

# *EMC Test Report Application for Grant of Equipment Authorization Class II Permissive Change/Reassessment pursuant to FCC Part 15, Subpart E*

Model: PROXMB82

- FCC ID: HZB-PROXMB82
- APPLICANT: Proxim Wireless Corporation 1561 Buckeye Dr. Milpitas, CA 95035
- TEST SITE(S): Elliott Laboratories 41039 Boyce Road. Fremont, CA. 94538-2435

REPORT DATE: January 26, 2010

FINAL TEST DATES:

August 24, August 25, August 26, August 27, August 28, September 4 and September 8, 2009

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Testing Cert #2016-01

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# **REVISION HISTORY**

Rev#	Date	Comments	Modified By
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# TABLE OF CONTENTS

REVISION HISTORY	2
TABLE OF CONTENTS	3
SCOPE	4
OBJECTIVE	
STATEMENT OF COMPLIANCE	5
DEVIATIONS FROM THE STANDARDS	5
TEST RESULTS SUMMARY	6
UNII / LELAN DEVICES	
GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS	
MEASUREMENT UNCERTAINTIES	
EQUIPMENT UNDER TEST (EUT) DETAILS	
GENERAL	
ANTENNA SYSTEM	
ENCLOSURE	
MODIFICATIONS	
SUPPORT EQUIPMENT EUT INTERFACE PORTS	
EUT OPERATION	
TEST SITE	
GENERAL INFORMATION	
CONDUCTED EMISSIONS CONSIDERATIONS	11
RADIATED EMISSIONS CONSIDERATIONS	11
MEASUREMENT INSTRUMENTATION	
RECEIVER SYSTEM	12
INSTRUMENT CONTROL COMPUTER	
LINE IMPEDANCE STABILIZATION NETWORK (LISN)	
FILTERS/ATTENUATORS	
ANTENNAS	
ANTENNA MAST AND EQUIPMENT TURNTABLE	13
INSTRUMENT CALIBRATION	13
TEST PROCEDURES	14
EUT AND CABLE PLACEMENT	
CONDUCTED EMISSIONS	
RADIATED EMISSIONS	
RADIATED EMISSIONS	15
CONDUCTED EMISSIONS FROM ANTENNA PORT	
BANDWIDTH MEASUREMENTS	
SPECIFICATION LIMITS AND SAMPLE CALCULATIONS	
CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(A), RSS GEN	
FCC 15.407 (A) OUTPUT POWER LIMITS	
OUTPUT POWER LIMITS –LELAN DEVICES	
OUTPUT POWER AND SPURIOUS LIMITS –UNII AND LELAN DEVICES	
SAMPLE CALCULATIONS - CONDUCTED EMISSIONS	
SAMPLE CALCULATIONS - RADIATED EMISSIONS	21
SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION	22
APPENDIX A TEST EQUIPMENT CALIBRATION DATA	1
APPENDIX B TEST DATA	
APPENDIX C SUBMITTAL DOCUMENTATION	

#### **SCOPE**

An electromagnetic emissions test has been performed on the Proxim Wireless Corporation model PROXMB82, pursuant to the following rules:

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

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.

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 Proxim Wireless Corporation model PROXMB82 complied with the requirements of the following regulations:

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 Proxim Wireless Corporation model PROXMB82 and therefore apply only to the tested sample. The sample was selected and prepared by Ivaylo Tankov of Proxim Wireless 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**

The maximum power rating of the module remains unchanged from the originally reported values: 802.11a: 10.98 dBm (0.013W); HT20: 15.01dBm (32mW); HT4 16.93 dBm (49 mW). Host devices using the high gain panel and sector antennas may only be used outdoors. Host systems intended for use with the sector and panel antennas are restricted to outdoor use only and are factory-configured by Proxim to ensure they will not operate in the 5150 – 5250 MHz sub band.

#### **Operation in the 5.25 – 5.35 GHz Band**

Note: Host devices using the high gain panel and sector antennas may only be used outdoors, therefore the spectral density of spurious emissions in the 5.15 - 5.25 GHz band were limited to the -27dBm/MHz limit for the assessment of the module with these sector and panel antennas.

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)	
15.407(a) (2)		26dB Bandwidth	> 20dB (Note 1)	N/A – limits output power if < 20MHz	N/A	
15.407(a) (2)	A9.2(2)	Maximum Output Power, Sector and Panel Antennas Note 2	Sector (≤17dBi): 802.11a: 8.6 dBm HT20: 12.3 dBm ( <i>eirp</i> < 29.3dBm) Sector (≤20dBi): 802.11a: 8.6 dBm HT20: 9.2 dBm HT40: 0.2 dBm ( <i>eirp</i> < 29.2dBm) Panel (≤30dBi): 802.11a: -3.4 dBm HT20: -0.7 dBm HT40: -1.4 dBm ( <i>eirp</i> < 29.3dBm)	24 dBm / 250mW (eirp < 30dBm)	Complies	
15.407(a) (2))		Power Spectral Density (Sector and Panel	16.9dBm/MHz eirp	11 dBm/MHz	Complies	
	A9.2(2) / A9.5 (2)	Antennas)	10.90Bil/Milzenp	17dBm/MHz eirp	Complies	
15.407(b) (5) / 15.209	A9.3	Spurious Emissions below 1GHz	Not evaluated, Note 1			
15.407(b) (2)	A9.3	Spurious Emissions above 1GHz	68.2dBµV/m@ 5250.0MHz (-0.1dB)	54dBuV/m in restricted bands 68.3dBuV/m all other frequencies	Complies	
15.407(a)(6)						
Note 1: The 2	Note 1: The 26dB bandwidth and peak excursion ratio were not measured. The proposed change to add high gain					

Note 1: The 26dB bandwidth and peak excursion ratio were not measured. The proposed change to add high gain panel and sector antennas does not affect the values of these parameters from those detailed in the original certification documents for this device.

Note 2: The maximum power rating of the module remains unchanged from the originally reported values of: 802.11a 18.0dBm (0.064W); HT20 21.71dBm (0.156W) and HT40 22.0dBm (0.159W). However, when using high gain antennas the output power has to be reduced to comply with eirp and spurious emissions requirements. The maximum output powers listed here are for when the module is used with a panel or sector antenna.

#### **Operation in the 5.47 – 5.725 GHz Band**

The maximum power rating of the module remains unchanged from the originally reported values 802.11a / HT20: 49mW and HT40: 191mW.) However, when using high gain antennas the output power has to be reduced to comply with eirp and spurious emissions requirements. Host devices using the high gain panel and sector antennas may only be used outdoors. Host systems intended for use with the sector and panel antennas are restricted to outdoor use only and are factory-configured by Proxim to ensure they will not operate in the 5470 – 5725 MHz sub band.

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407	A9.5a	Modulation	Note 1		
15.407 (c)	A9.5(4)	Operation in the absence of information to transmit	Note 1-		
15.407 (g)	A9.5 (5)	Frequency Stability	Note 1-		
15.407 (h1)	A9.4	Transmit Power Control Note 1-			
15.407 (h2)	A9.4	Dynamic frequency Selection (device with radar detection)	Note 1		
15.207	RSS GEN Table 2	Note			
of these param	eters from those	posed change to add high e detailed in the original c of higher gain than the or	ertification documents for	or this device. DFS is no	

#### **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	High gain panel and sector antennas use standard N-type connectors. Host systems using these antennas must require professional installation.	Unique connector or professional installation	Complies
15.247 (b) (5) 15.407 (f)	RSS 102	RF Exposure Requirements	Refer to MPE calculations, original RSS 102 declaration remains valid.	Refer to OET 65, FCC Part 1 and RSS 102	Complies

# 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 Radiated Emissions Radiated Emissions Radiated Emissions	0.15 to 30 0.015 to 30 30 to 1000 1000 to 40000	$\pm 2.4 \\ \pm 3.0 \\ \pm 3.6 \\ \pm 6.0$

# EQUIPMENT UNDER TEST (EUT) DETAILS

#### GENERAL

The Proxim Wireless Corporation model PROXMB82 is an 802.11 abgn module that is designed to operate in the 2400-2483.5MHz, 5150-5250 MHz, 5250-5350 MHz, 5470 - 5725 MHz and 5725-5850 MHz bands. The scope of testing was to add some new, high gain antennas for use with outdoor Access Points, therefore the frequency bands 5150-5250MHz and 5470 – 5725 MHz, as they are for indoor use only, were excluded from the scope of testing.

For testing purposes the module was installed into the mini PCI slot of a host system. The enclosure of the host system was removed to expose the module on all sides as required for modular testing.

The sample was received on July 2, 2009 and tested on August 24, August 25, August 26, August 27, August 28, September 4 and September 8, 2009. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID
Proxim	PROXMB82	802.11abgn	nono	HZB-
Corporation	FRUAND82	Module	none	PROXMB82

#### ANTENNA SYSTEM

The antenna connects to the EUT via a standard coaxial N-connector. The antennas evaluated were a high gain panel and a high gain sector antenna for 2.4GHz operation and a high gain panel and a high gain sector antenna for 5GHz operation. Host systems using these antennas will require professional installation, therefore the use of standard connectors is permitted.

#### ENCLOSURE

The EUT does not have an enclosure as it is designed to be installed within the enclosure of a host computer or system.

#### **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
Proxim	-	Access Point	-	-
Sony	VAIO	Laptpop	-	DoC

# EUT INTERFACE PORTS

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

Port	Connected	Cable(s)			
Folt	То	Description	Shielded or Unshielded	Length(m)	
AP ethernet	Laptop	Cat 5	Unshielded	3	
AP mini PCI	EUT	-	Direct connection	-	
EUT port A	Antenna 1	Coaxial	-	3	
EUT Port B	Antenna 2	Coaxial	-	3	
EUT Port C	Antenna 3	Coaxial	-	3	

#### EUT OPERATION

During testing, the EUT was configured in a continuous transmit or receive mode using the ART software utility to control the radio.

When the module is used with high gain antennas the operating firmware will allow the selection of output power levels below 0dBm. As the ART utility used during testing does not have the dynamic range to allow out put power to be set below 0dBm, an external 10dB or 20dB attenuator was used between antenna port and antenna to simulate the lower power levels that can be achieved by the operating software. Proxim justified the use of the approach based on the fact that the signal spectrum at the higher output powers from the module under ART software control would be more distorted (wider skirts and higher spurious emissions) than if the output power were at the lower rf signal level.

All power measurements were made at the far end of the attenuator.

# TEST SITE

# GENERAL INFORMATION

Final test measurements were taken 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.

Site	Registration Numbers		Location
Site	FCC	Canada	
Chamber 3	769238	2845B-3	41039 Boyce Road
Chamber 4	211948	2845B-4	Fremont,
Chamber 5	211948	2845B-5	CA 94538-2435

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 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.

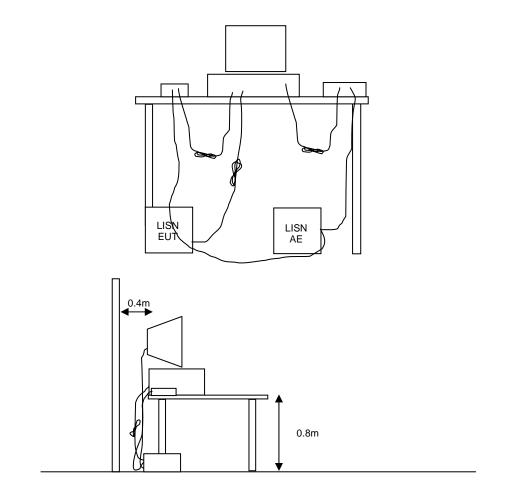
# TEST PROCEDURES

# 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.



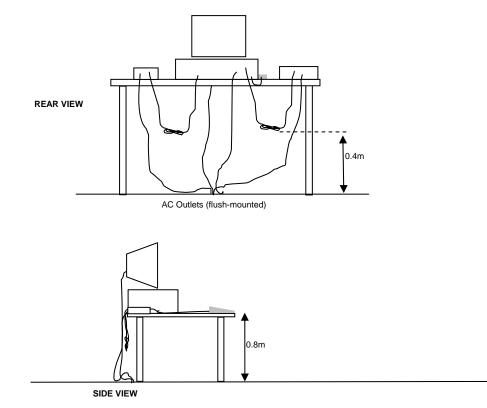
# RADIATED EMISSIONS

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.

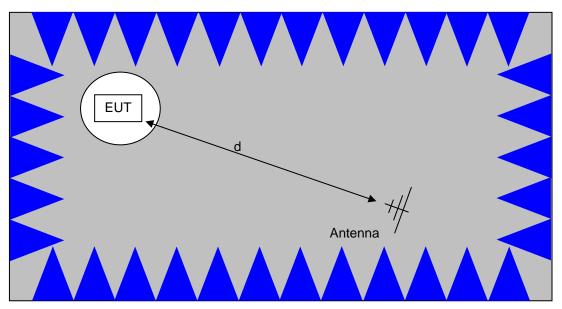
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

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 1 meter from the EUT and the antenna height is restricted to a maximum of 2.5 meters.

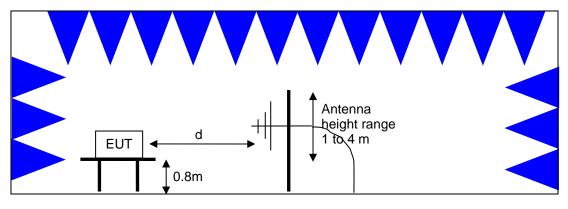


Typical Test Configuration for Radiated Field Strength Measurements



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.

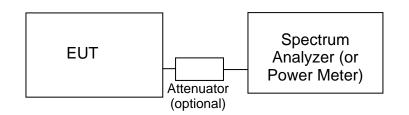
Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



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

#### CONDUCTED EMISSIONS FROM ANTENNA PORT

Direct measurements of power, bandwidth and power spectral density are performed, where possible, 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.



# Test Configuration for Antenna Port Measurements

Measurement bandwidths (video and resolution) are set in accordance with the relevant standards and Elliott's test procedures for the type of radio being tested. When power measurements are made using a resolution bandwidth less than the signal bandwidth the power is calculated by summing the power across the signal bandwidth using either the analyzer channel power function or by capturing the trace data and calculating the power using software. In both cases the summed power is corrected to account for the equivalent noise bandwidth (ENBW) of the resolution bandwidth used.

If power averaging is used (typically for certain digital modulation techniques), the EUT is configured to transmit continuously. Power averaging is performed using either the built-in function of the analyzer or, if the analyzer does not feature power averaging, using external software. In both cases the average power is calculated over a number of sweeps (typically 100). When the EUT cannot be configured to continuously transmit then either the analyzer is configured to perform a gated sweep to ensure that the power is averaged over periods that the device is transmitting or power averaging is disabled and a max-hold feature is used.

If a power meter is used to make output power measurements the sensor head type (peak or average) is stated in the test data table.

#### BANDWIDTH MEASUREMENTS

The 6dB, 20dB and/or 26dB signal bandwidth is measured in using the bandwidths recommended by ANSI C63.4. When required, the 99% bandwidth is measured using the methods detailed in RSS GEN.

# 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:

#### CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(a), RSS GEN

The table below shows the limits for the emissions on the AC power line from an intentional radiator and a receiver.

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

# GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands<sup>1</sup> (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 Range (MHz)	Limit (uV/m)	Limit (dBuV/m @ 3m)
0.009-0.490	2400/F <sub>KHz</sub> @ 300m	67.6-20*log <sub>10</sub> (F <sub>KHz</sub> ) @ 300m
0.490-1.705	24000/F <sub>KHz</sub> @ 30m	87.6-20*log <sub>10</sub> (F <sub>KHz</sub> ) @ 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

# 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.

<sup>&</sup>lt;sup>1</sup> The restricted bands are detailed in FCC 15.203, RSS 210 Table 1 and RSS 310 Table 2

# **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	$250 \text{ mW} (24 \text{ dBm})^3$ 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.

<sup>&</sup>lt;sup>2</sup> If EIRP exceeds 500mW the device must employ TPC

<sup>&</sup>lt;sup>3</sup> 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:

 $R_c = R_r + F_d$ 

 $M = R_c - L_s$ 

where:

and

 $R_r$  = 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 3 where P is the eirp (Watts)

Manufacturer	<b>Description</b>	Model #	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	09-Oct-09
EMCO	Antenna, Horn, 1-18 GHz	3115	786	06-Dec-09
EMCO	Antenna, Horn, 1-18GHz	3115	868	10-Jun-10
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	02-Sep-10
Hewlett Packard	SpectAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	10-Apr-10
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	1729	07-Oct-09
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1730	07-Oct-09
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	1771	20-Oct-09
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	05-Mar-10
Agilent	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	30-Dec-09
A.H. Systems	Blue System Horn, 18-40GHz	SAS-574, p/n: 2581	2159	17-Mar-10
A.H. Systems	Purple System Horn, 18-40GHz	SAS-574, p/n: 2581	2160	17-Mar-10

# Appendix A Test Equipment Calibration Data

# Appendix B Test Data

T75951 36 Pages

© Ellio	tt Grompany	El	MC Test Data
Client:	Proxim Corporation	Job Number:	J75847
	PROXMB82 802.11abgn miniPCI module (3x3)	T-Log Number:	T75950
		Account Manager:	
	Ivaylo Tankov		-
Emissions Standard(s):	FCC Part 15 Subpart E, RSS 210	Class:	
Immunity Standard(s):		Environment:	N/A
	EMC Test Da	ta	
	For The		
	Proxim Corpora	ation	
	Model		
	PROXMB82 802.11abgn miniPCI n	nodule (3x3)	

Date of Last Test: 9/23/2009

Ellic				EMC Test Data
Client: Proxim Col	rporation		J	lob Number: J75847
Model: PROXMB8	2 802.11abgn miniPCI module (3x3)			og Number: T75950
			Accou	nt Manager: -
Contact: Ivaylo Tanl	5 Subpart E, RSS 210			Class: N/A
	RSS-210 (LELAN Antenna Port Mea	-	-	•
Test Specific Deta	ils			
Objective	The objective of this test session is to specification listed above.	perform final qualification	on testing of th	e EUT with respect to the
Test Engineer	:: 9/4/2009 and 9/8/2009 :: Rafael Varelas and Mehran Birgani :: SV Radio Lab	Config. Usec Config Change Host Unit Voltag	: -	
Summary of Resu				
Run #	Test Performed with the highest gain sector antenna	Limit	Pass / Fail	Result / Margin
1,2,3	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	802.11a: 8.6 dBm (7.2mW) HT20: 9.2 dBm (8mW) HT40: 0.2 dBm (1mW)
Maximum output powe	er for use with sector antennas (max	imum gain at the maxi	mum power is	
1,2,3	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	802.11a: 8.6 dBm [20dBi] HT20: 12.3 dBm [17dBi] HT40: 0.2 dBm [20dBi]
Output power for use	with the highest gain panel antenna	(30dBi)		
1,2,3	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	802.11a: -3.4 dBm (0.5mW) HT20: -0.7 dBm (0.9mW) HT40: -1.4 dBm (0.7mW)
Maximum output power	er for use with panel antennas (maxi	mum gain at the maxin	num power is	
1,2,3	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	802.11a: -3.4 dBm [30dBi] HT20: -0.7 dBm [30dBi] HT40: -1.4 dBm [30dBi]

# **Elliott**

# EMC Test Data

	An 2022 Company		
Client:	Proxim Corporation	Job Number:	J75847
Madalı	PROXMB82 802.11abgn miniPCI module (3x3)	T-Log Number:	T75950
MOUEI.	FROAMBOZ 002. Habyi Himir Chinodule (3x3)	Account Manager:	-
Contact:	Ivaylo Tankov		
Standard:	FCC Part 15 Subpart E, RSS 210	Class:	N/A

The highest power settings per channel meeting spurious (band edge and other) with the 20dBi sector antennas and 30dBi Panel antennas are listed below for reference. In some cases these power settings exceed the maximum permitted eirp of 1Watt when used with the highest gain Sector and/or Panel antennas, in which case the maximum gain of antenna at that power setting is determined and the power setting for the highest gain antenna is also measured. When installed the system's output power is set by the professional installer to ensure the maximum eirp is not violated. The power cannot exceed the highest power level listed.

