

Amulet Devices U.S.

Voice Remote,
Model: RXT9000-18XXE

Report No. AMUL0001

Report Prepared By



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

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EMC Test Report



22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test

Last Date of Test: August 12, 2010

Amulet Devices U.S.

Model: Voice Remote, Model: RXT9000-18XXE

Emissions			
Test Description	Specification	Test Method	Pass/Fail
Occupied Bandwidth	FCC 15.247:2010	ANSI C63.10:2009	Pass
Output Power	FCC 15.247:2010	ANSI C63.10:2009	Pass
Band Edge Compliance	FCC 15.247:2010	ANSI C63.10:2009	Pass
Power Spectral Density	FCC 15.247:2010	ANSI C63.10:2009	Pass
Spurious Conducted Emissions	FCC 15.247:2010	ANSI C63.10:2009	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).

Approved By:

Don Facteau, IS 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 Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.



Accreditations and Authorizations

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.



NVLAP LAB CODE 200629-0
NVLAP LAB CODE 200630-0
NVLAP LAB CODE 200676-0
NVLAP LAB CODE 200761-0
NVLAP LAB CODE 200881-0

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-Gen, Issue 2 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. (*Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2, Brooklyn Park: 2834E-1*)



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.



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, G-84, C-2687, T-1658, and R-2318, Irvine: R-1943, G-85, C-2766, and T-1659, Sultan: R-871, G-83, C-1784, and T-1511, Brooklyn Park: R-3125, G-86, G-141, C-3464, and T-1634).



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 (US0017). 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



KCC

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



VIETNAM

Vietnam MIC has approved Northwest EMC as an accredited test lab. Per Decision No. 194/QD-QLCL (dated December 15, 2009), Northwest EMC test reports can be used for Vietnam approval submissions.



SCOPE

For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/accreditations/>



Northwest EMC Locations



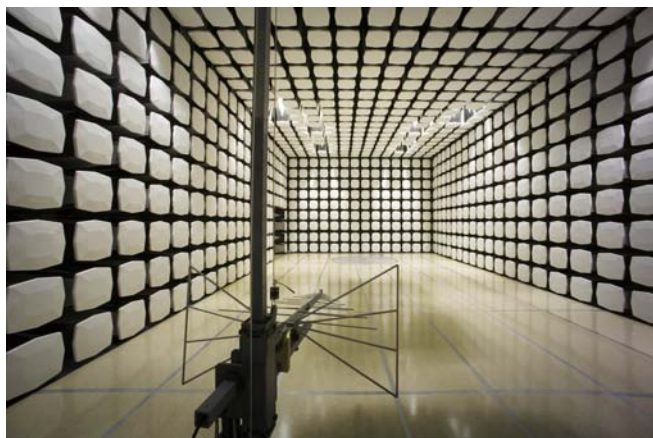
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

California
Labs OC01-OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

Minnesota
Labs MN01-MN08
9349 W Broadway Ave.
Brooklyn Park,
MN 55445
(763) 425-2281

Washington
Labs SU01-SU07
14128 339th Ave. SE
Sultan, WA 98294
(360) 793-8675

New York
Labs WA01-WA04
4939 Jordan Rd.
Elbridge, NY 13060
(315) 685-0796



Party Requesting the Test

Company Name:	Amulet Devices U.S.
Address:	1401 W Idaho Street, Suite 900
City, State, Zip:	Boise, ID 83702
Test Requested By:	Pat Lawless
Model:	Voice Remote, Model: RXT9000-18XXE
First Date of Test:	August 12, 2010
Last Date of Test:	August 12, 2010
Receipt Date of Samples:	August 5, 2010
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test**Functional Description of the EUT (Equipment Under Test):**

Battery operated Voice Remote that contains a 2.4 GHz DTS device

Testing Objective:

To demonstrate compliance with FCC 15.247 requirements.

CONFIGURATION 1 AMUL0002**Software/Firmware Running during test**

Description	Version
AMD6debug	v1.49.003

EUT

Description	Manufacturer	Model/Part Number	Serial Number
Voice Remote	Amulet Devices, US	RXT9000-18XXE	1410 B06F47A

Remote Equipment Outside of Test Setup Boundary

Description	Manufacturer	Model/Part Number	Serial Number
USB-SPY convertor	Avnera	Aardvark	2237-018808
Control PC	IBM	Thinkpad G40	IS136

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB	Yes	1.2m	No	USB to SPI converter	Laptop

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
1	8/12/2010	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	8/12/2010	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	8/12/2010	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	8/12/2010	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	8/12/2010	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

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	E4440A	AFD	6/1/2009	24
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/21/2009	13
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/7/2010	13
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	13
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	4/1/2010	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	24

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are 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 at its maximum data rate with the typical modulation.

EMC

OCCUPIED BANDWIDTH

EUT:	Voice Remote, Model: RXT9000-18XXE	Work Order:	AMUL0002
Serial Number:	1410 B06F47A	Date:	08/12/10
Customer:	Amulet Devices U.S.	Temperature:	22°C
Attendees:	Pat Lawless	Humidity:	42%
Project:	None	Barometric Pres.:	1013.5 mb
Tested by:	Rod Peloquin	Power:	Battery
		Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

0.2 dB adapter cable loss added to spectrum analyzer reference level offset.

DEVIATIONS FROM TEST STANDARD

No Deviations

Configuration #	1	Signature
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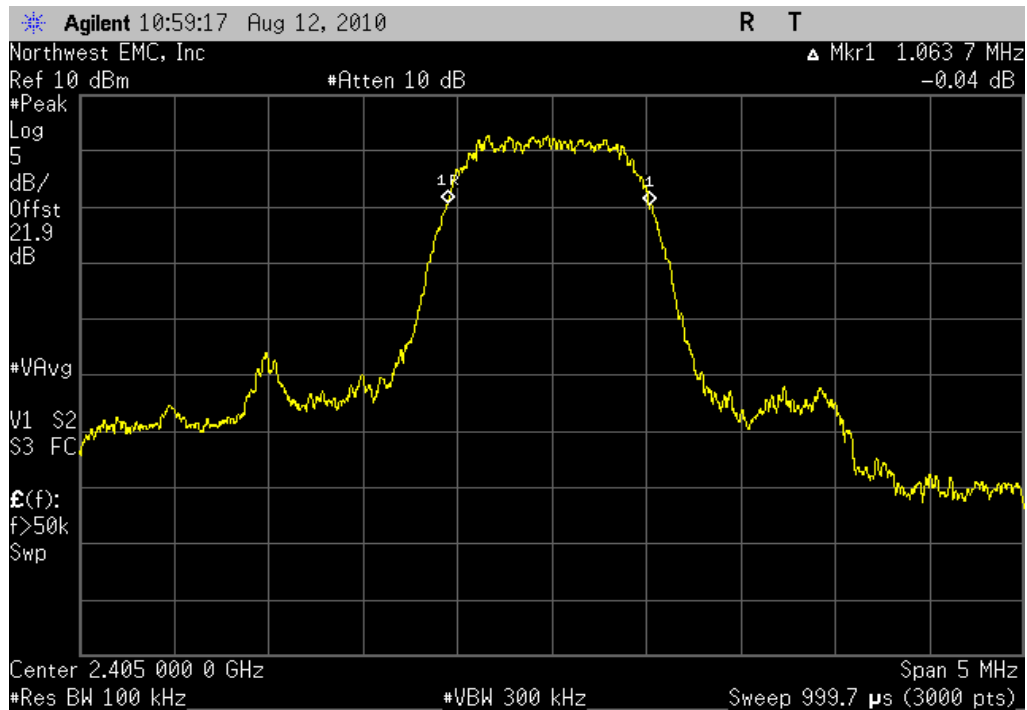
	Value	Limit	Results
Antenna Diversity Low			
Low Channel, Ch. 2, 2405 MHz	1.064 MHz	> 500 kHz	Pass
Mid Channel, Ch. 20, 2441 MHz	1.072 MHz	> 500 kHz	Pass
High Channel, Ch. 38, 2477 MHz	1.072 MHz	> 500 kHz	Pass
Antenna Diversity High			
Low Channel, Ch. 2, 2405 MHz	1.079 MHz	> 500 kHz	Pass
Mid Channel, Ch. 20, 2441 MHz	1.094 MHz	> 500 kHz	Pass
High Channel, Ch. 38, 2477 MHz	1.079 MHz	> 500 kHz	Pass

