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 <u>http://www.digitalemc.com</u>

CERTIFICATION OF COMPLIANCE

BLUECOM Co., Ltd. 38B1L Namdong Industrial Complex 626 Namcheon-dong, Namdong-gu Incheon, 405-100, Korea Dates of Tests: March 8 ~ 14, 2007 Test Report S/N: DR50110703L Test Site : DIGITAL EMC CO., LTD.



FCC Classification	:	Frequency Hopping Spread Spectrum (FHSS)
Device name	:	Bluetooth Headset
Manufacturer	:	BLUECOM Co., Ltd.
FCC ID	:	U3WBCM130
Model name	:	BCM-130
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	:	3.86dBm Conducted
Data of issue	:	March 29, 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 <u>http://www.digitalemc.com</u> E-mail : <u>Harveysung@digitalemc.com</u> 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

March 29, 2007	Dong -Chul CHA	0
Data	Name	Signature

Report Reviewed By: manager

March 29, 2007 Data Harvay Sung Name

Signature

Ordering party:

Company name	:	BLUECOM Co., Ltd.
Address	:	38B1L Namdong Industrial Complex 626 Namcheon-dong, Namdong-gu
City/town	:	Incheon
Country	:	Korea
Zip code	:	405-100
Date of order	:	February 24, 2007

2. Information about test item

U3WBCM130

2.1 Equipment information

2.1 Equipment information	
Equipment model no.	BCM-130
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

2.2 Tested frequency

Frequency	ТХ	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 VDC

2.4 Ancillary Equipment

Equipment	Model No.	Serial No.	Manufacturer
Adaptor	CTA-5010R	N/A	CELLINE TELECOM CO. LTD
-	-	-	-
-	-	-	-

2.5 EMI Suppression Device(s)/Modifications

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

-> None

3. Test Report

3.1 Summary of tests

FCC Part Section(s)	Parameter	Limit	Test Condition	Status (note 1)
I. Test Items				
	Carrier Frequency Separation	> 25 kHz		С
	Number of Hopping Frequencies	> 75 hops		С
15.247(a)	20 dB Bandwidth	< 1 MHz		С
	Dwell Time	0.4 seconds within a 30 second period per any frequency	Conducted	С
15.247(b)	Transmitter Output Power	< 1Watt		С
	Band-edge /Conducted	The radiated emission to any 100 kHz of outband		С
15.247(c)	Conducted Spurious Emissions	shall be at least 20dB below the highest inband spectral density.		С
15.205 15.209	Radiated Emissions	FCC 15.209 Limits	Radiated	C
15.207	AC Conducted Emissions	EN 55022	AC Line	С
13.207		EN 33022	Conducted	
Note 1: C=Com	plies 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.

Detector function = peak

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

Trace = max hold

Measurement Data:

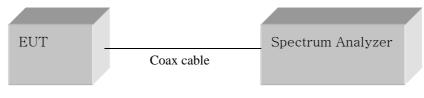
Frequency of marker #1	Frequency of marker #2	Test R	Results
(MHz)	(MHz)	Carrier Frequency Separation (MHz)	Result
2440.994	2441.996	1.002	Complies

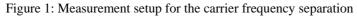
- See next pages for actual measured spectrum plots.

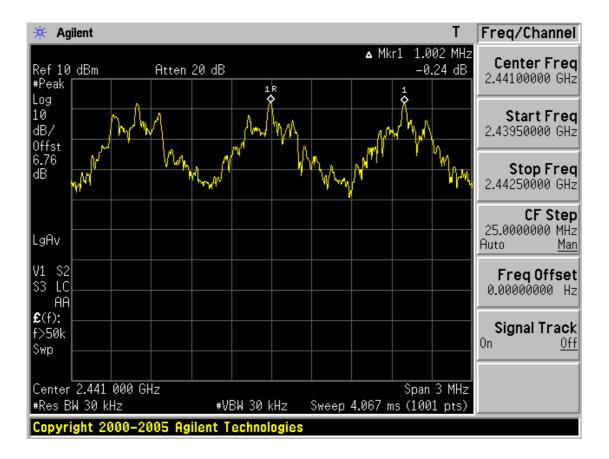
Minimum Standard:

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







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 (V	$(BW \ge RBW)$	Detector function = peak
Trace = max hold		Span = 25MHz

Measurement Data: Complies

|--|

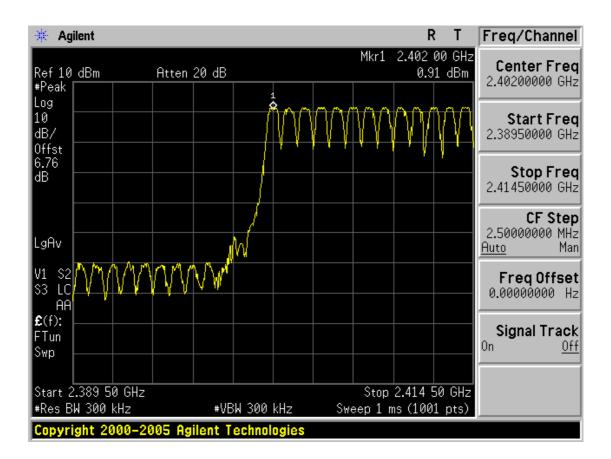
- See next pages for actual measured spectrum plots.

