

#### *EMC Test Report Industry Canada RSS-Gen Issue 3 / RSS 210 Issue 8 FCC Part 15, Subpart E Model: LocoM5*

- IC CERTIFICATION #: 6545A-M5LB FCC ID: SWX-M5LD
  - APPLICANT: Ubiquiti Networks 91 E. Tasman Drive San Jose, CA 95134
  - TEST SITE(S): Elliott Laboratories 41039 Boyce Road. Fremont, CA. 94538-2435

#### IC SITE REGISTRATION #:

REPORT DATE: August 5, 2011

FINAL TEST DATES:

TOTAL NUMBER OF PAGES:

204

PROGRAM MGR / TECHNICAL REVIEWER:

Mark Briggs

Staff Engineer

QUALITY ASSURANCE DELEGATE / FINAL REPORT PREPARER:

2845B-3; 2845B-4, 2845B-5, 2845B-7

June 1 and June 14, 2011

April 12, 14, 18, 22, May 3, 4, 5, 9, 19, 25, 26,

David Guidotti Senior Technical Writer



Elliott Laboratories is accredited by the A2LA, certificate number 2016.01, to perform the test(s) listed in this report, except where noted otherwise. This report and the information contained herein represent the results of testing test articles identified and selected by the client performed to specifications and/or procedures selected by the client. National Technical Systems (NTS) makes no representations, expressed or implied, that such testing is adequate (or inadequate) to demonstrate efficiency, performance, reliability, or any other characteristic of the articles being tested, or similar products. This report should not be relied upon as an endorsement or certification by NTS of the equipment tested, nor does it represent any statement whatsoever as to its merchantability or fitness of the test article, or similar products, for a particular purpose. This report shall not be reproduced except in full

Testing Cert #2016.01

### **REVISION HISTORY**

Rev#	Date	Comments	Modified By
-	08-05-2011	First release	

#### TABLE OF CONTENTS

REVISION HISTORY	2
TABLE OF CONTENTS	3
SCOPE	5
OBJECTIVE	
STATEMENT OF COMPLIANCE	6
DEVIATIONS FROM THE STANDARDS	6
TEST RESULTS SUMMARY	
GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS	
MEASUREMENT UNCERTAINTIES	
EQUIPMENT UNDER TEST (EUT) DETAILS	
GENERAL.	
ANTENNA SYSTEM	
ENCLOSURE	
MODIFICATIONS	11
SUPPORT EQUIPMENT	
EUT INTERFACE PORTS	
EUT OPERATION	12
TEST SITE	13
GENERAL INFORMATION	13
CONDUCTED EMISSIONS CONSIDERATIONS	13
RADIATED EMISSIONS CONSIDERATIONS	
MEASUREMENT INSTRUMENTATION	14
RECEIVER SYSTEM	
INSTRUMENT CONTROL COMPUTER	
LINE IMPEDANCE STABILIZATION NETWORK (LISN)	
FILTERS/ATTENUATORS	
ANTENNAS	15
ANTENNA MAST AND EQUIPMENT TURNTABLE	15
INSTRUMENT CALIBRATION	15
TEST PROCEDURES	16
EUT AND CABLE PLACEMENT	
CONDUCTED EMISSIONS	
RADIATED EMISSIONS	16
RADIATED EMISSIONS	
CONDUCTED EMISSIONS FROM ANTENNA PORT	19
BANDWIDTH MEASUREMENTS	
SPECIFICATION LIMITS AND SAMPLE CALCULATIONS	
GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS	
RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS	
FCC 15.407 (A) OUTPUT POWER LIMITS	
OUTPUT POWER LIMITS –LELAN DEVICES	
SPURIOUS EMISSIONS LIMITS –UNII AND LELAN DEVICES	
SAMPLE CALCULATIONS - CONDUCTED EMISSIONS	
SAMPLE CALCULATIONS - RADIATED EMISSIONS	
SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION	24

APPENDIX A TEST EQUIPMENT CALIBRATION DATA	25
APPENDIX B TEST DATA	
APPENDIX C PHOTOGRAPHS OF TEST CONFIGURATIONS	
APPENDIX D INDUSTRY CANADA / FCC ID LABEL & LABEL LOCATION	
APPENDIX E OPERATOR'S MANUAL	
APPENDIX F BLOCK DIAGRAM	
APPENDIX G THEORY OF OPERATION	
APPENDIX H RF EXPOSURE INFORMATION	
END OF REPORT	

#### SCOPE

An electromagnetic emissions test has been performed on the Ubiquiti Networks model LocoM5, pursuant to the following rules:

Industry Canada RSS-Gen Issue 3

RSS 210 Issue 8 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"

FCC Part 15, Subpart E requirements for UNII Devices (using FCC DA 02-2138, August 30, 2002)

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

ANSI C63.4:2003

FCC UNII test procedure 2002-08 DA-02-2138, August 2002

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

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

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

#### **OBJECTIVE**

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

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

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

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

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

#### STATEMENT OF COMPLIANCE

The tested sample of Ubiquiti Networks model LocoM5 complied with the requirements of the following regulations:

RSS 210 Issue 8 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"

FCC Part 15, Subpart E requirements for UNII Devices

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

The test results recorded herein are based on a single type test of Ubiquiti Networks model LocoM5 and therefore apply only to the tested sample. The sample was selected and prepared by Jennifer Sanchez of Ubiquiti Networks.

#### DEVIATIONS FROM THE STANDARDS

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

#### TEST RESULTS SUMMARY

**Operation in the 5.25 – 5.35 GHz Band** Note: The device may 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.

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)		26dB Bandwidth	802.11a: >20MHz HT5: 8.3 MHz HT8: 10.8 MHz HT10: 13.4 MHz HT20: > 20MHz HT30: > 20MHz HT40: > 20MHz	N/A – limits output power if < 20MHz	N/A
15.407(a) (2)	A9.2(2)	Output Power	802.11a: 7.6 mW HT5: 5.8 mW HT8: 7.4 mW HT10: 11.5 mW HT20: 13.7 mW HT30: 23.5 mW HT40: 5.5 mW	SISO: 17dBm (50mW) MIMO: 14dBm (25mW) <sup>1</sup>	Complies
15.407(a) (2)	-	Power Spectral Density	802.11a: -3.9dBm/MHz HT5: 0.91 dBm/MHz HT8: 0.3 dBm/MHz 	SISO: 4 dBm/MHz MIMO: 1dBm/MHz	Complies
-	A9.2(2) / A9.5 (2)	Power Spectral Density	HT10: 0.9 dBm/MHz HT20: 0.7 dBm/MHz HT30: -0.9 dBm/MHz HT40: -7.5 dBm/MHz	11 dBm / MHz	Complies

<sup>&</sup>lt;sup>1</sup> As the antenna gain is 13dBi (with effective gain of 16dBi for MIMO modes due to correlation between transmit chains) the maximum allowed output power for this device is 17dBm for SISO modes and 14dBm for MIMO modes to maintain the eirp below 30dBm.

FCC	RSS	Description	Measured Value /	Limit / Requirement	Result
Rule Part	Rule Part	1	Comments	1	(margin)
15.407(a) (2)		26dB Bandwidth	802.11a: >20MHz HT5: 8.3 MHz HT8: 11.5 MHz HT10: 15.0 MHz HT20: > 20MHz HT30: > 20MHz HT40: > 20MHz	N/A – limits output power if < 20MHz	N/A
15.407(a) (2)	A9.2(2)	Output Power	802.11a: 17.8 mW HT5: 6.0 mW HT8: 9.6 mW HT10: 11.9 mW HT20: 23.3 mW HT30: 24.1 mW HT40: 21.6 mW	SISO: 17dBm (50mW) MIMO: 14dBm (25mW) <sup>2</sup>	Complies
15.407(a) (2))		Power Spectral Density	802.11a: -0.3dBm/MHz HT5: 1.0 dBm/MHz HT8: 0.9 dBm/MHz -HT10: 0.9 dBm/MHz	SISO: 4 dBm/MHz MIMO: 1dBm/MHz	Complies
	A9.2(2) / A9.5 (2)	Power Spectral Density	HT10: 0.9 dBm/MHz HT20: 1.5 dBm/MHz HT30: -0.7 dBm/MHz HT40: -2.8 dBm/MHz	11 dBm / MHz	Complies
KDB 443999	A9	Non-operation in 5600 – 5650 MHz sub band	Device cannot operate in the 5600 – 5650 MHz band –refer to Operational Description		Complies

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

<sup>&</sup>lt;sup>2</sup> As the antenna gain is 13dBi (with effective gain of 16dBi for MIMO modes due to correlation between transmit chains) the maximum allowed output power for this device is 17dBm for SISO modes and 14dBm for MIMO modes to maintain the eirp below 30dBm.

<b>Requirements</b>	for all U-NII/I	FI AN bonds		Report Dute. Mug	
FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407	A9.5a	Modulation	Digital Modulation is used (OFDM with BPSK-64 QAM))	Digital modulation is required	Complies
15.407(b) (5) / 15.209	A9.3	Spurious Emissions below 1GHz	Note 1		-
15.407(b) (5) / 15.209	A9.3	Spurious Emissions above 1GHz	54.0dBµV/m @ 5357.6MHz (802.11a Mode)	Refer to page 22	Complies (- 0.0 dB)
15.407(a)(6)	-	Peak Excursion Ratio	12.9dB (HT10 mode)	< 13dB	Complies
15	A9.5 (3)	- Channel Selection	Spurious emissions tested at outermost channels in each band Measurements on three channels in each	Device was tested on the top, bottom and center channels in each band for each operating	N/A
15			band	mode.	
15.407 (c)	A9.5(4)	Operation in the absence of information to transmit	Operation is discontinued in the absence of information (refer to Operational Description )	Device shall automatically discontinue operation in the absence of information to transmit	Complies
15.407 (g)	A9.5 (5)	Frequency Stability	Frequency stability is better than 10ppm (Operational Description)	Signal shall remain within the allocated band	Complies
15.407 (h1)	A9.4	Transmit Power Control	TPC mechanism is discussed in the Operational Description. Power measurements were made to show the device has the required dynamic range.	The U-NII device shall have the capability to operate with a mean EIRP value lower than 24dBm (250mW)	Complies
15.407 (h2)	A9.4	Dynamic frequency Selection (device with radar detection)	Refer to separate test report, reference R83910	Threshold64dBm Channel Availability Check > 60s Channel closing transmission time < 260ms Channel move time < 10s Non occupancy period > 30minutes	Complies
	A9.9g	User Manual information	Refer to Exhibit 6 for details	Warning regarding interference from Satellite Systems	Complies

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Integral antenna	Unique or integral antenna required	Complies
15.207	RSS GEN Table 2	AC Conducted Emissions	does not affect the pre-	PC to add the NII freque viously reported measur conducted emissions.	
15.109	RSS GEN 7.2.3 Table 1	Receiver spurious emissions	43.0dBµV/m @ 1440.0MHz	Refer to page 21	Complies (- 11 dB)
15.247 (b) (5) 15.407 (f)	RSS 102	RF Exposure Requirements	Refer to MPE calculations in Exhibit 11, RSS 102 declaration and User Manual statements.	Refer to OET 65, FCC Part 1 and RSS 102	Complies
-	RSP 100 RSS GEN 7.1.5	User Manual	Refer to Manual	Statement required regarding non- interference	Complies
-	RSP 100 RSS GEN 4.4.1	99% Bandwidth	802.11a: 17.1MHz HT5: 8.3 MHz HT8: 7.5 MHz HT10: 9.4 MHz HT20: 18.2MHz HT30: 27.0MHz HT40: 36.9MHz	Information only	N/A

#### GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

#### 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	Measurement Unit	Frequency Range	Expanded Uncertainty
RF power, conducted (power meter)	dBm	25 to 7000 MHz	$\pm 0.52 \text{ dB}$
RF power, conducted (Spectrum analyzer)	dBm	25 to 7000 MHz	$\pm 0.7 \text{ dB}$
Conducted emission of transmitter	dBm	25 to 26500 MHz	$\pm 0.7 \text{ dB}$
Conducted emission of receiver	dBm	25 to 26500 MHz	$\pm 0.7 \text{ dB}$
Radiated emission (substitution method)	dBm	25 to 26500 MHz	± 2.5 dB
Radiated emission (field strength)	dBµV/m	25 to 1000 MHz 1000 to 40000 MHz	$\frac{\pm 3.6 \text{ dB}}{\pm 6.0 \text{ dB}}$
Conducted Emissions (AC Power)	dBµV	0.15 to 30 MHz	± 2.4 dB

#### EQUIPMENT UNDER TEST (EUT) DETAILS

#### GENERAL

The Ubiquiti Networks model LocoM5 is a proprietary Access Point which is designed to provide wireless communications links using MIMO technology with bandwidths of between 5 and 40 MHz. The system also supports one MISO operating bandwidth of 20MHz. The operating frequency ranges for each mode are:

Mode	Frequency Range	Bandwidth
HT5	5255-5340 MHz, 5475-5595 MHz, 5655-5715 MHz	5 MHz
HT8	5260-5330MHz, 5480-5595MHz, 5655-5715 MHz	8 MHz
HT10	5260-5330MHz, 5480-5590MHz, 5660-5710 MHz	10 MHz
HT20	5265-5320MHz, 5500-5580MHz, 5660-5700MHz	20 MHz
HT30	5275-5315MHz, 5500-5580MHz, 5665-5680 MHz	30 MHz
HT40	5275-5310 MHz, 5510 MHz-5550 MHz, 5670 MHz	40 MHz
802.11a	5270-5320MHz, 5500-5580MHz, 5660-5700MHz	20 MHz

Since the EUT would normally be pole or wall mounted during operation, the EUT was located on a pole at a height of approximately 0.8m to 1.0m above the ground plane. The device is designed to be powered via Power-over-Ethernet and the PoE adapter used during testing was rated at 100-240 Volts, 50-60 Hz, .3 Amps.

The sample was received on April 12, 2011 and tested on April 12, 14, 18, 22, May 3, 4, 5, 9, 19, 25, 26, June 1 and June 14, 2011. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID
Ubiquiti Networks	NanoStation Loco M5 wideband Wireless Access Point/bridge	Sample for conducted measurements Sample for radiated measurements	-	SWX-M5LD

#### ANTENNA SYSTEM

The antenna is integral to the device and has 13 dBi gain per element.

#### ENCLOSURE

The EUT enclosure is primarily constructed of plastic. It measures approximately 8 cm wide by 28 cm deep by 6 cm high.

#### **MODIFICATIONS**

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

#### SUPPORT EQUIPMENT

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

Company	Model	Description	Serial Number
DELL	Vostro 1000	Laptop	28832224069
Ubiquiti	UBI-POE-24-1	PoE	0912-0000635

#### 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)
Ethernet	POE Injector	Cat 5 UTP	Unshielded	10
PoE Injector	Laptop	Cat 5 UTP	Unshielded	3
PoE Injector	AC-DC adapter	2-wire	Unshielded	1

#### EUT OPERATION

During testing, the EUT was configured via the ART test utility to either transmit continuously or be in a continuous receive mode. The transmit mode measurements were made win each of the modes supported at the lowest data rate in that mode (the highest power in each mode is achieved at the lowest data rate). There was one MISO mode (802.11a) and 6 different MIMO modes supporting bandwidths of 5 MHz, 8 MHz, 10MHz, 20MHz, 30 MHz and 40MHz.

#### 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	Registratio	Location	
Site	FCC	Canada	Location
Chamber 3	769238	2845B-3	
Chamber 4	211948	2845B-4	41039 Boyce Road
Chamber 5	211948	2845B-5	Fremont,
Chamber 7	A2LA	2845B-7	CA 94538-2435
Chamber /	accreditation	2043D-/	

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.

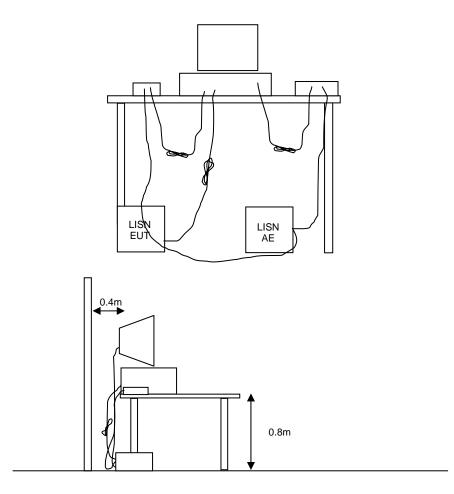


Figure 1 Typical Conducted Emissions Test Configuration

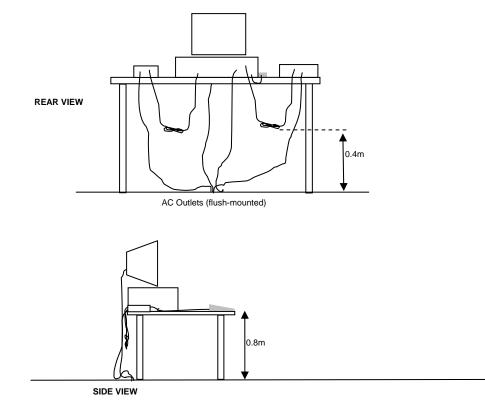
#### RADIATED EMISSIONS

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.

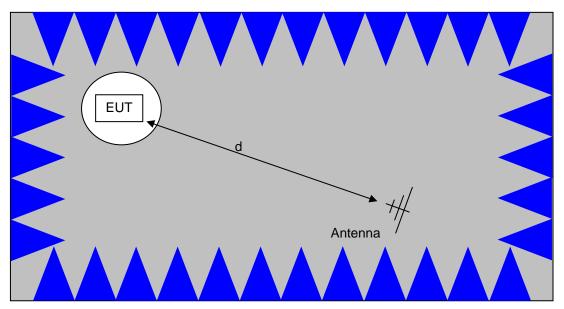
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

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.

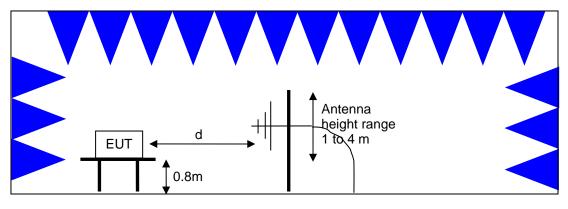


Typical Test Configuration for Radiated Field Strength Measurements



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.

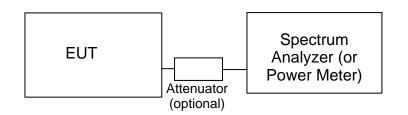
Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



<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:

#### GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands<sup>3</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

<sup>&</sup>lt;sup>3</sup> The restricted bands are detailed in FCC 15.203, RSS 210 Table 1 and RSS 310 Table 2

#### RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS

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

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

#### FCC 15.407 (a) OUTPUT POWER LIMITS

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

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

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

The peak excursion envelope is limited to 13dB.

#### **OUTPUT POWER LIMITS –LELAN DEVICES**

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

Operating Frequency (MHz)	Output Power	Power Spectral Density
5150 - 5250	200mW (23 dBm) eirp	10 dBm/MHz eirp
5250 - 5350	$250 \text{ mW} (24 \text{ dBm})^4$ 1W (30dBm) eirp	11 dBm/MHz
5470 - 5725	$250 \text{ mW} (24 \text{ dBm})^5$ 1W (30dBm) eirp	11 dBm/MHz
5725 - 5825	1 Watt (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.

#### SPURIOUS EMISSIONS 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 equivalent to a field strength of 68.3dBuV/m/MHz at a distance of 3m. Measurements against this limit use the same measurement method as those used to determine the inband power spectral density. 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>4</sup> If EIRP exceeds 500mW the device must employ TPC

<sup>&</sup>lt;sup>5</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:

$$R_c = R_r + F_d$$

and

 $M = R_c - L_s$ 

where:

 $R_r$  = Receiver Reading in dBuV/m

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

#### SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

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

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

d

where P is the eirp (Watts)

For a measurement at 3m the conversion from a logarithmic value for field strength (dBuV/m) to an eirp power (dBm) is -95.3dB.

### Appendix A Test Equipment Calibration Data

<b>Radio Antenna Port (f <u>Manufacturer</u> Hewlett Packard</b>	Power and Spurious Emissions), Description SpecAn 9 KHz-26.5 GHz, Non- Program	14-Apr-11 <u>Model</u> 8563E	<u>Asset #</u> 284	<u>Cal Due</u> 1/13/2012
Radio Antenna Port (F <u>Manufacturer</u> Hewlett Packard	Power and Spurious Emissions), <u>Description</u> SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	15-Apr-11 <u>Model</u> 8564E (84125C)	<u>Asset #</u> 1393	<u>Cal Due</u> 5/14/2011
Radio Antenna Port (F <u>Manufacturer</u> Hewlett Packard	Power and Spurious Emissions), Description SpecAn 30 Hz -40 GHz, SV (SA40) Red	18-Apr-11 <u>Model</u> 8564E (84125C)	<u>Asset #</u> 1148	<u>Cal Due</u> 7/12/2011
Radiated Emissions, <u>Manufacturer</u> Hewlett Packard	1000 - 18,000 MHz, 19-Apr-11 <u>Description</u> Microwave Preamplifier, 1- 26.5GHz	<u>Model</u> 8449B	<u>Asset #</u> 263	<u>Cal Due</u> 12/8/2011
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	7/12/2011
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	9/21/2012
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2251	10/21/2011
<b>UNII Bandedge, 22-Ap <u>Manufacturer</u> Hewlett Packard</b>	o <b>r-11</b> <u>Description</u> Microwave Preamplifier, 1- 26.5GHz	<u>Model</u> 8449B	<u>Asset #</u> 263	<u>Cal Due</u> 12/8/2011
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	7/12/2011
EMCO	Àntenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	9/21/2012
<b>Radio Antenna Port (I <u>Manufacturer</u> Hewlett Packard</b>	Power and Spurious Emissions), Description SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	28-Apr-11 <u>Model</u> 8564E (84125C)	<u>Asset #</u> 1393	<u>Cal Due</u> 5/14/2011
<b>Radio Antenna Port (F <u>Manufacturer</u> Agilent</b>	Power and Spurious Emissions), <u>Description</u> PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	<b>04-May-11</b> <u>Model</u> E4446A	<u>Asset #</u> 2139	<u>Cal Due</u> 1/26/2012
<b>Radio Antenna Port (F <u>Manufacturer</u> Agilent</b>	Power and Spurious Emissions), <u>Description</u> PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	11-May-11 <u>Model</u> E4446A	<u>Asset #</u> 2139	<u>Cal Due</u> 1/26/2012

Radiated Emissions,	1000 - 40000MHz, 27-May-11			
Manufacturer	Description	Model	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	263	12/8/2011
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	6/14/2011
EMCO	Antenna, Horn, 1-18 GHz	3115	1561	6/22/2012
Radiated Spurious E	nissions, 1 - 18 GHz, 27-May-11			
			-	
<u>Manufacturer</u>	<u>Description</u>	<u>Model</u>	<u>Asset #</u>	<u>Cal Due</u>
<u>Manufacturer</u> Hewlett Packard	<u>Description</u> Microwave Preamplifier, 1- 26.5GHz	<u>Model</u> 8449B	<u>Asset #</u> 263	<u>Cal Due</u> 12/8/2011
	Microwave Preamplifier, 1-			
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	263	12/8/2011
Hewlett Packard EMCO Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz Antenna, Horn, 1-18 GHz SpecAn 30 Hz -40 GHz, SV	8449B 3115 8564E (84125C)	263 487	12/8/2011 7/6/2012

Manufacturer	Description	WICHEI	<u>A3361 m</u>	
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	7/12/2011

### Appendix B Test Data

T82792 Pages 28 - 197

# ©Elliott

## EMC Test Data

AD DALC-	5 company		
Client:	Ubiquiti Networks	Job Number:	J82749
Model:	NanoStation Loco M5	T-Log Number:	T82792
		Account Manager:	Susan Pelzl
Contact:	Jennifer Sanchez		-
Emissions Standard(s):	FCC 15E, RSS-210	Class:	-
Immunity Standard(s):	-	Environment:	-

### **EMC** Test Data

For The

### **Ubiquiti Networks**

Model

#### NanoStation Loco M5

Date of Last Test: 6/15/2011

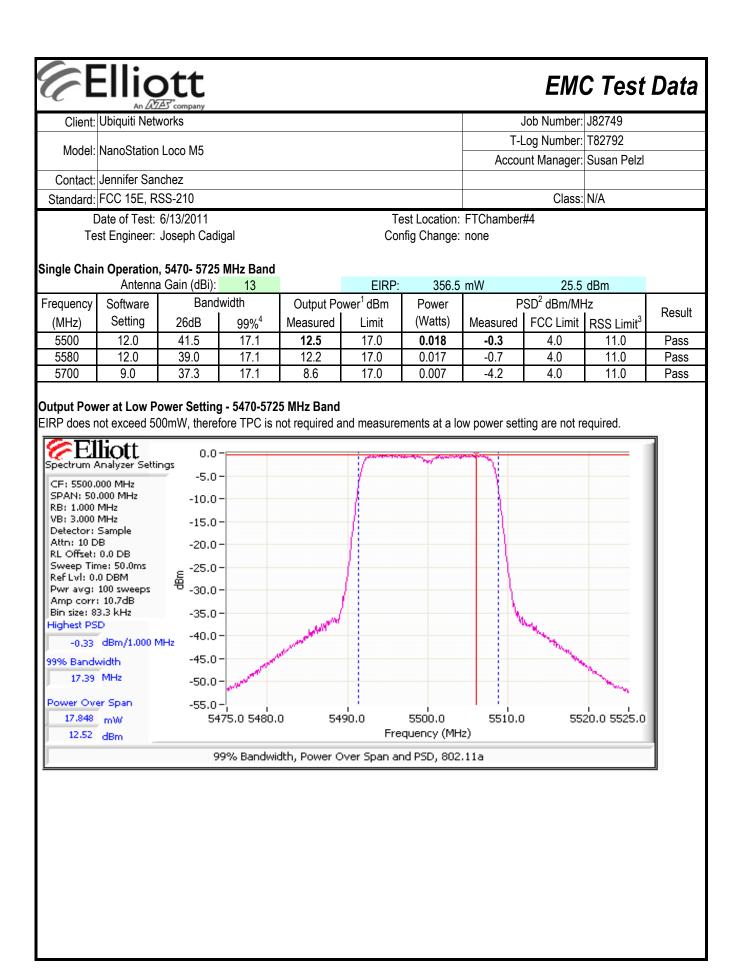
Ellic	ott			EMO	C Test Data
Client: Ubiquiti Net	_			Job Number:	J82749
Model: NanoStatio	n Loop ME		T-I	Log Number:	T82792
			Αссοι	unt Manager:	Susan Pelzl
Contact: Jennifer Sa					
Standard: FCC 15E, F	RSS-210			Class:	N/A
	•	N) and FCC 15.40 Port Measuremen n, Bandwidth and S	Its	missions	
Test Specific Detai	ls				
Objective	The objective of this test session is to	perform final qualification	n testing of th	ne EUT with r	espect to the
Date of Test	4/12/2011 18:25	Config. Used:	1		
	Rafael Varelas, Joseph Cadigal	Config Change:			
Test Location:	Fremont Chamber #7	EUT Voltage:	POE		
Summary of Resul	ts				
Run #	Test Performed	Limit	Pass / Fail	Result / Mar	gin
1	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	802.11a: 7.6	
1	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	802.11a: -3.	
1	Power, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	802.11a: 17	
1	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	802.11a: -0.	3 dBm/MHz
1	26dB Bandwidth	15.407 (Information only)	-	> 20MHz	
1	99% Bandwidth	RSS 210 (Information only)	N/A	802.11a (20	MHz): 17.1 MHz
2	Peak Excursion Envelope	15.407(a) (6)	Pass	802.11a (20	MHz): 11.5dB
3	Antenna Conducted - Out of Band Spurious (802.11a 20MHz)	15.407(b) -27dBm/MHz	Pass	All emission limit	s below -27dBm/MHz
General Test Confi				in in c	
When measuring the co analyzer or power meter	nducted emissions from the EUT's anter via a suitable attenuator to prevent over enuators and cables used.				
	Temperature:20.7Rel. Humidity:36				
Modifications Mad	e 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.

