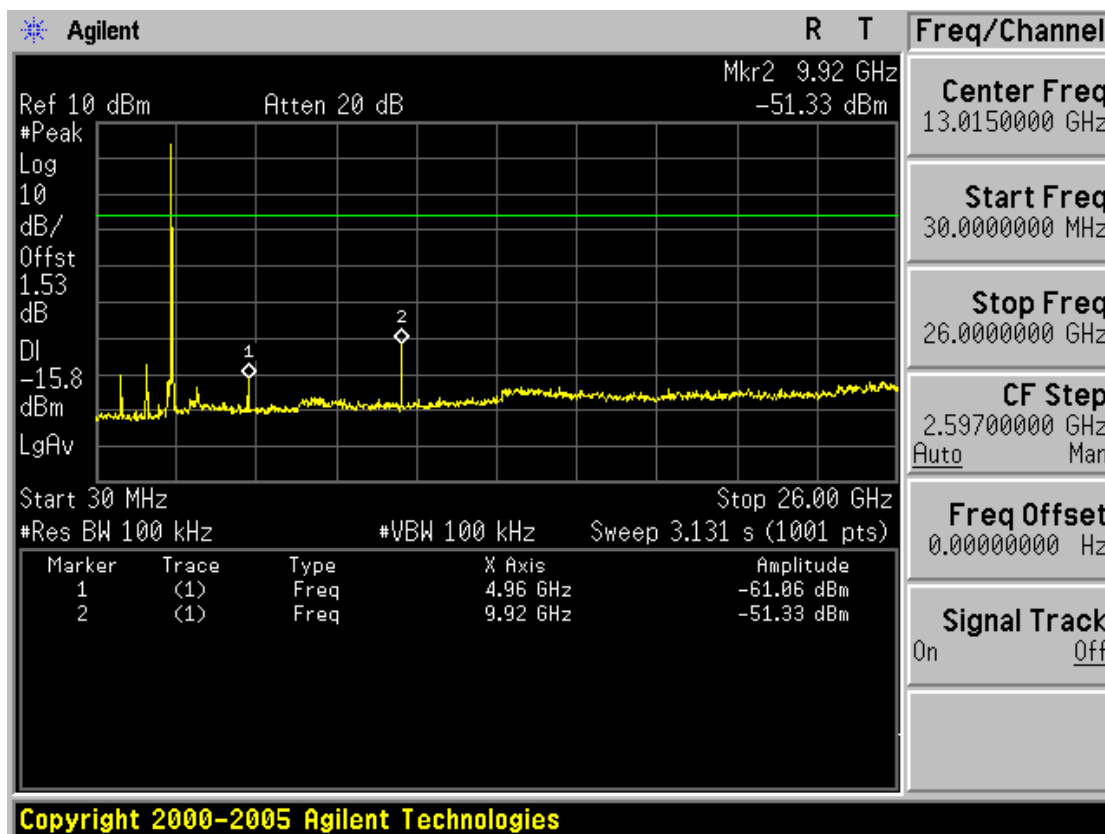
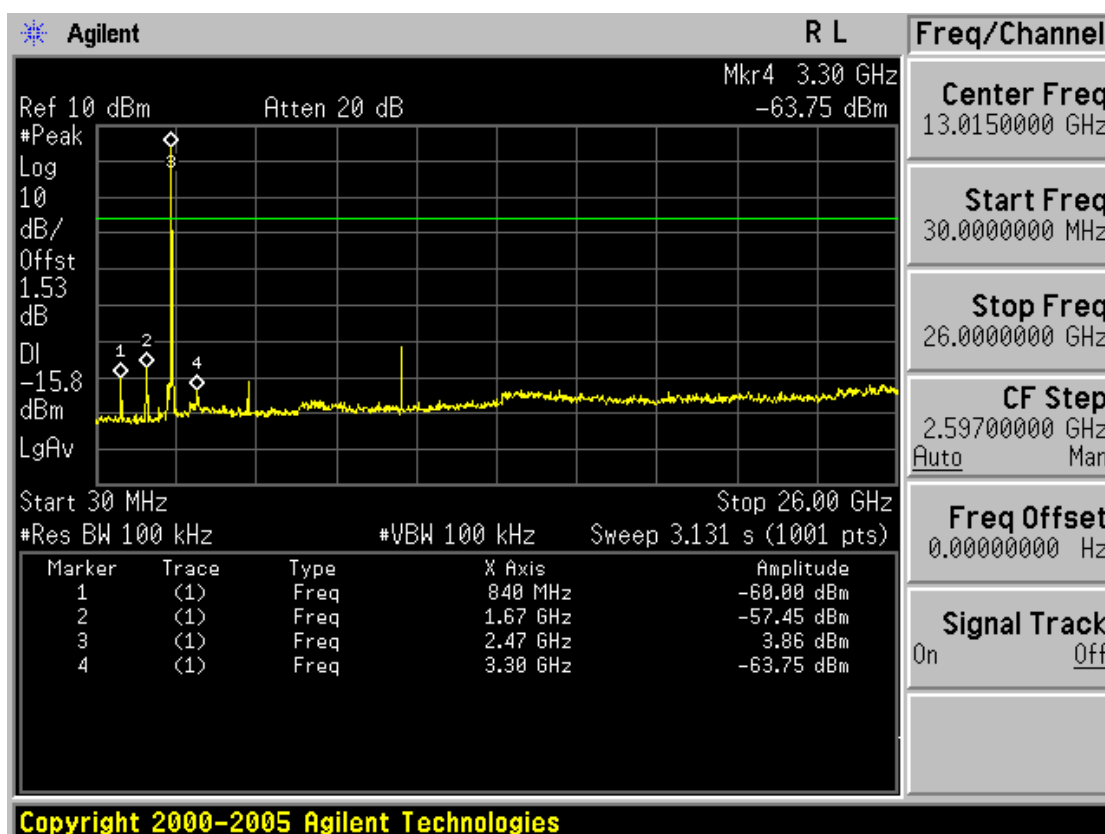
High band with hopping disabled (M1 Port)



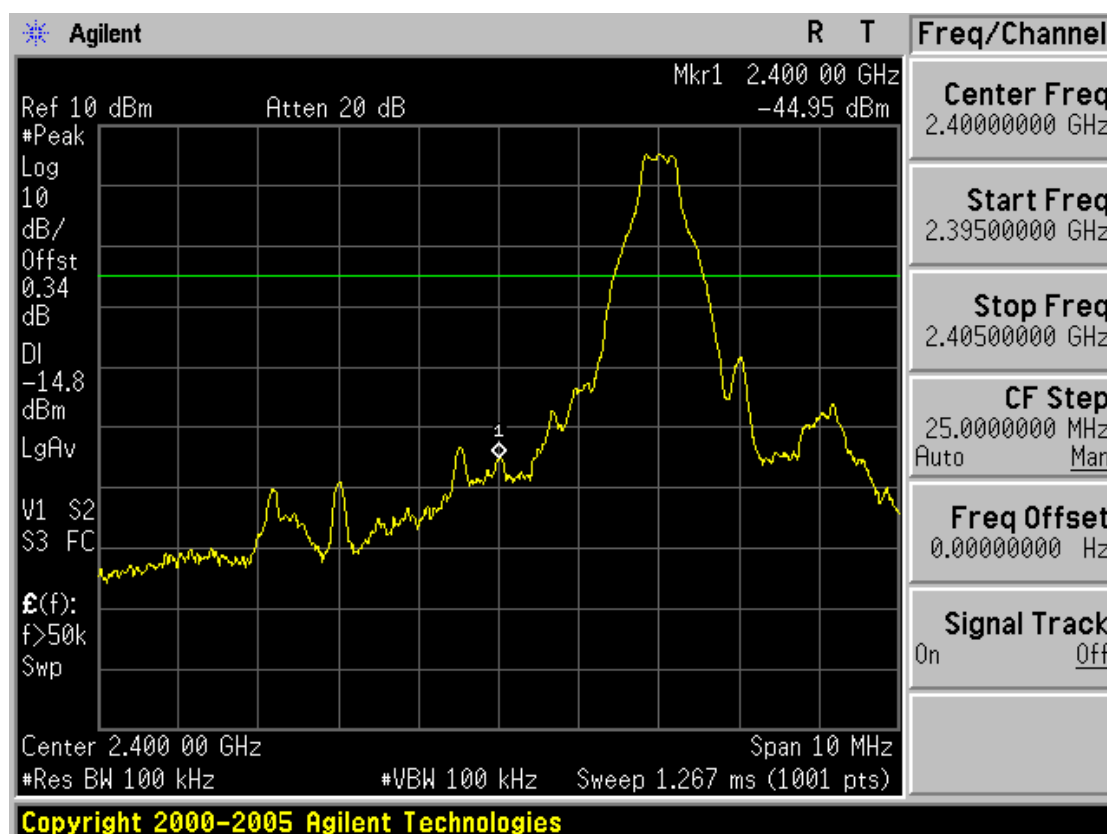
High band with hopping enabled (M1 Port)



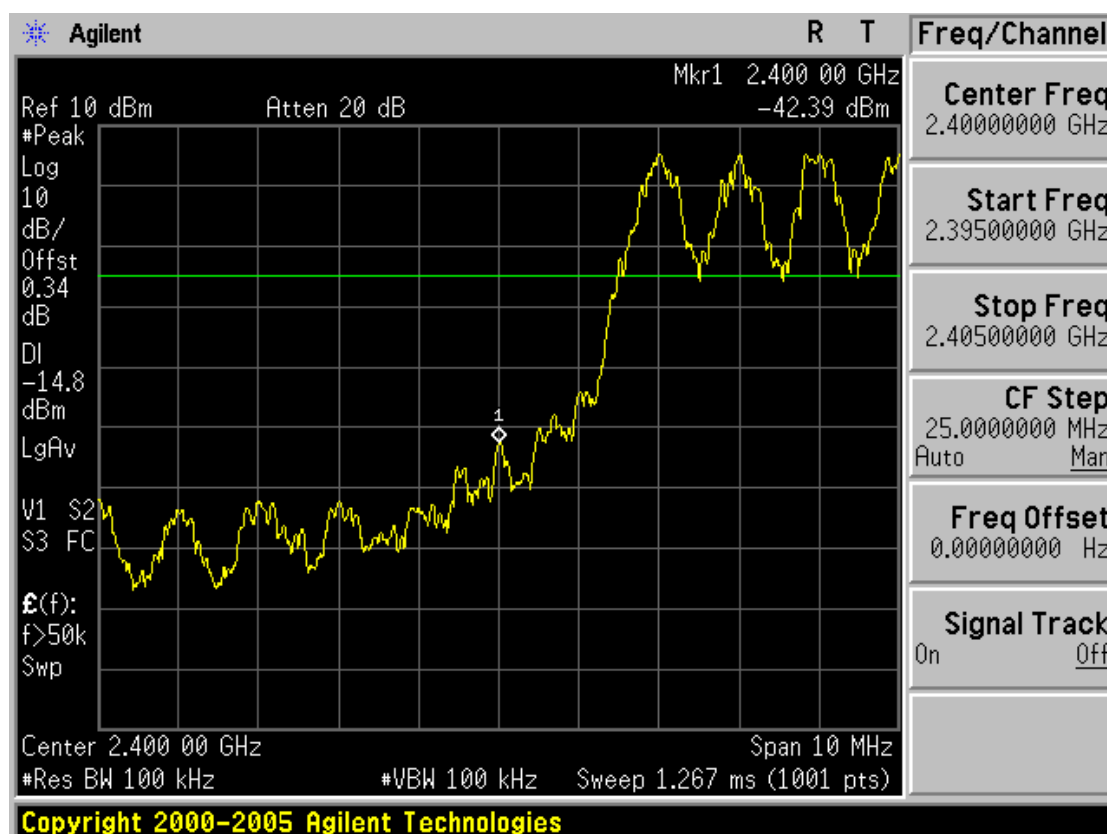
High channel spurious (M1 Port)



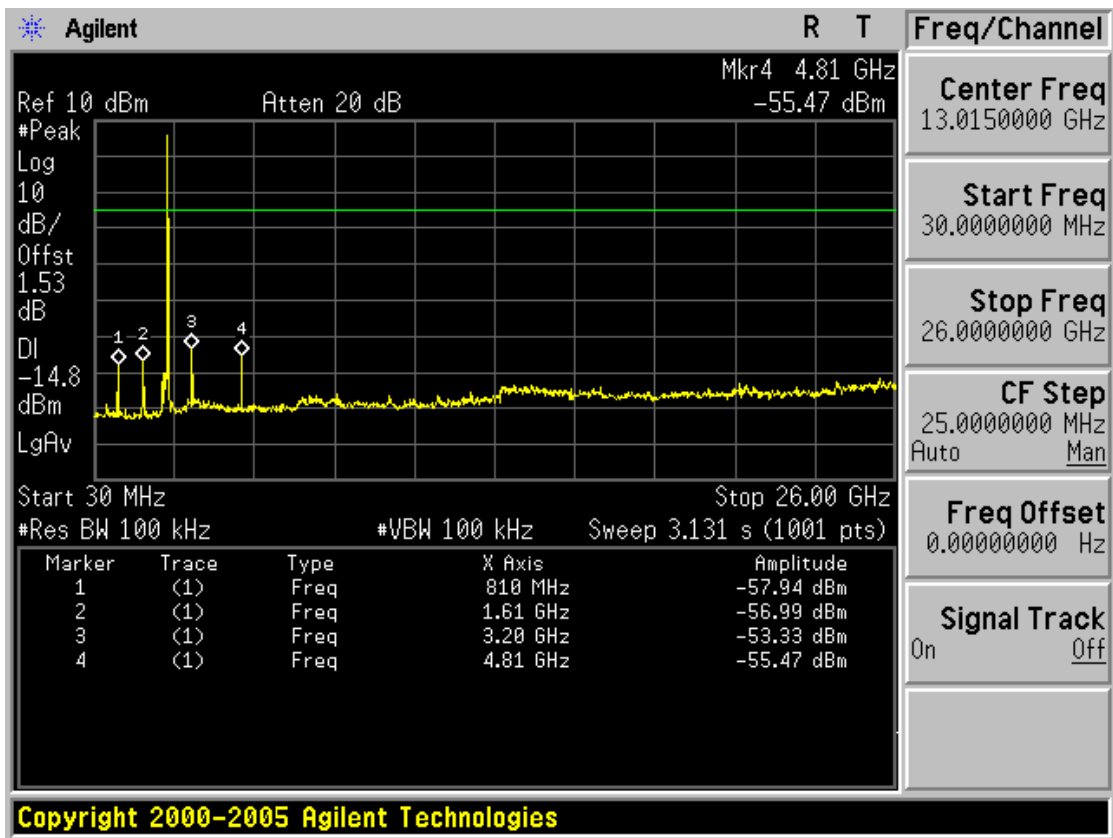
Low band with hopping disabled (M2 Port)



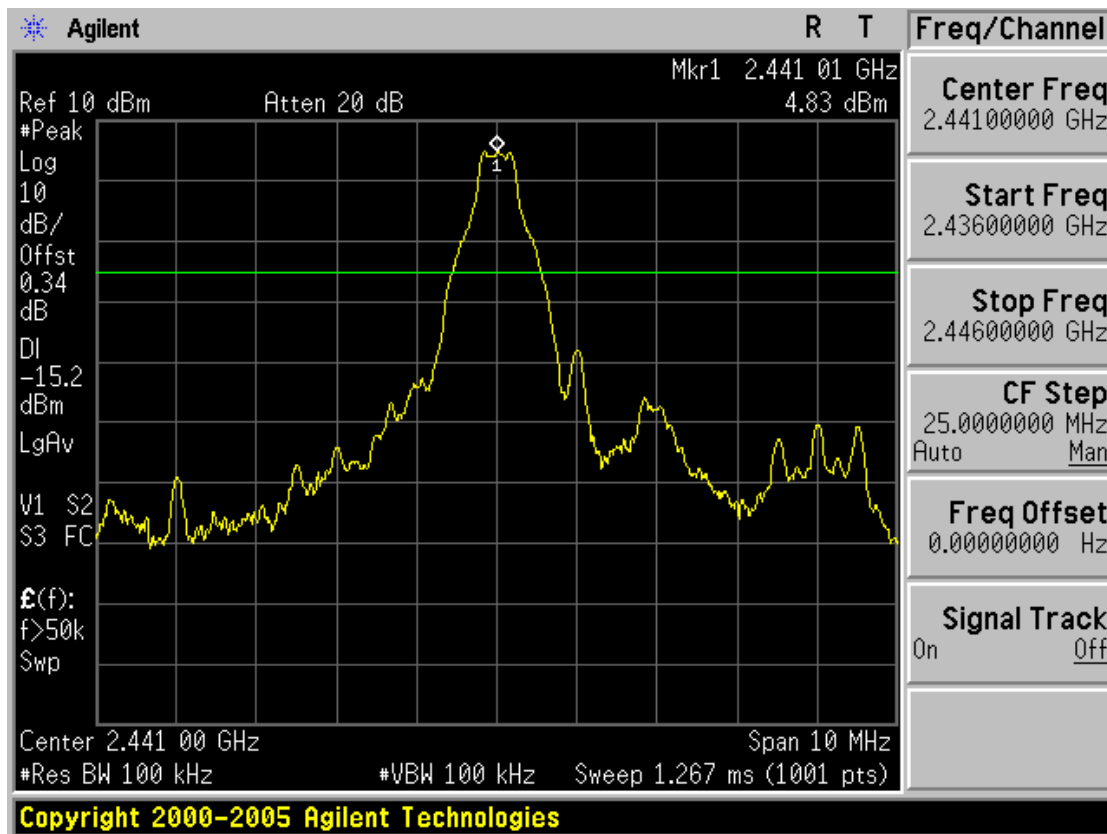
Low band with hopping enabled (M2 Port)



