

NORTHWEST EMC

Precor, Inc.

Precor Wi-Fi / Bluetooth Module Model 303346

FCC 15.207:2015

FCC 15.247:2015

BT LE DTS

Report # PRCR0230.13



NVLAP Lab Code: 200629-0

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. This Report may only be duplicated in its entirety

CERTIFICATE OF TEST

Last Date of Test: November 16, 2015
Precor, Inc.
Model: Precor Wi-Fi / Bluetooth Module Model 303346

Radio Equipment Testing

Standards

Specification	Method
FCC 15.207:2015	ANSI C63.10:2013
FCC 15.247:2015	ANSI C63.10:2013

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	Yes	Pass	
6.5, 6.6, 11.12.1, 11.13.2	Spurious Radiated Emissions	Yes	Pass	
6.10.4	Band Edge Compliance	Yes	Pass	
11.6	Duty Cycle	Yes	Pass	
11.8.2	Occupied Bandwidth	Yes	Pass	
11.9	Output Power	Yes	Pass	
11.10	Power Spectral Density	Yes	Pass	
11.11	Spurious Conducted Emissions	Yes	Pass	

Deviations From Test Standards

None

Approved By:



Rod Munro, Operations Manager

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. 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. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information.

REVISION HISTORY

Revision Number		Description	Date	Page Number
00		None		

ACCREDITATIONS AND AUTHORIZATIONS

United States

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

A2LA - Accredited by A2LA to ISO / IEC 17065 as a product certifier. This allows Northwest EMC to certify transmitters to FCC and IC specifications.

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

IC - Recognized by Industry Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with IC.

European Union

European Commission – Validated by the European Commission as a Conformity Assessment Body (CAB) under the EMC directive and as a Notified Body under the R&TTE Directive.

Australia/New Zealand

ACMA - Recognized by ACMA as a CAB for the acceptance of test data.

Korea

MSIP / RRA - Recognized by KCC's RRA as a CAB for the acceptance of test data.

Japan

VCCI - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

Taiwan

BSMI – Recognized by BSMI as a CAB for the acceptance of test data.

NCC - Recognized by NCC as a CAB for the acceptance of test data.

Singapore

IDA – Recognized by IDA as a CAB for the acceptance of test data.

Israel

MOC – Recognized by MOC as a CAB for the acceptance of test data.

Hong Kong

OFCA – Recognized by OFCA as a CAB for the acceptance of test data.

Vietnam

MIC – Recognized by MIC as a CAB for the acceptance of test data.

SCOPE

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

<http://www.nwemc.com/accreditations/>
<http://gsi.nist.gov/global/docs/cabs/designations.html>

MEASUREMENT UNCERTAINTY

Measurement Uncertainty

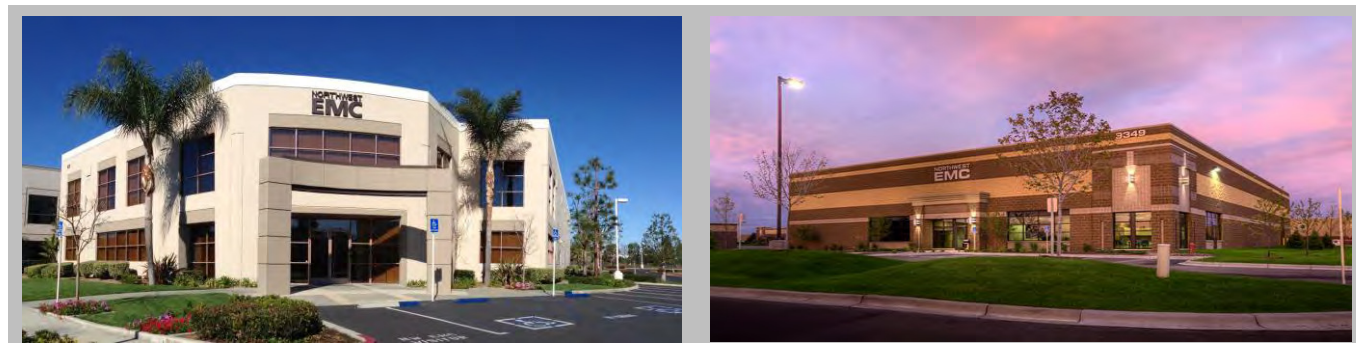
When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

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 (K=2) for each test is on each data sheet. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

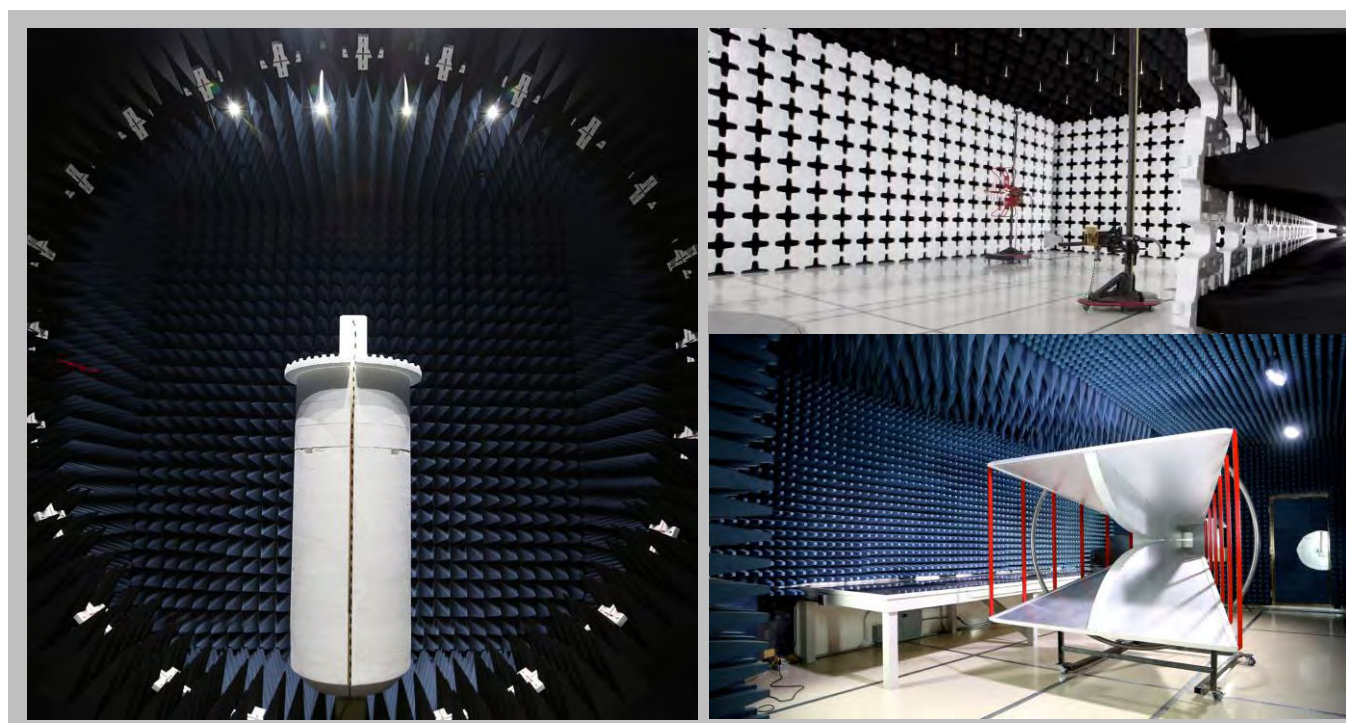
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.0 dB	-5.0 dB
AC Powerline Conducted Emissions (dB)	2.4 dB	-2.4 dB

FACILITIES



California Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	New York Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	Oregon Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	Texas Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Washington Labs NC01-05 19201 120 th Ave NE Bothell, WA 9801 (425)984-6600
NVLAP					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
Industry Canada					
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1
BSMI					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRR, MIC, MOC, NCC, OFCA					
US0158	US0175	N/A	US0017	US0191	US0157



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Precor, Inc.
Address:	PO Box 7202
City, State, Zip:	Woodinville, WA 98072-4002
Test Requested By:	James Minahan
Model:	Precor Wi-Fi-Bluetooth Module
First Date of Test:	November 10, 2015
Last Date of Test:	November 16, 2015
Receipt Date of Samples:	September 14, 2015
Equipment Design Stage:	Preproduction
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT:

P82 Fitness Display Console with following radios: 802.11abgn / Bluetooth and 13.56 MHz NFC. In the 2.4 GHz band, the 802.11bgn radio supports 20 MHz and 40 MHz SISO, and 20 MHz MIMO for MCS12-MCS15 data rates only. In the 5 GHz bands, the 802.11an radio supports 20 MHz SISO only.

Testing Objective:

To demonstrate compliance of the Bluetooth radio to FCC 15.247 requirements.

EUT Photo



PRODUCT DESCRIPTION

Bluetooth LE: RF Power Table – FCC 15.247

Bluetooth LE, Antenna 2 Power Settings:

	2402 MHz	2446 MHz	2480 MHz
Bluetooth Low Energy	6	6	6

CONFIGURATIONS

Configuration PRCR0230- 10

Software/Firmware Running during test					
Description				Version	
Android System				Driver 8.6	

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Host Console	Precor, Inc.	P82	AXKRF22150081
Precor Wi-Fi / Bluetooth Module	Precor, Inc.	303346	None

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Power Adapter	Phihong	PSAC60N-120	DOE6 (Level 6 Sample)

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Remote Laptop PC	HP	EliteBook 8540w	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power	No	0.8m	No	AC Power Adapter	P82 Console
AC Power	No	1.8m	No	AC Mains	AC Power Adapter
USB Cable	Yes	3m	No	Remote Laptop PC	P82 Console

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	11/10/2015	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.
2	11/10/2015	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.
3	11/10/2015	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.
4	11/10/2015	Spurious Conducted Emissions	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	11/10/2015	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.
6	11/13/2015	Spurious Radiated Emissions	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.
7	11/16/2015	Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

POWERLINE CONDUCTED EMISSIONS

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50 Ω measuring port is terminated by a 50 Ω EMI meter or a 50 Ω resistive load. All 50 Ω measuring ports of the LISN are terminated by 50 Ω .

The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
LISN	Solar Electronics	9252-50-R-24-BNC	LIM	11/3/2015	11/3/2016
Cable - Conducted Cable Assembly	Northwest EMC	NC4, HHF, RKD	NC4A	2/11/2015	2/11/2016
Receiver	Rohde & Schwarz	ESCI	ARE	8/5/2015	8/5/2016

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	2.4 dB	-2.4 dB

CONFIGURATIONS INVESTIGATED

PRCR0230-10

MODES INVESTIGATED

Transmitting BT LE, Low Channel 1, 2402 MHz, Power Setting at 6
Transmitting BT LE, Mid Channel 20, 2446 MHz, Power Setting at 6.
Transmitting BT LE, High Channel 40, 2480 MHz, Power Setting at 6.

POWERLINE CONDUCTED EMISSIONS

EUT:	Precor Wi-Fi / Bluetooth Module Model 303346	Work Order:	PRCR0230
Serial Number:	None	Date:	11/16/2015
Customer:	Precor, Inc.	Temperature:	23°C
Attendees:	Rich Whitbeck	Relative Humidity:	35%
Customer Project:	None	Bar. Pressure:	1020 mb
Tested By:	Richard Mellroth	Job Site:	NC05
Power:	110VAC/60Hz	Configuration:	PRCR0230-10

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2013

TEST PARAMETERS

Run #:	59	Line:	High Line	Add. Ext. Attenuation (dB):	0
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COMMENTS

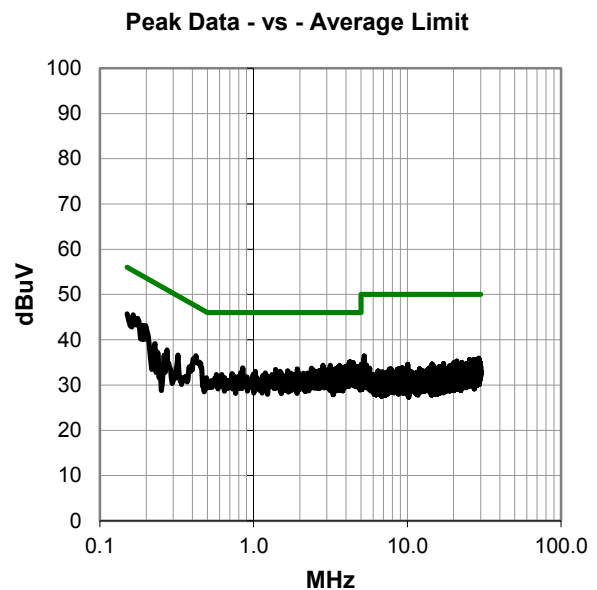
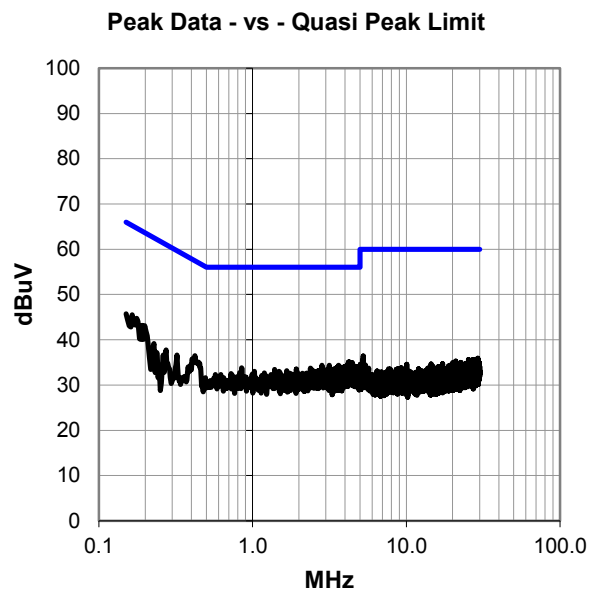
None

EUT OPERATING MODES

Transmitting BT LE, Low Channel 1, 2402 MHz, Power Setting at 6.
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DEVIATIONS FROM TEST STANDARD