Antenna Diversity Low, Low Channel, Ch. 2, 2405 MHz

Result: Pass

Value: 1.064 MHz

Limit: > 500 kHz

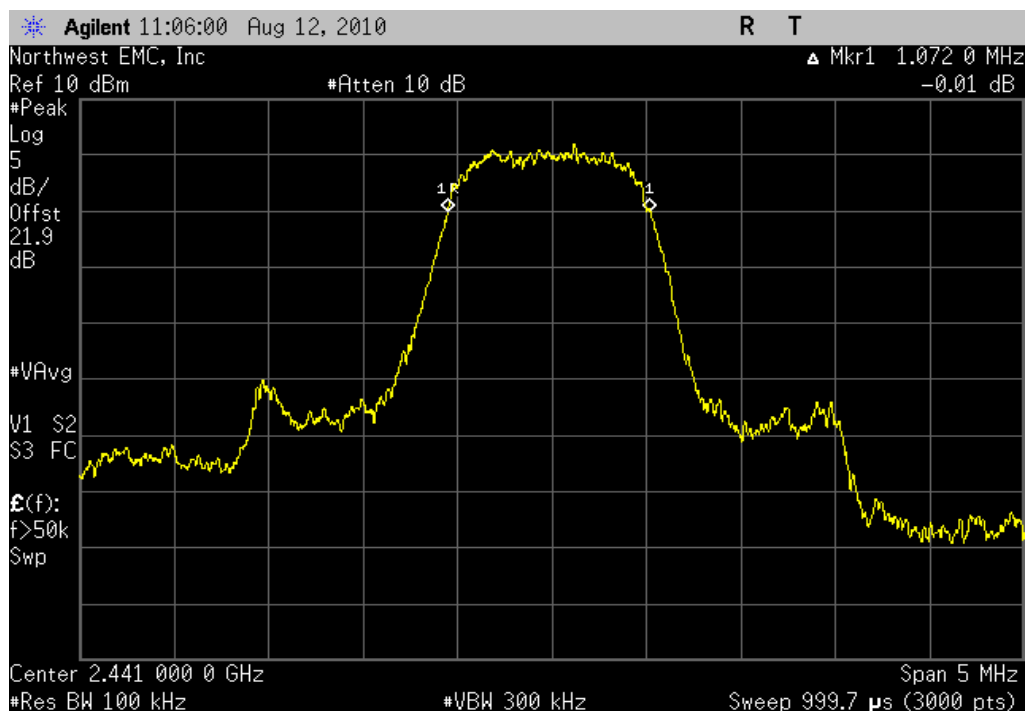


Antenna Diversity Low, Mid Channel, Ch. 20, 2441 MHz

Result: Pass

Value: 1.072 MHz

Limit: > 500 kHz

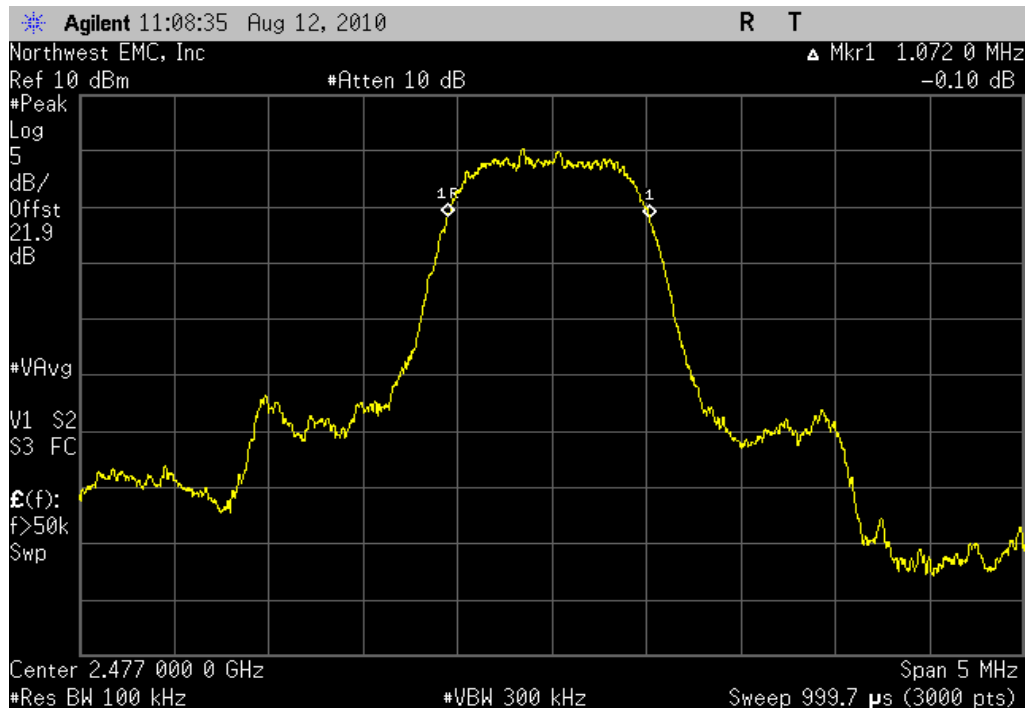


Antenna Diversity Low, High Channel, Ch. 38, 2477 MHz

Result: Pass

Value: 1.072 MHz

Limit: > 500 kHz

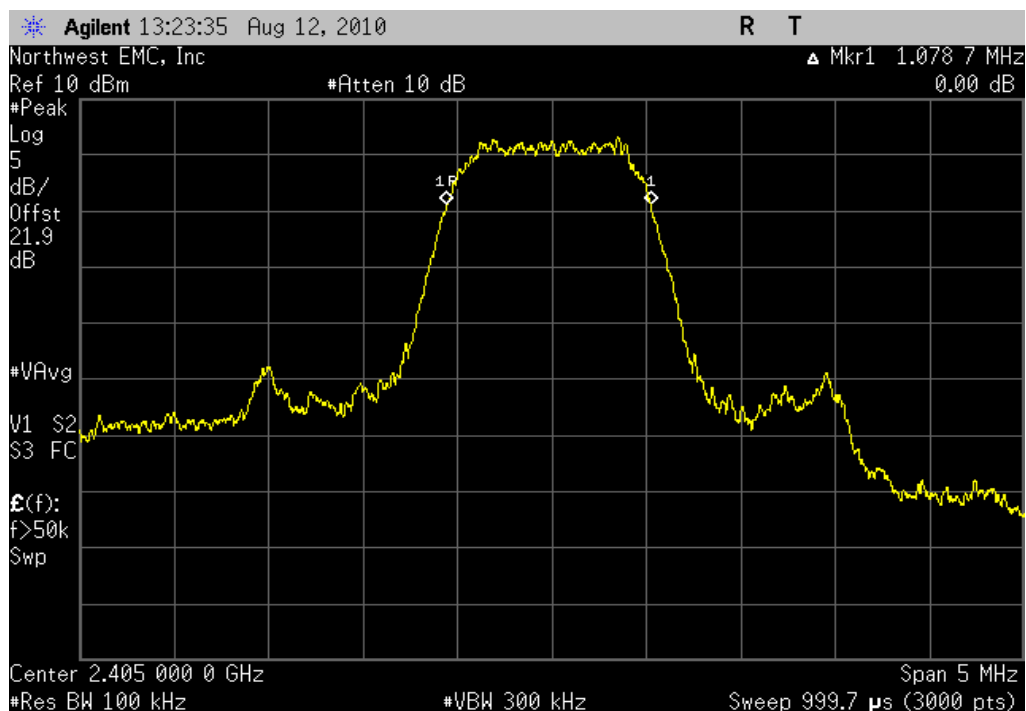


Antenna Diversity High, Low Channel, Ch. 2, 2405 MHz

Result: Pass

Value: 1.079 MHz

Limit: > 500 kHz

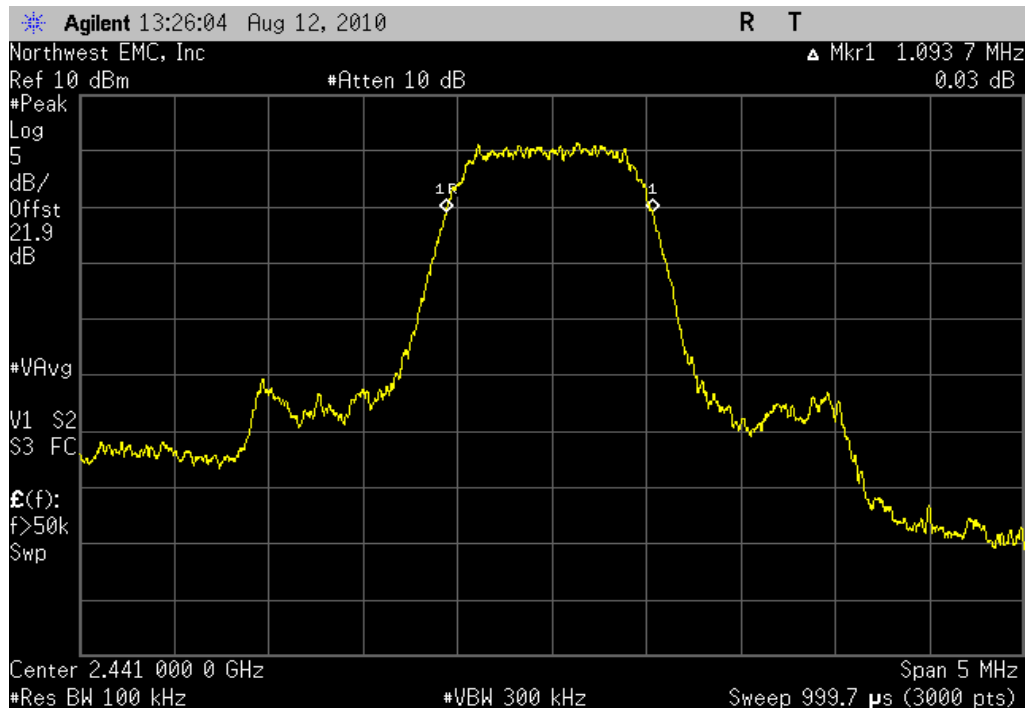


Antenna Diversity High, Mid Channel, Ch. 20, 2441 MHz

Result: Pass

Value: 1.094 MHz

Limit: > 500 kHz

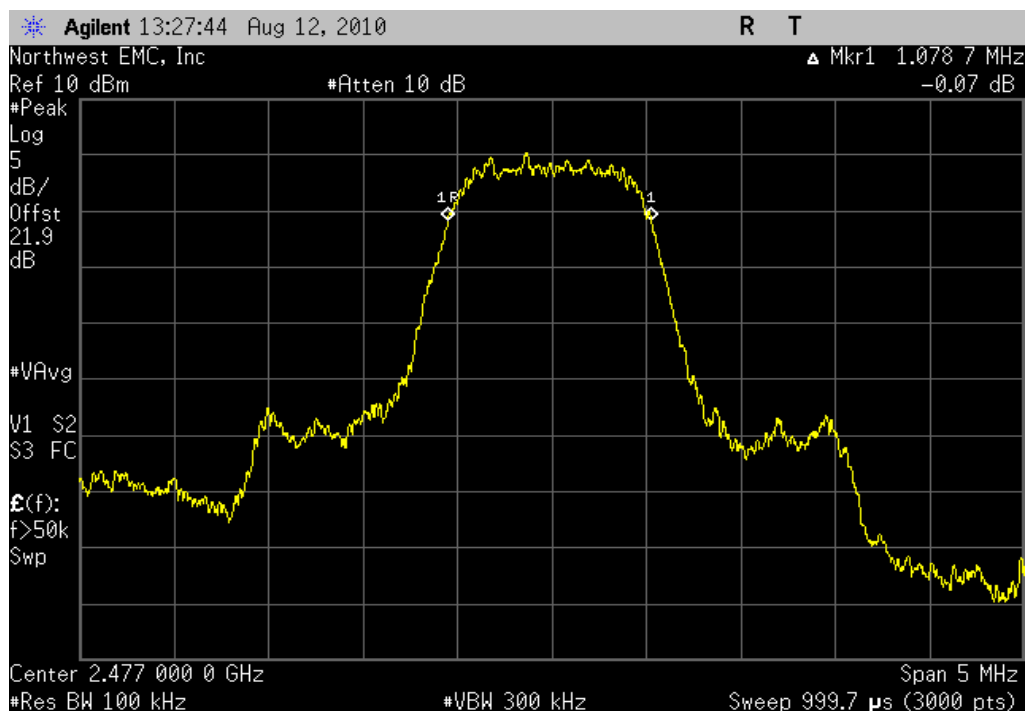


Antenna Diversity High, High Channel, Ch. 38, 2477 MHz

Result: Pass

Value: 1.079 MHz

Limit: > 500 kHz



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	E4440A	AFD	6/1/2009	24
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/21/2009	13
Power Meter	Gigatronics	8651A	SPM	1/7/2010	13
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	24
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	4/1/2010	13
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are 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 at its maximum data rate in a no hop mode.

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

EMC

OUTPUT POWER

EUT:	Voice Remote, Model: RXT9000-18XXE	Work Order:	AMUL0002
Serial Number:	1410 B06F47A	Date:	08/12/10
Customer:	Amulet Devices U.S.	Temperature:	22°C
Attendees:	Pat Lawless	Humidity:	42%
Project:	None	Barometric Pres.:	1013.5 mb
Tested by:	Rod Peloquin	Power:	Battery
		Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

0.2 dB adapter cable loss added to spectrum analyzer reference level offset.

DEVIATIONS FROM TEST STANDARD

No Deviations

Configuration #	1	Signature
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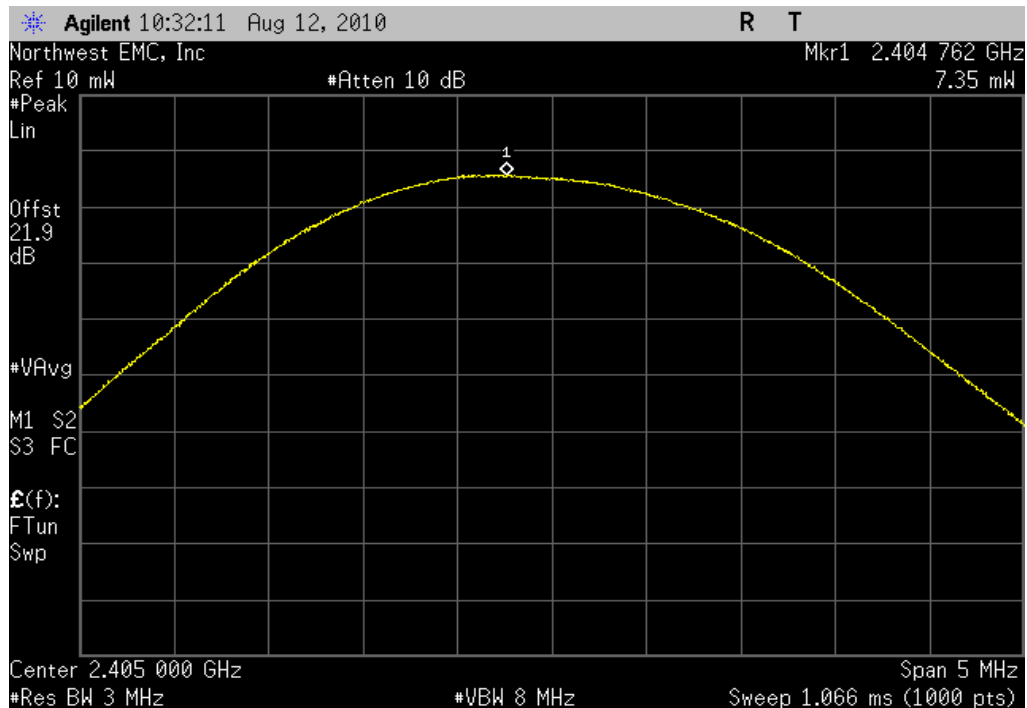
	Value	Limit	Results
Antenna Diversity Low			
Low Channel, Ch. 2, 2405 MHz	7.4 mW	1 Watt	Pass
Mid Channel, Ch. 20, 2441 MHz	6.3 mW	1 Watt	Pass
High Channel, Ch. 38, 2477 MHz	5.0 mW	1 Watt	Pass
Antenna Diversity High			
Low Channel, Ch. 2, 2405 MHz	7.3 mW	1 Watt	Pass
Mid Channel, Ch. 20, 2441 MHz	6.2 mW	1 Watt	Pass
High Channel, Ch. 38, 2477 MHz	5.0 mW	1 Watt	Pass