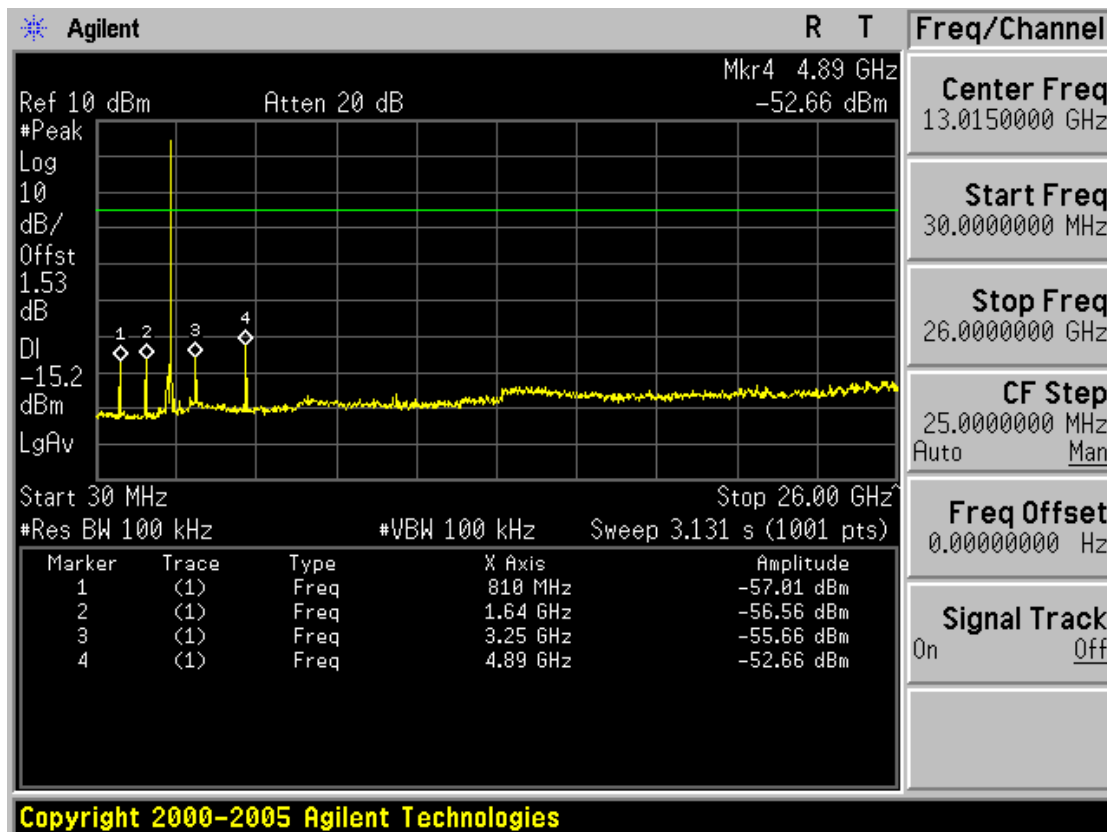
Low channel spurious (M2 Port)



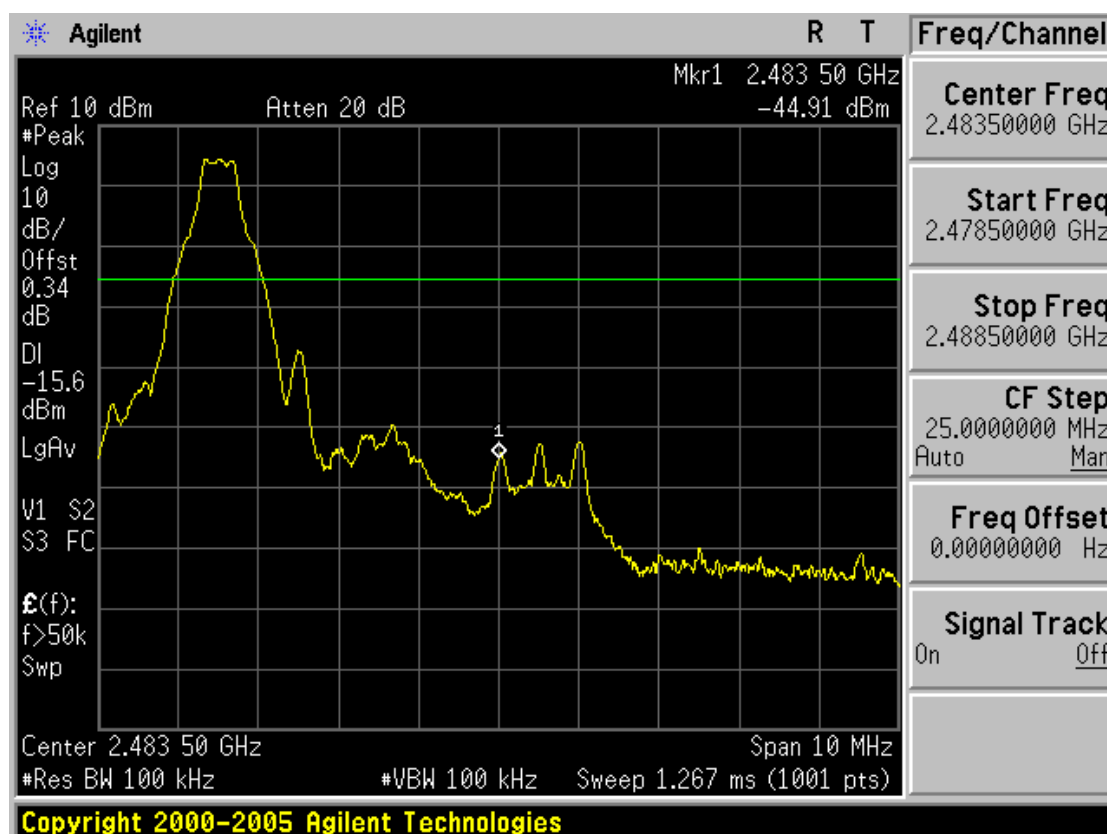
Mid channel ref (M2 Port)



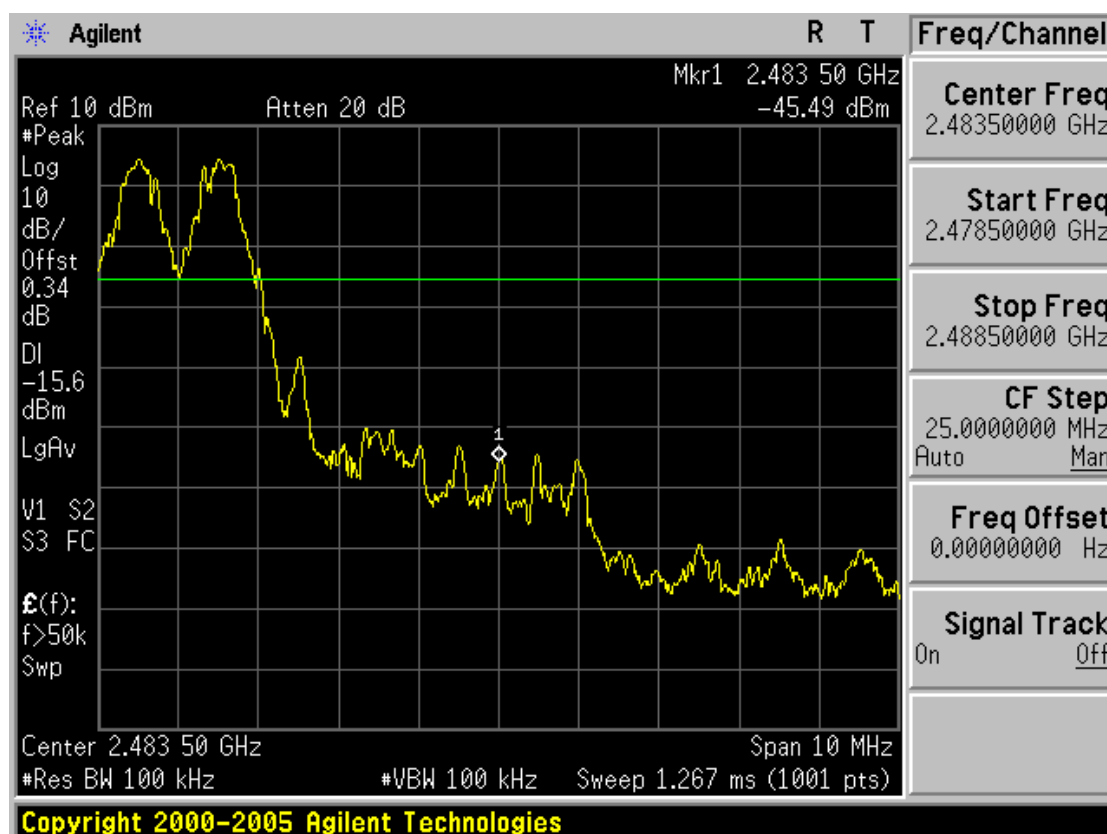
Mid channel spurious (M2 Port)



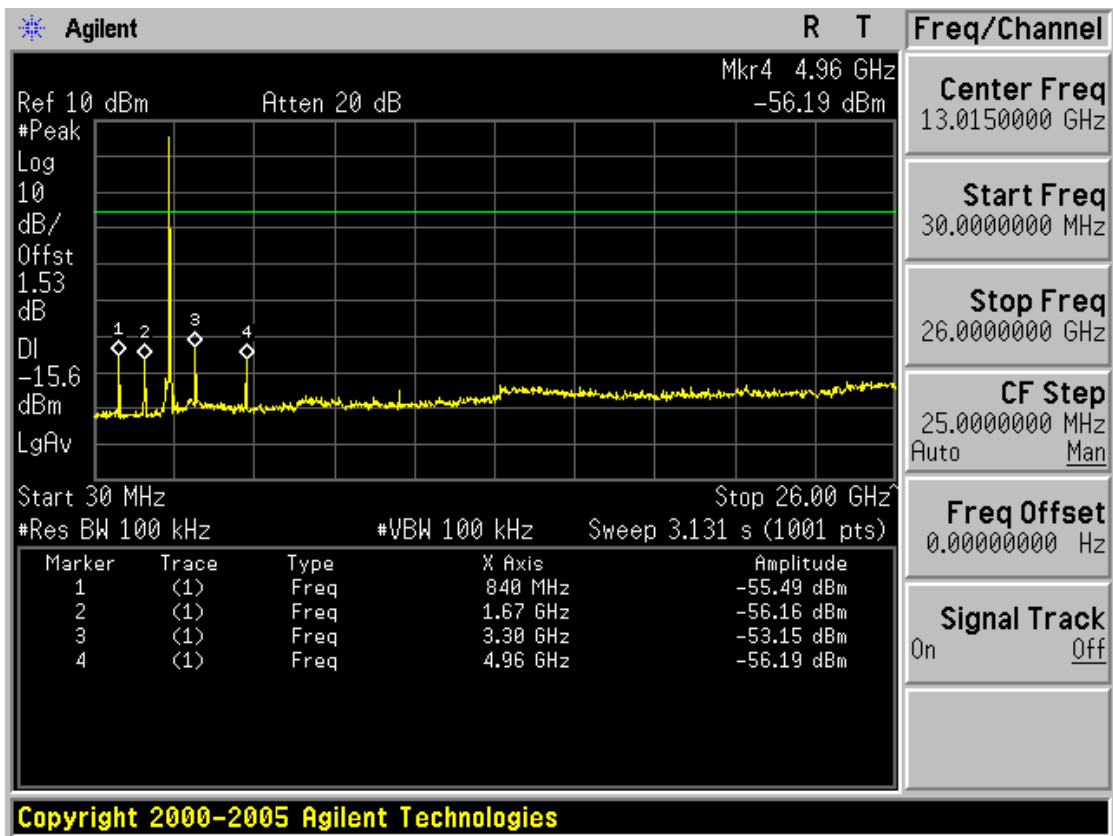
High band with hopping disabled (M2 Port)



High band with hopping enabled (M2 Port)



High channel spurious (M2 Port)



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 \geq RBW (Peak)

VBW = 10Hz (Average)

Sweep = auto

Measurement Data: **Complies**

- No emissions were detected at a level greater than 10dB below limit.
- Refer to the next page.

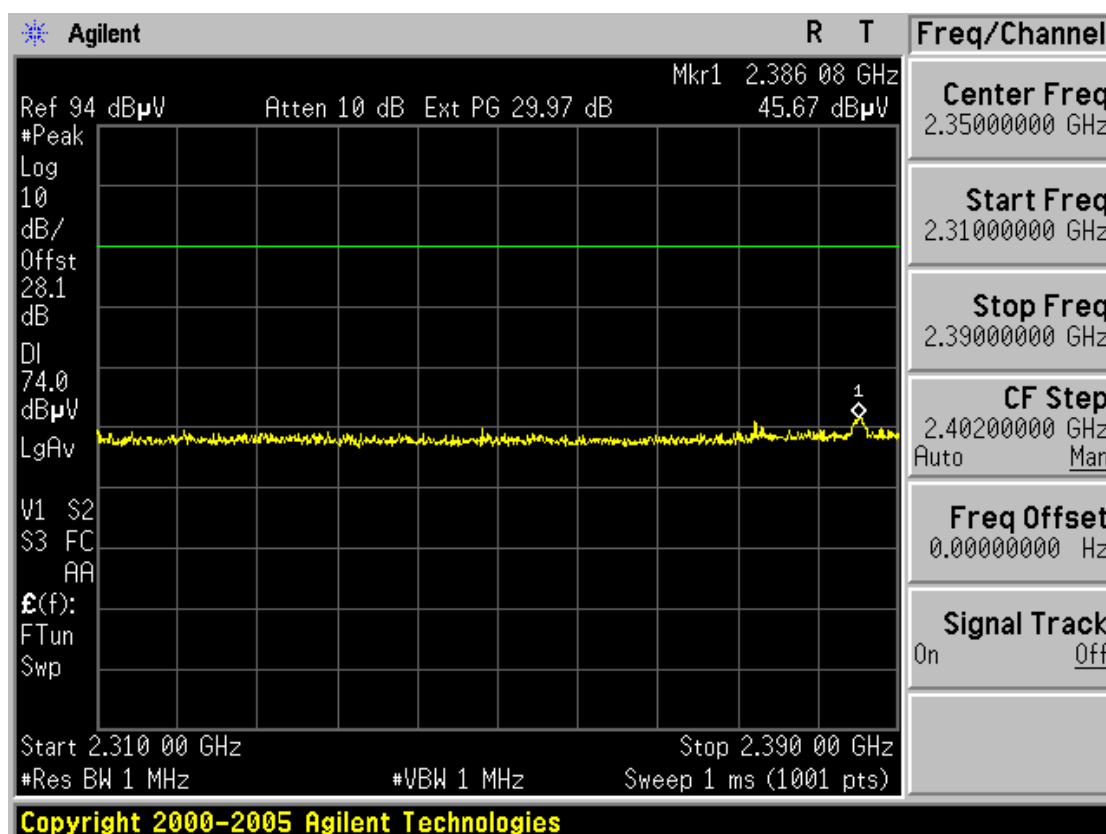
Minimum Standard: FCC Part 15.205 (a), 15.205(b), 15.209(a) and (b)

Limit : FCC P15.209(a)

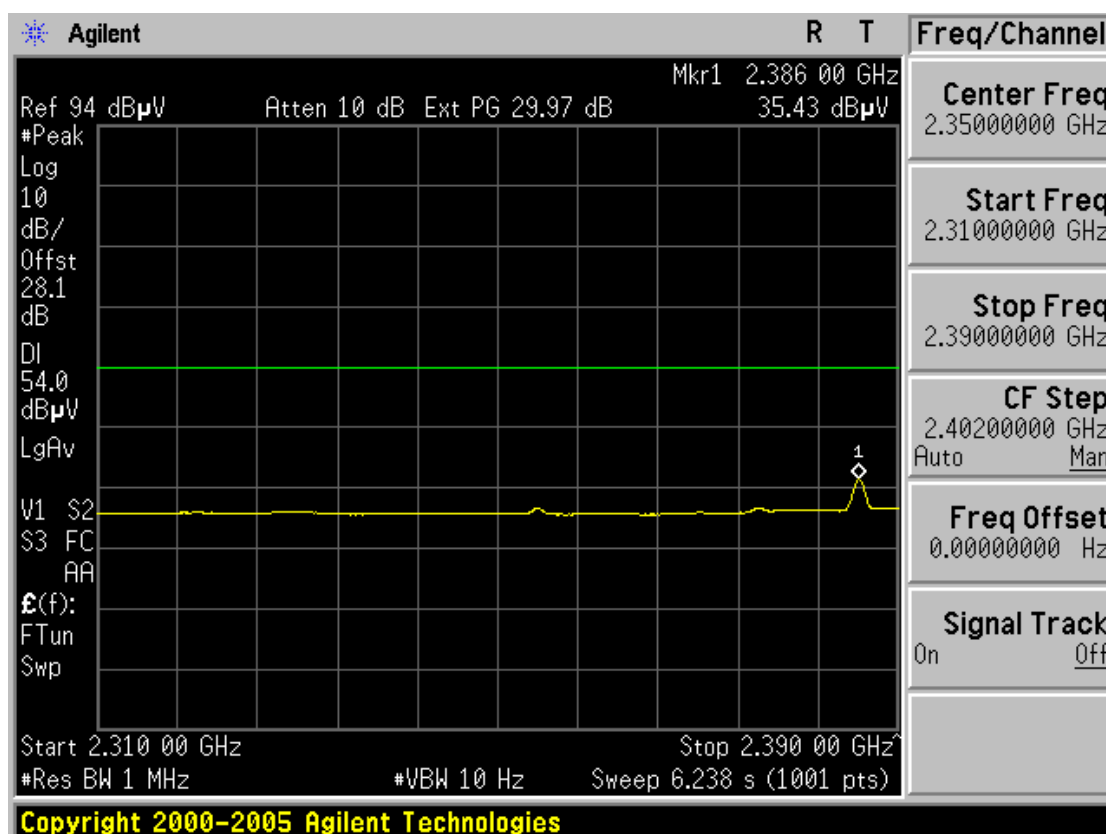
Frequency (MHz)	Limit (uV/m) @ 3m
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