None



POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #659

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	25.2	20.6	45.8	66.0	-20.3
0.191	22.7	20.5	43.2	64.0	-20.8
0.422	16.1	20.4	36.5	57.4	-20.9
4.265	14.4	20.7	35.1	56.0	-20.9
4.213	14.4	20.7	35.1	56.0	-20.9
4.444	14.2	20.7	34.9	56.0	-21.1
4.164	14.0	20.7	34.7	56.0	-21.3
3.635	13.8	20.6	34.4	56.0	-21.6
3.150	13.8	20.6	34.4	56.0	-21.6
2.832	13.8	20.5	34.3	56.0	-21.7
4.578	13.5	20.7	34.2	56.0	-21.8
4.713	13.4	20.7	34.1	56.0	-21.9
4.105	13.4	20.7	34.1	56.0	-21.9
3.676	13.5	20.6	34.1	56.0	-21.9
3.937	13.4	20.6	34.0	56.0	-22.0
4.761	13.3	20.7	34.0	56.0	-22.0
3.545	13.4	20.6	34.0	56.0	-22.0
4.291	13.2	20.7	33.9	56.0	-22.1
0.848	13.4	20.4	33.8	56.0	-22.2
2.374	13.2	20.5	33.7	56.0	-22.3
3.396	13.0	20.6	33.6	56.0	-22.4
3.452	13.0	20.6	33.6	56.0	-22.4
2.400	13.0	20.5	33.5	56.0	-22.5
1.926	13.0	20.5	33.5	56.0	-22.5
1.392	13.0	20.4	33.4	56.0	-22.6
3.258	12.8	20.6	33.4	56.0	-22.6

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	25.2	20.6	45.8	56.0	-10.3
0.191	22.7	20.5	43.2	54.0	-10.8
0.422	16.1	20.4	36.5	47.4	-10.9
4.265	14.4	20.7	35.1	46.0	-10.9
4.213	14.4	20.7	35.1	46.0	-10.9
4.444	14.2	20.7	34.9	46.0	-11.1
4.164	14.0	20.7	34.7	46.0	-11.3
3.635	13.8	20.6	34.4	46.0	-11.6
3.150	13.8	20.6	34.4	46.0	-11.6
2.832	13.8	20.5	34.3	46.0	-11.7
4.578	13.5	20.7	34.2	46.0	-11.8
4.713	13.4	20.7	34.1	46.0	-11.9
4.105	13.4	20.7	34.1	46.0	-11.9
3.676	13.5	20.6	34.1	46.0	-11.9
3.937	13.4	20.6	34.0	46.0	-12.0
4.761	13.3	20.7	34.0	46.0	-12.0
3.545	13.4	20.6	34.0	46.0	-12.0
4.291	13.2	20.7	33.9	46.0	-12.1
0.848	13.4	20.4	33.8	46.0	-12.2
2.374	13.2	20.5	33.7	46.0	-12.3
3.396	13.0	20.6	33.6	46.0	-12.4
3.452	13.0	20.6	33.6	46.0	-12.4
2.400	13.0	20.5	33.5	46.0	-12.5
1.926	13.0	20.5	33.5	46.0	-12.5
1.392	13.0	20.4	33.4	46.0	-12.6
3.258	12.8	20.6	33.4	46.0	-12.6

CONCLUSION

Pass



Tested By

POWERLINE CONDUCTED EMISSIONS

EUT:	Precor Wi-Fi / Bluetooth Module Model 303346	Work Order:	PRCR0230
Serial Number:	None	Date:	11/16/2015
Customer:	Precor, Inc.	Temperature:	23°C
Attendees:	Rich Whitbeck	Relative Humidity:	35%
Customer Project:	None	Bar. Pressure:	1020 mb
Tested By:	Richard Mellroth	Job Site:	NC05
Power:	110VAC/60Hz	Configuration:	PRCR0230-10

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2013

TEST PARAMETERS

Run #:	60	Line:	Neutral	Add. Ext. Attenuation (dB):	0
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COMMENTS

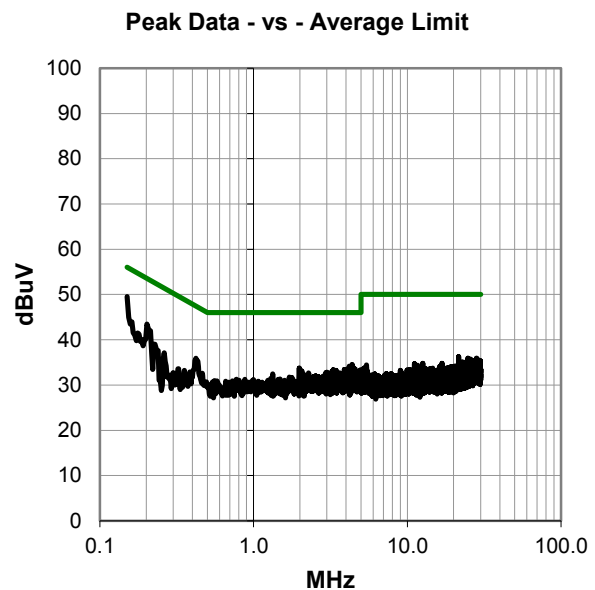
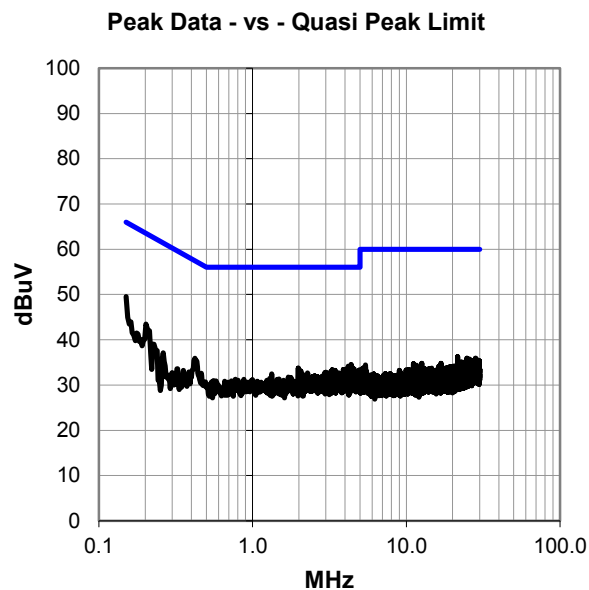
None

EUT OPERATING MODES

Transmitting BT LE, Low Channel 1, 2402 MHz, Power Setting at 6.

DEVIATIONS FROM TEST STANDARD

None



POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #660

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	29.0	20.6	49.6	66.0	-16.5
0.202	23.0	20.5	43.5	63.5	-20.0
0.422	15.5	20.4	35.9	57.4	-21.5
4.377	13.8	20.7	34.5	56.0	-21.5
4.179	13.5	20.7	34.2	56.0	-21.8
4.478	13.1	20.7	33.8	56.0	-22.2
1.982	13.2	20.5	33.7	56.0	-22.3
4.306	13.0	20.7	33.7	56.0	-22.3
4.597	12.8	20.7	33.5	56.0	-22.5
4.108	12.8	20.7	33.5	56.0	-22.5
3.896	12.8	20.6	33.4	56.0	-22.6
3.299	12.8	20.6	33.4	56.0	-22.6
4.959	12.6	20.7	33.3	56.0	-22.7
3.437	12.7	20.6	33.3	56.0	-22.7
2.060	12.6	20.5	33.1	56.0	-22.9
4.037	12.3	20.7	33.0	56.0	-23.0
3.209	12.4	20.6	33.0	56.0	-23.0
2.993	12.3	20.5	32.8	56.0	-23.2
2.053	12.3	20.5	32.8	56.0	-23.2
4.287	12.1	20.7	32.8	56.0	-23.2
2.944	12.2	20.5	32.7	56.0	-23.3
2.280	12.2	20.5	32.7	56.0	-23.3
3.649	12.1	20.6	32.7	56.0	-23.3
3.545	12.1	20.6	32.7	56.0	-23.3
3.030	12.0	20.5	32.5	56.0	-23.5
4.993	11.8	20.7	32.5	56.0	-23.5

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	29.0	20.6	49.6	56.0	-6.5
0.202	23.0	20.5	43.5	53.5	-10.0
0.422	15.5	20.4	35.9	47.4	-11.5
4.377	13.8	20.7	34.5	46.0	-11.5
4.179	13.5	20.7	34.2	46.0	-11.8
4.478	13.1	20.7	33.8	46.0	-12.2
1.982	13.2	20.5	33.7	46.0	-12.3
4.306	13.0	20.7	33.7	46.0	-12.3
4.597	12.8	20.7	33.5	46.0	-12.5
4.108	12.8	20.7	33.5	46.0	-12.5
3.896	12.8	20.6	33.4	46.0	-12.6
3.299	12.8	20.6	33.4	46.0	-12.6
4.959	12.6	20.7	33.3	46.0	-12.7
3.437	12.7	20.6	33.3	46.0	-12.7
2.060	12.6	20.5	33.1	46.0	-12.9
4.037	12.3	20.7	33.0	46.0	-13.0
3.209	12.4	20.6	33.0	46.0	-13.0
2.993	12.3	20.5	32.8	46.0	-13.2
2.053	12.3	20.5	32.8	46.0	-13.2
4.287	12.1	20.7	32.8	46.0	-13.2
2.944	12.2	20.5	32.7	46.0	-13.3
2.280	12.2	20.5	32.7	46.0	-13.3
3.649	12.1	20.6	32.7	46.0	-13.3
3.545	12.1	20.6	32.7	46.0	-13.3
3.030	12.0	20.5	32.5	46.0	-13.5
4.993	11.8	20.7	32.5	46.0	-13.5

CONCLUSION

Pass



Tested By

POWERLINE CONDUCTED EMISSIONS

EUT:	Precor Wi-Fi / Bluetooth Module Model 303346	Work Order:	PRCR0230
Serial Number:	None	Date:	11/16/2015
Customer:	Precor, Inc.	Temperature:	23°C
Attendees:	Rich Whitbeck	Relative Humidity:	35%
Customer Project:	None	Bar. Pressure:	1020 mb
Tested By:	Richard Mellroth	Job Site:	NC05
Power:	110VAC/60Hz	Configuration:	PRCR0230-10

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2013

TEST PARAMETERS

Run #:	62	Line:	Neutral	Add. Ext. Attenuation (dB):	0
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COMMENTS

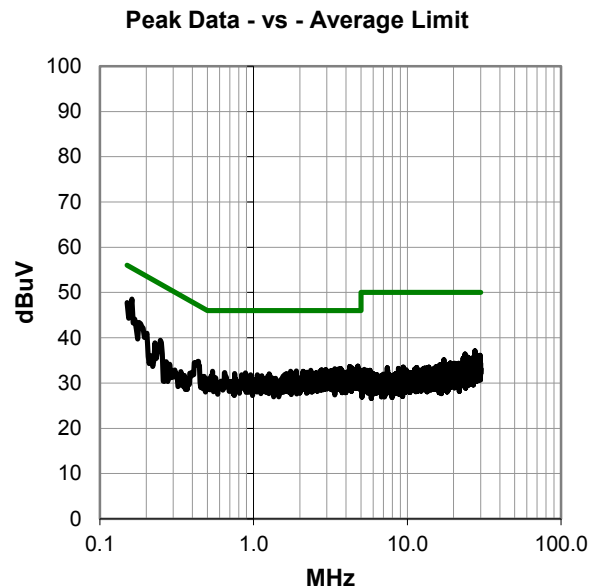
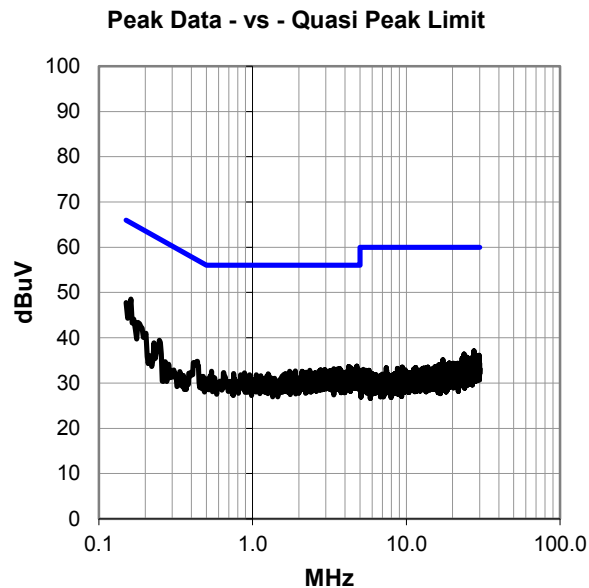
None

EUT OPERATING MODES

Transmitting BT LE, Mid Channel 20, 2446 MHz, Power Setting at 6.