Minimum Standard:

At least 75 hopes

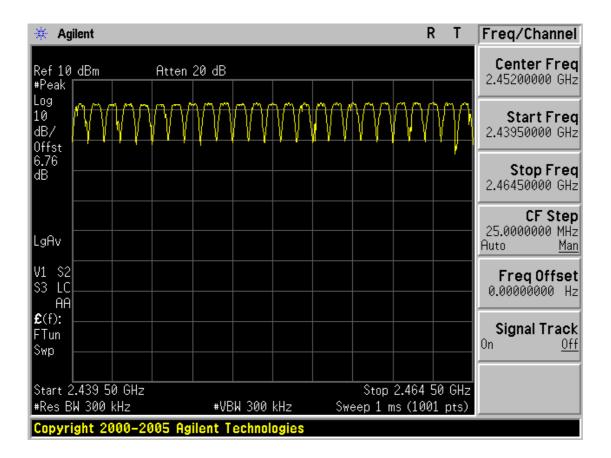
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

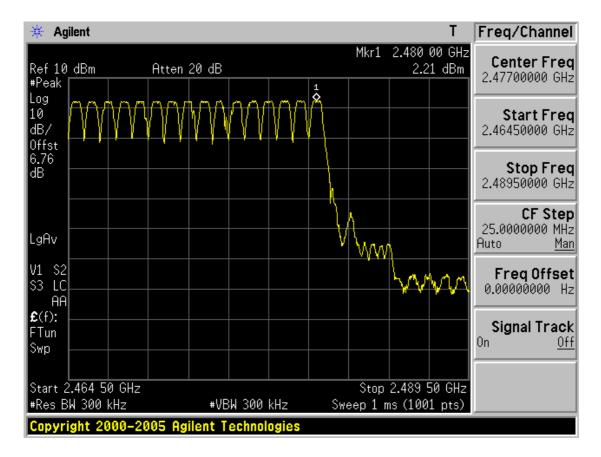


Number of Hopping Frequencies

🔆 Agilent		Т	Freq/Channel
Ref 10 dBm #Peak	Atten 20 dB		Center Freq 2.42700000 GHz
Log 10 dB/ Offst		MMMMM	Start Freq 2.41450000 GHz
0ffst 6.76 dB			Stop Freq 2.43950000 GHz
LgAv			CF Step 25.0000000 MHz Auto <u>Mar</u>
V1 S2 S3 LC AA			Freq Offset 0.00000000 Hz
£(f): FTun Swp			Signal Track On <u>Off</u>
Start 2.414 50 GHz #Res BW 300 kHz	#VBW 300 kHz	Stop 2.439 50 GHz Sweep 1 ms (1001 pts)	
	05 Agilent Technologies		



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 \geq RBW) Detector function = peak Trace = max hold

Measurement Data:

Frequency		Test Results		
(MHz)	Channel No.	Measured Bandwidth (MHz)	Result	
2402	1	0.943	Complies	
2441	40	0.947	Complies	
2480	79	0.877	Complies	

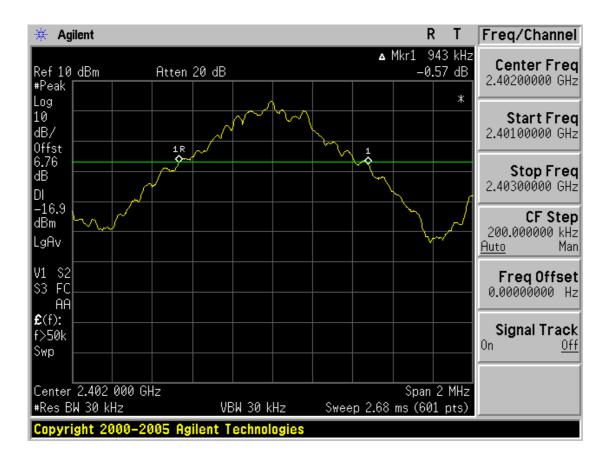
- See next pages for actual measured spectrum plots.

Minimum Standard:

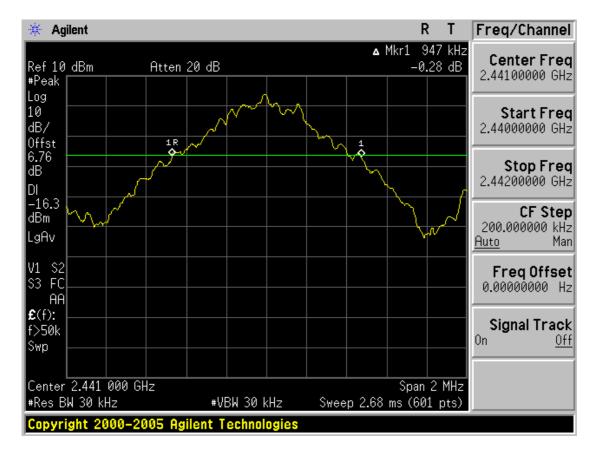
The transmitter shall have a maximum 20dB bandwidth of 1 MHz.

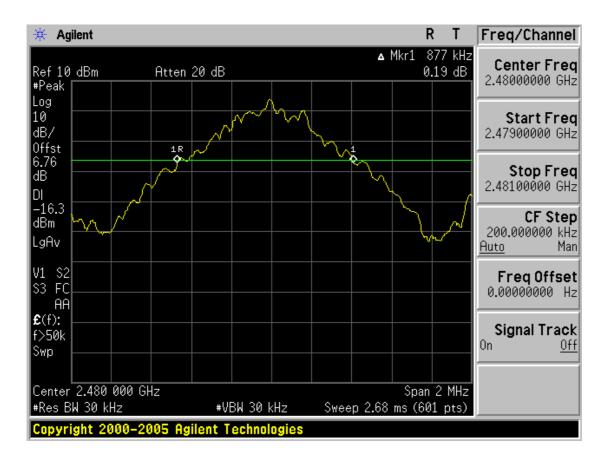
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)



20 dB Bandwidth





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	$VBW = 1 MHz (VBW \ge RBW)$
Trace = max hold	Detector function = peak

Measurement Data:

Packet Type	Burst duration in one	Test Results		
r acket Type	hop (us)	Dwell Time (ms)	Result	
DH 1	420	134.446	Complies	
DH 3	1673	269.620	Complies	
DH 5	2930	312.015	Complies	

- See next pages for actual measured spectrum plots.

