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Electromagnetic Emissions Test Report and Application for Grant of Equipment Authorization pursuant to FCC Part 15, Subpart C Specifications for an Intentional Radiator on the Intel Corporation Model: WM3B2100A

FCC ID: PD9WM3B2100A

GRANTEE: Intel Corporation 2300 Corporate Center Drive Thousand Oaks, CA 91320

TEST SITE: Elliott Laboratories, Inc. 684 W. Maude Avenue Sunnyvale, CA 94086

REPORT DATE: April 29, 2003

FINAL TEST DATE:

April 23 and April 24, 2003

Juan man_

AUTHORIZED SIGNATORY:

Juan Martinez Sr. EMC Engineer



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TABLE OF CONTENTS

COVER PAGE	1
APPLICATION AND AGREEMENT FOR CERTIFICATION SERVICES	. 1
TABLE OF CONTENTS	2
DECLARATIONS OF COMPLIANCE	3
SCOPE	.4
OBJECTIVE	.4
STATEMENT OF COMPLIANCE	.4
SUMMARY OF RESULTS	5
MEASUREMENT UNCERTAINTIES	6
EQUIPMENT UNDER TEST (EUT) DETAILS	7
GENERAL	7
OTHER EUT DETAILS	
ENCLOSURE	
MODIFICATIONS SUPPORT EQUIPMENT	
EUT INTERFACE PORTS	
EUT OPERATION DURING TESTING.	
TEST SITE	
GENERAL INFORMATION	9
CONDUCTED EMISSIONS CONSIDERATIONS	
RADIATED EMISSIONS CONSIDERATIONS	9
MEASUREMENT INSTRUMENTATION	10
INSTRUMENT CONTROL COMPUTER	.10
LINE IMPEDANCE STABILIZATION NETWORK (LISN)	
POWER METER	
FILTERS/ATTENUATORS	
ANTENNAS	
ANTENNA MAST AND EQUIPMENT TURNTABLE INSTRUMENT CALIBRATION	
TEST PROCEDURES	
EUT AND CABLE PLACEMENT	
EUT AND CABLE PLACEMENT	
RADIATED EMISSIONS	
CONDUCTED EMISSIONS FROM ANTENNA PORT	
SPECIFICATION LIMITS AND SAMPLE CALCULATIONS	14
CONDUCTED EMISSIONS SPECIFICATION LIMITS, SECTION 15.207	.14
RADIATED EMISSIONS SPECIFICATION LIMITS, SECTION 15.209	
SAMPLE CALCULATIONS - CONDUCTED EMISSIONS	
SAMPLE CALCULATIONS - RADIATED EMISSIONS	
EXHIBIT 1: Test Equipment Calibration Data	
EXHIBIT 2: Test Data Log Sheets	. 2

DECLARATIONS OF COMPLIANCE

Equipment Name and Model: WM3B2100A

Manufacturer:

Intel Corporation 2300 Corporate Center Drive Thousand Oaks, Ca 91320

Tested to applicable standards:

RSS-210, Issue 5, November 2001 (Low Power License-Exempt Radiocommunication Devices) FCC Part 15 Subpart C

Measurement Facility Description Filed With Department of Industry:

Departmental Acknowledgement Number: IC2845 SV3 Dated July 30, 2001

I declare that the testing was performed or supervised by me; that the test measurements were made in accordance with the above mentioned departmental standards (through the use of ANSI C63.4 as detailed in section 5.3 of RSS-210, Issue 5); and that the equipment performed in accordance with the data submitted in this report.

Juan mar

Signature Name Title Company

Juan Martinez Sr. EMC Engineer Elliott Laboratories Inc. Address 684 W. Maude Ave Sunnyvale, CA 94086 USA

Date: April 29, 2003

Maintenance of compliance with the above standards 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.).

SCOPE

An electromagnetic emissions test has been performed on the Intel Corporation model WM3B2100A pursuant to Subpart C of Part 15 of FCC Rules for intentional radiators. Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in ANSI C63.4-1992 as outlined in Elliott Laboratories test procedures.

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant FCC 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.

The test results recorded herein are based on a single type test of the Intel Corporation model WM3B2100A and therefore apply only to the tested sample. The sample was selected and prepared by Robert Paxman of Intel Corporation

OBJECTIVE

The primary objective of the manufacturer is compliance with Subpart C of Part 15 of FCC Rules for the radiated and conducted emissions of intentional radiators. Certification of these devices is required as a prerequisite to marketing as defined in Part 2 the FCC Rules.

Certification is a procedure where the manufacturer or a contracted laboratory makes measurements and submits the test data and technical information to the FCC. The FCC issues a grant of equipment authorization upon successful completion of their 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.

STATEMENT OF COMPLIANCE

The tested sample of Intel Corporation model WM3B2100A complied with the requirements of Subpart C of Part 15 of the FCC Rules for low power intentional radiators.

Maintenance of FCC 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.).

SUMMARY OF RESULTS

FCC Part 15 Section	RSS 210 Section	Description	Measured Value	Comments	Result
15.247(a)			Systems uses Direct Sequence Spread Spectrum techniques	System must utilize a digital transmission technology	Complies
15.247 (a) (2)		6dB Bandwidth	13.15 MHz	Minimum allowed is 500kHz	Complies
	RSP 100	99% Bandwidth	16.5 MHz	Minimum allowed is 500kHz	Complies
15.247 (b) (3)	6.2.2(o)(b)	Output Power, 2400 - 2483.5 MHz	16.6 dBm (0.0447 Watts) EIRP = .071 W	Multi-point applications: Maximum permitted is 1Watt, with EIRP limited to 4 Watts.	Complies
15.247(d)	6.2.2(o)(b)	Power Spectral Density	-16.29 dBm / MHz	Maximum permitted is 8dBm/3kHz	Complies
15.247(c)	6.2.2(o)(e1)	Spurious Emissions – Antenna Conducted 30MHz – 25GHz	All spurious emissions < -20dBc	All spurious emissions < -20dBc.	Complies
	6.2.2(o)(e1)	Radiated Spurious Emissions 30MHz – 25GHz	All spurious emissions < -20dBc	Emissions in restricted bands must meet the radiated emissions limits detailed in 15.207	Complies
15.247(c) / 15.209		Radiated Spurious Emissions 30MHz – 25GHz	52.9 dBuV/m @ 4824 MHz (-1.2 dB)	Emissions in restricted bands must meet the radiated emissions limits detailed in 15.207. All others must be < -20dBc	Complies
15.207		AC Conducted Emissions	50.5dBuV @ .174 MHz (-14.2dB)	Conducted emissions from the AC power port must meet the limits set forth in 15.207	Complies
15.247 (b) (5)		RF Exposure Requirements	MPE Caculation		
15.203		RF Connector	Unique antenna connection required for user-installed applications. Standard rf connectors permitted for professionally installed systems.	Integral antenna or specialized connector required	Complies
	6.2.2(o)(b)	Processing Gain		Requirement has been removed	

EIRP calculated using antenna gain of dBi (0) for the Hitachi Antennas and dBi (2) for the Ethetronics Antennas.

MEASUREMENT UNCERTAINTIES

ISO Guide 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 NAMAS document NIS 81.

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

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The Intel Corporation model WM3B2100A is a mini PCI Card dual band (802.11a and 802.11b) transceiver which is designed to be installed into a laptop PC and connect to antennas mounted in the screen of the laptop. The Mini PCI was tested outside the host system. The host laptop was treated as table-top equipment during testing to simulate the end user environment. The electrical rating of the Host Systerm is 120/240 V, 50/60 Hz, 5 Amps.

The sample was received on April 23, 2003 and tested on April 23 and April 24, 2003. The EUT consisted of the following component(s):

Manufacturer/Model/Description	Serial Number	Proposed FCC ID #
Intel Corporation WM3B2100A Mini PCI card	DEB	PD9WM3B2100A

OTHER EUT DETAILS

Ethertronics Antenna at 2.4 Ghz has a gain of 2 dBi and at 5 Ghz a gain of 5 dBi.

Hitachi Antenna at 2.4 Ghz and at 5 Ghz a gain of 0 dBi.

Antennas will be installed inside at the topside of the display screen of the Laptop. The Laptop vendors will professionally install the antennas.

ENCLOSURE

The EUT contains it's own shield made out of aluminum. It measures approximately 6 cm wide by 2 cm deep by 4.5 cm high.

MODIFICATIONS

The EUT did not require modifications during testing in order to comply with the emission specifications.

SUPPORT EQUIPMENT

The following equipment was used as local support equipment for emissions testing:

Manufacturer	Model	Description	Serial Number	FCC ID
Hewlett Packard	Pavilion 500	PC	MX21111561	DoC
Dell	828FI	Monitor	22794E28CJ29	DoC
Compaq	SK-2800	Keyboard	B1C800BCPHVV9Q	GYUR66SK
Hewlett Packard	P813I	Mouse	K020215557	DoC

No remote support equipment was used during testing.

EUT INTERFACE PORTS

EUT Tx	Antenna #1	Antenna Cable	Shielded	0.5
EUT Rx	Antenna #2	Antenna Cable	Shielded	0.5
Host PC, Keyboard	Keyboard	Keyboard Cable	Shielded	1.0
Host PC, AC Input	AC Power Source	IEC Power Cord	Unshielded	2.0
Host PC, Mouse	Mouse	Mouse Cable	Shielded	1.0
Monitor, AC Input	AC Power Source	IEC Power Cord	Unshielded	2.0

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

EUT OPERATION DURING TESTING

The EUT was transmitting on the channel stated in each test description at the maximum power. The transmission was continuous at 6Mb/s for 802.11a mode and at 1Mb/s in 802.11b mode. These data rates produce the highest power spectral density in their respective modes.

For measurements of radiated emissions above 1GHz host laptop's screen was in the down position to reduce any effects it might have on the antenna-related emissions. The EUT was tested with two different antennas (Ethertronics and Hitachi). The antennas were mounted to the top edge of a sheet of glass with a metal backing. The glass and metal simulated the actual implementation of the antennas in a laptop system.

TEST SITE

GENERAL INFORMATION

Final test measurements were taken on April 23 and April 24, 2003 at the Elliott Laboratories Open Area Test Site #3 located at 684 West Maude Avenue, Sunnyvale, California. The test site contains separate areas for radiated and conducted emissions testing. Pursuant to section 2.948 of the Rules, construction, calibration, and equipment data has been filed with the Commission.

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

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.4-1992. 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. The test site is maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4 guidelines.

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

An EMI receiver as specified in CISPR 16-1 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.

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.

INSTRUMENT CONTROL COMPUTER

The receivers utilize either a Rohde and 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.

POWER METER

A power meter and thermister mount are used for all direct output power measurements from transmitters as they provide a broadband indication of the power output.

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 biconical antenna is used to cover the range from 30 MHz to 300 MHz and a log periodic antenna is utilized from 300 MHz to 1000 MHz. Narrowband tuned dipole antennas are used over the entire 30 to 1000 MHz range for precision measurements of field strength. Above 1000 MHz, a horn antenna is used. The antenna calibration factors are included in site factors programmed into the test receivers.

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.

ANSI C63.4 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 FCC requires 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, 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

Radiated emissions measurements are performed in two phases as well. A preliminary scan of emissions is conducted in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed from 30 MHz up to the frequency required by the regulation specified on page 1. One or more of these is with the antenna polarized vertically while the one or more of these is with the antenna polarized horizontally. During the preliminary scans, the EUT is rotated through 360°, the antenna height is varied and cable positions are varied to determine the highest emission relative to the limit.

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. 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. Emissions which have values close to the specification limit may also be measured with a tuned dipole antenna to determine compliance.

CONDUCTED EMISSIONS FROM ANTENNA PORT

Direct measurements are performed with the antenna port of the EUT connected to either the power meter or spectrum analyzer via a suitable attenuator and/or filter. These are used to ensure that the front end of the measurement instrument is not overloaded by the fundamental transmission.

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:

Frequency (MHz)	Average Limit (dBuV)	Quasi Peak Limit (dBuV)
0.150 to 0.500	Linear decrease on logarithmic frequency axis between 56.0 and 46.0	Linear decrease on logarithmic frequency axis between 66.0 and 56.0
0.500 to 5.000	46.0	56.0
5.000 to 30.000	50.0	60.0

CONDUCTED EMISSIONS SPECIFICATION LIMITS, SECTION 15.207

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

RADIATED EMISSIONS SPECIFICATION LIMITS, SECTION 15.209

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

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

$$R_r - B = C$$

and

$$C - S = M$$

where:

 $R_r = Receiver Reading in dBuV$

B = Broadband Correction Factor*

C = Corrected Reading in dBuV

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

* Broadband Level - Per ANSI C63.4, if the amplitude measured in the quasi-peak mode is at least 6 dB higher than the amplitude measured in the average mode, the level measured in the quasi-peak mode may be reduced by 13 dB before comparing it to the limit.

