

EMC Test Report

Application for Grant of Equipment Authorization Class II Permissive Change/Reassessment pursuant to

Industry Canada RSS-Gen Issue 2 / RSS 210 Issue 7 FCC Part 15, Subpart E

Model: Intel Centrino Advanced-N 6200

IC CERTIFICATION #: 1000M-622ANHU and 1000M-622ANH FCC ID: PD9622ANHU and PD9622ANH

> APPLICANT: Intel Corporation 2111 NE 25th Avenue Hillsboro, OR 97124

TEST SITE(S): Elliott Laboratories 41039 Boyce Road. Fremont, CA. 94538-2435

IC SITE REGISTRATION #:

April 14, 2010

2845B-4, 2845B-5

FINAL TEST DATES:

REPORT DATE:

March 12 to April 1, 2010

AUTHORIZED SIGNATORY:

Mark Briggs (Staff Engineer Elliott Laboratories.



Testing Cert #2016-01

Elliott Laboratories is accredited by the A2LA, certificate number 2016-01, to perform the test(s) listed in this report, except where noted otherwise. This report shall not be reproduced, except in its entirety, without the written approval of Elliott Laboratories

REVISION HISTORY

Revision #	Date	Comments	Modified By
-		First release	

TABLE OF CONTENTS

REVISION HISTORY	2
TABLE OF CONTENTS	3
SCOPE	4
OBJECTIVE	5
STATEMENT OF COMPLIANCE	5
DEVIATIONS FROM THE STANDARDS	6
TEST RESULTS SUMMARY	6
UNII / LELAN DEVICES	6
GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS	7
MEASUREMENT UNCERTAINTIES	8
EQUIPMENT UNDER TEST (EUT) DETAILS	9
GENERAL	9
OTHER EUT DETAILS	9
ENCLOSURE	9
MODIFICATIONS	9
SUPPORT EQUIPMENT	9
EUTINIERFACE PORIS	10
EUT OPERATION	10
TEST SITE.	11
GENERAL INFORMATION	11
CONDUCTED EMISSIONS CONSIDERATIONS	11
RADIATED EMISSIONS CONSIDERATIONS	11
MEASUREMENT INSTRUMENTATION	11
RECEIVER SYSTEM	11
INSTRUMENT CONTROL COMPUTER	12
LINE IMPEDANCE STABILIZATION NETWORK (LISN)	12
FILTERS/ATTENUATURS	12
ANTENNA MAST AND FOLIIPMENT TURNTABLE	12
INSTRUMENT CALIBRATION	13
TEST BDACEDUDES	11
FUT AND CABLE PLACEMENT	 14 14
CONDUCTED EMISSIONS	14
RADIATED EMISSIONS	15
SPECIFICATION LIMITS AND SAMPLE CALCULATIONS	17
GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS	17
RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS	18
FCC 15.407 (A) OUTPUT POWER LIMITS	18
OUTPUT POWER LIMITS –LELAN DEVICES	19
OUTPUT POWER AND SPURIOUS LIMITS –UNII AND LELAN DEVICES	19
SAMPLE CALCULATIONS - CONDUCTED EMISSIONS	20
SAMPLE CALCULATIONS - RADIATED EMISSIONS	20
SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION	21
APPENDIX A TEST EQUIPMENT CALIBRATION DATA	1
APPENDIX B TEST DATA	2
APPENDIX C PHOTOGRAPHS OF TEST CONFIGURATIONS	3
APPENDIX D THEORY OF OPERATION	3
APPENDIX E SCHEMATICS	3
APPENDIX F RF EXPOSURE INFORMATION	3

SCOPE

An electromagnetic emissions test has been performed on the Intel Corporation Intel Centrino Advanced-N 6200, pursuant to the following rules:

Industry Canada RSS-Gen Issue 2 RSS 210 Issue 7 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment" RSS 310 Issue 2 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category II Equipment" FCC Part 15, Subpart E requirements for UNII Devices (using FCC DA 02-2138, August 30, 2002)

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in Elliott Laboratories test procedures:

ANSI C63.4:2003 FCC UNII test procedure 2002-08 DA-02-2138, August 2002

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Industry Canada performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

OBJECTIVE

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, all unlicensed transmitters and transceivers require certification. Receive-only devices operating between 30 MHz and 960 MHz are subject to either certification or a manufacturer's declaration of conformity, with all other receive-only devices exempt from the technical requirements.

Prior to marketing in Canada, Class I transmitters, receivers and transceivers require certification. Class II devices are required to meet the appropriate technical requirements but are exempt from certification requirements.

Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body's review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units, which are subsequently manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

STATEMENT OF COMPLIANCE

The tested sample of Intel Corporation Intel Centrino Advanced-N 6200 complied with the requirements of the following regulations:

Industry Canada RSS-Gen Issue 2 RSS 210 Issue 7 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment" RSS 310 Issue 2 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category II Equipment" FCC Part 15, Subpart E requirements for UNII Devices

Maintenance of compliance is the responsibility of the manufacturer. Any modifications to the product should be assessed to determine their potential impact on the compliance status of the device with respect to the standards detailed in this test report.

The test results recorded herein are based on a single type test of Intel Corporation Intel Centrino Advanced-N 6200 and therefore apply only to the tested sample. The sample was selected and prepared by Steve Hackett of Intel Corporation.

DEVIATIONS FROM THE STANDARDS

No deviations were made from the published requirements listed in the scope of this report.

TEST RESULTS SUMMARY

UNII / LELAN DEVICES

Operation in the 5.15 – 5.25 GHz Band

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result	
15.407(e)		Indoor operation only	Indoor operation - limit	ed to indoor systems		
15.407(a) (1)		26dB Bandwidth	The proposed changes t	o the digital aircuite do	not offoot	
15.407 (a) (1)	A9.2(1)	Output Power	the characteristics of the device with respect to output			
15.407 (a) (1)	-	Power Spectral	made at the antenna port.		urements	
-	A9.5 (2)	Density				
15.407(b) (2)	A9.3	Spurious Emissions above 1GHz	51.7dBµV/m @ 5150.0MHz (-2.3dB)	Refer to pages 17 and 19	Complies	

Operation in the 5.25 – 5.35 GHz Band

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)		26dB Bandwidth			
15.407(a) (2)	A9.2(2)	Output Power	The proposed changes t	o the digital circuits do	not affect
15.407(a) (2))	-	Power Spectral Density	power, bandwidth, power density or other measuremen		
-	A9.2(2) / A9.5 (2)	Power Spectral Density	made at the antenna por	ι.	
-	A9.5 (2)	Peak Spectral Density			
15.407(b) (2)	A9.3	Spurious Emissions above 1GHz	47.4dBµV/m @ 5350.0MHz (-6.6dB)	Refer to pages 17 and 19	Complies

Operation in the 5.47 – 5.725 GHz Band

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)		26dB Bandwidth			
15.407(a) (2)	A9.2(2)	Output Power The proposed changes to the digital circ the characteristics of the device with res		o the digital circuits do a device with respect to	not affect output
15.407(a) (2))		Power Spectral Density	power, bandwidth, power density or other measurer made at the antenna port.		urements
	A9.2(2) / A9.5 (2)	Power Spectral Density	y		
15.407(b) (2)	A9.3	Spurious Emissions above 1GHz	51.5dBµV/m @ 5460.0MHz (-2.5dB)	Refer to pages 17 and 19	Complies

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407	A9.5a	Modulation			
15.407(b) (5) / 15.209	A9.3	Spurious Emissions below 1GHz	The spurious emissions below 1GHz were evaluated for the digital device. The proposed changes did not affect these emissions.		
15.407(a)(6)	-	Peak Excursion Ratio	The proposed changes to the digital circuits do not affect the characteristics of the device with respect to the peak excursion measurement made at the antenna port		
	A9.5 (3)	Channel Selection	Spurious emissions tested at outermost channels in each band	Device was tested on the top, bottom	N/A
15		Channel Selection	Measurements on three channels in each band	and center channels in each band	
15.407 (c)	A9.5(4)	Operation in the absence of information to transmit	The proposed changes to the digital circuits do not affect these characteristics of the device as detailed in the		
15.407 (g)	A9.5 (5)	Frequency Stability	original filing for certif	ication.	
15.407 (h1)	A9.4	Transmit Power Control			
15.407 (h2)	A9.4	Dynamic frequency Selection (device without radar detection)	The proposed changes to the digital circuits do not affect the DFS measurements for channel closing time and channel move time for a slave device. The data provided in the original filing remains representative of the device so no measurements were made.		
	A9.9g	User Manual information	No changes are propose as detailed in the origin	ed to the user manual int al filing for certification	formation

Requirements for all U-NII/LELAN bands

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	_	RF Connector	No changes to the rf co	nnectors are proposed.	
15.109	RSS GEN 7.2.3 Table 1	Receiver spurious emissions	49.7dBµV/m @ 6986.7MHz (-4.3dB) Refer to page 18		Complies
15.207	RSS GEN Table 2	AC Conducted Emissions	The proposed changes to the digital circuits do not affect the values originally reported for AC conducted emissions.		not affect 1
15.247 (b) (5) 15.407 (f)	RSS 102	RF Exposure Requirements	No change in power rating or antenna gain are proposed. The maximum eirp and, therefore, the MPE evaluation, remains unchanged from that previously reported.		proposed. Iluation, ed.
-	RSP 100 RSS GEN 7.1.5	User Manual	No changes to the user manual are proposed.		
-	RSP 100 RSS GEN 4.4.1	99% Bandwidth	The proposed changes to the digital circuits do not affect the bandwidth of the signal as previously reported.		not affect ted.

MEASUREMENT UNCERTAINTIES

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with UKAS document LAB 34.

Measurement Type	Frequency Range (MHz)	Calculated Uncertainty (dB)
Conducted Emissions	0.15 to 30	± 2.4
Radiated Emissions	0.015 to 30	± 3.0
Radiated Emissions	30 to 1000	± 3.6
Radiated Emissions	1000 to 40000	± 6.0

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The Intel Corporation Intel Centrino Advanced-N 6200 is a 2x2 802.11abgn mini PCI express module. The device is sold under two different model numbers in Canada, one having a full modular approval (622ANHMW) and the other a limited modular approval (622ANHU). There are no hardware or firmware differences between the two model numbers. It is only the scope of the certification that is different.

The sample was received on March 12, 2010 and tested on March 12 to April 1, 2010. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID
Intel Cornoration	622ANHU	2x2 802.11abgn	MAC Address	FCC:PD9622ANHU IC:1000M-622ANHU
Intel Corporation	622ANHMW	express module	0023146851DC	FCC:PD9622ANH IC:1000M-622ANH

OTHER EUT DETAILS

The device was tested with the Universe PIFA antennas evaluated in the original filing. The antenna specifications are provided below for reference.

Fraguanay Dand	Gain (dBi)		
Frequency Band	Main	Aux	
2400-2500 MHz	3.2	24	
5150-5350 MHz	3.'	73	
5470-5725 MHz	4.′	77	
5725-5850 MHz	4.9	97	

ENCLOSURE

The EUT has no enclosure. It is designed to be installed within the enclosure of a host computer.

MODIFICATIONS

No modifications were made to the EUT during the time the product was at Elliott.

SUPPORT EQUIPMENT

The following equipment was used as support equipment for testing:

Company	Model	Description	Serial Number	FCC ID
Dell	-	Laptop	Prototype	N/A
Intel	Mini PCIE extender card	Extender card	None	N/A

EUT INTERFACE PORTS

The I/O cabling configuration during testing was as follows:

Dort	Connected To	Cable(s)			
Polt	Connected 10	Description	Shielded/Unshielded	Length(m)	
Laptop Adapter	AC power	-	Unshielded	1.0	
Extender mini PCI	Laptop mini PCI bus	Ribbon	Unshielded	1.0	
Extender dc power	DC power supply	2-wires	Unshielded	1.0	

EUT OPERATION

For measurements on the spurious emissions from the transmitter the EUT was operating on the specified channel at the specified output power using one or both chains, as detailed in the test descriptions, with a > 99% duty cycle. Worst case modes and transmitter chains were selected based on the original test data for spurious emissions.

The output power for all spurious measurements away from the band edges was at, or above, the maximum power rating in each band. For band edge measurements the output power was set at or above either the rated power in each band or, in some cases, to the maximum nominal operating power (as programmed into the EEPROM) plus +1.5dB to account for the worst case tolerance in output power from the programmed power stored in EEPROM. The EEPROM power is always lower than the maximum rated power by at least 1.5dB. All target powers are measured with an average power meter and, therefore, do not exactly correlate with the powers listed in the grant which are measured in accordance with the FCC procedures based on the U-NII power measurement methods. The original report includes information correlating the average power (measured with a power meter) to the reported average power (measured using a spectrum analyzer).

For receiver spurious the device was in receive mode and tested on the center channel in each band.

TEST SITE

GENERAL INFORMATION

Final test measurements were taken on «FinalDate» at the test sites listed below. Pursuant to section 2.948 of the FCC's Rules and section 3.3 of RSP-100, construction, calibration, and equipment data has been filed with the Commission and with industry Canada.

Sita	Registration	Location	
Site	FCC	Canada	Location
Chamber 3	769238	2845B-3	41020 Dovice Dead
Chamber 4	211948	2845B-4	Fromont CA 04528 2425
Chamber 5	211948	2845B-5	Flemon, CA 94558-2455

ANSI C63.4:2003 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement of predictable local TV, radio, and mobile communications traffic. The test site(s) contain separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4:2003.

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.4:2003. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

RADIATED EMISSIONS CONSIDERATIONS

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment or in a semi-anechoic chamber. The test sites are maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4:2003 guidelines and meet the Normalized Site Attenuation (NSA) requirements of ANSI C63.4:2003.

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

An EMI receiver as specified in CISPR 16-1-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements. If the repetition frequency of the signal being measured is below 20Hz, peak measurements are made in lieu of Quasi-Peak measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz, unless the signal is pulsed in which case the average (or video) bandwidth of the measuring instrument is reduced to onset of pulse desensitization and then increased.

INSTRUMENT CONTROL COMPUTER

The receivers utilize either a Rohde & Schwarz EZM Spectrum Monitor/Controller or contain an internal Spectrum Monitor/Controller to view and convert the receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers.

The Spectrum Monitor provides a visual display of the signal being measured. In addition, the controller or a personal computer run automated data collection programs which control the receivers. This provides added accuracy since all site correction factors, such as cable loss and antenna factors are added automatically.

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.

FILTERS/ATTENUATORS

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

ANTENNAS

A loop antenna is used below 30 MHz. For the measurement range 30 MHz to 1000 MHz either a combination of a biconical antenna and a log periodic or a bi-log antenna is used. Above 1000 MHz, horn antennas are used. The antenna calibration factors to convert the received voltage to an electric field strength are included with appropriate cable loss and amplifier gain factors to determine an overall site factor, which is then programmed into the test receivers or incorporated into the test software.

ANTENNA MAST AND EQUIPMENT TURNTABLE

The antennas used to measure the radiated electric field strength are mounted on a nonconductive antenna mast equipped with a motor-drive to vary the antenna height. Measurements below 30 MHz are made with the loop antenna at a fixed height of 1m above the ground plane.

ANSI C63.4:2003 specifies that the test height above ground for table mounted devices shall be 80 centimeters. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

INSTRUMENT CALIBRATION

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

TEST PROCEDURES

EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.4:2003, and the worst-case orientation is used for final measurements.

CONDUCTED EMISSIONS

Conducted emissions are measured at the plug end of the power cord supplied with the EUT. Excess power cord length is wrapped in a bundle between 30 and 40 centimeters in length near the center of the cord. Preliminary measurements are made to determine the highest amplitude emission relative to the specification limit for all the modes of operation. Placement of system components and varying of cable positions are performed in each mode. A final peak mode scan is then performed in the position and mode for which the highest emission was noted on all current carrying conductors of the power cord.



RADIATED EMISSIONS

A preliminary scan of the radiated emissions is performed in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed, one scan for each antenna polarization (horizontal and vertical; loop parallel and perpendicular to the EUT). During the preliminary scans, the EUT is rotated through 360°, the antenna height is varied (for measurements above 30 MHz) and cable positions are varied to determine the highest emission relative to the limit. Preliminary scans may be performed in a fully anechoic chamber for the purposes of identifying the frequencies of the highest emissions from the EUT.

A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth, which results in the highest emission is then maintained while varying the antenna height from one to four meters (for measurements above 30 MHz, measurements below 30 MHz are made with the loop antenna at a fixed height of 1m). The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain.

When testing above 18 GHz, the receive antenna is located at 1meter from the EUT and the antenna height is restricted to a maximum of 2.5 meters.







The anechoic materials on the walls and ceiling ensure compliance with the normalized site attenuation requirements of CISPR 16 / CISPR 22 / ANSI C63.4 for an alternate test site at the measurement distances used.

Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



<u>Test Configuration for Radiated Field Strength Measurements</u> <u>Semi-Anechoic Chamber, Plan and Side Views</u>

SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

The limits for conducted emissions are given in units of microvolts, and the limits for radiated emissions are given in units of microvolts per meter at a specified test distance. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

For reference, converting the specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. These limits in both linear and logarithmic form are as follows:

GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands¹ (with the exception of transmitters operating under FCC Part 15 Subpart D and RSS 210 Annex 9), the limits for all emissions from a low power device operating under the general rules of RSS 310 (tables 3 and 4), RSS 210 (table 2) and FCC Part 15 Subpart C section 15.209.

Frequency	Limit	Limit
Range (MHz)	(uV/m)	(dBuV/m @ 3m)
0.009-0.490	2400/F _{KHz} @ 300m	67.6-20*log ₁₀ (F _{KHz}) @ 300m
0.490-1.705	24000/F _{KHz} @ 30m	87.6-20*log ₁₀ (F _{KHz}) @ 30m
1.705 to 30	30 @ 30m	29.5 @ 30m
30 to 88	100 @ 3m	40 @ 3m
88 to 216	150 @ 3m	43.5 @ 3m
216 to 960	200 @ 3m	46.0 @ 3m
Above 960	500 @ 3m	54.0 @ 3m

¹ The restricted bands are detailed in FCC 15.203, RSS 210 Table 1 and RSS 310 Table 2

RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from receivers as detailed in FCC Part 15.109, RSS 210 Table 2, RSS GEN Table 1 and RSS 310 Table 3. Note that receivers operating outside of the frequency range 30 MHz – 960 MHz are exempt from the requirements of 15.109.

Frequency	Limit	Limit
Range (MHz)	(uV/m @ 3m)	(dBuV/m @ 3m)
30 to 88	100	40
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

FCC 15.407 (a) OUTPUT POWER LIMITS

The table below shows the limits for output power and output power density. Where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency (MHz)	Output Power	Power Spectral Density
5150 - 5250	50mW (17 dBm)	4 dBm/MHz
5250 - 5350	250 mW (24 dBm)	11 dBm/MHz
5725 - 5825	1 Watts (30 dBm)	17 dBm/MHz

For system using antennas with gains exceeding 6dBi, the output power and power spectral density limits are reduced by 1dB for every dB the antenna gain exceeds 6dBi. Fixed point-to-point applications using the 5725 - 5825 MHz band may use antennas with gains of up to 23dBi without this limitation. If the gain exceeds 23dBi then the output power limit of 1 Watt is reduced by 1dB for every dB the gain exceeds 23dBi.

The peak excursion envelope is limited to 13dB.

OUTPUT POWER LIMITS -LELAN DEVICES

The table below shows the limits for output power and output power density defined by RSS 210. Where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency	Output Power	Power Spectral
(MHz)		Density
5150 - 5250	200mW (23 dBm) eirp	10 dBm/MHz eirp
5250 - 5350	$250 \text{ mW} (24 \text{ dBm})^2$ 1W (30dBm) eirp	11 dBm/MHz
5470 - 5725	250 mW (24 dBm) ³ 1W (30dBm) eirp	11 dBm/MHz
5725 - 5825	1 Watts (30 dBm) 4W eirp	17 dBm/MHz

In addition, the power spectral density limit shall be reduced by 1dB for every dB the highest power spectral density exceeds the "average" power spectral density) by more than 3dB. The "average" power spectral density is determined by dividing the output power by 10log(EBW) where EBW is the 99% power bandwidth.

Fixed point-to-point applications using the 5725 - 5825 MHz band may use antennas with gains of up to 23dBi without this limitation. If the gain exceeds 23dBi then the output power limit of 1 Watt is reduced by 1dB for every dB the gain exceeds 23dBi.

OUTPUT POWER AND SPURIOUS LIMITS –UNII and LELAN DEVICES

The spurious emissions limits for signals below 1GHz are the FCC/RSS-GEN general limits. For emissions above 1GHz, signals in restricted bands are subject to the FCC/RSS GEN general limits. All other signals have a limit of -27dBm/MHz, which is a field strength of 68.3dBuV/m/MHz at a distance of 3m. This is an average limit so the peak value of the emission may not exceed -7dBm/MHz (68.3dBuV/m/MHz at a distance of 3m). For devices operating in the 5725-5850Mhz bands under the LELAN/UNII rules, the limit within 10Mhz of the allocated band is increased to -17dBm/MHz.

² If EIRP exceeds 500mW the device must employ TPC

³ If EIRP exceeds 500mW the device must employ TPC

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

Receiver readings are compared directly to the conducted emissions specification limit (decibel form) as follows:

$$R_r - S = M$$

where:

 $R_r =$ Receiver Reading in dBuV

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor, when used for electric field measurements above 30MHz, is calculated by using the following formula:

$$F_d = 20*LOG_{10} (D_m/D_s)$$

where:

 F_d = Distance Factor in dB D_m = Measurement Distance in meters D_s = Specification Distance in meters

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

$$F_d = 40*LOG_{10} (D_m/D_s)$$

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

The margin of a given emission peak relative to the limit is calculated as follows:

$$R_c = R_r + F_d$$

and

 $M = R_c - L_s$

where:

- R_r = Receiver Reading in dBuV/m
- F_d = Distance Factor in dB
- R_c = Corrected Reading in dBuV/m
- L_S = Specification Limit in dBuV/m
- M = Margin in dB Relative to Spec

SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp), or where a field strength measurement of output power is made in lieu of a direct measurement, the following formula is used to convert between eirp and field strength at a distance of 3m from the equipment under test:

 $E = \frac{1000000 \sqrt{30 P}}{3}$ microvolts per meter

where P is the eirp (Watts)

<u>Manufacturer</u>	Description	Model	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	785	6/3/2010
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	7/15/2010
Rohde & Schwarz	Power Meter, Single Channel	NRVS	1290	10/22/2010
Hewlett Packard	High Pass filter, 8.2 GHz (Blu System)	P/N 84300-80039 (84125C)	1392	6/22/2010
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	4/10/2010
Rohde & Schwarz	ÈMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	10/15/2010
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	1549	6/4/2010
EMCO	Antenna, Horn, 1-18 GHz	3115	1561	6/10/2010
Hewlett Packard	Preamplifier, 100 kHz - 1.3 GHz	8447E	1606	4/30/2010
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1683	7/29/2010
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1728	2/1/2011
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	1729	9/25/2010
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1730	9/25/2010
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	1771	9/30/2010
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	1780	9/17/2010
Rohde & Schwarz	Pwr Sensor 300 uW - 30 Watts (+ 25dB pad)	NRV-Z54	1788	6/9/2010
Rohde & Schwarz	Attenuator, 25 dB, 30W, DC-18 GHz	25dB, 30W, Type N	1794	6/9/2010

Appendix A Test Equipment Calibration Data

Appendix B Test Data

T78805 30 Pages

Elliott

EMC Test Data

Company		
Intel Corporation	Job Number:	J78599
Puma Peak 2x2	T-Log Number:	T78676
	Account Manager:	Christine Krebill
Steve Hackett		-
FCC 15E, FCC 15C, FCC 15B	Class:	В
-	Environment:	-
	Intel Corporation Puma Peak 2x2 Steve Hackett FCC 15E, FCC 15C, FCC 15B -	Intel Corporation Job Number: Puma Peak 2x2 T-Log Number: Account Manager: Steve Hackett FCC 15E, FCC 15C, FCC 15B Class: - Environment:

EMC Test Data

For The

Intel Corporation

Model

Puma Peak 2x2

Date of Last Test: 4/1/2010

Elliott

EMC Test Data

	An ATAS company		
Client:	Intel Corporation	Job Number:	J78599
Model:	Duma Doak 3x2	T-Log Number:	T78676
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15E, FCC 15C, FCC 15B	Class:	N/A

FCC 15 E Radiated Emissions - Band Edge Measurements

Test Specific Details

Objective: The objective of this test session is to perform engineering evaluation testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT ws installed into a test fixture such that the EUT was exposed (i.e. outside of a host PC). For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Summary of Results

MAC Address: 0023146851DC CRTU Tool Version 5.15.36.0 Driver version 13.0.0.91

Run #	Mode	Channel	Target	Measured	Test Performed	l imit	Result / Margin
IXUIT #	Power Power		restrenomed	Linin	Result / Margin		
	802.11a	#36	16.5	16.5	Restricted Band Edge	15,209	51.7dBµV/m@
Run #1	Chain A	5180MHz	10.0	10.0	at 5150 MHz	10.207	5150.0MHz (-2.3dB)
	802.11a	#64	16 5		Restricted Band Edge	15 209	
	Chain A	5320MHz	10.0		at 5350 MHz	10.207	Original testing showed
	802.11a	#100	16 /		Band Edges at	15 209	Chain B worst case.
	Chain A	5500MHz	10.4		5460 MHz/5470 MHz	10.207	
	802.11a	#36	16 /	16 3	Restricted Band Edge	15 209	47.9dBµV/m @
	Chain B	5180MHz	10.4	10.5	at 5150 MHz	13.207	5150.0MHz (-6.1dB)
	802.11a	#64	16.2	16 7	Restricted Band Edge	15 200	47.1dBµV/m @
Pun # 2	Chain B	5320MHz	10.5	10.7	at 5350 MHz	13.207	5350.5MHz (-6.9dB)
Rull#2	802.11a Chain B	11a #100 n B 5500MHz		16 7	Band Edge at	15 200	41.5dBµV/m @
			16.6	10.7	5460 MHz	13.207	5460.0MHz (-12.5dB)
				16.7	Restricted Band Edge	15 F	48.9dBµV/m @
					at 5470 MHz	IJ L	5470.0MHz (-19.4dB)
	n20	#36	16 5		Restricted Band Edge	15 200	Original testing showed
	Chain A 5180MHz		10.5		at 5150 MHz	13.207	Chain B worst case
Dun # 2	n20 #64 Chain A 5320MHz		16 /	16.4	Restricted Band Edge	15 200	43.3dBµV/m @
Null # 5			10.4	10.4	at 5350 MHz	13.207	5350.1MHz (-10.7dB)
	n20 #100		14.4		Band Edges at	15 200	Original testing showed
	Chain A	5500MHz	10.0		5460 MHz/5470 MHz	13.207	Chain B worst case and
	n20	#36	14 E	16 /	Restricted Band Edge	15 200	49.0dBµV/m @
	Chain B	5180MHz	10.5	10.4	at 5150 MHz	13.209	5148.5MHz (-5.0dB)
	n20	#64	14.4	14 E	Restricted Band Edge	15 200	45.5dBµV/m @
Dup # 1	Chain B	5320MHz	10.0	10.0	at 5350 MHz	15.209	5350.4MHz (-8.5dB)
Run # 4		n20 #100		1/Г	Restricted Band Edge	15 200	42.7dBµV/m @
	n20		1//	16.5	at 5460 MHz	15.209	5460.0MHz (-11.3dB)
	Chain B	5500MHz	10.0	16.5	Restricted Band Edge	15 C	49.9dBµV/m @
					at 5470 MHz	13 E	5740.0MHz (-18.4dB)

EIIIOTT EMC Test Data									
Client:	Intel Corpor	ation				Job Number:	J78599		
Madalı	Duma Dook	ງນາ				T-Log Number:	T78676		
woder:	Pullia Peak	ZXZ				Account Manager:	Christine Krebill		
Contact:	Steve Hack	ett							
Standard:	FCC 15E, F	CC 15C, FC	C 15B			Class:	N/A		
MAC Addres	ss: 00231468	351DC CRT	J Tool Versi	on 5.15.36.0	Driver version 13.0.0.91				
Run #	Mode	Channel	Target Power	Measured Power	Test Performed	Limit	Result / Margin		
	n40 Chain A	#38 5190MHz	12.0	12.2	Restricted Band Edge at 5150 MHz	15.209	48.4dBµV/m @ 5149.9MHz (-5.6dB)		
Dup # E	n40 #62 Chain A 5310MHz 12.5 12.6 Restricted Band Edge at 5350 MHz		15.209	47.4dBµV/m @ 5350.0MHz (-6.6dB)					
Rull # 0	n40	n40	n40 #1	#102	16.6	16.7	Restricted Band Edge at 5460 MHz	15.209	50.0dBµV/m @ 5459.9MHz (-4.0dB)
	Chain A	chain A 5510MHz	10.0	10.7	Restricted Band Edge at 5470 MHz	15 E	58.0dBµV/m @ 5470.0MHz (-10.3dB)		
		#38 5190MHz	11.5	11.7	Restricted Band Edge at 5150 MHz	15.209	46.0dBµV/m @ 5150.0MHz (-8.0dB)		
Dun #6	n40	#62 n40 5310MHz 1	12.5	12.8	Restricted Band Edge at 5350 MHz	15.209	46.5dBµV/m @ 5350.8MHz (-7.5dB)		
Kull# 0	Chain B	B #102	145		Restricted Band Edge at 5460 MHz	15.209	45.5dBµV/m @ 5460.0MHz (-8.5dB)		
		5510MHz	14.0	14.0	Restricted Band Edge at 5470 MHz	15 E	54.2dBµV/m @ 5469.6MHz (-14.1dB)		

- - -

Note - the target and measured power are average powers (measured with average power sensor) and are used for reference purposes only. Power is set using " Set TX Power Manually" mode (run #s 1 - 4) and gain control (runs 5 and 6) in the CRTU tool.

Ambient Conditions:

Rel. Humidity:	18.7 %
Temperature:	39 °C

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Marker Delta Measurements

Three sets of marker deltas are measured using the following settings: RB=VB=100kHz; RB=1MHz, VB=1MHz; RB=1MHz, VB=10Hz. Marker deltas are made conducted (analyzer connected to EUT rf port a 20dB pad) for single chain operation and radiated (at a distance of ~ 50cm) for MIMO modes.

The fundamental field strength is always measured at a 3m test distance.

_										
Æ	Ellic	Stt						EM	C Test	[•] Data
Client:	Intel Corpor	ation						Job Number:	J78599	
						T-Log Number: T78676				
Model:	Puma Peak	2x2					Αςςοι	unt Manager:	Christine Kr	ebill
Contact [.]	Steve Hack	ett					,	ant manager		
Standard:			C 15B					Class	NI/A	
Jianuaru.		Id Strongth	002.110 CI	hain A				01033.		
Rull #1, Dal Run #1a Fl	IT on Chan	nol #36 5180	- 802.118, UI MH7 - 802.1	1aill A 1a Chain A						
[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[Date of Test:	3/13/2010	//// IZ = 002.1		Τe	est Location:	Chamber #4	4		
Те	st Engineer:	Suhaila Khu	ishzad		Cor	fig Change:	none			
	Chain	[Power	Settings	0 0		1		
	Chain	Target	t (dBm)	Measure	ed (dBm)	Softwar	e Setting			
	А	16	5.5	16	6.5	1	7.0			
Fundament	tal Signal Fi	eld Strength	1	145.047			I			
Frequency	Level	Pol	15.2097	/ 15.24/	Detector	Azimuth	Height	Comments		
MHZ	dBµV/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters		/D. 10 LI-	
5173.000	94.0	H U	-	-	AVG	210	1.0			
5172 930	96.5	V	-	-	AVG	210	1.0	RB 1 MHz·	VB. 1 1011Z	
5172.730	104.6	V	-	-	PK	200	1.0	RB 1 MHz;	VB: 10112	
5150 MHz E	Band Edge S	Signal Radia	ted Field Str	rength - Mar	ker Delta					
					Н	V]			
	Fundamenta	l emission le	vel @ 3m in 1	1MHz RBW:	102.8	104.6	Peak Meas	urement (RB=	=VB=1MHz)	
	Fundamenta	l emission lev	vel @ 3m in 1	1MHz RBW:	94.0	96.5	Average Me	/erage Measurement (RB=1MHz, VB=10Hz)		
			Delta Mark	er - 100kHz	<u>44.3 dB</u> <- this can only be used if band edge sign			signal is		
	Calcula	ited Band-Ed	lge Measuren	nent (Peak):	60.3	60.3 dBuV/m highest within 2MHz of band edge.				
	Calcu	lated Band-E	.dge Measure	ment (Avg):	52.2	dBuV/m	Margin	Level	Limit	Detector
		Dei	la Marker - T	MHZ/ IMHZ:	39.7	dB dD	-2.3	51.7	54	AVg
	Calcula	uted Band-Ed	na Measurer	nent (Peak)	44.8 64.0	dBu\//m	-13.7 Using 100k	00.3 Hz dolta valu	/4	PK
	Calcul	lated Band-F	dge Measure	ement (Ava)	51.7 dBuV/m Using 1MHz delta value					
	Galou		ugo modouro		51.7	abaviin				
Frequency	Level	Pol	FCC 1	15.209	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5150.000	51.7	-	54.0	-2.3	Avg	-	-	Using 1MHz	delta value	
	_					0 m m h m		1		
-10.0)-			^*	\sim	HP8564	er Settings IE,EMI			
-20.0)-					CF: 516 SPAN:7	50.000 MHz '0.000 MHz			
-25.0 -30.1)-					RB 1.00	00 MHz Iz			
-පු -35.0)-		· ·		~	Detecto	or Sample			
변 -40.0 및 -45.0)-					RL Offs Sween	et 0.00 Time 26.0s			
-50.0	,)-		/			Ref Lvl	10.00DBM			
-55.0)		<u></u>			Comme	ents			
-60.0)-)-					BE@5	150 MHz			
-70.0							a N			
	5125 5130	5140 515	50 5160 Frequency (Mł	5170 5 Hz)	5180 5190	2192				
Cursor	1 5150.0835	-56.00 💠	-*- ô-	Delta Freq.	24.733 🧷	- 171	1: - 4 4			
Cursor	2 5174.8169	-11.17 🕁		ta Amplitude	44.83	E	110T			
	,							-		

