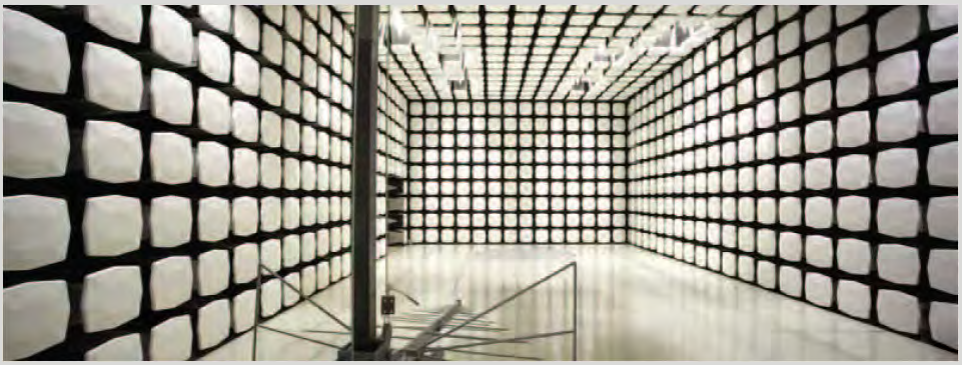
Intel Corporation

Intel 8-inch Tablet
Model: GQ110

FCC 15.207:2014
FCC 15.247:2014
Bluetooth Low Energy

Report #: INTE5431.4



Report Prepared By Northwest EMC Inc.

NORTHWEST EMC – (888) 364-2378 – www.nwemc.com

California – Minnesota – Oregon – New York – Washington

CERTIFICATE OF TEST

WTD 12.5.23

Last Date of Test: April 1, 2014
Intel Corporation
Model: GQ110

Emissions

Test Description	Specification	Test Method	Pass/Fail
Duty Cycle	FCC 15.247:2014	ANSI C63.10:2009	Pass
Occupied Bandwidth	FCC 15.247:2014	ANSI C63.10:2009	Pass
Output Power	FCC 15.247:2014	ANSI C63.10:2009	Pass
Power Spectral Density	FCC 15.247:2014	ANSI C63.10:2009	Pass
Band Edge Compliance	FCC 15.247:2014	ANSI C63.10:2009	Pass
Spurious Conducted Emissions	FCC 15.247:2014	ANSI C63.10:2009	Pass
Spurious Radiated Emissions	FCC 15.247:2014	ANSI C63.10:2009	Pass
AC Powerline Conducted Emissions	FCC 15.207:2014	ANSI C63.10:2009	Pass

Deviations From Test Standards

None

Approved By:

Kyle Holgate, Operations Manager

NVLAP Lab Code: 200630-0
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.

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.

NORTHWEST EMC
REV 2012.08.02

REVISION HISTORY

Revision Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

NORTHWEST EMC

REV 2012.05.24

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 Guide 65 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

KCC / 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.

Hong Kong

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

Vietnam

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

Russia

GOST – Accredited by Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC to perform EMC and Hygienic testing for Information Technology products to GOST standards.

SCOPE

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

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 listed below. 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 16-4-1 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.

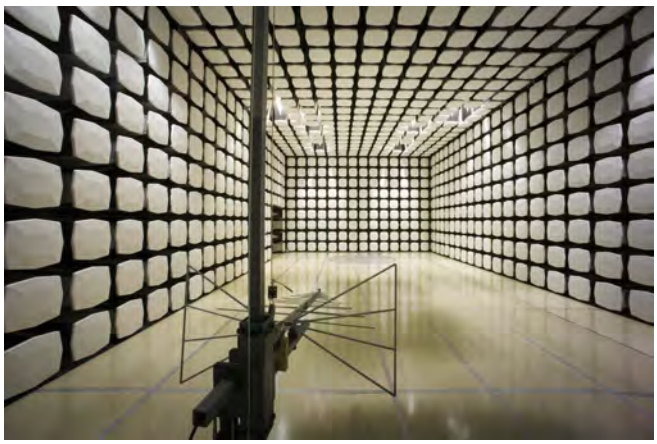
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.12	-0.01
Amplitude Accuracy (dB)	0.49	-0.49
Conducted Power (dB)	0.41	-0.41
Radiated Power via Substitution (dB)	0.69	-0.68
Temperature (degrees C)	0.81	-0.81
Humidity (% RH)	2.89	-2.89
Field Strength (dB)	3.80	-3.80
AC Powerline Conducted Emissions (dB)	2.94	-2.94

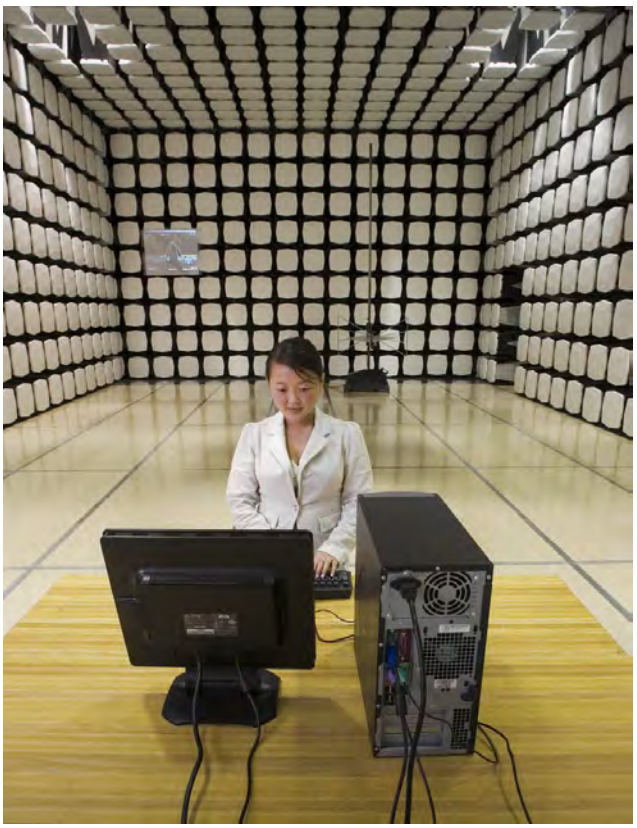
NORTHWEST EMC

REV 2013.06.28

FACILITIES

Oregon Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	**California** Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	**New York** Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 685-0796	**Minnesota** Labs MN01-08 9349 W Broadway Ave. Brooklyn Park, MN 55445 (763) 425-2281	**Washington** Labs NC01-05,SU02,SU07 19201 120th Ave. NE Bothell, WA 98011 (425) 984-6600
VCCI				
A-0108	A-0029		A-0109	A-0110
Industry Canada				
2834D-1, 2834D-*2*	2834B-1, 2834B-2, 2834B-3		2834E-1	2834F-1
NVLAP				
NVLAP Lab Code: 200630-0	NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200629-0





PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Intel Corporation
Address:	5200 NE Elam Young Pkwy
City, State, Zip:	Hillsboro, OR 97124
Test Requested By:	Aaron Cohen
Model:	GQ110
First Date of Test:	March 26, 2014
Last Date of Test:	April 1, 2014
Receipt Date of Samples:	March 26, 2014
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):
Tablet PC with 802.11(b/g/n) 20 MHz bandwidth, SISO, with Bluetooth 4.0 and GPS receiver.

Testing Objective:
To demonstrate compliance to FCC 15.247 requirements.

CONFIGURATIONS

Configuration INTE5431- 1

Software/Firmware Running during test	
Description	**Version**
Android OS	4.4.2

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Intel 8-inch Tablet	Intel Corporation	GQ110	EZF83450005Z

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
AC/DC Adapter	Salcomp	S11A02	131100233060

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
USB Cable	Yes	.3m	No	Intel 8-inch Tablet	AC/DC Adapter
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Configuration INTE5431- 4

Software/Firmware Running during test	
Description	**Version**
Android OS	4.4.2

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Intel 8-inch Tablet	Intel Corporation	GQ110	EZF8344000UK

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
AC/DC Adapter	Salcomp	S11A02	131100233060

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
USB Cable	Yes	.3m	No	Intel 8-inch Tablet	AC/DC Adapter
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATIONS

Configuration INTE5431- 6

Software/Firmware Running during test	
Description	**Version**
Android OS	4.4.2

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Intel 8-inch Tablet	Intel Corporation	GQ110	EZF8344000UK

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
AC/DC Adapter	Salcomp	S11A02	131100233060
Headphones(ear buds)	None	None	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
USB Cable	Yes	.3m	No	Intel 8-inch Tablet	AC/DC Adapter
HDMI Cable	Yes	3m	No	Intel 8-inch Tablet	Unterminated
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

MODIFICATIONS

WTD 12.5.23

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	3/26/2014	Duty Cycle	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	3/26/2014	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.
3	3/26/2014	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.
4	3/26/2014	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.
5	3/26/2014	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.
6	3/26/2014	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.
7	3/28/2014	AC Powerline 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.
8	4/1/2014	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

DUTY CYCLE

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
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
RF Vector Signal Generator	Agilent	V2920A	TIH	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Spectrum Analyzer	Agilent	E4440	AFE	11/4/2013	24

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.

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 duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, burst gating was used during some of the other tests in this report to only measure during the burst duration.

DUTY CYCLE

EUT:	GQ110			**Work Order:**	INTE5431
Serial Number:	EZF83450005Z			**Date:**	03/26/14
Customer:	Intel Corporation			**Temperature:**	21.7°C
Attendees:	None			**Humidity:**	39%
Project:	GQ110			**Barometric Pres.:**	1001.8
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Mode of operation tested were client provided.

DEVIATIONS FROM TEST STANDARD

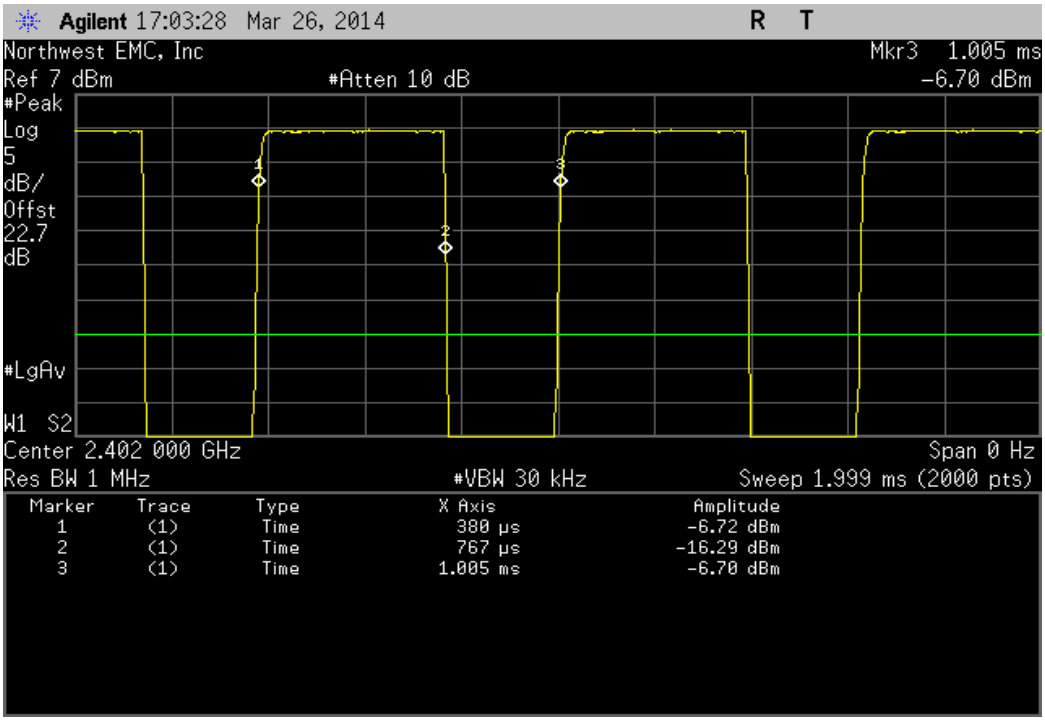
None

Configuration #	1	Signature

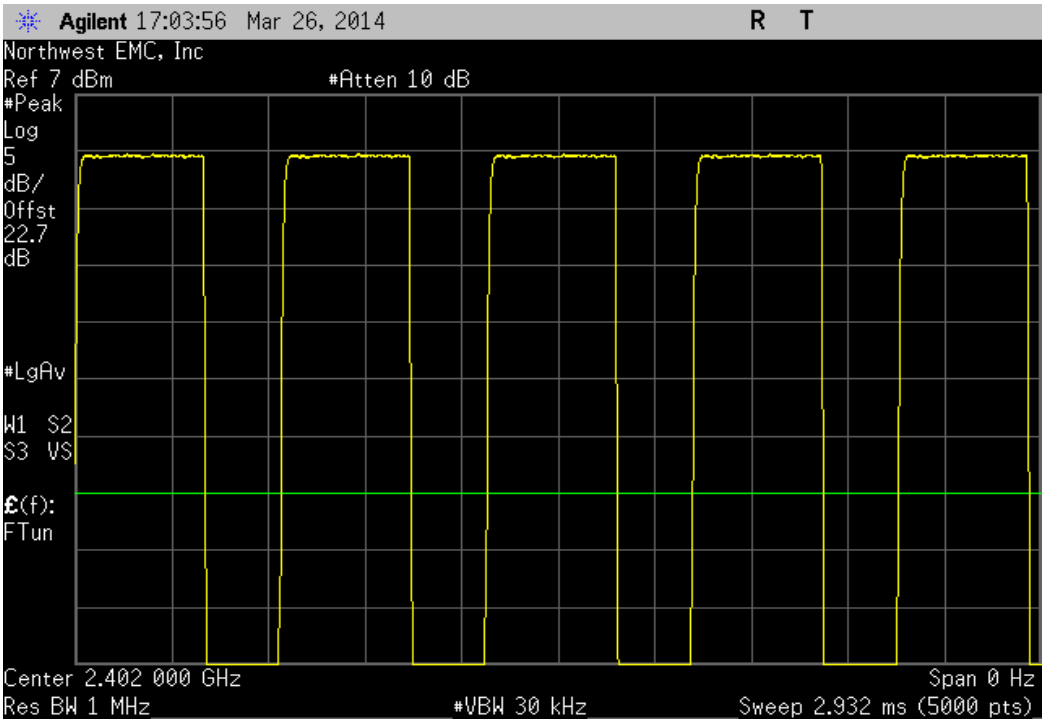
		Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
BLE - Advertising							
	Low Channel, 2402 MHz	387 uS	625 uS	1	61.9	N/A	N/A
	Low Channel, 2402 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel, 2426 MHz	388 uS	625 uS	1	62.1	N/A	N/A
	Mid Channel, 2426 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel, 2480 MHz	388 uS	625 uS	1	62.1	N/A	N/A
	High Channel, 2480 MHz	N/A	N/A	5	N/A	N/A	N/A
BLE - Data							
	Low Channel, 2404 MHz	388 uS	625 uS	1	62.1	N/A	N/A
	Low Channel, 2404 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel, 2442 MHz	387 uS	625 uS	1	61.9	N/A	N/A
	Mid Channel, 2442 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel, 2478 MHz	388 uS	625 uS	1	62.1	N/A	N/A
	High Channel, 2478 MHz	N/A	N/A	5	N/A	N/A	N/A

DUTY CYCLE

BLE - Advertising, Low Channel, 2402 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	387 uS	625 uS	1	61.9	N/A	N/A

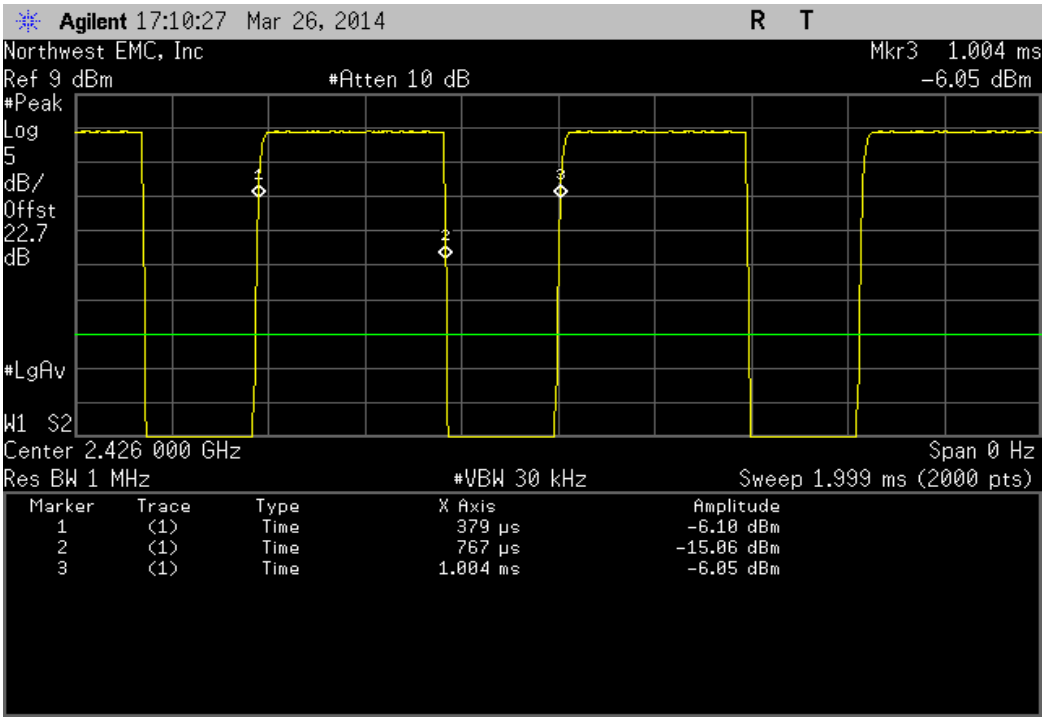


BLE - Advertising, Low Channel, 2402 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A

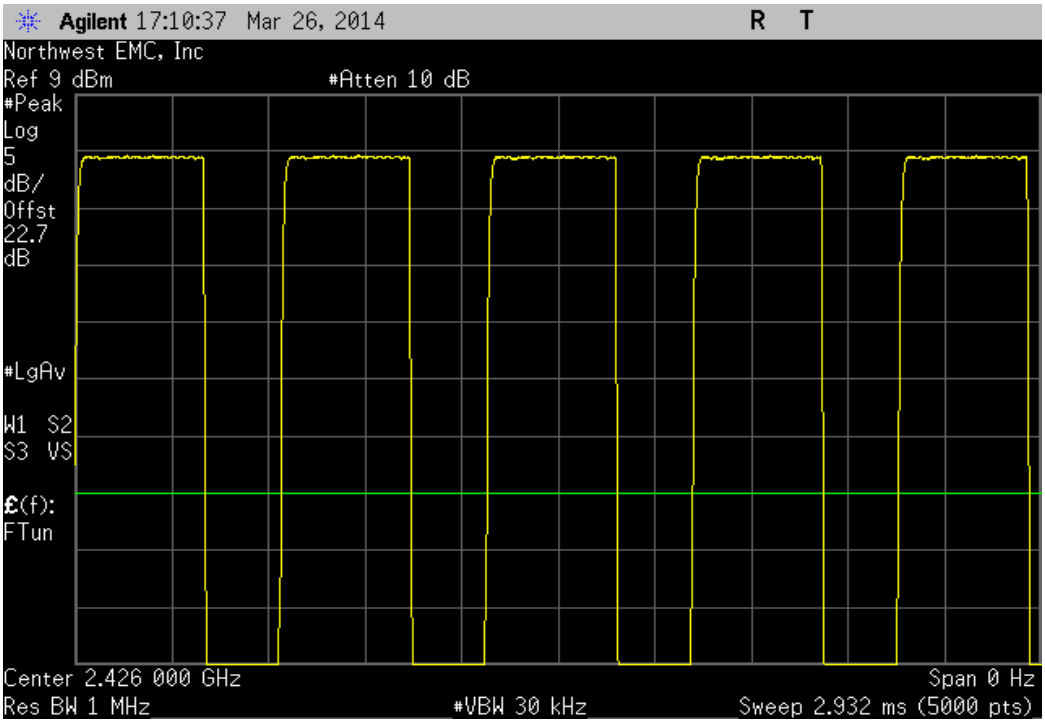


DUTY CYCLE

BLE - Advertising, Mid Channel, 2426 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	388 uS	625 uS	1	62.1	N/A	N/A



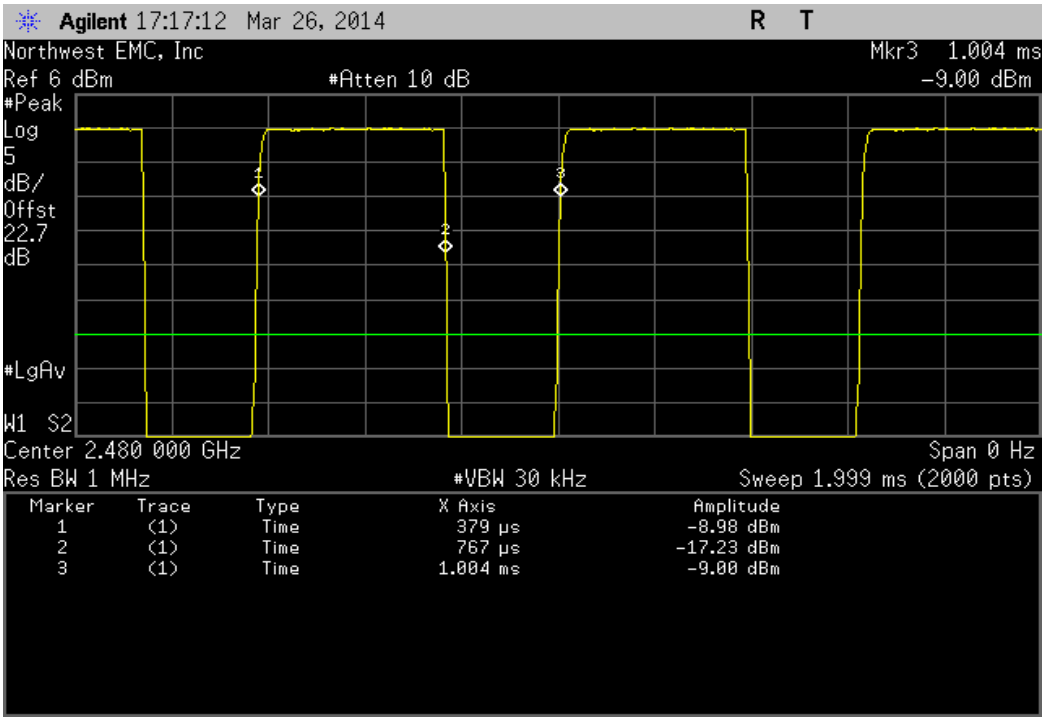
BLE - Advertising, Mid Channel, 2426 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



DUTY CYCLE

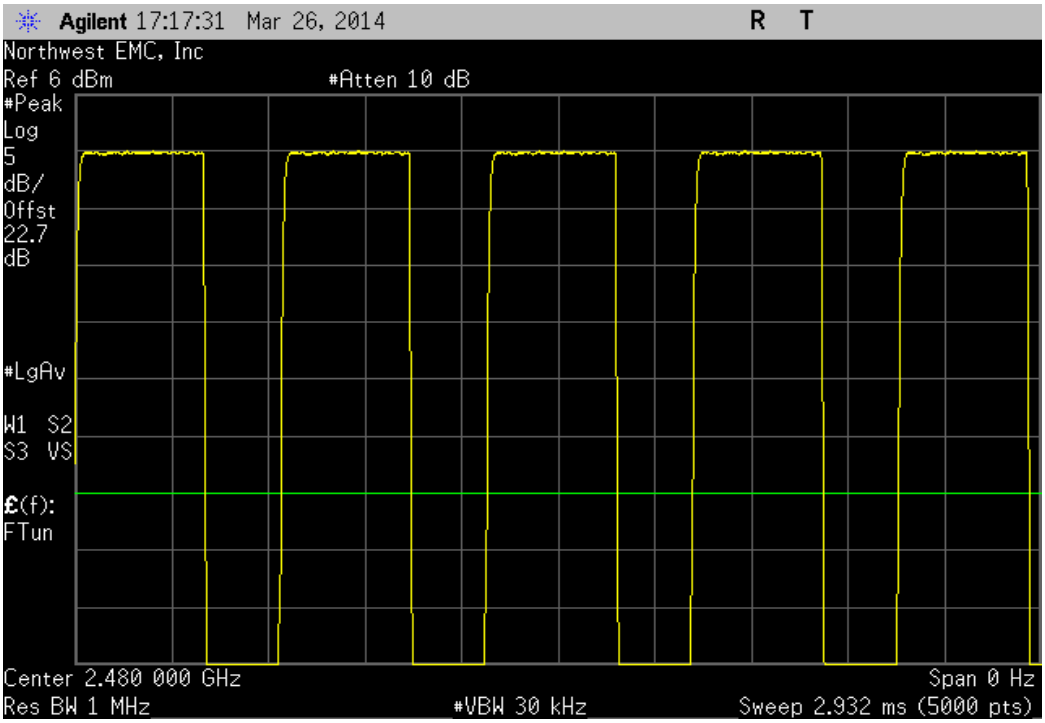
BLE - Advertising, High Channel, 2480 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	388 uS	625 uS	1	62.1	N/A	N/A



