# Spectrum Technology, Inc.

# IX350 with Bluetooth module GUBTC41M-TH

January 23, 2008

Report No. SPTE0078

Report Prepared By



www.nwemc.com 1-888-EMI-CERT

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22975 NW Evergreen Parkway Suite 400 Hillsboro, Oregon 97124

# **Certificate of Test**

Issue Date: January 23, 2008 Spectrum Technology, Inc.

Model: IX350 with Bluetooth module GUBTC41M-TH

Emissions							
Test Description	Specification	Test Method	Pass/Fail				
Occupied Bandwidth	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	Pass				
Output Power	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	Pass				
Band Edge Compliance	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	Pass				
Spurious Conducted Emissions	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	Pass				
Dwell Time	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	Pass				
Channel Spacing	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	Pass				
Power Spectral Density	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	Pass				

## Modifications made to the product

See the Modifications section of this report

### Test Facility

The measurement facility used to collect the data is located at:

Northwest EMC, Inc. 22975 NW Evergreen Parkway, Suite 400 Hillsboro, OR 97124

Phone: (503) 844-4066 Fax: 844-3826

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada.

Approved By:

Ethan Schoonover, Sultan Lab Manager

NVLAP Lab Code: 200630-0

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.

# **Revision History**

Revision 05/05/03

Revision Number	Description	Date	Page Number
00	None		

**FCC:** Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.





**NVLAP:** Northwest EMC, Inc. is accredited under the United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.



**Industry Canada:** Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS 212, Issue 1 (Provisional) and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements.



**CAB:** Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.



**TÜV Product Service:** Included in TUV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TUV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TUV's current Listing of CARAT Laboratories, available from TUV. A certificate was issued to represent that this laboratory continues to meet TUV's CARAT Program requirements. Certificate No. USA0604C.



**TÜV Rheinland:** Authorized to carryout EMC tests by order and under supervision of TÜV Rheinland. This authorization is based on "Conditions for EMC-Subcontractors" of November 1992.



**NEMKO:** Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).



**Australia/New Zealand:** The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).



**VCCI:** Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. (Registration Numbers. - Hillsboro: C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: R-1943, C-2766, and T-298, Sultan: R-871, C-1784, and T-294).



**BSMI:** Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement. License No.SL2-IN-E-1017.



**GOST:** Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification



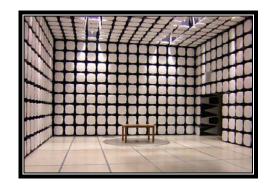
**MIC:** Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157)



# SCOPE

For details on the Scopes of our Accreditations, please visit: http://www.nwemc.com/scope.asp





# California – Orange County Facility Labs OC01 – OC13

41 Tesla Ave. Irvine, CA 92618 (888) 364-2378 Fax: (503) 844-3826





# Oregon – Evergreen Facility Labs EV01 – EV11

22975 NW Evergreen Pkwy. Suite 400 Hillsboro, OR 97124 (503) 844-4066 Fax: (503) 844-3826





# Washington – Sultan Facility Labs SU01 – SU07

14128 339<sup>th</sup> Ave. SE Sultan, WA 98294 (888) 364-2378

Rev 11/17/06

# Party Requesting the Test

Company Name:	Spectrum Technology, Inc.
Address:	209 Dayton Street Suite #205
City, State, Zip:	Edmonds, WA 98020
Test Requested By:	Rod Munro
Model:	IX350 with Bluetooth module GUBTC41M-TH
First Date of Test:	January 14, 2008
Last Date of Test:	January 14, 2008
Receipt Date of Samples:	December 20, 2007
Equipment Design Stage:	Prototype
<b>Equipment Condition:</b>	No Damage

# **Information Provided by the Party Requesting the Test**

Functional Description of the EUT (Equipment Under Test):

The Itronix Model IX350 is a tablet PC that can be used in a notebook configuration only. The IX350 contains a Bluetooth module.

# **Testing Objective:**

To demonstrate compliance with FCC 15.247 requirements.



# **CONFIGURATION 1 SPTE0078**

Software/Firmware Running during test	
Description	Version
BlueTest	Unknown

EUT					
Description	Manufacturer	Model/Part Number	Serial Number		
Bluetooth 2.0+EDR Module	Billionton	Itronix P/N IX- GUBTC41MTH	Unknown		

Peripherals in test setup boundary					
Description Manufacturer Model/Part Number Serial Number					
Tablet PC	Itronix Corporation	IX350	Unknown		
AC Adapter	Delta Electronics, Inc.	ADP-90SB BB	VCW0552024972		

Cables						
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2	
DC	No	1.8m	Yes	Tablet PC	AC Adapter	
AC	No	1.8m	No	AC Adapter	AC Mains	
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.						

	Equipment modifications							
Item	Date	Test	Modification	Note	Disposition of EUT			
	Output	Tested as	No EMI suppression	EUT remained at				
1	1/14/2008	Output Power	delivered to	devices were added or	Northwest EMC			
		rowei	Test Station.	modified during this test.	following the test.			
		Spurious	Tested as	No EMI suppression	EUT remained at			
2	1/14/2008	Conducted	delivered to	devices were added or	Northwest EMC			
		Emissions	Test Station.	modified during this test.	following the test.			
		Power	Tested as	No EMI suppression	EUT remained at			
3	1/14/2008	Spectral	delivered to	devices were added or	Northwest EMC			
		Density	Test Station.	modified during this test.	following the test.			
			Tested as	No EMI suppression	EUT remained at			
4	1/14/2008	Dwell Time	delivered to	devices were added or	Northwest EMC			
			Test Station.	modified during this test.	following the test.			
		Channel	Tested as	No EMI suppression	EUT remained at			
5	1/14/2008	Spacing	delivered to	devices were added or	Northwest EMC			
		Spacing	Test Station.	modified during this test.	following the test.			
		Band Edge	Tested as	No EMI suppression	EUT remained at			
6	1/14/2008	Compliance	delivered to	devices were added or	Northwest EMC			
		Compliance	Test Station.	modified during this test.	following the test.			
		Occupied	Tested as	No EMI suppression	Scheduled testing			
7	1/14/2008	Bandwidth	delivered to	devices were added or	completed.			
		Danawidin	Test Station.	modified during this test.	completed.			

# **Channel Spacing**

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT							
Description	Manufacturer	Model	ID	Last Cal.	Interval		
Spectrum Analyzer	Agilent	E4446A	AAY	12/18/2007	12		
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	6/8/2007	13		

## **MEASUREMENT UNCERTAINTY**

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

### **TEST DESCRIPTION**

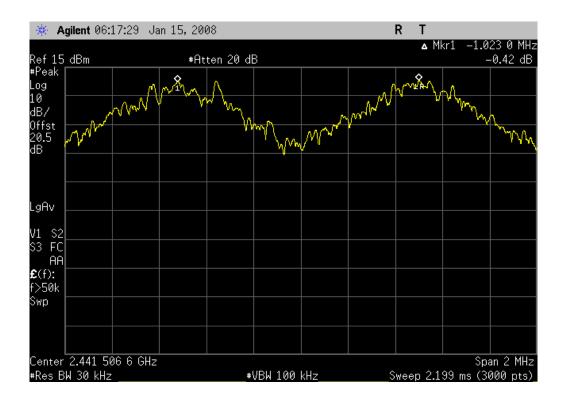
The channel carrier frequencies in the 2400-2483.5MHz band must be separated by 25 kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Or, if the output power is less than 125 mW, the channel separation can be 25 kHz or 2/3 of the 20dB bandwidth. The EUT was operated in pseudorandom hopping mode. The spectrum was scanned across two adjacent peaks. The separation between the peaks of these channels was measured.

NORTHWEST EMC		Channe	el Spacing			XMit 2007.06.13
EUT:	IX350 with Bluetooth modu	le GUBTC41M-TH			Work Order:	SPTE0078
Serial Number:	None				Date:	01/14/08
Customer:	Spectrum Technology, Inc.				Temperature:	23°C
Attendees:	Rod Munro				Humidity:	29%
Project:	None				Barometric Pres.:	1023.7
Tested by:	Holly Ashkannejhad		Power: 120VAC/	60Hz	Job Site:	EV06
TEST SPECIFICAT	IONS		Test Metl	hod		
FCC 15.247 (DTS)::	2006		ANSI C6	3.4:2003 KDB No. 558074	1	
COMMENTS Bluetooth radio in bandwidth (2/3*932		ls used: GFSK mode used 255,	44; pi/4-DQPSK and 8DP	SK used 255, 86. Limit i	s equal to 2/3 of th	ne measured occupied
DEVIATIONS FROM	W TEST STANDARD	- P.V. 18				
Configuration #	1	Signature Holy	Shughi	Value	Lir	nit Results
Bluetooth, GFSK, D	H5			1.023 MHz	621 kHz	Pass

# **Channel Spacing**

Bluetooth, GFSK, DH5

Result: Pass Value: 1.023 MHz Limit: 621 kHz



# Channel Spacing



# **Dwell Time**

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT							
Description	Manufacturer	Model	ID	Last Cal.	Interval		
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	6/8/2007	13		
Spectrum Analyzer	Agilent	E4446A	AAY	12/18/2007	12		

## **MEASUREMENT UNCERTAINTY**

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

## **TEST DESCRIPTION**

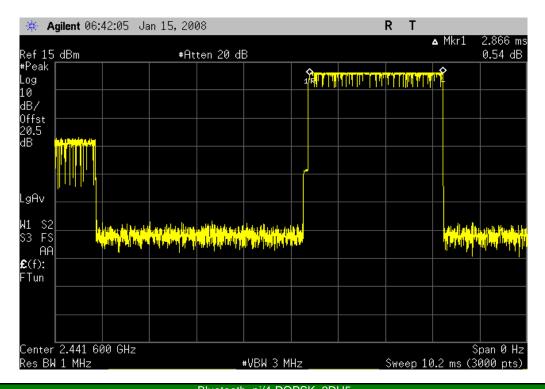
The average dwell time per hopping channel was measured at one hopping channel in the middle of the authorized band. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The hopping function of the EUT was enabled.