E	Ellic	ott						EM	C Test	[•] Data
Client:	An R	company ation						Job Number	178599	
Clicht.							T_I	og Number:	T78676	
Model:	Puma Peak	2x2					Δοςοι	Int Manager	Christing Kr	ohill
Contact	Stovo Hack	ott					ACCOL	int manager.		CDIII
Standard	FCC 15F. F	CC 15C, FC	C 15B					Class:	N/A	
Run # 2 Ba		ald Strength	- 802 11a C	hain B				010001		
Run # 2, 58	UT on Char	inel #36 518	002.118, C	11a. Chain E	3					
[Date of Test:	3/13/2010		-,	Te	est Location:	Chamber #4	1		
Те	est Engineer:	Suhaila Khu	ushzad		Cor	nfig Change:	none	_		
	Chain			Power	Settings					
	ondin	Targe	t (dBm)	Measure	ed (dBm)	Softwar	e Setting			
	B	10	5.4	16	5.3	1	/.0			
Fundament	tal Signal Fi	eld Strength	15 200	115 017	Detector	۸ –:	Listalat	Commente		
		P01	15.2097	10.247 Margin	Delector Dk/OD/Ava	Azimuln	Height	Comments		
5173 530	06μν/Π 9/17	V/11 V		iviai yiri	AVG	170	15	RB 1 MHz· \	/R· 10 Hz	
5173 530	102 7	V	_	_	PK	170	1.5	RB 1 MHz [,]	VB: 10112	
5176.530	95.4	H	-	-	AVG	94	1.0	RB 1 MHz; V	VB: 10 Hz	
5173.600	103.7	Н	-	-	PK	94	1.0	RB 1 MHz;	VB: 1 MHz	
5150 MHz E	Band Edge S	Signal Radia	ted Field Str	rength - Mar	rker Delta		_	-		
					Н	V				
	Fundamenta	l emission le	vel @ 3m in 1	1MHz RBW:	103.7	102.7	Peak Measu	urement (RB	=VB=1MHz)	
	Fundamenta	l emission le	<u>vel @ 3m in 1</u>	IMHz RBW:	95.4	94.7	Average Me	easurement (RB=1MHz, V	B=10Hz)
	0.1		Delta Mark	<u>er - 100kHz</u>	47.2	dB	<- this can o	only be used	if band edge	signal is
	Calcula	leted Band-Ed	Ige Measurer	nent (Peak):	56.5	dBuV/m	nignest with	IN ZIVINZ OF D	and edge.	Detector
	Calcu		uge Measure	ment (Avg):	48.2		Margin 4 1	Level	LIMIL	Detector
		Dei Dei	olta Markor - 1	1/////////////////////////////////////	42.0	uD dR	-0.1 17.5	47.9 56.5	34 74	Avy Dk
	Calcula	ited Band-Ed	lge Measurer	nent (Peak):	47.J	dBuV/m	Lising 100kl	- 50.5 Hz delta valu	ρ /4 ρ	ГК
	Calcu	lated Band-E	Idge Measure	ement (Avg):	47.9	dBuV/m	Using 100ki	z delta value	6	
							_ <u>5</u>			
Frequency	Level	Pol	FCC 1	15.209	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5150.000	47.9	-	54.0	-6.1	Avg	-	-	Using 1MHz	delta value	
-10.0) — — — — — — —					Analyze	er Settinas			
-15.0)-					HP8564	E,EMI	1		
-20.0)-					CF: 516 SPAN:7	0.000 MHz 0.000 MHz			
-25.0)-					RB 1.00 VB 10 H)0 MHz Iz			
-පී -35.0)-)		Detecto Att 20	or Sample			
플 -40.0 문 -45.0)-		/	-		RL Offs Sweep	et 0.00 Time 26.0s			
-50.0)-					Ref Lvl:	10.00DBM			
-55.0)- 					Comme	ents			
-65.0)					BE @ 51	150 MHz	1		
-70.0	5125 5130	5140 515	50 5160 Frequency (Mł	5170 5 Hz)	5180 5190	i Chain B 5195	3			
Cursor	1 5150.0835	-59.33 💠	-*- ゐ-	Delta Freq.	33.716 🥂	- 1-1	1: _ 44			
Cursor	2 5183.7998	-11.83 🕁		a Amplitude	47.50	≻ĽI	110TI]		
					-					

	-Ilic	htt						FM	∩ Tost	Data
4	An A	Z company					1			Data
Client:	Intel Corpora	ation						Job Number:	J/8599	
Model [.]	Puma Peak	2x2					T-I	_og Number:	T78676	
model.							Αссоι	unt Manager:	Christine Kre	ebill
Contact:	Steve Hacke	ett								
Standard:	FCC 15E, F	CC 15C, FC(C 15B					Class:	N/A	
Run # 2b, E	UT on Chan	nel #64 532	omhz - 802.°	11a, Chain E	3					
[Date of Test:	3/13/2010			Te	est Location:	Chamber #4	1		
Те	st Engineer:	Suhaila Khu	shzad		Cor	nfig Change:	none	•		
	Chain	_	(Power	Settings		.			
	-	Target	(dBm)	Measure	ed (dBm)	Softwar	e Setting	-		
F	B		0.3	16). <i>1</i>	I.	7.0	J		
Froquenesi	ai Signai Fi	eiu Strength	15 200	/ 15 2/7	Dotoctor	Azimuth	Hoight	Commonte		
МНт	dRu\//m	г UI v/h	imit	Margin		dearees	meters			
5313.070	93.9	V	-	-	AVG	123	1.0	RB 1 MHz [.] \	/B: 10 Hz	
5313.000	101.9	V	-	-	PK	123	1.0	RB 1 MHz; V	/B: 1 MHz	
5316.530	97.1	Н	-	-	AVG	113	1.0	RB 1 MHz; V	/B: 10 Hz	
5313.400	105.7	Н	-	-	PK	113	1.0	RB 1 MHz; \	/B: 1 MHz	
5350 MHz E	Band Edge S	Signal Radia	ted Field Sti	rength - Mari	ker Delta		_			
					Н	V				
	Fundamenta	emission lev	vel @ 3m in [•]	1MHz RBW:	105.7	101.9	Peak Measu	urement (RB=	=VB=1MHz)	
	Fundamenta	emission lev	<u>vel @ 3m in '</u>	1MHz RBW:	97.1	93.9	Average Me	easurement (I	RB=1MHz, V	B=10Hz)
	0.1.1		Delta Mark	er - 100kHz	50.0	dB	<- this can o	only be used	if band edge	signal is
	Calcula	ted Band-Ed	ge Measurer	nent (Peak):	55./	dBuV/m	highest with	in 2MHz of b	and edge.	
	Calcul	aled Band-E	uge Measure	ement (Avg):	47.1	dBuv/m	iviargin		LIMI	Detector
		Del	la Marker - T	MHZ/1MHZ:	45.8	dB dD	-6.9	47.1	54	AVg
	Calcula	ted Band-Ed	ne Measurer	ment (Peak)	49.7 50.0	dBuV/m	-10.3 Using 100kl	J. CC Jz dolta valu	74	PK
	Calcul	ated Band-E	dae Measure	ement (Ava)	<u> </u>	dBuV/m	Using 100ki	iz delta valu Iz delta valu	с а	
	Galou		ago moasar	inone (rug):	F.1F	abaviin	USING TOOK		0	
Frequency	Level	Pol	FCC 2	5.209	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5350.500	47.1	-	54.0	-6.9	Avg	-	-	Using 100kH	Iz delta value	ŝ
0.(-10.(-20.(90)-30.(-30.(-40.(-50.(-60.(-70.(Cursor	0 - - - - - - - - - - - - -	5320 533 -8.50 ♥ - -58.50 ♥ -	0 5340 Frequency (Mł ☆ ゐ▼ ☆ ゐ▼ Delt	5350 5 52) Delta Freq.	1 1360 5370 36.750 2 50.00 2	Analyze HP8564 CF: 534 SPAN:7 RB 100 VB 100 Detecto Att 20 RL Offs Sweep Ref Lvi: Comme BE @ 5: 802.112 Chain B	er Settings E,EMI 0.000 MH2 0.000 MH2 kH2 r POS et 0.00 Time 50.0ms 10.00DBM ents 350 MH2			

	ott						EM	C Test	' Data
Intel Corpora	ation						Job Number:	J78599	
						T-I	_og Number:	T78676	
Puma Peak	2x2					Αссоι	Int Manager:	Christine Kre	ebill
Steve Hacke	ett								
FCC 15E, F	CC 15C, FC	C 15B					Class:	N/A	
UT on Chan	nel #100 55	00MHz - 802	.11a, Chain	В				L	
Chain			Power	Settings	1]		
ondin D	Target	t (dBm)	Measure	ed (dBm)	Softwar	e Setting	-		
В	16	5.6	10	b./	1	7.0]		
tal Signal Fig	old Strenath	1							
Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments		
dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
98.2	Н	-	-	AVG	108	1.0	RB 1 MHz; V	/B: 10 Hz	
106.2	H	-	-	PK	108	1.0	RB 1 MHz; \	VB: 1 MHz	
94.6	V	-	-	AVG	129	1.1	RB 1 MHZ; \	/B: 10 Hz	
102.9	V	-	-	PK	129	1.1	RB I MHZ;	VB: T IVIHZ	
Restricted Ba	and Edge Si	ional Radiati	ed Field Stro	enath - Mark	er Delta				
	unu Lugo ol	gnarnaunan		H	V]			
Fundamental	emission le	vel @ 3m in [.]	1MHz RBW:	106.2		Peak Meas	urement (RB=	=VB=1MHz)	
Fundamental	emission le	vel @ 3m in [.]	1MHz RBW:	98.2		Average Me	easurement (I	RB=1MHz, V	B=10Hz)
		Delta Mark	er - 100kHz	55.8	dB	<- this can o	only be used	if band edge	signal is
Calcula	ted Band-Ed	ge Measurer	nent (Peak):	50.4	dBuV/m	highest with	in 2MHz of b	and edge.	D.I.I.
Calcul	aled Band-E	.age Measure	ement (Avg):	42.4	dBuv/m	Margin	Level	LIMIT	Detector
	Dei Dei	la Marker - T	1MHz/10Hz [.]	40.0	dB	-12.0	41.3 50.4		Avy Pk
Calcula	ted Band-Ed	lge Measurer	nent (Peak):	57.7	dBuV/m	Usina 100kl	Hz delta value		ΙK
Calcul	ated Band-E	dge Measure	ement (Avg):	41.5	dBuV/m	Using 1MHz	z delta value		
Level	Pol	FCC 2	15.209	Detector	Azimuth	Height	Comments		
dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
41.5	-	54.0	-12.5	Avg	-	-	Using 1MHz	delta value	
1 5460.0000 2 5495.0000	5430 5440 -67.47 中 -10.80 中	5450 5460 Frequency (Mi ★- ⓑ▼ ★- ⓑ▼	5470 5480 12) Delta Freq. :	5490 5500 9	Analyze HP8564 CF: 546 SPAN:10 RB 1.00 VB 10 H Detecto Att 10 RL Offsi Sweep 1 Ref LVI: Comme BE @ 54 802.11a Chain B	er Settings E,EMI 0.000 MHz 0.000 MHz 0 MHz r Sample et 0.00 Time 37.0s -0.30DBM ents 60 MHz 3	-		
	Intel Corpora Puma Peak Steve Hacke FCC 15E, F UT on Chain B tal Signal Fie (Level dBµV/m 98.2 106.2 94.6 102.9 Restricted Ba Fundamental Fundamental Calcula	Intel Corporation Puma Peak 2x2 Steve Hackett FCC 15E, FCC 15C, FC UT on Channel #100 55 Chain Targel B 10 tal Signal Field Strength Level Pol dBµV/m v/h 98.2 H 106.2 H 94.6 V 102.9 V Restricted Band Edge St Fundamental emission le Fundamental emission le Calculated Band-Ed Calc	Intel Corporation Puma Peak 2x2 Steve Hackett FCC 15E, FCC 15C, FCC 15B UT on Channel #100 5500MHz - 802 Chain Target (dBm) B 16.6 tal Signal Field Strength Level Pol 15.209 dBµV/m v/h Limit 98.2 H - 106.2 H - 106.2 H - 106.2 H - 106.2 H - 102.9 V - Restricted Band Edge Signal Radiate Fundamental emission level @ 3m in 7 Delta Marker - Calculated Band-Edge Measurer Calculated Band-Edge Measur	Intel Corporation Puma Peak 2x2 Steve Hackett FCC 15E, FCC 15C, FCC 15B UT on Channel #100 5500MHz - 802.11a, Chain Chain Target (dBm) Measure B 16.6 10 Target (dBm) Measure B 10.6 10 Ta	Intel Corporation Puma Peak 2x2 Steve Hackett FCC 15E, FCC 15C, FCC 15B UT on Channel #100 5500MHz - 802.11a, Chain B Chain Target (dBm) Measured (dBm) B 16.6 16.7 tal Signal Field Strength Level Pol 15.209 / 15.247 Detector dBµV/m V/h Limit Margin Pk/OP/Avg 98.2 H - AVG 106.2 H - AVG 102.9 V - PK Restricted Band Edge Signal Radiated Field Strength - Mark Fundamental emission level @ 3m in 1MHz RBW: 106.2 Funda	Intel Corporation Puma Peak 2x2 Steve Hackett FCC 15E, FCC 15C, FCC 15B UT on Channel #100 5500MHz - 802.11a, Chain B Chain Target (dBm) Measured (dBm) Softwar B 16.6 16.7 1 therefore the transmitter of	Intel Corporation Puma Peak 2x2 Accou Steve Hackett FCC 15C, FCC 15B UT on Channel #100 5500MHz - 802.11a, Chain B Chain Target (dBm) Measured (dBm) Software Setting B 16.6 16.7 17.0 tal Signal Field Strength Level Pol 15.209 / 15.247 Detector Azimuth Height dBµV/m V/h Limit Margin PK/OP/Avg degrees meters 98.2 H - AVG 108 1.0 106.2 H - AVG 108 1.0 94.6 V - AVG 108 1.0 106.2 H - PK 108 1.0 102.9 V - PK 129 1.1 102.9 V - PK 108 1.0 Fundamental emission level @ 3m in 1MHz RBW: 106.2 Peak Meass Peak Meass Fundamental emission level @ 3m in 1MHz RBW: 106.4 Peak Meass Peak Meass	EDICOLS Intel Corporation Job Number: Puma Peak 2x2 Steve Hackett FCC 15E, FCC 15C, FCC 15B Class: UT on Channel #100 5500MHz - 802.11a, Chain B Chain Target (dBm) Measured (dBm) Software Settings Al Signal Field Strength Evel Pol 15.209 / 15.247 Detector Azimuth Height Comments dBu/Vm wh Limit Margin Pk/OP/Avg degrees meters Ref RB 1 MHz; 1 106.2 H - - AVG 129 1.1 RB 1 MHz; 1 106.2 H - - PK 108 1.0 RB 1 MHz; 1 102.9 V - - PK 108 1.0 RB 1 MHz; 1 calculated Band Edge Signal Radiated Field Strength - PK 108 1.0 RB 1 MHz; 1 Fundamental emission level @ 3m in 1MHz RBW; 106.2 Average Measurement (RB- Average Measurement (RB- Calculated Band-Edge Measurement (Peak); 50.4 dB	EDECED EDECED Intel Corporation Job Number: J7859 Puma Peak 2x2 T-Log Number: J7857 Puma Peak 2x2 Colspan="2">Christine Kn Steve Hackett FCC 15E, FCC 15C, FCC 15B Class: N/A UT on Channel #100 SpootMitz - 802.11a, Chain B Chain Target (dBm) Measured (dBm) Software Settings B 16.6 16.7 To Chain Alge 7 Hold Strength Level Poil 15209 / 15.247 Detector Azimuth Height Comments BJu/M N/A 106.2 H - AVG colspan="2">108.1 NHz: VB: 10Hz 105.2 H V 0 - PK 108.2 - AVG colspan="2">- NUM 105.2 H V

