DIGITAL EMC CO., LTD.

683-3, Yubang-Dong, Yongin-Si, Kyunggi-Do, Korea. 449-080
Tel: +82-31-321-2664 Fax: +82-31-321-1664
http://www.digitalemc.com

CERTIFICATION OF COMPLIANCE

Zenocom Co.,Ltd.
#7201 Dongil Technotowth, 823,Kwanyang-2Dong,
Dongan_Ku, Anyang-City, Kyungki-Do, Korea 431-716

Dates of Tests: February 5~14,2004
Test Report S/N: DR50110402M
Test Site : DIGITAL EMC CO., LTD.

FCC ID **RRRBF0100**

APPLICANT **Zenocom Co.,Ltd.**

FCC Classification	:	**FHSS Sequence Spread Spectrum (FHSS)**
Device name	:	Bluetooth MP3 Player
Manufacturer	:	Zenocom Co., Ltd.
FCC ID	:	RRRBF0100
Model name	:	XBM-100P / XBM-100S
Test Device Serial number	:	Identical prototype
FCC Rule Part(s)	:	FCC Part 15.247 Subpart C; ANSI C-63.4-2001
Frequency Range	:	2402 ~ 2480 MHz
Max. Output power	:	1.26mW Conducted
Data of issue	:	February 16, 2004

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

TABLE OF CONTENTS

1. General information's

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 : demc@unitel.co.kr
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 competents of calibration and testing laboratory".
This laboratory is accredited by NVLAP for NVLAP Lab. Code : 200559-0.

Test operator: engineer

February 17, 2004	Won -Jong LEE	
Data	Name	Signature

Report Reviewed By: manager

February 17, 2004	Dong -Min JUNG	
Data	Name	Signature

Ordering party:

Company name	:	Zenocom Co., Ltd.
Address	:	#7201 Dongil Technotowth, 823,Kwanyang-2Dong, Dongan_Ku, Anyang-City,
Zip code	:	431-716
City/town	:	Kyungki-Do
Country	:	Korea
Date of order	:	February 2, 2004

2. Information's about test item

RRRBF0100

2.1 Equipment information

Equipment model name	XBM-100P(Memory size: 256Mbyte)
ADD model name	XBM-100S(Memory size: 128Mbyte)
Type of equipment	Bluetooth MP3 Player
Frequency band	2402 ~ 2480 MHz
Type of Modulation	GFSK
Channel Spacing	1.0 MHz
Type of antenna	Chip Antenna
Power	DC 4 V rechargeable Li-Polymer Battery

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 (^{o}C)
Relative humidity content	:	20 ~ 75 %
Air pressure	:	86 ~ 103 kPa
Details of power supply	:	4.0 V (powered by power supply)

2.4 Ancillary Equipment

Equipment	Model No.	Serial No.	Manufacturer
Notebook	PCG-645P	283600707600536	SONY

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. Transmit mode(Tx)				
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 (or Occupied BW for IC)	2400 < f < 2483.5 MHz		C
	Out of Band Emissions (Bandwidth at 20 dB blow)	The radiated emission to any 100 kHz of outband shall be at least 20dB below the highest inband spectral density.		C
15.205 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	< FCC 15.209 limits	Radiated	C
15.207	AC Conducted Emissions	EN 55022	Line Conducted	NA
II. Receive mode(Rx)				
15.107 / 15.207	AC Conducted Emissions	EN 55022	Line Conducted	C
15.109 / 15.209	Radiated Emission Out-of-Band Emissions (Band Width at 20dB below)	< FCC 15.209 limits	Radiated	C

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note: During the charging mode, The EUT can`t do the transmission.

The sample was tested according to the following specification:

FCC Parts 15.247; ANSI C-63.4-2001

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:

Frequency of marker #1 (MHz)	Frequency of marker #2 (MHz)	Test Results	
		Carrier Frequency Separation (MHz)	Result
2441.008	**2441.998**	**0.99**	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

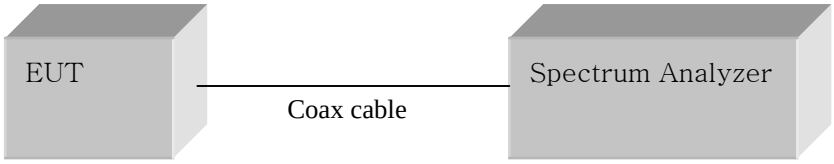
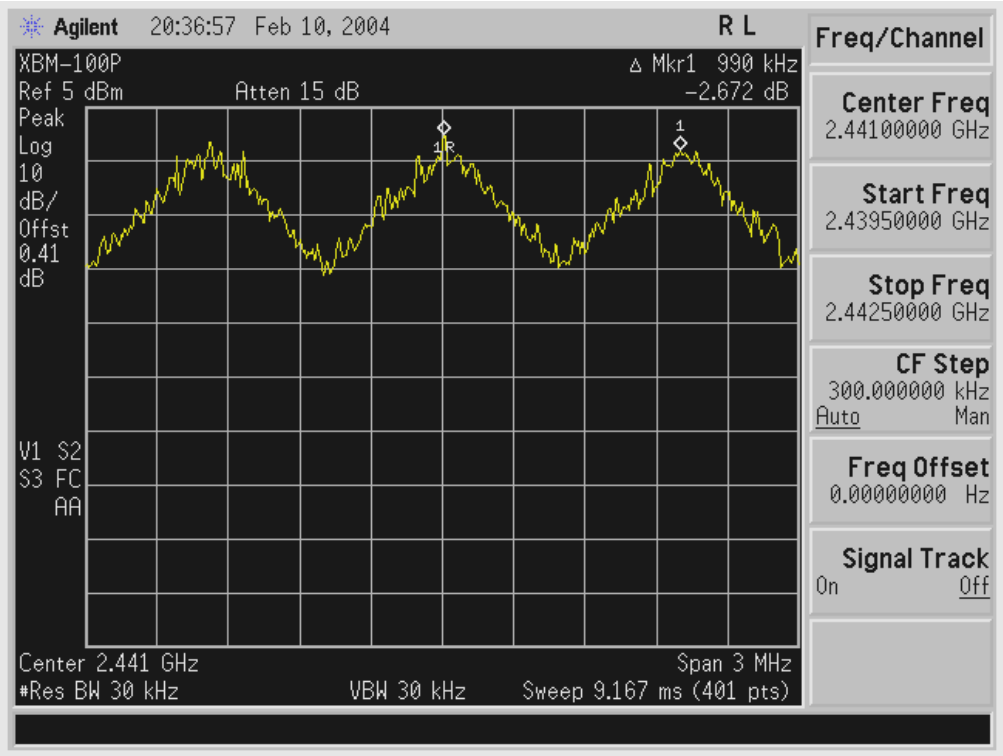


Figure 1: Measurement setup for the carrier frequency separation

TEST EQUIPMENT USED: 01, 19, 50

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 ≥ RBW) Detector function = peak

Trace = max hold Span = 25MHz

Measurement Data: Complies

Total number of Hopping Channels	79

- See next pages for actual measured spectrum plots.

Minimum Standard:

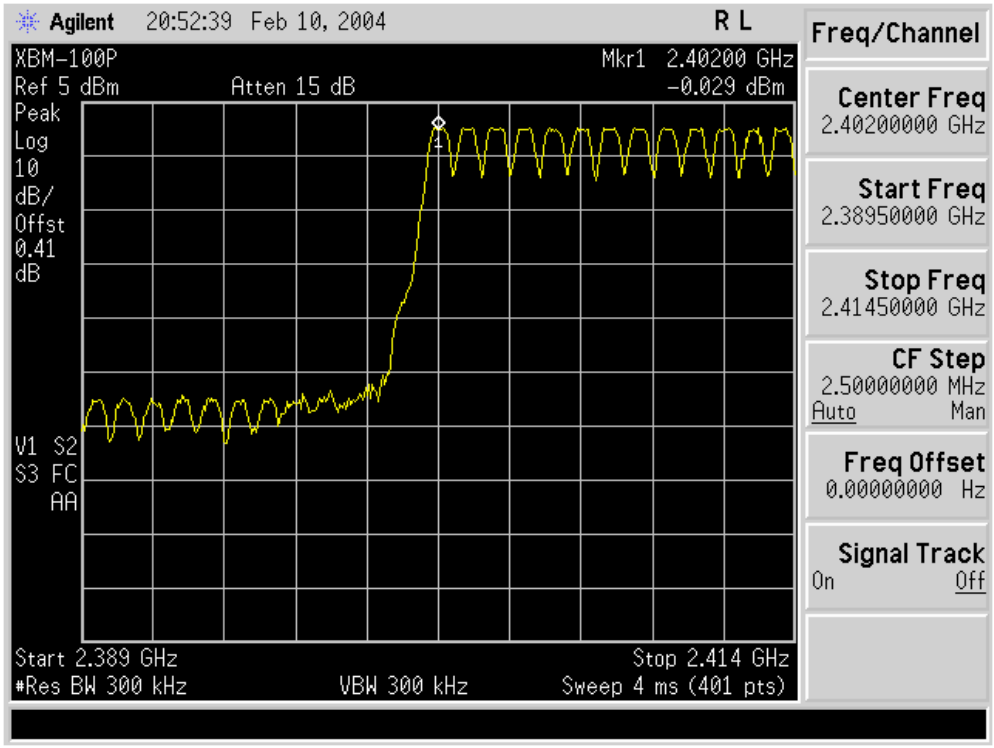
At least 75 hopes

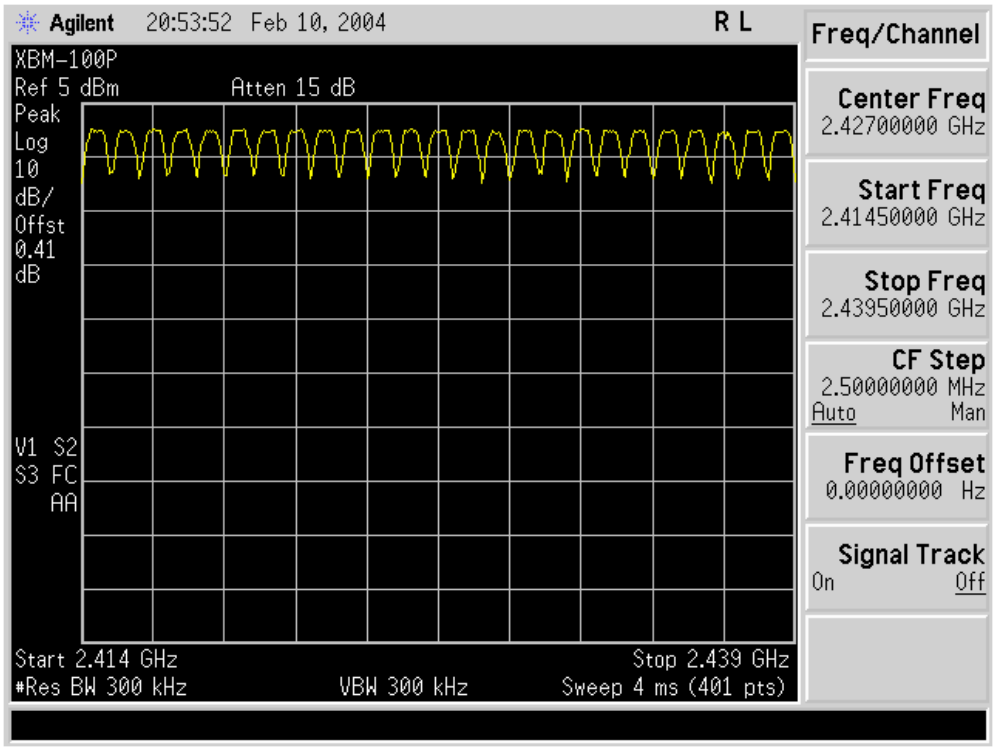
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

