NORTHWEST EMC

Intel Corporation

Skylake

FCC 22H:2015

FCC 24E:2015

FCC 27:2015

Report # INTE5614

NVLAP Lab Code: 200630-0

CERTIFICATE OF TEST

NORTHWEST EMC
2014-12-10

Last Date of Test: August 11, 2015
Intel Corporation
Model: Skylake

Radio Equipment Testing

Standards

Specification	Method
FCC 22.913:2015	ANSI/TIA/EIA-603-C-2004
FCC 24.232:2015	
FCC 27.50:2015	

Results

Method Clause	Test Description	Applied	Results	Comments
2.2.1	Conducted Output Power	No	N/A	Not requested
2.2.2	Frequency Stability	No	N/A	Not requested
2.2.3	Occupied Bandwidth Emission Mask	No	N/A	Not requested
2.2.12	Out of Band Emissions	No	N/A	Not requested
2.2.12	Out of Band Emissions	No	N/A	Not requested
2.2.13	Spurious Emissions at the Antenna Terminals	No	N/A	Not requested
2.2.17	ERP of Fundamental	Yes	Pass	
2.2.17	EIRP of Fundamental	Yes	Pass	

Deviations From Test Standards

None

Approved By:

Kyle Holgate, 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

NORTHWEST EMC
REV 2014.10.14

Revision Number	Description	Date	Page Number
00	None		

ACCREDITATIONS AND AUTHORIZATIONS

NORTHWEST EMC
REV 2015.2.19

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

TMU.2015.07.10

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.

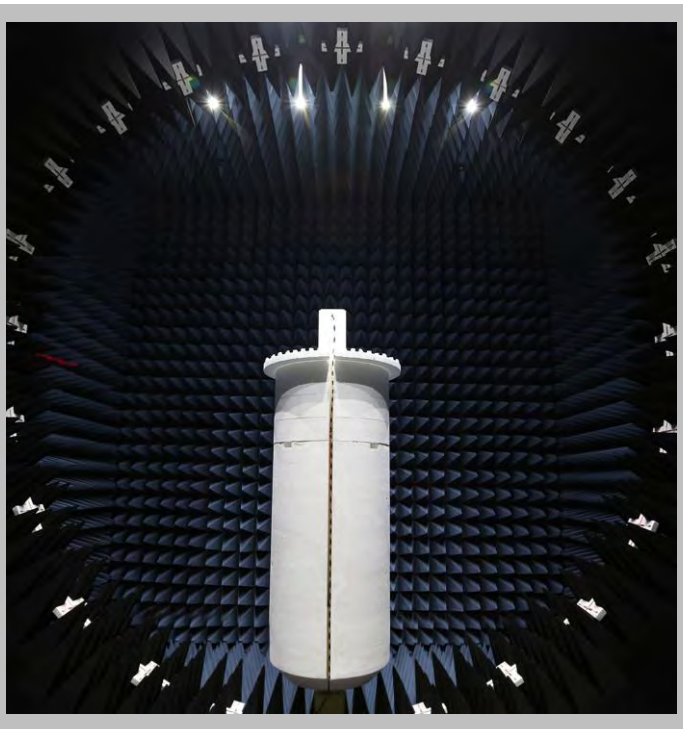
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

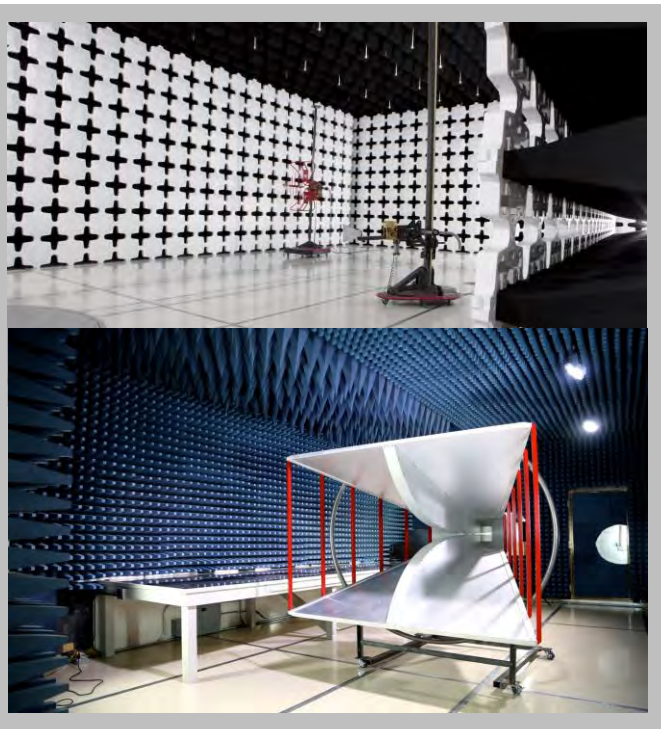
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	2.4 dB	-2.4 dB

FACILITIES

NORTHWEST EMC
REV 2015.2.19

California	Minnesota	New York	Oregon	Texas	Washington
Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Labs NC01-05 19201 120th 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/RRA, MIC, MOC, NCC, OFCA					
US0158	US0175	N/A	US0017	US0191	US0157





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:	Mike Lowe
Model:	Skylake
First Date of Test:	July 26, 2015
Last Date of Test:	August 11, 2015
Receipt Date of Samples:	July 26, 2015
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
Two in One laptop/tablet that contains 802.11abgn/ac, 2x2 MIMO, Bluetooth, NFC, LTE, GSM, WCDMA radios. A proximity sensor is co-located with the LTE, GSM, WCDMA radio.

Testing Objective:
To demonstrate compliance to FCC 22H, 24E, and 27 requirements. Separate test reports address compliance for spurious radiated emissions and antenna direct connect measurements.

CONFIGURATIONS

NORTHWEST EMC 2014-12-10

Configuration INTE5614- 1

Software/Firmware Running during test	
Description	**Version**
Windows 10	Pro Technical Preview

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Tablet w/Base	Intel Corporation	SKL21-SDS	Tablet: IASY515S0004, Base: IASY514B0060

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
AC/DC Adapter (Tablet/Base)	Delta Electronics	ADP-45GE AA	None
Mouse 1	Microsoft	1068	10-00199
Mouse 2	Lenovo	MOEUUO	44VE812
Mouse 3	Gateway	MOSXUB	None
Headphones	Apple	Unknown	Unknown
Headphones	None	Unknown	Unknown

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Power	No	0.55m	No	AC Mains	AC/DC Adapter (Tablet/Base)
DC Power	Yes	1.5m	Yes	AC/DC Adapter (Tablet/Base)	Tablet w/Base
USB	Yes	1.8m	Yes	Mouse 1	Tablet w/Base
USB	Yes	1.8m	No	Mouse 2	Tablet w/Base
USB	Yes	0.8m	No	Mouse 3	Tablet w/Base
HDMI Adapter	Yes	0.15m	No	Tablet w/Base	HDMI Cable
HDMI Cable	Yes	1.2m	No	HDMI Adapter	Unterminated

CONFIGURATIONS

NORTHWEST EMC 2014-12-10

Configuration INTE5615- 1

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Tablet w/Base	Intel Corporation	SKL21-SDS	Tablet: IASY515S0004, Base: IASY514B0060

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Headphones	None Provided	None Provided	10-00192
USB Mouse 1	Microsoft	1113	91705-523-2624511-61247
USB Mouse 2	Microsoft	1113	91705-523-3663262-61248
USB Mouse 3	Microsoft	1113	91705-523-9790021-51244
AC/DC Adapter (Tablet)	Delta Electronics Inc.	ADP-45GE AA	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Power	No	0.5m	No	AC/DC Adapter	AC Mains
DC Power	No	1.5m	No	Tablet	AC/DC Adapter
Audio	No	1.0m	No	Headphones	Laptop Computer
HDMI Cable	Yes	1.0m	No	Unterminated	Adapter Cable
Adapter Cable	Unknown	0.2m	No	HDMI Cable	Tablet
Mouse Cable x3	Unknown	2.0m	Yes	Mouse	Tablet

Configuration INTE5616- 1

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Tablet w/Base	Intel Corporation	SKL21-SDS	Tablet: IASY515S0004, Base: IASY514B0060

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Headphones	None Provided	None Provided	10-00192
USB Mouse 1	Microsoft	1113	91705-523-2624511-61247
USB Mouse 2	Microsoft	1113	91705-523-3663262-61248
USB Mouse 3	Microsoft	1113	91705-523-9790021-51244
AC/DC Adapter (Tablet)	Delta Electronics Inc.	ADP-45GE AA	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Power	No	0.5m	No	AC/DC Adapter	AC Mains
DC Power	No	1.5m	No	Tablet	AC/DC Adapter
Audio	No	1.0m	No	Headphones	Laptop Computer
HDMI Cable	Yes	1.0m	No	Unterminated	Adapter Cable
Adapter Cable	Unknown	0.2m	No	HDMI Cable	Tablet
Mouse Cable x3	Unknown	2.0m	Yes	Mouse	Tablet

MODIFICATIONS

NORTHWEST EMC 2014-12-10

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	7/26/2015	EIRP of Fundamental - Part 24E - BAND 2 LTE	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	7/26/2015	EIRP of Fundamental - Part 27 - BAND 4 LTE	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	7/31/2015	EIRP of Fundamental - Part 22H - BAND 5 LTE	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	8/1/2015	EIRP of Fundamental - Part 27 - BAND 7 LTE	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	8/3/2015	ERP of Fundamental - Part 27 - BAND 17 LTE	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	8/9/2015	ERP of Fundamental - Part 22H - WCDMA	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	8/9/2015	EIRP of Fundamental - Part 24E - WCDMA	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	8/9/2015	EIRP of Fundamental - Part 27 - WCDMA	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.
9	8/9/2015	ERP of Fundamental - Part 27 - BAND 13 LTE	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.
10	8/11/2015	EIRP of Fundamental - PART 24E - GSM	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

ERP OF FUNDAMENTAL - PART 22H - WCDMA

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

On, Continuous Tx/Rx WCDMA R99 Band V, 12.2k

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INTE5615 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	820 MHz	Stop Frequency	850 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
Antenna - Double Ridge	EMCO	3115	AHE	NCR	0 mo
Universal Radio Communication Tester	Anritsu	MT8820C	AFK	NCR	0 mo
Antenna - Dipole	EMCO	3121C-DB4	ADTD	4/3/2014	36 mo
Generator - Signal	Keysight	N5182B	TFX	4/16/2015	36 mo
Meter - Power	Gigatronics	8651A	SPM	5/25/2015	12 mo
Power Sensor	Gigatronics	80701A	SPL	5/25/2015	12 mo
Attenuator	S.M. Electronics	SA18N-06/SM4032	REE	10/20/2014	12 mo
Cable	N/A	Bilog Cables	EVA	2/10/2015	12 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2/10/2015	12 mo
Antenna - Biconilog	EMCO	3141	AXE	8/29/2014	24 mo