An /AZ	ott						EMO	C Test	Data
Ubiquiti Netv	A company						lob Number:	J82749	
						T-I	.og Number:	T82792	
I: NanoStation Loco M5									
FCC 15E, R	SS-210						Class:	N/A	
Measured us	sing the same	e analyzer se	ettings used f	or output pov	ver.	· · · ·			
(calculated fi	rom the mea	sured power	divided by th	ne measured	-				-
					10/ of an ar		חח		
					1% of spar		XKD		
				E Bana 000.					
ate of Test:	6/13/2011			Те	st Location:	FTChamber	#4		
t Engineer:	Joseph Cadi	gal		Con	fig Change:	none			
0		Mille David							
				FIRP.	151.0	mW	21.8	dBm	
			Output Po						_
									Result
MHz	LOUD	0070	modourou	2	( )	modourou			
8.0	28.5	17.3	8.5	17.0	0.0071	-4.0	4.0	11.0	Pass
8.0	32.3	17.1	8.8	17.0	0.0076	-3.9	4.0	11.0	Pass
5.0	29.0	17.0	5.7	17.0	0.0037	-6.8	4.0	11.0	Pass
	d 500mW TF	C is not req							
es not excee Light nalyzer Settin 00 MHz MHz MHz Sample 3 0.0 DB ie: 50.0ms 0 DBM 10.7 dB :.3 kHz 0 dBm/1.000 N	d 500mW TP 0.0・ -10.0・ -10.0・ -15.0・ -25.0・ -25.0・ -25.0・ -35.0・ -40.0・ -45.0・						Mar Marine		
es not excee Liott nalyzer Settin 00 MHz 000 MHz MHz MHz MHz 5ample 8 0.0 DB 10.7 dB 10.7 dB 10.7 dB 10.7 dB 10.7 dB	d 500mW TF 0.0・ -10.0・ -10.0・ -15.0・ -20.0・ -25.0・ -25.0・ -35.0・ -40.0・ -40.0・ -50.0・						Martin Martin		
es not excee Liott nalyzer Settin 00 MHz MHz MHz MHz 5ample 8 0.0 DB 10.7	d 500mW TP 0.0・ -10.0・ -10.0・ -15.0・ -25.0・ -25.0・ -35.0・ -40.0・ -55.0・						Martin Martin		
es not excee Liott nalyzer Settin 00 MHz 000 MHz MHz 5ample 3 0 DB 0 DB 10.7 dB 3.3 kHz dBm/1.000 M width	d 500mW TP 0.0・ -5.0・ -10.0・ -15.0・ -20.0・ -25.0・ -25.0・ -35.0・ -40.0・ -55.0・ -55.0・ -60.0・		uired.	90.0	5300.0 quency (MH	5310.0		20.0 5325.0	
	FCC 15E, R dwidth, Out Dutput powe averaging or Measured us For RSS-210 (calculated fine measured va 29% Bandwi Software set ate of Test: ate of Test: ate of Test: ate of Test: ate of Test: ate of Setting MHz 8.0 8.0 5.0	Output power measured is averaging on (transmitted Measured using the same For RSS-210 the limits and calculated from the measured value exceeds 29% Bandwidth measure Software settings in blue         ate of Test:       6/13/2011         ate of Test:       6/13/2011         ate of Test:       6/13/2011         ate of Test:       6/13/2011         Software       Bandwidth measure         Software       Same Software         Software       Bandwidth         Software       Date Software         Software	FCC 15E, RSS-210 <b>dwidth, Output Power and Power S</b> Output power measured using a spect averaging on (transmitted signal was Measured using the same analyzer set For RSS-210 the limits are corrected to (calculated from the measured power measured value exceeds the average 29% Bandwidth measured in accorda Software settings in blue are the power ate of Test: 6/13/2011         Operation, 5250-5350 MHz Band Antenna Gain (dBi): 13         Software Bandwidth Setting 26dB 99% <sup>4</sup> MHz         8.0 28.5 17.3         8.0 28.5 17.3         8.0 28.5 17.3	FCC 15E, RSS-210         dwidth, Output Power and Power Spectral Den         Output power measured using a spectrum analyze         averaging on (transmitted signal was continuous) a         Measured using the same analyzer settings used f         For RSS-210 the limits are corrected for instances         (calculated from the measured power divided by th         measured value exceeds the average by more tha         29% Bandwidth measured in accordance with RSS         Software settings in blue are the power levels in Ai         ate of Test: 6/13/2011         tengineer: Joseph Cadigal         Measured         Antenna Gain (dBi):       13         Software       Bandwidth       Output Po         Setting       26dB       99% <sup>4</sup> Measured         8.0       28.5       17.3       8.5         8.0       32.3       17.1       8.8         5.0       29.0       17.0       5.7	FCC 15E, RSS-210dwidth, Output Power and Power Spectral Density - SingleOutput power measured using a spectrum analyzer (see plots be averaging on (transmitted signal was continuous) and power into Measured using the same analyzer settings used for output powerMeasured using the same analyzer settings used for output powerFor RSS-210 the limits are corrected for instances where the hi (calculated from the measured power divided by the measured measured value exceeds the average by more than 3dB.29% Bandwidth measured in accordance with RSS GEN - RB > Software settings in blue are the power levels in Art Build 930.Attention of Test: 6/13/2011TestAntenna Gain (dBi):13EIRP: SoftwareSoftwareBandwidthOutput Power <sup>1</sup> dBmSoftwareBandwidthOutput Power <sup>1</sup> dBm	FCC 15E, RSS-210         dwidth, Output Power and Power Spectral Density - Single Chain Syst         Output power measured using a spectrum analyzer (see plots below). RBW         averaging on (transmitted signal was continuous) and power integration over         Weasured using the same analyzer settings used for output power.         For RSS-210 the limits are corrected for instances where the highest measure         (calculated from the measured power divided by the measured 99% bandw         measured value exceeds the average by more than 3dB.         29% Bandwidth measured in accordance with RSS GEN - RB > 1% of spar         Software settings in blue are the power levels in Art Build 930.         ate of Test: 6/13/2011       Test Location:         th Engineer: Joseph Cadigal       Config Change: <b>n Operation, 5250-5350 MHz Band</b> Antenna Gain (dBi):       13       EIRP:       151.0         Software       Bandwidth       Output Power <sup>1</sup> dBm       Power         Setting       26dB       99% <sup>4</sup> Measured       Limit       (Watts)         MHz       8.0       28.5       17.3       8.5       17.0       0.0071         8.0       28.5       17.3       8.5       17.0       0.0037	Jennifer Sanchez         FCC 15E, RSS-210         dwidth, Output Power and Power Spectral Density - Single Chain Systems         Dutput power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=         averaging on (transmitted signal was continuous) and power integration over 50 MHz (m         Measured using the same analyzer settings used for output power.         For RSS-210 the limits are corrected for instances where the highest measured value of (calculated from the measured power divided by the measured 99% bandwidth) by more measured value exceeds the average by more than 3dB.         99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3         Software settings in blue are the power levels in Art Build 930.         ate of Test: 6/13/2011       Test Location: FTChambers         ate of Test: 6/13/2011       Test Location: FTChambers         software       Bandwidth       Output Power <sup>1</sup> dBm       Power       Pr         Measured       13       EIRP:       151.0 mW       Measured         Software       Bandwidth       Output Power <sup>1</sup> dBm       Power       Pr         8.0       28.5       17.3       8.5       17.0       0.0071       -4.0         8.0       32.3       17.1       8.8       17.0       0.0037       -6.8	Jennifer Sanchez       Class:         FCC 15E, RSS-210       Class:         dwidth, Output Power and Power Spectral Density - Single Chain Systems       Dutput power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sam averaging on (transmitted signal was continuous) and power integration over 50 MHz (method 1 of D Measured using the same analyzer settings used for output power.         For RSS-210 the limits are corrected for instances where the highest measured value of the PSD exc (calculated from the measured power divided by the measured 99% bandwidth) by more than 3dB by measured value exceeds the average by more than 3dB.         99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB         Software settings in blue are the power levels in Art Build 930.         ate of Test: 6/13/2011       Test Location: FTChamber#4         tt Engineer: Joseph Cadigal       Config Change: none         Operation, 5250-5350 MHz Band       Antenna Gain (dBi):         Antenna Gain (dBi):       13       EIRP:       151.0 mW       21.8         Software       Bandwidth       Output Power <sup>1</sup> dBm       Power       PSD <sup>2</sup> dBm/MH         Setting       26dB       99% <sup>4</sup> Measured       Limit       (Watts)       Measured       FCC Limit         MHz       8.0       28.5       17.3       8.5       17.0       0.0071       -4.0       4.0	FCC 15E, RSS-210       Class: N/A         dwidth, Output Power and Power Spectral Density - Single Chain Systems         Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sample detector, averaging on (transmitted signal was continuous) and power integration over 50 MHz (method 1 of DA-02-2138A1         Weasured using the same analyzer settings used for output power.       50 MHz (method 1 of DA-02-2138A1         For RSS-210 the limits are corrected for instances where the highest measured value of the PSD exceeds the average by more than 3dB.       50 more than 3dB.         99% Bandwidth measured power divided by the measured 99% bandwidth) by more than 3dB by the amount is measured value exceeds the average by more than 3dB.       99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB         Software settings in blue are the power levels in Art Build 930.       Test Location: FTChamber#4         At tengineer: Joseph Cadigal       Config Change: none         NOperation, 5250-5350 MHz Band       Antenna Gain (dBi):       13       EIRP:       151.0 mW       21.8 dBm         Software       Bandwidth       Output Power <sup>1</sup> dBm       Power       PSD <sup>2</sup> dBm/MHz       RSS Limit <sup>3</sup> MHz       8.0       28.5       17.3       8.5       17.0       0.0071       -4.0       4.0       11.0         8.0       28.5       17.3       8.5       17.0



### EMC Test Data

(7 E	Elliott An DES' company	EM	C Test Da
	Ubiquiti Networks	Job Number:	J82749
Model	NanoStation Loco M5	T-Log Number:	T82792
woder.		Account Manager:	Susan Pelzl
Contact:	Jennifer Sanchez		
Standard:	FCC 15E, RSS-210	Class:	N/A

#### Run #2: Peak Excursion Measurement

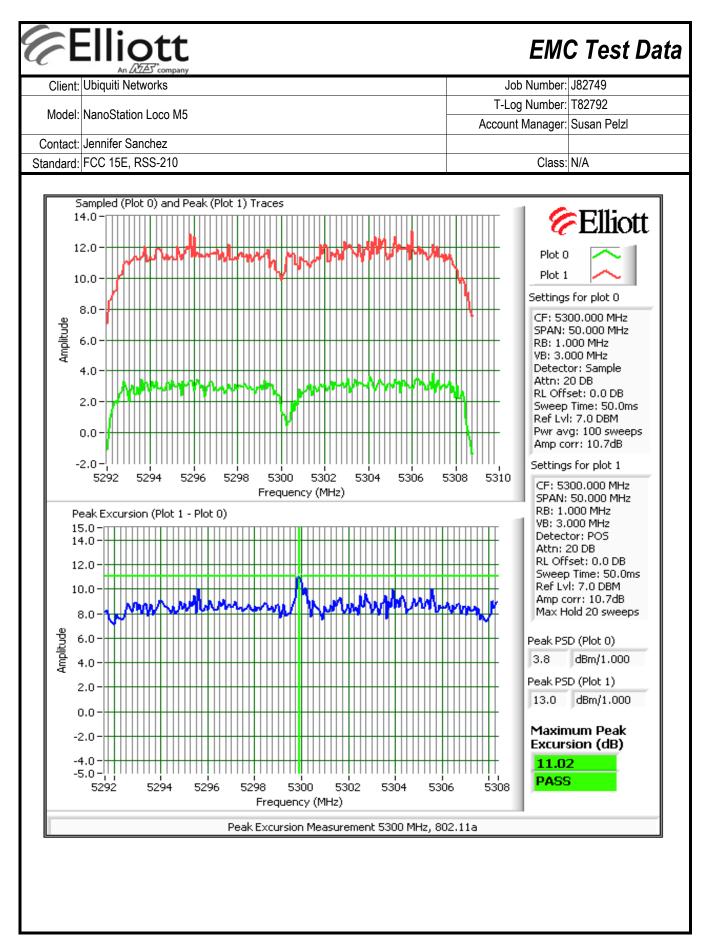
#### 20MHz: Device meets the requirement for the peak excursion

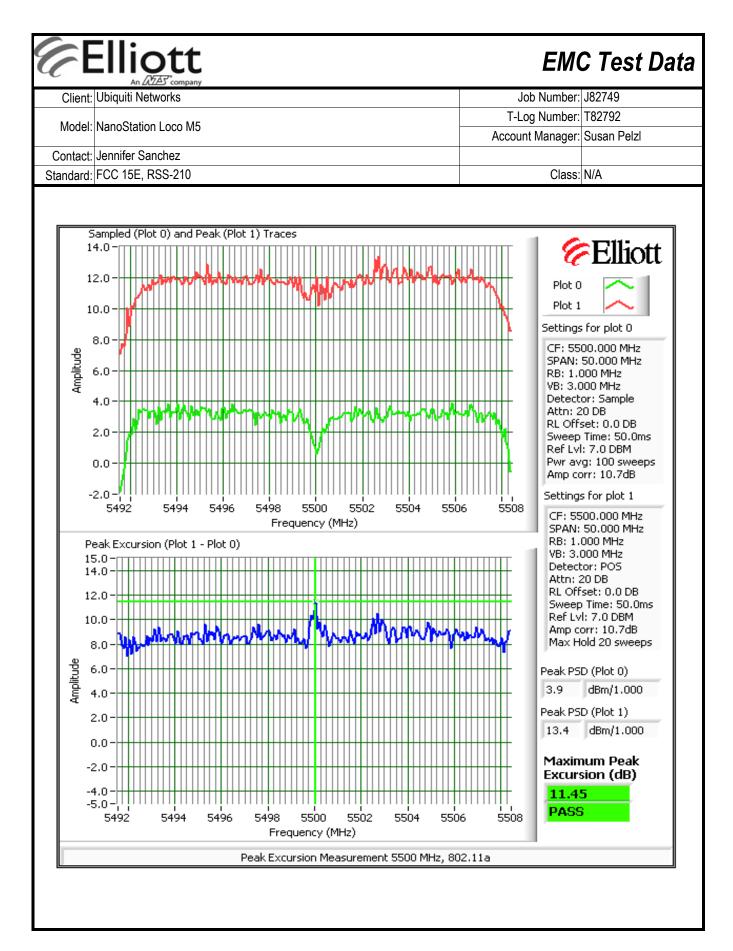
Freq	Peak Exc	ursion(dB)	Freq	Peak Exc	ursion(dB)
(MHz)	Value	Limit	(MHz)	Value	Limit
5270	11.2	13.0	5500	11.5	13.0
5300	11.0	13.0	5580	10.7	13.0
5320	11.0	13.0	5700	11.4	13.0

#### Plots Showing Peak Excursion Measurement

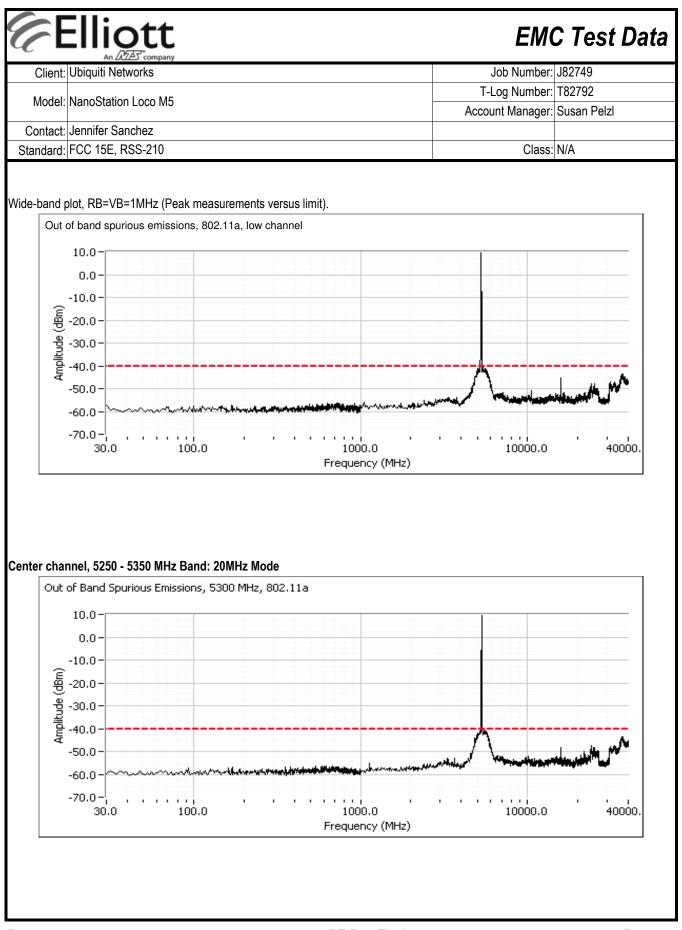
Trace A: RBW = 1MHz, VBW = 3MHz, Peak hold

Trace B: Same settings as used for power/PSD measurements (RBW = 1 MHz, VBW = 3MHz, Integrated average power)





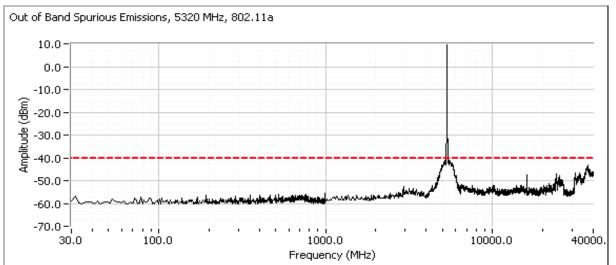
6								EM	C Test l	Data
Client	: Ubiquiti Net	works						Job Number:	J82749	
Madal	: NanoStatio	a I ago M5					T-I	Log Number:	T82792	
							Αссοι	unt Manager:	Susan Pelzl	
	: Jennifer Sa									
Standard	: FCC 15E, F	RSS-210						Class:	N/A	
un #3: O	ut Of Band S	Spurious Emi	ssions - An	itenna Cond	lucted					
	Limit	Maximum An Spi Used On Plots	urious Limit:	-27.0	dBm/MHz e	•	ent method is	method used	d for PSD	
lote 1:	consideration more than 5		im antenna le bands and	gain (limit = -	-27dBm - ant	enna gain).	Radiated fiel	d strength me	ed to take into easurements fo is the antenna g	•
lote 2:		signals below		measured du	iring digital d	evice radiate	d emissions	test.		
lote 3:		nin 10MHz of t								
ote 4:		e is for outdoo						) MHz band.		
ote 5:	Signals that	t fall in the res	tricted band	s of 15.205 a	are subject to	the limit of 1	15.209.			
lot showin	ng compliance	50 MHz Band with the -27c ower averagir	IBm/MHz lin	nit in the 515		z band. Start	and stop free	quencies set	to 5150-5250 N	MHz,
lot showin B=1MHz,	ng compliance VB=3MHz, p <b>Thiott</b>	e with the -27c ower averagir -41.0	IBm/MHz lin ng enabled (	nit in the 515		z band. Starl	and stop free	quencies set	to 5150-5250 M	MHz,
lot showin B=1MHz,	ng compliance	e with the -27c ower averagir -41.0 tings -42.0	IBm/MHz lin ng enabled ( 	nit in the 515		z band. Starl	and stop free	quencies set	to 5150-5250 N	MHz,
lot showin B=1MHz, Spectrum CF: 5200 SPAN: 1	ng compliance VB=3MHz, p Miliott Analyzer Set 0.000 MHz 100.000 MHz	e with the -270 ower averagir -41.0 tings -42.0 -43.0	IBm/MHz lin ng enabled ( 	nit in the 515		z band. Start	and stop free	quencies set	to 5150-5250 N	MHz,
lot showin B=1MHz, Spectrum CF: 5200	ng compliance VB=3MHz, p Miliott Analyzer Set 0.000 MHz 0.000 MHz 0 MHz	e with the -27c ower averagin -41.0 tings -42.0 -43.0 -44.0	IBm/MHz lin ng enabled ( 	nit in the 515		z band. Starl	and stop free	quencies set	to 5150-5250 N	MHz,
lot showin B=1MHz, Spectrum CF: 5200 SPAN: 1 RB: 1.000 VB: 3.000 Detector	ng compliance VB=3MHz, p Thiott Analyzer Set 0.000 MHz 0.000 MHz 0 MHz 0 MHz 3 Sample	e with the -270 ower averagir -41.0 -41.0 -42.0 -43.0 -44.0 -45.0	IBm/MHz lin ng enabled ( 	nit in the 515		z band. Starl	and stop free	quencies set	to 5150-5250 M	MHz,
Int showin B=1MHz, Spectrum CF: 5200 SPAN: 1 RB: 1.000 VB: 3.000 Detector Attn: 0 E RL Offsel	ng compliance VB=3MHz, p Miction Analyzer Set 0.000 MHz 0.000 MHZ	e with the -270 ower averagin -41.0 tings -42.0 -43.0 -44.0 -45.0 -46.0	IBm/MHz lin ng enabled ( 	nit in the 515		z band. Start	and stop free	quencies set	to 5150-5250 N	MHz,
ot showin B=1MHz, Spectrum CF: 5200 SPAN: 1 RB: 1.000 VB: 3.000 Detector Attn: 0 E RL Offsel Sweep T	ng compliance VB=3MHz, p Manalyzer Set 0.000 MHz 0.000 MHz 0 MHz 0 MHz c; Sample DB t: 0.0 DB Fime: 50.0ms	e with the -270 ower averagin -41.0 -41.0 -42.0 -43.0 -44.0 -45.0 -45.0 -47.0	IBm/MHz lin ng enabled ( 	nit in the 515		z band. Starl	and stop free	quencies set	to 5150-5250 N	MHz,
CF: 5200 Spectrum CF: 5200 SPAN: 1 RB: 1.000 VB: 3.000 Detector Attn: 0 E RL Offsel Sweep T Ref Lvl: Pwr avg	Ig compliance VB=3MHz, p Iliott Analyzer Set 0.000 MHz 0.000 MHz 0 MHz 0 MHz 0 MHz 10 0 MHz 10 0 DB 11 0 0 DB 11 0 0 Sweeps	e with the -27c ower averagir -41.0 -42.0 -43.0 -43.0 -44.0 -45.0 -45.0 -46.0 -47.0 慶 -48.0	IBm/MHz lin ng enabled ( 	nit in the 515		z band. Start	and stop free	quencies set	to 5150-5250 M	MHz,
International States St	Ig compliance VB=3MHz, p Analyzer Set 0.000 MHz 0.0000 MHz 0.000 M	e with the -270 ower averagin -41.0 -42.0 -43.0 -44.0 -45.0 -45.0 -45.0 -45.0 -45.0 -47.0 慶 -48.0 -49.0	IBm/MHz lin ng enabled ( 	nit in the 515		z band. Start	and stop free	quencies set	to 5150-5250 M	MHz,
CF: 5200 SPAN: 1 RB: 1.000 VB: 3.000 Detector Attn: 0 D RL Offsel Sweep T Ref Lvl: Pwr avg Amp cor	Ig compliance VB=3MHz, p Analyzer Set 0.000 MHz 0.0000 MHz 0.000 M	e with the -270 ower averagin -41.0 -43.0 -43.0 -44.0 -45.0 -46.0 -47.0 -47.0 -49.0 -50.0	IBm/MHz lin ng enabled ( 	nit in the 515		z band. Starl	and stop free	quencies set	to 5150-5250 M	MHz,
CF: 5200 Spectrum CF: 5200 SPAN: 1 RB: 1.000 VB: 3.000 Detector Attn: 0 E RL Offsel Sweep T Ref Lv1: Pwr avg Amp cor Bin size: Highest P	Ig compliance VB=3MHz, p Analyzer Set 0.000 MHz 0.0000 MHz 0.000 M	e with the -27c ower averagin -41.0 -43.0 -43.0 -43.0 -44.0 -45.0 -46.0 -47.0 & -47.0 & -49.0 -49.0 -50.0 MHz	IBm/MHz lin ng enabled ( 	nit in the 515	0 - 5250 MH				to 5150-5250 M	MHz,
lot showin B=1MHz, Spectrum CF: 5200 SPAN: 1 RB: 1.000 VB: 3.000 Detector Attn: 0 E RL Offsel Sweep T Ref Lv1: Pwr avg Amp cor Bin size: Highest P -41.33	Ig compliance VB=3MHz, p Infott Analyzer Set 0.000 MHz 0.000 MHz 0.0000 MHz 0.000 MHz 0.000 MHz 0.000 MHz	e with the -27c ower averagin -41.0 -43.0 -44.0 -44.0 -45.0 -45.0 -47.0 -47.0 -49.0 -49.0 -50.0 MHz -51.0	IBm/MHz lin ng enabled ( 	nit in the 515	0 - 5250 MH				to 5150-5250 M	MHz,
lot showin B=1MHz, Spectrum CF: 5200 SPAN: 1 RB: 1.000 VB: 3.000 Detector Attn: 0 E RL Offsel Sweep T Ref Lv1: Pwr avg Amp cor Bin size: Highest P -41.33	r: 100 sweeps r:	e with the -27c ower averagin -41.0 -43.0 -43.0 -44.0 -45.0 -46.0 -46.0 -47.0 & -48.0 -49.0 -50.0 MHz -51.0 -52.0 -53.0	IBm/MHz lin ng enabled ( 	nit in the 515	0 - 5250 MH				to 5150-5250 M	MHz,
lot showin B=1MHz, Spectrum CF: 5200 SPAN: 1 RB: 1.000 VB: 3.000 VB: 3.000 Detector Attn: 0 E RL Offsel Sweep T Ref LvI: Pwr avg Amp cor Bin size: Highest P -41.33 99% Band 99.33	Ig compliance VB=3MHz, p Infott Analyzer Set 0.000 MHz 0.000 MHz 0.0000 MHz 0.000 MHz 0.000 MHz 0.000 MHz	e with the -27c ower averagin -41.0 -43.0 -44.0 -44.0 -45.0 -45.0 -47.0 -47.0 -49.0 -49.0 -50.0 MHz -51.0	IBm/MHz lin ng enabled ( 	nit in the 515	0 - 5250 MH		and stop free		to 5150-5250 M	MHz,
lot showin B=1MHz, Spectrum CF: 5200 SPAN: 1 RB: 1.000 VB: 3.000 Detector Attn: 0 E RL Offsel Sweep T Ref Lv1: Pwr avg Amp cor Bin size: Highest P -41.30 99% Band 99% Band 99%3	Ig compliance VB=3MHz, p Infott Analyzer Set 0.000 MHz 0.000 MHZ 0.0000 MHZ 0.000 MHZ 0.000 MHZ 0.000 MHZ	e with the -27c ower averagin -41.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -49.0 -49.0 -49.0 -50.0 -51.0 -53.0 -53.0 -53.0	IBm/MHz lin ng enabled ( 	hit in the 515 100 traces):	0 - 5250 MH			dhapelbyn ghill	to 5150-5250 M	MHz,
International States St	Ig compliance VB=3MHz, p Infott Analyzer Set 0,000 MHz 00,000 MHz 00 MHz	e with the -27c ower averagin -41.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -49.0 -49.0 -49.0 -50.0 -51.0 -53.0 -53.0 -53.0	IBm/MHz lin ng enabled ( 	hit in the 515 100 traces):	0 - 5250 MH	Madamara	5220.	dhapelbyn ghill		MHz,
International States St	Ig compliance VB=3MHz, p Infott Analyzer Set 0.000 MHz 0.000 MHZ 0.0000 MHZ 0.000 MHZ 0.000 MHZ 0.000 MHZ	e with the -27c ower averagin -41.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -49.0 -49.0 -49.0 -50.0 -51.0 -53.0 -53.0 -53.0	IBm/MHz lin ng enabled ( 	hit in the 515 100 traces):	0 - 5250 MH	5200.0 equency (MI	5220. Hz)	dhapelbyn ghill		MHz,
lot showin B=1MHz, Spectrum CF: 5200 SPAN: 1 RB: 1.000 VB: 3.000 Detector Attn: 0 D RL Offsel Sweep T Ref Lv1: Pwr avg Amp cor Bin size: Highest P -41.30 99% Band 99% Band 99% Band	Ig compliance VB=3MHz, p Interference Analyzer Set 0,000 MHz 00 MHz 0 DB 0 MHz 0 MHz	e with the -27c ower averagin -41.0 tings -42.0 -43.0 -43.0 -44.0 -45.0 -46.0 -47.0 慶 -48.0 -49.0 -50.0 -51.0 -51.0 -51.0 -51.0 -51.0 -51.0 -51.0 -51.0	IBm/MHz lin ng enabled ( 	NYN YYN Y	0 - 5250 MH	5200.0 equency (MI pan and PSE	5220. Hz)	dhapelbyn ghill		MHz,
CF: S200 SPAN: 1 RE: 1.000 VB: 3.000 VB: 3.000	Ig compliance VB=3MHz, p Infott Analyzer Set 0.000 MHz 0.000 MHZ 0.0000 MHZ 0.000 MHZ 0.000 MHZ 0.000 MHZ	e with the -27c ower averagin -41.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -43.0 -49.0 -49.0 -49.0 -50.0 -51.0 -53.0 -53.0 -53.0	IBm/MHz lin ng enabled ( 	hit in the 515 100 traces):	0 - 5250 MH	5200.0 equency (MI	5220. Hz)	dhapelbyn ghill		MHz,

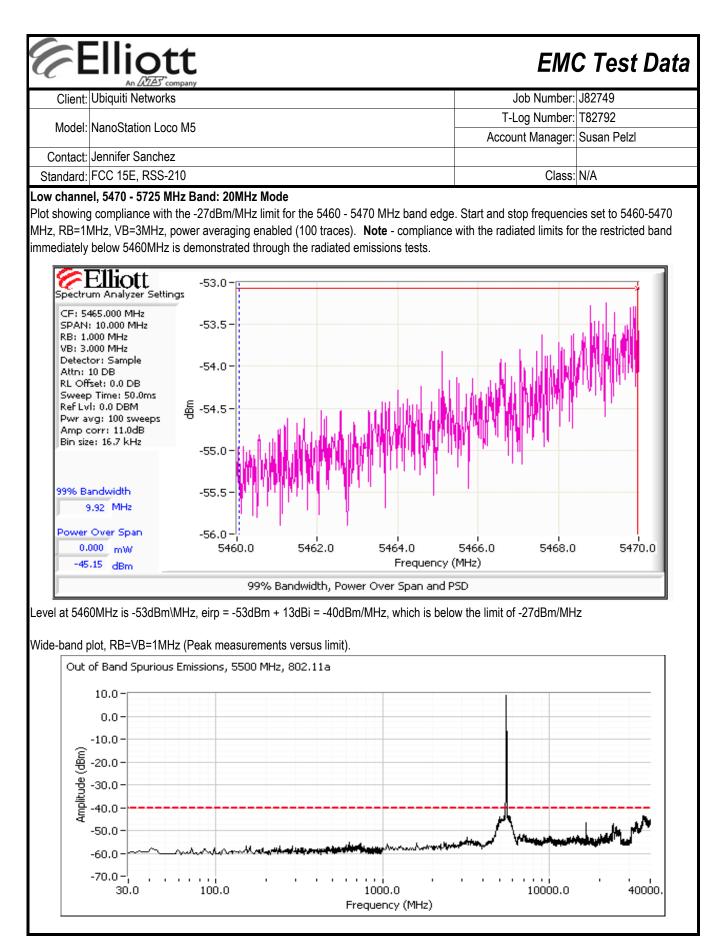


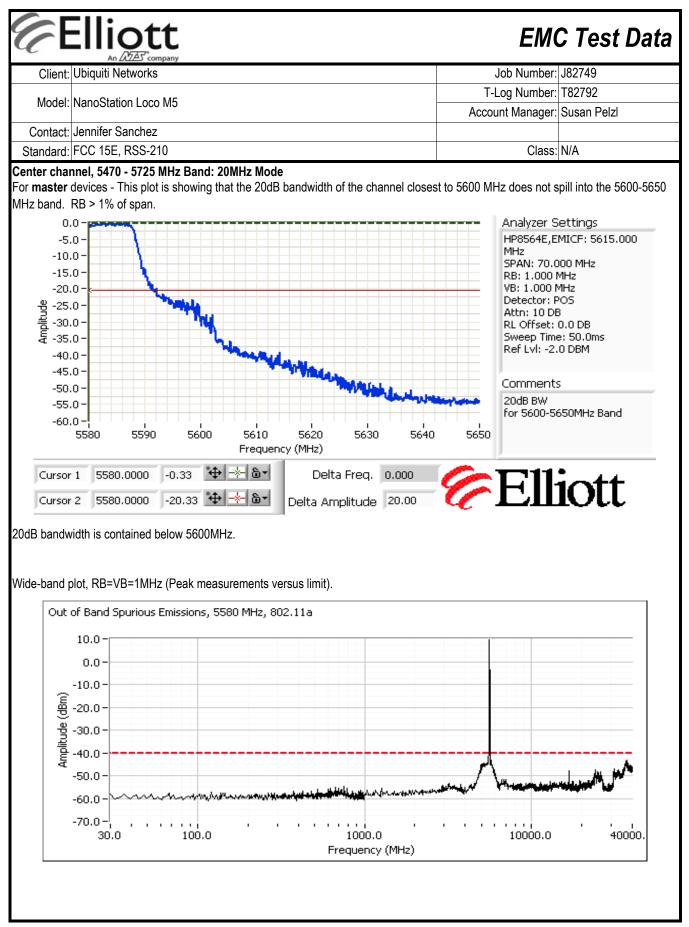
	EIIIOTT An 心云 company	EMO	C Test Data
Client:	Ubiquiti Networks	Job Number:	J82749
Madal	NanoStation Loco M5	T-Log Number:	T82792
Model.		Account Manager:	Susan Pelzl
Contact:	Jennifer Sanchez		
Standard:	FCC 15E, RSS-210	Class:	N/A

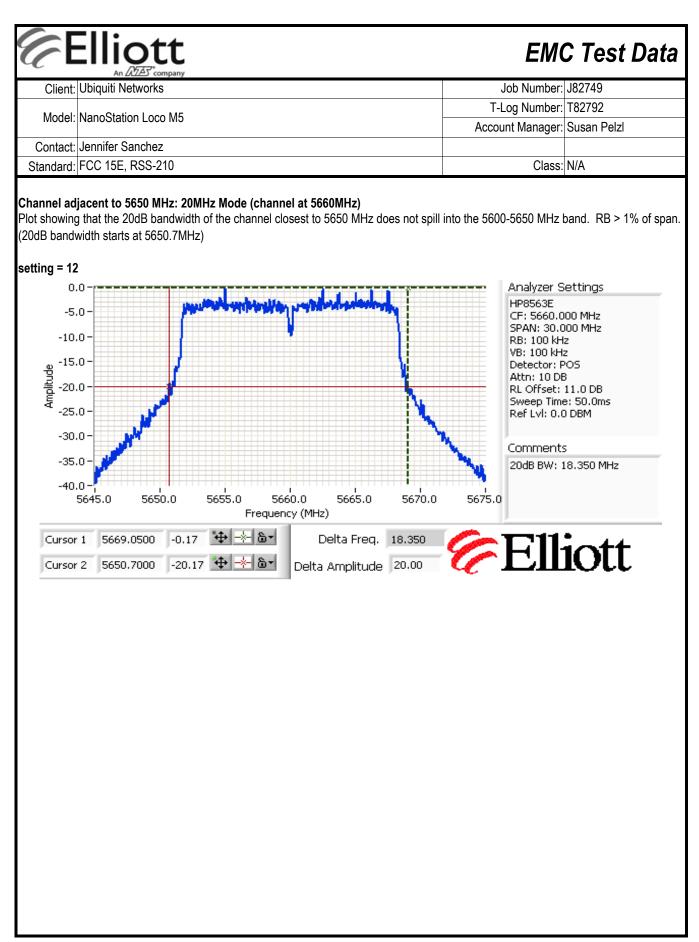
**Cllinet** 

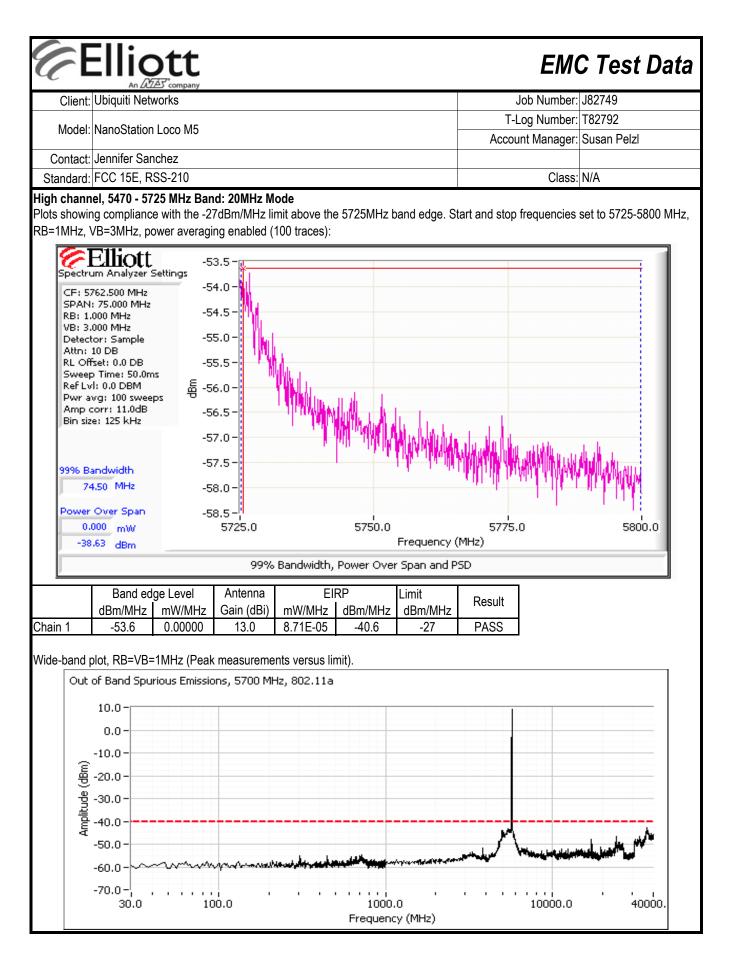
High channel, 5250 - 5350 MHz Band: 20MHz Mode Note - compliance with the radiated limits for the restricted band immediately above 5350MHz is demonstrated through the radiated emissions tests.