BLE - Advertising, High Channel, 2480 MHz

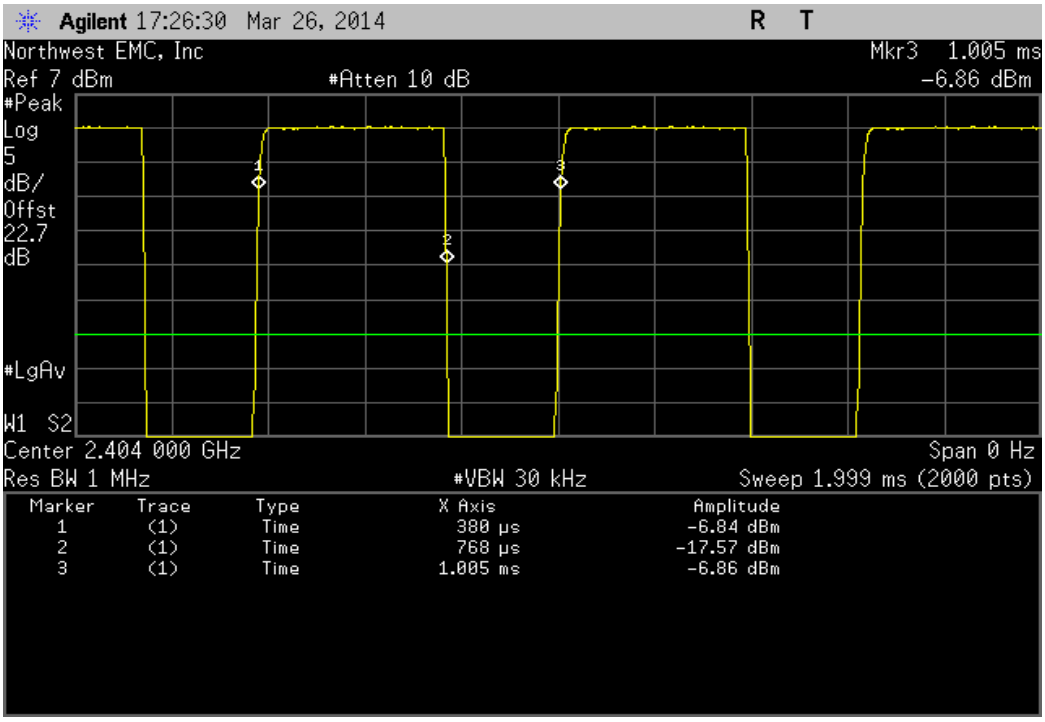
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



DUTY CYCLE

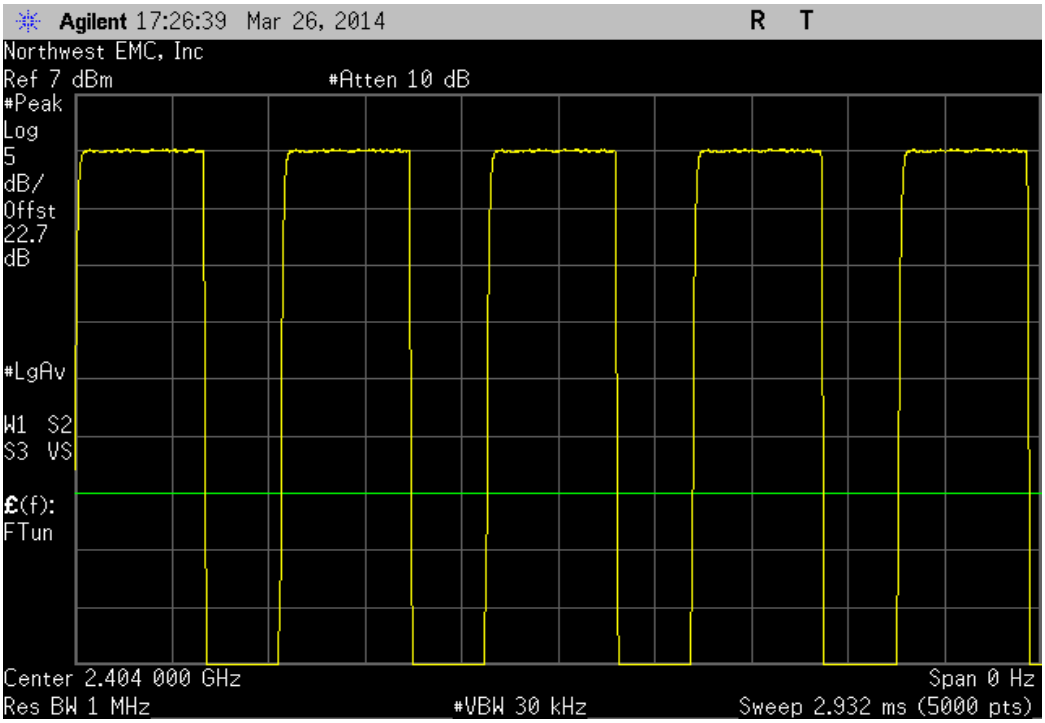
BLE - Data, Low Channel, 2404 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
388 uS	625 uS	1	62.1	N/A	N/A



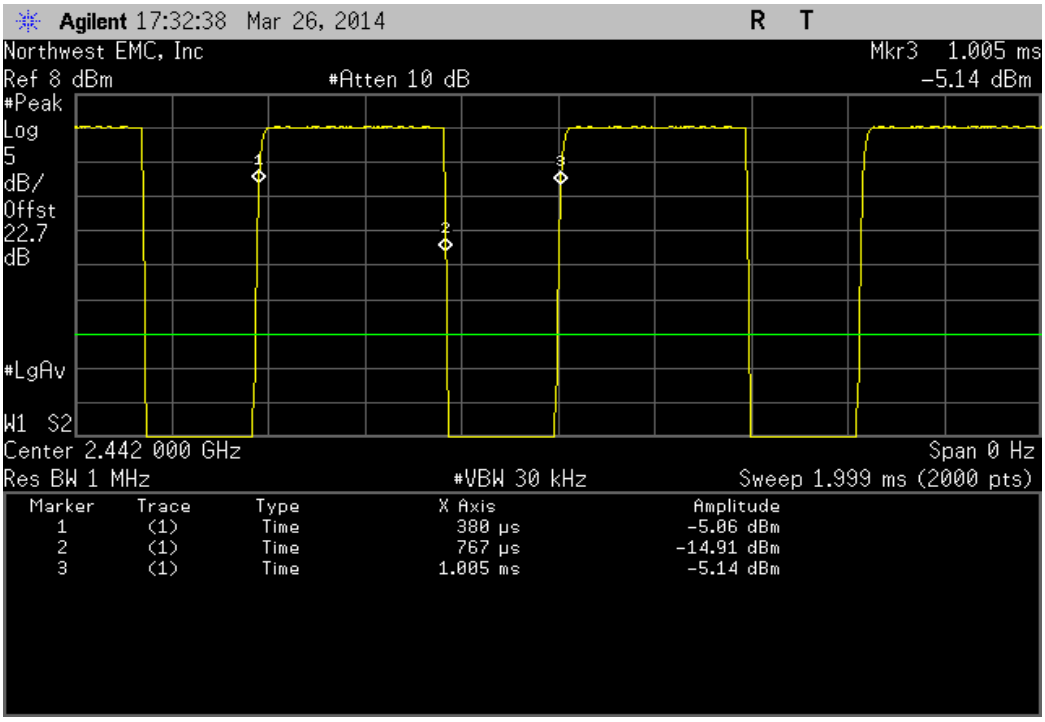
BLE - Data, Low Channel, 2404 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
N/A	N/A	5	N/A	N/A	N/A

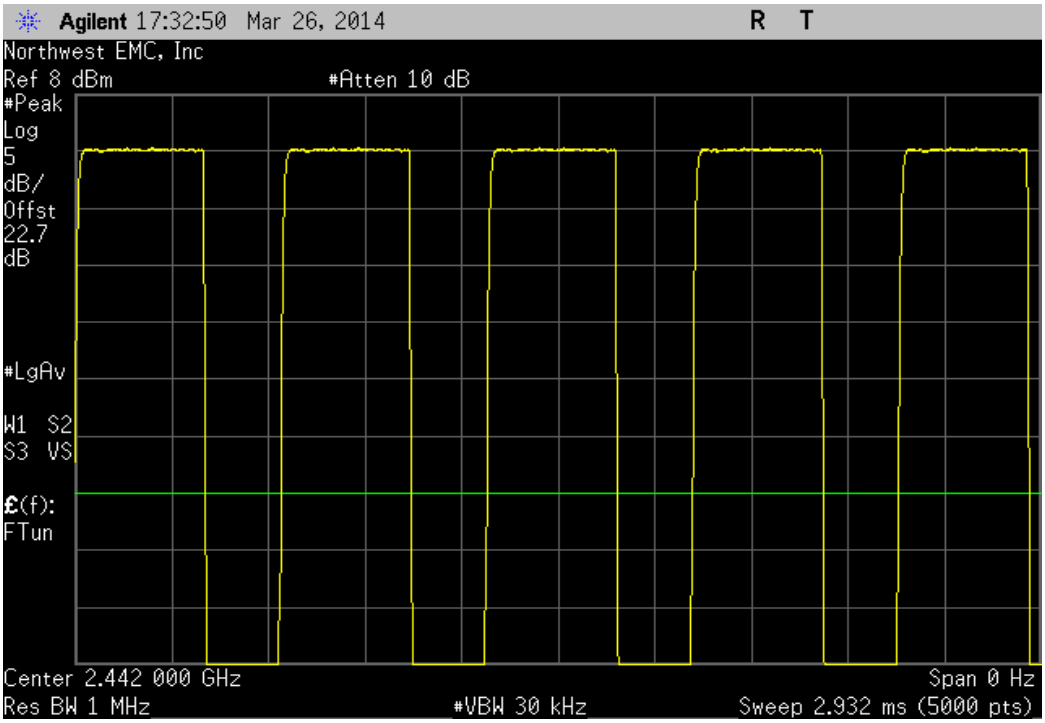


DUTY CYCLE

BLE - Data, Mid Channel, 2442 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	387 uS	625 uS	1	61.9	N/A	N/A



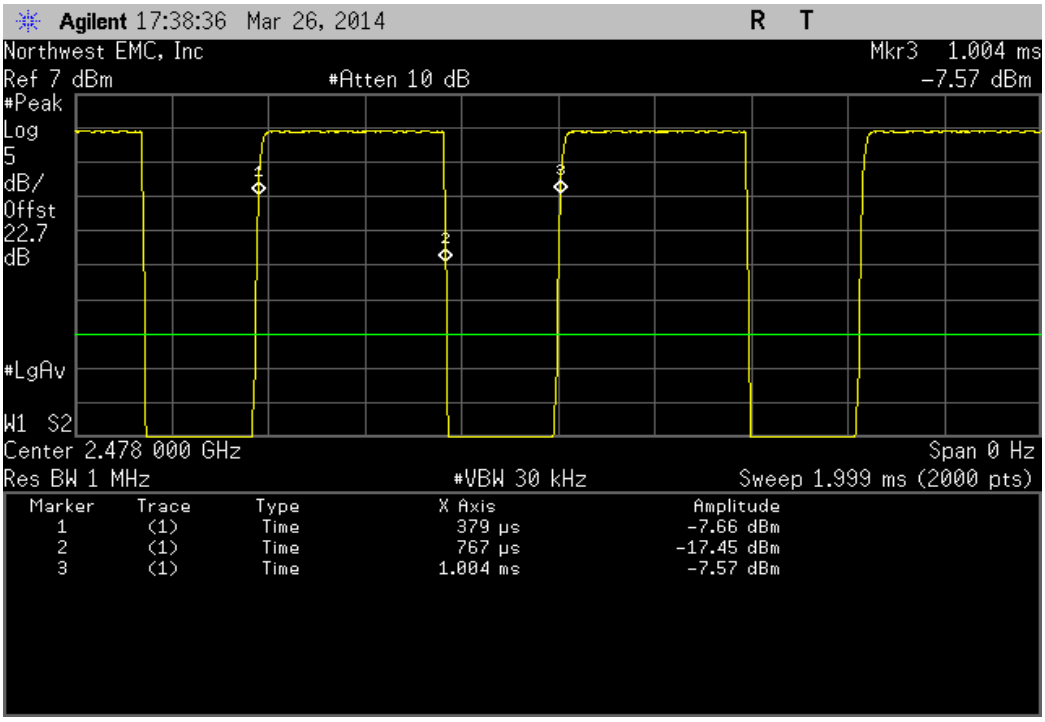
BLE - Data, Mid Channel, 2442 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



DUTY CYCLE

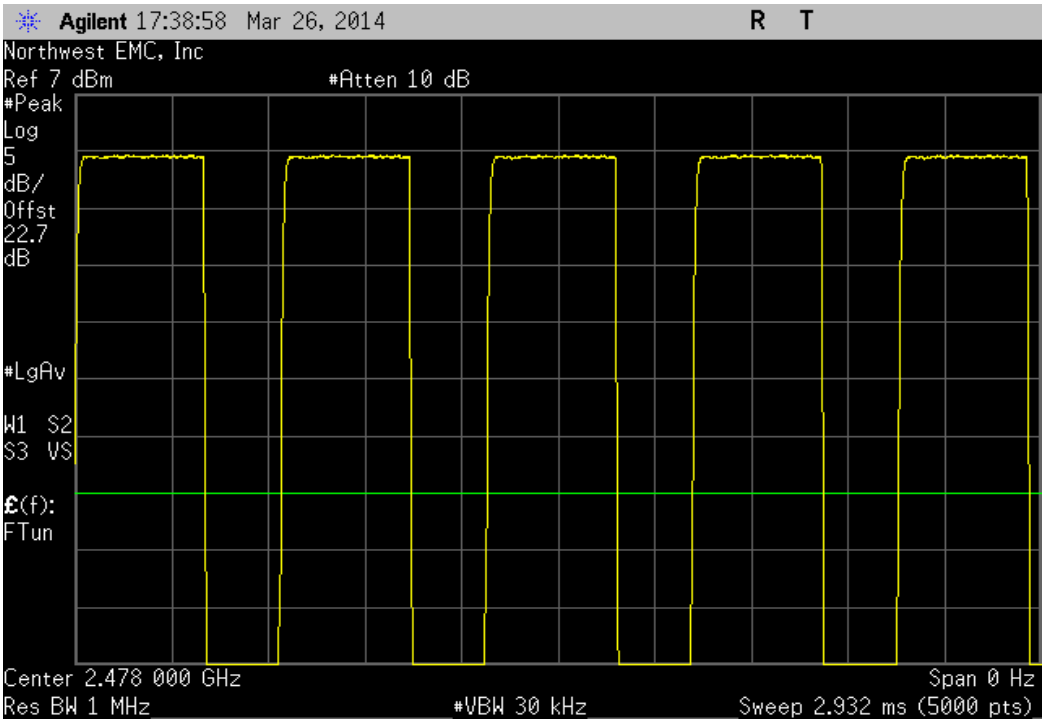
BLE - Data, High Channel, 2478 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	388 uS	625 uS	1	62.1	N/A	N/A



BLE - Data, High Channel, 2478 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



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
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
RF Vector Signal Generator	Agilent	V2920A	TIH	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Spectrum Analyzer	Agilent	E4440	AFE	11/4/2013	24

TEST DESCRIPTION

The 6dB occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.9% (approximate 26 dB) emission bandwidth (EBW) was also measured at the same time.

The EUT was 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 the data rate(s) listed in the datasheet.

OCCUPIED BANDWIDTH

EUT:	GQ110			**Work Order:**	INTE5431
Serial Number:	EZF83450005Z			**Date:**	03/26/14
Customer:	Intel Corporation			**Temperature:**	21.7°C
Attendees:	None			**Humidity:**	39%
Project:	GQ110			**Barometric Pres.:**	1001.8
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Mode of operation tested were client provided.

DEVIATIONS FROM TEST STANDARD

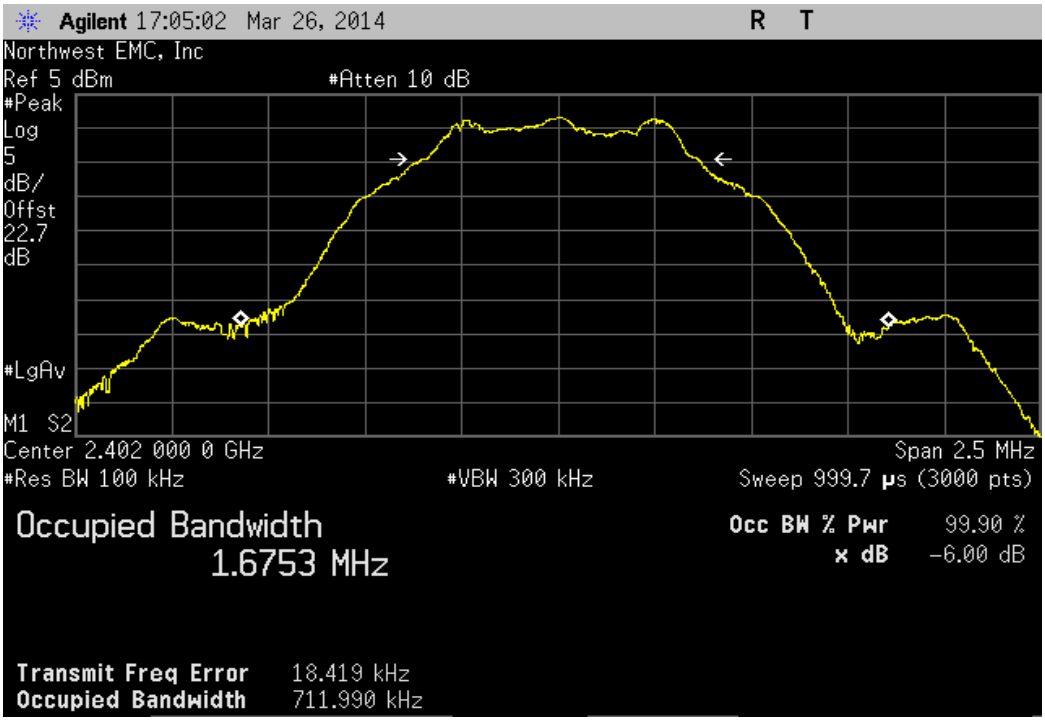
None

Configuration #	1	Signature

		Value	Limit	Result
BLE - Advertising				
	Low Channel, 2402 MHz	711.99 kHz	≥ 500 kHz	Pass
	Mid Channel, 2426 MHz	711.013 kHz	≥ 500 kHz	Pass
	High Channel, 2480 MHz	711.344 kHz	≥ 500 kHz	Pass
BLE - Data				
	Low Channel, 2404 MHz	709.976 kHz	≥ 500 kHz	Pass
	Mid Channel, 2442 MHz	707.478 kHz	≥ 500 kHz	Pass
	High Channel, 2478 MHz	717.18 kHz	≥ 500 kHz	Pass

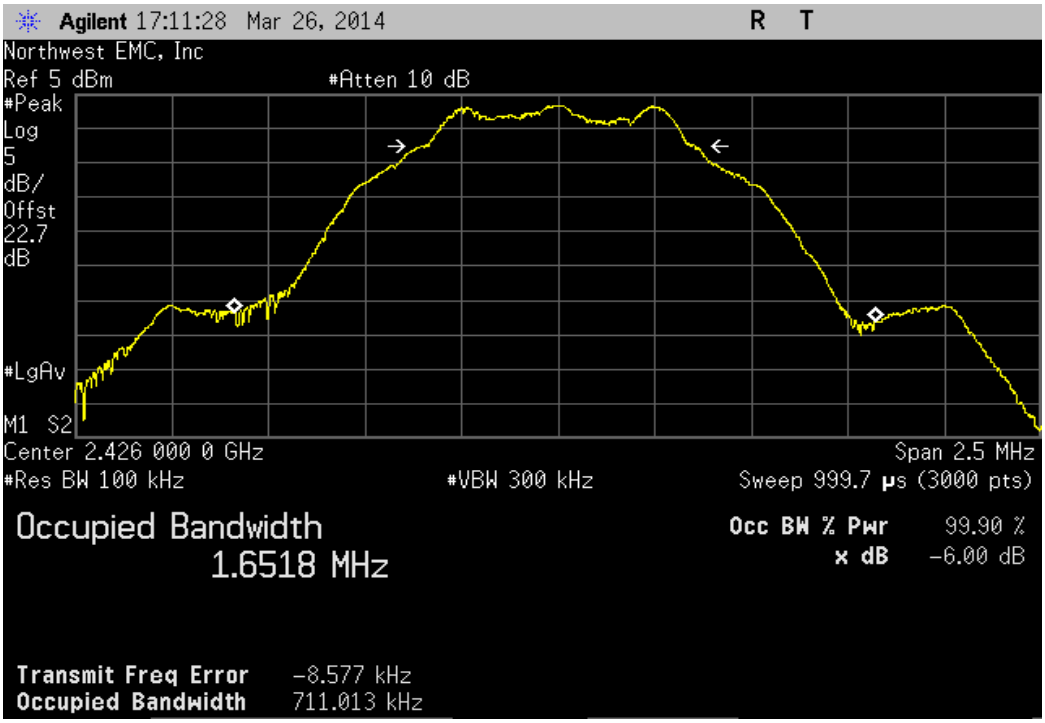
BLE - Advertising, Low Channel, 2402 MHz

				Value	Limit	Result
				711.99 kHz	≥ 500 kHz	Pass



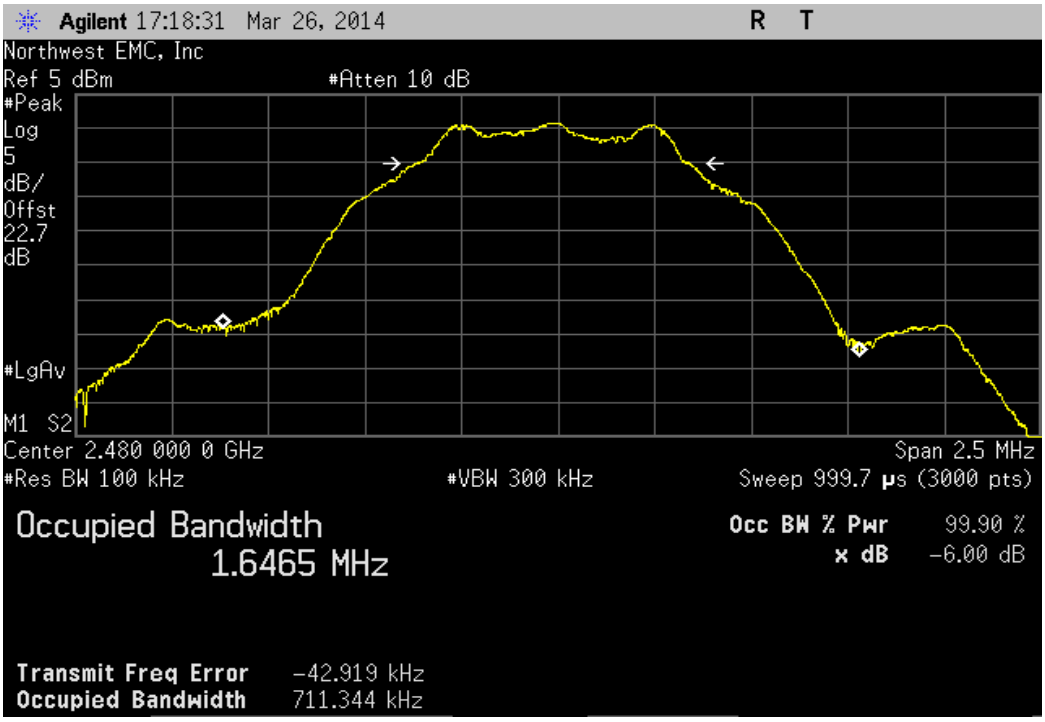
BLE - Advertising, Mid Channel, 2426 MHz

				Value	Limit	Result
				711.013 kHz	≥ 500 kHz	Pass



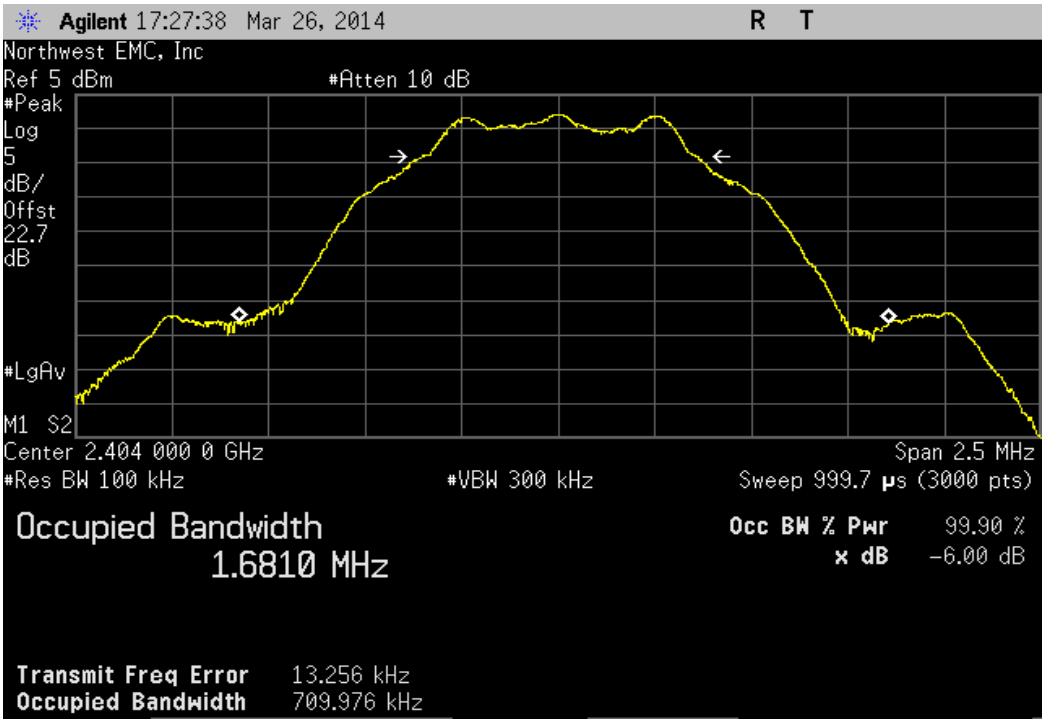
BLE - Advertising, High Channel, 2480 MHz