Operating frequency		20dBi Secto	r		30dBi Panel	
(MHz) [HT40 mode]	а	HT20	HT40	а	HT20	HT40
5260 [5270]	20 + 16.0 BE:10+ 16	20 + 12.5	20 + 16.5	20 + 12.5	20 + 7.0	20 + 15.0
5300 [-]	10 + 19.0	10 + 19.0	-	20 + 18.0	20 + 18.0	-
5320 [5310]	10 + 19.0 BE:10+22	10 + 16.0	20 + 17.0	20 + 18.0	20 + 17.5	20 + 15.5

# General Test Configuration

All measurements made with a 20dB or 10dB pad between analyzer and rf port. No correction made for the attenuator as it simulates the cables losses. The pad is also used because the rf control utility for testing cannot set the power below 0dBm so the attenuator adjusts for this fact. The actual drivers used in normal operation can set power below 0dBm.

	Output power measured using a spectrum analyzer (refer to sample plots embedded in the test data):
Note 1:	RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration
	over >=40 MHz for 802.11a/HT20 modes and >=80MHz for HT40 mode.
Note 2:	Measured using the same analyzer settings used for output power.
	99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB. The 26dB bandwidth for all
Note 4:	modes was determined to exceed 20 MHz during the original modular approval tests, therefore the 26dB bandwidth was not
	re-measured. If the bandwidth is less than 20MHz then the output power limits are reduced.
	For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual chains (in
	linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating
Note 5:	mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine
	the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each
	chain.

# Ambient Conditions:

Temperature: Rel. Humidity:

21.4 °C 39 %

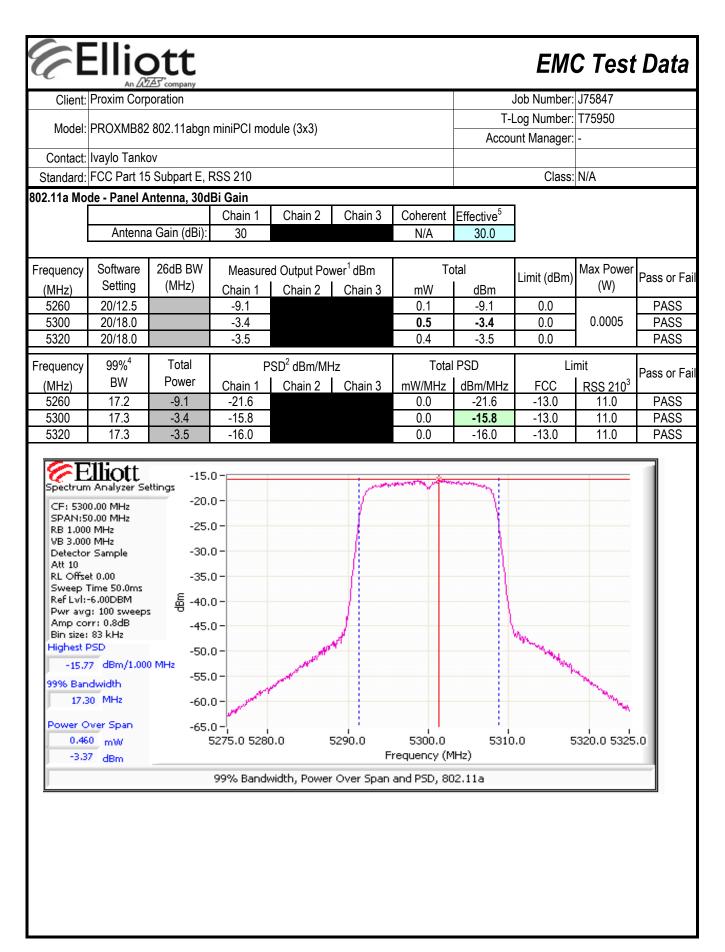
# Modifications Made During Testing

No modifications were made to the EUT during testing

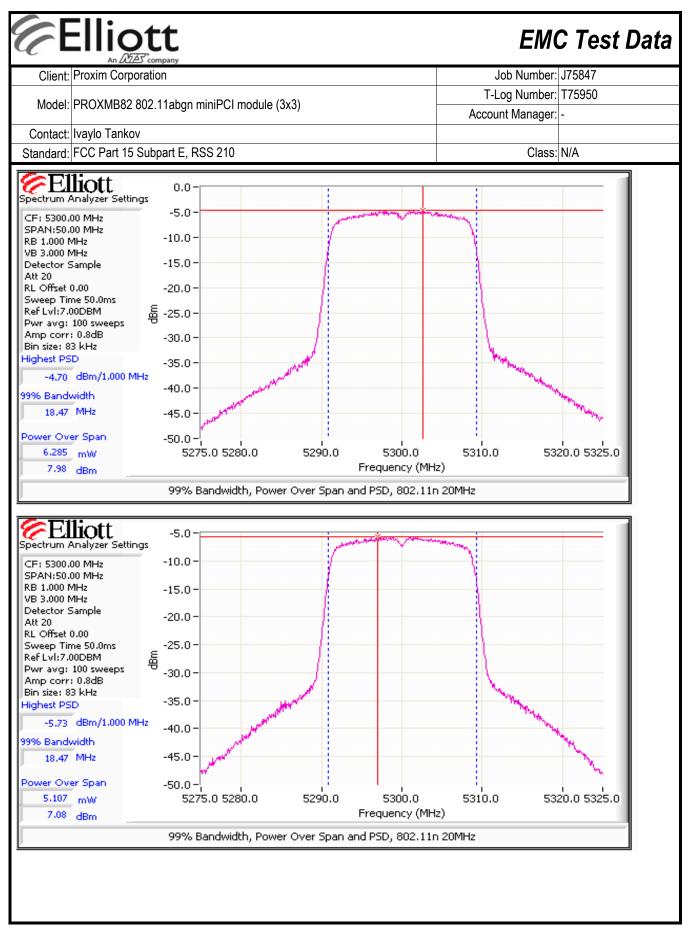
# Deviations From The Standard

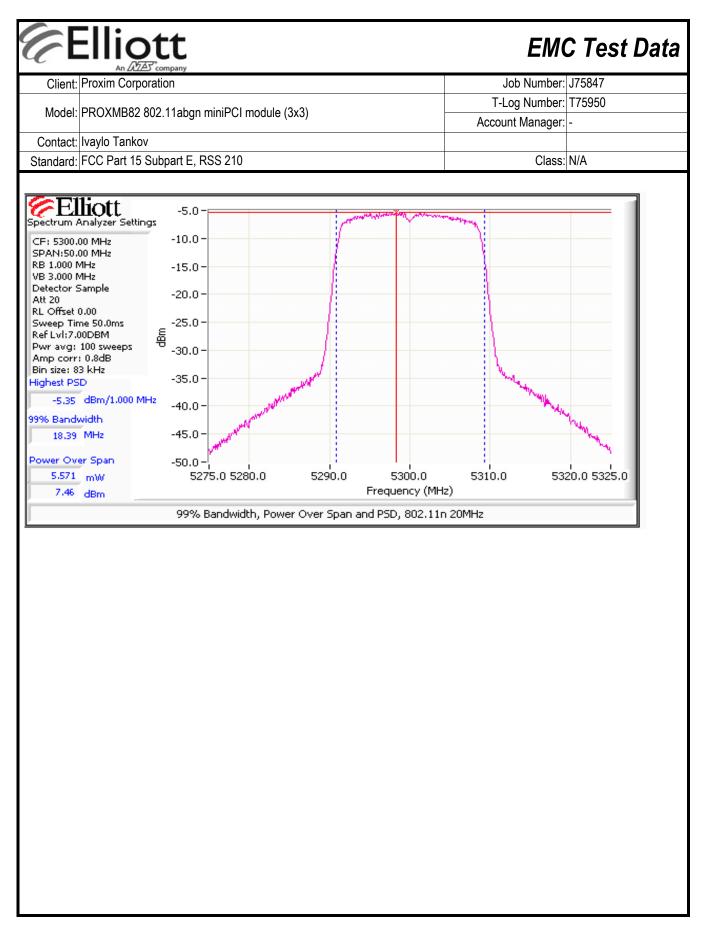
No deviations were made from the requirements of the standard.

Client:		ZAS company						Job Number:	J75847	
				/			T-I	Log Number:	T75950	
Model:	PROXMB82	2 802.11abgn	miniPCI mo	dule (3x3)			Account Manager: -			
	Ivaylo Tanko									
		5 Subpart E, I						Class:	N/A	
		Itput Power	and Power	spectral Den	nsity					
02.11a MO	de - Sector	Antenna	Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>	1		
	Antenna	a Gain (dBi):	20		Onain 9	N/A	20.0			
mit in the		Hz band for a	= =	antenna gain	of 20dBi is <i>'</i>		20.0	1		
	Software	26dB BW	N.4		1.0				Max Power	
requency	Setting	(MHz)		ed Output Po	-		otal	Limit (dBm)	(W)	Pass or F
(MHz) 5260	20/16.0	(11112)	Chain 1 -5.2	Chain 2	Chain 3	mW 0.3	dBm -5.2	10.0	(**)	PASS
5300	10/19.0		-5.2			6.2	-5.2	10.0	0.007	PASS
5320	10/19.0		8.6			7.2	8.6	10.0	0.007	PASS
								1		
requency	99% <sup>4</sup>	Total	F	PSD <sup>2</sup> dBm/MI	Hz	Tota	I PSD	Li	mit	Pass or F
(MHz)	BW	Power	Chain 1	Chain 2	Chain 3	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	
5260	16.8	-5.2	-17.3	-		0.0	-17.3	-3.0	11.0	PASS
5300 5320	17.3 16.9	7.9 8.6	-4.5 -3.6			0.4	-4.5 -3.6	-3.0 -3.0	11.0 11.0	PASS PASS
Spectrum CF: 5320 SPAN: 5 RB: 1.00 VB: 3.00 Detector Attn: 20 RL Offse Sweep T Ref LvI: Pwr avg Amp cor Bin size: Highest F -3.60 99% Ban 16.8 Power O	0 MHz :: Sample DB t: 0.0 DB ime: 1.0ms 10.0 DBM :: 100 sweeps r: 0.8dB 83.3 kHz SD 0 dBm/1.000 dwidth 9 MHz ver Span	5.( -10.( -15.( -20.( 플 -25.( -30.( -35.( -40.( -45.( -50.(		Surgeneer marked				Martin Martin	Municamiliany	
	4 m₩ <sup>5</sup> dBm		295.0 5300	andwidth, Po		5320.0 requency (M		.0 5	340.0 5345.	