TEST DESCRIPTION

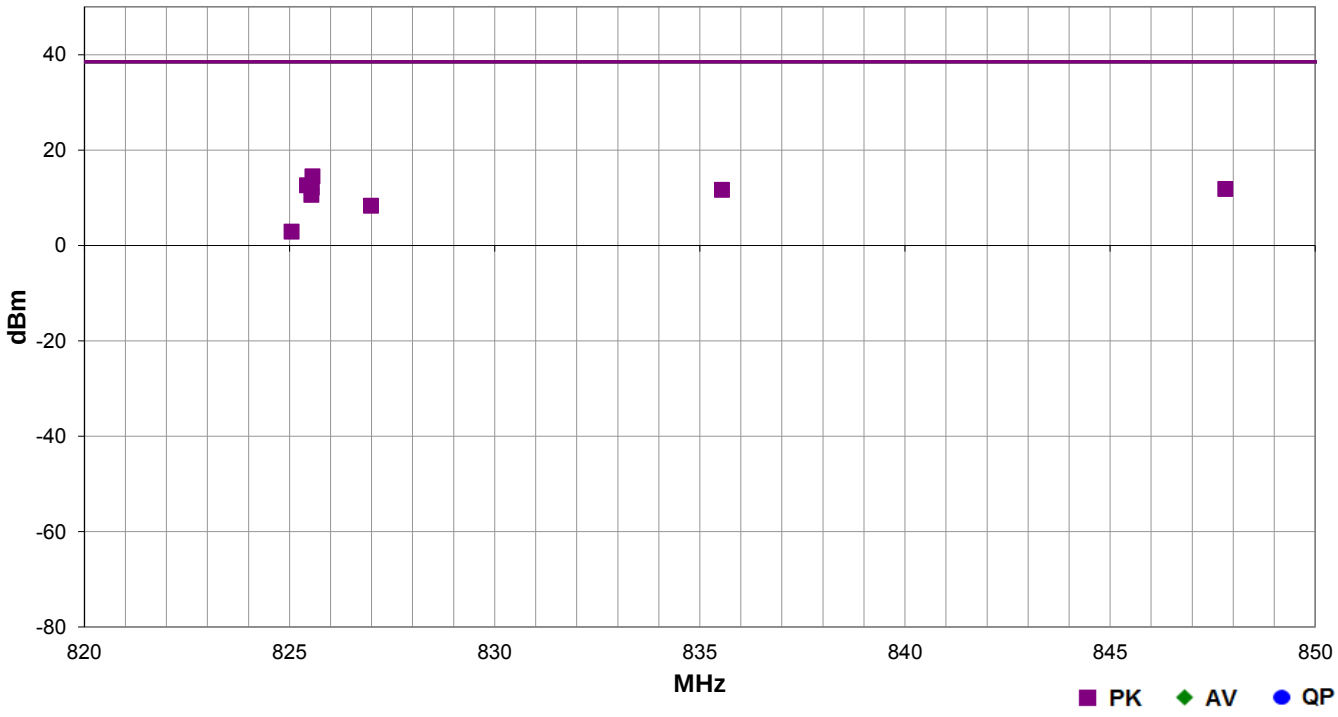
The fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarizationThe amplitude and frequency of the highest emission were noted. The EUT was then replaced with a ½ wave dipole that was successively tuned to the highest emission. A signal generator was connected to the dipole, and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded. The signal generator, amplifier, and cable were then connected to an analyzer and the power output was recorded. By factoring in the dipole antenna gain (dBi), the effective radiated power for the maximum fundamental emission was determined. The ERP value was obtained from taking the value in EIRP – 2.15.

ERP OF FUNDAMENTAL - PART 22H - WCDMA

Work Order:	INTE5615	**Date:**	08/09/15		
Project:	None	**Temperature:**	25.9 °C		
Job Site:	EV01	**Humidity:**	41.9% RH		
Serial Number:	See Configuration	**Barometric Pres.:**	1014.5 mbar	**Tested by:**	Brandon Hobbs
EUT:	Skylake				
Configuration:	1				
Customer:	Intel Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	On, Continuous Tx/Rx WCDMA R99 Band V				
Deviations:	None				
Comments:	Please reference the data comments for EUT orientation, channel and frequency.				

Test Specifications	**Test Method**
FCC 22.913:2015	ANSI/TIA/EIA-603-C-2004

Run #	0	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	825.558	1.0	223.0	Vert	PK	2.82E-02	14.5	38.5	-24.0	Low Ch. 4132, 826.4MHz, EUT Vert
	825.425	1.9	48.0	Vert	PK	1.82E-02	12.6	38.5	-25.9	Low Ch. 4132, 826.4MHz, EUT On Side
	825.542	1.0	153.0	Horz	PK	1.63E-02	12.1	38.5	-26.4	Low Ch. 4132, 826.4MHz, EUT Vert
	847.808	1.0	68.0	Vert	PK	1.53E-02	11.9	38.5	-26.6	High Ch. 4233, 846.6MHz, EUT Vert
	835.542	1.0	257.0	Vert	PK	1.46E-02	11.6	38.5	-26.9	Mid Ch. 4182, 836.4MHz, EUT Vert
	825.533	1.1	180.0	Horz	PK	1.15E-02	10.6	38.5	-27.9	Low Ch. 4132, 826.4MHz, EUT On Side
	826.983	1.3	17.0	Horz	PK	6.78E-03	8.3	38.5	-30.2	Low Ch. 4132, 826.4MHz, EUT Horz
	825.050	2.3	99.0	Vert	PK	1.95E-03	2.9	38.5	-35.6	Low Ch. 4132, 826.4MHz, EUT Horz

EIRP OF FUNDAMENTAL - PART 24E - WCDMA

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

On, Continuous Tx/Rx WCDMA R99 Band II, 12.2K

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INTE5615 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	1850 MHz	Stop Frequency	1920 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
Antenna - Double Ridge	EMCO	3115	AHE	NCR	0 mo
Antenna - Double Ridge	EMCO	3115	AHC	6/13/2014	24 mo
Generator - Signal	Keysight	N5182B	TFX	4/16/2015	36 mo
Meter - Power	Gigatronics	8651A	SPM	5/25/2015	12 mo
Power Sensor	Gigatronics	80701A	SPL	5/25/2015	12 mo
Attenuator	S.M. Electronics	SA18N-06/SM4032	REE	10/20/2014	12 mo
Universal Radio Communication Tester	Anritsu	MT8820C	AFK	NCR	0 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2/10/2015	12 mo
Cable	N/A	Bilog Cables	EVA	2/10/2015	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIZ	1/27/2014	24 mo

TEST DESCRIPTION

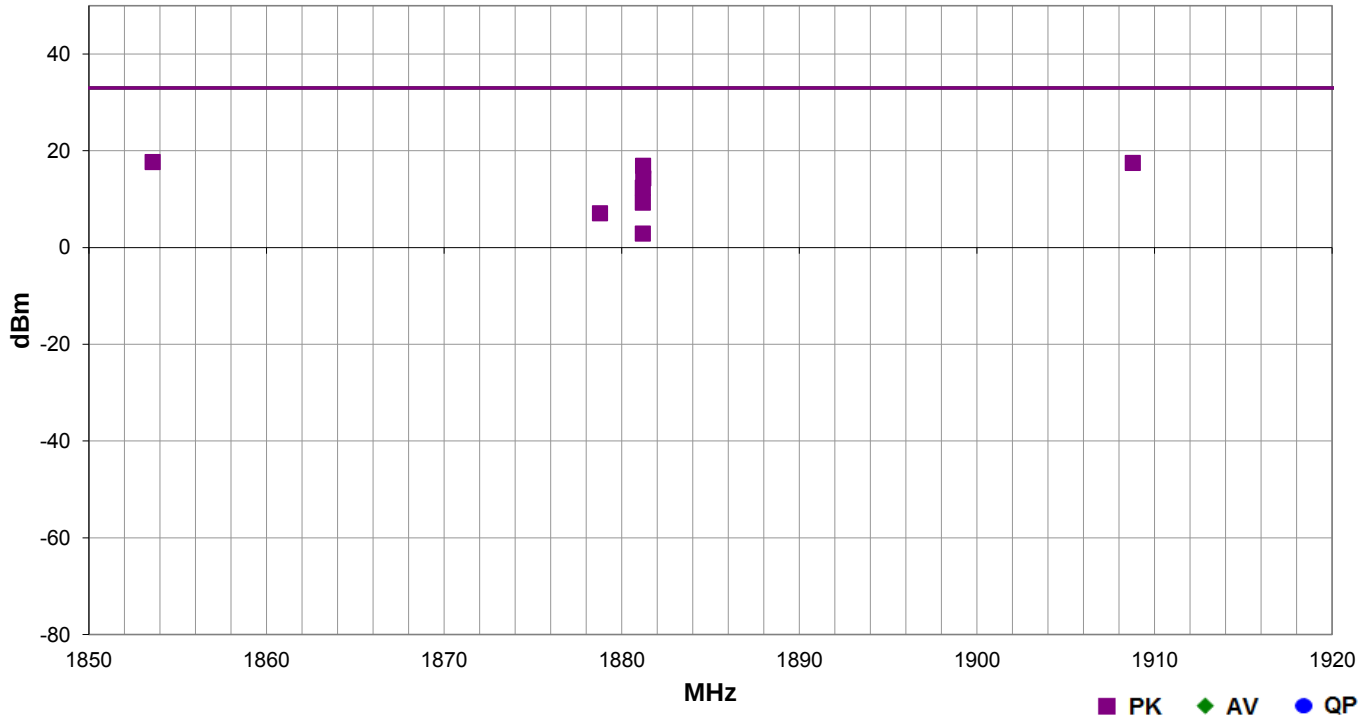
The fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarization and manipulating the EUT antenna in 3 orthogonal planes The antennas to be used with the EUT were tested. The EUT was transmitting while set at the lowest channel, a middle channel, and the highest channel available. The amplitude and frequency were noted. The EUT was then replaced with a horn antenna. A signal generator was connected to the horn antenna and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded, and by factoring in the gain (dBi) of the horn antenna the effective radiated power for each emission was determined.

EIRP OF FUNDAMENTAL - PART 24E - WCDMA

Work Order:	INTE5615	**Date:**	08/09/15		
Project:	None	**Temperature:**	25.9 °C		
Job Site:	EV01	**Humidity:**	41.9% RH		
Serial Number:	See Configuration	**Barometric Pres.:**	1014.5 mbar	**Tested by:**	Brandon Hobbs
EUT:	Skylake				
Configuration:	1				
Customer:	Intel Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	On, Continuous Tx/Rx WCDMA R99 Band II, 12.2K				
Deviations:	None				
Comments:	Please reference the data comments for EUT orientation, channel and frequency.				

Test Specifications	**Test Method**
FCC 24.232:2015	ANSI/TIA/EIA-603-C-2004

Run #	2	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	1853.592	1.5	67.0	Horz	PK	5.81E-02	17.6	33.0	-15.4	Low Ch. 9262, 1852MHz, EUT Horz
	1908.775	1.0	67.0	Horz	PK	5.61E-02	17.5	33.0	-15.5	High Ch. 9538, 1907MHz, EUT Horz
	1881.208	1.0	71.0	Horz	PK	4.86E-02	16.9	33.0	-16.1	Mid Ch. 9400, 1880MHz, EUT Horz
	1881.217	1.2	72.0	Horz	PK	2.67E-02	14.3	33.0	-18.7	Mid Ch. 9400, 1880MHz, EUT Vert
	1881.192	2.4	125.0	Vert	PK	1.73E-02	12.4	33.0	-20.6	Mid Ch. 9400, 1880MHz, EUT Vert
	1881.192	2.2	331.0	Vert	PK	8.45E-03	9.3	33.0	-23.7	Mid Ch. 9400, 1880MHz, EUT On Side
	1878.775	1.1	44.0	Horz	PK	5.08E-03	7.1	33.0	-25.9	Mid Ch. 9400, 1880MHz, EUT On Side
	1881.192	1.1	332.0	Vert	PK	1.94E-03	2.9	33.0	-30.1	Mid Ch. 9400, 1880MHz, EUT Horz

EIRP OF FUNDAMENTAL - PART 27 - WCDMA

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

On, Continuous Tx/Rx WCDMA R99 Band IV, AWS 1700, 12.2K

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INTE5615 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	1700 MHz	Stop Frequency	1760 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
Cable	N/A	Double Ridge Horn Cables	EVB	4/16/2015	12 mo
Antenna - Double Ridge	EMCO	3115	AHC	6/13/2014	24 mo
Attenuator	S.M. Electronics	SA18N-06/SM4032	REE	10/20/2014	12 mo
Generator - Signal	Keysight	N5182B	TFX	4/16/2015	36 mo
Meter - Power	Gigatronics	8651A	SPM	5/25/2015	12 mo
Power Sensor	Gigatronics	80701A	SPL	5/25/2015	12 mo
Antenna - Double Ridge	EMCO	3115	AHE	NCR	0 mo
Universal Radio Communication Tester	Anritsu	MT8820C	AFK	NCR	0 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2/10/2015	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIZ	1/27/2014	24 mo