Ellig	JTC			EMO	C Test Data
Client: Ubiquiti Ne	etworks		J	lob Number:	J82749
			T-L	.og Number:	T82792
Model: NanoStatio	on Loco M5			2	Susan Pelzl
Contact: Jennifer Sa					
Standard: FCC 15E,	RSS-210			Class:	N/A
	RSS-210 (LELA Antenna Port Meas Power, PSD, Peak Excursion	•	Bandwic		
est Specific Deta Objective	The objective of this test essentian is to	perform final qualification	testing of th	e EUT with r	espect to the
	t: 5/3 and 4/2011 r: M. Birgani/ R. Varelas n: FT5	Config. Used: Config Change: EUT Voltage:	none		
ummary of Resu Run #	Its Test Performed	Limit	Pass / Fail	Result / Mar	gin
1	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass		5.8 mW
1	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	C	).91 dBm/MHz
	Max EIRP	TPC_not required EIRP ≥ 200mW	NA		
1	5250 - 5350MHz	(23dBm) DFS threshold = -64dBm.			
1		(23dBm) DFS threshold = -64dBm. 15.407(a) (1), (2)	Pass		6.0 mW
	5250 - 5350MHz	= -64dBm. 15.407(a) (1), (2) 15.407(a) (1), (2)		0	6.0 mW 0.97 dBm/MHz
1	5250 - 5350MHz Power, 5470 - 5725MHz	= -64dBm. 15.407(a) (1), (2)	Pass	C	
1 1	5250 - 5350MHz Power, 5470 - 5725MHz PSD, 5470 - 5725MHz Max EIRP	= -64dBm. 15.407(a) (1), (2) 15.407(a) (1), (2) TPC not required EIRP ≥ 200mW (23dBm) DFS threshold	Pass Pass	C	
1 1 1	5250 - 5350MHz Power, 5470 - 5725MHz PSD, 5470 - 5725MHz Max EIRP 5470 - 5725MHz	= -64dBm. 15.407(a) (1), (2) 15.407(a) (1), (2) TPC not required EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm. 15.407 (Determines max power) RSS 210	Pass Pass NA	C	).97 dBm/MHz
1 1 1 1	5250 - 5350MHz Power, 5470 - 5725MHz PSD, 5470 - 5725MHz Max EIRP 5470 - 5725MHz 26dB Bandwidth	= -64dBm. 15.407(a) (1), (2) 15.407(a) (1), (2) TPC not required EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm. 15.407 (Determines max power)	Pass Pass NA Pass		0.97 dBm/MHz 8.3 MHz

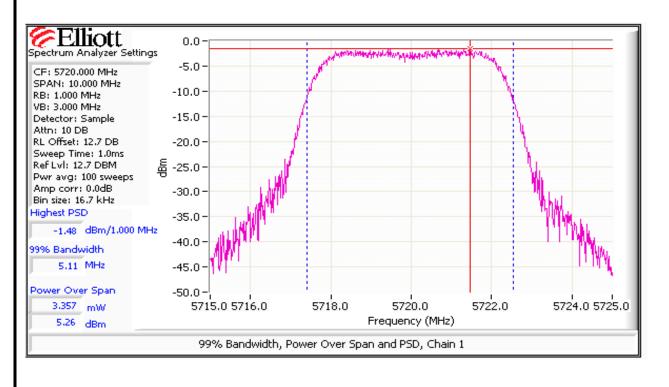
When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

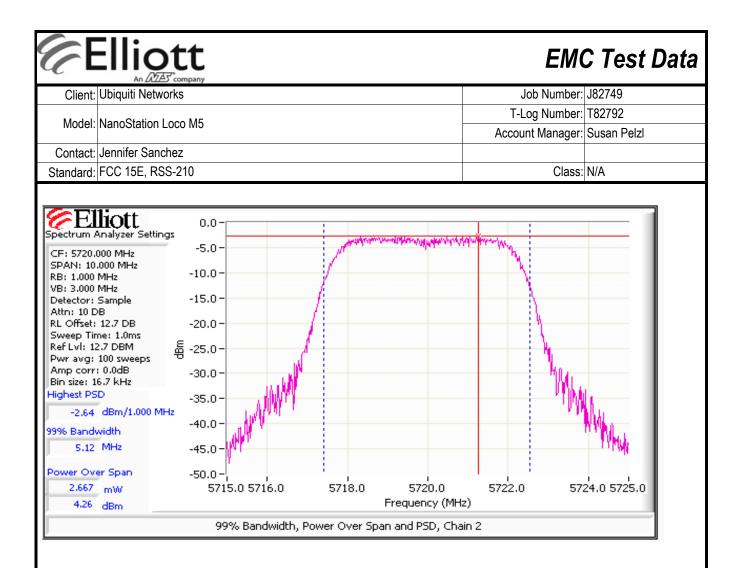
	Ellig	ott						EMO	C Test	Dat
Client	An 242 Ubiquiti Net	vorks						Job Number:	J82749	
								Log Number:		
Model	NanoStatior	n Loco M5						Int Manager:		
Contact	: Jennifer Sar	nchez						ŭ		
Standard	FCC 15E, R	RSS-210						Class:	N/A	
Ambient	Condition	s:		emperature: el. Humidity:		°C %				
Modificat	tions Made	e During To	estina							
		ade to the El	•	sting						
<b>-</b> • <i>0</i>		o/ 1								
		he Standar		f the steveley	. al					
NO DEVIATIO	ns were made	e from the red	quirements o	t the standar	d.					
Run #1: Ba		itput Power a								
Note 1:		er measured	• •	•	• •	,			•	•
		n (transmitteo			and power in	tearation over	er 50 MHz (m	nethod 1 of D	A-02-2138A	1).
					-					1
Note 2:						wer. PSD is	highest valu	e on the plot.		<u>,                                     </u>
Note 2: Note 4:	99% Bandw	vidth measure	d in accorda	nce with RS	S GEN - RB	wer. PSD is > 1% of spar	highest value and VB >=3	e on the plot. xRB		
	99% Bandw For MIMO s	vidth measure systems the to	d in accorda tal output po	nce with RS	S GEN - RB I PSD are ca	wer. PSD is > 1% of span	highest value and VB >=3 the sum of	e on the plot. xRB the powers o	f the individu	
	99% Bandw For MIMO s	vidth measure	d in accorda tal output po	nce with RS	S GEN - RB I PSD are ca	wer. PSD is > 1% of span	highest value and VB >=3 the sum of	e on the plot. xRB the powers o	f the individu	
Note 4:	99% Bandw For MIMO s linear terms	vidth measure systems the to	d in accorda Ital output po na gain used	nce with RS wer and tota to determine	S GEN - RB I PSD are ca e the EIRP a	wer. PSD is > 1% of span alculated form nd limits for F	highest value and VB >=3 the sum of PSD/Output p	e on the plot. xRB the powers o power depend	f the individu ds on the ope	erating
	99% Bandw For MIMO s linear terms mode of the	vidth measure systems the to ). The anteni	d in accorda atal output po na gain used e. If the sign	nce with RSS wer and tota to determine als on the no	S GEN - RB al PSD are ca e the EIRP a on-coherent l	wer. PSD is > 1% of span alculated form nd limits for F petween the t	highest value and VB >=3 the sum of PSD/Output p transmit chai	e on the plot. xRB the powers o power dependents ns then the g	f the individu ds on the ope gain used to	erating determir
Note 4:	99% Bandw For MIMO s linear terms mode of the the limits is	vidth measure systems the to ). The anteni MIMO device the highest g	d in accorda ital output po na gain used e. If the sign ain of the ind	nce with RSS wer and tota to determine als on the no lividual chain	S GEN - RB al PSD are ca e the EIRP a on-coherent l is and the El	wer. PSD is > 1% of spar alculated form nd limits for F petween the t RP is the sur	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod	e on the plot. xRB the powers o power dependent ns then the g ucts of gain a	f the individu ds on the ope gain used to and power or	erating determir n each
Note 4:	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the	vidth measure systems the to ). The anteni MIMO device	d in accorda tal output po na gain used e. If the sign ain of the ind coherent the	nce with RS wer and tota to determine als on the no ividual chain n the effectiv	S GEN - RB al PSD are ca e the EIRP a on-coherent l is and the El e antenna ga	wer. PSD is > 1% of spar alculated form nd limits for F petween the t RP is the sur	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod	e on the plot. xRB the powers o power dependent ns then the g ucts of gain a	f the individu ds on the ope gain used to and power or	erating determir n each
Note 4: Note 5:	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is	vidth measure systems the to ). The antenion MIMO device the highest ga e signals are of the product of	d in accorda otal output po na gain used e. If the sign ain of the ind coherent their f the effective	nce with RS wer and tota to determine als on the no ividual chain n the effectiv	S GEN - RB al PSD are ca e the EIRP a on-coherent l is and the El e antenna ga	wer. PSD is > 1% of spar alculated form nd limits for F petween the t RP is the sur	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod	e on the plot. xRB the powers o power dependent ns then the g ucts of gain a	f the individu ds on the ope gain used to and power or	erating determir n each
Note 4: Note 5:	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is	vidth measure systems the to ). The anteni MIMO device the highest gr signals are o	d in accorda tal output pc na gain used e. If the sign ain of the ind coherent the f the effective	nce with RS wer and tota to determine als on the no lividual chain n the effectiv e gain and to	S GEN - RB al PSD are ca e the EIRP a on-coherent l is and the EI e antenna ga otal power.	wer. PSD is > 1% of span alculated form nd limits for F between the the RP is the sum ain is the sum	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod n (in linear te	e on the plot. xRB the powers o power dependent ns then the g ucts of gain a rms) of the ga	f the individu ds on the ope gain used to and power or ains for each	erating determir each chain ai
Note 4: Note 5:	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is ce - 5250-53	vidth measure systems the to . The antenion MIMO device the highest ga e signals are of the product of 50 MHz Band	d in accorda tal output po na gain used e. If the sign ain of the ind coherent the f the effective d Chain 1	nce with RS wer and tota to determine als on the no lividual chain n the effectiv e gain and to Chain 2	S GEN - RB al PSD are ca e the EIRP a on-coherent l is and the El e antenna ga	wer. PSD is > 1% of span alculated form nd limits for F between the f RP is the sum ain is the sum Coherent	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod n (in linear ter Effective <sup>5</sup>	e on the plot. xRB the powers o bower depend ns then the g ucts of gain a rms) of the gain EIRP (mW)	f the individu ds on the ope gain used to and power or ains for each EIRP (dBm)	erating determir each chain ai
Note 4: Note 5: MIMO Devi	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is ce - 5250-53	vidth measure systems the to ). The antenion MIMO device the highest ga e signals are of the product of	d in accorda tal output pc na gain used e. If the sign ain of the ind coherent the f the effective	nce with RS wer and tota to determine als on the no lividual chain n the effectiv e gain and to	S GEN - RB al PSD are ca e the EIRP a on-coherent l is and the EI e antenna ga otal power.	wer. PSD is > 1% of span alculated form nd limits for F between the the RP is the sum ain is the sum	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod n (in linear te	e on the plot. xRB the powers o power dependent ns then the g ucts of gain a rms) of the ga	f the individu ds on the ope gain used to and power or ains for each	erating determir each chain ai
Note 4: Note 5: MIMO Devi	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is ce - 5250-53 Antenna	vidth measure systems the to . The anteni MIMO device the highest ga e signals are o the product o 50 MHz Band a Gain (dBi):	d in accorda otal output po na gain used e. If the sign ain of the ind coherent their f the effectiv d Chain 1 13	nce with RS wer and tota to determine als on the no lividual chain n the effectiv e gain and to Chain 2 13	S GEN - RB al PSD are ca the EIRP a pon-coherent l as and the EI e antenna ga tal power. Chain 3	wer. PSD is > 1% of span alculated form nd limits for F between the f RP is the sum ain is the sum Coherent Yes	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod n (in linear te Effective <sup>5</sup> 16.0	e on the plot. xRB the powers o power depend ns then the g ucts of gain a rms) of the gain EIRP (mW)	f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 23.6	erating determir n each chain ar
Note 4: Note 5: MIMO Devi Power Frequency	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is ce - 5250-53 Antenna Software	vidth measure systems the to MIMO device the highest gr signals are o the product o 50 MHz Band a Gain (dBi): 26dB BW	d in accorda tal output po na gain used e. If the sign ain of the ind coherent their f the effective Chain 1 13 Measure	nce with RS wer and tota to determine als on the no lividual chain n the effectiv e gain and to Chain 2 13 d Output Pov	S GEN - RB al PSD are ca e the EIRP a pn-coherent h is and the El e antenna ga otal power. Chain 3 wer <sup>1</sup> dBm	wer. PSD is > 1% of span alculated form nd limits for F between the f RP is the sum ain is the sum Coherent Yes To	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod n (in linear te Effective <sup>5</sup> 16.0	e on the plot. xRB the powers o power depend ns then the g ucts of gain a rms) of the gain EIRP (mW)	f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 23.6 Max Power	erating determir n each chain ar
Note 4: Note 5: MIMO Devi Power Frequency (MHz)	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is ce - 5250-53 Antenna Software Setting	idth measure ystems the to ). The antenion MIMO device the highest ga e signals are of the product of 50 MHz Band a Gain (dBi): 26dB BW (MHz)	d in accorda tal output po na gain used e. If the sign ain of the ind coherent their f the effective d Chain 1 13 Measure Chain 1	nce with RS wer and tota to determine als on the no lividual chain n the effectiv e gain and to Chain 2 13 d Output Por Chain 2	S GEN - RB al PSD are ca the EIRP a pon-coherent l as and the EI e antenna ga tal power. Chain 3	wer. PSD is > 1% of span alculated form nd limits for F between the f RP is the sum ain is the sum Coherent Yes	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod n (in linear tel Effective <sup>5</sup> 16.0 tal dBm	e on the plot. xRB the powers o power dependent ns then the g ucts of gain a rms) of the gain EIRP (mW) 230.4	f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 23.6	erating determir each chain ar
Note 4: Note 5: MIMO Devi Power Frequency	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is ce - 5250-53 Antenna Software	vidth measure systems the to MIMO device the highest gr signals are o the product o 50 MHz Band a Gain (dBi): 26dB BW	d in accorda tal output por na gain used e. If the sign ain of the ind coherent their f the effectiv Chain 1 13 Measure Chain 1 3.8	nce with RS wer and tota to determine als on the no lividual chain n the effectiv e gain and to Chain 2 13 d Output Pov	S GEN - RB al PSD are ca e the EIRP a pn-coherent h is and the El e antenna ga otal power. Chain 3 wer <sup>1</sup> dBm	wer. PSD is > 1% of span alculated form nd limits for F between the f RP is the sum in is the sum Coherent Yes To mW 5.2	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod n (in linear ter Effective <sup>5</sup> 16.0 tal dBm 7.2	e on the plot. xRB the powers o power dependent ns then the gradient ucts of gain a rms) of the gradient EIRP (mW) 230.4 Limit (dBm)	f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 23.6 Max Power	erating determin n each n chain ar
Note 4: Note 5: MIMO Devi Power Frequency (MHz) 5255	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is ce - 5250-53 Antenna Software Setting 4.5	idth measure ystems the to ). The anteni MIMO device the highest ga signals are o the product o 50 MHz Band a Gain (dBi): 26dB BW (MHz) 8.3	d in accorda tal output po na gain used e. If the sign ain of the ind coherent their f the effective d Chain 1 13 Measure Chain 1	nce with RS wer and tota to determine als on the no lividual chain n the effectiv e gain and to Chain 2 13 d Output Poo Chain 2 4.5	S GEN - RB al PSD are ca e the EIRP a pn-coherent h is and the El e antenna ga otal power. Chain 3 wer <sup>1</sup> dBm	wer. PSD is > 1% of span alculated form nd limits for F between the tar RP is the sum in is the sum Coherent Yes To mW	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod n (in linear tel Effective <sup>5</sup> 16.0 tal dBm	e on the plot. xRB the powers o power dependent ns then the gradient ucts of gain a rms) of the gradient EIRP (mW) 230.4 Limit (dBm) 10.2	f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 23.6 Max Power (W)	erating determin each chain ar Pass or PAS:
Note 4: Note 5: MIMO Devi Power Frequency (MHz) 5255 5300 5340	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is ce - 5250-53 Antenna Software Setting 4.5 4.5	idth measure ystems the to ). The anteni MIMO device the highest ga signals are of the product o 50 MHz Band a Gain (dBi): 26dB BW (MHz) 8.3 8.4	d in accorda tal output pc na gain used e. If the sign ain of the ind coherent their f the effectiv Chain 1 13 Measure Chain 1 3.8 4.8	nce with RS wer and tota to determine als on the no ividual chain n the effectiv e gain and to Chain 2 13 d Output Pov Chain 2 4.5 4.4	S GEN - RB al PSD are ca e the EIRP a pn-coherent h is and the El e antenna ga otal power. Chain 3 wer <sup>1</sup> dBm	wer. PSD is > 1% of span alculated form nd limits for F between the f RP is the sur ain is the sur Coherent Yes Tc mW 5.2 5.8	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod n (in linear ter ffective <sup>5</sup> 16.0 tal dBm 7.2 7.6	e on the plot. xRB the powers o power dependent ns then the gradient ucts of gain a rms) of the gradient EIRP (mW) 230.4 Limit (dBm) 10.2 10.2	f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 23.6 Max Power (W)	erating determin each chain ar Pass or PAS PAS
Note 4: Note 5: MIMO Devi Power Frequency (MHz) 5255 5300 5340 PSD	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is ce - 5250-53 ce - 5250-53 Ce - 5250-53 Antenna Software Setting 4.5 4.5 4.5 4.0	idth measure ystems the to ). The antenion MIMO device the highest gate signals are of the product of 50 MHz Band a Gain (dBi): 26dB BW (MHz) 8.3 8.4 9.4	d in accorda tal output pc na gain used e. If the sign ain of the ind coherent thei f the effective d Chain 1 13 Measure Chain 1 3.8 4.8 4.5	nce with RS wer and tota to determine als on the no ividual chain n the effectiv e gain and to Chain 2 13 d Output Poo Chain 2 4.5 4.4 3.6	S GEN - RB al PSD are ca e the EIRP a pn-coherent h is and the El e antenna ga otal power. Chain 3 Wer <sup>1</sup> dBm Chain 3	wer. PSD is > 1% of span alculated form nd limits for F between the t RP is the sur in is the sur Coherent Yes To mW 5.2 5.8 5.1	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod n (in linear ter ffective <sup>5</sup> 16.0 tal dBm 7.2 7.6	e on the plot. xRB the powers o power dependent ns then the gradient ucts of gain a rms) of the gradient EIRP (mW) 230.4 Limit (dBm) 10.2 10.2 10.7	f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 23.6 Max Power (W)	erating determir n each chain a Pass or PAS PAS PAS
Note 4: Note 5: MIMO Devi Power Frequency (MHz) 5255 5300 5340 PSD Frequency	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is ce - 5250-53 ce - 5250-53 Antenna Software Setting 4.5 4.5 4.5 4.0	idth measure systems the to ). The anteni MIMO device the highest ga e signals are of the product o 50 MHz Band a Gain (dBi): 26dB BW (MHz) 8.3 8.4 9.4 Total	d in accorda tal output pc na gain used e. If the sign ain of the ind coherent their f the effectiv d Chain 1 13 Measure Chain 1 3.8 4.8 4.5	nce with RS wer and tota to determine als on the no ividual chain n the effectiv e gain and to Chain 2 13 d Output Poo Chain 2 4.5 4.4 3.6 SD <sup>2</sup> dBm/MH	S GEN - RB al PSD are ca e the EIRP a on-coherent l is and the EI e antenna ga otal power. Chain 3 wer <sup>1</sup> dBm Chain 3	wer. PSD is > 1% of span alculated form nd limits for F between the f RP is the sur ain is the sur Coherent Yes To mW 5.2 5.8 5.1 Total	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod n (in linear ter Effective <sup>5</sup> 16.0 tal dBm 7.2 7.6 7.1	e on the plot. xRB the powers o power dependent ns then the gradient ucts of gain a rms) of the gradient EIRP (mW) 230.4 Limit (dBm) 10.2 10.2 10.7	f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 23.6 Max Power (W) 0.006	erating determir n each chain an Pass or PAS PAS PAS
Note 4: Note 5: MIMO Devi Power Frequency (MHz) 5255 5300 5340 PSD Frequency (MHz)	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is ce - 5250-53 ce - 5250-53 Antenna Software Setting 4.5 4.5 4.5 4.0 99% <sup>4</sup> BW	idth measure systems the to ). The antenne MIMO device the highest ga signals are of the product of <b>50 MHz Band</b> a Gain (dBi): 26dB BW (MHz) 8.3 8.4 9.4 Total Power	d in accorda tal output pc na gain used e. If the sign ain of the ind coherent their f the effective d Chain 1 13 Measure Chain 1 3.8 4.8 4.5 P Chain 1	nce with RS wer and tota to determine als on the no ividual chain n the effectiv e gain and to Chain 2 13 d Output Poo Chain 2 4.5 4.4 3.6 SD <sup>2</sup> dBm/MH Chain 2	S GEN - RB al PSD are ca e the EIRP a pn-coherent h is and the El e antenna ga otal power. Chain 3 Wer <sup>1</sup> dBm Chain 3	wer. PSD is > 1% of span alculated form nd limits for F between the f RP is the sur ain is the surr Coherent Yes To mW 5.2 5.8 5.1 Total mW/MHz	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod n (in linear ter Effective <sup>5</sup> 16.0 tal dBm 7.2 7.6 7.1 PSD dBm/MHz	e on the plot. xRB the powers o power dependent ns then the gradient the powers of gain a crms) of the gradient EIRP (mW) 230.4 Limit (dBm) 10.2 10.2 10.7 Lin FCC	f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 23.6 Max Power (W) 0.006 mit RSS 210 <sup>3</sup>	erating determir each chain a chain a Pass or PAS PAS PAS
Note 4: Note 5: MIMO Devi Power Frequency (MHz) 5255 5300 5340 PSD Frequency	99% Bandw For MIMO s linear terms mode of the the limits is chain. If the the EIRP is ce - 5250-53 ce - 5250-53 Antenna Software Setting 4.5 4.5 4.5 4.0	idth measure systems the to ). The anteni MIMO device the highest ga e signals are of the product o 50 MHz Band a Gain (dBi): 26dB BW (MHz) 8.3 8.4 9.4 Total	d in accorda tal output pc na gain used e. If the sign ain of the ind coherent their f the effectiv d Chain 1 13 Measure Chain 1 3.8 4.8 4.5	nce with RS wer and tota to determine als on the no ividual chain n the effectiv e gain and to Chain 2 13 d Output Poo Chain 2 4.5 4.4 3.6 SD <sup>2</sup> dBm/MH	S GEN - RB al PSD are ca e the EIRP a on-coherent l is and the EI e antenna ga otal power. Chain 3 wer <sup>1</sup> dBm Chain 3	wer. PSD is > 1% of span alculated form nd limits for F between the f RP is the sur ain is the sur Coherent Yes To mW 5.2 5.8 5.1 Total	highest value and VB >=3 the sum of PSD/Output p transmit chai n of the prod n (in linear ter Effective <sup>5</sup> 16.0 tal dBm 7.2 7.6 7.1	e on the plot. xRB the powers o power dependent ns then the gradient ucts of gain a rms) of the gradient EIRP (mW) 230.4 Limit (dBm) 10.2 10.2 10.7	f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 23.6 Max Power (W) 0.006	erating determin each chain ar Pass or PAS PAS

(C) E		Dtt Art company						EMO	C Test	Data
Client:	Ubiquiti Net	works						Job Number:	J82749	
Model:	NanoStatior	Loco M5					T-I	Log Number:	T82792	
wouer.	Nanostation						Αссοι	unt Manager:	Susan Pelzl	
Contact:	Jennifer Sar	nchez								
Standard:	FCC 15E, R	SS-210						Class:	N/A	
MIMO Devid	ce - 5470-572	25 MHz Band	b				-			
			Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>	EIRP (mW)	EIRP (dBm)	
	Antenna	a Gain (dBi):	13	13		Yes	16.0	242.6	23.8	
Power										
Frequency	Software	26dB BW		d Output Po			otal	Limit (dBm)	Max Power	Pass or Fa
<i>(</i> <b>- - - - - - - - - -</b>	0.111.1								() & ()	

								Limit (dDm)		Dace or Lail
(MHz)	Setting	(MHz)	Chain 1	Chain 2	Chain 3	mW	dBm	Limit (dBm)	(W)	Pass or Fail
5475	5.0	8.5	5.0	3.5		5.4	7.3	10.3		PASS
5595	4.5	8.7	3.9	5.3		5.8	7.7	10.4	0.006	PASS
5720	4.5	8.4	5.3	4.3		6.1	7.8	10.2		PASS
PSD										
Frequency	99% <sup>4</sup>	Total	Р	SD <sup>2</sup> dBm/MH	łz	Tota	PSD	Lir	mit	Pass or Fail
	99% <sup>4</sup> BW	Total Power	P Chain 1	SD <sup>2</sup> dBm/Mł Chain 2	lz Chain 3	Total mW/MHz	PSD dBm/MHz	Lir FCC	nit RSS 210 <sup>3</sup>	Pass or Fail
Frequency							I			Pass or Fail PASS
Frequency (MHz)	BW	Power	Chain 1	Chain 2		mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	

## Output Power at Low Power Setting - 5470-5725 MHz Band

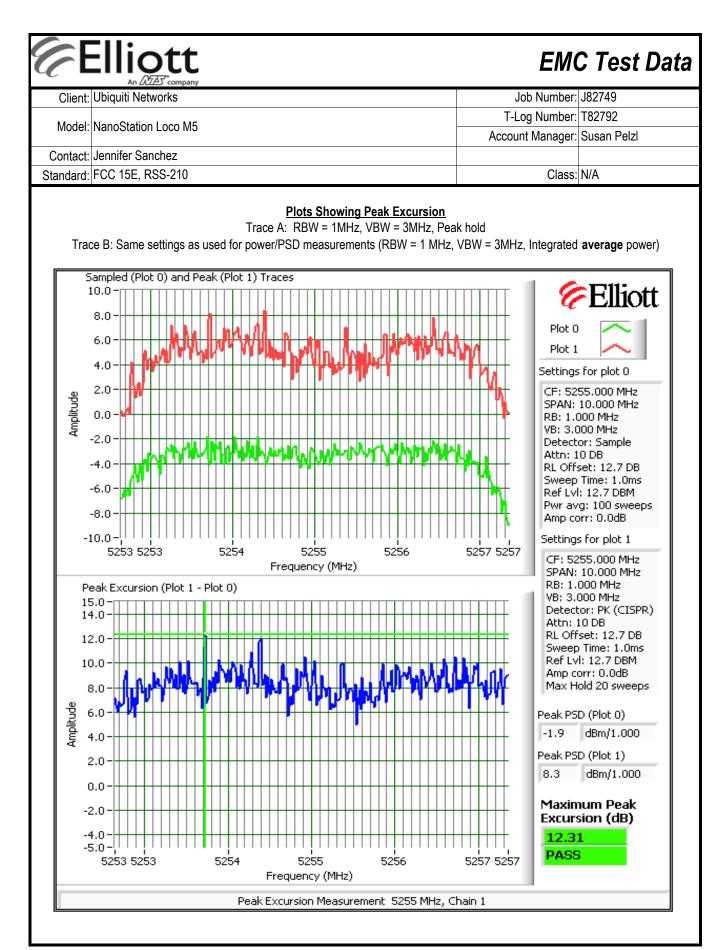


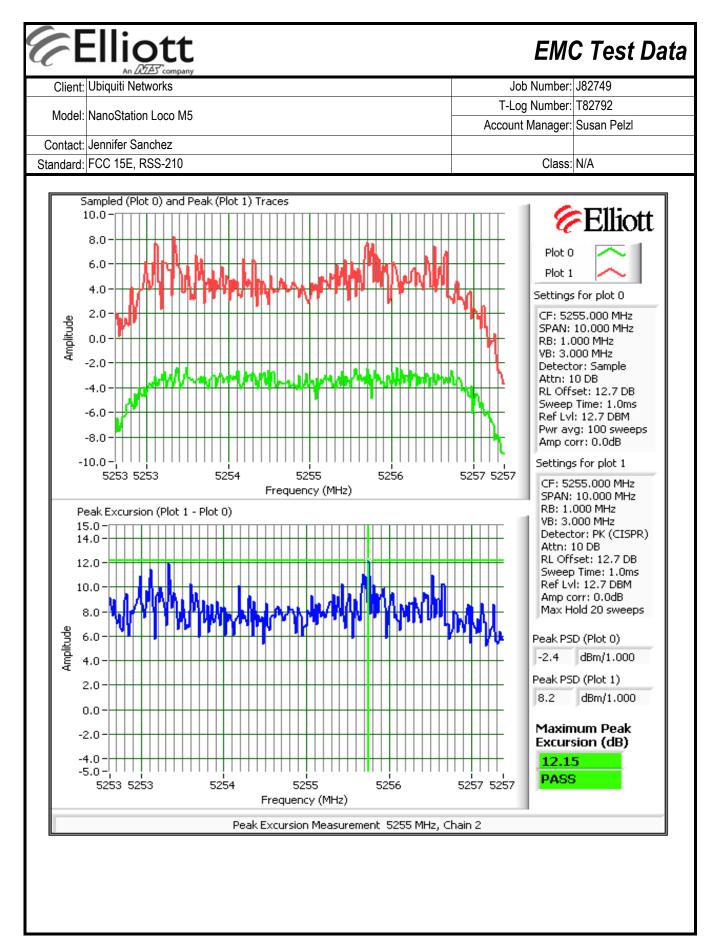


## Run #2: Peak Excursion Measurement

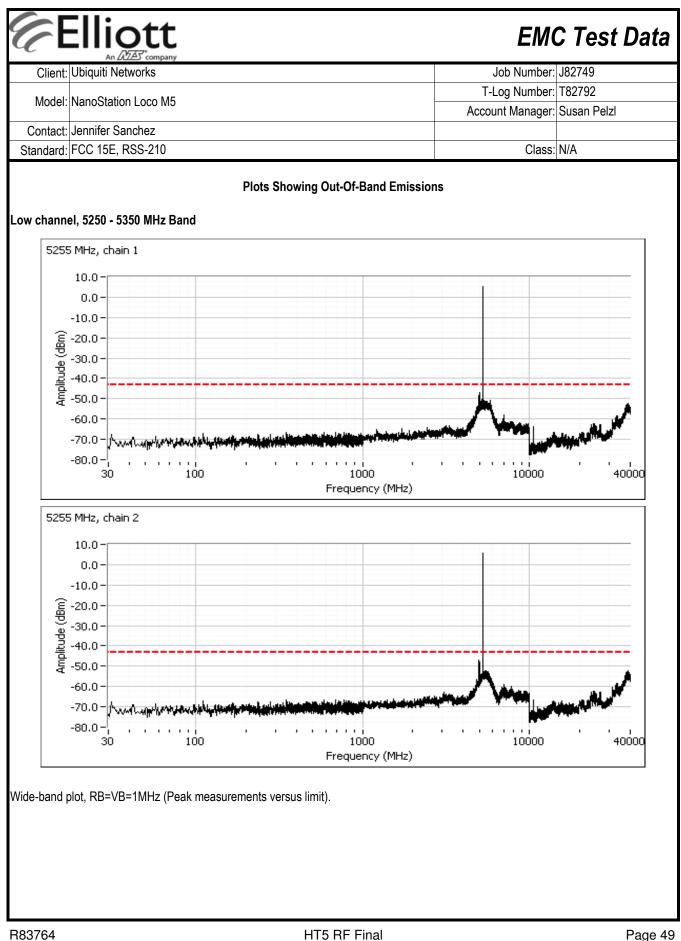
## HT5 Device meets the requirement for the peak excursion