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, 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

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

EXHIBIT 1: Test Equipment Calibration Data

1 Page

Conducted and Radiated Emissions, 25-Apr-03 Engineer: volivas

Engineer. volivas						
Manufacturer	Description	Model #	Assett #	Cal interval	Last Calibrated	Cal Due
Elliott Laboratories	FCC / CISPR LISN	LISN-4, OATS	362	12	4/19/02	4/30/03
EMCO	Biconical Antenna, 30-300 MHz	3110B	1320	12	6/3/02	6/3/03
EMCO	Horn Antenna, D. Ridge 1-18GHz	3115	1242	12	10/9/02	10/9/03
EMCO	Log Periodic Antenna, 0.2-2 GHz	3148	1347	12	10/30/02	10/30/03
Rohde & Schwarz	Pulse Limiter	ESH3 Z2	372	12	7/18/02	7/18/03
Rohde & Schwarz	Test Receiver, 0.009-30 MHz	ESH3	274	12	1/24/03	1/24/04
Rohde & Schwarz	Test Receiver, 20-1300MHz	ESVP	213	12	7/22/02	7/22/03

Radiated Emissions, 1 - 40,000 GHz, 28-Apr-03

Engineer: jmartinez						
Manufacturer	Description	Model #	Assett #	Cal interval	Last Calibrated	Cal Due
Hewlett Packard	High Pass filter, 3.5GHz	84300-80038	1157	18	3/1/02	9/1/03
Hewlett Packard	High Pass filter, 8.2GHz	P/N-84300-80039	1156	12	4/17/03	4/17/04
EMCO	Horn Antenna, D. Ridge 1-18GHz	3115	786	12	2/28/03	2/28/04
Hewlett Packard	Microwave EMI test system (SA40, 9kHz - 40GHz)	84125C	1149	12	3/12/03	3/12/04
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	12	1/24/03	1/24/04
Rohde & Schwarz	Power Meter, Single Channel	NRVS	1290	12	4/8/03	4/8/04
Rohde & Schwarz	Power Sensor 100uW - 10 Watts	NRV-Z53	1236	12	8/15/02	8/15/03
Hewlett Packard	Spectrum Analyzer, 9KHz - 26.5GHz	8563E	F1202LB	12	9/27/02	9/27/03

EXHIBIT 2: Test Data Log Sheets

ELECTROMAGNETIC EMISSIONS

TEST LOG SHEETS

AND

MEASUREMENT DATA

T50976_DTS 26 Pages T50976_Digital 8 Pages

Elliott

EMC Test Data

Client:	Intel Corporation	Job Number:	J50404
Model:	WM3B2100A	T-Log Number:	T50976
		Proj Eng:	Mark Briggs
Contact:	Robert Paxman		
Emissions Spec:	FCC Part 15 B, C, and E, RSS-	Class:	Radio
Immunity Spec:	N/A	Environment:	-

EMC Test Data

For The

Intel Corporation

Model

WM3B2100A

€ Elliott EMC Test Data Job Number: J50404 Client: Intel Corporation Model: WM3B2100A T-Log Number: T50976 Proj Eng: Mark Briggs Contact: Robert Paxman Emissions Spec: FCC Part 15 B, C, and E, RSS-21(Class: Radio Environment: Immunity Spec: N/A -**EUT INFORMATION General Description** The EUT is a mini PCI Card dual band (802.11a and 802.11b) transceiver which is designed to be installed into a laptop PC and connect to antennas mounted in the screen of the laptop. The Mini PCI was tested outside the host system. The host laptop was treated as table-top equipment during testing to simulate the end user environment. The electrical rating of the laptop is 120/240 V, 50/60 Hz, 5 Amps. Equipment Under Test FCC ID Manufacturer Model Description Serial Number WM3B2100A Mini PCI card PD9WM3B2100A Intel Corporation DEB Antenna Ethertronics Antenna at 2.4 Ghz has a gain of 2 dBi and at 5 Ghz a gain of 5 dBi. Hitachi Antenna at 2.4 Ghz and at 5 Ghz a gain of 0 dBi. Antennas will be installed inside at the topside of the display screen of the Laptop. The Laptop vendors will professionally install the antennas. **EUT Enclosure** The EUT contains it's own shield made out of aluminum. It measures approximately 6 cm wide by 2 cm deep by 4.5 cm high. Modification History Mod. # Test Date Modification 1

Client:	Intel Corporation		Job Number:	J50404	
	Model: WM3B2100A		T-Log Number:		
				Mark Briggs	
Contact:	Robert Paxman		<u>, </u>		
Emissions Spec:	FCC Part 15 B, C, and E,	RSS-21(Class:	Radio	
Immunity Spec:			Environment:	-	
	Lo	t Configuratio	nent	50015	
Manufacturer	Model	Description	Serial Number	FCC ID	
Hewlett Packard	Pavilion 500	PC	MX21111561	DoC	
Dell	828FI	Monitor	22794E28CJ29	DoC	
Compaq Hewlett Packard	SK-2800 P813I	Keyboard Mouse	B1C800BCPHVV9Q K020215557	GYUR66SK	
Hewiell Fackalu	FOISI	Mouse	K020215557	DoC	
	Ren	note Support Equip	ment		
Manufacturer	Model	Description	Serial Number	FCC ID	
None					
		rface Cabling and F			
EUT Tx	Antenna #1	Antenna Cable	Shielded	0.5	
EUT Rx	Antenna #2	Antenna Cable	Shielded	0.5	
Host PC, Keyboard	Keyboard	Keyboard Cable	Shielded		
	AC Power Source	IEC Power Cord	Unshielded	2.0	
Host PC, AC Input	5.4				
Host PC, AC Input Host PC, Mouse Monitor, AC Input	Mouse AC Power Source	Mouse Cable IEC Power Cord	Shielded Unshielded	1.0 2.0	

EUT Operation During Emissions Testing (Radio)

The EUT was transmitting on the channel stated in each test description at the maximum power. The transmission was continuous at 6Mb/s for 802.11a mode and at 1Mb/s in 802.11b mode. These data rates produce the highest power spectral density in their respective modes.

For measurements of radiated emissions above 1GHz host laptop's screen was in the down position to reduce any effects it might have on the antenna-related emissions. The EUT was tested with two different antennas (Ethertronics and Hitachi). The antennas were mounted to the top edge of a sheet of glass with a metal backing. The glass and metal simulated the actual implementation of the antennas in a laptop system.

			1		IC Test
Client: Intel Corpo			-	Job Number:	
Model: WM3B2100	AC			og Number:	
			Accou	nt Manager:	Mark Briggs
Contact: Robert Pax	(man				
Spec: FCC Part 1	15 B, C, and E, RSS-210			Class:	Radio
	Receiver Em	ission RSS-21	10 issı	ıe 5	
Test Specifics					
•	The objective of this test session the specification listed above.	is to perform engineerin	ıg evaluatio	n testing of t	he EUT with
Date of Test: 4	4/23/03	Config. Used:	1		
Test Engineer: j	gonzalez	Config Change:			
Test Location: S	SVOATS #3	EUT Voltage:	120V / 60H	łz	
Comoral Tast Confi	- uration				
General Test Config	•	the turntable for red	-tod omics	tooting	
	support equipment were located asurement antenna was located			•	
On the OKTO, the me	asulement antenna was located		5 licqueriej) (112.
Ambient Condition	S: Temperature:	11 °C			
Ambient Condition	S: Temperature: Rel. Humidity:	11 °C 98 %			
	Rel. Humidity:				
	Rel. Humidity:				
	Rel. Humidity:		Result	Ma	argin
Summary of Result	Rel. Humidity:	98 %	Result Pass		argin dividual Runs
Summary of Result Run # 1-6	Rel. Humidity: ts Test Performed RE, 1000 - 18000 MHz, Maximized Emissions	98 % Limit RSS210 RX Mode (Hitachi)		Refer to inc	dividual Runs
Summary of Result	Rel. Humidity: ts Test Performed RE, 1000 - 18000 MHz, Maximized Emissions RE, 1000 - 18000 MHz,	98 % Limit RSS210 RX Mode (Hitachi) RSS210 RX Mode		Refer to inc	
Summary of Result Run # 1-6	Rel. Humidity: ts Test Performed RE, 1000 - 18000 MHz, Maximized Emissions	98 % Limit RSS210 RX Mode (Hitachi)	Pass	Refer to inc	dividual Runs
Summary of Result Run # 1-6 1-6	Rel. Humidity: ts Test Performed RE, 1000 - 18000 MHz, Maximized Emissions RE, 1000 - 18000 MHz, Maximized Emissions	98 % Limit RSS210 RX Mode (Hitachi) RSS210 RX Mode	Pass	Refer to inc	dividual Runs
Summary of Result Run # 1-6 1-6 Modifications Made	Rel. Humidity: ts Test Performed RE, 1000 - 18000 MHz, Maximized Emissions RE, 1000 - 18000 MHz, Maximized Emissions e During Testing:	98 % Limit RSS210 RX Mode (Hitachi) RSS210 RX Mode (Ethertronics)	Pass	Refer to inc	dividual Runs
Summary of Result Run # 1-6 1-6 Modifications Made	Rel. Humidity: ts Test Performed RE, 1000 - 18000 MHz, Maximized Emissions RE, 1000 - 18000 MHz, Maximized Emissions	98 % Limit RSS210 RX Mode (Hitachi) RSS210 RX Mode (Ethertronics)	Pass	Refer to inc	dividual Runs
Summary of Result Run # 1-6 1-6 No modifications Made No modifications were	Rel. Humidity: ts Test Performed RE, 1000 - 18000 MHz, Maximized Emissions RE, 1000 - 18000 MHz, Maximized Emissions e During Testing: e made to the EUT during testing	98 % Limit RSS210 RX Mode (Hitachi) RSS210 RX Mode (Ethertronics)	Pass	Refer to inc	dividual Runs
Summary of Result Run # 1-6 1-6 Modifications Made	Rel. Humidity: ts Test Performed RE, 1000 - 18000 MHz, Maximized Emissions RE, 1000 - 18000 MHz, Maximized Emissions e During Testing: e made to the EUT during testing	98 % Limit RSS210 RX Mode (Hitachi) RSS210 RX Mode (Ethertronics)	Pass	Refer to inc	dividual