NORTHWEST						XMit 2007.06.13
EMC		Dwell	Time			
EUT:	IX350 with Bluetooth module	GUBTC41M-TH			Work Order:	SPTE0078
Serial Number:	None				Date:	01/14/08
Customer:	Spectrum Technology, Inc.				Temperature:	23°C
Attendees:	Rod Munro				Humidity:	29%
Project:	None			l l	Barometric Pres.:	1023.7
	olly Ashkannejhad Power: 120VAC/60Hz				Job Site:	EV06
TEST SPECIFICATI	IONS		Test Method			
FCC 15.247 (DTS):2	2006		ANSI C63.4:200	03 KDB No. 558074	1	
COMMENTS						
		used: GFSK mode used 255, 44;	pi/4-DQPSK and 8DPSK us	sed 255, 86.		
DEVIATIONS FROM	/I TEST STANDARD					
Configuration #	1	Signature Holy	Slight			
				Value	Lin	nit Results
Bluetooth, GFSK, DI	H5	_	2.	866 msec	0.4 sec	Pass
Bluetooth, pi/4-DQPS	SK, 2DH5		2.	887 msec	0.4 sec	Pass
Bluetooth, 8DPSK, 3	BDH5		2.	904 msec	0.4 sec	Pass

# **Dwell Time**

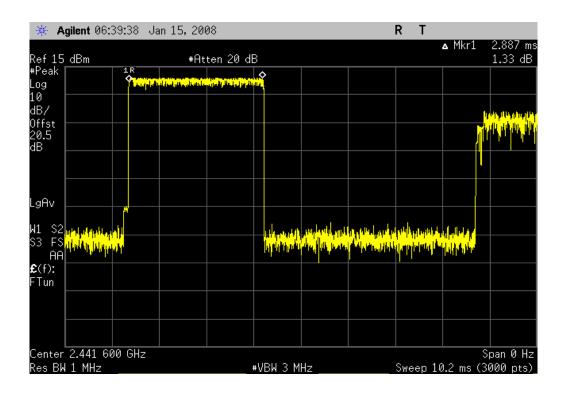
Bluetooth, GFSK, DH5

Result: Pass Value: 2.866 msec Limit: 0.4 sec

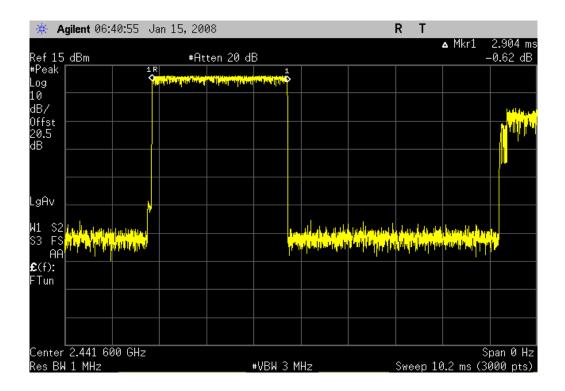


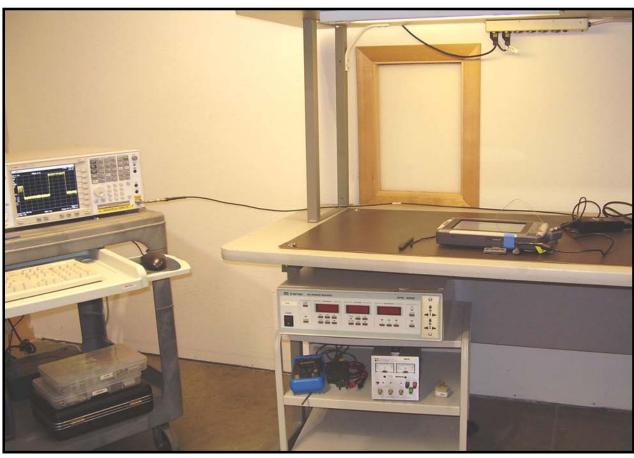
Result: Pass Bluetooth, pi/4-DQPSK, 2DH5

Value: 2.887 msec Limit: 0.4 sec



	Bluetooth, 8DPSK, 3DH5		
	Bluetooth, 6DF 3R, 3DH3		
Result: Pass	Value: 2.904 msec	I imit:	0.4 sec







Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	6/8/2007	13
Spectrum Analyzer	Agilent	E4446A	AAY	12/18/2007	12

### **MEASUREMENT UNCERTAINTY**

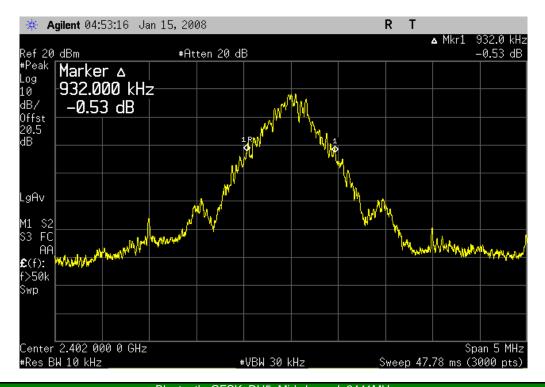
Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

## **TEST DESCRIPTION**

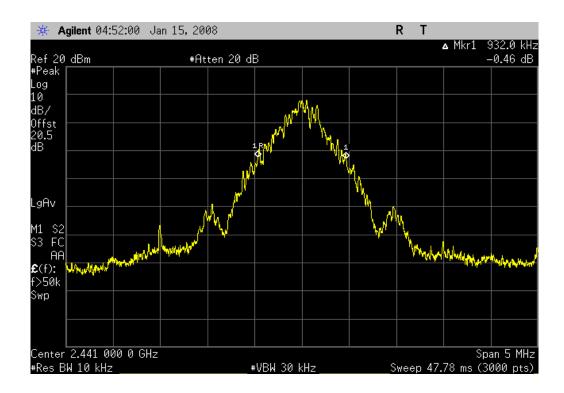
The occupied bandwidth was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting in a no hop mode at its maximum data rate for each of the three different modulations available.

NORTHWEST		Occupied	Danduridth		XMit 2007.0
EMC		Occupied	Bandwidth		
EUT	: IX350 with Bluetooth module 0	SUBTC41M-TH		Work Order:	SPTE0078
Serial Number					01/14/08
Customer	r: Spectrum Technology, Inc.			Temperature:	24°C
	s: Rod Munro			Humidity:	
	t: None			Barometric Pres.:	
	/: Holly Ashkannejhad		Power: 120VAC/60Hz	Job Site:	EV06
EST SPECIFICAT	TIONS		Test Method		
CC 15.247 (DTS)	:2006		ANSI C63.4:2003 KDB I	No. 558074	
OMMENTS					
DEVIATIONS FRO	M TEST STANDARD				
DEVIATIONS FRO	OM TEST STANDARD				
	OM TEST STANDARD	1/ 8,	A ling las		
DEVIATIONS FRO		Signature Holy	Solingha		
		Signature Holy		Value Lin	nit Result
Configuration #	1	Signature Holy		Value Lin	nit Result
onfiguration #	1	Signature Holy		Value Lin	nit Result
Configuration #	1 DH5	Signature Holy	,		
Configuration #	1 DH5 Low channel, 2402MHz	Signature Holy	932 kHz	1.5 MHz	Pass
onfiguration #	1 DH5 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz	Signature Holy	932 kHz 932 kHz	1.5 MHz 1.5 MHz	Pass Pass
onfiguration #	1 DH5 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz	Signature Holy	932 kHz 932 kHz	1.5 MHz 1.5 MHz 1.5 MHz	Pass Pass
onfiguration #	1  DH5  Low channel, 2402MHz  Mid channel, 2441MHz  High channel, 2480MHz  PSK, 2DH5	Signature Holy	932 kHz 932 kHz 932 kHz	1.5 MHz 1.5 MHz 1.5 MHz 2 1.5 MHz	Pass Pass Pass
onfiguration #	1  DH5  Low channel, 2402MHz  Mid channel, 2441MHz  High channel, 2480MHz  PSK, 2DH5  Low channel, 2402MHz	Signature Holy	932 kHz 932 kHz 932 kHz 932 kHz 1.322 MHz	1.5 MHz 1.5 MHz 1.5 MHz z 1.5 MHz z 1.5 MHz	Pass Pass Pass Pass
onfiguration #	DH5 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz PSK, 2DH5 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz	Signature Holy	932 kHz 932 kHz 932 kHz 932 kHz 1.322 MHz 1.255 MHz	1.5 MHz 1.5 MHz 1.5 MHz z 1.5 MHz z 1.5 MHz	Pass Pass Pass Pass Pass
onfiguration #	DH5 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz PSK, 2DH5 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz	Signature Holy	932 kHz 932 kHz 932 kHz 932 kHz 1.322 MHz 1.255 MHz	1.5 MHz 1.5 MHz 1.5 MHz 2 1.5 MHz 2 1.5 MHz 2 1.5 MHz	Pass Pass Pass Pass Pass
	Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz PSK, 2DH5 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz 3DH5	Signature Holy	932 kHz 932 kHz 932 kHz 932 kHz 1.322 MHz 1.255 MHz 1.309 MHz	1.5 MHz 1.5 MHz 1.5 MHz 2 1.5 MHz	Pass Pass Pass Pass Pass Pass

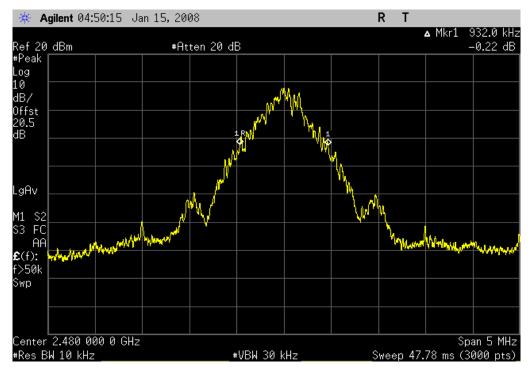
Result: Pass Value: 932 kHz Limit: 1.5 MHz



Result: Pass Value: 932 kHz Limit: 1.5 MHz

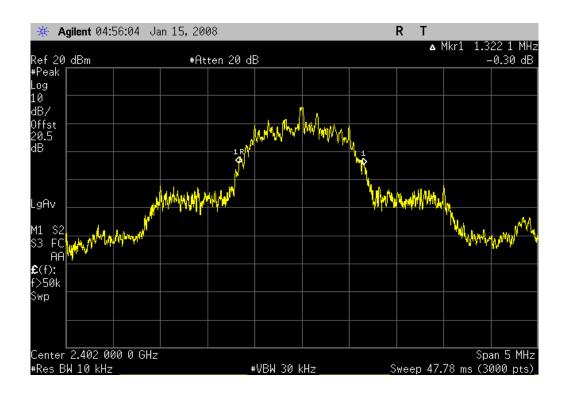


Result: Pass Value: 932 kHz Limit: 1.5 MHz



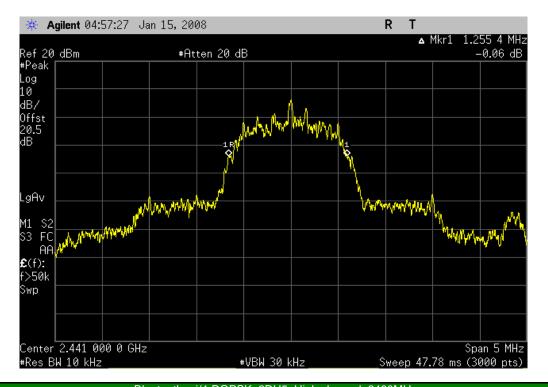
Bluetooth, pi/4-DQPSK, 2DH5, Low channel, 2402MHz