DEVIATIONS FROM TEST STANDARD

None



POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #662

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.161	28.0	20.5	48.5	65.4	-16.9
0.150	27.2	20.6	47.8	66.0	-18.3
0.180	22.9	20.5	43.4	64.5	-21.1
4.761	13.0	20.7	33.7	56.0	-22.3
4.228	13.0	20.7	33.7	56.0	-22.3
0.434	14.4	20.4	34.8	57.2	-22.4
0.247	19.0	20.4	39.4	61.9	-22.4
4.377	12.6	20.7	33.3	56.0	-22.7
3.702	12.6	20.6	33.2	56.0	-22.8
3.586	12.6	20.6	33.2	56.0	-22.8
3.370	12.6	20.6	33.2	56.0	-22.8
27.564	13.5	23.6	37.1	60.0	-22.9
2.952	12.4	20.5	32.9	56.0	-23.1
2.776	12.4	20.5	32.9	56.0	-23.1
4.940	12.2	20.7	32.9	56.0	-23.1
4.515	12.2	20.7	32.9	56.0	-23.1
3.616	12.3	20.6	32.9	56.0	-23.1
2.754	12.3	20.5	32.8	56.0	-23.2
2.359	12.3	20.5	32.8	56.0	-23.2
2.989	12.2	20.5	32.7	56.0	-23.3
3.780	12.1	20.6	32.7	56.0	-23.3
4.280	12.0	20.7	32.7	56.0	-23.3
1.900	12.2	20.5	32.7	56.0	-23.3
4.164	12.0	20.7	32.7	56.0	-23.3
3.172	12.1	20.6	32.7	56.0	-23.3
3.202	12.1	20.6	32.7	56.0	-23.3

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.161	28.0	20.5	48.5	55.4	-6.9
0.150	27.2	20.6	47.8	56.0	-8.3
0.180	22.9	20.5	43.4	54.5	-11.1
4.761	13.0	20.7	33.7	46.0	-12.3
4.228	13.0	20.7	33.7	46.0	-12.3
0.434	14.4	20.4	34.8	47.2	-12.4
0.247	19.0	20.4	39.4	51.9	-12.4
4.377	12.6	20.7	33.3	46.0	-12.7
3.702	12.6	20.6	33.2	46.0	-12.8
3.586	12.6	20.6	33.2	46.0	-12.8
3.370	12.6	20.6	33.2	46.0	-12.8
27.564	13.5	23.6	37.1	50.0	-12.9
2.952	12.4	20.5	32.9	46.0	-13.1
2.776	12.4	20.5	32.9	46.0	-13.1
4.940	12.2	20.7	32.9	46.0	-13.1
4.515	12.2	20.7	32.9	46.0	-13.1
3.616	12.3	20.6	32.9	46.0	-13.1
2.754	12.3	20.5	32.8	46.0	-13.2
2.359	12.3	20.5	32.8	46.0	-13.2
2.989	12.2	20.5	32.7	46.0	-13.3
3.780	12.1	20.6	32.7	46.0	-13.3
4.280	12.0	20.7	32.7	46.0	-13.3
1.900	12.2	20.5	32.7	46.0	-13.3
4.164	12.0	20.7	32.7	46.0	-13.3
3.172	12.1	20.6	32.7	46.0	-13.3
3.202	12.1	20.6	32.7	46.0	-13.3

CONCLUSION

Pass



Tested By

POWERLINE CONDUCTED EMISSIONS

EUT:	Precor Wi-Fi / Bluetooth Module Model 303346	Work Order:	PRCR0230
Serial Number:	None	Date:	11/16/2015
Customer:	Precor, Inc.	Temperature:	23°C
Attendees:	Rich Whitbeck	Relative Humidity:	35%
Customer Project:	None	Bar. Pressure:	1020 mb
Tested By:	Richard Mellroth	Job Site:	NC05
Power:	110VAC/60Hz	Configuration:	PRCR0230-10

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2013

TEST PARAMETERS

Run #:	61	Line:	High Line	Add. Ext. Attenuation (dB):	0
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COMMENTS

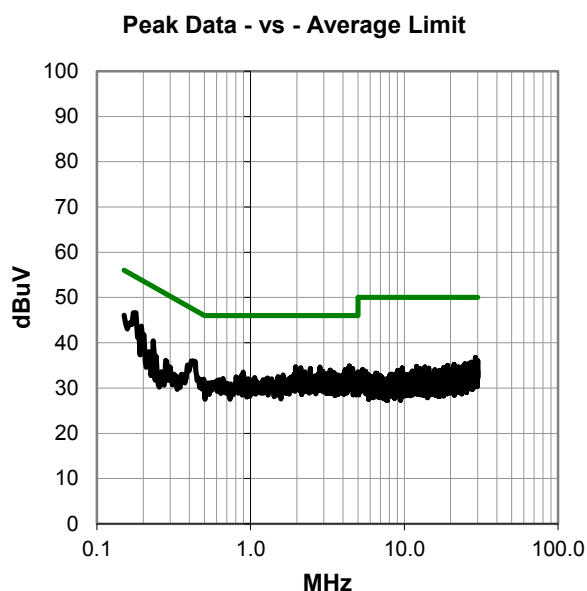
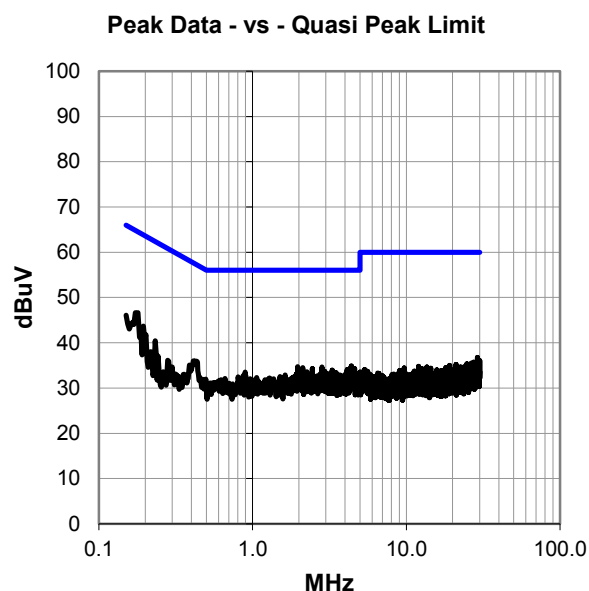
None

EUT OPERATING MODES

Transmitting BT LE, Mid Channel 20, 2446 MHz, Power Setting at 6.

DEVIATIONS FROM TEST STANDARD

None



POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #661

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.172	26.1	20.5	46.6	64.8	-18.2
0.150	25.5	20.6	46.1	66.0	-20.0
0.195	23.2	20.5	43.7	63.8	-20.1
4.396	14.2	20.7	34.9	56.0	-21.1
1.967	14.2	20.5	34.7	56.0	-21.3
4.362	14.0	20.7	34.7	56.0	-21.3
2.821	14.1	20.5	34.6	56.0	-21.4
2.116	14.0	20.5	34.5	56.0	-21.5
0.411	15.6	20.4	36.0	57.6	-21.6
2.448	13.8	20.5	34.3	56.0	-21.7
4.612	13.6	20.7	34.3	56.0	-21.7
4.340	13.4	20.7	34.1	56.0	-21.9
4.131	13.4	20.7	34.1	56.0	-21.9
0.232	20.0	20.4	40.4	62.4	-21.9
4.444	13.3	20.7	34.0	56.0	-22.0
3.291	13.4	20.6	34.0	56.0	-22.0
4.526	13.2	20.7	33.9	56.0	-22.1
4.291	13.0	20.7	33.7	56.0	-22.3
2.948	13.1	20.5	33.6	56.0	-22.4
2.258	13.1	20.5	33.6	56.0	-22.4
0.896	13.1	20.4	33.5	56.0	-22.5
4.090	12.8	20.7	33.5	56.0	-22.5
2.086	12.9	20.5	33.4	56.0	-22.6
3.489	12.8	20.6	33.4	56.0	-22.6
3.280	12.7	20.6	33.3	56.0	-22.7
3.131	12.6	20.6	33.2	56.0	-22.8

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.172	26.1	20.5	46.6	54.8	-8.2
0.150	25.5	20.6	46.1	56.0	-10.0
0.195	23.2	20.5	43.7	53.8	-10.1
4.396	14.2	20.7	34.9	46.0	-11.1
1.967	14.2	20.5	34.7	46.0	-11.3
4.362	14.0	20.7	34.7	46.0	-11.3
2.821	14.1	20.5	34.6	46.0	-11.4
2.116	14.0	20.5	34.5	46.0	-11.5
0.411	15.6	20.4	36.0	47.6	-11.6
2.448	13.8	20.5	34.3	46.0	-11.7
4.612	13.6	20.7	34.3	46.0	-11.7
4.340	13.4	20.7	34.1	46.0	-11.9
4.131	13.4	20.7	34.1	46.0	-11.9
0.232	20.0	20.4	40.4	52.4	-11.9
4.444	13.3	20.7	34.0	46.0	-12.0
3.291	13.4	20.6	34.0	46.0	-12.0
4.526	13.2	20.7	33.9	46.0	-12.1
4.291	13.0	20.7	33.7	46.0	-12.3
2.948	13.1	20.5	33.6	46.0	-12.4
2.258	13.1	20.5	33.6	46.0	-12.4
0.896	13.1	20.4	33.5	46.0	-12.5
4.090	12.8	20.7	33.5	46.0	-12.5
2.086	12.9	20.5	33.4	46.0	-12.6
3.489	12.8	20.6	33.4	46.0	-12.6
3.280	12.7	20.6	33.3	46.0	-12.7
3.131	12.6	20.6	33.2	46.0	-12.8

CONCLUSION

Pass



Tested By

POWERLINE CONDUCTED EMISSIONS

EUT:	Precor Wi-Fi / Bluetooth Module Model 303346	Work Order:	PRCR0230
Serial Number:	None	Date:	11/16/2015
Customer:	Precor, Inc.	Temperature:	23°C
Attendees:	Rich Whitbeck	Relative Humidity:	35%
Customer Project:	None	Bar. Pressure:	1020 mb
Tested By:	Richard Mellroth	Job Site:	NC05
Power:	110VAC/60Hz	Configuration:	PRCR0230-10

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2013

TEST PARAMETERS

Run #:	63	Line:	High Line	Add. Ext. Attenuation (dB):	0
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COMMENTS

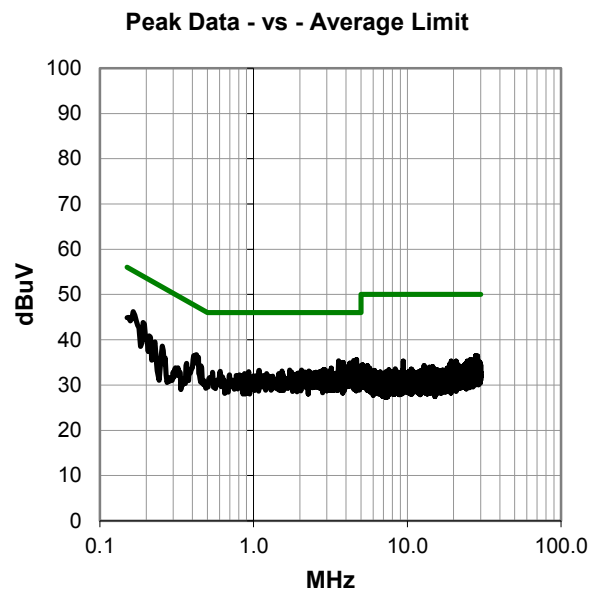
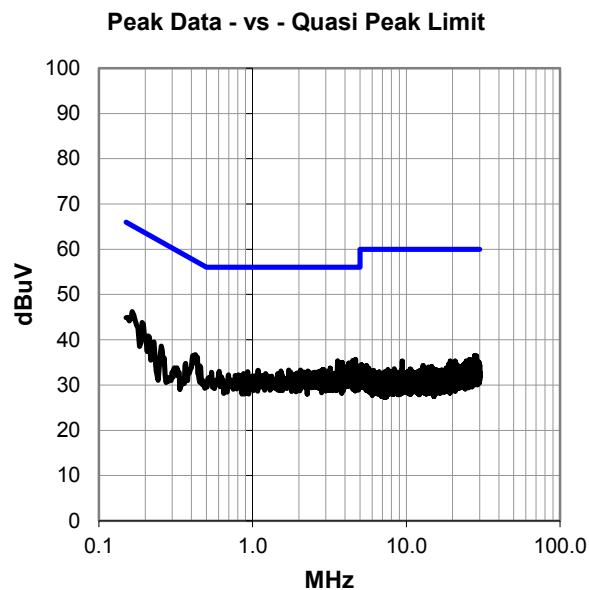
None

EUT OPERATING MODES

Transmitting BT LE, High Channel 40, 2480 MHz, Power Setting at 6.
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DEVIATIONS FROM TEST STANDARD

None



POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #663

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.165	25.7	20.5	46.2	65.2	-19.0
0.191	23.3	20.5	43.8	64.0	-20.2
4.683	14.9	20.7	35.6	56.0	-20.4
4.485	14.7	20.7	35.4	56.0	-20.6
3.567	14.8	20.6	35.4	56.0	-20.6
0.422	16.3	20.4	36.7	57.4	-20.7
3.821	14.4	20.6	35.0	56.0	-21.0
4.239	14.2	20.7	34.9	56.0	-21.1
4.978	13.5	20.7	34.2	56.0	-21.8
4.530	13.4	20.7	34.1	56.0	-21.9
3.963	13.4	20.6	34.0	56.0	-22.0
4.127	13.2	20.7	33.9	56.0	-22.1
3.198	13.2	20.6	33.8	56.0	-22.2
4.649	13.0	20.7	33.7	56.0	-22.3
4.418	13.0	20.7	33.7	56.0	-22.3
4.328	13.0	20.7	33.7	56.0	-22.3
0.210	20.4	20.5	40.9	63.2	-22.3
4.258	12.8	20.7	33.5	56.0	-22.5
2.870	12.9	20.5	33.4	56.0	-22.6
0.456	13.8	20.4	34.2	56.8	-22.6
2.933	12.8	20.5	33.3	56.0	-22.7
2.045	12.8	20.5	33.3	56.0	-22.7
4.843	12.6	20.7	33.3	56.0	-22.7
4.586	12.6	20.7	33.3	56.0	-22.7
4.179	12.6	20.7	33.3	56.0	-22.7
1.721	12.8	20.5	33.3	56.0	-22.7