Minimum Standard:

 $0.4\ seconds$ within a 30 second period per any frequency

Measurement Setup

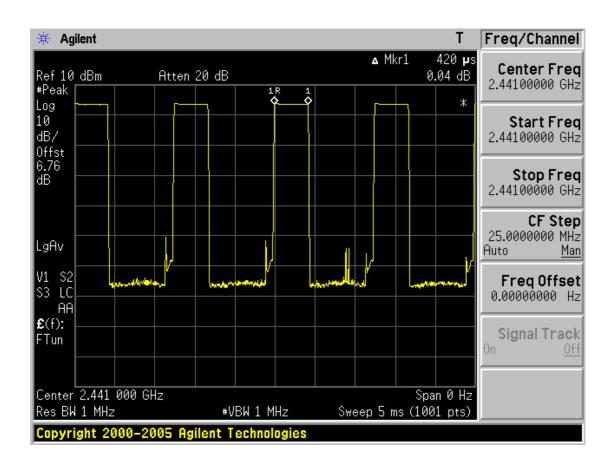
Same as the Chapter 3.2.1 (Figure 1)

<u>Time of Occupancy for Packet Type DH 1</u>

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 $0.4 \times 79 = 31.6$ seconds you have $10.13 \times 31.6 = 320.11$ times of appearance.

Each Tx-time per appearance is 420 us

So we have 320.11 x 420us = 134.446 ms per 31.6 seconds.

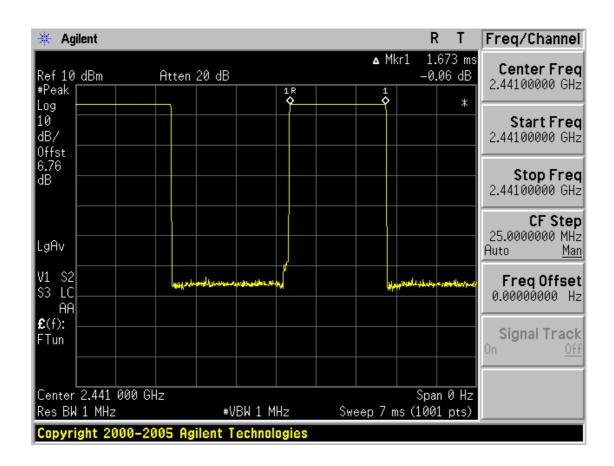


<u>Time of Occupancy for Packet Type DH 3</u>

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 1.61 ms

So we have $161.16 \times 1.673 \text{ ms} = 269.620 \text{ ms}$ per 31.6 seconds.

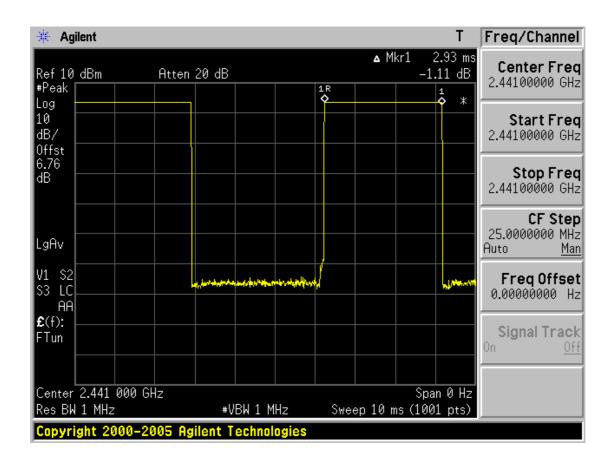


Time of Occupancy for Packet Type DH 5

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 $3.37 \times 31.6 = 106.49$ times of appearance.

Each Tx-time per appearance is 2.878 ms

So we have $106.49 \times 2.930 \text{ ms} = 312.015 \text{ ms}$ 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.

Detector function = peak

Sweep = auto

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)

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

Trace = max hold

Measurement Data:

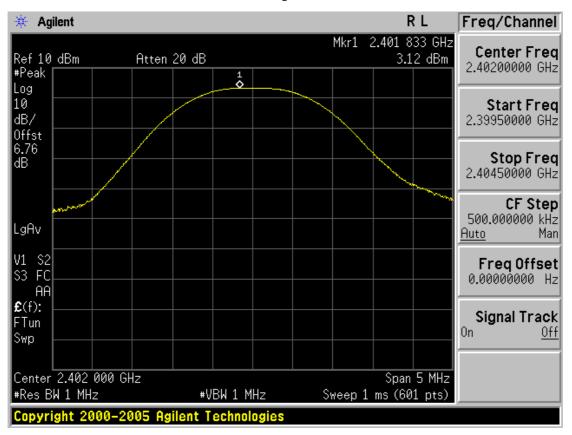
Frequency (MHz)	Ch.	Test Results		
	CII.	dBm	mW	Result
2402	1	3.12	2.051	Complies
2441	40	3.53	2.254	Complies
2480	79	3.86	2.432	Complies

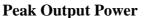
- See next pages for actual measured spectrum plots.

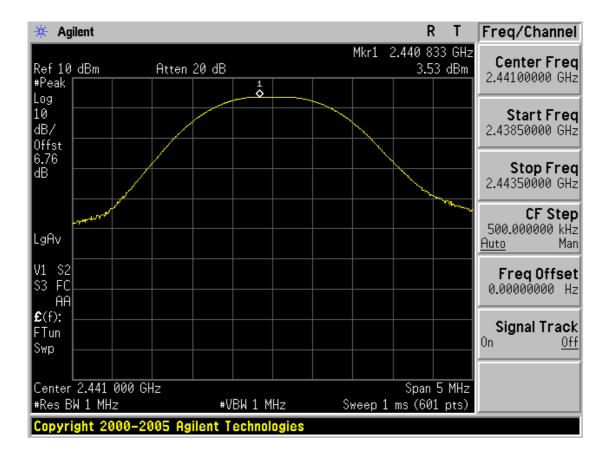
Minimum Standard:	< 1W
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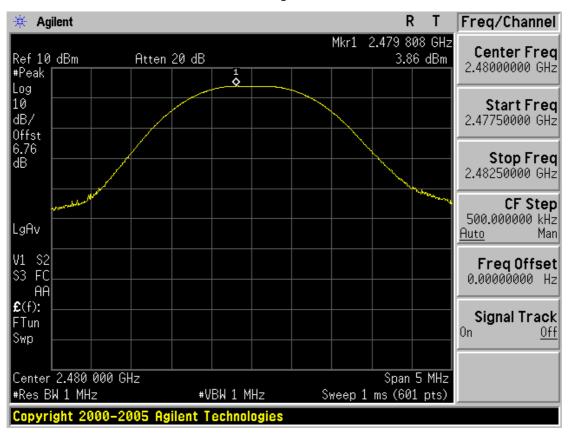
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)









