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## CERTIFICATION OF COMPLIANCE

**PYUNG-HWA IND.CO.,LTD**

#478-5, Noonsa-Dong Kwangmyung-city, Korea

Dates of Tests: June 23 ~ 30, 2008  
 Test Report S/N: DR50110807R  
 Test Site : DIGITAL EMC CO., LTD.

FCC ID

**WGG-PHMH-100**

APPLICANT

**PYUNG-HWA IND.CO.,LTD**

<b>FCC Equipment Class</b>	<b>:</b> Part 15 Spread Spectrum Transmitter(DSS)
<b>Device name</b>	<b>:</b> Bluetooth Mono Headset
<b>Manufacturer</b>	<b>:</b> PYUNG-HWA IND.CO.,LTD
<b>FCC ID</b>	<b>:</b> WGG-PHMH-100
<b>Model name</b>	<b>:</b> PHMH-100
<b>Test Device Serial number</b>	<b>:</b> Identical prototype
<b>FCC Rule Part(s)</b>	<b>:</b> FCC Part 15.247 Subpart C ANSI C63.4-2003
<b>Frequency Range</b>	<b>:</b> 2402 ~ 2480 MHz
<b>Max. Output power</b>	<b>:</b> -44.76 dBm Conducted
<b>Data of issue</b>	<b>:</b> July 3, 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

<http://www.digitalemc.com> E-mail : [Harveysung@digitalemc.com](mailto: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**



July 3, 2008

Won -Jung LEE

Data

Name

Signature

**Report Reviewed By: manager**



July 3, 2008

Harvey Sung

Data

Name

Signature

Ordering party:

Company name	:	PYUNG-HWA IND.CO.,LTD
Address	:	#478-5, Noonsa-Dong
City/town	:	Kwangmyung-city
Country	:	Korea
Date of order	:	May 7, 2008

## 2. Information about test item

### WGG-PHMH-100

#### 2.1 Equipment information

Equipment model no.	PHMH-100
Equipment serial no.	Identical prototype
Type of equipment	Bluetooth Mono Headset
Frequency band	2402 ~ 2480 MHz
Type of Modulation	GFSK
Spread Spectrum	Frequency Hopping
Channel Spacing	1.0 MHz
Type of antenna	Chip Antenna

- This device does not have EDR function.

#### 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	: 3.7 V DC

#### 2.4 Ancillary Equipment

Equipment	Model No.	Serial No.	Manufacturer
Notebook	HP520	CND73824M9	HP
-	-	-	-

#### 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)	
<b>I. Test Items</b>					
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	=< 0.4 seconds		C	
15.247(b)	Transmitter Output Power	=< 1Watt , if CHs >= 75 Others =<0.125W	Conducted	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=Comply NC=Not Comply 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 Sweep = auto

VBW = 30 kHz Detector function = peak

Trace = max hold

#### Measurement Data:

Frequency of marker #1 (MHz)	Frequency of marker #2 (MHz)	Test Results	
		Carrier Frequency Separation (MHz)	Result
2441.009	2442.014	1.005	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

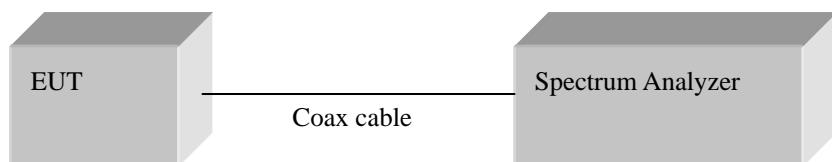
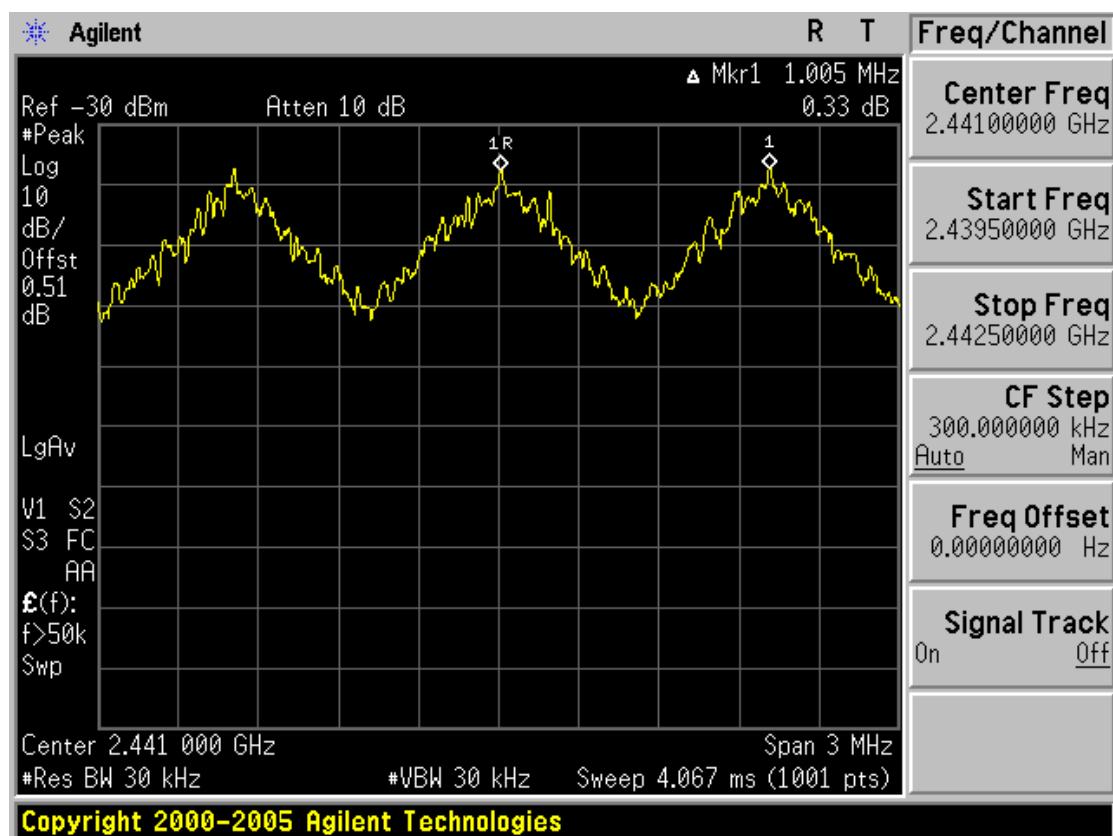


Figure 1: Measurement setup for the carrier frequency separation

## Carrier Frequency Separation



### 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  $\geq$  RBW) Detector function = peak

Trace = max hold Span = 25MHz

#### Measurement Data: Comply

Total number of Hopping Channels	79
----------------------------------	----

- See next pages for actual measured spectrum plots.

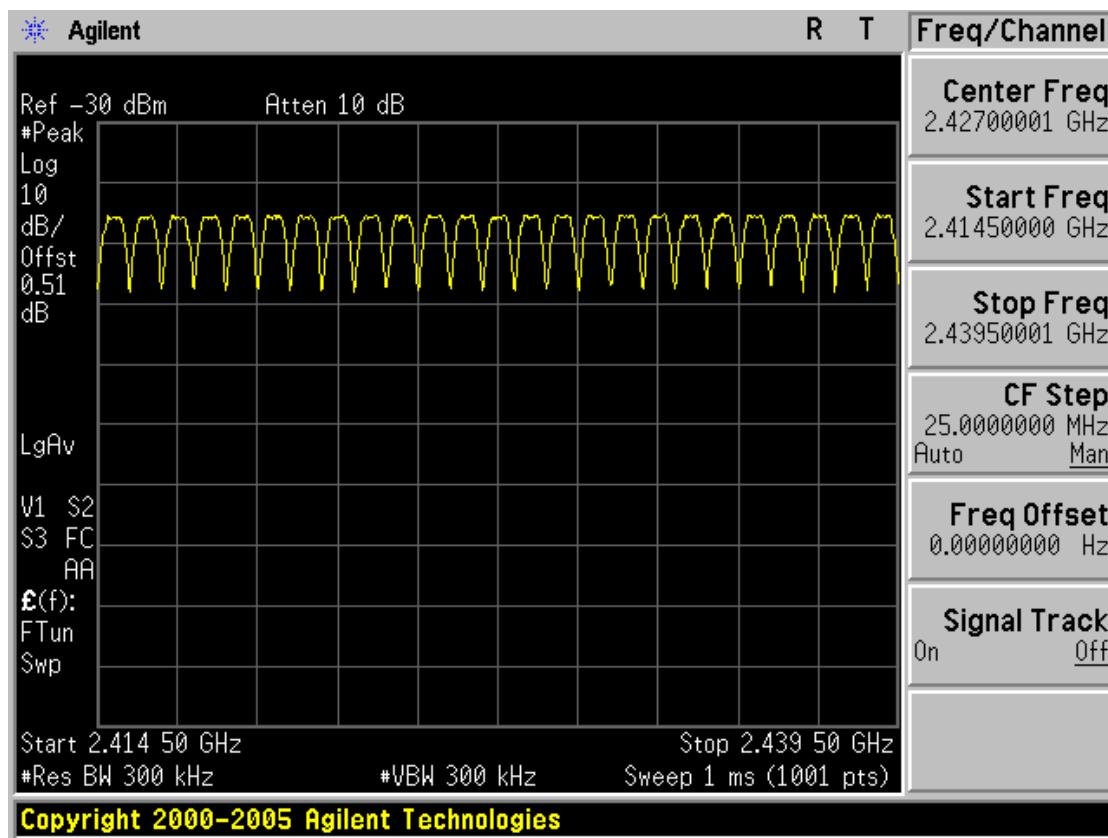
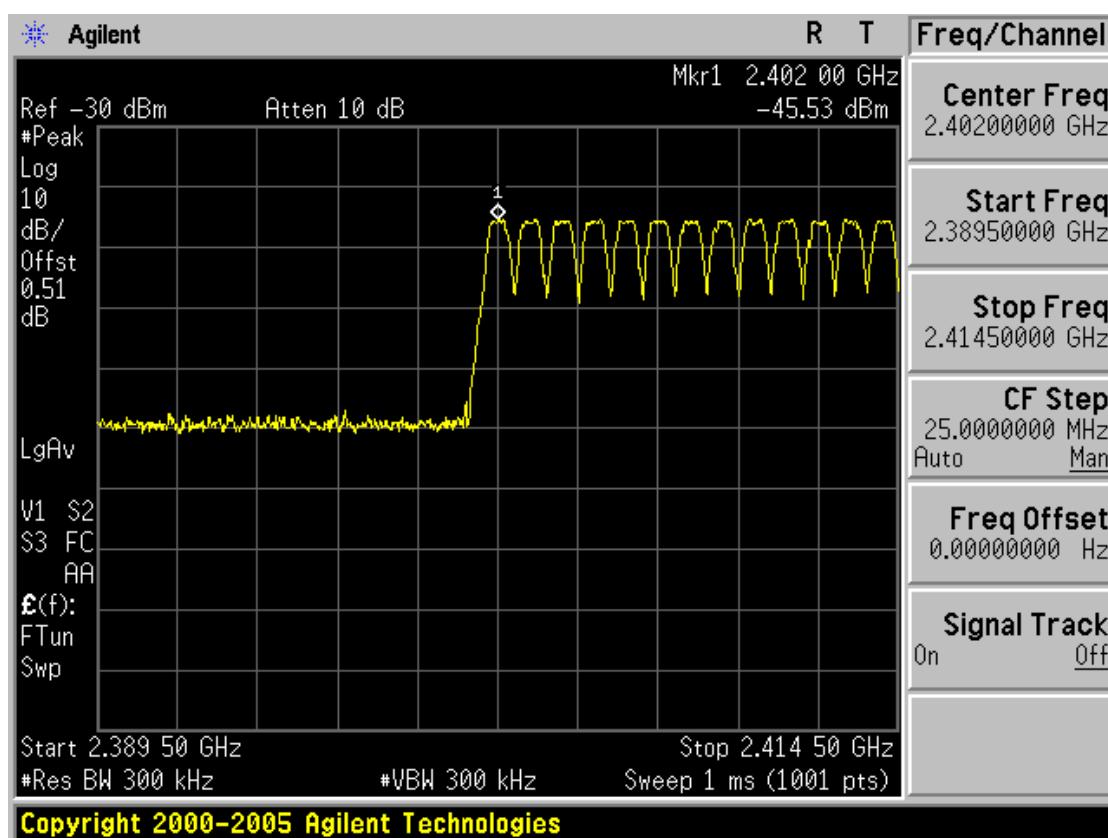
#### Minimum Standard:

At least 15 hopes
-------------------

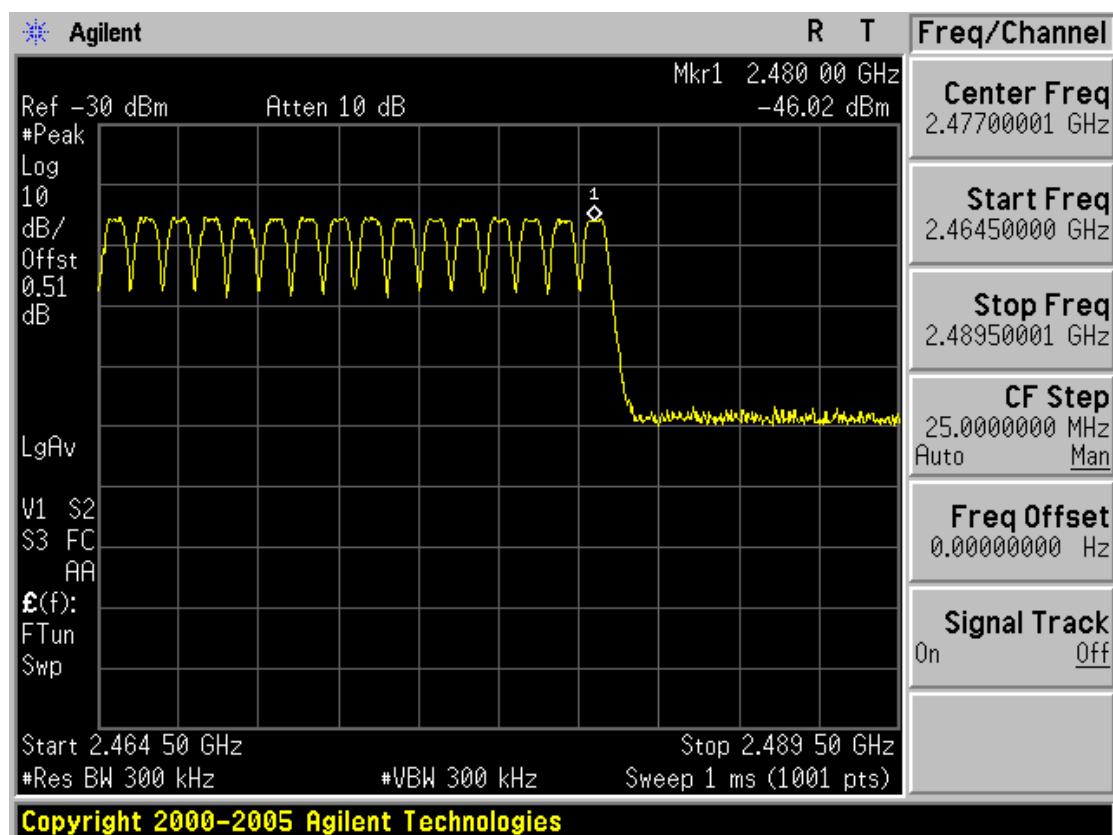
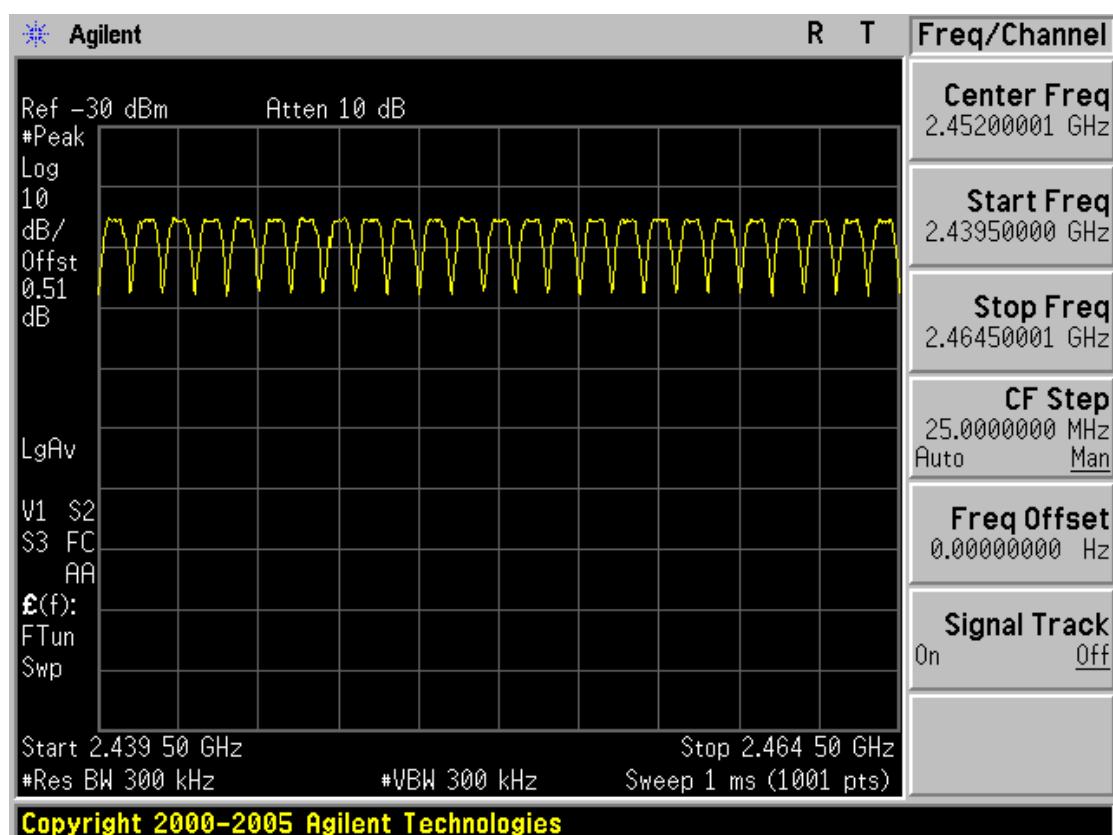
#### Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

## Number of Hopping Frequencies



## Number of Hopping Frequencies



### 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 = 5 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:

Frequency (MHz)	Channel No.	Test Results	
		Measured Bandwidth (MHz)	Result
2402	1	1.475	Comply
2441	40	1.475	Comply
2480	79	1.480	Comply

- See next pages for actual measured spectrum plots.

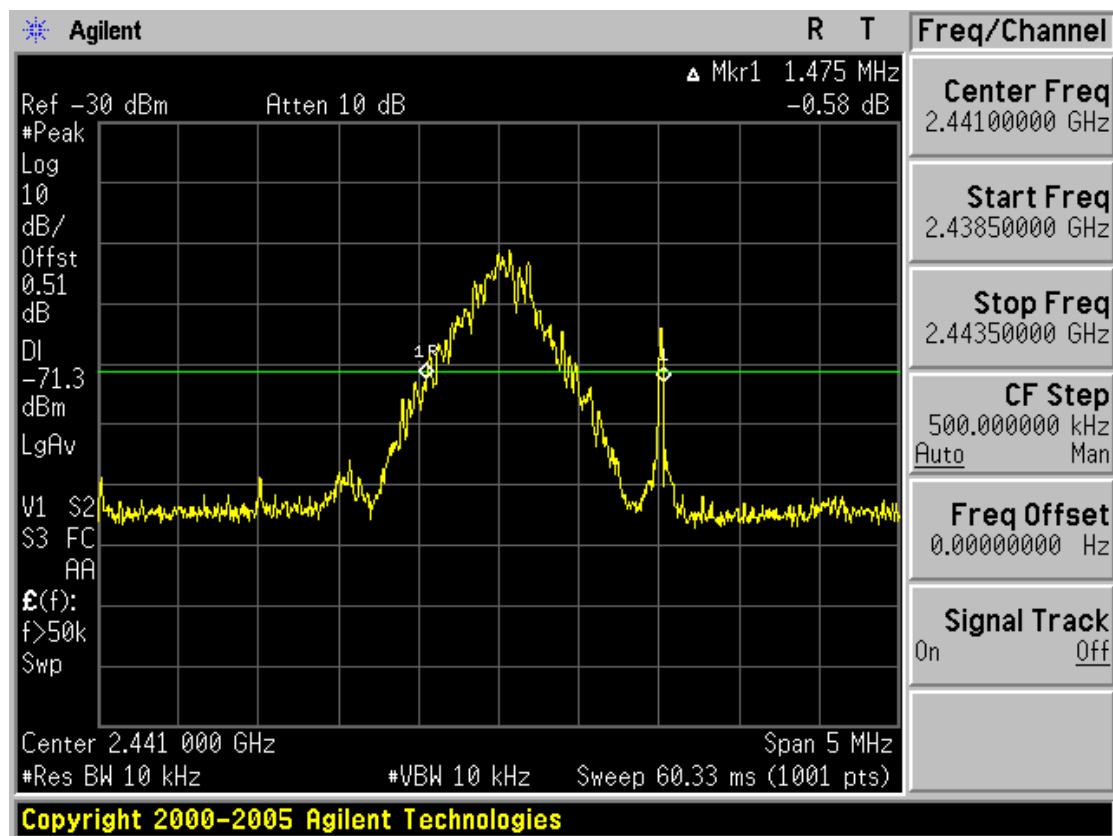
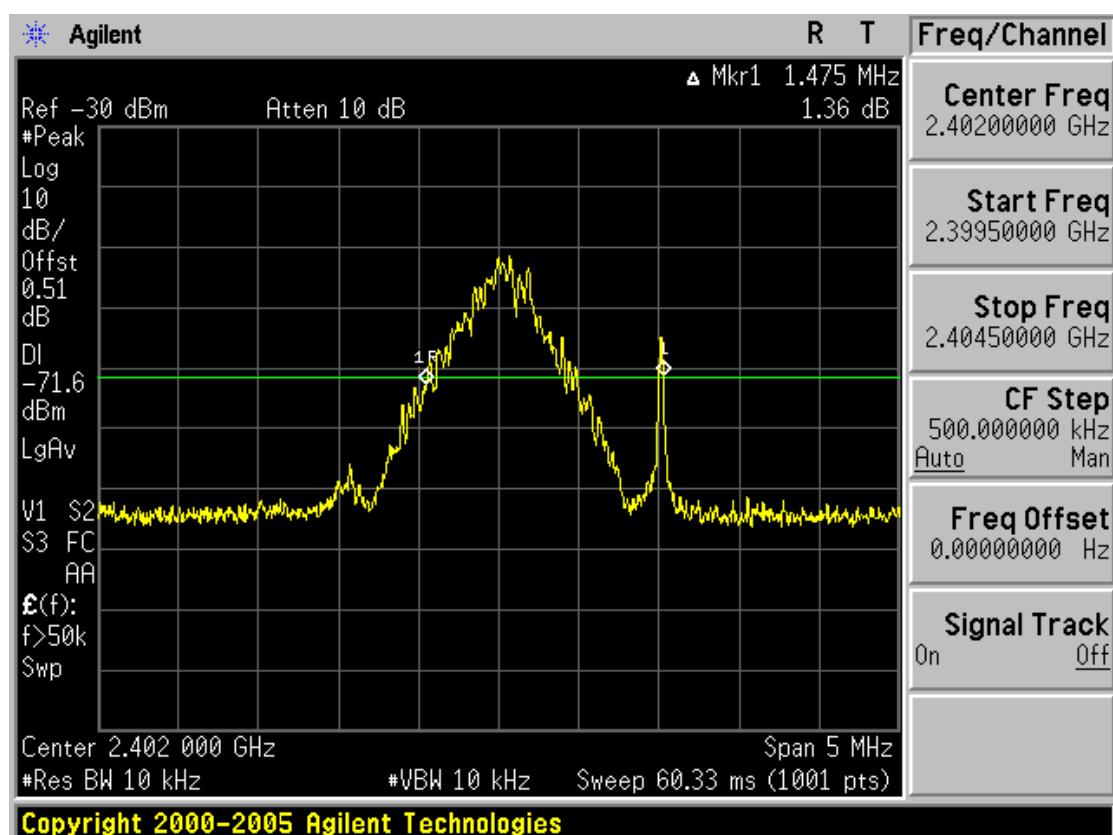
#### Minimum Standard:

None
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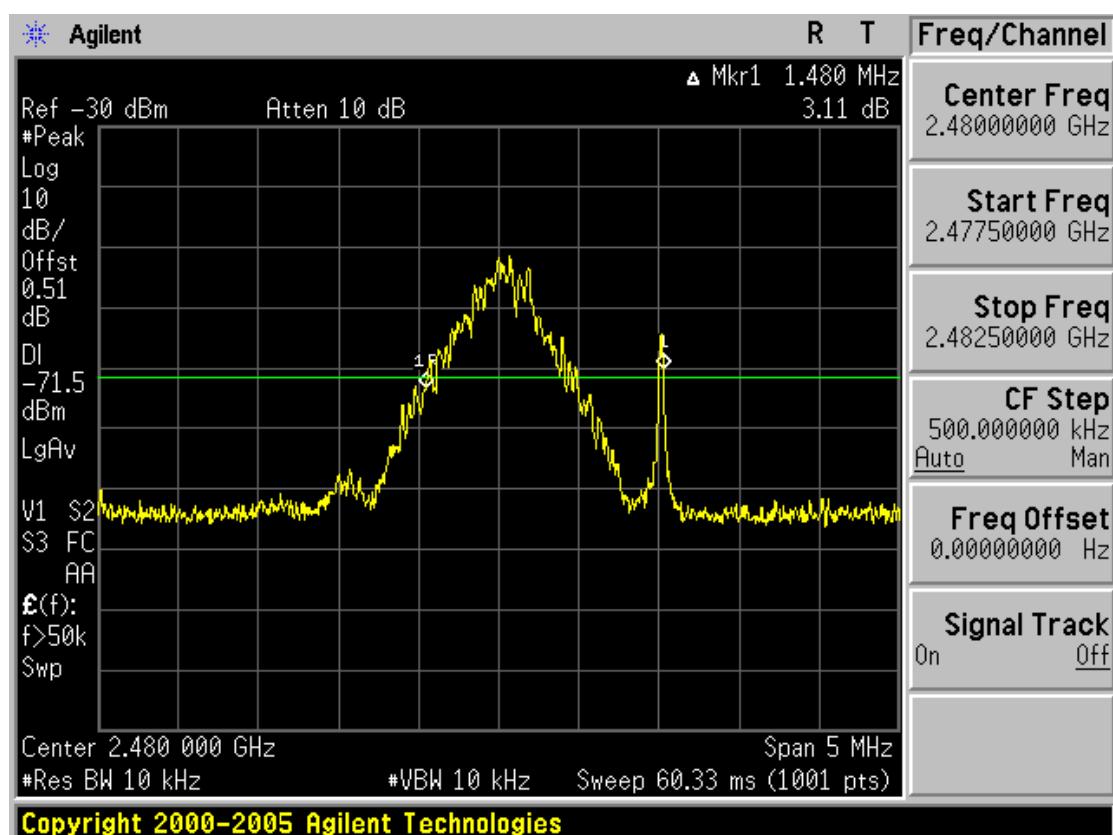
#### Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

## 20 dB Bandwidth



## 20 dB Bandwidth



### 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.

Packet Type	Burst On Time (ms)	Period (ms)	Number of hopping Channels	DWELL TIME (s)	Result
DH 1	0.396	1.248	79	0.127	Comply
DH 3	1.122	2.496	79	0.180	Comply
DH 5	2.900	3.730	79	0.310	Comply