Result: Pass Value: 1.322 MHz Limit: 1.5 MHz



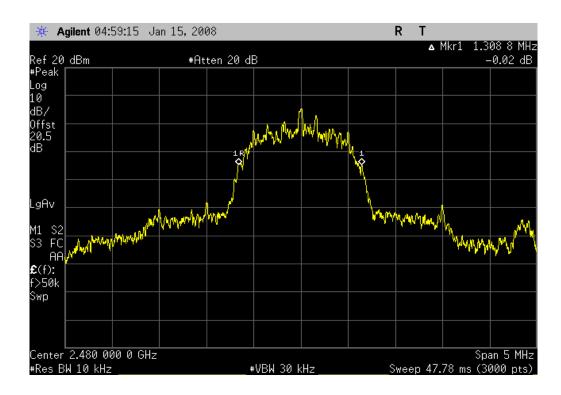
Bluetooth, pi/4-DQPSK, 2DH5, Mid channel, 2441MHz

Result: Pass Value: 1.255 MHz Limit: 1.5 MHz



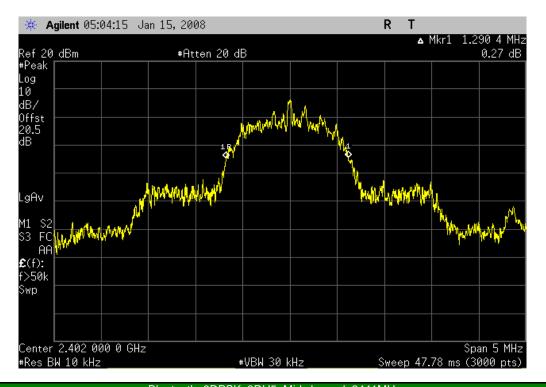
Bluetooth, pi/4-DQPSK, 2DH5, High channel, 2480MHz

Result: Pass Value: 1.309 MHz Limit: 1.5 MHz



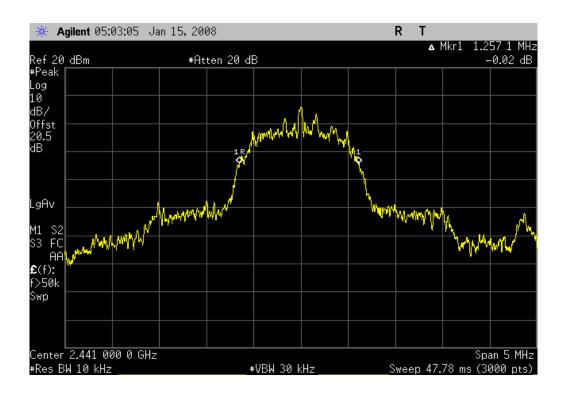
Bluetooth, 8DPSK, 3DH5, Low channel, 2402MHz

Result: Pass Value: 1.290 MHz Limit: 1.5 MHz



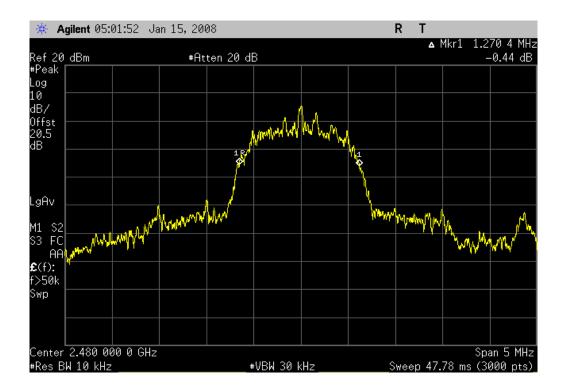
Bluetooth, 8DPSK, 3DH5, Mid channel, 2441MHz

Result: Pass Value: 1.257 MHz Limit: 1.5 MHz

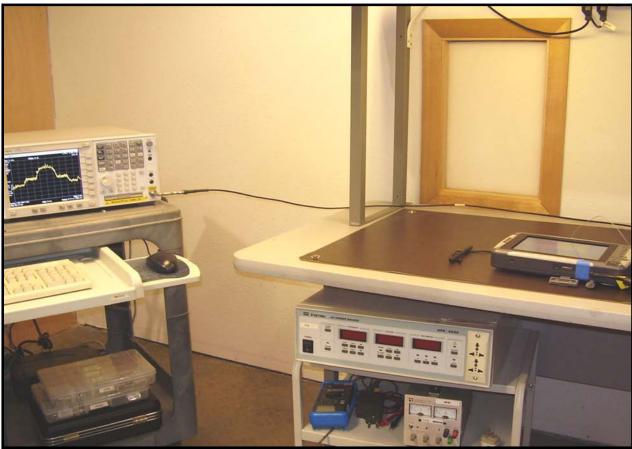


Bluetooth, 8DPSK, 3DH5, High channel, 2480MHz

Result: Pass Value: 1.270 MHz Limit: 1.5 MHz







Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	6/8/2007	13
Spectrum Analyzer	Agilent	E4446A	AAY	12/18/2007	12

## **MEASUREMENT UNCERTAINTY**

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

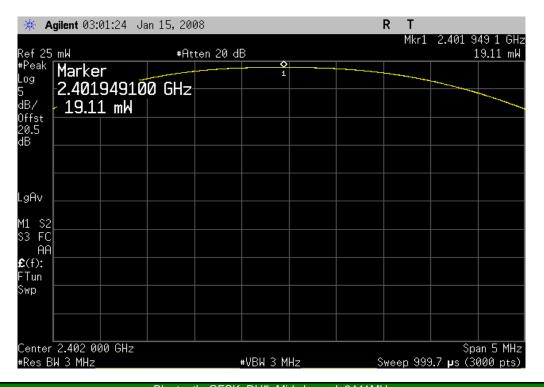
### **TEST DESCRIPTION**

The peak output power was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was transmitting in a no hop mode at its maximum data rate for each of the three different modulations available.

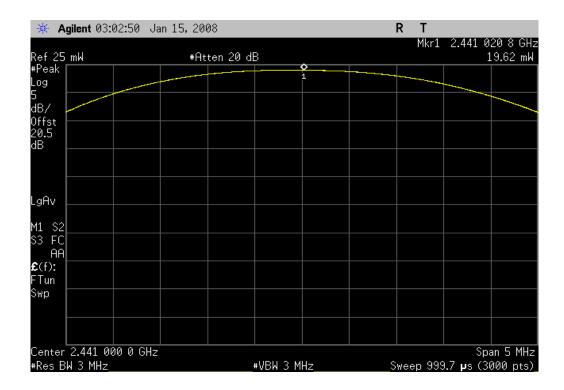
De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36dBm.

NORTHWEST		Output	Dowo			XMit 2007.06
EMC		Output	rowei			
EUT: I)	K350 with Bluetooth module	GUBTC41M-TH			Work Order: SPTE	
Serial Number: N					Date: 01/14	/08
	pectrum Technology, Inc.				Temperature: 23°C	
Attendees: R					Humidity: 29%	
Project: N					Barometric Pres.: 1023	
	lolly Ashkannejhad			120VAC/60Hz	Job Site: EV06	i
EST SPECIFICATIO	NS			Test Method		
CC 15.247 (DTS):20	06			ANSI C63.4:2003 KDB No. 5	58074	
COMMENTS						
EVIATIONS FROM	TEST STANDARD					
DEVIATIONS FROM	TEST STANDARD			0		
DEVIATIONS FROM T	TEST STANDARD	Signature Holy A	hligh	9		
		Signature Holy A	hligh	Value	Limit	Result
Configuration #	1	Signature Holy S	hligh		. Limit	Result
onfiguration #	1 5 ow channel, 2402MHz	Signature Holy S	Mingh	<b>Value</b> 19.11 mW	1 Watt	Pass
configuration #	1	Signature Holy A	pligh	<b>Value</b> 19.11 mW 19.62 mW		
Configuration # Sluetooth, GFSK, DHS L N	1 5 ow channel, 2402MHz	Signature Holy A	pligh	<b>Value</b> 19.11 mW	1 Watt	Pass
Juetooth, GFSK, DHS L W H Juetooth, pi/4-DQPSk	1 ow channel, 2402MHz did channel, 2441MHz ligh channel, 2480MHz K, 2DH5	Signature Holy S	pligh	Value 19.11 mW 19.62 mW 18.26 mW	1 Watt 1 Watt 1 Watt	Pass Pass
onfiguration # luetooth, GFSK, DH5 L N H luetooth, pi/4-DQPSk	1 ow channel, 2402MHz did channel, 2441MHz ligh channel, 2480MHz	Signature Holy S	hligh	<b>Value</b> 19.11 mW 19.62 mW	1 Watt 1 Watt	Pass Pass
onfiguration # luetooth, GFSK, DHS L W H luetooth, pi/4-DQPSk	1 ow channel, 2402MHz did channel, 2441MHz ligh channel, 2480MHz K, 2DH5	Signature Holy S	pligh	Value 19.11 mW 19.62 mW 18.26 mW	1 Watt 1 Watt 1 Watt	Pass Pass Pass
Sonfiguration #  Sluetooth, GFSK, DH5  N H Sluetooth, pi/4-DQPSi L	1 ow channel, 2402MHz did channel, 2441MHz ligh channel, 2480MHz 4, 2DH5 ow channel, 2402MHz	Signature Holy A	Mingh	19.11 mW 19.62 mW 18.26 mW 13.19 mW	1 Watt 1 Watt 1 Watt	Pass Pass Pass
Sonfiguration #  Sluetooth, GFSK, DH5  M H Sluetooth, pi/4-DQPSk L M H	1 ow channel, 2402MHz did channel, 2441MHz ligh channel, 2480MHz 4, 2DH5 ow channel, 2402MHz did channel, 2441MHz ligh channel, 2480MHz	Signature Holy S	hligh	19.11 mW 19.62 mW 18.26 mW 13.19 mW 11.93 mW	1 Watt 1 Watt 1 Watt 1 Watt 1 Watt	Pass Pass Pass Pass Pass
Sluetooth, GFSK, DHS L M Bluetooth, pi/4-DQPSk L M H Bluetooth, 8DPSK, 3D	1 ow channel, 2402MHz did channel, 2441MHz ligh channel, 2480MHz 4, 2DH5 ow channel, 2402MHz did channel, 2441MHz ligh channel, 2480MHz	Signature Holy S	hligh	19.11 mW 19.62 mW 18.26 mW 13.19 mW 11.93 mW	1 Watt 1 Watt 1 Watt 1 Watt 1 Watt	Pass Pass Pass Pass Pass
Sonfiguration #  Bluetooth, GFSK, DHS L N H Bluetooth, pi/4-DQPSk L N H Bluetooth, 8DPSK, 3D	1  ow channel, 2402MHz did channel, 2441MHz ligh channel, 2480MHz <, 2DH5 ow channel, 2402MHz did channel, 2441MHz ligh channel, 2480MHz H5	Signature Holy S	hligh	19.11 mW 19.62 mW 18.26 mW 13.19 mW 11.93 mW 10.49 mW	1 Watt 1 Watt 1 Watt 1 Watt 1 Watt 1 Watt	Pass Pass Pass Pass Pass Pass