Client: Intel Corporation Job Number: 174599 Model: Puma Peak 2x2 T-Log Number: 174676 Contact: Steve Hackett Excount Manager: Christine Krebill Standard: FCC 15E, FCC 15C, FCC 15B Class: N/A Standard: FCC 15E, FCC 15C, FCC 15B Class: N/A Standard: Fordamental emission level @ 3m in 1MHz RBW: 98.2 Peak Measurement (RB=1MHz, VB=10Hz) Nerrage Measurement (RB=7: 106.2 Peak Measurement (RB=1MHz, VB=10Hz) Nerrage Measurement (RB=1MHz, VB=10Hz) Nerrage Measurement (RB=1MHz, VB=10Hz) Calculated Band-Edge Measurement (Pay): 49.0 dB -11 49.9 68.3 Avg Calculated Band-Edge Measurement (Avg): 49.2 dBu//m Margin Level Linit Delector Calculated Band-Edge Measurement (Avg): 49.2 dBu//m Margin Level Linit Delector Calculated Band-Edge Measurement (Avg): 49.3 dB -31.1 45.9 82.3 Avg Calculated Band-Edge Measurement (Avg): 49.3 dBu//m Using 1MHz delta value Using 1MHz delta value									EMO	C Test	t Data
Model: Puma Peak 232 T-Log Number: T78676 Account Manager: Christine Krebill Standard: FCC 15E, FCC 15C, FCC 15B Class: Standard: FCC 15E, FCC 15C, FCC 15B Class: Standard: Fundamental emission level @ 3m in 1MHz RBW: 106.2 Peak Measurement (RB=VB=1MHz) Average Measurement (RB=VB=10Hz) Average Measurement (RB=VB=10Hz) Average Measurement (RB=VB=10Hz) Calculated Band-Edge Measurement (Pag): 92.2 dBuV/m Highest within 2MHz ABy Calculated Band-Edge Measurement (Pag): Calculated Band-Edge Measurement (Pag): 49.2 dBuV/m Using 100KHz delta value Vising 100KHz delta value Calculated Band-Edge Measurement (Pag): 49.2 dBuV/m Using 100KHz delta value Vising 100KHz delta value Calculated Band-Edge Measurement (Pag): 48.9 dBuV/m Using 100KHz delta value Using 100KHz delta value Frequency Level Pol FCC 15E Delta Marker - 10Hz/10Hz: 40.4 dBuV/m Using 10Hz delta value Frequency Level Pol FCC 15E Delta Corr Level Average Using 10Hz delta value MHz dBau/fm vhz 68.3 19.4 Avg Using	Client:	Intel Corpor	ation						Job Number:	J78599	
Account Manager: Christine Krebill Contact: Steve Hackett Class: N/A Standard: FCC 15E, FCC 15B. Class: N/A Standard: Fundamental emission level @ 3m in 1MHz RBW: 106.2 Peak Measurement (RB-VB-1MHz) Average Measurement (RB-VB-1MHz) Average Measurement (RB-VB-1MHz) Peak Measurement (RB-VB-1MHz) Average Measurement (RB-UB-1MHz) Standard: Standard: Standard: Calculated Band-Edge Measurement (Peak): 57.2 dBu/Vm Margin Level Limit Delta Markor: Calculated Band-Edge Measurement (Peak): 57.2 dBu/Vm Margin Level Limit Delta Markor: Calculated Band-Edge Measurement (Peak): 54.4 dBu/Vm Using 100kHz delta value Using 100kHz delta value Using 100kHz delta or delta Markor: MHZ/1MHz: 41.9 Avg - Using 10MHz delta value Note - average limit is equivalent to -27dBm elp: Ecolor Azimuth Height Comments Med dBau/Vm Vin Limit Margin PK/QP/Avg degrees meters Using 1MHz delta value Note - average limit is equivalent to -27dBm elp: Ecol on th	Model [.]	Puma Peak	2x2					T-	Log Number:	T78676	
Contact: Steve Hackett Standard: FCC 15E, FCC 15C, FCC 15B Class: N/A Standard: FCC 15E, FCC 15C, FCC 15B Standard: FCC 15E, FCC 15C, FCC 15B Class: N/A Standard: Fundamental emission level @ 3m in 1MHz RBW: 98.2 Average Measurement (RB=1MHz, VB=10Hz) Dulta Marker - 100kHz 49.0 B Calculated Band Edge Measurement (Paul): Dulta Marker - 100kHz 49.0 B Calculated Band Edge Measurement (Paul): Delta Marker - 100kHz 49.0 B -10.4 49.9 68.3 Avg Delta Marker - 1MHz/1NHz: 41.8 dB UV/m Using 10MHz delta value Calculated Band Edge Measurement (Peak): 64.4 48.9 0BU/m Using 10MHz delta value Calculated Band Edge Measurement (Avg): 48.9 dBu/m Using 10MHz delta value Calculated Band Edge Measurement (Avg): 48.9 dBu/m Using 10MHz delta value Calculated Band Edge Measurement (Avg): <	Model.							Acco	unt Manager:	Christine Kr	ebill
Standard: FCC 15E, FCC 15B Glass: INA Standard: FCC 15E, FCC 15B Peak Measurement (RB-VB-1MHz) Fundamental emission level @ 3m in 1MHz RBW: 1982 Delta Marker - 100kHz 49.0 dB Calculated Band-Edge Measurement (Peak): 57.2 dBUV/m Calculated Band-Edge Measurement (Peak): 54.2 dBUV/m Calculated Band-Edge Measurement (Peak): 54.3 dBUV/m Calculated Band-Edge Measurement (Peak): 54.4 dBUV/m Calculated Band-Edge Measurement (Peak): 54.7 dBUV/m Calculated Band-Edge Measurement (Peak): 54.7 dBUV/m Calculated Band-Edge Measurement (Peak): 54.4 dBUV/m Calculated Band-Edge Measurement (Peak): 54.7 dBUV/m	Contact:	Steve Hack	ett								
Stronger Signal Rediated Field Strength - Marker Delta Fundamental emission level @ 3m in TMHz RBW: 196.2 Fundamental emission level @ 3m in TMHz RBW: 98.2 Peak Measurement (RB=VB=1MHz) Calculated Band-Edge Measurement (Peak): 57.2 dBuV/m Argin Level Limit Delta Marker - 100KHz 49.0 dB	Standard:	FCC 15E, F	CC 15C, FC	C 15B					Class:	N/A	
Barlor Edge Signal Radialed Field Strength - Warket Defa Fundamental emission level @ 3m in TMHz RBW: 106.2 Peak Measurement (RB=VB=1MHz) Fundamental emission level @ 3m in TMHz RBW: 106.2 Peak Measurement (RB=VB=1MHz) Delta Marker - TOMEXT 49.0 dB his can only be used if band edge signal is highest within 2MHz of band edge. Calculated Band-Edge Measurement (Peak): 57.2 dBu/lm Margin Level Limit Delta Marker - TMHz/TMHz Calculated Band-Edge Measurement (Peak): 64.4 dBu/lm Using 100kHz delta value Using 100kHz delta value Calculated Band-Edge Measurement (Avg): 48.9 dBu/lm Using 100kHz delta value Using 100kHz delta value Using 100kHz delta value Using 100kHz delta value Frequency Level Pol FCC 15E Delector Azimuth Height Comments MHz dBu/lm vh Limit Margin Pol Vice 152 Mice average Mice average Mice average 68.3 .19.4 Avg - Using 100kHz delta value Mice average Mice average Mice average Mice average Mice average Mice average		Danal Edge (Cianal Dadia	tod Field Ct	ronath Mor	kar Dalta					
Fundamental emission level @ 3m in 1MHz RBW: 106.2 Peak Measurement (RB=VB=1MHz) Fundamental emission level @ 3m in 1MHz RBW: 98.2 Average Measurement (RB=VB=1MHz) Detta Marker - 700kHz 49.0 dB <- this can only be used if band edge.	5470 WHZ E	sand Edge S	Signal Radia	lea Fleia Sil	rengin - Mar	Ker Deita H	V	1			
Fundamental emission level @ 3m in 1MHz RBW: 98.2 Average Measurement (RB=1MHz, VB=10Hz) Delta Marker - 100kHz 49.0 dB < this can only be used if band edge.		Fundamenta	Il emission le	vel @ 3m in [•]	1MHz RBW:	106.2		Peak Meas	urement (RB=	=VB=1MHz)	
Delta Marker - 100kHz 49.0 dB <- this can only be used if band edge signal is highest within 2MHz of band edge. Calculated Band-Edge Measurement (Peak): 57.2 dBu//m Margin Level Limit Delta Marker - 10H/z/10Hz 0 Delta Marker - 11H/z/10Hz 41.8 dB -19.4 48.9 68.3 Avg 0 Delta Marker - 11H/z/10Hz 49.3 dB -31.1 57.2 88.3 Pk Calculated Band-Edge Measurement (Peak): 64.4 dBu//m Using 100kHz delta value Using 100kHz delta value Calculated Band-Edge Measurement (Avg): 48.9 dBu//m Using 110kHz delta value Frequency Level Pol FCC 15E Delector Azimuth Height Comments MHz dBu//m v/h Limit Margin Pk/QP/Avg degrees meters 5470.000 48.9 . . Using 11Hiz delta value . Using 11Hiz delta value vole - average limit is equivalent to -27dBm eirp. . . Using 11Hiz delta value . . Using 11Hiz delta value 0.0.0 . .		Fundamenta	Il emission le	vel @ 3m in [•]	1MHz RBW:	98.2		Average Me	easurement (I	, RB=1MHz, V	′B=10Hz)
Calculated Band-Edge Measurement (Avg): 49.2 dBuV/m Margin Level Limit Detector Calculated Band-Edge Measurement (Avg): 49.2 dBuV/m Margin Level Limit Detector Delfa Marker - 11MH2/10H2; 49.3 dB -31.1 57.2 88.3 Pk Calculated Band-Edge Measurement (Peak): 64.4 dBuV/m Using 100kHz delta value Calculated Band-Edge Measurement (Avg): 48.9 dBuV/m Using 100kHz delta value Calculated Band-Edge Measurement (Avg): 48.9 dBuV/m Using 100kHz delta value Frequency Level Pol FCC 15E Detector Azimuth Height Comments MHz dBuV/m V/h Limit Margin Pk/OP/Avg degrees meters 5470.000 48.9 - 68.3 -19.4 Avg - Using 1MHz delta value Note - average limit is equivalent to -27dBm eirp. Note - average limit is equivalent to -27dBm eirp. Analyzer Settings 40.0 Using 1MHz delta value Calculated Sand-Edge Measurement (Avg): Using 1MHz delta value 0.0				Delta Mark	er - 100kHz	49.0	dB	<- this can	only be used	if band edge	signal is
Calculated Band-Edge Measurement (Avg): 49.2 dBuV/m Margin Level Linit Detector Delta Marker - 1MHz/TMHz: 41.8 dB -19.4 48.9 68.3 Avg Calculated Band-Edge Measurement (Peak): 64.4 dBuV/m Using 100kHz delta value 98.3 Pk Calculated Band-Edge Measurement (Avg): 48.9 dBuV/m Using 100kHz delta value 98.3 Pk Frequency Level Pol FCC 15E Detector Azimuth Height Comments MHz dB ₂ V/m v/h Limit Margin Pk/OP/Avg degrees meters 5470.000 48.9 - 68.3 -19.4 Avg - - Using 1MHz delta value Note - average limit is equivalent to -27dBm eirp. - Using 1MHz delta value - Using 1MHz delta value		Calcula	ated Band-Ed	ge Measurer	nent (Peak):	57.2	dBuV/m	highest with	<mark>nin 2MHz of b</mark>	and edge.	
Delta Marker - IMHZ/IMHZ: 41.8 dB -19.4 49.3 68.3 Avg Calculated Band-Edge Measurement (Peak): 64.4 dBuV/m Using 100kHz delta value Calculated Band-Edge Measurement (Peak): 64.4 dBuV/m Using 100kHz delta value Frequency Level Pol FCC 15E Detector Azimuth Height Comments MHz dBuV/m v/h Limit Margin PV/OP/Avg degrees meters 5470.000 48.9 - 68.3 -19.4 Avg - Using 100kHz delta value Note - average limit is equivalent to -27dBm eirp. - Using 10Hz delta value - Using 10Hz delta value -0.0 - - 68.3 -19.4 Avg - - Using 10Hz delta value Note - average limit is equivalent to -27dBm eirp. - - Using 10Hz delta value - - 0 - - - - 0 - - - - - - - - - - - - - - - - - - <td< td=""><td></td><td>Calcu</td><td>lated Band-E</td><td>dge Measure</td><td>ement (Avg):</td><td>49.2</td><td>dBuV/m</td><td>Margin</td><td>Level</td><td>Limit</td><td>Detector</td></td<>		Calcu	lated Band-E	dge Measure	ement (Avg):	49.2	dBuV/m	Margin	Level	Limit	Detector
Delta walke 1011/Unit 44.3 dB -1.1 5.1.2 58.3 Pk Calculated Band-Edge Measurement (Peak): 64.4 dBuV/m Using 100kHz delta value Using 100kHz delta value Frequency Level Pol FCC 15E Detector Azimuth Height Comments MHz dBuV/m V/n Limit Margin Pk/QP/Avg degrees meters MHz dBuV/m v/n Limit Margin Pk/QP/Avg degrees meters MHz dBuV/m v/n Limit Margin Pk/QP/Avg degrees meters Mote - average limit is equivalent to -27dBm eirp. Avg - Using 1MHz delta value -0.0 -0.0 -0.0 -0.0 -0.0 -0.0 -0.0 -0.0 -0.0 </td <td></td> <td></td> <td>Del</td> <td>ta Marker - 1</td> <td>MHZ/TMHZ:</td> <td>41.8</td> <td>dB dB</td> <td>-19.4</td> <td>48.9</td> <td>68.3</td> <td>Avg</td>			Del	ta Marker - 1	MHZ/TMHZ:	41.8	dB dB	-19.4	48.9	68.3	Avg
Calculated Band-Edge Measurement (Vg): 48.9 dBUV/m Using 100kHz delta value Frequency Hz dBµU/m V/h Limit Margin Pk/QP/Avg degrees meters MHz dBµU/m v/h Limit Margin Pk/QP/Avg degrees meters MHz dBµU/m v/h Limit Margin Pk/QP/Avg degrees meters Note - average limit is equivalent to -27dBm eirp. - Using 1MHz delta value		Calcula	Utod Dand Ed	na Marker -	nont (Doak):	49.3	dBu\//m	-31.1	57.2	88.3	PK
Frequency Level Pol FCC 15E Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/OP/Avg degrees meters		Calcul	lated Band-F	dae Measure	ement (Ava).	48.9	dBuV/m	Using 100k	ri∠ ucita value z delta value	6	
Frequency Level Pol FCC 15E Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/OP/Avg degrees meters 5470.000 48.9 - 68.3 -19.4 Avg - Using 1MHz delta value Note - average limit is equivalent to -27dBm eirp. - Using 1MHz delta value - Using 1MHz delta value -0.0 - - 0.0 - - Using 1MHz delta value -0.0 - - 0.0 - - Using 1MHz delta value -0.0 - - - - Using 1MHz delta value - - - - - Using 1MHz delta value - - - - - Using 1MHz delta value - - - - - - Using 1MHz delta value - - - - - - - - - - - - - - - - -		04104		ago modour	5	10.7	abaviii				
MHz dBµV/m V/h Limit Margin Pk/OP/Avg degrees meters 5470.000 48.9 - 68.3 -19.4 Avg - Using 1MHz delta value Note - average limit is equivalent to -27dBm eirp. - using 1MHz delta value - Using 1MHz delta value -10.0 - - - Using 1MHz delta value - -20.0 - - - Using 1MHz delta value - -30.0 - - - - Using 1MHz delta value -30.0 - - - - - Using 1MHz delta value -30.0 - </td <td>Frequency</td> <td>Level</td> <td>Pol</td> <td>FCC</td> <td>: 15E</td> <td>Detector</td> <td>Azimuth</td> <td>Height</td> <td>Comments</td> <td></td> <td></td>	Frequency	Level	Pol	FCC	: 15E	Detector	Azimuth	Height	Comments		
5470.000 48.9 - 68.3 -19.4 Avg - Using 1MHz delta value Note - average limit is equivalent to -27dBm eirp. - </td <td>MHz</td> <td>dBµV/m</td> <td>v/h</td> <td>Limit</td> <td>Margin</td> <td>Pk/QP/Avg</td> <td>degrees</td> <td>meters</td> <td></td> <td></td> <td></td>	MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
Note - average limit is equivalent to -27dBm eirp. -10.0 -20.0 -30.0 -9 -60.0 -770.0 -60.0 -770.0 -60.0 -770.0 -60.0 -770.0 -60.0 -770.0 -60.0 -770.0 -770.0 -770.0 -770.0 -770.0 -770.0 -770.0 -770.0 -770.0 -770.0 -770.0 -770.0 -770.0 -770.0	5470.000	48.9	-	68.3	-19.4	Avg	-	-	Using 1MHz	delta value	
	-10.0 - -20.0 - -30.0 - -30.0 - - 	0 5420 543 5469.8335 - 5495.0000 -	30 5440 545 60.13 ♥ ÷ 10.80 ♥ *	i0 5460 547 equency (MH2) âr De âr Delta A	ro 5480 549 Alta Freq. 25. Amplitude 49.	00 5500 551 167 (33	Analyzer S HP8564E,E CF: 5460.0 SPAN:1000, RB 1.000 M VB 10 Hz Detector S. Att 10 RL Offset C Sweep Time Ref LvI:-0.3 Comment: BE @ 5470 802.11a Chain B	Settings MI 000 MHz 000 MHz 1Hz ample 0.00 e 37.0s 30DBM s MHz iottt			