TEST DESCRIPTION

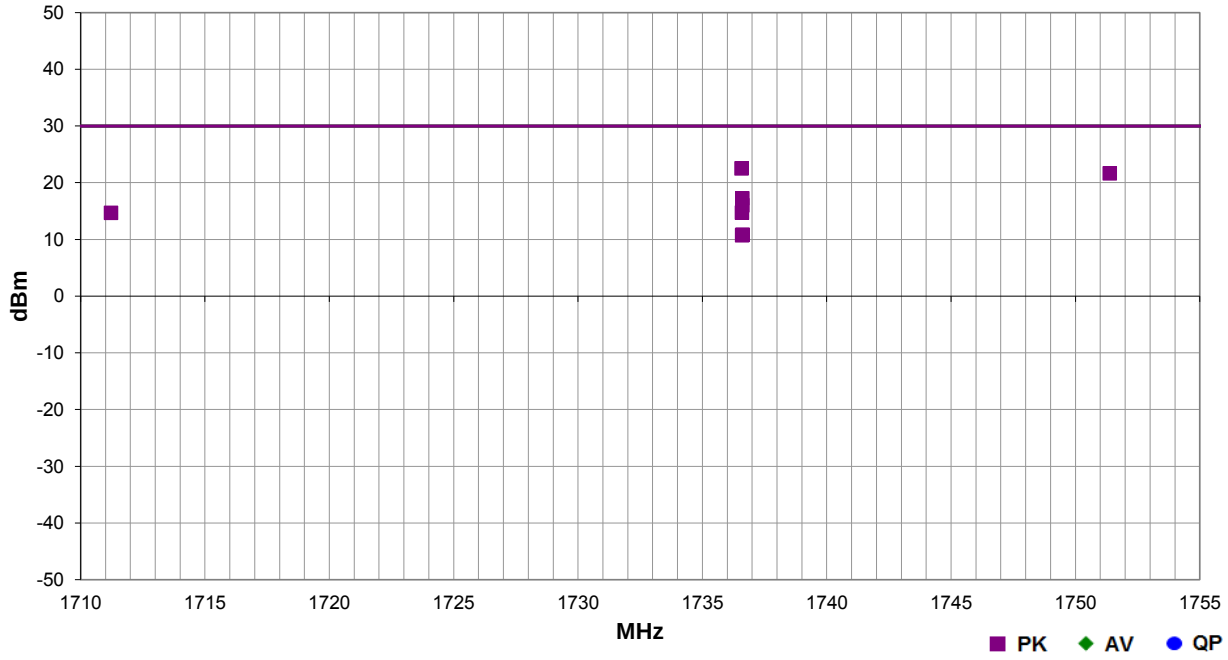
The fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarization and manipulating the EUT antenna in 3 orthogonal planes The antennas to be used with the EUT were tested. The EUT was transmitting while set at the lowest channel, a middle channel, and the highest channel available. The amplitude and frequency were noted. The EUT was then replaced with a horn antenna. A signal generator was connected to the horn antenna and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded, and by factoring in the gain (dBi) of the horn antenna the effective radiated power for each emission was determined.

EIRP OF FUNDAMENTAL - PART 27 - WCDMA

Work Order:	INTE5615	**Date:**	08/09/15		
Project:	None	**Temperature:**	25.9 °C		
Job Site:	EV01	**Humidity:**	41.9% RH		
Serial Number:	See Configuration	**Barometric Pres.:**	1014.5 mbar	**Tested by:**	Brandon Hobbs
EUT:	Skylake				
Configuration:	1				
Customer:	Intel Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	On, Continuous Tx/Rx WCDMA R99 Band IV, AWS 1700, 12.2K				
Deviations:	None				
Comments:	Please reference the data comments for EUT orientation, channel and frequency.				

Test Specifications	**Test Method**
FCC 27.50:2015	ANSI/TIA/EIA-603-C-2004

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



	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	1736.575	1.1	236.0	Horz	PK	1.79E-01	22.5	30.0	-7.5	Mid Ch. 1427, 1735.4MHz, EUT Vert
	1751.383	1.0	360.0	Horz	PK	1.47E-01	21.7	30.0	-8.3	High Ch. 1513, 1752.6MHz, EUT Vert
	1736.608	1.0	51.0	Vert	PK	5.30E-02	17.2	30.0	-12.8	Mid Ch. 1427, 1735.4MHz, EUT On Sid
	1736.608	1.1	58.0	Horz	PK	4.00E-02	16.0	30.0	-14.0	Mid Ch. 1427, 1735.4MHz, EUT Horz
	1736.592	1.0	317.0	Horz	PK	2.96E-02	14.7	30.0	-15.3	Mid Ch. 1427, 1735.4MHz, EUT On Sid
	1711.225	1.1	239.0	Horz	PK	2.95E-02	14.7	30.0	-15.3	Low Ch. 1312, 1712MHz, EUT Vert
	1736.617	1.0	95.0	Vert	PK	1.21E-02	10.8	30.0	-19.2	Mid Ch. 1427, 1735.4MHz, EUT Vert
	1736.600	3.6	272.0	Vert	PK	1.18E-02	10.7	30.0	-19.3	Mid Ch. 1427, 1735.4MHz, EUT Horz

EIRP OF FUNDAMENTAL - PART 24E - GSM

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

Continuous Transmit/Receive PCS 1900

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INTE5614 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	1800 MHz	Stop Frequency	2000 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
Power Sensor	Gigatronics	80701A	SPL	5/25/2015	12 mo
Meter - Power	Gigatronics	8651A	SPM	5/25/2015	12 mo
Generator - Signal	Keysight	N5182B	TFX	4/16/2015	36 mo
Antenna - Double Ridge	EMCO	3115	AHC	6/13/2014	24 mo
Antenna - Double Ridge	EMCO	3115	AHE	NCR	0 mo
Universal Radio Communication Tester	Rhode & Schwarz	CMU200	BSU	NCR	0 mo
Cable	N/A	Double Ridge Horn Cables	EVB	4/16/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAG	4/16/2015	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIZ	1/27/2014	24 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2/10/2015	12 mo

TEST DESCRIPTION

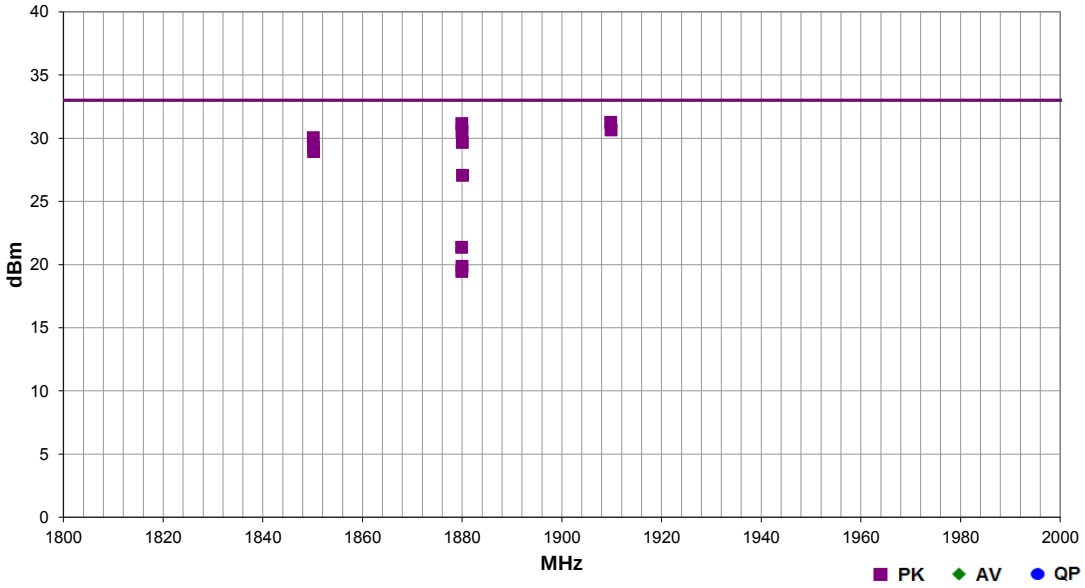
The fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarization and manipulating the EUT antenna in 3 orthogonal planes The antennas to be used with the EUT were tested. The EUT was transmitting while set at the lowest channel, a middle channel, and the highest channel available. The amplitude and frequency were noted. The EUT was then replaced with a horn antenna. A signal generator was connected to the horn antenna and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded, and by factoring in the gain (dBi) of the horn antenna the effective radiated power for each emission was determined.

EIRP OF FUNDAMENTAL - PART 24E - GSM

Work Order:	INTE5614	**Date:**	08/11/15		
Project:	None	**Temperature:**	24.2 °C		
Job Site:	EV01	**Humidity:**	44.3% RH		
Serial Number:	IASY515S0004	**Barometric Pres.:**	1013.4 mbar	**Tested by:**	Cole Ghizzone
EUT:	Skylake				
Configuration:	1				
Customer:	Intel Corporation				
Attendees:	Mike Lowe				
EUT Power:	110VAC/60Hz				
Operating Mode:	Continuous Transmit/Receive PCS 1900, reference the data comments for mode, modulation, channel, frequency and slots up/down.				
Deviations:	None				
Comments:	See data comments for EUT orientation.				

Test Specifications	**Test Method**
FCC 24.232:2015	ANSI/TIA/EIA-603-C-2004

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



	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	1909.810	1.4	129.0	Horz	PK	1.34E+00	31.3	33.0	-1.7	High Ch. 810, 1909.8MHz, E-GPRS, MCS-9, slot setting 1up/1down, EUT Vert
	1879.925	1.0	122.0	Horz	PK	1.31E+00	31.2	33.0	-1.8	Mid Ch. 661, 1800MHz, GPRS, CS-4, slot setting 1up/1down, EUT Vert
	1909.875	1.1	64.0	Horz	PK	1.16E+00	30.7	33.0	-2.3	High Ch. 810, 1909.8MHz, GPRS, CS-4, slot setting 1up/1down, EUT Vert
	1879.965	1.9	80.0	Vert	PK	1.14E+00	30.6	33.0	-2.4	Mid Ch. 661, 1800MHz, GPRS, CS-4, slot setting 1up/1down, EUT Vert
	1850.110	1.5	126.0	Horz	PK	1.01E+00	30.0	33.0	-3.0	Low Ch. 512, 1850.2MHz, GPRS, CS-4, slot setting 1up/1down, EUT Vert
	1880.020	1.3	129.0	Horz	PK	9.25E-01	29.7	33.0	-3.3	Mid Ch. 661, 1880MHz, E-GPRS, MCS-9, slot setting 1up/1down, EUT Vert
	1850.165	2.4	96.0	Vert	PK	8.43E-01	29.3	33.0	-3.7	Low Ch. 512, 1850.2MHz, GPRS, CS-4, slot setting 1up/1down, EUT Vert
	1850.195	1.6	128.0	Horz	PK	7.83E-01	28.9	33.0	-4.1	Low Ch. 512, 1850.2MHz, E-GPRS, MCS-9, slot setting 1up/1down, EUT Vert
	1880.060	2.1	162.0	Vert	PK	5.08E-01	27.1	33.0	-5.9	Mid Ch. 661, 1800MHz, GPRS, CS-4, slot setting 1up/1down, EUT On Side
	1879.905	2.1	104.0	Vert	PK	1.37E-01	21.4	33.0	-11.6	Mid Ch. 661, 1800MHz, GPRS, CS-4, slot setting 1up/1down, EUT Horz
	1879.965	1.0	5.0	Horz	PK	9.68E-02	19.9	33.0	-13.1	Mid Ch. 661, 1800MHz, GPRS, CS-4, slot setting 1up/1down, EUT On Side
	1879.930	1.0	109.0	Horz	PK	8.83E-02	19.5	33.0	-13.5	Mid Ch. 661, 1800MHz, GPRS, CS-4, slot setting 1up/1down, EUT Horz

EIRP OF FUNDAMENTAL - PART 24E - BAND 2 LTE

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

Continuous Transmit/Receive LTE Band 2

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INTE5616 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	1850.7 MHz	Stop Frequency	1909.3 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
Radio Communication Analyzer	Anritsu	MT8820C	AFK	NCR	0 mo
Antenna, Horn	EMCO	3115	AHE	NCR	0 mo
Spectrum Analyzer	Keysight	N9010A	AFN	2/10/2015	12 mo
Power Meter	Gigatronics	8651A	SPM	5/25/2015	12 mo
Power Sensor	Gigatronics	80701A	SPL	5/25/2015	12 mo
Antenna, Horn	EMCO	3115	AHC	6/13/2014	24 mo
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	10/20/2014	12 mo
Signal Generator	Keysight	N5182B	TFX	4/16/2015	36 mo
Cable	N/A	Double Ridge Horn Cables	EVB	4/16/2015	12 mo
Antenna, Horn	ETS Lindgren	3115	AIZ	1/27/2014	24 mo

TEST DESCRIPTION

The fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarization and manipulating the EUT antenna in 3 orthogonal planes The antennas to be used with the EUT were tested. The EUT was transmitting while set at the lowest channel, a middle channel, and the highest channel available. The amplitude and frequency were noted. The EUT was then replaced with a horn antenna. A signal generator was connected to the horn antenna and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded, and by factoring in the gain (dBi) of the horn antenna the effective radiated power for each emission was determined.