				Value	Limit	Result
				711.344 kHz	≥ 500 kHz	Pass



BLE - Data, Low Channel, 2404 MHz

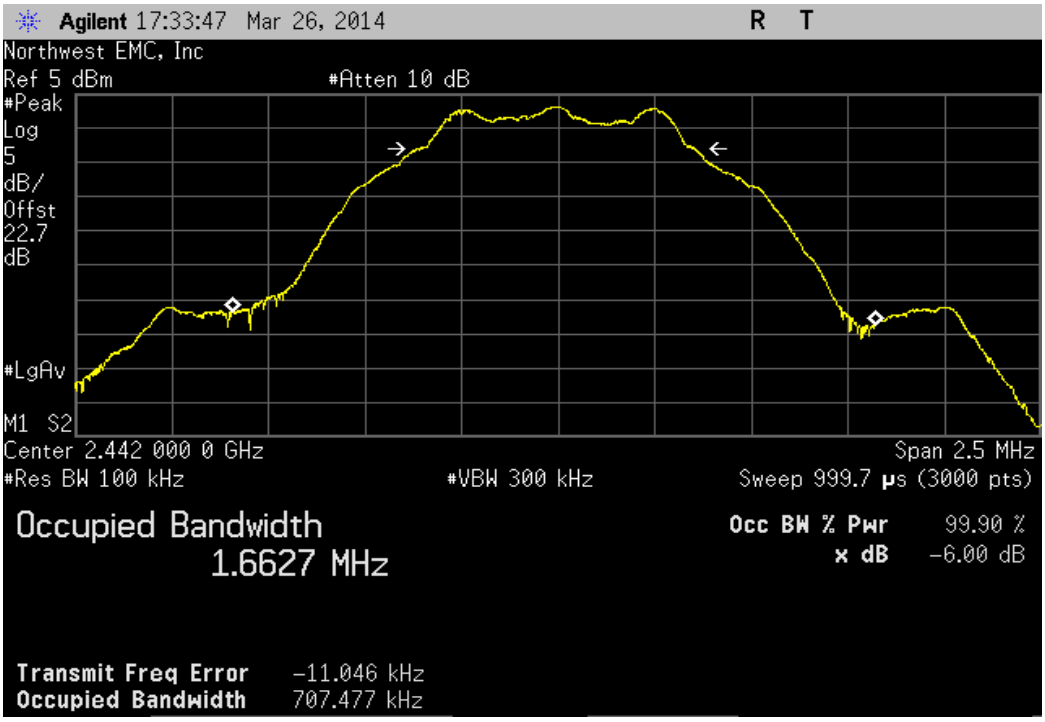
				Value	Limit	Result
				709.976 kHz	≥ 500 kHz	Pass



OCCUPIED BANDWIDTH

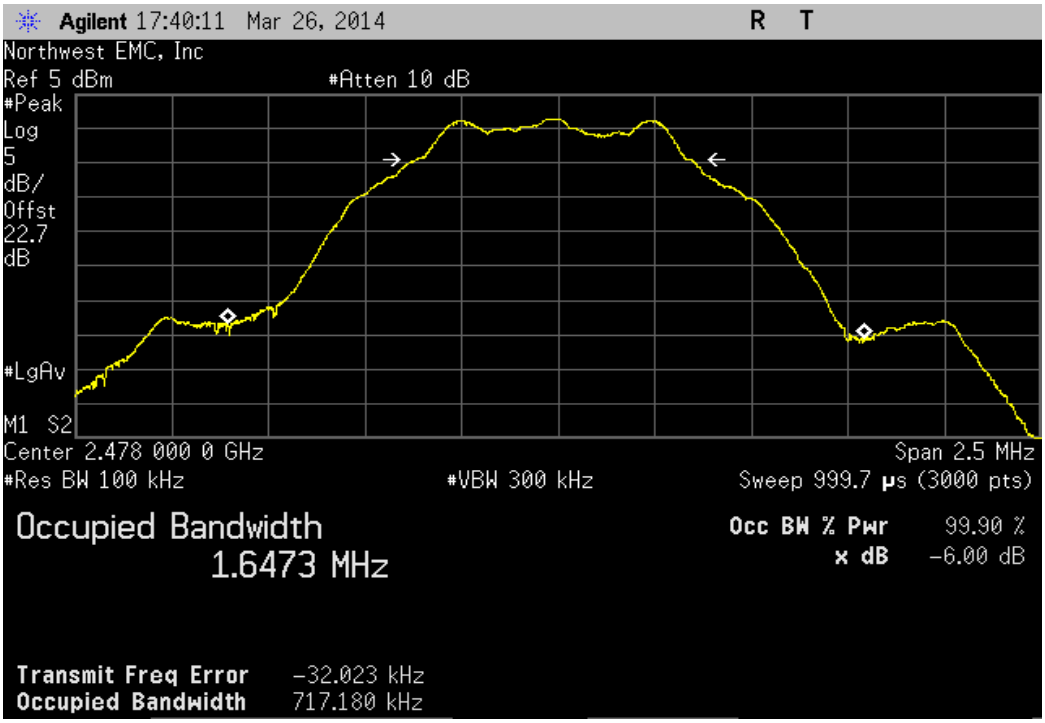
BLE - Data, Mid Channel, 2442 MHz

				Value	Limit	Result
				707.478 kHz	≥ 500 kHz	Pass



BLE - Data, High Channel, 2478 MHz

				Value	Limit	Result
				717.18 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
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
RF Vector Signal Generator	Agilent	V2920A	TIH	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Spectrum Analyzer	Agilent	E4440	AFE	11/4/2013	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.

Method Option 1 found in KDB 558074 DTS D01 Measurement Section 8.1.1 was used because the RBW on the analyzer was greater than the Emission 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:	GQ110			**Work Order:**	INTE5431
Serial Number:	EZF83450005Z			**Date:**	03/26/14
Customer:	Intel Corporation			**Temperature:**	21.7°C
Attendees:	None			**Humidity:**	39%
Project:	GQ110			**Barometric Pres.:**	1001.8
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Mode of operation tested were client provided.

DEVIATIONS FROM TEST STANDARD

None

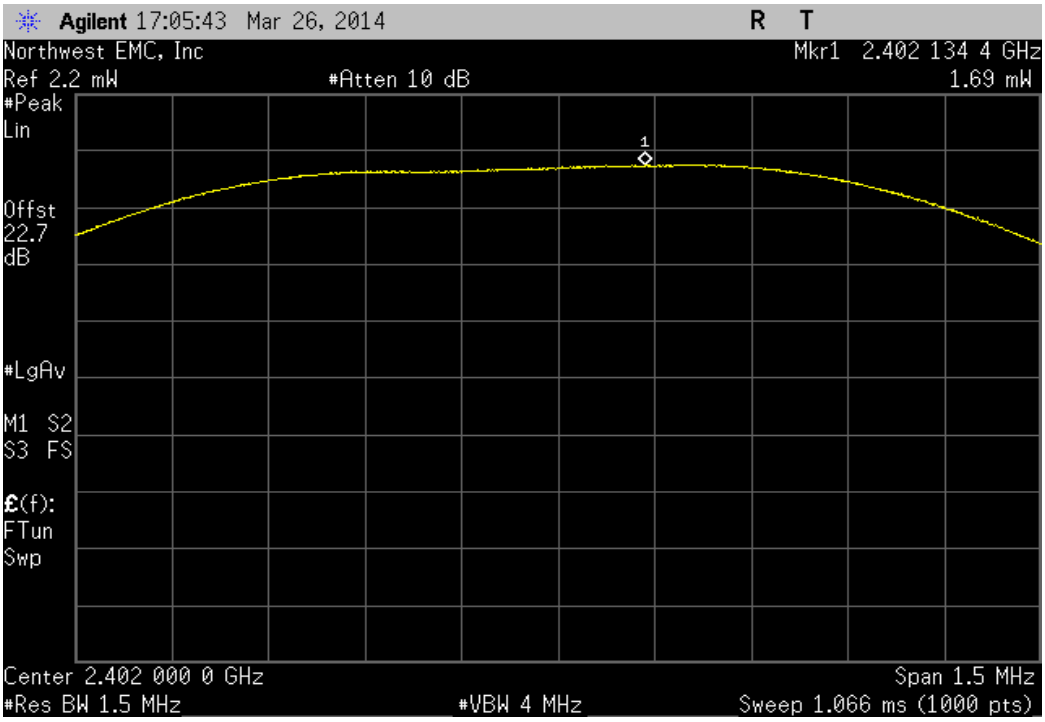
Configuration #	1	*Signature*

		Value	Limit	Result
BLE - Advertising				
	Low Channel, 2402 MHz	1.688 mW	< 1 W	Pass
	Mid Channel, 2426 MHz	2.567 mW	< 1 W	Pass
	High Channel, 2480 MHz	1.435 mW	< 1 W	Pass
BLE - Data				
	Low Channel, 2404 MHz	1.866 mW	< 1 W	Pass
	Mid Channel, 2442 MHz	2.385 mW	< 1 W	Pass
	High Channel, 2478 MHz	1.661 mW	< 1 W	Pass

OUTPUT POWER

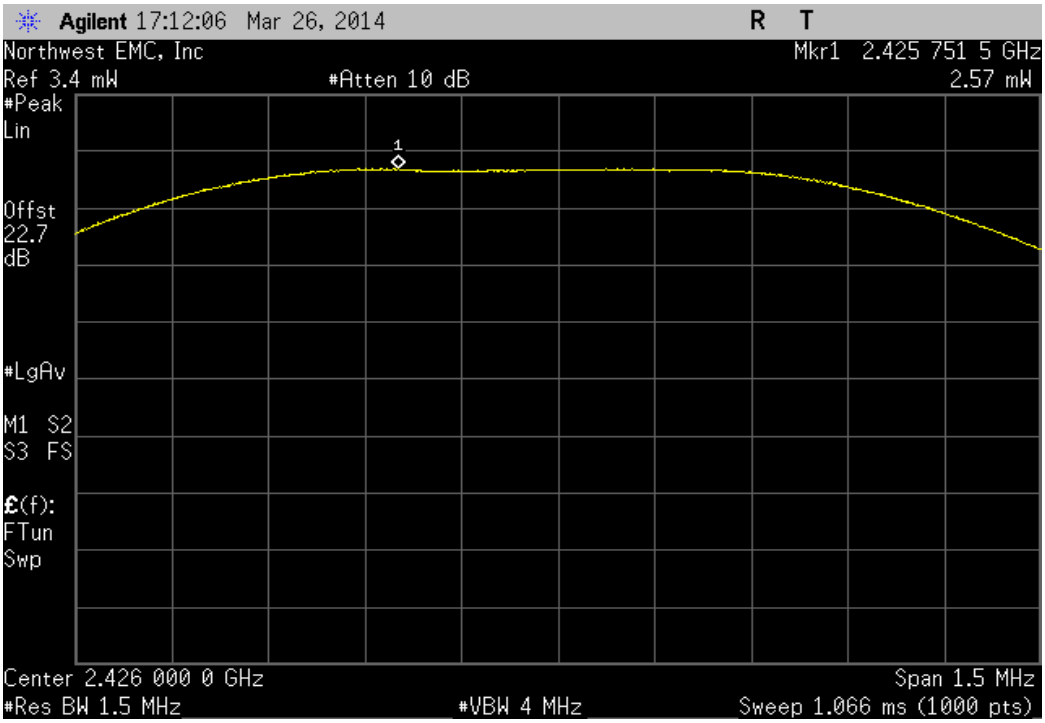
BLE - Advertising, Low Channel, 2402 MHz

Value	Limit	Result
1.688 mW	< 1 W	Pass



BLE - Advertising, Mid Channel, 2426 MHz

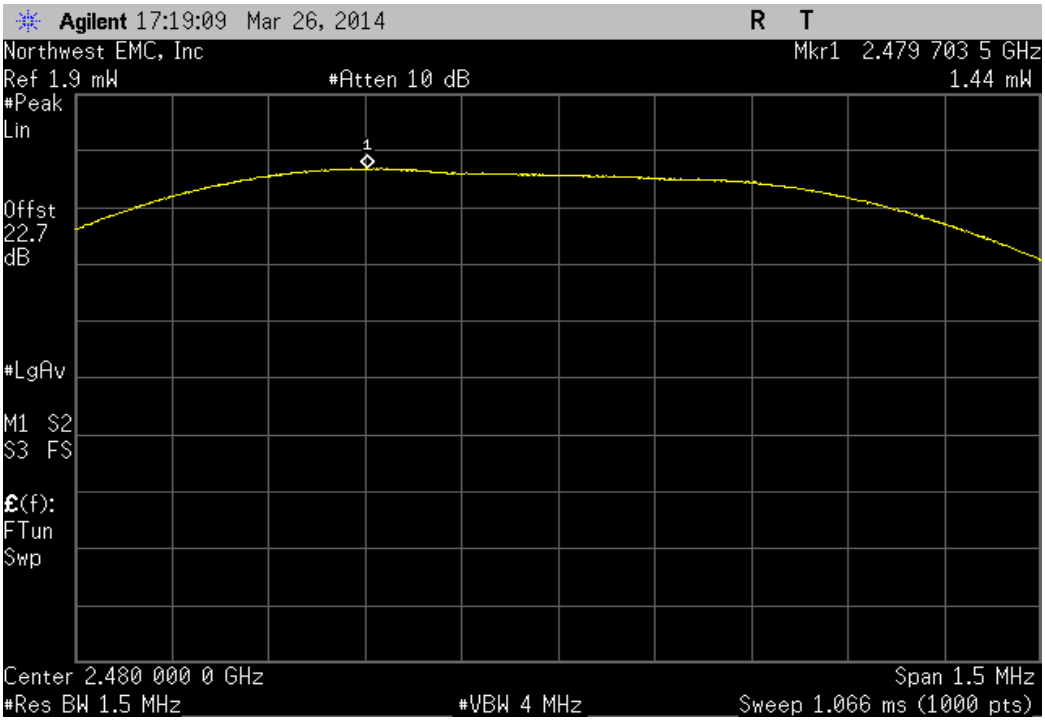
Value	Limit	Result
2.567 mW	< 1 W	Pass



OUTPUT POWER

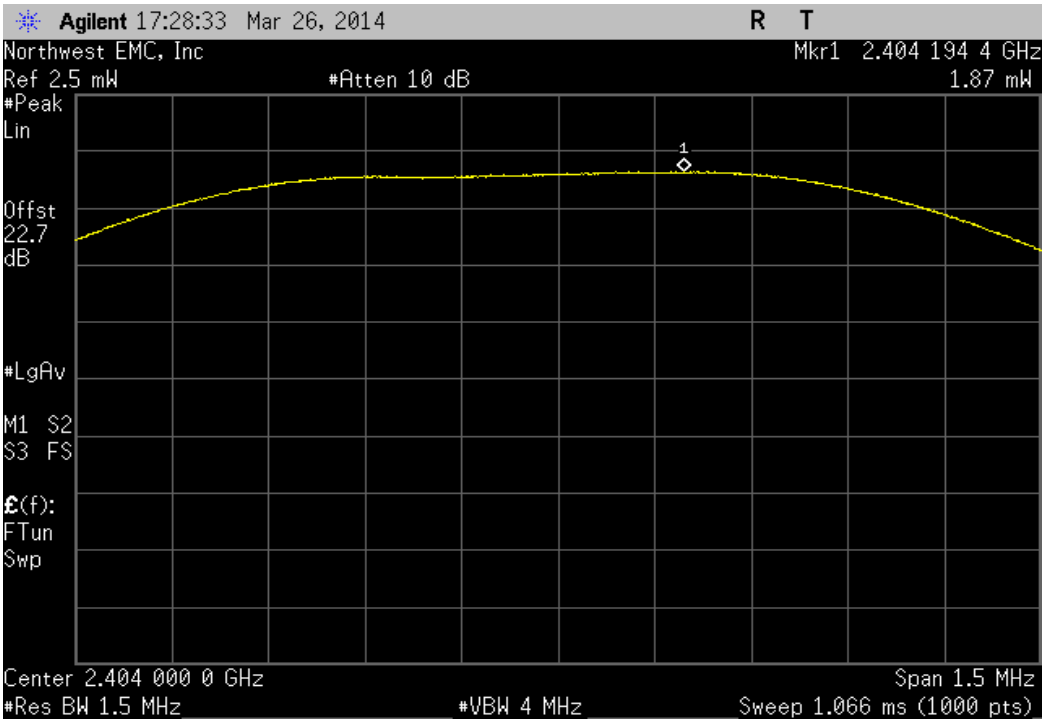
BLE - Advertising, High Channel, 2480 MHz

Value	Limit	Result
1.435 mW	< 1 W	Pass



BLE - Data, Low Channel, 2404 MHz

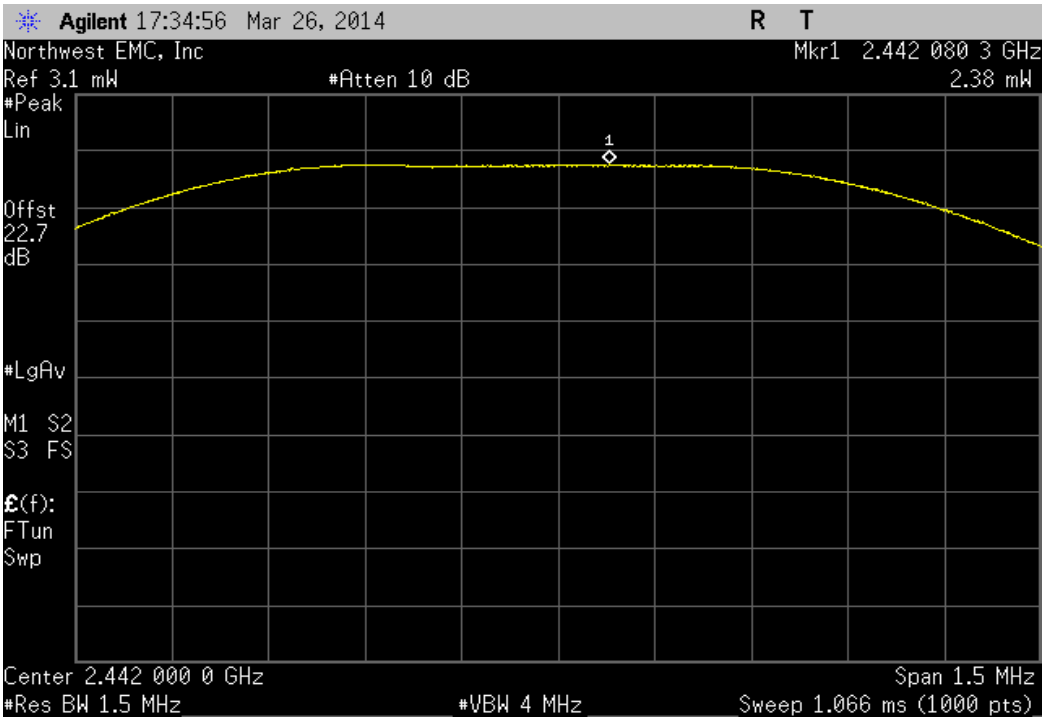
Value	Limit	Result
1.866 mW	< 1 W	Pass



OUTPUT POWER

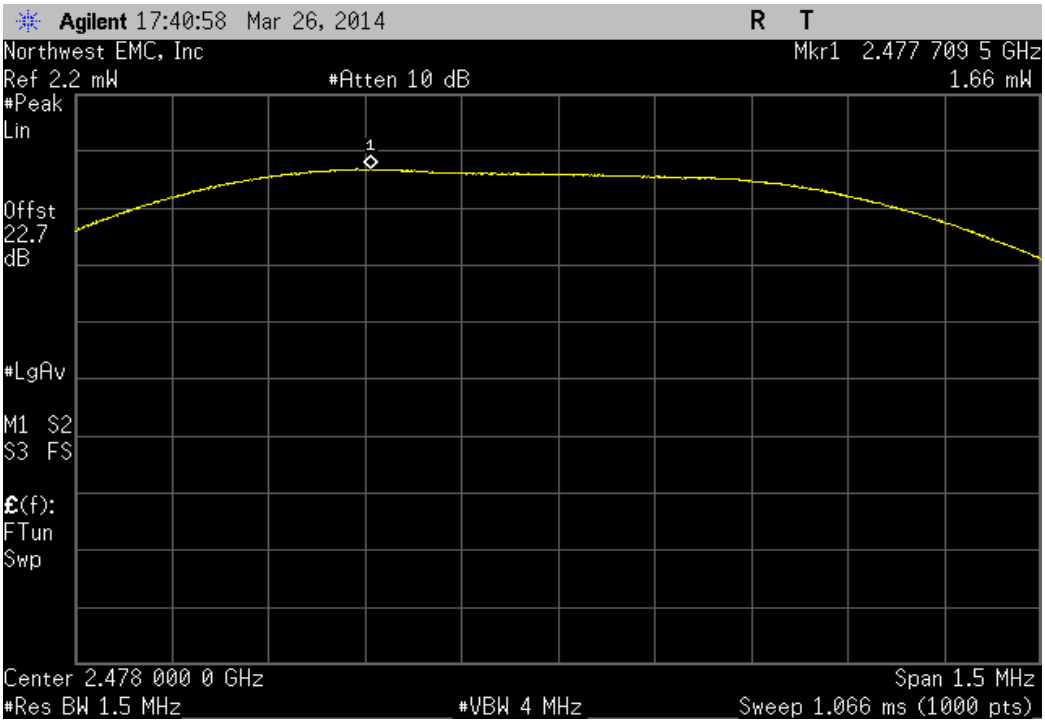
BLE - Data, Mid Channel, 2442 MHz

Value	Limit	Result
2.385 mW	< 1 W	Pass



BLE - Data, High Channel, 2478 MHz

Value	Limit	Result
1.661 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
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
RF Vector Signal Generator	Agilent	V2920A	TIH	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Spectrum Analyzer	Agilent	E4440	AFE	11/4/2013	24

TEST DESCRIPTION

The maximum power spectral density measurements were measured with the EUT set to the required transmit frequencies in each band. 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 lowest, middle, and maximum data rate for each modulation type available.

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement Section 5.3.1, the spectrum analyzer was used as follows:

- RBW = 100 kHz
- VBW = 300 kHz
- Detector = Peak (to match method used for power measurement)
- Trace = Max hold

The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

BWCF = 10*LOG (3 kHz / 100 kHz) = -15.2 dB

POWER SPECTRAL DENSITY

EUT:	GQ110			**Work Order:**	INTE5431
Serial Number:	EZF83450005Z			**Date:**	03/26/14
Customer:	Intel Corporation			**Temperature:**	21.7°C
Attendees:	None			**Humidity:**	39%
Project:	GQ110			**Barometric Pres.:**	1001.8
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Mode of operation tested were client provided.