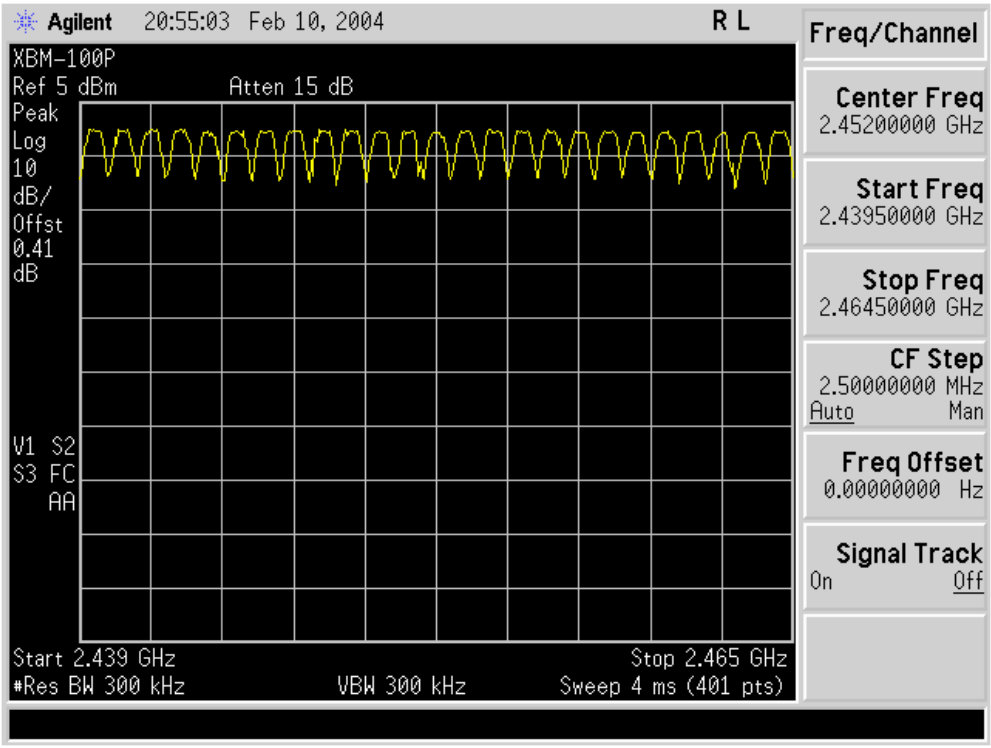
TEST EQUIPMENT USED: 02, 19, 50

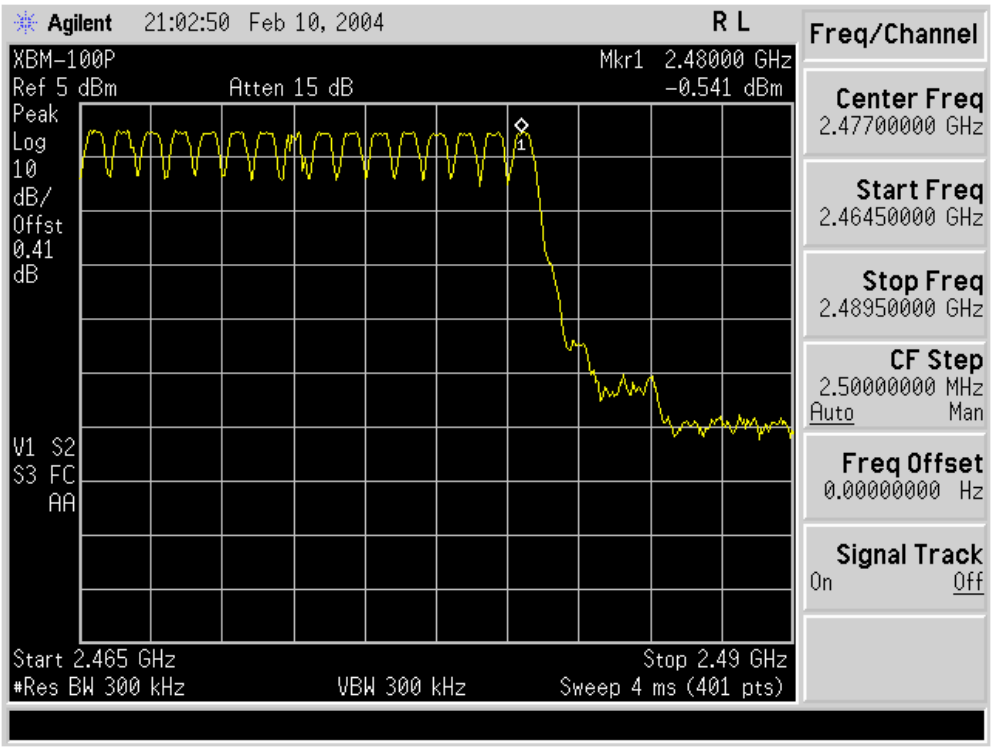
Number of Hopping Frequencies





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 = 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 ≥ RBW) Detector function = peak

Trace = max hold

Measurement Data:

Frequency (MHz)	Channel No.	Test Results	
		Measured Bandwidth (MHz)	Result
2402	**1**	**0.795**	Complies
2441	**40**	**0.795**	Complies
2480	**79**	**0.795**	Complies

- See next pages for actual measured spectrum plots.

Minimum Standard:

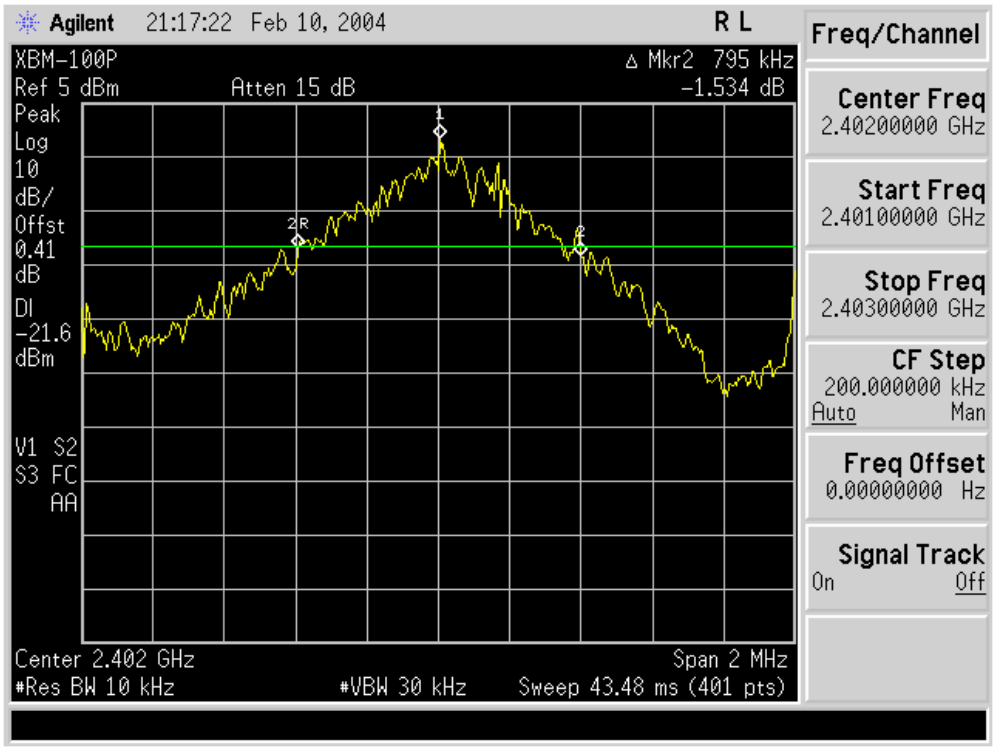
The transmitter shall have a maximum 20dB bandwidth of 1 MHz.

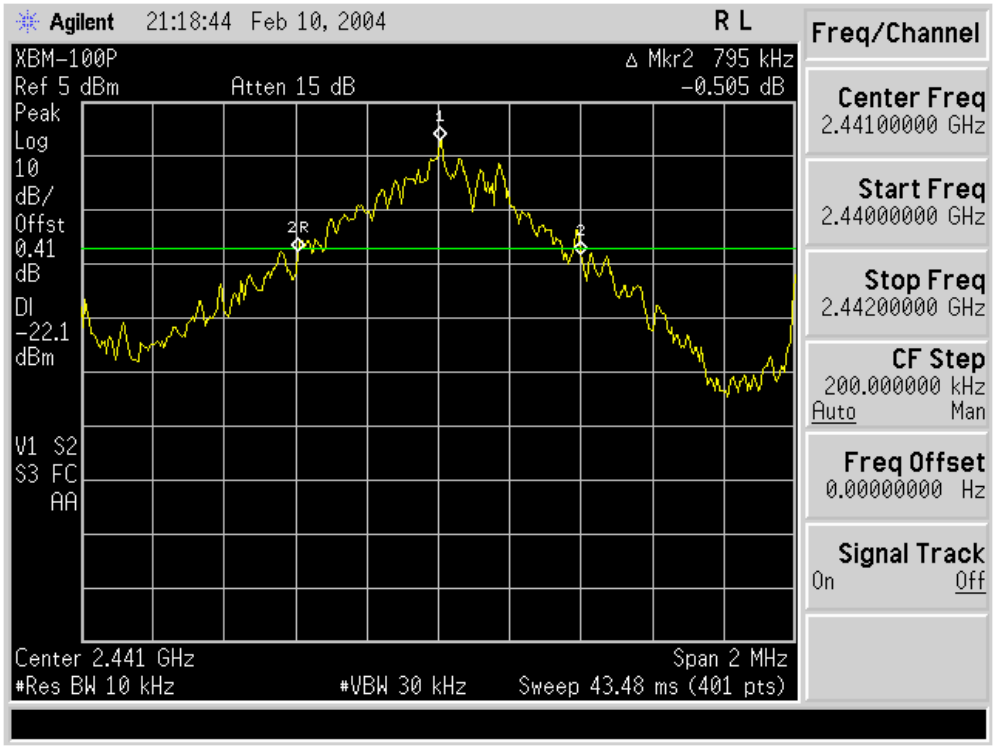
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