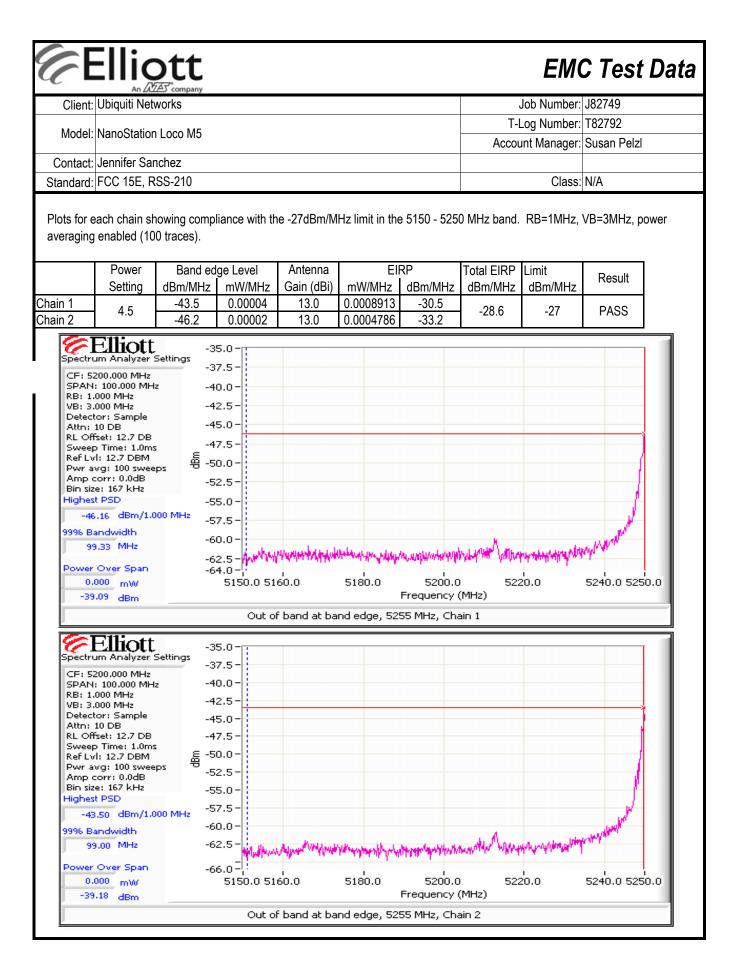
Freq	Peak Exc	ursion(dB)	Freq	Peak Exc	ursion(dB)
(MHz)	Value	Limit	(MHz)	Value	Limit
5255	12.3/12.2	13.0	5475	12.1/10.8	13.0
5300	11.4/11.5	13.0	5595	10.1/10.6	13.0
5340	11.6/11.9	13.0	5720	11.4/10.8	13.0

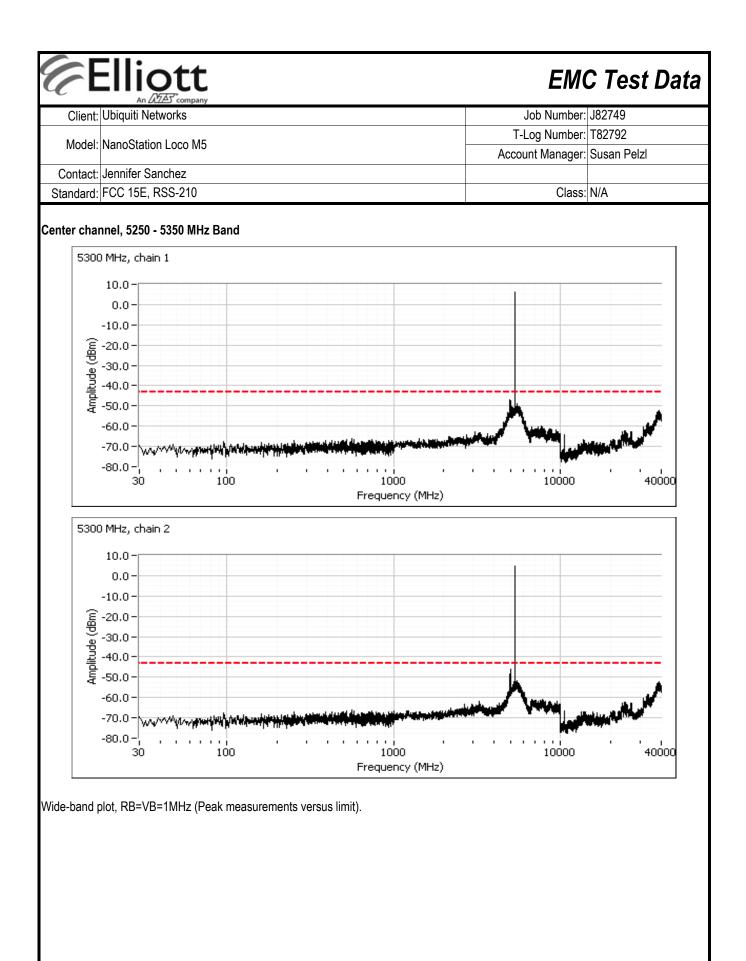




	Elliott An AZAS <sup>*</sup> company		C Test Data
Client:	Ubiquiti Networks	Job Number:	J82749
Model	NanoStation Loco M5	T-Log Number:	T82792
wouer.		Account Manager:	Susan Pelzl
Contact:	Jennifer Sanchez		
Standard:	FCC 15E, RSS-210	Class:	N/A
MIMO Devid to be cohere	<ul> <li>at Of Band Spurious Emissions - Antenna Conducted</li> <li>ces: Antenna gain used is the individual antenna antenna gain (the spuriou ent between chains and spurious removed from the band edges are evaluat btained for each chain individually and the limit was adjusted to account for Number of transmit chains:</li> </ul>	ed as radiated emissions i	f close to the limit). The
	Maximum Antenna Gain: 13.0 dBi Spurious Limit: -27.0 dBm/MHz eirp Adjustment for 2 chains: -3.0 dB adjustment for multip Limit Used On Plots <sup>Note 1</sup> : -43.0 dBm/MHz Average Lin	mit (RB=1MHz, VB=10Hz)	
Note 1:	The -27dBm/MHz limit is an eirp limit. The limit for antenna port conducted consideration the maximum antenna gain and number of transmitters (limit field strength measurements for signals more than 50MHz from the bands determine compliance as the antenna gain is not known at these frequenci	= -27dBm - antenna gain and that are close to the li	- 10Log[N]). Radiated
Note 2:	All spurious signals below 1GHz are measured during digital device radiate		
Note 3:	Signals within 10MHz of the 5.725 or 5.825 Band edge are subject to a lim		
Note 4:	If the device is for outdoor use then the -27dBm eirp limit also applies in the		
Note 5:	Signals that fall in the restricted bands of 15.205 are subject to the limit of	15.209.	



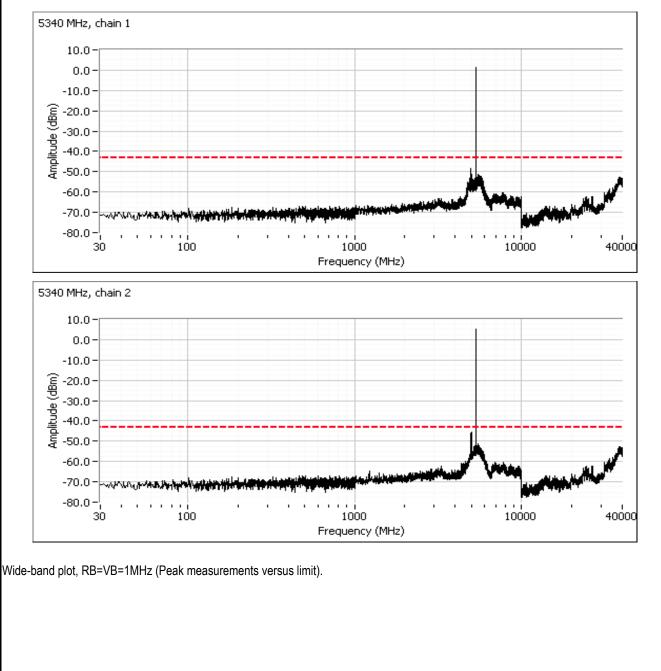


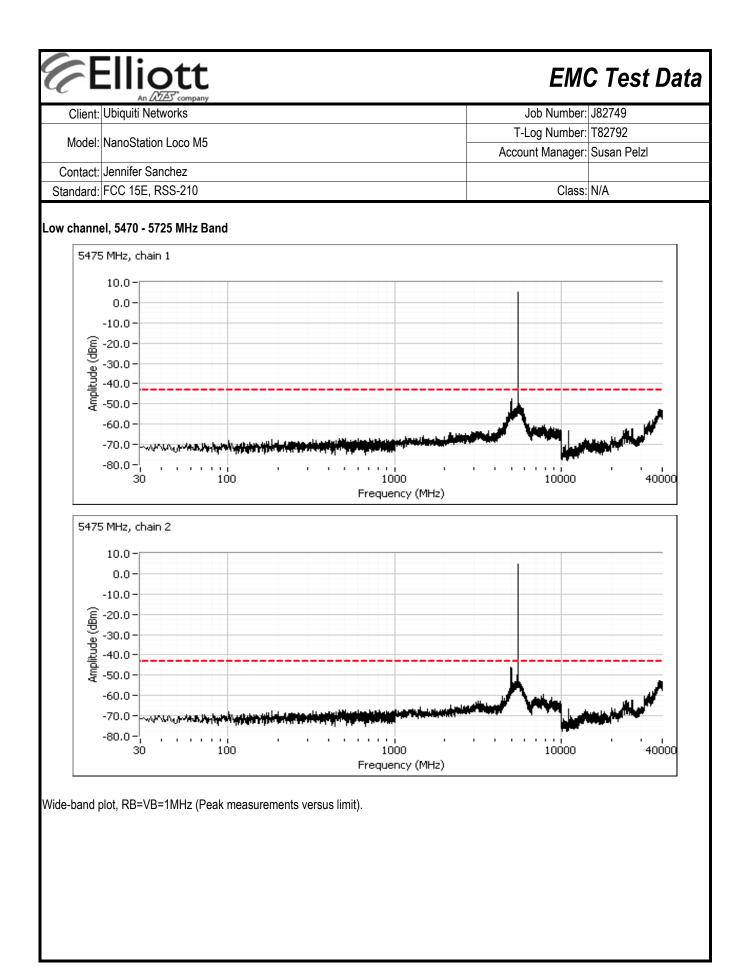


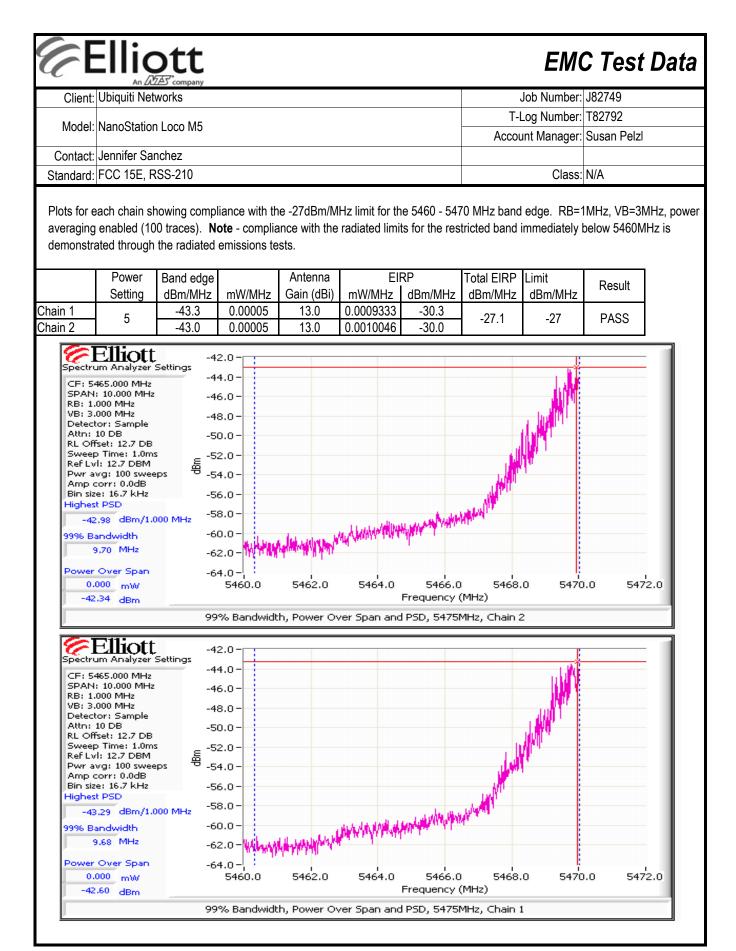
# Client: Ubiquiti Networks Job Number: J82749 Model: NanoStation Loco M5 T-Log Number: T82792 Contact: Jennifer Sanchez Susan Pelzl Standard: FCC 15E, RSS-210 Class: N/A

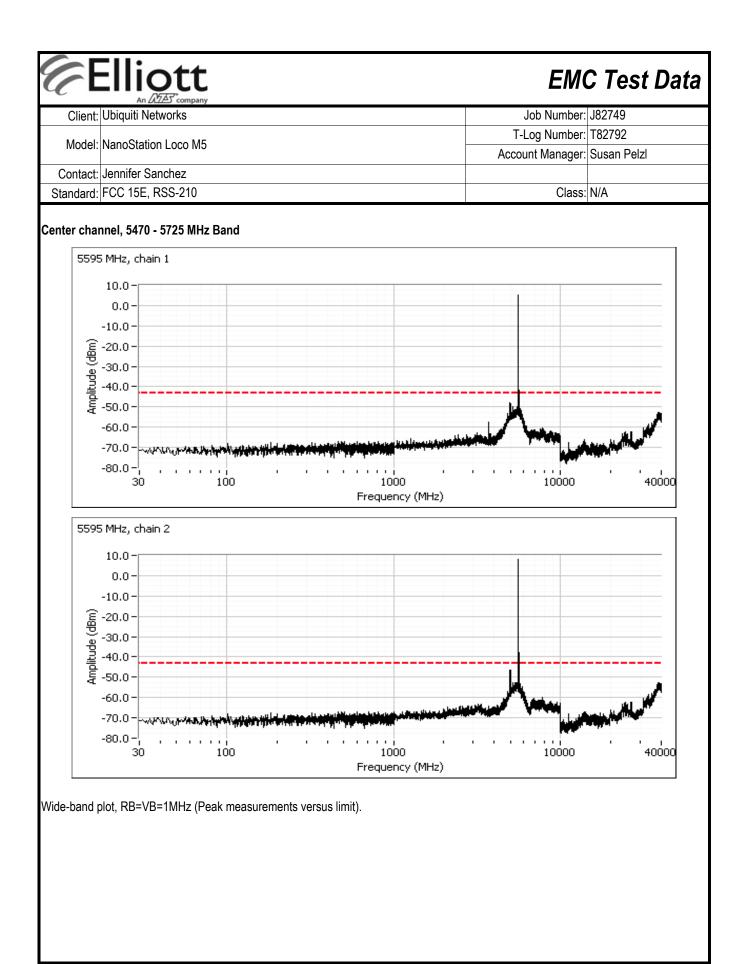
## High channel, 5250 - 5350 MHz Band

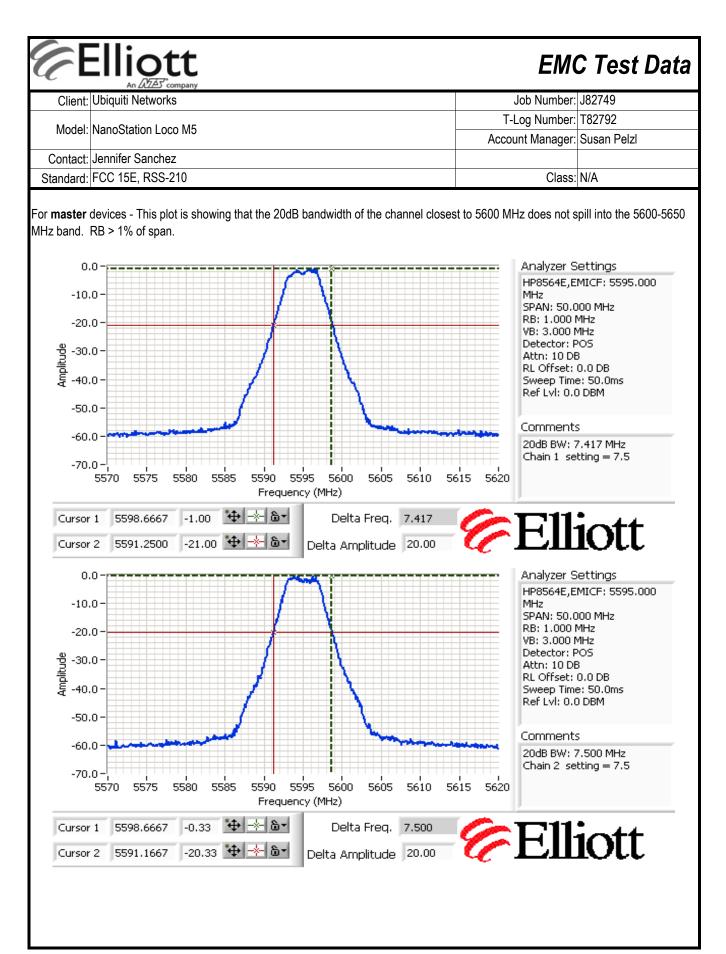
**Note** - compliance with the radiated limits for the restricted band immediately above 5350MHz is demonstrated through the radiated emissions tests.

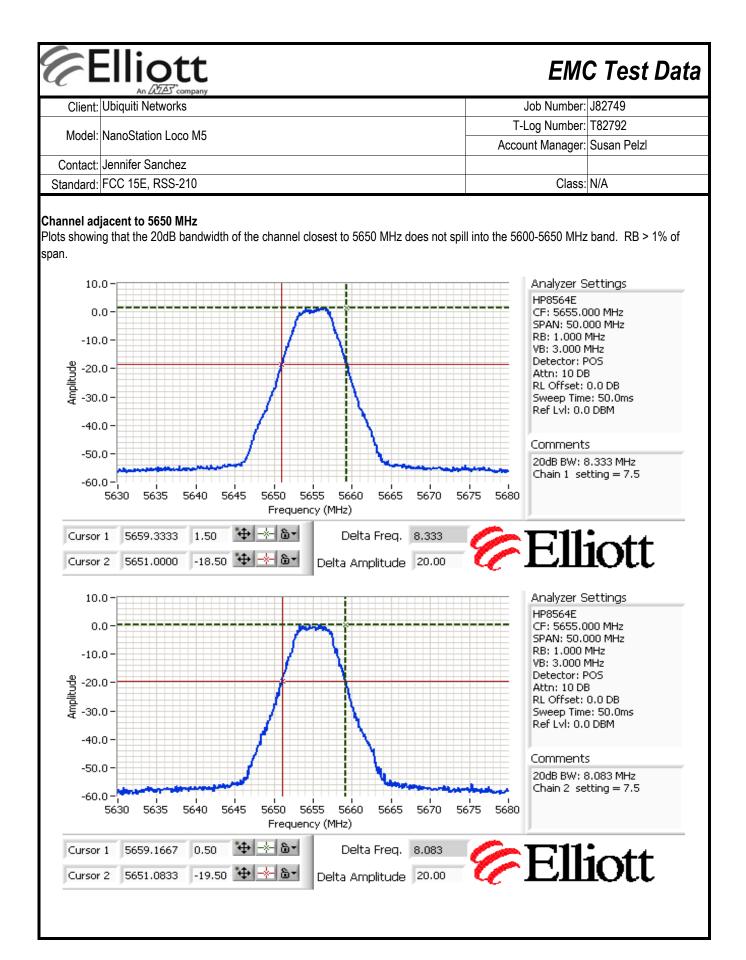


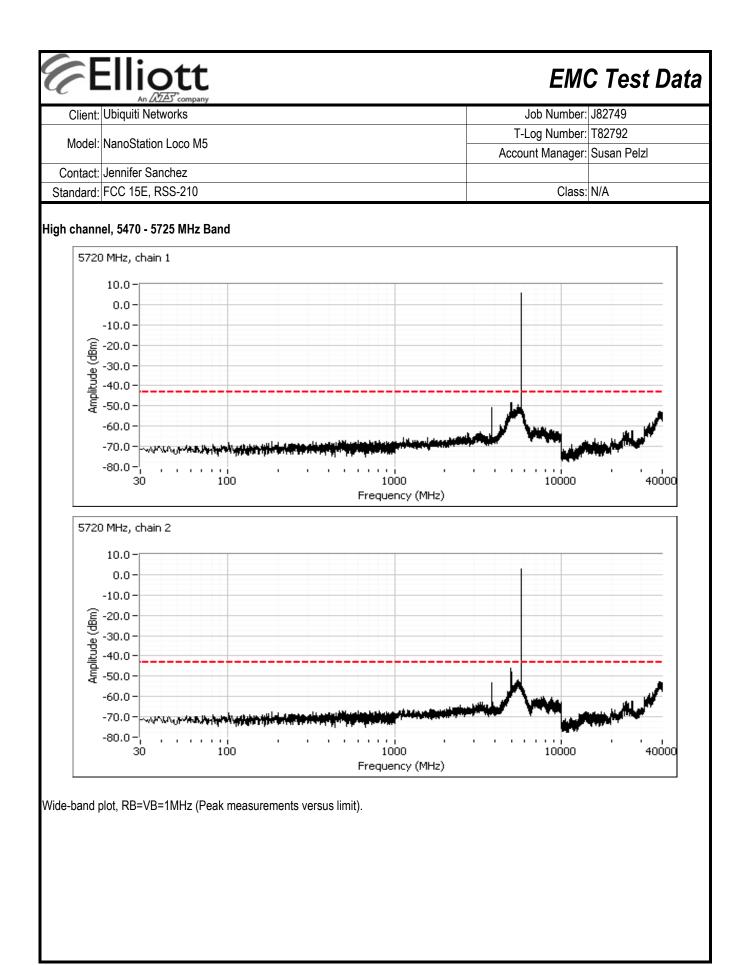


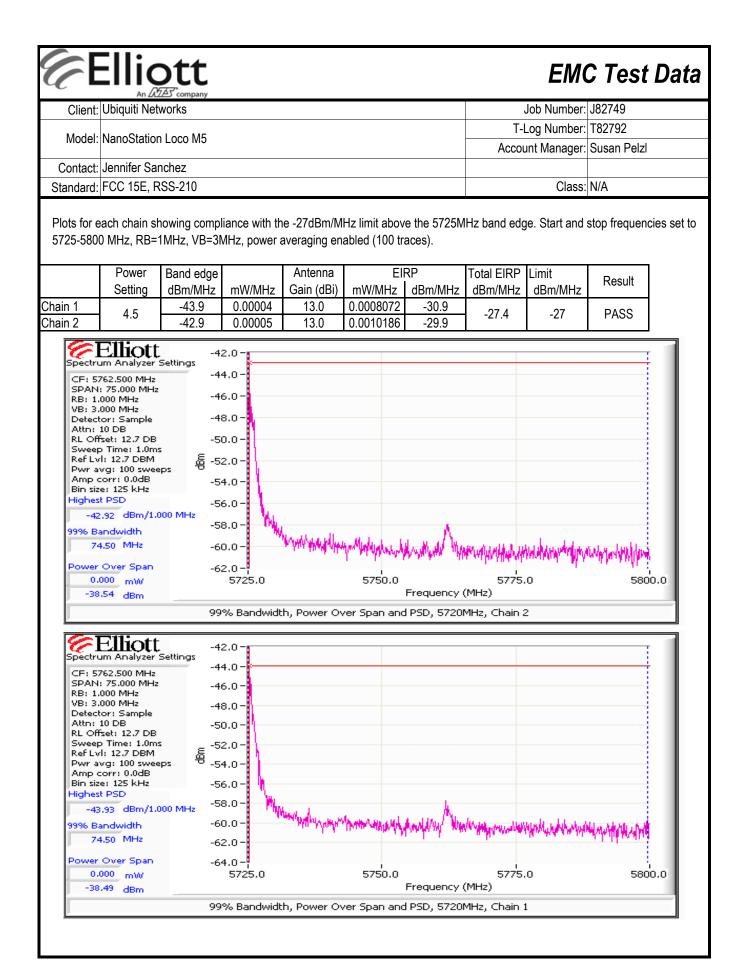












<b>Ellic</b>				EM	C Test Data
Client: Ubiquiti Net			,	Job Number:	J82749
			T-l	_og Number:	T82792
Model: NanoStatior	n Loco M5			-	Susan Pelzl
Contact: Jennifer Sar	nchez				
Standard: FCC 15E, R	SS-210			Class:	N/A
	RSS-210 (LELA Antenna Port Me Power, PSD, Peak Excursior	•	Hz Mode		
Test Specific Detai	ls				
Objective:	The objective of this test session is to specification listed above.	perform final qualification	testing of th	e EUT with r	espect to the
Date of Test:	5/3 and 4/2011	Config. Used:	1		
Test Engineer:	R. Varelas, M. Birgani	Config Change:	none		
Test Location:	FT Lab #4	EUT Voltage:	POE		
Summary of Result					
Run #	Test Performed	Limit		Result / Mar	gin
1	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	7.9 mW	1
1	PSD, 5250 - 5350MHz	15.407(a) (1), (2) TPC required if EIRP≥	Pass	0.5 dBm/MH	IZ
1	Max EIRP 5250 - 5350MHz	500 mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm.	N/A		dBm (317.7 mW)
1	Power, 5470 - 5725MHz	15.407(a) (1), (2)		9.6 mW	
1	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	0.9 dBm/MF	lz
1	Max EIRP 5470 - 5725MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold	N/A	EIRP = 25.8	dBm (382.4 mW)
1	26dB Bandwidth	15.407 (Determines max power)	-	11.8 MHz	
1	99% Bandwidth	RSS 210	N/A	7.5 MHz	
2	Peak Excursion Envelope	15.407(a) (6) 13dB	PASS	12.3 dB	
3	Antenna Conducted - Out of Band Spurious	15.407(b) -27dBm/MHz	PASS	All emission -27dBm/MH	

# General Test Configuration

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

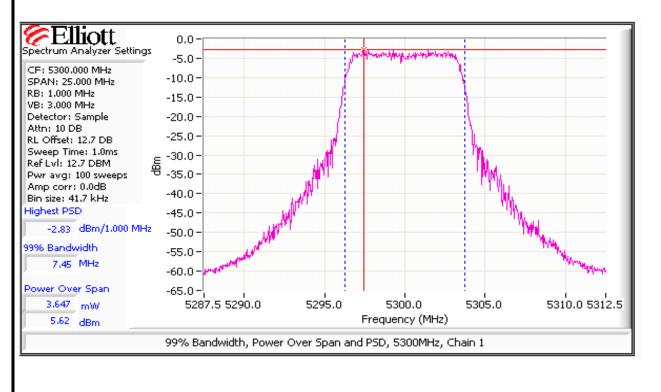
6	Ellic	ott						EM	C Test	Data
Client	<u>An 22</u> Ubiquiti Net	works						Job Number:	J82749	
Oliciti.	obiquiti i tot							Log Number:		
Model:	NanoStatior	I Loco M5						unt Manager:		
Contact:	Jennifer Sar	nchez								
Standard:	FCC 15E, R	SS-210						Class:	N/A	
Ambient	Condition	S:		emperature: el. Humidity:		°C %				
No modifi	cations were	e During To made to the ne Standar	EUT during	testing						
No deviat	ions were ma	ade from the I	requirements	s of the stand	lard.					
Run #1: Ba	-	tput Power a								
Note 1:		er measured	• •	•	• •	,				•
		n (transmitted	-	,		-				1).
Note 2:		sing the same								
Note 4:		idth measure ystems the to							f the individu	
		). The anteni	-					•	•	-
Note 5:		MIMO device	-						-	
		the highest g					•	-	•	
		signals are o			•	ain is the sun	n (in linear te	rms) of the g	ains for each	chain an
	the EIRP is	the product o	T the effectiv	e gain and to	otal power.					
MIMO Devi	ce - 5250-53	50 MHz Band	d							
			Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>	EIRP (mW)	EIRP (dBm)	
	Antenna	a Gain (dBi):	13	13		Yes	16.0	296.6	24.7	
ower								•		
Frequency	Software	26dB BW	Measure	d Output Pov	wer <sup>1</sup> dBm	To	otal	Limit (dBm)	Max Power	Pass or F
(MHz)	Setting	(MHz)	Chain 1	Chain 2	Chain 3	mW	dBm	Linii (ubiii)	(W)	F 855 UI I
5260	5.0	12.3	4.1	3.0		4.5	6.6	11.9		PASS
	5.5	11.8	5.6	5.8		7.4	8.7	11.7	0.007	PASS
5300	5.0	10.8	2.7	2.6		3.7	5.7	11.3		PASS
5300 5330		<b></b>		0				1		1
5300 5330 <b>PSD</b>			I P	SD <sup>2</sup> dBm/Ml			I PSD		mit	Pass or F
5300 5330 <b>PSD</b> Frequency	99% <sup>4</sup>	Total	1		Chain 3	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	
5300 5330 <b>PSD</b> Frequency (MHz)	BW	Power	Chain 1	Chain 2	onun o					
5300 5330 PSD Frequency (MHz) 5260	BW 7.8	Power 6.6	-3.4	-4.9		0.8	-1.1	1.0	11.0	PASS
5300 5330 PSD Frequency (MHz)	BW	Power					-1.1 <b>0.3</b> -2.0	1.0 1.0 1.0		PASS PASS PASS

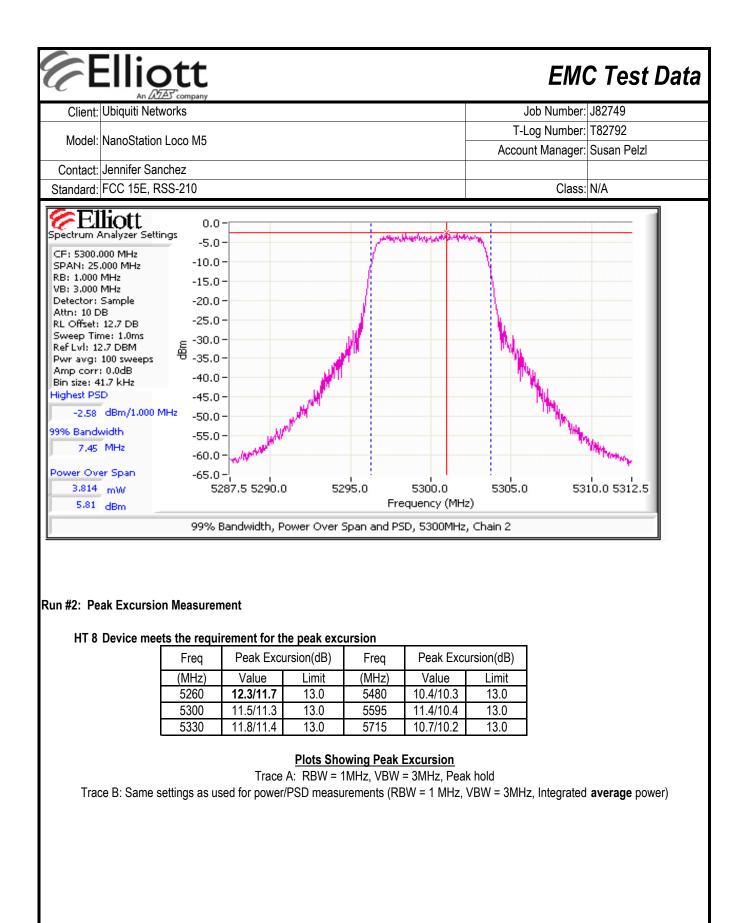
## Output Power at Low Power Setting - 5250-5350 MHz Band

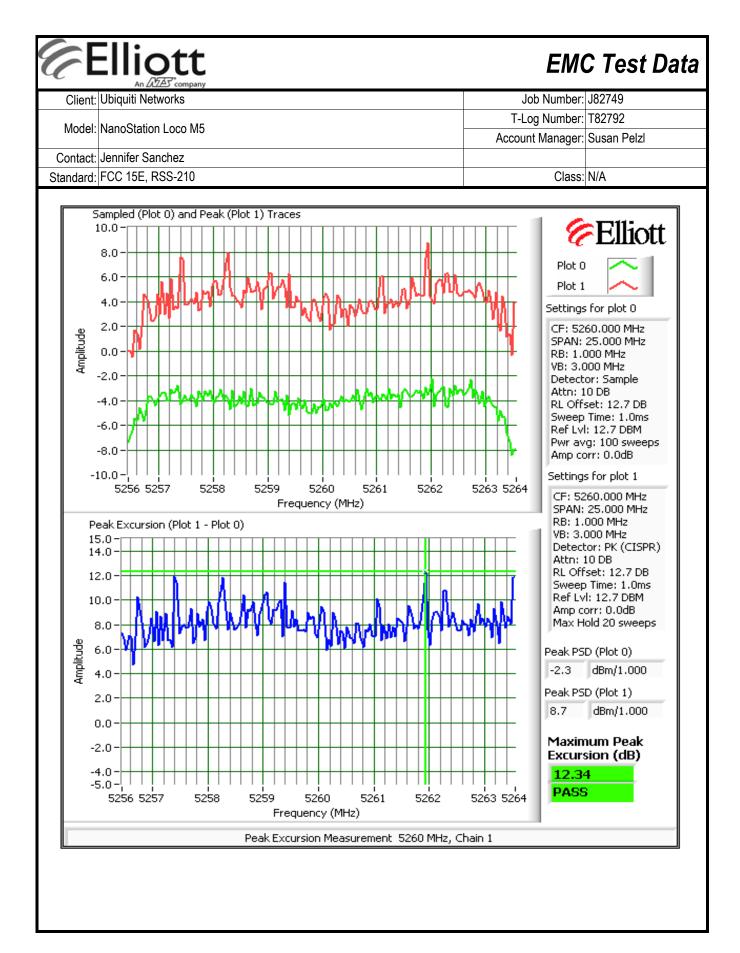
<b>E</b>	Elliott An AZAS <sup>*</sup> company						EMO	C Test	Data
Client:	Ubiquiti Networks						Job Number:	J82749	
Madal	NanoStation Loco M5					T-l	Log Number:	T82792	
Model.						Αссоι	unt Manager:	Susan Pelzl	
Contact:	Jennifer Sanchez								
Standard:	FCC 15E, RSS-210						Class:	N/A	
MIMO Devid	ce - 5470-5725 MHz Bang	ł					_		
		Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>	EIRP (mW)	EIRP (dBm)	
	Antenna Gain (dBi):	13	13		Yes	16.0	382.4	25.8	