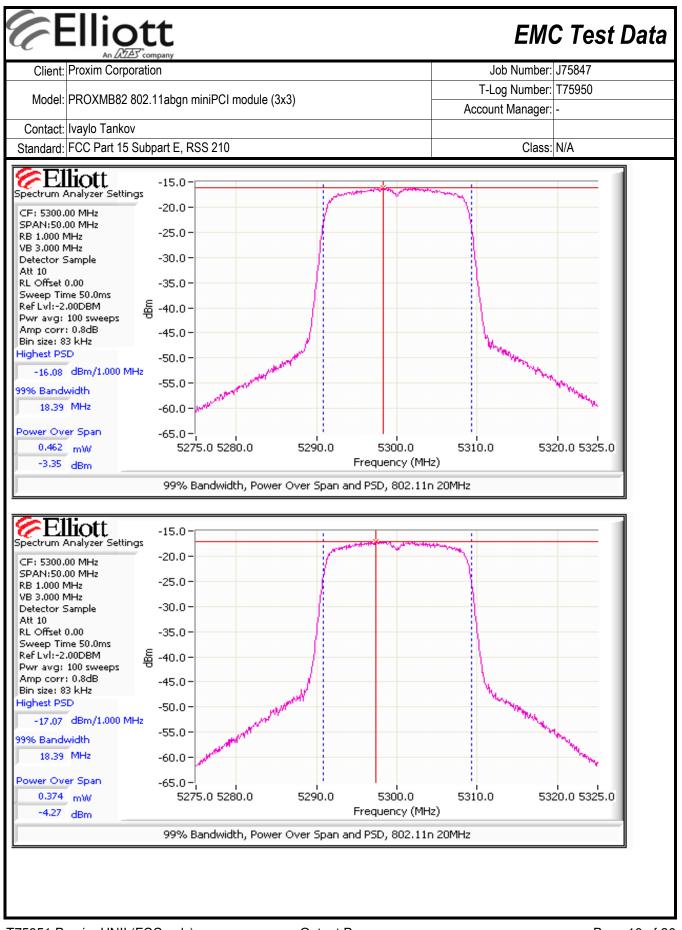


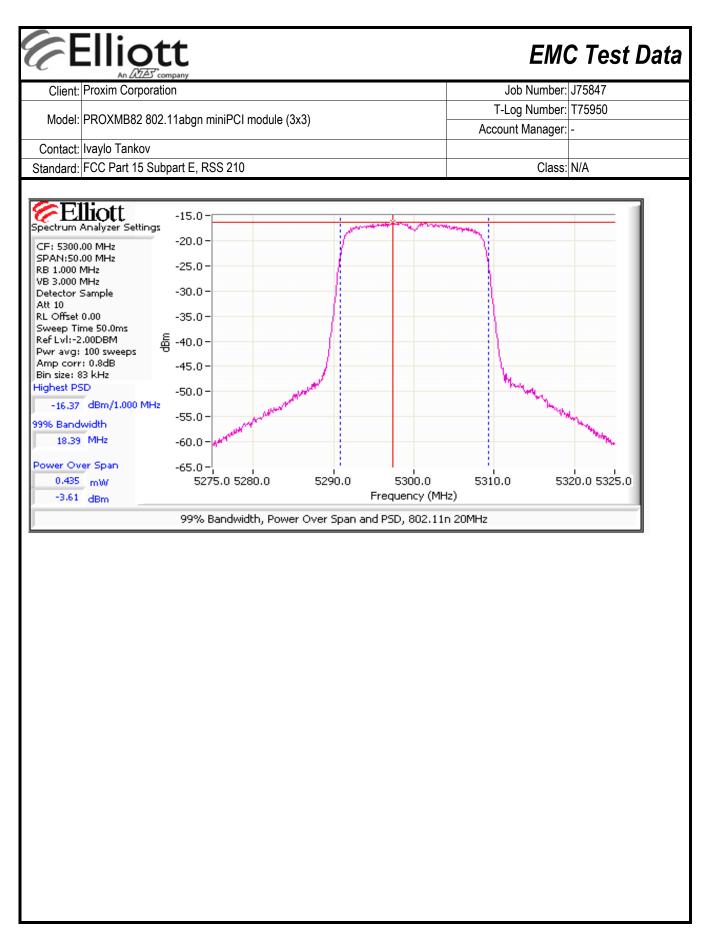
enerit.	Proxim Corp	ooration						Job Number:		
Model:	PROXMB82	2 802.11abgn	miniPCI mo	dule (3x3)			T-Log Number: T75950 Account Manager: -			
Contact:	Ivaylo Tanko	ov					ACCOL	ini manayer.	-	
		5 Subpart E, I	RSS 210					Class:	N/A	
		Mode - Secto								
			Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>			
		a Gain (dBi):	20	20	20	No	20.0			
•		MHz was rec		•	-		nissions tests	to comply w	ith eirp limits	. The
	, and the second s	radiated emis								1
Frequency	Software	26dB BW	Measure	ed Output Pov	wer <sup>1</sup> dBm	Тс	otal	Limit (dBm)	Max Power	Pass or I
(MHz)	Setting	(MHz)	Chain 1	Chain 2	Chain 3	mW	dBm	. ,	(W)	
5260	20/12.5		-9.3	-10.3	-10.1	0.3	-5.1	10.0	0.000	PASS
5300	10/16.0		5.0	4.0	2.4	7.4	8.7	10.0	0.008	PASS
5320	10/16.0		4.6	4.1	4.7	8.4	9.2	10.0		PASS
Frequency	99% <sup>4</sup>	Total	F	SD <sup>2</sup> dBm/Mł	Ηz	Tota	I PSD	Li	mit	Pass or I
(MHz)	BW	Power	Chain 1	Chain 2	Chain 3	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	1 833 01
	10.0	-5.1	-22.0	-23.2	-22.9	0.0	-17.9	-3.0	11.0	PASS
5260	18.3	-0.1	-22.0	20.2						
5300	18.3	8.7	-7.7	-8.8	-10.3	0.4	-4.0	-3.0	11.0	PASS
5300 5320	18.3 18.4		-7.7 -8.1 or Antenna v	-8.8 -8.8 vith Gain no	-10.3 -8.1 t exceeding	0.4 17dBi (5250	-3.5 - <b>5350 MHz)</b> .	-3.0 -3.0	11.0 11.0	PASS PASS
5300 5320	18.3 18.4 Dutput Powe	8.7 9.2	-7.7 -8.1	-8.8 -8.8	-10.3 -8.1	0.4	-3.5 - <b>5350 MHz)</b> .			PASS
5300 5320 Maximum C	18.3 18.4 Dutput Powe	8.7 9.2 er with Secto a Gain (dBi):	-7.7 -8.1 or <b>Antenna</b> v Chain 1 17	-8.8 -8.8 <b>vith Gain no</b> Chain 2 17	-10.3 -8.1 <b>t exceeding</b> Chain 3 17	0.4 <b>17dBi (5250</b> Coherent No	-3.5 <b>-5350 MHz)</b> . Effective <sup>5</sup> 17.0	-3.0	11.0	PASS PASS
5300 5320 Maximum C Frequency	18.3 18.4 Dutput Powe Antenna Software	8.7 9.2 er with Secto a Gain (dBi): 26dB BW	-7.7 -8.1 or Antenna v Chain 1 17 Measure	-8.8 -8.8 vith Gain no Chain 2 17 ed Output Por	-10.3 -8.1 <b>t exceeding</b> Chain 3 17 wer <sup>1</sup> dBm	0.4 17dBi (5250 Coherent No	-3.5 -5350 MHz). Effective <sup>5</sup> 17.0 otal		11.0 Max Power	PASS PASS
5300 5320 Maximum C Frequency (MHz)	18.3 18.4 Dutput Powe Antenna Software Setting	8.7 9.2 er with Secto a Gain (dBi):	-7.7 -8.1 or Antenna v Chain 1 17 Measure Chain 1	-8.8 -8.8 vith Gain no Chain 2 17 ed Output Pov Chain 2	-10.3 -8.1 Chain 3 17 wer <sup>1</sup> dBm Chain 3	0.4 <b>17dBi (5250</b> Coherent No To mW	-3.5 <b>-5350 MHz)</b> . Effective <sup>5</sup> 17.0 otal dBm	-3.0 Limit (dBm)	11.0	PASS PASS Pass or I
5300 5320 <b>/laximum C</b> Frequency (MHz) 5260	18.3 18.4 Dutput Powe Antenna Software Setting 20/12.5	8.7 9.2 er with Secto a Gain (dBi): 26dB BW	-7.7 -8.1 or Antenna v Chain 1 17 Measure Chain 1 -9.3	-8.8 -8.8 vith Gain no Chain 2 17 ed Output Pov Chain 2 -10.3	-10.3 -8.1 <b>t exceeding</b> Chain 3 17 wer <sup>1</sup> dBm Chain 3 -10.1	0.4 <b>17dBi (5250</b> Coherent No To mW 0.3	-3.5 -5350 MHz). Effective <sup>5</sup> 17.0 otal dBm -5.1	-3.0 Limit (dBm) 13.0	11.0 Max Power (W)	PASS PASS Pass or I PASS
5300 5320 <b>/laximum C</b> Frequency (MHz) 5260 5300	18.3 18.4 Dutput Powe Antenna Software Setting 20/12.5 10/19.0	8.7 9.2 er with Secto a Gain (dBi): 26dB BW	-7.7 -8.1 or Antenna v Chain 1 17 Measure Chain 1 -9.3 8.0	-8.8 -8.8 vith Gain no Chain 2 17 ed Output Pov Chain 2 -10.3 7.1	-10.3 -8.1 <b>t exceeding</b> Chain 3 17 wer <sup>1</sup> dBm Chain 3 -10.1 7.5	0.4 <b>17dBi (5250</b> Coherent No To mW 0.3 17.0	-3.5 -5350 MHz). Effective <sup>5</sup> 17.0 otal dBm -5.1 12.3	-3.0 Limit (dBm) 13.0 13.0	11.0 Max Power	PASS PASS Pass or PASS PASS
5300 5320 Maximum C Frequency (MHz) 5260 5300 5320	18.3 18.4 Dutput Powe Antenna Software Setting 20/12.5 10/19.0 10/16.0	8.7 9.2 er with Secto a Gain (dBi): 26dB BW (MHz)	-7.7 -8.1 or Antenna v Chain 1 17 Measure Chain 1 -9.3 8.0 4.6	-8.8 -8.8 vith Gain no Chain 2 17 ed Output Por Chain 2 -10.3 7.1 4.1	-10.3 -8.1 <b>t exceeding</b> Chain 3 17 wer <sup>1</sup> dBm Chain 3 -10.1 7.5 4.7	0.4 <b>17dBi (5250</b> Coherent No To mW 0.3 17.0 8.4	-3.5 -5350 MHz). Effective <sup>5</sup> 17.0 otal dBm -5.1 12.3 9.2	-3.0 Limit (dBm) 13.0 13.0 13.0	11.0 Max Power (W) 0.017	PASS PASS Pass or I PASS PASS
5300 5320 Maximum C Frequency (MHz) 5260 5300 5320 Frequency	18.3 18.4 Dutput Powe Antenna Software Setting 20/12.5 10/19.0 10/16.0 99% <sup>4</sup>	8.7 9.2 er with Secto a Gain (dBi): 26dB BW (MHz) Total	-7.7 -8.1 or Antenna v Chain 1 17 Measure Chain 1 -9.3 8.0 4.6	-8.8 -8.8 vith Gain no Chain 2 17 ed Output Pov Chain 2 -10.3 7.1 4.1 PSD <sup>2</sup> dBm/MH	-10.3 -8.1 <b>t exceeding</b> Chain 3 17 wer <sup>1</sup> dBm Chain 3 -10.1 7.5 4.7	0.4 <b>17dBi (5250</b> Coherent No To mW 0.3 17.0 8.4 Tota	-3.5 -5350 MHz). Effective <sup>5</sup> 17.0 otal dBm -5.1 12.3 9.2 I PSD	-3.0 Limit (dBm) 13.0 13.0 13.0 Liu	11.0 Max Power (W) 0.017 mit	PASS PASS Pass or PASS PASS PASS
5300 5320 Maximum C Frequency (MHz) 5260 5300 5320 Frequency (MHz)	18.3 18.4 Dutput Powe Antenna Software Setting 20/12.5 10/19.0 10/16.0 99% <sup>4</sup> BW	8.7 9.2 er with Secto a Gain (dBi): 26dB BW (MHz) (MHz) Total Power	-7.7 -8.1 or Antenna v Chain 1 17 Measure Chain 1 -9.3 8.0 4.6 F Chain 1	-8.8 -8.8 vith Gain no Chain 2 17 ed Output Pov Chain 2 -10.3 7.1 4.1 2SD <sup>2</sup> dBm/Mł Chain 2	-10.3 -8.1 <b>t exceeding</b> Chain 3 17 wer <sup>1</sup> dBm Chain 3 -10.1 7.5 4.7 Hz Chain 3	0.4 <b>17dBi (5250</b> Coherent No To mW 0.3 17.0 8.4 Tota mW/MHz	-3.5 -5350 MHz). Effective <sup>5</sup> 17.0 otal dBm -5.1 12.3 9.2 I PSD dBm/MHz	-3.0 Limit (dBm) 13.0 13.0 13.0 Lin FCC	11.0 Max Power (W) 0.017 mit RSS 210 <sup>3</sup>	PASS PASS PASS PASS PASS PASS
5300 5320 Maximum C Frequency (MHz) 5260 5300 5320 Frequency	18.3 18.4 Dutput Powe Antenna Software Setting 20/12.5 10/19.0 10/16.0 99% <sup>4</sup>	8.7 9.2 er with Secto a Gain (dBi): 26dB BW (MHz) Total	-7.7 -8.1 or Antenna v Chain 1 17 Measure Chain 1 -9.3 8.0 4.6	-8.8 -8.8 vith Gain no Chain 2 17 ed Output Pov Chain 2 -10.3 7.1 4.1 PSD <sup>2</sup> dBm/MH	-10.3 -8.1 <b>t exceeding</b> Chain 3 17 wer <sup>1</sup> dBm Chain 3 -10.1 7.5 4.7	0.4 <b>17dBi (5250</b> Coherent No To mW 0.3 17.0 8.4 Tota	-3.5 -5350 MHz). Effective <sup>5</sup> 17.0 otal dBm -5.1 12.3 9.2 I PSD	-3.0 Limit (dBm) 13.0 13.0 13.0 Liu	11.0 Max Power (W) 0.017 mit	PASS PASS Pass or I

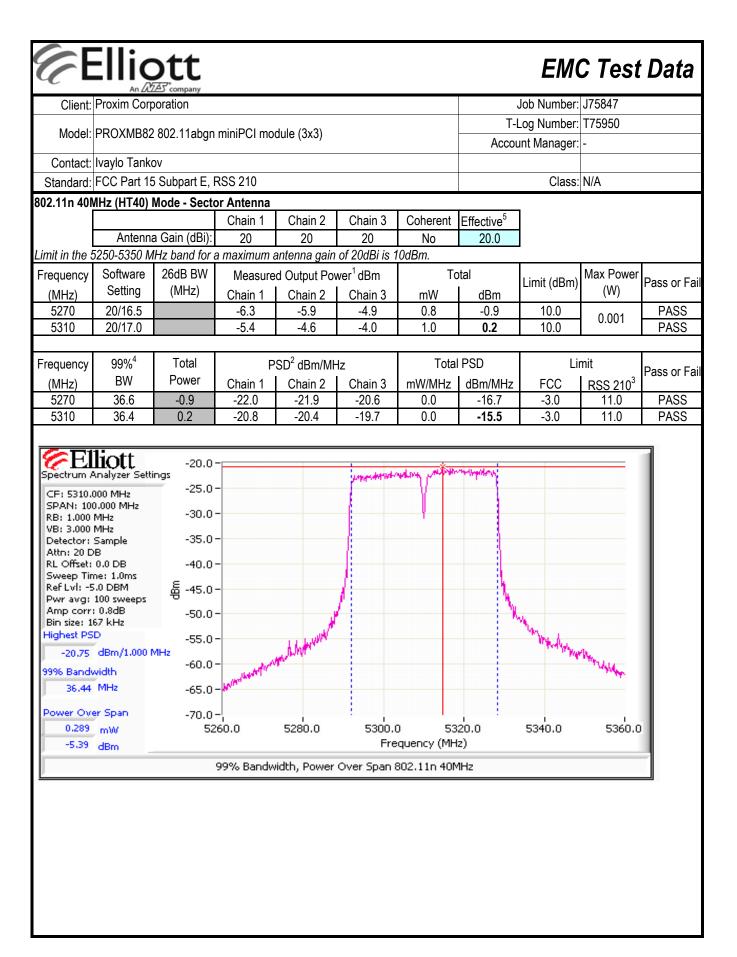


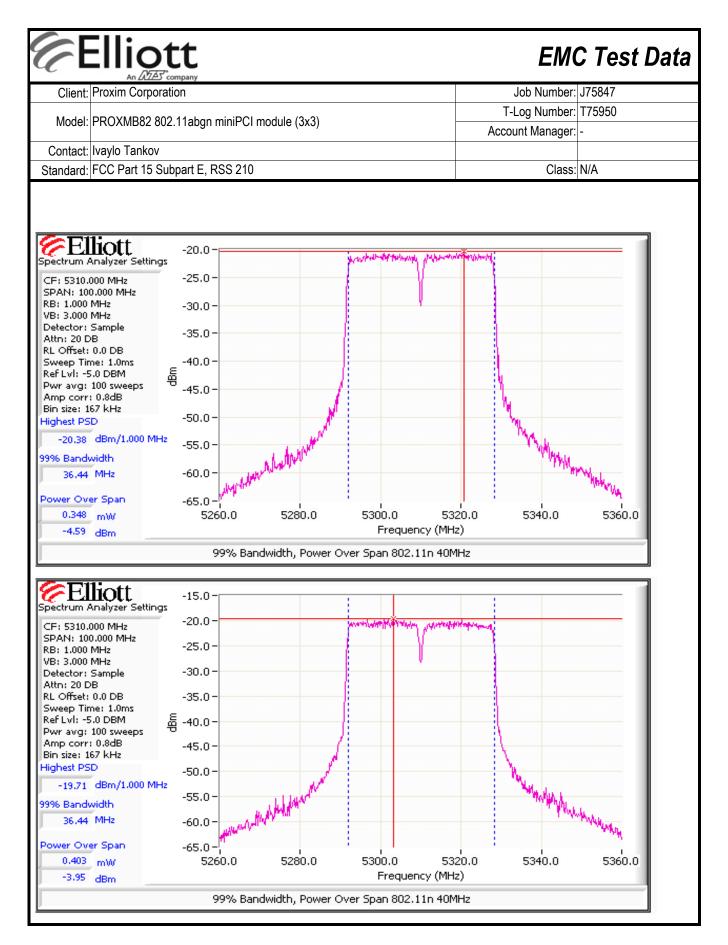


	Proxim Corp	oration						Job Number:	J75847	
Model:	PROXMB82	802.11abgn	miniPCI mo	dule (3x3)				Log Number:		
				( )			Acco	unt Manager:	-	
	Vaylo Tanko FCC Part 15		200 210					Class:	Ν/Δ	
	MHz (HT20)	1 /						Ciass.	N/A	
502.1111 20		NOUE - Falle	Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>	1		
	Antenna	a Gain (dBi):	30	30	30	No	30.0			
imit in the	5250-5350 M						00.0	J		
he power l	level at <b>5300I</b> power level u	MHz and 532	0MHz was re	educed from	the power se	ettings used t		emissions tes	ts to comply	with eirp
Frequency	Software	26dB BW		d Output Pov			otal		Max Power	D
(MHz)	Setting	(MHz)	Chain 1	Chain 2	Chain 3	mW	dBm	Limit (dBm)	(W)	Pass or F
5260	20/7.0		-14.4	-15.6	-15.2	0.1	-10.2	0.0		PASS
5300	20/16.5		-6.0	-5.7	-5.1	0.8	-0.8	0.0	0.0009	PASS
5320	20/16.5		-5.2	-5.8	-5.3	0.9	-0.7	0.0		PASS
	4	_								1
Frequency	99% <sup>4</sup>	Total	Р	SD <sup>2</sup> dBm/M⊦	lz	Tota	I PSD	Lii	nit	Pass or F
(MHz)	BW	Power	Chain 1	Chain 2	Chain 3	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	
5260	18.4	-10.2	-27.1	-28.5	-28.0	0.0	-23.0	-13.0	11.0	PASS
5300 5320	18.4	-0.8 -0.7	-17.7 -18.1	-18.6 -18.5	-17.7 -18.0	0.0	<b>-13.2</b> -13.4	-13.0 -13.0	11.0 11.0	PASS PASS
5520	18.4	-0.7	-10.1	-10.0	-10.0	0.0	-13.4	-13.0	11.0	FA33
/laximum (	Output Powe	r for use wit	h Panel Ant	ennas - Gai	n not excee	ding 28dBi (	5250 - 5350	MHz)		
			Chain 1	Chain 2	Chain 3		Effective <sup>5</sup>	] ′		
	Antenna	a Gain (dBi):	28	28	28	No	28.0			
					1	<u> </u>		r		
		26dB BW		d Output Pov	_		otal	Limit (dBm)	Max Power	Pass or F
	Software			Chain 2	Chain 3	mW	dBm		(W)	5400
(MHz)	Setting	(MHz)	Chain 1				40.0	~ ~		PASS
(MHz) 5260	Setting 20/7.0		-14.4	-15.6	-15.2	0.1	-10.2	2.0	0.0012	
(MHz) 5260 5300	Setting 20/7.0 20/18.0		-14.4 -3.4	-15.6 -4.3	-15.2 -3.6	0.1 1.3	1.0	2.0	0.0013	PASS
(MHz) 5260	Setting 20/7.0		-14.4	-15.6	-15.2	0.1			0.0013	
(MHz) 5260 5300 5320	Setting 20/7.0 20/18.0 20/17.5	(MHz)	-14.4 -3.4 -4.1	-15.6 -4.3 -4.5	-15.2 -3.6 -4.2	0.1 1.3 1.1	<b>1.0</b> 0.5	2.0 2.0		PASS PASS
(MHz) 5260 5300 5320 Frequency	Setting 20/7.0 20/18.0 20/17.5 99% <sup>4</sup>	(MHz)	-14.4 -3.4 -4.1 P	-15.6 -4.3 -4.5 SD <sup>2</sup> dBm/MF	-15.2 -3.6 -4.2 Iz	0.1 1.3 1.1 Tota	1.0 0.5	2.0 2.0 Lii	nit	PASS PASS
(MHz) 5260 5300 5320 Frequency (MHz)	Setting 20/7.0 20/18.0 20/17.5 99% <sup>4</sup> BW	(MHz) Total Power	-14.4 -3.4 -4.1 P Chain 1	-15.6 -4.3 -4.5 SD <sup>2</sup> dBm/MH Chain 2	-15.2 -3.6 -4.2 Iz Chain 3	0.1 1.3 1.1 Tota mW/MHz	<b>1.0</b> 0.5 I PSD dBm/MHz	2.0 2.0 FCC	nit RSS 210 <sup>3</sup>	PASS PASS Pass or F
5260 5300 5320 Frequency	Setting 20/7.0 20/18.0 20/17.5 99% <sup>4</sup>	(MHz)	-14.4 -3.4 -4.1 P	-15.6 -4.3 -4.5 SD <sup>2</sup> dBm/MF	-15.2 -3.6 -4.2 Iz	0.1 1.3 1.1 Tota	1.0 0.5	2.0 2.0 Lii	nit	PASS