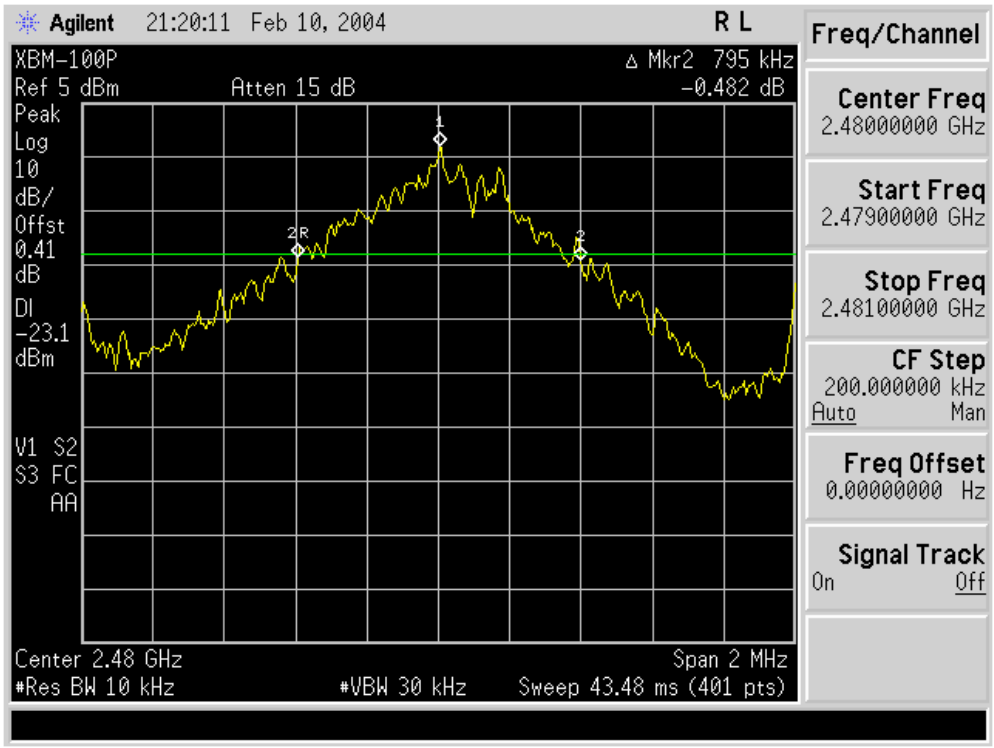
TEST EQUIPMENT USED: 01, 19, 50

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 ≥ RBW)

Trace = max hold — Detector function = peak

Measurement Data:

Packet Type	Burst duration in one hop (us)	Test Results	
		Dwell Time (ms)	Result
DH 1	**400**	**128.044**	Complies
DH 3	**1488**	**239.806**	Complies
DH 5	**2943**	**313.400**	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)

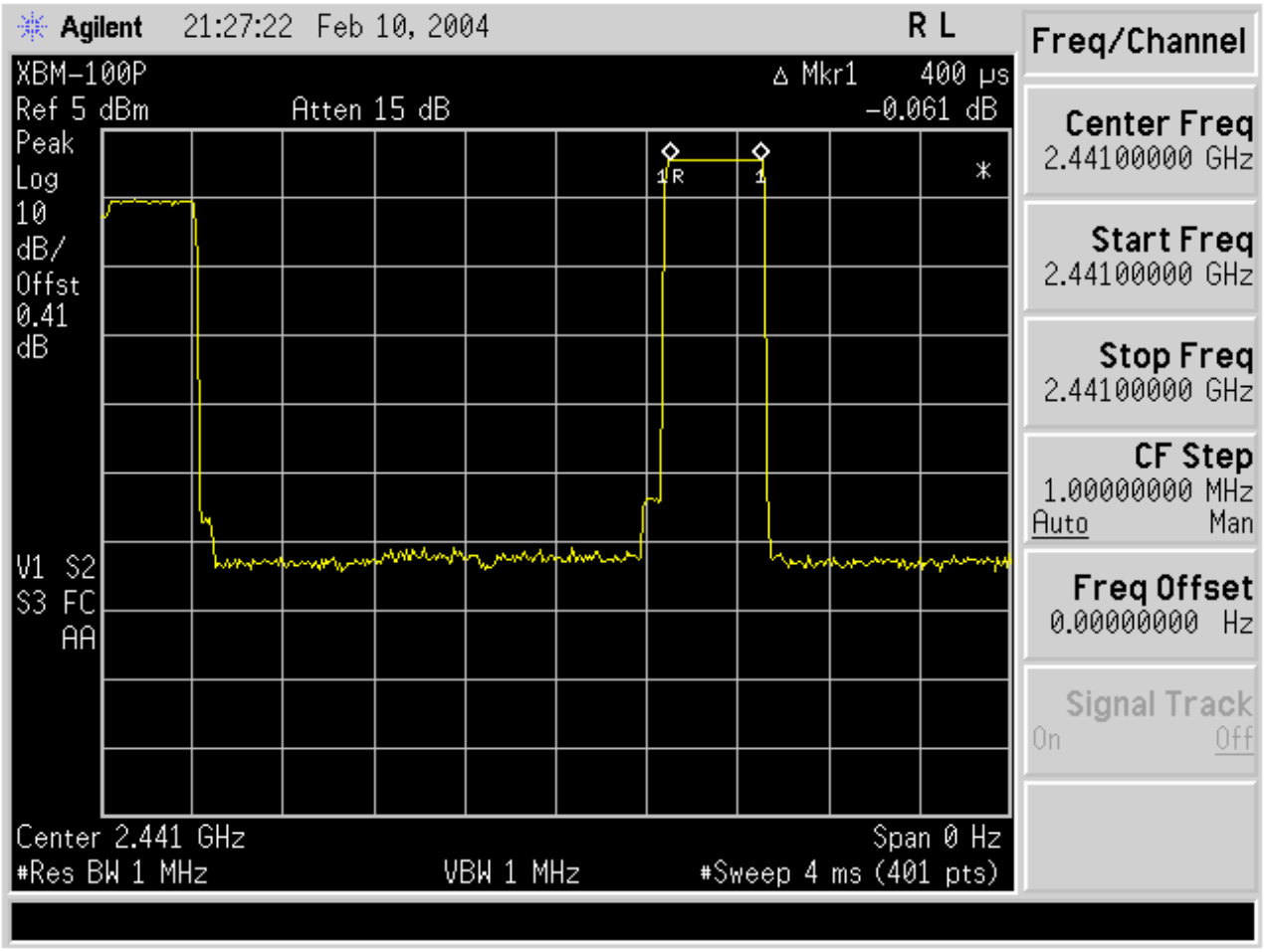
TEST EQUIPMENT USED: 01, 19, 50

Time of Occupancy for PACKET Type DH 1

The system makes worst case 1600 hopes 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 x 79 = 31.6 seconds you have 10.13 x 31.6 = 320.11 times of appearance.

Each Tx-time per appearance is 400 us

So we have 320.11 x 400 us = 128.044 ms per 31.6 seconds.

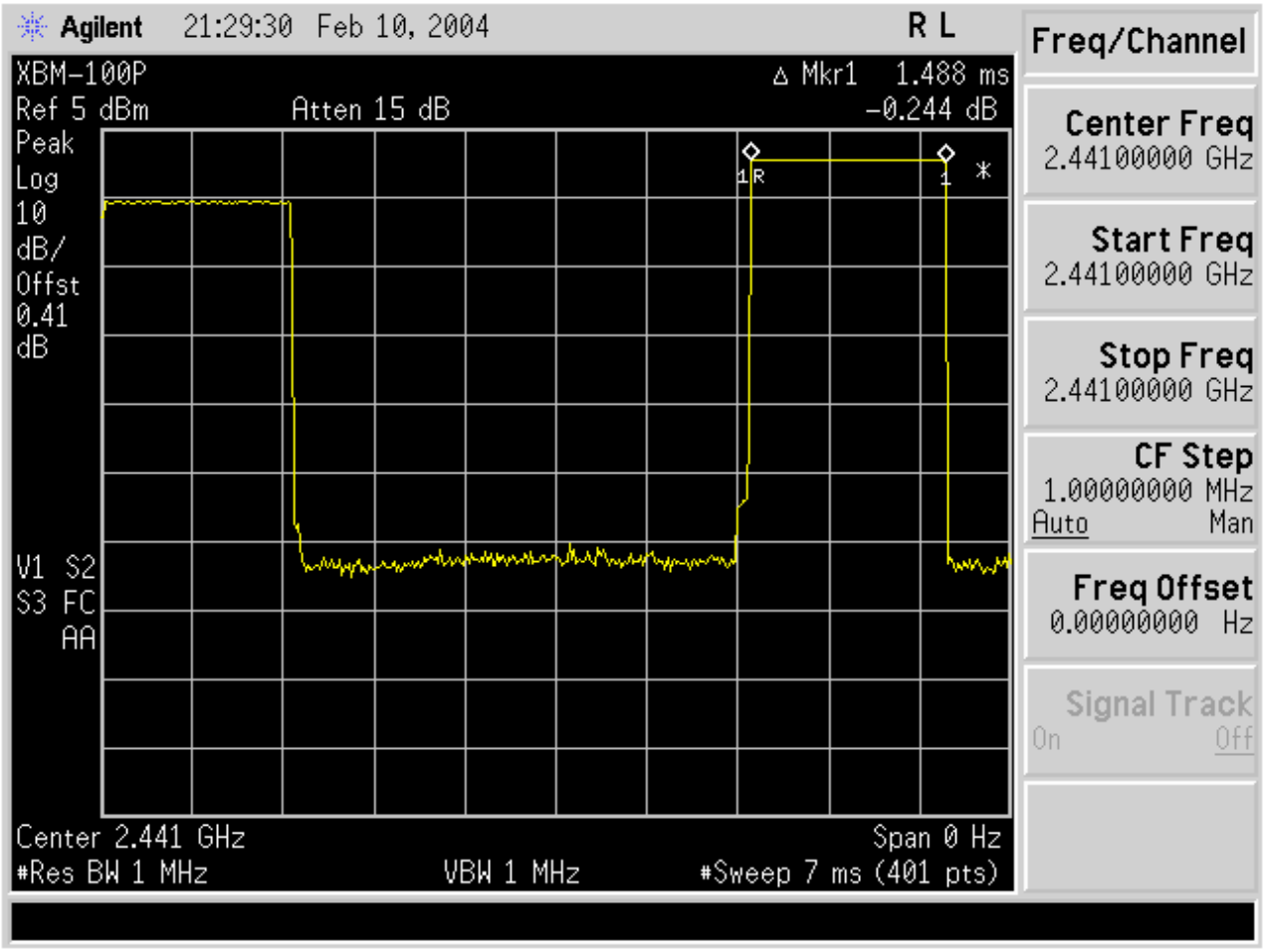


Time of Occupancy for PACKET Type DH 3

The system makes worst case 1600 hopes 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 x 79 = 31.6 seconds you have 5.1 x 31.6 = 161.16 times of appearance.