Peak Output Power

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

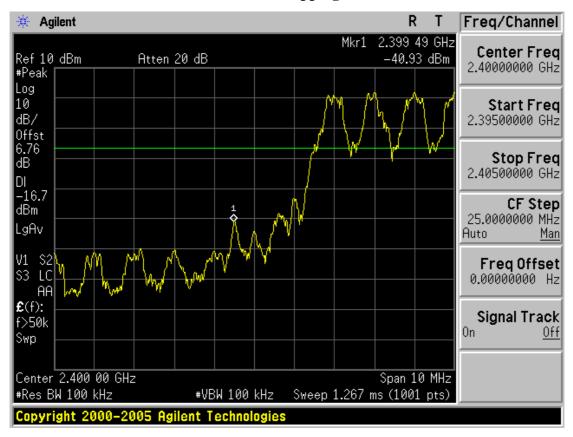
Measurement Setup

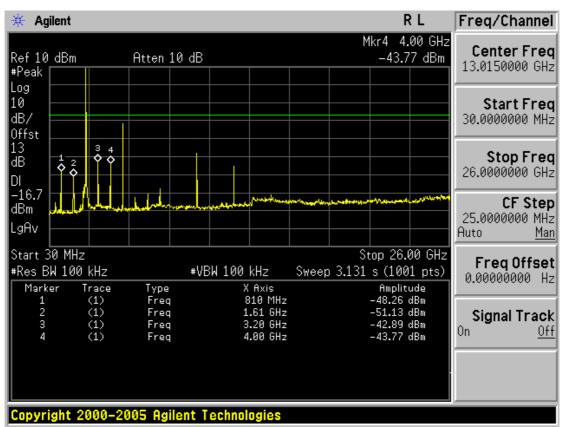
Same as the Chapter 3.2.1 (Figure 1)



Low band with hopping disabled

Low band with hopping enabled

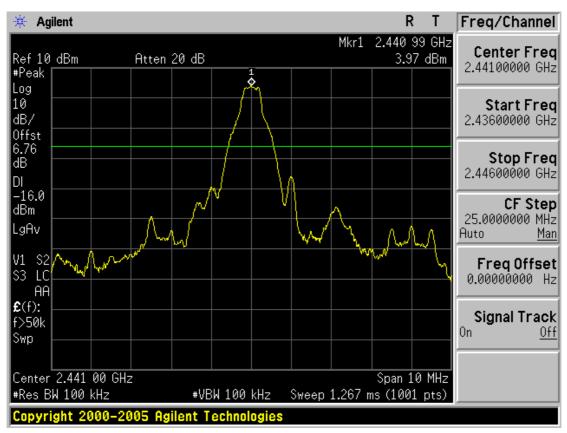




Low channel spurious

🔆 Agilent	:				Т	Freq/Channel
Ref 10 dBi #Peak	m	Atten 10 d	IB	4	1kr4 7.20 GHz -57.60 dBm	Center Freq 13.0150000 GHz
Log 10 dB/ Offst						Start Freq 30.0000000 MHz
13 dB DI						Stop Freq 26.0000000 GHz
–16.7 dBm للمجار LgAv			Langer and Produced	1997-1995-1995-1995-1995-1995-1995-1995-	and a second	CF Step 25.0000000 MHz Auto <u>Man</u>
Start 30 M #Res BW 10 Marker	00 kHz Trace	Type	ŧVBW 100 kHz X Axis	Sweep 3.131	top 26.00 GHz s (1001 pts) Amplitude	Freq Offset 0.00000000 Hz
1 2 3 4	(1) (1) (1) (1)	Freq Freq Freq Freq	4.81 GHz 5.61 GHz 6.42 GHz 7.20 GHz		-21.96 dBm -62.76 dBm -60.74 dBm -57.60 dBm	Signal Track ^{On <u>Off</u>}
Conuminate	2000 2	DOE Orilant	t Technologies			

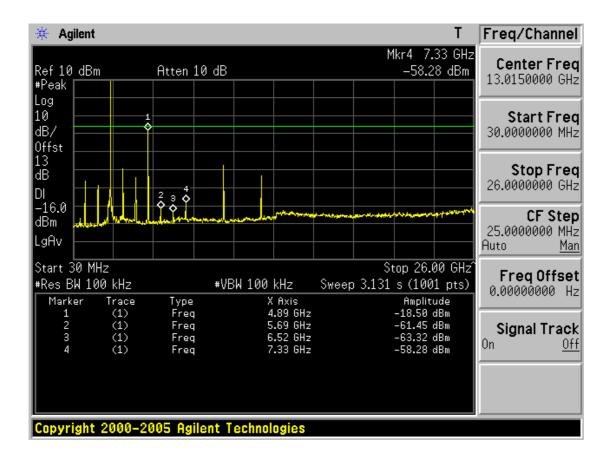
🔆 Agilent				Т	Freq/Channel
Ref 10 dBm #Peak	Atten 10 dB		Mkr2 12.0 -45.51		Center Freq 13.0150000 GHz
Log 10 dB/ Offst					Start Freq 30.0000000 MHz
13 dB DI					Stop Freq 26.0000000 GHz
-16.7 dBm LgAv	al a de al volter a proprio de la constantes	hand have been a supplier of the supplier of t	<u>hanaðsdrygu</u> r a Ynsknamski ar	f and the second	CF Step 25.000000 MHz Auto <u>Man</u>
Start 30 MHz #Res BW 100 kHz	#VBW 100	· ·	Stop 26.0 3.131 s (1001	pts)	Freq Offset 0.00000000 Hz
Marker Trace 1 (1) 2 (1)	Freq	X Axis 9.61 GHz 2.00 GHz	Amplitud -37.89 dl -45.51 dl	Bm Bm	Signal Track ^{On <u>Off</u>}
Copyright 2000-	2005 Agilent Techno	logies			