DEVIATIONS FROM TEST STANDARD

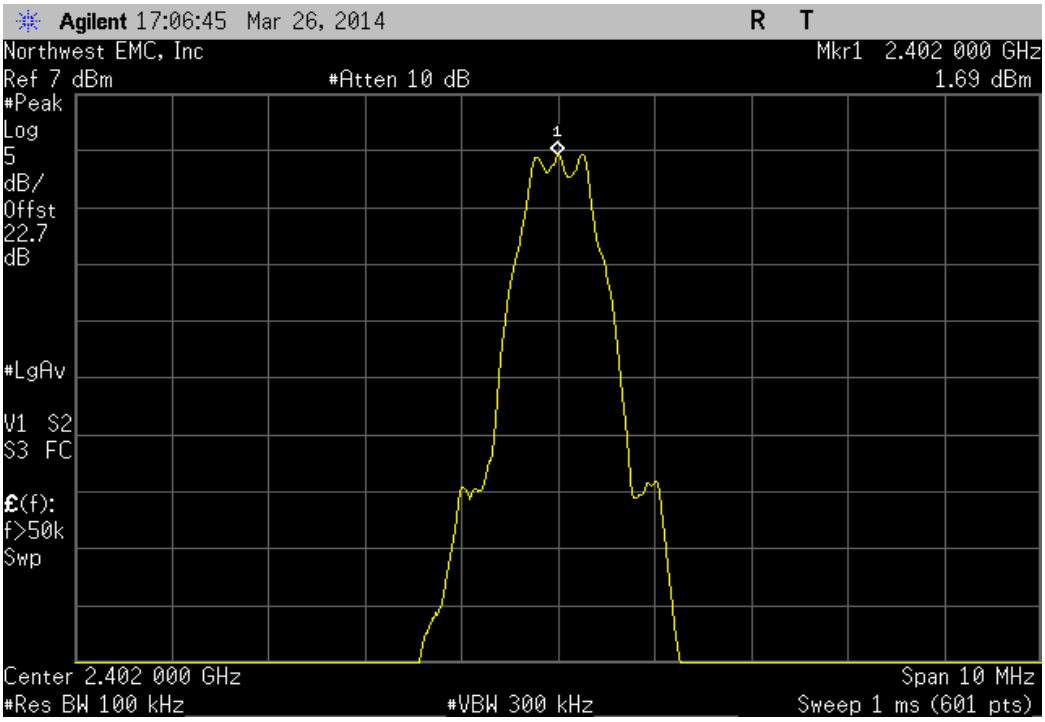
None

Configuration #	1	Signature

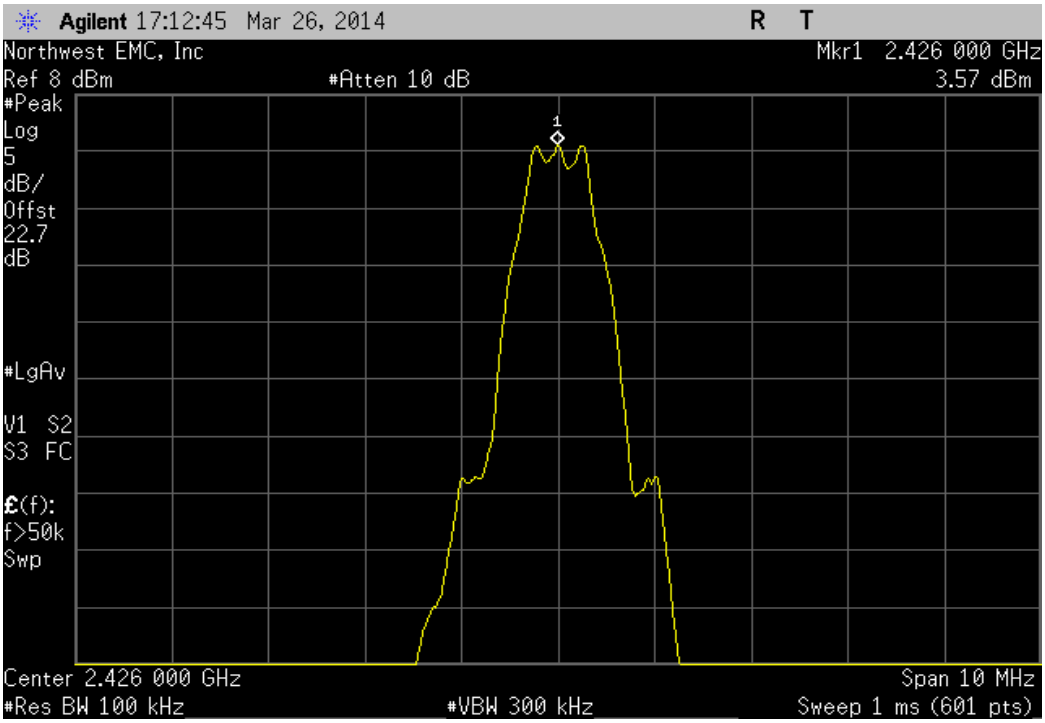
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
BLE - Advertising						
	Low Channel, 2402 MHz	1.693	-15.2	-13.507	8	Pass
	Mid Channel, 2426 MHz	3.572	-15.2	-11.628	8	Pass
	High Channel, 2480 MHz	0.979	-15.2	-14.221	8	Pass
BLE - Data						
	Low Channel, 2404 MHz	2.159	-15.2	-13.041	8	Pass
	Mid Channel, 2442 MHz	3.232	-15.2	-11.968	8	Pass
	High Channel, 2478 MHz	1.633	-15.2	-13.567	8	Pass

POWER SPECTRAL DENSITY

BLE - Advertising, Low Channel, 2402 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		1.693	-15.2	-13.507	8	Pass

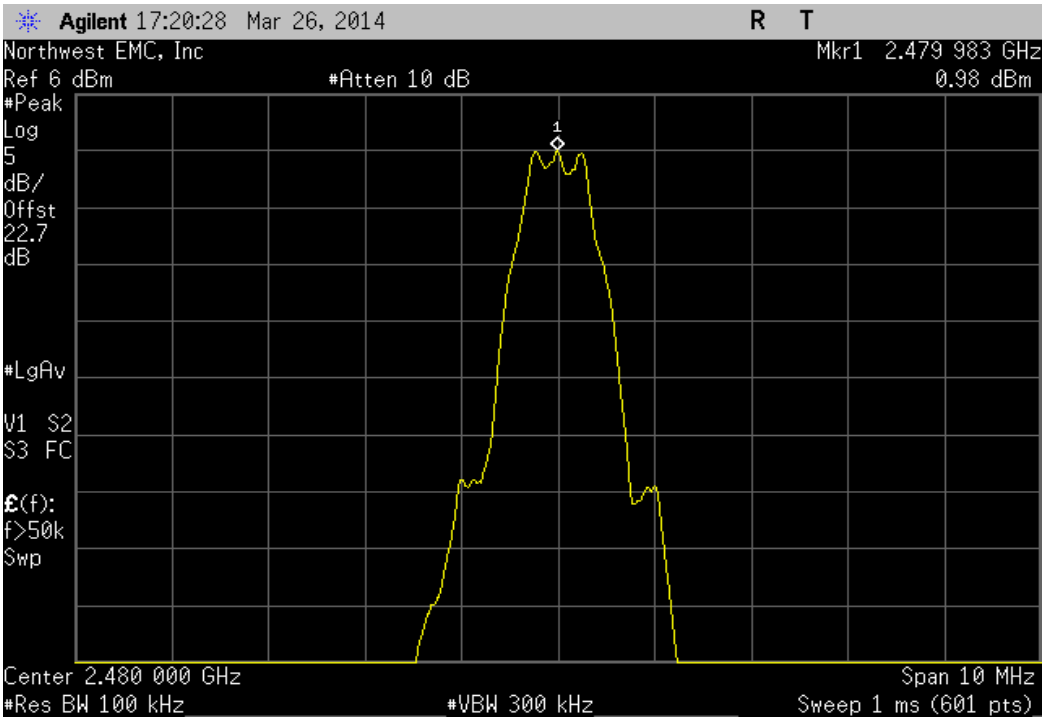


BLE - Advertising, Mid Channel, 2426 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		3.572	-15.2	-11.628	8	Pass

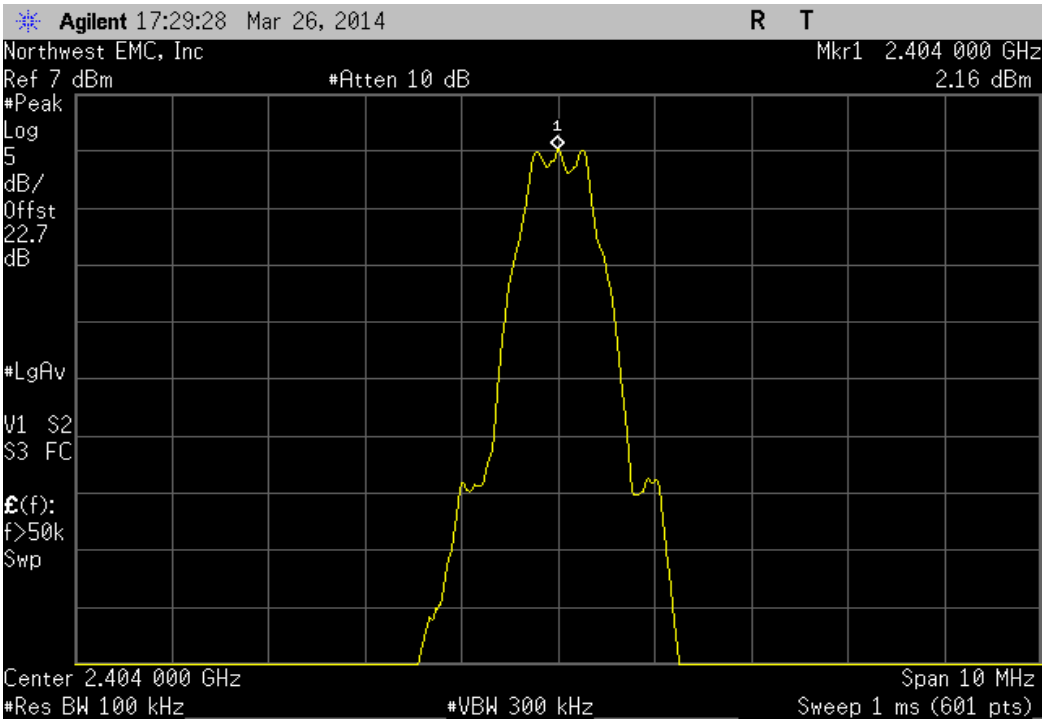


POWER SPECTRAL DENSITY

BLE - Advertising, High Channel, 2480 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.979	-15.2	-14.221	8	Pass

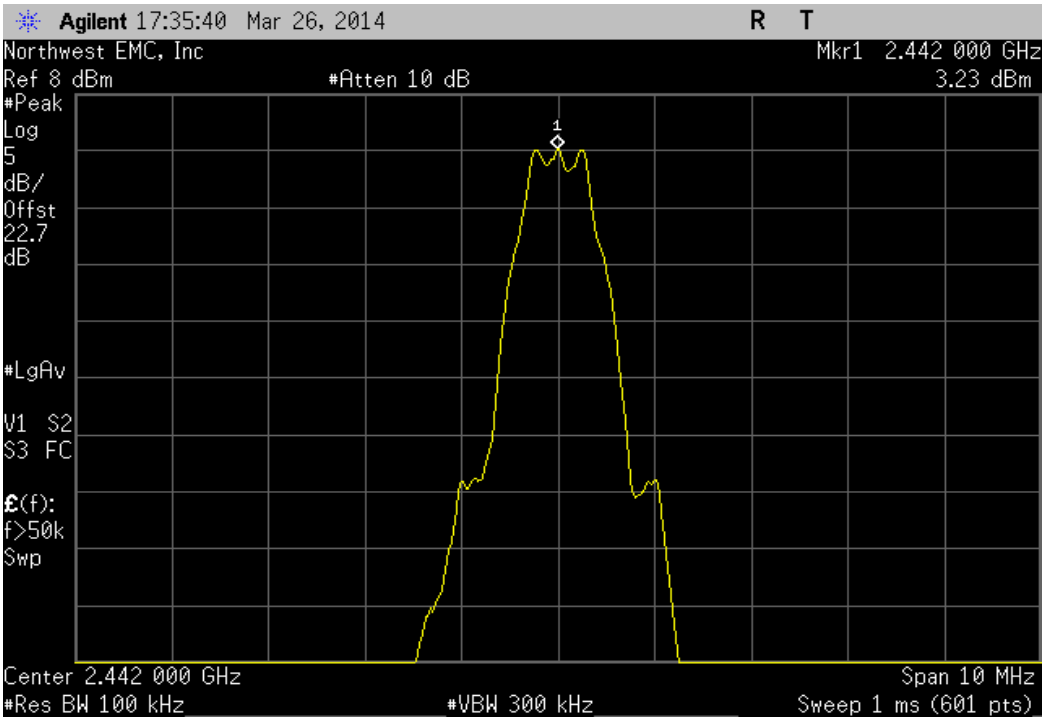


BLE - Data, Low Channel, 2404 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		2.159	-15.2	-13.041	8	Pass

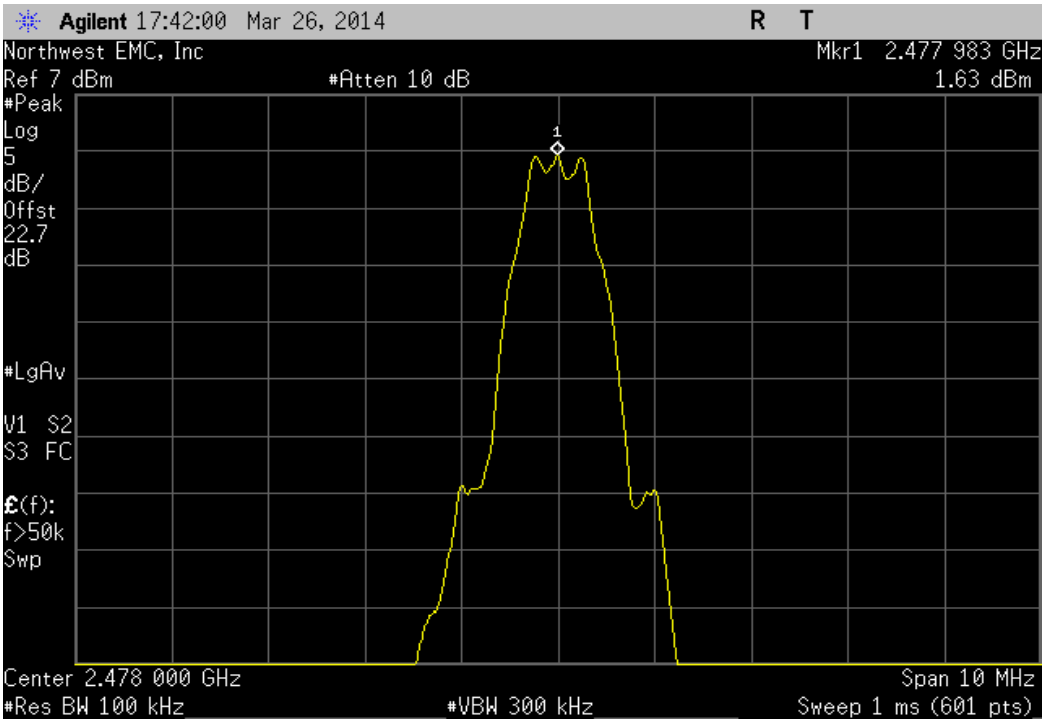


POWER SPECTRAL DENSITY

BLE - Data, Mid Channel, 2442 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		3.232	-15.2	-11.968	8	Pass



BLE - Data, High Channel, 2478 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		1.633	-15.2	-13.567	8	Pass



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
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
RF Vector Signal Generator	Agilent	V2920A	TIH	NCR	0
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Spectrum Analyzer	Agilent	E4440	AFE	11/4/2013	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:	GQ110			**Work Order:**	INTE5431
Serial Number:	EZF83450005Z			**Date:**	03/26/14
Customer:	Intel Corporation			**Temperature:**	21.7°C
Attendees:	None			**Humidity:**	39%
Project:	GQ110			**Barometric Pres.:**	1001.8
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Mode of operation tested were client provided.

DEVIATIONS FROM TEST STANDARD

None

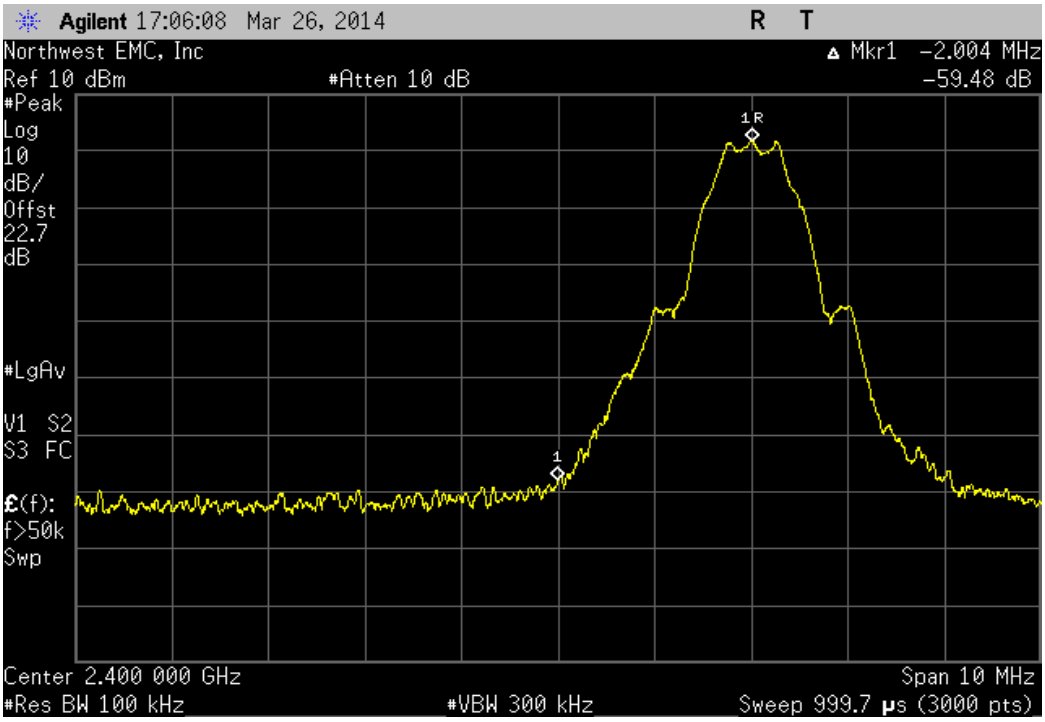
Configuration #	1	Signature

		Value	Limit	Result
BLE - Advertising				
	Low Channel, 2402 MHz	-59.48 dBc	≤ -20 dBc	Pass
	High Channel, 2480 MHz	-59.84 dBc	≤ -20 dBc	Pass
BLE - Data				
	Low Channel, 2404 MHz	-61.58 dBc	≤ -20 dBc	Pass
	High Channel, 2478 MHz	-60.06 dBc	≤ -20 dBc	Pass

BAND EDGE COMPLIANCE

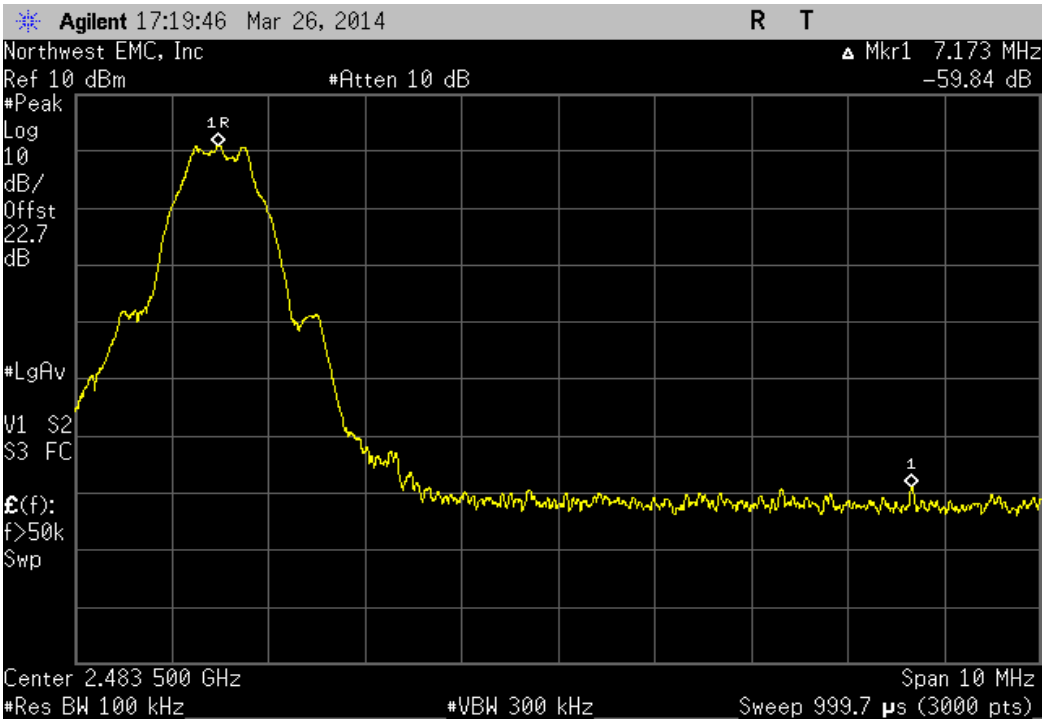
BLE - Advertising, Low Channel, 2402 MHz

				Value	Limit	Result
				-59.48 dBc	≤ -20 dBc	Pass



BLE - Advertising, High Channel, 2480 MHz

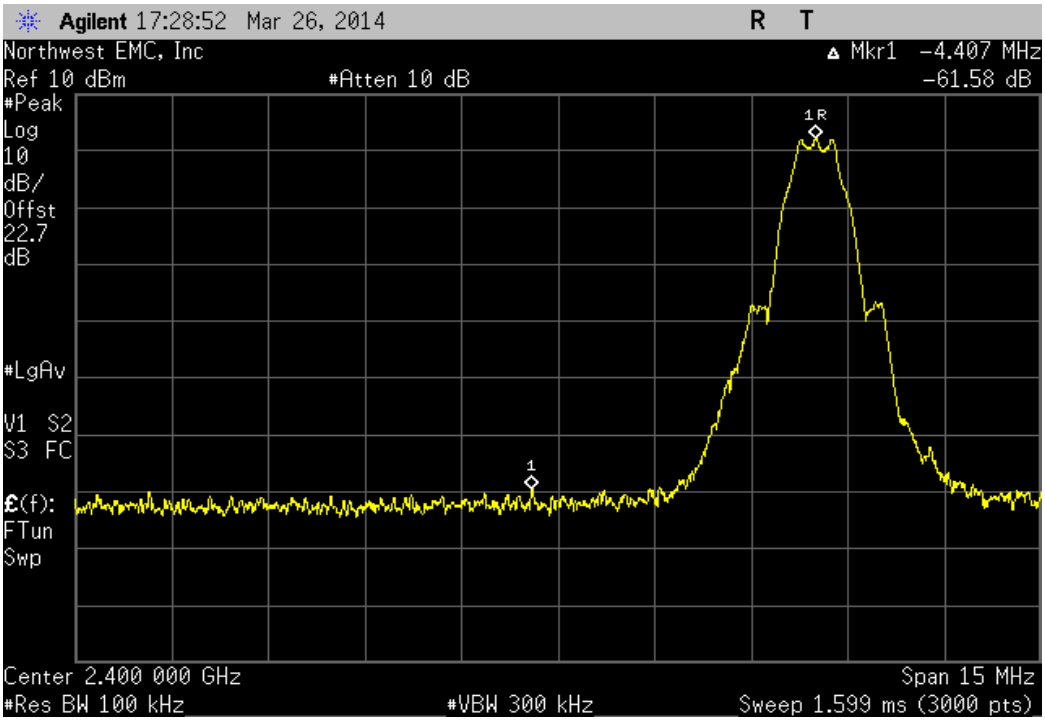
				Value	Limit	Result
				-59.84 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

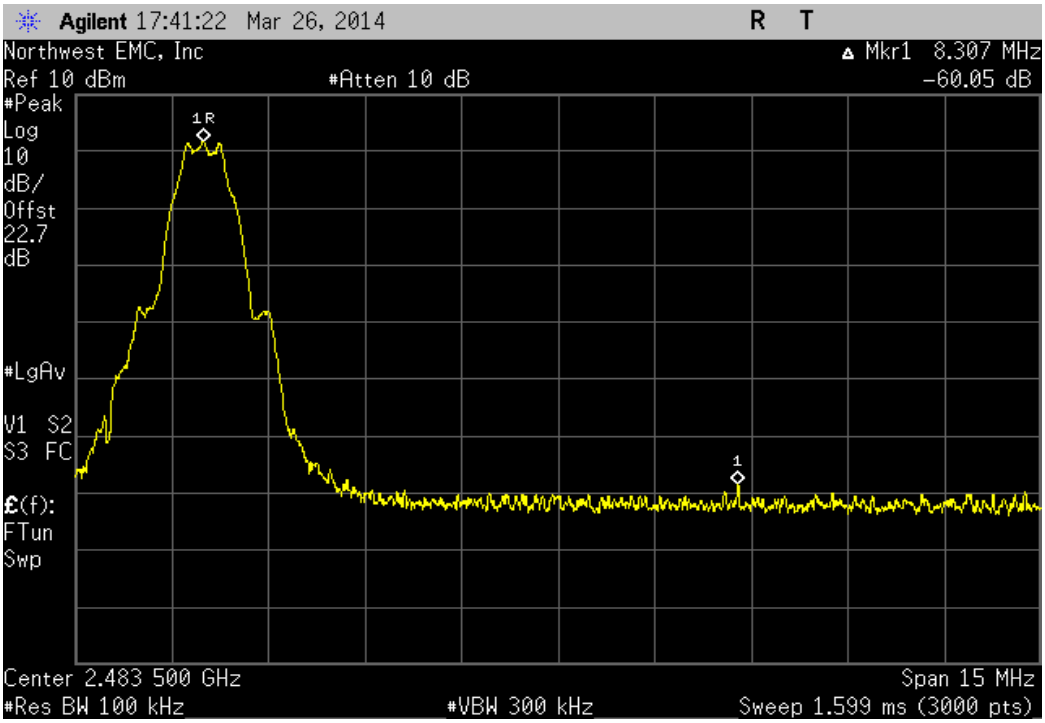
BLE - Data, Low Channel, 2404 MHz

				Value	Limit	Result
				-61.58 dBc	≤ -20 dBc	Pass



BLE - Data, High Channel, 2478 MHz

				Value	Limit	Result
				-60.06 dBc	≤ -20 dBc	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
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
RF Vector Signal Generator	Agilent	V2920A	TIH	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Spectrum Analyzer	Agilent	E4440	AFE	11/4/2013	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:	GQ110			**Work Order:**	INTE5431
Serial Number:	EZF83450005Z			**Date:**	03/26/14
Customer:	Intel Corporation			**Temperature:**	21.7°C
Attendees:	None			**Humidity:**	39%
Project:	GQ110			**Barometric Pres.:**	1001.8
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Mode of operation tested were client provided.