Æ		D tt						EM	C Test	[•] Data
Client:	Intel Corpora	ation						Job Number:	J78599	
Madal	Duma Doak	JvJ					T-	Log Number:	T78676	
would.	Pulla Peak	ZXZ					Accou	unt Manager:	Christine Kr	ebill
Contact:	Steve Hacke	ett								
Standard:	FCC 15E, F	CC 15C, FC	C 15B					Class:	N/A	
Run # 3b, E	UT on Chan	nel #64 532	0MHz - n20,	Chain A						
C	Date of Test:	3/14/2010			Te	est Location:	FT Chambe	er #4		
le	st Engineer:	Rafael Vare	las	Dowor	Cor	ifig Change:	none	7		
	Chain	Tarqot	(dBm)	Measure	Settings ad (dBm)	Softwar	o Sottina			
	Δ	16	5.4	16	5.4	1	8.0	-		
Fundament	al Signal Fie	eld Strenath	1		5.1		0.0	J		
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5314.470	93.8	Н	-	-	AVG	218	1.0	RB 1 MHz; V	/B: 10 Hz	
5316.030	101.8	Н	-	-	PK	218	1.0	RB 1 MHz; V	/B: 1 MHz	
5314.400	94.0	V	-	-	AVG	47	1.0	RB 1 MHz;	/B: 10 Hz	
5315.870	102.1 Demol Edma (V V	-	-	PK	4/	1.0	RB 1 MHZ;	VB: 1 MHz	
5350 MHZ B	sand Edge S	ignai Radia	tea Fiela Sti	rength - Mar	Ker Deita	M	1			
	Jundamontal	omission la	ual @ 3m in '	1MHz DRW/·	101.8	v 102.1	Peak Meas	urement (RR-	-\/R_1MH7)	
'		emission lev	vel @ 3m in '	1MHz RBW:	93.8	94.0	Average Me	easurement (RB=1MHz V	B=10Hz)
· · ·	undumenta	CITIOSIONIC	Delta Mark	er - 100kHz	50.7	dB	<- this can	only be used	if band edge	signal is
	Calcula	ted Band-Ed	ae Measurer	nent (Peak):	51.4	dBuV/m	highest with	nin 2MHz of b	and edge.	orginario
	Calcul	ated Band-E	dge Measure	ement (Avg):	43.3	dBuV/m	Margin	Level	Limit	Detector
		Del	ta Marker - 1	MHz/1MHz:	44.7	dB	-10.7	43.3	54	Avg
		De	lta Marker -	1MHz/10Hz:	50.3	dB	-22.6	51.4	74	Pk
	Calcula	ted Band-Ed	ge Measurer	nent (Peak):	57.4	dBuV/m	Using 100k	Hz delta valu	9	
	Calcul	ated Band-E	dge Measure	ement (Avg):	43.7	dBuV/m	Using 100k	Hz delta valu	e	
Frequency	Level	Pol	FCC 2	15.209	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	11.1 40011		
5350.133	43.3	-	54.0	-10.7	Avg	-	-	Using TOOKI	Hz delta valu	9
0.0 - -10.0 - -20.0 - -30.0 - - 	0 5320 5313.7334 -6 5350.1333 -5	5330 5340 Fr 3.70 ⊕ ÷	5350 5: equency (MHz) & De b Delta A	360 5370 Ita Freq. 36.4 mplitude 50.4	5380 539 67 (Analyzer S HP8564E,El CF: 5350.0 SPAN:80.00 RB 100 kHz VB 100 kHz VB 100 kHz Detector PC Att 10 RL Offset 0 Sweep Time Ref LvI:-0.2 Comments BE @ 5350 802.11 n20 Chain A	ettings MI 00 MHz 00 MHz 05 0.00 = 50.0ms 20DBM 5 MHz 1 iottt			

Œ) tt [*] company						EMO	C Test	[•] Data
Client:	Intel Corpora	ation						Job Number:	J78599	
							T-I	Log Number:	T78676	
Model:	Puma Peak	2x2					Αссοι	unt Manager:	Christine Kre	ebill
Contact:	Steve Hacke	ett					-	5		
Standard	ECC 15E E	CC 15C FC	C 15B					Class [.]	N/A	
Dup # / Do	nd Edge Eic	d Strongth	n20 Chair	P				01035.	14/7 (
Run # 4, Da Run # 4a F	III Euge Fle	inel #36 518	- 1120, Chair 0MHz - n20	Chain B						
1. cin # 40, E	Date of Test:	3/14/2010			Τe	est Location:	FT Chambe	er #4		
Te	st Engineer:	Rafael Vare	las		Cor	ifig Change:	none			
	Chain			Power 2	Settings			1		
	Chain	Target	(dBm)	Measure	ed (dBm)	Softwar	e Setting			
	В	16	b.5	16	b .4	1	7.0]		
Fundament	al Signal Fie	eld Strength	1		1		.			
Frequency	Level	Pol	15.209/	/ 15.247	Detector	Azimuth	Height	Comments		
MHZ	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		(D. 1011-	
5185.330	96.Z	H	-	-	AVG	122		RB I MHZ; \	/B: 10 HZ	
5185.100	04.7	H V	-	-		122	1.1			
5177 100	102 A	V	-	-	PK	150	1.5	RB 1 MHz· \	/B: 1 MHz	
5150 MHz E	Rand Edge S	sional Radia	ted Field Str	renath - Mar	ker Delta	100	1.0			
	<u>unu zugo o</u>	<u>igna naua</u>		<u>engui inui</u>	Н	V]			
ŀ	Fundamental	emission lev	vel @ 3m in 1	1MHz RBW:	103.5	102.4	Peak Meas	urement (RB=	=VB=1MHz)	
ŀ	Fundamental	emission lev	vel @ 3m in 1	1MHz RBW:	96.2	94.7	Average Me	easurement (I	RB=1MHz, V	B=10Hz)
			Delta Mark	er - 100kHz	47.2	dB	<- this can o	only be used i	if band edge	signal is
	Calcula	ted Band-Ed	ge Measuren	nent (Peak):	56.3	dBuV/m	highest with	i <mark>in 2MHz of b</mark>	and edge.	
	Calcul	ated Band-E	dge Measure	ement (Avg):	49.0	dBuV/m	Margin	Level	Limit	Detector
		Del	ta Marker - 1	MHz/1MHz:	40.8	dB	-5.0	49.0	54	Avg
		De	<u>Ita Marker - 1</u>	1MHz/10Hz:	47.0	dB	-17.7	56.3	74	Pk
	Calculat	ted Band-Ed	ge Measuren	nent (Peak):	62.7	dBuV/m	Using 100kl	Hz delta value	5	
		ated Band-E	age Measure	ment (Avg):	49.2	dBuV/m		Hz delta value	.	
Frequency	Level	P0I	FCC I	5.209	Detector	Azimuth	Height	Comments		
IVIHZ	αΒμν/m	V/f1	54.0	Margin 5.0	PK/QP/AVg	degrees	meters	Llsing 100kk	Jz dolta valu	
5140.555	47.0	-	54.0	-3.0	Avy	-		USING TOOKI		5
0.0 -10.0 -20.0 -30.0 -30.0 -40.0 -50.0 -60.0 -70.0 -80.0						Analyze HP8564 CF: 515 SPAN:80 RB 100 I VB 100 I Detecto Att 10 RL Offsi Sweep 1 Ref Lvl: Comme BE @ 51 802.11	r Settings E,EMI 0.000 MHz 0.000 MHz 4Hz r POS et 0.00 Time 50.0ms -0.20DBM ents 150 MHz n20			
Cursor 1 Cursor 2	5110 5120 1 5148.5332 2 5174.0000	5130 51 -55.70 ⊕ - -8.53 ⊕ -	.40 5150 Frequency (MH ★- ゐ▼ ★- ゐ▼ Delt.	5160 517(12) Delta Freq. 2 a Amplitude	0 5180 9 25.467 47.17		liott	-		

E		btt						EM	C Test	⁻ Data
Client:	Intel Corpor	ation						Job Number:	J78599	
Model.	Puma Peak	JvJ					T-	Log Number:	T78676	
wouci.		272					Ассо	unt Manager:	Christine Kre	ebill
Contact:	Steve Hacke	ett								
Standard:	FCC 15E, F	CC 15C, FC	C 15B					Class:	N/A	
Run # 4b, E	UT on Char	nel #64 532	0MHz - n20,	Chain B						
_[Date of Test:	3/14/2010			Te	est Locatio	on: FT Chambe	er #4		
le	st Engineer:	Rafael Vare	as	Dowor	Cor Sottings	ntig Chang	je: none	7		
	Chain	Taraot	(dBm)	Measure	sellings ad (dBm)	Softw	varo Sottina			
	B	16	(ubiii) 5.6	16	50 (0Dill) 5.5	3011	17.0	-		
Fundament	al Signal Fi	eld Strength)							
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuti	h Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	s meters			
5313.000	94.8	V	-	-	AVG	168	1.5	RB 1 MHz; V	/B: 10 Hz	
5313.170	102.6	V	-	-	PK	168	1.5	RB 1 MHz;	/B: 1 MHz	
5314.270	96.7	Н	-	-	AVG	123	1.0	RB 1 MHZ;	/B: 10 HZ	
5315.170	104.5	∏ Sianal Dadia	- tod Eiold St	- ronath Mar	PK kor Dolta	123	1.0	RB I IVIHZ;	VB: T IVIHZ	
5550 IVITIZ E	anu Euge S	Siyilal Kaula	ieu rieiu Sil	engin - mai	H	V				
	Fundamenta	emission lev	/el @ 3m in	1MHz RBW:	104.5	102.6	Peak Meas	urement (RB=	=VB=1MHz)	
	Fundamenta	l emission lev	/el @ 3m in	1MHz RBW:	96.7	94.8	Average M	easurement (I	RB=1MHz, V	B=10Hz)
			Delta Mark	er - 100kHz	51.2	dB	<- this can	only be used	if band edge	signal is
	Calcula	ted Band-Ed	ge Measurei	nent (Peak):	53.3	dBuV/m	highest with	nin 2MHz of b	and edge.	5
	Calcul	ated Band-E	dge Measure	ement (Avg):	45.5	dBuV/m	Margin	Level	Limit	Detector
		Del	ta Marker - 1	MHz/1MHz:	45.0	dB	-8.5	45.5	54	Avg
		De	lta Marker -	1MHz/10Hz:	50.8	dB	-20.7	53.3	74	Pk
	Calcula	ted Band-Ed	ge Measurer	ment (Peak):	59.5	dBuV/m	Using 100k	Hz delta valu	9	
	Calcul	ated Band-E	dge Measure	ement (Avg):	45.9	dBuV/m	Using 100k	Hz delta valu	Ĵ	
Frequency	Level	Pol	FCC	15.209	Detector	Azimuti	h Height	Comments		
MHZ	dBµV/m	v/h	Limit	Margin	PK/QP/Avg	degrees	s meters	Lloing 100kl		
5350.399	45.5	-	54.0	-8.5	Avg	-	-	USING TUUKF		5
- Amplitude -	10.0 - 20.0 - 30.0 - 50.0 - 50.0 - 70.0 - 30.0 - 5310 53	20 5330	5340 535	0 5360		5390	HP8564E,EMI CF: 5350.000 MHz SPAN:80.000 MHz R8 100 KHz VB 100 KHz VB 100 KHz Detector POS Att 10 RL Offset 0.00 Sweep Time 50.0m Ref LvI:-0.20DBM Comments SE @ 5350 MHz 302.11 n20 Chain B	5		
Cur	sor 1 5322.53 sor 2 5350.39	332 -9.37 • 999 -60.53 •	Frequency	(MHz) Delta Frec Delta Amplituc	а. 27.867 de 51.17	6]	Ellio	tt		

E	Ellic	ott						EM	C Test	' Data
Client [.]	An R	ation						Job Number [.]	178599	2 4 1 4
Onorit.							T-I	og Number	T78676	
Model:	Puma Peak	2x2					Accou	Int Manager:	Christine Kr	ebill
Contact:	Steve Hacke	ett								
Standard:	FCC 15E, F	CC 15C, FC	C 15B					Class:	N/A	
Run # 4c, E	UT on Char	nel #100 550	00MHz - n20	, Chain B						
	Chain			Power	Settings]		
	Chain	Target	(dBm)	Measure	ed (dBm)	Softwar	e Setting			
	В	16	0.6	16	5.5	1	7.0	J		
Fundament	al Signal Fi	eld Strength	15 200	15 017	Detester	۸	l la la la la	Commente		
	Level	P0I v/b	15.209	/ 15.247 Margin	Delector Dk/OD/Avg	Azimuin	Height	Comments		
IVIHZ	04 /	V/I1 V	LIIIII	warym		125	1 5		/R· 10 ∐7	
5494.300	74.4 102.2	V	-		PK AVG	125	1.5	RB 1 MHz· V	/B· 1 MH7	
5494,500	98.2	H	-	-	AVG	107	1.0	RB 1 MHz [.]	/B: 10 H7	
5496.300	107.2	H	-	-	PK	107	1.0	RB 1 MHz; V	/B: 1 MHz	
5460 MHz R	Restricted B	and Edge Si	gnal Radiat	ed Field Stre	ength - Mark	er Delta				
		<u> </u>	0		Η	V	1			
	Fundamenta	l emission lev	/el @ 3m in [·]	1MHz RBW:	107.2	102.2	Peak Measu	urement (RB=	=VB=1MHz)	
	Fundamenta	l emission lev	/el @ 3m in [·]	1MHz RBW:	98.2	94.4	Average Me	easurement (l	RB=1MHz, V	B=10Hz)
			Delta Mark	er - 100kHz	53.2	dB	<- this can d	only be used	if band edge	signal is
	Calcula	ted Band-Ed	ge Measurer	ment (Peak):	54.0	dBuV/m	highest with	in 2MHz of b	and edge.	
	Calcul	ated Band-E	dge Measure	ement (Avg):	45.0	dBuV/m	Margin	Level	Limit	Detector
		Del	ta Marker - 1	MHz/1MHz:	47.7	dB	-11.3	42.7	54	Avg
		De	lta Marker -	1MHz/10Hz:	55.5	dB	-20.0	54.0	74	Pk
	Calcula	ted Band-Ed	ge Measurer	ment (Peak):	59.5	dBuV/m	Using 100kl	Hz delta valu	e	
	Calcul	ated Band-E	dge Measure	ement (Avg):	42.7	dBuV/m	Using 1MHz	z delta value		
Frequency	Level	Pol	FCC 2	15.209	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5460.000	42.7	-	54.0	-11.3	Avg	-	-	Using 1MHz	delta value	
-10.0 -20.0 -30.0 -90.440.0 -90.440.0 -70.0 -60.0 -70.0 -80.0 -80.0 -20.0 -80.0		5430 5440 -66.53 ∳ - -11.03 ∳ -	5450 5460 Frequency (Mł * & Delt	5470 5480 12) Delta Freq. 3	5490 5500 9 34.667 6	Analyze HP85641 CF: 546 SPAN:10 RB 1.00 VB 10 H- Detecto Att 10 RL Offsa Sweep 1 Ref LvI: Comme BE @ 54 802.111 Chain B	r Settings E,EMI 0.000 MHz 0.000 MHz 0 MHz r Sample et 0.00 rime 37.0s -0.20DBM rhts 160 MHz n20			
	. 1944.0005	J-11:03 []#	Uelt	a Ampitude	JJ, JU					

CEIIIC	Dtt						EM	C Test	' Data
Client: Intel Corpor	ation						Job Number:	J78599	
						T-l	_og Number:	T78676	
Model: Puma Peak	2x2					Accou	Int Manager:	Christine Kr	ebill
Contact: Steve Hack	ett								
Standard: FCC 15E, F	CC 15C, FC	C 15B					Class:	N/A	
5470 MHz Band Edge S	Signal Radia	ted Field Sti	rength - Mar	ker Delta					
				Н	V				
Fundamenta	l emission lev	vel @ 3m in 1	1MHz RBW:	107.2	102.2	Peak Measu	urement (RB	=VB=1MHz)	-
Fundamenta	l emission lev	vel @ 3m in	IMHZ RBW:	98.2	94.4	Average Me	easurement (RB=1MHz, V if hand adap	B=10Hz)
Calcula	ated Band-Ed	Della Mark	:er - TUUKHZ	48.3	<i>dBuV/m</i>	<- INIS Can (in 2MHz of b	and odgo	signal is
Calcul	lated Band-Eu	dae Measure	ment (Δva).	00.9 /0 Q	dBuV/m	Margin		Limit	Detector
Odicu	Del	ta Marker - 1	MHz/1MHz:	41.3	dB	-18.4	49.9	68.3	Ava
	De	lta Marker -	1MHz/10Hz:	47.8	dB dB	-29.4	58.9	88.3	Pk
Calcula	ited Band-Ed	ge Measurer	ment (Peak):	65.9	dBuV/m	Using 100kl	Iz delta valu	e	
Calcu	lated Band-E	dge Measure	ement (Avg):	50.4	dBuV/m	Using 100kl	Hz delta valu	е	
Frequency Level	Pol	FCC	15E	Detector	Azimuth	Height	Comments		
VIHZ <u>dBµV/m</u>	V/N	LIMIL	iviargin 10 /	PK/QP/AVg	degrees	meters	Licing 100kl	Jz dolta valu	0
5740.000 49.9	-	00.3	-10.4	Avy	-	-	USING TUUKI	iz uella valu	C
0.0 -10.0 -20.0 -20.0 -30.0 -30.0 -40.0 -60.0 -60.0 -60.0 -70.0 -80.0 -5410 5420 543 Cursor 1 5470.0000 - Cursor 2 5505.5000 -	10 5440 545 Fr 56.20 ₽ ↔	0 5460 547 equency (MHz) b Delta A	0 5480 549 Ita Freq. 35.5 mplitude 48.		Analyzer S HP8564E,EI CF: 5460.00 SPAN:100.0 RB 100 kHz VB 100 kHz VB 100 kHz Detector PC Att 10 RL Offset 0 Sweep Time Ref LvI:-0.2 Comments BE @ 5470 802.11 n20 Chain B	ettings MI 00 MHz 000 MHz 05 000 MHz 05 000BM 9 MHz iottt			