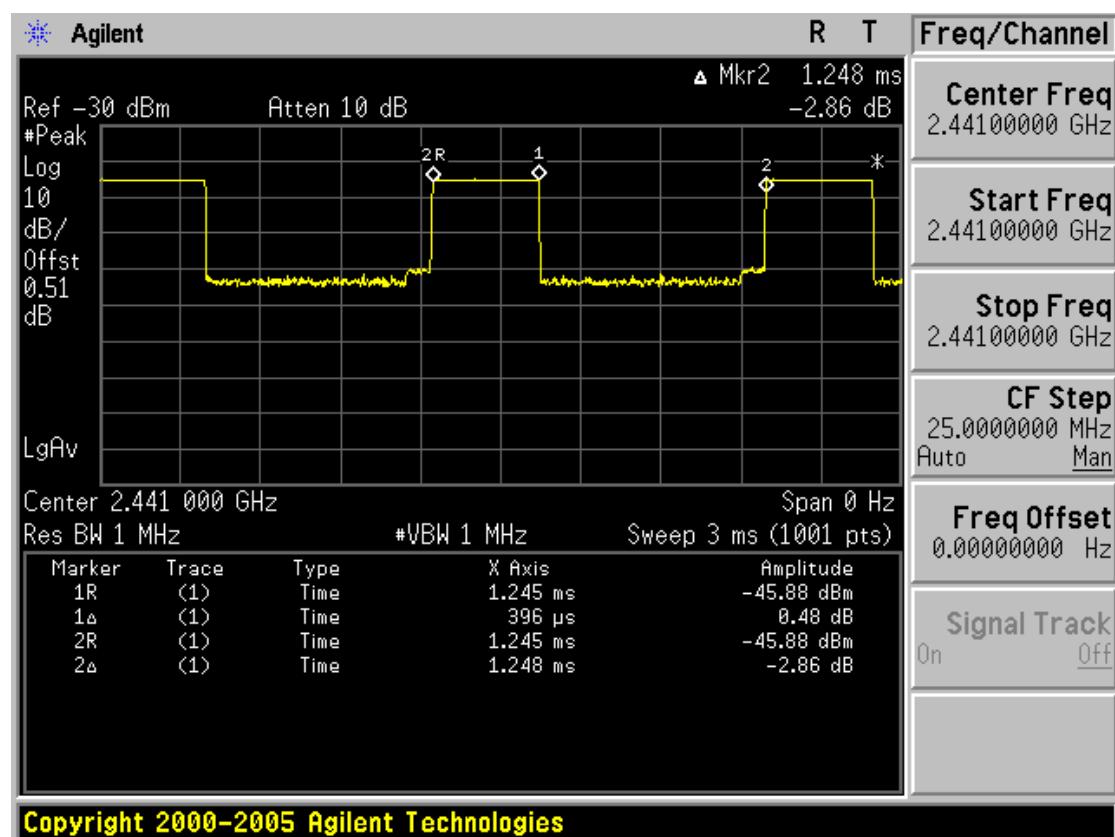
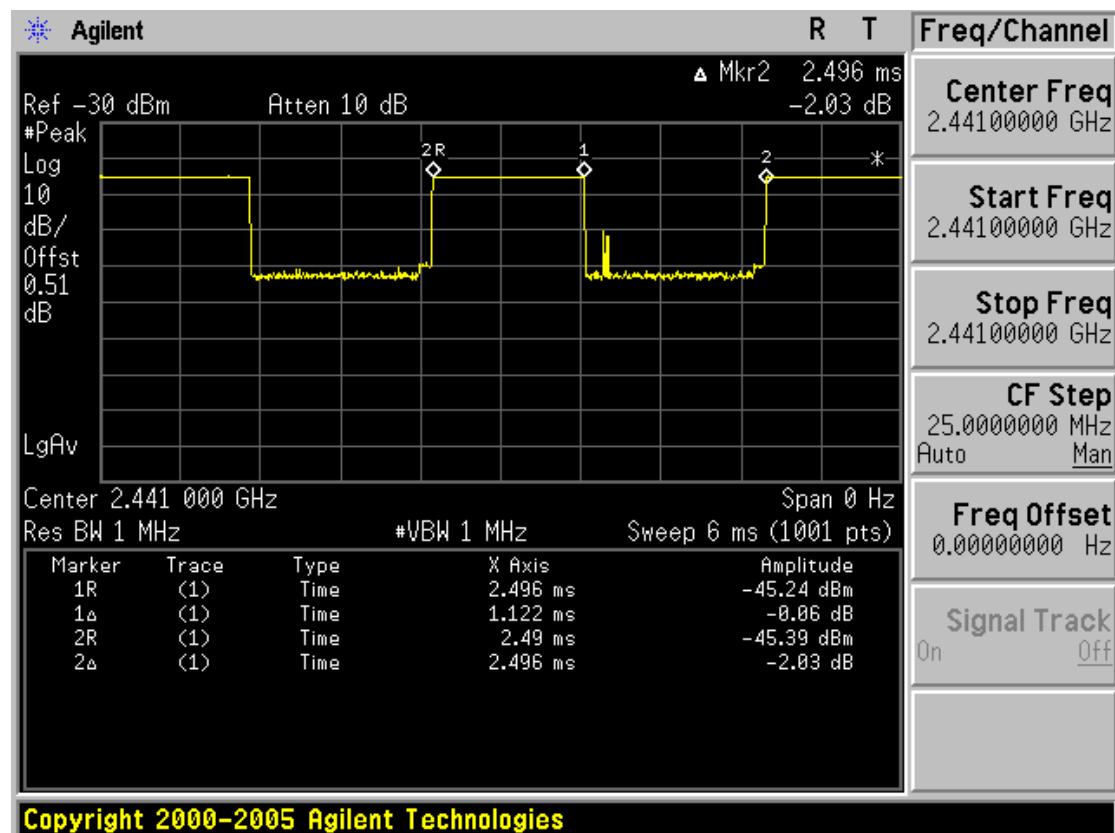
Note : Each new transmission event begins on the next channel in the hopping sequence after the final channel used in the previous transmission event. DWELL TIME=(0.4 x Number of hopping Channels) x Burst On time / (period x Number of hopping Channels)

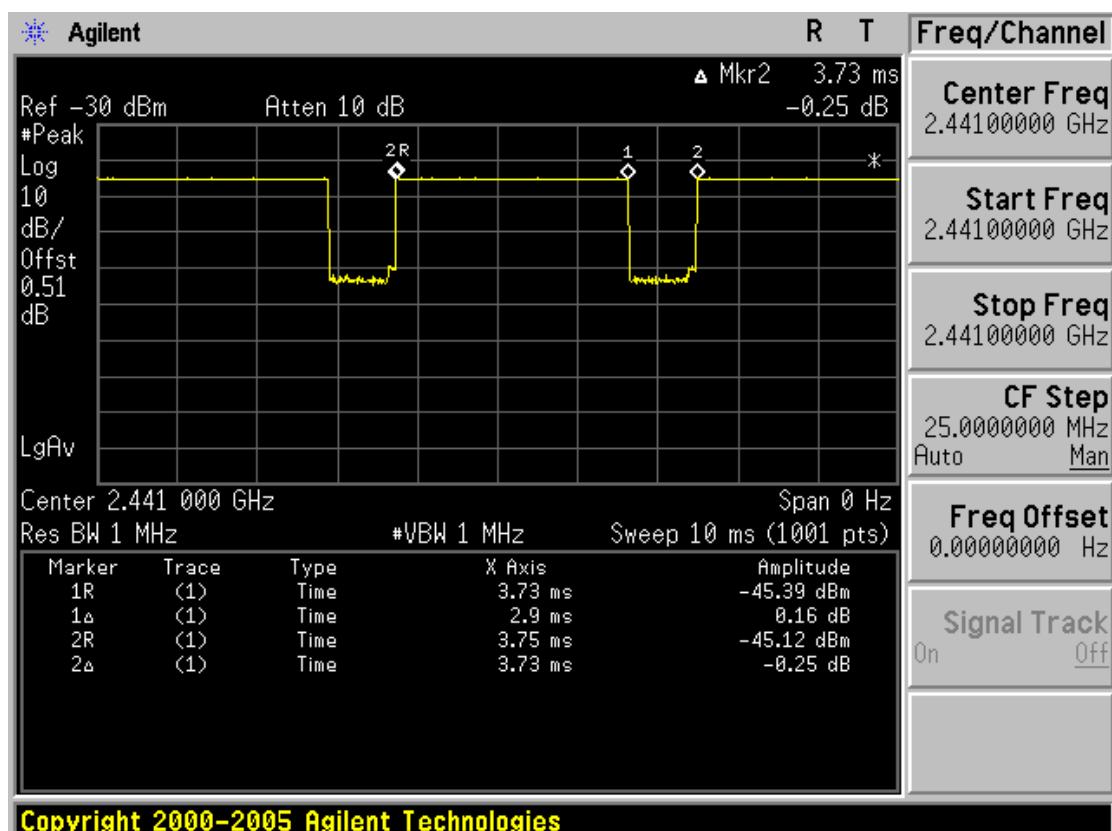
#### Minimum Standard:

No greater than 0.4 seconds

#### Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

Time of Occupancy for Packet Type DH 1Time of Occupancy for Packet Type DH 3

Time of Occupancy for Packet Type DH 5

### 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:

Frequency (MHz)	Ch.	Test Results		
		dBm	mW	Result
2402	1	<b>-45.01</b>	<b>0.0000315</b>	<b>Comply</b>
2441	40	<b>-44.76</b>	<b>0.0000334</b>	<b>Comply</b>
2480	79	<b>-45.22</b>	<b>0.0000300</b>	<b>Comply</b>

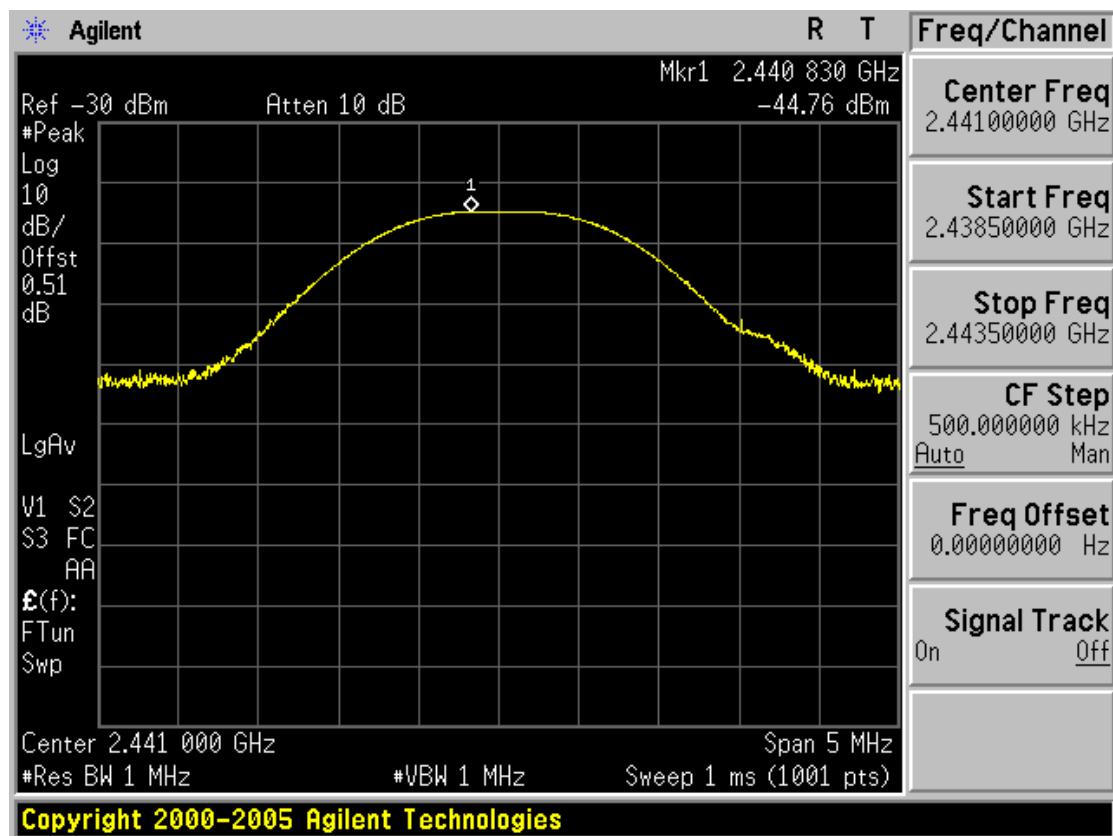
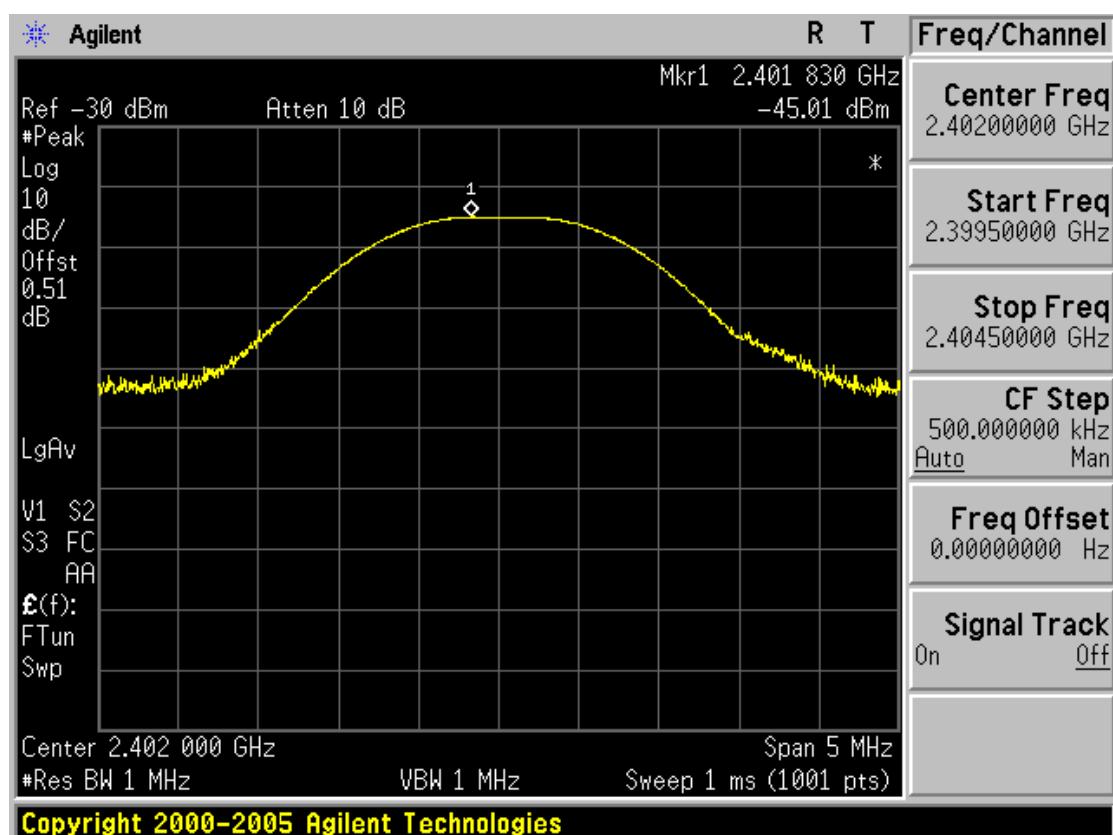
- See next pages for actual measured spectrum plots.