ΥĽ	Ellio	II						EN	IC Test Da
Client:	Intel Corp	oration					J	lob Number:	J50404
Model:	WM3B210	00A					T-L	og Number:	T50976
							Accou	nt Manager:	Mark Briggs
Contact:	Robert Pa	xman						0	
			and E, RSS	5-210				Class	Radio
·								01035.	Rudio
Run #1: Ma Hitachi	ximized re	adings,	1000 - 180	00 MHz					
Mode A (5.1	80CH2)								
Frequency	Level	Pol	PSS210	Rx Mode	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Comments	
3453.000	и <u>ы</u> µv/ш 49.9	H	60.0	-10.1	Avg	176	1.0		
13813.000	44.6	 H	60.0	-15.4	Avg	200	1.0		
6906.000	43.3	V	60.0	-16.7	Avg	134	1.0	1	
17266.000	43.3	V	60.0	-18.1	Avg	321	1.0	<u> </u>	
10354.000	41.3	V	60.0	-18.7	Avg	0	1.0		
	40.5	H	60.0	-19.5	Avg	200	1.0		
6906.000	40.0		00.0						
6906.000 3453.000			60.0	-21.5	Ανα	10	1.0		
3453.000 10360.000 Run #2: Ma	38.5 36.3	V H	60.0 60.0 1000 - 180	-21.5 -23.7 00 MHz	Avg Avg	<u>10</u> 132	1.0 1.0		
3453.000 10360.000 Run #2: Ma Hitachi	38.5 36.3 ximized re	V H	60.0	-23.7	v				
3453.000 10360.000 Run #2: Ma Hitachi	38.5 36.3 ximized re	V H	60.0 1000 - 180	-23.7 00 MHz Rx Mode	v			Comments	
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz	38.5 36.3 ximized re 60GHz) Level dBµV/m	V H eadings,	60.0 1000 - 180	-23.7 00 MHz	Avg	132 Azimuth degrees	1.0	Comments	
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000	38.5 36.3 ximized re 60GHz) Level dBμV/m 44.0	V H eadings, Pol V/h H	60.0 1000 - 180 RSS210 Limit 60.0	-23.7 00 MHz Rx Mode Margin -16.0	Avg Detector	132 Azimuth degrees 187	1.0 Height meters 1.0	Comments	
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000	38.5 36.3 ximized re 60GHz) Level dBμV/m 44.0 42.8	V H eadings, Pol V/h H H	60.0 1000 - 180 RSS210 Limit 60.0 60.0	-23.7 00 MHz Rx Mode Margin -16.0 -17.2	Avg Detector Pk/QP/Avg Avg Avg	132 Azimuth degrees 187 321	1.0 Height meters 1.0 1.0	Comments	
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000 7013.000	38.5 36.3 ximized re 60GHz) Level dBµV/m 44.0 42.8 42.5	V H eadings, Pol V/h H H V	60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0	-23.7 00 MHz Rx Mode Margin -16.0 -17.2 -17.5	Avg Detector Pk/QP/Avg Avg Avg Avg	132 Azimuth degrees 187 321 234	1.0 Height meters 1.0 1.0 1.0	Comments	
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000 3506.000	38.5 36.3 ximized re 60GHz) Level dBμV/m 44.0 42.8 42.5 41.8	V H eadings, Pol V/h H H H V V	60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0	-23.7 00 MHz Rx Mode Margin -16.0 -17.2 -17.5 -18.2	Avg Detector Pk/QP/Avg Avg Avg Avg Avg	132 Azimuth degrees 187 321 234 0	1.0 Height meters 1.0 1.0 1.0 1.0	Comments	
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000 7013.000	38.5 36.3 ximized re 60GHz) Level dBµV/m 44.0 42.8 42.5	V H eadings, Pol V/h H H V	60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0	-23.7 00 MHz Rx Mode Margin -16.0 -17.2 -17.5	Avg Detector Pk/QP/Avg Avg Avg Avg	132 Azimuth degrees 187 321 234	1.0 Height meters 1.0 1.0 1.0	Comments	
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000 7013.000 3506.000	38.5 36.3 ximized ref 60GHz) Level dBμV/m 44.0 42.8 42.5 41.8 41.1	V H eadings, Pol V/h H H V V V V	60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0 60.0	-23.7 00 MHz Rx Mode Margin -16.0 -17.2 -17.5 -18.2 -18.9	Avg Detector Pk/QP/Avg Avg Avg Avg Avg	132 Azimuth degrees 187 321 234 0	1.0 Height meters 1.0 1.0 1.0 1.0	Comments	
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000 7013.000 3506.000 10519.000	38.5 36.3 ximized ref 60GHz) Level dBμV/m 44.0 42.8 42.5 41.8 41.1	V H eadings, Pol V/h H H V V V V	60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0 60.0 60.0	-23.7 00 MHz Rx Mode Margin -16.0 -17.2 -17.5 -18.2 -18.9	Avg Detector Pk/QP/Avg Avg Avg Avg Avg	132 Azimuth degrees 187 321 234 0	1.0 Height meters 1.0 1.0 1.0 1.0	Comments	
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000 7013.000 3506.000 10519.000 Run #3: Ma	38.5 36.3 ximized re 60GHz) Level dBµV/m 44.0 42.8 42.5 41.8 41.1 ximized re	V H eadings, Pol V/h H H V V V V	60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0 60.0 60.0	-23.7 00 MHz Rx Mode Margin -16.0 -17.2 -17.5 -18.2 -18.9	Avg Detector Pk/QP/Avg Avg Avg Avg Avg	132 Azimuth degrees 187 321 234 0	1.0 Height meters 1.0 1.0 1.0 1.0	Comments	
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000 7013.000 3506.000 10519.000 Run #3: Ma Hitachi	38.5 36.3 ximized re 60GHz) Level dBµV/m 44.0 42.8 42.5 41.8 41.1 ximized re	V H eadings, Pol V/h H H V V V V	60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0 60.0 1000 - 180	-23.7 00 MHz Rx Mode Margin -16.0 -17.2 -17.5 -18.2 -18.9	Avg Detector Pk/QP/Avg Avg Avg Avg Avg	132 Azimuth degrees 187 321 234 0	1.0 Height meters 1.0 1.0 1.0 1.0	Comments	
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000 7013.000 3506.000 10519.000 Run #3: Ma Hitachi Mode A (5.3	38.5 36.3 ximized re 60GHz) Level dBμV/m 44.0 42.8 42.5 41.8 41.1 ximized re 20GHz)	V H Padings, Pol V/h H H V V V v v	60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0 60.0 1000 - 180	-23.7 00 MHz Rx Mode Margin -16.0 -17.2 -17.5 -18.2 -18.9 00 MHz	Avg Detector Pk/QP/Avg Avg Avg Avg Avg Avg Avg	132 Azimuth degrees 187 321 234 0 360	1.0 Height meters 1.0 1.0 1.0 1.0 1.0		
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000 7013.000 3506.000 10519.000 Run #3: Ma Hitachi Mode A (5.3 Frequency	38.5 36.3 ximized ref 60GHz) Level dBμV/m 44.0 42.8 42.5 41.8 41.1 ximized ref 20GHz) Level	V H eadings, Pol V/h H H V V V eadings, Pol	60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0 60.0 1000 - 180 RSS210	-23.7 00 MHz Rx Mode Margin -16.0 -17.2 -17.5 -18.2 -18.9 00 MHz Rx Mode	Avg Detector Pk/QP/Avg Avg Avg Avg Avg Avg Avg Detector	132 Azimuth degrees 187 321 234 0 360 360	1.0 Height meters 1.0 1.0 1.0 1.0 1.0 1.0		
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000 7013.000 3506.000 10519.000 Run #3: Ma Hitachi Mode A (5.3 Frequency MHz	38.5 36.3 ximized re 60GHz) Level dBµV/m 44.0 42.8 42.5 41.8 41.1 ximized re 20GHz) Level dBµV/m	V H eadings, Pol V/h H H V V V eadings, Pol V/h	60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0 60.0 60.0 1000 - 180 RSS210 Limit	-23.7 00 MHz Rx Mode Margin -16.0 -17.2 -17.5 -18.2 -18.9 00 MHz Rx Mode Margin	Avg Detector Pk/QP/Avg Avg Avg Avg Avg Avg Avg Avg Pk/QP/Avg	132 Azimuth degrees 187 321 234 0 360 360 Azimuth degrees	1.0Heightmeters1.01.01.01.01.0Heightmeters		
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000 7013.000 3506.000 10519.000 Run #3: Ma Hitachi Mode A (5.3 Frequency MHz 7092.000	38.5 36.3 ximized re 60GHz) Level dBµV/m 44.0 42.8 42.5 41.8 41.1 ximized re 20GHz) Level dBµV/m 43.4	V H eadings, Pol V/h H H V V V v eadings, Pol V/h V	60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0 60.0 60.0 1000 - 180 RSS210 Limit 60.0	-23.7 00 MHz Rx Mode Margin -16.0 -17.2 -17.5 -18.2 -18.9 00 MHz Rx Mode Margin -16.6	Avg Detector Pk/QP/Avg Avg Avg Avg Avg Avg Avg Avg	132 Azimuth degrees 187 321 234 0 360 360 Azimuth degrees 111	1.0Heightmeters1.01.01.01.01.01.01.01.01.01.0		
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000 7013.000 3506.000 10519.000 Run #3: Ma Hitachi Mode A (5.3 Frequency MHz 7092.000 3546.000	38.5 36.3 ximized ref 60GHz) Level dBμV/m 44.0 42.8 42.5 41.8 41.1 ximized ref 20GHz) Level dBμV/m 43.4 41.9	V H eadings, Pol V/h H V V V v eadings, Pol V/h V V V V V V V V H H H	60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0 60.0 1000 - 180 RSS210 Limit 60.0 60.0	-23.7 00 MHz Rx Mode Margin -16.0 -17.2 -17.5 -18.2 -18.9 00 MHz Rx Mode Margin -16.6 -18.1	Avg Detector Pk/QP/Avg Avg Avg Avg Avg Avg Avg Avg	132 Azimuth degrees 187 321 234 0 360 360 Azimuth degrees 111 200	1.0 Height meters 1.0 1.0 1.0 1.0 1.0 1.0 Height meters 1.0 1.0		
3453.000 10360.000 Run #2: Ma Hitachi Mode A (5.2 Frequency MHz 7013.000 3506.000 7013.000 3506.000 10519.000 3506.000 Run #3: Ma Hitachi Mode A (5.3 Frequency MHz 7092.000 3546.000	38.5 36.3 ximized ref 60GHz) Level dBμV/m 44.0 42.8 42.5 41.8 41.1 ximized ref 20GHz) Level dBμV/m 43.4 41.9 41.3	V H eadings, Pol V/h H V V v eadings, Pol V/h V V V H	60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0 60.0 1000 - 180 RSS210 Limit 60.0 60.0 60.0 0 0 0 0 0 0 0 0 0 0 0 0 0	-23.7 00 MHz Rx Mode Margin -16.0 -17.2 -17.5 -18.2 -18.9 00 MHz Rx Mode Margin -16.6 -18.1 -18.7	Avg Detector Pk/QP/Avg Avg Avg Avg Avg Avg Avg Avg	132 Azimuth degrees 187 321 234 0 360 360 Azimuth degrees 111 200 89	1.0 Height meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0		

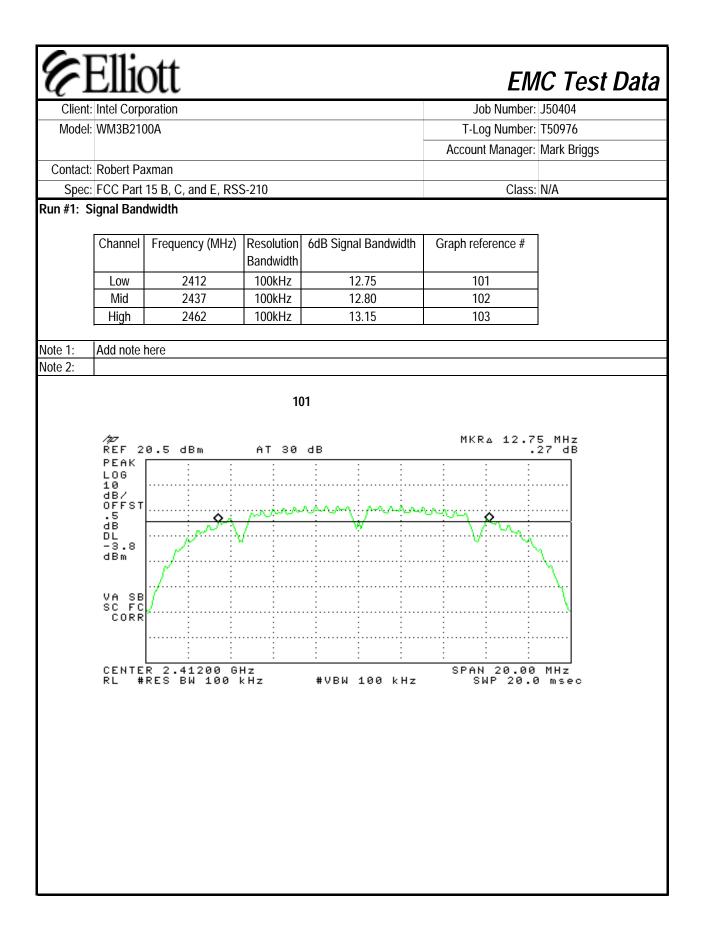
Client:	Intel Corpo						-	Job Number:	J50404
	WM3B210							og Number:	
								nt Manager:	
Contact:	Robert Pa	xman							
Spec:	FCC Part	15 B, C,	and E, RSS	5-210				Class:	Radio
Run #4: Ma							I		
Hitachi		· ·							
Mode B (2.4								1	
Frequency	Level	Pol		Rx Mode	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
2412.000 4823.000	27.2 40.8	H H	60.0 60.0	-32.8 -19.2	Avg Avg	312 154	1.0 1.0		
4823.000	40.8	<u>п</u> V	60.0	-19.2	Avg	154	1.0		
Run #5: Ma Hitachi	xiiiiizeu ie	aunys,	1000 - 100						
Mode B (2.4	37CH2)								
	370112)								
Frequency	Level	Pol		Rx Mode	Detector	Azimuth	Height	Comments	
Frequency MHz	Level dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Comments	
Frequency MHz 4873.000 Run #6: Ma	Level dBµV/m 39.0	v/h V	Limit 60.0	Margin -21.0				Comments	
Frequency MHz 4873.000 Run #6: Ma Hitachi Mode B (2.4 Frequency	Level dBµV/m 39.0 ximized re 62GHz) Level	v/h V eadings, Pol	Limit 60.0 1000 - 180 RSS210	Margin -21.0 00 MHz Rx Mode	Pk/QP/Avg Avg Detector	degrees 300 Azimuth	meters	Comments Comments	
Frequency MHz 4873.000 Run #6: Ma Hitachi Mode B (2.4 Frequency MHz	Level dBµV/m 39.0 ximized re 62GHz) Level dBµV/m	v/h V eadings, Pol v/h	Limit 60.0 1000 - 180 RSS210 Limit	Margin -21.0 00 MHz Rx Mode Margin	Pk/QP/Avg Avg Detector Pk/QP/Avg	degrees 300 Azimuth degrees	meters 1.0 Height meters		
Frequency MHz 4873.000 Run #6: Ma Hitachi Mode B (2.4 Frequency	Level dBµV/m 39.0 ximized re 62GHz) Level	v/h V eadings, Pol	Limit 60.0 1000 - 180 RSS210	Margin -21.0 00 MHz Rx Mode	Pk/QP/Avg Avg Detector	degrees 300 Azimuth	meters 1.0 Height		