(CE	Ellic	ott						EM	C Test	' Data
Client:	Intel Corpor	ation						Job Number:	J78599	
	1						T-I	og Number:	T78676	
Model:	Puma Peak	2x2					Αςςοι	Int Manager	Christine Kr	ehill
Contact.	Steve Hack	ott					710000			
Standard	FCC 15F F	CC 15C EC	C 15B					Class	N/A	
		old Strongth	n/0 Chair	- Λ				01033.		
Run # 5, Da Run # 5a F	IIU Euge Fie IIT on Chan	nel #38 519	- 1140, Chail 0MHz - n40	Chain Δ						
[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[[Date of Test:	3/31/2010		onun //	Te	est Location:	Chamber #	5		
Те	st Engineer:	Suhaila Khu	ishzad		Cor	nfig Change:	none			
					Power S	Settings	-]	
			Target	(dBm)	Measure	ed (dBm)	Softwar	e Setting		
		Chain A	12	2.0	12	2	23	3.0	J	
Fundament	tal Signal Fi	eld Strength	15 200	15 017	Detector	A insuith	Lloight	Commonto		
	Level	P0I v/b	15.2097	15.247 Margin		Azimuin	Height	Comments		
5192 530	88.5	H	-	-	AVG	212	10	RB 1 MHz [.]	VB· 10 Hz	
5200.130	96.5	H	_	-	PK	212	1.0	RB 1 MHz; '	VB: 10112 VB: 1 MHz	
5200.730	89.2	V	-	-	AVG	146	1.4	RB 1 MHz; Y	VB: 10 Hz	
5200.270	97.7	V	-	-	PK	146	1.4	RB 1 MHz;	VB: 1 MHz	
5150 MHz E	Band Edge S	Signal Radia	ted Field Str	rength - Mar	ker Delta					
					Н	V				
	Fundamenta	l emission lev	vel @ 3m in 1	IMHz RBW:	96.5	97.7	Peak Measu	urement (RB	=VB=1MHz)	
	Fundamenta	emission lev	vel @ 3m in	IMHZ RBW:	88.5	89.2	Average Me	easurement (RB=1MHZ, V	B=10HZ)
	Calcula	tod Dand Ed	Della Mark	POPT - TUUKHZ	40.8 54.0	dBu\//m	<- INIS Can (in 2MUz of b	II band edge	signal is
	Calcul	lated Band-Eu	dae Measure	ment (Ava)	00.9 18.4	dBuV/m	Margin		Limit	Detector
	Calcul	Del	lta Marker - 1	MHz/1MHz [,]	40.4 3 <u>4</u> 7	dB	-5.6	<u>48.4</u>	54	Δνα
		De	ta Marker - 1	1MHz/10Hz:	39.2	dB	-17.1	56.9	74	Pk
	Calcula	ited Band-Ed	ge Measurer	nent (Peak):	63.0	dBuV/m	Using 100kl	Iz delta valu	e	
	Calcul	ated Band-E	dge Measure	ement (Avg):	50.0	dBuV/m	Using 100kl	Hz delta valu	е	
							-			
Frequency	Level	Pol	FCC 1	15.209	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	11	I. d. B	
5149.910	48.4	-	54.0	-5.6	AVg	-	-	USING TUUKI	HZ delta value	5
-15.0 -20.0 -30.0 -35.0 -35.0 -40.0 -55.0 -55.0 -60.0 -65.0 -770.0	0	- 51 ['] 30 51 ['] 40	5150 5160 5 Frequency (MI	5170 5180 5: -12) Delta Freq. ;	190 5200	Analyze HP8564 CF: 516 SPAN:1 RB 1.00 VB 10 H Detecto Att 20 RL Offs Sweep Ref Lvl: Comme BE @ 5: 802.11r Chain A	er Settings E,EMI 10.000 MHz 10.000 MHz 10.000 MHz 2 er Sample et 0.00 Time 41.0s 10.00DBM ents 150 MHz 140 11			

_										
E	Ellic	ott						EM	C Test	' Data
Client:	Intel Corpora	ation						Job Number:	J78599	
							T-	Loa Number:	T78676	
Model:	Puma Peak	2x2					Accou	unt Manager:	Christine Kr	ebill
Contact:	Steve Hacke	ett								
Standard:	FCC 15E, F	CC 15C, FC(C 15B					Class:	N/A	
Run # 5b, E	UT on Chan	nel #62 531	0MHz - n40,	Chain A						
[Date of Test:	4/1/2010			Te	est Location:	FT Chambe	er #4		
Ie	st Engineer:	Rafael Vare	las		Con Dowor S	itig Change:	none		1	
			Target	(dBm)	Measure	d (dBm)	Softwar	e Settina		
		Chain A	12	2.5	12	.6	2	4.5		
Fundament	al Signal Fie	eld Strength	1	-		-			1	
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5307.330	88.2	V	-	-	AVG	210	1.0	RB 1 MHz; V	VB: 10 Hz	
5299.470	96.3	V	-	-	PK	210	1.0	RB 1 MHz; V	VB: 1 MHz	
5298.800	89.2	H	-	-	AVG	219	1.0	RB 1 MHz;	VB: 10 Hz	
5299.930	97.0	H	-	-	PK	219	1.0	RB 1 MHZ; V	VB: 1 MHz	
5350 MHz B	and Edge S	ignal Radia	ted Field Str	rength - Mar	<i>ker Delta</i> H	V]			
I	undamental	emission lev	vel @ 3m in '	1MHz RBW:	97.0	96.3	Peak Meas	urement (RB	=VB=1MHz)	
	undamental	emission lev	vel @ 3m in '	IMHz RBW:	89.2	88.2	Average Me	easurement (RB=1MHz, V	B=10Hz)
	Calavia	ted Devel Ed	Delta Mark	<i>er - 100kHz</i>	41.2	dB	<- this can o	only be used	if band edge	signal is
	Calcula	ted Band-Ed	ge Measurer	nent (Peak):	55.8		nignest with	IN ZIVIHZ OF D	and edge.	Dataatar
	Calcul		uye Measure	MUz/1MUz	48.0		Margin		LIMIL E4	Delector
			lta Marker - T	1MHz/10Hz·	40.2	dB	-0.0	47.4 55.8	- 54 - 77	Avy Dk
	Calcula	ted Band-Ed	ge Measurer	nent (Peak):	56.8	dBuV/m	Using 100k	Hz delta valu	ρ / 4	ΙK
	Calcul	ated Band-E	dge Measure	ement (Avg):	47.4	dBuV/m	Using 100k	z delta value	0	
			5	() <i>,</i>			- J			
Frequency	Level	Pol	FCC 1	5.209	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5350.000	47.4	-	54.0	-6.6	Avg	-	-	Using 1MHz	z delta value	
-10.0 - -20.0 - -30.0 - 	125300 5310 5320.8667 -	5320 5330 53 Fi 19.20 ♥ *	340 5350 5364 requency (MHz)	o 5370 5380 elta Freq. 29.	5390 5400540	Analyzer 9 HP85642, CF: 5350, SPAN:115 RB 1.000 ft VB 10 H2 Detector S Att 10 RL Offset Sweep Tim Ref LvI:-5, Comment BE @ 5350 802,11n40 Chain A	Eettings EMI 2000 MHz 0000 MHz MHz Eample 0.00 100 ee 43.0s 700BM 35 0 MHz 0 MHz			
Cursor 2	5350.0000 -	61.03 💠 🔸	©▼ Delta /	Amplitude 41.	.83 7	Ell	1011			

(F		Dtt Areany						EM	C Test	' Data
Client:	Intel Corpora	ation						Job Number:	J78599	
Madalı	Dumo Dook	<u> </u>					T-I	Log Number:	T78676	
wodel:	Рита Реак	2X2					Αссоι	unt Manager:	Christine Kre	ebill
Contact:	Steve Hacke	ett								
Standard:	FCC 15E, F	CC 15C, FC(C 15B					Class:	N/A	
Run # 5c, E	UT on Chan	nel #102 55 ⁻	10MHz - n40	, Chain A						
[Date of Test:	3/14/2010			T€	est Location:	FT Chambe	er #4		
le	st Engineer:	Rafael Vare	as	Dowor	Cor	ntig Change:	none	1		
	Chain	Taraot	(dBm)	Moasure	Settings	Softwar	o Sottina			
	Δ	16	(ubiii) . 6	1/	5 7	301twai 1	7 0			
Fundament	tal Signal Fi	eld Strenath			5.1		7.0	1		
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Heiaht	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5507.470	93.0	Н	-	-	AVG	326	1.0	RB 1 MHz; V	VB: 10 Hz	
5505.870	100.9	Н	-	-	PK	326	1.0	RB 1 MHz; V	VB: 1 MHz	
5513.330	91.9	V	-	-	AVG	133	1.0	RB 1 MHz; V	VB: 10 Hz	
5520.130	100.0	V	-	-	PK	133	1.0	RB 1 MHz;	VB: 1 MHz	
5460 MHZ F	Restricted B	and Edge Si	gnal Radiat	ed Field Stre	ength - Mark	er Delta	1			
	Fundamental	omission lo	vol@2min		H 100.0	V 100.0	Dook Moos	uromont (DD.	_\/D_1\/U\	
	Fundamental		/ei @ 311111 /ol @ 3m in '		02.0	01.0	Avorago Ma	urennenn (RD:	=VD=110102) DR_1MU7_V	R_10H7)
		CHIISSIONIC	Delta Mark	er - 100kHz	73.0 20 N	dR	Average interaction of the second	only be used	if hand edge	signal is
	Calcula	ted Band-Ed	ne Measurer	nent (Peak).	61.9	dBuV/m	highest with	nin 2MHz of h	and edge	Signal is
	Calcul	ated Band-E	dae Measure	ement (Ava):	54.0	dBuV/m	Margin	Level	L imit	Detector
		Del	ta Marker - 1	MHz/1MHz:	39.7	dB	-4.0	50.0	54	Ava
		De	lta Marker -	1MHz/10Hz:	43.0	dB	-12.8	61.2	74	Pk
	Calcula	ted Band-Ed	ge Measurer	nent (Peak):	61.2	dBuV/m	Using 1MHz	z delta value		
	Calcul	ated Band-E	dge Measure	ement (Avg):	50.0	dBuV/m	Using 1MHz	z delta value		
Frequency	Level	Pol	FCC	5.209	Detector	Azimuth	Height	Comments		
MHZ	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Lloing 1ML-	dalta valua	
5459.910	50.0	-	54.0	-4.0	Avg	-	-	USING TIVIHZ	della value	
-10.0 -20.0 -30.0 90 -40.0 40 -50.0 -60.0 -70.0 -80.0 Cursor	1	5440 5450 -57.00 ⊕ -14.00 ⊕	5460 5470 9 Frequency (Mi * & * & Delt	5480 5490 55 12) Delta Freq.	500 5510 ' 38.867 (43.00	Analyze HP8564 CF: 547 SPAN:1 RB 1.00 VB 10 H Detecto Att 10 RL Offs Sweep Ref Lvl: Comme BE @ 5- 802.111 Chain A	Pr Settings E,EMI 10.000 MHz 10.000 MHz 10.000 MHz 10.000 MHz 10.000 MHz 10.000 Time 41.0s 0.000BM ents 460 MHz 10 10 10 10 10 10 10 10 10 10			

F IIi	off							C Tost	· Data
	CATAS [®] company					1	EIVIO		Dala
Client: Intel Cor	oration						Job Number:	J78599	
Model: Puma Pe	ak 2x2					T-	Log Number:	T78676	
						Αссοι	unt Manager:	Christine Kr	ebill
Contact: Steve Ha	ckett								
Standard: FCC 15E	, FCC 15C, FC	C 15B					Class:	N/A	
5470 MHz Band Edg	e Signal Radia	ated Field St	rength - Mar	ker Delta		-			
E.u.douro				H 100.0	V 100.0	DealsMean			
Fundame	Ital emission le	evel @ 3m in	IMHZ RBW:	100.9	100.0	Peak Meas	urement (RB=	=VB=IMHZ) DD 1MH7 V	D 10U-)
Fundame		Dolta Marl	Kor 100kHz	93.0	91.9 dD	Average ive	asurement (i	KB= IIVIHZ, V if band odgo	B=TUHZ)
Calc	ulated Band-Fr	ne Measurei	ment (Peak).	35.0 65.9	dBuV/m	s- mis carry	oin 2MHz of h	and edge	siyildi is
C.a	culated Band-F	Edge Measure	ement (Ava).	58.0	dBuV/m	Margin	evel	imit	Detector
	De	Ita Marker - 1	1MHz/1MHz:	31.0	dB	-10.3	58.0	68.3	Ava
	De	elta Marker -	1MHz/10Hz:	34.5 dB -22			65.9	88.3	Pk
Calc	ulated Band-Ed	dge Measurei	ment (Peak):	69.9	dBuV/m	V/m Using 100kHz delta valu			
Са	culated Band-E	Edge Measure	ement (Avg):	58.5	dBuV/m	Using 100k	Hz delta value	е	
Frequency Level	Pol	FCC	C 15E	Detector	Azimuth	Height	Comments		
MHz dBµV/r	n v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5470.000 58.0	-	68.3	-10.3	Avg	-	-	Using 100kl	Hz delta valu	9
Note - average limit is	equivalent to -	27dBm eirp.							
-10.0 - -20.0 - -30.0 - -30.0 - -50.0 - -60.0 - -70.0 - -80.0 - -5415 5 5470.00 Cursor 1 5470.00 Cursor 2 5498.76	130 5440 5450 00 -48.50 ₱ 32 -14.00 ₱	5460 5470 5 Frequency (MI 	5480 5490 53 Hz) Delta Freq.	500 5510 ' 28.783 34.50	Analyze HP8564 CF: 54 SPAN:1 RB 1.00 VB 10 H Detecto Att 10 RL Offs Sweep Ref Lvl Comme BE @ 5 802.11 Chain A	er Settings HE,EMI 70.000 MHz 10.000 MHz 20 OMHz or Sample HE 0.00 Time 41.0s 0.00DBM ents 470 MHz 10 110011			