<b>Minimum Standard:</b>	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: <b>1 Watt</b> . For all other frequency hopping systems in the 2400-2483.5 MHz band: <b>0.125 Watts</b>
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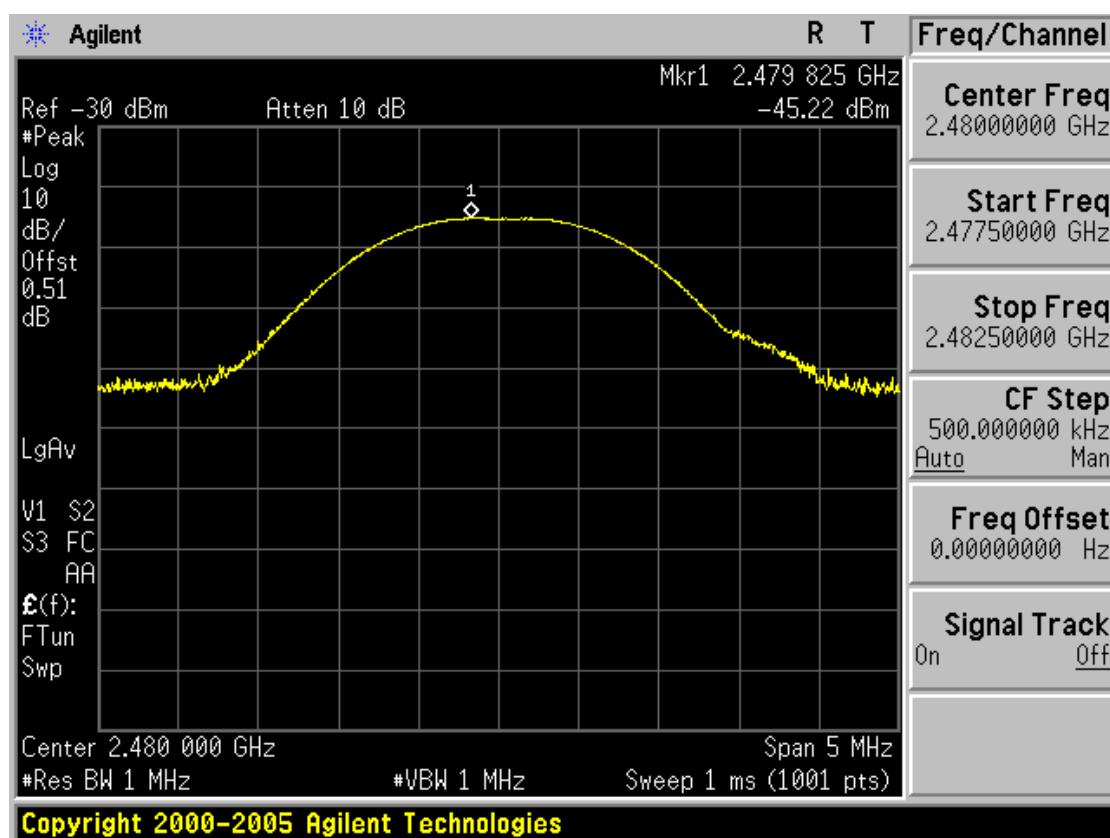
#### Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

## Peak Output Power



## Peak Output Power



### 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

VBW = 100 kHz

Span = 100 MHz

Detector function = peak

### Measurement Data: **Comply**

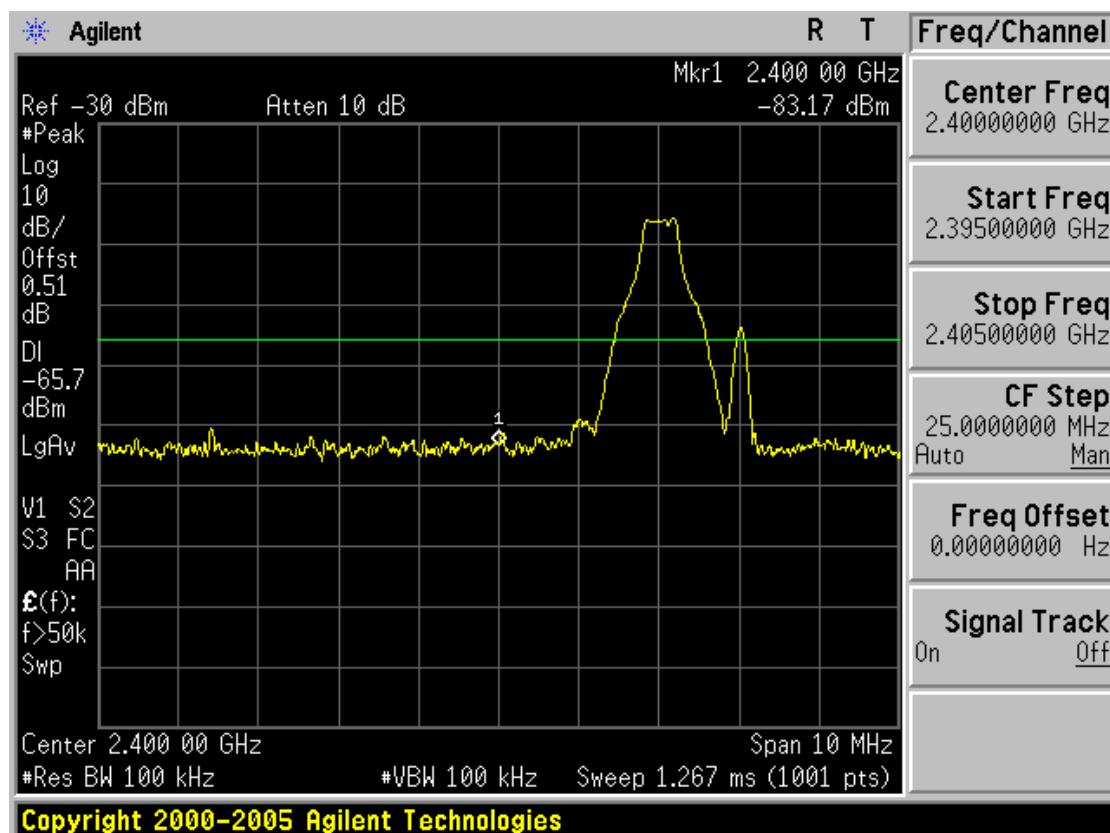
See next pages for actual measured spectrum plots

<b>Minimum Standard:</b>	> 20 dBc
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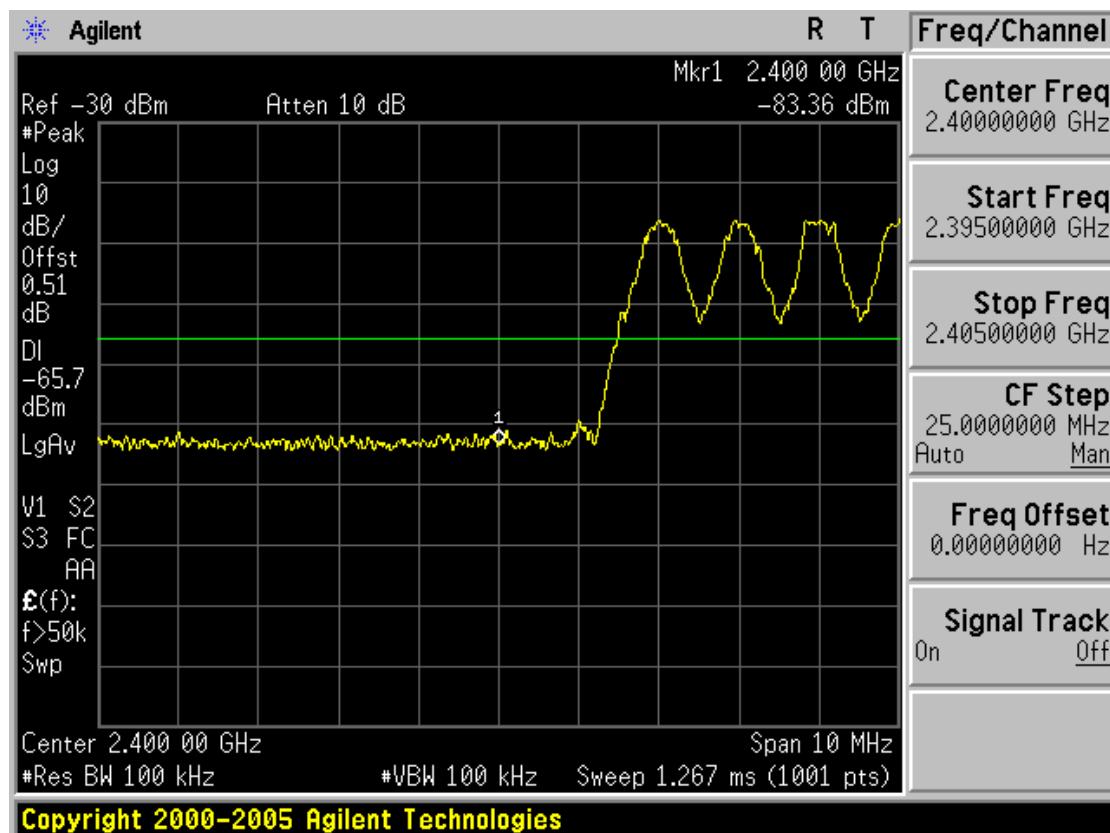
## Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