	Antenne	a Gain (ubi).	15	10		163	10.0	302.4	20.0	
Power										
Frequency	Software	26dB BW	Measure	d Output Pov	wer <sup>1</sup> dBm	To	otal	Limit (dBm)	Max Power	Pass or Fail
(MHz)	Setting	(MHz)	Chain 1	Chain 2	Chain 3	mW	dBm	сти (авти)	(W)	Pass of Fall
5480	4.5	11.5	6.7	5.2		8.0	9.0	11.6		PASS
5595	4.5	11.5	6.1	6.8		8.9	9.5	11.6	0.010	PASS
5715	5.5	11.5	7.0	6.6		9.6	9.8	11.6		PASS
PSD										
Frequency	99% <sup>4</sup>	Total	Р	SD <sup>2</sup> dBm/MH	lz	Total	PSD	Li	mit	Deee or Foil
(MHz)	BW	Power	Chain 1	Chain 2	Chain 3	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	Pass or Fail
5480	7.5	9.0	-2.0	-3.7		1.1	0.2	1.0	11.0	PASS
5595	7.5	9.5	-2.5	-2.1		1.2	0.7	1.0	11.0	PASS
5715	7.5	9.8	-1.9	-2.3		1.2	0.9	1.0	11.0	PASS

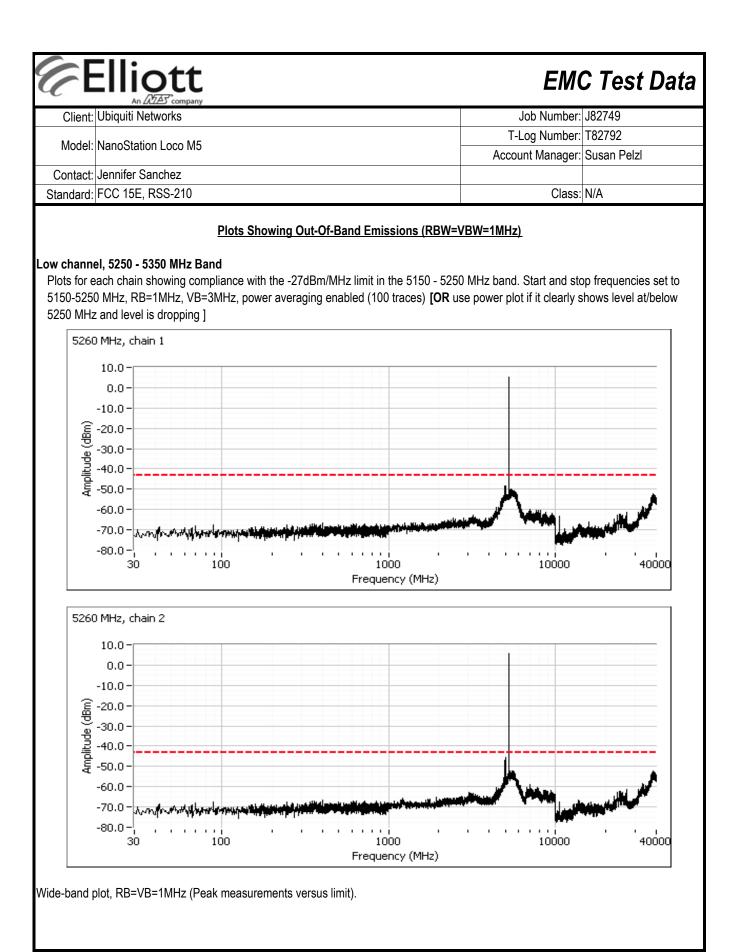
# Output Power at Low Power Setting - 5470-5725 MHz Band

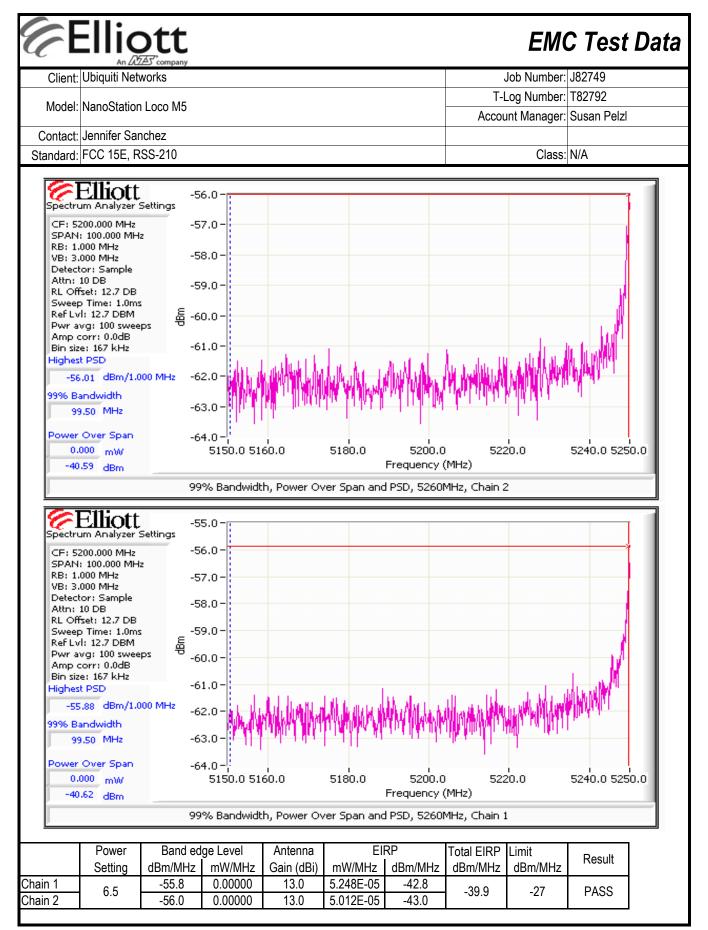


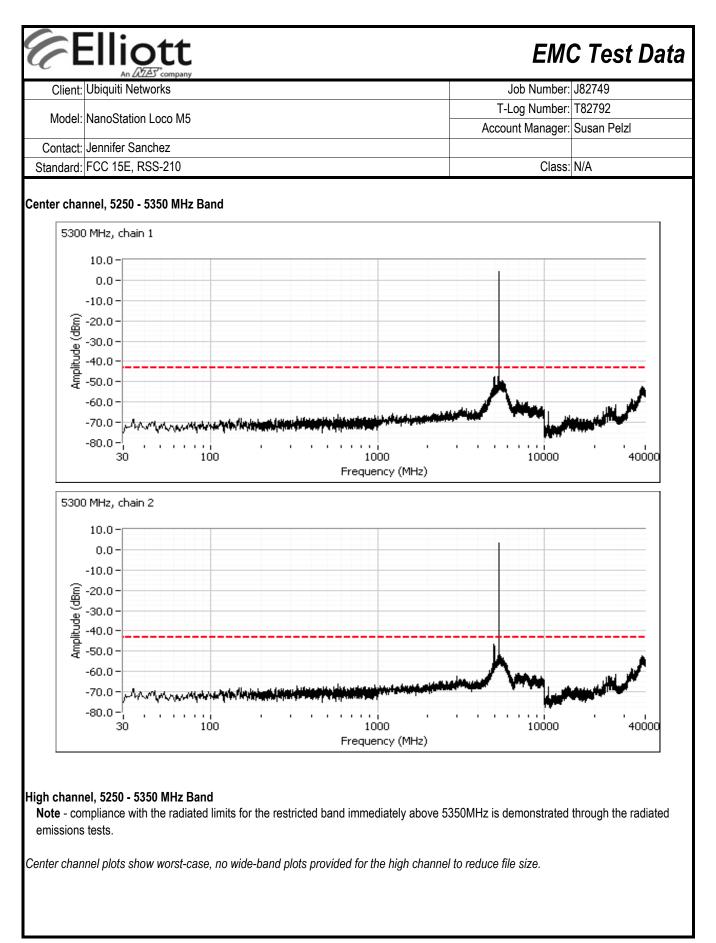


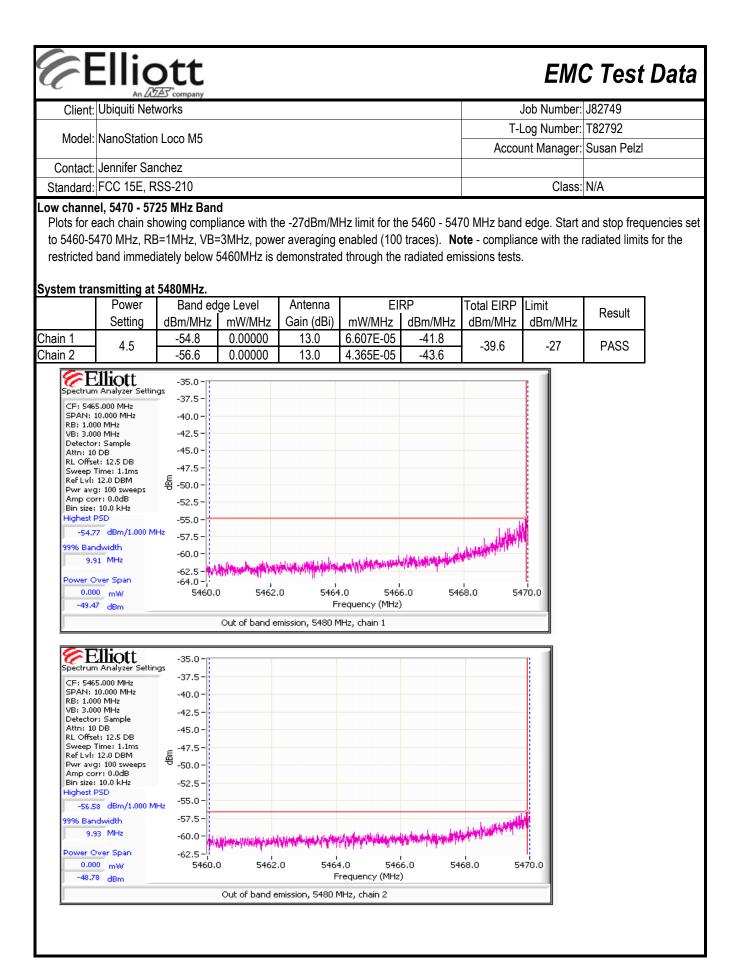


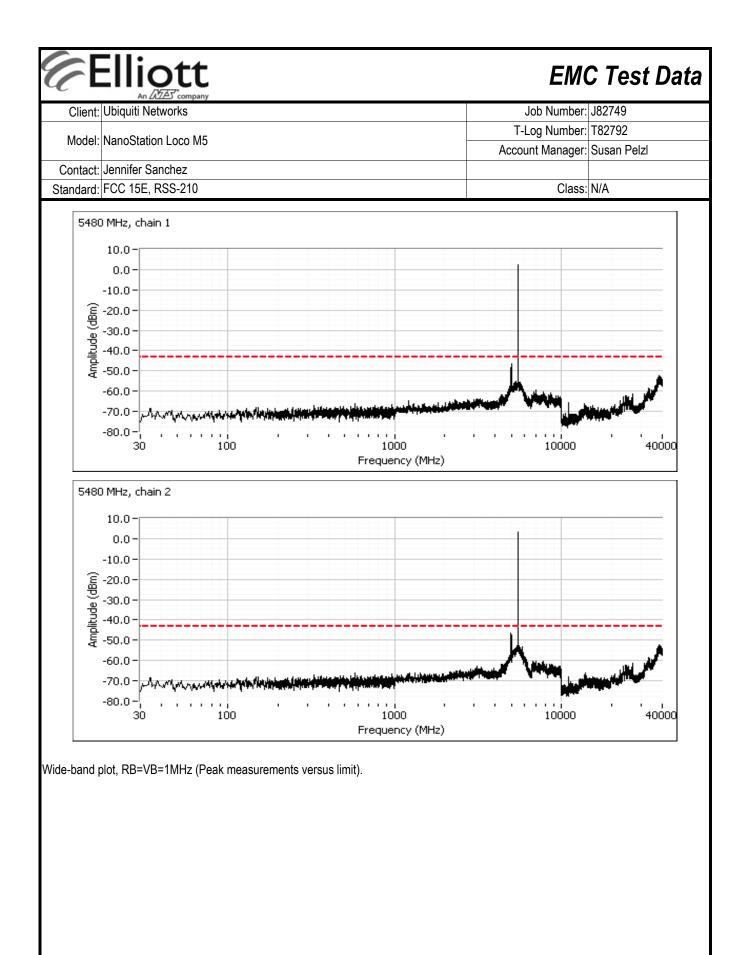
Model:         NanoStation Loco M5         T-Log Number         T82792           Contact:         Jennifer Sanchez         Susan Pelzl         Contact:         Jennifer Sanchez         Susan Pelzl         Contact:         Class:         N/A           Run #3:         Out Of Band Spurious Emissions - Antenna Conducted         MMO Devices:         Account Manager:         Susan Pelzl           MMO Devices:         Anten again used is the individual antenna antenna gain (the spurious emissions at the band edges are not considered to be coherent between chains and spurious removed from the band edges are evaluated as radiated emissions if clo the limit). The plots were obtained for each chain individually and the limit was adjusted to account for all chains transmitting simultaneously         Number of transmit chains:         2           Maximum Antenna Gain:         13.0 dBi         Spurious Limit:         -27.0 dBm/MHz erip         Adjustment for 2 chains:         -3.0 dB adjustment for multiple chains.           Limit Used On Plots <sup>New 1</sup> :         -43.0 dBm/MHz wareage Limit (RB=1MHz, VB=10Hz)         The -27dBm/Mz limit is an erip limit. The limit for antenna port conducted measurements is on signals more than 50MHz from the bands and that acclose to the limit are made to determine compliance as the antenna gain and number of transmitters (limit = -27dBm elose) of the inter are measured during digital device radiated emissions test.         Note 4:         If the device is for outdoor use finent the -27dBm elos deplate are subject to a limit of 17dBm EIRP         Note 4:         If the device is for outd	Client:	Ubiquiti Networks		Job Number:	J82749
Contact:       Jennifer Sanchez       Account Manager:       Susan Pelzl         Standard:       FCC 15E, RSS-210       Class:       N/A         Run #3:       Out Of Band Spurious Emissions - Antenna Conducted       MIMO Devices:       Antenna gain used is the individual antenna antenna gain (the spurious emissions at the band edges are not considered to be coherent between chains and spurious removed from the band edges are evaluated as radiated emissions if clo the limit). The plots were obtained for each chain individually and the limit was adjusted to account for all chains transmitting simultaneously         Number of transmit chains:       2         Maximum Antenna Gain:       13.0 dBi         Spurious Limit:       -27.0 dBm/MHz eirp         Adjustment for 2 chains:       -3.0 dB adjustment for multiple chains.         Limit Used On Plots       -43.0 dBm/MHz       Average Limit (RB=1MHz, VB=10Hz)         Autor 1:       The -27dBm/MHz limit is an eirp limit. The limit for antenna port conducted measurements is adjusted to take into consideration the maximum antenna gain and number of transmitters (limit = -27dBm - antenna gain - 10Log[N]). Radi field strength measurements for signals more than 50MHz from the bands and that are close to the limit are made to determine compliance as the antenna gain is not known at these frequencies.         Vote 2:       All spurious signals below 1GHz are measured during digital device radiated emissions test.         Vote 3:       Signals within 10MHz of the 5.725 or 5.825 Band edge are subject to a limit of -17dBm EIRP	Madalı			T-Log Number:	T82792
Standard:       FCC 15E, RSS-210       Class:       N/A         Run #3:       Out Of Band Spurious Emissions - Antenna Conducted         MIMO Devices:       Antenna gain used is the individual antenna antenna gain (the spurious emissions at the band edges are not considered to be coherent between chains and spurious removed from the band edges are evaluated as radiated emissions if clo the limit). The plots were obtained for each chain individually and the limit was adjusted to account for all chains transmitting simultaneously         Number of transmit chains:       2         Maximum Antenna Gain:       13.0 dBi         Spurious Limit:       -27.0 dBm/MHz eirp         Adjustment for 2 chains:       -30. dB adjustment for multiple chains.         Limit Used On Plots       Note 1:       -43.0 dBm/MHz         Average Limit (RB=1MHz, VB=10Hz)       VB=10Hz)         Note 1:       The -27dBm/MHz limit is an eirp limit. The limit for antenna port conducted measurements is adjusted to take into consideration the maximum antenna gain and number of transmitters (limit = -27dBm - antenna gain - 10Log[N]). Radi field strength measurements for signals more than 50MHz from the bands and that are close to the limit are made to determine compliance as the antenna gain is not known at these frequencies.         Note 2:       All spurious signals below 1GHz are measured during digital device radiated emissions test.         Note 3:       Signals within 10MHz of the 5.725 or 5.825 Band edge are subject to a limit of -17dBm EIRP         Note 4:	Model:	NanoStation Loco M5		Account Manager:	Susan Pelzl
Run #3: Out Of Band Spurious Emissions - Antenna Conducted         MIMO Devices: Antenna gain used is the individual antenna antenna gain (the spurious emissions at the band edges are not considered to be coherent between chains and spurious removed from the band edges are evaluated as radiated emissions if clo the limit). The plots were obtained for each chain individually and the limit was adjusted to account for all chains transmitting simultaneously         Number of transmit chains:       2         Maximum Antenna Gain:       13.0         Adjustment for 2 chains:       -27.0         Adjustment for 2 chains:       -3.0         Limit Used On Plots       -43.0         Note 1:       The -27dBm/MHz limit is an eirp limit. The limit for antenna port conducted measurements is adjusted to take into consideration the maximum antenna gain and number of transmitters (limit = -27dBm - antenna gain - 10Log[N]). Radi field strength measurements for signals more than 50MHz from the bands and that are close to the limit are made to determine compliance as the antenna gain is not known at these frequencies.         Note 2:       All spurious signals below 1GHz are measured during digital device radiated emissions test.         Note 3:       Signals within 10MHz of the 5.725 or 5.825 Band edge are subject to a limit of -17dBm EIRP         Note 4:       If the device is for outdoor use then the -27dBm eirp limit also applies in the 5150 - 5250 MHz band.	Contact:	Jennifer Sanchez			
MIMO Devices: Antenna gain used is the individual antenna antenna gain (the spurious emissions at the band edges are not considered to be coherent between chains and spurious removed from the band edges are evaluated as radiated emissions if clo the limit). The plots were obtained for each chain individually and the limit was adjusted to account for all chains transmitting simultaneously         Number of transmit chains:       2         Maximum Antenna Gain:       13.0         Adjustment for 2 chains:       -27.0         Limit Used On Plots       -27.0         Mote 1:       The -27dBm/MHz limit is an eirp limit. The limit for antenna port conducted measurements is adjusted to take into consideration the maximum antenna gain and number of transmitters (limit = -27dBm - antenna gain - 10Log[N]). Radi field strength measurements for signals more than 50MHz from the bands and that are close to the limit are made to determine compliance as the antenna gain is not known at these frequencies.         Note 2:       All spurious signals below 1GHz are measured during digital device radiated emissions test.         Note 3:       Signals within 10MHz of the 5.725 or 5.825 Band edge are subject to a limit of -17dBm EIRP         Note 4:       If the device is for outdoor use then the -27dBm eirp limit also applies in the 5150 - 5250 MHz band.	Standard:	FCC 15E, RSS-210		Class:	N/A
Inter-27dBm/MHz limit is an eirp limit. The limit for antenna port conducted measurements is adjusted to take into consideration the maximum antenna gain and number of transmitters (limit = -27dBm - antenna gain - 10Log[N]). Radi field strength measurements for signals more than 50MHz from the bands and that are close to the limit are made to determine compliance as the antenna gain is not known at these frequencies.         Note 2:       All spurious signals below 1GHz are measured during digital device radiated emissions test.         Note 3:       Signals within 10MHz of the 5.725 or 5.825 Band edge are subject to a limit of -17dBm EIRP         Note 4:       If the device is for outdoor use then the -27dBm eirp limit also applies in the 5150 - 5250 MHz band.	the limit).	The plots were obtained for each chain individual ously Number of transmit chains: Maximum Antenna Gain: 13. Spurious Limit: -27. Adjustment for 2 chains: -3.	ly and the limit was adjuste 2 0 dBi 0 dBm/MHz eirp 0 dB adjustment for multip	ed to account for all chains le chains.	s transmitting
Interpretation       consideration the maximum antenna gain and number of transmitters (limit = -27dBm - antenna gain - 10Log[N]). Radi field strength measurements for signals more than 50MHz from the bands and that are close to the limit are made to determine compliance as the antenna gain is not known at these frequencies.         Interpretation       All spurious signals below 1GHz are measured during digital device radiated emissions test.         Interpretation       Signals within 10MHz of the 5.725 or 5.825 Band edge are subject to a limit of -17dBm EIRP         Interpretation       If the device is for outdoor use then the -27dBm eirp limit also applies in the 5150 - 5250 MHz band.		Limit Used On Plots -43.	0 dBm/MHZ Average Lin	nit (RB=1MHZ, VB=10HZ)	
	Note 3:	Signals within 10MHz of the 5.725 or 5.825 Banc			
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	
			eirp limit also applies in the	e 5150 - 5250 MHz band.	

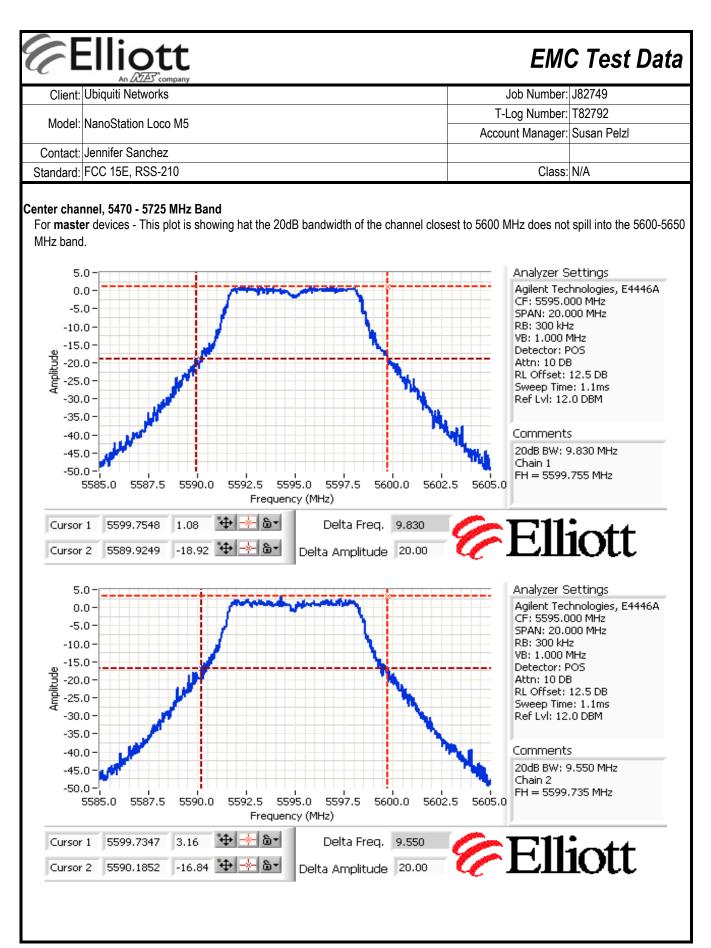


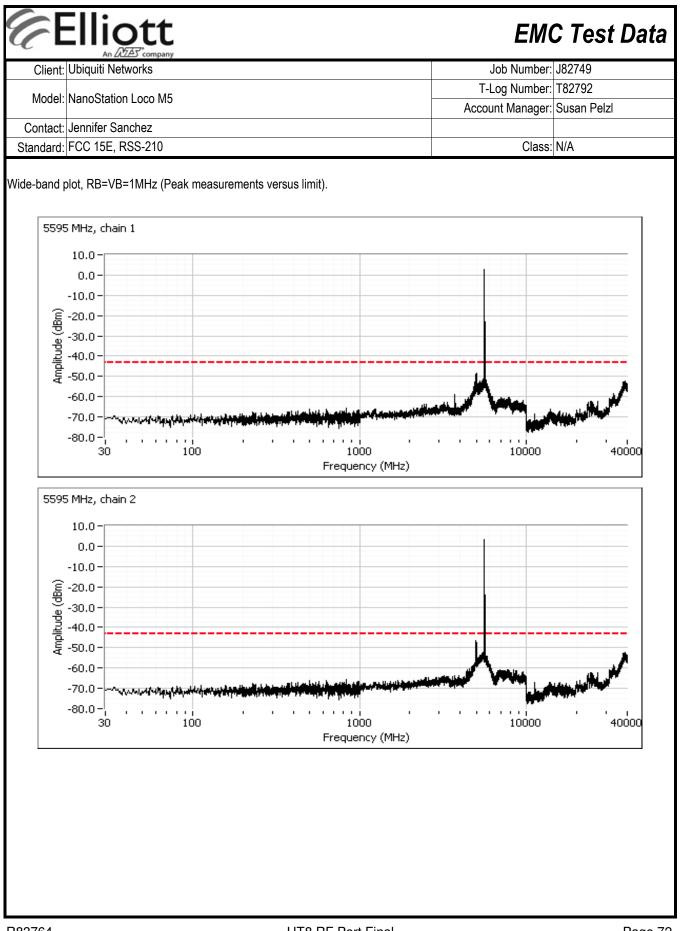


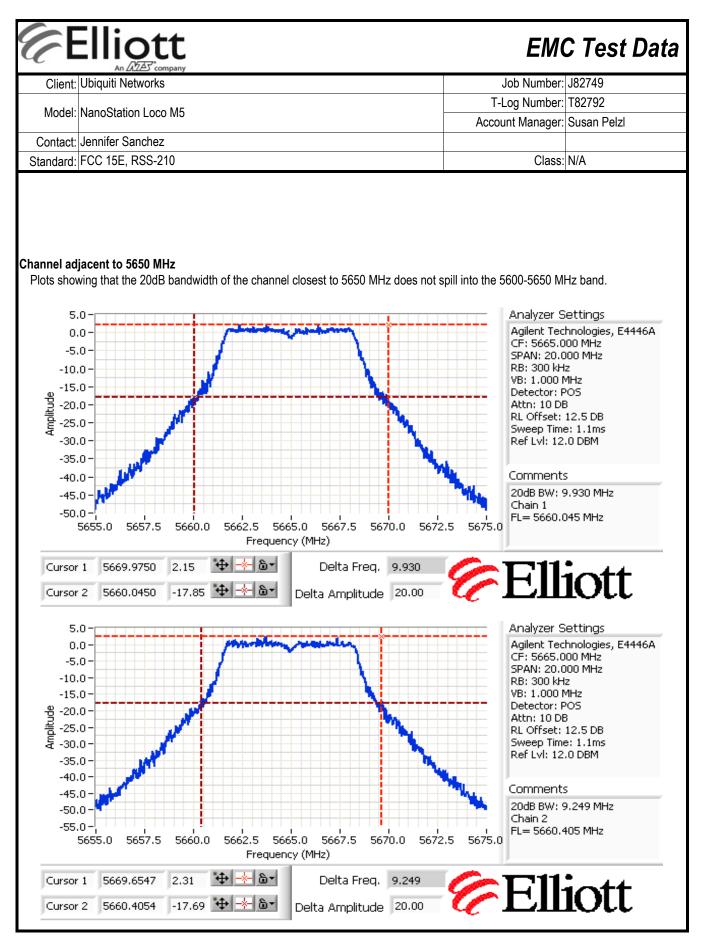


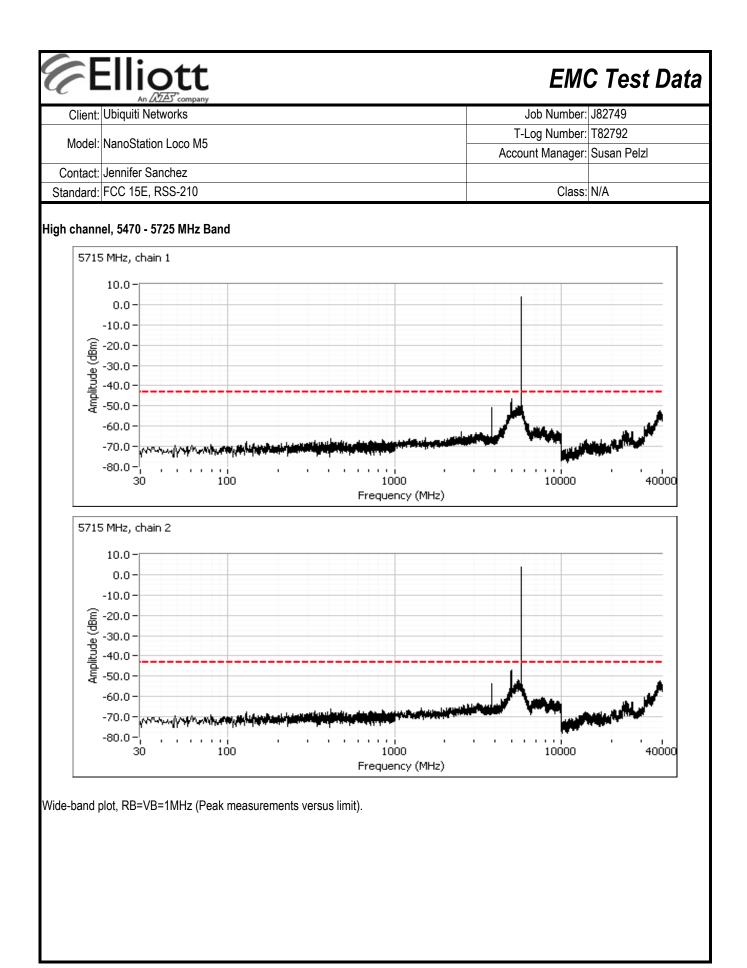












#### Elliott EMC Test Data Client: Ubiquiti Networks Job Number: J82749 T-Log Number: T82792 Model: NanoStation Loco M5 Account Manager: Susan Pelzl Contact: Jennifer Sanchez Standard: FCC 15E, RSS-210 Class: N/A Plots for each chain showing compliance with the -27dBm/MHz limit above the 5725MHz band edge. Start and stop frequencies set to 5725-5800 MHz, RB=1MHz, VB=3MHz, power averaging enabled (100 traces): Power Band edge Level Antenna EIRP Total EIRP Limit Result Setting dBm/MHz mW/MHz Gain (dBi) dBm/MHz dBm/MHz mW/MHz dBm/MHz -54.7 0.00000 13.0 6.761E-05 -41.7 Chain 1 -39.0 -27 PASS 5.5 Chain 2 -55.3 0.00000 13.0 5.888E-05 -42.3Elliott -35.0 Spectrum Analyzer Settings -37.5 CF: 5762.500 MHz SPAN: 75.000 MHz -40.0 RB: 1.000 MHz VB: 3.000 MHz -42.5-Detector: Sample Attn: 10 DB -45.0 RL Offset: 12.5 DB Sweep Time: 1.1ms -47.5 튭 Ref Lvl: 12.0 DBM Pwr avg: 100 sweeps -50.0 Amp corr: 0.0dB Bin size: 75.1 kHz -52.5 Highest PSD -55.0 -54.71 dBm/1.000 MHz 99% Bandwidth -57.5 74.55 MHz -60.0 Power Over Span -62.0-0.000 mW 5775.0 5725.0 5750.0 5800.0 Frequency (MHz) -39.28 dBm Out of band emission, 5715 MHz, chain 1 ℰ Elliott -35.0 Spectrum Analyzer Settings -37.5 CE: 5762,500 MHz SPAN: 75,000 MHz -40.0 RB: 1.000 MHz -42.5-VB: 3.000 MHz Detector: Sample -45.0-Attn: 10 DB RL Offset: 12.5 DB -47.5-Sweep Time: 1.1ms <u>ភ</u>្ត -50.0 -Ref Lvl: 12.0 DBM Pwr avg: 100 sweeps Amp corr: 0.0dB -52.5

Bin size: 75.1 kHz

-55.25 dBm/1.000 MHz

Highest PSD

99% Bandwidth

74.47 MHz

0.000 mW

-42.06 dBm

Power Over Span

-55.0

-57.5

-60.0

-62.5

-65.0-

5725.0

Out of band emission, 5715 MHz, chain 2

5750.0

5775.0

Frequency (MHz)