** 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.

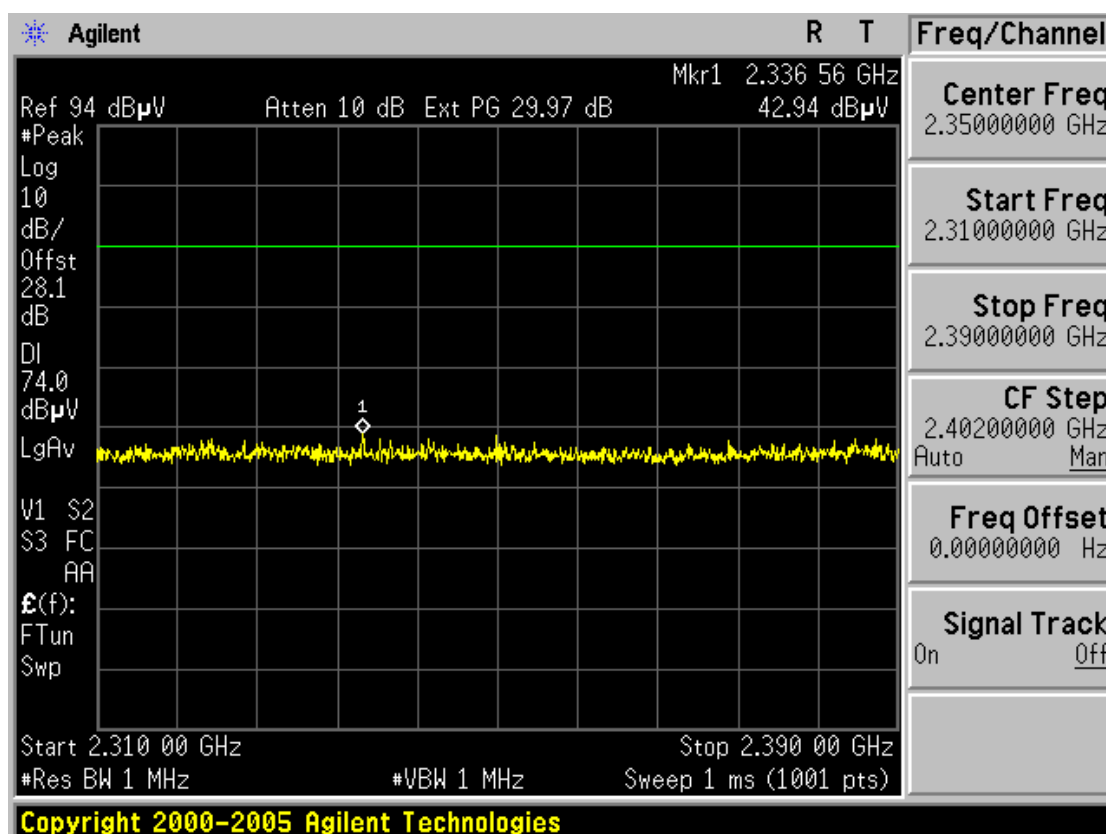
Restricted Band Edge: Low Channel (Peak, Horizontal) – M1 Port



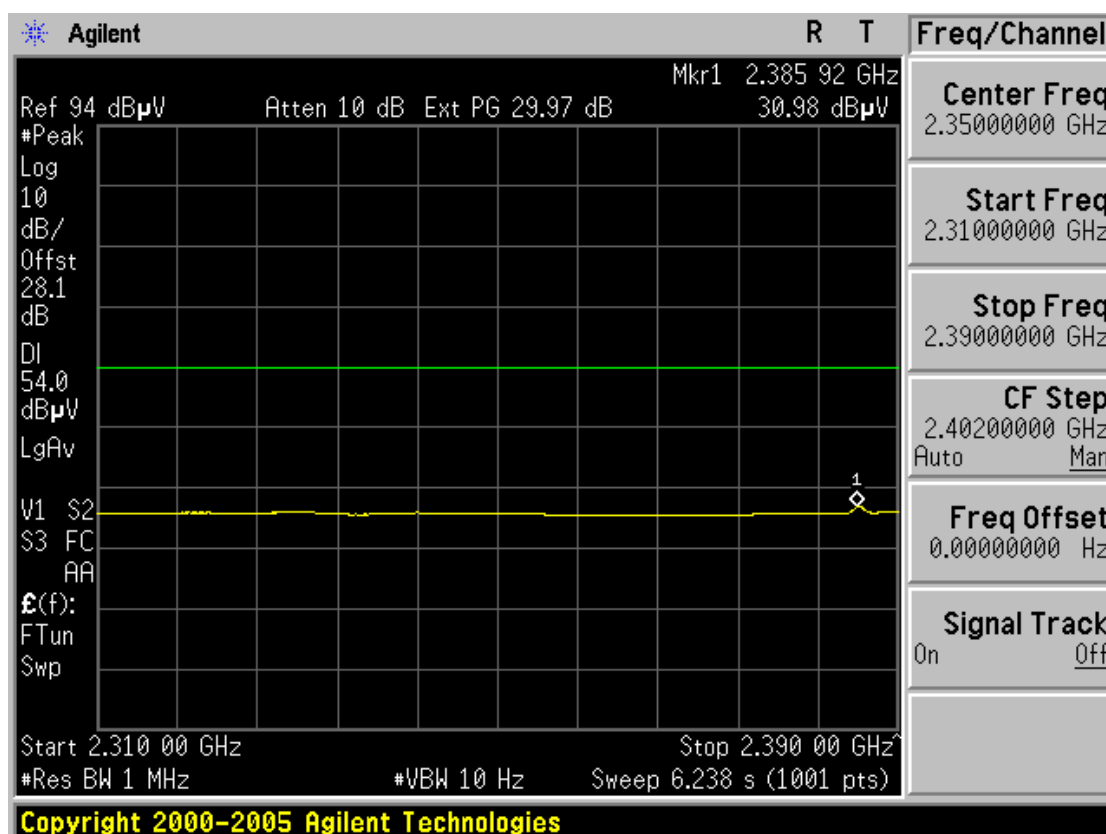
Restricted Band Edge: Low Channel (Average, Horizontal) – M1 Port



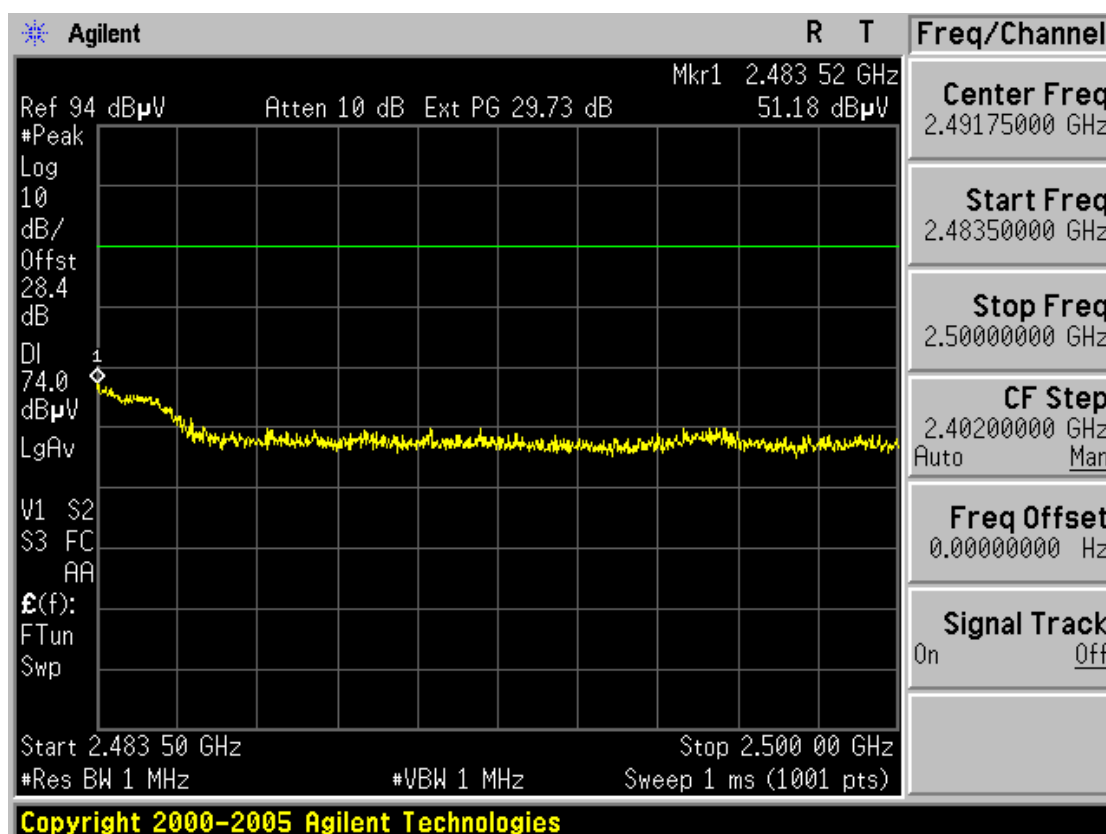
Restricted Band Edge: Low Channel (Peak, Vertical) – M1 Port



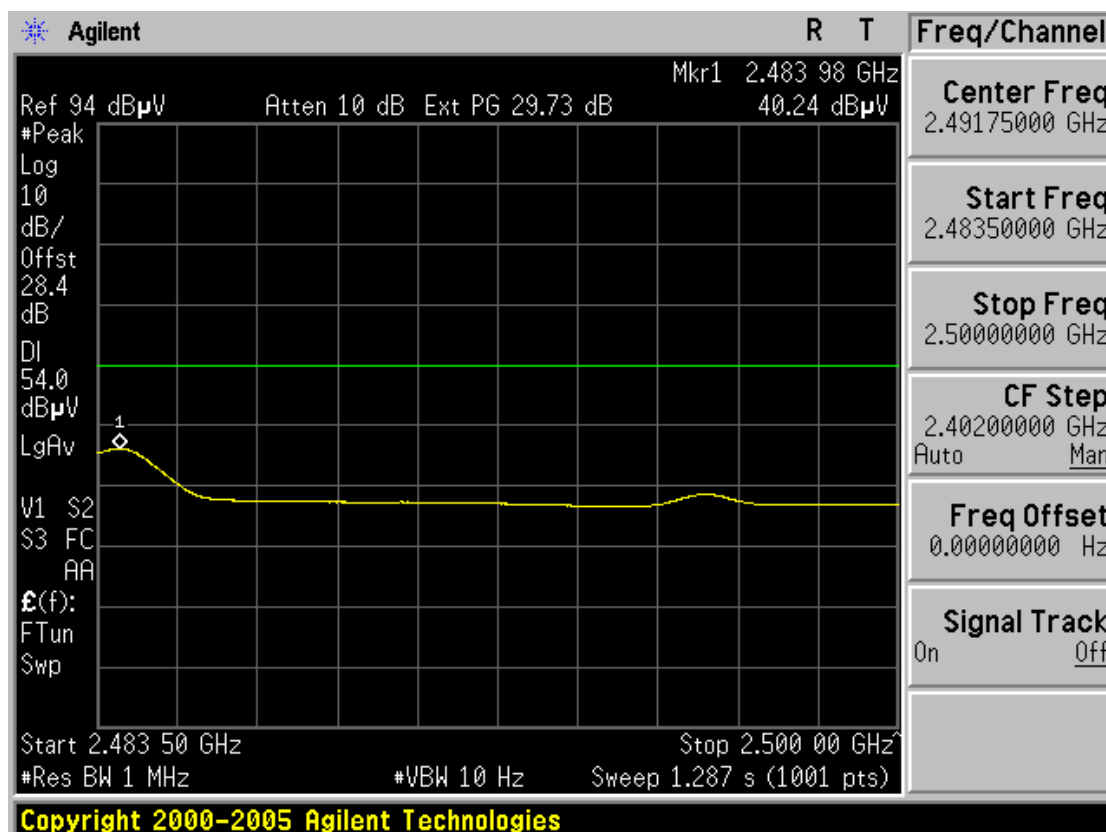
Restricted Band Edge: Low Channel (Average, Vertical) – M1 Port



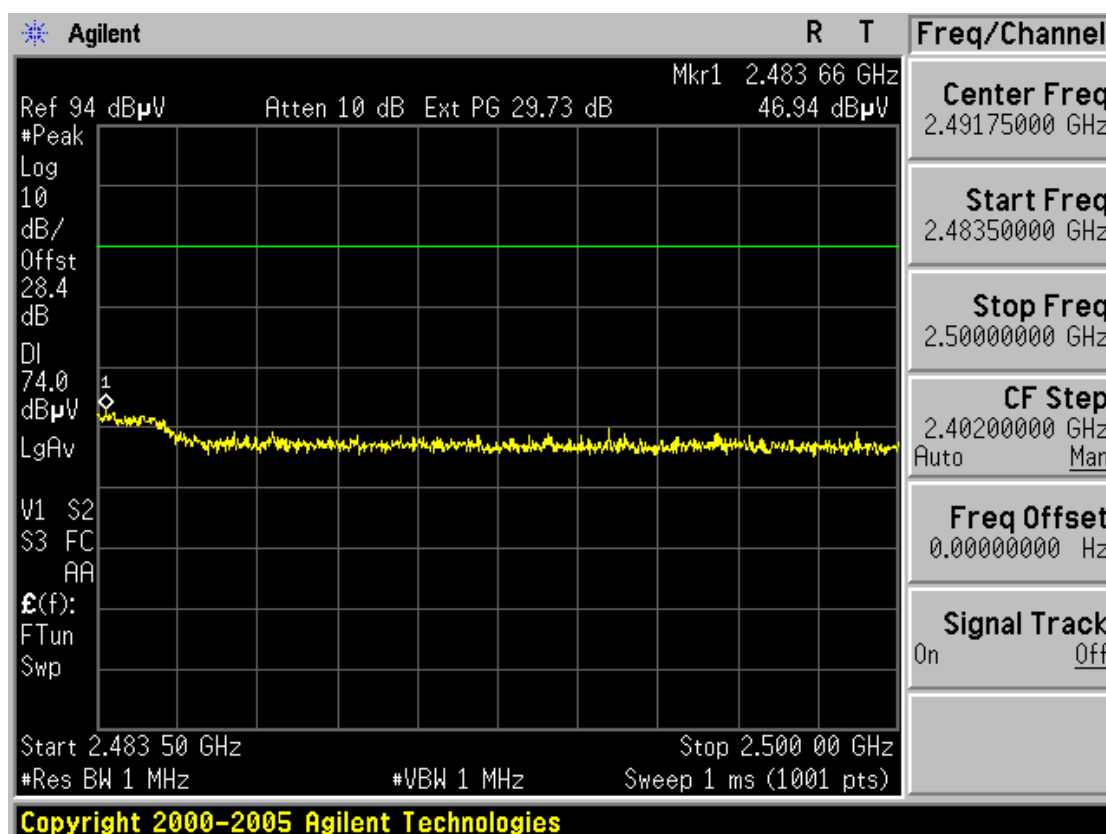
Restricted Band Edge: High Channel (Peak, Horizontal) – M1 Port



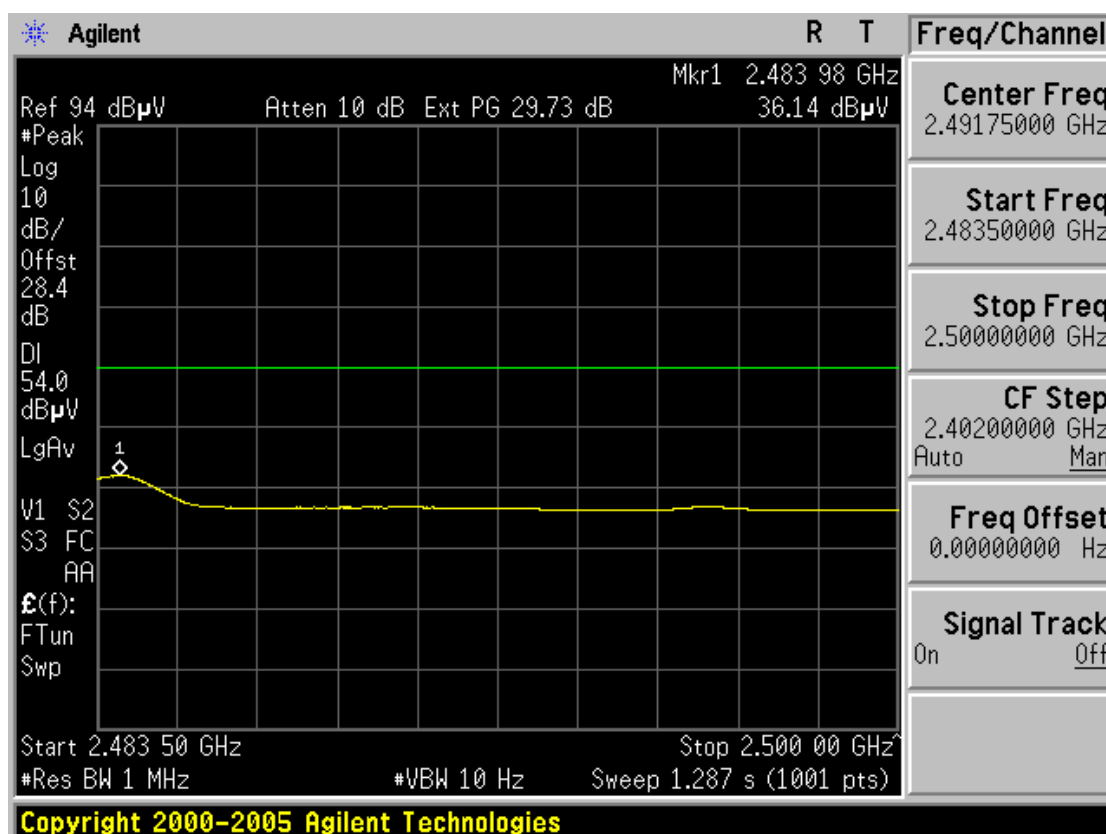
Restricted Band Edge: High Channel (Average, Horizontal) – M1 Port



Restricted Band Edge: High Channel (Peak, Vertical) – M1 Port



Restricted Band Edge: High Channel (Average, Vertical) – M1 Port



Radiated Spurious Emission Data(Harmonics) – M1 Port

<u>Low Channel(2402MHz)</u>										
Frequency (MHz)	ANT Pol. (H/V)	Reading Value (dBuV)		T.F (dB)	Result (dBuV)		Limit (dBuV)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4804	V	52.04	43.89	6.39	58.43	50.28	74	54	15.57	3.72
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
<u>Middle Channel(2441MHz)</u>										
Frequency (MHz)	ANT Pol. (H/V)	Reading Value (dBuV)		T.F (dB)	Result (dBuV)		Limit (dBuV)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4882	V	50.77	42.28	7.18	57.95	49.46	74	54	16.05	4.54
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
<u>High Channel(2480MHz)</u>										
Frequency (MHz)	ANT Pol. (H/V)	Reading Value (dBuV)		T.F (dB)	Result (dBuV)		Limit (dBuV)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4960	V	50.27	42.09	7.34	57.61	49.43	74	54	16.39	4.57
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

Not. 1. “ ** “ : No other emissions were detected at a level greater than 10dB below limit.