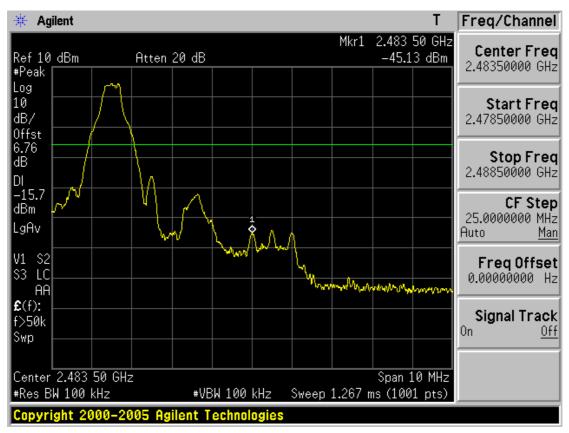
Mid channel ref

🔆 Agilent			RT	Freq/Channel
Ref 10 dBm #Peak	Atten 10 dB		Mkr4 4.08 GHz -44.49 dBm	Center Freq 13.0150000 GHz
Log 10 dB/ Offst				Start Freq 30.0000000 MHz
13 dB DI				Stop Freq 26.0000000 GHz
-16.0 dBm LgAv	l. de bolonnel de la		an de alarie de la company	CF Step 25.0000000 MHz Auto <u>Man</u>
Start 30 MHz #Res BW 100 kHz Marker Trace	Туре	X Axis	Stop 26.00 GHz 3.131 s (1001 pts) Amplitude	Freq Offset 0.00000000 Hz
$ \begin{array}{cccc} 1 & (1) \\ 2 & (1) \\ 3 & (1) \\ 4 & (1) \end{array} $	Freq Freq Freq Freq	810 MHz 1.64 GHz 3.25 GHz 4.08 GHz	-46.15 dBm -48.67 dBm -39.38 dBm -44.49 dBm	Signal Track On <u>Off</u>
Copyright 2000-2	2005 Ocilort Tor	haladica		



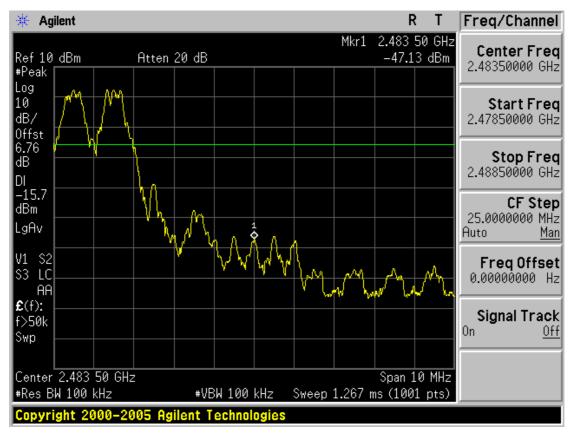


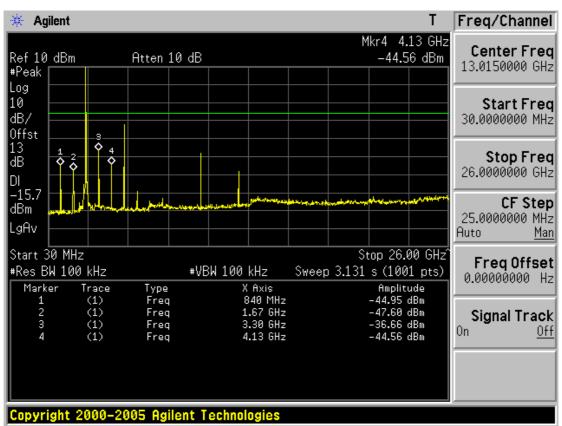
🔆 Agilent			F	۲ L	Freq/Channel
Ref 10 dBm #Peak	Atten 10 dB		Mkr2 12. -43.1	21 GHz 3 dBm	Center Freq 13.0150000 GHz
Log 10 dB/ Offst	1				Start Freq 30.0000000 MHz
13 dB DI	\$	2			Stop Freq 26.0000000 GHz
–16.0 dBm – Jahr		and the second s	1.500 m. 1.5000 m. 1.5000 m. 1.5000 m. 1.500 m. 1.5000 m. 1.5000 m. 1.5000 m. 1.5000 m. 1.500 m. 1.500 m. 1.500 m. 1.500	a f slovens t	CF Step 25.0000000 MHz Auto <u>Man</u>
Start 30 MHz #Res BW 100 kHz Marker Trace	#VB	W 100 kHz Sw X Axis	.Stop 26 eep 3.131 s (100 Amplit	1 pts)	FreqOffset 0.00000000 Hz
1 (1) 2 (1)	Freq Freq Freq	9.77 GHz 12.21 GHz	-37.63 -43.13	dBm	Signal Track ^{On <u>Off</u>}
Copyright 2000-2	OOF Onitent T				



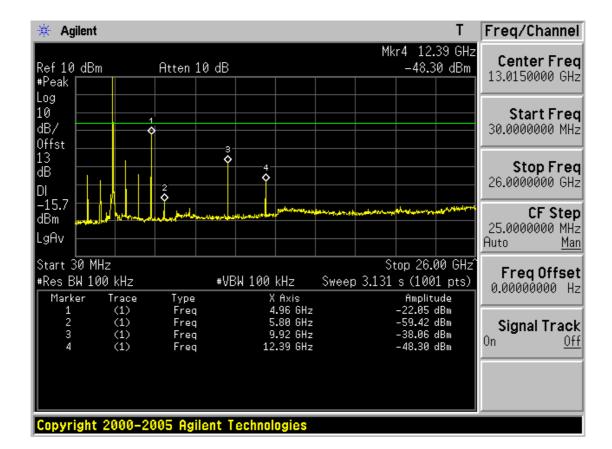
High band with hopping disabled

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 = $30 \text{ MHz} \sim 10^{\text{th}} \text{ harmonic.}$	
RBW = 120 kHz (30MHz ~ 1 GHz)	$VBW \geq RBW$ (Peak)
$= 1 \text{ MHz} (1 \text{ GHz} \sim 10^{\text{th}} \text{ harmonic})$	VBW = 10Hz (Average)
Trace = max hold	Sweep = auto