Result: Pass Value: 19.11 mW Limit: 1 Watt

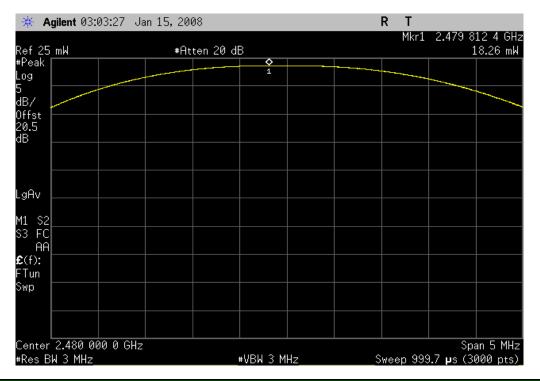


Result: Pass Value: 19.62 mW Limit: 1 Watt



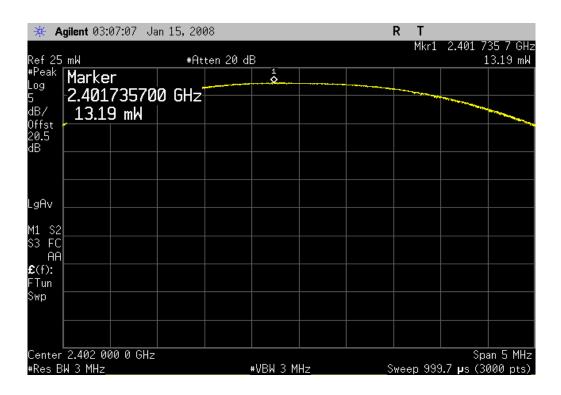
Bluetooth, GFSK, DH5, High channel, 2480MHz

Result: Pass Value: 18.26 mW Limit: 1 Watt



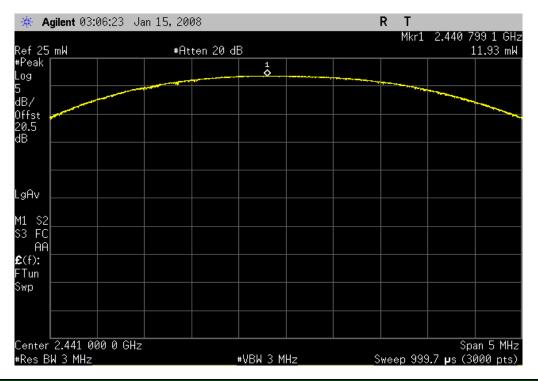
Bluetooth, pi/4-DQPSK, 2DH5, Low channel, 2402MHz

Result: Pass Value: 13.19 mW Limit: 1 Watt



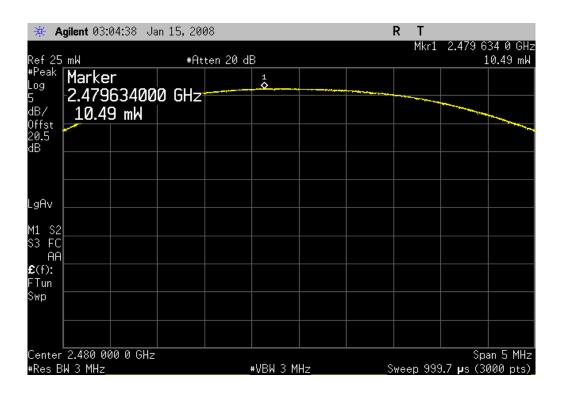
Bluetooth, pi/4-DQPSK, 2DH5, Mid channel, 2441MHz

Result: Pass Value: 11.93 mW Limit: 1 Watt



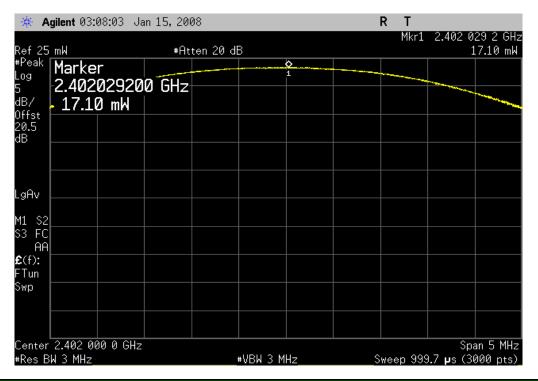
Bluetooth, pi/4-DQPSK, 2DH5, High channel, 2480MHz

Result: Pass Value: 10.49 mW Limit: 1 Watt



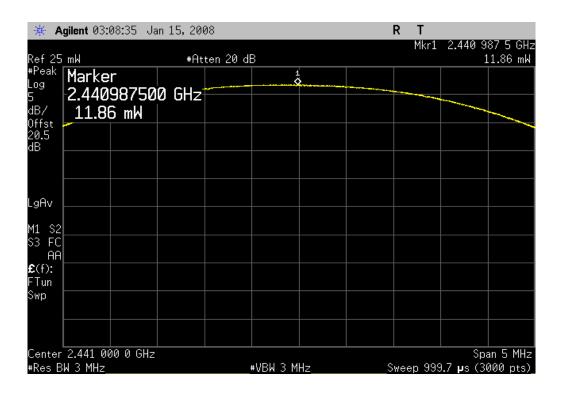
Bluetooth, 8DPSK, 3DH5, Low channel, 2402MHz

Result: Pass Value: 17.10 mW Limit: 1 Watt

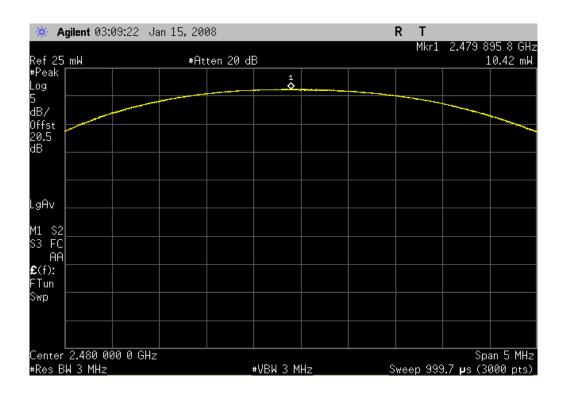


Bluetooth, 8DPSK, 3DH5, Mid channel, 2441MHz

Result: Pass Value: 11.86 mW Limit: 1 Watt



Result: Pass Value: 10.42 mW Limit: 1 Watt



# NORTHWEST **EMC**



# **Bandedge Compliance**

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	6/8/2007	13
Spectrum Analyzer	Agilent	E4446A	AAY	12/18/2007	12

### **MEASUREMENT UNCERTAINTY**

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

### **TEST DESCRIPTION**

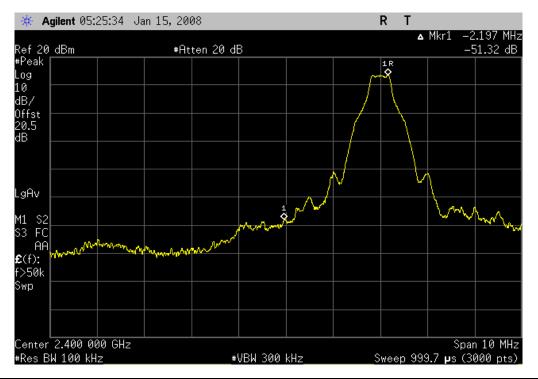
The requirements of FCC 15.247(d) for emissions at least 20dB below the carrier in any 100kHz bandwidth outside the allowable band was measured with the EUT set to low and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The channels closest to the band edges were selected. The spectrum was scanned across each band edge from 10 MHz below the band edge to 10 MHz above the band edge.

The EUT was transmitting at its maximum data rate using all three types of modulations available in Bluetooth EDR.

NORTHWEST		Dandada	a Camplia			XMit 2007.0
EMC		Bandedg	ge Compliar	ice		
EUT:	IX350 with Bluetooth module (	GUBTC41M-TH			Work Order: SPTE0	078
Serial Number:	None				Date: 01/14/0	08
Customer:	Spectrum Technology, Inc.				Temperature: 23°C	
Attendees:	Rod Munro				Humidity: 29%	
Project:	None				Barometric Pres.: 1023.7	
Tested by:	Holly Ashkannejhad		Power: 120\	/AC/60Hz	Job Site: EV06	
<b>EST SPECIFICATI</b>	ONS		Test	Method		
CC 15.247 (DTS):2	2006		ANS	I C63.4:2003 KDB No. 55807	74	
OMMENTS						
luetooth radio in i						
siuetooth radio in	IX350. Power software levels u	seu. Grak mode used 25	3, 44, pi/4-DQF3K and			
siuetooth radio in	1A350. Power software levels to	seu. Grak mode useu 23:	3, 44, pi/4-bur 3K anu			
		sed. Gran mode used 23:	3, 44, pi/4-ber 3K and	,		
	M TEST STANDARD			·		
DEVIATIONS FROM				·		
	// TEST STANDARD		ly Arling	·	Limit	Result
DEVIATIONS FROM	II TEST STANDARD				Limit	Result
DEVIATIONS FROM	II TEST STANDARD				Limit ≤ -20 dBc	<b>Result</b> Pass
DEVIATIONS FROM Configuration #	1 TEST STANDARD			Value		
Configuration #	1  H5 Low channel, 2402MHz High channel, 2480MHz			Value -51.3 dBc	≤ -20 dBc	Pass
Configuration #	1  H5 Low channel, 2402MHz High channel, 2480MHz			Value -51.3 dBc	≤ -20 dBc	Pass
configuration #	1  H5 Low channel, 2402MHz High channel, 2480MHz SK, 2DH5			Value -51.3 dBc -56.9 dBc	≤ -20 dBc ≤ -20 dBc	Pass Pass
Configuration # configuration # cluetooth, GFSK, Di	1  H5 Low channel, 2402MHz High channel, 2480MHz SK, 20H5 Low channel, 2402MHz High channel, 2402MHz High channel, 2402MHz			-51.3 dBc -56.9 dBc -41.2 dBc	≤ -20 dBc ≤ -20 dBc ≤ -20 dBc	Pass Pass
Configuration # Bluetooth, GFSK, Di	1  H5 Low channel, 2402MHz High channel, 2480MHz SK, 20H5 Low channel, 2402MHz High channel, 2402MHz High channel, 2402MHz			-51.3 dBc -56.9 dBc -41.2 dBc	≤ -20 dBc ≤ -20 dBc ≤ -20 dBc	Pass Pass