2. T.F(Total Factor) = Cable Loss + Ant Factor –AMP Gain

3. Result = Reading Value + T.F

4. Margin = Limit - Result

Radiated Spurious Emission Data (Other Emissions) – M1 Port

(Continued...)

Other Emissions														
Frequency (MHz)	ANT Pol. (H/V)	Reading Value (dBuV)			T.F (dB)	Result (dBuV)			Limit (dBuV)			Margin (dB)		
		PK	QP	AV		PK	QP	AV	PK	QP	AV	PK	QP	AV
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

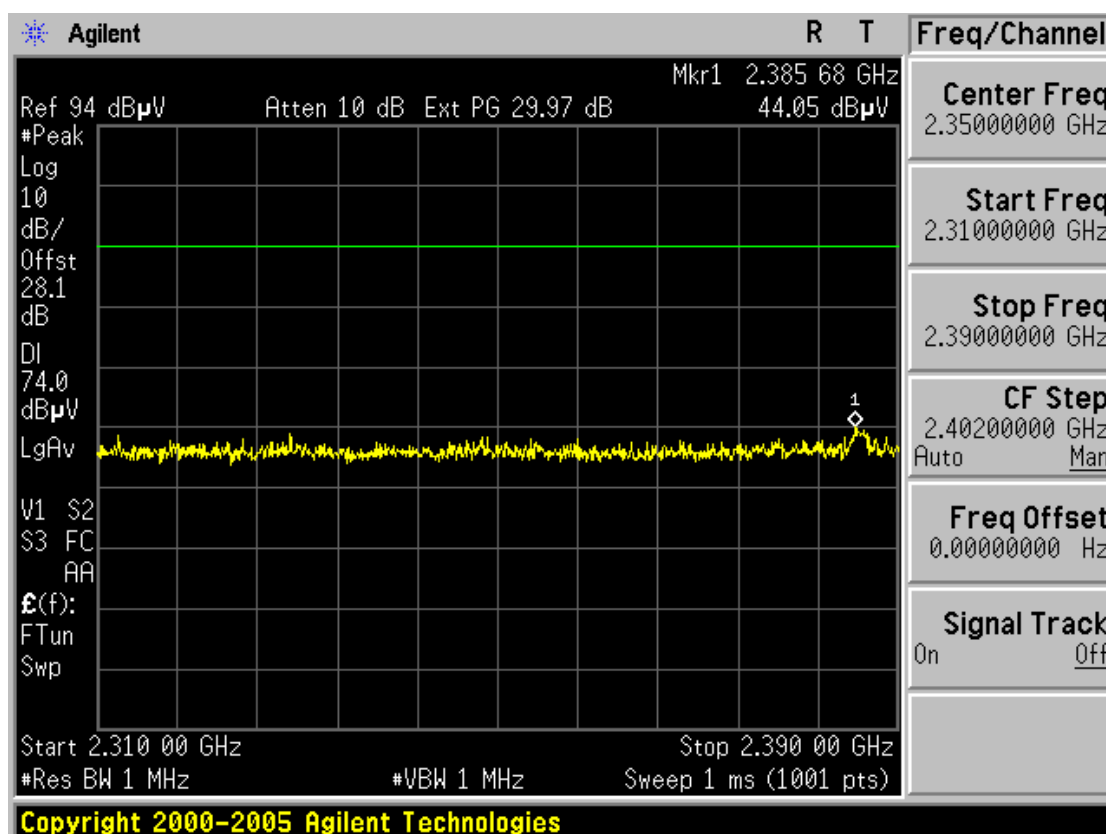
Not. 1. “ ** “ : No emissions were detected at a level greater than 20dB below limit.

2. T.F(Total Factor) = Cable Loss + Ant Factor –AMP Gain

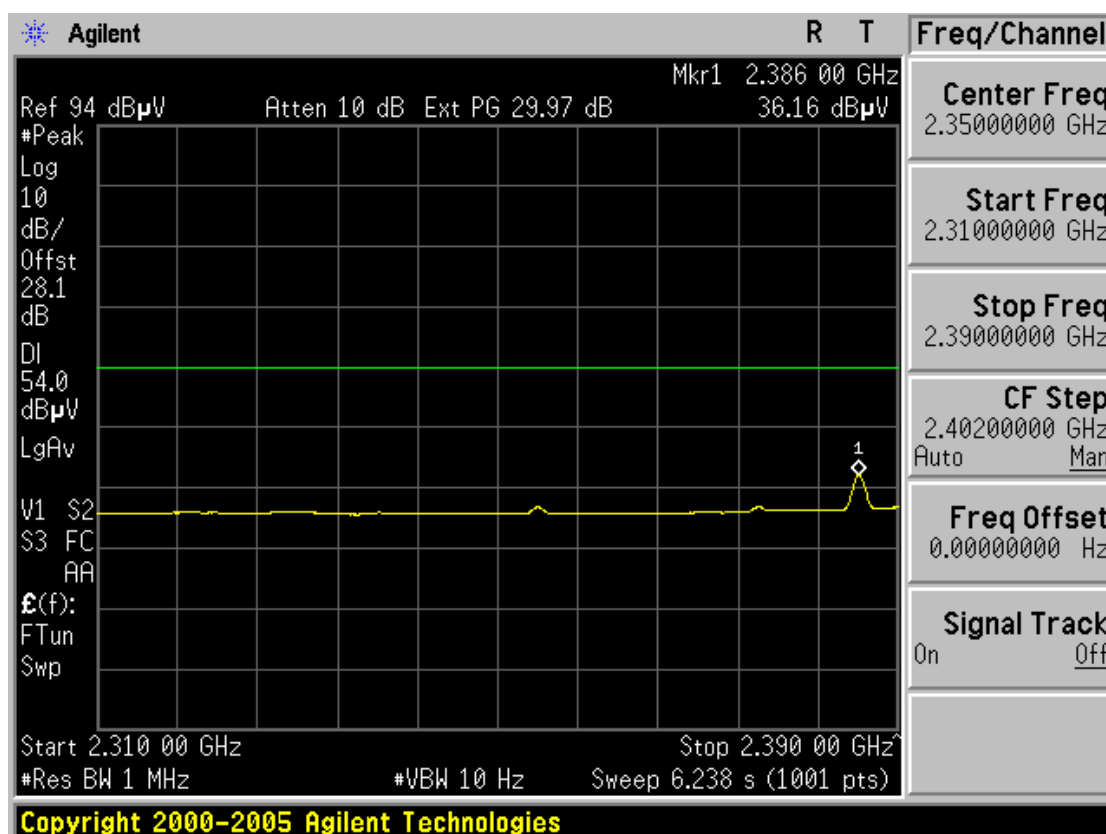
3. Result = Reading Value + T.F

4. Margin = Limit - Result

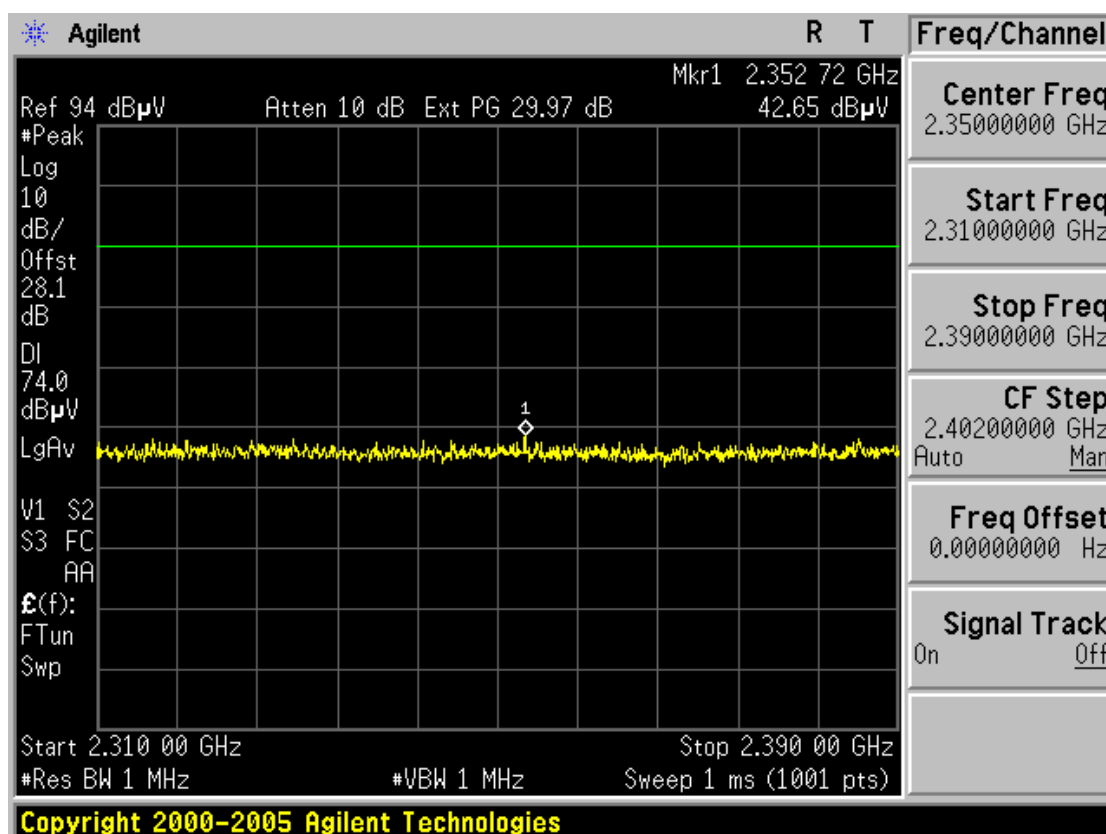
Restricted Band Edge: Low Channel (Peak, Horizontal) – M2 Port



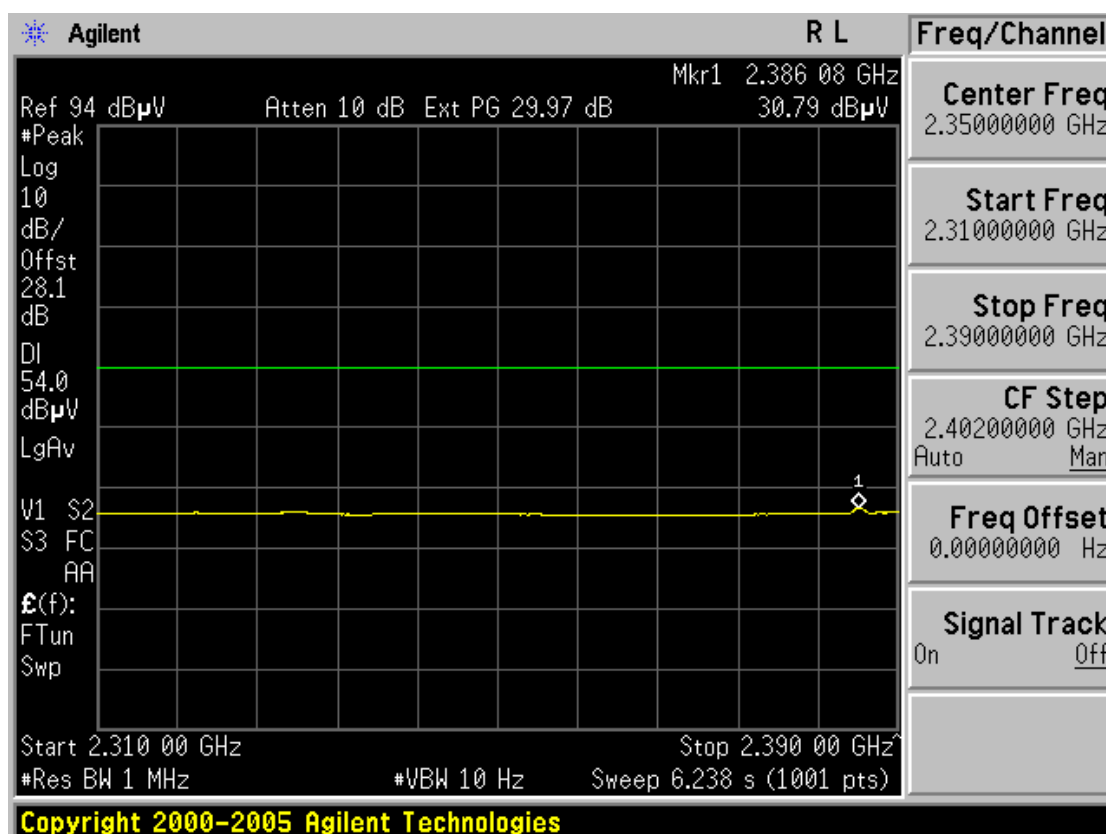
Restricted Band Edge: Low Channel (Average, Horizontal) – M2 Port



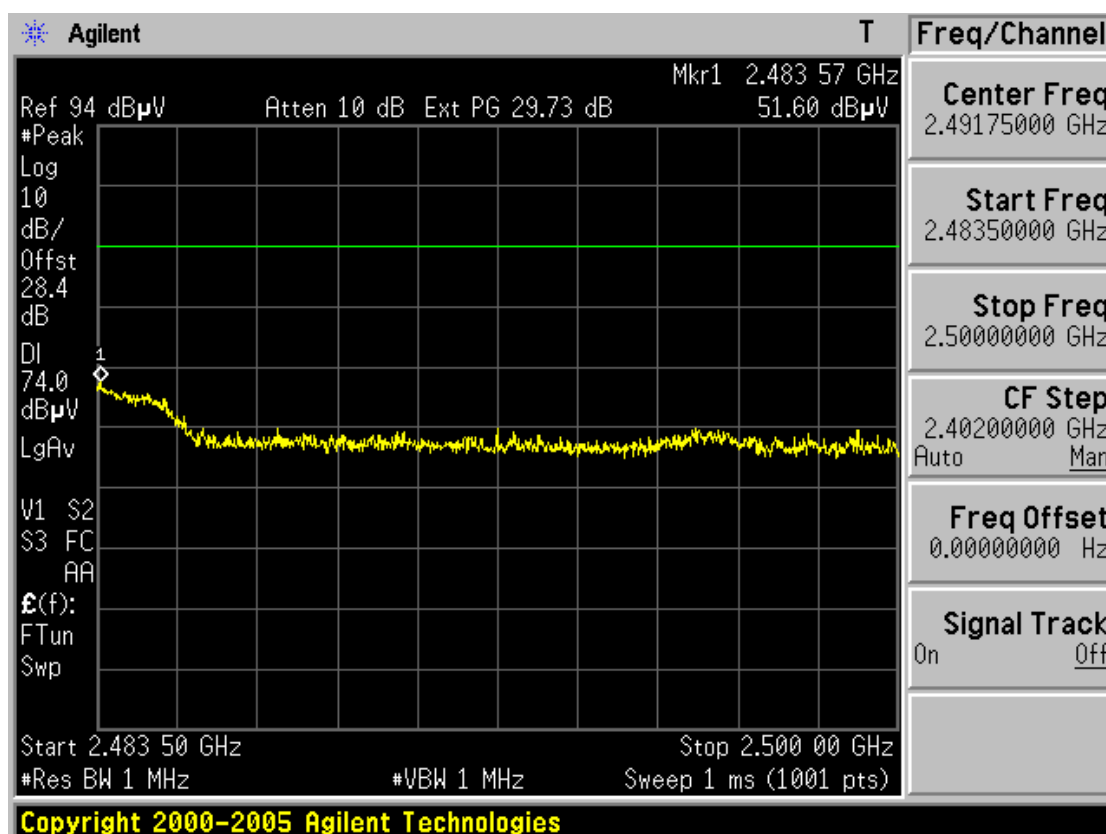
Restricted Band Edge: Low Channel (Peak, Vertical) – M2 Port