E	Ellic	Stt						EM	C Test	' Data
Client:	Intel Corpor	ation						Job Number:	J78599	
onorm							T-	og Number	T78676	
Model:	Puma Peak	2x2					Accol	Int Manager	Christine Kr	ehill
Contact.	Steve Hacke						710000	ant manager		
Standard	FCC 15F. F	CC 15C, FC(C 15B					Class:	N/A	
Run # 6 Ba	nd Edge Fie	Id Strenath	- n40 Chair	n R				010001		
Run # 6a, E	UT on Chan	inel #38 519	0MHz - n40,	Chain B						
Ĺ	Date of Test:	4/1/2010			Tes	st Location:	FT Chambe	er #4		
Те	st Engineer:	Rafael Vare	las		Cont	fig Change:	none		_	
					Power S	ettings				
			Target	: (dBm)	Measure	d (dBm)	Softwar	e Setting		
		Chain B	11	1.5	11.	/	2	1.0		
Fundament	al Signal Fi	eld Strength	15 200	/ 15 2/7	Dotostor	Azimuth	Hoight	Commonto		
	Level	P01	15.209 Limit	/ 15.247 Margin	Delector Dk/OD/Avg	Azimuin	Height	Comments		
10102 870	<u>αβμν/m</u> 80 5	V/II Ц		iviaryiri	AVG	uegrees os	1 1	RB 1 MHz [.]	/R· 10 Hz	
5193 530	97.9	H			PK	95	1.1	RB 1 MHz [,]	VB: 10112	
5192.600	88.6	V	-	-	AVG	197	1.5	RB 1 MHz; '	VB: 10 Hz	
5193.400	96.6	V	-	-	PK	197	1.5	RB 1 MHz; Y	VB: 1 MHz	
5150 MHz E	and Edge S	Signal Radia	ted Field Str	rength - Mar	ker Delta					
					Н	V				
	undamenta	emission lev	vel @ 3m in '	1MHz RBW:	97.9	96.6	Peak Meas	urement (RB	=VB=1MHz)	
	undamenta	emission lev	vel @ 3m in *	1MHz RBW:	89.5	88.6	Average Me	easurement (RB=1MHz, V	'B=10Hz)
	0.1.1		Delta Mark	<u>(er - 100kHz</u>	43.5	dB	<- this can o	only be used	if band edge	signal is
	Calcula	ted Band-Ed	ge Measurer	nent (Peak):	54.4 (dBuV/m	highest with	in 2MHz of b	and edge.	Datastas
	Calcul	aled Band-E	dge Measure	ement (Avg):	46.0 (abuv/m	Margin	Level	Limit	Detector
		Dei	la Markor	<u>IVIПZ/ IIVIПZ.</u> 1МЦz/1∩Цz [,]	38.7	UB dD	-8.0	40.U	54 74	AVY
	Calcula	ted Band-Ed	ne Measurer	ment (Peak)	42.2 59.2 (dBuV/m	-17.0 Usina 100k	Hz delta valu	ρ /4	ГК
	Calcul	ated Band-E	dge Measure	ement (Avg):	47.3 (dBuV/m	Using 100k	Hz delta valu	e	
					1110				•	
Frequency	Level	Pol	FCC 1	15.209	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5150.000	46.0	-	54.0	-8.0	Avg	-	-	Using 100kl	Hz delta valu	е
10.0						- Aurahuran G				
-10.0-					*	HP8564E,E	Securiys EMI			
-20.0 -				العسملل	and the second of the	CF: 5150.0 SPAN:115.	000 MHz .000 MHz			
-30.0 -						RB 100 kH: VB 100 kH:	2			
පු -40.0-						Detector P	OS			
1 <u>2</u> 5 -50.0 -				.100		RL Offset	0.00 e 63.0ms			
a 0000			Market .			Ref Lvl:-6.	60DBM			
-00.0						Comment	s			
-70.0-	natamilitan k	- Landbook	Y			BE @ 5150	MHz			
-80.0 - <mark> </mark> 509	25100 5110	5120 5130 51	140 5150 516 requency (MHz)	0 5170 5180	5190 5200520	Chain B	,			
Cursor 1	5150.0000	59.77 🖶 -×-	6 · D	elta Fregulazi	567 🦯 🥕 🗕		•			
Curren 0	E107 E440	16 27 4	AT CH	analia da 10			10tt			
Cursor 2	2187.2669	10.27 🕎 🏹	Delta /	Amplitude 43	.50 🥰	L /II	TOUL			

C E	Ellic	Stt						EM	C Test	' Data
Client:	Intel Corpor;	ation						Job Number:	J78599	
							T-I	Log Number:	T78676	
Modei:	Рита Реак	2x2					Αссоι	unt Manager:	Christine Kre	ebill
Contact:	Steve Hacke	ett								
Standard:	FCC 15E, F	CC 15C, FC(C 15B					Class:	N/A	
Run # 6b, E	UT on Chan	inel #62 5310	0MHz - n40,	Chain B						
[Date of Test:	4/1/2010			Τe	est Location:	FT Chambe	r #4		
Te	st Engineer:	Rafael Varel	as		Con	Ifig Change:	none		1	
			Tardo	t (dRm)	Power : Measure	Settings	I Coffwar	o Sotting		
		Chain B	12 12	2 (UDIII) 2 5	12		22	2 N		
Fundament	tal Signal Fie	eld Strength	 I		<u> </u>	.0	<u> </u>	2.0	ł	
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5321.400	90.3	H		-	AVG	126	1.2	RB 1 MHz; \	VB: 10 Hz	
5321.130	98.4	H	- <u>'</u>	-	PK	126	1.2	RB 1 MHz; V	/B: 1 MHz	
5321.330	85.8 01.2	V	- <u> </u>	-	AVG DK	240	1.U 1.0			
5350 MHz E	^{74.∠} Rand Fdae S	v Signal Radia	- ted Field St	renath - Mar	rker Delta	240	1.0	KD I WITZ,	Ø. EIVIEIZ	
	ana Lage -	Igna nation		chight	H	V	1			
	Fund <u>amenta</u>	l emission lev	vel @ 3m in ⁻	1MHz RBW:	98.4	94.2	Peak Measu	urement (RB=	=VB=1MHz)	
	Fundamental	emission lev	vel @ 3m in f	1MHz RBW:	90.3	85.8	Average Me	asurement (I	RB=1MHz, V	B=10Hz)
			Delta Mark	ter - 100kHz	43.8	dB	<- this can o	only be used	if band edge	signal is
	Calcula	ted Band-Ed	ge Measurer	nent (Peak):	54.6	dBuV/m	highest with	in 2MHz of b	and edge.	
	Calcul	ated Band-L	dge Measure	ement (Avg):	46.5	dBuV/m	Margin	Level	Limit	Detector
		Dell	ta Marker - I	MHZ/IMHZ:	39.8 42.7	dB	-7.5	46.5	54	Avg
	Calcula	שש t≏d Rand-Ed	<u>lla Marker - 1</u> de Measurer	ment (Peak)	<u>4∠.</u> /	dBu\//m	-19.4 Heina 100kl	54.0 Ulav etlet z	/4	ΡK
	Calcul	ated Band-E	dge Measure	ement (Avg):	47.6	dBuV/m	Using 100kl	Hz delta valu	e e	
			<u>"9</u>	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			000.9	IL GONG TEL	5	
Frequency	Level	Pol	FCC 1	15.209	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5350.766	46.5	-	54.0	-7.5	Avg		-	Using 100kH	Iz delta value	е
-10.0-0						Analyzer 9	Cottings			
	ي أور والارا بالراد .	ilal .				HP8564E,E	MI			
-20.0-		"Wy				CF: 5350.0 SPAN:115.	,00 MHz 000 MHz			
-30.0-						RB 100 KHz VB 100 KHz	2			
-40.0 − චූ -40.0 −						Detector Po Att 10	OS			
und die die die die die die die die die di		Make	d 1.			RL Offset u Sweep Tim).00 e 63.0ms			
-60.0-						Ref Lvi:-6.t	60DBM			
-70.0 -						Comment	s			
				manplores	-	BE @ 5350 802.11n40	MHz			
-80.0 – 529	25300 5310	5320 5330 53	40 5350 536(0 5370 5380	5390 540054C	Chain B)8				
		Fr	equency (MHz)							
Cursor 1	5313.7749 -	14.93 🖤 🔫	br De	alta Freq. 36.9	992	F 11	intt			
Cursor 2	5350.7666	58.77 🕁 📩	©™ Delta A	Amplitude 43.	.83 📿		Юц			

(CE	Ellic	ott						EMO	C Test	[•] Data
Client:	Intel Corpora	ation						Job Number:	J78599	
							T-l	og Number:	T78676	
Model:	Puma Peak	2x2					Αссоι	Int Manager:	Christine Kre	ebill
Contact:	Steve Hacke	ett								
Standard:	FCC 15E, F	CC 15C, FC	C 15B					Class:	N/A	
Run # 6c, E	UT on Chan	nel #102 55 ⁻	10MHz - n40	, Chain B						
					Power S	Settings				
			Target	(dBm)	Measure	d (dBm)	Softwar	e Setting		
F	tal Cianal Fi	Chain B	14	.5	14	.6	20	5.0		
Fundamen	tai Signai Fi	ela Strength Dol	15 209	/ 15 2/7	Dotoctor	Azimuth	Hoight	Commonts		
MHz		 v/h	l imit	Margin		dearees	meters	COMMENTS		
5521.470	93.2	V	-	-	AVG	173	1.1	RB 1 MHz: \	/B: 10 Hz	
5520.470	101.4	V	-	-	PK	173	1.1	RB 1 MHz; \	/B: 1 MHz	
5512.870	93.0	Н	-	-	AVG	117	1.0	RB 1 MHz; \	/B: 10 Hz	
5520.470	101.1	Н	-	-	PK	117	1.0	RB 1 MHz; \	/B: 1 MHz	
5460 MHz I	Restricted B	and Edge Si	gnal Radiate	ed Field Stre	e ngth - Mark H	<i>er Delta</i> V]			
	Fundamental	emission lev	/el @ 3m in *	IMHz RBW:	101.1	101.4	Peak Measu	urement (RB=	=VB=1MHz)	
	Fundamenta	emission lev	<u>/el @ 3m in 1</u>	IMHz RBW:	93.0	93.2	Average Me	asurement (I	RB=1MHz, V	B=10Hz)
	Calaula	tod Dond Ed	Delta Mark	er - 100kHz	45.0	dB dB://///	<- this can o	only be used i	if band edge	signal is
	Calcula	atod Band-Eu	ge Measurer	ment (Ava):	56.4 49.2		nignest with Margin	IN ZIVINZ OF D	and edge.	Dotoctor
	Calcul		ta Markor 1	лиети (Avy). Мит/1Мит.	40.2		iviaiyiii од		5 <i>1</i>	Delector
		Dei Dei	la Marker - 1. Ita Marker - 1	1MHz/10Hz·	42.0	uD dB	-0.0	40.0 56 /	- 04 7/	Avy Dk
	Calcula	ted Band-Ed	de Measurer	nent (Peak):	59.4	dBuV/m	Using 100kl	Iz delta value	۲۱ د	T K
	Calcul	ated Band-E	dge Measure	ement (Avg):	45.5	dBuV/m	Using 1MHz	delta value		
Frequency	Level	Pol	FCC 1	5.209	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	11.1		
5460.000	45.5	-	54.0	-8.5	Avg	-	-	Using TMHz	delta value	
-10.0 -20.0 -30.0 99 -40.0 -40.0 -60.0 -70.0 -80.0 5 Cursor 1 Cursor 2	4125420 5430 5460.0332 5499.1333	5440 5450 -63.97 ⊕ ⊰ -16.30 ⊕ ⊰	5460 5470 54 Frequency (MHz	ao 5490 5500 Delta Freq. 39 Amplitude 4	0 5510 552059 9.100 7.67	Analyzer HP8564E CF: 5470 SPAN:111 RB 1.000 VB 10 Hz Detector Att 10 RL Offsel Sweep Ti Ref LVI:-: Commer BE @ 544 802.11n4 Chain B	Settings ,EMI .000 MHz 5.000 MHz MHz Sample t 0.00 me 43.0s 3.300BM hts 50 MHz 10			

(FE	Ellic	D tt						EM	C Test	t Data
Client:	Intel Corpor	ation						Job Number:	J78599	
Model	Duma Doak	JvJ					T-l	_og Number:	T78676	
MOUCI.	r unia r cak						Αссоι	int Manager:	Christine Kr	ebill
Contact:	Steve Hack	ett								
Standard:	FCC 15E, F	CC 15C, FC	C 15B					Class:	N/A	
5470 MHz E	Band Edge S	Signal Radia	ted Field St	rength - Mai	ker Delta		7			
	F		ما و اس ا		H	V	Deal: Mean			
	Fundamenta	I emission lev	/el @ 3m in /el @ 3m in	IMHZ RBW:	101.1 03.0	02.2	Peak Measu	Jrement (RB=	=VB=IMHZ) DR_1MH7_W	/R_10U7)
	Fulluamenta		Delta Mari	HVINZ KOVV.	93.0 30 0	93.Z dR	Average we	asurement (i	KD= IIVINZ, V if hand edge	$D = I \cup \Pi Z$
	Calcula	ated Band-Ed	de Measure	ment (Peak).	62.4	dBuV/m	highest with	in 2MHz of h	and edge	Signalis
	Calcu	lated Band-E	dge Measur	ement (Ava):	54.2	dBuV/m	Margin	Level	Limit	Detector
	54.54	Del	ta Marker - 1	IMHz/1MHz:	35.5	dB	-14.1	54.2	68.3	Ava
		De	Ita Marker -	1MHz/10Hz:	38.8	dB	-25.9	62.4	88.3	Pk
	Calcula	ated Band-Ed	ge Measure	ment (Peak):	65.9	dBuV/m	Using 100kl	- Hz delta value	e	
	Calcu	lated Band-E	dge Measur	ement (Avg):	54.4	dBuV/m	Using 100kl	Hz delta value	e	
Frequency	Level	Pol	FCC	C 15E	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5469.616	54.2	-	68.3	-14.1	Avg	-	-	Using 100kl	Hz delta valu	е
-10.0 - -20.0 - -30.0 - -30.0 - -30.0 - 	25420 5430 \$ 5469.6167 -: 5519.0669 -:	1	50 5470 5480 equency (MHz) Br Delta A	ta Freq. 49.4 mplitude 39.1		Analyzer Se HP8564E,EN CF: 5470.00 SPAN:115.00 RB 100 kHz VB 100 kHz Detector PC Att 10 RL Offset 0 Sweep Time Ref LvI:-3.3 Comments BE @ 54700 B02.11n40 Chain B	ettings 41 30 MHz 30 MHz 35 .00 63.0ms 0DBM MHz			

6	Ellic	ott				EM	C Test Data
Client:	Intel Corpor	ation				Job Number:	J78599
Madal	Dumo Dook	222				T-Log Number:	T78676
woder:	Puma Peak	282				Account Manager:	Christine Krebill
Contact: Standard:	Steve Hacke	ett CC 15C FC	C 15B			Class	N/A
	Tra	RSS nsmitte	210 / F er and I	CC 15. Receive	247 (DTS) / FC er Radiated Sp	C 15 E (NII) ourious Emiss	ions
Test Spe	cific Detai Objective:	IS The objectiv specificatior	e of this test listed above	session is to e.	perform engineering eva	luation testing of the EU1	F with respect to the
General The EUT was For radiated Ambient	Test Config s installed inte d emissions te Condition	guration o a test fixtur esting the me s:	e such that t easurement a T R	he EUT was antenna was emperature: rel. Humidity:	exposed (i.e. outside of a located 3 meters from the 19.2 °C 41 %	host PC). EUT.	
Summary MAC Addre	y of Result ss: 00231468	S S1DC CRT	U Tool Versid	on 5.15.36.0	Driver version 13.0.0.91		I
Run #	Mode	Channel	l arget Power	Measured Power	Test Performed	Limit	Result / Margin
5150 - 5250 from the res the lowest o both chains	b/5250 - 5350 stricted band channel in the were no wor	MHz UNII (I edges by eva two bands t se than those	ELAN) Ban aluating 802. hat has a set e in the origin	ds - verified 11n mode or cond harmon nal filing (11.1	that the changes had no s n channel 60 (5300MHz) f ic falling into a restricted 1dB for Chain A and 10.40	significant effect on the sport or Chains A and B. 5300 band. The results indicat dB For Chain B)	ourious emissions away Mhz was chosen as it is ted that the margins for
Run #4	n20	#60	16.8	16.9	Radiated Emissions,	FCC 15.209 / 15 E	59.5dBµV/m@
Run # 5	Chain A+B n20 Chain A n20	5300MHz #60 5300MHz #60	16.4	16.4	1 - 40 GHz Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	1328.9MHz (-14.5dB) 38.3dBµV/m @ 15895.6MHz (-15.7dB) 39.2dBµV/m @
5470-5725	Chain B MHz UNII (LI	5300MHz ELAN) Band	- verified tha	at the change	es had no significant effec	t on the spurious emissio	15906.7MHz (-14.8dB) ns away from the
restricted ba	and edges by 1dB of the m	argin reporte	ed in the origi	e on channei inal filing (6.0	118 (5590MHz). The resu 0dB).	lits indicated that the mai	rgins for both chains
Run # 6	n40 Chain A+B	#118 5590MHz	16.6	16.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	48.6dBµV/m @ 7453.4MHz (-5.4dB)
Receiver s		#48 5240MHz	-	-	Dedicted Emissions		49.7dBµV/m @ 6986.7MHz (-4.3dB)
Run # 7	KX Chain A+B	#60 5300 MHz #120	-	-	Radiated Emissions, 1 - 12 GHz	RSS 210	45.9dBµV/m @ 3000.4MHz (-8.1dB) 47.8dBµV/m @
L		5600MHz					6000./MHz (-6.2dB)

Elliott

EMC Test Data

	An ZAZZES company		
Client:	Intel Corporation	Job Number:	J78599
Model	Duma Daak 2v2	T-Log Number:	T78676
MOUEI.		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15E, FCC 15C, FCC 15B	Class:	N/A

Deviations From The Standard

Radiated spurious emissions were measured only to 40 GHz when the device was operating on the - channel in the #159 5795MHzest 5 GHz band (5725-5850 MHz). The requirement would be to test to 40GHz for all channels. The measurements for the #159 5795MHzest channel showed there were no significant emissions above 18 GHz, therefore measurements above 18 GHz were considered unnecessary for the remaining 5GHz channels.