Each Tx-time per appearance is 1.488 ms

So we have 161.16 x 1.488 ms = 239.806 ms per 31.6 seconds.

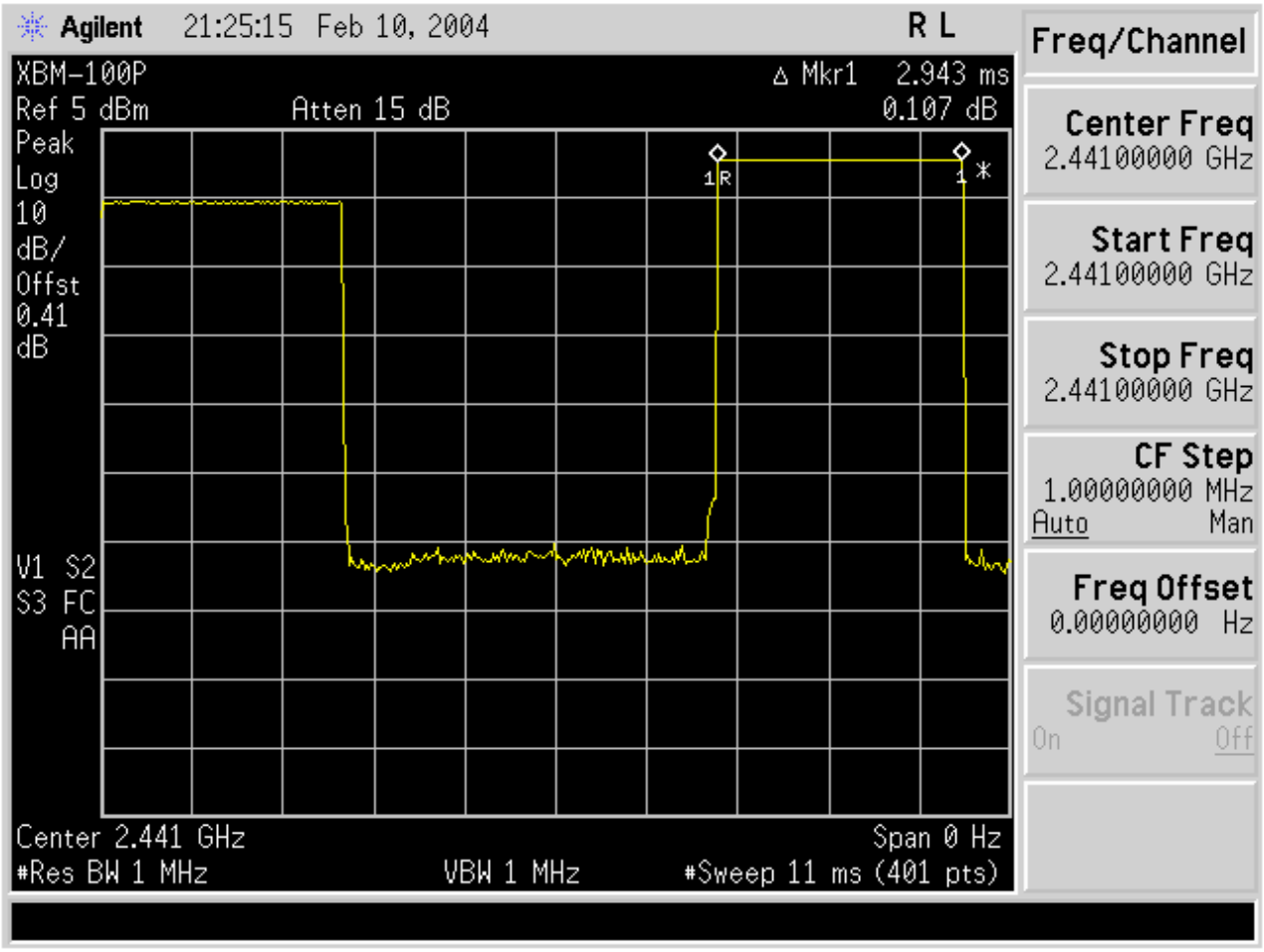


Time of Occupancy for PACKET Type DH 5

The system makes worst case 1600 hopes 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 x 79 = 31.6 seconds you have 3.37 x 31.6 = 106.49 times of appearance.

Each Tx-time per appearance is 2.943 ms

So we have 106.49 x 2.943 ms = 313.4 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 ≥ RBW) Detector function = peak

Trace = max hold Sweep = auto

Measurement Data:

Frequency (MHz)	Ch.	Test Results		
		dBm	W	Result
2402	1	**1.02**	**1.26**	Complies
2441	40	**0.42**	**1.10**	Complies
2480	79	**-0.571**	**0.88**	Complies

- See next pages for actual measured spectrum plots.

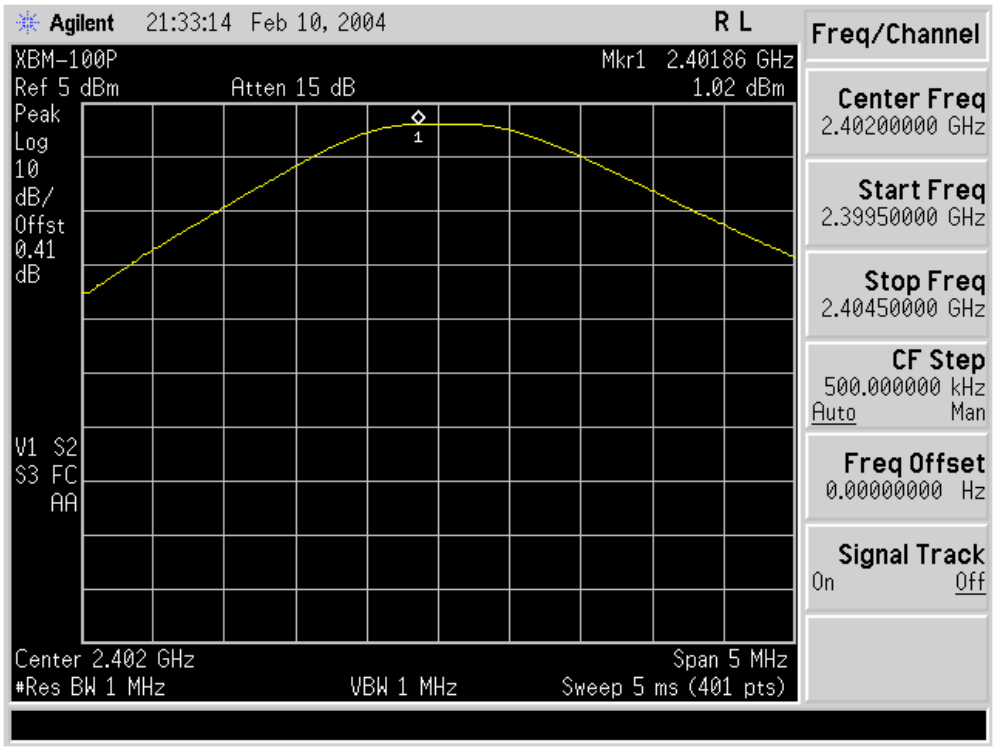
Minimum Standard:	< 1W

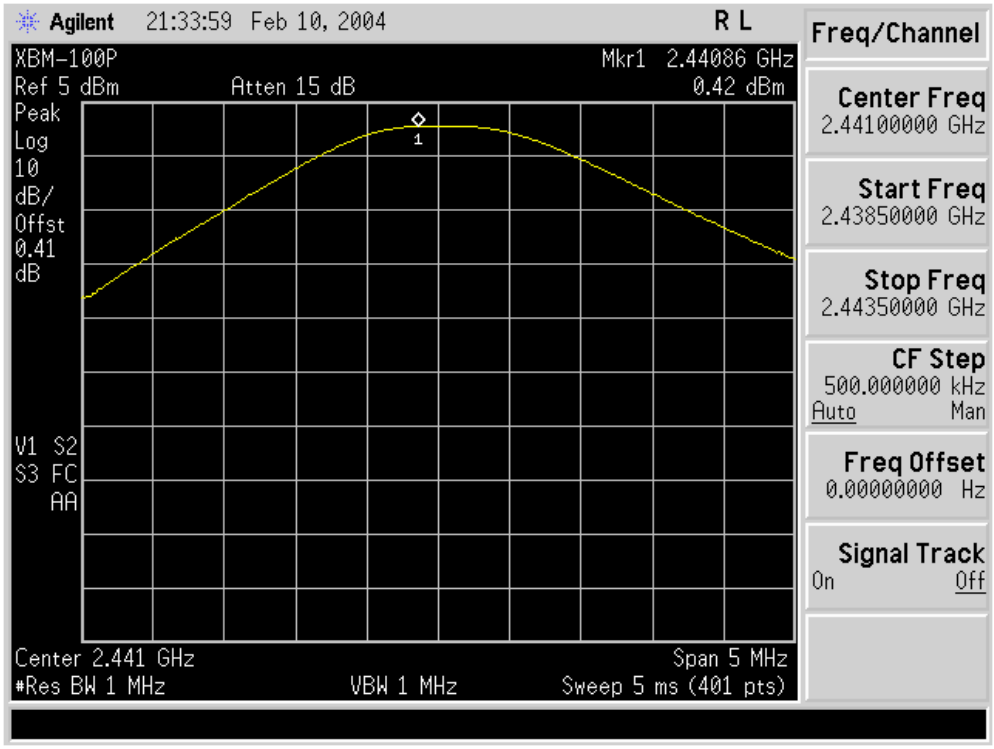
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

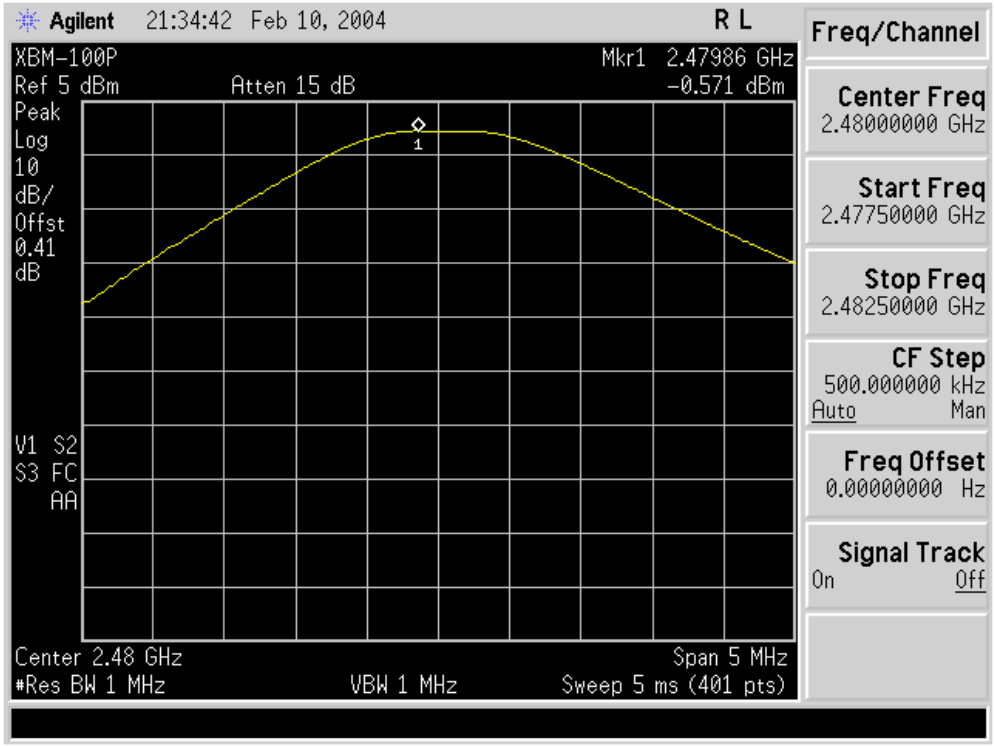
TEST EQUIPMENT USED: 01, 19, 50

Peak Output Power





Peak Output Power



3.2.6 Band - edge (at 20 dB blow)

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.