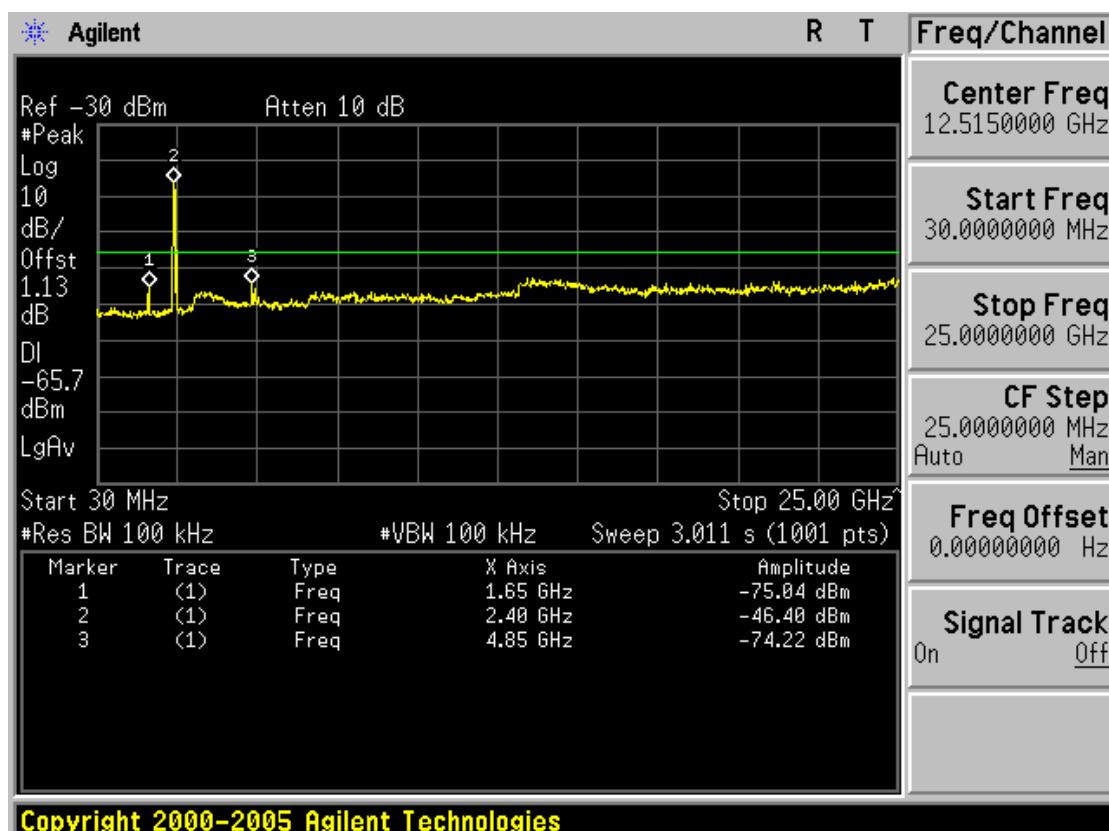
## Low band with hopping disabled



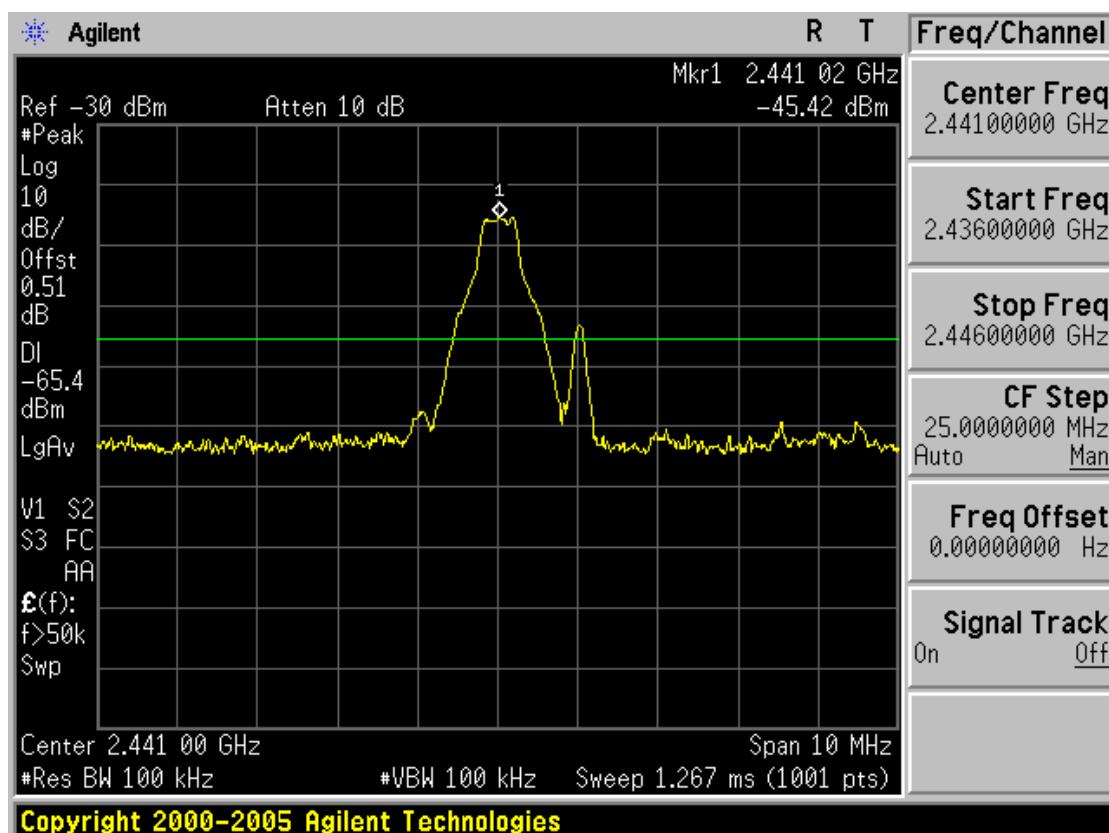
## Low band with hopping enabled



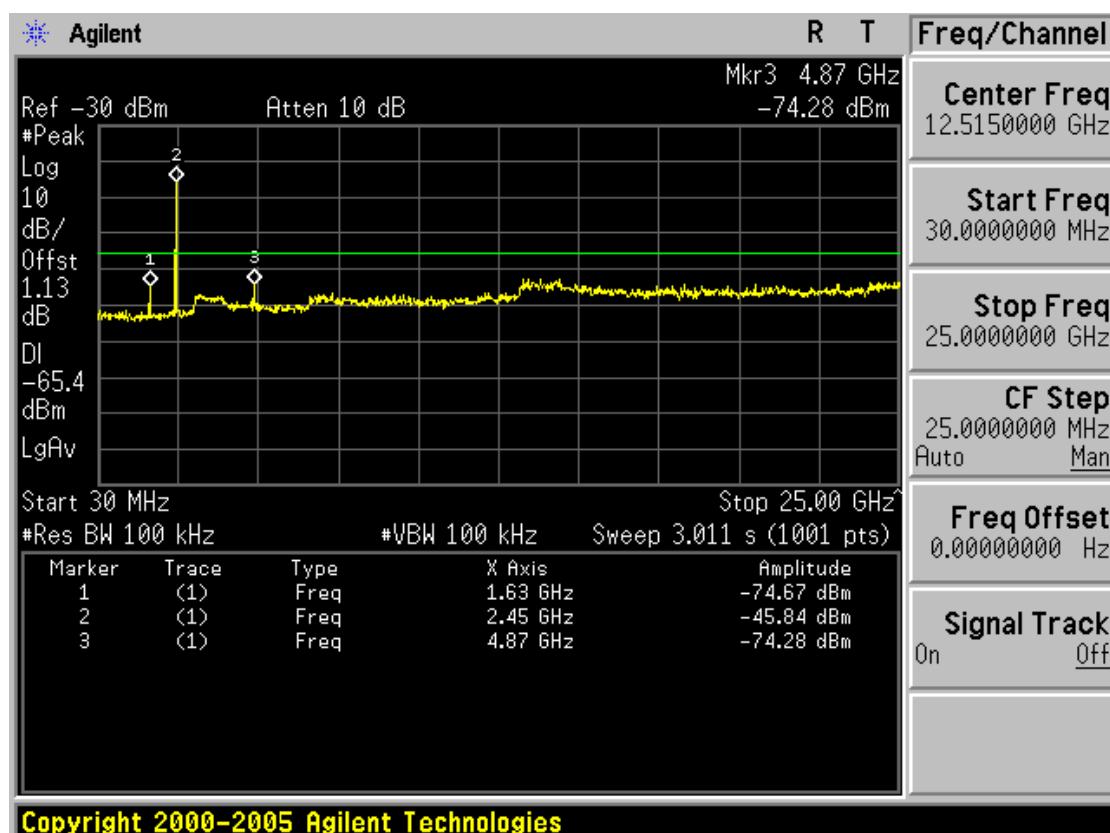
## Low channel spurious



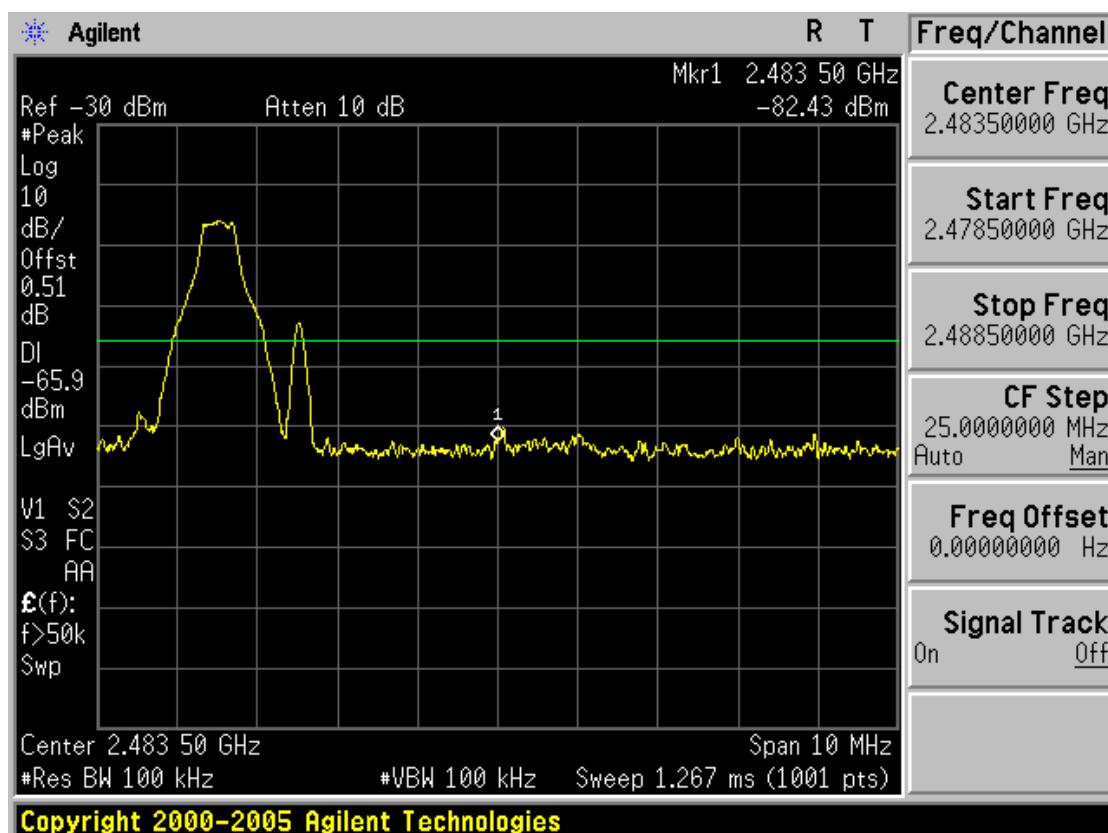
## Mid channel ref



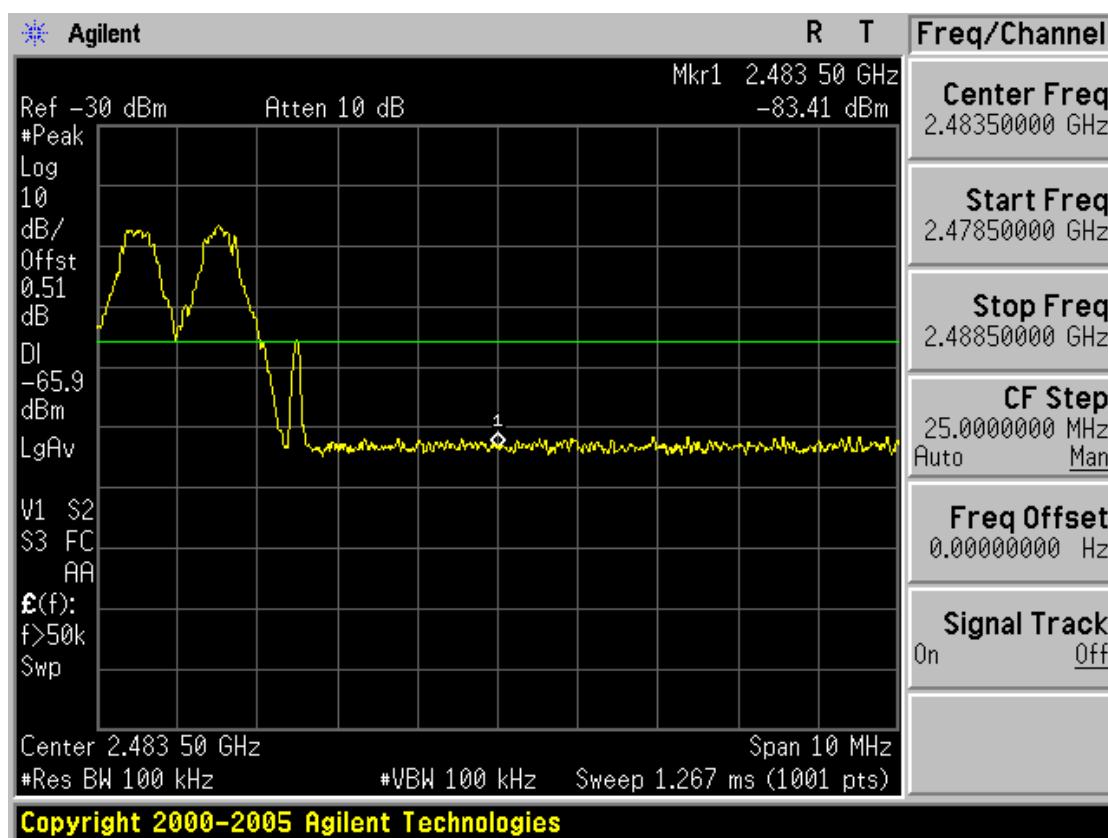
## Mid channel spurious



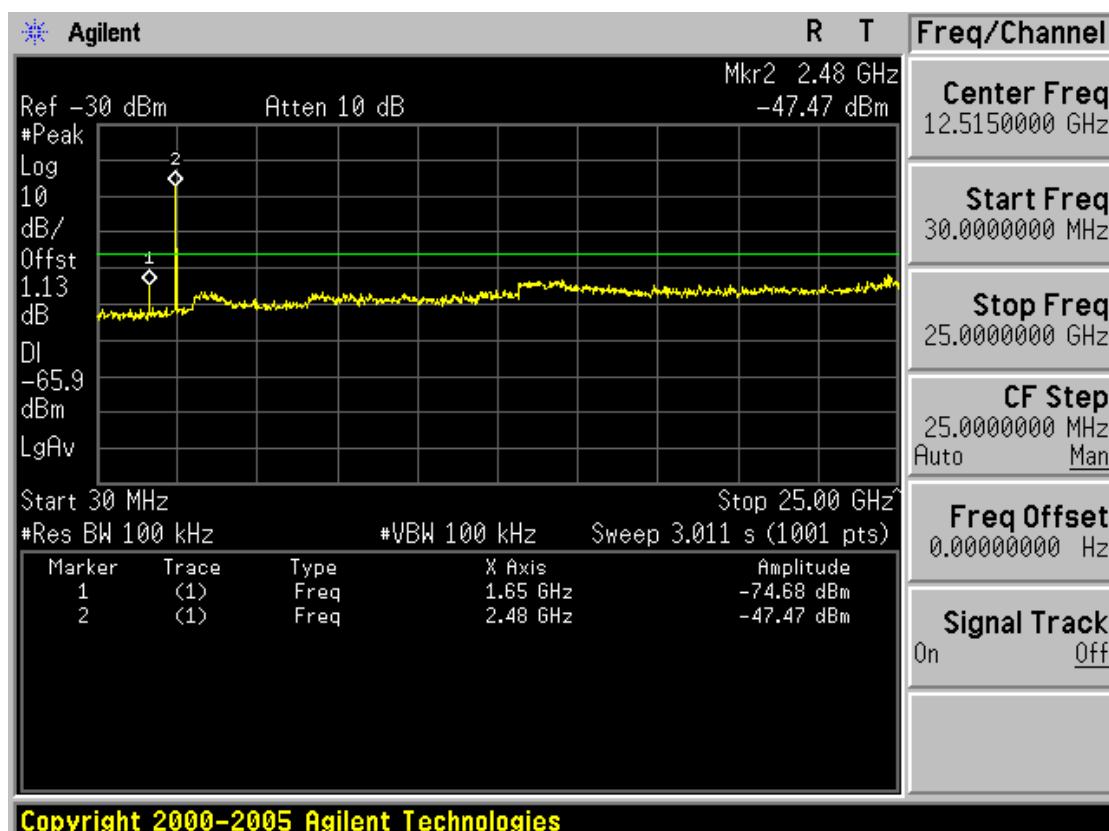
## High band with hopping disabled



## High band with hopping enabled



## High channel spurious



### 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 ~ 10<sup>th</sup> harmonic.

RBW = 120 kHz ( 30MHz ~ 1 GHz)

VBW ≥ RBW ( Peak)

= 1 MHz ( 1 GHz ~ 10<sup>th</sup> harmonic )

VBW = 10Hz (Average)

Trace = max hold

Sweep = auto

#### Measurement Data: **Comply**

- Refer to the next page.

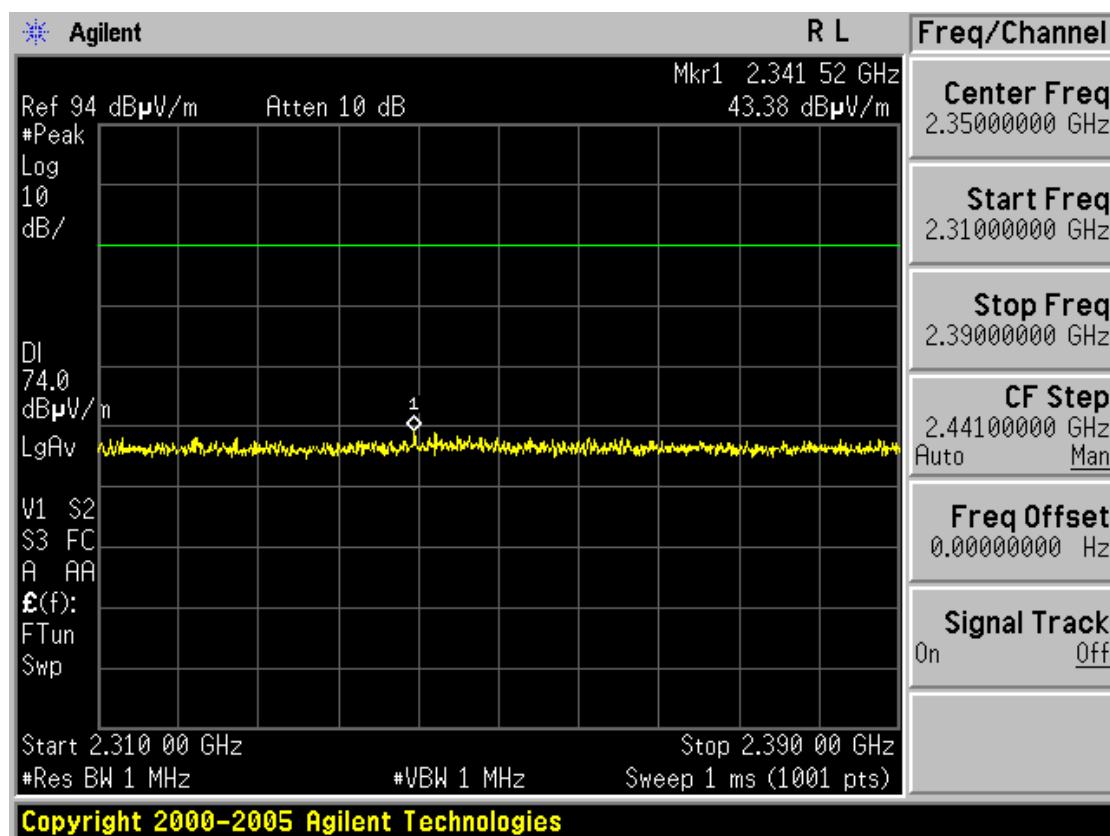
#### Minimum Standard: FCC Part 15.205 (a), 15.205(b), 15.209(a) and (b)