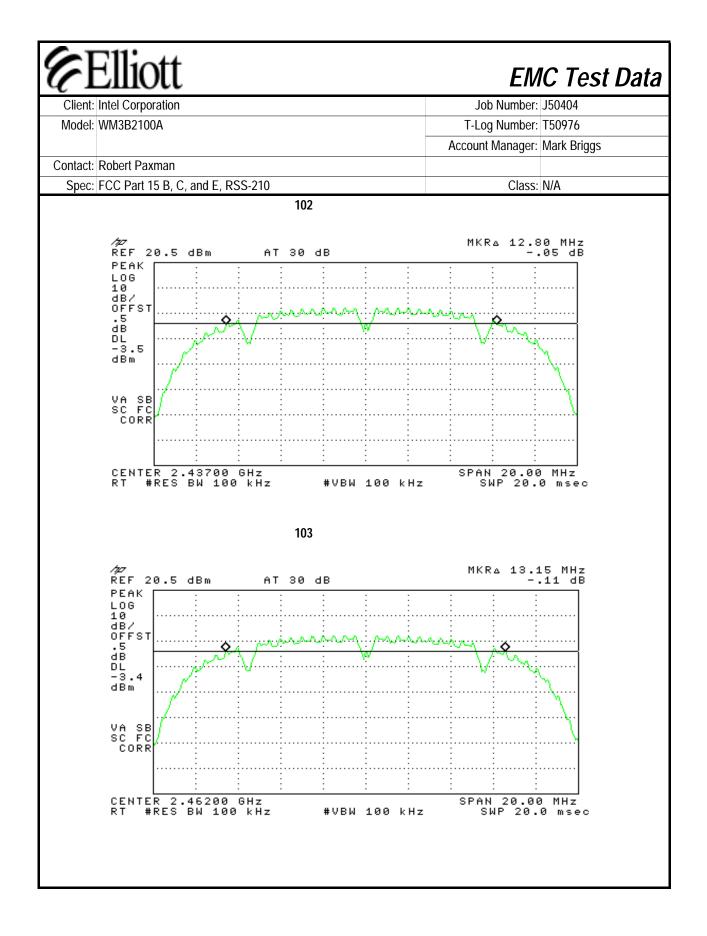
ΥL	Ellio	tt						EN	IC Test Da
Client:	Intel Corpo	oration						Job Number:	J50404
Model:	WM3B210	00A					T-L	og Number:	T50976
								•	Mark Briggs
Contact:	Robert Pa	xman						<u> </u>	33
			and E, RSS	5-210				Class:	Radio
Run #1: Ma								014001	
Ethertronics		uunigo,	1000 100						
Mode A (5.1									
Frequency	Level	Pol	RSS210	Rx Mode	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
3453.000	46.7	V	60.0	-13.3	Avg	22	1.0		
6906.000	39.8	V	60.0	-20.2	Avg	134	1.0		
13813.000	40.1	V	60.0	-19.9	Avg	100	1.0		
3453.000	38.4	Н	60.0	-21.6	Avg	321	1.0		
10359.000	39.7	Н	60.0	-20.3	Avg	300	1.0		
Run #2: Ma Ethertronics Mode A (5.2	5	adings,	1000 - 1800	00 MHz					
Ethertronics Mode A (5.2	s 60GHz)	-							
Ethertronics Mode A (5.2 Frequency	60GHz) Level	Pol	RSS210	Rx Mode	Detector	Azimuth	Height	Comments	
Ethertronics Mode A (5.2 Frequency MHz	60GHz) Level dBμV/m	Pol v/h	RSS210 Limit	Rx Mode Margin	Pk/QP/Avg	degrees	meters	Comments	
Ethertronics Mode A (5.2 Frequency MHz 3506.000	60GHz) Level dBμV/m 40.3	Pol v/h V	RSS210 Limit 60.0	Rx Mode Margin -19.7	Pk/QP/Avg Avg	degrees 321	meters 1.0	Comments	
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000	60GHz) Level dBμV/m 40.3 39.7	Pol v/h V V	RSS210 Limit 60.0 60.0	Rx Mode Margin -19.7 -20.3	Pk/QP/Avg Avg Avg	degrees 321 179	meters 1.0 1.0	Comments	
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000 17530.000	60GHz) Level dBµV/m 40.3 39.7 43.1	Pol v/h V V V	RSS210 Limit 60.0 60.0 60.0	Rx Mode Margin -19.7 -20.3 -16.9	Pk/QP/Avg Avg Avg Avg	degrees 321 179 37	meters 1.0 1.0 1.0	Comments	
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000	60GHz) Level dBμV/m 40.3 39.7	Pol v/h V V	RSS210 Limit 60.0 60.0	Rx Mode Margin -19.7 -20.3	Pk/QP/Avg Avg Avg Avg Avg	degrees 321 179	meters 1.0 1.0	Comments	
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000 17530.000 3506.000	60GHz) Level dBμV/m 40.3 39.7 43.1 42.0	Pol v/h V V V H	RSS210 Limit 60.0 60.0 60.0 60.0	Rx Mode Margin -19.7 -20.3 -16.9 -18.0	Pk/QP/Avg Avg Avg Avg Avg Avg	degrees 321 179 37 98	meters 1.0 1.0 1.0 1.0 1.0	Comments	
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000 3506.000 7012.000	60GHz) Level dBμV/m 40.3 39.7 43.1 42.0 39.1	Pol V/h V V V H H	RSS210 Limit 60.0 60.0 60.0 60.0 60.0	Rx Mode Margin -19.7 -20.3 -16.9 -18.0 -20.9	Pk/QP/Avg Avg Avg Avg Avg	degrees 321 179 37 98 0	meters 1.0 1.0 1.0 1.0 1.0 1.0	Comments	
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000 17530.000 3506.000 7012.000 10518.000	60GHz) Level dBμV/m 40.3 39.7 43.1 42.0 39.1 38.7	Pol V/h V V V H H H	RSS210 Limit 60.0 60.0 60.0 60.0 60.0 60.0	Rx Mode Margin -19.7 -20.3 -16.9 -18.0 -20.9 -21.3	Pk/QP/Avg Avg Avg Avg Avg Avg	degrees 321 179 37 98 0	meters 1.0 1.0 1.0 1.0 1.0 1.0	Comments	
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000 17530.000 3506.000 7012.000 10518.000 Run #3: Ma	60GHz) Level dBμV/m 40.3 39.7 43.1 42.0 39.1 38.7 ximized re	Pol V/h V V V H H H	RSS210 Limit 60.0 60.0 60.0 60.0 60.0 60.0	Rx Mode Margin -19.7 -20.3 -16.9 -18.0 -20.9 -21.3	Pk/QP/Avg Avg Avg Avg Avg Avg	degrees 321 179 37 98 0	meters 1.0 1.0 1.0 1.0 1.0 1.0	Comments	
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000 17530.000 3506.000 7012.000 10518.000 Run #3: Ma Ethertronics	60GHz) Level dBμV/m 40.3 39.7 43.1 42.0 39.1 38.7 ximized res	Pol V/h V V V H H H	RSS210 Limit 60.0 60.0 60.0 60.0 60.0 60.0	Rx Mode Margin -19.7 -20.3 -16.9 -18.0 -20.9 -21.3	Pk/QP/Avg Avg Avg Avg Avg Avg	degrees 321 179 37 98 0	meters 1.0 1.0 1.0 1.0 1.0 1.0	Comments	
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000 17530.000 3506.000 7012.000 10518.000 Run #3: Ma Ethertronics Mode A (5.3	60GHz) Level dBμV/m 40.3 39.7 43.1 42.0 39.1 38.7 ximized res 20GHz)	Pol V/h V V H H H	RSS210 Limit 60.0 60.0 60.0 60.0 60.0 1000 - 180	Rx Mode Margin -19.7 -20.3 -16.9 -18.0 -20.9 -21.3 00 MHz	Pk/QP/Avg Avg Avg Avg Avg Avg	degrees 321 179 37 98 0 360	meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0		
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000 17530.000 3506.000 7012.000 10518.000 Run #3: Ma Ethertronics Mode A (5.3 Frequency	60GHz) Level dBμV/m 40.3 39.7 43.1 42.0 39.1 38.7 ximized res 20GHz) Level	Pol v/h V V H H H eadings,	RSS210 Limit 60.0 60.0 60.0 60.0 60.0 1000 - 1800 RSS210	Rx Mode Margin -19.7 -20.3 -16.9 -18.0 -20.9 -21.3 00 MHz Rx Mode	Pk/QP/Avg Avg Avg Avg Avg Avg Avg	degrees 321 179 37 98 0 360 360	meters 1.0 1.0 1.0 1.0 1.0 1.0 Height	Comments	
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000 17530.000 3506.000 7012.000 10518.000 Run #3: Ma Ethertronics Mode A (5.3 Frequency MHz	60GHz) Level dBμV/m 40.3 39.7 43.1 42.0 39.1 38.7 ximized res 20GHz) Level dBμV/m	Pol v/h V V H H H eadings, Pol v/h	RSS210 Limit 60.0 60.0 60.0 60.0 60.0 1000 - 1800 RSS210 Limit	Rx Mode Margin -19.7 -20.3 -16.9 -18.0 -20.9 -21.3 00 MHz Rx Mode Margin	Pk/QP/Avg Avg Avg Avg Avg Avg Avg Detector Pk/QP/Avg	degrees 321 179 37 98 0 360 360 Azimuth degrees	meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 Height meters		
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000 17530.000 3506.000 7012.000 10518.000 Run #3: Ma Ethertronics Mode A (5.3 Frequency MHz 3546.000	60GHz) Level dBμV/m 40.3 39.7 43.1 42.0 39.1 38.7 38.7 ximized res 20GHz) Level dBμV/m 39.7	Pol v/h V V H H H H Output Pol v/h V	RSS210 Limit 60.0 60.0 60.0 60.0 60.0 1000 - 1800 RSS210 Limit 60.0	Rx Mode Margin -19.7 -20.3 -16.9 -18.0 -20.9 -21.3 00 MHz Rx Mode Margin -20.3	Pk/QP/Avg Avg Avg Avg Avg Avg Avg Avg Pk/QP/Avg Avg	degrees 321 179 37 98 0 360 360 Azimuth degrees 134	meters 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 1.0 1.0		
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000 17530.000 3506.000 7012.000 10518.000 Run #3: Ma Ethertronics Mode A (5.3 Frequency MHz 3546.000 7092.000	60GHz) Level dBμV/m 40.3 39.7 43.1 42.0 39.1 38.7 ximized res 20GHz) Level dBμV/m 39.7 39.7 39.7	Pol v/h V V H H H H eadings, Pol v/h V V	RSS210 Limit 60.0 60.0 60.0 60.0 60.0 1000 - 1800 RSS210 Limit 60.0 60.0	Rx Mode Margin -19.7 -20.3 -16.9 -20.9 -21.3 00 MHz Rx Mode Margin -20.3 -20.3	Pk/QP/Avg Avg Avg Avg Avg Avg Avg Avg Pk/QP/Avg Avg Avg	degrees 321 179 37 98 0 360 360 Azimuth degrees 134 231	meters 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 1.0 1.0 1.0 1.0		
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000 17530.000 3506.000 7012.000 10518.000 10518.000 Run #3: Ma Ethertronics Mode A (5.3 Frequency MHz 3546.000 7092.000 10638.000	60GHz) Level dBμV/m 40.3 39.7 43.1 42.0 39.1 38.7 ximized res 20GHz) Level dBμV/m 39.7 39.7 39.7 39.7 40.7	Pol V/h V V H H H H V V V V V V V V V V V V V/h V V V V V V V V	RSS210 Limit 60.0 60.0 60.0 60.0 60.0 1000 - 1800 RSS210 Limit 60.0 60.0 60.0	Rx Mode Margin -19.7 -20.3 -16.9 -21.3 -20.9 -21.3 00 MHz Rx Mode Margin -20.3 -20.3 -20.3 -20.3 -20.3	Pk/QP/Avg Avg Avg Avg Avg Avg Avg Avg Pk/QP/Avg Avg Avg Avg Avg	degrees 321 179 37 98 0 360 360 Azimuth degrees 134 231 347	meters 1.0		
Ethertronics Mode A (5.2 Frequency MHz 3506.000 7012.000 17530.000 3506.000 7012.000 10518.000 Run #3: Ma Ethertronics Mode A (5.3 Frequency MHz 3546.000 7092.000	60GHz) Level dBμV/m 40.3 39.7 43.1 42.0 39.1 38.7 ximized res 20GHz) Level dBμV/m 39.7 39.7 39.7	Pol v/h V V H H H H eadings, Pol v/h V V	RSS210 Limit 60.0 60.0 60.0 60.0 60.0 1000 - 1800 RSS210 Limit 60.0 60.0	Rx Mode Margin -19.7 -20.3 -16.9 -20.9 -21.3 00 MHz Rx Mode Margin -20.3 -20.3	Pk/QP/Avg Avg Avg Avg Avg Avg Avg Avg Pk/QP/Avg Avg Avg	degrees 321 179 37 98 0 360 360 Azimuth degrees 134 231	meters 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 1.0 1.0 1.0 1.0		

Model: Contact:	Intel Corpo WM3B210	raiinn						lob Number:	150404
Contact:	WVIVI.1112 11						-	og Number:	
	THIODE IS							•	
	Dohort Do	vman					ALLUU	nt Manager:	IVIAIN DI IYYS
Choose			and E, RSS	\$ 210				Class	Radio
Spec: Run #4: Ma:								Ciass:	Raulu
Ethertronics		aungs,	1000 - 180						
Mode B (2.4)									
Frequency	Level	Pol	RSS210	Rx Mode	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
2412.000	29.7	V	60.0	-30.3	Avg	346	1.0		
Ethertronics Aode B (2.4) Frequency		Pol	RSS210	Rx Mode	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
4873.000	37.8	H	60.0	-22.2	Avg	321	1.0		
Run #6: Ma		adings,	1000 - 180	00 MHz	· · · ·				
Run #6: Ma Ethertronics Mode B (2.4	62GHz)	•							
Run #6: Ma Ethertronics Mode B (2.4 Frequency	6 62GHz) Level	Pol	RSS210	Rx Mode	Detector	Azimuth	Height	Comments	
Run #6: Ma Ethertronics Mode B (2.4	62GHz)	•			Detector Pk/QP/Avg Avg	Azimuth degrees 134	Height meters 1.0	Comments	