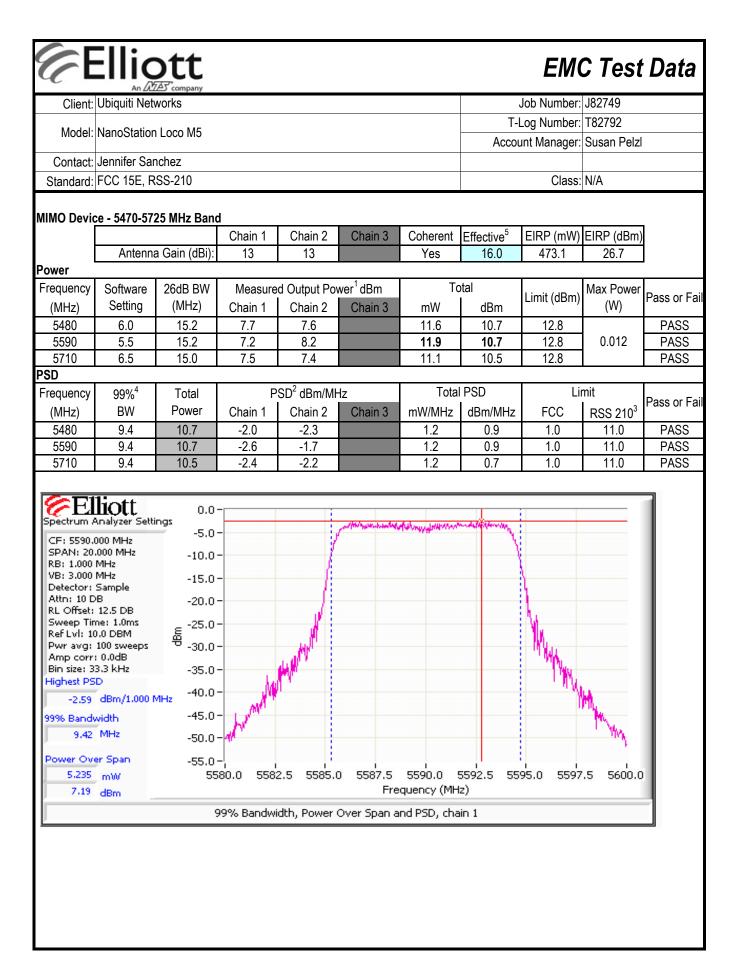
5800.0

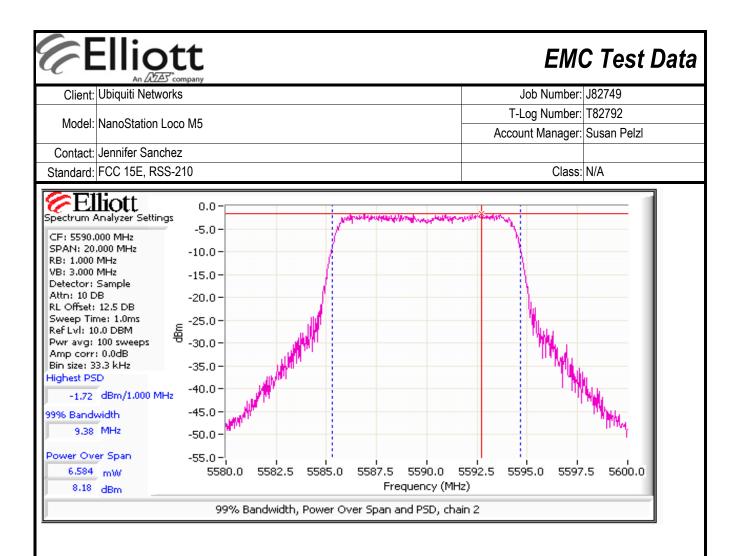
7		<b>btt</b>			EMO	C Test Dat
Client:	Ubiquiti Netv	works			Job Number:	J82749
					Log Number:	
Model:	NanoStation	Loco M5			unt Manager:	
Contact:	Jennifer Sar	Johan		,	int manage	0000111 012
	FCC 15E, R				Class:	NI/A
Stanuaru.		00-210		<u> </u>	01000.	N//A
Tost Snov	cific Detail	Antenna P Power, PSD, Peak Excursior	N) and FCC 15.40 Port Measuremen n, Bandwidth and Sp	ts	nissions	
est spec	cific Detail		norform final qualification	tooting of th	∽ ⊑UT with r	concet to the
		The objective of this test session is to specification listed above.		r testing or th		espect to the
Γ	Date of Test:	5/5/2011	Config. Used:	-		
	est Engineer:		Config Change:			
	est Location:		EUT Voltage:			
	of Result					
Ru	ın #	Test Performed	Limit		Result / Mar	gin
	1	Power, 5250 - 5350MHz	15.407(a) (1), (2)		11.5 mW	
	1	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	PASS	0.9 dBm/MH	z
	1	Max EIRP 5250 - 5350MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm.	N/A	EIRP = 26.6	dBm (459.4 mW)
	1	Power, 5470 - 5725MHz	15.407(a) (1), (2)	PASS	11.5 mW	
	1	PSD, 5470 - 5725MHz	15.407(a) (1), (2)		0.9 dBm/MH	Iz
	1	Max EIRP 5470 - 5725MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold	N/A	EIRP = 26.6	dBm (459.4 mW)
	1	26dB Bandwidth	15.407 (Determines max power)		15.2 MHz	
	1	99% Bandwidth	RSS 210	N/A	9.4 MHz	
			15.407(a) (6)	PASS	12.9 dB	
	2	Peak Excursion Envelope	13dB			

#### General Test Configuration

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

(MHz)         Setting         (MHz)         Chain 1         Chain 2         Chain 3         mW         dBm         Model         (W)           5260         5.0         13.4         3.5         3.8         4.6         6.7         12.3         P           5300         6.0         15.1         7.5         7.7         11.5         10.6         12.8         0.012         P           5330         5.0         15.1         7.1         7.2         10.4         10.2         12.8         P           PSD         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> 5260         9.7         6.7         -5.3         -5.3         0.6         -2.3         1.0         11.0         P	<u></u>		Company							100740	
Model:         NanoStation Loco MS         Account Manager:         Suan Pelz           Contact:         Jennifer Sanchez         Class:         NA           Standard:         FCC 15E, RSS-210         Class:         NA           Ambient Conditions:         Temperature:         18-23 °C         Rel. Humidity:         30-35 %           Wodifications 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.           Not deviations were made from the requirements of the standard.         Not deviations were measured using a peak power meter         Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sample detector, power averaging on [transmitted signal was continuous) and power integration over 20 MHz (method 1 of DA-02-2138A1).           Note 1:         Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sample detector, power averaging on [transmitted signal was continuous) and power integration over 20 MHz (method 1 of DA-02-2138A1).           Note 2:         Measured using the same analyzer settings used for output power. PSD is highest value on the plot.           Note 4:         99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB           For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signa	Client	Ubiquiti Net	works								
Contact       Jennifer Senchez       Class:       N/A         Standard:       FCC 15E, RSS-210       Class:       N/A         Ambient Conditions:       Temperature:       18-23 °C         Rel. Humidity:       30-35 %         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.         Run #1: Bandwidth, Output Power and Power Spectral Density - MIMO Systems         Note 1:       Output power measured using a pack power meter         Output power measured using a pack power meter         Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sample detector, power arging on (transmitted signal was continuous) and power integration over 20 MHz (method 1 of DA-02-2138A1).         Note 1:       Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sample detector, power and from Owers to the to avour power. PSD is highest value on the plot.         Note 2:       Measured using the same analyzer settings used for output power. PSD is highest value on the plot.         Note 5:       for MIMO systems the total output power and teal PSD are calculated form the sum of the powers of the individual chains and the EIRP is the sum of the powers of the individual chains and the EIRP is the sum of the powers of the individual chains and the EIRP is the sum of the powere each chain the EIRP is the gind the individ	Model	NanoStation	Loco M5						•		
Standard       FCC 15E, RSS-210       Class:       N/A         Ambient Conditions:       Temperature:       18-23 °C       Rel. Humidity:       30-35 %         Modifications Made During Testing       No modifications were made to the EUT during testing       Deviations From The Standard         No deviations were made to the EUT during testing       Deviations were made from the requirements of the standard.         Note 1:       Output power measured using a peak power meter         Note 1:       Output power measured using a peak power meter         Note 1:       Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 20 MHz (method 1 of DA-02-2138A1).         Note 2:       Measured using the same analyzer settings used for output power. PSD is highest value on the plot.         Note 4:       040444 measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB         For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual chains and the EIRP is the sum of the products of gain and power on ead chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP is the sum (in linear terms) of the gains for each chain the EIRP is the sum (in linear terms) of the gains for each chain the EIRP is the sum (in linear terms) of the gains for each chain the EIRP is the sum of the products of gain and power on ead chain. If the signals are coherent then the effective ant	Contact	lonnifor Sar	nchez					ACCOL	int Manager.	Susan Peizi	
Ambient Conditions:       Temperature:       18-23 °C Rel. Humidity:       30-35 %         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.         No deviations were made from the requirements of the standard.       Rel. Humidity:       MIMO Systems         Note 1:       Output power measured using a peak power meter       Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sample detector, power areging on (transmitted signal was continuous) and power integration over: 20 MHz (method 1 of DA-02-2138A1).         Note 2:       Measured using the same analyzer settings used for output power: PSD is highest value on the plot.         Note 4:       99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >>3XBB         For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual chains and the EIRP and limits for PSD/Output power depends on the operatin mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the EIRP and limits for PSD/Output power depends on the operatin mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP is the product of the affective gain and total power.         MIMO Device - 5250-5350 MHz									Class:	N/A	
Rel. Humidity: 30-35 %         Modifications Made During Testing         Deviations From The Standard         No deviations were made to the EUT during testing         Deviations From The Standard         Note 1: Output Power and Power Spectral Density - MIMO Systems         Note 1: Output power measured using a peak power meter       Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 20 MHz (method 1 of DA-02-2138A1).         Note 1: Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 20 MHz (method 1 of DA-02-2138A1).         Note 2: Measured using the same analyzer settings used for output power. PSD is highest value on the plot.         Note 2: Measured using the same analyzer settings used for output power. PSD is highest value on the plot.         Note 2: Measured using the same analyzer settings used for output power. PSD is highest value on the plot.         Note 3: MiMO Systems the total output power and total PSD are calculated form the sum of the powers of the individual chains and the EIRP and limits for PSD/Output power depends on the operatin mode of the MIMO device. If the signals on the non-ocherent between the transmit chains then the gain s for each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP	Otaridara	100102,10	00 210						01000.		
No modifications were made to the EUT during testing         Deviations From The Standard         Note visitions were made from the requirements of the standard.         Rum #1: Bandwidth, Output Power and Power Spectral Density - MIMO Systems         Note 1:       Output power measured using a peak power meter         Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 20 MHz (method 1 of DA-02-2138A1).         Note 2:       Measured using the same analyzer settings used for output power. PSD is highest value on the plot.         Note 2:       Measured using the same analyzer settings used for output power and total PSD are calculated form the sum of the powers of the individual ch linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operatin mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to deter the limits is the bighest gain of the individual chains and the EIRP is the sum of the products of gain and power on ead chain. If the signals are coherent then the effective and to power.         WIMO Device - 5250-5350 MHz Band         Chain 1       Chain 2       Chain 3       Coherent Effective <sup>6</sup> EIRP (mW) EIRP (dBm)         5260 5.0       13.4       3.5       3.8         Mutor Signal math	Ambient	Condition	S:								
No deviations were made from the requirements of the standard.         Run #1: Bandwidth, Output Power and Power Spectral Density - MIMO Systems         Note 1:       Output power measured using a peak power meter         Note 1:       Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 20 MHz (method 1 of DA-02-2138A1).         Note 2:       Measured using the same analyzer settings used for output power. PSD is highest value on the plot.         Note 4:       99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB         For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual chains and the EIRP and limits for PSD/Output power depends on the operatin mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to deter the limits is the highest gain of the individual chains and the EIRP is the sum of the product of gain and power on eacl chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP is the product of the effective gain and total power.         WIMO Device - 5250-5350 MHz Band         Total         (MHz)         Chain 1         Chain 1         Chain 1         Chain 1         Chain 1       Chain 3			-	-	testing						
Note 1:       Output power measured using a peak power meter         Note 1:       Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 20 MHz (method 1 of DA-02-2138A1).         Note 2:       Measured using the same analyzer settings used for output power. PSD is highest value on the plot.         Note 4:       99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB         For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual chains and the EIRP and limits for PSD/Output power depends on the operatin mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to deter 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. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP is the product of the effective gain and total power.         VIIMO Device - 5250-5350 MHz Band         Mexer       Chain 1       Chain 2       Chain 3       Coherent       Effective <sup>5</sup> EIRP (mW)       EIRP (dBm)         Antenna Gain (dBi):       13       13       13       Yes       16.0       459.4       26.6         Power       Software       26dB BW       Measured Output Power <sup>1</sup> dBm       Total       Limit (dBm)       Max Power       Pass         <	No deviat	ions were ma	ade from the r	requirements			Sustans				
Note 1:       Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 20 MHz (method 1 of DA-02-2138A1).         Note 2:       Measured using the same analyzer settings used for output power. PSD is highest value on the plot.         Note 4:       99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB         For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual chains and the EIRP and limits for PSD/Output power depends on the operatin mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP is the product of the effective gain and total power.         MIMO Device - 5250-5350 MHz Band       Chain 1       Chain 2       Chain 3       Coherent       Effective <sup>5</sup> EIRP (mW)       EIRP (dBm)         Antenna Gain (dBi):       13       13       Yes       16.0       459.4       26.6         Power       Frequency       Software       26dB BW       Measured Output Power <sup>1</sup> dBm       Total       Limit (dBm)       Max Power       Pass         5300       6.0       15.1       7.5       7.7       11.5       10.6       12.8       0.012       P </td <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td>Systems</td> <td></td> <td></td> <td></td> <td></td>		-					Systems				
Averaging on (transmitted signal was continuous) and power integration over 20 MHz (method 1 of DA-02-2138A1).         Note 2: Measured using the same analyzer settings used for output power. PSD is highest value on the plot.         Note 4: 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB         For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual ch linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operatin mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the EIRP is the sum of the products of gain and power on eacl chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP is the product of the effective gain and total power.         WIMO Device - 5250-5350 MHz Band         VilMO Device - 5250-5350 MHz Band         Measured Output Power <sup>1</sup> dBm       Total         Note 5:         Frequency       Software       26dB BW       Measured Output Power <sup>1</sup> dBm       Total       Limit (dBm)       Max Power         Software       26dB BW       Measured Output Power <sup>1</sup> dBm       Total       Limit (dBm)       Max Power         Software       26dB					•		below). RBW	/=1MHz, VB=	-3 MHz, sam	ple detector,	power
Note 4: 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB >=3xRB         For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual chains and the EIRP and limits for PSD/Output power depends on the operatin mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the EIRP and limits for PSD/Output power depends on the operatin mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to deter 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. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP is the product of the effective gain and total power.         MIMO Device - 5250-5350 MHz Band         Terequency       Chain 1       Chain 2       Chain 3       Coherent Effective <sup>5</sup> EIRP (mW)       EIRP (dBm)         Antenna Gain (dBi):       13       13       Yes       16.0       459.4       26.6         Power         (MHZ)       Software       26dB BW       Measured Output Power <sup>1</sup> dBm       Total       Limit (dBm)       Max Power (W)       Pass         5260       5.0       13.4       3.5       3.8       4.6       6.7       12.3       0.0				-	,						1).
For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual chainear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operatin mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to deter the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on eacl chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP is the product of the effective gain and total power.         AllMO Device - 5250-5350 MHz Band         Total Chain 1       Chain 2       Coherent Effective <sup>5</sup> EIRP (mW)       EIRP (dBm)         Antenna Gain (dBi): 13       13       Total       Limit (dBm)       Max Power         Software       26dB BW       Measured Output Power <sup>1</sup> dBm       Total       Limit (dBm)       Max Power       Pase         Software       26dB BW       Measured Output Power <sup>1</sup> dBm       Total       Limit (dBm)       Max Power       Queue         Software       26dB BW       Measured Output Power <sup>1</sup> dBm       Total       Limit (dBm)       Max Power       Queue </td <td></td> <td></td> <td>-</td> <td></td> <td>-</td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td>			-		-			-			
Inear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operatin mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to deter 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. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain the EIRP is the product of the effective gain and total power.         MIMO Device - 5250-5350 MHz Band         Chain 1       Chain 2       Chain 3       Coherent       Effective <sup>5</sup> EIRP (mW)       EIRP (dBm)         Antenna Gain (dBi): 13       13       Yes       16.0       459.4       26.6         Power         Frequency       Software       26dB BW       Measured Output Power <sup>1</sup> dBm       Total       Limit (dBm)       Max Power       Pase         Software       26dB BW       Measured Output Power <sup>1</sup> dBm       Total       Limit (dBm)       Max Power       Pase         Software       26dB BW       Measured Output Power <sup>1</sup> dBm       Total       Limit (dBm)       Max Power       Pase         Software       26dB BW       Measured Output Power <sup>1</sup> dBm       Total       Limit (dBm)       Max Power       Pase         Software       26dB BW<	Note 4:									f the standball date	-1 -1 -1
MIMO Device - 5250-5350 MHz Band           Image: Chain 1         Chain 1         Chain 2         Chain 3         Coherent         Effective <sup>5</sup> EIRP (mW)         EIRP (dBm)           Antenna Gain (dBi):         13         13         Yes         16.0         459.4         26.6           Power         Frequency         Software         26dB BW         Measured Output Power <sup>1</sup> dBm         Total         Limit (dBm)         Max Power         Pass           5260         5.0         13.4         3.5         3.8         4.6         6.7         12.3         0.012         P           5300         6.0         15.1         7.5         7.7         11.5         10.6         12.8         0.012         P           5330         5.0         15.1         7.1         7.2         10.4         10.2         12.8         P         P           Station         Station         Station         Station         Station         Station         P           5330         5.0         15.1         7.1         7.2         10.4         10.2         12.8         P           PSD         Effective         Station         Station         Station         Station         Station <t< th=""><th>Note 5:</th><th>mode of the the limits is t chain. If the</th><th>MIMO device the highest ga signals are o</th><th>e. If the sigr ain of the inc coherent the</th><th>als on the no lividual chair n the effectiv</th><th>on-coherent b is and the Ell re antenna ga</th><th>between the t RP is the sur</th><th>transmit chai n of the prod</th><th>ns then the gucts of gain a</th><th>gain used to and power or</th><th>determine i each</th></t<>	Note 5:	mode of the the limits is t chain. If the	MIMO device the highest ga signals are o	e. If the sigr ain of the inc coherent the	als on the no lividual chair n the effectiv	on-coherent b is and the Ell re antenna ga	between the t RP is the sur	transmit chai n of the prod	ns then the gucts of gain a	gain used to and power or	determine i each
Chain 1         Chain 2         Chain 3         Coherent         Effective <sup>5</sup> EIRP (mW)         EIRP (dBm)           Antenna Gain (dBi):         13         13         Yes         16.0         459.4         26.6           Power         Frequency         Software         26dB BW         Measured Output Power <sup>1</sup> dBm         Total         Limit (dBm)         Max Power (W)         Pass           5260         5.0         13.4         3.5         3.8         4.6         6.7         12.3         0.012         P           5300         6.0         15.1         7.5         7.7         11.5         10.6         12.8         0.012         P           Sottom         Sottom         PSD <sup>2</sup> dBm/MHz         Total PSD         Limit         Elimit         Pass           6330         5.0         15.1         7.1         7.2         10.4         10.2         12.8         0.012         P           Sottom         5260         9.7         6.7         -5.3         -5.3         0.6         -2.3         1.0         11.0         P											
Antenna Gain (dBi):         13         13         Yes         16.0         459.4         26.6           Power         Frequency (MHz)         Software         26dB BW         Measured Output Power <sup>1</sup> dBm         Total mW         Limit (dBm)         Max Power (W)         Pass           5260         5.0         13.4         3.5         3.8         4.6         6.7         12.3         0.012         P           5300         6.0         15.1         7.5         7.7         11.5         10.6         12.8         0.012         P           5300         5.0         15.1         7.1         7.2         10.4         10.2         12.8         0.012         P           S5D         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> 5260         9.7         6.7         -5.3         -5.3         0.6         -2.3         1.0         11.0         P	MIMO Devi	ce - 5250-53	50 MHz Band		Oh eire O		Ochemat	<b>F</b> (( ); 5			1
Power         Frequency         Software         26dB BW         Measured Output Power <sup>1</sup> dBm         Total         Limit (dBm)         Max Power (W)         Pass           5260         5.0         13.4         3.5         3.8         4.6         6.7         12.3         P           5300         6.0         15.1         7.5         7.7         11.5         10.6         12.8         0.012         P           5330         5.0         15.1         7.1         7.2         10.4         10.2         12.8         0.012         P           SSD         Frequency         99% <sup>4</sup> Total         PSD <sup>2</sup> dBm/MHz         Total PSD         Limit         Pass           (MHz)         BW         Power         Chain 1         Chain 2         0.012         P           5260         5.0         15.1         7.1         7.2         10.4         10.2         12.8         P           SD         Frequency         99% <sup>4</sup> Total         PSD <sup>2</sup> dBm/MHz         Total PSD         Limit         Pass           (MHz)         BW         Power         Chain 1         Chain 2         MW/MHz         dBm/MHz         FCC         RSS 210 <sup>3</sup>		Antonn	a Cain (dBi):			Chain 3			, ,	, ,	
Frequency (MHz)         Software Setting         26dB BW (MHz)         Measured Output Power <sup>1</sup> dBm         Total mW         Limit (dBm)         Max Power (W)         Pass Pass           5260         5.0         13.4         3.5         3.8         4.6         6.7         12.3         P 0.012         P           5300         6.0         15.1         7.5         7.7         11.5         10.6         12.8         0.012         P           5330         5.0         15.1         7.1         7.2         10.4         10.2         12.8         0.012         P           Software         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> 5260         9.7         6.7         -5.3         -5.3         0.6         -2.3         1.0         11.0         P	Power	Antenne	a Oairi (ubi).	15	15		163	10.0	433.4	20.0	
(MHz)         Setting         (MHz)         Chain 1         Chain 2         Chain 3         mW         dBm         Limit (dBm)         (W)         Pass           5260         5.0         13.4         3.5         3.8         4.6         6.7         12.3         P           5300         6.0         15.1         7.5         7.7         11.5         10.6         12.8         0.012         P           5330         5.0         15.1         7.1         7.2         10.4         10.2         12.8         0.012         P           SSD         P         P         SSD         SSS 210 <sup>3</sup> Pass           S260         9.7         6.7         -5.3         -5.3         0.6         -2.3         1.0         11.0         P		Software	26dB BW	Measure	d Output Po	wer <sup>1</sup> dBm	To	otal		Max Power	_
5260         5.0         13.4         3.5         3.8         4.6         6.7         12.3         P           5300         6.0         15.1         7.5         7.7         11.5         10.6         12.8         0.012         P           5330         5.0         15.1         7.1         7.2         10.4         10.2         12.8         0.012         P           SD         Frequency         99% <sup>4</sup> Total         PSD           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> 5260         9.7         6.7         -5.3         -5.3         0.6         -2.3         1.0         11.0         P								1	Limit (dBm)		Pass or F
5300         6.0         15.1         7.5         7.7         11.5         10.6         12.8         0.012         P           5330         5.0         15.1         7.1         7.2         10.4         10.2         12.8         P           SSD         Psp         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> 5260         9.7         6.7         -5.3         -5.3         0.6         -2.3         1.0         11.0         P	( )	_	. ,						12.3		PASS
PSD         Frequency         99% <sup>4</sup> Total         PSD <sup>2</sup> dBm/MHz         Total PSD         Limit         Pase           (MHz)         BW         Power         Chain 1         Chain 2         Chain 3         mW/MHz         dBm/MHz         FCC         RSS 210 <sup>3</sup> Pase           5260         9.7         6.7         -5.3         -5.3         0.6         -2.3         1.0         11.0         P	5300	6.0	15.1	7.5	7.7		11.5	10.6	12.8	0.012	PASS
Frequency (MHz)         99% <sup>4</sup> Total Power         PSD <sup>2</sup> dBm/MHz         Total PSD         Limit         Pase           5260         9.7         6.7         -5.3         -5.3         0.6         -2.3         1.0         11.0         P		5.0	15.1	7.1	7.2		10.4	10.2	12.8		PASS
(MHz)         BW         Power         Chain 1         Chain 2         Chain 3         mW/MHz         dBm/MHz         FCC         RSS 210 <sup>3</sup> Pass           5260         9.7         6.7         -5.3         -5.3         0.6         -2.3         1.0         11.0         P	PSD				2						
(MHz)         BW         Power         Chain 1         Chain 2         Chain 3         mW/MHz         dBm/MHz         FCC         RSS 210 <sup>3</sup> 5260         9.7         6.7         -5.3         -5.3         0.6         -2.3         1.0         11.0         P										_	Pass or F
						Chain 3					
	(MHz)	97									PASS
5330         9.4         10.0         -2.1         -2.2         1.2         0.9         1.0         11.0         P           5330         9.4         10.2         -2.2         -2.5         1.2         0.7         1.0         11.0         P	(MHz) 5260		100	-71	-2.2		1.2	0.9	1.0	11.0	PASS

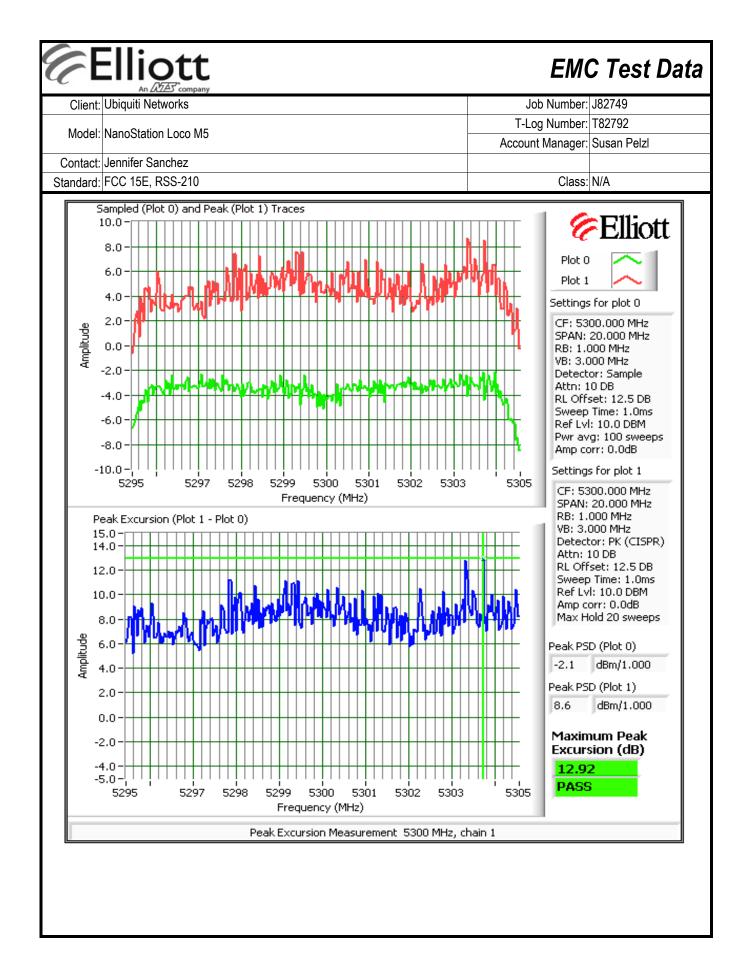




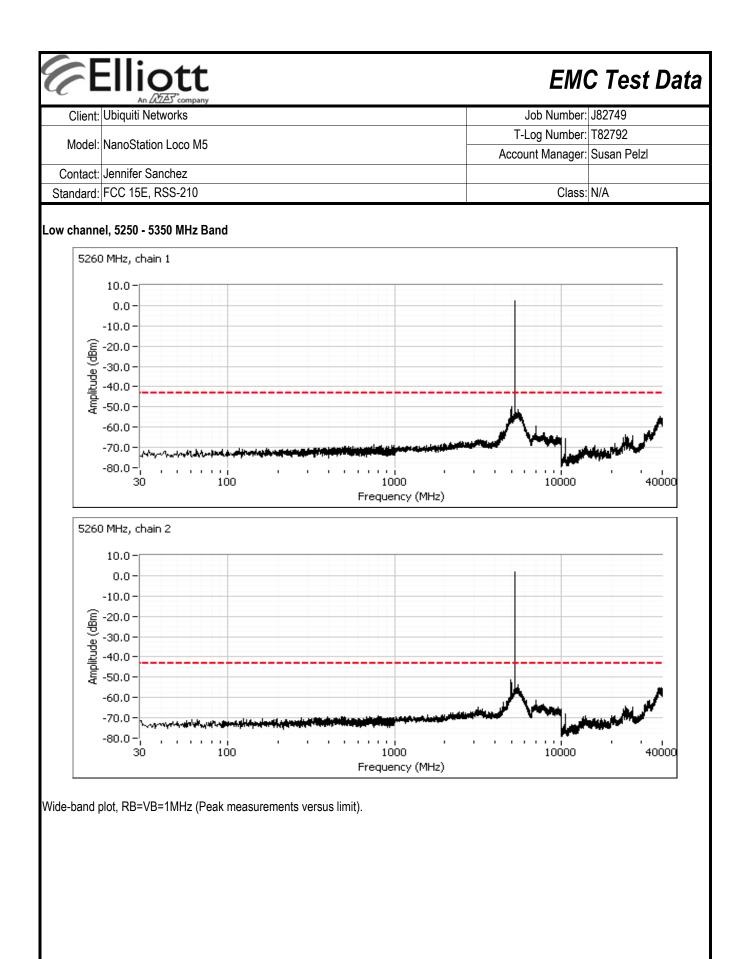
#### Run #2: Peak Excursion Measurement

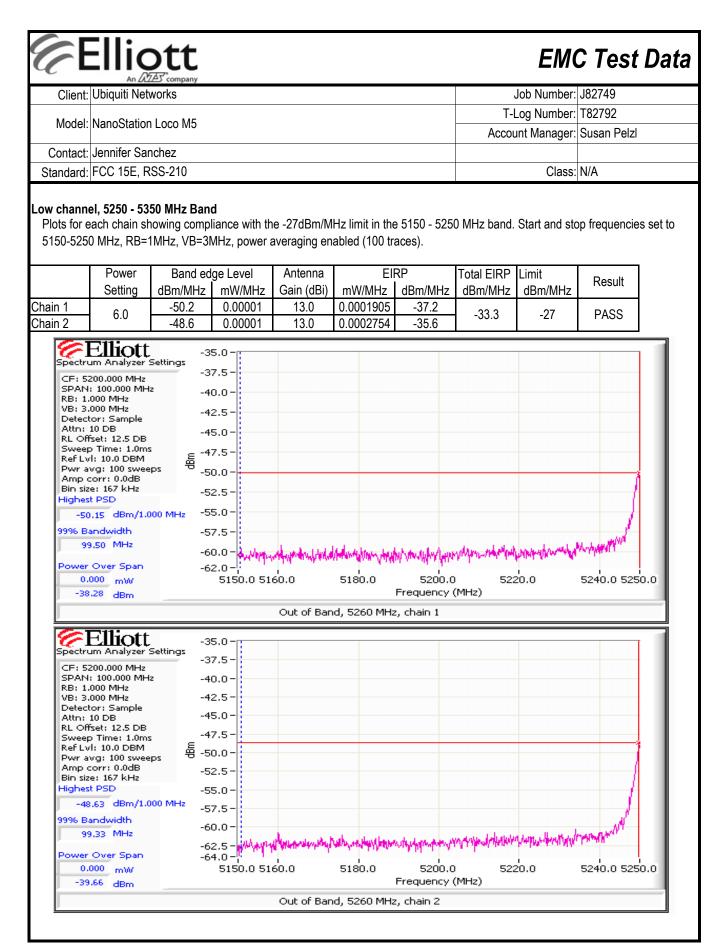
HT 10 Device meets the requirement for the peak excursion