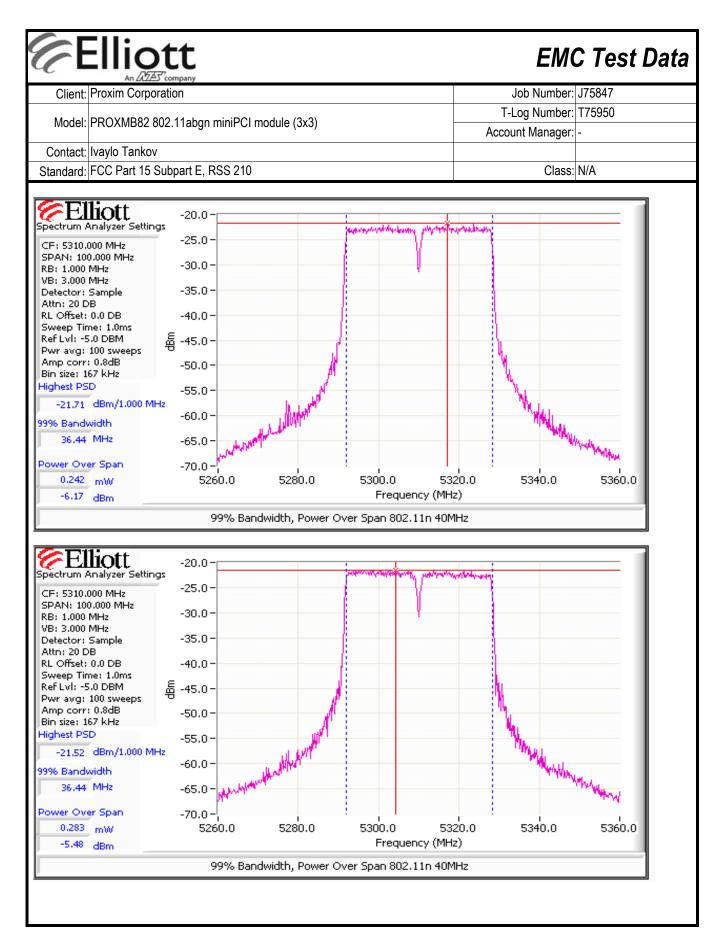








Limit in both 5250-5350 MHz and 5470 - 5725 MHz bands for a maximum antenna gain of 30dBi is 0dBm           Chain 1         Chain 2         Chain 2         Chain 2	Client:	Proxim Cor	poration						Job Number:	J75847	
Contact:         Ivaylo Tankov           Standard:         FCC Part 15 Subpart E, RSS 210         Class: N/A           802.11n 40MHz (HT40) Mode - Panel Antenna         Chain 1         Chain 2         Chain 3         Coherent         Effective5           Antenna Gain (dB):         30         30         No         30.0         30.0         Standard:           Frequency         Software         26dB BW         Measured Output Power <sup>1</sup> dBm         Total         Limit (dBm)         Max Power           (MHz)         Setting         (MHz)         Chain 1         Chain 2         Chain 3         mW         dBm           (MHz)         Setting         (MHz)         Measured Output Power <sup>1</sup> dBm         Total         Limit (dBm)         Max Power         Pass           S270         20/15.0         -8.1         -7.1         -6.9         0.6         -2.6         0.0         0.0007         P           S310         20/15.5         -7.1         -6.2         -5.5         0.7         -1.4         0.0         Pass           S470         S70         36.6         -2.6         -2.0         0.0         -11.4         0.0         Pass           S270         36.6         -2.6         -23.9         -23.1<	Model:	PROXMB82	2 802.11abgn	miniPCI mo	dule (3x3)				-		
B02.11n 40MHz (HT40) Mode - Panel Antenna           Limit in both 5250-5350 MHz and 5470 - 5725 MHz bands for a maximum antenna gain of 30dBi is 0dBm           Chain 1         Chain 3         Coherent Effective <sup>5</sup> Antenna Gain (dBi): 30         30         No         30.0           The power level lot annels in the 5470-5725MHz was reduced from the power settings used for radiated emissions tests to col with eirp limits. The power level used during radiated emissions tests is shown in the 2nd set of tables.           Frequency Software         26dB BW         Measured Output Power' dBm         Total         Limit (dBm)         Max Power           Ghin 1         Chain 3         mW         dBm         Limit (dBm)         Max Power           Measured Output Power' dBm         Total         Limit (dBm)         Max Power           Gene 20/15.5         -7.1         -6.0.0         0.0007         P           Frequency         99% <sup>4</sup> Total         PSD <sup>2</sup> dBm/MHz         Total PSD         Limit           Source         P	Contact:	Ivaylo Tank	OV						<u></u>		
Antenna Gain (dBi):         30         30         30         No         30.0           The power level for all channels in the 5470-5725MHz was reduced from the power settings used for radiated emissions tests to co with eirp limits. The power level used during radiated emissions tests is shown in the 2nd set of tables.         Total         Limit (dBm         Max Power (W)         Pass Pass           Frequency         Software         26dB BW         Measured Output Power <sup>1</sup> dBm         Total         Limit (dBm         Max Power (W)         Pass           5270         20/15.0         -8.1         -7.1         -6.9         0.6         -2.6         0.0         0.0007         P           5310         20/15.5         -7.1         -6.2         -5.5         0.7         -1.4         0.0         0.0007         P           Frequency         99% <sup>4</sup> Total         PSD <sup>2</sup> dBm/MHz         Total PSD         Limit         Pass           (MHz)         BW         Power         Chain 1         Chain 2         Chain 3         mW/MHz         dBm/MHz         FCC         RSS 210 <sup>3</sup> 5270         36.6         -2.6         -23.9         -23.1         -22.6         0.0         -18.4         -13.0         11.0         P           Spectrum Analyzer Settings <td< td=""><td>Standard:</td><td>FCC Part 1</td><td>5 Subpart E, F</td><td>RSS 210</td><td></td><td></td><td></td><td></td><td>Class:</td><td>N/A</td><td></td></td<>	Standard:	FCC Part 1	5 Subpart E, F	RSS 210					Class:	N/A	
Chain 1         Chain 2         Chain 3         Coherent         Effective <sup>5</sup> Antenna Gain (dBi):         30         30         30         No         30.0           The power level for all channels in the 5470-5725MHz was reduced from the power settings used for radiated emissions tests to co with eirp limits. The power level used during radiated emissions tests is shown in the 2nd set of tables.         Frequency         Software         26dB BW         Measured Output Power <sup>1</sup> dBm         Total         Limit (dBm)         Max Power         Pass           (MHz)         Setting         (MHz)         Chain 1         Chain 2         Chain 3         mW         dBm         Limit (dBm)         Max Power         Pass           5270         20/15.0         -8.1         -7.1         -6.9         0.6         -2.6         0.0         0.0007         P           Frequency         99% <sup>4</sup> Total         PSD <sup>2</sup> dBm/MHz         Total PSD         Limit         Pass           (MHz)         BW         Power         Chain 1         Chain 2         Chain 3         mW/MHz         dBm/MHz         FCC         RSS 210 <sup>3</sup> 5270         36.6         -2.6         -23.9         -23.1         -22.6         0.0         -18.4         -13.0         11.0         P		• •									
Antenna Gain (dBi):         30         30         30         No         30.0           The power level for all channels in the 5470-5725MHz was reduced from the power settings used for radiated emissions tests to co with eirp limits. The power level used during radiated emissions tests is shown in the 2nd set of tables.         Total         Limit (dBm         Max Power (W)         Pass Pass           Frequency         Software         26dB BW         Measured Output Power <sup>1</sup> dBm         Total         Limit (dBm         Max Power (W)         Pass           5270         20/15.0         -8.1         -7.1         -6.9         0.6         -2.6         0.0         0.0007         P           5310         20/15.5         -7.1         -6.2         -5.5         0.7         -1.4         0.0         0.0007         P           Frequency         99% <sup>4</sup> Total         PSD <sup>2</sup> dBm/MHz         Total PSD         Limit         Pass           (MHz)         BW         Power         Chain 1         Chain 2         Chain 3         mW/MHz         dBm/MHz         FCC         RSS 210 <sup>3</sup> 5270         36.6         -2.6         -23.9         -23.1         -22.6         0.0         -18.4         -13.0         11.0         P           Spacht in 00.000 MHz         -30.0	Limit in both	5250-5350	MHz and 547					_	dBm 1		
The power level for all channels in the 5470-5725MHz was reduced from the power settings used for radiated emissions tests to consider the power settings used for radiated emissions tests to consider the power level used during radiated emissions tests is shown in the 2nd set of tables.         Frequency       Software       26dB BW       Measured Output Power <sup>1</sup> dBm       Total       Limit (dBm)       Max Power       Pass         (MHz)       Setting       20/15.0       -8.1       -7.1       -6.9       0.6       -2.6       0.0       0.0007       P         5310       20/15.5       -7.1       -6.2       -5.5       0.7       -1.4       0.0       0.0007       P         Frequency       99% <sup>4</sup> Total       PSD <sup>2</sup> dBm/MHz       Total PSD       Limit       Pass         (MHz)       BW       Power       Chain 1       Chain 2       Chain 3       mW/MHz       dBm/MHz       FCC       RSS 210 <sup>3</sup> 5270       36.6       -2.6       -23.9       -23.1       -22.6       0.0       -18.4       -13.0       11.0       P         Statings       -20.0       -35.0       -30.0       -35.0       -35.0       -35.0       -35.0       -35.0       -35.0       -35.0       -35.0       -35.0       -35.0       -35.0		Antonn	a Cain (dDi):						-		
with eirp limits. The power level used during radiated emissions tests is shown in the 2nd set of tables.         Frequency (MHz)       Software Setting       26dB BW (MHz)       Measured Output Power <sup>1</sup> dBm Chain 1       Total Chain 3       Limit (dBm)       Max Power (W)       Pass Pass         5270       20/15.0       -8.1       -7.1       -6.9       0.6       -2.6       0.0       0.0007       P         5310       20/15.5       -7.1       -6.2       -5.5       0.7       -1.4       0.0       0.0007       P         Frequency       99% <sup>4</sup> Total Power       PSD <sup>2</sup> dBm/MHz       Total PSD       Limit       Pass         (MHz)       BW       Power       Chain 1       Chain 2       Chain 3       mW/MHz       dBm/MHz       FCC       RSS 210 <sup>3</sup> 5270       36.6       -2.6       -23.9       -23.1       -22.6       0.0       -18.4       -13.0       11.0       P         5310       36.6       -1.4       -22.8       -21.7       -21.5       0.0       -17.2       -13.0       11.0       P         Spectrum Analyzer Settings       -25.0       -       -       -35.0       -       -       -       -       -       -       -       -	The nower l		( )						r radiated em	nissions tests	to comply
Frequency (MHz)         Software Setting         26dB BW (MHz)         Measured Output Power <sup>1</sup> dBm Chain 1         Total (Alin 2         Limit (dBm)         Max Power (W)         Pass           5270         20/15.0         -8.1         -7.1         -6.9         0.6         -2.6         0.0         0.0007         P           5310         20/15.5         -7.1         -6.2         -5.5         0.7         -1.4         0.0         0.0007         P           Frequency (MHz)         BW         Power         Chain 1         Chain 2         Chain 3         mW/MHz         dBm/MHz         FCC         RSS 210 <sup>3</sup> 5270         36.6         -2.6         -23.9         -23.1         -22.6         0.0         -18.4         -13.0         11.0         P           5310         36.6         -1.4         -22.8         -21.7         -21.5         0.0         -17.2         -13.0         11.0         P           Spectrum Analyzer Settings         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0											s to comply
(MHz)         Setting         (MHz)         Chain 1         Chain 2         Chain 3         mW         dBm         Limit (dBm)         (W)         Pass           5270         20/15.0         -8.1         -7.1         -6.9         0.6         -2.6         0.0         0.0007         P           5310         20/15.5         -7.1         -6.2         -5.5         0.7         -1.4         0.0         0.0007         P           Frequency         99% <sup>4</sup> Total         PSD <sup>2</sup> dBm/MHz         Total PSD         Limit         Pass           (MHz)         BW         Power         Chain 1         Chain 2         Chain 3         mW/MHz         dBm/MHz         FCC         RSS 210 <sup>3</sup> 5270         36.6         -2.6         -23.9         -23.1         -22.6         0.0         -18.4         -13.0         11.0         P           5310         36.6         -1.4         -22.8         -21.7         -21.5         0.0         -17.2         -13.0         11.0         P           Spectrum Analyzer Settings         -25.0         -25.0         -25.0         -25.0         -25.0         -25.0         -30.0         -25.0         -30.0         -25.0         -30.0		r	1 1	-						Max Power	
5270         20/15.0         -8.1         -7.1         -6.9         0.6         -2.6         0.0         0.0007         P           5310         20/15.5         -7.1         -6.2         -5.5         0.7         -1.4         0.0         0.0007         P           Frequency         99% <sup>4</sup> Total         Power         Chain 1         Chain 2         Chain 3         mW/MHz         dBm/MHz         FCC         RSS 210 <sup>3</sup> 5270         36.6         -2.6         -23.9         -23.1         -22.6         0.0         -18.4         -13.0         11.0         P           5310         36.6         -1.4         -22.8         -21.7         -21.5         0.0         -17.2         -13.0         11.0         P           5270         36.6         -1.4         -22.8         -21.7         -21.5         0.0         -17.2         -13.0         11.0         P           5310         36.6         -1.4         -22.8         -21.7         -21.5         0.0         -17.2         -13.0         11.0         P           Speatrum Analyzer Settings         -30.0         -         -35.0         -         -         -35.0         -         -			(MHz)						Limit (dBm)		Pass or Fa
5310       20/15.5       -7.1       -6.2       -5.5       0.7       -1.4       0.0       P         Frequency       99% <sup>4</sup> Total       PSD <sup>2</sup> dBm/MHz       Total PSD       Limit       Pass         (MHz)       BW       Power       Chain 1       Chain 2       Chain 3       mW/MHz       dBm/MHz       FCC       RSS 210 <sup>3</sup> 5270       36.6       -2.6       -23.9       -23.1       -22.6       0.0       -18.4       -13.0       11.0       P         5310       36.6       -1.4       -22.8       -21.7       -21.5       0.0       -17.2       -13.0       11.0       P         Spectrum Analyzer Settings       -20.0       -25.0	· /	20/15.0			1				0.0	0.0007	PASS
(MHz)         BW         Power         Chain 1         Chain 2         Chain 3         mW/MHz         dBm/MHz         FCC         RSS 210 <sup>3</sup> Pass           5270         36.6         -2.6         -23.9         -23.1         -22.6         0.0         -18.4         -13.0         11.0         P           5310         36.6         -1.4         -22.8         -21.7         -21.5         0.0         -17.2         -13.0         11.0         P           Spectrum Analyzer Settings           CF: 5310.000 MHz         -25.0<	5310	20/15.5		-7.1	-6.2	-5.5	0.7	-1.4	0.0	0.0007	PASS
(MHz)         BW         Power         Chain 1         Chain 2         Chain 3         mW/MHz         dBm/MHz         FCC         RSS 210 <sup>3</sup> Pass           5270         36.6         -2.6         -23.9         -23.1         -22.6         0.0         -18.4         -13.0         11.0         P           5310         36.6         -1.4         -22.8         -21.7         -21.5         0.0         -17.2         -13.0         11.0         P           Spectrum Analyzer Settings           CF: 5310.000 MHz         -25.0<		000/4	Total			1_	Tata			mit	I
Spectrum Analyzer Settings       -20.0         CF: 5310.000 MHz       -20.0         SPAN: 100.000 MHz       -25.0         SPAN: 100.000 MHz       -30.0         WB: 3.000 MHz       -35.0         Attn: 20 DB       -40.0         Sweep Time: 1.0ms       -45.0         Ref Lvl: -5.0 DBM       -45.0         Sweeps Time: 1.0ms       -45.0         Amp corr: 0.8dB       -55.0         -22.79       dBm/1.000 MHz						_					Pass or Fa
5310         36.6         -1.4         -22.8         -21.7         -21.5         0.0         -17.2         -13.0         11.0         P           Spectrum Analyzer Settings         -20.0         -25.0											PASS
Spectrum Analyzer Settings         -20.0           CF: 5310.000 MHz         -25.0           SPAN: 100.000 MHz         -30.0           RB: 1.000 MHz         -30.0           VB: 3.000 MHz         -35.0           Detector: Sample         -35.0           Attn: 20 DB         -40.0           Sweep Time: 1.0ms         6           Ref LvI: -5.0 DBM         6           Pwr avg: 100 sweeps         -50.0           Bin size: 167 kHz         -50.0           Highest PSD         -55.0           -22.79 dBm/1.000 MHz         -55.0											PASS
36.61 MHz     -65.0 -       Power Over Span     -70.0 -	SPAN: 10 RB: 1.000 VB: 3.000 Detector: Attn: 20 D RL Offset: Sweep Tir Ref Lvl: -5 Pwr avg: Amp corr Bin size: 1 Highest PS -22.79 99% Bandw 36.61	0.000 MHz MHz MHz Sample DB 0.0 DB me: 1.0ms 5.0 DBM 100 sweeps : 0.8dB 67 kHz 50 dBm/1.000 width MHz er Span	-30.0 -35.0 -40.0 -40.0 -50.0 -55.0 MH2 -60.0 -65.0		Warn Warter M				Muslim way ways	Marria Marrie	
0.196 mW 5260.0 5280.0 5300.0 5320.0 5340.0 5360.0 -7.08 dBm Frequency (MHz)	1	· · · · · · · · · · · · · · · · · · ·			5280.0				5340.0	5360.0	
99% Bandwidth, Power Over Span 802.11n 40MHz				99% Bandw	vidth, Power	Over Span	802.11n 40N	1Hz			



#### Elliott EMC Test Data Client: Proxim Corporation Job Number: J75847 T-Log Number: T75950 Model: PROXMB82 802.11abgn miniPCI module (3x3) Account Manager: Contact: Ivaylo Tankov Standard: FCC Part 15 Subpart E, RSS 210 Class: N/A RSS 210, FCC 15.407(NII) Band Edge Field Strength - Sector Antenna 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 was installed into a test fixture such that the EUT was exposed (i.e. outside of a host system). For radiated emissions testing the measurement antenna was located 3 meters from the EUT. Ambient Conditions: Rel. Humidity: 39 % Temperature: 18.6 °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. Summary of Results Attenuator Power Test Performed Run # Mode Channel Limit Result / Margin (dB) Setting 86.9dBµV/m @ 5260 MHz 10.0 18.0 dBm Band Edge at 5250MHz 15 E 802.11a 5250.0MHz (-1.4dB) (#52) Run #1 Chain A 5320 MHz Restricted Band Edge at 69.7dBµV/m @ 22.0 dBm 15.209 10.0 (#64) 5350 MHz 5351.9MHz (-4.3dB) 802.11n 5260 MHz 67.9dBµV/m @ Band Edge at 5250MHz 15 E 20.0 12.5 dBm 20MHz (#52) 5250.0MHz (-0.4dB) Run #2 Restricted Band Edge at Chain 5320 MHz 51.7dBµV/m @ 10.0 16.0 dBm 15.209 A+B+C (#64) 5350 MHz 5350.1MHz (-2.3dB) 802.11n 5270 MHz 65.3dBµV/m @ 20.0 Band Edge at 5250MHz 15 E 16.5 dBm 40MHz (#54) 5250.0MHz (-3.0dB) Run #3 Restricted Band Edge at 51.0dBµV/m @ Chain 5310 MHz 20.0 17.0dBm 15.209 5350 MHz 5350.1MHz (-3.0dB) A+B+C (#62)