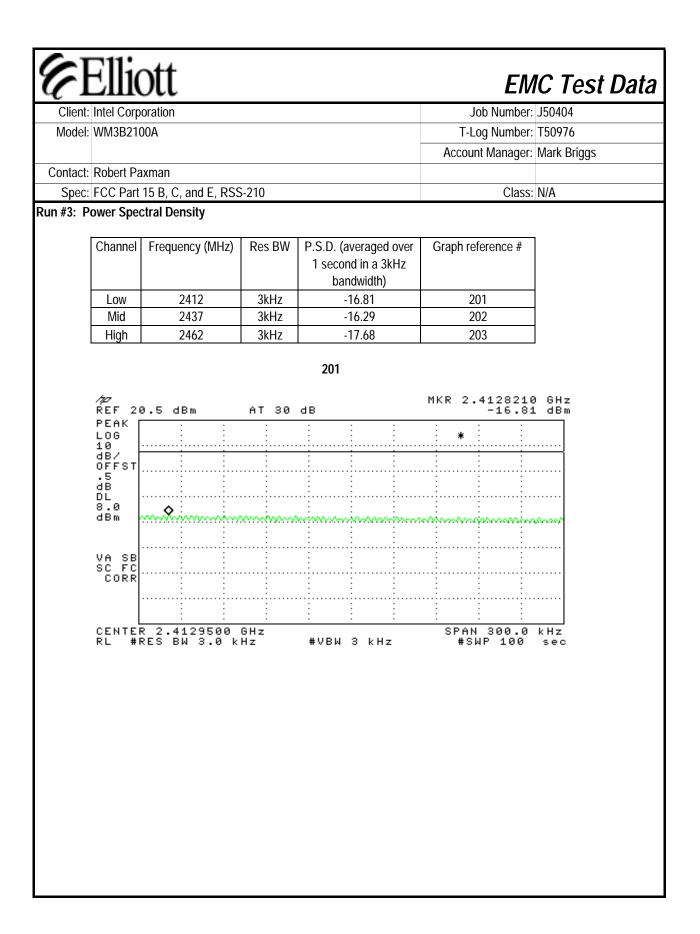
T-Log: T50976, Rev 1.0	

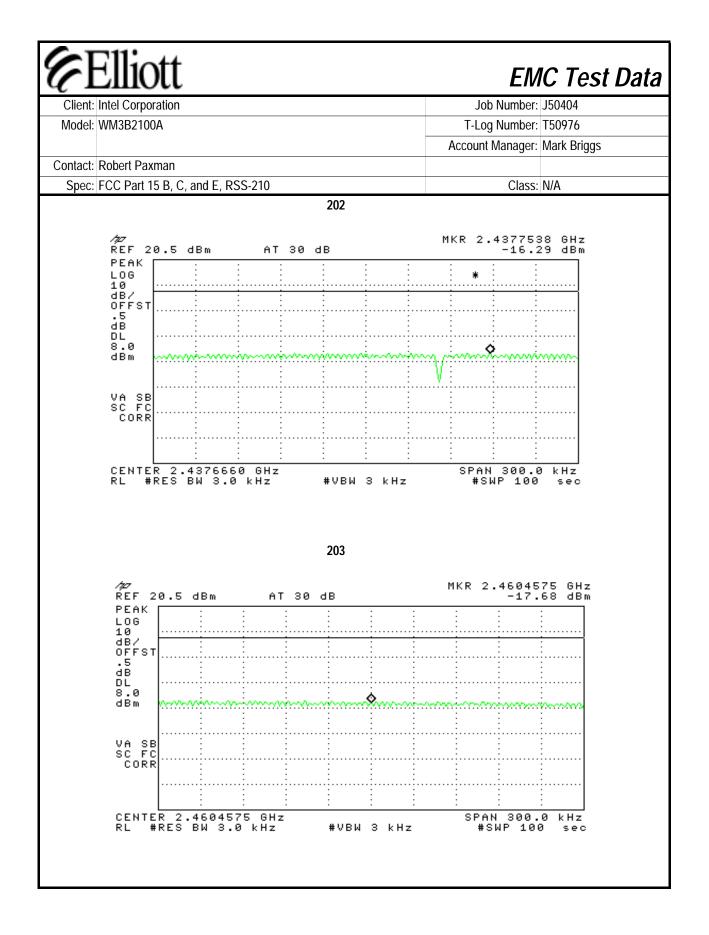
	ott			EN	IC Tes	t Data
Client: Intel Corp	ooration		Jol	b Number:	J50404	
Model: WM3B210	00A		T-Log	g Number:	T50976	
			Account	Manager:	Mark Briggs	
Contact: Robert Pa	axman					
Spec: FCC Part	: 15 B, C, and E, RSS-210			Class:	N/A	
	DTS 15.247 Ant	enna Conduc	ted Emi	ission)	
Test Specifics						
Objective:	The objective of this test session specification listed above.	n is to perform final quali	fication testing	g of the EL	JT with respe	ct to the
Date of Test:	4/25/03	Config. Used:	1			
Test Engineer:	jmartinez	Config Change:	None			
Test Location:	SVOATS #3	Host Unit Voltage	120Vac, 60H	łz		
Ambient Condition	ons: Temperature: Rel. Humidity:	11 °C 98 %				
Summary of Res	ults					
Run #	Test Performed	Limit	Result	Ma	argin]
1	6dB Bandwidth	15.247(a)	Pass	13.1	5 MHz	
2	Output Power	15.247(b)	Pass	1	6.6	
3	Power Spectral Density (PSD)	15.247(d)	Pass		6.29	
4	Out-of-Band	FCC Part 15.209 /	Pass	Refer	to plots	
		15.247(c)				-
5	Bandedge	15.247(c)	N/A	Refer	to plots	
	II					1

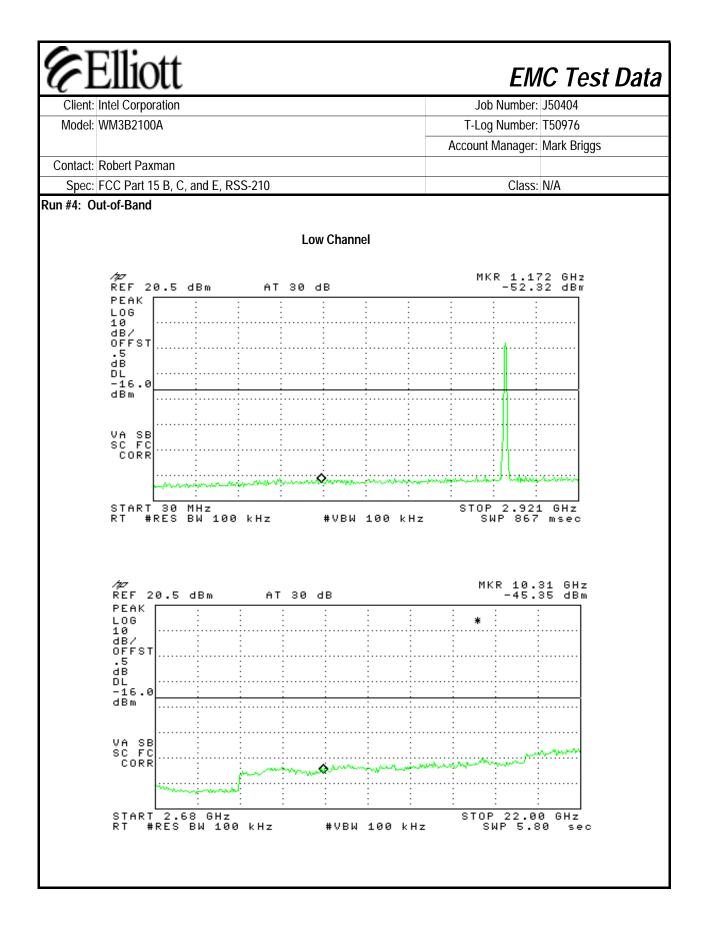


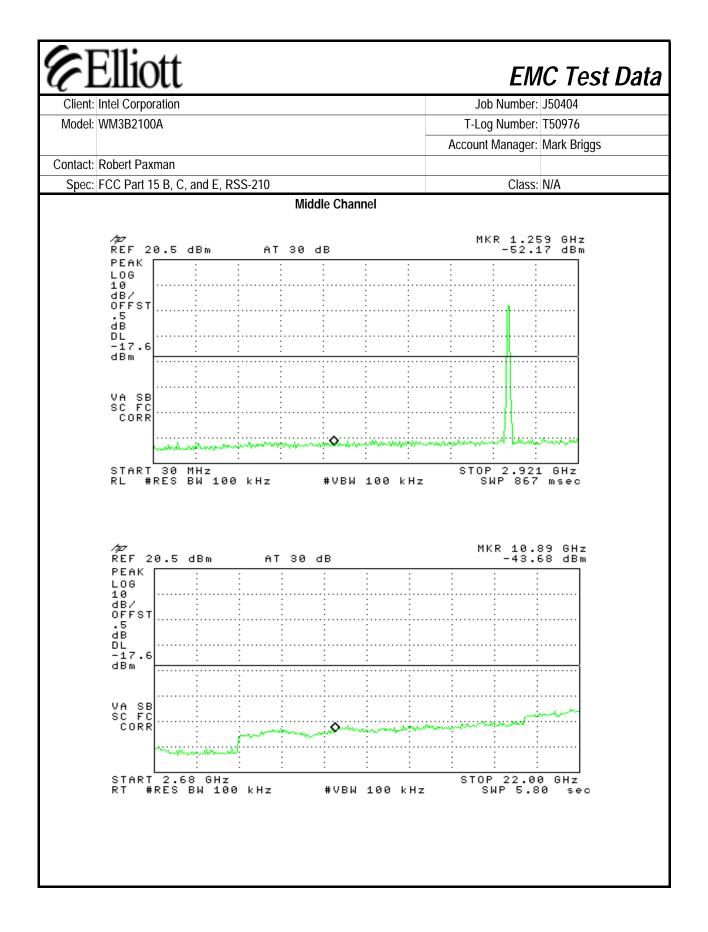


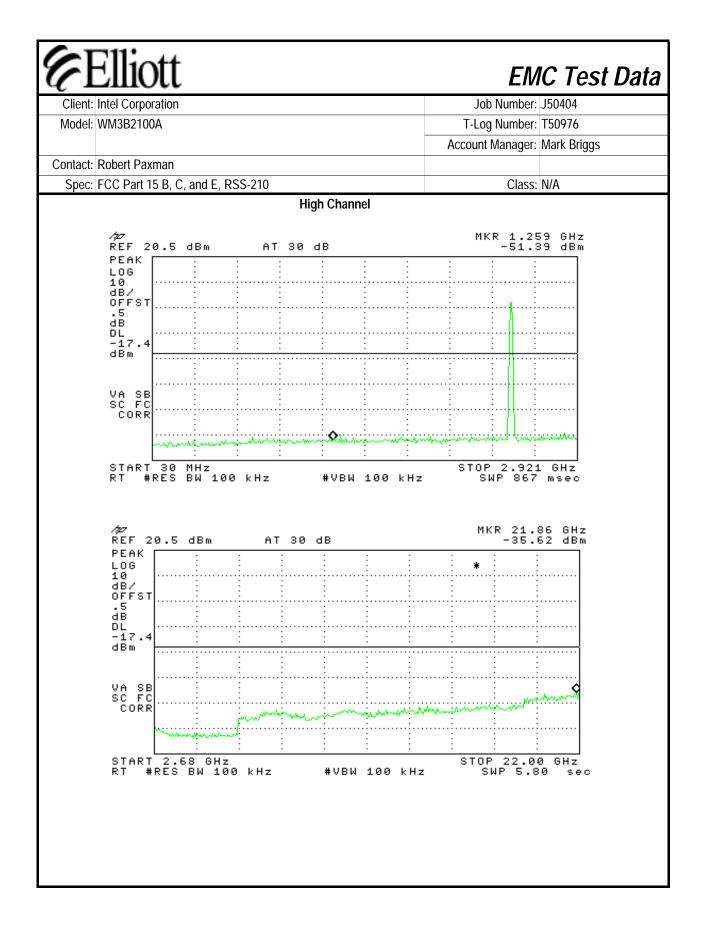
	Ellic Intel Corpor					J	ob Number:	J50404	
Model	: WM3B2100	A				T-L	og Number:	T50976	
						Accour	nt Manager:	Mark Briggs	
	Robert Pax								
Spec	FCC Part 1	5 B, C, and E, RS	S-210				Class:	N/A	
un #2: (Output Powe	er							
	Channel	Frequency	Power	Rate	Antenna	Step	Gain	Bias	scale
		(MHz)	(dBm)	(Mb/s)					10
	1 6	2412 2437	16.5 16.5	11 11	1	0	11 11	36 36	12 12
	0 11	2437	16.5	11	1	0	11	36	12
<u>te 2:</u>									
te 2:									
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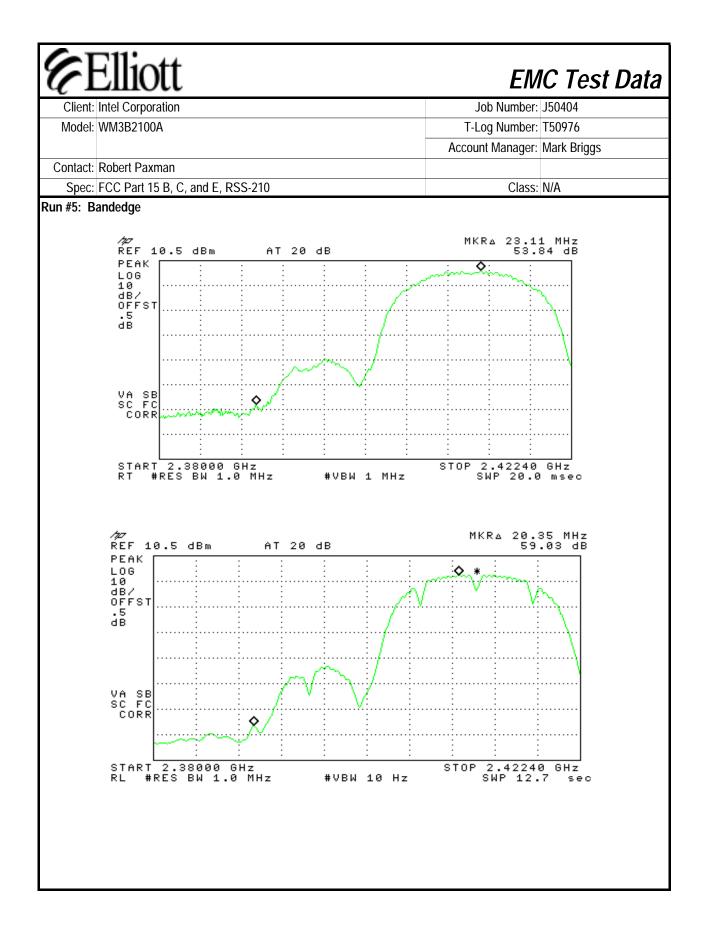