Modifications Made During Testing

No modifications were made to the EUT during testing

		Dtt						EM	C Test Da
Client:	Intel Corpora	ation						Job Number:	J78599
							T-	Log Number:	T78676
Model:	Puma Peak	2x2					Acco	unt Manager:	Christine Krebill
Contact:	Steve Hacke	ett							
Standard:	FCC 15E, F(CC 15C, FC	C 15B					Class:	N/A
cun #S 1-3 Cun #4, Rac [Te	diated Spurid Date of Test:	ous Emissio 3/15/2010 Rafael Vare	ons, 1-40GH	lz, n20, Cha	in A+B Te	est Location:	FT Chambe	er #4	
for emission ne power m Run #4a: El	ns in restricte leasured is av UT on Chanr	d bands, the verage powe nel #60 5300	e limit of 15.2 er this is cons DMHz - n20,	09 was used sidered an a Chain A+B	d. For all othe verage limit so	r emissions, the peak lin	the limit is - nit would be	-27dBm eirp (88.3dBuV/m	(68.3dBuV/m @3m). a at 3m.
		Targe	(dBm)		TOWERS	Measure	d (dBm)		Software Setting
Chain	A	B	С	Total	А	В	C	Total	contrare county
Chain	13.8	13.8		16.8	13.6	14.1		16.9	13.5
1328.870 1328.440 15903.110 15906.410 10600.780 10600.520 2998.330 5995.830	59.5 35.1 36.8 48.1 37.6 50.3 47.4 47.5	V V V V V V V V	74.0 54.0 54.0 74.0 54.0 74.0 68.3 68.3	-14.5 -18.9 -17.2 -25.9 -16.4 -23.7 -20.9 -20.8	PK AVG AVG PK AVG PK Peak Peak	80 80 172 172 183 183 104 104	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0		
7065.830	48.7	V	68.3	-19.6	Peak	182	1.9		
	30.0		U I.						
Amplitude (dBuV/m)	70.0 - 50.0 - 50.0 - +0.0 - 30.0 -	W.W.	human	White a second	Anna analas	 \		um Jaa	~~~V

	-Ilic	tt.						FM	C. Test Da
	An D	A * company							
Client:	Intel Corpora	ation						Job Number:	J78599
Model:	Puma Peak	2x2					-	Log Number:	1/86/6
							Accou	unt Manager:	Christine Krebill
Contact:	Steve Hacke	ett							
Standard:	FCC 15E, F	CC 15C, FC	C 15B					Class:	N/A
ın # 5, Ra	diated Spur	ious Emissi	ions, 1-40Gl	Iz, n20, Cha	ain A, Chain I	В			
D	ate of Test:	3/15/2010			Te	est Location:	FT Chambe	er #4	
Tes	st Engineer:	Rafael Vare	las		Cor	ilig Change:	None		
r omission	is in rostricte	d hands the	limit of 15.2	00 was uso	h For all othe	romissions	tha limit is .	27dRm oirn (68 3dBu\//m @3m)
	easured is a	verade nowe	r this is ocn	sidered an a	verage limit so	n the neak lin	nit would be	270Dinelip (88.3dRu\//m	at ?m
power m		verage powe			verage infine se			00.3000.700	
n # 5a: El	UT on Chan	nel #60 530	0MHz - n20,	Chain A					
					Power S	Settings			
		Targe	t (dBm)			Measure	ed (dBm)		Software Setting
Chain	A	В	С	Total	A	В	С	Total	47.5
	16.4			16.4	16.4			16.4	17.5
ourious D	adiated Emi	iccionc:							
equency	l evel	Pol	15.20	9/15F	Detector	Azimuth	Height	Comments	
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Ava	dearees	meters	Comments	
895.580	38.3	V	54.0	-15.7	AVG	271	1.1		
901.280	50.8	V	74.0	-23.2	PK	271	1.1		
599.550	38.8	V	68.3	-29.5	AVG	198	1.2		
599.080	52.3	V	88.3	-36.0	PK	198	1.2		
998.330	48.4	V	68.3	-19.9	Peak	85	1.0		
995.830	47.7	V	68.3	-20.6	Peak	9/	1.0		
229 400	49.0	V	68.3 54.0	-19.3		182	1.0		
328.000	30.7 58.0	V	54.0 74.0	-18.3	AVG	00 86	1.0		
330.020	56.0	V	74.0	-10.0	ΓN	00	1.0		
	80.0								
	,0.0								
7	70.0-								
Ê									
126	50.0-								
	50.0-								
tr de		•		Ī			Ĭ.		
	10.0- 1 B.n.d		6. h 4			1 miles			Mrs 1
4	V∾W	րույուներ	h him h	Willkrught	And the for the second s			w.	~~~~~
3	su.u -	211							
2	20.0-								
	1000							10000	18000
					_	/			

C I	Ellic	ott						EM	C Test Data
Client	An 242	ation						Job Number:	178599
Onorit.							T-	l og Number:	T78676
Model:	Puma Peak	2x2				-	Accou	unt Manager:	Christine Krebill
Contact:	Steve Hacke	ett						5	
Standard:	FCC 15E, F	CC 15C, FC	C 15B					Class:	N/A
Run # 5b: E	UT on Char	nel #60 530	0MHz - n20,	Chain B					
		Τ			Power S	Settings			
	۸	Target B		Total	Λ	R	a (aBm)	Total	Software Setting
Chain	16.5	D	C	16.5	A 16.7	D	C	16.7	17.0
	1010			1010	1017				
Spurious R	adiated Emi	issions:							
Frequency		Pol	15.209)/15E	Detector	Azimuth	Height	Comments	
MHZ 15906.670	0BµV/M 39.2	V/n V	Limit 54 0	-14.8	PK/QP/AVg Peak	degrees	1 0		
1331.080	34.5	V	54.0	-19.5	AVG	81	1.0		
1330.050	56.5	V	74.0	-17.5	PK	81	1.0		
10600.000	40.0	V	68.3	-28.3	Peak	189	1.0		
2998.330	47.2	V	68.3	-21.1	Peak	83	1.6		
5995.830	4/./	V	68.3	-20.6	Peak	140	1.0		
/005.830	50.Z	V	08.3	-18.1	Peak	175	1.3		
Amplitude (dBuV/m)	80.0 - 70.0 - 60.0 - 50.0 - 40.0 - 40.0 - 30.0 - 20.0 - 1000		l I. Numuh		Frequency	(MHz)		10000	

Client:	Intel Corpor	ation						Job Number:	J78599
Madal	Duma Dook	JvJ					T-	Log Number:	T78676
wouer.	Pullia Peak	282					Acco	unt Manager:	Christine Krebill
Contact:	Steve Hacke	ett							
tandard:	FCC 15E, F	CC 15C, FC(C 15B					Class:	N/A
n # 6, Ra [Te emission power m	Date of Test: ast Engineer: ns in restricte neasured is a	3/15/2010 Rafael Varel ed bands, the verage powe	ons, 1-40G as limit of 15.2 r this is ocn	Hz, n40, Cha 209 was used sidered an a	Te Te Con d. For all othe verage limit sc	est Location: fig Change: r emissions, o the peak lir	FT Chambe None the limit is - nit would be	er #4 -27dBm eirp (e 88.3dBuV/m	68.3dBuV/m @3m at 3m.
n # 6a: E	UT on Char	nel #118 55	90MHz - n40	0, Chain A+I	В				
					Power S	Settings			
		Target	(dBm)	— · · ·	ļ,	Measure	ed (dBm)		Software Setting
Chain	A	B	С	l otal	A 12.2	B	С	l otal	12.0
	13.0	13.0		10.0	13.Z	13.7		C.01	12.0
urious R	adiated Em	issions:							
equency	Level	Pol	15.20	9/15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
453.380	48.6	V	54.0	-5.4	AVG	176	1.1		
453.430	52.8	V	74.0	-21.2	PK	176	1.1		
598.310	35.U 52.0	V	54.0	- 19.0	AVG	105	1.4		
1180 710	35.6	V	74.0 54.0	-22.0	AVG	200	1.4		
1180.140	49.5	V	74.0	-24.5	PK	200	1.0		
998.330	47.1	V	68.3	-21.2	Peak	258	1.0		
995.830	46.4	V	68.3	-21.9	Peak	136	1.0		
Amplitude (dBuV/m)	80.0 - 70.0 - 60.0 - 50.0 - 40.0 -		!! ! 	Nulyowenda	1		ليانيا الا		
	20.0 - 1 1000				Frequency	(MHz)		10000	18000

Client: Intel Model: Pum Contact: Stev Standard: FCC Run # 7, Radiate Date of Test En Run # 7a: EUT o Run # 7b: EUT o Spurious Radiat Frequency Lo MHz dB 3000.360 4 6986.660 4	Corporat na Peak 2: /e Hackett 2 15E, FC/ ad Spurio of Test: 3 ngineer: R on Chann on Chann <u>ted Emis</u> : evel uV/m	tion x2 t C 15C, FCC Dus Emissio /15/2010 ?afael Varel el #6 2437N el #48 5240 sions:	2 15B ons, 1-40GF as //Hz - Rx, Cf)MHz - Rx, C	Iz, Rx, Chai hain A+B - I Chain A+B	n A+B Te Con DTS Band, re	st Location: fig Change:	T- Acco FT Chambe None	Job Number: Log Number: unt Manager: Class: r #4	J78599 T78676 Christine Krebill N/A
Model: Pum Contact: Steve Standard: FCC Run # 7, Radiate Date of Date of Test En Run # 7a: EUT of Run # 7b: EUT of Spurious Radiate Frequency Log MHz dB 3000.360 4 6986.660 4	na Peak 2: re Hackett 2 15E, FC ed Spurio of Test: 3 ngineer: R on Chann on Chann ted Emis: evel µV/m	x2 <u>C 15C, FC(</u> JUS Emissi (1/15/2010 afael Varel el #6 2437N el #48 5240 <u>sions:</u>	2 15В ons, 1-40GF as ИНz - Rx, CI)MHz - Rx, C	Iz, Rx, Chai hain A+B - I Chain A+B	in A+B Te Con DTS Band, re	est Location: ifig Change:	T- Acco FT Chambe None	Log Number: unt Manager: Class: er #4	T78676 Christine Krebill N/A
Contact: Steve Standard: FCC Run # 7, Radiate Date of Date of Test En Run # 7a: EUT of Run # 7b: EUT of Run # 7b: EUT of Spurious Radiate Date of Frequency Log MHz dB 3000.360 4 6986.660 4	ve Hackett 2 15E, FC ed Spurio of Test: 3 ngineer: R on Chann on Chann <u>ted Emis</u> : <u>evel</u> <u>u</u> V/m	t C 15C, FC(Dus Emission 3/15/2010 Rafael Varel el #6 2437N el #48 5240 sions:	С 15В ons, 1-40GF as ИНz - Rx, Cl)MHz - Rx, (Iz, Rx, Chai hain A+B - I Chain A+B	in A+B Te Con DTS Band, re	st Location: Ifig Change:	Acco FT Chambe None	unt Manager: Class: r #4	Christine Krebill
Contact: Stev Standard: FCC Standard: FCC Run # 7, Radiate Date of Date of Test En Run # 7a: EUT of Run # 7b: EUT of Spurious Radiate Frequency Log MHz dB 3000.360 4 6986.660 4	ve Hackett 2 15E, FC ed Spuric of Test: 3 ngineer: R on Chann on Chann ted Emis: evel µV/m	t C 15C, FCC Dus Emissie 3/15/2010 Rafael Varel el #6 2437N el #48 5240 <u>sions:</u>	<u>С 15В</u> ons, 1-40GF as ИНz - Rx, CI)MHz - Rx, C	1z, Rx, Chai hain A+B - I Chain A+B	in A+B Te Con DTS Band, re	est Location: Ifig Change:	FT Chambe None	Class: er #4	N/A
Standard: FCC Run # 7, Radiate Date of Test En Run # 7a: EUT o Run # 7b: EUT o Spurious Radiat Frequency MHz 3000.360 4 6986.660	c 15E, FC ed Spuric of Test: 3 ngineer: R on Chann on Chann <u>ted Emis</u> : evel µV/m	C 15C, FC(pus Emissi 3/15/2010 Rafael Varel el #6 2437N el #48 5240 <u>sions:</u>	C 15B ons, 1-40GF as /Hz - Rx, Cl)MHz - Rx, C	-Iz, Rx, Chai hain A+B - I Chain A+B	in A+B Te Con DTS Band, re	est Location: Ifig Change:	FT Chambe None	Class: er #4	N/A
Run # 7, Radiate Date of Test En Run # 7a: EUT of Run # 7b: EUT of Spurious Radiat Frequency Lo MHz 3000.360 4 6986.660	ed Spuric of Test: 3 ngineer: F on Chann on Chann <u>ted Emis</u> : <u>evel</u> µV/m	bus Emissi 3/15/2010 Rafael Varel el #6 2437N el #48 5240 <u>sions:</u>	ons, 1-40Gł as //Hz - Rx, Ci)MHz - Rx, (⊣z, Rx, Chai hain A+B - Ι Chain A+B	in A+B T∈ Cor DTS Band, re	est Location: Ifig Change:	FT Chambe None	er #4	
Pun # 7a: EUT o Pun # 7b: EUT o Purious Radiat Frequency Lo MHz dB 3000.360 4 6986.660 4	on Chann on Chann <u>ted Emis:</u> evel µV/m	nel #6 24371 nel #48 524(<u>sions:</u>	MHz - Rx, C)MHz - Rx, (hain A+B - i Chain A+B	DTS Band, re	() DTO			
un # 7b: EUT o <i>purious Radiat</i> requency Lo MHz dB 3000.360 4 5000.730 4 5986.660 4	on Chann <i>ted Emis</i> : .evel .µV/m	iel #48 524(s <i>ions:</i>)MHz - Rx, (Chain A+B		ter to DIS r	eport		
Addiate Frequency L MHz dB 3000.360 4 6000.730 4 6986.660 4	<i>ted Emis</i> . .evel βμV/m	sions:							
MHz dB 3000.360 4 5000.730 4 5986.660 4	μV/m		15 200	0 / 15F	Detector	۸zimuth	Height	Comments	
3000.360 4 5000.730 4 5986.660 4	μν/π	v/h	l imit	Margin		dearees	meters	Comments	
5000.730 4 5986.660 4	47.3	V	54.0	-6.7	AVG	95	1.0		
5986.660 4	47.4	V	54.0	-6.6	AVG	95	1.0	1	
	49.7	V	54.0	-4.3	AVG	176	1.9	<u> </u>	
3000.260 5	51.3	V	74.0	-22.7	РК	95	1.0		
5000.770 5	50.5	V	74.0	-23.5	PK	95	1.0		
6986.640 5	52.8	V	/4.0	-21.2	PK	1/6	1.9		
80.0 70.0 (W/\ngp) 90.0 90.0 40.0 30.0 1 20.0 1) -) -) -) -) -) -) - 1000	MM	MMM		Frequency	(MHz)		erendere tente	10000 12000

Elliott

EMC Test Data

	An Z(ZZ) company		
Client:	Intel Corporation	Job Number:	J78599
Model:	Duma Daak 2v2	T-Log Number:	T78676
		Account Manager:	Christine Krebill
Contact:	Steve Hackett		
Standard:	FCC 15E, FCC 15C, FCC 15B	Class:	N/A

Run # 7c: EUT on Channel #60 5300 MHz - Rx, Chain A+B

Spurious Radiated Emissions:

Frequency	Level	Pol	15.209	9/15E	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1322.870	27.6	V	54.0	-26.4	AVG	295	1.0	
3000.370	45.9	V	54.0	-8.1	AVG	248	1.0	
6000.700	43.0	V	54.0	-11.0	AVG	254	1.6	
1323.540	45.3	V	74.0	-28.7	PK	295	1.0	
3000.300	50.4	V	74.0	-23.6	PK	248	1.0	
6000.800	50.2	V	74.0	-23.8	PK	254	1.6	



Client:	Intel Corpora	ation		Job Number: J78599					
Madal	Puma Peak 2x2						T-Log Number: T78676		
wouer.							Account Manager: Christine Krebi		Christine Krebill
Contact:	Steve Hacke	ett							
Standard:	: FCC 15E, FCC 15C, FCC 15B							Class:	N/A
Run # 7d: E	UT on Chan	nel #120 56	00MHz - Rx,	Chain A+B					
Spurious R	Padiated Emi	ssions:						-	
Frequency	Level	Pol	15.209	9/15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
1327.920	32.2	V	54.0	-21.8	AVG	288	1.0		
3000.360	45.9	V	54.0	-8.1	AVG	247	1.0		
6000.720	47.8	V	54.0	-6.2	AVG	268	1.5		
1328.460	56.4	V	74.0	-17.6	PK	288	1.0		
2000 270	50.3	V	74.0	-23.7	PK	247	1.0		
3000.370		11	74.0	22 F	DK	268	15		



Appendix C Photographs of Test Configurations

Uploaded as a separate exhibit

Appendix D Theory of Operation

Uploaded as a separate exhibit (ANHU application only) – contains detailed information about the BiOS Lock mechanisms.

Appendix E Schematics

Uploaded as a separate exhibit – contains detailed information about the proposed changes.

Appendix F RF Exposure Information

Uploaded as a separate exhibit. Note that the rf exposure calculation is taken form the original filing. The antennas evaluated as part of this permissive change are of lower gain, therefore the original evaluation represents the worst case MPE calculation for the device.