EIRP OF FUNDAMENTAL - PART 24E - BAND 2 LTE

Work Order:	INTE5616	**Date:**	07/26/15		
Project:	None	**Temperature:**	24.3 °C		
Job Site:	EV01	**Humidity:**	44.5% RH		
Serial Number:	See Configuration	**Barometric Pres.:**	1018.4 mbar	**Tested by:**	Brandon Hobbs
EUT:	Skylake				
Configuration:	1				
Customer:	Intel Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Continuous Transmit/Receive LTE Band 2				
Deviations:	None				
Comments:	Please reference the data comments for EUT orientation, channel, frequency, modulation, RB offset and RB Size				

Test Specifications	**Test Method**
FCC 24.232:2015	ANSI/TIA/EIA-603-C-2004

Run #	0	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass

	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	1879.990	1.3	138.0	Horz	AV	7.69E-01	28.9	33.0	-4.1	Mid Ch. 18900, 1880MHz, 16QAM, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	1879.840	1.3	138.0	Horz	PK	7.69E-01	28.9	33.0	-4.1	Mid Ch. 18900, 1880MHz, 16QAM, 10MHz BW, RB Size 1, RB Offset 24, EUT Vert
	1880.025	1.3	138.0	Horz	PK	7.52E-01	28.8	33.0	-4.2	Mid Ch. 18900, 1880MHz, 16QAM, 15MHz BW, RB Size 1, RB Offset 37, EUT Vert
	1880.000	1.3	138.0	Horz	PK	7.52E-01	28.8	33.0	-4.2	Mid Ch. 18900, 1880MHz, 16QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	1879.965	1.3	141.0	Horz	PK	7.52E-01	28.8	33.0	-4.2	Mid Ch. 18900, 1880MHz, 16QAM, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	1879.895	1.3	138.0	Horz	PK	7.18E-01	28.6	33.0	-4.4	Mid Ch. 18900, 1880MHz, 16QAM, 20MHz BW, RB Size 1, RB Offset 49, EUT Vert
	1880.000	1.3	138.0	Horz	PK	7.01E-01	28.5	33.0	-4.5	Mid Ch. 18900, 1880MHz, QPSK, 15MHz BW, RB Size 1, RB Offset 37, EUT Vert
	1879.915	1.3	138.0	Horz	PK	7.01E-01	28.5	33.0	-4.5	Mid Ch. 18900, 1880MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 24, EUT Vert
	1880.015	1.3	138.0	Horz	PK	6.85E-01	28.4	33.0	-4.6	Mid Ch. 18900, 1880MHz, QPSK, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	1879.970	1.3	138.0	Horz	PK	6.85E-01	28.4	33.0	-4.6	Mid Ch. 18900, 1880MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	1879.900	1.3	138.0	Horz	PK	6.85E-01	28.4	33.0	-4.6	Mid Ch. 18900, 1880MHz, QPSK, 20MHz BW, RB Size 1, RB Offset 49, EUT Vert
	1879.895	2.1	60.0	Horz	PK	6.55E-01	28.2	33.0	-4.8	Mid Ch. 18900, 1880MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	1879.890	3.0	89.0	Vert	PK	5.97E-01	27.8	33.0	-5.2	Mid Ch. 18900, 1880MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	1850.670	1.9	133.0	Horz	PK	5.57E-01	27.5	33.0	-5.5	Low Ch. 18607, 1850.7MHz, 16QAM, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	1850.595	1.9	133.0	Horz	PK	5.45E-01	27.4	33.0	-5.6	Low Ch. 18650, 1855MHz, 16QAM, 10MHz BW, RB Size 1, RB Offset 0, EUT Vert
	1850.605	1.9	133.0	Horz	PK	5.20E-01	27.2	33.0	-5.8	Low Ch. 18650, 1855MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 0, EUT Vert
	1850.380	1.9	133.0	Horz	PK	5.20E-01	27.2	33.0	-5.8	Low Ch. 18625, 1852.5MHz, 16QAM, 5MHz BW, RB Size 1, RB Offset 0, EUT Vert
	1851.425	1.9	133.0	Horz	PK	5.09E-01	27.1	33.0	-5.9	Low Ch. 18615, 1851.5MHz, 16QAM, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	1850.575	1.9	133.0	Horz	PK	5.08E-01	27.1	33.0	-5.9	Low Ch. 18607, 1850.7MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	1850.355	1.9	133.0	Horz	PK	5.08E-01	27.1	33.0	-5.9	Low Ch. 18625, 1852.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 0, EUT Vert
	1850.225	1.9	133.0	Horz	PK	4.74E-01	26.8	33.0	-6.2	Low Ch. 18615, 1851.5MHz, QPSK, 3MHz BW, RB Size 1, RB Offset 0, EUT Vert
	1879.890	3.8	24.0	Vert	PK	3.94E-01	26.0	33.0	-7.0	Mid Ch. 18900, 1880MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT On Side
	1879.910	3.7	120.0	Vert	PK	1.53E-01	21.9	33.0	-11.1	Mid Ch. 18900, 1880MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Horz
	1879.980	3.7	113.0	Vert	PK	1.47E-01	21.7	33.0	-11.3	Mid Ch. 18900, 1880MHz, 16QAM, 15MHz BW, RB Size 1, RB Offset 37, EUT Vert
	1880.000	3.7	113.0	Vert	PK	1.43E-01	21.6	33.0	-11.4	Mid Ch. 18900, 1880MHz, 16QAM, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	1880.000	3.7	113.0	Vert	PK	1.43E-01	21.6	33.0	-11.4	Mid Ch. 18900, 1880MHz, 16QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	1879.905	3.7	113.0	Vert	PK	1.43E-01	21.6	33.0	-11.4	Mid Ch. 18900, 1880MHz, 16QAM, 10MHz BW, RB Size 1, RB Offset 24, EUT Vert
	1879.905	1.0	69.0	Horz	PK	1.40E-01	21.5	33.0	-11.5	Mid Ch. 18900, 1880MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Horz
	1879.925	3.7	113.0	Vert	PK	1.40E-01	21.5	33.0	-11.5	Mid Ch. 18900, 1880MHz, 16QAM, 20MHz BW, RB Size 1, RB Offset 49, EUT Vert
	1879.945	3.7	111.0	Vert	PK	1.37E-01	21.4	33.0	-11.6	Mid Ch. 18900, 1880MHz, 16QAM, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	1908.515	1.6	139.0	Horz	PK	1.26E-01	21.0	33.0	-12.0	High Ch. 19185, 1908.5MHz, 16QAM, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	1902.470	1.6	138.0	Horz	PK	1.21E-01	20.8	33.0	-12.2	High Ch. 19125, 1902.5MHz, QPSK, 15MHz BW, RB Size 1, RB Offset 37, EUT Vert
	1909.235	1.6	139.0	Horz	PK	1.18E-01	20.7	33.0	-12.3	High Ch. 19193, 1909.3MHz, 16QAM, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	1908.475	1.6	139.0	Horz	PK	1.10E-01	20.4	33.0	-12.6	High Ch. 19185, 1908.5MHz, QPSK, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert

	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	1909.495	1.6	135.0	Horz	PK	1.08E-01	20.3	33.0	-12.7	High Ch. 19195, 1907.5MHz, 16QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	1909.425	1.6	138.0	Horz	PK	1.08E-01	20.3	33.0	-12.7	High Ch. 19150, 1905MHz, 16QAM, 10MHz BW, RB Size 1, RB Offset 49, EUT Vert
	1902.500	1.6	138.0	Horz	PK	1.08E-01	20.3	33.0	-12.7	High Ch. 19125, 1902.5MHz, QPSK, 15MHz BW, RB Size 1, RB Offset 37, EUT Vert
	1909.215	1.6	139.0	Horz	PK	1.03E-01	20.1	33.0	-12.9	High Ch. 19193, 1909.3MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	1899.925	1.6	138.0	Horz	PK	9.62E-02	19.8	33.0	-13.2	High Ch. 19100, 1900MHz, 16QAM, 20MHz BW, RB Size 1, RB Offset 49, EUT Vert
	1900.605	1.6	138.0	Horz	PK	9.34E-02	19.7	33.0	-13.3	High Ch. 19150, 1905MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 0, EUT Vert
	1880.070	3.7	113.0	Vert	PK	9.29E-02	19.7	33.0	-13.3	Mid Ch. 18900, 1880MHz, QPSK, 15MHz BW, RB Size 1, RB Offset 37, EUT Vert
	1880.010	3.7	113.0	Vert	PK	9.28E-02	19.7	33.0	-13.3	Mid Ch. 18900, 1880MHz, QPSK, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	1879.955	3.7	113.0	Vert	PK	9.28E-02	19.7	33.0	-13.3	Mid Ch. 18900, 1880MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	1879.870	3.7	113.0	Vert	PK	9.28E-02	19.7	33.0	-13.3	Mid Ch. 18900, 1880MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 24, EUT Vert
	1850.835	1.9	133.0	Horz	PK	9.26E-02	19.7	33.0	-13.3	Low Ch. 18675, 1857.5MHz, 16QAM, 15MHz BW, RB Size 1, RB Offset 0, EUT Vert
	1879.895	3.7	113.0	Vert	PK	9.07E-02	19.6	33.0	-13.4	Mid Ch. 18900, 1880MHz, QPSK, 20MHz BW, RB Size 1, RB Offset 49, EUT Vert
	1879.885	3.7	111.0	Vert	PK	9.07E-02	19.6	33.0	-13.4	Mid Ch. 18900, 1880MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	1899.875	1.6	138.0	Horz	PK	8.89E-02	19.5	33.0	-13.5	High Ch. 19100, 1900MHz, QPSK, 20MHz BW, RB Size 1, RB Offset 49, EUT Vert
	1879.905	1.0	220.0	Horz	PK	8.46E-02	19.3	33.0	-13.7	Mid Ch. 18900, 1880MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT On Side
	1850.830	1.9	133.0	Horz	PK	8.06E-02	19.1	33.0	-13.9	Low Ch. 18675, 1857.5MHz, QPSK, 15MHz BW, RB Size 1, RB Offset 0, EUT Vert
	1859.920	1.9	133.0	Horz	PK	7.70E-02	18.9	33.0	-14.1	Low Ch. 18700, 1860MHz, 16QAM, 20MHz BW, RB Size 1, RB Offset 049, EUT Vert
	1859.890	1.9	133.0	Horz	PK	6.40E-02	18.1	33.0	-14.9	Low Ch. 18700, 1860MHz, QPSK, 20MHz BW, RB Size 1, RB Offset 049, EUT Vert
	1910.090	1.6	135.0	Horz	PK	4.09E-02	16.1	33.0	-16.9	High Ch. 19195, 1907.5MHz, QPSK, 5MHz BW, RB Size 12, RB Offset 6, EUT Vert

EIRP OF FUNDAMENTAL - PART 27 - BAND 4 LTE

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

Continuous Transmit/Receive LTE Band 4

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INTE5616 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	1710 MHz	Stop Frequency	1755 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
Radio Communication Analyzer	Anritsu	MT8820C	AFK	NCR	0 mo
Signal Generator	Keysight	N5182B	TFX	4/16/2015	36 mo
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	10/20/2014	12 mo
Antenna, Horn	EMCO	3115	AHC	6/13/2014	24 mo
Antenna, Horn	EMCO	3115	AHE	NCR	0 mo
Power Meter	Gigatronics	8651A	SPM	5/25/2015	12 mo
Power Sensor	Gigatronics	80701A	SPL	5/25/2015	12 mo
Spectrum Analyzer	Keysight	N9010A	AFN	2/10/2015	12 mo
Cable	N/A	Double Ridge Horn Cables	EVB	4/16/2015	12 mo
Antenna, Horn	ETS Lindgren	3115	AIZ	1/27/2014	24 mo

TEST DESCRIPTION

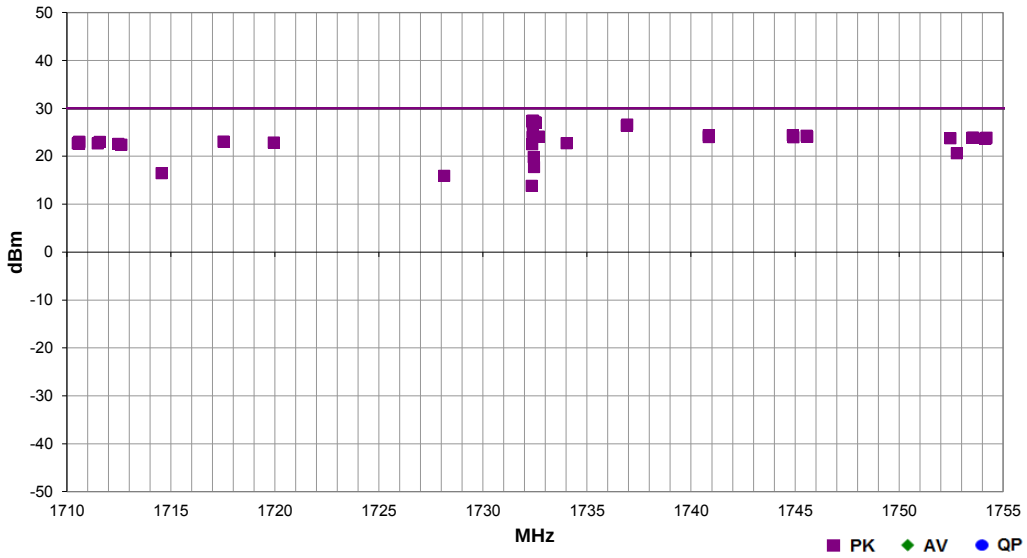
The fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarization and manipulating the EUT antenna in 3 orthogonal planes The antennas to be used with the EUT were tested. The EUT was transmitting while set at the lowest channel, a middle channel, and the highest channel available. The amplitude and frequency were noted. The EUT was then replaced with a horn antenna. A signal generator was connected to the horn antenna and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded, and by factoring in the gain (dBi) of the horn antenna the effective radiated power for each emission was determined.