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.165	25.7	20.5	46.2	55.2	-9.0
0.191	23.3	20.5	43.8	54.0	-10.2
4.683	14.9	20.7	35.6	46.0	-10.4
4.485	14.7	20.7	35.4	46.0	-10.6
3.567	14.8	20.6	35.4	46.0	-10.6
0.422	16.3	20.4	36.7	47.4	-10.7
3.821	14.4	20.6	35.0	46.0	-11.0
4.239	14.2	20.7	34.9	46.0	-11.1
4.978	13.5	20.7	34.2	46.0	-11.8
4.530	13.4	20.7	34.1	46.0	-11.9
3.963	13.4	20.6	34.0	46.0	-12.0
4.127	13.2	20.7	33.9	46.0	-12.1
3.198	13.2	20.6	33.8	46.0	-12.2
4.649	13.0	20.7	33.7	46.0	-12.3
4.418	13.0	20.7	33.7	46.0	-12.3
4.328	13.0	20.7	33.7	46.0	-12.3
0.210	20.4	20.5	40.9	53.2	-12.3
4.258	12.8	20.7	33.5	46.0	-12.5
2.870	12.9	20.5	33.4	46.0	-12.6
0.456	13.8	20.4	34.2	46.8	-12.6
2.933	12.8	20.5	33.3	46.0	-12.7
2.045	12.8	20.5	33.3	46.0	-12.7
4.843	12.6	20.7	33.3	46.0	-12.7
4.586	12.6	20.7	33.3	46.0	-12.7
4.179	12.6	20.7	33.3	46.0	-12.7
1.721	12.8	20.5	33.3	46.0	-12.7

CONCLUSION

Pass



Tested By

POWERLINE CONDUCTED EMISSIONS

EUT:	Precor Wi-Fi / Bluetooth Module Model 303346	Work Order:	PRCR0230
Serial Number:	None	Date:	11/16/2015
Customer:	Precor, Inc.	Temperature:	23°C
Attendees:	Rich Whitbeck	Relative Humidity:	35%
Customer Project:	None	Bar. Pressure:	1020 mb
Tested By:	Richard Mellroth	Job Site:	NC05
Power:	110VAC/60Hz	Configuration:	PRCR0230-10

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2013

TEST PARAMETERS

Run #:	64	Line:	Neutral	Add. Ext. Attenuation (dB):	0
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COMMENTS

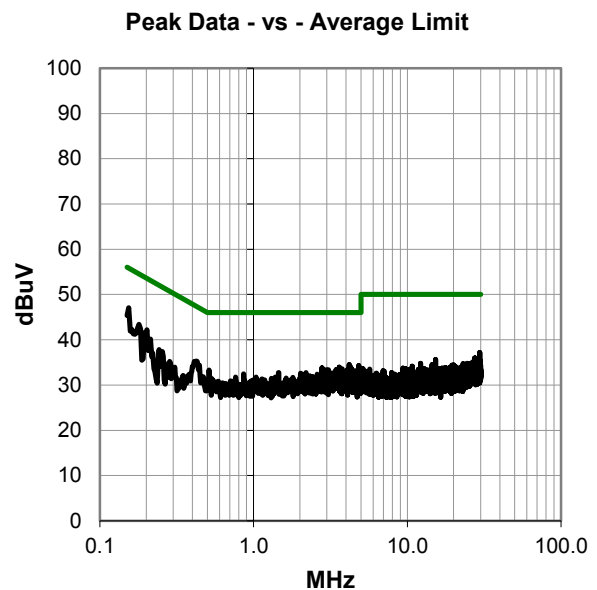
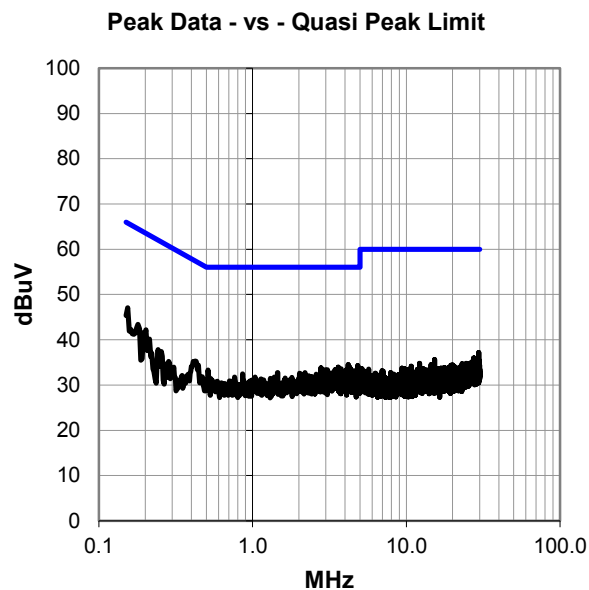
None

EUT OPERATING MODES

Transmitting BT LE, High Channel 40, 2480 MHz, Power Setting at 6.
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DEVIATIONS FROM TEST STANDARD

None



POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #664

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.154	26.5	20.5	47.0	65.8	-18.8
0.202	21.7	20.5	42.2	63.5	-21.3
4.187	13.8	20.7	34.5	56.0	-21.5
4.836	13.6	20.7	34.3	56.0	-21.7
4.243	13.4	20.7	34.1	56.0	-21.9
3.612	13.4	20.6	34.0	56.0	-22.0
0.422	14.9	20.4	35.3	57.4	-22.1
2.784	13.3	20.5	33.8	56.0	-22.2
4.321	13.0	20.7	33.7	56.0	-22.3
3.761	13.0	20.6	33.6	56.0	-22.4
4.332	12.8	20.7	33.5	56.0	-22.5
4.157	12.8	20.7	33.5	56.0	-22.5
3.060	12.8	20.6	33.4	56.0	-22.6
3.444	12.8	20.6	33.4	56.0	-22.6
2.970	12.8	20.5	33.3	56.0	-22.7
0.512	12.9	20.4	33.3	56.0	-22.7
4.064	12.6	20.7	33.3	56.0	-22.7
4.556	12.5	20.7	33.2	56.0	-22.8
29.619	13.2	24.0	37.2	60.0	-22.8
3.526	12.6	20.6	33.2	56.0	-22.8
4.381	12.3	20.7	33.0	56.0	-23.0
4.358	12.2	20.7	32.9	56.0	-23.1
2.881	12.3	20.5	32.8	56.0	-23.2
1.456	12.3	20.4	32.7	56.0	-23.3
3.911	12.1	20.6	32.7	56.0	-23.3
2.187	12.2	20.5	32.7	56.0	-23.3

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.154	26.5	20.5	47.0	55.8	-8.8
0.202	21.7	20.5	42.2	53.5	-11.3
4.187	13.8	20.7	34.5	46.0	-11.5
4.836	13.6	20.7	34.3	46.0	-11.7
4.243	13.4	20.7	34.1	46.0	-11.9
3.612	13.4	20.6	34.0	46.0	-12.0
0.422	14.9	20.4	35.3	47.4	-12.1
2.784	13.3	20.5	33.8	46.0	-12.2
4.321	13.0	20.7	33.7	46.0	-12.3
3.761	13.0	20.6	33.6	46.0	-12.4
4.332	12.8	20.7	33.5	46.0	-12.5
4.157	12.8	20.7	33.5	46.0	-12.5
3.060	12.8	20.6	33.4	46.0	-12.6
3.444	12.8	20.6	33.4	46.0	-12.6
2.970	12.8	20.5	33.3	46.0	-12.7
0.512	12.9	20.4	33.3	46.0	-12.7
4.064	12.6	20.7	33.3	46.0	-12.7
4.556	12.5	20.7	33.2	46.0	-12.8
29.619	13.2	24.0	37.2	50.0	-12.8
3.526	12.6	20.6	33.2	46.0	-12.8
4.381	12.3	20.7	33.0	46.0	-13.0
4.358	12.2	20.7	32.9	46.0	-13.1
2.881	12.3	20.5	32.8	46.0	-13.2
1.456	12.3	20.4	32.7	46.0	-13.3
3.911	12.1	20.6	32.7	46.0	-13.3
2.187	12.2	20.5	32.7	46.0	-13.3

CONCLUSION

Pass



Tested By

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. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

MODES OF OPERATION

Transmitting BT LE, Power Setting = 6

CHANNELS TESTED

Low Channel 1, 2402 MHz

Mid Channel 20, 2446 MHz

High Channel 40, 2480 MHz

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

PRCR0230 - 10

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26 GHz
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SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	6/23/2015	12 mo
Filter - High Pass	Micro-Tronics	HPM50111	HHI	10/30/2015	12 mo
Attenuator	Fairview Microwave	SA18E-20	AQV	9/28/2015	12 mo
Filter - Low Pass	Micro-Tronics	LPM50004	LFF	3/6/2015	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AYL	7/30/2015	24 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	PAB	7/31/2015	12 mo
Cable	Northwest EMC	Bilog Cables	NC1	8/27/2015	12 mo
Antenna - Double Ridge	EMCO	3115	AHM	6/3/2014	24 mo
Cable	Northwest EMC	3115 Horn Cable	NC2	6/17/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVZ	7/31/2015	12 mo
Antenna - Standard Gain	EMCO	3160-07	AHP	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOK	9/21/2015	12 mo
Antenna - Standard Gain	EMCO	3160-08	AHO	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AOJ	9/21/2015	12 mo
Cable	Northwest EMC	Standard Gain Horn Cable	NC3	6/17/2015	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AIY	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AOD	6/6/2015	12 mo
Cable	Northwest EMC	N/A	NC8	6/6/2015	12 mo

MEASUREMENT BANDWIDTHS

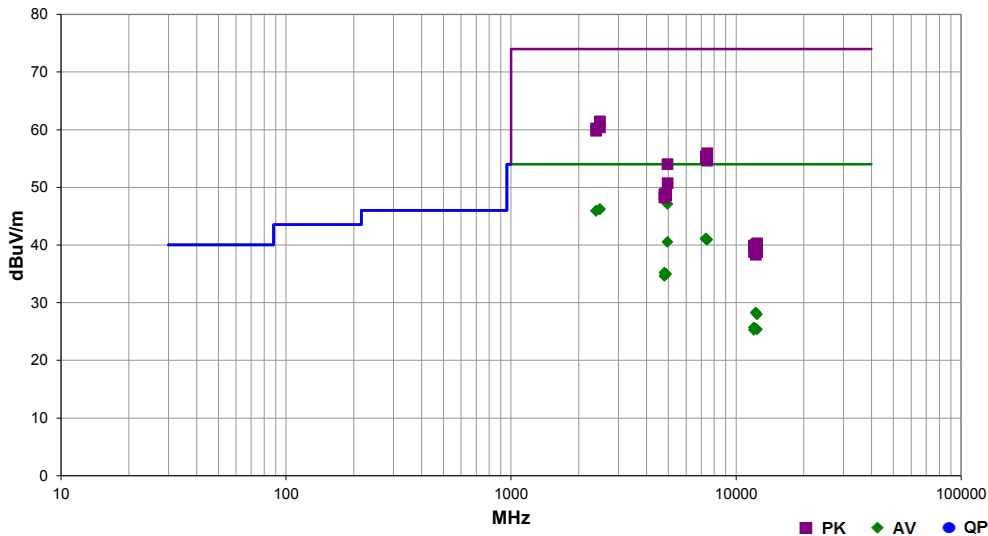
Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

TEST DESCRIPTION

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization. A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

Work Order:	PRCR0230	Date:	11/13/15	
Project:	None	Temperature:	23 °C	
Job Site:	NC01	Humidity:	49% RH	
Serial Number:	None	Barometric Pres.:	1011 mbar	
EUT:	Precor Wi-Fi / Bluetooth Module Model 303346			Tested by: Richard Mellroth
Configuration:	10			
Customer:	Precor, Inc.			
Attendees:	Rich Whitbeck			
EUT Power:	110VAC/60Hz			
Operating Mode:	Transmitting BT LE. Power Setting = 6. See comments next to data points for EUT channel.			
Deviations:	None			
Comments:	EUT configurable in only one physical orientation.			
Test Specifications				Test Method