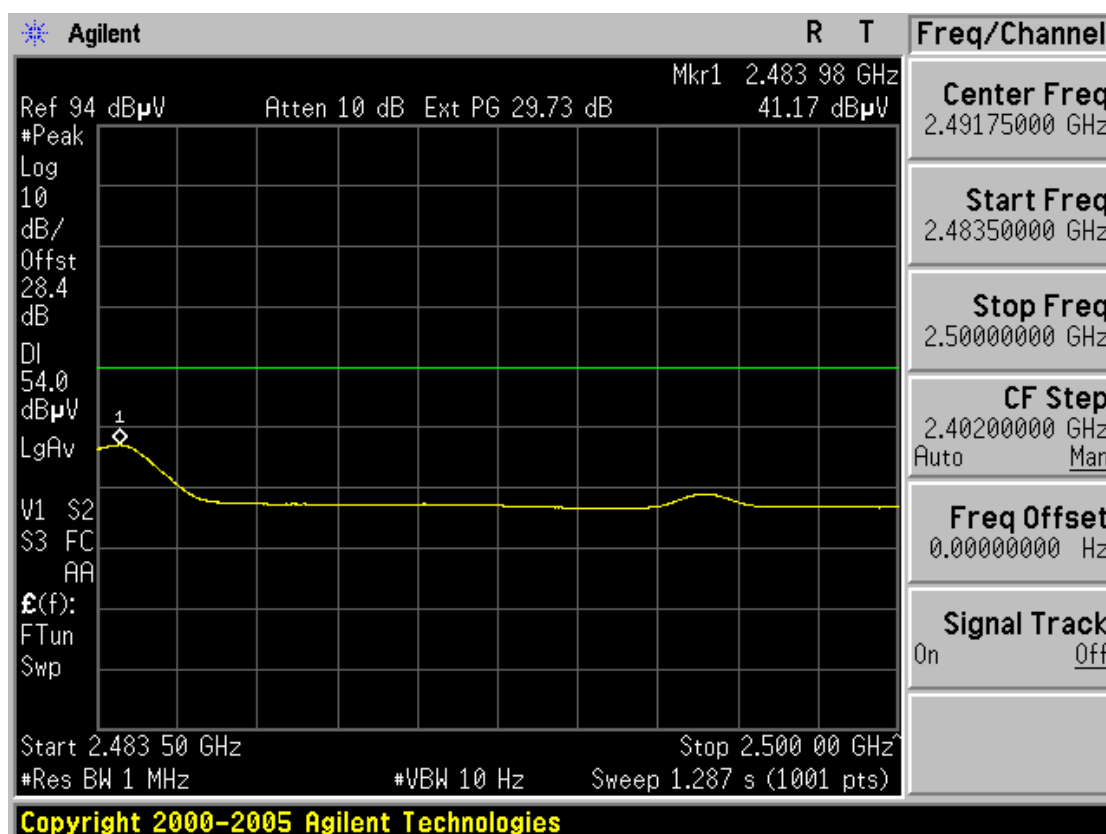
Restricted Band Edge: Low Channel (Average, Vertical) – M2 Port



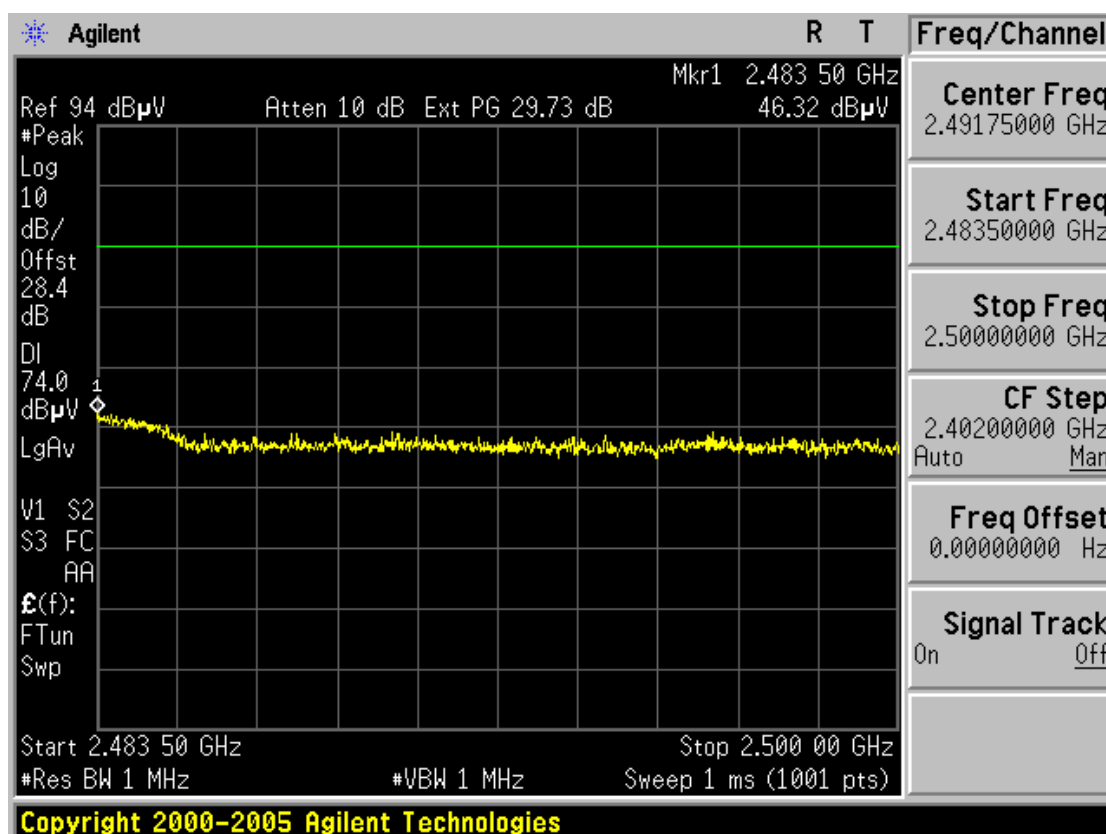
Restricted Band Edge: High Channel (Peak, Horizontal) – M2 Port



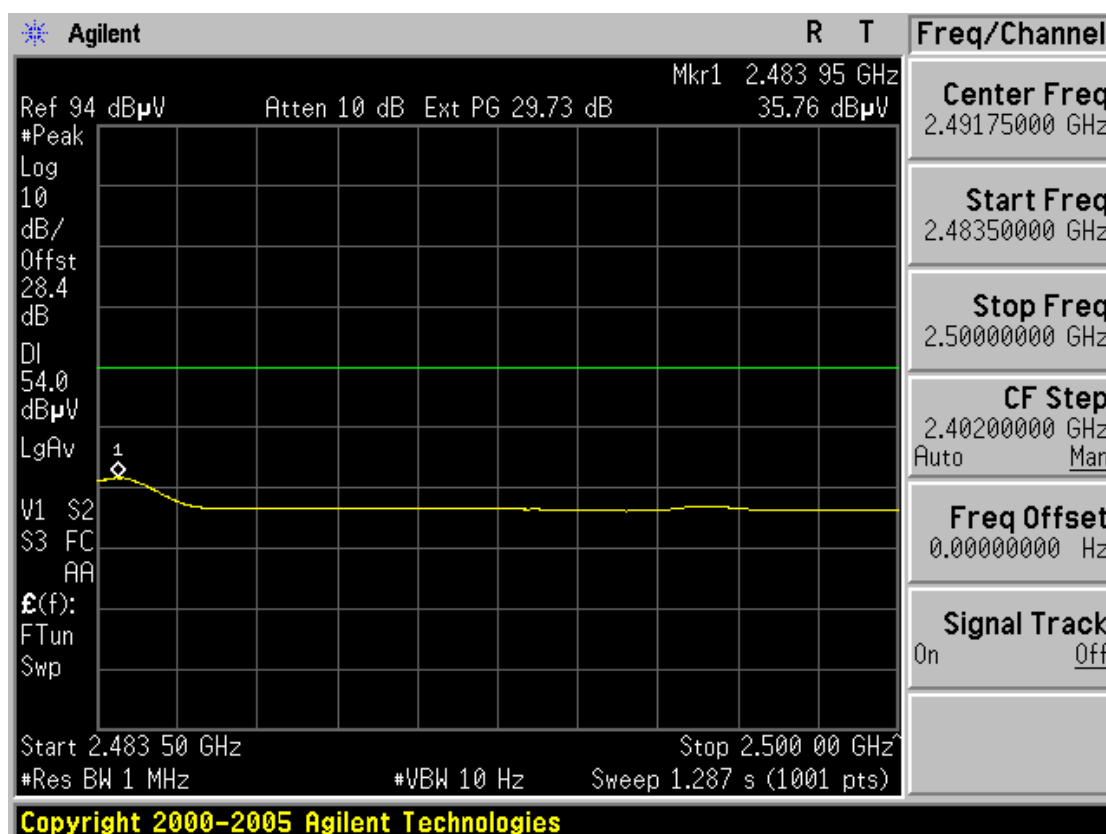
Restricted Band Edge: High Channel (Average, Horizontal) – M2 Port



Restricted Band Edge: High Channel (Peak, Vertical) – M2 Port



Restricted Band Edge: High Channel (Average, Vertical) – M2 Port



Radiated Spurious Emission Data (Harmonics) – M2 Port

<u>Low Channel(2402MHz)</u>										
Frequency (MHz)	ANT Pol. (H/V)	Reading Value (dBuV)		T.F (dB)	Result (dBuV)		Limit (dBuV)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4804	V	51.76	42.09	6.39	58.15	48.48	74	54	15.85	5.52
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
<u>Middle Channel(2441MHz)</u>										
Frequency (MHz)	ANT Pol. (H/V)	Reading Value (dBuV)		T.F (dB)	Result (dBuV)		Limit (dBuV)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4882	V	51.49	43.09	7.18	58.67	50.27	74	54	15.33	3.73
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
<u>High Channel(2480MHz)</u>										
Frequency (MHz)	ANT Pol. (H/V)	Reading Value (dBuV)		T.F (dB)	Result (dBuV)		Limit (dBuV)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4960	V	52.80	44.88	7.34	60.14	52.22	74	54	13.86	1.78
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

Not. 1. “ ** “ : No other emissions were detected at a level greater than 10dB below limit.

2. T.F(Total Factor) = Cable Loss + Ant Factor –AMP Gain

3. Result = Reading Value + T.F

4. Margin = Limit - Result

Radiated Spurious Emission Data (Other Emissions) – M2 Port

(Continued...)

Other Emissions														
Frequency (MHz)	ANT Pol. (H/V)	Reading Value (dBuV)			T.F (dB)	Result (dBuV)			Limit (dBuV)			Margin (dB)		
		PK	QP	AV		PK	QP	AV	PK	QP	AV	PK	QP	AV
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

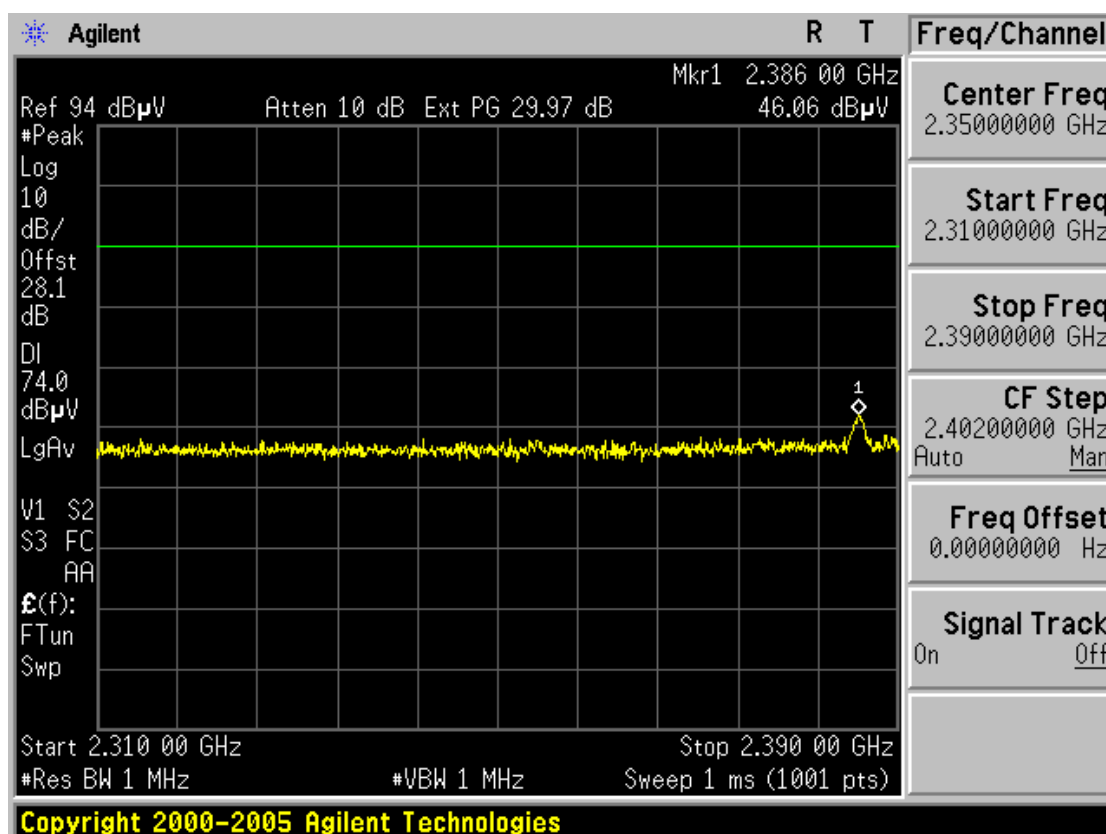
Not. 1. “ ** “ : No emissions were detected at a level greater than 20dB below limit.

2. T.F(Total Factor) = Cable Loss + Ant Factor –AMP Gain

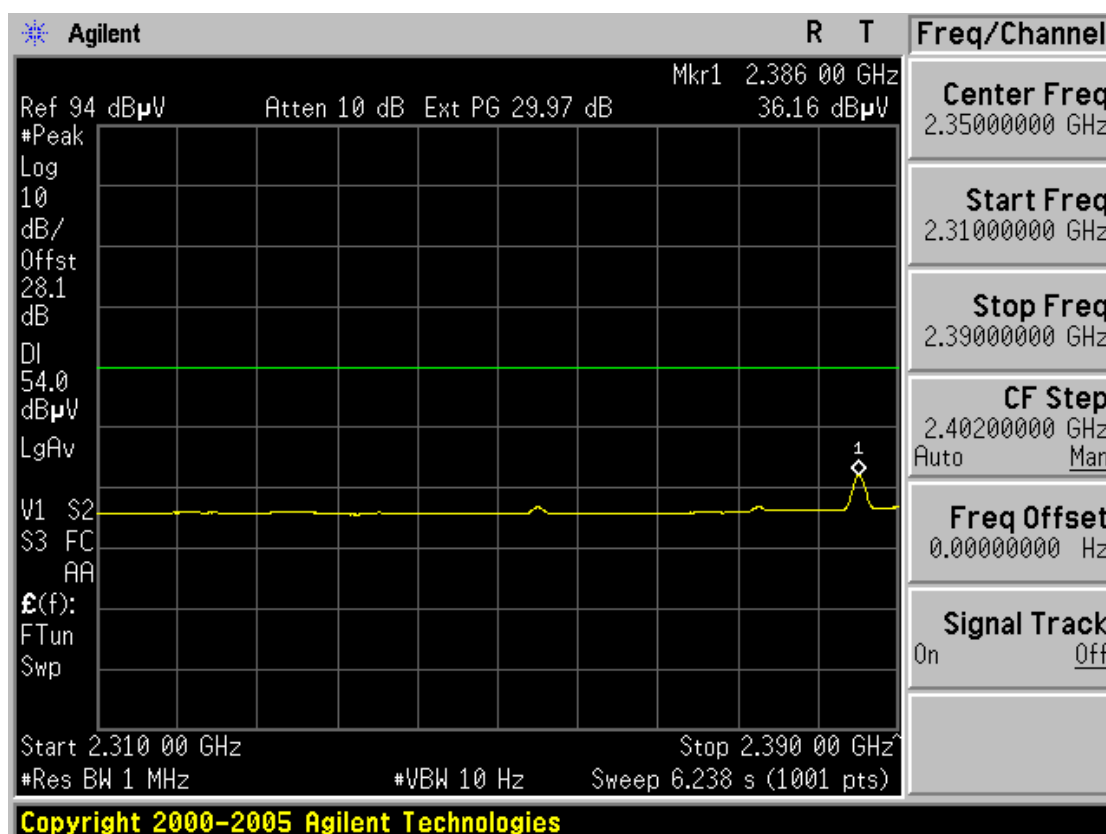
3. Result = Reading Value + T.F

4. Margin = Limit - Result

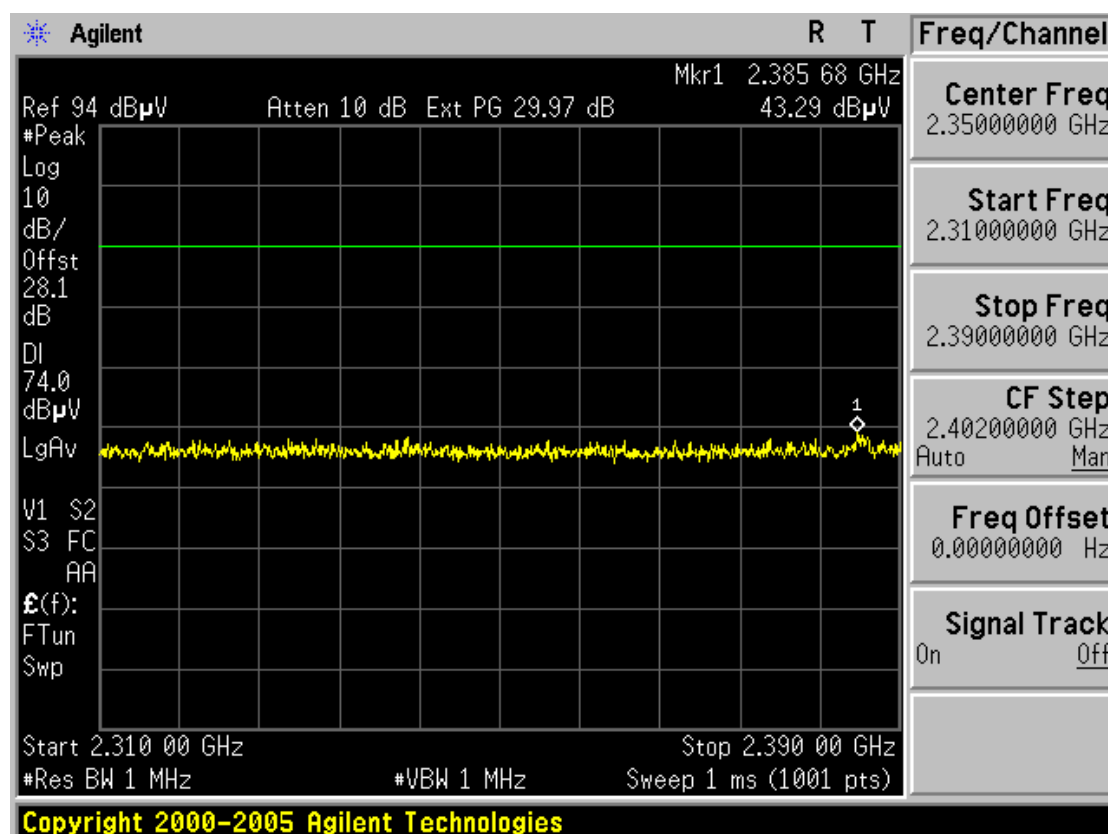
Restricted Band Edge: Low Channel (Peak, Horizontal) – M1 , M2 Simultaneous Operation