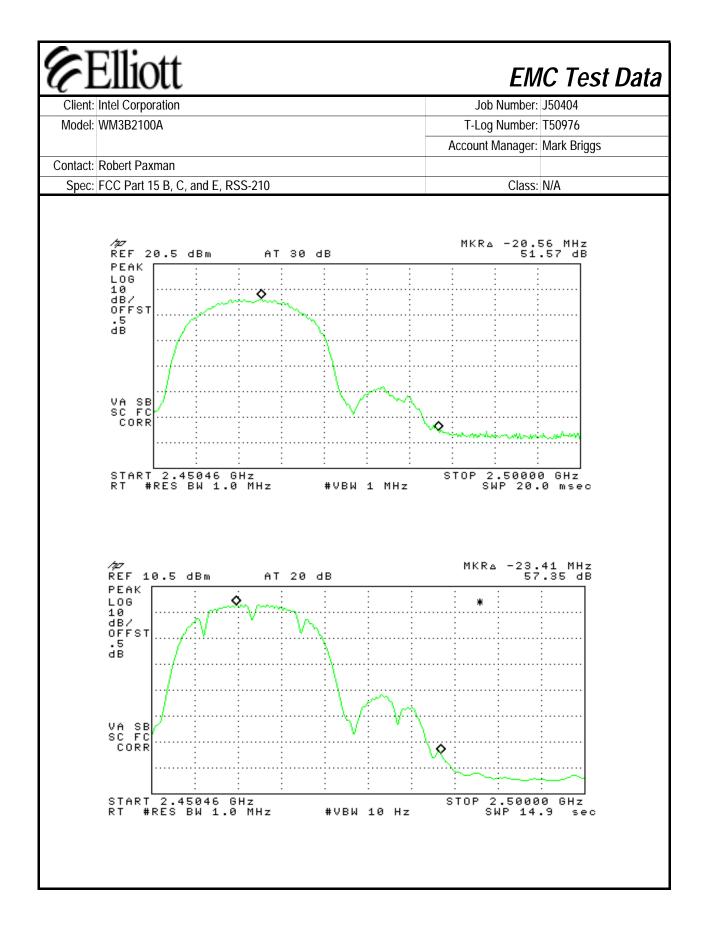












Client: Intel Corporation Job Number: J50404 Model: WM3B2100A T-Log Number: T50976 Account Manager: Mark Bright Contact: Robert Paxman Class: Mark Bright Spec: FCC Part 15 B, C, and E, RSS-210 Class: N/A Radiated Emissions st Specifics Objective: The objective of this test session is to perform final qualification testing of the EUT with respecification listed above. Date of Test: 4/27/03 Config. Used: 1 Test Engineer: jmartinez Config Change: None Test Location: SVOATS #3 Host Unit Voltage 120Vac, 60Hz meral Test Configuration 'he EUT and all local support equipment were located on the turntable for radiated spurious emissions testing for radiated emissions testing the measurement antenna was located 3 meters from the EUT. nbient Conditions: Temperature: 13°C
Account Manager: Mark Brid Contact: Robert Paxman Account Manager: Mark Brid Spec: FCC Part 15 B, C, and E, RSS-210 Class: N/A Radiated Emissions st Specifics Objective: The objective of this test session is to perform final qualification testing of the EUT with respecification listed above. Date of Test: 4/27/03 Config. Used: 1 Test Engineer: jmartinez Config Change: None Test Location: SVOATS #3 Host Unit Voltage 120Vac, 60Hz meral Test Configuration The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing for radiated emissions testing the measurement antenna was located 3 meters from the EUT.
Contact: Robert Paxman Spec: FCC Part 15 B, C, and E, RSS-210 Class: N/A Radiated Emissions st Specifics Objective: The objective of this test session is to perform final qualification testing of the EUT with respecification listed above. Date of Test: 4/27/03 Config. Used: 1 Test Engineer: jmartinez Config Change: None Test Location: SVOATS #3 Host Unit Voltage 120Vac, 60Hz emeral Test Configuration ineral Test Configuration ineral Test Configuration ineral Test Configuration ineral test ing the measurement antenna was located 3 meters from the EUT.
Spec: FCC Part 15 B, C, and E, RSS-210 Class: N/A Radiated Emissions st Specifics Objective: The objective of this test session is to perform final qualification testing of the EUT with respecification listed above. Date of Test: 4/27/03 Config. Used: 1 Test Engineer: jmartinez Config Change: None Test Location: SVOATS #3 Host Unit Voltage 120Vac, 60Hz meral Test Configuration The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing for radiated emissions testing the measurement antenna was located 3 meters from the EUT.
Radiated Emissions st Specifics Objective: The objective of this test session is to perform final qualification testing of the EUT with reserve specification listed above. Date of Test: 4/27/03 Config. Used: 1 Test Engineer: jmartinez Config Change: None Test Location: SVOATS #3 Host Unit Voltage 120Vac, 60Hz neral Test Configuration he EUT and all local support equipment were located on the turntable for radiated spurious emissions testing or radiated emissions testing the measurement antenna was located 3 meters from the EUT.
St Specifics Objective: The objective of this test session is to perform final qualification testing of the EUT with respecification listed above. Date of Test: 4/27/03 Config. Used: 1 Test Engineer: jmartinez Config Change: None Test Location: SVOATS #3 Host Unit Voltage 120Vac, 60Hz he EUT and all local support equipment were located on the turntable for radiated spurious emissions testing for radiated emissions testing the measurement antenna was located 3 meters from the EUT.
Objective: The objective of this test session is to perform final qualification testing of the EUT with respecification listed above. Date of Test: 4/27/03 Config. Used: 1 Test Engineer: imartinez Config Change: None Test Location: SVOATS #3 Host Unit Voltage 120Vac, 60Hz heral Test Configuration New Provide the Market Structure Structur
specification listed above. Date of Test: 4/27/03 Config. Used: 1 Test Engineer: jmartinez Config Change: None Test Location: SVOATS #3 Host Unit Voltage 120Vac, 60Hz eneral Test Configuration The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing for radiated emissions testing the measurement antenna was located 3 meters from the EUT.
Test Engineer: jmartinez Config Change: None Test Location: SVOATS #3 Host Unit Voltage 120Vac, 60Hz Ineral Test Configuration Host Unit Voltage for radiated spurious emissions testing To radiated emissions testing the measurement antenna was located 3 meters from the EUT.
Test Location: SVOATS #3 Host Unit Voltage 120Vac, 60Hz Ineral Test Configuration Ineral Test Configuration The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing for radiated emissions testing the measurement antenna was located 3 meters from the EUT.
neral Test Configuration The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing or radiated emissions testing the measurement antenna was located 3 meters from the EUT.
ne EUT and all local support equipment were located on the turntable for radiated spurious emissions testing or radiated emissions testing the measurement antenna was located 3 meters from the EUT.
Rel. Humidity: 91%
Run # Test Performed Limit Result Margin
1 RE, 30 - 24,000 MHz - FCC Part 15.209 / Pass -1.1dB @ 4824.048
Spurious Emissions 15.247(c)
2 RE, 30 - 24,000 MHz - FCC Part 15.209 / Pass -4.1dB @ 4874.048
Spurious Emissions 15.247(c)

E	Ellic	ott						EM	IC Test Data
Client:	Intel Corp	oration					J	ob Number:	J50404
Model:	WM3B210)0A					T-L	og Number:	T50976
								•	Mark Briggs
Contact.	Robert Pa	vman					710000	in managon	indik Briggo
			and E, RSS	210				Class:	Ν/Λ
			-			h: Antonno)		CIdSS.	N/A
RUN#I: R	adiated Sp	ourious	Emissions,	30 - 24,00	0 MHz (Hitac	ini Antenna)			
Fundamen	tal signal	measur	ements (to	calculate t	he band edg	e field strer	aths).		
Frequency		Pol	15.209/		Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Comments	
2412.0	101.0	V	-	-	Pk	-	-	RBW = VB	W = 1 MHz
2412.0	97.9	v	-	-	Avg	-	-		Hz, VBW = 10Hz
2412.0	104.2	h	-	_	Pk	-	_	RBW = VB	· · · · · · · · · · · · · · · · · · ·
2412.0	100.5	h	-	-	Avg	-	-		Hz, VBW = 10Hz
2462.0	99.3	V	-	-	Pk	-	-	RBW = VB	1
2462.0	95.1	V	-	-	Avg	-	-		Hz, VBW = 10Hz
2462.0	102.1	h	-	-	Pk	-	-	RBW = VB	
2462.0	98.5	h	-	-	Avg	-	-	RBW = 1M	Hz, VBW = 10Hz
					J J				
Band Edge	Field Stre	ength C	alculations						
Frequency		Pol	15.209/	15.407	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
2390.0	47.2	V	74.0	-26.8	Pk	-	-	Note 1	
2390.0	38.9	V	54.0	-15.1	Avg	-	-	Note 1	
2390.0	50.3	h	74.0	-23.7	Pk	-	-	Note 1	
2390.0	41.5	h	54.0	-12.5	Avg	-	-	Note 1	
2483.5	47.7	V	74.0	-26.3	Pk	-	-	Note 2	
2483.5	37.8	V	54.0	-16.3	Avg	-	-	Note 2	
2483.5	50.5	h	74.0	-23.5	Pk	-	-	Note 2	
2483.5	41.2	h	54.0	-12.8	Avg	-	-	Note 2	
	EUT opera	ating on	the lowest c	hannel ava	ilable in the 5	i.15 - 5.25 M	Hz band. S	ignal level c	alculated using the
Note 1:	relative m	easurem	nents in run #	#5 (-53.84 d	Bc for peak	and -59.03 d	Bc for avera	age) applied	to the highest peak and
	verage fie	ld streng	th measurer	ments of the	e fundamenta	al signal leve	I.		-
	-							nal level calc	ulated using the relative
Note 2:									ighest peak and average
					mental signal				.gp
		5			j i j i				

Client:	Intel Corpo	oration					J	ob Number:	J50404
Model:	WM3B210	0A					T-L	og Number:	T50976
						_	Accour	nt Manager:	Mark Briggs
Contact:	Robert Pa	xman						0	
Spec:	FCC Part	15 B. C.	and E, RSS	5-210				Class:	N/A
	nel @ 2412			-					
Frequency		Pol	15.209/	/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
4824.000	55.8	V	74.0	-18.2	Pk	210	1.2	Note 1	
4824.000	52.9	V	54.0	-1.2	Avg	210	1.2	Note 1	
7236.000	47.1	٧	54.0	-6.9	Pk	210	1.2	Note 3	
4824.000	52.2	h	74.0	-21.8	Pk	260		Note 1	
4824.000	47.2	h	54.0	-6.8	Avg	260		Note 1	
7236.000	49.1	h	54.0	-4.9	Pk	260	1.2	Note 3	
				ter the third	l harmonic 20	-dB of the lim	it.		
Note 3:	Peak Read	ding, ave	erage limit.	ter the third	l harmonic 20	-dB of the lim	it.		
Note 3:		ding, ave	erage limit.	ter the third	l harmonic 20	-dB of the lim	it.		
Note 3: Center Ch	Peak Read	ding, ave	erage limit.		harmonic 20	-dB of the lim	it. Height	Comments	
Note 3: Center Ch Frequency MHz	Peak Read annel @ 2 Level dBµV/m	ding, ave 437 MH	z 15.209 / Limit	/ 15.247 Margin	Detector Pk/QP/Avg	Azimuth degrees	Height meters		
Note 3: Center Ch Frequency MHz 4874.000	Peak Read annel @ 2 Level dBµV/m 58.1	ding, ave 437 MH : Pol	erage limit. z 15.209 / Limit 74.0	/ 15.247 Margin -15.9	Detector Pk/QP/Avg Pk	Azimuth degrees 215	Height meters 1.0	Note 1	
Note 3: Center Ch Frequency MHz 4874.000 4874.000	Peak Read annel @ 2 Level dBµV/m 58.1 52.8	ding, ave 437 MH Pol V/h V	2 15.209 / Limit 74.0 54.0	/ 15.247 Margin -15.9 -1.2	Detector Pk/QP/Avg Pk Avg	Azimuth degrees 215 215	Height meters 1.0 1.0	Note 1 Note 1	
Note 3: Center Ch Frequency MHz 4874.000 4874.000 7311.000	Peak Read annel @ 2 Level dBμV/m 58.1 52.8 47.8	ding, ave 437 MH: Pol V/h V V V	z 15.209 / Limit 74.0 54.0 54.0	/ 15.247 Margin -15.9 -1.2 -6.2	Detector Pk/QP/Avg Pk Avg Pk	Azimuth degrees 215 215 215 215	Height meters 1.0 1.0 1.0	Note 1 Note 1 Note 3	
Note 3: Center Ch Frequency MHz 4874.000 4874.000 7311.000 4874.000	Peak Read annel @ 2 Level dBμV/m 58.1 52.8 47.8 54.5	ding, ave 437 MH: Pol V/h V V V v h	z 15.209 / Limit 74.0 54.0 54.0 74.0	/ 15.247 Margin -15.9 -1.2 -6.2 -19.5	Detector Pk/QP/Avg Pk Avg Pk Pk Pk	Azimuth degrees 215 215 215 215 255	Height meters 1.0 1.0 1.0 1.0	Note 1 Note 1 Note 3 Note 1	
Note 3: Center Ch Frequency MHz 4874.000 4874.000 7311.000 4874.000 4874.000	Peak Read annel @ 2 Level dBµV/m 58.1 52.8 47.8 54.5 50.5	ding, ave 437 MH: Pol v/h v v v v h h	z 15.209 / Limit 74.0 54.0 54.0 74.0 54.0	/ 15.247 Margin -15.9 -1.2 -6.2 -19.5 -3.5	Detector Pk/QP/Avg Pk Avg Pk Pk Pk Avg	Azimuth degrees 215 215 215 255 255	Height meters 1.0 1.0 1.0 1.0 1.0 1.0	Note 1 Note 1 Note 3 Note 1 Note 1	
Note 3: Center Ch Frequency MHz 4874.000 4874.000 7311.000 4874.000	Peak Read annel @ 2 Level dBµV/m 58.1 52.8 47.8 54.5 50.5	ding, ave 437 MH: Pol V/h V V V v h	z 15.209 / Limit 74.0 54.0 54.0 74.0	/ 15.247 Margin -15.9 -1.2 -6.2 -19.5	Detector Pk/QP/Avg Pk Avg Pk Pk Pk	Azimuth degrees 215 215 215 215 255	Height meters 1.0 1.0 1.0 1.0 1.0 1.0	Note 1 Note 1 Note 3 Note 1	
Note 3: Center Ch Frequency MHz 4874.000 7311.000 4874.000 4874.000 7311.000 4874.000 7311.000	Peak Read	ding, ave 437 MH: Pol V/h V V V V h h h	z 15.209 / Limit 74.0 54.0 54.0 74.0 54.0 54.0 54.0	/ 15.247 Margin -15.9 -1.2 -6.2 -19.5 -3.5 -7.1	Detector Pk/QP/Avg Pk Avg Pk Pk Avg Pk Avg	Azimuth degrees 215 215 215 255 255 255	Height meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Note 1 Note 1 Note 3 Note 1 Note 1 Note 3	e limit was set 20 dB
Note 3: Center Ch Frequency MHz 4874.000 4874.000 4874.000 4874.000 4874.000 7311.000	Peak Read annel @ 2 Level dBμV/m 58.1 52.8 47.8 54.5 50.5 46.9 For emissi	ding, ave 437 MH: Pol V/h V V V h h h ons in re	z 15.209 / Limit 74.0 54.0 54.0 74.0 54.0 54.0 54.0 54.0	/ 15.247 Margin -15.9 -1.2 -6.2 -19.5 -3.5 -7.1 nds, the lim	Detector Pk/QP/Avg Pk Avg Pk Pk Avg Pk Avg	Azimuth degrees 215 215 215 255 255 255	Height meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Note 1 Note 1 Note 3 Note 1 Note 1 Note 3	e limit was set 20 dB
Note 3: Center Ch Frequency MHz 4874.000 4874.000 4874.000 4874.000 7311.000 7311.000 Note 1:	Peak Read	ding, ave 437 MH: Pol V/h V V V h h h ons in re level of t	z 15.209 / Limit 74.0 54.0 54.0 54.0 54.0 54.0 54.0 stricted bar the fundame	/ 15.247 Margin -15.9 -1.2 -6.2 -19.5 -3.5 -7.1 mds, the lim ental.	Detector Pk/QP/Avg Pk Avg Pk Avg Pk Avg Pk	Azimuth degrees 215 215 215 255 255 255 255 as used. For	Height meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 310 other er	Note 1 Note 1 Note 3 Note 1 Note 1 Note 3	e limit was set 20 dB
Frequency MHz 4874.000 4874.000 7311.000 4874.000 4874.000	Peak Read	ding, ave 437 MH: Pol V/h V V V h h h h cons in re level of t mission	z 15.209 / Limit 74.0 54.0 54.0 54.0 54.0 54.0 54.0 estricted bar he fundame detected aft	/ 15.247 Margin -15.9 -1.2 -6.2 -19.5 -3.5 -7.1 mds, the lim ental.	Detector Pk/QP/Avg Pk Avg Pk Avg Pk Avg Pk	Azimuth degrees 215 215 215 255 255 255	Height meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 310 other er	Note 1 Note 1 Note 3 Note 1 Note 1 Note 3	e limit was set 20 dB