Run #	193-195	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4960.030	36.8	10.3	1.9	253.0	3.0	0.0	Horz	AV	0.0	47.1	54.0	-6.9	High Ch 40, 2480 MHz
2483.990	27.0	-0.8	1.5	223.0	3.0	20.0	Horz	AV	0.0	46.2	54.0	-7.8	High Ch 40, 2480 MHz
2483.500	27.0	-0.8	3.5	54.0	3.0	20.0	Vert	AV	0.0	46.2	54.0	-7.8	High Ch 40, 2480 MHz
2389.353	26.9	-1.0	1.5	61.0	3.0	20.0	Horz	AV	0.0	45.9	54.0	-8.1	Low Ch 1, 2402 MHz
2389.210	26.9	-1.0	1.5	334.0	3.0	20.0	Vert	AV	0.0	45.9	54.0	-8.1	Low Ch 1, 2402 MHz
2483.990	42.2	-0.8	1.5	223.0	3.0	20.0	Horz	PK	0.0	61.4	74.0	-12.6	High Ch 40, 2480 MHz
7337.585	25.4	15.7	2.7	137.0	3.0	0.0	Horz	AV	0.0	41.1	54.0	-12.9	Mid Ch 20, 2446 MHz
7337.625	25.3	15.7	1.5	180.0	3.0	0.0	Vert	AV	0.0	41.0	54.0	-13.0	Mid Ch 20, 2446 MHz
7438.875	24.6	16.3	1.5	59.0	3.0	0.0	Horz	AV	0.0	40.9	54.0	-13.1	High Ch 40, 2480 MHz
7438.990	24.6	16.3	1.5	156.0	3.0	0.0	Vert	AV	0.0	40.9	54.0	-13.1	High Ch 40, 2480 MHz
4960.045	30.2	10.3	1.5	256.0	3.0	0.0	Vert	AV	0.0	40.5	54.0	-13.5	High Ch 40, 2480 MHz
2483.570	41.2	-0.8	3.5	54.0	3.0	20.0	Vert	PK	0.0	60.4	74.0	-13.6	High Ch 40, 2480 MHz
2389.467	41.2	-1.0	1.5	334.0	3.0	20.0	Vert	PK	0.0	60.2	74.0	-13.8	Low Ch 1, 2402 MHz
2388.730	40.8	-1.0	1.5	61.0	3.0	20.0	Horz	PK	0.0	59.8	74.0	-14.2	Low Ch 1, 2402 MHz
7440.885	39.6	16.3	1.5	156.0	3.0	0.0	Vert	PK	0.0	55.9	74.0	-18.1	High Ch 40, 2480 MHz
7337.565	39.6	15.7	2.7	137.0	3.0	0.0	Horz	PK	0.0	55.3	74.0	-18.7	Mid Ch 20, 2446 MHz
4804.000	25.4	9.8	1.5	73.0	3.0	0.0	Horz	AV	0.0	35.2	54.0	-18.8	Low Ch 1, 2402 MHz
7338.405	39.3	15.8	1.5	180.0	3.0	0.0	Vert	PK	0.0	55.1	74.0	-18.9	Mid Ch 20, 2446 MHz
4880.645	24.7	10.3	1.5	233.0	3.0	0.0	Vert	AV	0.0	35.0	54.0	-19.0	Mid Ch 20, 2446 MHz
4880.505	24.7	10.3	3.4	31.0	3.0	0.0	Horz	AV	0.0	35.0	54.0	-19.0	Mid Ch 20, 2446 MHz
7438.910	38.3	16.3	1.5	59.0	3.0	0.0	Horz	PK	0.0	54.6	74.0	-19.4	High Ch 40, 2480 MHz
4803.840	24.8	9.8	1.5	38.0	3.0	0.0	Vert	AV	0.0	34.6	54.0	-19.4	Low Ch 1, 2402 MHz
4960.080	43.7	10.3	1.9	253.0	3.0	0.0	Horz	PK	0.0	54.0	74.0	-20.0	High Ch 40, 2480 MHz
4960.585	40.4	10.3	1.5	256.0	3.0	0.0	Vert	PK	0.0	50.7	74.0	-23.3	High Ch 40, 2480 MHz
4882.635	38.7	10.3	3.4	31.0	3.0	0.0	Horz	PK	0.0	49.0	74.0	-25.0	Mid Ch 20, 2446 MHz
4803.555	39.0	9.8	1.5	73.0	3.0	0.0	Horz	PK	0.0	48.8	74.0	-25.2	Low Ch 1, 2402 MHz
4881.985	38.3	10.3	1.5	233.0	3.0	0.0	Vert	PK	0.0	48.6	74.0	-25.4	Mid Ch 20, 2446 MHz
12231.090	30.9	-2.6	1.3	218.0	3.0	0.0	Horz	AV	0.0	28.3	54.0	-25.7	Mid Ch 20, 2446 MHz
4805.370	38.4	9.8	1.5	38.0	3.0	0.0	Vert	PK	0.0	48.2	74.0	-25.8	Low Ch 1, 2402 MHz
12398.890	30.3	-2.3	2.9	150.0	3.0	0.0	Vert	AV	0.0	28.0	54.0	-26.0	High Ch 40, 2480 MHz
12008.830	28.7	-3.0	1.5	224.0	3.0	0.0	Vert	AV	0.0	25.7	54.0	-28.3	Low Ch 1, 2402 MHz
12231.130	28.1	-2.6	1.5	181.0	3.0	0.0	Vert	AV	0.0	25.5	54.0	-28.5	Mid Ch 20, 2446 MHz
12399.460	27.7	-2.3	1.5	278.0	3.0	0.0	Horz	AV	0.0	25.4	54.0	-28.6	High Ch 40, 2480 MHz
12008.910	28.3	-3.0	2.0	360.0	3.0	0.0	Horz	AV	0.0	25.3	54.0	-28.7	Low Ch 1, 2402 MHz
12398.690	42.6	-2.3	2.9	150.0	3.0	0.0	Vert	PK	0.0	40.3	74.0	-33.7	High Ch 40, 2480 MHz
12231.260	42.6	-2.6	1.3	218.0	3.0	0.0	Horz	PK	0.0	40.0	74.0	-34.0	Mid Ch 20, 2446 MHz
12009.060	42.9	-3.0	2.0	360.0	3.0	0.0	Horz	PK	0.0	39.9	74.0	-34.1	Low Ch 1, 2402 MHz
12009.400	41.8	-3.0	1.5	224.0	3.0	0.0	Vert	PK	0.0	38.8	74.0	-35.2	Low Ch 1, 2402 MHz
12398.880	41.1	-2.3	1.5	278.0	3.0	0.0	Horz	PK	0.0	38.8	74.0	-35.2	High Ch 40, 2480 MHz
12230.930	40.9	-2.6	1.5	181.0	3.0	0.0	Vert	PK	0.0	38.3	74.0	-35.7	Mid Ch 20, 2446 MHz

BAND EDGE 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 (mos)
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAT	9/29/2015	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKE	1/16/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Generator - Signal	Agilent	N5183A	TIA	4/7/2014	24

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

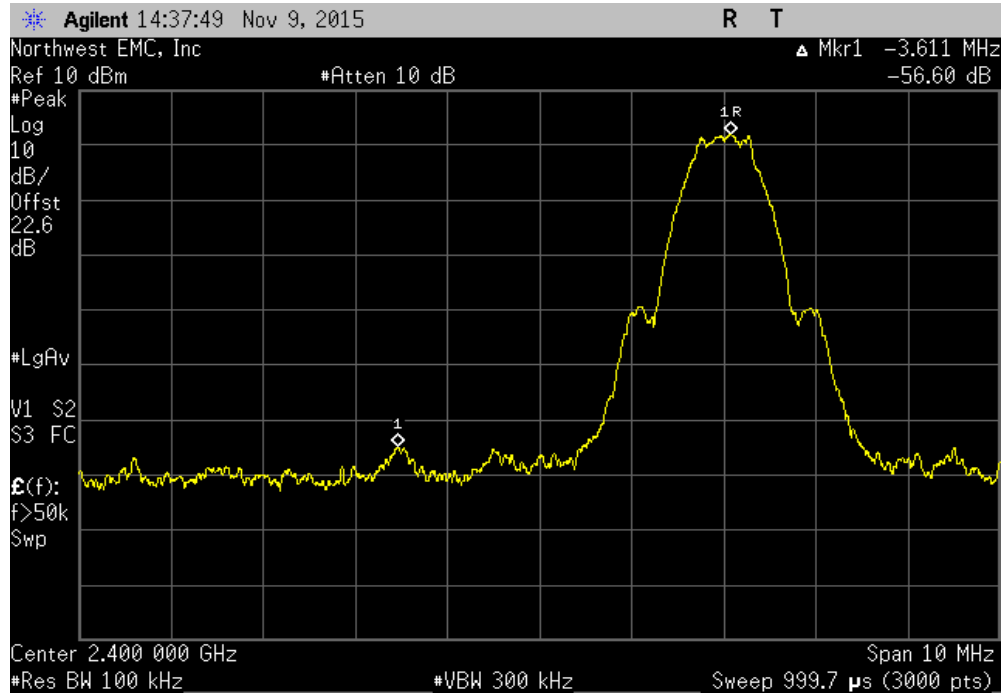
The spectrum was scanned below the lower band edge and above the higher band edge.

BAND EDGE COMPLIANCE

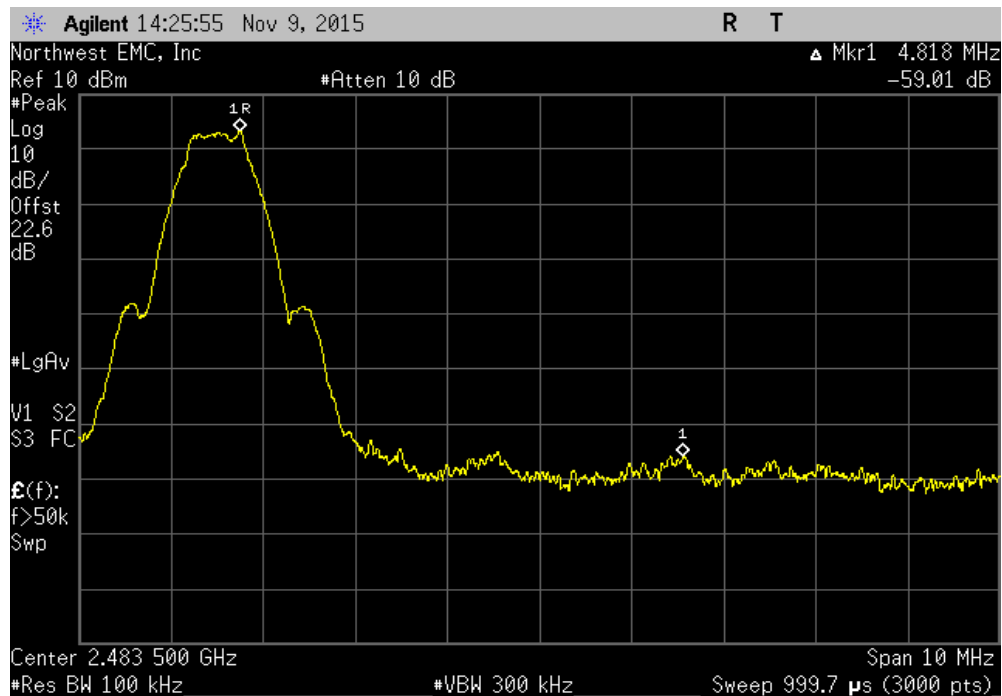
EUT: Precor Wi-Fi / Bluetooth Module Model 303346		Work Order: PRCR0230	
Serial Number: None		Date: 11/10/15	
Customer: Precor, Inc.		Temperature: 23°C	
Attendees: Rich Whitbeck		Humidity: 40%	
Project: None		Barometric Pres.: 1024 mbar	
Tested by: Richard Mellroth	Power: 110VAC/60Hz	Job Site: NC02	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2015		ANSI C63.10:2013	
COMMENTS			
EUT Power Level = 6.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	10	Signature 	
		Value (dBc)	Limit ≤ (dBc) Result
Ant 2 Bluetooth LE			
Low Channel 1, 2402 MHz		-56.6	-20 Pass
High Channel 40, 2480 MHz		-59.01	-20 Pass

BAND EDGE COMPLIANCE

Ant 2, Bluetooth LE, Low Channel 1, 2402 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-56.6	-20	Pass



Ant 2, Bluetooth LE, High Channel 40, 2480 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-59.01	-20	Pass



DUTY CYCLE

TEST DESCRIPTION

The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

There is no compliance requirement to be met by this test, so therefore no Pass / Fail criteria.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used

The test software provided for operation in a fixed, single channel mode allows the EUT to operate continuously at 100% Duty Cycle.

OCCUPIED BANDWIDTH

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 (mos)
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAT	9/29/2015	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKE	1/16/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Generator - Signal	Agilent	N5183A	TIA	4/7/2014	24

TEST DESCRIPTION

The 6dB occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.00% (approximate 26 dB) emission bandwidth (EBW) was also measured at the same time.

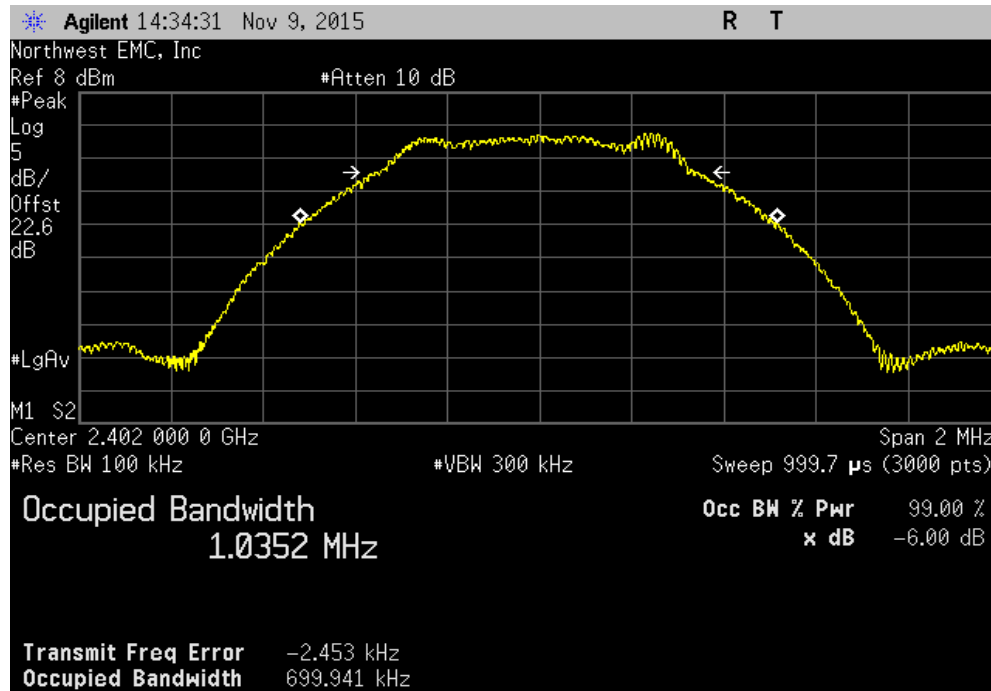
The EUT was set to the channels and modes listed in the datasheet. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer.