#### Limit : FCC P15.209(a)

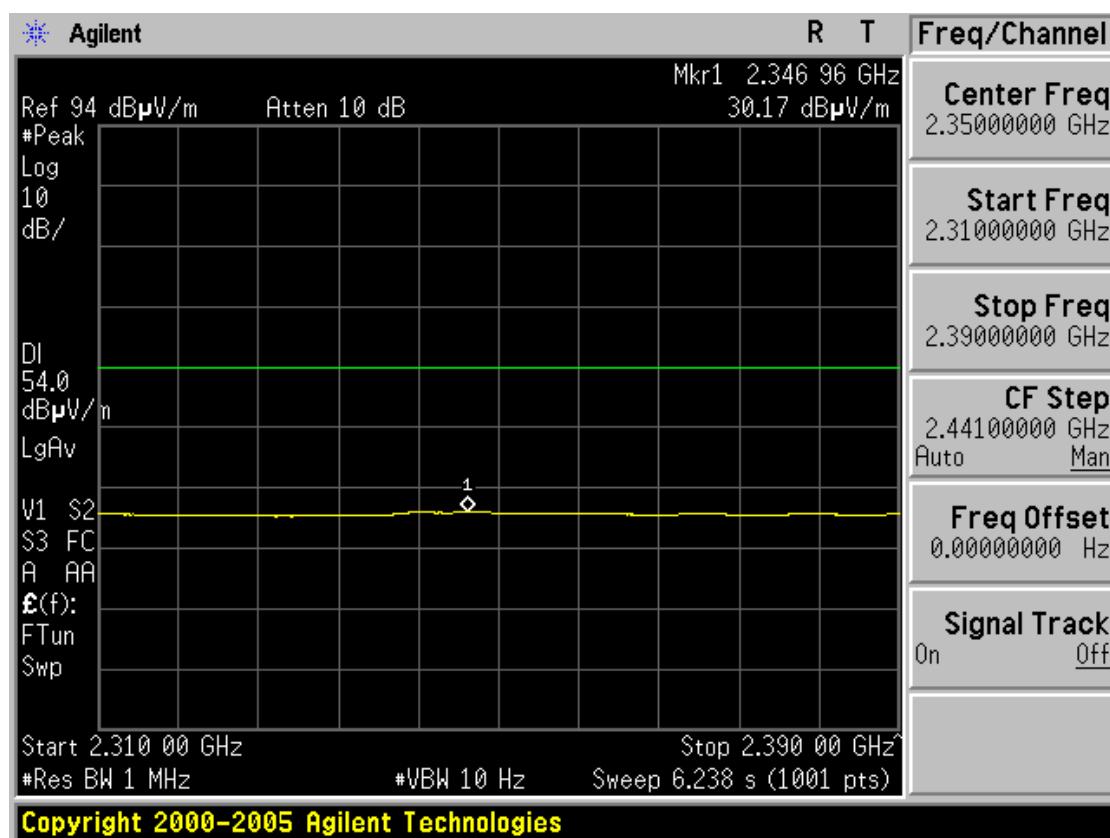
Frequency (MHz)	Limit (uV/m) @ 3m
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

\*\* 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.

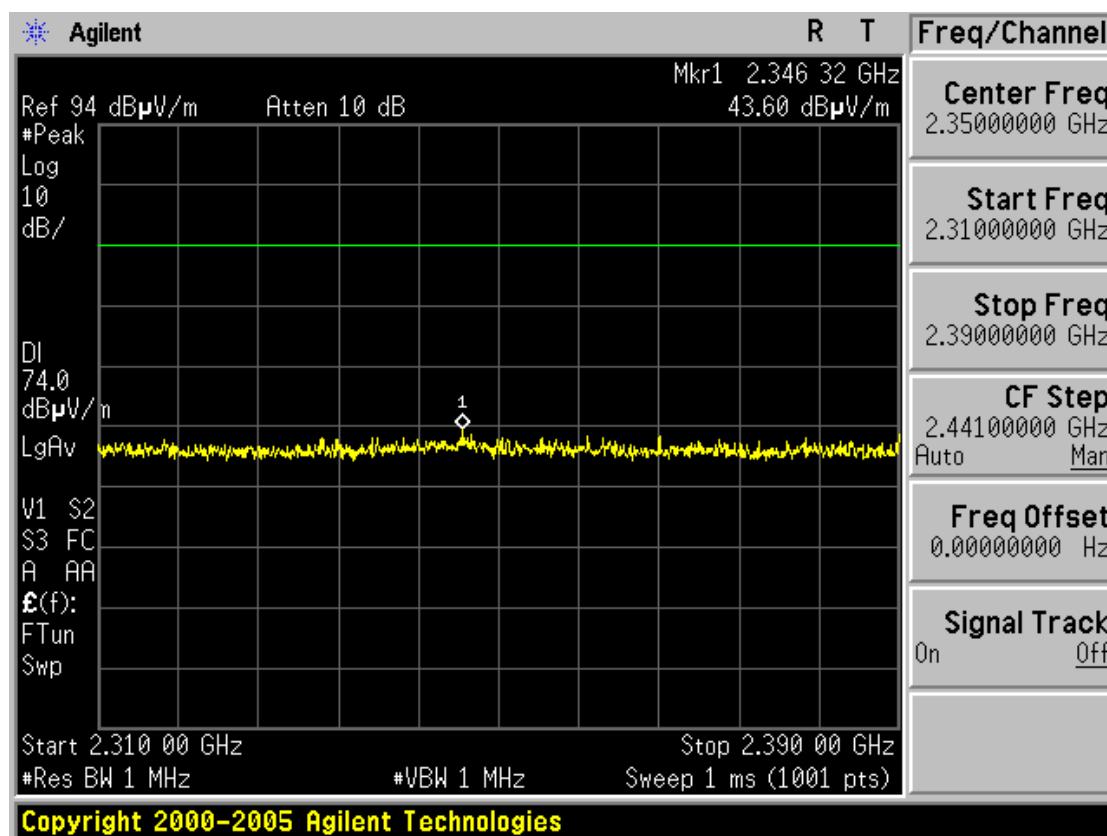
## Restricted Band Edge: Low Channel (Peak, Horizontal)



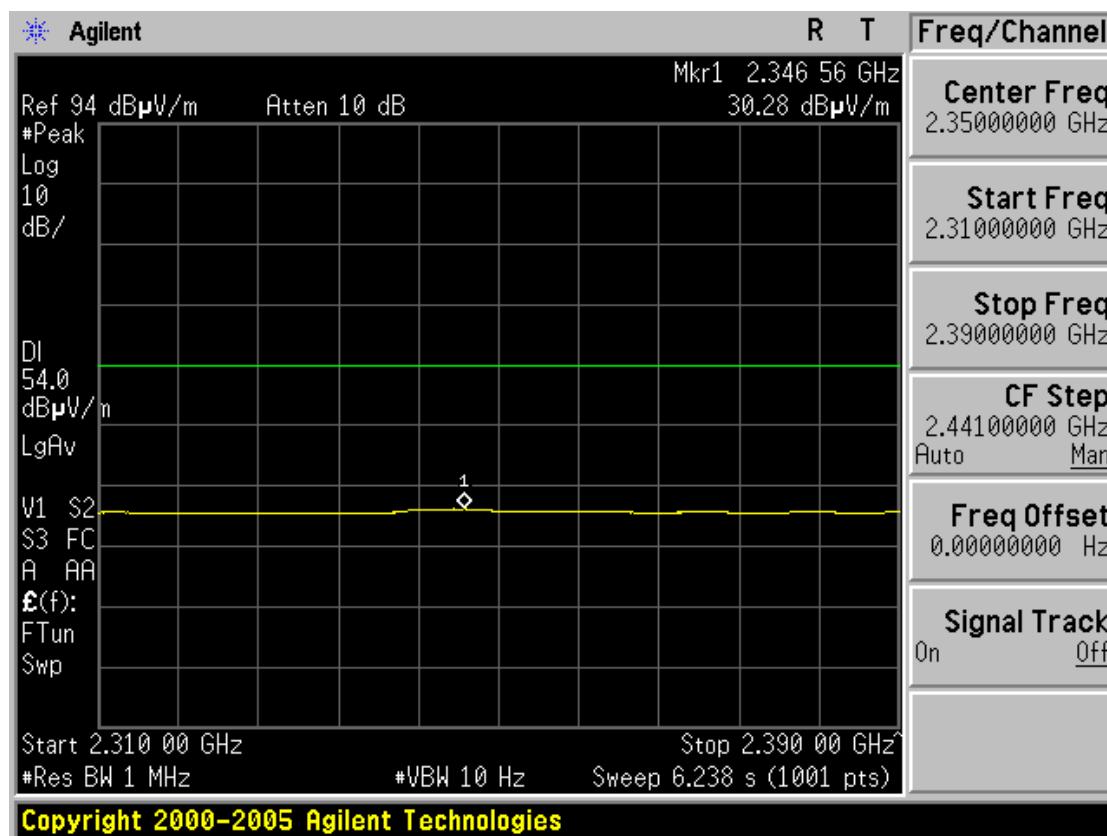
## Restricted Band Edge: Low Channel (Average, Horizontal)



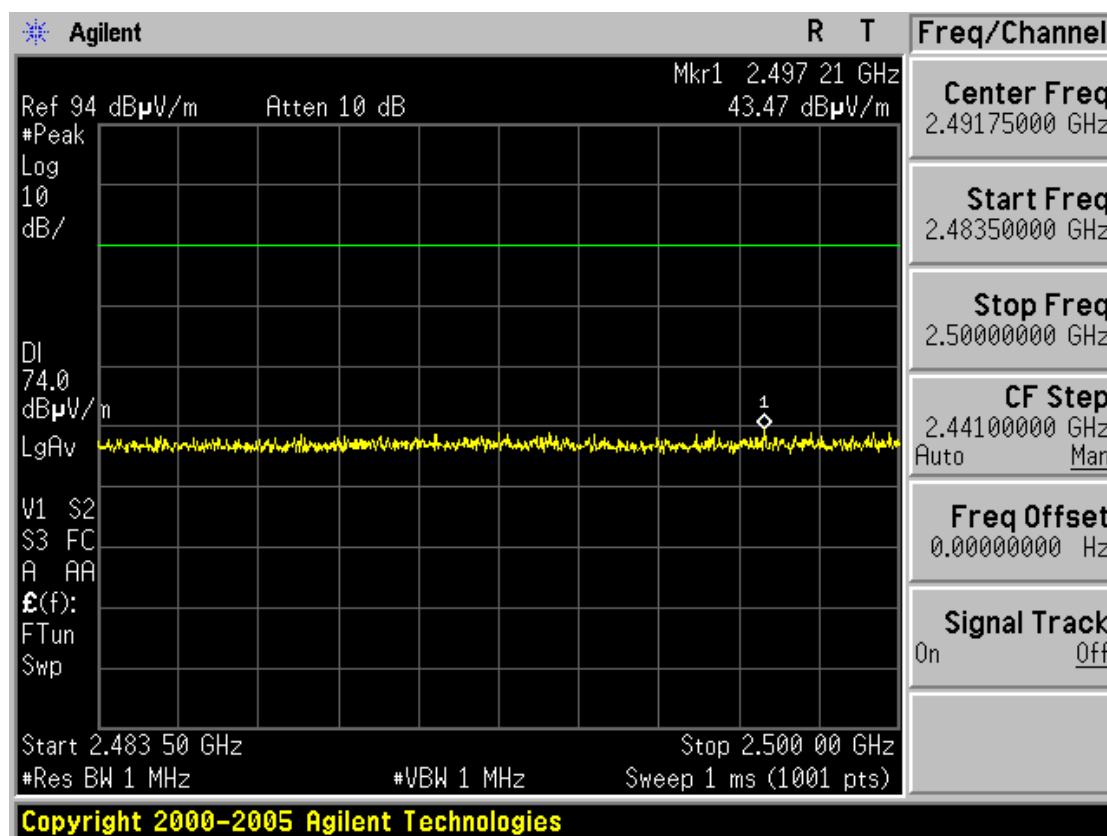
## Restricted Band Edge: Low Channel (Peak, Vertical)



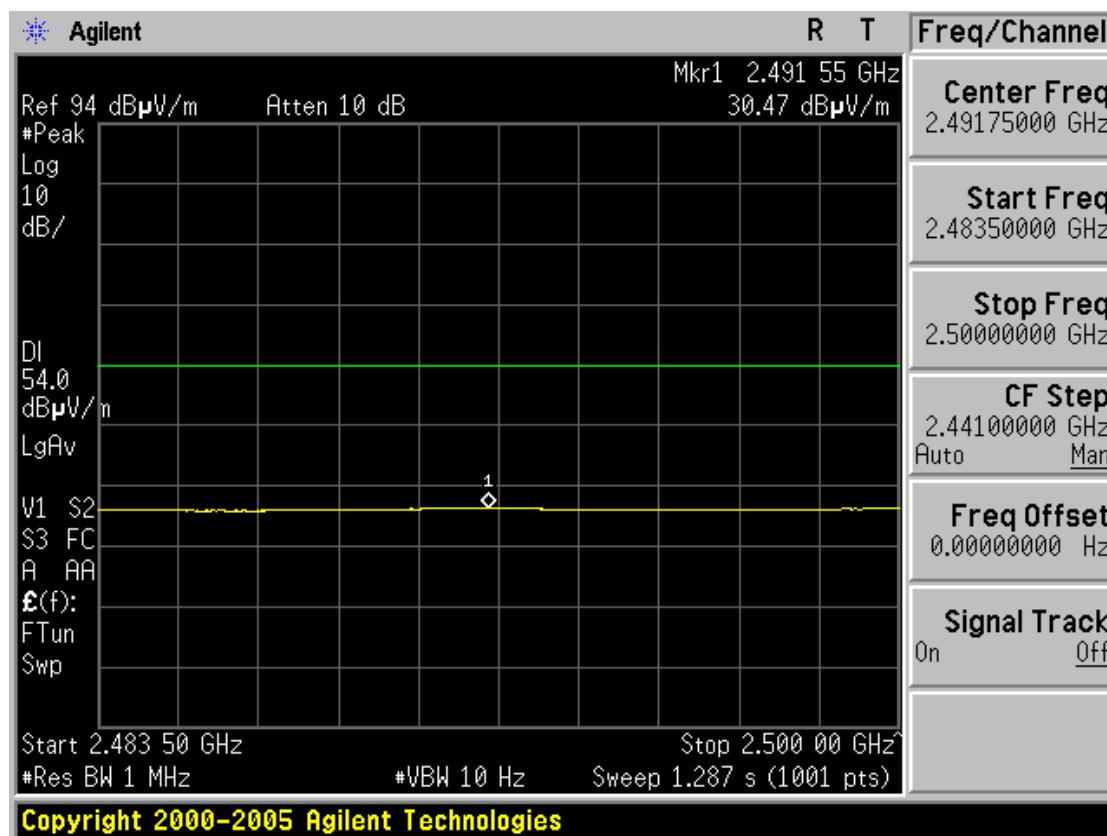
## Restricted Band Edge: Low Channel (Average, Vertical)