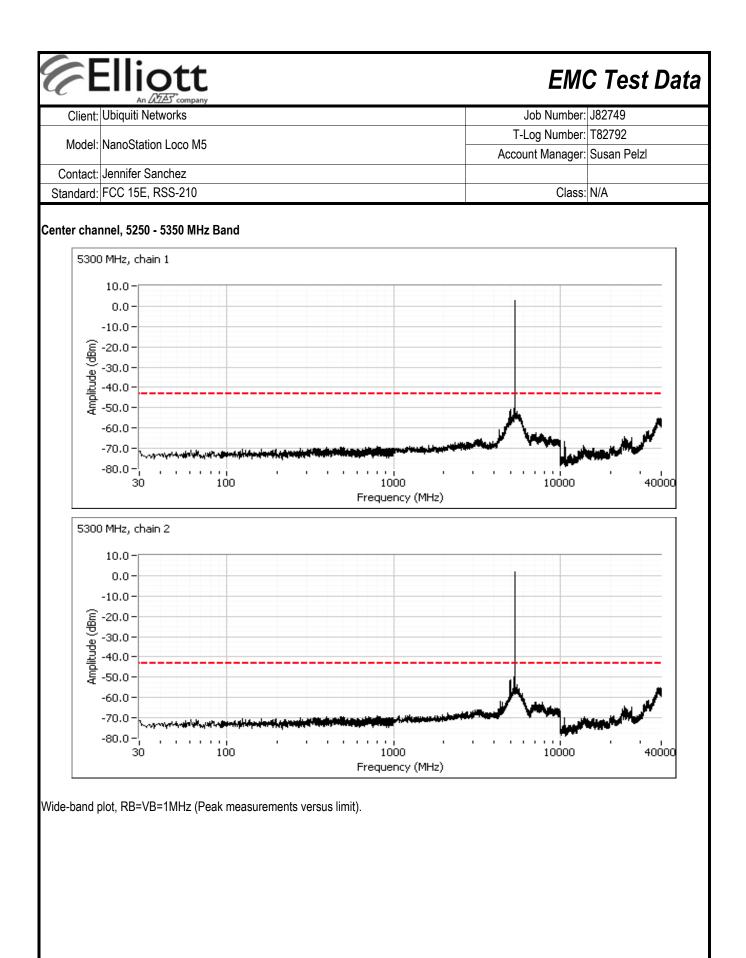
Freq	Peak Excursion(dB)		Freq	Peak Exc	ursion(dB)
(MHz)	Value	Limit	(MHz)	Value	Limit
5260	11.3/11.4	13.0	5480	11.1/10.4	13.0
5300	12.9/11.4	13.0	5590	9.9/9.8	13.0
5330	12.2/11.6	13.0	5710	10.2/10.1	13.0



	Ubiquiti Networks		Job Number:	J82749
			T-Log Number:	
Model	NanoStation Loco M5		Account Manager:	
Contact	Jennifer Sanchez			
Standard	FCC 15E, RSS-210		Class:	N/A
	Number of transmit chains: Maximum Antenna Gain: Spurious Limit: Adjustment for 2 chains:	-	ed to account for all chains ple chains.	
ote 2: ote 3: ote 4: ote 5:	field strength measurements for signals more determine compliance as the antenna gain is All spurious signals below 1GHz are measure Signals within 10MHz of the 5.725 or 5.825 E If the device is for outdoor use then the -27dE Signals that fall in the restricted bands of 15.2	not known at these frequenci ed during digital device radiate and edge are subject to a lim 8m eirp limit also applies in the	ies. ed emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	



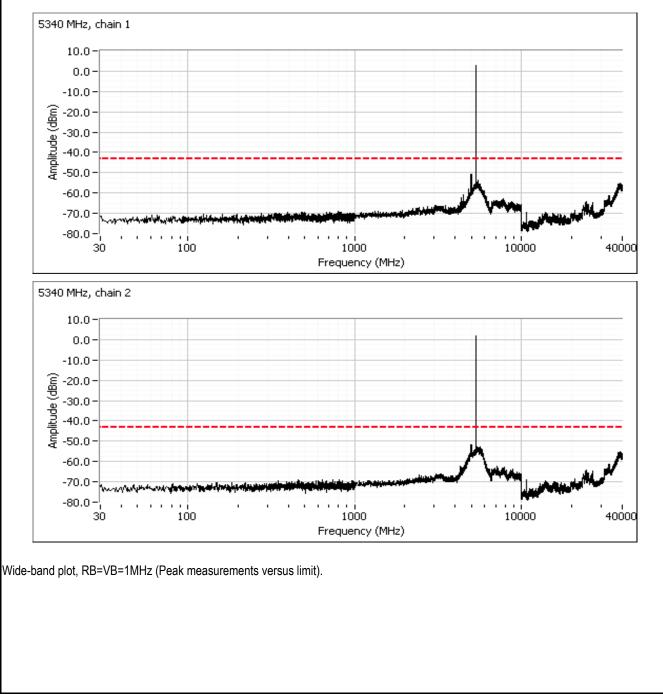


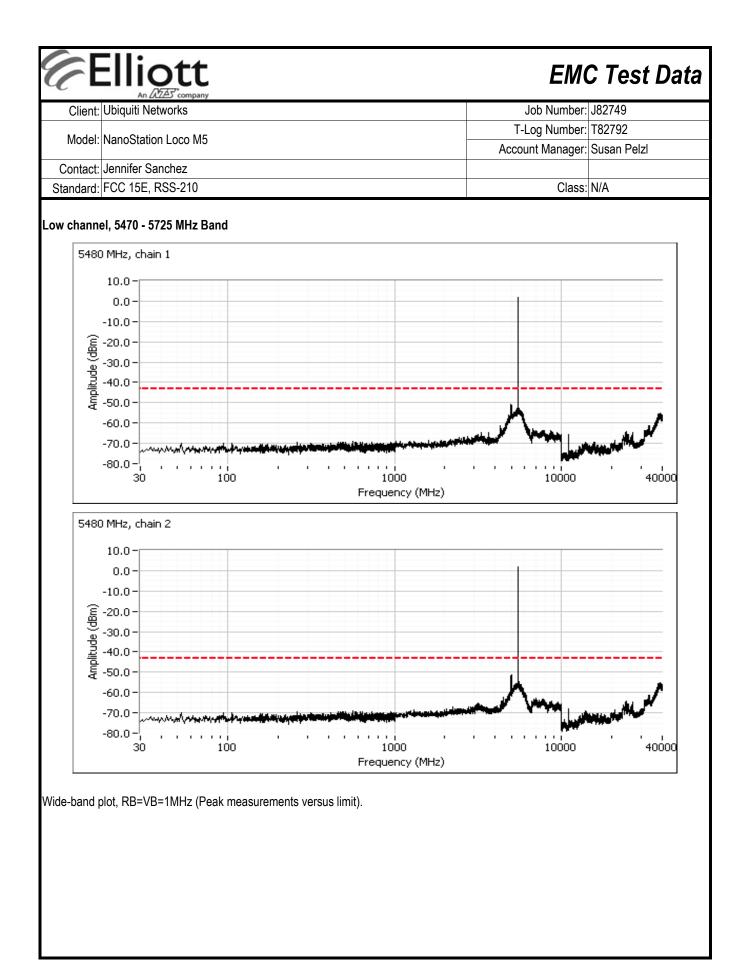


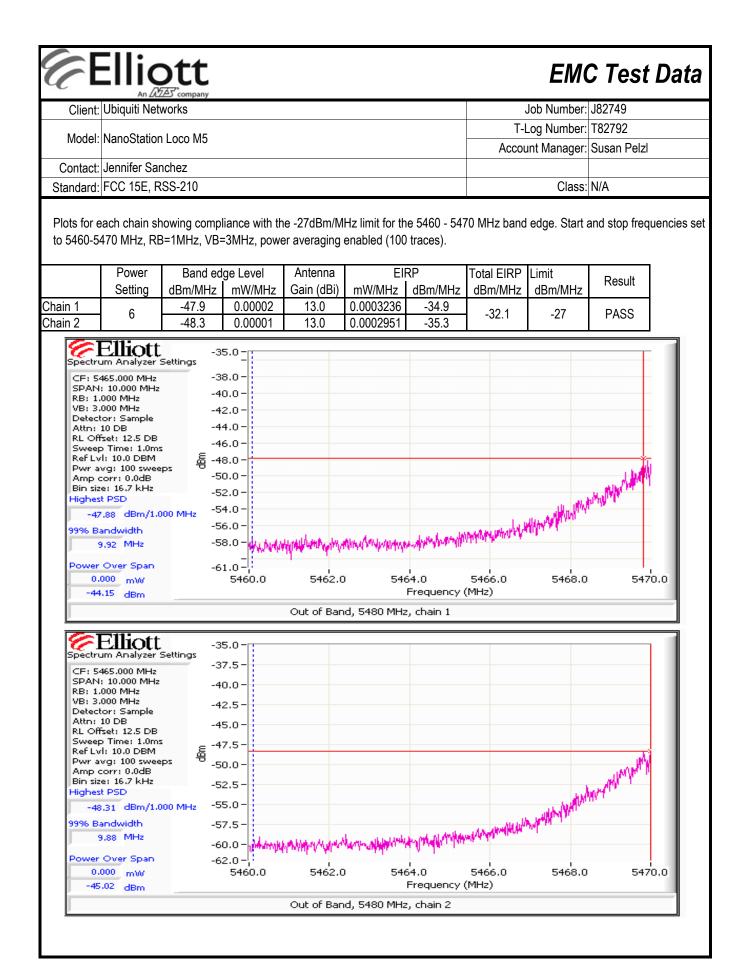
# Client:Ubiquiti NetworksJob Number:J82749Model:NanoStation Loco M5T-Log Number:T82792Contact:Jennifer SanchezSusan PelzlStandard:FCC 15E, RSS-210Class:N/A

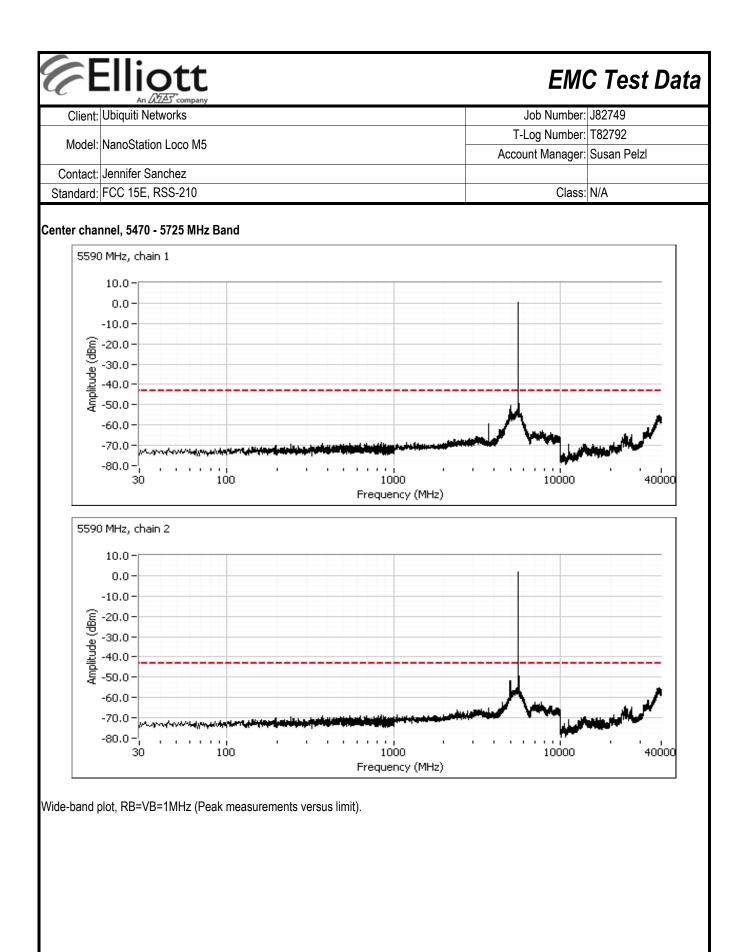
#### High channel, 5250 - 5350 MHz Band

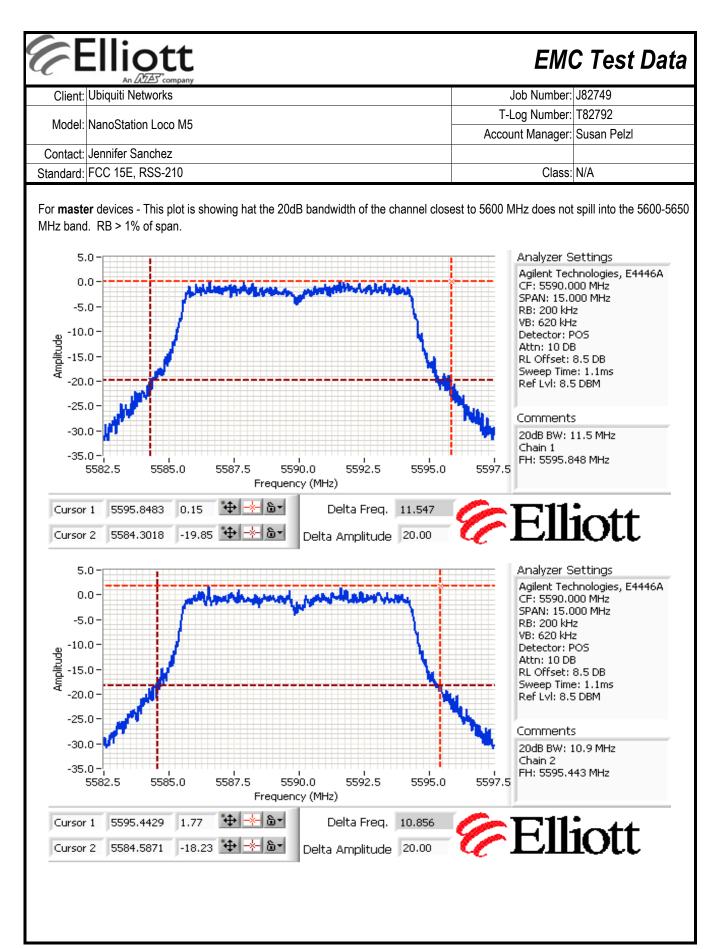
**Note** - compliance with the radiated limits for the restricted band immediately above 5350MHz is demonstrated through the radiated emissions tests.

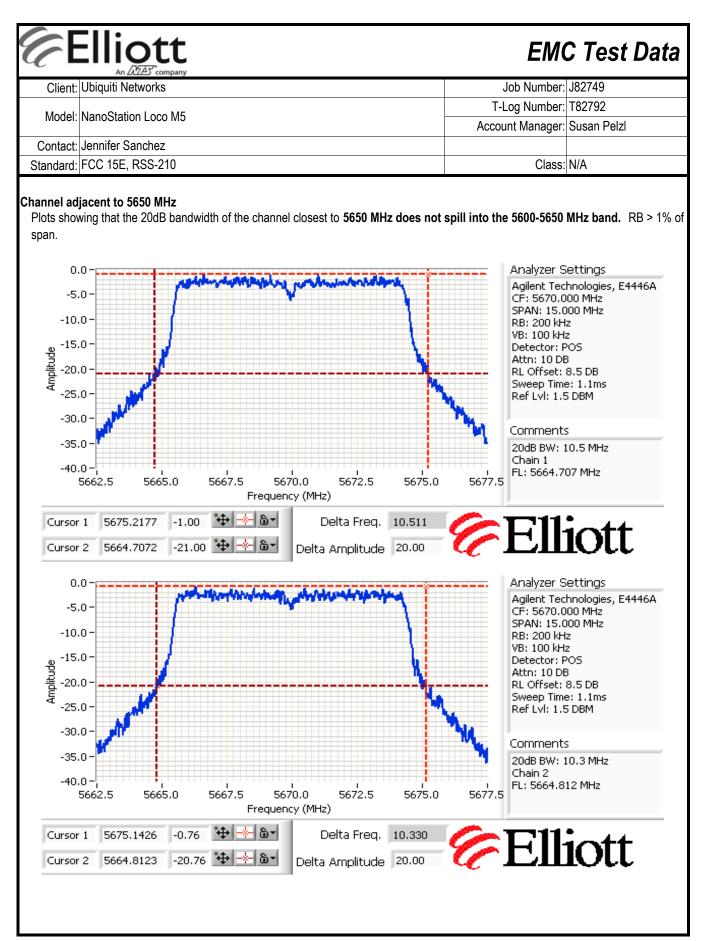


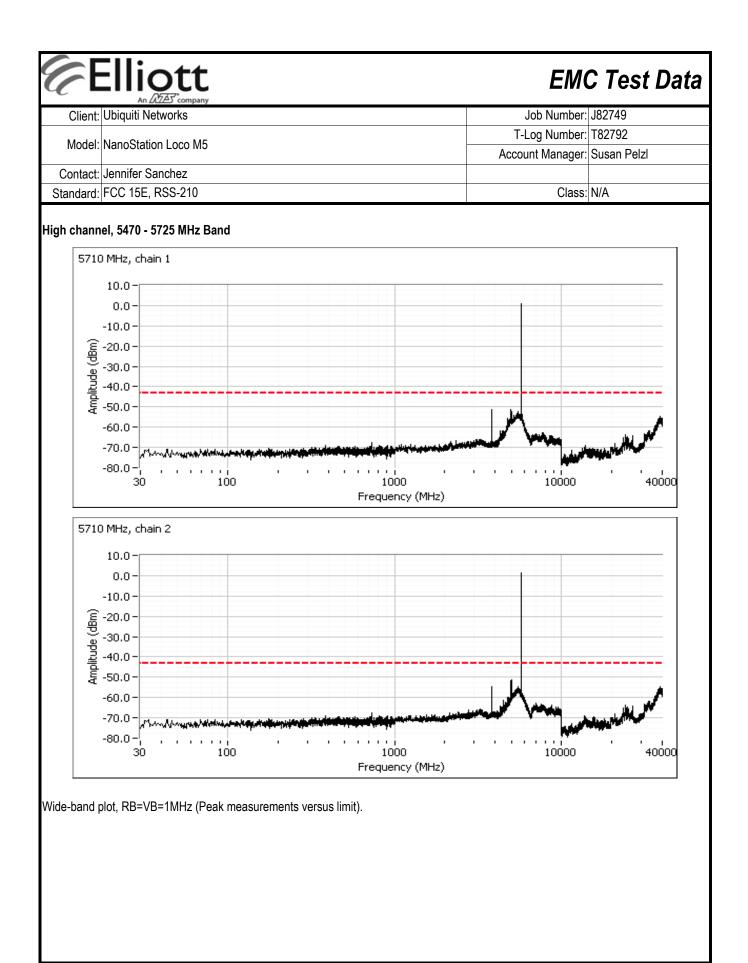




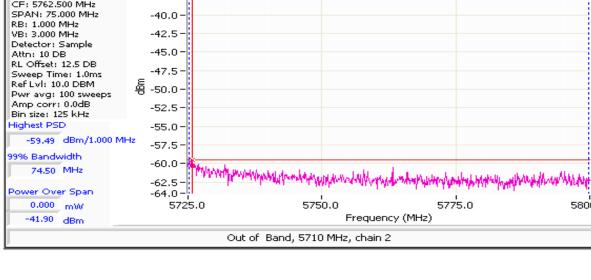








#### Elliott EMC Test Data Client: Ubiquiti Networks Job Number: J82749 T-Log Number: T82792 Model: NanoStation Loco M5 Account Manager: Susan Pelzl Contact: Jennifer Sanchez Standard: FCC 15E, RSS-210 Class: N/A Plots for each chain showing compliance with the -27dBm/MHz limit above the 5725MHz band edge. Start and stop frequencies set to 5725-5800 MHz, RB=1MHz, VB=3MHz, power averaging enabled (100 traces): Power Band edge Level Antenna EIRP Total EIRP Limit Result Setting dBm/MHz mW/MHz Gain (dBi) dBm/MHz dBm/MHz mW/MHz dBm/MHz 0.00000 13.0 2.239E-05 -46.5 Chain 1 -59.5 PASS 6.5 -42.7 -27 Chain 2 -58.0 0.00000 13.0 3.162E-05 -45.0 **Elliott** -35.0 Spectrum Analyzer Settings -37.5 CF: 5762,500 MHz SPAN: 75,000 MHz -40.0 RB: 1.000 MHz VB: 3.000 MHz -42.5-Detector: Sample Attn: 10 DB -45.0-RL Offset: 12.5 DB Sweep Time: 1.0ms -47.5-Ref Lvl: 10.0 DBM 쎾 Pwr avg: 100 sweeps -50.0 Amp corr: 0.0dB Bin size: 125 kHz -52.5 Highest PSD -55.0-57,99 dBm/1.000 MHz 99% Bandwidth -57.5 74.38 MHz White Million and Ministry Public de Al WHAT IM I HAVE A ANAL -60.0 Power Over Span -62.0 5775.0 0.000 mW 5725.0 5750.0 5800.0 Frequency (MHz) -39.62 dBm Out of Band, 5710 MHz, chain 1 **Elliott** -35.0 Spectrum Analyzer Settings -37.5 CF: 5762.500 MHz SPAN: 75.000 MHz -40.0 RB: 1.000 MHz



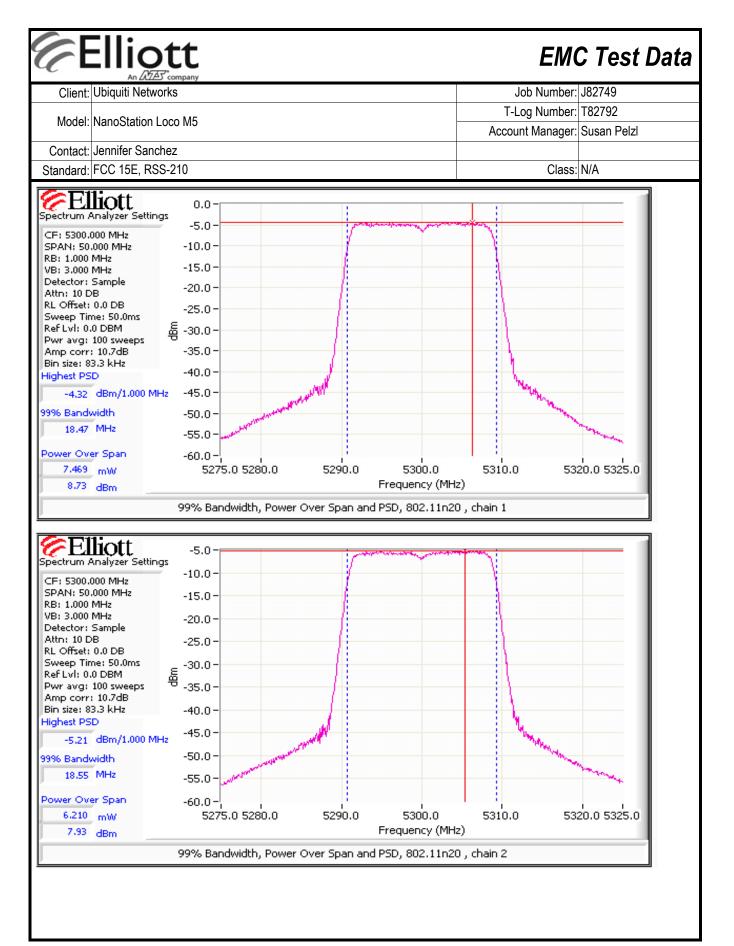
5800.0

6	Ellic	<u>p</u> tt			EMC Test Dat
Client:	Ubiquiti Netv	vorks			Job Number: J82749
Madal	New - Otellier	1		T-l	_og Number: T82792
Model:	NanoStation	LOCO M5		Accou	ınt Manager: Susan Pelzl
	Jennifer San				
Standard:	FCC 15E, R	SS-210			Class: N/A
est Spec	cific Detail	Antenna F Power, PSD, Peak Excursion	N) and FCC 15.40 Port Measuremen n, Bandwidth and Sp	ts	nissions
·	Objective:	The objective of this test session is to specification listed above.	perform final qualificatior	n testing of th	e EUT with respect to the
[	Date of Test:	4/14/2011	Config. Used:	1	
Te	est Engineer:	Joseph Cadigal/R. Varelas	Config Change:	none	
Τe	est Location:	FT Chamber#5	EUT Voltage:	POE	
	/ of Result	<b>S</b> Test Performed	Limit	Pass / Fail	Result / Margin
	1	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	13.7 mW
	1	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	0.7 dBm/MHz
	1	Max EIRP 5250 - 5350MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW DFS threshold = -64dBm.	Pass	EIRP = 27.4 dBm (546 mW)
	1	Power, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	23.3 mW
	1	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	1.5 dBm/MHz
	1	Max EIRP 5470 - 5725MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW DFS threshold = -64dBm.	Pass	EIRP = 29.7 dBm (929 mW)
	1	26dB Bandwidth	15.407 (Determines max power)	Pass	> 20MHz for all modes
	1	99% Bandwidth	RSS 210 (Information only)	Pass	18.2 MHz
	2	Peak Excursion Envelope	15.407(a) (6) 13dB	Pass	11.81dB
		Antenna Conducted - Out of Band	15.407(b)	Pass	All emissions below -27dBm/MH

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

	Elliott					EM	C Test Dat
Client:	Ubiquiti Networks	ý				Job Numbe	r: J82749
Madalı	NanoStation Loco M5					T-Log Numbe	r: T82792
	NanoStation Loco Ma	)				Account Manage	r: Susan Pelzl
	Jennifer Sanchez						
Standard:	FCC 15E, RSS-210					Class	s: N/A
	<b>O</b> a m d <b>iti</b> a m a c						
mbient	Conditions:	Temperature:	25 °(	<u>_</u>			
		Rel. Humidity:	25 ( 37 %				
		rton rionnaity.	01 /	0			
odificat	ions Made During	g Testing					
	tions were made to the	•	g				
	s From The Stan						
deviation	ns were made from the	e requirements of th	e standard.				
ın #1· Ba	ndwidth, Output Pow	ver and Power Sne	ctral Densi	ity - MIMO	Svetome		
				-		=1MHz, VB=3 MHz, sar	nple detector, power
Note 1:		• •	•	• •	,	50 MHz (method 1 of	
		-	1		-	nighest value on the plo	1
Note 4:	99% Bandwidth meas	sured in accordance	e with RSS (		1% of span	and VB >=3xRB	
						the sum of the powers	
	linear terms). The an	tenna gain used to	determine t	he EIRP ar	d limits for P	the sum of the powers SD/Output power depe	nds on the operating
NIOto bil	linear terms). The an mode of the MIMO de	tenna gain used to evice. If the signals	determine t on the non-	he EIRP ar -coherent b	d limits for Petween the tr	the sum of the powers SD/Output power depe ansmit chains then the	nds on the operating gain used to determin
NIOto bil	linear terms). The an mode of the MIMO de the limits is the highe	tenna gain used to evice. If the signals st gain of the individ	determine t on the non- dual chains	he EIRP ar -coherent b and the EIF	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIOto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the	nds on the operating gain used to determin and power on each
NIAto bi	linear terms). The an mode of the MIMO de the limits is the highe	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIAto bi	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIOto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIOto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIAto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIOto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIAto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIAto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIAto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIAto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIAto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIOto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIAto bi	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIAto bi	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIAto bi	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIOto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIOto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIOto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each
NIOto bil	linear terms). The an mode of the MIMO de the limits is the highe chain. If the signals a	tenna gain used to evice. If the signals st gain of the individ are coherent then th	determine t on the non- dual chains ne effective a	he EIRP ar -coherent b and the EIF antenna ga	d limits for P etween the tr RP is the sum	the sum of the powers SD/Output power depe ansmit chains then the of the products of gain	nds on the operating gain used to determin and power on each

Client		works						Job Number:	J82749	
Model	NanoStatior							_og Number:		
							Accou	int Manager:	Susan Pelzl	
	Jennifer Sa									
	FCC 15E, R							Class:	N/A	
MIMO Devi	ce - 5250-53	50 MHz Band	d							
	Date of Test:	6/13/2011			Te	est Location:	FTChamber	#4		
Te	est Engineer:	Joseph Cad	igal		Co	nfig Change:	none			
MIMO Devi	ce - 5250-53	50 MHz Ban		Chain 2	Chain 3	Cabarant	<b>-m</b> , <b>1</b> , 5			1
	Antenn	a Gain (dBi):	Chain 1 13	Chain 2 13	Chain 3	Coherent Yes	Effective <sup>5</sup> 16.0	545.6	EIRP (dBm) 27.4	
Power			IJ	10		163	10.0	J <del>4</del> J.U	21.4	1
Frequency	Software	26dB BW	Measure	d Output Pov	wer <sup>1</sup> dBm	Тс	otal		Max Power	D
(MHz)	Setting	(MHz)	Chain 1	Chain 2	Chain 3	mW	dBm	Limit (dBm)	(W)	Pass or Fa
5265	5.0	27.3	5.5	5.2		6.9	8.4	14.0		PASS
5300	7.5	28.4	8.7	7.9		13.7	11.4	14.0	0.014	PASS
5320	5.0	28.3	5.8	4.8		6.8	8.3	14.0		PASS
PSD	000/4	Tatal		SD <sup>2</sup> dBm/MH	1_	Toto	IPSD		mit	1
Frequency	99% <sup>4</sup> BW	Total Power	P Chain 1	Chain 2		mW/MHz		FCC		Pass or Fa
(MHz) 5265	Буу 17.3	8.4	-7.6	-7.9	Chain 3	0.3	dBm/MHz -4.7	1.0	RSS 210 <sup>3</sup> 11.0	PASS
5300	18.4	11.4	-4.3	-7.9		0.3	-4.7 -1.7	1.0	11.0	PASS
5320	18.4	8.3	-7.3	-7.9		0.3	-4.6	1.0	11.0	PASS
	vor at Low P	ower Setting	5250 525	0 MUz Band		-		-		-
Output FO						250mW.				
As EIRP ex		50mW) minus								
As EIRP ex Limit is set :	0 Z70DIII (20	26dB BW		d Output Pov	wer <sup>1</sup> dBm	To	otal	Limit (dBm)	Max Power	Pass or Fa
limit is set		2000 011		Chain 2	Chain 3	mW	dBm	сти (авти)	(W)	Pass of Fa
Limit is set		(MHz)	Chain 1							
Limit is set Frequency (MHz) 5265	Software Setting 4.0		4.8	3.9		5.5	7.4	8.0		PASS
Limit is set Frequency (MHz)	Software Setting					5.5 5.6 5.0	7.4 7.5 7.0	8.0 8.0 8.0	0.006	PASS PASS PASS