Antenna Diversity Low, Low Channel, Ch. 2, 2405 MHz

Result: Pass

Value: 7.4 mW

Limit: 1 Watt

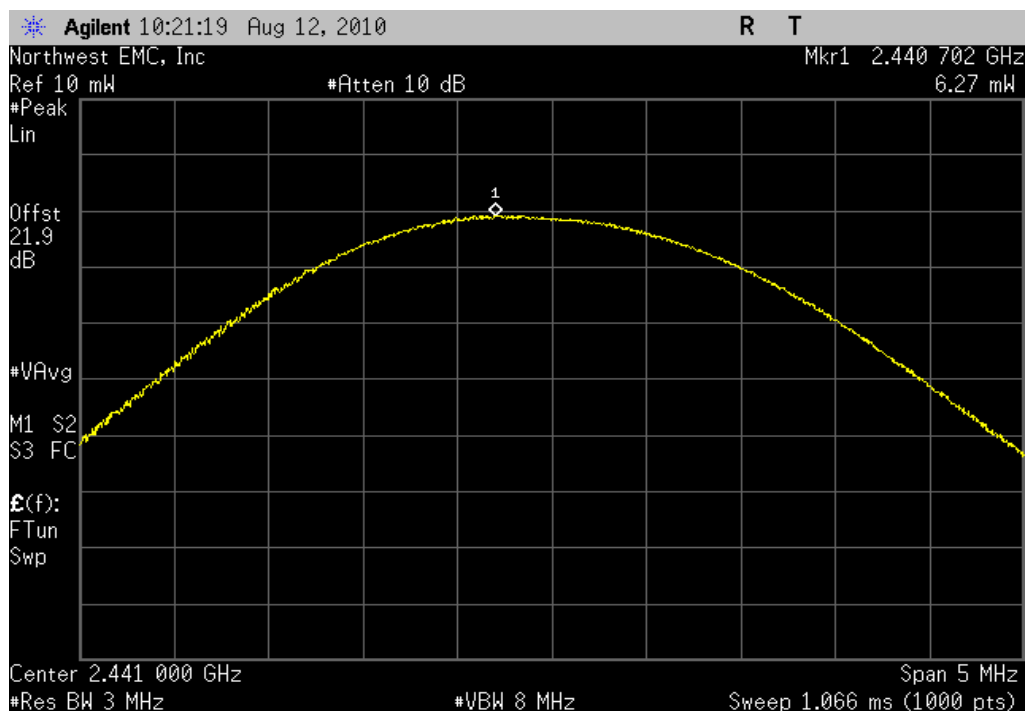


Antenna Diversity Low, Mid Channel, Ch. 20, 2441 MHz

Result: Pass

Value: 6.3 mW

Limit: 1 Watt

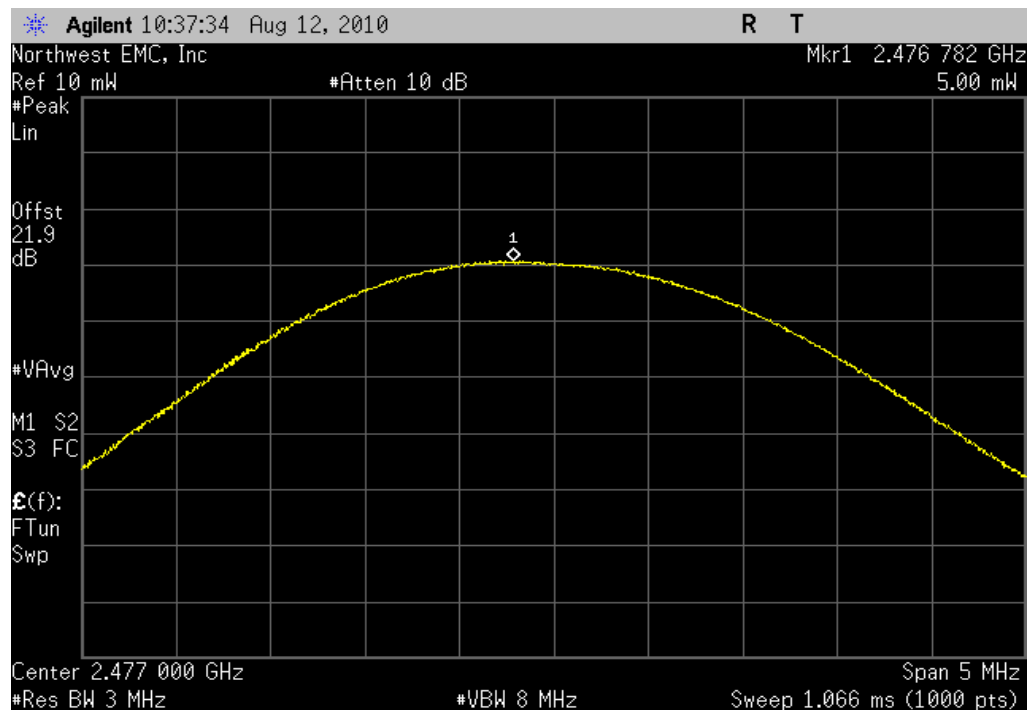


Antenna Diversity Low, High Channel, Ch. 38, 2477 MHz

Result: Pass

Value: 5.0 mW

Limit: 1 Watt

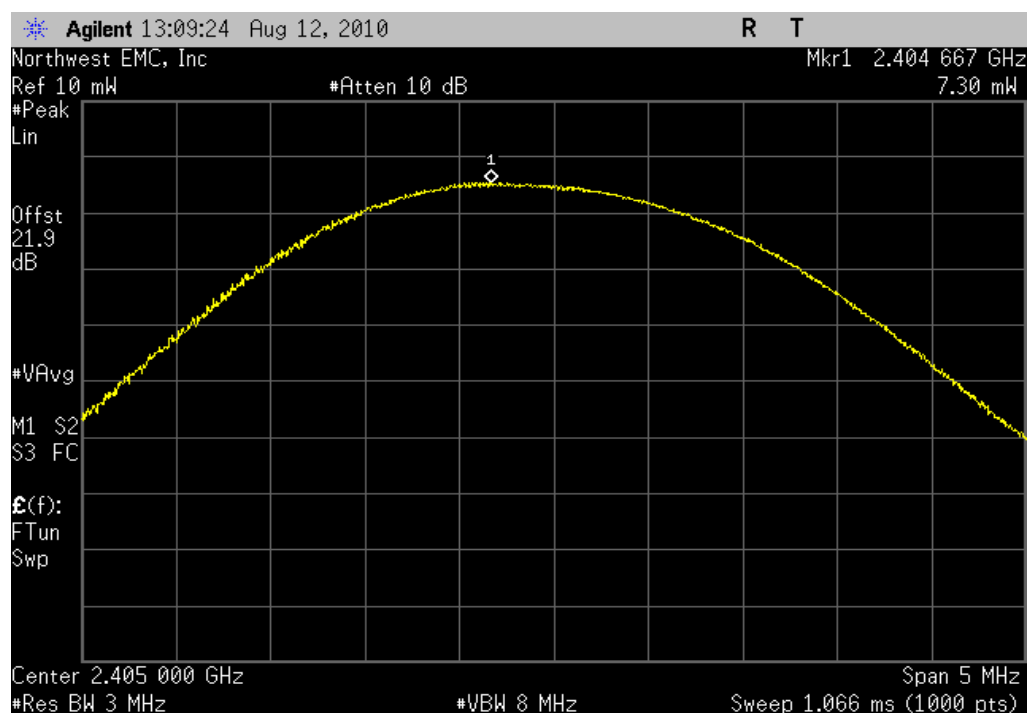


Antenna Diversity High, Low Channel, Ch. 2, 2405 MHz

Result: Pass

Value: 7.3 mW

Limit: 1 Watt

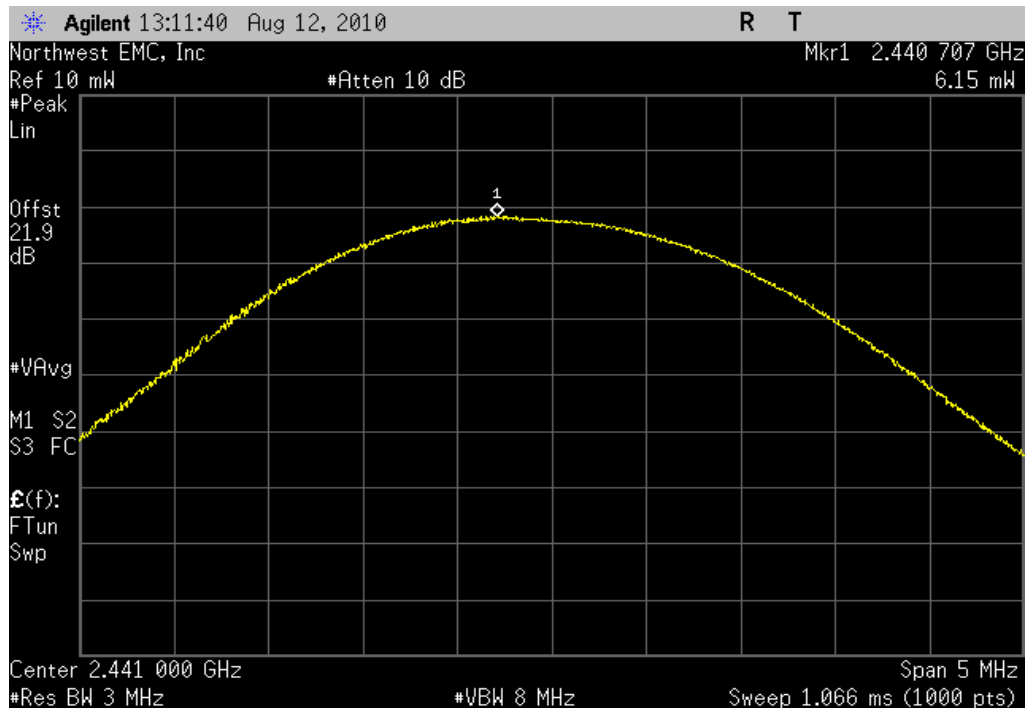


Antenna Diversity High, Mid Channel, Ch. 20, 2441 MHz

Result: Pass

Value: 6.2 mW

Limit: 1 Watt

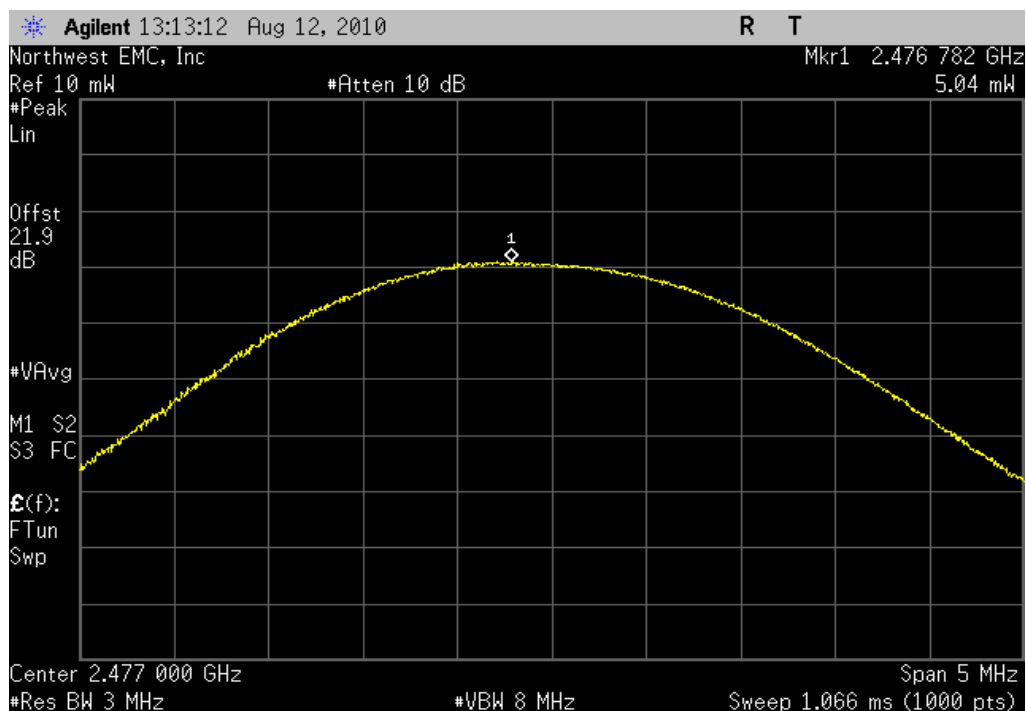


Antenna Diversity High, High Channel, Ch. 38, 2477 MHz

Result: Pass

Value: 5.0 mW

Limit: 1 Watt



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	E4440A	AFD	6/1/2009	24
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/21/2009	13
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/7/2010	13
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	13
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	4/1/2010	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	24

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are 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 EUT was transmitting at its maximum data. 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.