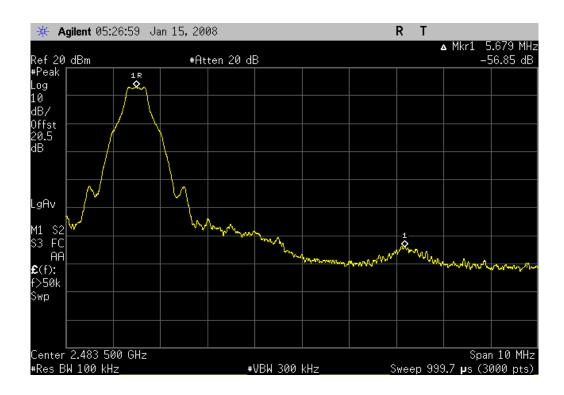
Bluetooth, GFSK, DH5, Low channel, 2402MHz

Result: Pass Value: -51.3 dBc Limit: ≤ -20 dBc



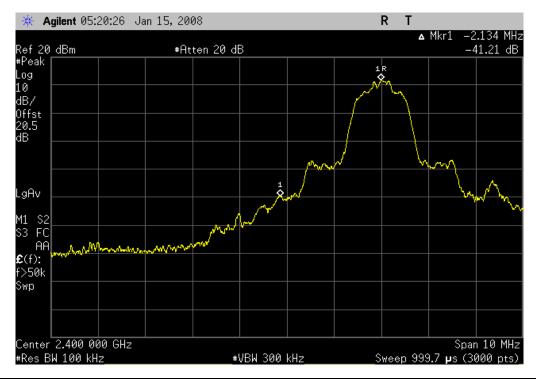
Bluetooth, GFSK, DH5, High channel, 2480MHz

Result: Pass Value: -56.9 dBc Limit: ≤ -20 dBc



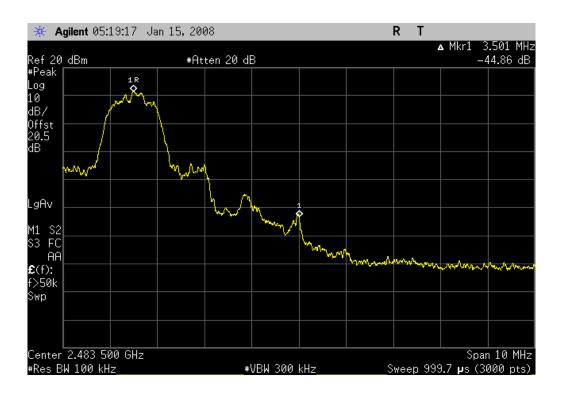
Bluetooth, pi/4-DQPSK, 2DH5, Low channel, 2402MHz

Result: Pass Value: -41.2 dBc Limit: ≤ -20 dBc



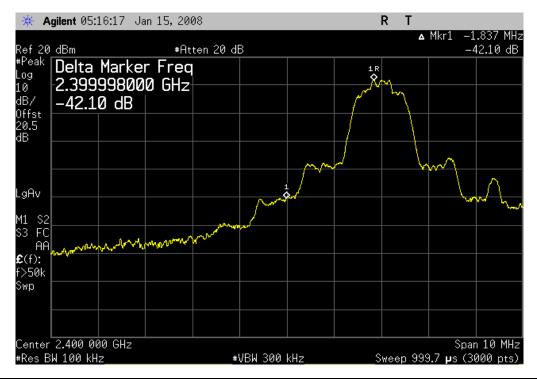
Bluetooth, pi/4-DQPSK, 2DH5, High channel, 2480MHz

Result: Pass Value: -44.9 dBc Limit: ≤ -20 dBc



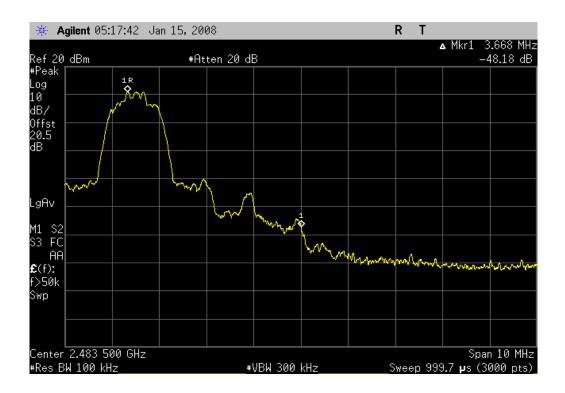
Bluetooth, 8DPSK, 3DH5, Low channel, 2402MHz

Result: Pass Value: -42.1 dBc Limit: ≤ -20 dBc



Bluetooth, 8DPSK, 3DH5, High channel, 2480MHz

Result: Pass Value: -48.2 dBc Limit: ≤ -20 dBc







Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAY	12/18/2007	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	6/8/2007	13

#### **MEASUREMENT UNCERTAINTY**

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

#### **TEST DESCRIPTION**

The spurious RF conducted emissions were measured with the EUT set to low, medium, and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate in a no hop mode. For each transmit frequency, the spectrum was scanned throughout the specified frequency.

NORTHWEST EMC	Spurious Condu	icted E	Emissions			XMit 2007.06.13
EUT:	IX350 with Bluetooth module GUBTC41M-TH			Work Order:	SPTE0078	•
Serial Number:	None			Date:	01/14/08	
Customer:	Spectrum Technology, Inc.			Temperature:	23°C	
Attendees:	Rod Munro			Humidity:	29%	
Project:	None			Barometric Pres.:	1023.7	
Tested by:	Holly Ashkannejhad	Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATI	ONS		Test Method			
FCC 15.247 (DTS):2006		ANSI C63.4:2003 KDB No. 558074				
COMMENTS						
Bluetooth radio in I	X350. Power software levels used: GFSK mode used 255, 44;	pi/4-DQPSK	and 8DPSK used 255, 86	) <b>.</b>		

DEVIATIONS FROM TEST STANDARD

Configuration #

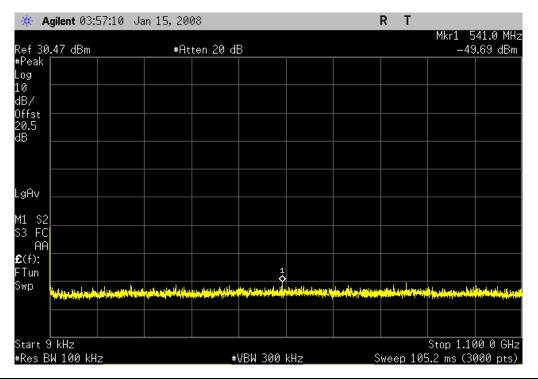
1

Signature Holy Aling

	Value	Limit	Results
Bluetooth, GFSK, DH5			
Low channel, 2402MHz			
9kHz - 1.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
1GHz - 13.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
13GHz - 26GHz	≤ -40 dBc	≤ -20 dBc	Pass
Mid channel, 2441MHz			
9kHz - 1.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
1GHz - 13.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
13GHz - 26GHz	≤ -40 dBc	≤ -20 dBc	Pass
High channel, 2480MHz			
9kHz - 1.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
1GHz - 13.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
13GHz - 26GHz	≤ -40 dBc	≤ -20 dBc	Pass
Bluetooth, pi/4-DQPSK, 2DH5			
Low channel, 2402MHz		1.00 15	
9kHz - 1.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
1GHz - 13.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
13GHz - 26GHz	≤ -40 dBc	≤ -20 dBc	Pass
Mid channel, 2441MHz			
9kHz - 1.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
1GHz - 13.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
13GHz - 26GHz	≤ -40 dBc	≤ -20 dBc	Pass
High channel, 2480MHz	1.40.17	1.00 ID	
9kHz - 1.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
1GHz - 13.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
13GHz - 26GHz	≤ -40 dBc	≤ -20 dBc	Pass
Bluetooth, 8DPSK, 3DH5 Low channel, 2402MHz			
9kHz - 1.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
1GHz - 13.1GHz	≤ -35 dBc	≤ -20 dBc	Pass
13GHz - 26GHz	≤ -40 dBc	≤ -20 dBc	Pass
Mid channel, 2441MHz			
9kHz - 1.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
1GHz - 13.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
13GHz - 26GHz	≤ -40 dBc	≤ -20 dBc	Pass
High channel, 2480MHz			
9kHz - 1.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
1GHz - 13.1GHz	≤ -40 dBc	≤ -20 dBc	Pass
13GHz - 26GHz	≤ -40 dBc	≤ -20 dBc	Pass

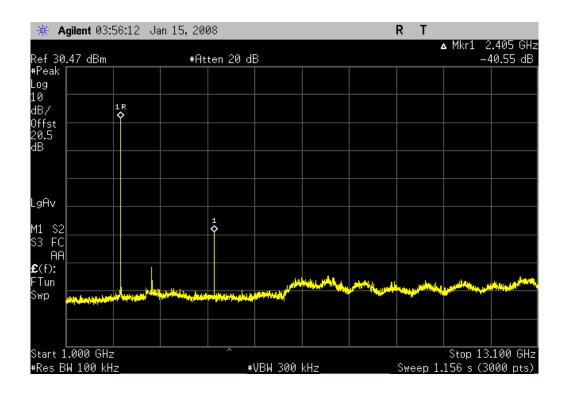
Bluetooth, GFSK, DH5, Low channel, 2402MHz, 9kHz - 1.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



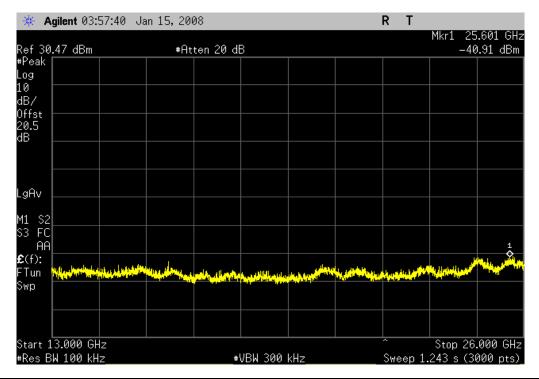
Bluetooth, GFSK, DH5, Low channel, 2402MHz, 1GHz - 13.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



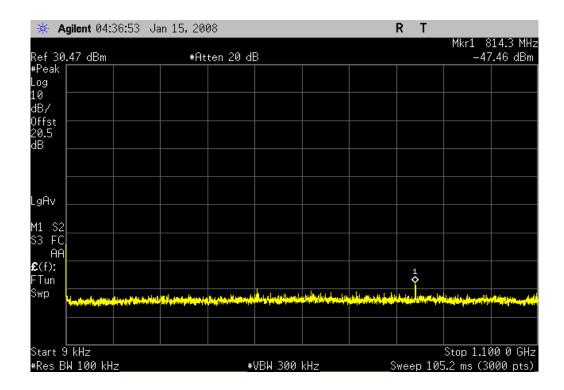
Bluetooth, GFSK, DH5, Low channel, 2402MHz, 13GHz - 26GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