Measurement Data: Complies

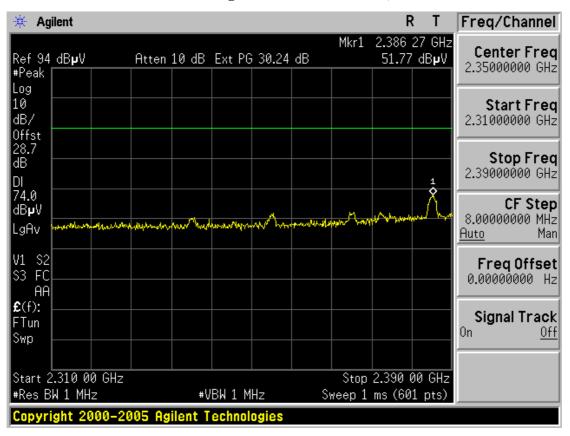
- No emissions were detected at a level greater than 10dB below limit.
- Refer to the next page.

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

Limit : FCC P15.209(a)

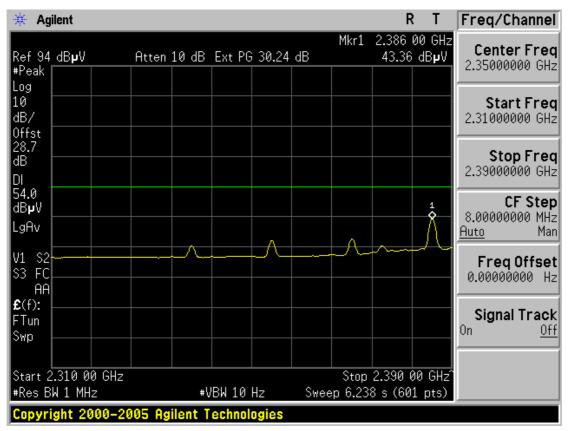
Frequency (MHz)	Limit (uV/m) @ 3m
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

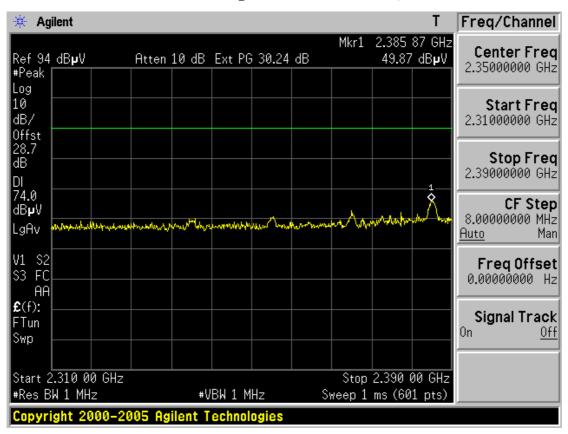
** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part,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



Restricted Band Edge: Low Channel (Peak, Horizontal)

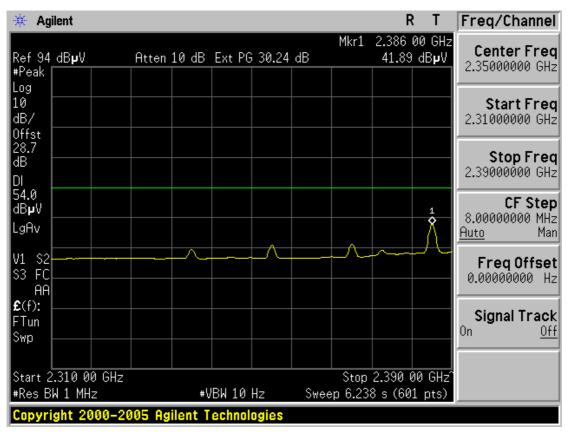
Restricted Band Edge: Low Channel (Average, Horizontal)

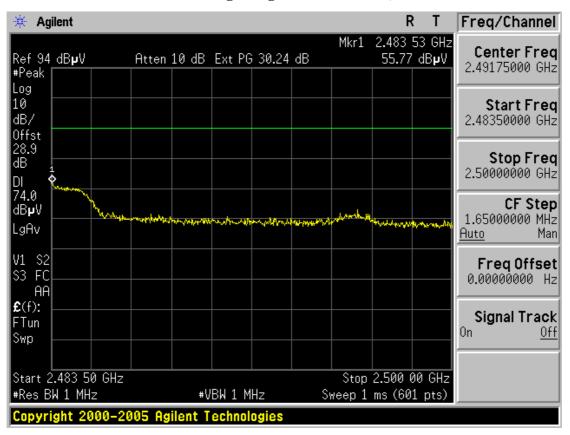




Restricted Band Edge: Low Channel (Peak, Vertical)

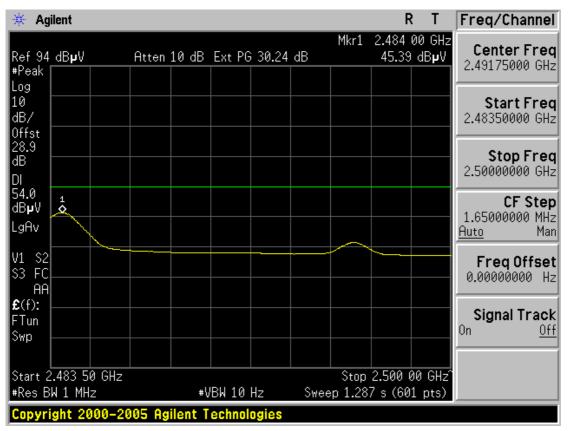
Restricted Band Edge: Low Channel (Average, Vertical)