EMC

BAND EDGE COMPLIANCE

EUT:	Voice Remote, Model: RXT9000-18XXE	Work Order:	AMUL0002
Serial Number:	1410 B06F47A	Date:	08/12/10
Customer:	Amulet Devices U.S.	Temperature:	22°C
Attendees:	Pat Lawless	Humidity:	42%
Project:	None	Barometric Pres.:	1013.5 mb
Tested by:	Rod Peloquin	Power:	Battery
		Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

0.2 dB adapter cable loss added to spectrum analyzer reference level offset.

DEVIATIONS FROM TEST STANDARD

No Deviations

Configuration #	1	Signature
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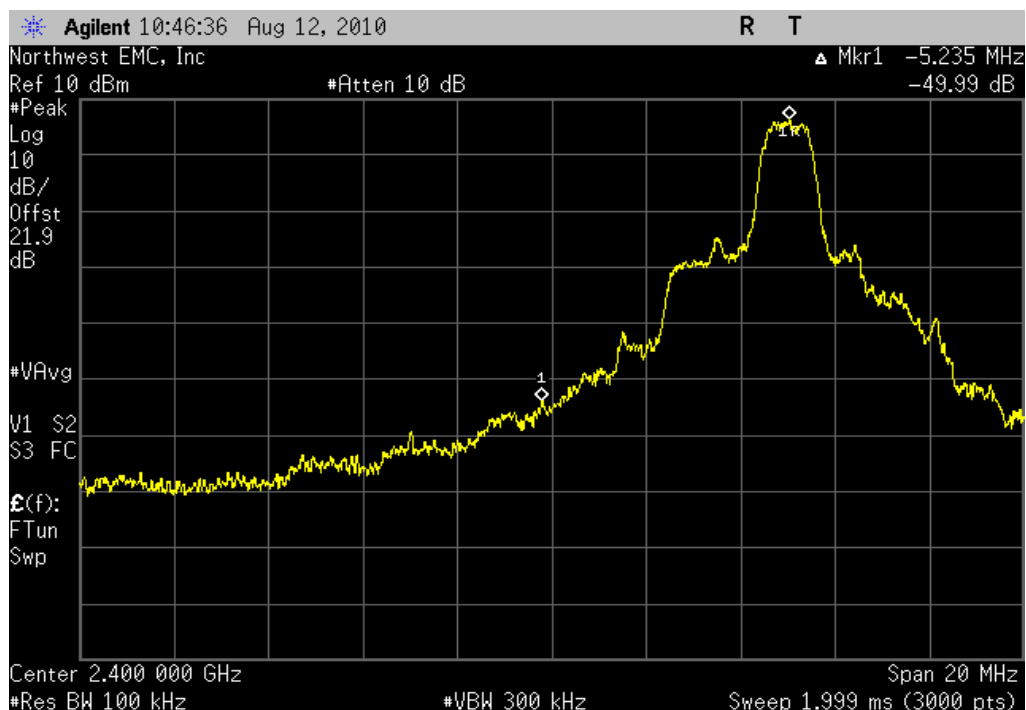
	Value	Limit	Results
Antenna Diversity Low			
Low Channel, Ch. 2, 2405 MHz	-50.0 dBc	≤ -20 dBc	Pass
High Channel, Ch. 38, 2477 MHz	-55.6 dBc	≤ -20 dBc	Pass
Antenna Diversity High			
Low Channel, Ch. 2, 2405 MHz	-48.7 dBc	≤ -20 dBc	Pass
High Channel, Ch. 38, 2477 MHz	-55.4 dBc	≤ -20 dBc	Pass

BAND EDGE COMPLIANCE

Antenna Diversity Low, Low Channel, Ch. 2, 2405 MHz

Result: Pass

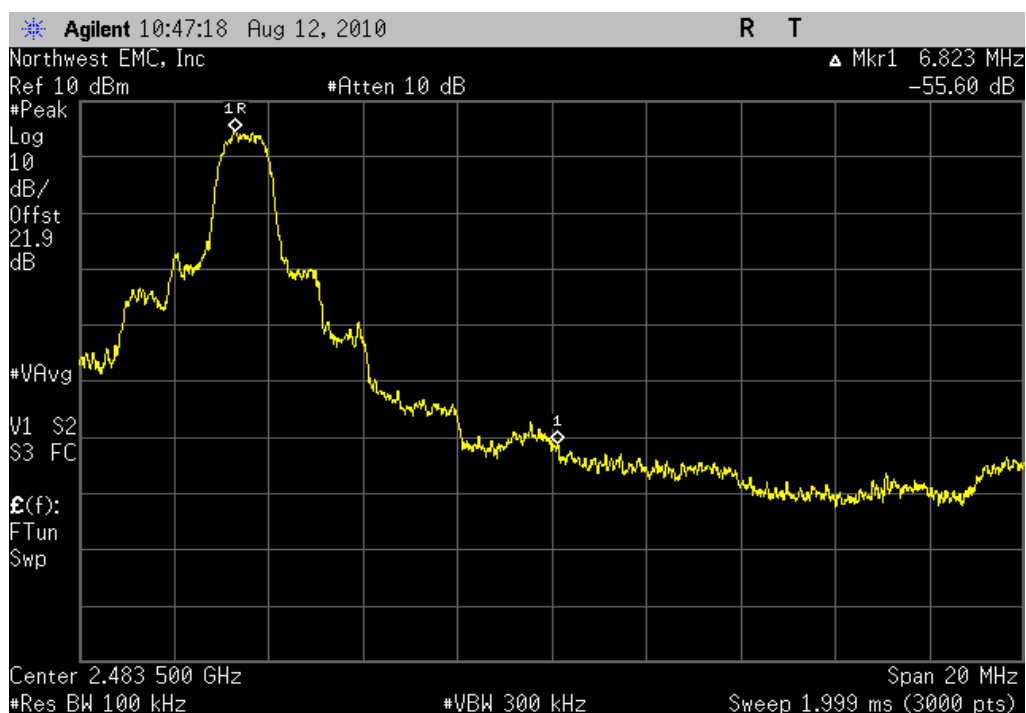
Value: -50.0 dBc

Limit: ≤ -20 dBc

Antenna Diversity Low, High Channel, Ch. 38, 2477 MHz

Result: Pass

Value: -55.6 dBc

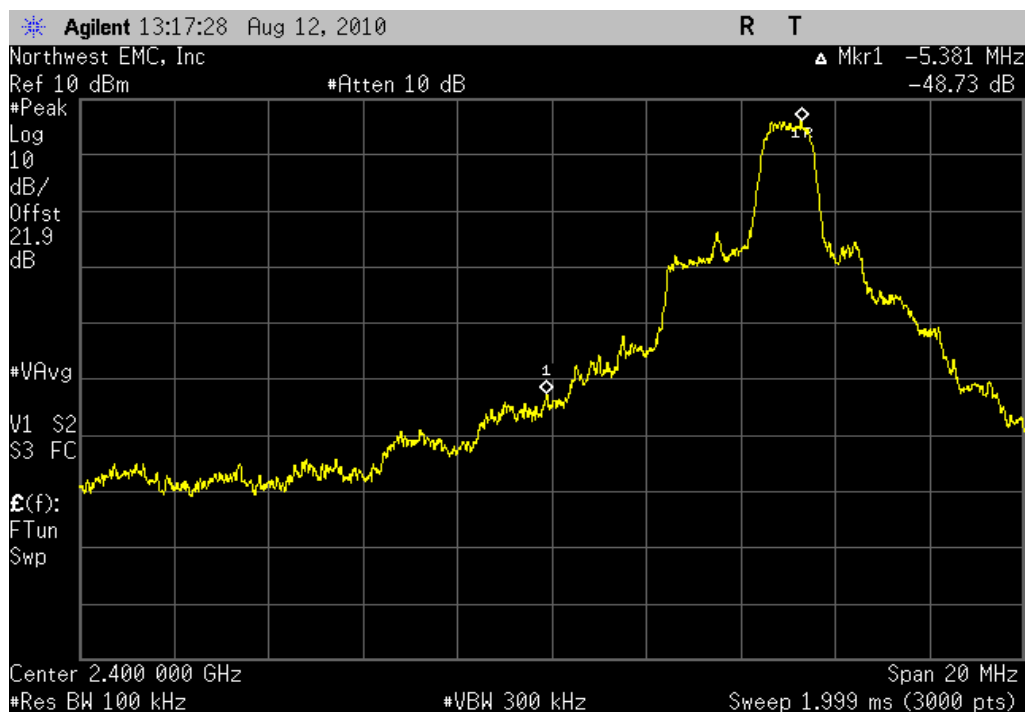
Limit: ≤ -20 dBc

BAND EDGE COMPLIANCE

Antenna Diversity High, Low Channel, Ch. 2, 2405 MHz

Result: Pass

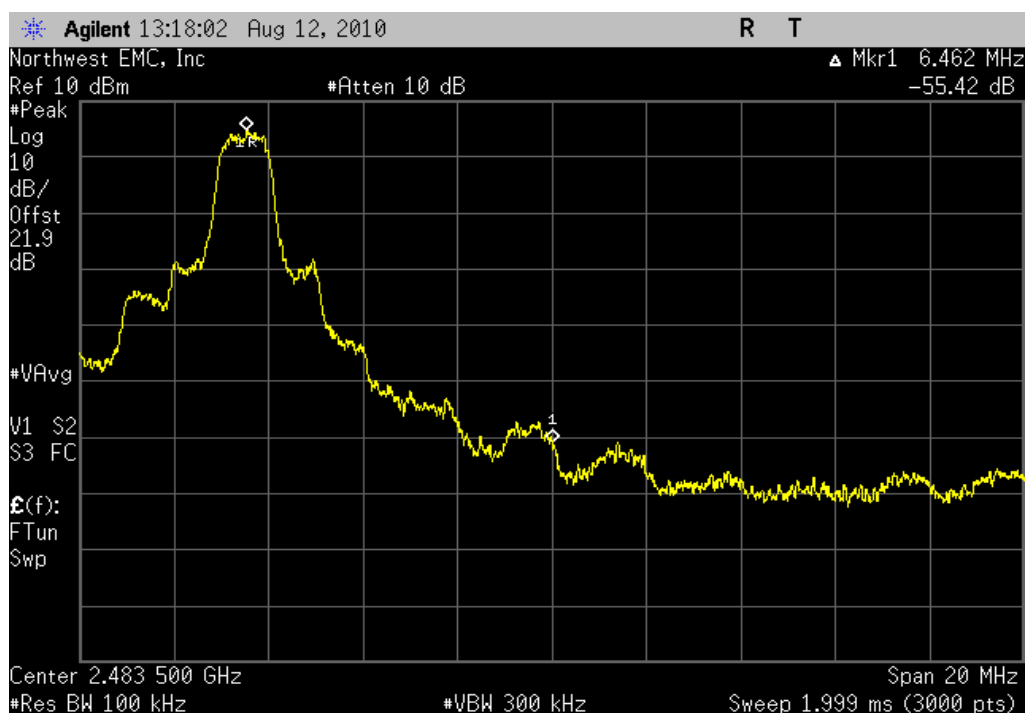
Value: -48.7 dBc

Limit: ≤ -20 dBc

Antenna Diversity High, High Channel, Ch. 38, 2477 MHz

Result: Pass

Value: -55.4 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	E4440A	AFD	6/1/2009	24
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	4/1/2010	13
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
Power Meter	Gigatronics	8651A	SPM	1/7/2010	13
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	13
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	4/1/2010	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	24

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are 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. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

EMC

SPURIOUS CONDUCTED EMISSIONS

EUT:	Voice Remote, Model: RXT9000-18XXE	Work Order:	AMUL0002
Serial Number:	1410 B06F47A	Date:	08/12/10
Customer:	Amulet Devices U.S.	Temperature:	22°C
Attendees:	Pat Lawless	Humidity:	42%
Project:	None	Barometric Pres.:	1013.5 mb
Tested by:	Rod Peloquin	Power:	Battery
		Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

0.2 dB adapter cable loss added to spectrum analyzer reference level offset.