DEVIATIONS FROM TEST STANDARD

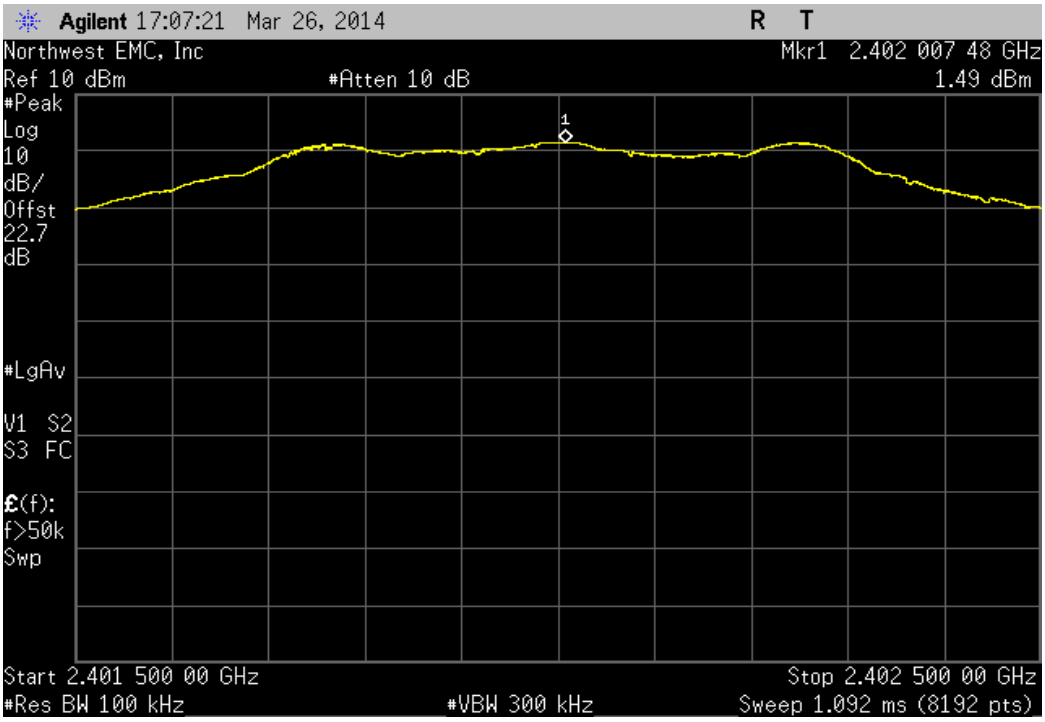
None

Configuration #	1	Signature

		Frequency Range	Value	Limit	Result
BLE - Advertising					
	Low Channel, 2402 MHz	Fundamental	N/A	N/A	N/A
	Low Channel, 2402 MHz	30 MHz - 12.5 GHz	-55.26 dBc	≤ -20 dBc	Pass
	Low Channel, 2402 MHz	12.5 GHz - 25 GHz	-53.39 dBc	≤ -20 dBc	Pass
	Mid Channel, 2426 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel, 2426 MHz	30 MHz - 12.5 GHz	-58.64 dBc	≤ -20 dBc	Pass
	Mid Channel, 2426 MHz	12.5 GHz - 25 GHz	-55.63 dBc	≤ -20 dBc	Pass
	High Channel, 2480 MHz	Fundamental	N/A	N/A	N/A
	High Channel, 2480 MHz	30 MHz - 12.5 GHz	-55.78 dBc	≤ -20 dBc	Pass
	High Channel, 2480 MHz	12.5 GHz - 25 GHz	-53.07 dBc	≤ -20 dBc	Pass
BLE - Data					
	Low Channel, 2404 MHz	Fundamental	N/A	N/A	N/A
	Low Channel, 2404 MHz	30 MHz - 12.5 GHz	-57.12 dBc	≤ -20 dBc	Pass
	Low Channel, 2404 MHz	12.5 GHz - 25 GHz	-54.23 dBc	≤ -20 dBc	Pass
	Mid Channel, 2442 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel, 2442 MHz	30 MHz - 12.5 GHz	-57.77 dBc	≤ -20 dBc	Pass
	Mid Channel, 2442 MHz	12.5 GHz - 25 GHz	-54.74 dBc	≤ -20 dBc	Pass
	High Channel, 2478 MHz	Fundamental	N/A	N/A	N/A
	High Channel, 2478 MHz	30 MHz - 12.5 GHz	-56.82 dBc	≤ -20 dBc	Pass
	High Channel, 2478 MHz	12.5 GHz - 25 GHz	-53.96 dBc	≤ -20 dBc	Pass

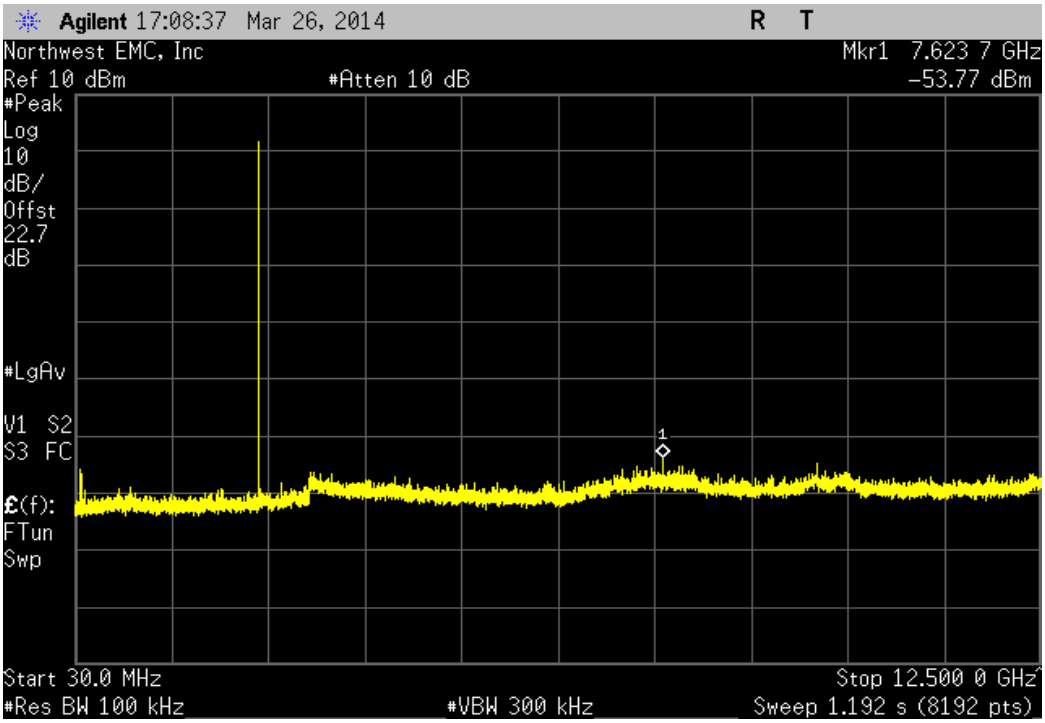
BLE - Advertising, Low Channel, 2402 MHz

Frequency Range			Value	Limit	Result
Fundamental			N/A	N/A	N/A

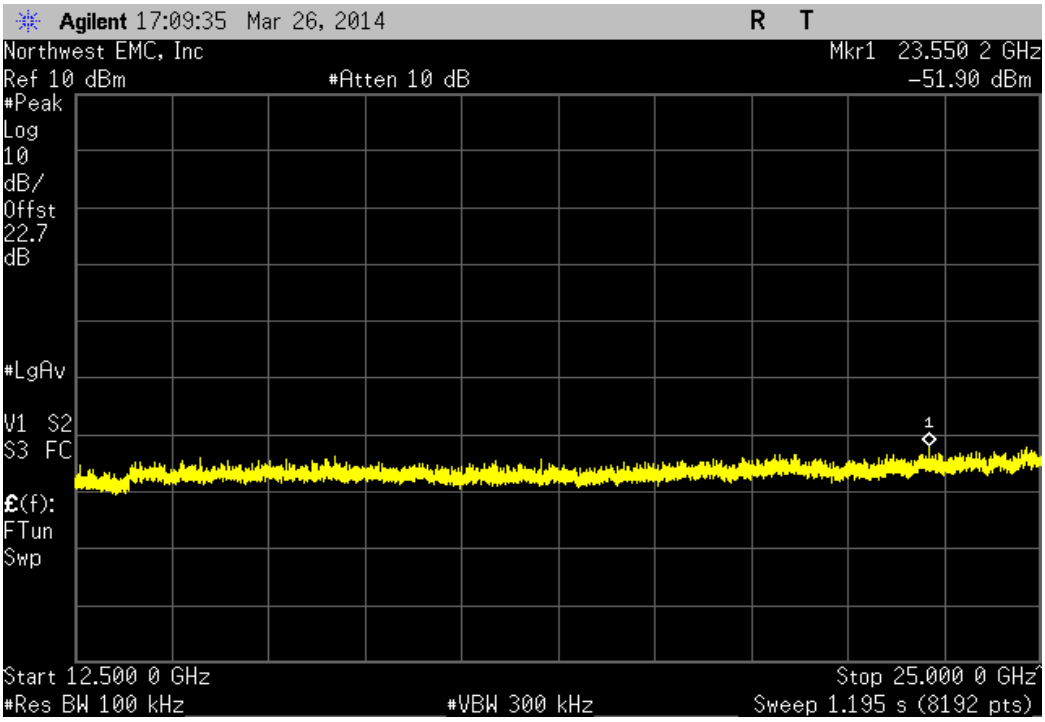


BLE - Advertising, Low Channel, 2402 MHz

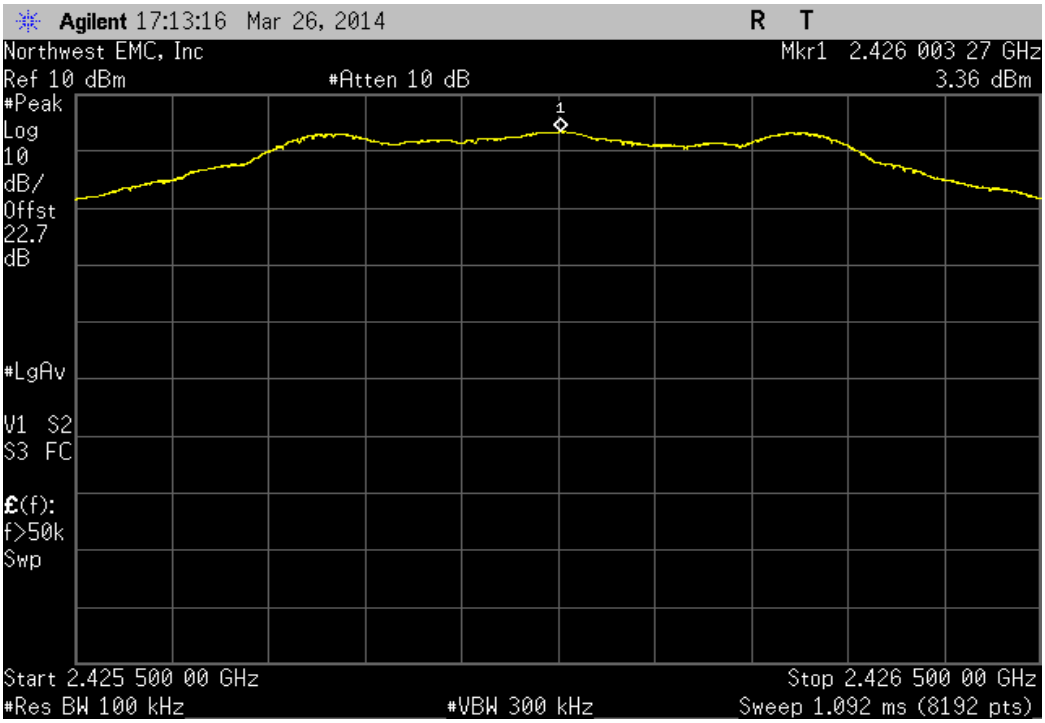
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-55.26 dBc	≤ -20 dBc	Pass



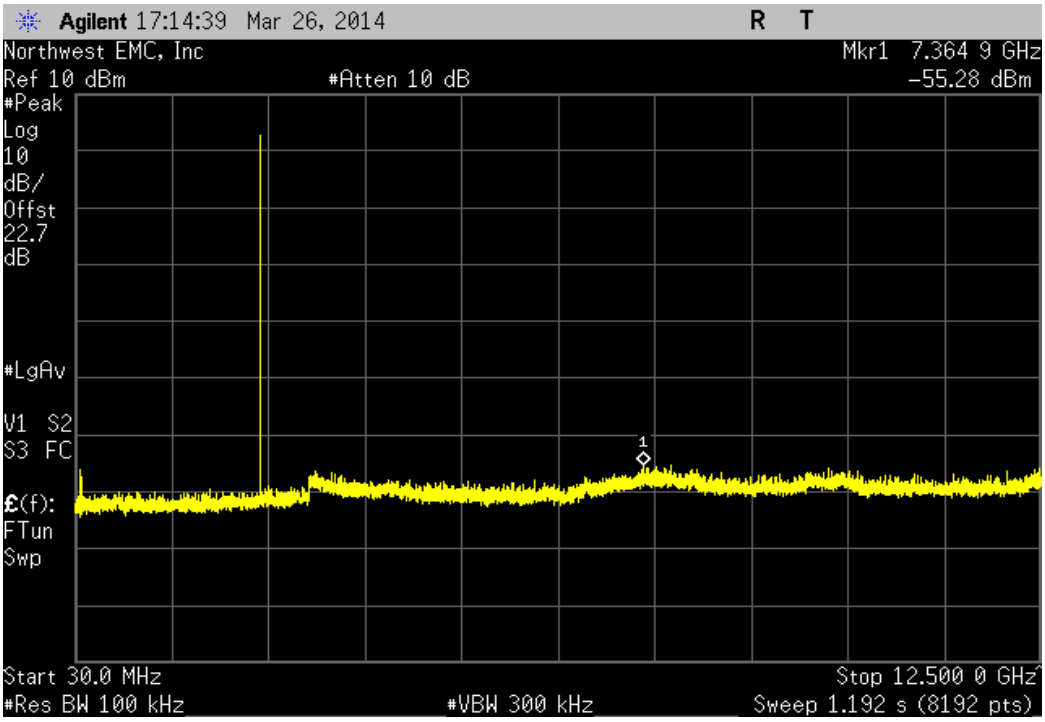
BLE - Advertising, Low Channel, 2402 MHz				
Frequency Range		**Value**	**Limit**	**Result**
12.5 GHz - 25 GHz		-53.39 dBc	≤ -20 dBc	Pass



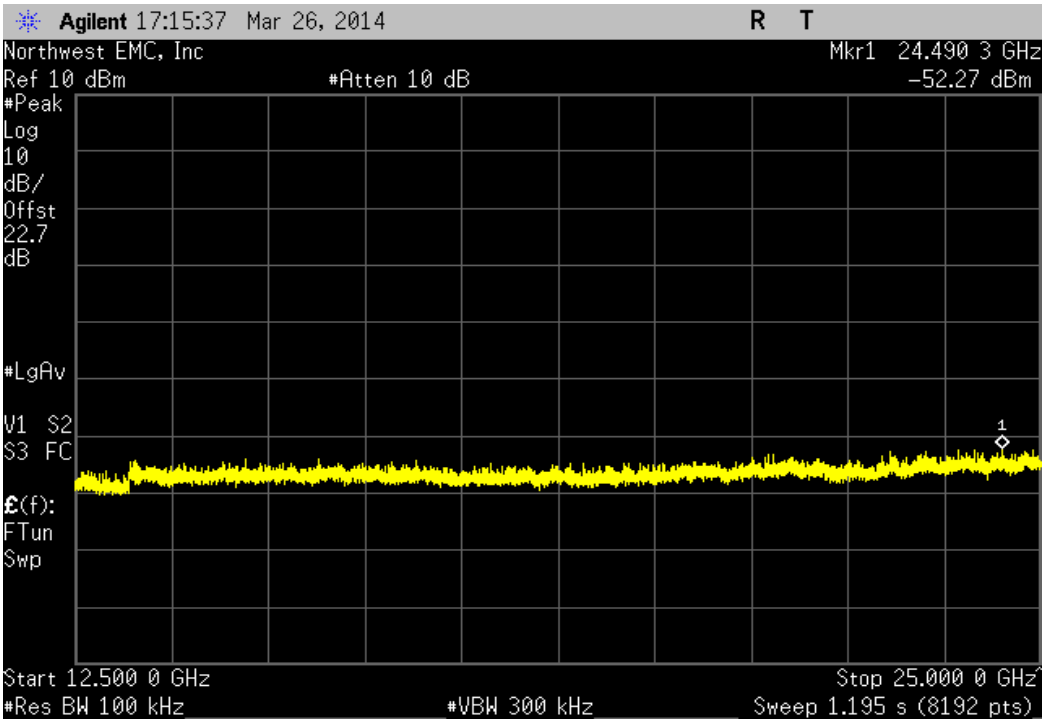
BLE - Advertising, Mid Channel, 2426 MHz						
	Frequency Range			**Value**	**Limit**	**Result**
	Fundamental			N/A	N/A	N/A



BLE - Advertising, Mid Channel, 2426 MHz				
Frequency Range		**Value**	**Limit**	**Result**
30 MHz - 12.5 GHz		-58.64 dBc	≤ -20 dBc	Pass

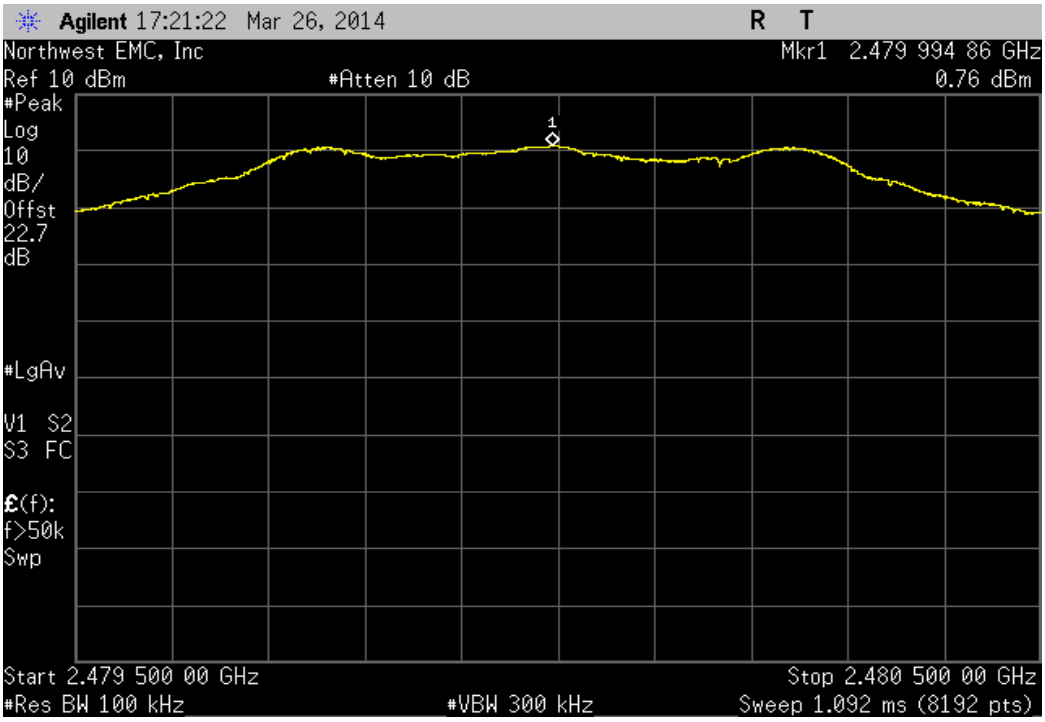


BLE - Advertising, Mid Channel, 2426 MHz				
Frequency Range		**Value**	**Limit**	**Result**
12.5 GHz - 25 GHz		-55.63 dBc	≤ -20 dBc	Pass



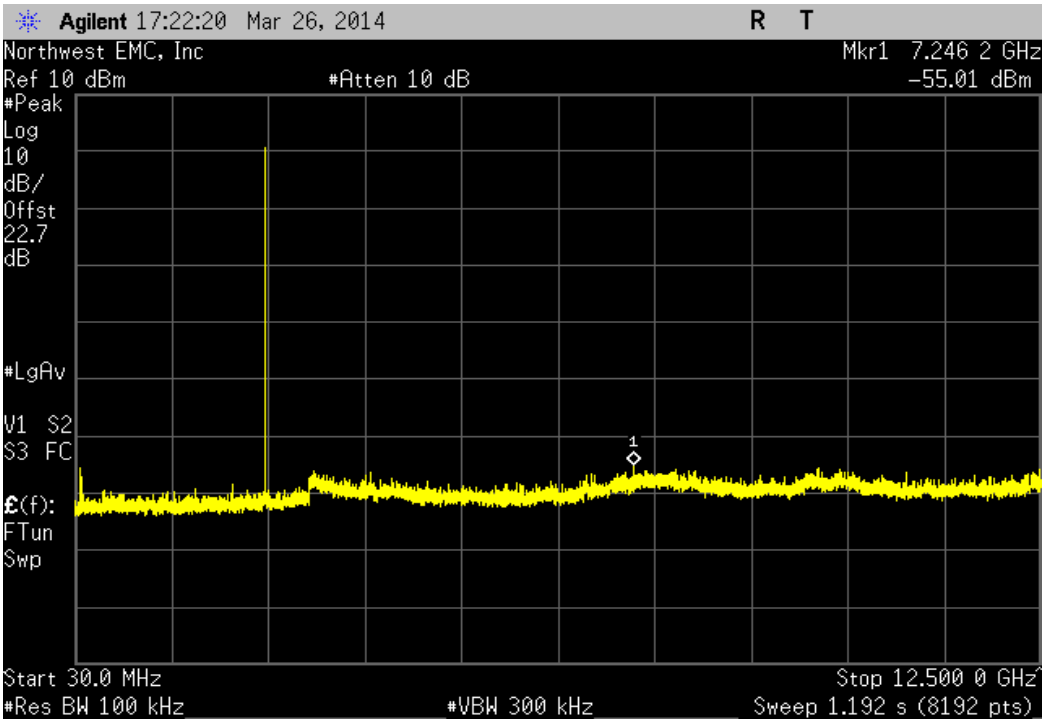
BLE - Advertising, High Channel, 2480 MHz

Frequency Range			Value	Limit	Result
Fundamental			N/A	N/A	N/A

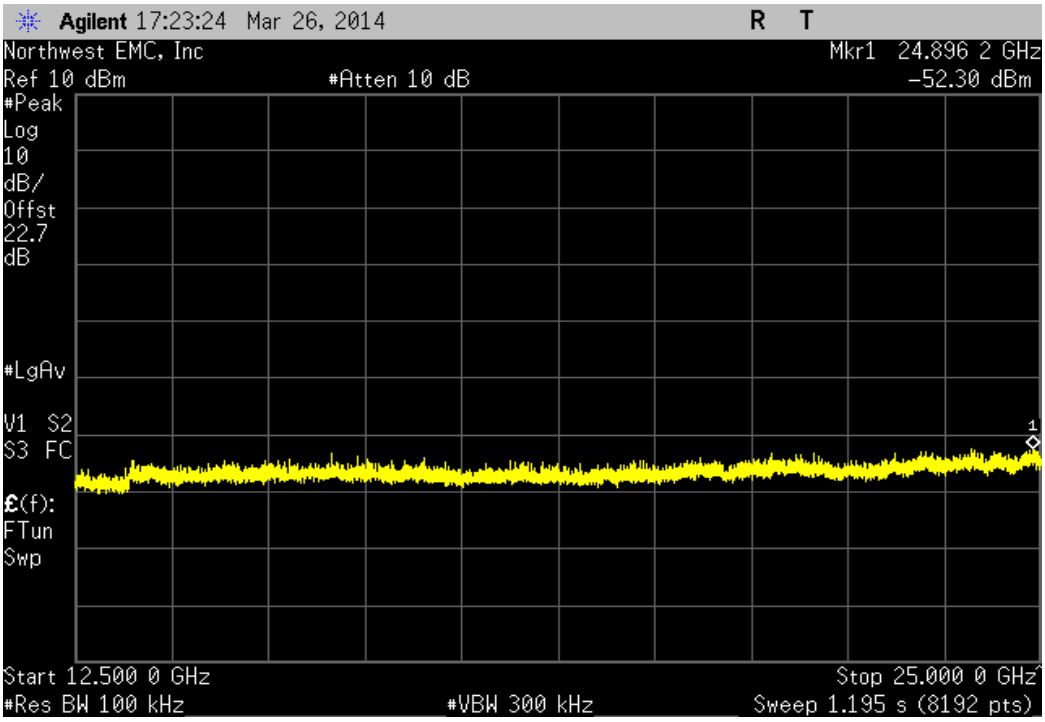


BLE - Advertising, High Channel, 2480 MHz

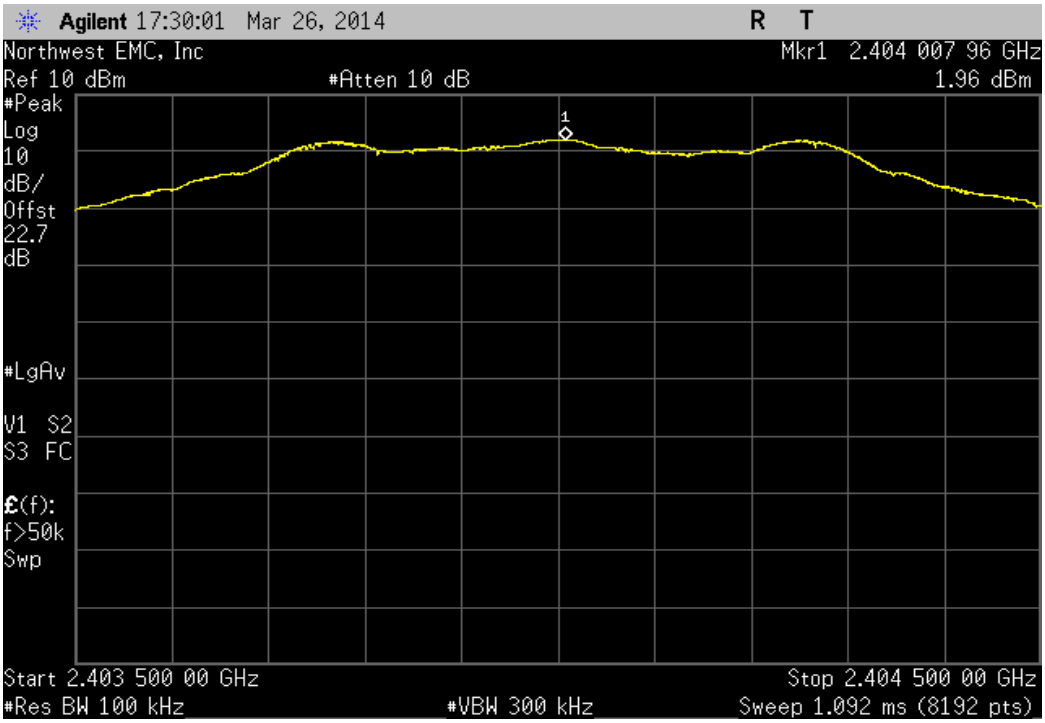
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-55.78 dBc	≤ -20 dBc	Pass