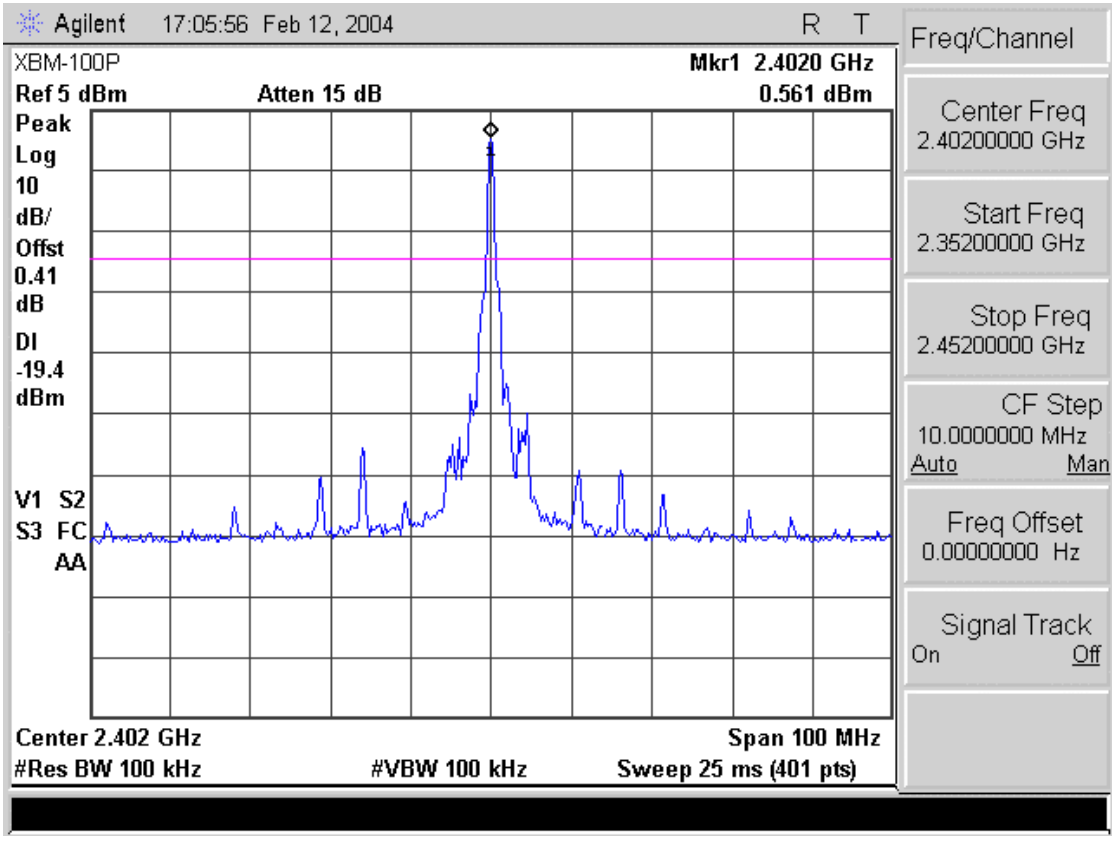
Minimum Standard:	> 20 dBc

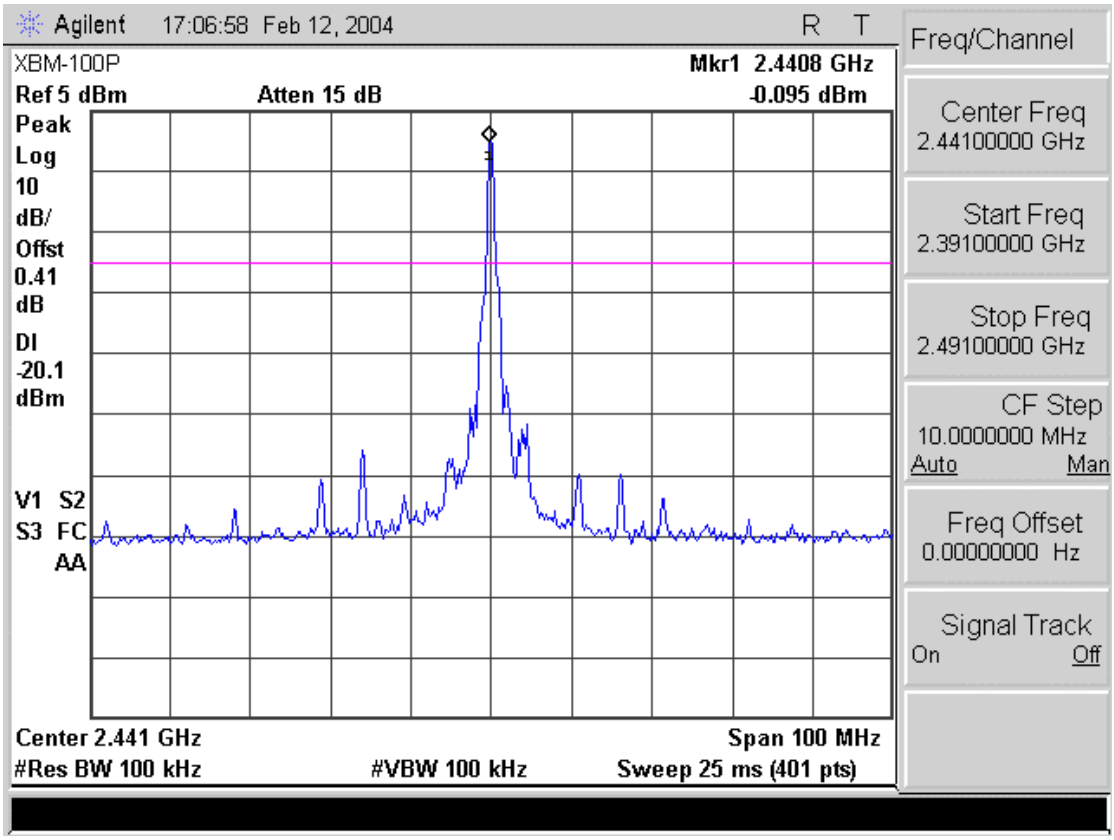
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

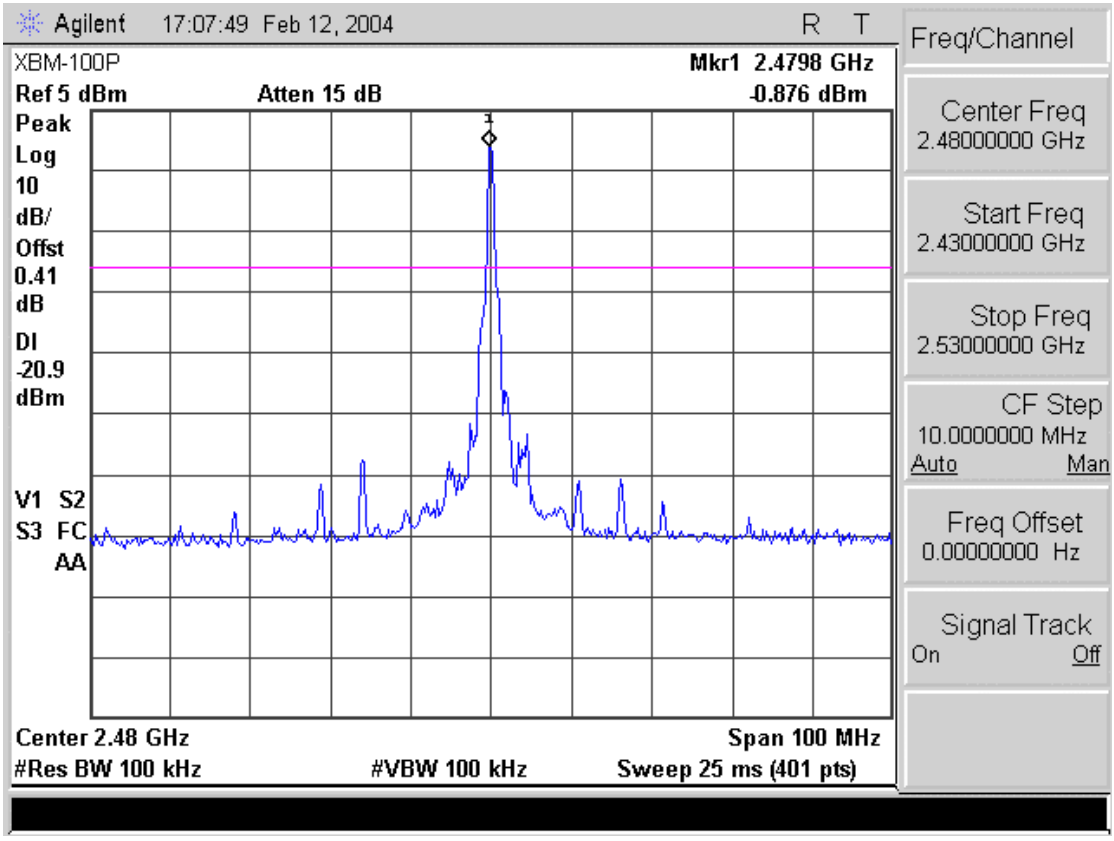
TEST EQUIPMENT USED: 01, 02, 19, 50

Band - edge (at 20 dB blow)