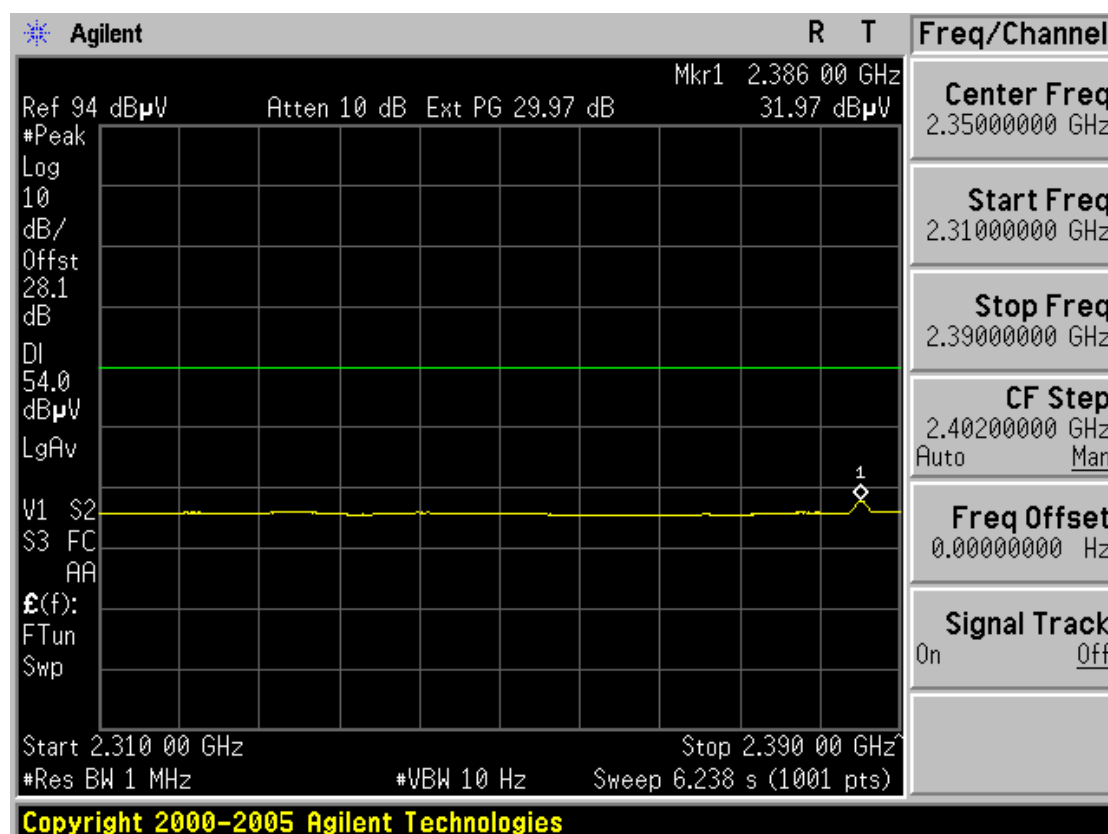
Restricted Band Edge: Low Channel (Average, Horizontal) – M1 , M2 Simultaneous Operation



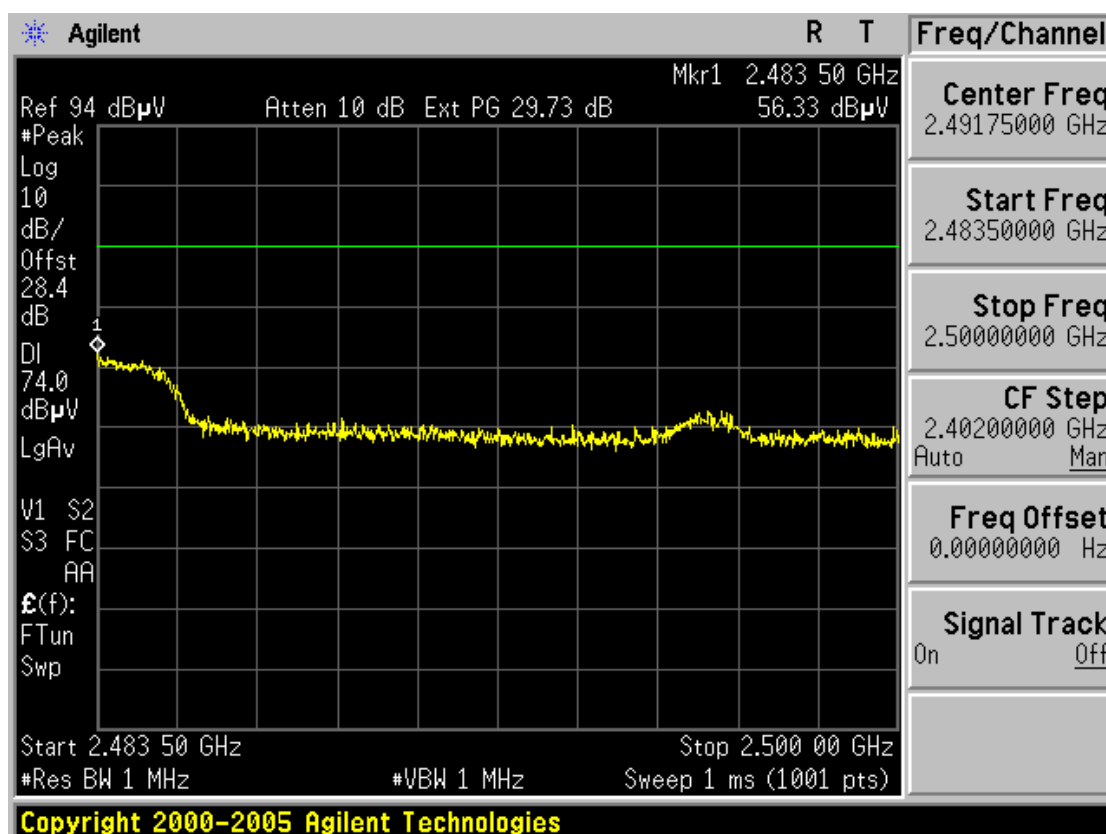
Restricted Band Edge: Low Channel (Peak, Vertical) – M1 , M2 Simultaneous Operation



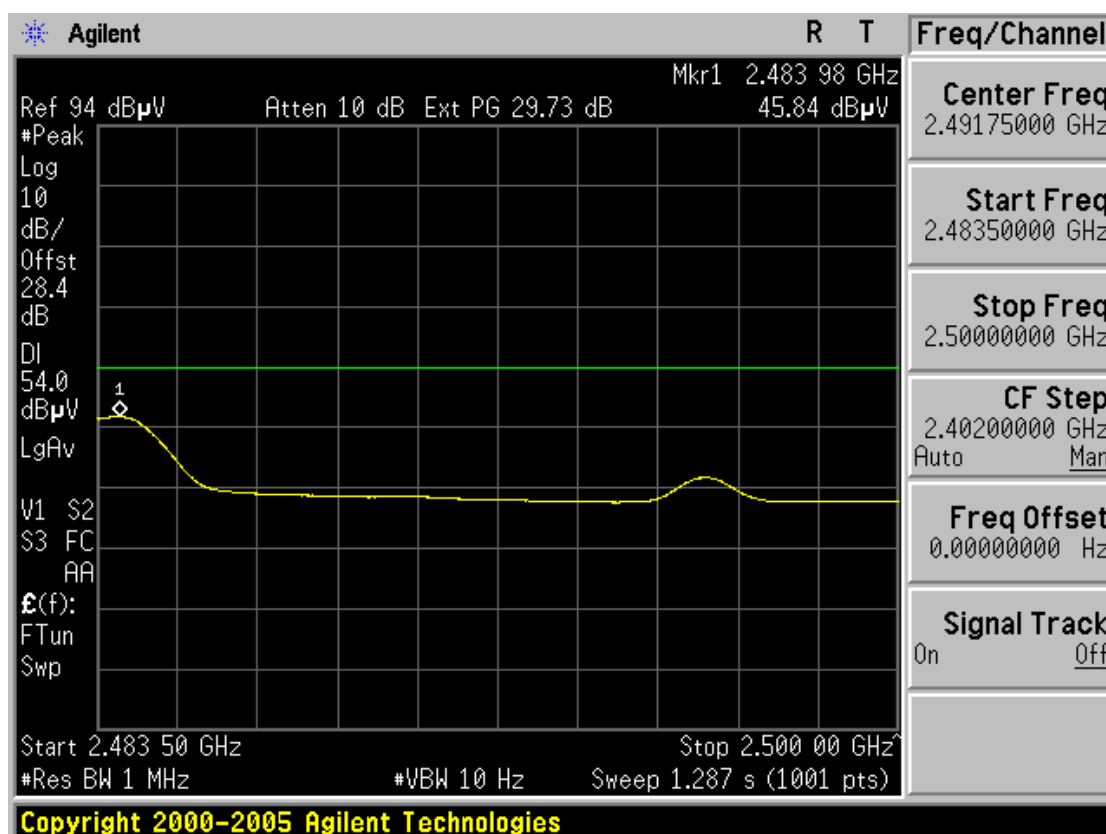
Restricted Band Edge: Low Channel (Average, Vertical) – M1 , M2 Simultaneous Operation



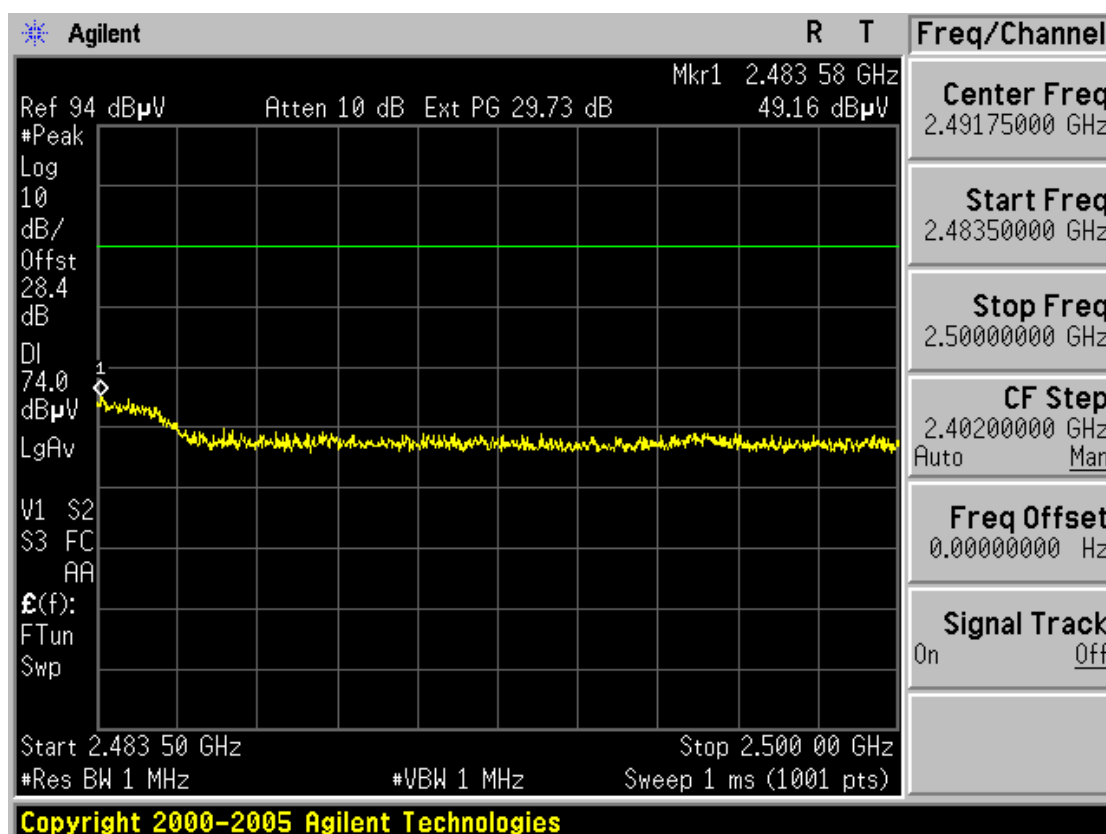
Restricted Band Edge: High Channel (Peak, Horizontal) – M1 , M2 Simultaneous Operation



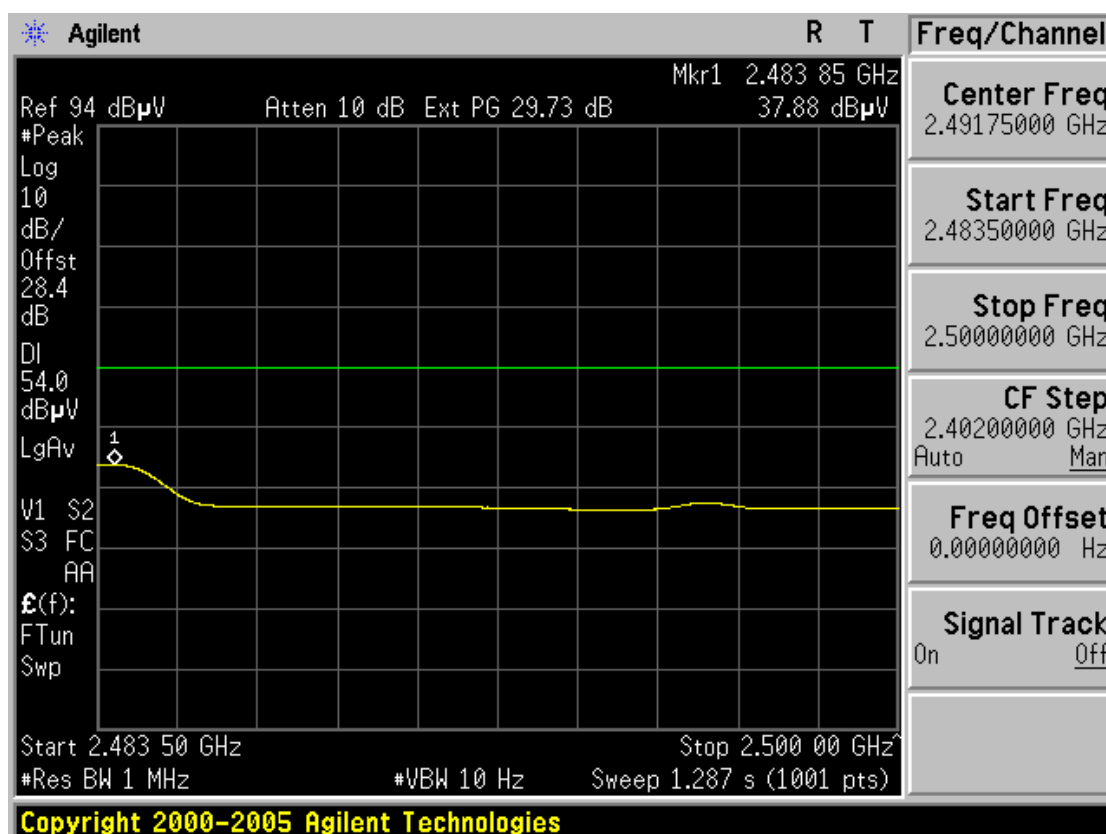
Restricted Band Edge: High Channel (Average, Horizontal) – M1 , M2 Simultaneous Operation



Restricted Band Edge: High Channel (Peak, Vertical) – M1 , M2 Simultaneous Operation



Restricted Band Edge: High Channel (Average, Vertical) – M1 , M2 Simultaneous Operation



Radiated Spurious Emission Data (Harmonics) – M1 , M2 Simultaneous Operation

<u>Low Channel(2402MHz)</u>										
Frequency (MHz)	ANT Pol. (H/V)	Reading Value (dBuV)		T.F (dB)	Result (dBuV)		Limit (dBuV)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4804	V	54.87	44.82	6.39	61.26	51.21	74	54	12.74	2.79
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

<u>Middle Channel(2441MHz)</u>										
Frequency (MHz)	ANT Pol. (H/V)	Reading Value (dBuV)		T.F (dB)	Result (dBuV)		Limit (dBuV)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4882	V	55.84	44.37	7.18	63.02	51.55	74	54	10.98	2.45
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

<u>High Channel(2480MHz)</u>										
Frequency (MHz)	ANT Pol. (H/V)	Reading Value (dBuV)		T.F (dB)	Result (dBuV)		Limit (dBuV)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4960	V	54.63	43.79	7.34	61.97	51.13	74	54	12.03	2.87
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

Not. 1. “ ** “ : No other emissions were detected at a level greater than 10dB below limit.