OCCUPIED BANDWIDTH

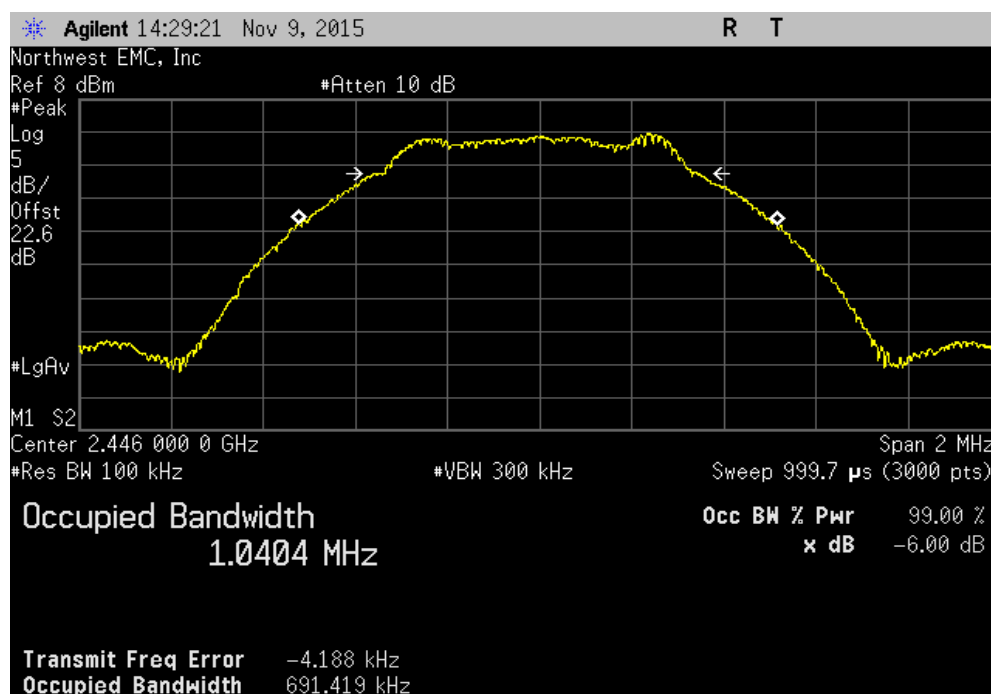
EUT: Precor Wi-Fi / Bluetooth Module Model 303346		Work Order: PRCR0230	
Serial Number: None		Date: 11/10/15	
Customer: Precor, Inc.		Temperature: 23°C	
Attendees: Rich Whitbeck		Humidity: 40%	
Project: None		Barometric Pres.: 1024 mbar	
Tested by: Richard Mellroth	Power: 110VAC/60Hz	Job Site: NC02	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2015		ANSI C63.10:2013	
COMMENTS			
EUT Power Level = 6.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	10	Signature 	
		Value	Limit (±) Result
Ant 2 Bluetooth LE			
Low Channel 1, 2402 MHz		699.941 kHz	500 kHz Pass
Mid Channel 20, 2446 MHz		691.419 kHz	500 kHz Pass
High Channel 40, 2480 MHz		697.195 kHz	500 kHz Pass

OCCUPIED BANDWIDTH

Ant 2, Bluetooth LE, Low Channel 1, 2402 MHz						
				Value	Limit (≥)	Result
				699.941 kHz	500 kHz	Pass

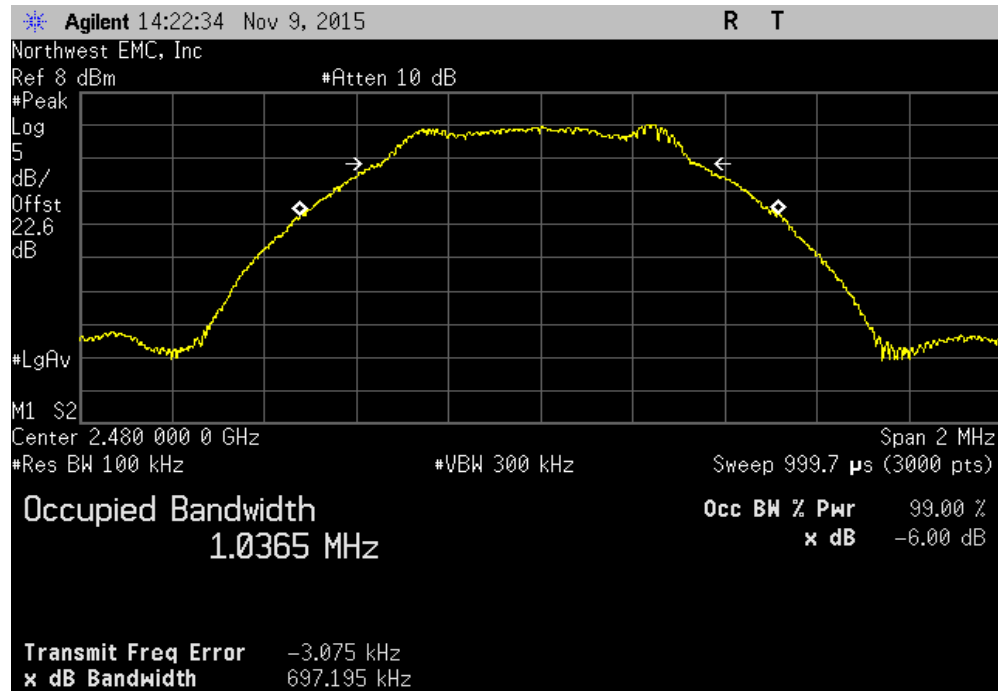


Ant 2, Bluetooth LE, Mid Channel 20, 2446 MHz						
				Value	Limit (≥)	Result
				691.419 kHz	500 kHz	Pass



OCCUPIED BANDWIDTH

Ant 2, Bluetooth LE, High Channel 40, 2480 MHz						
Value				Limit (≥)	Result	
697.195 kHz				500 kHz	Pass	



OUTPUT POWER

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 (mos)
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAT	9/29/2015	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKE	1/16/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Generator - Signal	Agilent	N5183A	TIA	4/7/2014	24

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

Prior to measuring peak transmit power the DTS bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method found in ANSI C63.10:2013 Section 11.10.2 was used because the RBW on the analyzer was greater than the DTS Bandwidth of the radio..

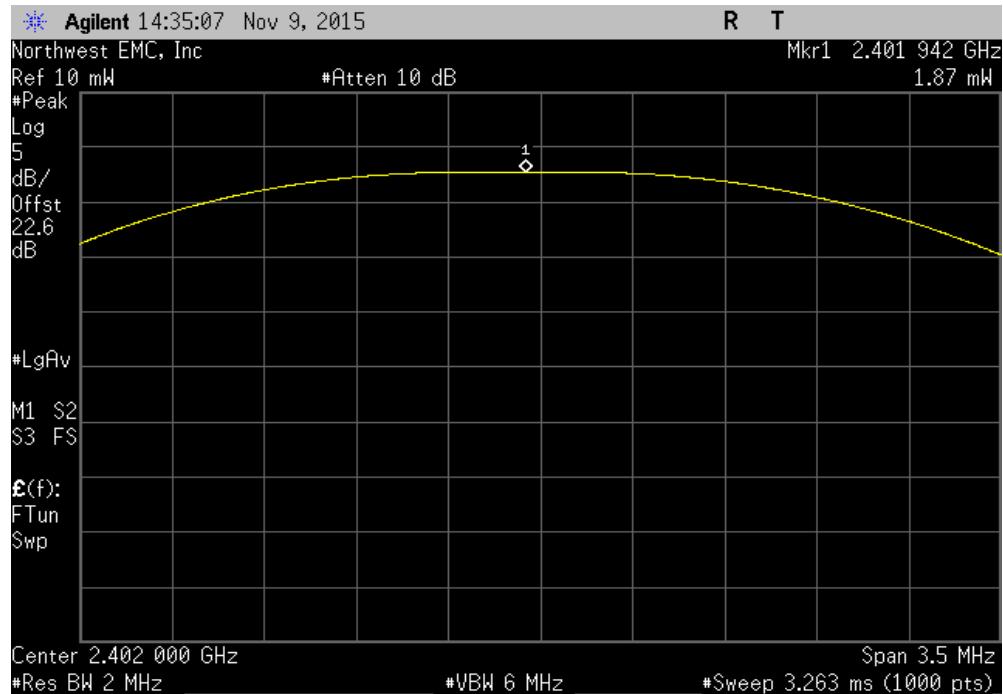
De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

OUTPUT POWER

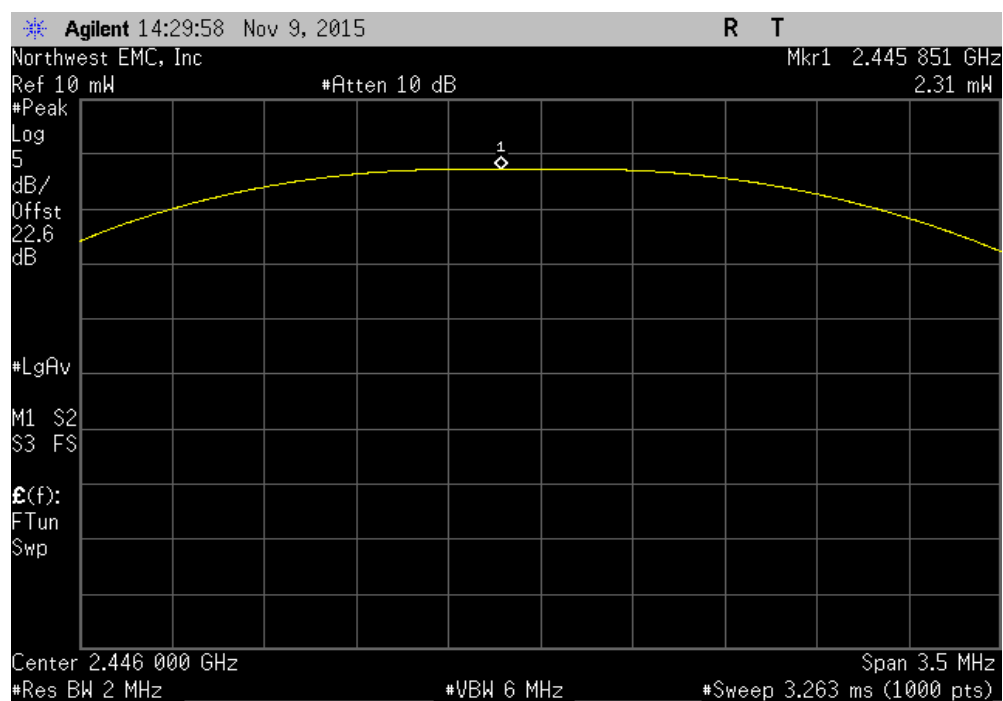
EUT: Precor Wi-Fi / Bluetooth Module Model 303346		Work Order: PRCR0230	
Serial Number: None		Date: 11/10/15	
Customer: Precor, Inc.		Temperature: 23°C	
Attendees: Rich Whitbeck		Humidity: 40%	
Project: None		Barometric Pres.: 1024 mbar	
Tested by: Richard Mellroth	Power: 110VAC/60Hz	Job Site: NC02	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2015		ANSI C63.10:2013	
COMMENTS			
EUT Power Level = 6.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	10	Signature 	
		Value	Limit (<) Result
Ant 2 Bluetooth LE			
Low Channel 1, 2402 MHz		1.872 mW	1 W Pass
Mid Channel 20, 2446 MHz		2.31 mW	1 W Pass
High Channel 40, 2480 MHz		2.513 mW	1 W Pass

OUTPUT POWER

Ant 2, Bluetooth LE, Low Channel 1, 2402 MHz						
				Value	Limit (<)	Result
				1.872 mW	1 W	Pass

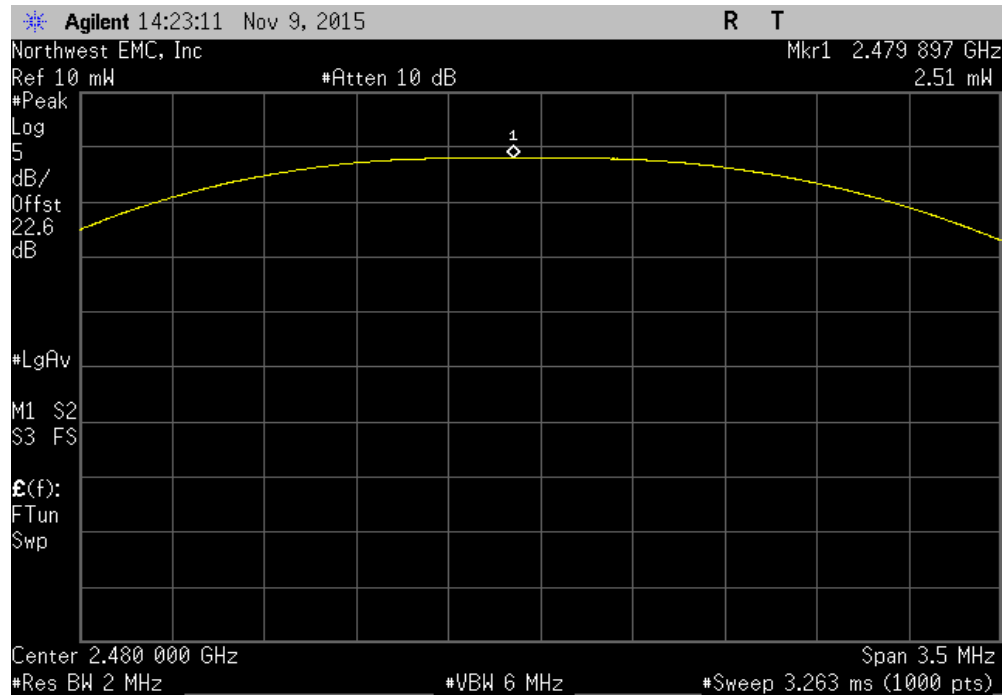


Ant 2, Bluetooth LE, Mid Channel 20, 2446 MHz						
				Value	Limit (<)	Result
				2.31 mW	1 W	Pass



OUTPUT POWER

Ant 2, Bluetooth LE, High Channel 40, 2480 MHz						
Value				Limit	Result	
2.513 mW				1 W	Pass	



POWER SPECTRAL DENSITY

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 (mos)
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAT	9/29/2015	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKE	1/16/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Generator - Signal	Agilent	N5183A	TIA	4/7/2014	24

TEST DESCRIPTION

The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. External attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

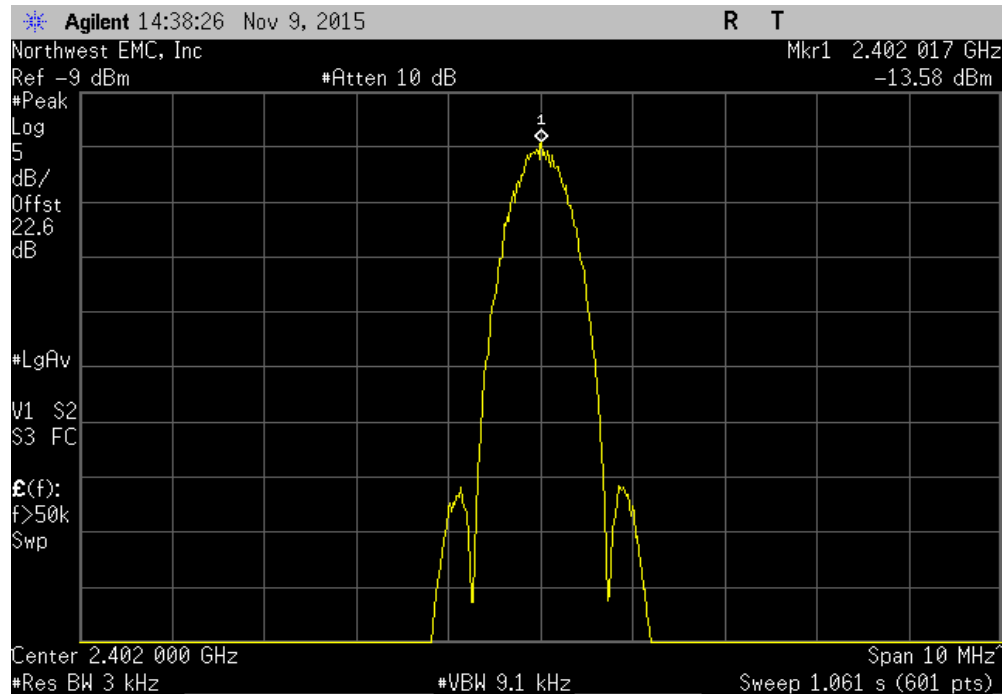
Per the procedure outlined in ANSI C63.10 the peak power spectral density was measured in a 3 kHz RBW.