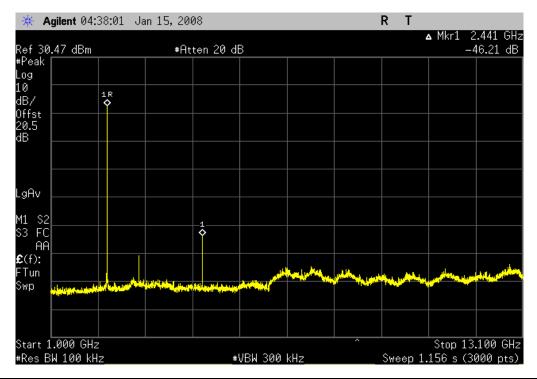
Bluetooth, GFSK, DH5, Mid channel, 2441MHz, 9kHz - 1.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



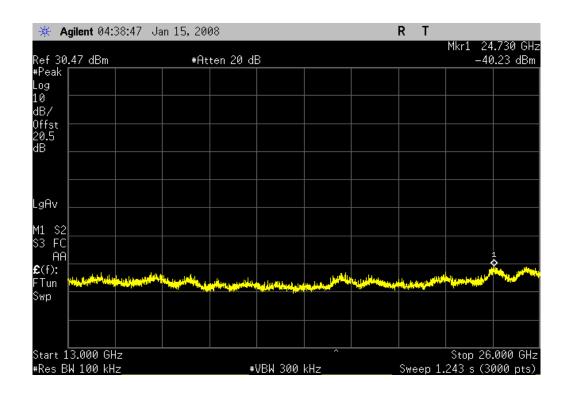
Bluetooth, GFSK, DH5, Mid channel, 2441MHz, 1GHz - 13.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



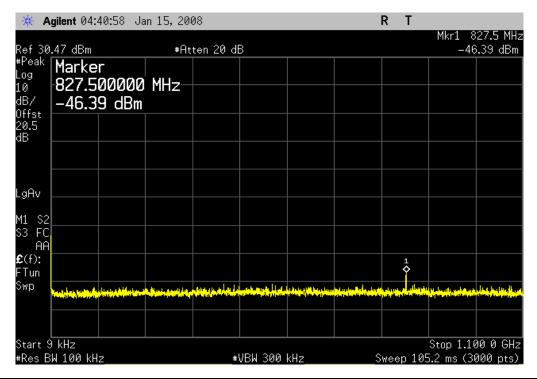
Bluetooth, GFSK, DH5, Mid channel, 2441MHz, 13GHz - 26GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



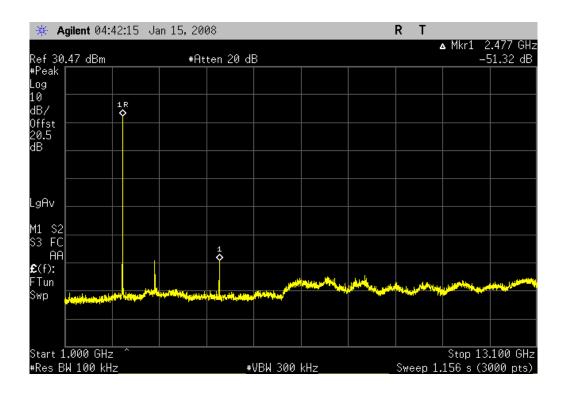
Bluetooth, GFSK, DH5, High channel, 2480MHz, 9kHz - 1.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



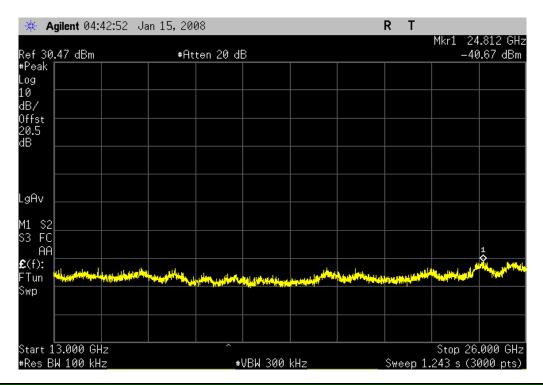
Bluetooth, GFSK, DH5, High channel, 2480MHz, 1GHz - 13.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



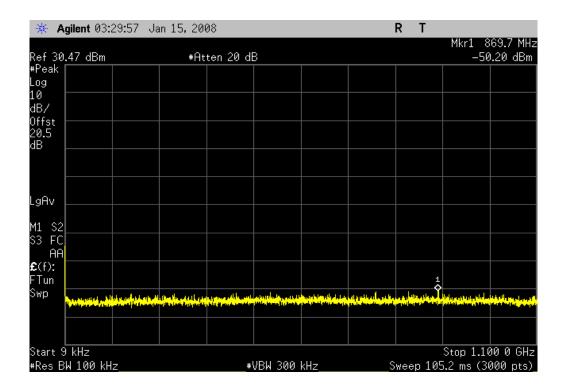
Bluetooth, GFSK, DH5, High channel, 2480MHz, 13GHz - 26GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



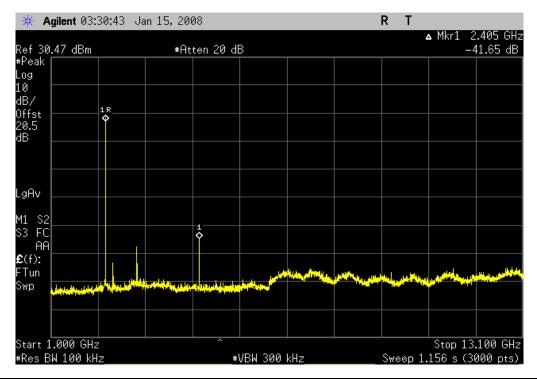
Bluetooth, pi/4-DQPSK, 2DH5, Low channel, 2402MHz, 9kHz - 1.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



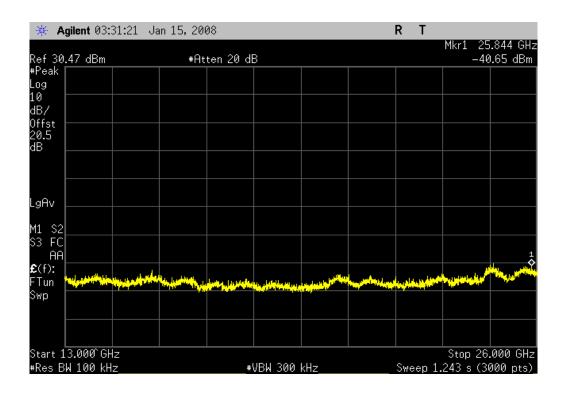
Bluetooth, pi/4-DQPSK, 2DH5, Low channel, 2402MHz, 1GHz - 13.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



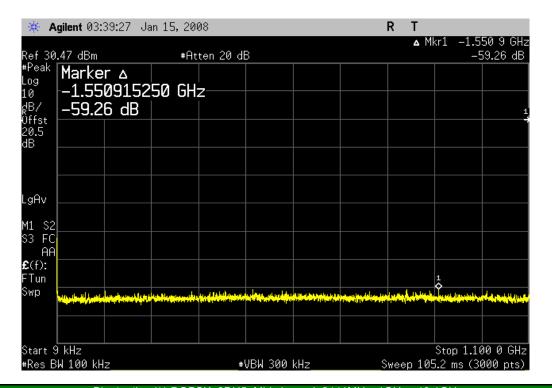
Bluetooth, pi/4-DQPSK, 2DH5, Low channel, 2402MHz, 13GHz - 26GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



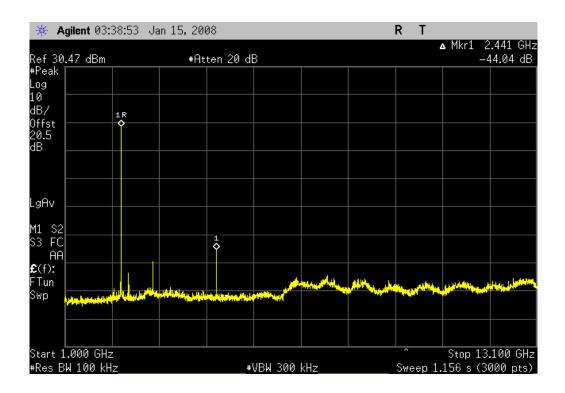
Bluetooth, pi/4-DQPSK, 2DH5, Mid channel, 2441MHz, 9kHz - 1.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



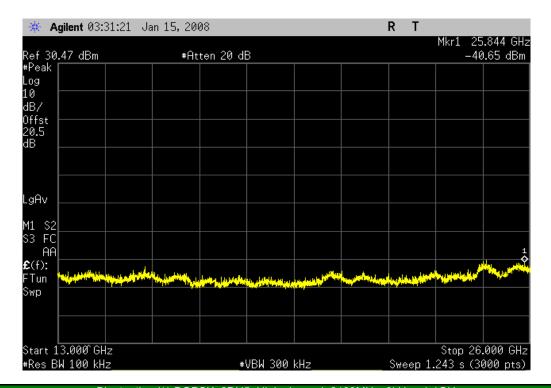
Bluetooth, pi/4-DQPSK, 2DH5, Mid channel, 2441MHz, 1GHz - 13.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



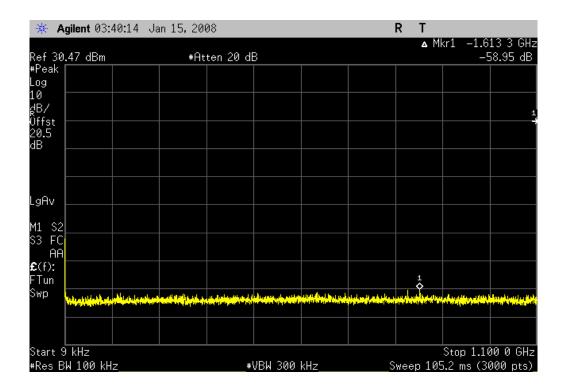
Bluetooth, pi/4-DQPSK, 2DH5, Mid channel, 2441MHz, 13GHz - 26GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



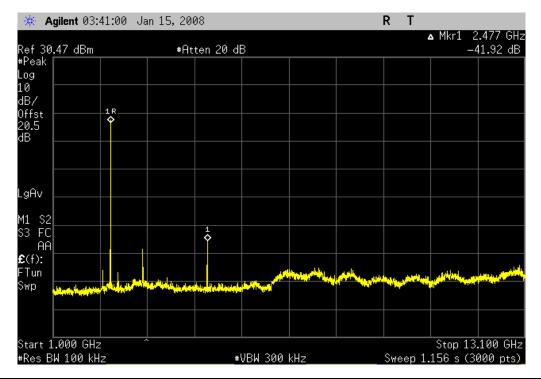
Bluetooth, pi/4-DQPSK, 2DH5, High channel, 2480MHz, 9kHz - 1.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