EIRP OF FUNDAMENTAL - PART 27 - BAND 4 LTE

Work Order:	INTE5616	**Date:**	07/26/15		
Project:	None	**Temperature:**	24.8 °C		
Job Site:	EV01	**Humidity:**	42.7% RH		
Serial Number:	See Configuration	**Barometric Pres.:**	1018.4 mb	**Tested by:**	Brandon Hobbs
EUT:	Skylake				
Configuration:	1				
Customer:	Intel Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Continuous Transmit/Receive LTE Band 4				
Deviations:	None				
Comments:	Please reference the data comments for EUT orientation, channel, frequency, modulation, RB offset and RB Size				

Test Specifications	**Test Method**
FCC 27.50:2015	ANSI/TIA/EIA-603-C-2004

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



	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	1732.415	1.5	71.0	Horz	PK	5.53E-01	27.4	30.0	-2.6	Mid Ch. 20175, 1732.5MHz, 16QAM, 15MHz BW, RB Size 1, RB Offset 37, EUT Horz
	1732.370	1.5	68.0	Horz	PK	5.53E-01	27.4	30.0	-2.6	Mid Ch. 20175, 1732.5MHz, 16QAM, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Horz
	1732.370	1.5	71.0	Horz	PK	5.41E-01	27.3	30.0	-2.7	Mid Ch. 20175, 1732.5MHz, 16QAM, 20MHz BW, RB Size 1, RB Offset 49, EUT Horz
	1732.525	1.5	68.0	Horz	PK	5.05E-01	27.0	30.0	-3.0	Mid Ch. 20175, 1732.5MHz, 16QAM, 3MHz BW, RB Size 1, RB Offset 7, EUT Horz
	1732.485	1.5	68.0	Horz	PK	5.05E-01	27.0	30.0	-3.0	Mid Ch. 20175, 1732.5MHz, 16QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Horz
	1732.500	1.5	71.0	Horz	PK	5.05E-01	27.0	30.0	-3.0	Mid Ch. 20175, 1732.5MHz, QPSK, 15MHz BW, RB Size 1, RB Offset 37, EUT Horz
	1732.390	1.5	71.0	Horz	PK	5.05E-01	27.0	30.0	-3.0	Mid Ch. 20175, 1732.5MHz, QPSK, 20MHz BW, RB Size 1, RB Offset 49, EUT Horz
	1736.935	1.5	71.0	Horz	PK	4.58E-01	26.6	30.0	-3.4	Mid Ch. 20175, 1732.5MHz, 16QAM, 10MHz BW, RB Size 1, RB Offset 49, EUT Horz
	1736.905	1.5	71.0	Horz	PK	4.39E-01	26.4	30.0	-3.6	Mid Ch. 20175, 1732.5MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 49, EUT Horz
	1732.400	1.0	73.0	Horz	PK	3.26E-01	25.1	30.0	-4.9	Mid Ch. 20175, 1732.5MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Horz
	1744.890	1.0	56.0	Horz	PK	2.75E-01	24.4	30.0	-5.6	High Ch. 20300, 1745MHz, 16QAM, 20MHz BW, RB Size1, RB Offset 49, EUT Horz
	1740.855	1.0	56.0	Horz	PK	2.75E-01	24.4	30.0	-5.6	High Ch. 20325, 1747.5MHz, 16QAM, 15MHz BW, RB Size1, RB Offset 0, EUT Horz
	1745.555	1.0	56.0	Horz	PK	2.69E-01	24.3	30.0	-5.7	High Ch. 20350, 1750MHz, 16QAM, 10MHz BW, RB Size 1, RB Offset 0, EUT Horz
	1732.680	1.5	68.0	Horz	PK	2.59E-01	24.1	30.0	-5.9	Mid Ch. 20175, 1732.5MHz, QPSK, 3MHz BW, RB Size 8, RB Offset 4, EUT Horz
	1745.590	1.0	56.0	Horz	PK	2.56E-01	24.1	30.0	-5.9	High Ch. 20350, 1750MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 0, EUT Horz
	1732.380	1.0	345.0	Horz	PK	2.53E-01	24.0	30.0	-6.0	Mid Ch. 20175, 1732.5MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	1744.920	1.0	56.0	Horz	PK	2.51E-01	24.0	30.0	-6.0	High Ch. 20300, 1745MHz, QPSK, 20MHz BW, RB Size1, RB Offset 49, EUT Horz
	1740.850	1.0	56.0	Horz	PK	2.51E-01	24.0	30.0	-6.0	High Ch. 20325, 1747.5MHz, QPSK, 15MHz BW, RB Size1, RB Offset 0, EUT Horz
	1754.200	1.0	56.0	Horz	PK	2.43E-01	23.9	30.0	-6.1	High Ch. 20393, 1754.3MHz, 16QAM, 1.4MHz BW, RB Size1, RB Offset 2, EUT Horz
	1753.565	1.0	56.0	Horz	PK	2.43E-01	23.9	30.0	-6.1	High Ch. 20385, 1753.5MHz, 16QAM, 3MHz BW, RB Size 1, RB Offset 7, EUT Horz
	1753.520	1.0	56.0	Horz	PK	2.43E-01	23.9	30.0	-6.1	High Ch. 20385, 1753.5MHz, QPSK, 3MHz BW, RB Size 1, RB Offset 7, EUT Horz
	1752.465	1.0	56.0	Horz	PK	2.38E-01	23.8	30.0	-6.2	High Ch. 20375, 1752.5MHz, 16QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Horz
	1754.150	1.0	56.0	Horz	PK	2.32E-01	23.7	30.0	-6.3	High Ch. 20393, 1754.3MHz, QPSK, 1.4MHz BW, RB Size1, RB Offset 2, EUT Horz
	1717.530	1.0	62.0	Horz	PK	2.03E-01	23.1	30.0	-6.9	Low Ch. 20025, 1717.5MHz, 16QAM, 15MHz BW, RB Size 1, RB Offset 37, EUT Horz
	1711.575	1.0	24.0	Horz	PK	2.00E-01	23.0	30.0	-7.0	Low Ch. 19965, 1711.5MHz, 16QAM, 3MHz BW, RB Size 1, RB Offset 7, EUT Horz
	1710.575	1.0	24.0	Horz	PK	2.00E-01	23.0	30.0	-7.0	Low Ch. 19957, 1710.7MHz, 16QAM, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Horz
	1710.600	1.0	62.0	Horz	PK	2.00E-01	23.0	30.0	-7.0	Low Ch. 20000, 1715MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 0, EUT Horz
	1719.945	1.0	62.0	Horz	PK	1.94E-01	22.9	30.0	-7.1	Low Ch. 20050, 1720MHz, 16QAM, 20MHz BW, RB Size 1, RB Offset 49, EUT Horz
	1711.485	1.0	24.0	Horz	PK	1.86E-01	22.7	30.0	-7.3	Low Ch. 19965, 1711.5MHz, QPSK, 3MHz BW, RB Size 1, RB Offset 7, EUT Horz
	1710.525	1.0	62.0	Horz	PK	1.86E-01	22.7	30.0	-7.3	Low Ch. 20000, 1715MHz, 16QAM, 10MHz BW, RB Size 1, RB Offset 0, EUT Horz
	1734.017	1.5	68.0	Horz	PK	1.87E-01	22.7	30.0	-7.3	Mid Ch. 20175, 1732.5MHz, QPSK, 5MHz BW, RB Size 12, RB Offset 11, EUT Horz
	1712.470	1.0	62.0	Horz	PK	1.82E-01	22.6	30.0	-7.4	Low Ch. 19975, 1712.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Horz
	1710.585	1.0	24.0	Horz	PK	1.82E-01	22.6	30.0	-7.4	Low Ch. 19957, 1710.7MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Horz
	1732.365	1.0	44.0	Vert	PK	1.79E-01	22.5	30.0	-7.5	Mid Ch. 20175, 1732.5MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT On Side
	1712.615	1.0	62.0	Horz	PK	1.74E-01	22.4	30.0	-7.6	Mid Ch. 20175, 1732.5MHz, 16QAM, 5MHz BW, RB Size 12, RB Offset 11, EUT Horz
	1752.780	1.0	56.0	Horz	PK	1.16E-01	20.7	30.0	-9.3	High Ch. 20375, 1752.5MHz, QPSK, 5MHz BW, RB Size 12, RB Offset 12, EUT Horz

	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	1732.435	1.0	113.0	Vert	PK	9.66E-02	19.9	30.0	-10.1	Mid Ch. 20175, 1732.5MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	1732.450	1.3	75.0	Horz	PK	5.96E-02	17.8	30.0	-12.2	Mid Ch. 20175, 1732.5MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT On Side
	1714.550	1.0	62.0	Horz	PK	4.45E-02	16.5	30.0	-13.5	Low Ch. 20025, 1717.5MHz, QPSK, 15MHz BW, RB Size 36, RB Offset 18, EUT Horz
	1728.133	1.0	62.0	Horz	PK	3.92E-02	15.9	30.0	-14.1	Low Ch. 20050, 1720MHz, QPSK, 20MHz BW, RB Size 50, RB Offset 49, EUT Horz
	1732.340	1.5	42.0	Vert	PK	2.43E-02	13.9	30.0	-16.1	Mid Ch. 20175, 1732.5MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Horz

EIRP OF FUNDAMENTAL - PART 22H - BAND 5 LTE

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

Continuous Transmit/Receive on Band 5

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INTE5616 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	824 MHz	Stop Frequency	849 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
Antenna, Dipole	EMCO	3121C-DB4	ADTD	4/3/2014	36 mo
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	10/20/2014	12 mo
Power Sensor	Gigatronics	80701A	SPL	5/25/2015	12 mo
Power Meter	Gigatronics	8651A	SPM	5/25/2015	12 mo
Signal Generator	Keysight	N5182B	TFX	4/16/2015	36 mo
Cable	N/A	Bilog Cables	EVA	2/10/2015	12 mo
Antenna, Biconilog	EMCO	3141	AXE	8/29/2014	24 mo
Spectrum Analyzer	Keysight	N9010A	AFN	2/10/2015	12 mo

TEST DESCRIPTION

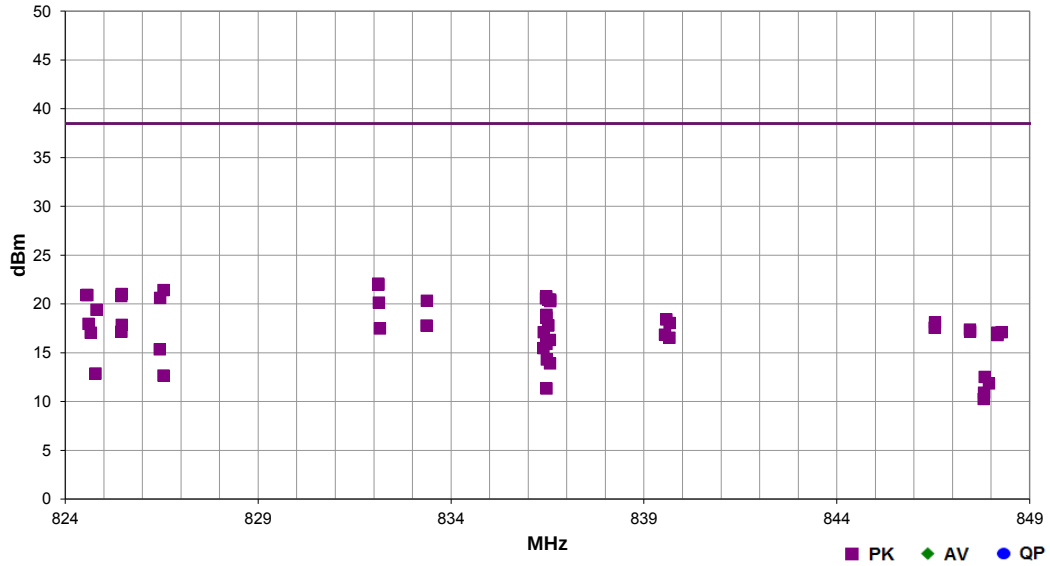
The fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarizationThe amplitude and frequency of the highest emission were noted. The EUT was then replaced with a ½ wave dipole that was successively tuned to the highest emission. A signal generator was connected to the dipole, and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded. The signal generator, amplifier, and cable were then connected to an analyzer and the power output was recorded. By factoring in the dipole antenna gain (dBi), the effective radiated power for the maximum fundamental emission was determined. The ERP value was obtained from taking the value in EIRP – 2.15.