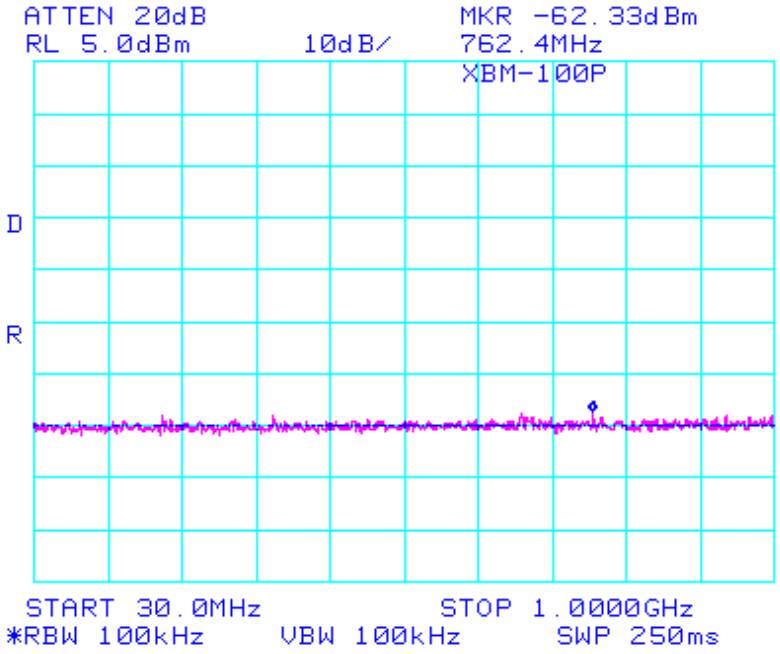


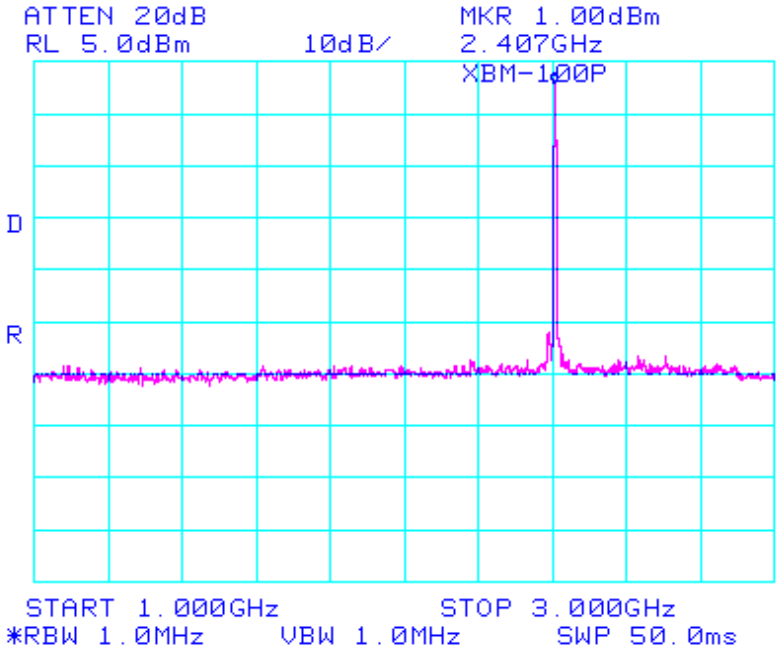
Band - edge (at 20 dB blow)



Band - edge (at 20 dB blow)

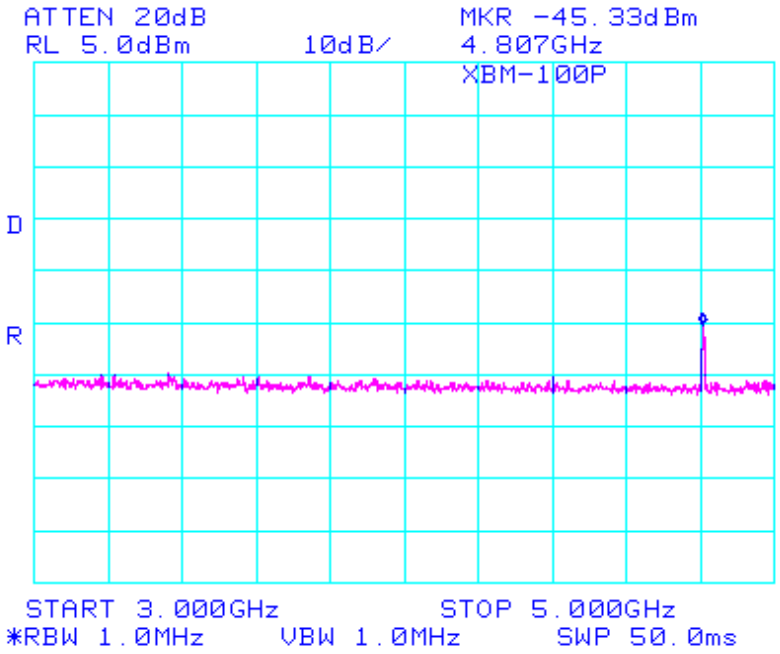
Frequency Range = 30 MHz ~ 10th harmonic.

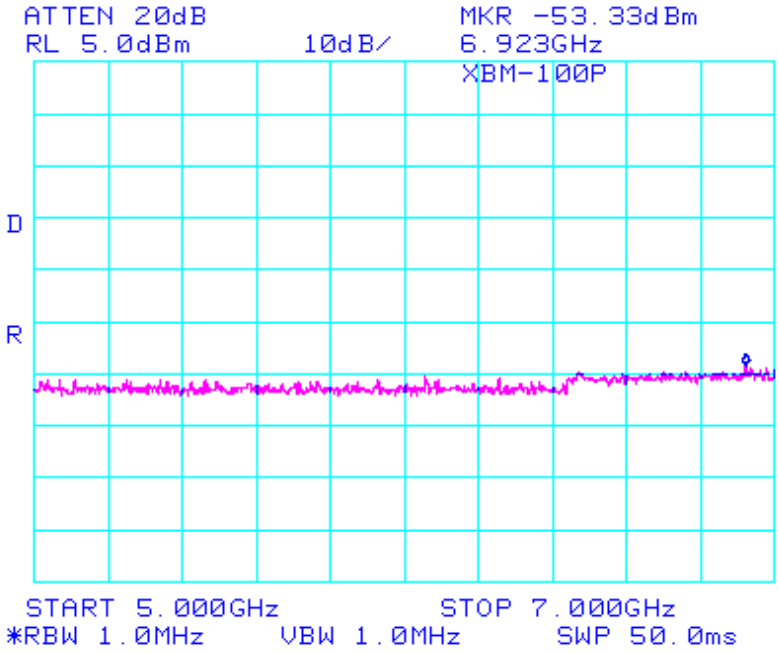




Band - edge (at 20 dB blow)

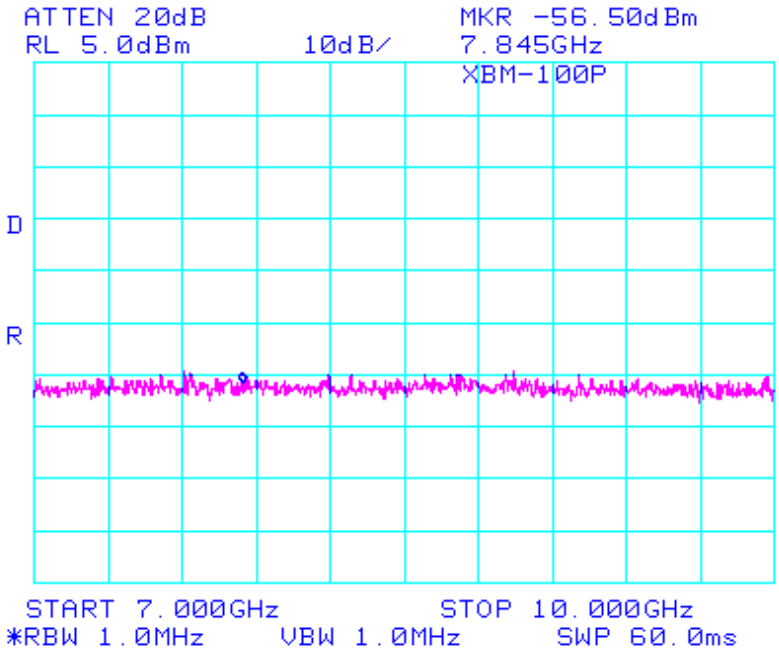
Frequency Range = 30 MHz ~ 10th harmonic.

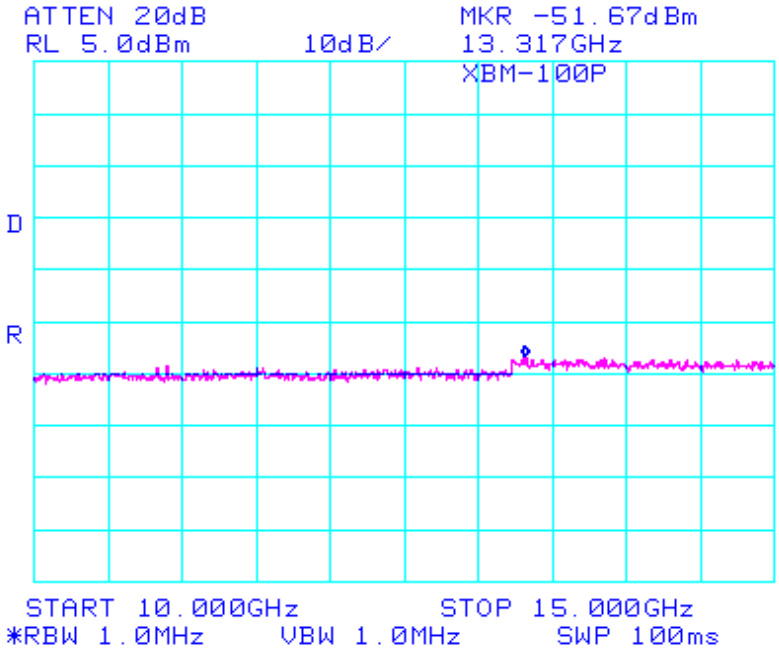




Band - edge (at 20 dB blow)

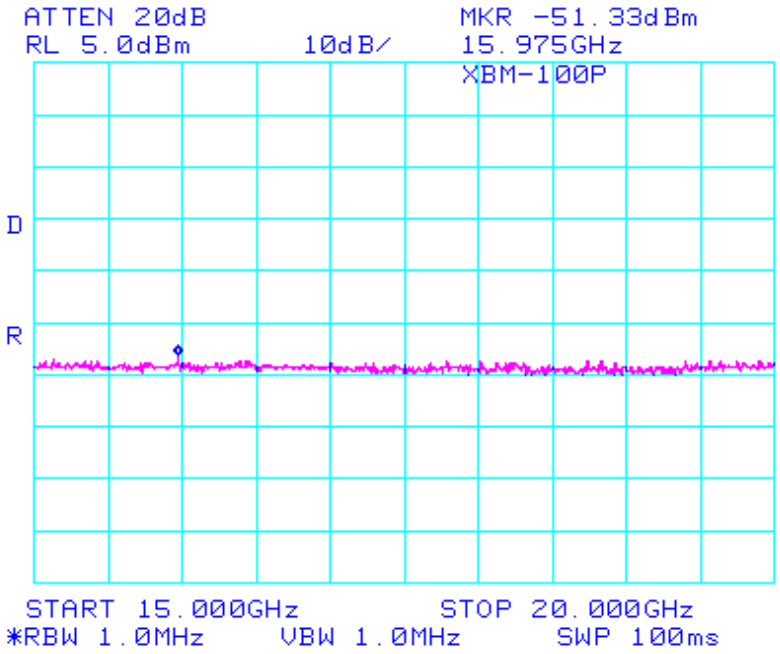
Frequency Range = 30 MHz ~ 10th harmonic.