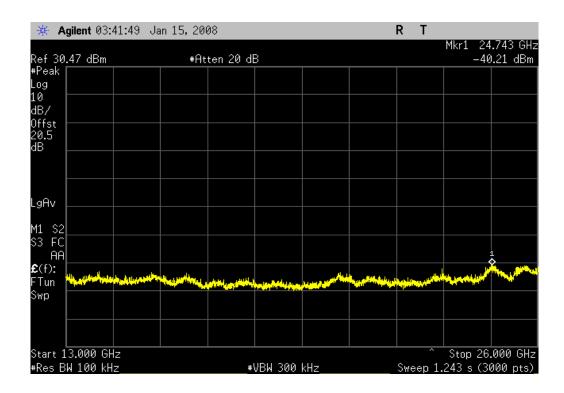
Bluetooth, pi/4-DQPSK, 2DH5, High channel, 2480MHz, 1GHz - 13.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



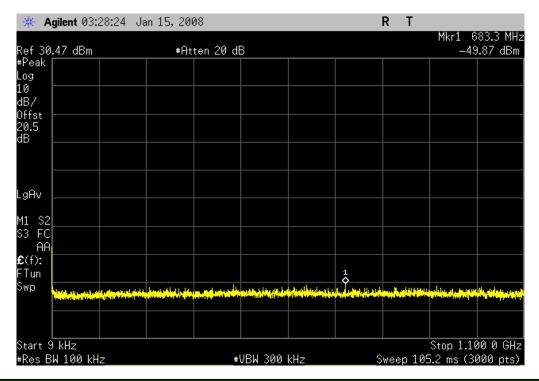
Bluetooth, pi/4-DQPSK, 2DH5, High channel, 2480MHz, 13GHz - 26GHz

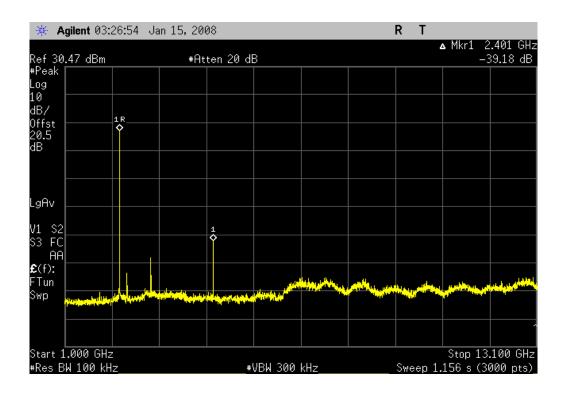
Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



Bluetooth, 8DPSK, 3DH5, Low channel, 2402MHz, 9kHz - 1.1GHz

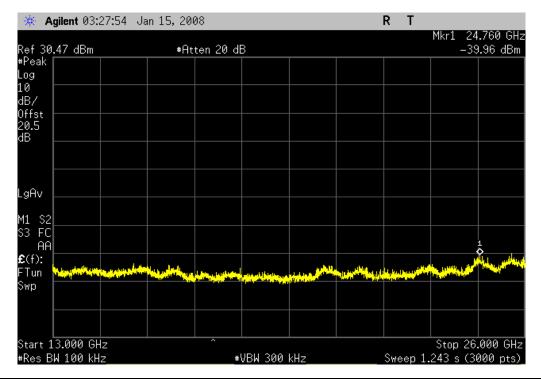
Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc





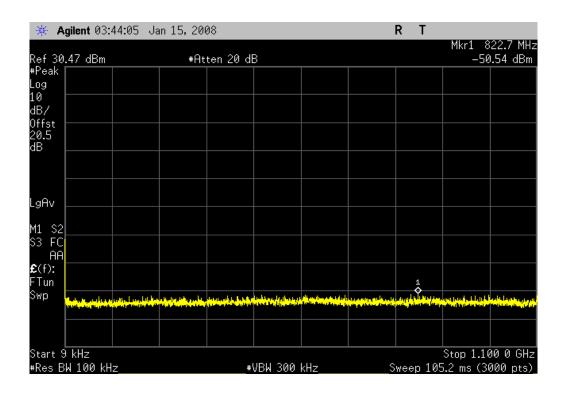
Bluetooth, 8DPSK, 3DH5, Low channel, 2402MHz, 13GHz - 26GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



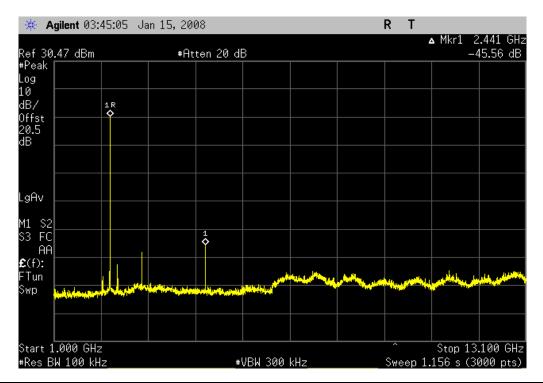
Bluetooth, 8DPSK, 3DH5, Mid channel, 2441MHz, 9kHz - 1.1GHz

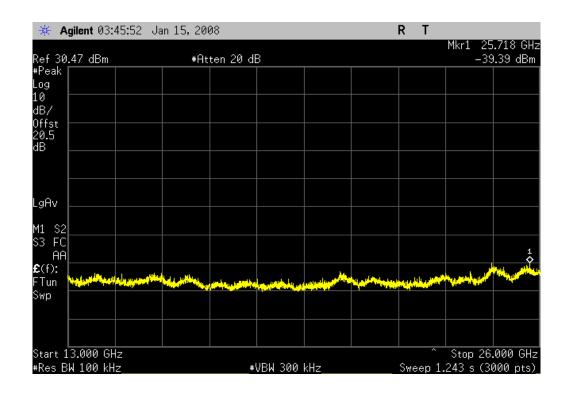
Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



Bluetooth, 8DPSK, 3DH5, Mid channel, 2441MHz, 1GHz - 13.1GHz

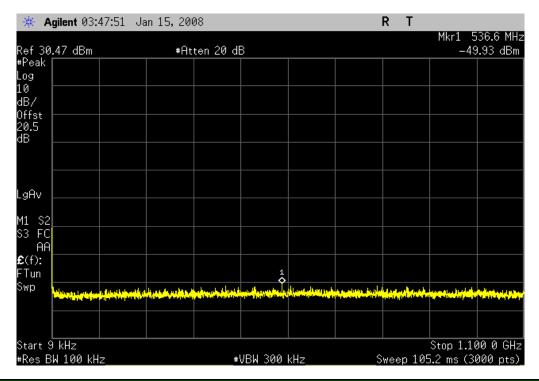
Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc





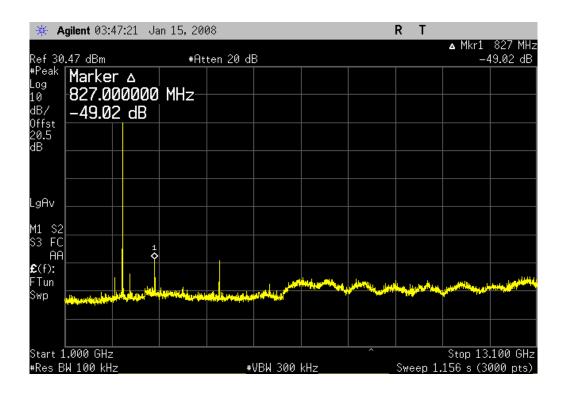
Bluetooth, 8DPSK, 3DH5, High channel, 2480MHz, 9kHz - 1.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



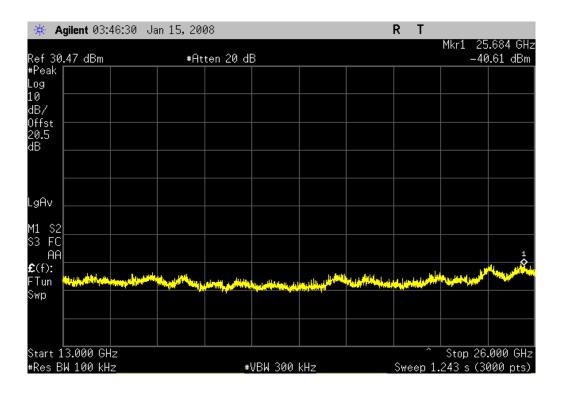
Bluetooth, 8DPSK, 3DH5, High channel, 2480MHz, 1GHz - 13.1GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc



Bluetooth, 8DPSK, 3DH5, High channel, 2480MHz, 13GHz - 26GHz

Result: Pass Value: ≤ -40 dBc Limit: ≤ -20 dBc







Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	6/8/2007	13
Spectrum Analyzer	Agilent	E4446A	AAY	12/18/2007	12

#### **MEASUREMENT UNCERTAINTY**

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

#### **TEST DESCRIPTION**

The peak power spectral density measurements were measured with the EUT set to low, mid, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate using direct sequence modulation. Per the procedure outlined in FCC 97-114, the spectrum analyzer was used as follows:

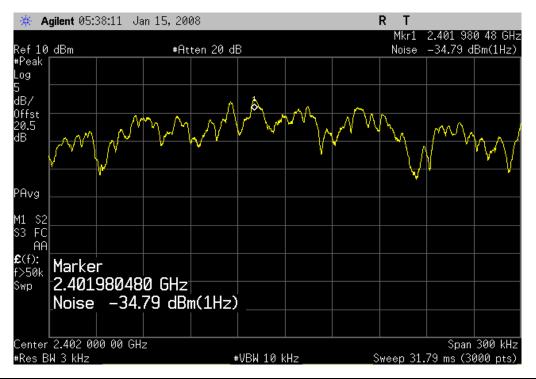
The emission peak(s) were located and zoom in on within the passband. The resolution bandwidth was set to 3 kHz, the video bandwidth was set to greater than or equal to the resolution bandwidth. The sweep speed was set equal to the span divided by 3 kHz (sweep = (SPAN/3 kHz)). For example, given a span of 1.5 MHz, the sweep should be 1.5 x  $10^6 \div 3 \times 10^3 = 500$  seconds. External attenuation was used and added to the reading. The following FCC procedure was used for modifying the power spectral density measurements:

"If the spectrum line spacing cannot be resolved on the available spectrum analyzer, the noise density function on most modern conventional spectrum analyzers will directly measure the noise power density normalized to a 1 Hz noise power bandwidth. Add 34.8 dB for correction to 3 kHz."