### CElliott An AZAS" company

### EMC Test Data

	Proxim Corpo	Jauon						Job Number:	
Model:	PROXMB82	802.11abgr	miniPCI mo	dule (3x3)				Log Number:	
				( )			Acco	unt Manager:	-
	Ivaylo Tanko							01	
Standard:	FCC Part 15	Subpart E,	RSS 210					Class:	N/A
un #1. Ba	nd Edge Field	d Strenath	- 802.11a						
	Date of Test: 8				-	st Location:		er #4	
Te	st Engineer:	Joseph Cad	igal		Con	fig Change:	None		
#4			(#50) 000						
in #1a, E	JT on Chann	ei 5260 MH	z (#52) - 802		Settings			7	
	Chain	Target	(dBm)		ator (dB)	Software	e Settina		
	А		. (		0.0	18	-	-	
	al Signal Fie		( =		<u> </u>			-	
requency	Level	Pol		15.247	Detector	Azimuth	Height	Comments	
MHz 5262.230	dBμV/m 98.2	V/H V	Limit	Margin	Pk/QP/Avg AVG	degrees 350	meters 1.4		
5262.230 5256.970	98.2 108.0	V V	-	-	PK	350	1.4		
5262.270	84.7	<u>н</u>	_	-	AVG	135	1.4		
5262.700	94.9	Н	-	-	PK	135	1.0		
-	(5250MHz, li							1-	
requency	Level	Pol	15		Detector	Azimuth	Height	Comments	
MHz 5249.830	dBμV/m 66.7	V/H V	Limit 68.3	Margin -1.6	Pk/QP/Avg Avg	degrees 350	meters 1.40		
5250.000	54.7	H	68.3	-13.6	Avg Avg	135	1.40		
	70.1	H	88.3	-18.2	Pk	135	1.00		
248.730	86.9	V	88.3	-1.4	Pk	350	1.40		
	00.9								
5250.000		lz Avg (blac	:k trace), VB	=RM= 1MH	z (blue trace)	Vertical			
RB 1	MHz; VB 10 H	lz Avg (blac							
5250.000 RB 1	MHz; VB 10 H 35.0 - 80.0 -	lz Avg (blac						<u>k</u> e. <i>h</i> i	the many when
5250.000 RB 1	MHz; VB 10 H 85.0 - 80.0 - 75.0 -	lz Avg (blac					walter	an white the	yhannel Mar
5250.000 RB 1	MHz; VB 10 H 85.0 - 80.0 - 75.0 - 70.0 -	lz Avg (blac					nnthudylen	ann an the stando	phone when the
5250.000 RB 1	MH2; VB 10 H 85.0 - 75.0 - 75.0 - 70.0 -					WANNING	планимарын	quarteritation	apper more thank the second
RB 1	MHz; VB 10 H 35.0 - 75.0 - 75.0 - 70.0 - 65.0 - 60.0 -					WANNING	an manage	Hanna Martinde	getermeter and
RB 1 (W/\ngp) april	MH2; VB 10 H 85.0 - 75.0 - 75.0 - 70.0 -					WANNING	an a	ahan Marindo many many marine	phaneter all
RB 1 (w/\ng) aprilia	MHz; VB 10 H 35.0 - 75.0 - 75.0 - 70.0 - 65.0 - 60.0 -					WANNING MAN	ngtowntothe wardowniadd	grand and a standard Mary Market and Market a	get mythe the
RB 1 (m/\ngp) aprilidmy	MHz; VB 10 H 35.0 - 75.0 - 70.0 - 65.0 - 55.0 - 55.0 - 55.0 - 45.0 -					WANNING MAN	nghathalphin ann an ann an Ar	an a	getermenter were
Amplitude (dBuV/m)	MH2; VB 10 H 35.0 - 30.0 - 75.0 - 75.0 - 55.0 - 55.0 - 55.0 - 55.0 - 45.0 - 40.0 -	North And	hur Marine d	normalion <sup>t</sup> an whay the s <sup>on</sup>	man and a second s	MW 44.4			5248.0 5250

Client:	Proxim Co	rporation						Job Number:	
Model:	PROXMB8	2 802.11abgr	miniPCI ma	dule (3x3)				Log Number:	
		-					Acco	unt Manager:	-
	Ivaylo Tanl		DO0 040					01	N1/A
Standard:	FCC Part	5 Subpart E,	RSS 210					Class:	N/A
un #1b Fl	UT on Cha	nnel 5320 MH	z (#64) - 802	2 11a					
un <i>n</i> 10, E	Chain				Settings			1	
	Chain	Target	t (dBm)		ator (dB)		e Setting		
	A			1	0.0	18	3.0		
undamont	al Sianal E	ield Strength							
requency	Level	Pol		/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters		
5317.830	98.7	V	-	-	AVG	342	1.3		
5317.570	108.1	V	-	-	PK	342	1.3		
5317.130	87.8	H	-	-	AVG	116	1.0		
5322.000	98.7	Н	-	-	PK	116	1.0		
850 MHz B	Sand Edge	Signal Radia	ted Field St	renath (Rest	tricted band	limit =54dBı	JV/m)		
requency	Level	Pol		5 E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters		
5350.170	49.5	V	54.0	-4.5	Avg	342	1.0		
5350.460	42.7	Н	54.0	-11.3	AVG	360	1.0		
5350.310	57.3	Н	74.0	-16.7	PK	360	1.0		
5351.860	69.7	V	74.0	-4.3	Pk	342	1.0		
Amplitude (dBuV/m)	80.0 - 75.0 - 70.0 - 65.0 - 55.0 - 55.0 - 50.0 - 45.0 - 40.0 -	0 Hz Avg (bla	WWW. WWW	ulutusillefi Sanangara	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	.5	5352.0		5 5353.0
					Frequency				

# Elliott

## EMC Test Data

Client:	Proxim Corp	oration						Job Number:	
Model	PROXMB82	802 11ahan	miniDCI mo	dula (3x3)			T-	Log Number:	T75950
MOUEI.	FRUAIVIDUZ	002.118091					Acco	unt Manager:	-
Contact:	Ivaylo Tanko	V							
Standard:	FCC Part 15	Subpart E, I	RSS 210					Class:	N/A
									l
un #2, Bai	nd Edge Fiel	d Strength -	- 802.11n 20	MHz					
Γ	Date of Test:	3/27/2009			Te	est Location:	Chamber #	3	
Te	est Engineer:	Mehran Birg	ani		Cor	fig Change:	None		
			(#==)						
un #2a, El	UT on Chann	el 5260 MH	z (#52) - 802					7	
	Chain	Target	(dBm)		Settings ator (dB)	Software	Sotting		
	A+B+C	Target	(ubiii)		0.0	12		-	
	AIDIO				0.0	12	.0	1	
undament	tal Signal Fie	ld Strenath							
requency	Level	Pol		/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters		
5257.730	92.8	V	-	-	AVG	359	1.2		
5257.100	101.7	V	-	-	PK	359	1.2		
	000	Н	-	-	AVG	114	1.0	ļ	
5261.600	80.3				PK	114	1.0		
5261.600	80.3 90.0	Н	-	-	ΓN				
5261.600 5261.900	90.0		-	- 2 d(D++) //ma)	ΓN		-		
5261.600 5261.900 and Edge	90.0 ( <b>5250MHz, li</b>	mit is -27dE						Commonts	
5261.600 5261.900 and Edge	90.0 ( <b>5250MHz, li</b> Level	<i>mit is -27dE</i> Pol	15	ōΕ	Detector	Azimuth	Height	Comments	
5261.600 5261.900 and Edge requency MHz	90.0 ( <b>5250MHz, li</b> Level dBµV/m	<i>mit is -27dE</i> Pol V/H	15 Limit	5 E Margin	Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments	
5261.600 5261.900 and Edge requency MHz 5250.000	90.0 ( <b>5250MHz, li</b> Level dBµV/m <b>67.9</b>	<i>mit is -27dB</i> Pol V/H <b>V</b>	15 Limit 68.3	5 E Margin -0.4	Detector Pk/QP/Avg AVG	Azimuth degrees 359	Height meters 1.2	Comments	
261.600 261.900 and Edge requency MHz 5250.000 5250.000	90.0 ( <b>5250MHz, li</b> Level dBµV/m	<i>mit is -27dE</i> Pol V/H	15 Limit	5 E Margin	Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments	
i261.600 i261.900 and Edge requency MHz i250.000 i250.000 i249.830	90.0 (5250MHz, li Level dBµV/m 67.9 56.4	mit is -27dE Pol V/H V H	15 Limit 68.3 68.3	5 E Margin -0.4 -11.9	Detector Pk/QP/Avg AVG AVG	Azimuth degrees 359 114	Height meters 1.2 1.0	Comments	
5261.600 5261.900 and Edge requency MHz 5250.000 5250.000 5249.830 5249.970	90.0 ( <b>5250MHz, li</b> Level dBμV/m <b>67.9</b> 56.4 86.0 74.5	mit is -27dE Pol V/H V H V H	18 Limit 68.3 68.3 88.3 88.3	5 E Margin -0.4 -11.9 -2.3 -13.8	Detector Pk/QP/Avg AVG AVG PK PK	Azimuth degrees 359 114 359 114	Height meters 1.2 1.0 1.2 1.0 1.2	Comments	
5261.600 5261.900 and Edge requency MHz 5250.000 5250.000 5249.830 5249.970	90.0 (5250MHz, li Level dBμV/m 67.9 56.4 86.0	mit is -27dE Pol V/H V H V H	18 Limit 68.3 68.3 88.3 88.3	5 E Margin -0.4 -11.9 -2.3 -13.8	Detector Pk/QP/Avg AVG AVG PK PK	Azimuth degrees 359 114 359 114	Height meters 1.2 1.0 1.2 1.0 1.2	Comments	
5261.600 5261.900 Frequency MHz 5250.000 5249.830 5249.970 RB 1	90.0 ( <b>5250MHz, li</b> Level dBμV/m <b>67.9</b> 56.4 86.0 74.5	mit is -27dE Pol V/H V H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -0.4 -11.9 -2.3 -13.8 e), RB=VB=	Detector Pk/QP/Avg AVG PK PK 1 MHz Peak (	Azimuth degrees 359 114 359 114 Blue Trace),	Height meters 1.2 1.0 1.2 1.0 1.2 1.0 Vertical		
5261.600 5261.900 Frequency MHz 5250.000 5249.830 5249.970 RB 1	90.0 (5250MHz, li Level dBμV/m 67.9 56.4 86.0 74.5 MHz; VB 10 F	mit is -27dE Pol V/H V H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -0.4 -11.9 -2.3 -13.8 e), RB=VB=	Detector Pk/QP/Avg AVG PK PK 1 MHz Peak (	Azimuth degrees 359 114 359 114 Blue Trace),	Height meters 1.2 1.0 1.2 1.0 1.2 1.0 Vertical		
5261.600 5261.900 Frequency MHz 5250.000 5249.830 5249.970 RB 1	90.0 (5250MHz, li Level dBµV/m 67.9 56.4 86.0 74.5 MHz; VB 10 F 90.0 –	mit is -27dE Pol V/H V H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -0.4 -11.9 -2.3 -13.8 e), RB=VB=	Detector Pk/QP/Avg AVG PK PK 1 MHz Peak (	Azimuth degrees 359 114 359 114 Blue Trace),	Height meters 1.2 1.0 1.2 1.0 1.2 1.0 Vertical		1 h all for the second
5261.600 5261.900 requency MHz 5250.000 5249.830 5249.970 RB 1	90.0 (5250MHz, li Level dBµV/m 67.9 56.4 86.0 74.5 MHz; VB 10 F 90.0 –	mit is -27dE Pol V/H V H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -0.4 -11.9 -2.3 -13.8 e), RB=VB=	Detector Pk/QP/Avg AVG PK PK 1 MHz Peak (	Azimuth degrees 359 114 359 114 Blue Trace),	Height meters 1.2 1.0 1.2 1.0 1.2 1.0 Vertical		white and
5261.600 5261.900 Frequency MHz 5250.000 5249.830 5249.970 RB 1	90.0 (5250MHz, li Level dBµV/m 67.9 56.4 86.0 74.5 MHz; VB 10 F 90.0 –	mit is -27dE Pol V/H V H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -0.4 -11.9 -2.3 -13.8 e), RB=VB=	Detector Pk/QP/Avg AVG PK PK 1 MHz Peak (	Azimuth degrees 359 114 359 114 Blue Trace),	Height meters 1.2 1.0 1.2 1.0 1.2 1.0 Vertical		not the set of the set
5261.600 5261.900 Frequency MHz 5250.000 5249.830 5249.970 RB 1	90.0 (5250MHz, li Level dBµV/m 67.9 56.4 86.0 74.5 MHz; VB 10 F 90.0 –	mit is -27dE Pol V/H V H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -0.4 -11.9 -2.3 -13.8 e), RB=VB=	Detector Pk/QP/Avg AVG PK PK 1 MHz Peak (	Azimuth degrees 359 114 359 114 Blue Trace),	Height meters 1.2 1.0 1.2 1.0 1.2 1.0 Vertical		white a feature of
5261.600 5261.900 Frequency MHz 5250.000 5249.830 5249.970 RB 1	90.0 (5250MHz, li Level dBµV/m 67.9 56.4 86.0 74.5 MHz; VB 10 F 90.0 –	mit is -27dE Pol V/H V H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -0.4 -11.9 -2.3 -13.8 e), RB=VB=	Detector Pk/QP/Avg AVG PK PK 1 MHz Peak (	Azimuth degrees 359 114 359 114 Blue Trace),	Height meters 1.2 1.0 1.2 1.0 1.2 1.0 Vertical		nuthing the second
5261.600 5261.900 requency MHz 5250.000 5249.830 5249.970 RB 1	90.0 (5250MHz, li Level dBµV/m 67.9 56.4 86.0 74.5 MHz; VB 10 F 90.0 –	mit is -27dE Pol V/H V H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -0.4 -11.9 -2.3 -13.8 e), RB=VB=	Detector Pk/QP/Avg AVG PK PK 1 MHz Peak (	Azimuth degrees 359 114 359 114 Blue Trace),	Height meters 1.2 1.0 1.2 1.0 1.2 1.0 Vertical		where the second
261.600 261.900 and Edge requency MHz 250.000 5249.830 5249.970 RB 1	90.0 (5250MHz, li dBµV/m 67.9 56.4 86.0 74.5 MHz; VB 10 F 90.0 -	mit is -27dE Pol V/H V H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -0.4 -11.9 -2.3 -13.8 e), RB=VB=	Detector Pk/QP/Avg AVG PK PK 1 MHz Peak (	Azimuth degrees 359 114 359 114 Blue Trace),	Height meters 1.2 1.0 1.2 1.0 1.2 1.0 Vertical		sublice and the second
5261.600 5261.900 and Edge requency MHz 5250.000 5249.830 5249.970 RB 1 (W/\ngp) aprilidwy	90.0 (5250MHz, li Level dBµV/m 67.9 56.4 86.0 74.5 MHz; VB 10 F 90.0 - 80.0 - 70.0 - 60.0 - 50.0 -	mit is -27dE Pol V/H V H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -0.4 -11.9 -2.3 -13.8 e), RB=VB=	Detector Pk/QP/Avg AVG PK PK 1 MHz Peak (	Azimuth degrees 359 114 359 114 Blue Trace),	Height meters 1.2 1.0 1.2 1.0 1.2 1.0 Vertical		suthice to the second
2261.600 2261.900 and Edge requency MHz 5250.000 5249.830 5249.970 RB 1 (///ngp) aprinition (///ngp) apr	90.0 (5250MHz, li Level dBµV/m 67.9 56.4 86.0 74.5 MHz; VB 10 F 90.0 - 80.0 - 70.0 - 60.0 - 50.0 - 40.0 -	mit is -27dE Pol V/H V H V Hz Average	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -0.4 -11.9 -2.3 -13.8 ≥), RB=VB=	Detector Pk/QP/Avg AVG PK PK 1 MHz Peak (1	Azimuth degrees 359 114 359 114 Blue Trace),	Height meters 1.2 1.0 1.2 1.0 Vertical	and and a second as a second	
5261.600 5261.900 Frequency MHz 5250.000 5249.830 5249.970 RB 1	90.0 (5250MHz, li Level dBµV/m 67.9 56.4 86.0 74.5 MHz; VB 10 H 90.0 - 80.0 - 70.0 - 60.0 - 50.0 - 50.0 - 40.0 - 35.0 -	mit is -27dE Pol V/H V H V Hz Average	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -0.4 -11.9 -2.3 -13.8 ≥), RB=VB=	Detector Pk/QP/Avg AVG PK PK 1 MHz Peak (1	Azimuth degrees 359 114 359 114 Blue Trace),	Height meters 1.2 1.0 1.2 1.0 Vertical	en en ander	
5261.600 5261.900 Frequency MHz 5250.000 5249.830 5249.970 RB 1	90.0 (5250MHz, li Level dBµV/m 67.9 56.4 86.0 74.5 MHz; VB 10 F 90.0 - 80.0 - 70.0 - 60.0 - 50.0 - 40.0 -	mit is -27dE Pol V/H V H V Hz Average	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -0.4 -11.9 -2.3 -13.8 ≥), RB=VB=	Detector Pk/QP/Avg AVG PK PK 1 MHz Peak (1	Azimuth degrees 359 114 359 114 Blue Trace),	Height meters 1.2 1.0 1.2 1.0 Vertical	en en ander	,

Client:	Proxim Corp	oration						Job Number:	
Model:	PROXMB82	802.11abgr	miniPCI mo	dule (3x3)				Log Number: unt Manager:	
Contact:	Ivaylo Tanko	V							
Standard:	FCC Part 15	Subpart E,	RSS 210					Class:	N/A
un #2b, El	UT on Chanr	nel 5320 MH	z (#64) - 802					-	
	Chain	Targat	: (dBm)		Settings ator (dB)	Software	Sotting		
	A+B+C	Taiye	. (udiii)		0.0		-	-	
<u> </u>	AIDIO				0.0				
undament	al Signal Fie	d Strength							
requency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters		
5322.470	105.6	V V	-	-	AVG	346	1.2		
5321.470 5321.530	115.9 88.2		-	-	PK AVG	346 349	1.2		
5321.530	<u> </u>	<u>Н</u> Н	-	-	PK	349	1.1 1.1		
5021.200	50.7	11	_	_		040	1.1		
850 MHz B	and Edge S	ignal Radia	ted Field Str	ength (Res	tricted band	limit =54dBı	ıV/m)		
requency	Level	Pol		δE	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters		
5350.130	51.7	V	54.0	-2.3	AVG	346	1.2		
5350.130	38.1	Н	54.0	-15.9	AVG	349	1.1		
5350.900	71.7	V	74.0	-2.3	PK	346	1.2		
5352.770	52.5	Н	74.0	-21.5	PK	349	1.1		
Amplitude (dBuV/m)	40.0-	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	356.0 53	58.0 5360.	0 5362.0	5364.0	5366.0	5368.0 5370.0
					Frequency	(MHZ)			