6F	Ellic	ott						EM	IC Test Data
	Intel Corpo						J	ob Number:	J50404
	WM3B210							og Number:	
Model	WINOD2 TO	011				-		•	Mark Briggs
Contacti	Robert Pa	man					Accour	it ivialiayer.	wark Driggs
				210				Class	N1/A
			and E, RSS	-210				Class:	N/A
High Chani	nel @ 2462	2 MHZ							
Frequency	Level	Pol	15.209 /	15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
4924.000	55.7	V	74.0	-18.4	Pk	210		Note 1	
4924.000	52.2	V	54.0	-1.8	Avg	210		Note 1	
7386.000	47.8	V	54.0	-6.2	Pk	133		Note 3	
4924.000	50.5	h	74.0	-23.5	Pk	250		Note 1	
4924.000	45.5	h	54.0	-8.5	Avg	250		Note 1	
7386.000	49.5	h	54.0	-4.5	Pk	260	1.1	Note 3	
	below the	level of t	he fundame	ntal.		vas used. For		missions, th	e limit was set 20 dB
	Peak Read								

E	Ellic	ott						EM	IC Test Data
Client:	Intel Corp	oration					J	ob Number:	J50404
Model:	WM3B210	00A					T-L	og Number:	T50976
								0	Mark Briggs
Contact.	Robert Pa	xman							
		-	and E, RSS	210				Class:	N/A
					0 MHz (Etho	rthronice Ar	toppa)	01033.	
KUII #2. K	aulateu S	Junious	EIIIISSIUIIS,	30 - 24,00			iternia)		
Fundamen	tal signal	measur	ements (to	calculate t	he band edg	le field strer	aths):		
Frequency		Pol	15.209/		Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg		meters		
2412.0	101.5	V	-	-	Pk	-	-	RBW = VB	W = 1 MHz
2412.0	97.9	V	-	-	Avg	-	-		Hz, VBW = 10Hz
2412.0	107.5	h	-	-	Pk	-	-	RBW = VB	
2412.0	107.0	h	-	-	Avg	-	-		Hz, VBW = 10Hz
2462.0	100.1	v	-	_	Pk	-	-	RBW = VB	,
2462.0	99.4	v	-	-	Avg	-	-		Hz, VBW = 10Hz
2462.0	108.5	h	_	-	Pk	-	-	RBW = VB	
2462.0	105.0	h	-	-	Avg	-	-		Hz, VBW = 10 Hz
2102.0	100.0				nig				
Band Edge	Field Str	enath C	alculations						
Frequency		Pol	15.209/	15.407	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
2390.0	47.7	V	74.0	-26.3	Pk	-	-	Note 1	
2390.0	38.9	V	54.0	-15.1	Avg	-	-	Note 1	
2390.0	53.6	h	74.0	-20.4	Pk	-	-	Note 1	
2390.0	44.3	h	54.0	-9.7	Avg	-	-	Note 1	
2483.5	52.7	v	74.0	-21.3	Pk	-	-	Note 2	
2483.5	42.0	v	54.0	-12.0	Avg	-	-	Note 2	
2483.5	56.9	h	74.0	-17.1	Pk	-	-	Note 2	
2483.5	47.7	h	54.0	-6.3	Avg	-	-	Note 2	
1.0010			0.110	0.0	<u>g</u>				
Note 1:	relative m verage fie	easurem Id streng	nents in run ∉ jth measurer	#5 (-53.84 c ments of the	Bc for peak a le fundamenta	and -59.03 d al signal leve	Bc for avera I.	age) applied	alculated using the to the highest peak and
									ulated using the relative
Note 2:							verage) app	lied to the h	ighest peak and average
	field stren	gth mea	surements o	f the funda	mental signal	level.			

Contact:		xman 15 B, C,	and E, RSS			_	TI		
Spec: Low Chanr Frequency MHz 4824.000	FCC Part 7 nel @ 2412 Level	15 B, C,	and E, RSS			-	I-L(og Number:	T50976
Spec: Low Chanr Frequency MHz 4824.000	FCC Part 7 nel @ 2412 Level	15 B, C,	and E, RSS					•	Mark Briggs
Spec: Low Chanr Frequency MHz 4824.000	FCC Part 7 nel @ 2412 Level	15 B, C,	and E, RSS						
Low Chanr Frequency MHz 4824.000	nel @ 2412 Level			5.210				Class:	NI/A
Frequency MHz 4824.000	Level			-210				01033.	IN/A
MHz 4824.000		Pol	15 209	/ 15.247	Detector	Azimuth	Height	Comments	
4824.000		v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	oominiento	
4824.000	51.8	V	74.0	-22.2	Pk	210		Note 1	
	46.8	V	54.0	-7.2	Avg	210		Note 1	
7236.000	48.6	V	54.0	-5.5	Pk	130	1.4	Note 3	
4824.000	48.1	h	74.0	-25.9	Pk	260	1.2	Note 1	
4824.000	46.5	h	54.0	-7.5	Avg	260	1.2	Note 1	
7236.000	48.5	h	54.0	-5.5	Pk	260	1.2	Note 3	
lote 3:	Peak Read	ding, ave	erage limit.						
Center Ch	annel @ 2	437 MHz	2						
				/ 15 247	Dotoctor	Azimuth	Hoight	Commonts	
Frequency	Level	Pol	15.209		Detector Pk/OP/Ava	Azimuth	Height	Comments	
Frequency MHz	Level dBµV/m	Pol v/h	15.209 Limit	Margin	Pk/QP/Avg	degrees	meters		
Frequency MHz 4874.000	Level dBµV/m 53.7	Pol v/h v	15.209 Limit 74.0	Margin -20.3	Pk/QP/Avg Pk	degrees 220	meters 1.1	Note 1	
Frequency MHz 4874.000 4874.000	Level dBµV/m 53.7 49.9	Pol v/h v v	15.209 Limit 74.0 54.0	Margin -20.3 -4.1	Pk/QP/Avg Pk Avg	degrees 220 220	meters 1.1 1.1	Note 1 Note 1	
Frequency MHz 4874.000 4874.000 7311.000	Level dBµV/m 53.7 49.9 46.5	Pol v/h v v v	15.209 J Limit 74.0 54.0 54.0	Margin -20.3 -4.1 -7.5	Pk/QP/Avg Pk Avg Pk	degrees 220 220 220	meters 1.1 1.1 1.1	Note 1 Note 1 Note 3	
Frequency MHz 4874.000 4874.000	Level dBµV/m 53.7 49.9	Pol v/h v v	15.209 Limit 74.0 54.0	Margin -20.3 -4.1	Pk/QP/Avg Pk Avg Pk Pk	degrees 220 220	meters 1.1 1.1 1.1 1.2	Note 1 Note 1 Note 3 Note 1	
Frequency MHz 4874.000 4874.000 7311.000 4874.000	Level dBµV/m 53.7 49.9 46.5 48.6	Pol v/h v v v	15.209 Limit 74.0 54.0 54.0 74.0	Margin -20.3 -4.1 -7.5 -25.4	Pk/QP/Avg Pk Avg Pk	degrees 220 220 220 220 220	meters 1.1 1.1 1.1 1.2 1.2	Note 1 Note 1 Note 3	
Frequency MHz 4874.000 4874.000 7311.000 4874.000 4874.000	Level dBµV/m 53.7 49.9 46.5 48.6 39.9	Pol v/h v v v h h	15.209 J Limit 74.0 54.0 54.0 74.0 54.0	Margin -20.3 -4.1 -7.5 -25.4 -14.1	Pk/QP/Avg Pk Avg Pk Pk Avg	degrees 220 220 220 220 220 220	meters 1.1 1.1 1.1 1.2 1.2	Note 1 Note 1 Note 3 Note 1 Note 1	
Frequency MHz 4874.000 4874.000 7311.000 4874.000 4874.000 7311.000 4874.000 7311.000	Level dBµV/m 53.7 49.9 46.5 48.6 39.9 49.5	Pol v/h v v v h h h	15.209 / Limit 74.0 54.0 54.0 74.0 54.0 54.0 54.0	Margin -20.3 -4.1 -7.5 -25.4 -14.1 -4.5	Pk/QP/Avg Pk Avg Pk Pk Avg Pk	degrees 220 220 220 220 220 220 220	meters 1.1 1.1 1.1 1.2 1.2 1.2 1.2	Note 1 Note 1 Note 3 Note 1 Note 1 Note 3	e limit was set 20 dB
Frequency MHz 4874.000 4874.000 7311.000 4874.000 4874.000 7311.000 Note 1:	Level dBµV/m 53.7 49.9 46.5 48.6 39.9 49.5 For emissi	Pol v/h v v h h h n n	15.209 / Limit 74.0 54.0 54.0 74.0 54.0 54.0 54.0	Margin -20.3 -4.1 -7.5 -25.4 -14.1 -4.5	Pk/QP/Avg Pk Avg Pk Pk Avg Pk	degrees 220 220 220 220 220 220 220	meters 1.1 1.1 1.1 1.2 1.2 1.2 1.2	Note 1 Note 1 Note 3 Note 1 Note 1 Note 3	
Frequency MHz 4874.000 4874.000 7311.000 4874.000 4874.000 7311.000 7311.000 Note 1:	Level dBµV/m 53.7 49.9 46.5 48.6 39.9 49.5 For emissi below the	Pol v/h v v h h h level of t	15.209 / Limit 74.0 54.0 54.0 54.0 54.0 54.0 stricted bar he fundame	Margin -20.3 -4.1 -7.5 -25.4 -14.1 -4.5 mds, the limi ental.	Pk/QP/Avg Pk Avg Pk Pk Avg Pk	degrees 220 220 220 220 220 220 220 220 as used. For	meters 1.1 1.1 1.2 1.2 1.2 1.2 all other er	Note 1 Note 1 Note 3 Note 1 Note 1 Note 3	

	- 11 0								
6	Ellic	ott						EN	IC Test Data
	Intel Corpo						J	ob Number:	J50404
	WM3B210							og Number:	
modell	THIODE TO	0,1						0	Mark Briggs
Contact:	Robert Pa	xman							
Spec:	FCC Part	15 B, C,	and E, RSS	-210				Class:	N/A
High Chan	nel @ 2462	2 MHz							
Frequency	Level	Pol	15.209 /	15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
4924.000	52.9	V	74.0	-21.1	Pk	175	1.4	Note 1	
4924.000	49.5	٧	54.0	-4.5	Avg	175	1.4	Note 1	
7386.000	48.9	V	54.0	-5.1	Pk	154	1.1	Note 3	
4924.000	49.9	h	74.0	-24.1	Pk	180	1.2	Note 1	
4924.000	44.4	h	54.0	-9.6	Avg	180	1.2	Note 1	
7386.000	49.7	h	54.0	-4.3	Pk	180	1.2	Note 3	
	below the	level of t	he fundame	ntal.		vas used. For D-dB of the lim		missions, th	e limit was set 20 dB
	Peak Read								

Elliott

EMC Test Data

Client:	Intel Corporation	Job Number:	J50404
Model:	WM3B2100A	T-Log Number:	T50976
		Proj Eng:	Mark Briggs
Contact:	Robert Paxman		
Emissions Spec:	FCC Part 15 B, C, and E, RSS-	Class:	Radio
Immunity Spec:	N/A	Environment:	-

EMC Test Data

For The

Intel Corporation

Model

WM3B2100A

€ Elliott EMC Test Data Job Number: J50404 Client: Intel Corporation Model: WM3B2100A T-Log Number: T50976 Proj Eng: Mark Briggs Contact: Robert Paxman Emissions Spec: FCC Part 15 B, C, and E, RSS-21(Class: Radio Environment: Immunity Spec: N/A -**EUT INFORMATION General Description** The EUT is a mini PCI Card dual band (802.11a and 802.11b) transceiver which is designed to be installed into a laptop PC and connect to antennas mounted in the screen of the laptop. The Mini PCI was tested outside the host system. The host laptop was treated as table-top equipment during testing to simulate the end user environment. The electrical rating of the laptop is 120/240 V, 50/60 Hz, 5 Amps. Equipment Under Test FCC ID Manufacturer Model Description Serial Number WM3B2100A Mini PCI card PD9WM3B2100A Intel Corporation DEB Antenna Ethertronics Antenna at 2.4 Ghz has a gain of 2 dBi and at 5 Ghz a gain of 5 dBi. Hitachi Antenna at 2.4 Ghz and at 5 Ghz a gain of 0 dBi. Antennas will be installed inside at the topside of the display screen of the Laptop. The Laptop vendors will professionally install the antennas. **EUT Enclosure** The EUT contains it's own shield made out of aluminum. It measures approximately 6 cm wide by 2 cm deep by 4.5 cm high. Modification History Mod. # Test Date Modification 1

Elliot				C Test Da
Client:	Intel Corporation		Job Number:	J50404
Model:	WM3B2100A		T-Log Number:	
			Proj Eng:	Mark Briggs
Contact:	Robert Paxman			
Emissions Spec:	FCC Part 15 B, C, and E,	RSS-21(Class:	Radio
Immunity Spec:	N/A		Environment:	-
		t Configuratio		
Manufacturer	Model	Description	Serial Number	FCC ID
Hewlett Packard	Pavilion 500	PC	MX21111561	DoC
Dell	828FI	Monitor	22794E28CJ29	DoC
Compaq	SK-2800	Keyboard	B1C800BCPHVV9Q	GYUR66SK
Hewlett Packard	P813I	Mouse	K020215557	DoC
3Com	Pilot1000	PDA	604719G68390	MQ90001
Hewlett Packard	2225C	Printer	2714540166	DSI6XU2225
Manufacturer	Ren Model	note Support Equip	ment Serial Number	FCC ID
None				
		rface Cabling and F		
EUT Tx	Antenna #1	Antenna Cable	Shielded	0.5
EUT Rx	Antenna #2	Antenna Cable	Shielded	0.5
Host PC, Keyboard	Keyboard	Keyboard Cable	Shielded	1.0
Host PC, AC Input	AC Power Source	IEC Power Cord	Unshielded	2.0
Host PC, Mouse	Mouse	Mouse Cable	Shielded	1.0
Host PC, COM Port	PDA	HotSync Cable	Shielded	1.0
	Printer	Parallel Cable	Shielded	1.0
Host PC, Parallel Port Monitor, AC Input	AC Power Source	IEC Power Cord	Unshielded	2.0

EUT Operation During Emissions Testing (Radio)

The EUT was transmitting on the middle channel stated at the maximum power. The worst case mode from 802.11b or 802.11a was picked from the pre-scan in chamber# 2.