NORTHWEST		D	tool Develop			XMit 2007.06
EMC		Power Spec	tral Density			
EUT:	IX350 with Bluetooth module GUB	TC41M-TH			Work Order: SPTE00	78
Serial Number:	: None				Date: 01/14/08	8
Customer:	: Spectrum Technology, Inc.				Temperature: 23°C	
Attendees	: Rod Munro				Humidity: 29%	
Project:	: None			Ba	rometric Pres.: 1023.7	
Tested by:	: Holly Ashkannejhad		Power: 120VAC/60Hz		Job Site: EV06	
EST SPECIFICAT	TIONS		Test Method			
CC 15.247 (DTS):	2006		ANSI C63.4:2003 KDB I	No. 558074		
OMMENTS						
uetooth radio in	IX350. Power software levels used	GESK mode used 255 AA	ni//_DODSK and SDDSK used 255	86		
EVIATIONS FROI	M TEST STANDARD					
EVIATIONS FROI	M TEST STANDARD	Signatura Holy	Juliy W			
		Signature Holy		/alue	Limit	Result
onfiguration #	1	Signature Holy )		/alue	Limit	Result
onfiguration #	1	Signature Holy )			Limit 8 dBm / 3 kHz	<b>Result</b> Pass
onfiguration #	1 DH5	Signature Holy		3 kHz		
onfiguration #	1 DH5 Low channel, 2402MHz	Signature Holy )	0.01 dBm	′ 3 kHz / 3 kHz	8 dBm / 3 kHz	Pass
onfiguration # uetooth, GFSK, D	1 DH5 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz	Signature Holy )	0.01 dBm -0.42 dBm	′ 3 kHz / 3 kHz	8 dBm / 3 kHz 8 dBm / 3 kHz	Pass Pass
onfiguration # uetooth, GFSK, D	1 DH5 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz	Signature Holy )	0.01 dBm -0.42 dBm	/ 3 kHz / 3 kHz / 3 kHz	8 dBm / 3 kHz 8 dBm / 3 kHz	Pass Pass
onfiguration # uetooth, GFSK, D	1 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz PSK, 2DH5	Signature Holy	0.01 dBm -0.42 dBm -0.69 dBm	/ 3 kHz / 3 kHz / 3 kHz / 3 kHz	8 dBm / 3 kHz 8 dBm / 3 kHz 8 dBm / 3 kHz	Pass Pass Pass
onfiguration # uetooth, GFSK, D	1 DH5 Low channel, 2402MHz Mid channel, 241MHz High channel, 2480MHz PSK, 2DH5 Low channel, 2402MHz	Signature Holy )	0.01 dBm, -0.42 dBm -0.69 dBm -3.44 dBm	/ 3 kHz / 3 kHz / 3 kHz / 3 kHz / 3 kHz	8 dBm / 3 kHz 8 dBm / 3 kHz 8 dBm / 3 kHz 8 dBm / 3 kHz	Pass Pass Pass
onfiguration # luetooth, GFSK, D luetooth, pi/4-DQF	1 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz PSK, 2DH5 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz	Signature Holy )	0.01 dBm -0.42 dBm -0.69 dBm -3.44 dBm -3.75 dBm	/ 3 kHz / 3 kHz / 3 kHz / 3 kHz / 3 kHz	8 dBm / 3 kHz 8 dBm / 3 kHz 8 dBm / 3 kHz 8 dBm / 3kHz 8 dBm / 3kHz	Pass Pass Pass Pass Pass
onfiguration # luetooth, GFSK, D luetooth, pi/4-DQF	1 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz PSK, 2DH5 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz	Signature Holy	0.01 dBm -0.42 dBm -0.69 dBm -3.44 dBm -3.75 dBm	/ 3 kHz / 3 kHz / 3 kHz / 3 kHz / 3 kHz / 3 kHz / 3 kHz	8 dBm / 3 kHz 8 dBm / 3 kHz 8 dBm / 3 kHz 8 dBm / 3kHz 8 dBm / 3kHz	Pass Pass Pass Pass Pass
	hts Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz PSK, 2DH5 Low channel, 2402MHz Mid channel, 2441MHz High channel, 2480MHz 3DH5	Signature Holy	0.01 dBm -0.42 dBm -0.69 dBm -3.44 dBm -3.75 dBm -4.53 dBm	/3 kHz /3 kHz /3 kHz /3 kHz /3 kHz /3 kHz /3 kHz	8 dBm / 3 kHz 8 dBm / 3 kHz	Pass Pass Pass Pass Pass Pass

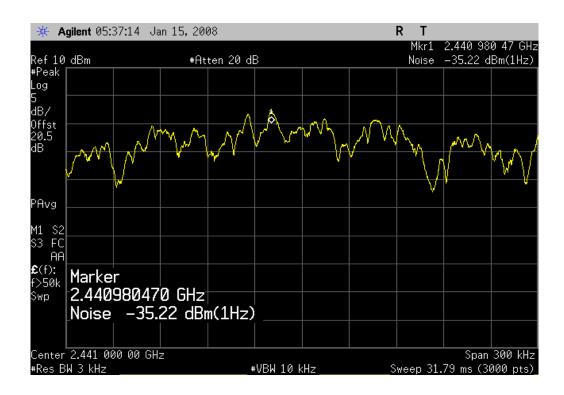
Bluetooth, GFSK, DH5, Low channel, 2402MHz

Result: Pass Value: 0.01 dBm / 3 kHz Limit: 8 dBm / 3 kHz

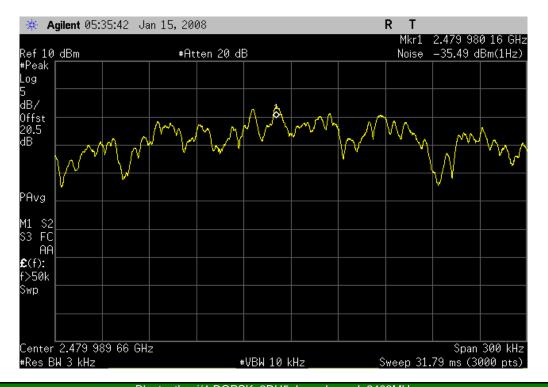


Bluetooth, GFSK, DH5, Mid channel, 2441MHz

Result: Pass Value: -0.42 dBm / 3 kHz Limit: 8 dBm / 3 kHz

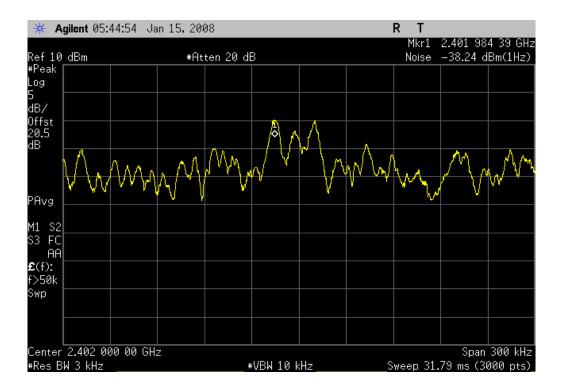


Result: Pass Value: -0.69 dBm / 3 kHz Limit: 8 dBm / 3 kHz



Bluetooth, pi/4-DQPSK, 2DH5, Low channel, 2402MHz

Result: Pass Value: -3.44 dBm / 3 kHz Limit: 8 dBm / 3kHz

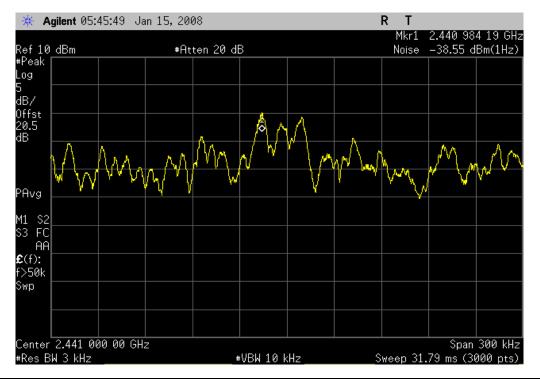


Bluetooth, pi/4-DQPSK, 2DH5, Mid channel, 2441MHz

Result: Pass

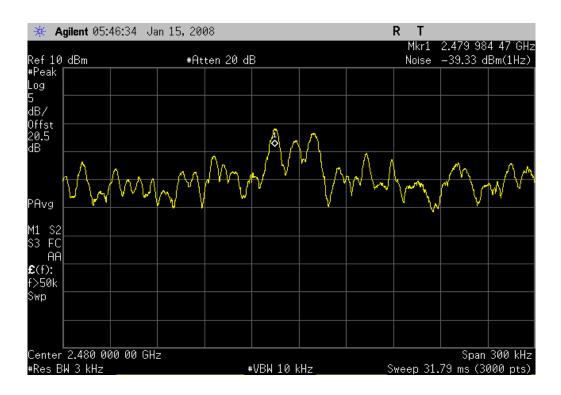
Value: -3.75 dBm / 3 kHz

Limit: 8 dBm / 3 kHz



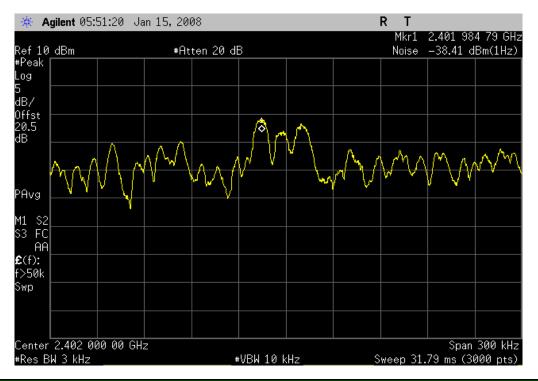
Bluetooth, pi/4-DQPSK, 2DH5, High channel, 2480MHz

Result: Pass Value: -4.53 dBm / 3 kHz Limit: 8 dBm / 3 kHz



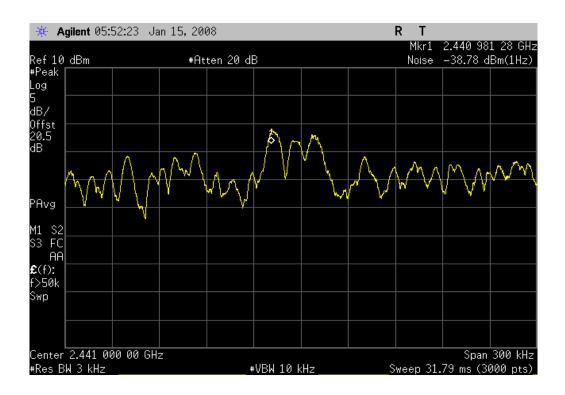
Bluetooth, 8DPSK, 3DH5, Low channel, 2402MHz

Result: Pass Value: -3.61 dBm / 3 kHz Limit: 8 dBm / 3 kHz



Bluetooth, 8DPSK, 3DH5, Mid channel, 2441MHz

Result: Pass Value: -3.98 dBm / 3 kHz Limit: 8 dBm / 3 kHz



Result: Pass Value: -4.42 dBm / 3 kHz Limit: 8 dBm / 3 kHz