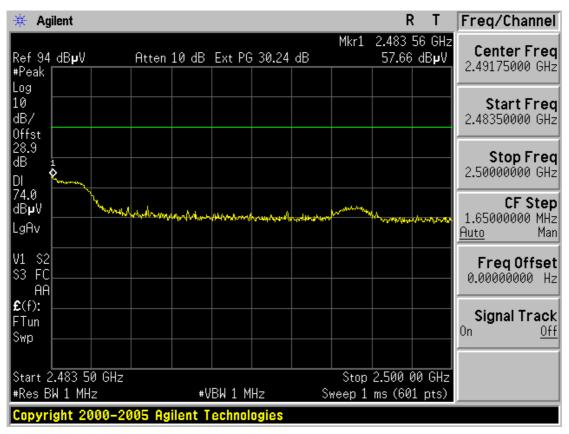




Restricted Band Edge: High Channel (Peak, Horizontal)

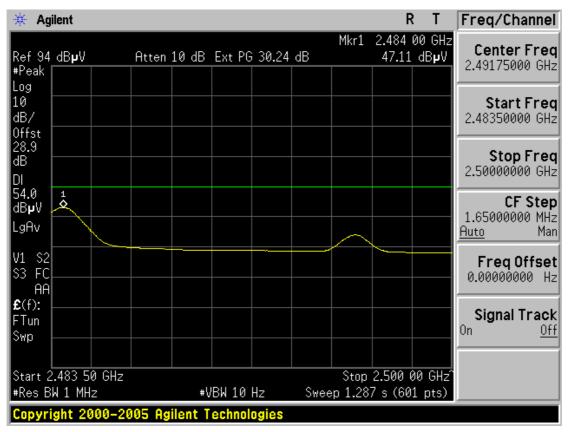
Restricted Band Edge: High Channel (Average, Horizontal)





Restricted Band Edge: High Channel (Peak, Vertical)

Restricted Band Edge: High Channel (Average, Vertical)



Frequency (MHz)	ANT Pol. (H/V)		g Value uV)	T.F (dB)		sult suV)	Limit (dBuV)		Margin (dB)	
	(11/ V)	РК	AV		РК	AV	РК	AV	РК	AV
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
Frequency (MHz)	ANT Pol. (H/V)	Reading Value (dBuV)		T.F (dB)	Result (dBuV)		Limit (dBuV)		Margin (dB)	
(IVIIIZ)	(· /	РК	AV	()	PK	AV	РК	AV	РК	AV
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
High Chann Frequency (MHz)	nel(2480MH ANT Pol. (H/V)	Readin	g Value uV)	T.F (dB)		sult suV)		mit uV)		rgin B)
(MHZ)	(11/ ¥)	РК	AV	(uD)	РК	AV	РК	AV	РК	AV
-	-	-	-	-	-	-	-	-	-	-
				-	_	-	-	-	-	_
-	-	-	-	-	-	1 -	-	-	-	

Radiated Spurious Emission Data(Harmonics)

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)

(Continued...)

Other Emissions														
Breamency	ANT Pol.	Re	ading Va (dBuV)		T.F (dB)		Result (dBuV)			Limit (dBuV)	e			
(IVIIIZ)	(H/V)	РК	QP	AV	(uD)	РК	QP	AV	РК	QP	AV	РК	QP	AV
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

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

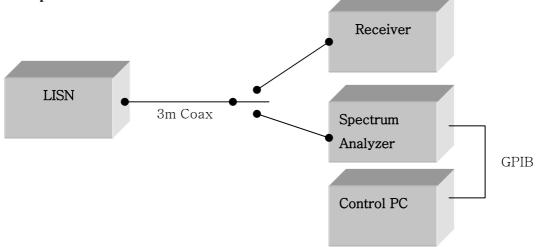
- Refer to the next page.
- When AC/DC adaptor is connected to this device, Bluetooth is in idle mode only to changing the battery. Therefore conducted emission test was performed in idle mode only

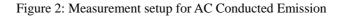
Minimum Standard: FCC Part 15.207(a)/EN 55022

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

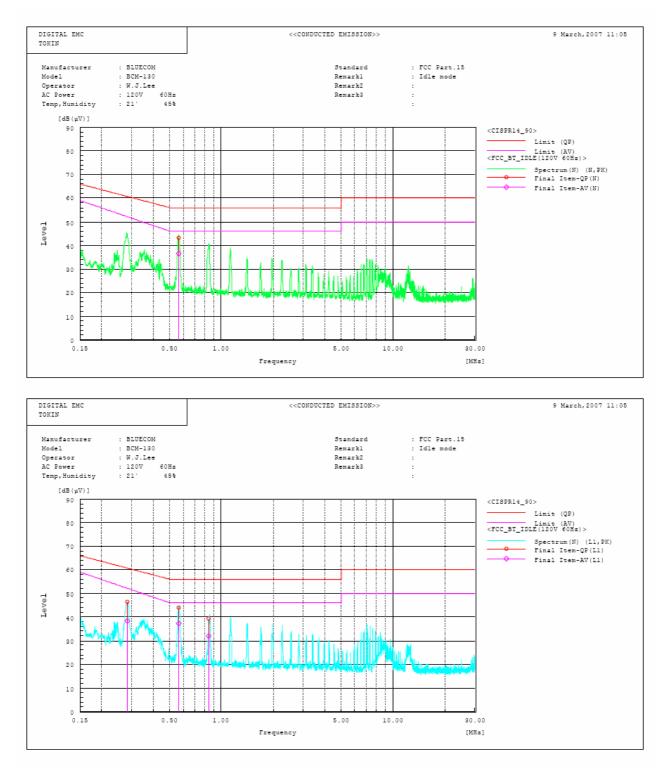
* Decreases with the logarithm of the frequency