# Elliott

## EMC Test Data

Client:	Proxim Corpo	oration						Job Number:	J75847
Madal	PROXMB82	902 11ahan	miniDCI mo	dula (2v2)			T-	Log Number:	T75950
wouer.		002.11abyn		uule (3x3)			Acco	unt Manager:	-
Contact:	Ivaylo Tankov	V							
Standard:	FCC Part 15	Subpart E,	RSS 210					Class:	N/A
un #3, Bar	nd Edge Field	Strength -	- 802.11n 40	MHz					
D	Date of Test: 8	3/27/2009			Te	st Location:	FT Chambe	er #3	
Tes	st Engineer: 、	Joseph Cad	igal		Con	fig Change:	None		
un #3a, EL	JT on Chann	el 5270 MH	z (#54) - 802					-	
	Chain	Τ	(-10)	-	Settings	0.4	0		
-		Target	(dBm)		ator (dB) 0.0		e Setting 6.5	-	
L	A+B+C			Ζ	0.0	10	0.0		
undemont	al Signal Fiel	ld Stronath							
requency	Level	Pol		/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	5511110110	
5275.130	91.9	V	-	-	AVG	344	1.2		
5278.730	102.4	V	-	-	PK	344	1.2		
5268.520	76.8	Н	-	-	AVG	341	1.2		
5268.580	87.5	Н	-	-	PK	341	1.2		
and Edua	(5250MH+ lin	mit is _27dl	2m oirn 68 '	3dBuV/m)					
requency	Level	Pol	15	δE	Detector	Azimuth	Height	Comments	
-requency MHz	Level dBµV/m	Pol V/H	15 Limit	5 E Margin	Pk/QP/Avg	degrees	meters	Comments	
Frequency MHz 5249.900	Level dBµV/m 50.9	Pol V/H H	15 Limit 68.3	5 E Margin -17.4	Pk/QP/Avg AVG	degrees 341	meters 1.2	Comments	
Frequency MHz 5249.900 5249.970	Level dBµV/m 50.9 <b>65.3</b>	Pol V/H H V	15 Limit 68.3 68.3	E Margin -17.4 -3.0	Pk/QP/Avg AVG AVG	degrees 341 344	meters 1.2 1.2	Comments	
Frequency MHz 5249.900 5249.970 5249.830	Level dBµV/m 50.9 <b>65.3</b> 84.0	Pol V/H H V V	15 Limit 68.3 68.3 88.3	5 E Margin -17.4 -3.0 -4.3	Pk/QP/Avg AVG AVG PK	degrees 341 344 344	meters 1.2 1.2 1.2	Comments	
Frequency MHz 5249.900 5249.970 5249.830	Level dBµV/m 50.9 <b>65.3</b>	Pol V/H H V	15 Limit 68.3 68.3	E Margin -17.4 -3.0	Pk/QP/Avg AVG AVG	degrees 341 344	meters 1.2 1.2	Comments	
Frequency MHz 5249.900 5249.970 5249.830 5250.000	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6	Pol V/H H V V H	15 Limit 68.3 68.3 88.3 88.3	5 E Margin -17.4 -3.0 -4.3 -18.7	Pk/QP/Avg AVG AVG PK	degrees 341 344 344 341	meters 1.2 1.2 1.2 1.2 1.2	Comments	
Frequency MHz 5249.900 5249.970 5249.830 5250.000 RB 1 M	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H	Pol V/H H V V H	15 Limit 68.3 68.3 88.3 88.3	5 E Margin -17.4 -3.0 -4.3 -18.7	Pk/QP/Avg AVG AVG PK PK	degrees 341 344 344 341	meters 1.2 1.2 1.2 1.2 1.2	Comments	
Frequency MHz 5249.900 5249.830 5250.000 RB 1 M 9	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H 00.0 –	Pol V/H H V V H	15 Limit 68.3 68.3 88.3 88.3	5 E Margin -17.4 -3.0 -4.3 -18.7	Pk/QP/Avg AVG AVG PK PK	degrees 341 344 344 341	meters 1.2 1.2 1.2 1.2 1.2 Vertical		
Frequency MHz 5249.900 5249.830 5250.000 RB 1 M 9 8	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H 90.0 –	Pol V/H H V V H	15 Limit 68.3 68.3 88.3 88.3	5 E Margin -17.4 -3.0 -4.3 -18.7	Pk/QP/Avg AVG AVG PK PK	degrees 341 344 344 341	meters 1.2 1.2 1.2 1.2 1.2 Vertical		n and My Malit
Frequency MHz 5249.900 5249.830 5250.000 RB 1 M 9 8 8	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H 0.0 – 35.0 – 30.0 –	Pol V/H H V V H	15 Limit 68.3 68.3 88.3 88.3	5 E Margin -17.4 -3.0 -4.3 -18.7	Pk/QP/Avg AVG AVG PK PK	degrees 341 344 344 341	meters 1.2 1.2 1.2 1.2 1.2 Vertical		tool fries all Alm Market
Frequency MHz 5249.900 5249.830 5250.000 RB 1 M 9 8 8	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H 0.0 - 35.0 - 30.0 - 75.0 - 75.0 -	Pol V/H H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -17.4 -3.0 -4.3 -18.7	Pk/QP/Avg AVG AVG PK PK	degrees 341 344 344 341	meters 1.2 1.2 1.2 1.2 1.2 Vertical		where a hard a h
Frequency MHz 5249.900 5249.830 5250.000 RB 1 M 9 8 8	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H 90.0 - 95.0 - 95.0 - 95.0 - 95.0 - 95.0 -	Pol V/H H V V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -17.4 -3.0 -4.3 -18.7	Pk/QP/Avg AVG AVG PK PK	degrees 341 344 344 341	meters 1.2 1.2 1.2 1.2 1.2 Vertical		with the all the second s
Frequency MHz 5249.900 5249.830 5250.000 RB 1 M 9 8 8	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H 90.0 - 35.0 - 35.0 - 35.0 - 35.0 -	Pol V/H H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -17.4 -3.0 -4.3 -18.7	Pk/QP/Avg AVG AVG PK PK	degrees 341 344 344 341	meters 1.2 1.2 1.2 1.2 1.2 Vertical		with the state
Frequency MHz 5249.900 5249.830 5250.000 RB 1 M 9 8 8	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H 00.0 - 5.0 - 5.0 - 75.0 - 75.0 -	Pol V/H H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -17.4 -3.0 -4.3 -18.7	Pk/QP/Avg AVG AVG PK PK	degrees 341 344 344 341	meters 1.2 1.2 1.2 1.2 1.2 Vertical		- America Markata
Frequency         MHz           5249.900         5249.900           5249.900         5250.000           5250.000         5250.000           RB 1 M         9           (UI)/ngp)         9           (UI)/ngp)         9           1         9           8         8           9         8           9         8           9         9           10         9           10         9           10         9           10         9           10         9           10         9           10         9           10         9           11         9           10         9           10         9           10         9           10         9           10         9           10         9           11         9           12         9           13         9           14         9           15         9           16         9	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H 00.0 - 5.0 - 5.	Pol V/H H V H	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -17.4 -3.0 -4.3 -18.7	Pk/QP/Avg AVG AVG PK PK	degrees 341 344 344 341	meters 1.2 1.2 1.2 1.2 1.2 Vertical		with the state
Trequency MHz 5249.900 5249.970 5249.830 5250.000 RB 1 M 9 8 (W(Angp) apnalldurg 7 7 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H 90.0 - 95.0 -	Pol V/H H V z Average	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -17.4 -3.0 -4.3 -18.7 ), RB=VB=1	Pk/QP/Avg AVG AVG PK PK	degrees 341 344 344 341	meters 1.2 1.2 1.2 1.2 1.2 Vertical		with the state
Frequency MHz 5249.900 5249.970 5249.830 5250.000 RB 1 M 9 8 (W/\ngp) app.1 9 8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Level dBµV/m 50.9 65.3 84.0 69.6 MHz; VB 10 H 00.0 - 5.0	Pol V/H H V H z Average	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -17.4 -3.0 -4.3 -18.7 ), RB=VB=1	Pk/QP/Avg AVG PK PK I MHz Peak (E	degrees 341 344 344 341	meters 1.2 1.2 1.2 1.2 1.2 Vertical		- And Mark
Frequency MHz 5249.900 5249.970 5249.830 5250.000 RB 1 M 9 8 (W/\ngp) app.1 9 8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H 00.0 - 5.0 - 5.	Pol V/H H V z Average	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -17.4 -3.0 -4.3 -18.7 ), RB=VB=1	Pk/QP/Avg AVG PK PK I MHz Peak (B	degrees 341 344 344 341 lue Trace),	meters 1.2 1.2 1.2 1.2 Vertical	who while have not	
Frequency MHz 5249.900 5249.970 5249.830 5250.000 RB 1 M 9 8 (W/\ngp) app.1 9 8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H 00.0 - 5.0 - 5.	Pol V/H H V z Average	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -17.4 -3.0 -4.3 -18.7 ), RB=VB=1	Pk/QP/Avg AVG PK PK I MHz Peak (E	degrees 341 344 341 due Trace), due Trace), 5242.0	meters 1.2 1.2 1.2 1.2 Vertical	who while have not	- Anna Mart
Frequency MHz 5249.900 5249.970 5249.830 5250.000 RB 1 M 9 8 (W/\ngp) app. 1 9 8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H 00.0 - 5.0 - 5.	Pol V/H H V z Average	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -17.4 -3.0 -4.3 -18.7 ), RB=VB=1	Pk/QP/Avg AVG PK PK I MHz Peak (B	degrees 341 344 341 due Trace), due Trace), 5242.0	meters 1.2 1.2 1.2 1.2 Vertical	who while have not	
Frequency MHz 5249.900 5249.970 5249.830 5250.000 RB 1 M 9 8 (W/\ngp) app. 1 9 8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Level dBµV/m 50.9 <b>65.3</b> 84.0 69.6 MHz; VB 10 H 00.0 - 5.0 - 5.	Pol V/H H V z Average	15 Limit 68.3 68.3 88.3 88.3 (Black Trace	5 E Margin -17.4 -3.0 -4.3 -18.7 ), RB=VB=1	Pk/QP/Avg AVG PK PK I MHz Peak (E	degrees 341 344 341 due Trace), due Trace), 5242.0	meters 1.2 1.2 1.2 1.2 Vertical	who while have not	

Cilent.	Proxim Corpo	oration						Job Number:	
Model:	PROXMB82	802.11aban	miniPCI mo	dule (3x3)				-Log Number:	
		Ŭ					Acco	ount Manager:	-
	Ivaylo Tanko FCC Part 15							Class:	NI/A
Standard:	FUC Fail 15		100 2 10					Class.	N/A
un #3b, El	UT on Chann	el 5310 MH	z (#62) - 802	2.11n 40MHz	2				
	Chain		<b>.</b> .	-	Settings	<b>.</b> (	<b>0</b> ///		
	A+B+C	l arget	(dBm)		ator (dB) 0.0	Software	-	-	
	A+B+C			2	0.0	17	.0		
Indament	tal Signal Fie	ld Strength							
requency		Pol		/ 15.247	Detector	Azimuth	Height	Comments	
MHz 319.870	dBµV/m 92.2	V/H V	Limit	Margin	Pk/QP/Avg AVG	degrees 0	meters 1.1		
319.870	92.2	V	-	-	PK	0	1.1		
521.330 5295.400	78.4	H	-	-	AVG	34	1.1	RB 1 MHz; \	/B: 10 Hz
5296.530	89.6	H	-	-	PK	34	1.0	RB 1 MHz; V	
	51.0 71.0 38.8 53.6 MHz; VB 10 F 80.0 - 75.0 -	V H H Hz Average	54.0 74.0 54.0 74.0 (Black Trace	-3.0 -3.0 -15.2 -20.4 ≥), RB=VB=	Avg Pk AVG PK 1 MHz Peak (	0 0 0 Blue Trace),	1.1 1.1 1.1 1.1 Vertical		
	70.0	Muntu han	harmanthing	my layytha	www.	Amministrat	Northopped grand and a	Vnart-Wt	Whendthedtmight
	60.0 - 55.0 - 50.0 - <del>Vir</del>	- Marindury	mar and a start	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					
Amplitude (dBuV/m)	70.0	-Antonio - Antonio - A	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	www.	www.www.wyw	-particular descention	,,	voftable bergering	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

#### Elliott EMC Test Data Client: Proxim Corporation Job Number: J75847 T-Log Number: T75950 Model: PROXMB82 802.11abgn miniPCI module (3x3) Account Manager: Contact: Ivaylo Tankov Standard: FCC Part 15 Subpart E, RSS 210 Class: N/A RSS 210, FCC 15.407(NII) Band Edge Field Strength - Panel Antenna 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 was installed into a test fixture such that the EUT was exposed (i.e. outside of a host system). For radiated emissions testing the measurement antenna was located 3 meters from the EUT. Ambient Conditions: Rel. Humidity: 25-40 % Temperature: 18-26 °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. Summary of Results Attenuator Power Test Performed Mode Channel Limit Result / Margin Run # (dB) Setting 5260 MHz 87.6dBµV/m @ 802.11a 20.0 Band Edge at 5250MHz 15 E 12.5 5249.6MHz (-0.7dB) (#52) Run #1 20MHz Restricted Band Edge at 53.7dBuV/m @ 5320 MHz Chain A 20.0 18.0 15,209 5350.0MHz (-0.3dB) (#64) 5350 MHz 802.11n 5260 MHz 67.1dBµV/m @ Band Edge at 5250MHz 15 E 20.0 7.0 5250.0MHz (-1.2dB) 20MHz (#52) Run #2 Restricted Band Edge at Chain 5320 MHz 52.8dBµV/m @ 15.209 20.0 17.5 A+B+C (#64) 5350 MHz 5350.0MHz (-1.2dB) 802.11n 68.2dBµV/m @ 5270 MHz 20.0 Band Edge at 5250MHz 15 E 15.0 40MHz 5250.0MHz (-0.1dB) (#54) Run #3

Chain

A+B+C

5310 MHz

(#62)

20.0

15.5

Restricted Band Edge at

5350 MHz

51.8dBµV/m @

5350.0MHz (-2.2dB)

15.209

Client:	Proxim Corpo	oration						Job Number:	
Model:	PROXMB82	802.11abgn	miniPCI mo	dule (3x3)				Log Number: unt Manager:	
Contact:	Ivaylo Tanko	V					7,000	ant managor.	
	FCC Part 15		RSS 210					Class:	N/A
C Te	nd Edge Field Date of Test: 3 st Engineer: 3 JT on Chann	8/24/2009 Joseph Cadi	gal		Cor	est Location: fig Change:		5	
un #1a, <b>_</b> _			- (#JZ) - 00Z		Settings			٦	
	Chain	Target	(dBm)	-	ed (dBm)	Software	e Setting		
	Chain A	-			-	12	2.5	]	
<i>undament</i> requency	al Signal Fiel Level	Id Strength Pol	15 200	/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	Comments	
5261.100	97.2	V	-	-	AVG	15	1.0		
5257.770	105.2	V	-	-	PK	15	1.0		
5259.020	79.3	Н	-	-	AVG	31	1.0		
5258.710	89.1	Н	-	-	PK	31	1.0		
requency MHz 5249.970	(5250MHz, li Level dBµV/m 49.8	Pol V/H H	1: Limit 68.3	5 E Margin -18.5	Detector Pk/QP/Avg Avg	Azimuth degrees 33	Height meters 1.0	Comments	
5250.000	64.4	V	68.3	-3.9	Avg	14	1.0		
<b>5249.600</b> 5249.600	<b>87.6</b> 68.2	V H	<b>88.3</b>	<b>-0.7</b> -20.1	PK PK	14 33	1.0 1.0		
5			•	~~	MHz Peak (Bl			www.white.org.org.	and and the second second
Amplitud	40.0- 30.0-,								

	Proxim Corpo						T·	Job Number: Log Number:	
Wodel:	PROXMB82	802.11abgr		dule (3x3)			Acco	unt Manager:	-
	Ivaylo Tanko								
Standard:	FCC Part 15	Subpart E,	RSS 210					Class:	N/A
	IT on Chonn	-1 5220 MU	- (#CA) 000	dda Chai					
n #10, EU	JT on Chann		IZ (#04) - 002		Settings			7	
	Chain	Targe	t (dBm)		red (dBm)	Software	e Setting		
	Chain A	Ŭ	-		-	18	3.0		
	al Signal Fie Level			/ 15.247	Detector	Azimuth	Hoight	Comments	
equency MHz	dBµV/m	Pol V/H	Limit	Margin	Pk/QP/Avg	degrees	Height meters	Comments	
22.000	96.0	V/11	-	-	AVG	346	1.0		
21.370	105.1	V	-	-	PK	346	1.0		
18.940	86.7	Н	-	-	AVG	42	1.0		
321.370	96.4	Н	-	-	PK	42	1.0		
			41 <b>F</b> 1-1-1 04-		4		- <b>1</b> (/)		
equency	Level	gnai Radia Pol		engtn (Res 5 E	tricted band Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	Comments	
350.000	53.7	<b>V</b>	54.0	-0.3	AVG	346	1.0		
50.210	39.2	H	54.0	-14.8	AVG	41	1.0		
50.870	70.2	V	74.0	-3.8	PK	346	1.0		
50.960	55.0	Н	74.0	-19.0	PK	41	1.0		
Amplitude (dBuV/m)	00.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 - 0.0 -	Mrsh. Marija	w/w/www.	annun raantaa	MHz Peak (Bl	1. M.	ndattalijange		<b></b>
					Frequency	(MHz)			