DEVIATIONS FROM TEST STANDARD

No Deviations

Configuration #	1	Signature 
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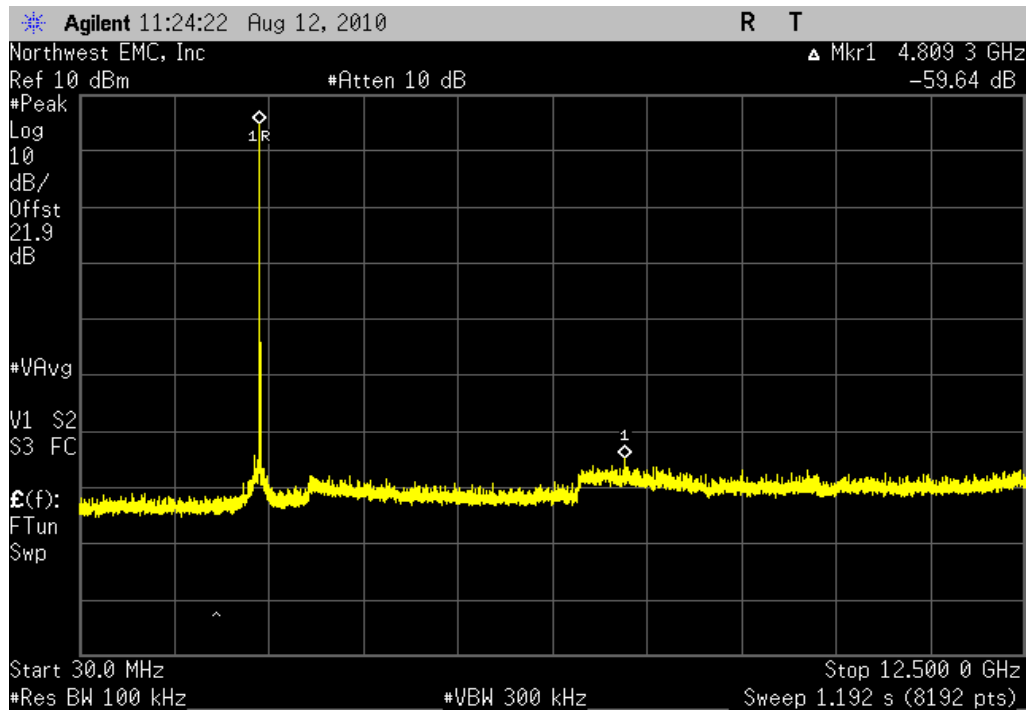
	Value	Limit	Results
Antenna Diversity Low			
Low Channel, Ch. 2, 2405 MHz			
30 MHz - 12.5 GHz	-59.6 dBc	≤ -20 dBc	Pass
12.5 GHz - 25 GHz	-52.9 dBc	≤ -20 dBc	Pass
Mid Channel, Ch. 20, 2441 MHz			
30 MHz - 12.5 GHz	-58.5 dBc	≤ -20 dBc	Pass
12.5 GHz - 25 GHz	-52.9 dBc	≤ -20 dBc	Pass
High Channel, Ch. 38, 2477 MHz			
30 MHz - 12.5 GHz	-59.3 dBc	≤ -20 dBc	Pass
12.5 GHz - 25 GHz	-52.3 dBc	≤ -20 dBc	Pass
Antenna Diversity High			
Low Channel, Ch. 2, 2405 MHz			
30 MHz - 12.5 GHz	-57.8 dBc	≤ -20 dBc	Pass
12.5 GHz - 25 GHz	-52.4 dBc	≤ -20 dBc	Pass
Mid Channel, Ch. 20, 2441 MHz			
30 MHz - 12.5 GHz	-59.2 dBc	≤ -20 dBc	Pass
12.5 GHz - 25 GHz	-52.9 dBc	≤ -20 dBc	Pass
High Channel, Ch. 38, 2477 MHz			
30 MHz - 12.5 GHz	-58.1 dBc	≤ -20 dBc	Pass
12.5 GHz - 25 GHz	-52.6 dBc	≤ -20 dBc	Pass