POWER SPECTRAL DENSITY

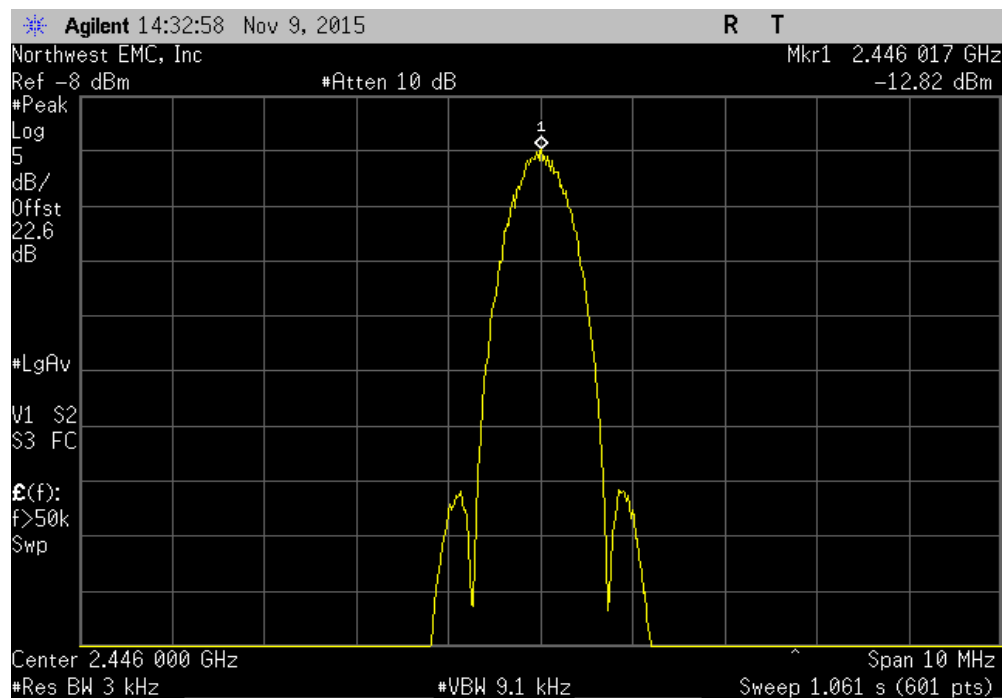
EUT: Precor Wi-Fi / Bluetooth Module Model 303346		Work Order: PRCR0230	
Serial Number: None		Date: 11/10/15	
Customer: Precor, Inc.		Temperature: 23°C	
Attendees: Rich Whitbeck		Humidity: 40%	
Project: None		Barometric Pres.: 1024 mbar	
Tested by: Richard Mellroth	Power: 110VAC/60Hz	Job Site: NC02	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2015		ANSI C63.10:2013	
COMMENTS			
EUT Power Level = 6.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	10	Signature 	
		Value dBm/3kHz	Limit < dBm/3kHz
Ant 2	Bluetooth LE		Results
	Low Channel 1, 2402 MHz	-13.581	8 Pass
	Mid Channel 20, 2446 MHz	-12.819	8 Pass
	High Channel 40, 2480 MHz	-12.337	8 Pass

POWER SPECTRAL DENSITY

Ant 2, Bluetooth LE, Low Channel 1, 2402 MHz						
	Value	Limit	Results			
	dBm/3kHz	< dBm/3kHz				
	-13.581	8	Pass			

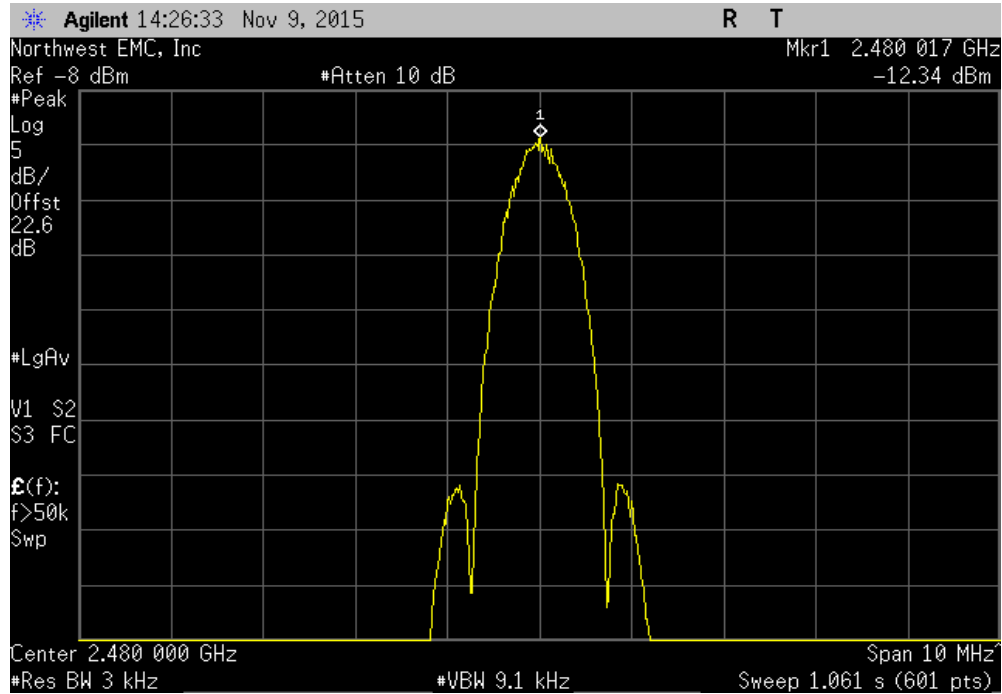


Ant 2, Bluetooth LE, Mid Channel 20, 2446 MHz						
	Value	Limit	Results			
	dBm/3kHz	< dBm/3kHz				
	-12.819	8	Pass			



POWER SPECTRAL DENSITY

Ant 2, Bluetooth LE, High Channel 40, 2480 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-12.337	8	Pass



SPURIOUS CONDUCTED EMISSIONS

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 (mos)
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAT	9/29/2015	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKE	1/16/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Generator - Signal	Agilent	N5183A	TIA	4/7/2014	24

TEST DESCRIPTION

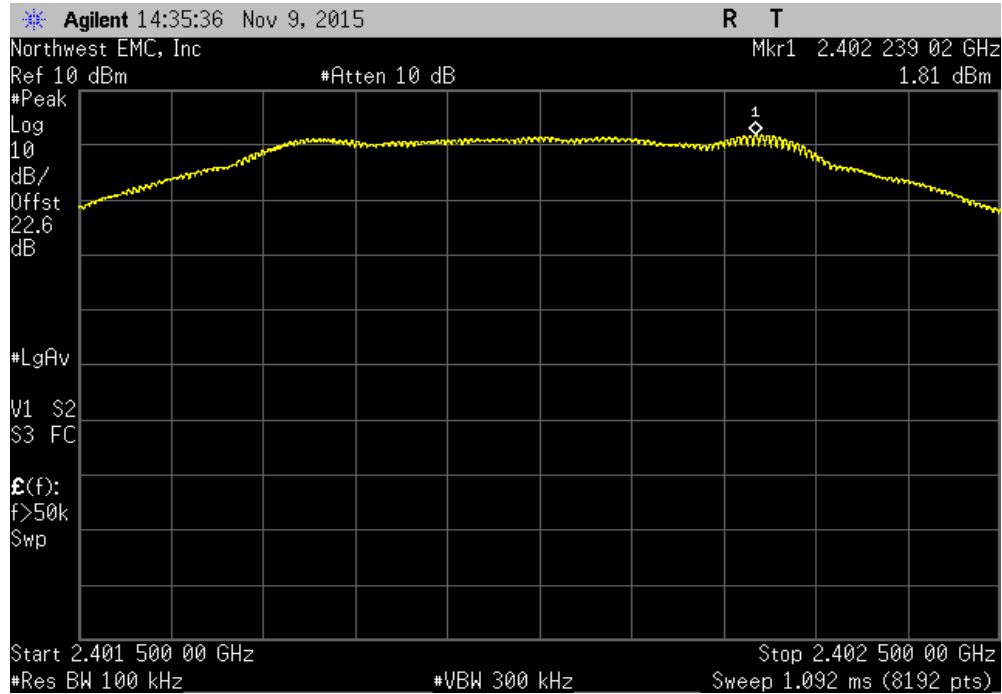
The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

SPURIOUS CONDUCTED EMISSIONS

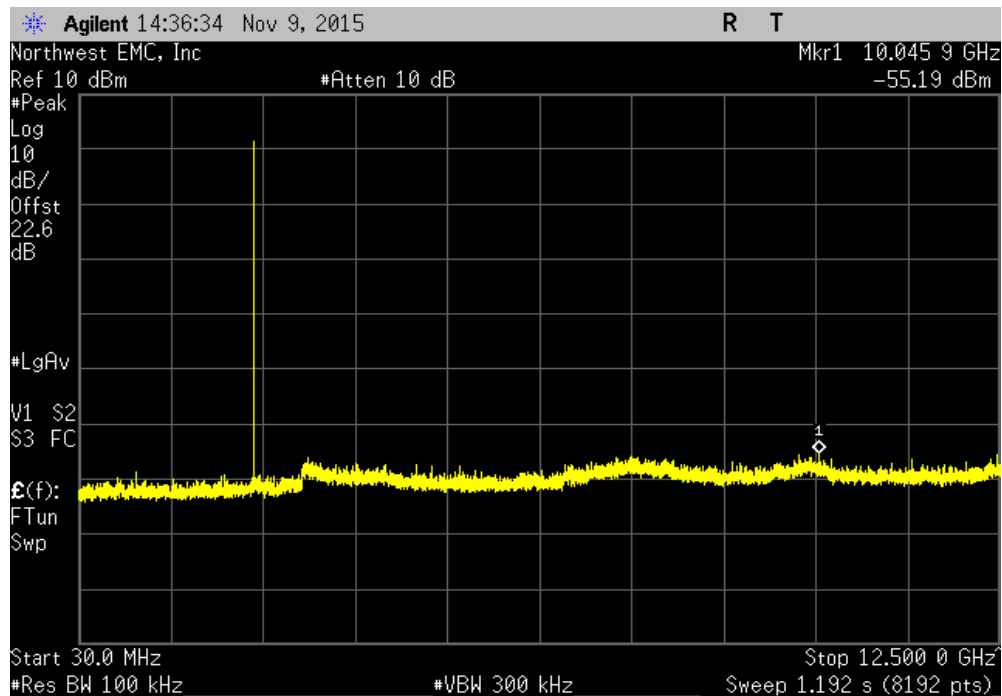
EUT: Precor Wi-Fi / Bluetooth Module Model 303346		Work Order: PRCR0230	
Serial Number: None		Date: 11/10/15	
Customer: Precor, Inc.		Temperature: 23°C	
Attendees: Rich Whitbeck		Humidity: 40%	
Project: None		Barometric Pres.: 1024 mbar	
Tested by: Richard Mellroth		Power: 110VAC/60Hz	
		Job Site: NC02	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2015		ANSI C63.10:2013	
COMMENTS			
EUT Power Level = 6.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	10	Signature 	
		Frequency Range	Max Value (dBc) Limit ≤ (dBc) Result
Ant 2 Bluetooth LE			
	Low Channel 1, 2402 MHz	Fundamental	N/A N/A N/A
	Low Channel 1, 2402 MHz	30 MHz - 12.5 GHz	-57 -20 Pass
	Low Channel 1, 2402 MHz	12.5 GHz - 25 GHz	-54.07 -20 Pass
	Mid Channel 20, 2446 MHz	Fundamental	N/A N/A N/A
	Mid Channel 20, 2446 MHz	30 MHz - 12.5 GHz	-55.33 -20 Pass
	Mid Channel 20, 2446 MHz	12.5 GHz - 25 GHz	-54.21 -20 Pass
	High Channel 40, 2480 MHz	Fundamental	N/A N/A N/A
	High Channel 40, 2480 MHz	30 MHz - 12.5 GHz	-54.7 -20 Pass
	High Channel 40, 2480 MHz	12.5 GHz - 25 GHz	-54.49 -20 Pass

SPURIOUS CONDUCTED EMISSIONS

Ant 2, Bluetooth LE, Low Channel 1, 2402 MHz						
Frequency Range		Max Value (dBc)		Limit ≤ (dBc)	Result	
Fundamental		N/A		N/A	N/A	