BLE - Advertising, High Channel, 2480 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-53.07 dBc	≤ -20 dBc	Pass

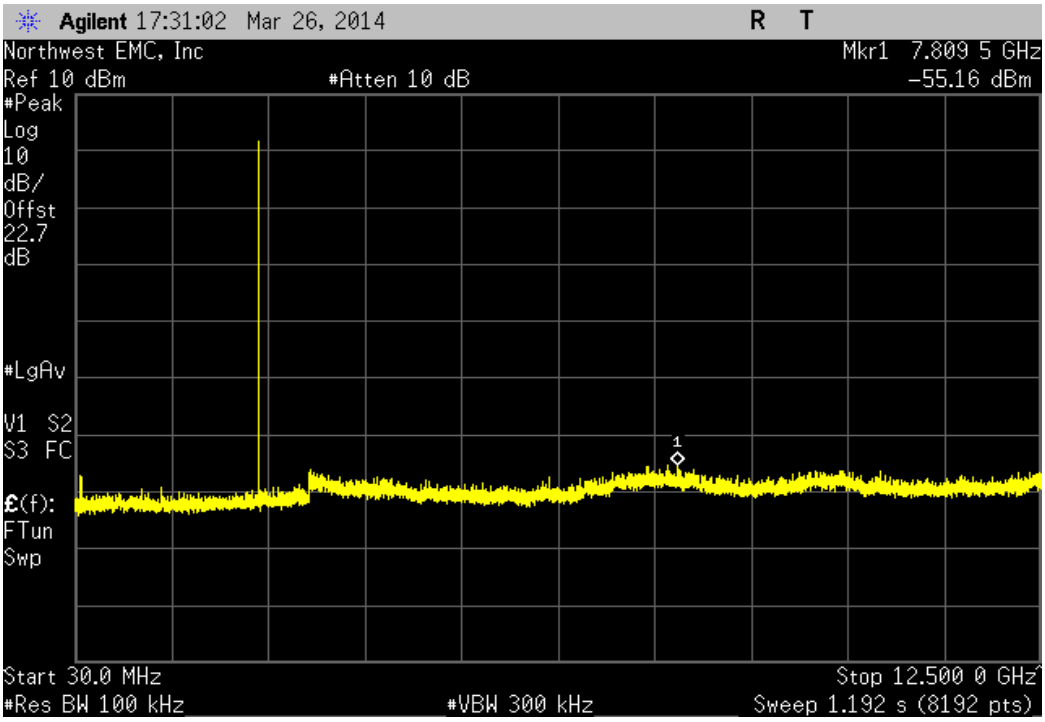


BLE - Data, Low Channel, 2404 MHz						
	Frequency Range			Value	Limit	Result
	Fundamental			N/A	N/A	N/A



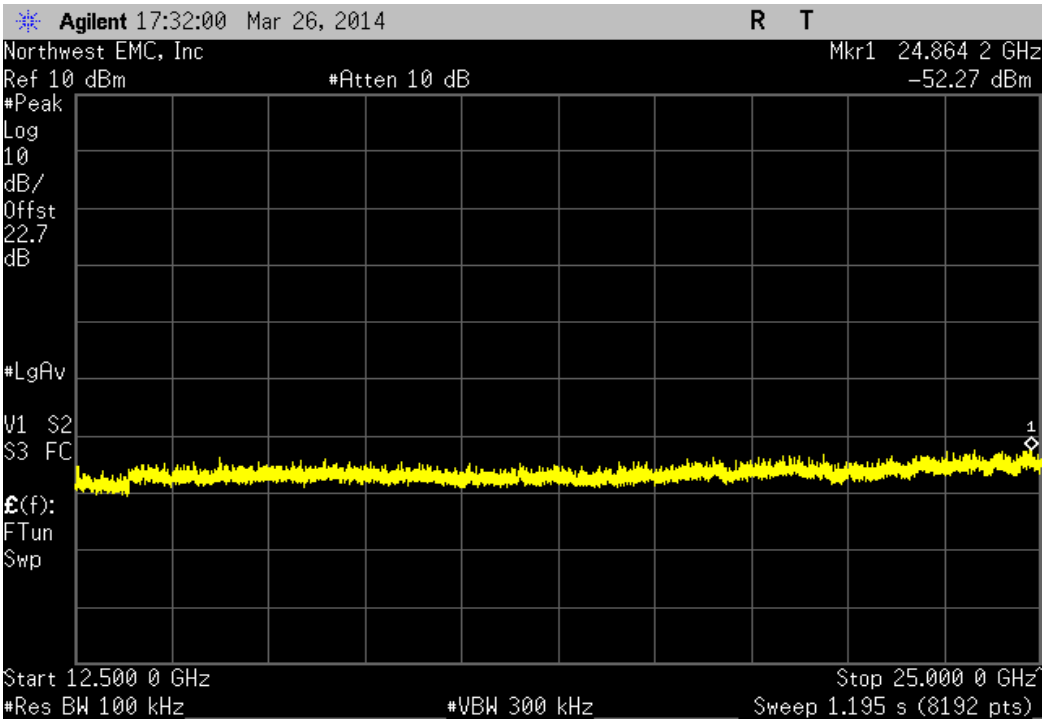
BLE - Data, Low Channel, 2404 MHz

Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-57.12 dBc	≤ -20 dBc	Pass



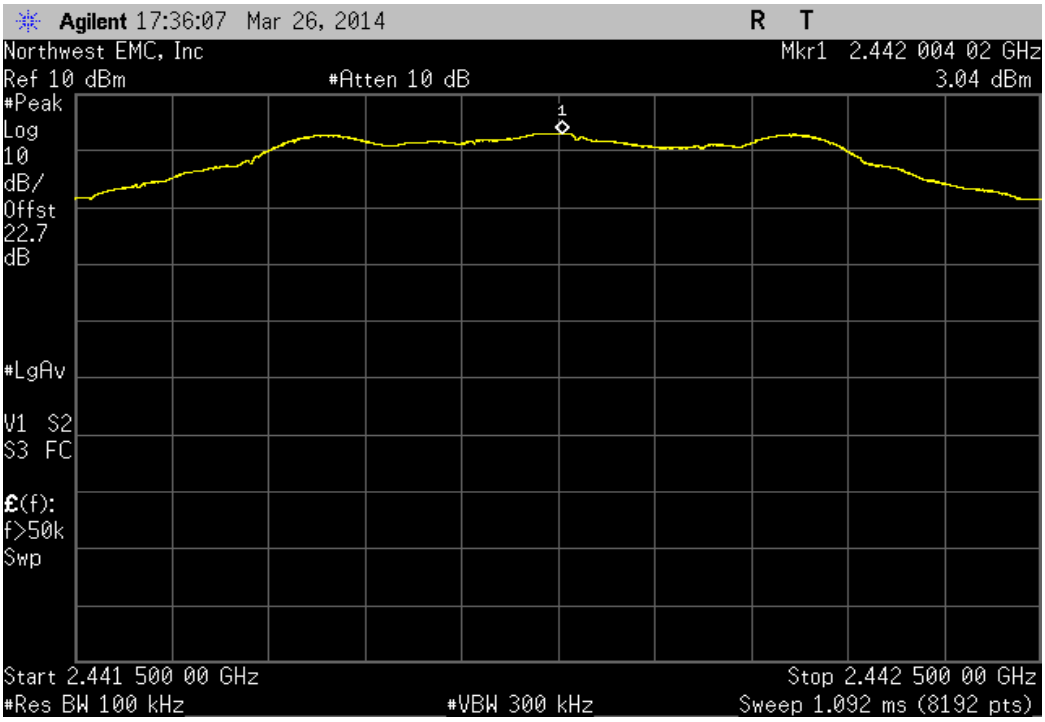
BLE - Data, Low Channel, 2404 MHz

Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-54.23 dBc	≤ -20 dBc	Pass



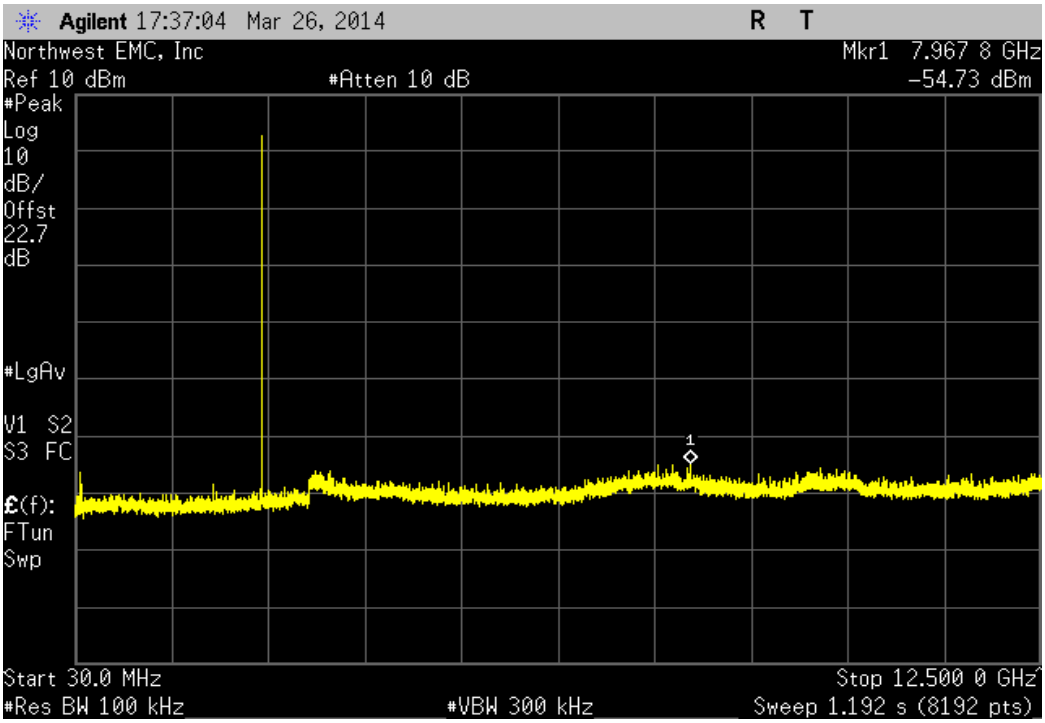
BLE - Data, Mid Channel, 2442 MHz

Frequency Range			Value	Limit	Result
Fundamental			N/A	N/A	N/A



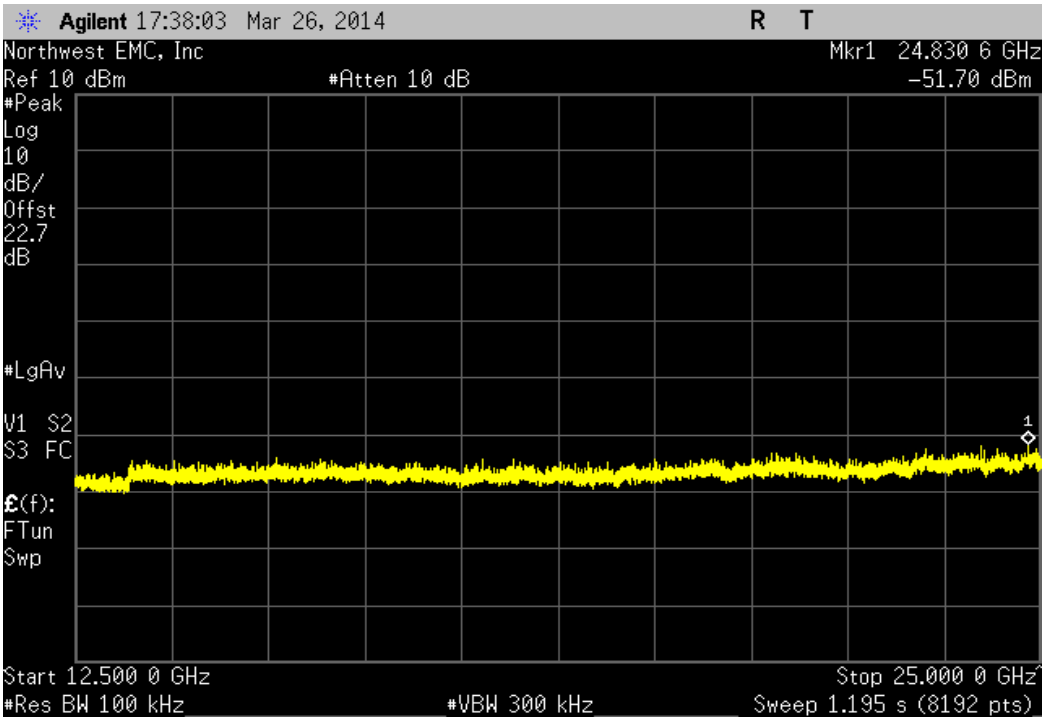
BLE - Data, Mid Channel, 2442 MHz

Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-57.77 dBc	≤ -20 dBc	Pass



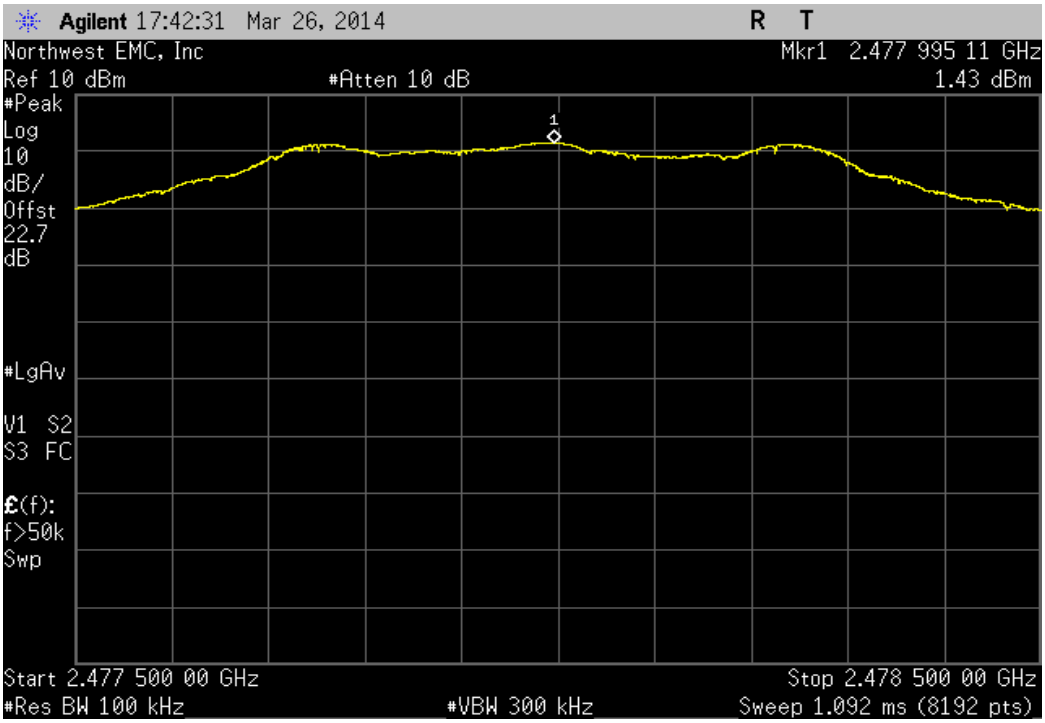
BLE - Data, Mid Channel, 2442 MHz

Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-54.74 dBc	≤ -20 dBc	Pass

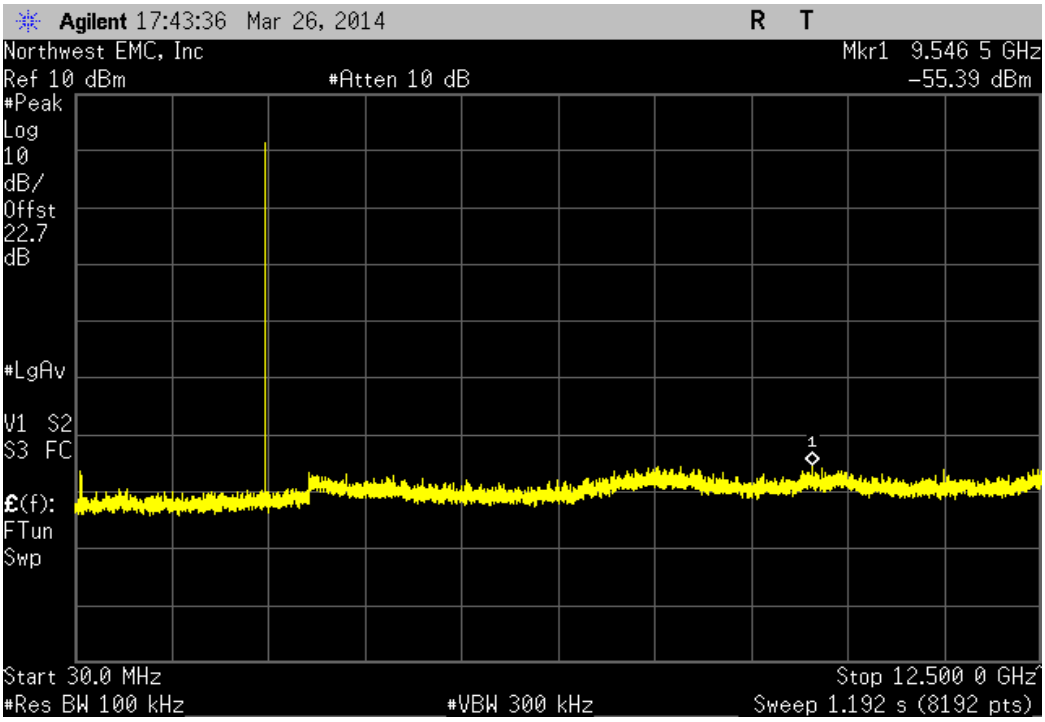


BLE - Data, High Channel, 2478 MHz

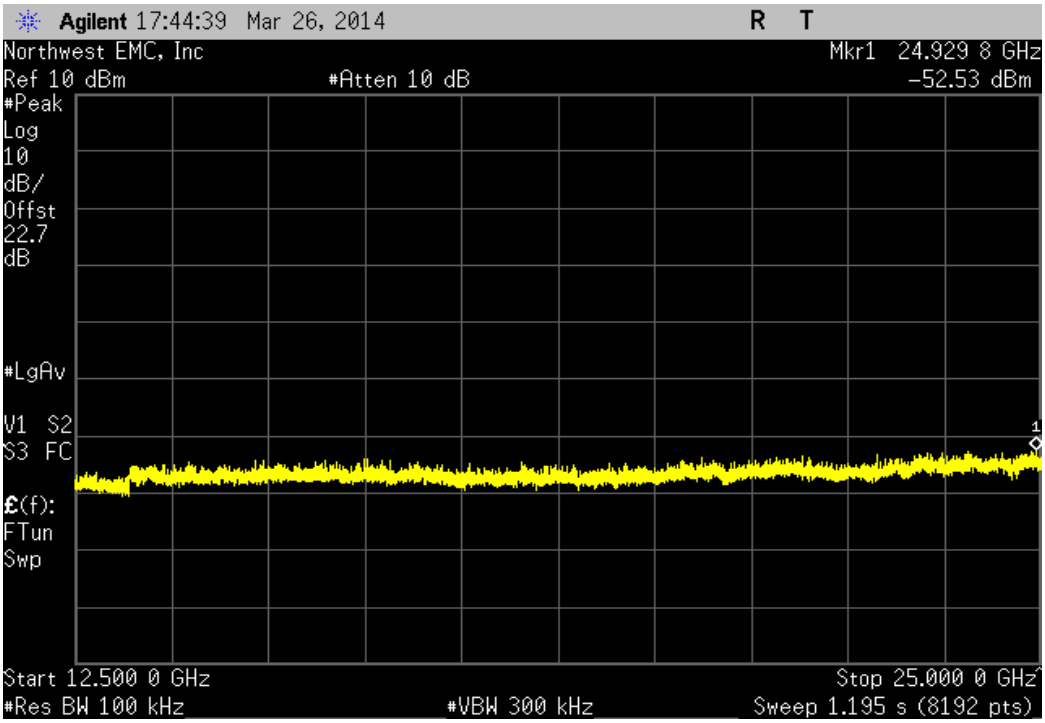
Frequency Range				Value	Limit	Result
	Fundamental			N/A	N/A	N/A



BLE - Data, High Channel, 2478 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-56.82 dBc	≤ -20 dBc	Pass



BLE - Data, High Channel, 2478 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-53.96 dBc	≤ -20 dBc	Pass



SPURIOUS RADIATED 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. 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 BLE, ADVERTISING (ADV)
Transmitting BLE, DATA

CHANNELS TESTED

ADV Channel 0, 2402 MHz
ADV Channel 18, 2442 MHz
ADV Channel 39, 2480 MHz
DATA Channel 1, 2404 MHz
DATA Channel 12, 2426 MHz
DATA Channel 38, 2478 MHz

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INTE5431 - 6

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26000 MHz

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
OC Cable	ESM Cable Corp.	KMKM-72	OCV	6/24/2013	12 mo
Pre-Amplifier	Miteq	JSW45-26004000-40-5P	AVR	6/24/2013	12 mo
Antenna, Horn	ETS Lindgren	3160-10	AIW	NCR	0 mo
Cable	ESM Cable Corp.	KMKM-72	EVY	9/10/2013	12 mo
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	9/10/2013	12 mo
Antenna, Horn	ETS Lindgren	3160-09	AIV	NCR	0 mo
EV01 Cables	N/A	Standard Gain Horns Cables	EVF	2/18/2014	12 mo
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	2/18/2014	12 mo
Antenna, Horn	ETS	3160-08	AHV	NCR	0 mo
HP Filter	Micro-Tronics	HPM50111	HFO	7/6/2013	24 mo
Attenuator - 20dB, HF (1000MHz - 18000MHz)	Coaxicom	3910-20	AXZ	6/20/2013	12 mo
EV01 Cables	N/A	Double Ridge Horn Cables	EVB	2/18/2014	12 mo
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	2/18/2014	12 mo
Antenna, Horn	ETS	3115	AIZ	1/27/2014	36 mo
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2012	24 mo
LP Filter	Micro-Tronics	LPM50004	LFD	7/6/2012	24 mo
EV01 Cables	N/A	Bilog Cables	EVA	2/18/2014	12 mo
Pre-Amplifier	Miteq	AM-1616-1000	AOL	2/18/2014	12 mo
Antenna, Biconilog	EMCO	3141	AXG	4/10/2012	36 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

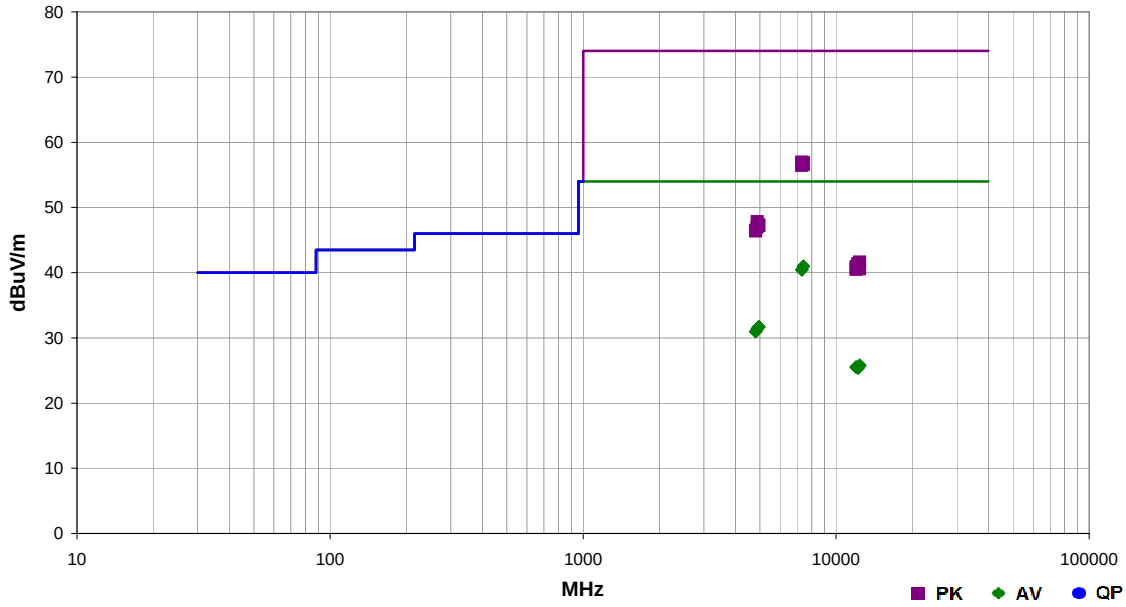
The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify 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.

SPURIOUS RADIATED EMISSIONS

Work Order:	INTE5431	**Date:**	04/01/14		
Project:	GQ110	**Temperature:**	22 °C		
Job Site:	EV01	**Humidity:**	38% RH		
Serial Number:	EZF8344000UK	**Barometric Pres.:**	1009 mbar	**Tested by:**	Richard Mellroth
EUT:	GQ110				
Configuration:	6				
Customer:	Intel Corporation				
Attendees:	Sahithi Kandula				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting BLE, DATA. See comments next to data points for EUT channel and orientation.				
Deviations:	None.				
Comments:	None.				