Client:	Proxim Corpo	oration						Job Number:	J75847
								Log Number:	
Model:	PROXMB82	802.11abgn	miniPCI mo	dule (3x3)				unt Manager:	
Contact:	Ivaylo Tanko	V							
Standard:	FCC Part 15	Subpart E, I	RSS 210					Class:	N/A
C Te	nd Edge Field Date of Test: S St Engineer: J JT on Chann	8/25/2009 Mehran Birg	ani		Те	st Location: fig Change: • <b>C</b>		er #3	
,	Chain				Settings	-		7	
		Target	(dBm)	Measur	ed (dBm)		e Setting	4	
	A+B+C					7.	.0	J	
undament	al Signal Fie	ld Strenath							
requency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters		
5258.170	90.5	V	-	-	AVG	343	1.0		
5258.300	99.8	V	-	-	PK	343	1.0		
5260.500	76.1	Н	-	-	AVG	43	1.0		
5258.670	85.6	Н	-	-	PK	43	1.0		
and Edge	(5250MHz, li	mit is -27dF	8 eirn 68	3dRuV/m)					
requency	Level	Pol		5 E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters		
5250.000	67.1	V	68.3	-1.2	AVG	343	1.0		
5250.000	52.6	Н	68.3	-15.7	AVG	43	1.0		
5249.730	82.5	V	88.3	-5.8	PK	343	1.0		
5249.970	69.7	Н	88.3	-18.6	PK	43	1.0		
	90.0 - 80.0 - 70.0 - 60.0 - 50.0 - 40.0 - 35.0 -			wooddalaa		hruhilwayatha	whythe dur		
	5230.0	5232.0	5234.0 \$	5236.0 52	238.0 5240 Frequenc		0 5244.0	) 5246.0	5248.0 5250.0

	Proxim Corp						T.	Job Number: Log Number:	
Model:	PROXMB82	802.11abgr	n miniPCI mo	dule (3x3)				unt Manager:	
	Ivaylo Tanko								
Standard:	FCC Part 15	Subpart E,	RSS 210					Class:	N/A
un #2b, El	UT on Chann	el 5320 MH	lz (#64) - 802		z, , Chain A+E	3+C			
,	Chain			Power	Settings		0.44	]	
	A+B+C	large	t (dBm)	Measur	ed (dBm)		e Setting 7.5	-	
	A+D+C					17	.0		
	al Signal Fie		(= 000						
requency MHz	Level dBµV/m	Pol V/H	15.209 / Limit	/ 15.247 Margin	Detector Pk/QP/Avg	Azimuth	Height	Comments	
321.970	100.5	V/H V	- LIIIIL	Margin -	AVG	degrees 359	meters 1.0		
323.600	110.5	V	-	-	PK	359	1.0		
321.100	84.1	H	-	-	AVG	41	1.0	1	
324.600	94.4	Н	-	-	PK	41	1.0		
MHz 350.030	Level dBµV/m <b>52.8</b>	Pol V/H <b>V</b>	15 Limit <b>54.0</b>	Margin -1.2	Pk/QP/Avg AVG	degrees 359	meters 1.0		
requency MHz (350.030) (350.170) (350.500) (351.700)	dBµV/m	V/H	Limit		<u> </u>				

Date of Test: 8/25/2009       Test Location: FT Chamber #3         Test Enginee: Mehran Birgani       Config Change: None         un #3a, EUT on Channel 5270 MHz (#54) - 802.11n 40MHz, Chain A+B+C       Power Settings         Chain       Target (dBm)       Power Settings         A+B+C       15.0         undamental Signal Field Strength       15.0         requency       Level       Pol         VH       Limit       Margin         2265.270       94.7       V         -       -       AVG         3256.200       104.3       V         -       -       PK         3274.070       90.1       H         -       -       PK         3274.070       90.1       H         -       -       PK         3274.070       90.1       H         -       -       PK         48       1.0       10         5275.000       68.2       V         68.3       -0.1       AVG         48       1.0       10         5250.000       53.1       H         68.2       V       68.3       -0.1         AVG       48	Client:	Proxim Corpo	oration						Job Number:	J75847
Contact:         Ivaylo Tankov         Account Manager: -           Standard:         FCC Part 15 Subpart E, RSS 210         Class:         N/A           Lun #3, Band Edge Field Strength - 802.11n 40MHz Chain A+B+C         Date of Test:         8/25/2009         Test Location:         FT Chamber #3           Test Engineer:         Menan Birgani         Config Change:         None           Lun #3a, EUT on Channel 5270 MHz (#54) - 802.11n 40MHz, Chain A+B+C         Power Settings         Chain         Target (dBm)         Measured (dBm)         Software Setting           A+B+C         Target (dBm)         Measured (dBm)         Software Setting         Software Setting           Generated Signal Field Strength         Terget not the software Setting         15.0         Software Setting           Vindamental Signal Field Strength         Terget not the software Setting         15.0         Software Setting           Standard:         Poil         15.209 / 15.247         Detector         Azimuth         Height         Comments           MHz         dBµU/m         V/H         Limit         Margin         PK/QP/Avg         degrees         meters         5255.000         525.000         79.4         H         -         -         PK         48         1.0           Stand Edge (5250MHz, limit is -27dBm eirp,	Madalı		000 11 ab ara		dula (2x2)			T-	Log Number:	T75950
Standard: FCC Part 15 Subpart E, RSS 210         Class: N/A           Standard: FCC Part 15 Subpart E, RSS 210         Class: N/A           Class: N/A           Standard: FCC Part 15 Subpart E, RSS 210         Class: N/A           Date of Test: 8/25/2009         Test Location: FT Chamber #3           Config Change: None           Run #3a, EUT on Channel 5270 MHz (#54) - 802.11n 40MHz, Chain A+B+C           Power Settings           A+B+C           Chain         Target (dBm)         Measured (dBm)         Software Setting           A+B+C         Power Settings           Mage: Signal Field Strength           Frequency         Level         Pol         15.209 / 15.247         Detector         Azimuth         Height         Comments           MHz         dBµ//m         VIH         Limit         Marget Marget M           Software Setting           Software Setting           MHz         OB           OB         OB	woder:	PRUXIVIB02	602. Frangn	miniPCI mo	dule (3x3)			Acco	unt Manager:	-
Run #3, Band Edge Field Strength - 802.11n 40MHz Chain A+B+C Date of Test. 8/25/2009           Test Logineer: Mehran Birgani         Config Change: None           Run #3a, EUT on Channel 5270 MHz (#54) - 802.11n 40MHz, Chain A+B+C           Chain         Target (dBm)         Measured (dBm)         Software Setting           A+B+C         15.0           Fundamental Signal Field Strength           Frequency         Level         Pol         15.209 / 15.247         Detector         Azimuth         Height         Comments           MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters           5265.270         94.7         V         -         -         AVG         341         1.0           5256.200         104.3         V         -         -         PK         341         1.0           5257.000         90.1         H         -         -         PK         48         1.0           Sand Edge (5250MHz, limit is -27dBm eirp, 68.3dBuV/m)         Frequency         Level         Pol         15 E         Detector         Azimuth         Height         Comments           MHz         2550.000         68.2         -0.1         <	Contact:	Ivaylo Tankov	V							
Date of Test: 8/25/2009       Test Location: FT Chamber #3         Test Engineer: Mehran Birgani       Config Change: None         Run #3a, EUT on Channel 5270 MHz (#54) - 802:11n 40MHz, Chain A+B+C       Power Settings         Chain       Target (dBm)       Measured (dBm)       Software Setting         A+B+C       15.0         Frequency       Level       Pol       15.209 / 15.247       Detector       Azimuth       Height       Comments         MHz       dBµV/m       V/H       Limit       Margin       PK/QP/Avg       degrees       meters         5265.270       94.7       V       -       -       PK       341       1.0         5256.200       104.3       V       -       -       PK       341       1.0         5274.070       90.1       H       -       -       PK       48       1.0         5274.070       90.1       H       -       -       PK       48       1.0         5276.000       68.2       V       68.3       -0.1       AVG       341       1.0         5250.000       53.1       H       68.3       -0.1       AVG       341       1.0         5249.930       72.0       H <t< td=""><td>Standard:</td><td>FCC Part 15</td><td>Subpart E, I</td><td>RSS 210</td><td></td><td></td><td></td><td></td><td>Class:</td><td>N/A</td></t<>	Standard:	FCC Part 15	Subpart E, I	RSS 210					Class:	N/A
Chain         Target (dBm)         Measured (dBm)         Software Setting           A+B+C         15.0           Sundamental Signal Field Strength           Frequency         Level         Pol           MHz         dBµV/m         V/H         Limit         Margin           S256.200         104.3         V         -         -           S256.200         104.3         V         -         -           S256.200         104.3         V         -         -           S274.070         90.1         H         -         -           S265.000         68.2         V         68.3 dBuV/m)           Frequency         Level         Pol         15 E         Detector         Azimuth         Height         Comments           MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters           S250.000         53.1         H         68.3         -15.2         AVG	[ Te	Date of Test: 8 st Engineer: 1	3/25/2009 Mehran Birg	ani		Te Con	fig Change:		er #3	
Iarget (dBm)         Measured (dBm)         Software Setting           A+B+C         15.0           Fundamental Signal Field Strength           Frequency         Level         Pol         15.209 / 15.247         Detector         Azimuth         Height         Comments           MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters           5265.270         94.7         V         -         -         AVG         341         1.0           5256.200         104.3         V         -         -         PK         341         1.0           5265.200         90.1         H         -         -         AVG         48         1.0           5274.070         90.1         H         -         -         PK         48         1.0           Sand Edge (5250MHz, limit is -27dBm eirp, 68.3dBuV/m)         Frequency         Level         Pol         15 E         Detector         Azimuth         Height         Comments           MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters         5250.000         53.1         H         68.3         -0.1         AVG				<i>i</i>					1	
Fundamental Signal Field Strength           Frequency         Level         Pol         15.209 / 15.247         Detector         Azimuth         Height         Comments           MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters           5265.270         94.7         V         -         -         AVG         341         1.0           5255.200         104.3         V         -         -         PK         341         1.0           5258.000         79.4         H         -         -         PK         48         1.0           5274.070         90.1         H         -         -         PK         48         1.0           5274.070         90.1         H         -         -         PK         48         1.0           Stand Edge (5250MHz, limit is -27dBm eirp, 68.3dBuV/m)           Frequency         Level         Pol         15 E         Detector         Azimuth         Height         Comments           MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters           5250.000         53.1         H         6			Target	(dBm)	Measur	ed (dBm)		-	4	
Frequency         Level         Pol         15.209 / 15.247         Detector         Azimuth         Height         Comments           MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters           5265.270         94.7         V         -         -         AVG         341         1.0           5256.200         104.3         V         -         -         PK         341         1.0           5258.000         79.4         H         -         -         PK         341         1.0           5274.070         90.1         H         -         -         PK         48         1.0           Strate         frequency         Level         Pol         15 E         Detector         Azimuth         Height         Comments           MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters           5250.000         68.2         V         68.3         -0.1         AVG         341         1.0           5249.900         86.7         V         88.3         -16.3         PK         48         1.0           90.0		A+B+C					15	5.0	l	
Frequency         Level         Pol         15.209 / 15.247         Detector         Azimuth         Height         Comments           MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters           5265.270         94.7         V         -         -         AVG         341         1.0           5256.200         104.3         V         -         -         PK         341         1.0           5258.000         79.4         H         -         -         PK         341         1.0           5274.070         90.1         H         -         -         PK         48         1.0           Strate         frequency         Level         Pol         15 E         Detector         Azimuth         Height         Comments           MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters           5250.000         68.2         V         68.3         -0.1         AVG         341         1.0           5249.900         86.7         V         88.3         -16.3         PK         48         1.0           90.0	Fundamont	al Signal Eigl	ld Stronath							
MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters           5265.270         94.7         V         -         -         AVG         341         1.0           5256.200         104.3         V         -         -         PK         341         1.0           5256.200         79.4         H         -         -         PK         341         1.0           5258.000         79.4         H         -         -         PK         48         1.0           5274.070         90.1         H         -         -         PK         48         1.0           Band Edge (5250MHz, limit is -27dBm eirp, 68.3dBuV/m)           Frequency         Level         Pol         15 E         Detector         Azimuth         Height         Comments           MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters         5250.000         68.2         V         68.3         -0.1         AVG         341         1.0         5249.900         86.7         V         88.3         -1.6         PK         341         1.0         5249.900         52.0 <td></td> <td></td> <td></td> <td>15.209</td> <td>/ 15.247</td> <td>Detector</td> <td>Azimuth</td> <td>Height</td> <td>Comments</td> <td></td>				15.209	/ 15.247	Detector	Azimuth	Height	Comments	
5265.270       94.7       V       -       -       AVG       341       1.0         5256.200       104.3       V       -       -       PK       341       1.0         5256.200       79.4       H       -       -       AVG       48       1.0         5258.000       79.4       H       -       -       AVG       48       1.0         5274.070       90.1       H       -       -       PK       48       1.0         Sand Edge (5250MHz, limit is -27dBm eirp, 68.3dBuV/m)         Frequency       Level       Pol       15 E       Detector       Azimuth       Height       Comments         MHz       dBµV/m       V/H       Limit       Margin       Pk/QP/Avg       degrees       meters         5250.000       68.2       V       68.3       -0.1       AVG       341       1.0         5250.000       53.1       H       68.3       -16.       PK       341       1.0         5249.930       72.0       H       88.3       -16.3       PK       48       1.0         90.0       -       -       -       -       -       -       -       -	MHz			Limit	Margin					
5258.000       79.4       H       -       -       AVG       48       1.0         5274.070       90.1       H       -       -       PK       48       1.0         Sand Edge (5250MHz, limit is -27dBm eirp, 68.3dBuV/m)         Frequency Level Pol 15 E Detector Azimuth Height Comments         MHz       dBµV/m       V/H       Limit       Margin       Pk/QP/Avg       degrees       meters         5250.000       68.2       V       68.3       -0.1       AVG       341       1.0         5250.000       53.1       H       68.3       -15.2       AVG       48       1.0         5249.900       86.7       V       88.3       -16.3       PK       48       1.0         5249.930       72.0       H       88.3       -16.3       PK       48       1.0         80.0       -       -       -       -       -       -       -       -         90.0       -       -       -       -       -       -       -       -         90.0       -       -       -       -       -       -       -       -       -       -       -       -	5265.270	94.7	V	-		AVG	341	1.0		
5274.070       90.1       H       -       -       PK       48       1.0         Band Edge (5250MHz, limit is -27dBm eirp, 68.3dBuV/m)         Frequency       Level       Pol       15 E       Detector       Azimuth       Height       Comments         MHz       dBµV/m       V/H       Limit       Margin       Pk/QP/Avg       degrees       meters         5250.000       68.2       V       68.3       -0.1       AVG       341       1.0         5250.000       53.1       H       68.3       -15.2       AVG       48       1.0         5249.900       86.7       V       88.3       -16.6       PK       341       1.0         5249.930       72.0       H       88.3       -16.3       PK       48       1.0         80.0       -       -       -       RB 1 MHz; VB 10 Hz Average (Black Trace), RB=VB=1 MHz Peak (Blue Trace), Vertical       90.0         90.0       -       -       -       -       -       -         90.0       -       -       -       -       -       -         90.0       -       -       -       -       -       -         90.0 <td< td=""><td>5256.200</td><td>104.3</td><td></td><td>-</td><td>-</td><td>PK</td><td>341</td><td>1.0</td><td></td><td></td></td<>	5256.200	104.3		-	-	PK	341	1.0		
Band Edge (5250MHz, limit is -27dBm eirp, 68.3dBuV/m)           Frequency         Level         Pol         15 E         Detector         Azimuth         Height         Comments           MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters           5250.000         68.2         V         68.3         -0.1         AVG         341         1.0           5250.000         53.1         H         68.3         -15.2         AVG         48         1.0           5249.900         86.7         V         88.3         -1.6         PK         341         1.0           5249.930         72.0         H         88.3         -16.3         PK         48         1.0				-	-					
Frequency         Level         Pol         15 E         Detector         Azimuth         Height         Comments           MHz         dBµV/m         V/H         Limit         Margin         Pk/QP/Avg         degrees         meters         5250.000         68.2         V         68.3         -0.1         AVG         341         1.0         5250.000         53.1         H         68.3         -15.2         AVG         48         1.0         5249.900         86.7         V         88.3         -1.6         PK         341         1.0         5249.930         72.0         H         88.3         -16.3         PK         48         1.0         5249.930         72.0         H         88.3         -16.3         PK         48         1.0         5249.930         72.0         H         88.3         -16.3         PK         48         1.0         5249.930         52.0         -	5274.070	90.1	Н	-	-	PK	48	1.0		
5250.000         68.2         V         68.3         -0.1         AVG         341         1.0           5250.000         53.1         H         68.3         -15.2         AVG         48         1.0           5249.900         86.7         V         88.3         -1.6         PK         341         1.0           5249.930         72.0         H         88.3         -16.3         PK         48         1.0           5249.930         72.0         H         88.3         -16.3         PK         48         1.0           RB 1 MHz; VB 10 Hz Average (Black Trace), RB=VB=1 MHz Peak (Blue Trace), Vertical           90.0         -         <	Frequency	Level	Pol	1	δE				Comments	
5250.000       53.1       H       68.3       -15.2       AVG       48       1.0         5249.900       86.7       V       88.3       -1.6       PK       341       1.0         5249.900       72.0       H       88.3       -16.3       PK       48       1.0         RB 1 MHz; VB 10 Hz Average (Black Trace), RB=VB=1 MHz Peak (Blue Trace), Vertical         90.0       -       -       -       -         80.0       -       -       -       -       -         75.0       -       -       -       -       -       -         90.0       -       -       -       -       -       -       -         90.0       -       -       -       -       -       -       -       -         90.0       -       -       -       -       -       -       -       -         80.0       -       -       -       -       -       -       -       -       -         90.0       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -						, in the second s				
5249.900         86.7         V         88.3         -1.6         PK         341         1.0           5249.930         72.0         H         88.3         -16.3         PK         48         1.0           RB 1 MHz; VB 10 Hz Average (Black Trace), RB=VB=1 MHz Peak (Blue Trace), Vertical           90.0         - <td></td>										
5249.930         72.0         H         88.3         -16.3         PK         48         1.0           RB 1 MHz; VB 10 Hz Average (Black Trace), RB=VB=1 MHz Peak (Blue Trace), Vertical           90.0         -										
RB 1 MHz; VB 10 Hz Average (Black Trace), RB=VB=1 MHz Peak (Blue Trace), Vertical         90.0         85.0         80.0         75.0         97.0										
55.0	Amplitude (dBuV/m)	00.0 - 35.0 - 30.0 - 75.0 - 70.0 - 35.0 -			an the second se	non the second			ware and the second	and a start of the

	Proxim Corporation					Job Number: J75847 T-Log Number: T75950			
	PROXMB82 802.11abgn miniPCI module (3x3)						Acco	ount Manager: -	
	Ivaylo Tankov FCC Part 15 Subpart E, RSS 210						Class: N/A		
Stanuaru.	1001 at 15	Subpart L,	100 2 10					Old33. N/A	
Run #3b, El	UT on Chann	el 5310 MH	z (#62) - 802	2.11n 40MHz	z, , Chain A+E	3+C			
	Chain	-	(15.)	-	Settings	0.4	0.41		
	A+B+C	Target (dBm)		Measured (dBm)		Software Setting 15.5		4	
	A+D+C								
undament	al Signal Fiel	ld Strength							
Frequency	Level	Pol		/ 15.247	Detector	Azimuth	Height	Comments	
MHz 5314.730	dBμV/m 95.4	<u>V/H</u> V	Limit	Margin	Pk/QP/Avg	degrees	meters		
5314.730	95.4 105.1	V V	-	-	AVG PK	341 341	1.0 1.0	1	
5293.070	80.3	H		-	AVG	48	1.0		
5303.330	90.2	H	-	-	PK	48	1.0		
		<b>gnal Radia</b> Pol		r <b>ength (Res</b> : 5 E	tricted band I			Comments	
Frequency MHz	Level dBµV/m	V/H	Limit	5 ⊑ Margin	Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments	
5350.000	51.8	V	54.0	-2.2	AVG	341	1.0		
5350.000	38.4	H	54.0	-15.6	AVG	48	1.0		
5350.200	55.6	Н	74.0	-18.4	PK	48	1.0		
5352.800	70.1	V	74.0	-3.9	PK	341	1.0		
Amplitude (dBu//m)	75.0 - 70.0 - 55.0 - 55.0 - 55.0 - 55.0 - 55.0 - 45.0 - 45.0 -							1 <sup></sup>	
				356.0 535		5362.0		5366.0 5368.0 5370	1.0

# Elliott

### EMC Test Data

	An AZAS company		
Client:	Proxim Corporation	Job Number:	J75847
Model:	PROXMB82 802.11abgn miniPCI module (3x3)	T-Log Number:	T75950
		Account Manager:	-
Contact:	Ivaylo Tankov		
Standard:	FCC Part 15 Subpart E, RSS 210	Class:	N/A

### RSS 210 and FCC 15.407 (UNII) Radiated Spurious Emissions

### **Test Specific Details**

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

### General Test Configuration

The EUT was installed into a test fixture such that the EUT was exposed (i.e. outside of a host system).