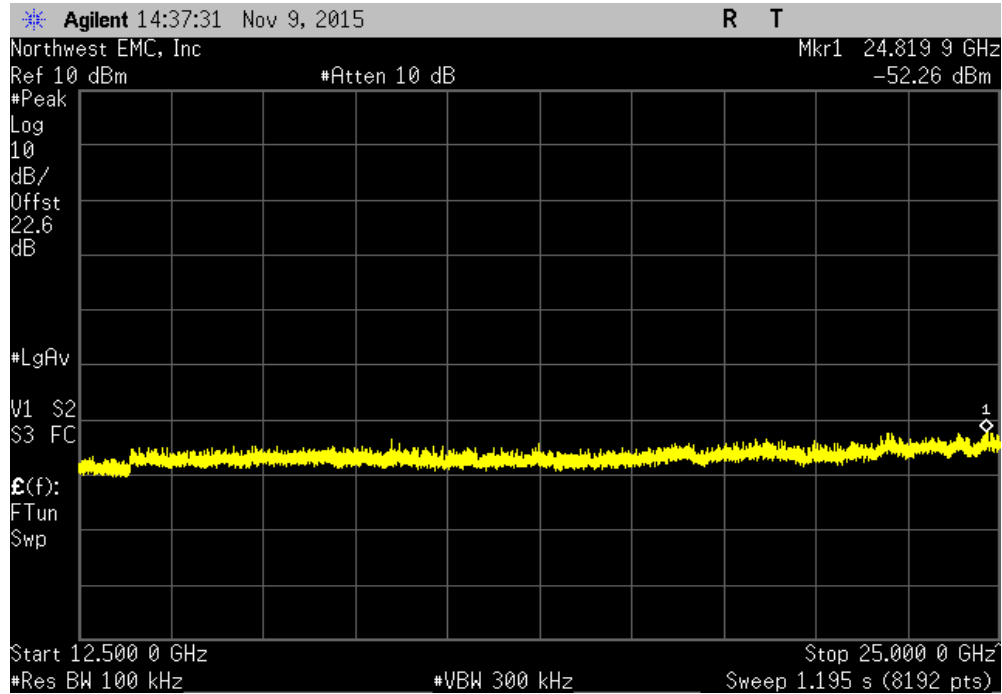


Ant 2, Bluetooth LE, Low Channel 1, 2402 MHz						
Frequency Range		Max Value (dBc)		Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz		-57		-20	Pass	

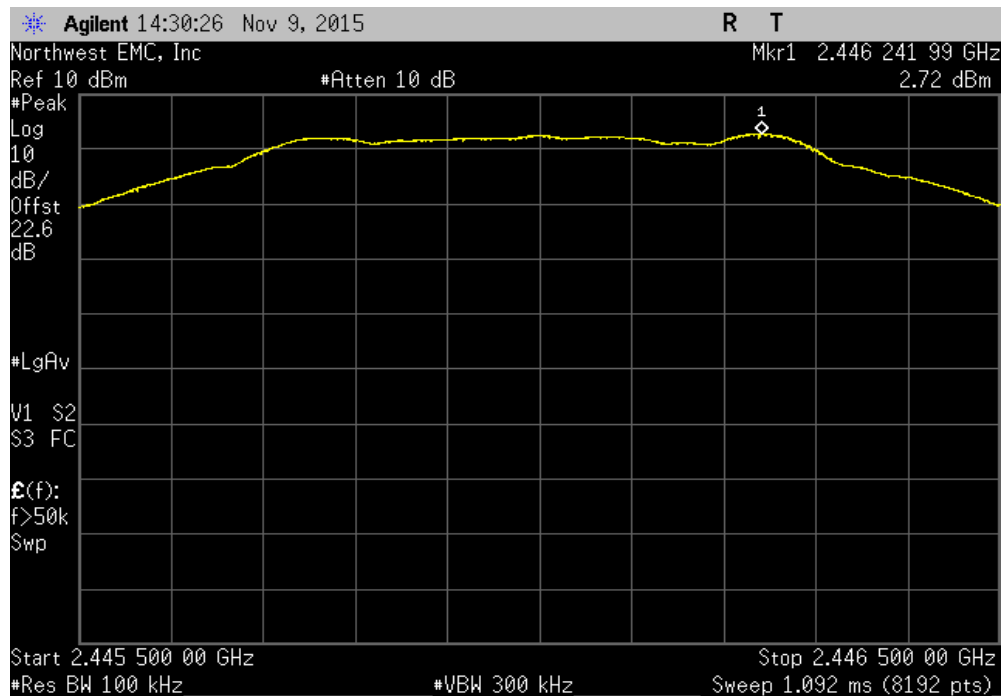


SPURIOUS CONDUCTED EMISSIONS

Ant 2, Bluetooth LE, Low Channel 1, 2402 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-54.07	-20	Pass	

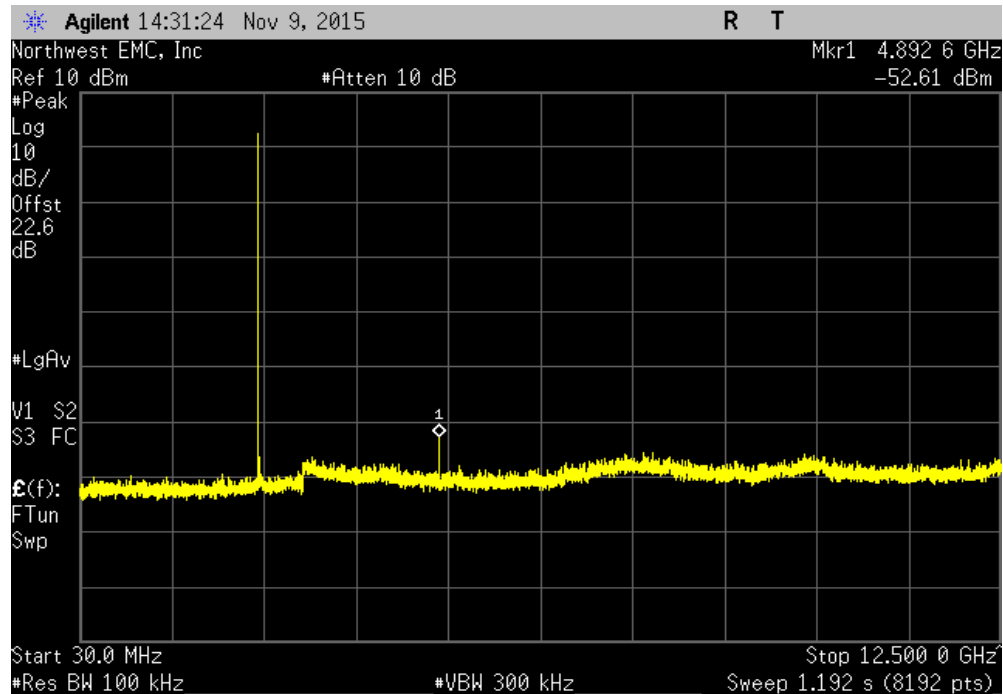


Ant 2, Bluetooth LE, Mid Channel 20, 2446 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	

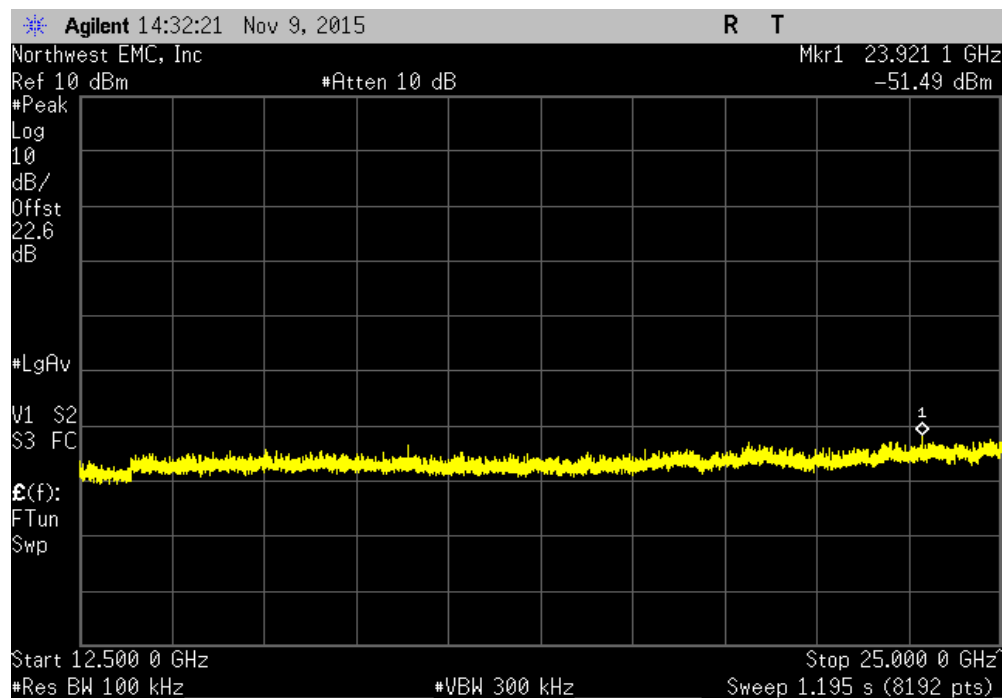


SPURIOUS CONDUCTED EMISSIONS

Ant 2, Bluetooth LE, Mid Channel 20, 2446 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-55.33	-20	Pass	

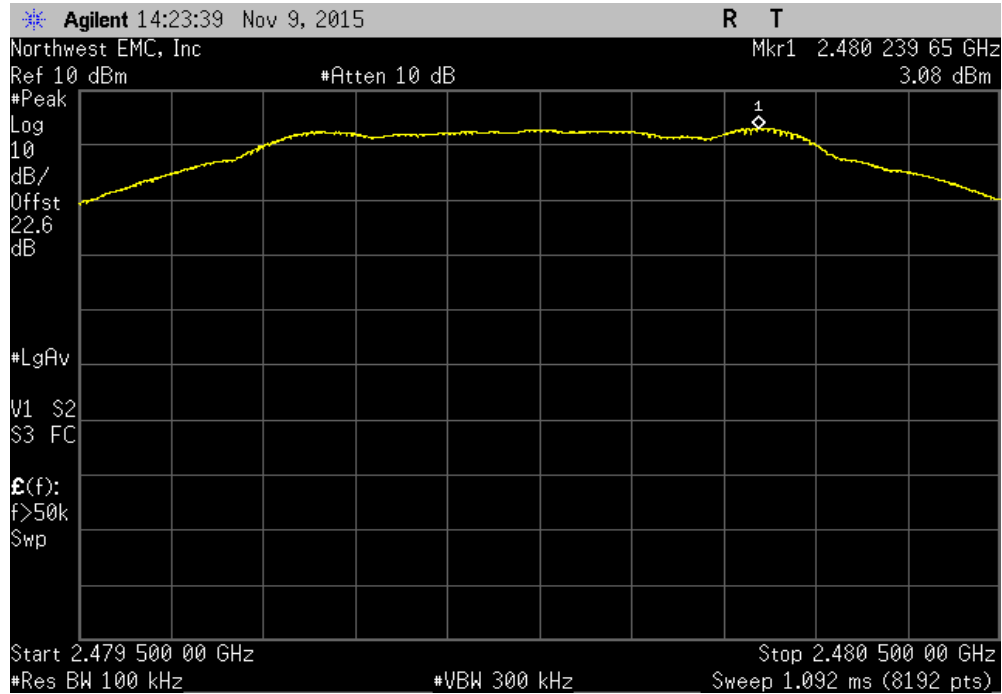


Ant 2, Bluetooth LE, Mid Channel 20, 2446 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-54.21	-20	Pass	

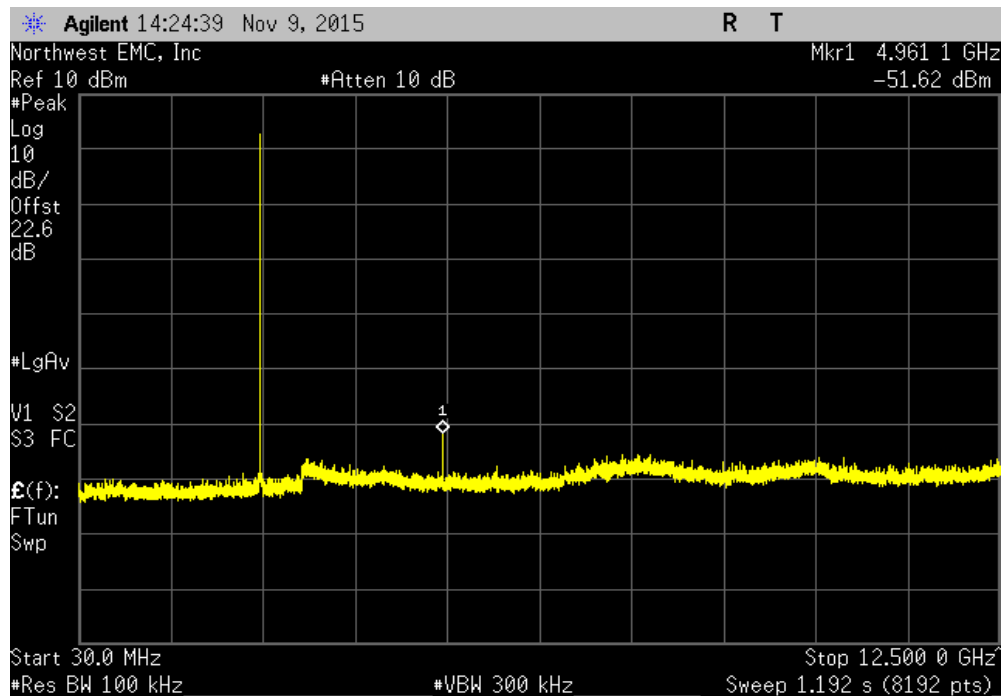


SPURIOUS CONDUCTED EMISSIONS

Ant 2, Bluetooth LE, High Channel 40, 2480 MHz						
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result		
Fundamental		N/A	N/A	N/A		



Ant 2, Bluetooth LE, High Channel 40, 2480 MHz						
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result		
30 MHz - 12.5 GHz		-54.7	-20	Pass		



SPURIOUS CONDUCTED EMISSIONS

Ant 2, Bluetooth LE, High Channel 40, 2480 MHz				
Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-54.49	-20	Pass	