EIRP OF FUNDAMENTAL - PART 22H - BAND 5 LTE

Work Order:	INTE5616	**Date:**	07/31/15		
Project:	None	**Temperature:**	24.8 °C		
Job Site:	EV01	**Humidity:**	38.6% RH		
Serial Number:	See Configuration	**Barometric Pres.:**	1017.9 mbar	**Tested by:**	Cole Ghizzone
EUT:	Skylake				
Configuration:	1				
Customer:	Intel Corporation				
Attendees:	Mike Lowe				
EUT Power:	110VAC/60Hz				
Operating Mode:	Continuous Transmit/Receive on Band 5				
Deviations:	None				
Comments:	Please reference the data comments for EUT orientation, channel, frequency, modulation, RB offset and RB Size				

Test Specifications	**Test Method**
FCC 22.913:2015	ANSI/TIA/EIA-603-C-2004

Run #	2	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	832.110	1.0	360.0	Vert	PK	1.61E-01	22.1	38.5	-16.4	Mid Ch. 20525, 836.5MHz, 16-QAM, 10MHz BW, RB Size 1, RB Offset 0, EUT Vert
	832.115	1.3	68.0	Horz	PK	1.57E-01	22.0	38.5	-16.5	Mid Ch. 20525, 836.5MHz, 16-QAM, 10MHz BW, RB Size 1, RB Offset 0, EUT Vert
	826.545	1.0	360.0	Vert	PK	1.39E-01	21.4	38.5	-17.1	Low Ch. 20425, 826.5MHz, 16-QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	825.460	1.0	348.0	Vert	PK	1.26E-01	21.0	38.5	-17.5	Low Ch. 20415, 825.5MHz, 16-QAM, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	824.570	1.0	347.0	Vert	PK	1.23E-01	20.9	38.5	-17.6	Low Ch. 20407, 829MHz, 16-QAM, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	824.545	1.0	2.0	Vert	PK	1.23E-01	20.9	38.5	-17.6	Low Ch. 20450, 829MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 0, EUT Vert
	836.470	1.0	6.0	Vert	PK	1.20E-01	20.8	38.5	-17.7	Mid Ch. 20525, 836.5MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	825.450	1.0	358.0	Vert	PK	1.21E-01	20.8	38.5	-17.7	Low Ch. 20415, 825.5MHz, QPSK, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	836.462	1.0	0.0	Vert	PK	1.14E-01	20.6	38.5	-17.9	Mid Ch. 20525, 836.5MHz, 16-QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	826.460	1.0	355.0	Vert	PK	1.15E-01	20.6	38.5	-17.9	Low Ch. 20425, 826.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	836.568	1.0	0.0	Vert	PK	1.11E-01	20.4	38.5	-18.1	Mid Ch. 20525, 836.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	836.525	1.0	355.0	Vert	PK	1.11E-01	20.4	38.5	-18.1	Mid Ch. 20525, 836.5MHz, 16-QAM, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	836.570	1.0	7.0	Vert	PK	1.07E-01	20.3	38.5	-18.2	Mid Ch. 20525, 836.5MHz, QPSK, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	833.375	1.0	357.0	Vert	PK	1.08E-01	20.3	38.5	-18.2	Low Ch. 20450, 829MHz, 16-QAM, 10MHz BW, RB Size 1, RB Offset 49, EUT Vert
	832.130	1.0	0.0	Vert	PK	1.03E-01	20.1	38.5	-18.4	Mid Ch. 20525, 836.5MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 0, EUT Vert
	824.810	1.0	359.0	Vert	PK	8.73E-02	19.4	38.5	-19.1	Low Ch. 20407, 829MHz, QPSK, 1.4MHz BW, RB Size 2, RB Offset 3, EUT Vert
	836.475	1.7	291.0	Vert	PK	7.73E-02	18.9	38.5	-19.6	Mid Ch. 20525, 836.5MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT On Side
	836.475	1.5	317.0	Horz	PK	7.24E-02	18.6	38.5	-19.9	Mid Ch. 20525, 836.5MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	839.580	1.0	4.0	Vert	PK	6.93E-02	18.4	38.5	-20.1	High Ch. 20600, 844MHz, 16-QAM, 10MHz BW, RB Size 1, RB Offset 0, EUT Vert
	846.545	1.0	0.0	Vert	PK	6.47E-02	18.1	38.5	-20.4	High Ch. 20625, 846.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	839.665	1.0	0.0	Vert	PK	6.37E-02	18.0	38.5	-20.5	High Ch. 20600, 844MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 0, EUT Vert
	824.605	1.4	49.0	Horz	PK	6.25E-02	18.0	38.5	-20.5	Low Ch. 20407, 829MHz, 16-QAM, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	825.465	1.4	51.0	Horz	PK	6.11E-02	17.9	38.5	-20.6	Low Ch. 20415, 825.5MHz, 16-QAM, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	836.515	1.3	311.0	Horz	PK	6.03E-02	17.8	38.5	-20.7	Mid Ch. 20525, 836.5MHz, 16-QAM, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	833.365	1.3	51.0	Horz	PK	6.01E-02	17.8	38.5	-20.7	Low Ch. 20450, 829MHz, 16-QAM, 10MHz BW, RB Size 1, RB Offset 49, EUT Vert
	836.515	1.2	67.0	Horz	PK	6.03E-02	17.8	38.5	-20.7	Mid Ch. 20525, 836.5MHz, 16-QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	846.535	1.4	51.0	Horz	PK	5.70E-02	17.6	38.5	-20.9	High Ch. 20625, 846.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	832.155	1.2	69.0	Horz	PK	5.61E-02	17.5	38.5	-21.0	Mid Ch. 20525, 836.5MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 0, EUT Vert
	847.450	1.0	357.0	Vert	PK	5.45E-02	17.4	38.5	-21.1	High Ch. 20635, 847.5MHz, 16-QAM, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	847.455	1.3	62.0	Horz	PK	5.20E-02	17.2	38.5	-21.3	High Ch. 20635, 847.5MHz, 16-QAM, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	825.455	1.3	70.0	Horz	PK	5.20E-02	17.2	38.5	-21.3	Low Ch. 20415, 825.5MHz, QPSK, 3MHz BW, RB Size 1, RB Offset 7, EUT Vert
	848.275	1.0	346.0	Vert	PK	5.14E-02	17.1	38.5	-21.4	High Ch. 20643, 848.3MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	836.405	1.5	317.0	Horz	PK	5.13E-02	17.1	38.5	-21.4	Mid Ch. 20525, 836.5MHz, 16-QAM, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	824.660	1.3	73.0	Horz	PK	5.08E-02	17.1	38.5	-21.4	Low Ch. 20450, 829MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 0, EUT Vert

	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	848.165	1.2	69.0	Horz	PK	5.08E-02	17.1	38.5	-21.4	High Ch. 20643, 848.3MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	848.165	1.3	54.0	Horz	PK	4.85E-02	16.9	38.5	-21.6	High Ch. 20643, 848.3MHz, 16-QAM, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	848.165	1.0	150.0	Vert	PK	4.80E-02	16.8	38.5	-21.7	High Ch. 20643, 848.3MHz, 16-QAM, 1.4MHz BW, RB Size 1, RB Offset 2, EUT Vert
	839.545	1.3	74.0	Horz	PK	4.83E-02	16.8	38.5	-21.7	High Ch. 20600, 844MHz, 16-QAM, 10MHz BW, RB Size 1, RB Offset 0, EUT Vert
	839.660	1.4	53.0	Horz	PK	4.51E-02	16.5	38.5	-22.0	High Ch. 20600, 844MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 0, EUT Vert
	836.560	1.5	319.0	Horz	PK	4.27E-02	16.3	38.5	-22.2	Mid Ch. 20525, 836.5MHz, QPSK, 3MHz BW, RB Size 1, RB Offest 7, EUT Vert
	836.475	1.3	325.0	Horz	PK	3.89E-02	15.9	38.5	-22.6	Mid Ch. 20525, 836.5MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offest 2, EUT Horz
	836.395	1.0	7.0	Vert	PK	3.53E-02	15.5	38.5	-23.0	Mid Ch. 20525, 836.5MHz, 16-QAM, 1.4MHz BW, RB Size 1, RB Offest 2, EUT Vert
	826.450	2.0	316.0	Horz	PK	3.44E-02	15.4	38.5	-23.1	Low Ch. 20425, 826.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	836.480	1.0	180.0	Horz	PK	2.69E-02	14.3	38.5	-24.2	Mid Ch. 20525, 836.5MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offest 2, EUT On Side
	836.565	1.0	238.0	Horz	PK	2.45E-02	13.9	38.5	-24.6	Mid Ch. 20525, 836.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offest 12, EUT Vert
	824.785	1.0	240.0	Horz	PK	1.93E-02	12.9	38.5	-25.6	Low Ch. 20407, 829MHz, QPSK, 1.4MHz BW, RB Size 2, RB Offset 3, EUT Vert
	826.545	1.3	48.0	Horz	PK	1.85E-02	12.7	38.5	-25.8	Low Ch. 20425, 826.5MHz, 16-QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	847.835	1.0	360.0	Vert	PK	1.78E-02	12.5	38.5	-26.0	High Ch. 20635, 847.5MHz, QPSK, 3MHz BW, RB Size 8, RB Offset 4, EUT Vert
	847.945	1.2	67.0	Horz	PK	1.53E-02	11.9	38.5	-26.6	High Ch. 20635, 847.5MHz, QPSK, 3MHz BW, RB Size 8, RB Offset 4, EUT Vert
	836.475	1.0	28.0	Vert	PK	1.36E-02	11.3	38.5	-27.2	Mid Ch. 20525, 836.5MHz, QPSK, 1.4MHz BW, RB Size 1, RB Offest 2, EUT Horz
	847.815	1.0	0.0	Vert	PK	1.23E-02	10.9	38.5	-27.6	High Ch. 20635, 846.5MHz, QPSK, 5MHz BW, RB Size 12, RB Offset 11, EUT Vert
	847.805	1.2	58.0	Horz	PK	1.06E-02	10.3	38.5	-28.2	High Ch. 20635, 846.5MHz, QPSK, 5MHz BW, RB Size 12, RB Offset 11, EUT Vert

EIRP OF FUNDAMENTAL - PART 27 - BAND 7 LTE

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

Continuous Transmit/Receive LTE Band 7

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INTE5616 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	2500 MHz	Stop Frequency	2570 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
Radio Communication Analyzer	Anritsu	MT8820C	AFK	NCR	0 mo
Antenna, Horn	EMCO	3115	AHE	NCR	0 mo
Antenna, Horn	EMCO	3115	AHC	6/13/2014	24 mo
Signal Generator	Keysight	N5182B	TFX	4/16/2015	36 mo
Power Meter	Gigatronics	8651A	SPM	5/25/2015	12 mo
Power Sensor	Gigatronics	80701A	SPL	5/25/2015	12 mo
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	10/20/2014	12 mo
Cable	N/A	Double Ridge Horn Cables	EVB	4/16/2015	12 mo
Antenna, Horn	ETS Lindgren	3115	AIZ	1/27/2014	24 mo
Spectrum Analyzer	Keysight	N9010A	AFN	2/10/2015	12 mo

TEST DESCRIPTION

The fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarization and manipulating the EUT antenna in 3 orthogonal planes The antennas to be used with the EUT were tested. The EUT was transmitting while set at the lowest channel, a middle channel, and the highest channel available. The amplitude and frequency were noted. The EUT was then replaced with a horn antenna. A signal generator was connected to the horn antenna and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded, and by factoring in the gain (dBi) of the horn antenna the effective radiated power for each emission was determined.