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:	Temperature:	18-26 °C	
	Rel. Humidity:	25-35 %	

### Modifications Made During Testing

No modifications were made to the EUT during testing

#### Deviations From The Standard

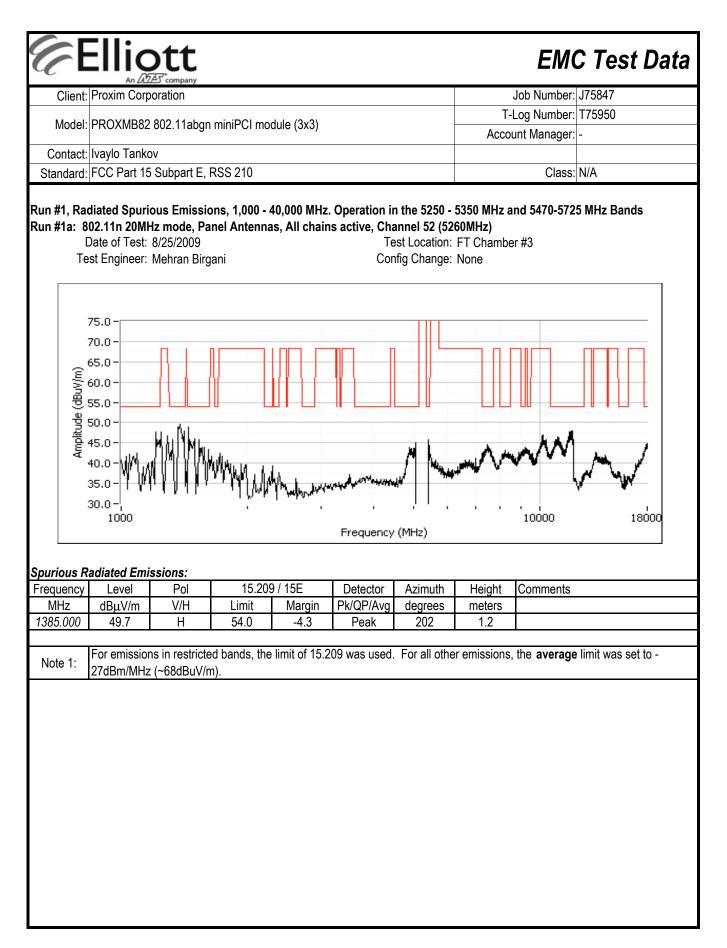
No deviations were made from the requirements of the standard.

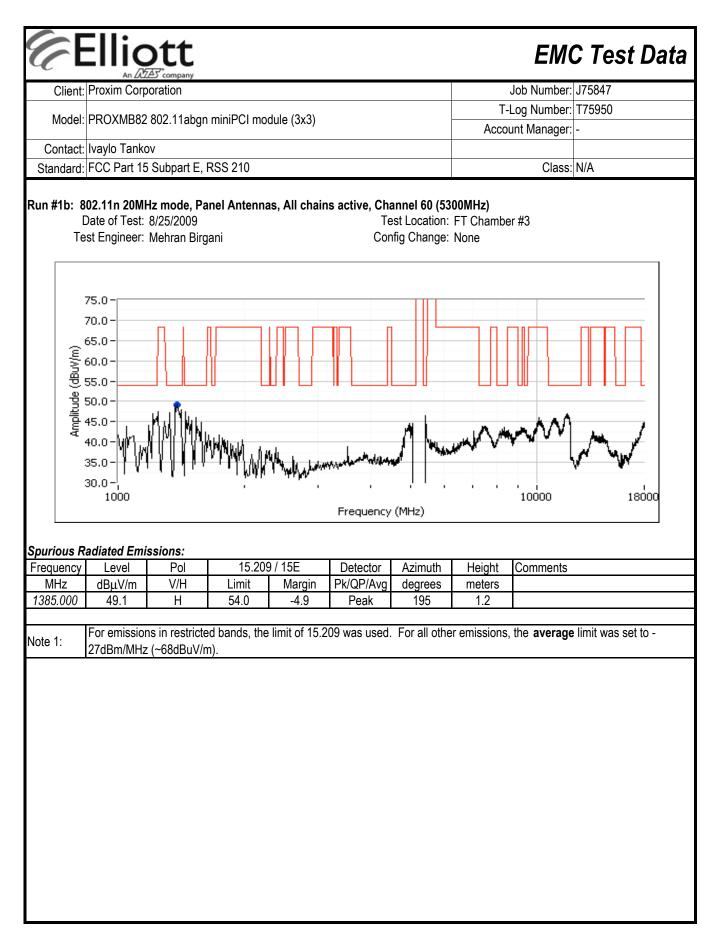
#### Summary of Results

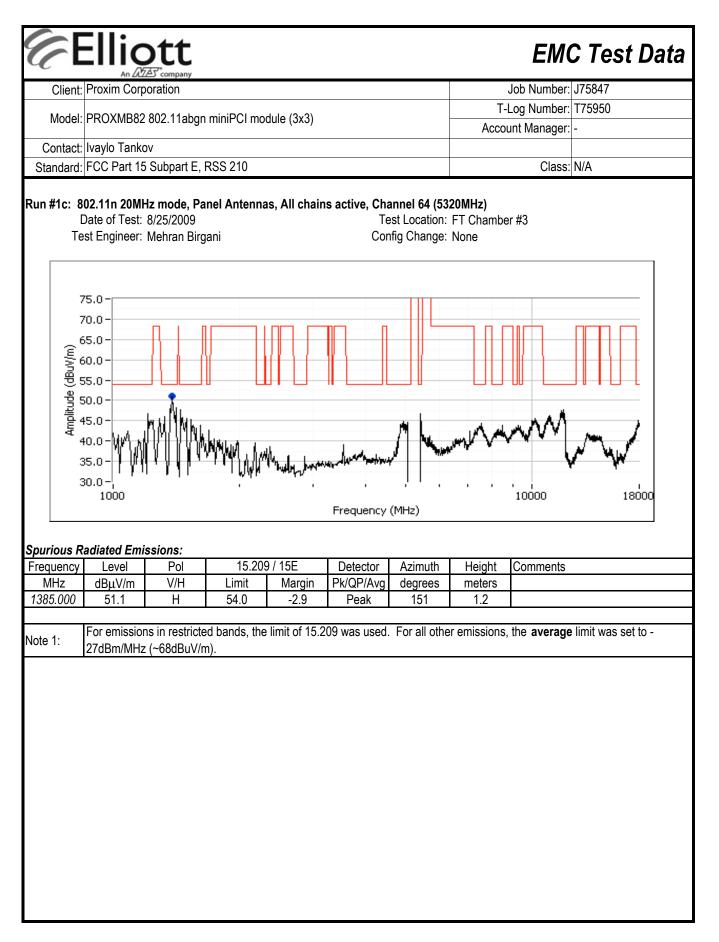
Note - the choice of operating modes for radiated spurious emissions was based on test results for the original module. The original results showed that the spurious emissions related to operation in the 5250-5350MHz band were highest in 802.11n 20MHz (HT20) mode with a margin of 4.7dB.

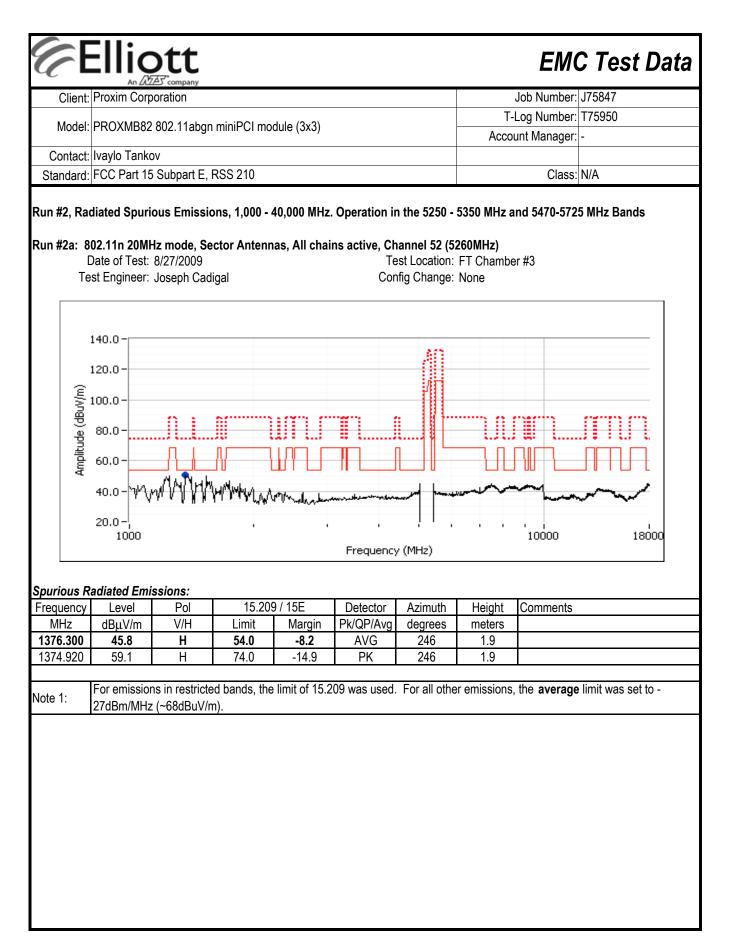
Run #	Mode	Channel	Attenuator (dB)	Power Setting	Test Performed	Limit	Result / Margin
1a	802.11n20 A+B+C Panel Antenna	5260 MHz (#52)	20.0	18.0	Radiated Emissions 1 - 40 GHz	FCC 15.209 / 15 E	49.7dBµV/m @ 1385.0MHz (-4.3dB)
1b		5300 MHz (#60)	20.0	18.0	Radiated Emissions 1 - 40 GHz	FCC 15.209 / 15 E	49.1dBµV/m @ 1385.0MHz (-4.9dB)
1c		5320MHz (#64)	20.0	18.0	Radiated Emissions 1 - 40 GHz	FCC 15.209 / 15 E	51.1dBµV/m @ 1385.0MHz (-2.9dB)
2a	802.11n20 A+B+C Sector	5260 MHz (#52)	20.0	16.0	Radiated Emissions 1 - 40 GHz	FCC 15.209 / 15 E	45.8dBµV/m @ 1376.3MHz (-8.2dB)
2b		5300 MHz (#60)	10.0	19.0	Radiated Emissions 1 - 40 GHz	FCC 15.209 / 15 E	58.2dBµV/m @ 1375.3MHz (-15.8dB)
2c	Antenna	5320MHz (#64)	10.0	19.0	Radiated Emissions 1 - 40 GHz	FCC 15.209 / 15 E	59.3dBµV/m @ 1375.2MHz (-14.7dB)

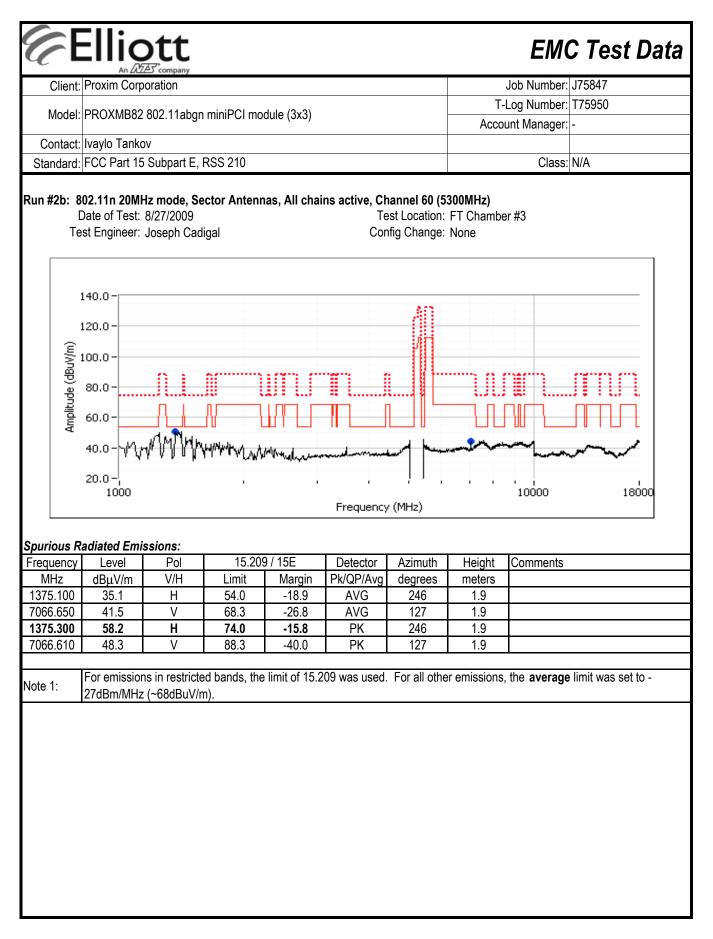
Note: No signal was found above 12GHz.

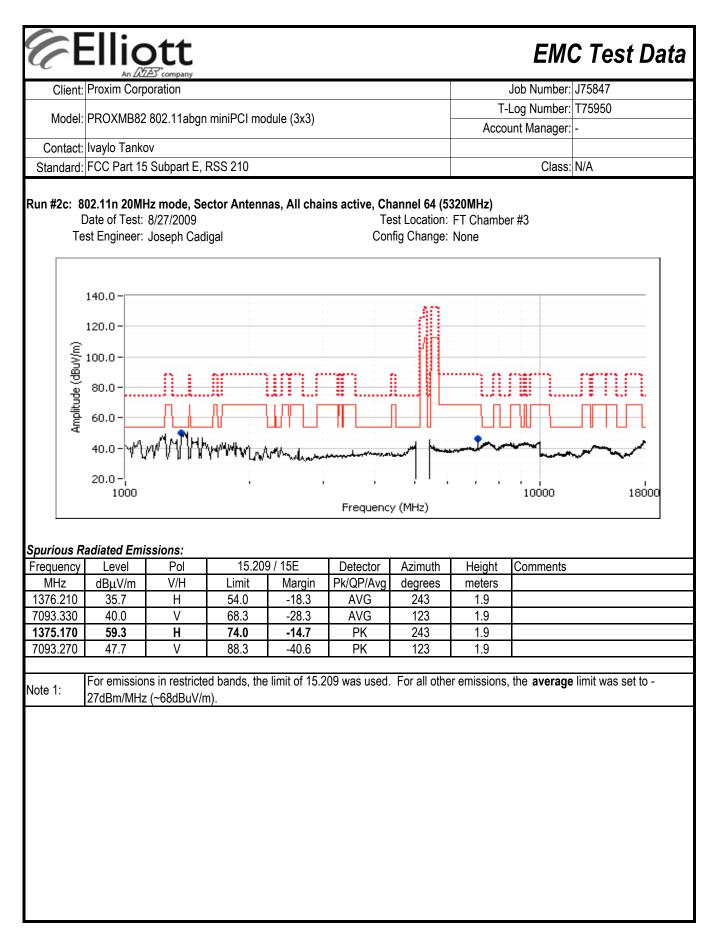












### Appendix C Submittal Documentation

The following is a list of documents required to support certification of a device under FCC and Industry Canada regulations.

Item	Status				
Label & Label Location	Not submitted - no change from original submittal documents.				
Detailed Photographs	Not submitted - no change from original submittal documents.				
Manual	The Installation manual for a host system that will use the sector				
	and panel antennas described in this filing has been uploaded as a				
	separate document. The installation manual shows the required				
	power setting for professional installers when the module is used				
	in host systems using high-gain antennas.				
Block Diagram	Not submitted - no change from original submittal documents.				
Schematic Diagrams	Not submitted - no change from original submittal documents.				
Theory of Operation	Not submitted - no change from original submittal documents.				
Test Configuration	Submitted as a separate document				
Photographs					
MPE Calculation	Submitted as a separate document				