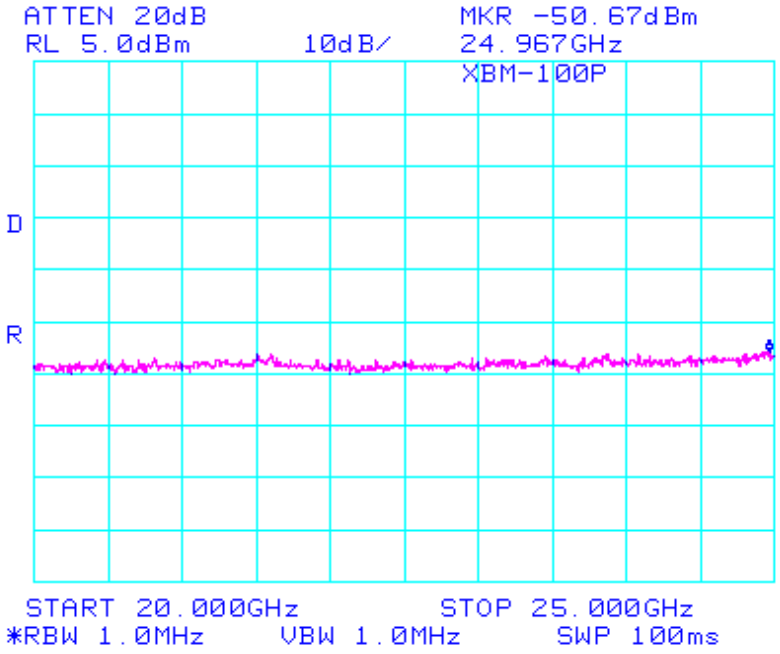




Band - edge (at 20 dB blow)

Frequency Range = 30 MHz ~ 10th harmonic.





3.2.7 Out of band Emission - Radiated

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) VBW ≥ RBW

= 1 MHz (1 GHz ~ 10th harmonic)

Span = 100 MHz Detector function = peak

Trace = max hold 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 15.209(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.

TEST EQUIPMENT USED: 02, 22, 30, 31, 33, 34, 39, 40, 41, 47, 49

Out of Band Emissions (TX)

Measurement Data

Frequency			Frequency		
Frequency (MHz)	**Band-width (kHz)**	**Level (dBuV)**	**Frequency (MHz)**	**Band-width (kHz)**	**Level (dBuV)**
158.53 MHz	**100**	**19.54**	**345.25 MHz**	**100**	**32.48**
328.28 MHz	**100**	**29.72**	**384.02 MHz**	**100**	**26.60**
Measurement uncertainty		± 6 dB			

Remark : the other emission is less than 10dB.

3.2.8 AC 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: NOT APPLY

- This EUT was not applied because During the charging mode, The EUT can`t do the transmission.

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

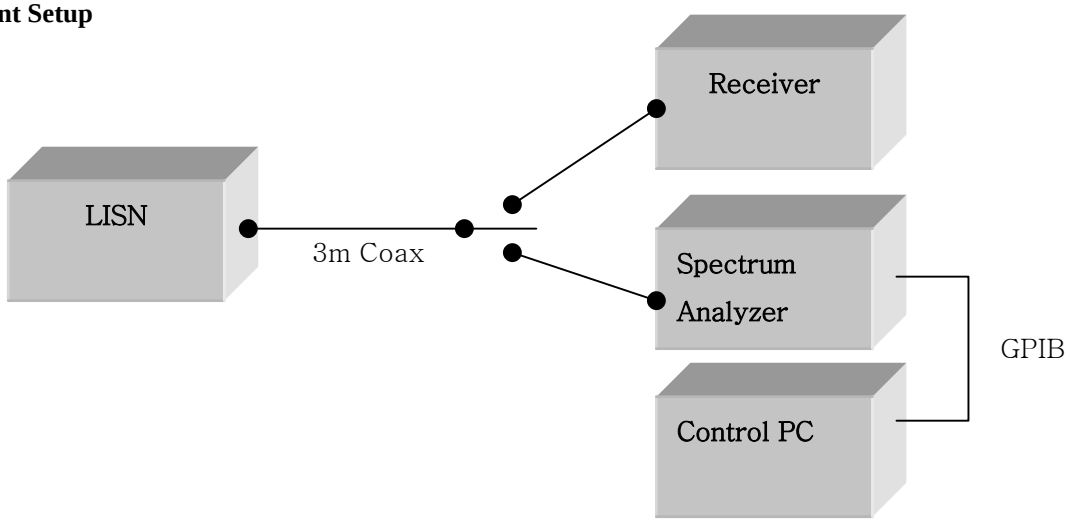


Figure 2: Measurement setup for AC Conducted Emission

TEST EQUIPMENT USED: 42, 43, 44, 45, 46, 48

3.3 Receiver requirements

3.3.1 AC 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 receiving function. 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

- See next pages for actual measured spectrum plots.

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

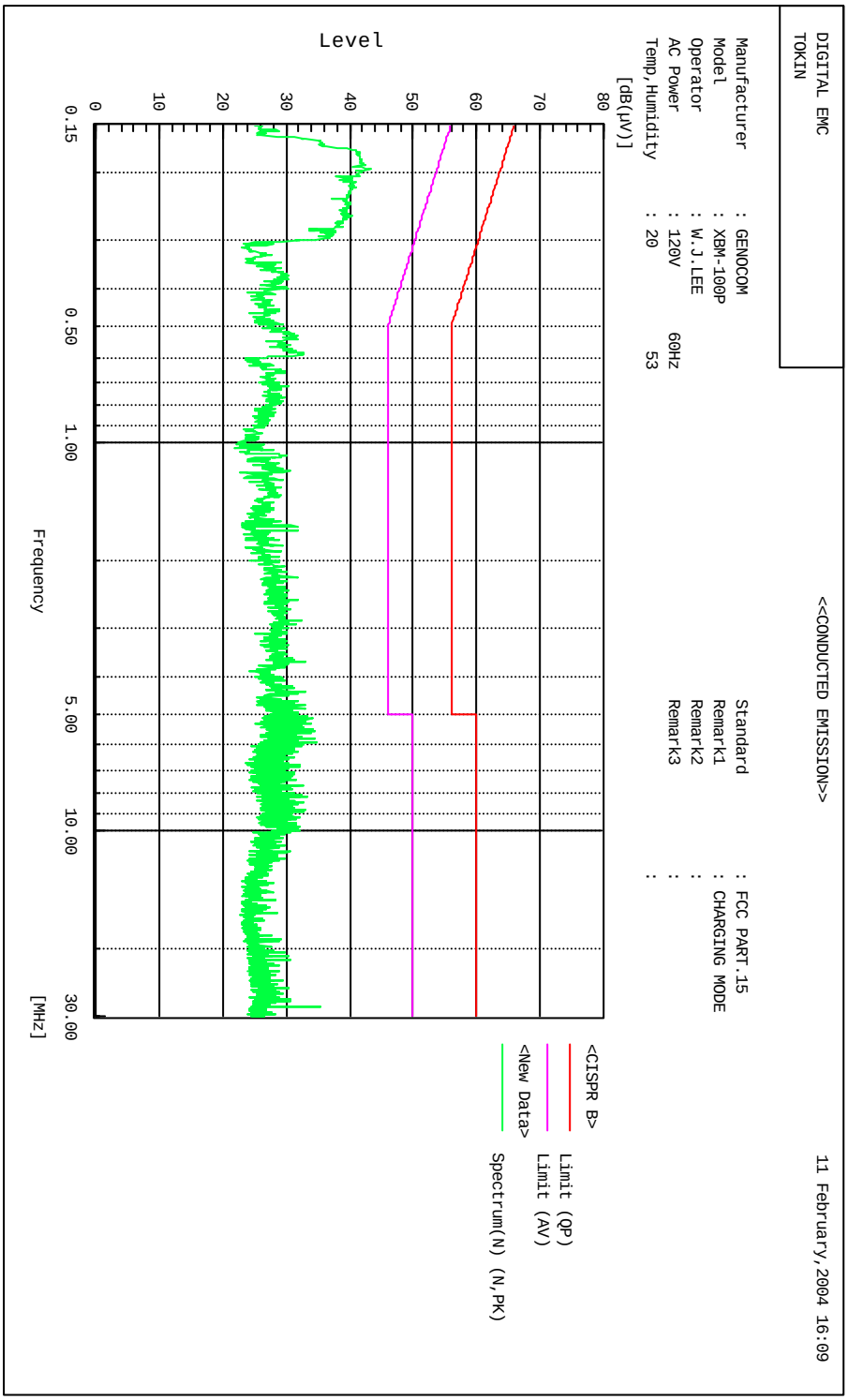
* Decreases with the logarithm of the frequency

Measurement Setup

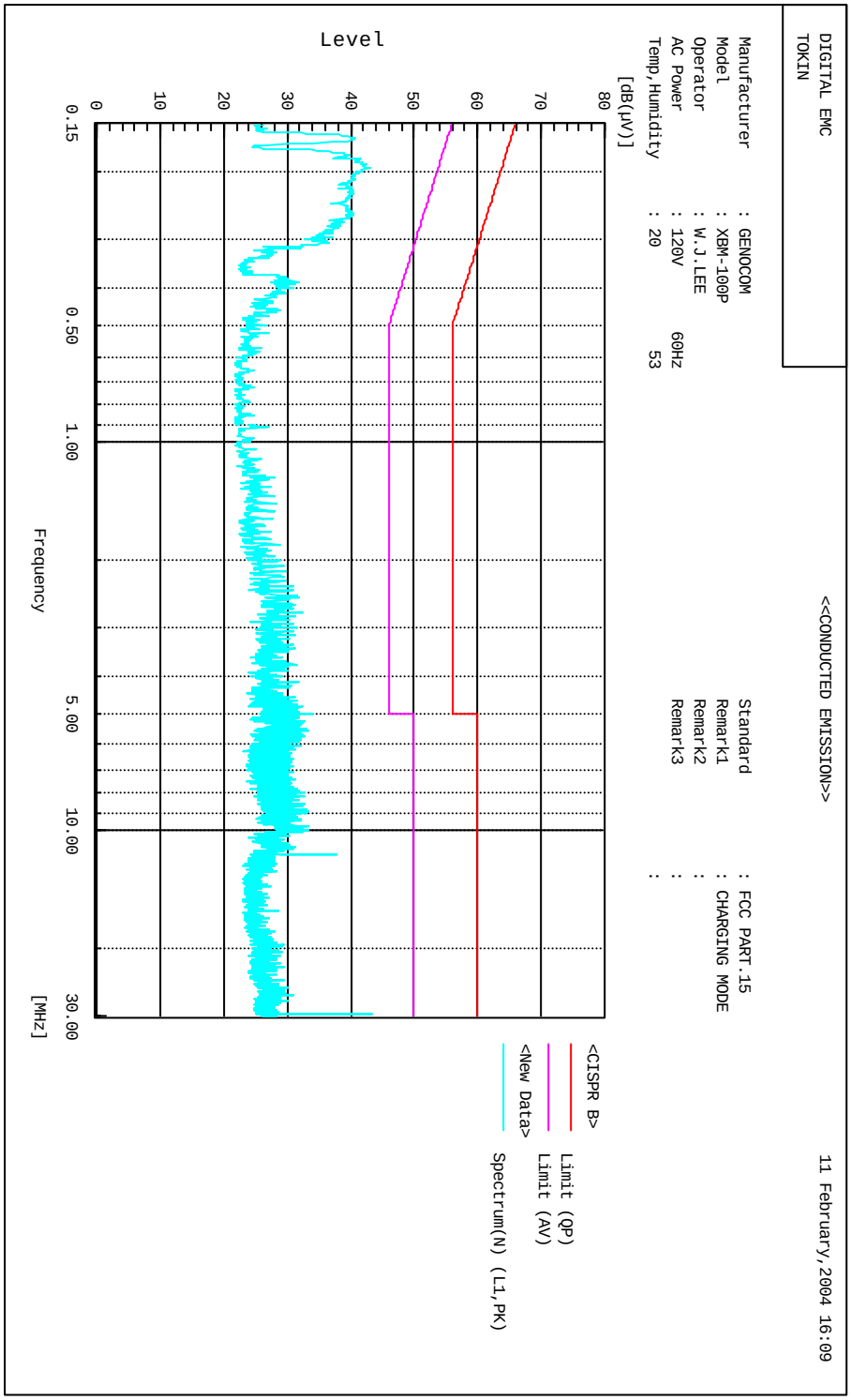
Same as the Chapter 3.2.9 (Figure 2)