SPURIOUS CONDUCTED EMISSIONS

Antenna Diversity Low, Low Channel, Ch. 2, 2405 MHz, 30 MHz - 12.5 GHz

Result: Pass

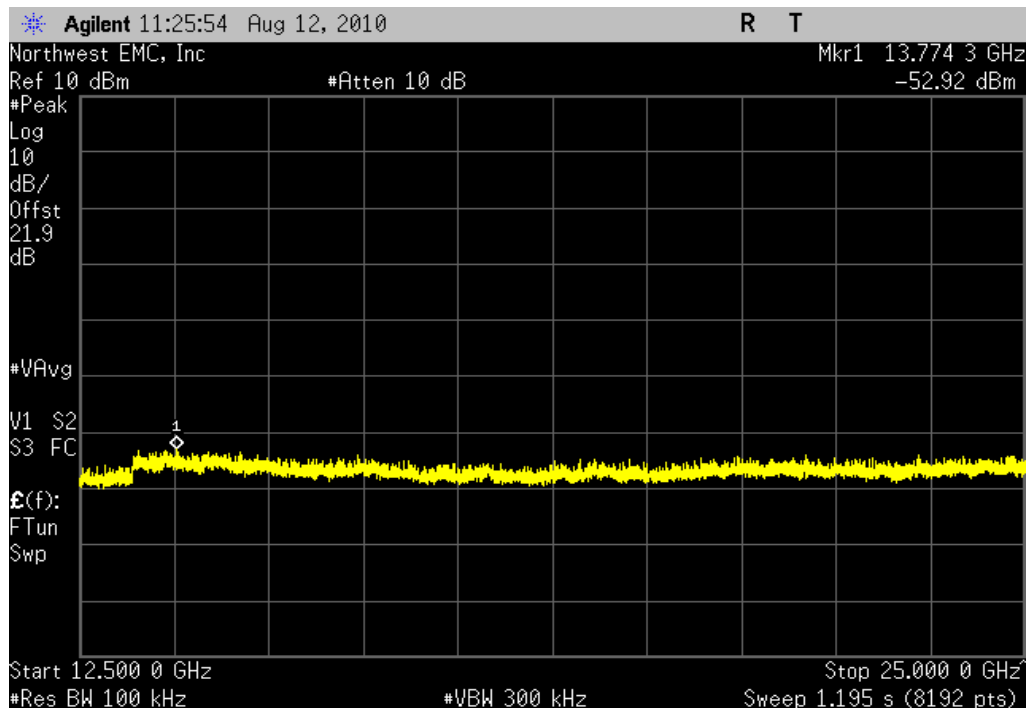
Value: -59.6 dBc

Limit: ≤ -20 dBc

Antenna Diversity Low, Low Channel, Ch. 2, 2405 MHz, 12.5 GHz - 25 GHz

Result: Pass

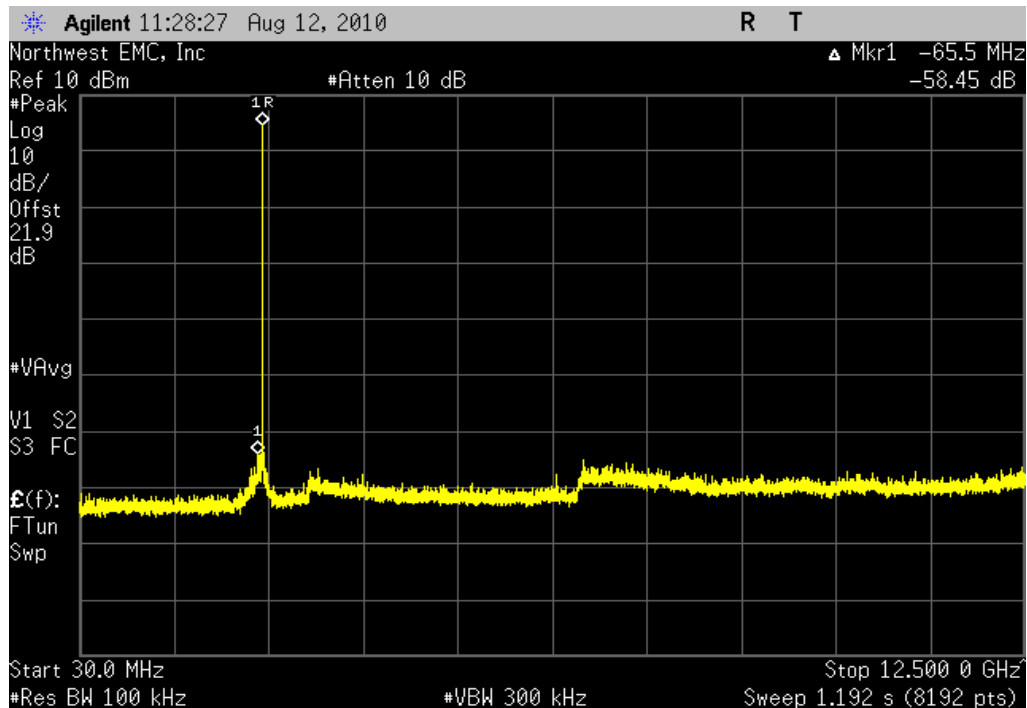
Value: -52.9 dBc

Limit: ≤ -20 dBc

Antenna Diversity Low, Mid Channel, Ch. 20, 2441 MHz, 30 MHz - 12.5 GHz

Result: Pass

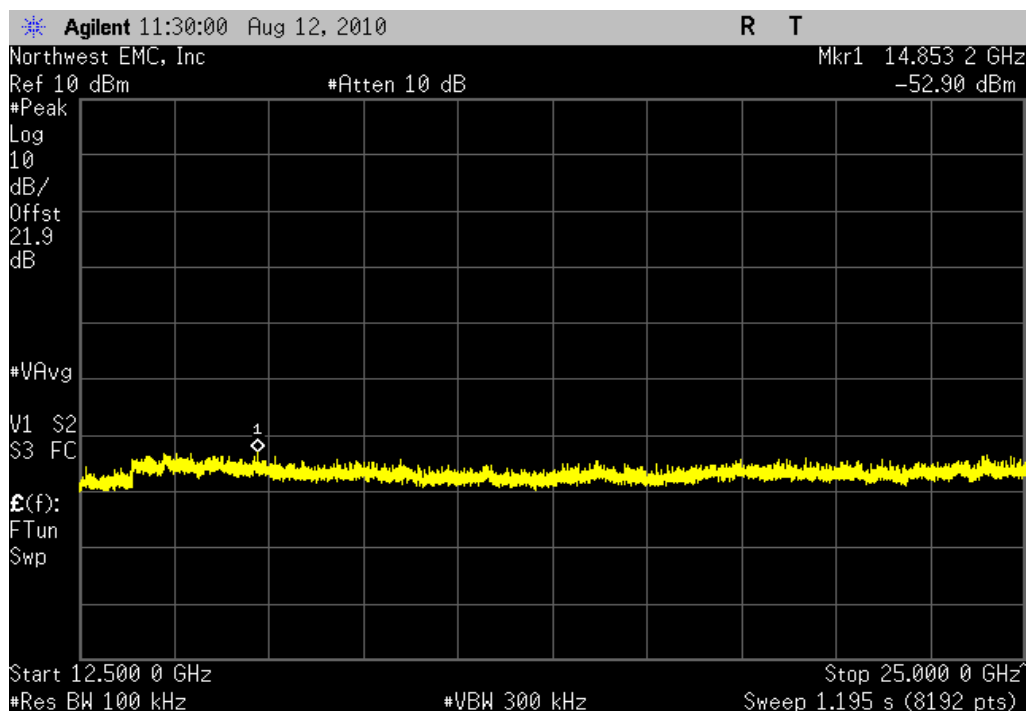
Value: -58.5 dBc

Limit: ≤ -20 dBc

Antenna Diversity Low, Mid Channel, Ch. 20, 2441 MHz, 12.5 GHz - 25 GHz

Result: Pass

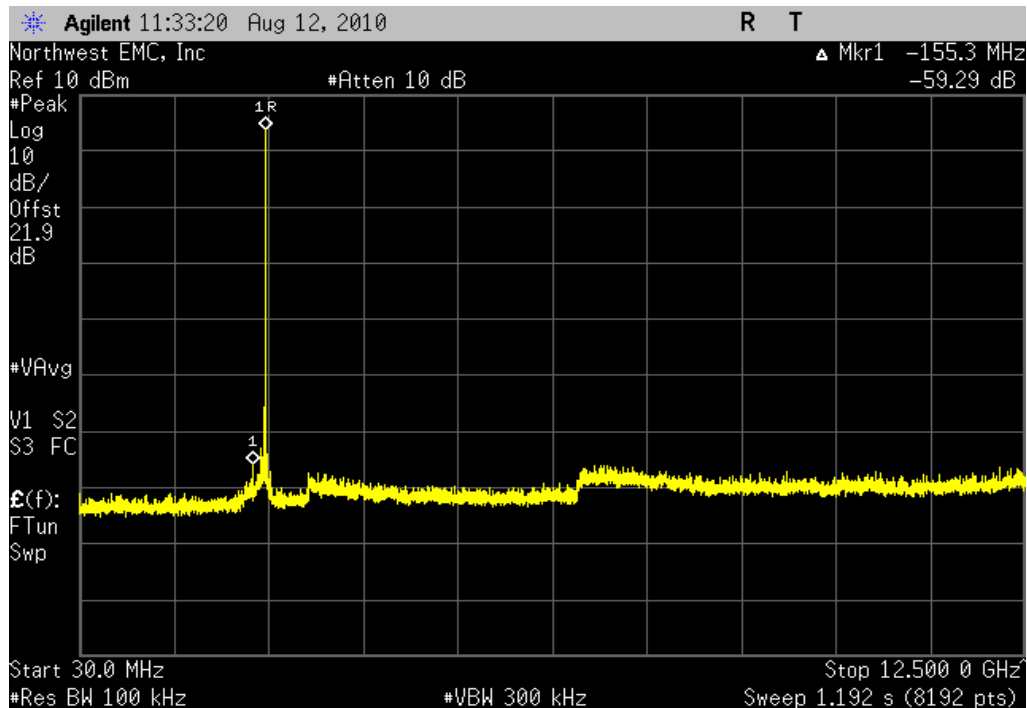
Value: -52.9 dBc

Limit: ≤ -20 dBc

Antenna Diversity Low, High Channel, Ch. 38, 2477 MHz, 30 MHz - 12.5 GHz

Result: Pass

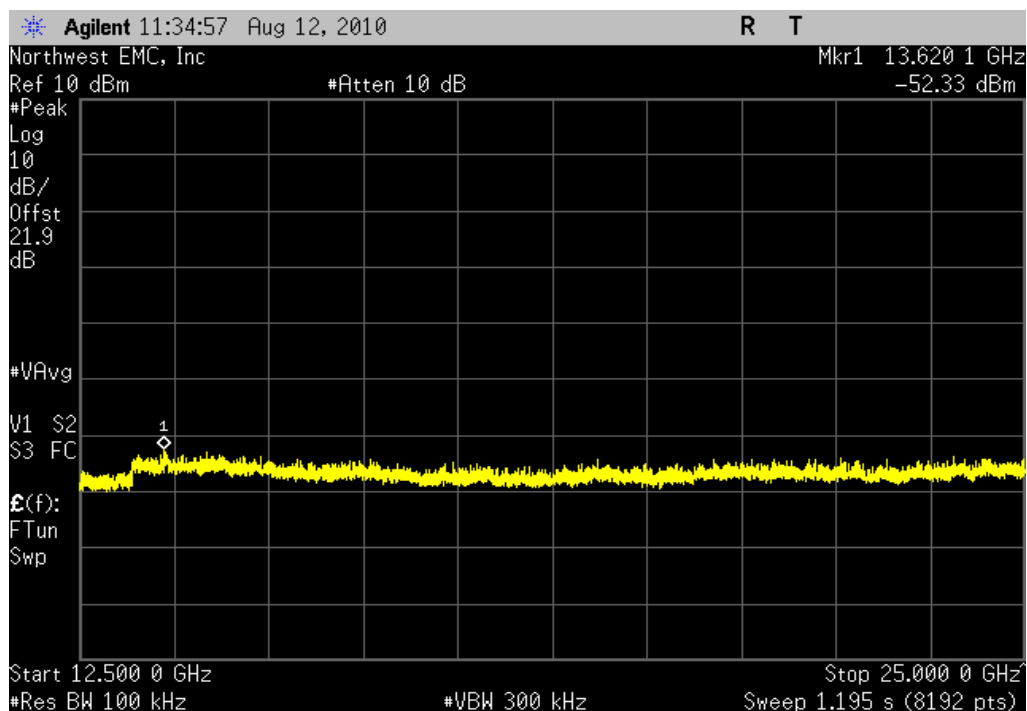
Value: -59.3 dBc

Limit: ≤ -20 dBc

Antenna Diversity Low, High Channel, Ch. 38, 2477 MHz, 12.5 GHz - 25 GHz

Result: Pass

Value: -52.3 dBc

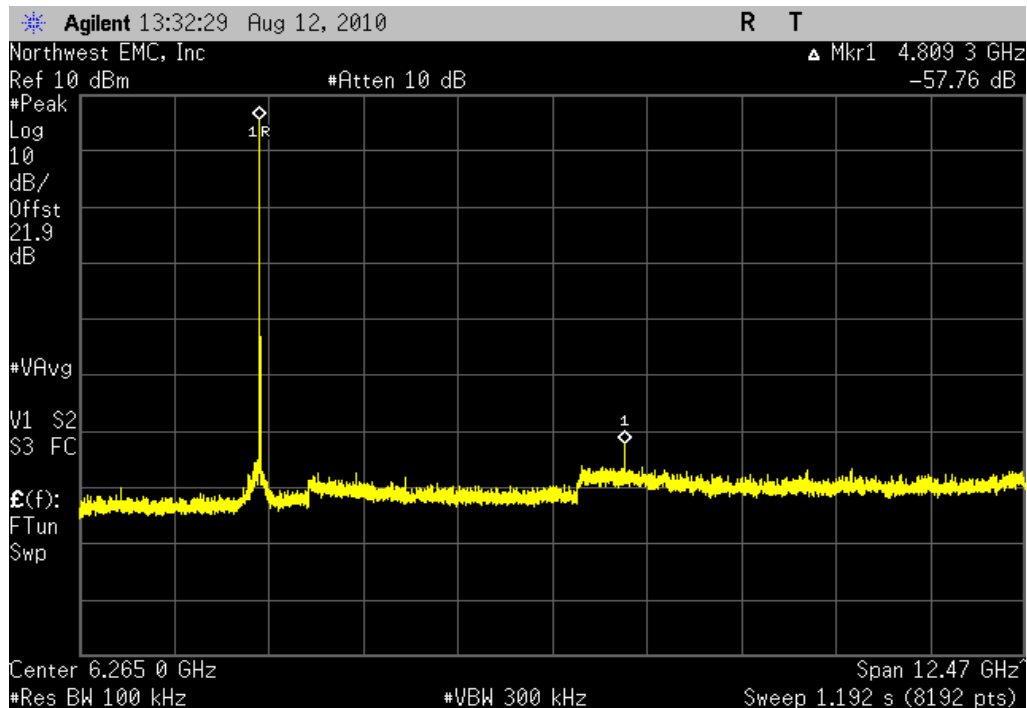
Limit: ≤ -20 dBc

SPURIOUS CONDUCTED EMISSIONS

Antenna Diversity High, Low Channel, Ch. 2, 2405 MHz, 30 MHz - 12.5 GHz

Result: Pass

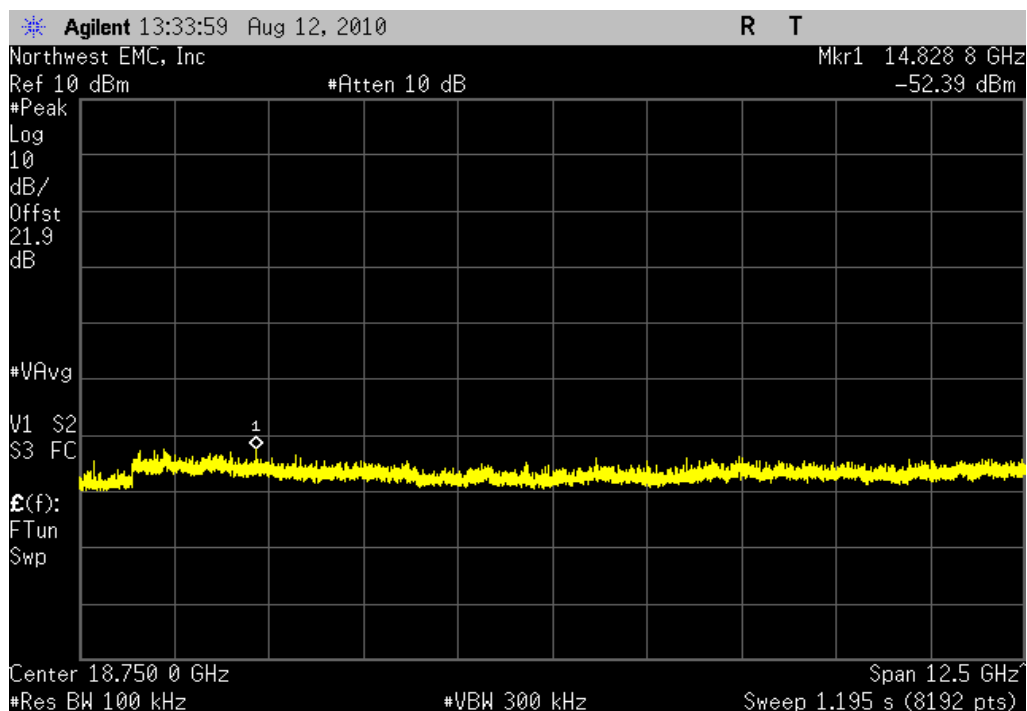
Value: -57.8 dBc

Limit: ≤ -20 dBc

Antenna Diversity High, Low Channel, Ch. 2, 2405 MHz, 12.5 GHz - 25 GHz

Result: Pass

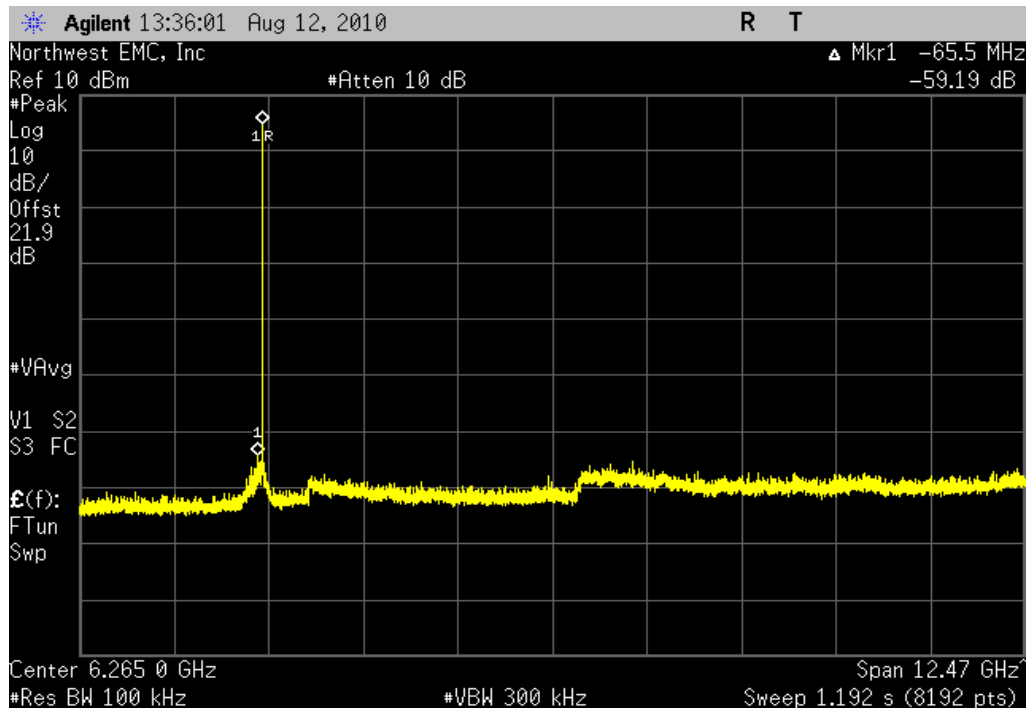
Value: -52.4 dBc

Limit: ≤ -20 dBc

Antenna Diversity High, Mid Channel, Ch. 20, 2441 MHz, 30 MHz - 12.5 GHz

Result: Pass

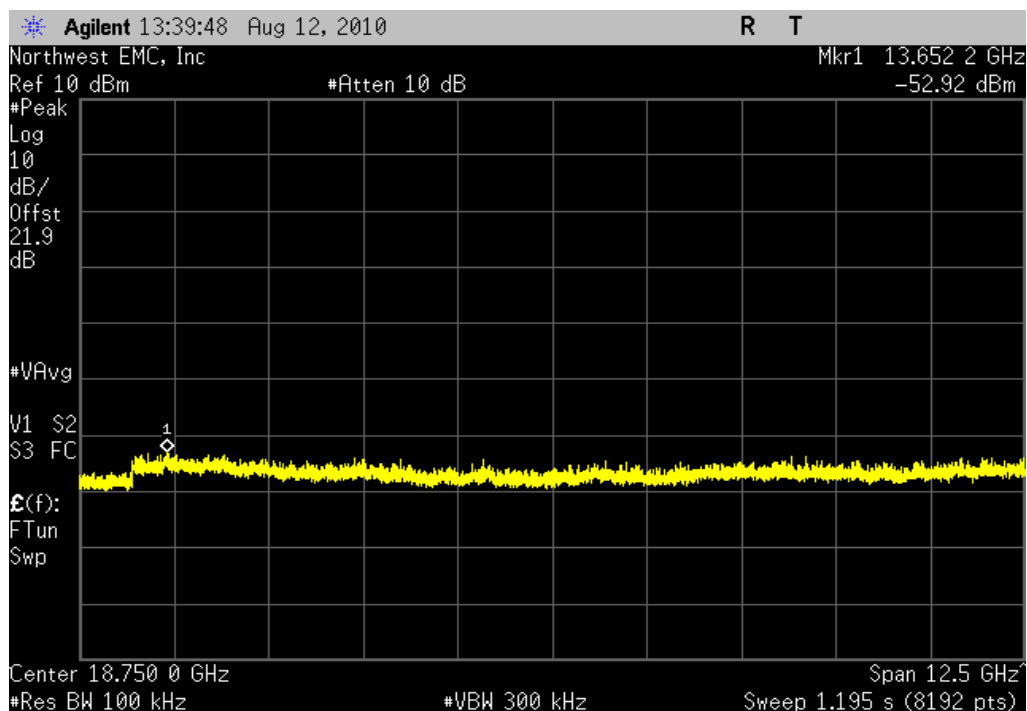
Value: -59.2 dBc

Limit: ≤ -20 dBc

Antenna Diversity High, Mid Channel, Ch. 20, 2441 MHz, 12.5 GHz - 25 GHz

Result: Pass

Value: -52.9 dBc

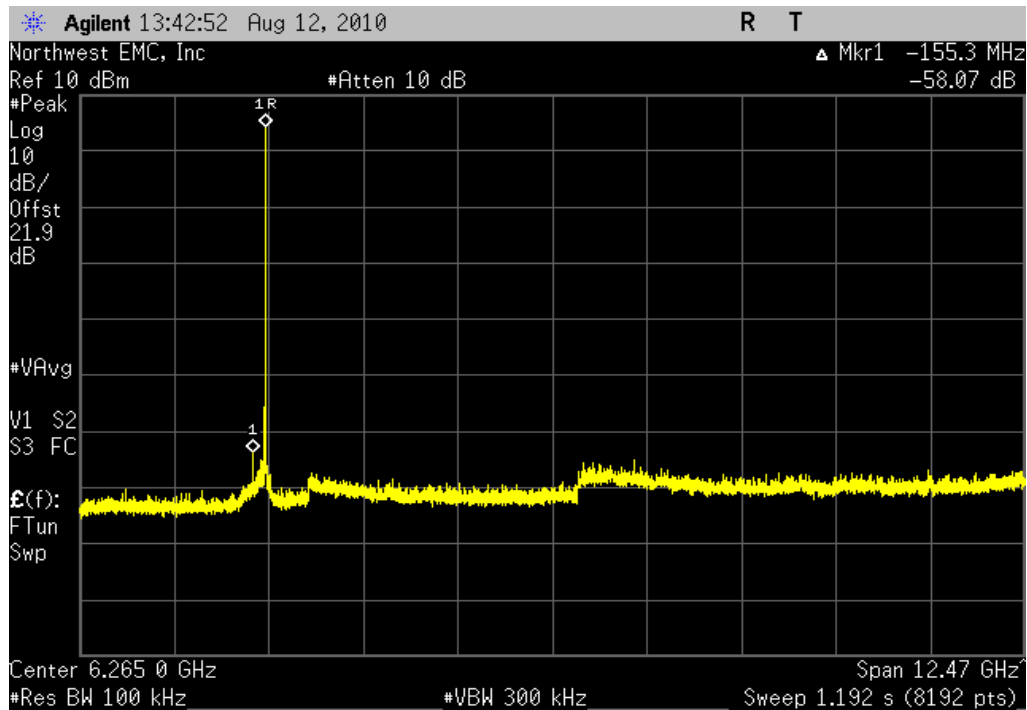