Test Specifications	**Test Method**
FCC 15.247:2014	ANSI C63.10:2009

Run #	27-28	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



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
7435.295	20.9	20.1	1.2	152.0	3.0	0.0	Horz	AV	0.0	41.0	54.0	-13.0	DATA Ch 38, 2478 MHz, EUT Flat
7434.850	20.9	20.1	1.3	214.0	3.0	0.0	Vert	AV	0.0	41.0	54.0	-13.0	DATA Ch 38, 2478 MHz, EUT Flat
7325.065	21.0	19.5	1.8	317.0	3.0	0.0	Horz	AV	0.0	40.5	54.0	-13.5	DATA Ch 18, 2442 MHz, EUT Flat
7324.550	21.0	19.5	1.6	219.0	3.0	0.0	Vert	AV	0.0	40.5	54.0	-13.5	DATA Ch 18, 2442 MHz, EUT Flat
7324.730	37.5	19.5	1.8	317.0	3.0	0.0	Horz	PK	0.0	57.0	74.0	-17.0	DATA Ch 18, 2442 MHz, EUT Flat
7434.750	36.8	20.1	1.3	214.0	3.0	0.0	Vert	PK	0.0	56.9	74.0	-17.1	DATA Ch 38, 2478 MHz, EUT Flat
7434.585	36.5	20.1	1.2	152.0	3.0	0.0	Horz	PK	0.0	56.6	74.0	-17.4	DATA Ch 38, 2478 MHz, EUT Flat
7325.525	37.0	19.5	1.6	219.0	3.0	0.0	Vert	PK	0.0	56.5	74.0	-17.5	DATA Ch 18, 2442 MHz, EUT Flat
4955.655	20.2	11.5	1.3	159.0	3.0	0.0	Horz	AV	0.0	31.7	54.0	-22.3	DATA Ch 38, 2478 MHz, EUT Flat
4955.620	20.2	11.5	1.3	319.0	3.0	0.0	Vert	AV	0.0	31.7	54.0	-22.3	DATA Ch 38, 2478 MHz, EUT Flat
4882.865	20.4	11.0	1.3	130.0	3.0	0.0	Horz	AV	0.0	31.4	54.0	-22.6	DATA Ch 18, 2442 MHz, EUT Flat
4882.760	20.4	11.0	1.3	108.0	3.0	0.0	Vert	AV	0.0	31.4	54.0	-22.6	DATA Ch 18, 2442 MHz, EUT Flat
4807.615	20.4	10.6	1.0	355.0	3.0	0.0	Horz	AV	0.0	31.0	54.0	-23.0	DATA Ch 1, 2404 MHz, EUT Flat
4806.615	20.4	10.6	3.9	262.0	3.0	0.0	Vert	AV	0.0	31.0	54.0	-23.0	DATA Ch 1, 2404 MHz, EUT Flat
4883.075	36.8	11.0	1.3	108.0	3.0	0.0	Vert	PK	0.0	47.8	74.0	-26.2	DATA Ch 18, 2442 MHz, EUT Flat
4956.505	35.8	11.5	1.3	319.0	3.0	0.0	Vert	PK	0.0	47.3	74.0	-26.7	DATA Ch 38, 2478 MHz, EUT Flat
4954.720	35.7	11.5	1.3	159.0	3.0	0.0	Horz	PK	0.0	47.2	74.0	-26.8	DATA Ch 38, 2478 MHz, EUT Flat
4885.220	36.0	11.0	1.3	130.0	3.0	0.0	Horz	PK	0.0	47.0	74.0	-27.0	DATA Ch 18, 2442 MHz, EUT Flat
4808.855	35.9	10.6	3.9	262.0	3.0	0.0	Vert	PK	0.0	46.5	74.0	-27.5	DATA Ch 1, 2404 MHz, EUT Flat
4806.810	35.8	10.6	1.0	355.0	3.0	0.0	Horz	PK	0.0	46.4	74.0	-27.6	DATA Ch 1, 2404 MHz, EUT Flat
12389.960	26.7	-0.9	1.3	49.0	3.0	0.0	Horz	AV	0.0	25.8	54.0	-28.2	DATA Ch 38, 2478 MHz, EUT Flat
12390.010	26.6	-0.9	1.3	15.0	3.0	0.0	Vert	AV	0.0	25.7	54.0	-28.3	DATA Ch 38, 2478 MHz, EUT Flat
12021.020	27.7	-2.1	1.3	345.0	3.0	0.0	Horz	AV	0.0	25.6	54.0	-28.4	DATA Ch 1, 2404 MHz, EUT Flat
12021.050	27.6	-2.1	1.3	193.0	3.0	0.0	Vert	AV	0.0	25.5	54.0	-28.5	DATA Ch 1, 2404 MHz, EUT Flat
12210.620	26.4	-1.0	1.3	317.0	3.0	0.0	Vert	AV	0.0	25.4	54.0	-28.6	DATA Ch 18, 2442 MHz, EUT Flat
12210.510	26.4	-1.0	1.3	327.0	3.0	0.0	Horz	AV	0.0	25.4	54.0	-28.6	DATA Ch 18, 2442 MHz, EUT Flat
12389.140	42.5	-0.9	1.3	15.0	3.0	0.0	Vert	PK	0.0	41.6	74.0	-32.4	DATA Ch 38, 2478 MHz, EUT Flat

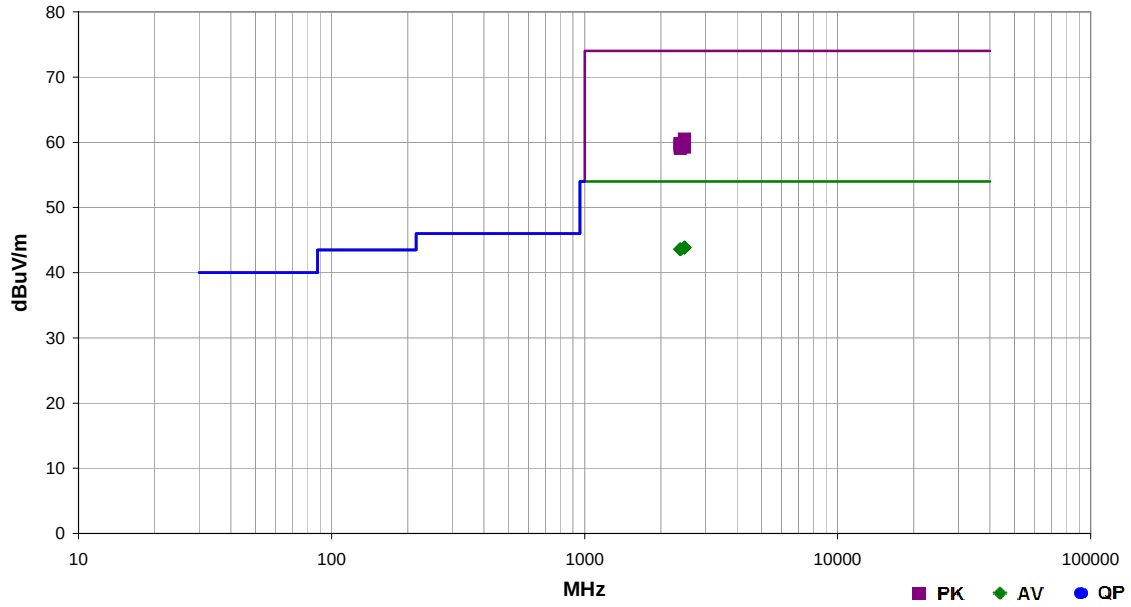
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
12209.450	42.4	-1.0	1.3	327.0	3.0	0.0	Horz	PK	0.0	41.4	74.0	-32.6	DATA Ch 18, 2442 MHz, EUT Flat
12208.640	42.2	-1.0	1.3	317.0	3.0	0.0	Vert	PK	0.0	41.2	74.0	-32.8	DATA Ch 18, 2442 MHz, EUT Flat
12019.330	43.0	-2.1	1.3	345.0	3.0	0.0	Horz	PK	0.0	40.9	74.0	-33.1	DATA Ch 1, 2404 MHz, EUT Flat
12388.730	41.5	-0.9	1.3	49.0	3.0	0.0	Horz	PK	0.0	40.6	74.0	-33.4	DATA Ch 38, 2478 MHz, EUT Flat
12020.290	42.6	-2.1	1.3	193.0	3.0	0.0	Vert	PK	0.0	40.5	74.0	-33.5	DATA Ch 1, 2404 MHz, EUT Flat

SPURIOUS RADIATED EMISSIONS

Work Order:	INTE5431	**Date:**	04/01/14		
Project:	GQ110	**Temperature:**	22 °C		
Job Site:	EV01	**Humidity:**	38% RH		
Serial Number:	EZF8344000UK	**Barometric Pres.:**	1009 mbar	**Tested by:**	Richard Mellroth
EUT:	GQ110				
Configuration:	6				
Customer:	Intel Corporation				
Attendees:	Sahithi Kandula				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting BLE, ADV. See comments next to data points for EUT channel and orientation.				
Deviations:	None.				
Comments:	None.				

Test Specifications	**Test Method**
FCC 15.247:2014	ANSI C63.10:2009

Run #	29-30	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



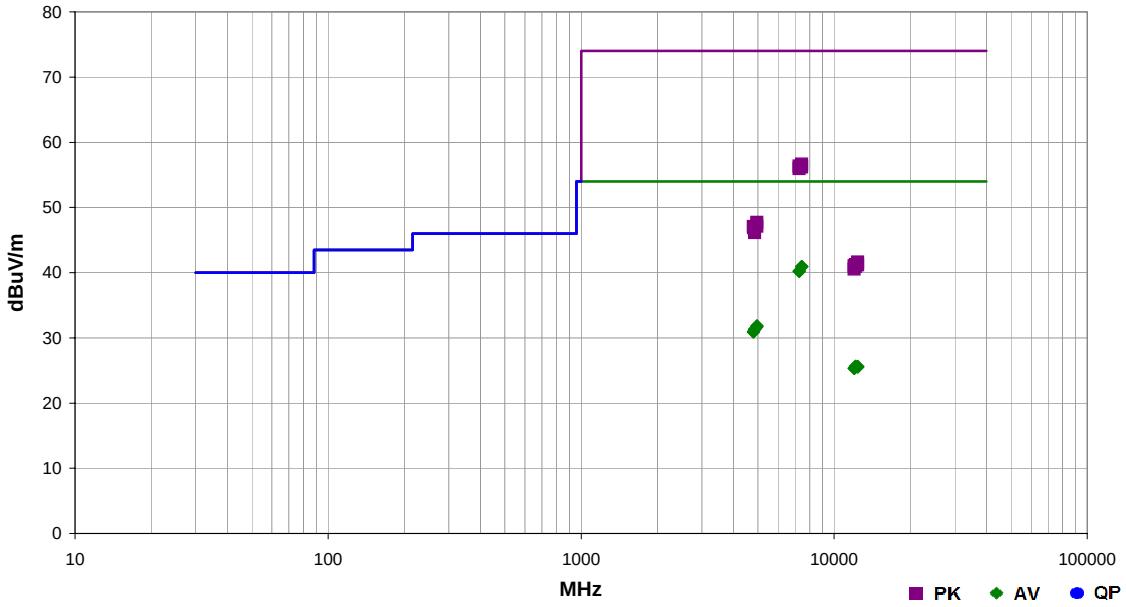
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2485.117	21.2	2.7	1.7	345.0	3.0	20.0	Horz	AV	0.0	43.9	54.0	-10.1	ADV Ch 39, 2480 MHz, EUT Vert
2484.780	21.2	2.7	3.2	222.0	3.0	20.0	Vert	AV	0.0	43.9	54.0	-10.1	ADV Ch 39, 2480 MHz, EUT Horz
2484.793	21.2	2.7	1.3	215.0	3.0	20.0	Vert	AV	0.0	43.9	54.0	-10.1	ADV Ch 39, 2480 MHz, EUT Vert
2483.790	21.2	2.7	1.8	253.0	3.0	20.0	Horz	AV	0.0	43.9	54.0	-10.1	ADV Ch 39, 2480 MHz, EUT Flat
2483.763	21.2	2.7	1.1	290.0	3.0	20.0	Horz	AV	0.0	43.9	54.0	-10.1	ADV Ch 39, 2480 MHz, EUT Horz
2483.630	21.2	2.7	1.3	278.0	3.0	20.0	Vert	AV	0.0	43.9	54.0	-10.1	ADV Ch 39, 2480 MHz, EUT Flat
2388.400	21.3	2.3	3.4	133.0	3.0	20.0	Vert	AV	0.0	43.6	54.0	-10.4	ADV Ch 0, 2402 MHz, EUT Flat
2388.410	21.3	2.3	1.1	302.0	3.0	20.0	Horz	AV	0.0	43.6	54.0	-10.4	ADV Ch 0, 2402 MHz, EUT Vert
2388.407	21.3	2.3	3.7	145.0	3.0	20.0	Horz	AV	0.0	43.6	54.0	-10.4	ADV Ch 0, 2402 MHz, EUT Horz
2388.757	21.3	2.3	1.3	133.0	3.0	20.0	Horz	AV	0.0	43.6	54.0	-10.4	ADV Ch 0, 2402 MHz, EUT Flat
2388.810	21.3	2.3	1.3	314.0	3.0	20.0	Vert	AV	0.0	43.6	54.0	-10.4	ADV Ch 0, 2402 MHz, EUT Vert
2388.973	21.3	2.3	1.3	233.0	3.0	20.0	Vert	AV	0.0	43.6	54.0	-10.4	ADV Ch 0, 2402 MHz, EUT Horz
2485.237	37.8	2.7	1.3	215.0	3.0	20.0	Vert	PK	0.0	60.5	74.0	-13.5	ADV Ch 39, 2480 MHz, EUT Vert
2484.000	37.2	2.7	1.7	345.0	3.0	20.0	Horz	PK	0.0	59.9	74.0	-14.1	ADV Ch 39, 2480 MHz, EUT Vert
2388.603	37.5	2.3	1.3	133.0	3.0	20.0	Horz	PK	0.0	59.8	74.0	-14.2	ADV Ch 0, 2402 MHz, EUT Flat
2389.950	37.5	2.3	3.4	133.0	3.0	20.0	Vert	PK	0.0	59.8	74.0	-14.2	ADV Ch 0, 2402 MHz, EUT Flat
2484.813	37.1	2.7	3.2	222.0	3.0	20.0	Vert	PK	0.0	59.8	74.0	-14.2	ADV Ch 39, 2480 MHz, EUT Horz
2389.293	37.4	2.3	1.1	302.0	3.0	20.0	Horz	PK	0.0	59.7	74.0	-14.3	ADV Ch 0, 2402 MHz, EUT Vert
2388.930	37.2	2.3	1.3	314.0	3.0	20.0	Vert	PK	0.0	59.5	74.0	-14.5	ADV Ch 0, 2402 MHz, EUT Vert
2483.763	36.8	2.7	1.1	290.0	3.0	20.0	Horz	PK	0.0	59.5	74.0	-14.5	ADV Ch 39, 2480 MHz, EUT Horz
2388.593	37.1	2.3	3.7	145.0	3.0	20.0	Horz	PK	0.0	59.4	74.0	-14.6	ADV Ch 0, 2402 MHz, EUT Horz
2485.000	36.7	2.7	1.8	253.0	3.0	20.0	Horz	PK	0.0	59.4	74.0	-14.6	ADV Ch 39, 2480 MHz, EUT Flat
2484.557	36.6	2.7	1.3	278.0	3.0	20.0	Vert	PK	0.0	59.3	74.0	-14.7	ADV Ch 39, 2480 MHz, EUT Flat
2390.000	36.8	2.3	1.3	233.0	3.0	20.0	Vert	PK	0.0	59.1	74.0	-14.9	ADV Ch 0, 2402 MHz, EUT Horz

SPURIOUS RADIATED EMISSIONS

Work Order:	INTE5431	**Date:**	04/01/14		
Project:	GQ110	**Temperature:**	22 °C		
Job Site:	EV01	**Humidity:**	38% RH		
Serial Number:	EZF8344000UK	**Barometric Pres.:**	1009 mbar	**Tested by:**	Richard Mellroth
EUT:	GQ110				
Configuration:	6				
Customer:	Intel Corporation				
Attendees:	Sahithi Kandula				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting BLE, ADV. See comments next to data points for EUT channel and orientation.				
Deviations:	None.				
Comments:	None.				

Test Specifications	**Test Method**
FCC 15.247:2014	ANSI C63.10:2009

Run #	31-32	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



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
7439.580	20.8	20.1	1.2	271.0	3.0	0.0	Vert	AV	0.0	40.9	54.0	-13.1	ADV Ch 39, 2480 MHz, EUT Flat
7438.510	20.8	20.1	1.3	95.0	3.0	0.0	Horz	AV	0.0	40.9	54.0	-13.1	ADV Ch 39, 2480 MHz, EUT Flat
7277.615	21.1	19.1	1.3	179.0	3.0	0.0	Vert	AV	0.0	40.2	54.0	-13.8	ADV Ch 12, 2426 MHz, EUT Flat
7277.245	21.1	19.1	1.3	46.0	3.0	0.0	Horz	AV	0.0	40.2	54.0	-13.8	ADV Ch 12, 2426 MHz, EUT Flat
7439.470	36.5	20.1	1.3	95.0	3.0	0.0	Horz	PK	0.0	56.6	74.0	-17.4	ADV Ch 39, 2480 MHz, EUT Flat
7278.435	37.2	19.1	1.3	179.0	3.0	0.0	Vert	PK	0.0	56.3	74.0	-17.7	ADV Ch 12, 2426 MHz, EUT Flat
7439.020	36.1	20.1	1.2	271.0	3.0	0.0	Vert	PK	0.0	56.2	74.0	-17.8	ADV Ch 39, 2480 MHz, EUT Flat
7279.075	36.8	19.1	1.3	46.0	3.0	0.0	Horz	PK	0.0	55.9	74.0	-18.1	ADV Ch 12, 2426 MHz, EUT Flat
4959.980	20.3	11.5	1.3	271.0	3.0	0.0	Horz	AV	0.0	31.8	54.0	-22.2	ADV Ch 39, 2480 MHz, EUT Flat
4958.880	20.2	11.5	1.3	149.0	3.0	0.0	Vert	AV	0.0	31.7	54.0	-22.3	ADV Ch 39, 2480 MHz, EUT Flat
4850.935	20.5	10.8	1.3	319.0	3.0	0.0	Horz	AV	0.0	31.3	54.0	-22.7	ADV Ch 12, 2426 MHz, EUT Flat
4850.740	20.5	10.8	1.3	198.0	3.0	0.0	Vert	AV	0.0	31.3	54.0	-22.7	ADV Ch 12, 2426 MHz, EUT Flat
4804.125	20.4	10.5	1.3	93.0	3.0	0.0	Vert	AV	0.0	30.9	54.0	-23.1	ADV Ch 0, 2402 MHz, EUT Flat
4803.800	20.4	10.5	1.3	97.0	3.0	0.0	Horz	AV	0.0	30.9	54.0	-23.1	ADV Ch 0, 2402 MHz, EUT Flat
4959.480	36.2	11.5	1.3	149.0	3.0	0.0	Vert	PK	0.0	47.7	74.0	-26.3	ADV Ch 39, 2480 MHz, EUT Flat
4959.735	35.6	11.5	1.3	271.0	3.0	0.0	Horz	PK	0.0	47.1	74.0	-26.9	ADV Ch 39, 2480 MHz, EUT Flat
4804.090	36.5	10.5	1.3	93.0	3.0	0.0	Vert	PK	0.0	47.0	74.0	-27.0	ADV Ch 0, 2402 MHz, EUT Flat
4853.040	36.2	10.8	1.3	198.0	3.0	0.0	Vert	PK	0.0	47.0	74.0	-27.0	ADV Ch 12, 2426 MHz, EUT Flat
4804.990	36.3	10.5	1.3	97.0	3.0	0.0	Horz	PK	0.0	46.8	74.0	-27.2	ADV Ch 0, 2402 MHz, EUT Flat
4852.635	35.3	10.8	1.3	319.0	3.0	0.0	Horz	PK	0.0	46.1	74.0	-27.9	ADV Ch 12, 2426 MHz, EUT Flat
12130.600	27.1	-1.5	3.2	342.0	3.0	0.0	Horz	AV	0.0	25.6	54.0	-28.4	ADV Ch 12, 2426 MHz, EUT Flat
12128.930	27.1	-1.5	1.3	256.0	3.0	0.0	Vert	AV	0.0	25.6	54.0	-28.4	ADV Ch 12, 2426 MHz, EUT Flat
12398.720	26.5	-0.9	3.6	172.0	3.0	0.0	Horz	AV	0.0	25.6	54.0	-28.4	ADV Ch 39, 2480 MHz, EUT Flat
12398.950	26.4	-0.9	1.3	322.0	3.0	0.0	Vert	AV	0.0	25.5	54.0	-28.5	ADV Ch 39, 2480 MHz, EUT Flat
12010.410	27.5	-2.2	1.3	271.0	3.0	0.0	Horz	AV	0.0	25.3	54.0	-28.7	ADV Ch 0, 2402 MHz, EUT Flat
12009.690	27.5	-2.2	1.3	210.0	3.0	0.0	Vert	AV	0.0	25.3	54.0	-28.7	ADV Ch 0, 2402 MHz, EUT Flat
12399.700	42.5	-0.9	1.3	322.0	3.0	0.0	Vert	PK	0.0	41.6	74.0	-32.4	ADV Ch 39, 2480 MHz, EUT Flat

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
12129.120	42.7	-1.5	3.2	342.0	3.0	0.0	Horz	PK	0.0	41.2	74.0	-32.8	ADV Ch 12, 2426 MHz, EUT Flat
12398.870	42.1	-0.9	3.6	172.0	3.0	0.0	Horz	PK	0.0	41.2	74.0	-32.8	ADV Ch 39, 2480 MHz, EUT Flat
12008.720	43.2	-2.2	1.3	210.0	3.0	0.0	Vert	PK	0.0	41.0	74.0	-33.0	ADV Ch 0, 2402 MHz, EUT Flat
12130.340	42.4	-1.5	1.3	256.0	3.0	0.0	Vert	PK	0.0	40.9	74.0	-33.1	ADV Ch 12, 2426 MHz, EUT Flat
12011.010	42.7	-2.2	1.3	271.0	3.0	0.0	Horz	PK	0.0	40.5	74.0	-33.5	ADV Ch 0, 2402 MHz, EUT Flat

AC 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 50Ω.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
EV07 Cables	N/A	Conducted Cables	EVG	03/07/2014	12 mo
Attenuator	Fairview Microwave	SA6B10W-20	RKA	10/24/2013	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HHD	01/22/2014	12 mo
Receiver	Rohde & Schwarz	ESCI	ARH	02/05/2014	12 mo
LISN	Solar	9252-50-R-24-BNC	LIP	02/16/2014	12 mo
LISN	Solar	9252-50-R-24-BNC	LIN	02/03/2014	12 mo

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	2.94 dB	-2.94 dB

CONFIGURATIONS INVESTIGATED

INTE5431-4

MODES INVESTIGATED

EUT powered on. Tx, BTLE Low Ch. 2402MHz, ADV
EUT powered on. Tx, BTLE Mid Ch. 2426MHz, ADV
EUT powered on. Tx, BTLE High Ch. 2480MHz, ADV

AC POWERLINE CONDUCTED EMISSIONS

EUT:	GQ110	Work Order:	INTE5431
Serial Number:	EZF8344000UK	Date:	03/28/2014
Customer:	Intel Corporation	Temperature:	20.2°C
Attendees:	Sahithi Kandula	Relative Humidity:	42.7%
Customer Project:	GQ110	Bar. Pressure:	1009.1 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	INTE5431-4

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

TEST PARAMETERS

Run #:	14	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None.

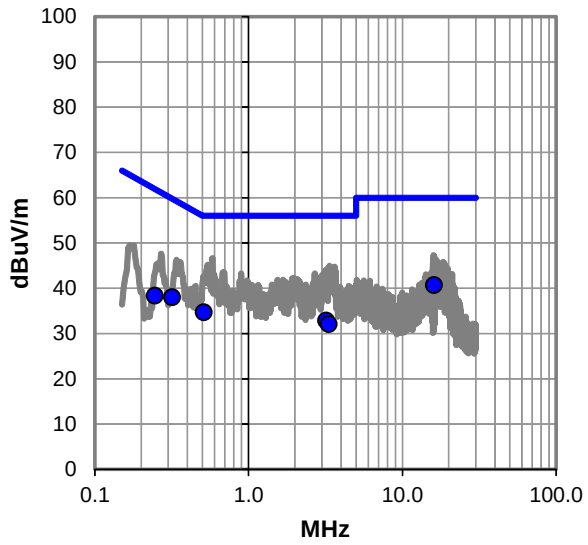
EUT OPERATING MODES

EUT powered on. Tx, BTLE Low Ch. 2402MHz, ADV

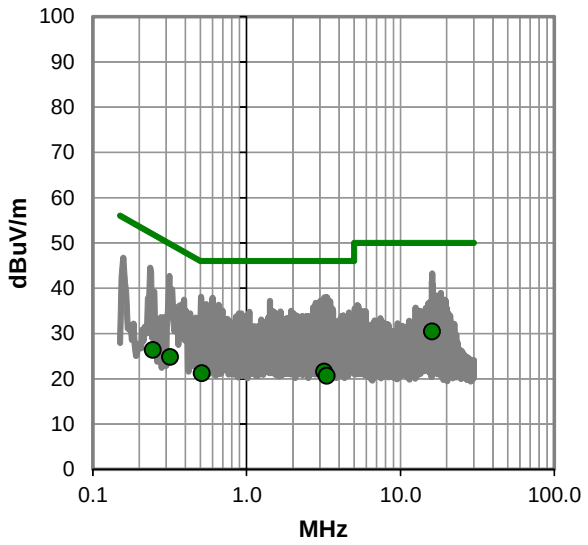
DEVIATIONS FROM TEST STANDARD

None

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



NORTHWEST EMC

WTD.2013.07.23, PSA-ESCI 2014.02.19, EmiR5 2014.02.04

AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #14

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Margin (dB)
16.098	21.1	19.6	40.7	60.0	-19.3
0.511	14.9	19.8	34.7	56.0	-21.3
0.319	18.2	19.8	38.0	59.7	-21.8
3.193	13.3	19.5	32.8	56.0	-23.2
0.245	18.6	19.7	38.3	61.9	-23.6
3.311	12.5	19.6	32.1	56.0	-23.9

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Margin (dB)
16.098	10.9	19.6	30.5	50.0	-19.5
3.193	2.0	19.5	21.5	46.0	-24.5
0.511	1.4	19.8	21.2	46.0	-24.8
0.319	5.0	19.8	24.8	49.7	-25.0
3.311	1.1	19.6	20.7	46.0	-25.3
0.245	6.6	19.7	26.3	51.9	-25.6

CONCLUSION

Pass

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	GQ110	Work Order:	INTE5431
Serial Number:	EZF8344000UK	Date:	03/28/2014
Customer:	Intel Corporation	Temperature:	20.2°C
Attendees:	Sahithi Kandula	Relative Humidity:	42.7%
Customer Project:	GQ110	Bar. Pressure:	1009.1 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	INTE5431-4

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

TEST PARAMETERS

Run #:	15	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None.