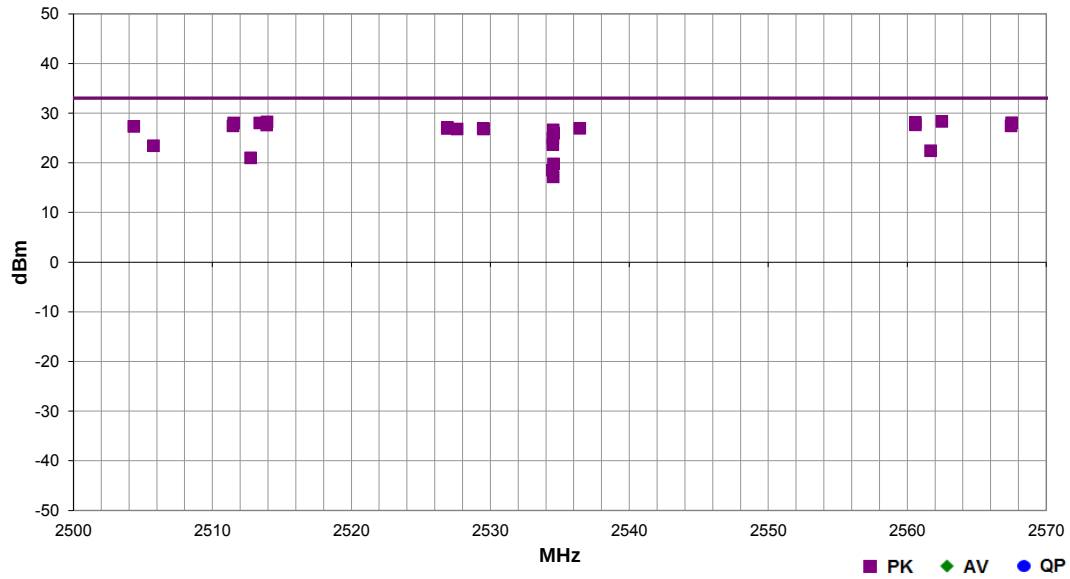
EIRP OF FUNDAMENTAL - PART 27 - BAND 7 LTE

Work Order:	INTE5616	**Date:**	08/01/15		
Project:	None	**Temperature:**	24.9 °C		
Job Site:	EV01	**Humidity:**	38.5% RH		
Serial Number:	See Configuration	**Barometric Pres.:**	1013.5 mbar	**Tested by:**	Brandon Hobbs

EUT:	Skylake
Configuration:	1
Customer:	Intel Corporation
Attendees:	Mike Lowe
EUT Power:	110VAC/60Hz
Operating Mode:	Continuous Transmit/Receive on Band 7
Deviations:	None
Comments:	Please reference the data comments for EUT orientation, channel, frequency, modulation, RB offset and RB Size

Test Specifications	**Test Method**
FCC 27.50:2015	ANSI/TIA/EIA-603-C-2004

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



	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	2562.485	1.0	68.0	Horz	PK	6.84E-01	28.4	33.0	-4.7	High Ch. 21375, 2562.5MHz, 16QAM, 15MHz, RB size 1, RB Offset 37, EUT Vert
	2513.930	1.0	70.0	Horz	PK	6.65E-01	28.2	33.0	-4.8	Low Ch. 20890, 2514MHz, 16QAM, 20MHz, RB size 1, RB Offset 49, EUT Vert
	2560.580	1.0	68.0	Horz	PK	6.53E-01	28.2	33.0	-4.9	High Ch. 21400, 2565MHz, 16QAM, 10MHz, RB size 1, RB Offset 0, EUT Vert
	2567.505	1.0	68.0	Horz	PK	6.38E-01	28.1	33.0	-5.0	High Ch. 21425, 2567.5MHz, 16QAM, 5MHz, RB size 1, RB Offset 12, EUT Vert
	2513.410	1.0	70.0	Horz	PK	6.35E-01	28.0	33.0	-5.0	Low Ch. 20840, 2509MHz, 16QAM, 10MHz, RB size 1, RB Offset 49, EUT Vert
	2511.535	1.0	70.0	Horz	PK	6.35E-01	28.0	33.0	-5.0	Low Ch. 20865, 2511.5MHz, 16QAM, 15MHz, RB size 1, RB Offset 37, EUT Vert
	2560.585	1.0	68.0	Horz	PK	5.82E-01	27.7	33.0	-5.4	High Ch. 21400, 2565MHz, QPSK, 10MHz, RB size 1, RB Offset 0, EUT Vert
	2513.905	1.0	70.0	Horz	PK	5.79E-01	27.6	33.0	-5.4	Low Ch. 20890, 2514MHz, QPSK, 20MHz, RB size 1, RB Offset 49, EUT Vert
	2567.475	1.0	68.0	Horz	PK	5.56E-01	27.5	33.0	-5.6	High Ch. 21425, 2567.5MHz, QPSK, 5MHz, RB size 1, RB Offset 12, EUT Vert
	2511.485	1.0	70.0	Horz	PK	5.53E-01	27.4	33.0	-5.6	Low Ch. 20865, 2511.5MHz, QPSK, 15MHz, RB size 1, RB Offset 37, EUT Vert
	2504.345	1.0	70.0	Horz	PK	5.40E-01	27.3	33.0	-5.7	Low Ch. 21815, 2506.5MHz, QPSK, 5MHz, RB size 1, RB Offset 0, EUT Vert
	2526.905	1.0	71.0	Horz	PK	5.16E-01	27.1	33.0	-5.9	Mid Ch. 21020, 2527MHz, 16QAM, 20MHz, RB size 1, RB Offset 49, EUT Vert
	2536.435	1.0	71.0	Horz	PK	4.94E-01	26.9	33.0	-6.1	Mid Ch. 21070, 2532MHz, 16QAM, 10MHz, RB size 1, RB Offset 49, EUT Vert
	2529.485	1.0	71.0	Horz	PK	4.93E-01	26.9	33.0	-6.1	Mid Ch. 21045, 2529.5MHz, 16QAM, 15MHz, RB size 1, RB Offset 37, EUT Vert
	2526.900	1.0	71.0	Horz	PK	4.93E-01	26.9	33.0	-6.1	Mid Ch. 21020, 2527MHz, QPSK, 20MHz, RB size 1, RB Offset 49, EUT Vert
	2529.505	1.0	71.0	Horz	PK	4.82E-01	26.8	33.0	-6.2	Mid Ch. 21045, 2529.5MHz, QPSK, 15MHz, RB size 1, RB Offset 37, EUT Vert
	2527.605	1.0	71.0	Horz	PK	4.82E-01	26.8	33.0	-6.2	Mid Ch. 21070, 2532MHz, QPSK, 10MHz, RB size 1, RB Offset 0, EUT Vert
	2534.525	1.0	71.0	Horz	PK	4.61E-01	26.6	33.0	-6.4	Mid Ch. 21095, 2534.5MHz, 16QAM, 5MHz, RB size 1, RB Offset 12, EUT Vert
	2534.545	1.0	74.0	Horz	PK	3.93E-01	25.9	33.0	-7.1	Mid Ch. 21095, 2534.5MHz, QPSK, 5MHz, RB size 1, RB Offset 12, EUT Vert
	2534.495	1.0	53.0	Vert	PK	3.11E-01	24.9	33.0	-8.1	Mid Ch. 21095, 2534.5MHz, QPSK, 5MHz, RB size 1, RB Offset 12, EUT On Side
	2534.500	1.2	276.0	Vert	PK	2.34E-01	23.7	33.0	-9.3	Mid Ch. 21095, 2534.5MHz, QPSK, 5MHz, RB size 1, RB Offset 12, EUT Vert
	2505.758	1.0	70.0	Horz	PK	2.21E-01	23.4	33.0	-9.6	Low Ch. 21815, 2506.5MHz, 16QAM, 5MHz, RB size 12, RB Offset 6, EUT Vert
	2561.680	1.0	68.0	Horz	PK	1.74E-01	22.4	33.0	-10.6	High Ch. 21375, 2562.5MHz, QPSK, 15MHz, RB size 36, RB Offset 0, EUT Vert
	2512.750	1.0	70.0	Horz	PK	1.26E-01	21.0	33.0	-12.0	Low Ch. 20840, 2509MHz, QPSK, 10MHz, RB size 50, RB Offset 0, EUT Vert
	2534.550	1.2	76.0	Horz	PK	9.52E-02	19.8	33.0	-13.2	Mid Ch. 21095, 2534.5MHz, QPSK, 5MHz, RB size 1, RB Offset 12, EUT Horz
	2534.475	1.0	274.0	Horz	PK	7.06E-02	18.5	33.0	-14.5	Mid Ch. 21095, 2534.5MHz, QPSK, 5MHz, RB size 1, RB Offset 12, EUT On Side
	2534.515	3.8	118.0	Vert	PK	5.23E-02	17.2	33.0	-15.8	Mid Ch. 21095, 2534.5MHz, QPSK, 5MHz, RB size 1, RB Offset 12, EUT Horz

ERP OF FUNDAMENTAL - PART 27 - BAND 13 LTE

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

Continuous Transmit/Receive on Band 13

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INTE5616 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	776 MHz	Stop Frequency	788 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
Universal Radio Communication Tester	Anritsu	MT8820C	AFK	NCR	0 mo
Antenna - Double Ridge	EMCO	3115	AHE	NCR	0 mo
Antenna - Dipole	EMCO	3121C-DB4	ADTD	4/3/2014	36 mo
Generator - Signal	Keysight	N5182B	TFX	4/16/2015	36 mo
Meter - Power	Gigatronics	8651A	SPM	5/25/2015	12 mo
Power Sensor	Gigatronics	80701A	SPL	5/25/2015	12 mo
Attenuator	S.M. Electronics	SA18N-06/SM4032	REE	10/20/2014	12 mo
Cable	N/A	Bilog Cables	EVA	2/10/2015	12 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2/10/2015	12 mo
Antenna - Biconilog	EMCO	3141	AXE	8/29/2014	24 mo

TEST DESCRIPTION

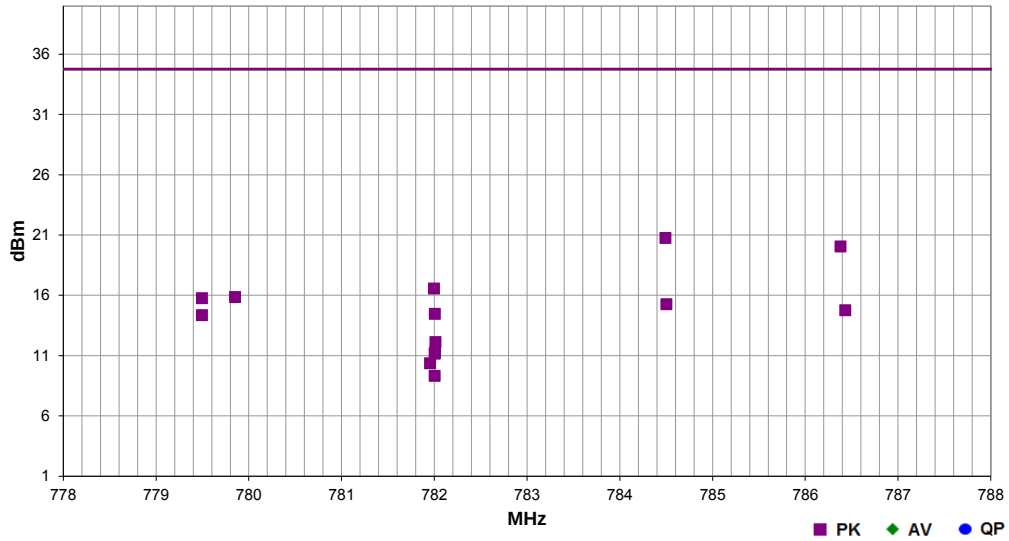
The fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarizationThe amplitude and frequency of the highest emission were noted. The EUT was then replaced with a ½ wave dipole that was successively tuned to the highest emission. A signal generator was connected to the dipole, and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded. The signal generator, amplifier, and cable were then connected to an analyzer and the power output was recorded. By factoring in the dipole antenna gain (dBi), the effective radiated power for the maximum fundamental emission was determined. The ERP value was obtained from taking the value in EIRP – 2.15.