Limit: ≤ -20 dBc

SPURIOUS CONDUCTED EMISSIONS

Antenna Diversity High, High Channel, Ch. 38, 2477 MHz, 30 MHz - 12.5 GHz

Result: Pass

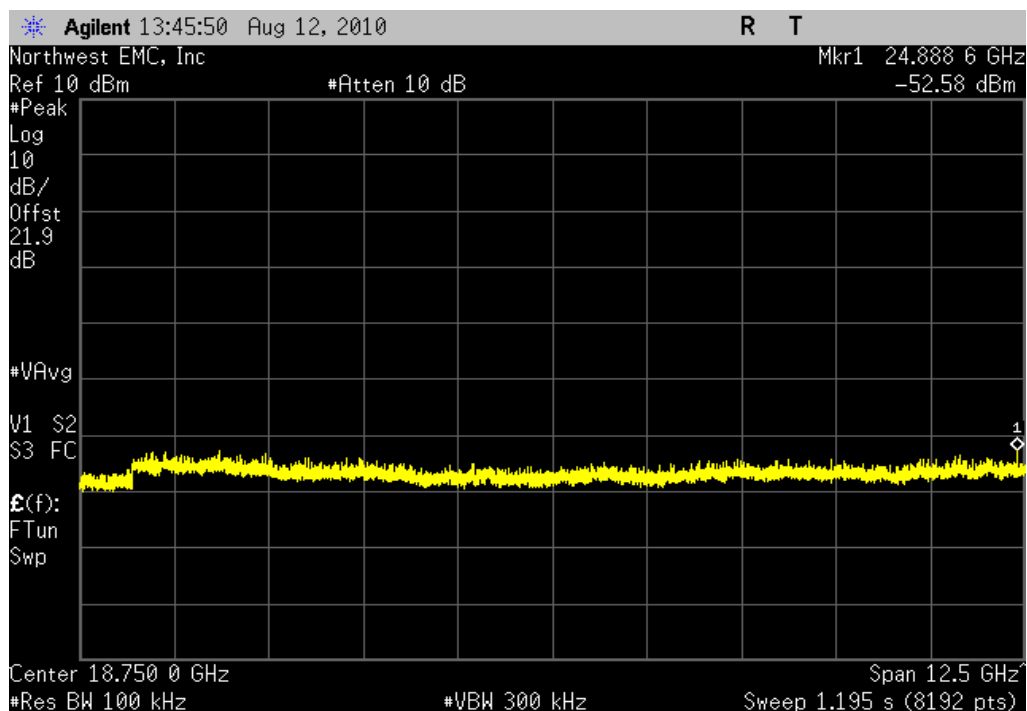
Value: -58.1 dBc

Limit: ≤ -20 dBc

Antenna Diversity High, High Channel, Ch. 38, 2477 MHz, 12.5 GHz - 25 GHz

Result: Pass

Value: -52.6 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	E4440A	AFD	6/1/2009	24
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/21/2009	13
Power Meter	Gigatronics	8651A	SPM	1/7/2010	13
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	24
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	4/1/2010	13
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The 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 for each modulation type available. While the average output power was measured as defined in section ANSI C63.10:2009, Section 6.11.2.3 was followed.

The spectrum analyzer was set as follows:

The emission peak was located and zoomed in on within the passband.

a) RBW = 3 kHz

b) VBW = 10 kHz

c) Span = 300 kHz

d) Sweep time = 100s

e) Trace set to MAX

f) The 1 hz Marker Noise function on the analyzer was used. The data was corrected to 3 kHz by adding 34.8 dB to the reading.

EMC

POWER SPECTRAL DENSITY

EUT:	Voice Remote, Model: RXT9000-18XXE	Work Order:	AMUL0002
Serial Number:	1410 B06F47A	Date:	08/19/10
Customer:	Amulet Devices U.S.	Temperature:	22°C
Attendees:	Pat Lawless	Humidity:	42%
Project:	none	Barometric Pres.:	1013.5 mb
Tested by:	Rod Peloquin	Power:	Battery
		Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

0.2 dB adapter cable loss added to spectrum analyzer reference level offset.