2. T.F(Total Factor) = Cable Loss + Ant Factor –AMP Gain

3. Result = Reading Value + T.F

4. Margin = Limit - Result

Radiated Spurious Emission Data (Other Emissions) – M1 , M2 Simultaneous Operation

(Continued...)

Other Emissions														
Frequency (MHz)	ANT Pol. (H/V)	Reading Value (dBuV)			T.F (dB)	Result (dBuV)			Limit (dBuV)			Margin (dB)		
		PK	QP	AV		PK	QP	AV	PK	QP	AV	PK	QP	AV
939.372	V		45.51		-18.38		27.13			46.00			18.87	
951.500	H		46.50		-18.34		28.16			46.00			17.84	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Not. 1. “ ** “ : No emissions were detected at a level greater than 20dB below limit.

2. T.F(Total Factor) = Cable Loss + Ant Factor –AMP Gain

3. Result = Reading Value + T.F

4. Margin = Limit - Result

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 mode (QP) 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: **Complies**

- 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

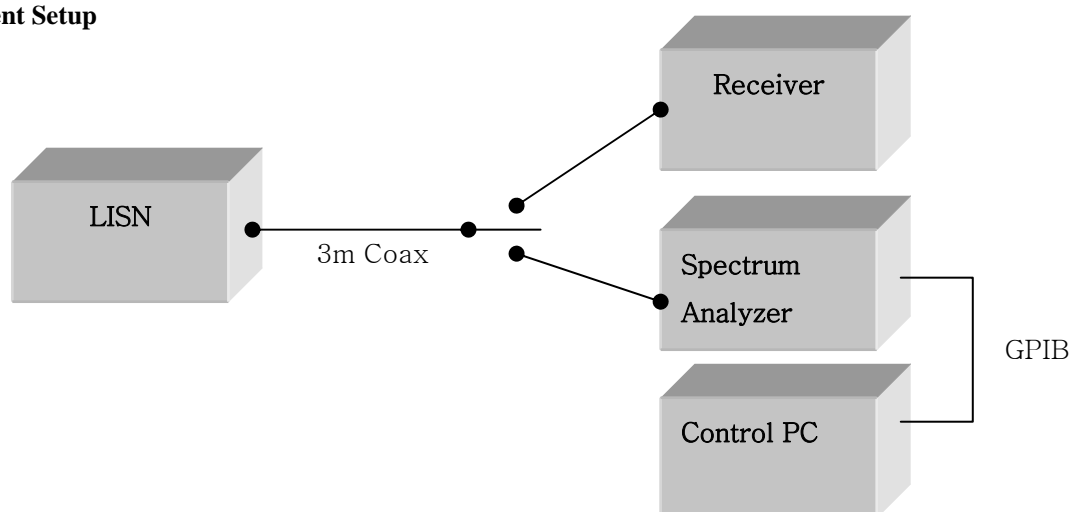
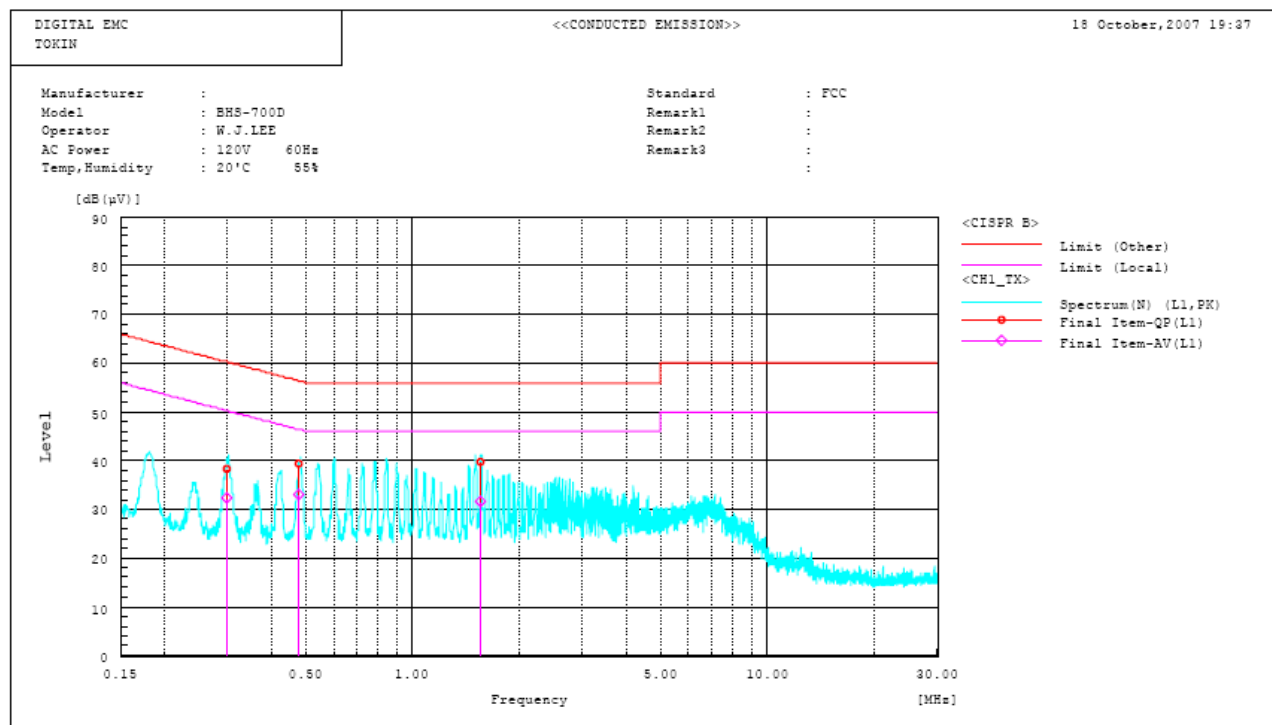
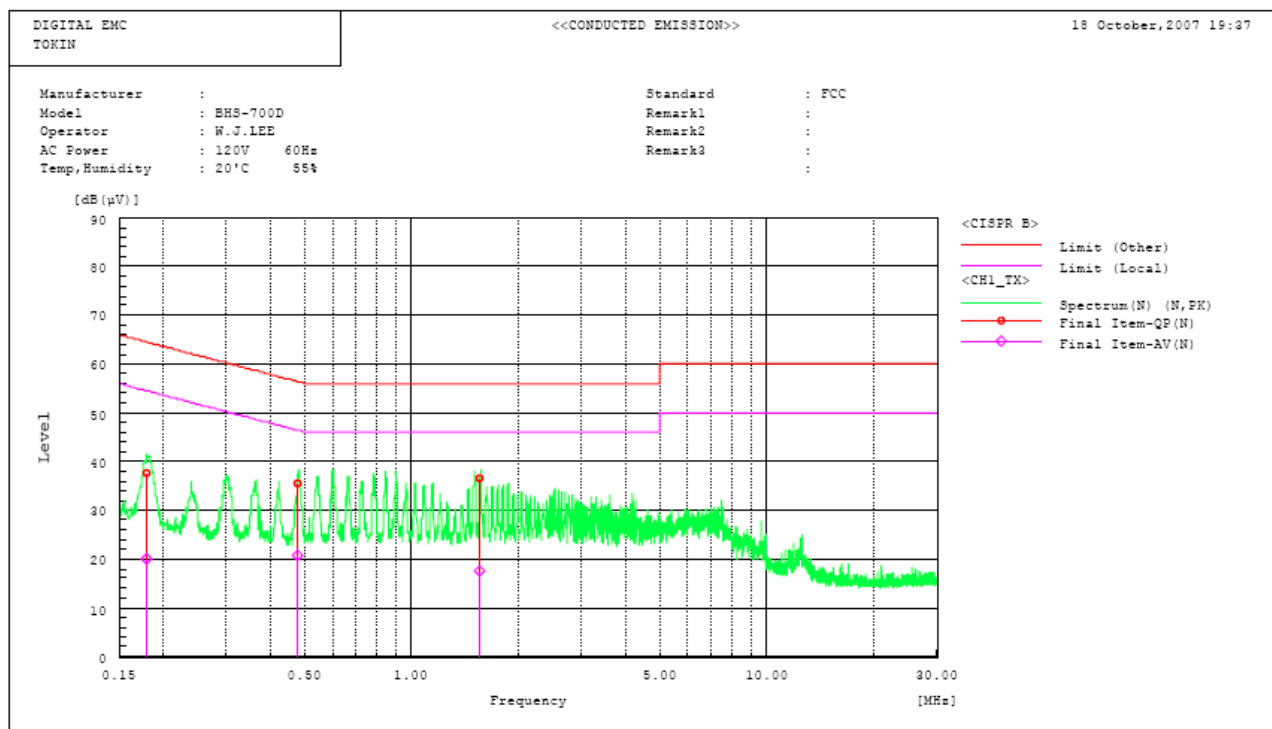


Figure 2: Measurement setup for AC Conducted Emission

AC Conducted Emissions – M1 Traffic Mode



AC Conducted Emissions – M1 Traffic Mode

***** DIGITAL EMC *****

<<CONDUCTED EMISSION>>

18 October, 2007 19:37

Standard : FCC

Manufacturer :

Model : BHS-700D

Operator : W.J.LEE

AC Power : 120V 60Hz

Temp, Humidity : 20°C 55%

Remark1 :

Remark2 :

Remark3 :

Final Result

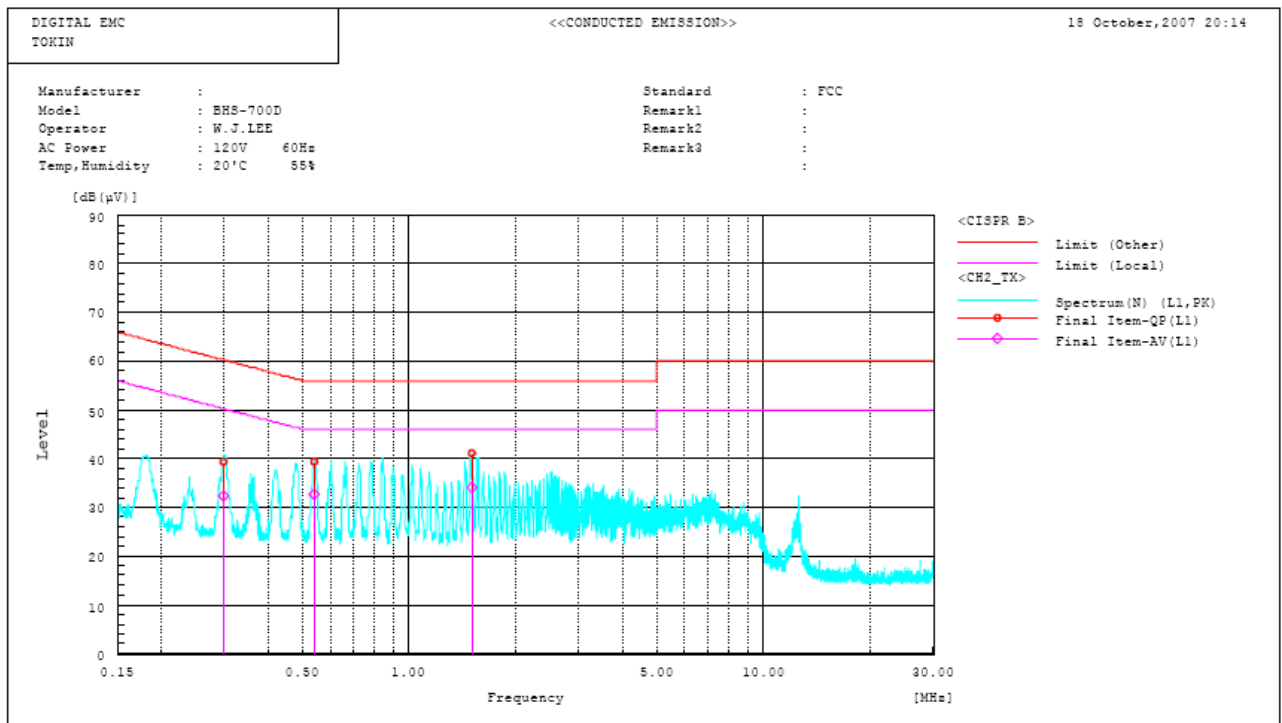
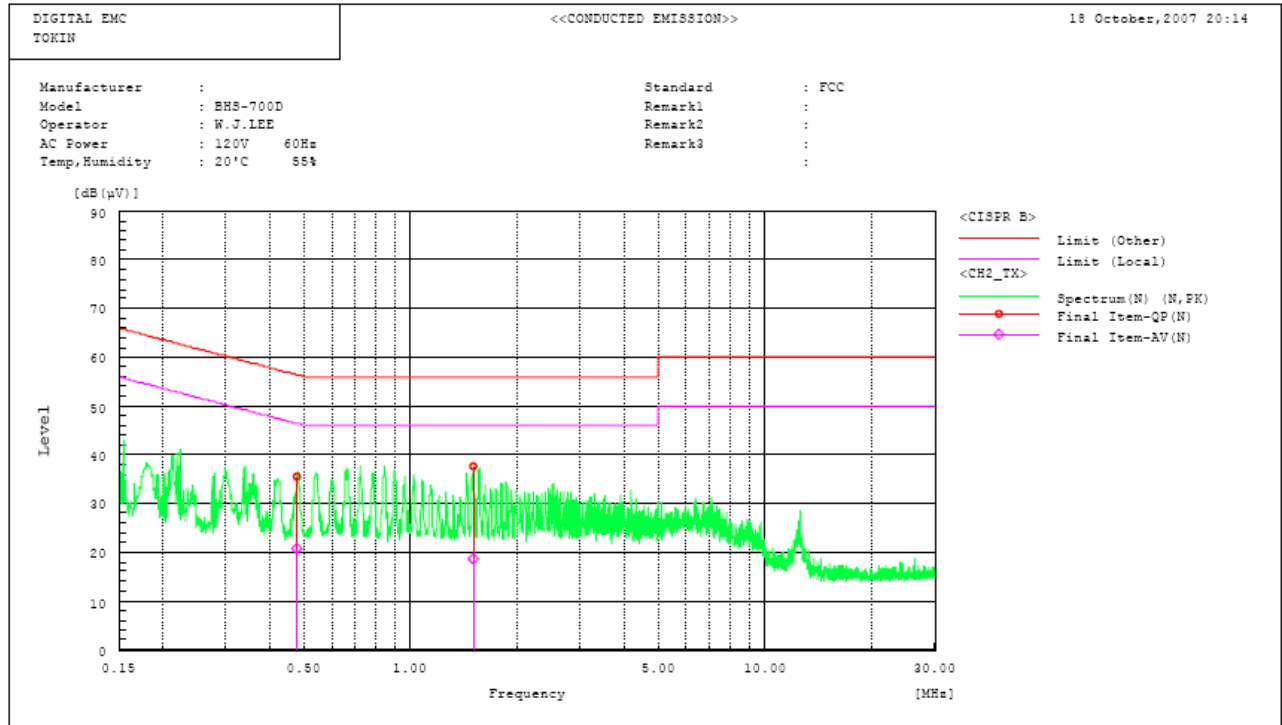
--- N Phase ---

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]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.478	35.3	20.8	0.1	35.4	20.9	56.4	46.4	21.0	25.5	
2	1.557	36.3	17.4	0.1	36.4	17.5	56.0	46.0	19.6	28.5	
3	0.180	37.4	19.9	0.1	37.5	20.0	64.5	54.5	27.0	34.5	

--- 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]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]	
1	0.479	39.0	32.8	0.2	39.2	33.0	56.4	46.4	17.2	13.4	
2	1.559	39.5	31.3	0.2	39.7	31.5	56.0	46.0	16.3	14.5	
3	0.299	38.1	32.3	0.2	38.3	32.5	60.3	50.3	22.0	17.8	