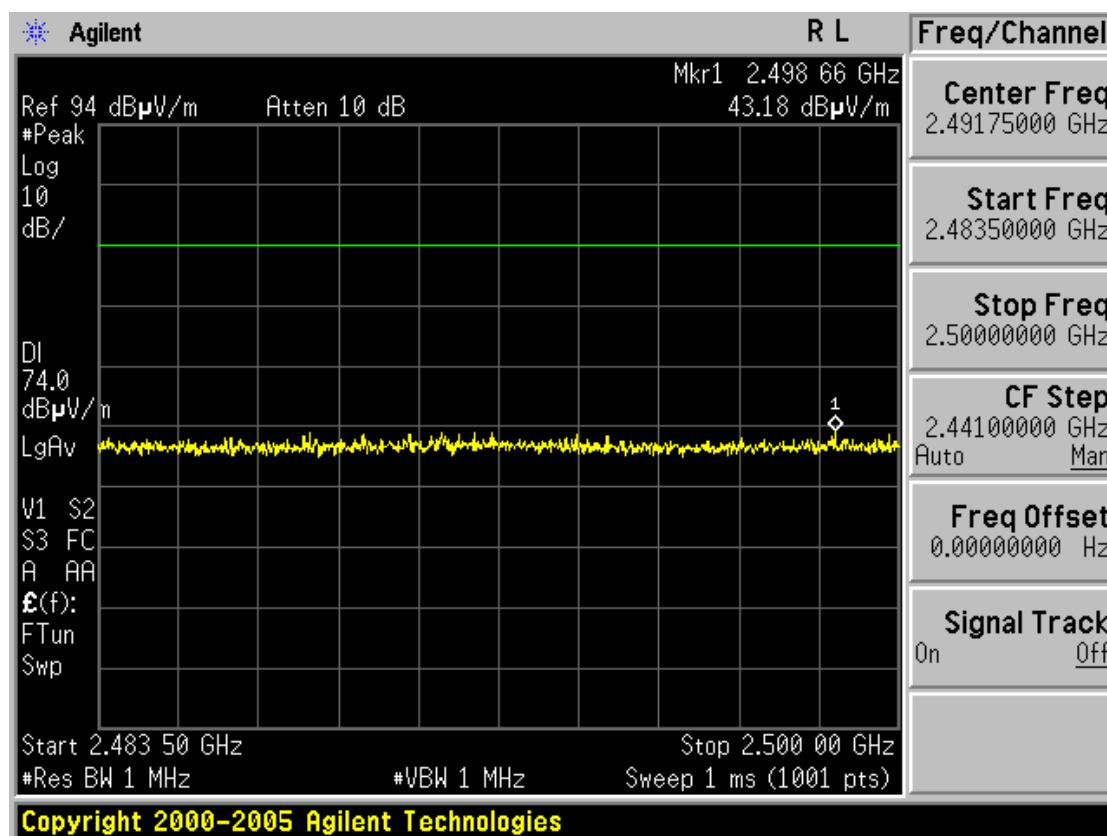
## Restricted Band Edge: High Channel (Peak, Horizontal)



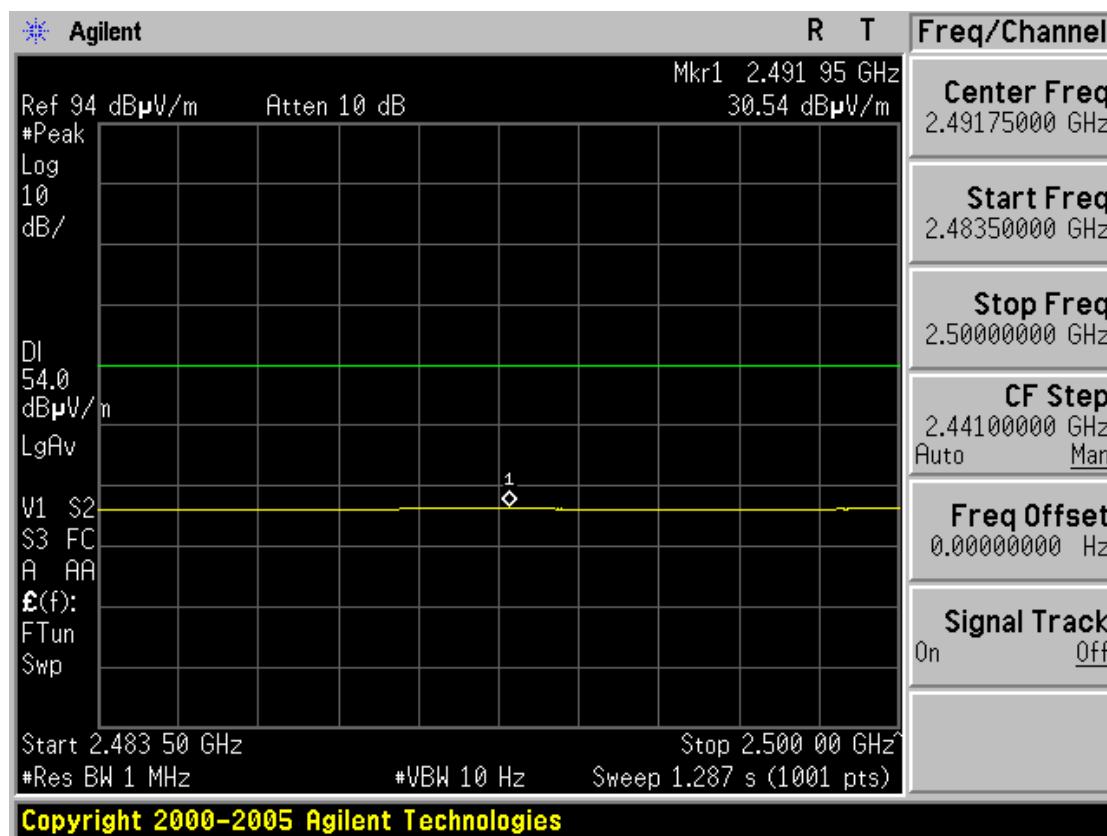
## Restricted Band Edge: High Channel (Average, Horizontal)



## Restricted Band Edge: High Channel (Peak, Vertical)



## Restricted Band Edge: High Channel (Average, Vertical)



## 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	-	51.54	44.30	6.70	-	58.24	51.00	-	74.00	54.00	-	15.76	3.00
4804	Ver	-	51.92	43.63	6.70	-	58.62	50.33	-	74.00	54.00	-	15.38	3.67
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## 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	-	50.24	42.70	7.05	-	57.29	49.75	-	74.00	54.00	-	16.71	4.25
4882	Ver	-	49.68	41.89	7.05	-	56.73	48.94	-	74.00	54.00	-	17.27	5.06
-	-	-	-	-	-					-	-	-	-	-

## 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	-	48.45	40.70	7.53	-	55.98	48.23	-	74.00	54.00	-	18.02	5.79
4960	Ver	-	47.68	38.90	7.53	-	55.21	46.43	-	74.00	54.00	-	18.79	7.57
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**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

### 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** (See next pages for actual measured spectrum plots.)

Note : The internal battery of this device is charged from USB port of the ITE equipment. Therefore the conducted emission was test with a notebook computer.

#### 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

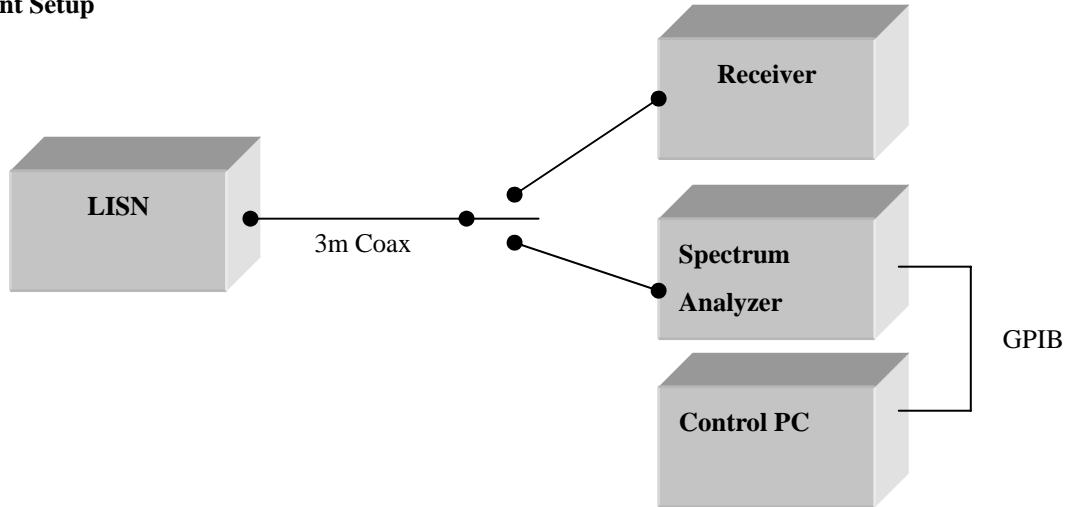
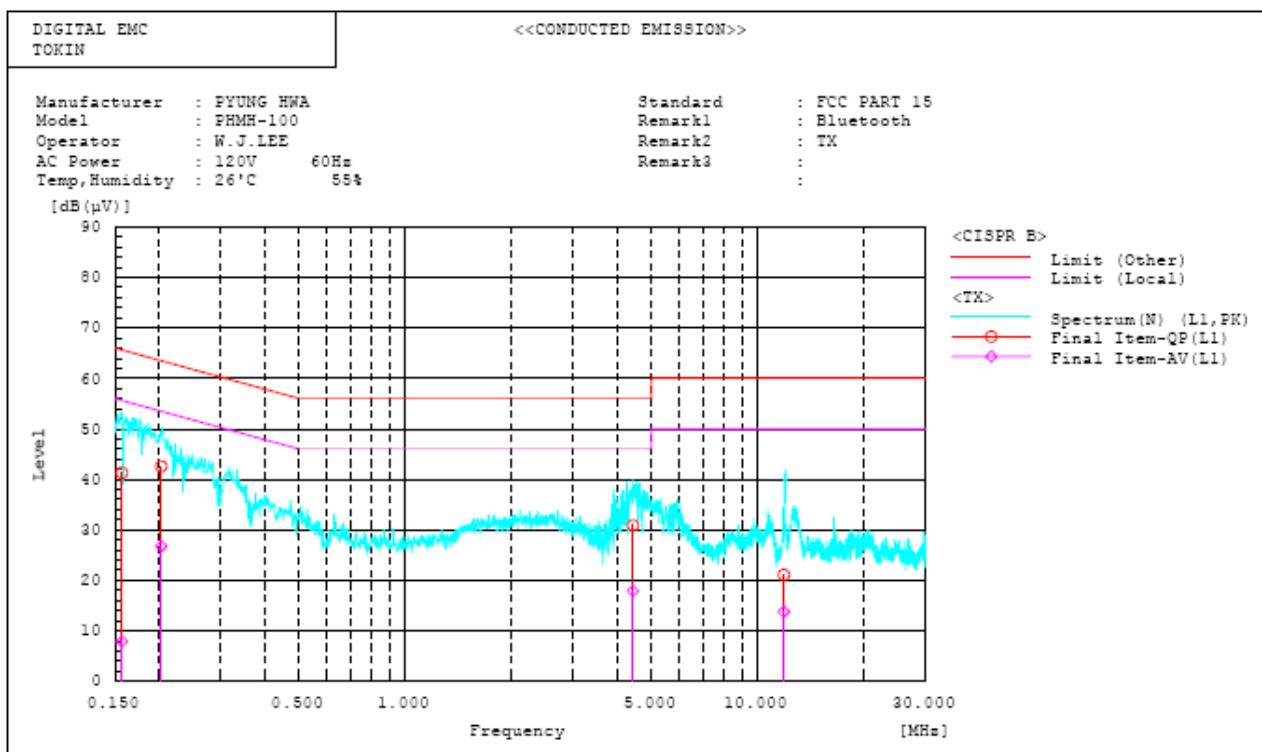
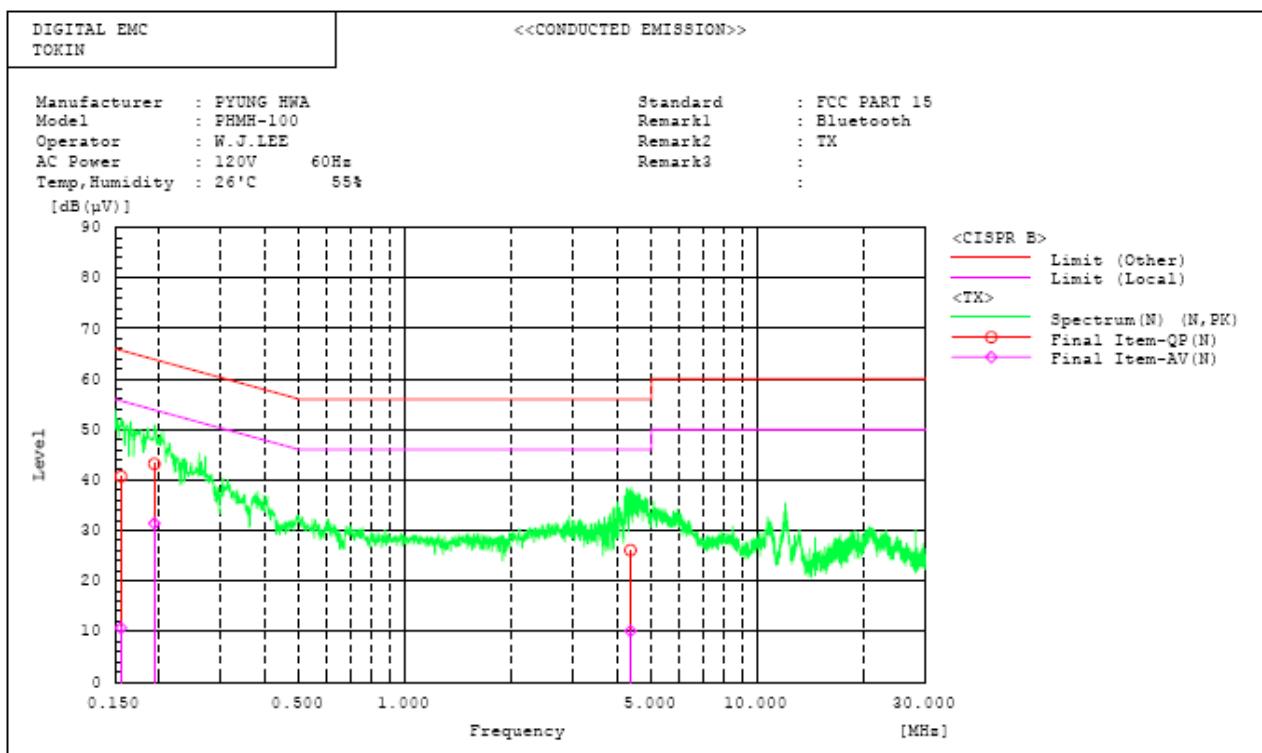