ERP OF FUNDAMENTAL - PART 27 - BAND 13 LTE

Work Order:	INTE5616	**Date:**	08/09/15		
Project:	None	**Temperature:**	25.1 °C		
Job Site:	EV01	**Humidity:**	40% RH		
Serial Number:	See Configuration	**Barometric Pres.:**	1014.5 mbar	**Tested by:**	Brandon Hobbs
EUT:	Skylake				
Configuration:	1				
Customer:	Intel Corporation				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Continuous Transmit/Receive on Band 13				
Deviations:	None				
Comments:	Please reference the data comments for EUT orientation, channel, frequency, modulation, RB offset and RB Size				

Test Specifications	**Test Method**
FCC 27.50:2015	ANSI/TIA/EIA-603-C-2004

Run #	13	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	784.493	1.0	224.0	Vert	PK	1.19E-01	20.8	34.8	-14.0	High Ch. 23255, 784.5MHz, 16QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	786.380	1.0	233.0	Vert	PK	1.01E-01	20.1	34.8	-14.7	Mid Ch. 23230, 782MHz, 16QAM, 10MHz BW, RB Size 1, RB Offset 49, EUT Vert
	781.997	1.0	230.0	Vert	PK	4.53E-02	16.6	34.8	-18.2	Mid Ch. 23230, 782MHz, 16QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	779.852	1.0	233.0	Vert	PK	3.85E-02	15.9	34.8	-18.9	Mid Ch. 23230, 782MHz, 16QAM, 5MHz BW, RB Size 1, RB Offset 0, EUT Vert
	779.495	1.0	228.0	Vert	PK	3.77E-02	15.8	34.8	-19.0	Low Ch. 23205, 779.5MHz, 16QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	784.503	1.0	228.0	Vert	PK	3.36E-02	15.3	34.8	-19.5	High Ch. 23255, 784.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 0, EUT Vert
	786.430	1.0	233.0	Vert	PK	2.99E-02	14.8	34.8	-20.0	Mid Ch. 23230, 782MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 49, EUT Vert
	782.006	1.0	289.0	Vert	PK	2.79E-02	14.5	34.8	-20.3	Mid Ch. 23230, 782MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	779.495	1.0	228.0	Vert	PK	2.73E-02	14.4	34.8	-20.4	Low Ch. 23205, 779.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	782.013	1.0	311.0	Horz	PK	1.63E-02	12.1	34.8	-22.6	Mid Ch. 23230, 782MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	782.008	1.0	286.0	Horz	PK	1.34E-02	11.3	34.8	-23.5	Mid Ch. 23230, 782MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Horz
	782.004	1.4	267.0	Vert	PK	1.31E-02	11.2	34.8	-23.6	Mid Ch. 23230, 782MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT On Side
	781.955	1.0	80.0	Horz	PK	1.09E-02	10.4	34.8	-24.4	Mid Ch. 23230, 782MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT On Side
	782.003	1.0	132.0	Vert	PK	8.56E-03	9.3	34.8	-25.4	Mid Ch. 23230, 782MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Horz

ERP OF FUNDAMENTAL - PART 27 - BAND 17 LTE

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

Continuous Transmit/Receive on Band 17

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INTE5616 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	706 MHz	Stop Frequency	714 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
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	10/20/2014	12 mo
Antenna, Dipole	EMCO	3121C-DB4	ADTD	4/3/2014	36 mo
Power Sensor	Gigatronics	80701A	SPL	5/25/2015	12 mo
Power Meter	Gigatronics	8651A	SPM	5/25/2015	12 mo
Signal Generator	Keysight	N5182B	TFX	4/16/2015	36 mo
Cable	N/A	Bilog Cables	EVA	2/10/2015	12 mo
Antenna, Biconilog	EMCO	3141	AXE	8/29/2014	24 mo
Spectrum Analyzer	Keysight	N9010A	AFN	2/10/2015	12 mo

TEST DESCRIPTION

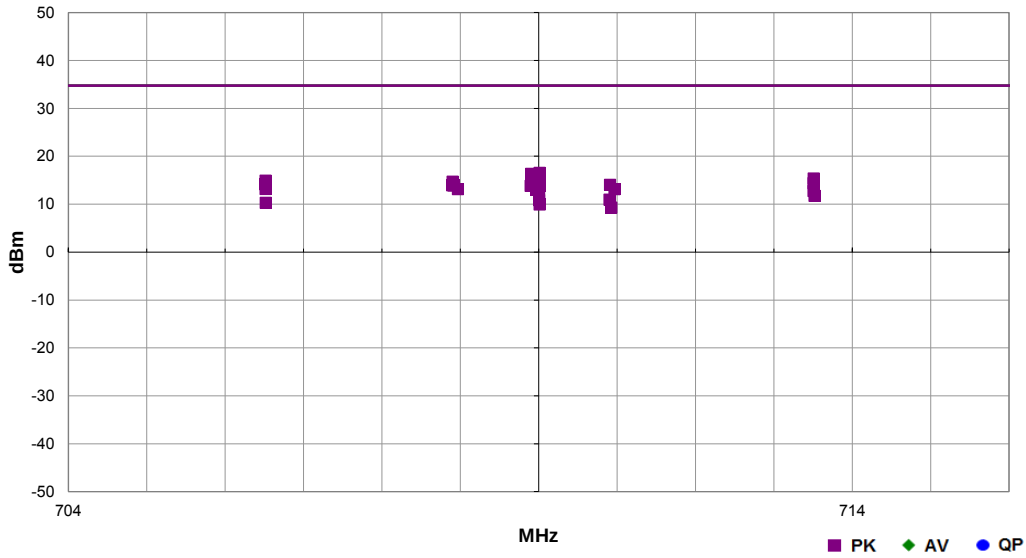
The fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarizationThe amplitude and frequency of the highest emission were noted. The EUT was then replaced with a ½ wave dipole that was successively tuned to the highest emission. A signal generator was connected to the dipole, and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded. The signal generator, amplifier, and cable were then connected to an analyzer and the power output was recorded. By factoring in the dipole antenna gain (dBi), the effective radiated power for the maximum fundamental emission was determined. The ERP value was obtained from taking the value in EIRP – 2.15.

ERP OF FUNDAMENTAL - PART 27 - BAND 17 LTE

Work Order:	INTE5616	**Date:**	08/03/15		
Project:	None	**Temperature:**	22.1 °C		
Job Site:	EV01	**Humidity:**	41% RH		
Serial Number:	See Configuration	**Barometric Pres.:**	1016.7 mbar	**Tested by:**	Cole Ghizzone
EUT:	Skylake				
Configuration:	1				
Customer:	Intel Corporation				
Attendees:	Mike Lowe				
EUT Power:	110VAC/60Hz				
Operating Mode:	Continuous Transmit/Receive on Band 17				
Deviations:	None				
Comments:	Please reference the data comments for EUT orientation, channel, frequency, modulation, RB offset and RB Size				

Test Specifications	**Test Method**
FCC 27.50:2015	ANSI/TIA/EIA-603-C-2004

Run #	9	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	710.013	1.5	25.0	Vert	PK	4.52E-02	16.6	34.8	-18.2	Mid Ch. 23790, 710MHz, 16-QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT On Side
	709.903	1.6	43.0	Vert	PK	4.32E-02	16.4	34.8	-18.4	Mid Ch. 23790, 710MHz, 16-QAM, 10MHz BW, RB Size 1, RB Offset 24, EUT On Side
	709.920	1.6	43.0	Vert	PK	3.59E-02	15.6	34.8	-19.2	Mid Ch. 23790, 710MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 24, EUT On Side
	710.008	1.7	41.0	Vert	PK	3.59E-02	15.6	34.8	-19.2	Mid Ch. 23790, 710MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT On Side
	713.508	1.6	41.0	Vert	PK	3.45E-02	15.4	34.8	-19.4	High Ch. 23825, 713.5MHz, 16-QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT On Side
	706.517	1.6	38.0	Vert	PK	3.09E-02	14.9	34.8	-19.9	Low Ch. 23790, 706.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT On Side
	710.010	1.1	45.0	Vert	PK	3.05E-02	14.9	34.8	-19.9	Mid Ch. 23790, 710MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	708.902	1.7	48.0	Vert	PK	2.94E-02	14.7	34.8	-20.1	Low Ch. 23780, 709MHz, 16-QAM, 10MHz BW, RB Size 1, RB Offset 24, EUT On Side
	713.507	1.6	41.0	Vert	PK	2.74E-02	14.4	34.8	-20.4	High Ch. 23825, 713.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT On Side
	706.513	1.0	9.0	Horz	PK	2.61E-02	14.2	34.8	-20.6	Low Ch. 23790, 706.5MHz, 16-QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Horz
	710.910	1.0	15.0	Horz	PK	2.54E-02	14.0	34.8	-20.7	High Ch. 23800, 711MHz, 16-QAM, 10MHz BW, RB Size 1, RB Offset 24, EUT Horz
	708.898	1.0	13.0	Horz	PK	2.48E-02	14.0	34.8	-20.8	Low Ch. 23780, 709MHz, 16-QAM, 10MHz BW, RB Size 1, RB Offset 24, EUT Horz
	710.015	1.0	96.0	Horz	PK	2.48E-02	14.0	34.8	-20.8	Mid Ch. 23790, 710MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Horz
	709.898	1.0	16.0	Horz	PK	2.43E-02	13.9	34.8	-20.9	Mid Ch. 23790, 710MHz, 16-QAM, 10MHz BW, RB Size 1, RB Offset 24, EUT Horz
	708.917	1.7	48.0	Vert	PK	2.45E-02	13.9	34.8	-20.9	Low Ch. 23780, 709MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 24, EUT On Side
	710.015	1.0	18.0	Horz	PK	2.37E-02	13.8	34.8	-21.0	Mid Ch. 23790, 710MHz, 16-QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Horz
	706.517	1.0	9.0	Horz	PK	2.07E-02	13.2	34.8	-21.6	Low Ch. 23790, 706.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Horz
	708.970	1.0	13.0	Horz	PK	2.07E-02	13.2	34.8	-21.6	Low Ch. 23780, 709MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 24, EUT Horz
	710.968	1.0	15.0	Horz	PK	2.06E-02	13.1	34.8	-21.6	High Ch. 23800, 711MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 24, EUT Horz
	709.972	1.0	16.0	Horz	PK	2.02E-02	13.1	34.8	-21.7	Mid Ch. 23790, 710MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 24, EUT Horz
	713.507	1.0	0.0	Horz	PK	1.88E-02	12.8	34.8	-22.0	High Ch. 23825, 713.5MHz, 16-QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT Horz
	713.518	1.0	0.0	Horz	PK	1.50E-02	11.8	34.8	-23.0	High Ch. 23825, 713.5MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Horz
	710.007	1.1	270.0	Vert	PK	1.33E-02	11.3	34.8	-23.5	Mid Ch. 23790, 710MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Horz
	710.903	3.5	218.0	Vert	PK	1.24E-02	10.9	34.8	-23.8	High Ch. 23800, 711MHz, 16-QAM, 10MHz BW, RB Size 1, RB Offset 24, EUT On Side
	710.007	1.0	333.0	Horz	PK	1.22E-02	10.9	34.8	-23.9	Mid Ch. 23790, 710MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT On Side
	706.518	3.8	220.0	Vert	PK	1.07E-02	10.3	34.8	-24.5	Low Ch. 23790, 706.5MHz, 16-QAM, 5MHz BW, RB Size 1, RB Offset 12, EUT On Side
	710.013	1.0	195.0	Horz	PK	9.89E-03	10.0	34.8	-24.8	Mid Ch. 23790, 710MHz, QPSK, 5MHz BW, RB Size 1, RB Offset 12, EUT Vert
	710.928	3.5	218.0	Vert	PK	8.49E-03	9.3	34.8	-25.5	High Ch. 23800, 711MHz, QPSK, 10MHz BW, RB Size 1, RB Offset 24, EUT On Side