AC Conducted Emissions – M2 Traffic Mode



AC Conducted Emissions – M2 Traffic Mode

```
***** DIGITAL EMC *****
<<CONDUCTED EMISSION>>
18 October, 2007 20:14

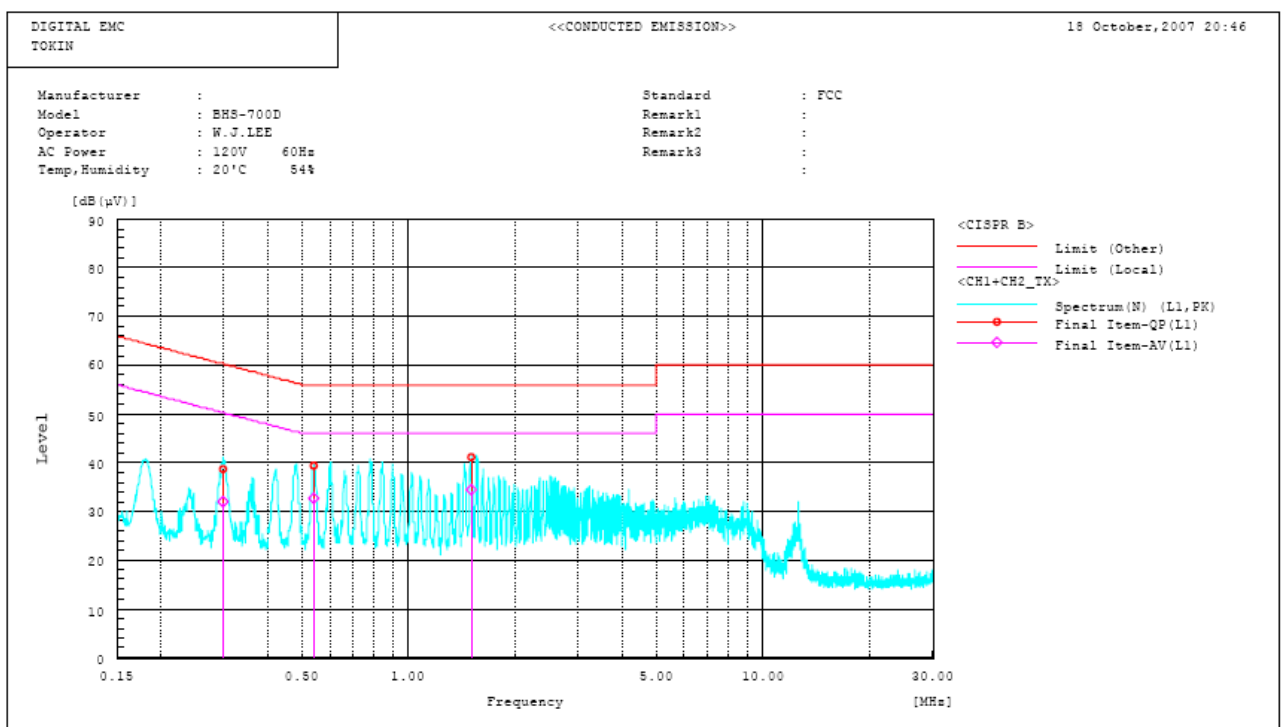
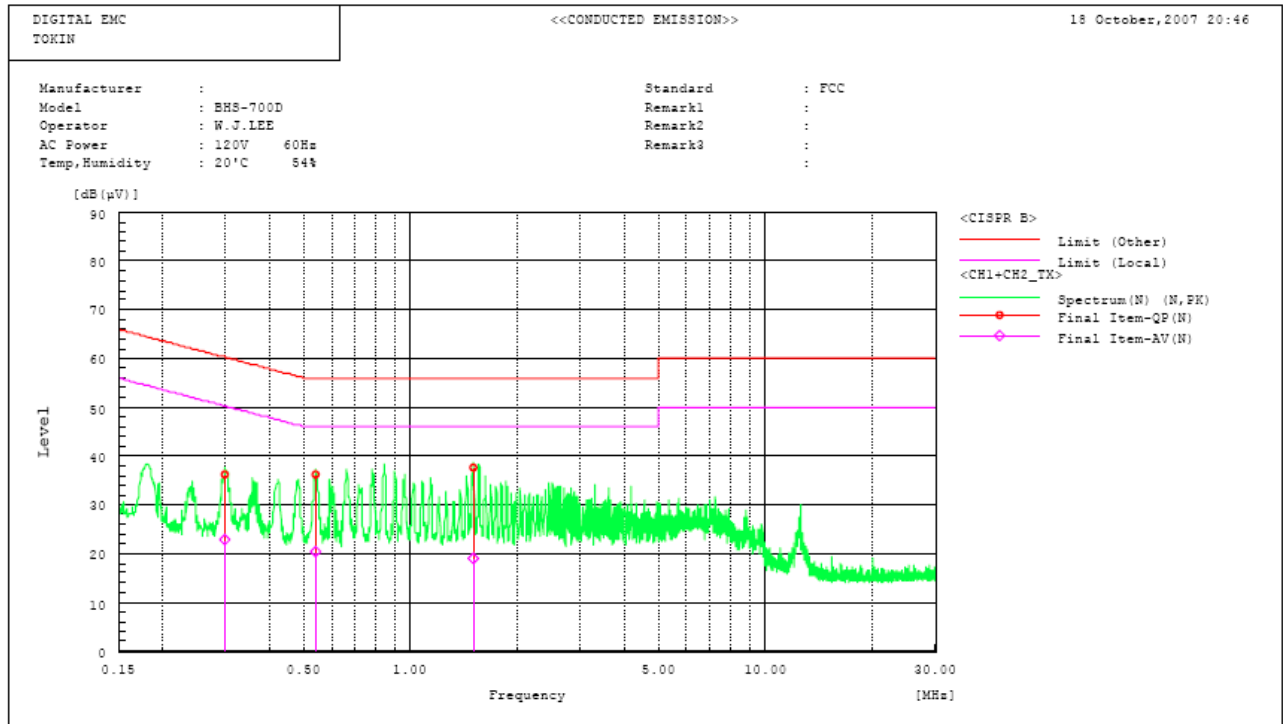
Standard      : FCC
Manufacturer  :
Model         : EHS-700D
Operator      : W.J.LEE
AC Power      : 120V   60Hz
Temp, Humidity : 20°C   55%
Remark1       :
Remark2       :
Remark3       :
*****

Final Result

--- N Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     [dB(μV)] [dB(μV)] [dB] [dB(μV)] [dB(μV)] [dB(μV)] [dB(μV)] [dB] [dB]
1    1.497      37.6    18.7    0.1   37.7    18.8    56.0    46.0    18.3    27.2
2    0.478      35.4    20.6    0.1   35.5    20.7    56.4    46.4    20.9    25.7

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     [dB(μV)] [dB(μV)] [dB] [dB(μV)] [dB(μV)] [dB(μV)] [dB(μV)] [dB] [dB]
1    1.498      40.8    33.8    0.2   41.0    34.0    56.0    46.0    15.0    12.0
2    0.300      39.1    32.1    0.2   39.3    32.3    60.2    50.2    20.9    17.9
3    0.538      39.3    32.6    0.2   39.5    32.8    56.0    46.0    16.5    13.2
```

AC Conducted Emissions – M1 , M2 Simultaneous Operation



AC Conducted Emissions – M1 , M2 Simultaneous Operation

```

***** DIGITAL EMC *****
<<CONDUCTED EMISSION>>
18 October, 2007 20:46

Standard      : FCC
Manufacturer   :
Model          : BHS-700D
Operator       : W.J.LEE
AC Power       : 120V   60Hz
Temp, Humidity : 20°C   54%
Remark1        :
Remark2        :
Remark3        :
*****

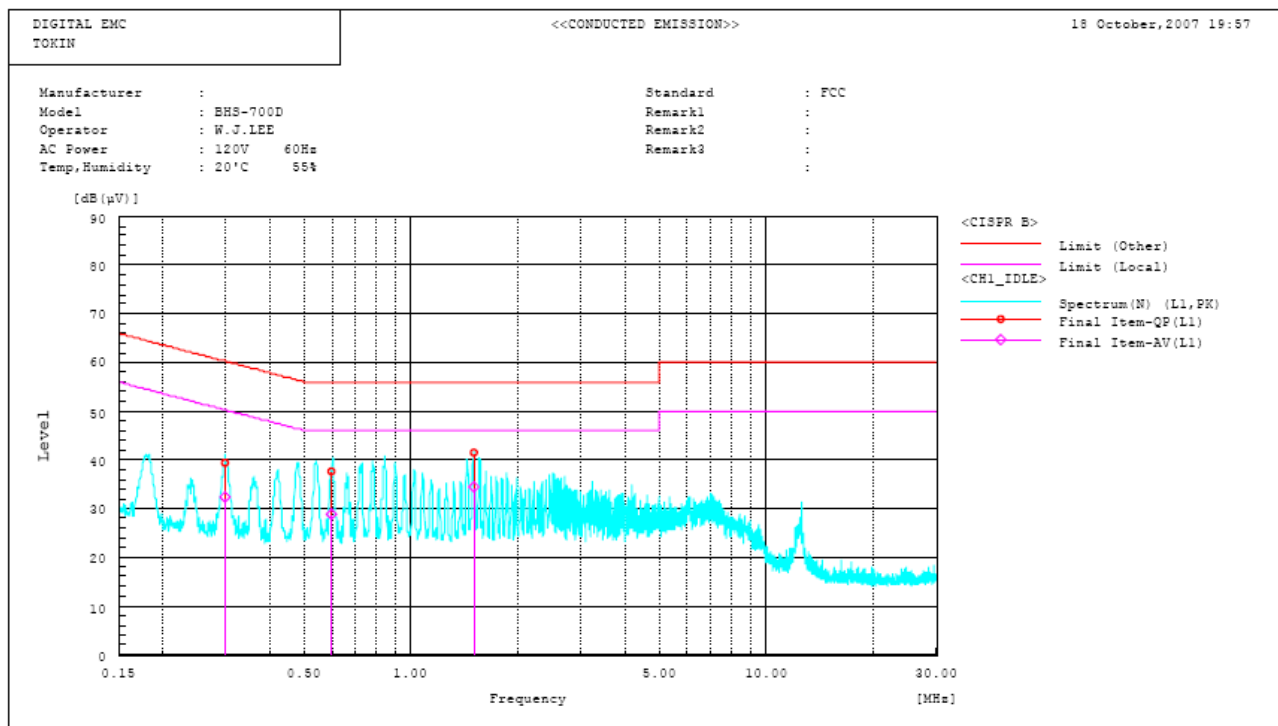
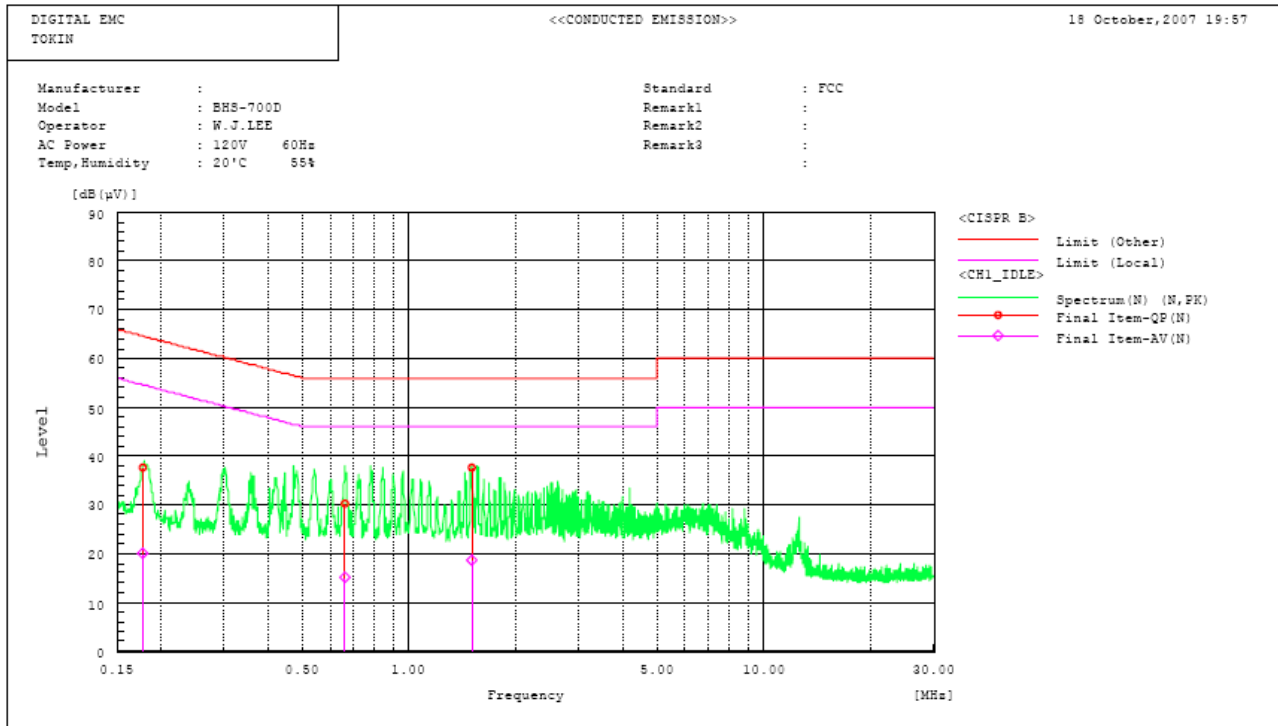
Final Result

--- 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     1.496     37.4     19.0    0.1   37.5     19.1    56.0    46.0    18.5    26.9
2     0.538     36.0     20.2    0.1   36.1     20.3    56.0    46.0    19.9    25.7
3     0.300     36.2     22.6    0.1   36.3     22.7    60.2    50.2    23.9    27.5

--- 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     1.497     41.1     34.2    0.2   41.3     34.4    56.0    46.0    14.7    11.6
2     0.299     38.6     31.8    0.2   38.8     32.0    60.3    50.3    21.5    18.3
3     0.538     39.3     32.6    0.2   39.5     32.8    56.0    46.0    16.5    13.2

```

AC Conducted Emissions – Idle Mode



AC Conducted Emissions – Idle Mode

```

***** DIGITAL EMC *****
<<CONDUCTED EMISSION>>
18 October, 2007 19:57

Standard      : FCC
Manufacturer   :
Model          : EHS-700D
Operator       : W.J.LEE
AC Power       : 120V   60Hz
Temp, Humidity : 20°C   55%
Remark1        :
Remark2        :
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     0.178     37.4     20.0    0.1   37.5     20.1    64.6    54.6    27.1    34.5
2     0.658     30.0     15.1    0.1   30.1     15.2    56.0    46.0    25.9    30.8
3     1.496     37.4     18.7    0.1   37.5     18.8    56.0    46.0    18.5    27.2

--- 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     0.300     39.0     32.2    0.2   39.2     32.4    60.2    50.2    21.0    17.8
2     0.598     37.4     28.8    0.2   37.6     29.0    56.0    46.0    18.4    17.0
3     1.497     41.4     34.2    0.2   41.6     34.4    56.0    46.0    14.4    11.6

```

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	17/04/07	17/04/08	US41061134
02	Spectrum Analyzer	Agilent	E4440A	14/11/06	14/11/07	MY45304199
03	Spectrum Analyzer	H.P	8563E	09/10/07	09/10/09	3551A04634
04	Power Meter	H.P	EMP-442A	23/03/07	23/03/08	GB37170413
05	Power Sensor	H.P	8481A	23/03/07	23/03/08	3318A96566
06	Frequency Counter	H.P	5342A	06/09/07	06/09/08	2119A04450
07	Signal Generator	Rohde Schwarz	SMR20	21/03/07	21/03/08	101251
08	Signal Generator	H.P	ESG-3000A	10/07/07	10/07/08	US37230529
09	Audio Analyzer	H.P	8903B	10/07/07	10/07/08	3011A09448
10	Modulation Analyzer	H.P	8901B	14/07/07	14/07/08	3028A03029
11	Oscilloscope	Tektronix	TDS3052	14/11/06	14/11/07	B016821
12	Universal Radio Communication tester	Rohde Schwarz	CMU200	24/04/07	24/04/08	107631
13	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	18/07/07	18/07/09	GB43461134
14	Bluetooth Tester	TESCOM	TC-3000A	28/03/07	28/03/08	3000A4A0121
15	Multisystem Ue Tester	Japan Radio Co.,Ltd	NJZ-2000	20/11/06	20/11/07	ET00095
16	Power Splitter	WEINSCHL	1593	05/10/07	05/10/08	332
17	BAND Reject Filter	Microwave Circuits	N0308372	18/10/07	18/10/08	3125-01DC0312
18	BAND Reject Filter	Wainwright	WRCG1750	18/10/07	18/10/08	SN2
19	AC Power supply	DAEKWANG	5KVA	20/03/07	20/03/08	N/A
20	DC Power Supply	H.P	6622A	20/03/07	20/03/08	465487
21	Attenuator (10dB)	WEINSCHL	23-10-34	26/01/07	26/01/08	BP4387
22	HORN ANT	EMCO	3115	10/08/07	10/08/08	6419
23	HORN ANT	EMCO	3115	09/10/07	09/10/08	21097
24	HORN ANT	A.H.Systems	SAS-574	20/08/07	20/08/08	154
25	HORN ANT	A.H.Systems	SAS-574	20/08/07	20/08/08	155
26	Dipole Antenna	Schwarzbeck	VHA9103	27/11/06	27/11/07	2116
27	Dipole Antenna	Schwarzbeck	VHA9103	27/11/06	27/11/07	2117
28	Dipole Antenna	Schwarzbeck	UHA9105	27/11/06	27/11/07	2261
29	Dipole Antenna	Schwarzbeck	UHA9105	27/11/06	27/11/07	2262

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	Next.Due.Date (dd/mm/yy)	S/N
30	RFI/FIELD Intensity Meter	Kyorits	KNM-504D	06/09/07	06/09/08	SN-161-4
31	Frequency Converter	Kyorits	KCV-604C	21/07/07	21/07/08	4-230-3
32	TEMP & HUMIDITY Chamber	JISCO	J-RHC2	02/10/07	02/10/08	021031
33	Log Periodic Antenna	Schwarzbeck	UHALP9108 A1	08/06/07	08/06/08	1098
34	Biconical Antenna	Schwarzbeck	VHA9103	08/06/07	08/06/08	2233
35	Digital Multimeter	H.P	34401A	20/03/07	20/03/08	3146A13475
36	Attenuator (10dB)	WEINSCHEL	23-10-34	05/10/07	05/10/08	BP4386
37	High-Pass Filter	ANRITSU	MP526D	08/10/07	08/10/08	MP27756
38	Attenuator (3dB)	Agilent	8491B	12/07/07	12/07/08	58177
39	Amplifier (25dB)	Agilent	8447D	08/08/07	08/08/08	2944A10144
40	Amplifier (30dB)	Agilent	8449B	25/10/07	25/10/08	3008A01590
41	Position Controller	TOKIN	5901T	N/A	N/A	14173
42	Driver	TOKIN	5902T2	N/A	N/A	14174
43	Spectrum Analyzer	H.P	8591E	16/04/07	16/04/08	3649A05889
44	RFI/FIELD Intensity Meter	Kyorits	KNW-2402	06/10/07	06/10/08	4N-170-3
45	LISN	Kyorits	KNW-407	30/08/07	30/08/08	8-317-8
46	LISN	Kyorits	KNW-242	06/10/07	06/10/08	8-654-15
47	CVCF	NF Electronic	4400	N/A	N/A	344536 4420064
48	Software	ToYo EMI	EP5/RE	N/A	N/A	Ver 2.0.800
49	Software	ToYo EMI	EP5/CE	N/A	N/A	Ver 2.0.801
50	Software	AUDIX	e3	N/A	N/A	Ver 3.0
51	Software	Agilent	Benchlink	N/A	N/A	A.01.09 021211