Figure 2: Measurement setup for AC Conducted Emission

**- Conducted Emission Graph -**



**-Conducted Emission List -**

\*\*\*\*\* DIGITAL EMC \*\*\*\*\*  
 <<CONDUCTED EMISSIONS>>

Standard : FCC PART 15  
 Manufacturer : PTUNG HWA  
 Model : PHSW-100  
 Operator : W.J.LEE  
 AC Power : 120V 60Hz  
 Temp, Humidity : 25°C 55%  
 Remark1 : Bluetooth  
 Remark2 : TX  
 Remark3 :

\*\*\*\*\*  
 Final Result

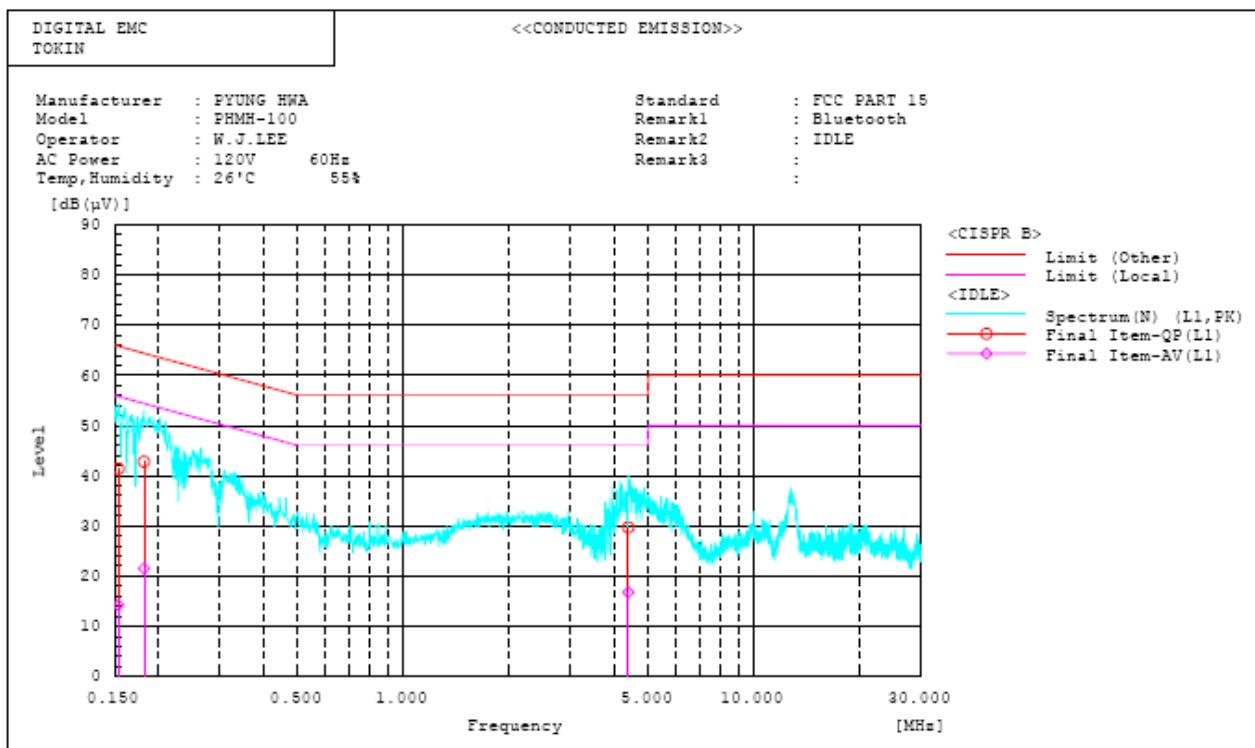
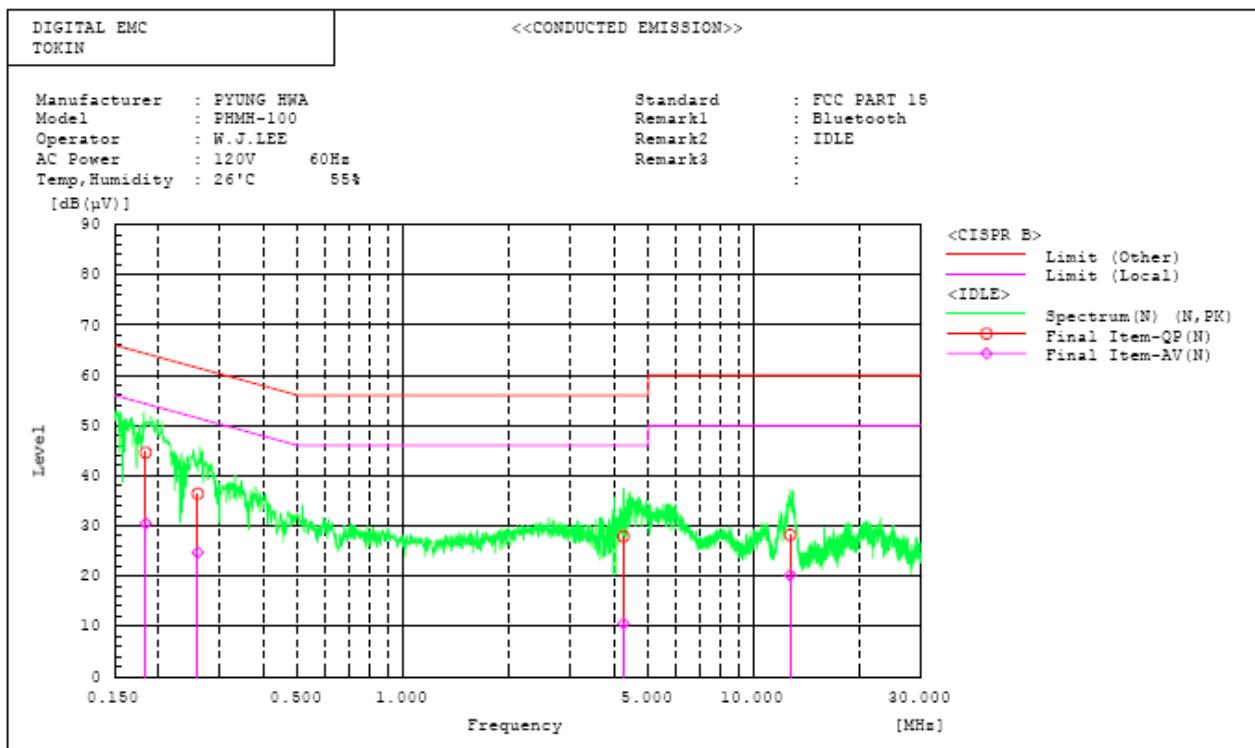
--- N Phase ---

No.	Frequency [MHz]	Reading [dB{μV}]	Reading [dB{μV}]	c.f.	Result [dB]	Result [dB{μV}]	Limit [dB{μV}]	Limit [dB{μV}]	Margin [dB]	Margin [dB]	Remark
1	0.156	40.6	10.6	0.1	40.7	10.7	65.7	55.7	25.0	45.0	
2	0.194	43.1	31.3	0.1	43.2	31.4	63.9	53.9	20.7	22.5	
3	4.352	25.8	9.8	0.3	26.1	10.1	56.0	46.0	29.9	35.9	

--- L1 Phase ---

No.	Frequency [MHz]	Reading [dB{μV}]	Reading [dB{μV}]	c.f.	Result [dB]	Result [dB{μV}]	Limit [dB{μV}]	Limit [dB{μV}]	Margin [dB]	Margin [dB]	Remark
1	0.157	41.1	7.7	0.2	41.3	7.9	65.6	55.6	24.3	47.7	
2	0.203	42.4	26.6	0.2	42.6	26.8	63.5	53.5	20.9	26.7	
3	4.423	30.4	17.4	0.5	30.9	17.9	56.0	46.0	25.1	28.1	
4	11.656	20.4	13.1	0.7	21.1	13.8	60.0	50.0	30.9	36.2	

### - Conducted Emission Graph -



**-Conducted Emission List -**

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

Standard : FCC PART 15  
 Manufacturer : PIUNG HWA  
 Model : PHMH-100  
 Operator : W.J.LEE  
 AC Power : 120V 60Hz  
 Temp, Humidity : 26°C 55%  
 Remark1 : Bluetooth  
 Remark2 : IDLE  
 Remark3 :

\*\*\*\*\* Final Result \*\*\*\*\*

--- N Phase ---

No.	Frequency [MHz]	Reading		c.f.		Result		Result		Limit		Margin		Remark
		QP [dB{μV}]	AV [dB{μV}]	QP [dB]	AV [dB{μV}]	QP [dB{μV}]	AV [dB{μV}]	QP [dB{μV}]	AV [dB{μV}]	QP [dB]	AV [dB]	QP [dB]	AV [dB]	
1	0.154	44.5	30.4	0.1	44.6	30.5	64.3	54.3	19.7	23.8				
2	0.182	36.3	24.6	0.1	36.4	24.7	61.5	51.5	25.1	26.8				
3	4.376	27.6	10.3	0.3	27.9	10.6	56.0	46.0	20.1	35.4				
4	12.663	27.6	19.6	0.6	28.2	20.2	60.0	50.0	31.8	29.8				

--- L1 Phase ---

No.	Frequency [MHz]	Reading		c.f.		Result		Result		Limit		Margin		Remark
		QP [dB{μV}]	AV [dB{μV}]	QP [dB]	AV [dB{μV}]	QP [dB{μV}]	AV [dB{μV}]	QP [dB{μV}]	AV [dB{μV}]	QP [dB]	AV [dB]	QP [dB]	AV [dB]	
1	0.154	41.2	14.0	0.2	41.4	14.2	65.0	55.0	24.4	41.6				
2	0.182	42.6	21.3	0.2	42.8	21.5	64.4	54.4	21.6	32.9				
3	4.376	29.2	16.3	0.5	29.7	16.8	56.0	46.0	26.3	29.2				

## 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	16/04/08	16/04/09	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	11/03/08	11/03/09	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	Universal Radio Communication tester	Rohde Schwarz	CMU200	02/04/08	02/04/09	107631
18	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	18/07/07	18/07/09	GB43461134
19	Universal Radio communication Tester	Rohde Schwarz	CMU 200	02/04/08	02/04/09	107631
20	Bluetooth Tester	TESCOM	TC-3000A	02/11/08	02/11/09	3000A4A0121
21	Power Splitter	WEINSCHEL	1593	05/10/07	05/10/08	332
22	Power Splitter	Anritsu	K241B	19/10/07	19/10/08	020611
23	BAND Reject Filter	Microwave Circuits	N0308372	18/10/07	18/10/08	3125-01DC0312
24	BAND Reject Filter	Wainwright	WRCG1750	18/10/07	18/10/08	SN2
25	AC Power supply	DAEKWANG	5KVA	20/03/08	20/03/09	N/A
26	DC Power Supply	H.P	6622A	20/03/08	20/03/09	465487
27	HORN ANT	EMCO	3115	10/08/07	10/08/08	6419
28	HORN ANT	EMCO	3115	09/10/07	09/10/08	21097
29	HORN ANT	A.H.Systems	SAS-574	20/08/07	20/08/08	154
30	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
31	Dipole Antenna	Schwarzbeck	VHA9103	19/12/07	19/12/08	2116
32	Dipole Antenna	Schwarzbeck	VHA9103	19/12/07	19/12/08	2117
33	Dipole Antenna	Schwarzbeck	UHA9105	20/12/07	20/12/08	2261
34	Dipole Antenna	Schwarzbeck	UHA9105	20/12/07	20/12/08	2262
35	TEMP & HUMIDITY Chamber	JISCO	J-RHC2	02/10/07	02/10/08	021031
36	Log Periodic Antenna	Schwarzbeck	UHALP9108A1	01/10/07	01/10/08	1098
37	Biconical Antenna	Schwarzbeck	VHA9103	08/06/07	08/06/08	2233
38	Digital Multimeter	H.P	34401A	20/03/08	20/03/09	3146A13475
39	Attenuator (10dB)	WEINSCHEL	23-10-34	05/10/07	05/10/08	BP4386
40	Attenuator (10dB)	WEINSCHEL	23-10-34	30/01/08	30/01/09	BP4387
41	High-Pass Filter	ANRITSU	MP526D	08/10/07	08/10/08	MP27756
42	Attenuator (3dB)	Agilent	8491B	12/07/07	12/07/08	58177
43	20dB Attenuator	Aeroflex/Weinschel	86-20-11	25/10/07	25/10/08	432
44	10dB Attenuator	Aeroflex/Weinschel	86-10-11	25/10/07	25/10/08	446
45	10dB Attenuator	Aeroflex/Weinschel	86-10-11	25/10/07	25/10/08	408
46	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0088CAN	05/07/07	05/07/08	788
47	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0185CAN	05/07/07	05/07/08	790
48	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0215CAN	05/07/07	05/07/08	112
49	Amplifier (25dB)	Agilent	8447D	20/05/08	20/05/09	2944A10144
50	Amplifier (30dB)	Agilent	8449B	25/10/07	25/10/08	3008A01590
51	Amplifier (22dB)	H.P	8447E	27/02/08	27/02/09	2945A02865
52	Position Controller	TOKIN	5901T	N/A	N/A	14173
53	Driver	TOKIN	5902T2	N/A	N/A	14174
54	RFI/FIELD Intensity Meter	Kyorits	KNW-2402	06/09/07	06/09/08	4N-170-3
55	LISN	Kyorits	KNW-407	30/08/07	30/08/08	8-317-8
56	LISN	Kyorits	KNW-242	06/10/07	06/10/08	8-654-15
57	CVCF	NF Electronic	4400	N/A	N/A	344536 4420064
58	Software	ToYo EMI	EP5/RE	N/A	N/A	Ver 2.0.800
59	Software	ToYo EMI	EP5/CE	N/A	N/A	Ver 2.0.801
60	Software	AUDIX	e3	N/A	N/A	Ver 3.0
61	Software	Agilent	Benchlink	N/A	N/A	A.01.09 021211