For measurements of radiated emissions below 1GHz and AC conducted emissions, the host laptop was connected to two peripherals (PDA and Printer) and had a scrolling 'H' pattern displayed on the screen. The laptop screen was open and the antenna located behind the laptop screen.

Spec: FCC Part 15 B, C, and E, RSS-210 Class: Radio **Radiated Emissions** specification listed above. Config. Used: 2 Config Change: none EUT Voltage: 120V/60Hz Rel. Humiaity: ðU 70

EMC Test Data

Elliott Client: Intel Corporation

Model: WM3B2100A

Job Number: J50404 T-Log Number: T50976

Account Manager: Mark Briggs

Contact: Robert Paxman

Test Specifics

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the

Date of Test: 4/25/03 Test Engineer: volivas Test Location: SVOATS #3

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated emissions testing.

On the OATS, the measurement antenna was located 10 meters from the EUT for the measurement range 30 - 1000 MHz and 3m from the EUT for the frequency range 1 - 2 GHz.

Note, preliminary testing indicates that the emissions were maximized by orientation of the EUT and elevation of the measurement antenna. Maximized testing indicated that the emissions were maximized by orientation of the EUT, elevation of the measurement antenna, and manipulation of the EUT's interface cables.

Note, for testing above 1 GHz, the FCC specifies the limit as an average measurement. In addition, the FCC states that the peak reading of any emission above 1 GHz, can not exceed the average limit by more than 20 dB.

Ambient Conditions:	Temperature:	11 °C
	Rel. Humidity:	80 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1	RE, 30 -1000 MHz, Preliminary	EN55022 B	Eval	-2.4dB @ 99.990MHz
	Scan			
2	RE, 30 - 1000MHz, Maximized	EN55022 B	Pass	-1.7dB @ 99.990MHz
	Emissions			
3	RE, 1000 - 2000 MHz,	FCC B	Pass	-6.6dB @ 1796.0MHz
	Maximized Emissions			

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.

Madal	Intel Corp	oration					~	lob Number:	J50404
wodel:	WM3B210	00A					T-L	og Number:	T50976
							Accou	nt Manager:	Mark Briggs
Contact:	Robert Pa	xman						5	
			and E, RSS	5-210				Class:	Radio
•			ed Emissio) MHz				
Frequency	Level	Pol	EN55	022 B	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
99.990	27.6	V	30.0	-2.4	QP	288	1.0		
99.990	26.7	H	30.0	-3.3	QP	15	4.0	ļ	
33.340	25.3	V	30.0	-4.7	QP	300	1.0		
66.800	20.8	<u>V</u>	30.0	-9.2	QP	134	1.0		
800.935	26.7	H	37.0	-10.3	QP	205	2.1		
719.880	26.3	<u>V</u>	37.0	-10.7	QP	0	1.0		
997.600	25.4	H	37.0	-11.6	QP	84	1.0		
997.600	25.4	V V	37.0	-11.6	QP	360	1.0		
299.970	25.1		37.0	-11.9	QP	360	1.0		
33.410	17.2 23.2	H V	30.0	-12.8	QP QP	149	1.3 1.0		
336.020 81.140	23.2 15.3	 H	37.0 30.0	-13.8 -14.7	QP QP	326 337	1.0		
719.880	22.2	<u>н</u> Н	30.0	-14.7	QP QP	337	1.0		
800.935	22.2	<u> </u>	37.0	-14.8	QP QP	36	1.0		
85.220	14.2	V V	30.0	-14.9	QP QP	92	1.0		
80.910	14.2	V	30.0	-15.9	QP	331	1.0		
299.970	20.6	 H	37.0	-16.4	QP	360	2.0		
738.805	20.0	 H	37.0	-16.6	QP	360	1.0		
738.805	20.4	V	37.0	-16.6	QP	324	1.0		
166.730	12.7	H	30.0	-17.3	QP	126	1.0		
287.970	19.7	H	37.0	-17.3	QP	289	1.0		
233.500	15.8	V	37.0	-21.2	QP	0	1.0	1	
234.460	14.0	H	37.0	-23.0	QP	300	1.0	1	
336.020	13.2	Н	37.0	-23.8	QP	360	4.0		

E	Ellic	ott						EM	IC Test Data
Client: Intel Corporation							Job Number: J50404		J50404
Model:	Model: WM3B2100A						T-Log Number:		T50976
							Account Manager:		Mark Briggs
Contact:	Robert Pa	xman							
Spec:	FCC Part	15 B, C,	and E, RSS	5-210				Class:	Radio
Run #2∙ M	aximized	.							
		Reading	s From Ru	n #1					
Frequency		Reading Pol	s From Rui EN55		Detector	Azimuth	Height	Comments	
					Detector Pk/QP/Avg		Height meters	Comments	
Frequency	Level	Pol	EN55	022 B		=	Ŭ	Comments	
Frequency MHz	Level dBµV/m	Pol v/h	EN55 Limit	022 B Margin	Pk/QP/Avg	degrees	meters	Comments	
Frequency MHz 99.990	Level dBµV/m 28.3	Pol v/h V	EN55 Limit 30.0	022 B Margin -1.7	Pk/QP/Avg QP	degrees 288	meters 1.0	Comments	
Frequency MHz 99.990 99.990	Level dBµV/m 28.3 27.3	Pol v/h V H	EN55 Limit 30.0 30.0	022 B Margin -1.7 -2.7	Pk/QP/Avg QP QP	degrees 288 15	meters 1.0 4.0	Comments	

QP

0

1.0

Run #3: Maximized readings, 1000 - 2000 MHz

26.3

719.880

Measurements made at 3m per FCC requirements.

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37.0

-10.7

Frequency	Level	Pol	FCC C	lass B	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1796.000	47.4	V	54.0	-6.6	Avg	360	1.0	
1949.810	47.3	V	54.0	-6.7	Avg	0	1.0	
1303.000	37.1	Н	54.0	-16.9	Avg	100	1.0	
1948.810	56.2	V	74.0	-17.8	Pk	0	1.0	
1064.190	34.0	Н	54.0	-20.0	Avg	300	1.0	
1481.940	33.3	V	54.0	-20.7	Avg	360	1.0	
2012.130	32.6	Н	54.0	-21.4	Avg	295	1.0	
1303.000	52.6	Н	74.0	-21.4	Pk	100	1.0	
1796.000	51.5	V	74.0	-22.5	Pk	360	1.0	
1064.190	46.4	Н	74.0	-27.6	Pk	300	1.0	
1481.940	45.7	V	74.0	-28.3	Pk	360	1.0	
2012.130	45.3	Н	74.0	-28.7	Pk	295	1.0	

Elli	ou		-	EMC Test L	Da
Client: Intel Cor	•		-	ob Number: J50404	
Model: WM3B2	100A			og Number: T50976	
			Accou	nt Manager: Mark Briggs	
Contact: Robert F					
Spec: FCC Par	rt 15 B, C, and E, RSS-210			Class: Radio	
	Conducted E	missions - Po	ower P	orts	
est Specifics					
Objective	e: The objective of this test session specification listed above.	is to perform final qualif	ication testi	ng of the EUT with respect to	o the
Date of Test	: 4/25/03	Config. Used:	1		
Test Engineer		Config Change:			
-	: SVOATS #3	EUT Voltage:		dividual run	
nbient Condit	ions: Temperature: Rel. Humidity:	11 °C 80 %			
Immary of Res	sults				
Immary of Res	Sults Test Performed	Limit	Result	Margin	
Run #	Test Performed CE, AC Power, 230V/50Hz	EN55022 B	Pass	-11.7dB @ 0.190MHz	
Run # 1 2	Test Performed			-	

	Ellio					1		IC Test Da
	Intel Corp						Job Number:	
Model:	WM3B21	00A				_	T-Log Number:	
							Account Manager:	Mark Briggs
Contact:	Robert Pa	axman						
Spec:	FCC Part	15 B, C,	and E, RSS	S-210			Class:	Radio
Run #1: A0	C Power F	Port Conc	lucted Em	issions, 0.1	5 - 30MHz,	230V/50Hz		
Frequency	Level	AC		022 B	Detector	Comments		
MHz	dBµV	Line	Limit	Margin	QP/Ave			
0.190	42.3	Neutral	54.0	-11.7	AV			
0.190	48.7	Neutral	64.0	-15.3	QP			
0.199	45.1	Line 1	63.6	-18.5	QP			
0.199	33.2	Line 1	53.6	-20.4	AV			
0.409	25.8	Line 1	47.6	-21.8	AV			
0.284	27.4	Neutral	50.7	-23.3	AV			
0.284	32.4	Neutral	60.7	-28.3	QP			
0.409	26.8	Line 1	57.6	-30.8	QP			
9.663	15.0	Line 1	50.0	-35.0	AV			
10.664	22.7	Neutral	60.0	-37.3	QP			
10.664	10.6	Neutral	50.0	-39.4	AV			
	16.4	Line 1	60.0	-43.6	QP			
9.663								
Run #2: A(C Power F			-	-	120V/60Hz		
Run #2: A(Power F Level	AC	EN55	022 B	Detector	120V/60Hz Comments		
Run #2: AC	C Power F	AC Line		-	-			
Run #2: AC Frequency MHz 0.174	C Power F Level dBµV 50.5	AC Line Neutral	EN55 Limit 64.7	022 B Margin -14.2	Detector QP/Ave QP			
Run #2: AC Frequency MHz	C Power F Level dBμV	AC Line	EN55 Limit	022 B Margin	Detector QP/Ave			
Run #2: AC Frequency MHz 0.174 0.190	Power F Level dBμV 50.5 39.7	AC Line Neutral Line 1	EN55 Limit 64.7 54.0	022 B Margin -14.2 -14.3	Detector QP/Ave QP AV			
Run #2: AC	C Power F Level dBμV 50.5 39.7 48.7	AC Line Neutral Line 1 Line 1	EN55 Limit 64.7 54.0 64.0	022 B Margin -14.2 -14.3 -15.3	Detector QP/Ave QP AV QP			
Run #2: AC Frequency MHz 0.174 0.190 0.190 0.301	C Power F Level dBμV 50.5 39.7 48.7 29.5	AC Line Neutral Line 1 Neutral	EN55 Limit 64.7 54.0 64.0 50.1	022 B Margin -14.2 -14.3 -15.3 -20.6	Detector QP/Ave QP AV QP AV			
Run #2: AC	C Power F Level dBμV 50.5 39.7 48.7 29.5 28.3	AC Line Neutral Line 1 Line 1 Neutral Line 1	EN55 Limit 64.7 54.0 64.0 50.1 50.1	022 B Margin -14.2 -14.3 -15.3 -20.6 -21.8	Detector QP/Ave QP AV QP AV AV			
Run #2: AC	C Power F Level dBμV 50.5 39.7 48.7 29.5 28.3 30.9	AC Line Neutral Line 1 Line 1 Neutral Line 1 Neutral	EN55 Limit 64.7 54.0 64.0 50.1 50.1 54.7	022 B Margin -14.2 -14.3 -15.3 -20.6 -21.8 -23.8	Detector QP/Ave QP AV QP AV AV AV			
Run #2: AC	C Power F Level dBμV 50.5 39.7 48.7 29.5 28.3 30.9 32.9	AC Line Neutral Line 1 Neutral Line 1 Neutral Line 1	EN55 Limit 64.7 54.0 64.0 50.1 50.1 54.7 60.1	022 B Margin -14.2 -14.3 -15.3 -20.6 -21.8 -23.8 -23.8 -27.2	Detector QP/Ave QP AV QP AV AV AV AV QP			
Run #2: AG Frequency MHz 0.174 0.190 0.190 0.301 0.304 0.174 0.304 0.301	C Power F Level dBμV 50.5 39.7 48.7 29.5 28.3 30.9 32.9 32.2	AC Line Neutral Line 1 Line 1 Neutral Line 1 Neutral Line 1 Neutral	EN55 Limit 64.7 54.0 64.0 50.1 50.1 54.7 60.1 60.1	022 B Margin -14.2 -14.3 -15.3 -20.6 -21.8 -21.8 -23.8 -27.2 -27.9	Detector QP/Ave QP AV QP AV AV AV AV QP QP			
Run #2: AC Frequency MHz 0.174 0.190 0.190 0.301 0.304 0.174 0.304 0.301 15.814	C Power F Level dBμV 50.5 39.7 48.7 29.5 28.3 30.9 32.9 32.2 22.9	AC Line Neutral Line 1 Line 1 Neutral Line 1 Neutral Neutral Neutral	EN55 Limit 64.7 54.0 64.0 50.1 50.1 54.7 60.1 60.1 60.0	022 B Margin -14.2 -14.3 -15.3 -20.6 -21.8 -23.8 -23.8 -27.2 -27.9 -37.1	Detector QP/Ave QP AV QP AV AV AV AV QP QP QP			