TEST EQUIPMENT USED: 42, 43, 44, 45, 46, 48

AC Conducted Emissions



AC Conducted Emissions



AC Conducted Emissions

```
********************************************** DIGITAL EMC **********************************************
                                    <<CONDUCTED EMISSION>>
                                                                        11 February,2004 16:09

Standard        : FCC PART.15
Manufacturer    : GENOCOM
Model           : XBM-100P
Operator        : W.J.LEE
AC Power        : 120V      60Hz
Temp,Humidity   : 20          53
Remark1         : CHARGING MODE
Remark2         :
Remark3         :
:

**********************************************************************************************************

Final Result

--- N Phase ---

No.  Frequency  Reading   Reading   c.f   Result    Result    Limit     Limit     Margin    Margin  Remark
                  QP        AV                QP        AV        QP        AV        QP        AV
       [MHz]  [dB(µV)]  [dB(µV)]  [dB]  [dB(µV)]  [dB(µV)]  [dB(µV)]  [dB(µV)]    [dB]      [dB]
  1    0.197     29.5       0.0   1.2      30.7       0.0      63.7      53.7      33.0       0.0
  2    0.587     32.9       0.0   0.3      33.2       0.0      56.0      46.0      22.8       0.0
  3    1.181     30.6       0.0   0.2      30.8       0.0      56.0      46.0      25.2       0.0
  4    2.865     32.4       0.0   0.4      32.8       0.0      56.0      46.0      23.2       0.0
  5    5.925     34.9       0.0   0.5      35.4       0.0      60.0      50.0      24.6       0.0
  6    8.186     33.4       0.0   0.5      33.9       0.0      60.0      50.0      26.1       0.0

--- L1 Phase ---

No.  Frequency  Reading   Reading   c.f   Result    Result    Limit     Limit     Margin    Margin  Remark
                  QP        AV                QP        AV        QP        AV        QP        AV
       [MHz]  [dB(µV)]  [dB(µV)]  [dB]  [dB(µV)]  [dB(µV)]  [dB(µV)]  [dB(µV)]    [dB]      [dB]
  1    0.194     29.4       0.0   1.1      30.5       0.0      63.9      53.9      33.4       0.0
  2    0.384     31.8       0.0   0.5      32.3       0.0      58.2      48.2      25.9       0.0
  3    1.431     28.2       0.0   0.3      28.5       0.0      56.0      46.0      27.5       0.0
  4    2.740     32.5       0.0   0.4      32.9       0.0      56.0      46.0      23.1       0.0
  5    5.006     33.8       0.0   0.5      34.3       0.0      60.0      50.0      25.7       0.0
  6   10.020     33.4       0.0   0.7      34.1       0.0      60.0      50.0      25.9       0.0
```

3.3.2 Radiated Emission

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 a 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:

Frequency Range = 30 MHz ~ 10^{th} harmonic.

RBW = 120 kHz (30MHz ~ 1 GHz) VBW ≥ RBW

= 1 MHz (1 GHz ~ 10^{th} harmonic)

Trace = max hold Detector function = peak

Sweep = auto

Measurement Data: Complies

- Refer to the next page.

Minimum Standard: FCC Part 15.209(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.

TEST EQUIPMENT USED: 02, 22, 30, 31, 33, 34, 39, 40, 41, 47, 49

Out of Band Emissions

Measurement Data:

1. Test mode : bluetooth standby and mp3 play mode. (only EUT)

Frequency	Remark	Read Level	Probe Factor	Cable Loss	Preamp Factor	Factor	Level	Limit	Margin
182.78	H	45.0	15.96	2.00	27.96	-10.00	35.0	43.5	8.5
345.25	H	46.0	14.67	3.00	28.19	-10.52	35.5	46.0	10.5

Remark : No other emissions were detected at a level greater than 10dB below limit.

2. Test mode : charging and data up/down mode

Frequency	Remark	Read Level	Probe Factor	Cable Loss	Preamp Factor	Factor	Level	Limit	Margin
345.25	H	48.0	14.67	3.00	28.19	-10.52	37.5	46.0	8.5
384.05	H	47.5	15.51	3.50	28.42	-9.41	38.1	46.0	7.9
401.25	H	48.4	15.88	3.47	28.51	-9.16	39.2	46.0	6.8
401.25	V	49.0	15.88	3.47	28.51	-9.16	39.9	46.0	6.1
667.78	H	42.5	19.42	4.30	29.30	-5.58	37.0	46.0	9.0
672.63	V	45.0	19.47	4.18	29.30	-5.65	39.4	46.0	6.6
704.15	H	42.7	19.80	4.21	29.29	-5.28	37.4	46.0	8.6
830.25	V	45.5	20.86	4.26	28.82	-3.70	41.8	46.0	4.2
830.25	H	44.0	20.86	4.26	28.82	-3.70	40.3	46.0	5.7
927.25	V	43.5	22.45	5.00	28.34	-0.89	42.6	46.0	3.4
934.53	H	38.5	22.49	5.00	28.38	-0.89	37.6	46.0	8.4
985.45	V	39.5	22.79	4.64	28.63	-1.20	38.3	46.0	7.7

Remark: the other emission is less than 10dB.

APPENDIX

TEST EQUIPMENT USED 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)	S/N
01	Spectrum Analyzer	Agilent	E4404B	22/11/04	30601-01-6025569
02	Spectrum Analyzer	H.P	8563E	25/09/04	3551A04634
03	Power Meter	H.P	EPM-442A	15/03/04	GB37170413
04	Power Sensor	H.P	8481A	19/04/04	3318A96332
05	Frequency Counter	H.P	5342A	26/09/04	2119A04450
06	Multfunction Synthesizer	H.P	8904A	15/10/04	3633A08404
07	Signal Generator	H.P	8673D	26/09/04	2844A00753
08	Signal Generator	H.P	E4421A	29/04/04	US37230529
09	Signal Generator	H.P	8657A	05/06/04	3430U02049
10	Audio Analyzer	H.P	8903B	18/04/04	3011A0944B
11	Modulation Analyzer	H.P	8901B	21/04/04	3028A03029
12	Sensor Module	H.P	11722A	21/04/04	3111A04665
13	Oscilloscope	LeCroy	9314A	27/08/04	93144390
14	CDMA Mobile Station Test Set	H.P	8924C	09/09/04	US35360688
15	Power Splitter	WEINSCHEL	1593	23/04/04	332
16	BAND Reject Filter	Wainwright	WRCG824	19/08/04	SN1
17	BAND Reject Filter	Wainwright	WRCG1750	19/08/04	SN2
18	AC Power supply	DAEKWANG	5KVA	03/04/04	N/A
19	DC Power Supply	H.P	6622A	24/03/04	465487
20	Attenuator (30dB)	H.P	8498A	23/05/04	50101
21	Attenuator (10dB)	WEINSCHEL	23-10-34	15/10/04	BP4387
22	HORN ANT	EMCO	3115	22/02/04	6419
23	HORN ANT	EMCO	3115	01/10/04	21097
24	HORN ANT	A.H.Systems	SAS-574	27/11/04	154
25	HORN ANT	A.H.Systems	SAS-574	14/11/04	155
26	Dipole Antenna	Schwarzbeck	VHA9103	04/10/04	2116

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	S/N
27	Dipole Antenna	Schwarzbeck	VHA9103	04/10/04	2117
28	Dipole Antenna	Schwarzbeck	UHA9105	04/10/04	2261
29	Dipole Antenna	Schwarzbeck	UHA9105	04/10/04	2262
30	RFI/FIELD Iintensity Meter	Kyorits	KNM-504D	25/07/04	SN-161-4
31	Frequency Converter	Kyorits	KCV-604C	05/07/04	4-230-3
32	TEMP & HUMIDITY Chamber	JISCO	J-RHC2	14/09/04	021031
33	Log Periodic Antenna	Schwarzbeck	UHALP9108A1	23/10/04	1098
34	Biconical Antenna	Schwarzbeck	VHA9103	23/10/04	VHA91031946
35	Digital Multimeter	H.P	34401A	15/10/04	3146A13475
36	Attenuator (10dB)	WEINSCHEL	23-10-34	15/10/04	BP4386
37	High-Pass Filter	ANRITSU	MP526	12/05/04	M27756
38	Attenuator (3dB)	Agilent	8491B	15/10/04	58177
39	Amplifier (25dB)	Agilent	8447D	24/06/04	2944A10144
40	Position Controller	TOKIN	5901T	N/A	14173
41	Driver	TOKIN	5902T2	N/A	14174
42	Spectrum Analyzer	H.P	8591E	23/05/04	3649A05889
43	RFI/FIELD Intensity Meter	Kyorits	KNW-2402	25/07/04	4N-170-3
44	LISN	Kyorits	KNW-407	29/08/04	8-317-8
45	LISN	Kyorits	KNW-242	22/08/04	8-654-15
46	CVCF	NF Electronic	4400	N/A	344536 4420064
47	Software	ToYo EMI	EP5/RE	N/A	Ver 2.0.800
48	Software	ToYo EMI	EP5/CE	N/A	Ver 2.0.801
49	Software	AUDIX	e3	N/A	Ver 3.0
50	Software	Agilent	Benchlink	N/A	A.01.09 021211