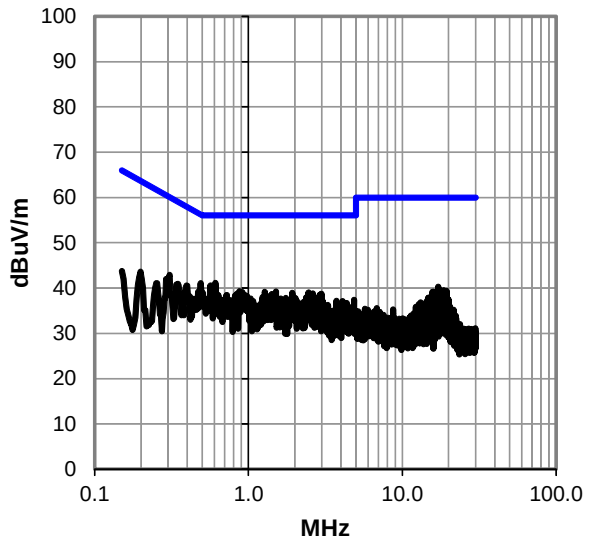
EUT OPERATING MODES

EUT powered on. Tx, BTLE Low Ch. 2402MHz, ADV

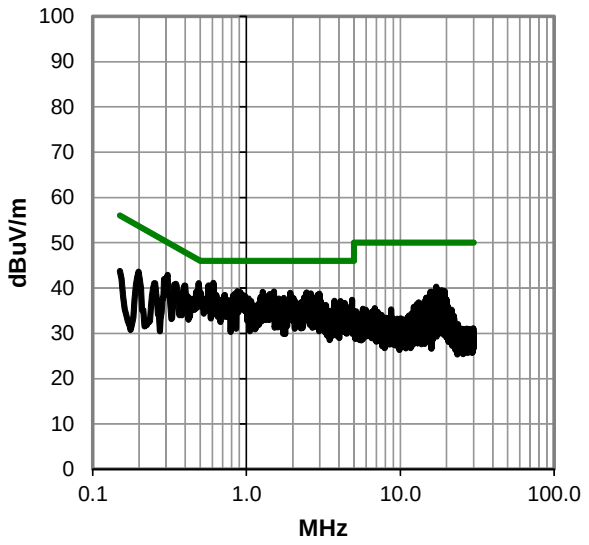
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #15

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Margin (dB)
0.609	21.4	19.8	41.2	56.0	-14.8
0.490	21.3	19.8	41.1	56.2	-15.1
0.568	20.8	19.8	40.6	56.0	-15.4
0.874	19.6	19.7	39.3	56.0	-16.7
1.508	19.6	19.7	39.3	56.0	-16.7
1.273	19.5	19.7	39.2	56.0	-16.8
0.911	19.4	19.7	39.1	56.0	-16.9
2.456	19.4	19.6	39.0	56.0	-17.0
1.930	19.3	19.6	38.9	56.0	-17.1
0.307	23.1	19.8	42.9	60.1	-17.2
2.616	19.2	19.6	38.8	56.0	-17.2
2.978	19.2	19.6	38.8	56.0	-17.2
0.840	19.0	19.7	38.7	56.0	-17.3
0.471	19.4	19.8	39.2	56.5	-17.3
0.396	20.8	19.8	40.6	57.9	-17.3
1.415	19.0	19.7	38.7	56.0	-17.3
2.907	19.0	19.6	38.6	56.0	-17.4
0.721	18.7	19.8	38.5	56.0	-17.5
1.396	18.6	19.7	38.3	56.0	-17.7
0.978	18.5	19.7	38.2	56.0	-17.8
2.650	18.5	19.6	38.1	56.0	-17.9
1.307	18.4	19.7	38.1	56.0	-17.9
1.348	18.4	19.7	38.1	56.0	-17.9
2.497	18.4	19.6	38.0	56.0	-18.0
1.236	18.3	19.7	38.0	56.0	-18.0
1.982	18.3	19.6	37.9	56.0	-18.1

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Margin (dB)
0.609	21.4	19.8	41.2	46.0	-4.8
0.490	21.3	19.8	41.1	46.2	-5.1
0.568	20.8	19.8	40.6	46.0	-5.4
0.874	19.6	19.7	39.3	46.0	-6.7
1.508	19.6	19.7	39.3	46.0	-6.7
1.273	19.5	19.7	39.2	46.0	-6.8
0.911	19.4	19.7	39.1	46.0	-6.9
2.456	19.4	19.6	39.0	46.0	-7.0
1.930	19.3	19.6	38.9	46.0	-7.1
0.307	23.1	19.8	42.9	50.1	-7.2
2.616	19.2	19.6	38.8	46.0	-7.2
2.978	19.2	19.6	38.8	46.0	-7.2
0.840	19.0	19.7	38.7	46.0	-7.3
0.471	19.4	19.8	39.2	46.5	-7.3
0.396	20.8	19.8	40.6	47.9	-7.3
1.415	19.0	19.7	38.7	46.0	-7.3
2.907	19.0	19.6	38.6	46.0	-7.4
0.721	18.7	19.8	38.5	46.0	-7.5
1.396	18.6	19.7	38.3	46.0	-7.7
0.978	18.5	19.7	38.2	46.0	-7.8
2.650	18.5	19.6	38.1	46.0	-7.9
1.307	18.4	19.7	38.1	46.0	-7.9
1.348	18.4	19.7	38.1	46.0	-7.9
2.497	18.4	19.6	38.0	46.0	-8.0
1.236	18.3	19.7	38.0	46.0	-8.0
1.982	18.3	19.6	37.9	46.0	-8.1

CONCLUSION

Pass

Tested By

AC POWERLINE CONDUCTED EMISSIONS

WTD.2013.07.23, PSA-ESCI 2014.02.19, EmiR5 2014.02.04

EUT:	GQ110	Work Order:	INTE5431
Serial Number:	EZF8344000UK	Date:	03/28/2014
Customer:	Intel Corporation	Temperature:	20.2°C
Attendees:	Sahithi Kandula	Relative Humidity:	42.7%
Customer Project:	GQ110	Bar. Pressure:	1009.1 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	INTE5431-4

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

TEST PARAMETERS

Run #:	16	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None.

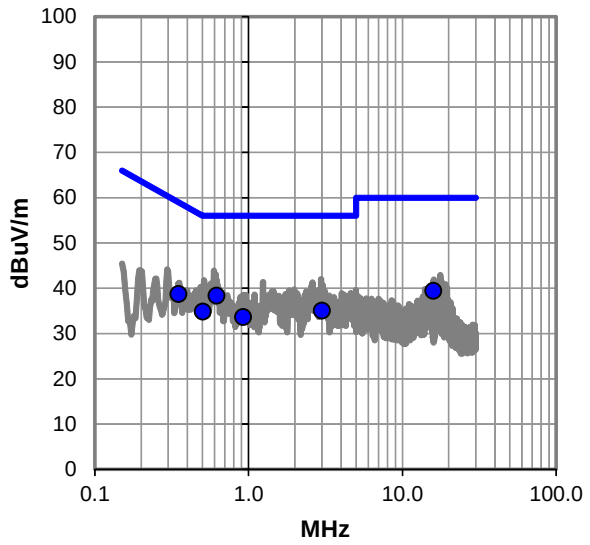
EUT OPERATING MODES

EUT powered on. Tx, BTLE Mid Ch. 2426MHz, ADV

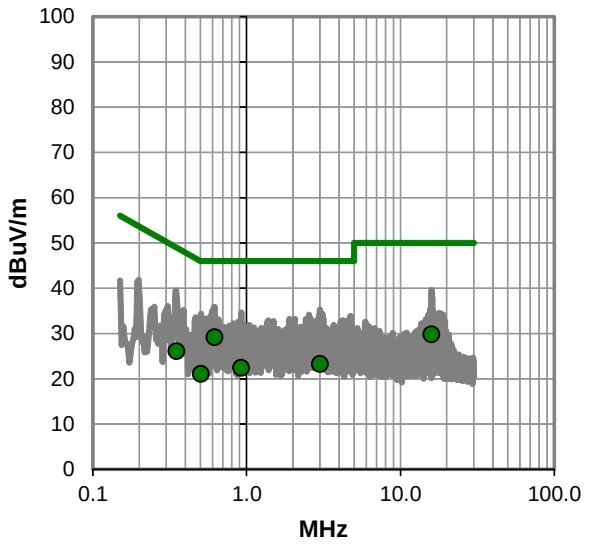
DEVIATIONS FROM TEST STANDARD

None

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



NORTHWEST EMC

WTD.2013.07.23, PSA-ESCI 2014.02.19, EmiR5 2014.02.04

AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #16

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Margin (dB)
0.621	18.6	19.8	38.4	56.0	-17.6
0.350	18.9	19.8	38.7	59.0	-20.3
15.949	19.8	19.6	39.4	60.0	-20.6
3.004	15.5	19.6	35.1	56.0	-20.9
0.505	15.0	19.8	34.8	56.0	-21.2
0.925	13.9	19.7	33.6	56.0	-22.4

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Margin (dB)
0.621	9.4	19.8	29.2	46.0	-16.8
15.949	10.2	19.6	29.8	50.0	-20.2
3.004	3.7	19.6	23.3	46.0	-22.7
0.350	6.3	19.8	26.1	49.0	-22.9
0.925	2.7	19.7	22.4	46.0	-23.6
0.505	1.3	19.8	21.1	46.0	-24.9

CONCLUSION

Pass

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	GQ110	Work Order:	INTE5431
Serial Number:	EZF8344000UK	Date:	03/28/2014
Customer:	Intel Corporation	Temperature:	20.2°C
Attendees:	Sahithi Kandula	Relative Humidity:	42.7%
Customer Project:	GQ110	Bar. Pressure:	1009.1 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	INTE5431-4

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

TEST PARAMETERS

Run #:	17	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None.

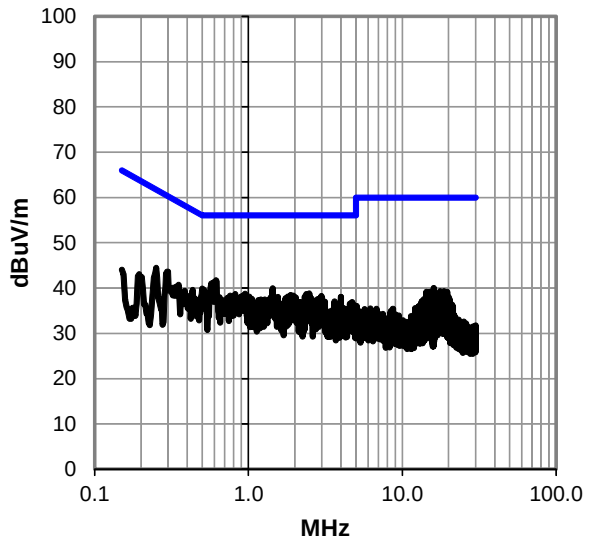
EUT OPERATING MODES

EUT powered on. Tx, BTLE Mid Ch. 2426MHz, ADV

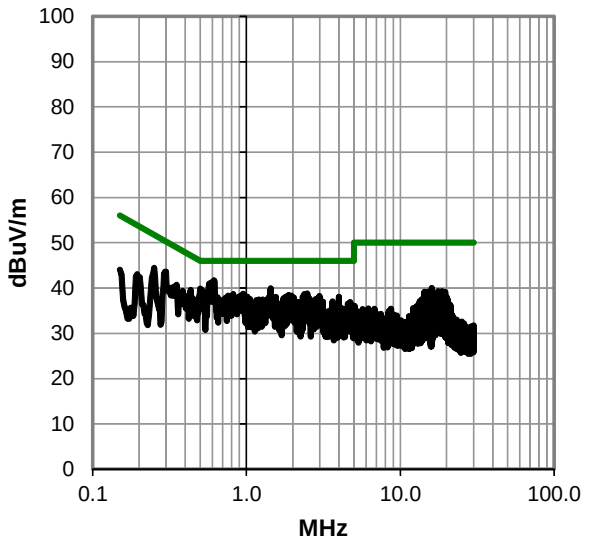
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #17

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Margin (dB)
0.616	21.9	19.8	41.7	56.0	-14.3
0.572	21.2	19.8	41.0	56.0	-15.0
1.437	20.3	19.7	40.0	56.0	-16.0
0.501	20.1	19.8	39.9	56.0	-16.1
1.426	19.8	19.7	39.5	56.0	-16.5
0.299	23.8	19.8	43.6	60.3	-16.7
2.485	19.2	19.6	38.8	56.0	-17.2
0.251	24.7	19.8	44.5	61.7	-17.3
0.952	19.0	19.7	38.7	56.0	-17.3
2.377	19.1	19.6	38.7	56.0	-17.3
0.822	18.9	19.7	38.6	56.0	-17.4
1.877	18.8	19.6	38.4	56.0	-17.6
0.434	19.8	19.8	39.6	57.2	-17.6
0.758	18.6	19.7	38.3	56.0	-17.7
0.926	18.6	19.7	38.3	56.0	-17.7
1.967	18.7	19.6	38.3	56.0	-17.7
1.452	18.6	19.7	38.3	56.0	-17.7
2.985	18.7	19.6	38.3	56.0	-17.7
2.415	18.6	19.6	38.2	56.0	-17.8
1.803	18.5	19.6	38.1	56.0	-17.9
0.892	18.4	19.7	38.1	56.0	-17.9
1.016	18.4	19.7	38.1	56.0	-17.9
2.325	18.5	19.6	38.1	56.0	-17.9
1.549	18.4	19.7	38.1	56.0	-17.9
3.985	18.4	19.6	38.0	56.0	-18.0
1.396	18.3	19.7	38.0	56.0	-18.0

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Margin (dB)
0.616	21.9	19.8	41.7	46.0	-4.3
0.572	21.2	19.8	41.0	46.0	-5.0
1.437	20.3	19.7	40.0	46.0	-6.0
0.501	20.1	19.8	39.9	46.0	-6.1
1.426	19.8	19.7	39.5	46.0	-6.5
0.299	23.8	19.8	43.6	50.3	-6.7
2.485	19.2	19.6	38.8	46.0	-7.2
0.251	24.7	19.8	44.5	51.7	-7.3
0.952	19.0	19.7	38.7	46.0	-7.3
2.377	19.1	19.6	38.7	46.0	-7.3
0.822	18.9	19.7	38.6	46.0	-7.4
1.877	18.8	19.6	38.4	46.0	-7.6
0.434	19.8	19.8	39.6	47.2	-7.6
0.758	18.6	19.7	38.3	46.0	-7.7
0.926	18.6	19.7	38.3	46.0	-7.7
1.967	18.7	19.6	38.3	46.0	-7.7
1.452	18.6	19.7	38.3	46.0	-7.7
2.985	18.7	19.6	38.3	46.0	-7.7
2.415	18.6	19.6	38.2	46.0	-7.8
1.803	18.5	19.6	38.1	46.0	-7.9
0.892	18.4	19.7	38.1	46.0	-7.9
1.016	18.4	19.7	38.1	46.0	-7.9
2.325	18.5	19.6	38.1	46.0	-7.9
1.549	18.4	19.7	38.1	46.0	-7.9
3.985	18.4	19.6	38.0	46.0	-8.0
1.396	18.3	19.7	38.0	46.0	-8.0

CONCLUSION

Pass

Tested By

NORTHWEST EMC

WTD.2013.07.23, PSA-ESCI 2014.02.19, EmiR5 2014.02.04

AC POWERLINE CONDUCTED EMISSIONS

EUT:	GQ110	Work Order:	INTE5431
Serial Number:	EZF8344000UK	Date:	03/28/2014
Customer:	Intel Corporation	Temperature:	20.2°C
Attendees:	Sahithi Kandula	Relative Humidity:	42.7%
Customer Project:	GQ110	Bar. Pressure:	1009.1 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	INTE5431-4

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

TEST PARAMETERS

Run #:	18	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None.

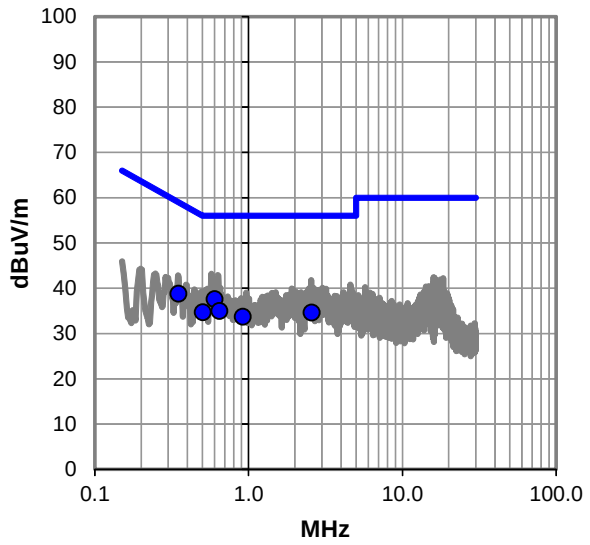
EUT OPERATING MODES

EUT powered on. Tx, BTLE High Ch. 2480MHz, ADV

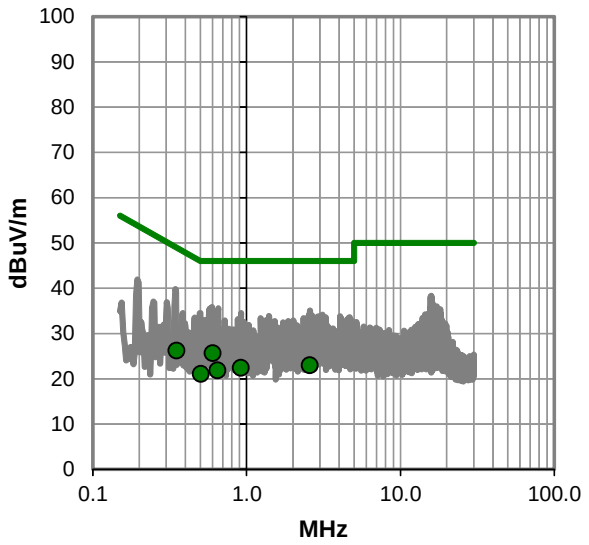
DEVIATIONS FROM TEST STANDARD

None

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



NORTHWEST EMC

WTD.2013.07.23, PSA-ESCI 2014.02.19, EmiR5 2014.02.04

AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #18

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Margin (dB)
0.602	17.8	19.8	37.6	56.0	-18.4
0.350	19.0	19.8	38.8	59.0	-20.2
0.648	15.2	19.8	35.0	56.0	-21.0
0.505	14.9	19.8	34.7	56.0	-21.3
2.573	15.0	19.6	34.6	56.0	-21.4
0.918	14.0	19.7	33.7	56.0	-22.3

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Margin (dB)
0.602	5.9	19.8	25.7	46.0	-20.3
0.350	6.4	19.8	26.2	49.0	-22.8
2.573	3.4	19.6	23.0	46.0	-23.0
0.918	2.7	19.7	22.4	46.0	-23.6
0.648	2.1	19.8	21.9	46.0	-24.1
0.505	1.3	19.8	21.1	46.0	-24.9

CONCLUSION

Pass

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	GQ110	Work Order:	INTE5431
Serial Number:	EZF8344000UK	Date:	03/28/2014
Customer:	Intel Corporation	Temperature:	20.2°C
Attendees:	Sahithi Kandula	Relative Humidity:	42.7%
Customer Project:	GQ110	Bar. Pressure:	1009.1 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	INTE5431-4

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

TEST PARAMETERS

Run #:	19	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None.

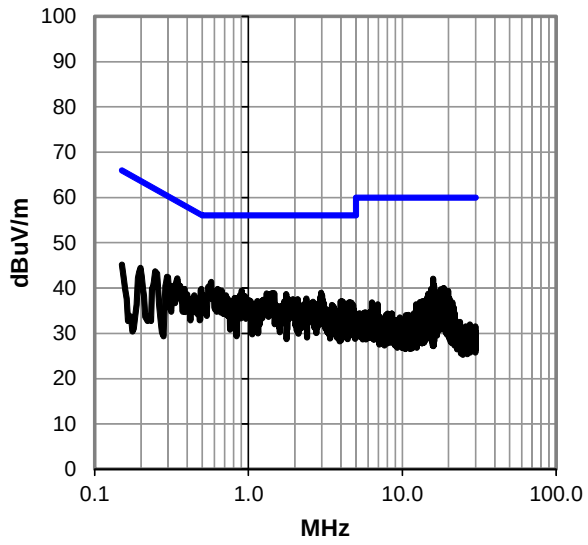
EUT OPERATING MODES

EUT powered on. Tx, BTLE High Ch. 2480MHz, ADV

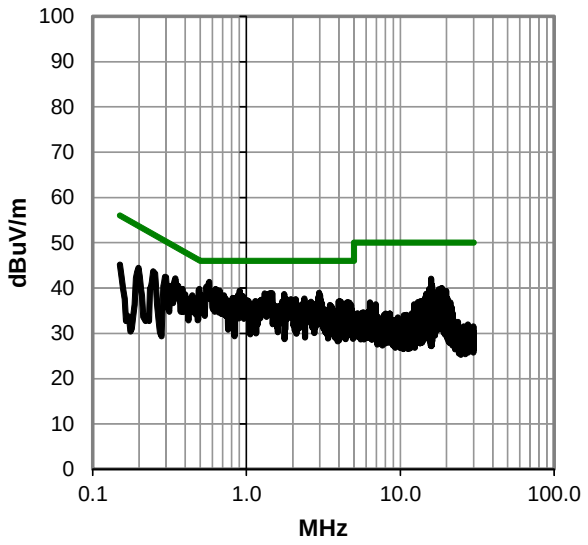
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



NORTHWEST EMC

WTD.2013.07.23, PSA-ESCI 2014.02.19, EmiR5 2014.02.04

AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #19

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Margin (dB)
0.572	21.6	19.8	41.4	56.0	-14.6
0.631	20.0	19.8	39.8	56.0	-16.2
0.493	20.0	19.8	39.8	56.1	-16.3
0.650	19.7	19.8	39.5	56.0	-16.5
0.669	19.7	19.8	39.5	56.0	-16.5
0.904	19.7	19.7	39.4	56.0	-16.6
0.344	22.3	19.8	42.1	59.1	-17.0
2.959	19.4	19.6	39.0	56.0	-17.0
1.426	19.2	19.7	38.9	56.0	-17.1
1.314	19.1	19.7	38.8	56.0	-17.2
1.762	19.0	19.6	38.6	56.0	-17.4
0.881	18.7	19.7	38.4	56.0	-17.6
1.359	18.7	19.7	38.4	56.0	-17.6
0.713	18.6	19.8	38.4	56.0	-17.6
3.012	18.8	19.6	38.4	56.0	-17.6
0.941	18.5	19.7	38.2	56.0	-17.8
0.296	22.7	19.8	42.5	60.4	-17.9
15.901	22.5	19.6	42.1	60.0	-17.9
2.933	18.5	19.6	38.1	56.0	-17.9
0.725	18.1	19.8	37.9	56.0	-18.1
0.814	18.1	19.7	37.8	56.0	-18.2
0.247	23.9	19.7	43.6	61.9	-18.2
2.374	18.1	19.6	37.7	56.0	-18.3
1.806	18.0	19.6	37.6	56.0	-18.4
0.385	20.0	19.8	39.8	58.2	-18.4
3.026	18.0	19.6	37.6	56.0	-18.4

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Margin (dB)
0.572	21.6	19.8	41.4	46.0	-4.6
0.631	20.0	19.8	39.8	46.0	-6.2
0.493	20.0	19.8	39.8	46.1	-6.3
0.650	19.7	19.8	39.5	46.0	-6.5
0.669	19.7	19.8	39.5	46.0	-6.5
0.904	19.7	19.7	39.4	46.0	-6.6
0.344	22.3	19.8	42.1	49.1	-7.0
2.959	19.4	19.6	39.0	46.0	-7.0
1.426	19.2	19.7	38.9	46.0	-7.1
1.314	19.1	19.7	38.8	46.0	-7.2
1.762	19.0	19.6	38.6	46.0	-7.4
0.881	18.7	19.7	38.4	46.0	-7.6
1.359	18.7	19.7	38.4	46.0	-7.6
0.713	18.6	19.8	38.4	46.0	-7.6
3.012	18.8	19.6	38.4	46.0	-7.6
0.941	18.5	19.7	38.2	46.0	-7.8
0.296	22.7	19.8	42.5	50.4	-7.9
15.901	22.5	19.6	42.1	50.0	-7.9
2.933	18.5	19.6	38.1	46.0	-7.9
0.725	18.1	19.8	37.9	46.0	-8.1
0.814	18.1	19.7	37.8	46.0	-8.2
0.247	23.9	19.7	43.6	51.9	-8.2
2.374	18.1	19.6	37.7	46.0	-8.3
1.806	18.0	19.6	37.6	46.0	-8.4
0.385	20.0	19.8	39.8	48.2	-8.4
3.026	18.0	19.6	37.6	46.0	-8.4

CONCLUSION

Pass

Tested By