Measurement Setup





AC Conducted Emissions



AC Conducted Emissions

••••	******			•••••			1.74	GITAL EMC TED EMISSIO	 ON>>		9 March,2007 11:05
Stan	dard	: FOC P	art.15								
Manu	facturer	: BLUEC	CM								
Mode		: BCM-1									
Oper		: W.J.L									
AC P		: 120V	60Hz								
Temp	Humidity	: 21	45%								
Rema	rk1	: Idle	node								
Rema	rk2	:									
Rema	rk3	:									
		:									
	**********	*********	**********	*******	*********	*********	*********	*********	********	*******	***************************************
Fina	l Result										
	N Phase										
No.	Frequency	Reading	Reading	c.f	Result	Result	Limit	Limit	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	0.562	43.1	36.6	0.1	43.2	36.7	56.0	46.0	12.8	9.3	
	Ll Phase	_									
No.	Frequency	Reading	Reading	c.f	Result	Result	Limit	Limit	Margin	Margin	Remark
140.	s reducine A	QP	AV	0.1	QP	AV	OP	AV	OP	AV	Protock, P.
	[MHz]	[dB(µV)]	[dB(µV)]	[dB]	[dB(uV)]	[dB(µV)]	[dB(μV)]	[dB(µV)]	[dB]	[dB]	
1	0.282	46.2	38.1	0.1	46.3	38.2	60.8	52.2	14.5	14.0	
2	0.563	43.7	37.3	0.1	43.8	37.4	56.0	46.0	12.2	8.6	
3	0.846	39.3	31.8	0.1	39.4	31.9	56.0	46.0	16.6	14.1	

APPENDIX

TEST EQUIPMENT FOR TESTS

	Туре	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	S/N
01	Spectrum Analyzer	Agilent	E4440A	05/10/07	MY45304199
02	Spectrum Analyzer	H.P	8563E	06/10/07	3551A04634
03	Power Meter	H.P	EPM-442A	06/07/07	GB37170413
04	Power Sensor	H.P	8481A	14/07/07	3318A96332
05	Frequency Counter	H.P	5342A	15/09/07	2119A04450
06	Multifunction Synthesizer	H.P	8904A	12/10/07	3633A08404
07	Signal Generator	Rohde Schwarz	SMR20	21/03/08	101251
08	Signal Generator	H.P	E4421A	06/07/07	US37230529
09	Audio Analyzer	H.P	8903B	06/07/07	3011A0944B
10	Modulation Analyzer	H.P	8901B	10/07/07	3028A03029
11	Oscilloscope	Tektronix	TDS3052	01/10/07	B016821
12	8960 Series 10 Wireless Comms Test Set	Agilent	Z5515C	13/06/08	GB43461134
13	Universal Radio Communication Test	Rohde Schwarz	CMU200	21/03/08	107631
14	CDMA Mobile Station Test Set	H.P	8924C	15/09/07	US35360688
15	PCS Interface	HP	83236B	15/09/07	3711J03014
16	Multi system Ue Tester	Japan Radid Co., Ltd	NJZ-2000	20/11/07	ET00095
17	Power Splitter	WEINSCHEL	1593	14/10/07	332
18	BAND Reject Filter	Microwave Circuits	N0308372	19/10/07	3125-01DC0312
19	BAND Reject Filter	Wainwright	WRCG1750	19/10/07	SN2
20	AC Power supply	DAEKWANG	5KVA	20/03/08	N/A
21	DC Power Supply	H.P	6622A	20/03/08	465487
22	HORN ANT	ЕМСО	3115	04/04/07	6419
23	HORN ANT	ЕМСО	3115	04/25/07	21097
24	HORN ANT	A.H.Systems	SAS-574	16/08/07	154
25	HORN ANT	A.H.Systems	SAS-574	16/08/07	155
26	Dipole Antenna	Schwarzbeck	VHA9103	18/11/07	2116
27	Dipole Antenna	Schwarzbeck	VHA9103	18/11/07	2117
28	Dipole Antenna	Schwarzbeck	UHA9105	18/11/07	2261
29	Dipole Antenna	Schwarzbeck	UHA9105	18/11/07	2262
30	Loop Antenna	ETS	6502	22/11/07	3471

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

	Туре	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	S/N
31	TEMP & HUMIDITY Chamber	JISCO	J-RHC2	13/09/07	021031
32	RFI/FIELD Intensity Meter	Kyorits	KNM-504D	21/07/07	4N-161-4
33	Frequency Converter	Kyorits	KCV-604C	21/07/07	4-230-3
34	Log Periodic Antenna	Schwarzbeck	UHALP9108A1	26/09/07	1098
35	Biconical Antenna	Schwarzbeck	VHA9103	12/09/07	2233
36	Digital Multimeter	H.P	34401A	18/04/07	3146A13475
37	Attenuator (10dB)	WEINSCHEL	23-10-34	17/10/07	BP4386
38	High-Pass Filter	ANRITSU	MP526	13/10/07	M27756
39	Attenuator (3dB)	Agilent	8491B	10/07/07	58177
40	Attenuator (10dB)	WEINSCHEL	23-10-34	26/01/08	BP4387
41	Attenuator (30dB)	H.P	8498A	17/10/07	50101
42	Amplifier (25dB)	Agilent	8447D	12/04/07	2944A10144
43	Amplifier (30dB)	Agilent	8449B	13/10/07	3008A01590
44	Position Controller	TOKIN	5901T	N/A	14173
45	Driver	TOKIN	5902T2	N/A	14174
46	Spectrum Analyzer	Agilent	8594E	04/11/07	3649A05889
47	RFI/FIELD Intensity Meter	Kyorits	KNW-2402	11/07/07	4N-170-3
48	LISN	Kyorits	KNW-407	19/08/07	8-317-8
49	LISN	Kyorits	KNW-242	09/10/07	8-654-15
50	CVCF	NF Electronic	4400	N/A	344536 4420064
51	Software	ΤοΥο ΕΜΙ	EP5/RE	N/A	Ver 2.0.800
52	Software	ToYo EMI	EP5/CE	N/A	Ver 2.0.801
53	Software	AUDIX	e3	N/A	Ver 3.0
54	Software	Agilent	Benchlink	N/A	A.01.09 021211