DEVIATIONS FROM TEST STANDARD

No Deviations

Configuration #	1	Signature 
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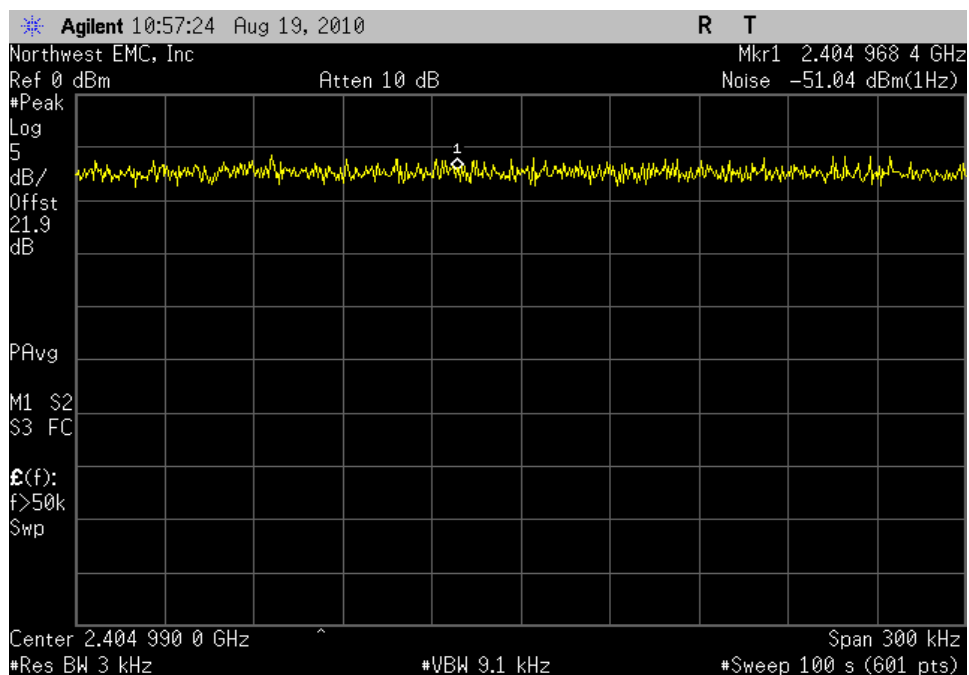
	Value	Limit	Results
Antenna Diversity Low			
Low Channel, Ch. 2, 2405 MHz	-16.2 dBm / 3 kHz	8 dBm / 3 kHz	Pass
Mid Channel, Ch. 20, 2441 MHz	-17.1 dBm / 3 kHz	8 dBm / 3 kHz	Pass
High Channel, Ch. 38, 2477 MHz	17.9 dBm / 3 kHz	8 dBm / 3 kHz	Pass
Antenna Diversity High			
Low Channel, Ch. 2, 2405 MHz	-16.6 dBm / 3 kHz	8 dBm / 3 kHz	Pass
Mid Channel, Ch. 20, 2441 MHz	-17.7 dBm / 3 kHz	8 dBm / 3 kHz	Pass
High Channel, Ch. 38, 2477 MHz	-18.5 dBm / 3 kHz	8 dBm / 3 kHz	Pass

Antenna Diversity Low, Low Channel, Ch. 2, 2405 MHz

Result: Pass

Value: -16.2 dBm / 3 kHz

Limit: 8 dBm / 3 kHz

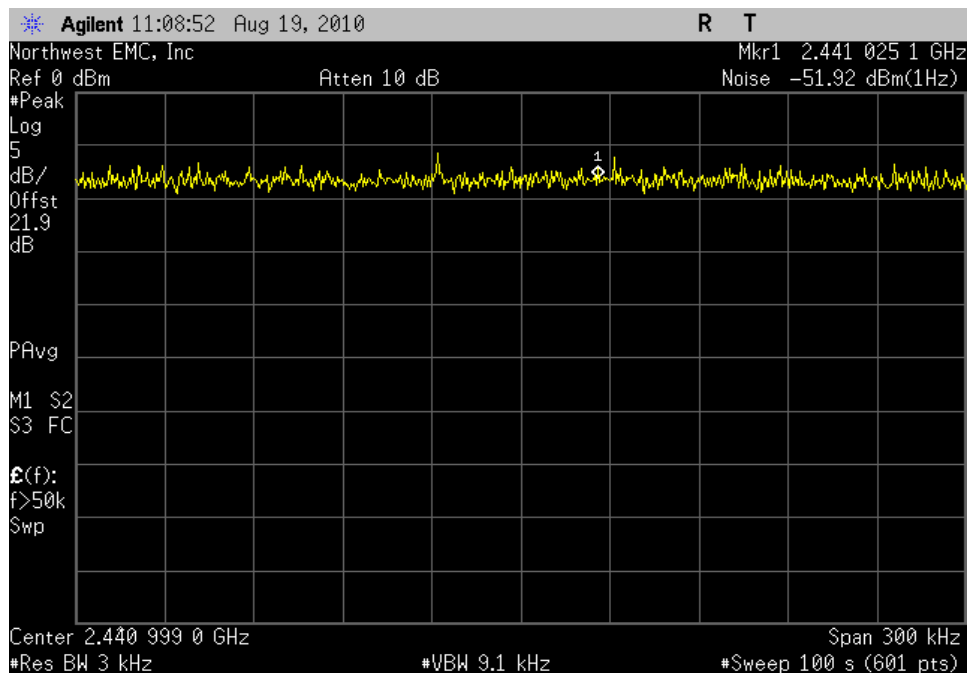


Antenna Diversity Low, Mid Channel, Ch. 20, 2441 MHz

Result: Pass

Value: -17.1 dBm / 3 kHz

Limit: 8 dBm / 3 kHz

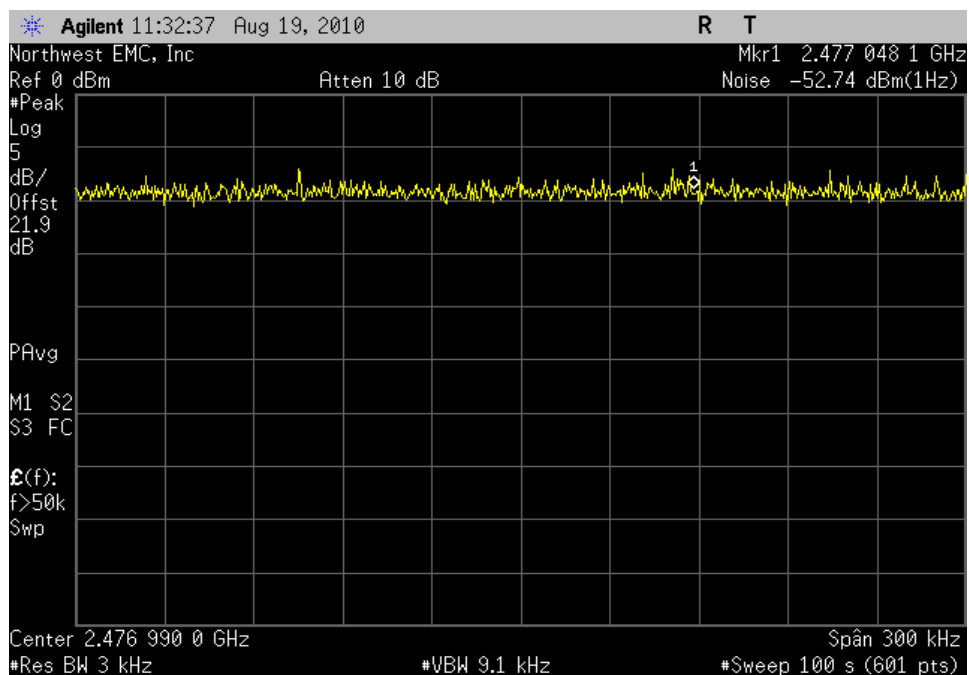


Antenna Diversity Low, High Channel, Ch. 38, 2477 MHz

Result: Pass

Value: 17.9 dBm / 3 kHz

Limit: 8 dBm / 3 kHz

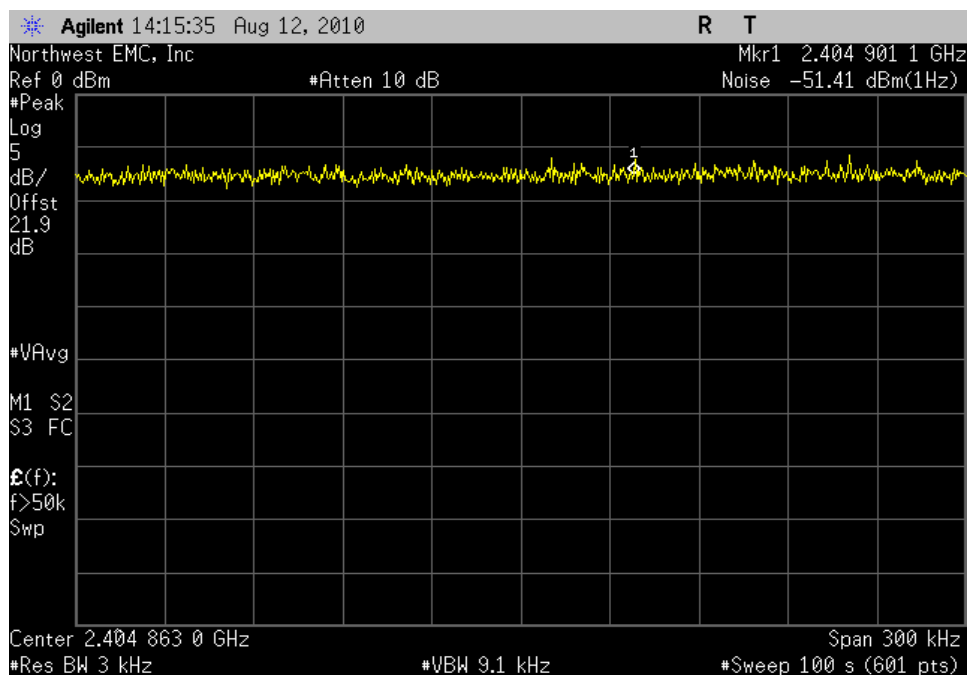


Antenna Diversity High, Low Channel, Ch. 2, 2405 MHz

Result: Pass

Value: -16.6 dBm / 3 kHz

Limit: 8 dBm / 3 kHz

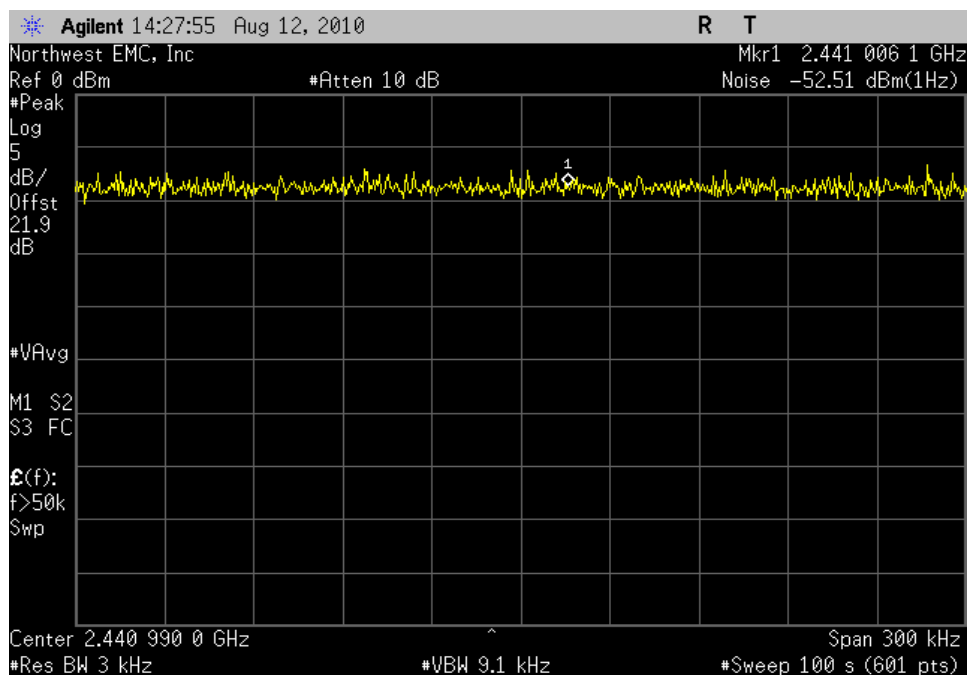


Antenna Diversity High, Mid Channel, Ch. 20, 2441 MHz

Result: Pass

Value: -17.7 dBm / 3 kHz

Limit: 8 dBm / 3 kHz



Antenna Diversity High, High Channel, Ch. 38, 2477 MHz

Result: Pass

Value: -18.5 dBm / 3 kHz

Limit: 8 dBm / 3 kHz