		D <b>tt</b>						EMO	C Test	Data
Client:	Ubiquiti Net	works						Job Number:	J82749	
Madalı		L M/					T-I	Log Number:	T82792	
wodel:	NanoStation	LOCO IVIS					Account Manager: Susan Pelzl			
Contact:	Jennifer Sar	nchez								
Standard:	FCC 15E, R	SS-210						Class:	N/A	
MIMO Devid	e - 5470-572	25 MHz Band	d							
0	Date of Test:	6/13/2011				est Location:		#4		
Te	st Engineer:	Joseph Cad	-			nfig Change:				1
			Chain 1	Chain 2	Chain 3	Coherent		( )	EIRP (dBm)	
	Antenna	a Gain (dBi):	13	13		Yes	16.0	929.1	29.7	
ower	0 1				1	Т	tal			
Frequency	Software	26dB BW		d Output Po	•		otal	Limit (dBm)	Max Power	Pass or Fa
(MHz)	Setting	(MHz)	Chain 1	Chain 2	Chain 3	mW	dBm	44.0	(W)	DAGG
5500 <b>5580</b>	9.0 <b>11.5</b>	27.8 <b>27.8</b>	9.7	9.1		17.4	12.4	14.0 14.0	0.023	PASS
<b>5580</b> 5700	11.5 8.5	27.8	<b>10.6</b> 7.8	<b>10.7</b> 7.6		<b>23.3</b> 11.7	<b>13.7</b> 10.7	14.0	0.023	PASS PASS
9700 PSD	0.0	20.0	1.0	7.0		11.7	10.7	14.0		FA00
Frequency	99% <sup>4</sup>	Total	Р	SD <sup>2</sup> dBm/Mł		Total	PSD	Li	mit	
(MHz)	BW	Power	Chain 1	Chain 2	Chain 3	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	Pass or Fa
5500	18.1	12.4	-3.3	-4.0	ondin o	0.9	-0.6	1.0	11.0	PASS
			-1.4	-1.5		1.4	1.5	1.0	11.0	FAIL
	18.1	13.7	-1.4	-1.0		1.7				
5580 5700 Dutput Pow		10.7 ower Setting	-5.3 g - 5470-572	-5.6 5 MHz Band		0.6	-2.4	1.0	11.0	PASS
5580 5700 <b>Dutput Pow</b> As EIRP ex	18.2 ver at Low P ceeds 500m	10.7	-5.3 <b>g - 5470-572</b> guired - meas the antenna	-5.6 5 MHz Band	show eirp <	0.6 250mW.		1.0		PASS
5580 5700 Dutput Pow As EIRP ex imit is set to	18.2 Ver at Low P ceeds 500m to 24dBm (25	10.7 ower Setting W TPC is req 0mW) minus	-5.3 <b>g - 5470-572</b> guired - meas the antenna	-5.6 5 MHz Band surements to gain (dBi).	show eirp <	0.6 250mW.	-2.4		11.0	PASS
5580 5700 Dutput Pow As EIRP ex- imit is set to Frequency (MHz) 5500	18.2 rer at Low P ceeds 500m o 24dBm (25 Software Setting 5.0	10.7 ower Setting W TPC is req 0mW) minus 26dB BW	-5.3 g <b>- 5470-572</b> guired - meas the antenna Measure Chain 1 4.4	-5.6 5 MHz Band surements to gain (dBi). d Output Po Chain 2 4.7	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7	-2.4 tal dBm 7.5	1.0 Limit (dBm) 8.0	11.0 Max Power (W)	PASS Pass or Fa PASS
5580 5700 Dutput Pow As EIRP ex Limit is set to Frequency (MHz) 5500 5580	18.2 ver at Low P ceeds 500m o 24dBm (25 Software Setting 5.0 5.5	10.7 ower Setting W TPC is req 0mW) minus 26dB BW	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1	-5.6 5 MHz Band surements to gain (dBi). d Output Por Chain 2 4.7 4.4	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power	PASS Pass or Fa PASS PASS
5580 5700 Dutput Pow As EIRP ex- imit is set to Frequency (MHz) 5500	18.2 rer at Low P ceeds 500m o 24dBm (25 Software Setting 5.0	10.7 ower Setting W TPC is req 0mW) minus 26dB BW	-5.3 g <b>- 5470-572</b> guired - meas the antenna Measure Chain 1 4.4	-5.6 5 MHz Band surements to gain (dBi). d Output Po Chain 2 4.7	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7	-2.4 tal dBm 7.5	1.0 Limit (dBm) 8.0	11.0 Max Power (W)	PASS Pass or F PASS
5580 5700 Dutput Pow As EIRP ex. imit is set to Frequency (MHz) 5500 5580 5700	18.2 ver at Low P ceeds 500m o 24dBm (25 Software Setting 5.0 5.5 5.5	10.7 ower Setting W TPC is req 0mW) minus 26dB BW (MHz)	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1	-5.6 5 MHz Band surements to gain (dBi). d Output Por Chain 2 4.7 4.4	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or F PASS PASS
5580 5700 Dutput Pow As EIRP ex. imit is set to Frequency (MHz) 5500 5580 5580 5700	18.2 ver at Low P ceeds 500m o 24dBm (25 Software Setting 5.0 5.5 5.5	10.7 ower Setting W TPC is req 0mW) minus 26dB BW (MHz)	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1	-5.6 5 MHz Band surements to gain (dBi). d Output Por Chain 2 4.7 4.4	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or F PASS PASS
5580 5700 <b>Dutput Pow</b> As EIRP ex <i>imit is set to</i> Frequency (MHz) 5500 5580 5700 <b>Spectrum Ana</b> CF: 5580.000	18.2 ver at Low P ceeds 500m o 24dBm (25 Software Setting 5.0 5.5 5.5 Ott alyzer Settings MHz	10.7 ower Setting W TPC is req 0mW) minus 26dB BW (MHz)	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1	-5.6 5 MHz Band surements to gain (dBi). d Output Por Chain 2 4.7 4.4	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or F PASS PASS
5580 5700 Dutput Pow As EIRP exi imit is set to requency (MHz) 5500 5580 5580 5580 5700	18.2 ver at Low P ceeds 500m o 24dBm (25 Software Setting 5.0 5.5 5.5 OUTE o MHz tz	10.7 ower Setting <i>W TPC is reg</i> <i>0mW) minus</i> 26dB BW (MHz) 0.0 - -5.0 - -10.0 -	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1	-5.6 5 MHz Band surements to gain (dBi). d Output Por Chain 2 4.7 4.4	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or F PASS PASS
5580 5700 Dutput Pow As EIRP exi imit is set to Frequency (MHz) 5500 5580 5580 5700 CF: 5580.000 SPAN: 50.00 RB: 1.000 MH VB: 3.000 MH VB: 3.000 MH	18.2 ver at Low P ceeds 500m 24dBm (25 Software Setting 5.0 5.5 5.5 Ott ott alyzer Settings 0 MHz 12 0 MHz 12	10.7 ower Setting W TPC is req (0mW) minus 26dB BW (MHz) 0.0 - -5.0 - -10.0 - -15.0 -	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1	-5.6 5 MHz Band surements to gain (dBi). d Output Por Chain 2 4.7 4.4	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or F PASS PASS
5580 5700 Dutput Pow As EIRP ex. imit is set to Frequency (MHz) 5500 5580 5700 Span: 50.00 Span: 50.00 RB: 1.000 MH VB: 3.000 MH Detector: Sa Attn: 10 DB RL offset: 0.1	18.2 ver at Low P ceeds 500m 5 24dBm (25 Software Setting 5.0 5.5 5.5 OMHz 1z 1z 1z 1z 1z 0 MHz 1z 1z 1z 1z 0 DB	10.7 ower Setting <i>W TPC is req</i> <i>i0mW) minus</i> 26dB BW (MHz) 0.0- -5.0- -5.0- -10.0- -15.0- -20.0-	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1	-5.6 5 MHz Band surements to gain (dBi). d Output Por Chain 2 4.7 4.4	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or F PASS PASS
5580 5700 Dutput Pow As EIRP exi imit is set to Frequency (MHz) 5500 5580 5580 5700 CF: 5580.000 SPAN: 50.00 RB: 1.000 MH VB: 3.000 MH VB: 4.000 MH VB: 5.000 MH VB: 5.000 MH VB: 5.000 MH VB: 4.000 MH	18.2 ver at Low P ceeds 500m o 24dBm (25 Software Setting 5.0 5.5 5.5 OMHz hz hz soloms DB Soloms Solom	10.7 ower Setting <i>W TPC is reg</i> <i>0mW) minus</i> 26dB BW (MHz) 0.0 - -5.0 - -10.0 - -15.0 - -20.0 - -25.0 - -25.0 -	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1	-5.6 5 MHz Band surements to gain (dBi). d Output Por Chain 2 4.7 4.4	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or F PASS PASS
5580 5700 <b>Dutput Pow</b> As EIRP ex <i>imit is set to</i> Frequency (MHz) 5500 5580 5700 <b>Span:</b> 50.00 <b>Span:</b>	18.2 ver at Low P ceeds 500m 2 24dBm (25 Software Setting 5.0 5.5 5.5 OMH2 0 MH2 12 12 12 12 12 12 12 12 12 1	10.7 ower Setting <i>W TPC is req</i> <i>(0mW) minus</i> 26dB BW (MHz) 0.0 - -5.0 - -5.0 - -15.0 - -15.0 - -20.0 - -25.0 - -30.0 -	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1	-5.6 5 MHz Band surements to gain (dBi). d Output Por Chain 2 4.7 4.4	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or F PASS PASS
5580 5700 Dutput Pow As EIRP exi imit is set to Frequency (MHz) 5500 5580 5700 5580 5700 CF: 5580.000 5700 Span: 50.000 MB: 1.000 MH VB: 3.000 MH Detector: 53 Attn: 10 DB RL Offset: 0.1 Sweep Time: Ref Lvi: 0.0 E Pwr avg: 10	18.2 ver at Low P ceeds 500m 2 24dBm (25 Software Setting 5.0 5.5 5.5 OMH2 0 MH2 12 12 12 12 12 12 12 12 12 1	10.7 ower Setting <i>W TPC is req</i> <i>OmW) minus</i> 26dB BW (MHz) 0.0- -5.0- -5.0- -5.0- -5.0- -5.0- -35.0- -35.0-	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1	-5.6 5 MHz Band surements to gain (dBi). d Output Por Chain 2 4.7 4.4	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or F PASS PASS
5580 5700 <b>Dutput Pow</b> As EIRP exi imit is set to Frequency (MHz) 5500 5580 5700 <b>Span:</b> 5000 <b>Span:</b> 5	18.2 ver at Low P ceeds 500m 2 24dBm (25 Software Setting 5.0 5.5 5.5 OMH2 0 MH2 12 12 12 12 12 12 12 12 12 1	10.7 ower Setting <i>W TPC is req</i> <i>(0mW) minus</i> 26dB BW (MHz) 0.0 - -5.0 - -5.0 - -15.0 - -15.0 - -20.0 - -25.0 - -30.0 -	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1	-5.6 5 MHz Band surements to gain (dBi). d Output Por Chain 2 4.7 4.4	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or F PASS PASS
5580 5700 <b>Dutput Pow</b> As EIRP exi imit is set to Frequency (MHz) 5500 5580 5700 <b>Solution</b> Spectrum Ana CF: 5580.000 SPAN: 50.00 SPAN: 50.00 SPAN: 50.00 RB: 1.000 MH Detector: Sa Attr: 10 DB RL Offset: 0.1 Sweep Time: Ref Lvl: 0.0 Pwr avg: 10 Amp corr: 1 Bin size: 83.3 Highest PSD -2.37 dl 99% Bandwid	18.2 ver at Low P ceeds 500m 5 24dBm (25 Software Setting 5.0 5.5 5.5 OMH2 0 MH2 12 12 142 12 142 142 142 142	10.7 ower Setting <i>W TPC is req</i> <i>OmW) minus</i> 26dB BW (MHz) 0.0 - -5.0 - -5.0 - -10.0 - -15.0 - -20.0 - -25.0 - -30.0 - -35.0 - -40.0 - -45.0 -	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1	-5.6 5 MHz Band surements to gain (dBi). d Output Por Chain 2 4.7 4.4	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or Fa PASS PASS
5580 5700 Dutput Pow As EIRP ex. <i>imit is set tr</i> Frequency (MHz) 5500 5580 5700 Spant 50.00 Spant 50.00 Spant 50.00 Spant 50.00 MB 2.00 Spant 50.00 MB 2.00 Spant 50.00 MB 2.00 Spant 50.00 MB 2.00 Spant 50.00 MB 2.00 MB 2.0	18.2 ver at Low P ceeds 500m o 24dBm (25 Software Setting 5.0 5.5 5.5 OMHz 0 MHz 12 14z 12 12 0 MHz 0 Software 0 MHz 15.0 0 Software 1.00 0 Sweeps 1.00 0 Sweeps 1.00	10.7 ower Setting <i>W TPC is req</i> <i>i0mW) minus</i> 26dB BW (MHz) 0.0 - -5.0 - -10.0 - -10.0 - -15.0 - -20.0 - -25.0 - -30.0 - -35.0 - -40.0 -	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1	-5.6 5 MHz Band surements to gain (dBi). d Output Por Chain 2 4.7 4.4	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or Fa PASS PASS
5580 5700 <b>Dutput Pow</b> As EIRP exc. <i>imit is set to</i> Frequency (MHz) 5500 5580 5700 <b>Spectrum Ana</b> CF: 5580.000 <b>SpAN:</b> 50.00 <b>SpAN:</b> 50.00 <b>S</b>	18.2 ver at Low P ceeds 500m o 24dBm (25 Software Setting 5.0 5.5 5.5 OMHz 0 MHz 12 0 MHz 12 0 MHz 12 14z 12 10 DB 1.0dB 1	10.7 ower Setting <i>W TPC is req</i> <i>OmW) minus</i> 26dB BW (MHz) 0.0- -5.0- -5.0- -10.0- -15.0- -20.0- -25.0- -35.0- -40.0- -45.0- -55.0- -55.0- -55.0-	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1 3.9	-5.6 <b>5 MHz Band</b> surements to gain (dBi). d Output Por Chain 2 4.7 4.4 4.1	show eirp <	0.6 250mW. Tc mW 5.7 5.3 5.0	-2.4	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or Fa PASS PASS
5580 5700 Dutput Pow As EIRP ex. <i>imit is set tr</i> Frequency (MHz) 5500 5580 5700 Spant 50.00 Spant 50.00 Spant 50.00 Spant 50.00 MB 2.00 Spant 50.00 MB 2.00 Spant 50.00 MB 2.00 Spant 50.00 MB 2.00 Spant 50.00 MB 2.00 MB 2.0	18.2 ver at Low P ceeds 500m 5 24dBm (25 Software Setting 5.0 5.5 5.5 OMHz 0 MHz 12 0 MHz 12 0 MHz 12 0 Soms 20 20 0 Sweeps 1.0dB	10.7 ower Setting <i>W TPC is req</i> <i>OmW) minus</i> 26dB BW (MHz) 0.0- -5.0- -5.0- -10.0- -15.0- -20.0- -25.0- -35.0- -35.0- -35.0- -35.0- -40.0- -45.0- -50.0- -45.0- -50.0- -45.0- -50.0- -45.0- -50.0- -50.0- -50.0- -50.0- -50.0- -50.0- -50.0- -50.0- -50.0- -50.0- -50.0- -10.0- -50.0- -20.0- -50.0- -20.0- -50.0- -20.0- -50.0- -50.0- -20.0- -50.0- -20.0- -50.0- -20.0- -50.0- -20.0- -35.0- -35.0- -40.0- -45.0- -35.0- -45.0- -50.0-	-5.3 g - 5470-572 guired - meas the antenna Measure Chain 1 4.4 4.1 3.9	-5.6 <b>5 MHz Band</b> surements to gain (dBi). d Output Por Chain 2 4.7 4.4 4.1	show eirp < wer <sup>1</sup> dBm	0.6 250mW. Tc mW 5.7 5.3	-2.4 ttal dBm 7.5 7.2	1.0 Limit (dBm) 8.0 8.0	11.0 Max Power (W)	PASS Pass or Fa PASS PASS

# EMC Test Data

Œ	Elliott An DEAT company	EMC Test		
	Ubiquiti Networks	Job Number:	J82749	
Madalı	NanaStation Loop ME	T-Log Number:	T82792	
woder.	NanoStation Loco M5	Account Manager:	Susan Pelzl	
Contact:	Jennifer Sanchez			
Standard:	FCC 15E, RSS-210	Class:	N/A	

#### Run #2: Peak Excursion Measurement

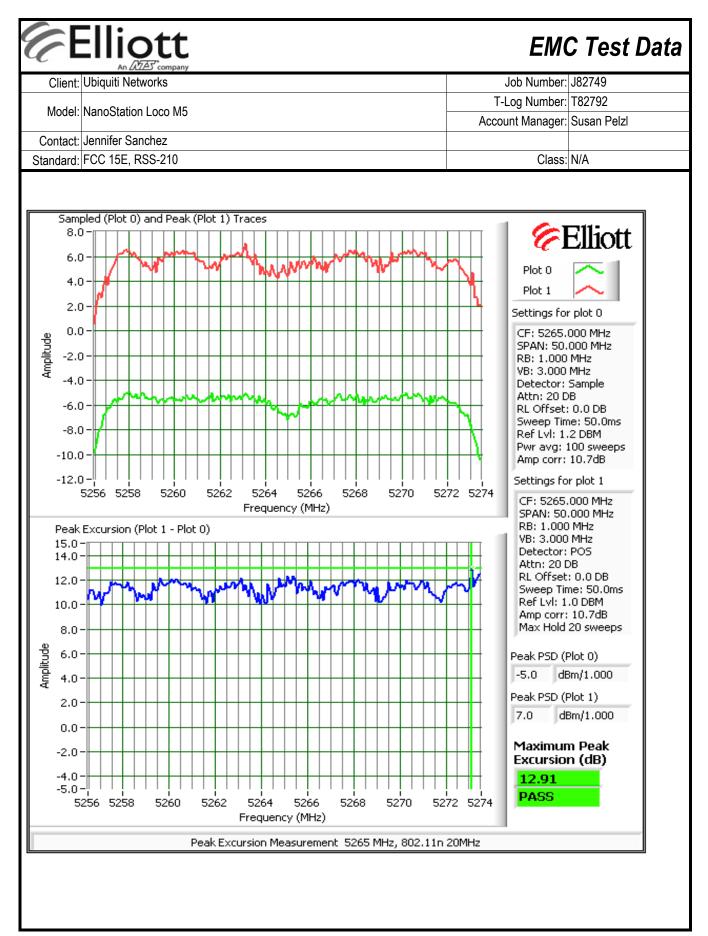
#### 20MHz: Device meets the requirement for the peak excursion

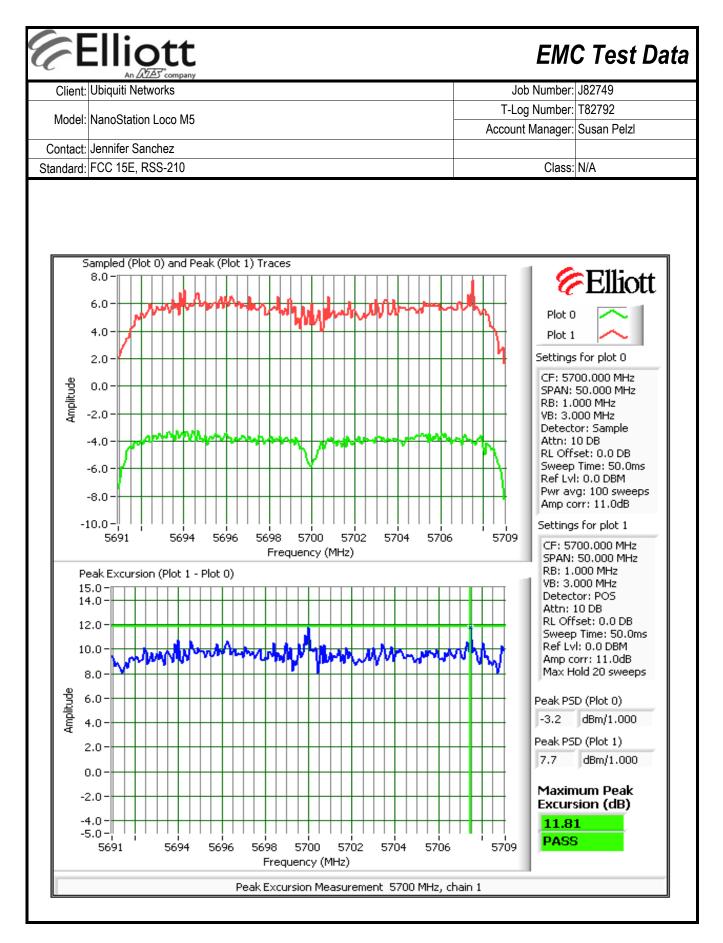
Freq	Peak Exc	ursion(dB)	Freq	Peak Exc	ursion(dB)
(MHz)	Value	Limit	(MHz)	Value	Limit
5265	12.91/12.47	13.0	5500	11.62/11.04	13.0
5300	12.34/12.15	13.0	5580	11.67/11.57	13.0
5320	12.35/11.81	13.0	5700	11.81/10.65	13.0

#### Plots Showing Peak Excursion (Worst Case)

Trace A: RBW = 1MHz, VBW = 3MHz, Peak hold

Trace B: Same settings as used for power/PSD measurements (RBW = 1 MHz, VBW = 3MHz, Integrated average power)





	Elliott An AZAS <sup>*</sup> company		C Test Data
Client:	Ubiquiti Networks	Job Number:	
Model:	NanoStation Loco M5	T-Log Number:	
		Account Manager:	Susan Pelzl
	Jennifer Sanchez		
Standard:	FCC 15E, RSS-210	Class:	N/A
<b>MIMO Devi</b> o be cohere	at Of Band Spurious Emissions - Antenna Conducted ces: Antenna gain used is the individual antenna antenna gain (the spurious ent between chains and spurious removed from the band edges are evaluated batained for each chain individually and the limit was adjusted to account for Number of transmit chains: 2	ed as radiated emissions i	f close to the limit). Th
	Maximum Antenna Gain: 13.0 dBi		
	Spurious Limit: -27.0 dBm/MHz eirp		
	Adjustment for 2 chains: -3.0 dB adjustment for multip		
	Limit Used On Plots <sup>Note 1</sup> : -43.0 dBm/MHz Average Lir	mit (RB=1MHz, VB=10Hz)	
Note 3: Note 4: Note 5:	Signals within 10MHz of the 5.725 or 5.825 Band edge are subject to a limi If the device is for outdoor use then the -27dBm eirp limit also applies in the Signals that fall in the restricted bands of 15.205 are subject to the limit of 7	e 5150 - 5250 MHz band.	



## EMC Test Data

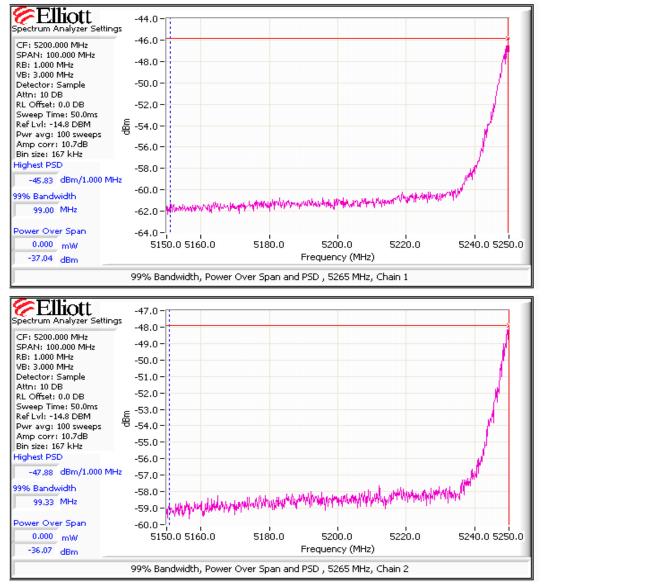
	All 2022 Company		
Client:	Ubiquiti Networks	Job Number:	J82749
Model	NanoStation Loco M5	T-Log Number:	T82792
woder.		Account Manager:	Susan Pelzl
Contact:	Jennifer Sanchez		
Standard:	FCC 15E, RSS-210	Class:	N/A

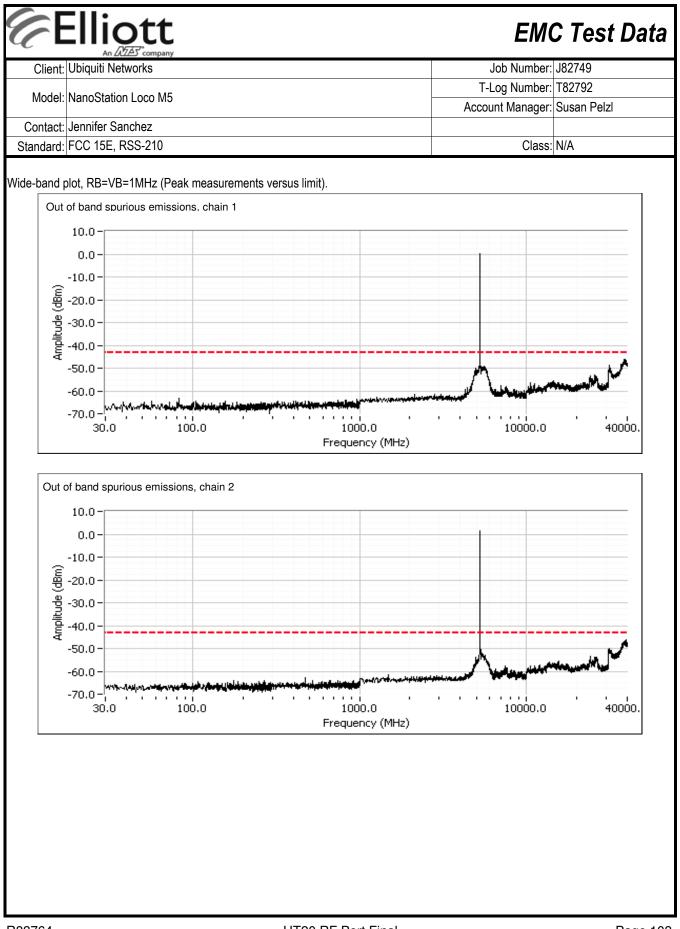
#### Low channel, 5250 - 5350 MHz Band

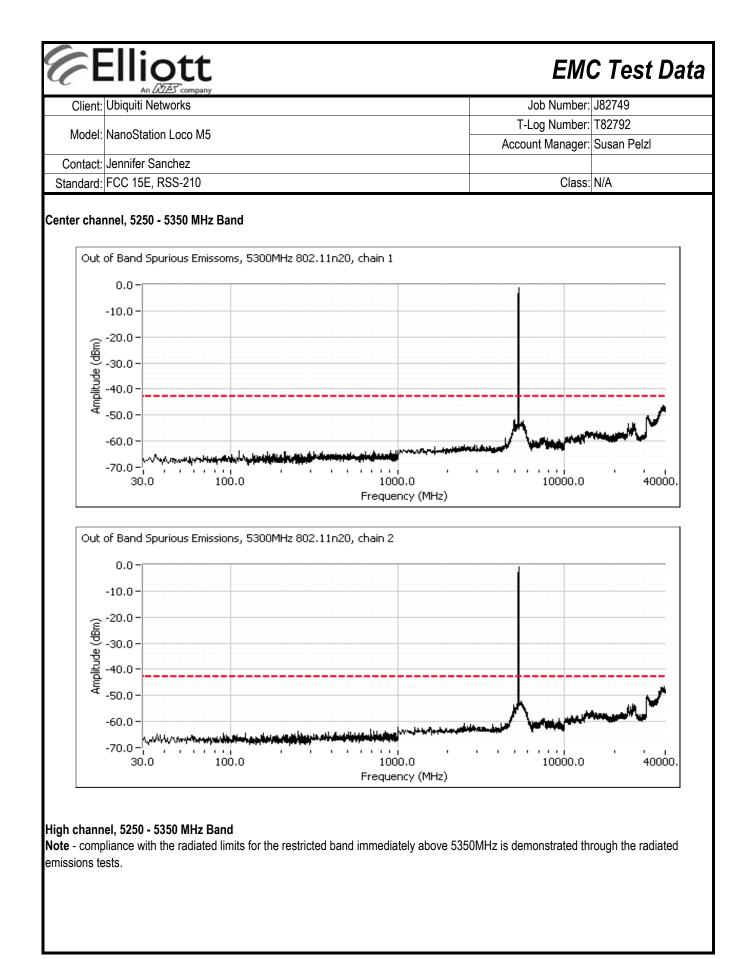
Plots for each chain showing compliance with the -27dBm/MHz limit in the 5150 - 5250 MHz band. Start and stop frequencies set to 5150-5250 MHz, RB=1MHz, VB=3MHz, power averaging enabled (100 traces):

#### Channel frequency: 5265 MHz

	Power	Band ed	ge Level	Antenna	Ell	RP	Total EIRP	Limit	Result
	Setting	dBm/MHz	mW/MHz	Gain (dBi)	mW/MHz	dBm/MHz	dBm/MHz	dBm/MHz	Result
Chain 1	7.5	-45.8	0.00003	13.0	0.0005212	-32.8	-30.7	-27	PASS
Chain 2	1.5	-47.9	0.00002	13.0	0.0003251	-34.9	-30.7	-21	FA00







# Elliott

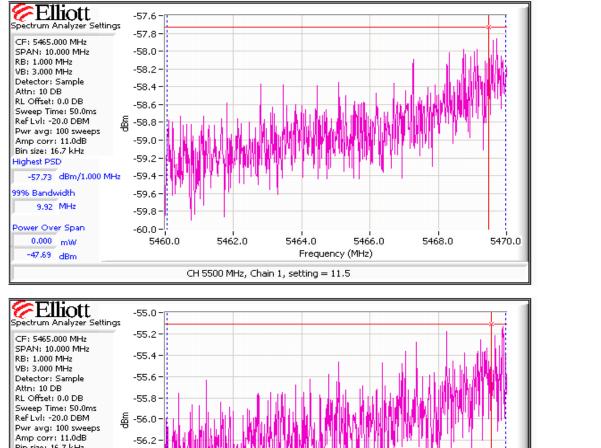
## **EMC** Test Data

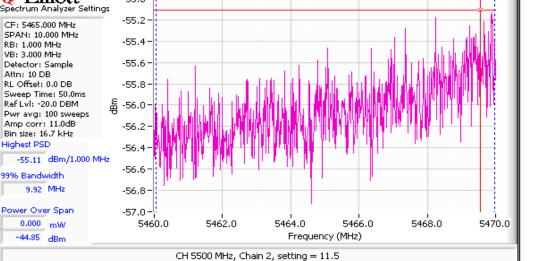
	An 2A22 company		
Client:	Ubiquiti Networks	Job Number:	J82749
Model	NanoStation Loco M5	T-Log Number:	T82792
wouer.		Account Manager:	Susan Pelzl
Contact:	Jennifer Sanchez		
Standard:	FCC 15E, RSS-210	Class:	N/A

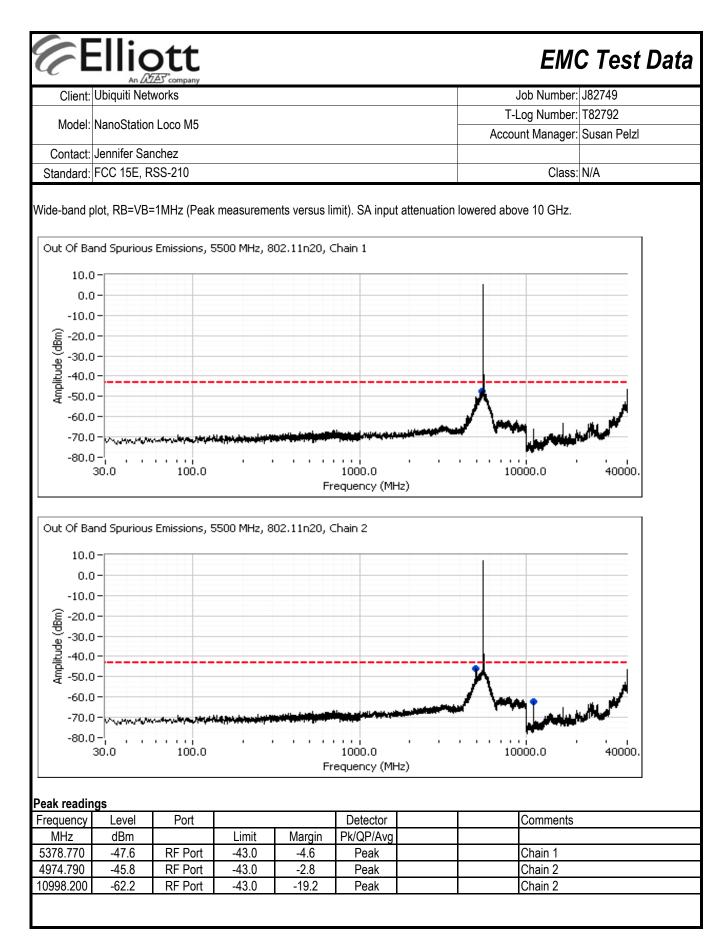
#### Low channel, 5470 - 5725 MHz Band

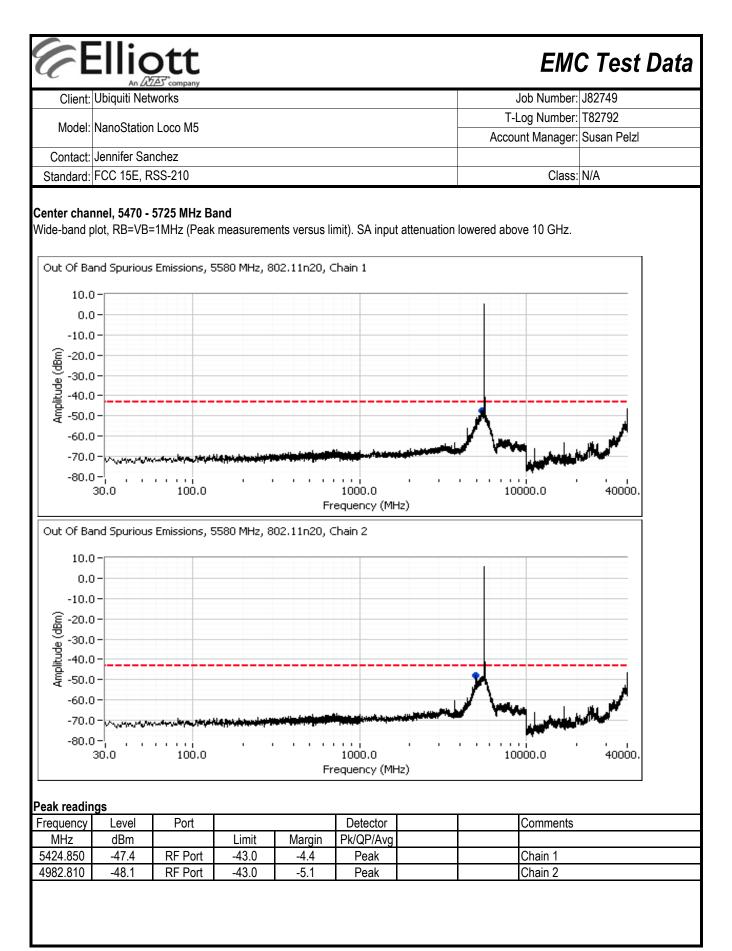
Plots for each chain showing compliance with the -27dBm/MHz limit for the 5460 - 5470 MHz band edge. Start and stop frequencies set to 5460-5470 MHz, RB=1MHz, VB=3MHz, power averaging enabled (100 traces). Note - compliance with the radiated limits for the restricted band immediately below 5460MHz is demonstrated through the radiated emissions tests.

	Power	Band ed	ae Level	Antenna	EI	RP	Total EIRP	Limit	
	Setting	dBm/MHz	mW/MHz	Gain (dBi)	mW/MHz	dBm/MHz	dBm/MHz	dBm/MHz	Result
Chain 1	11.5	-57.7	0.00000	13.0	3.388E-05	-44.7	-40.2	-27	PASS
Chain 2	11. <b>3</b>	-55.1	0.00000	13.0	6.166E-05	-42.1	-4U.Z	-21	LH99

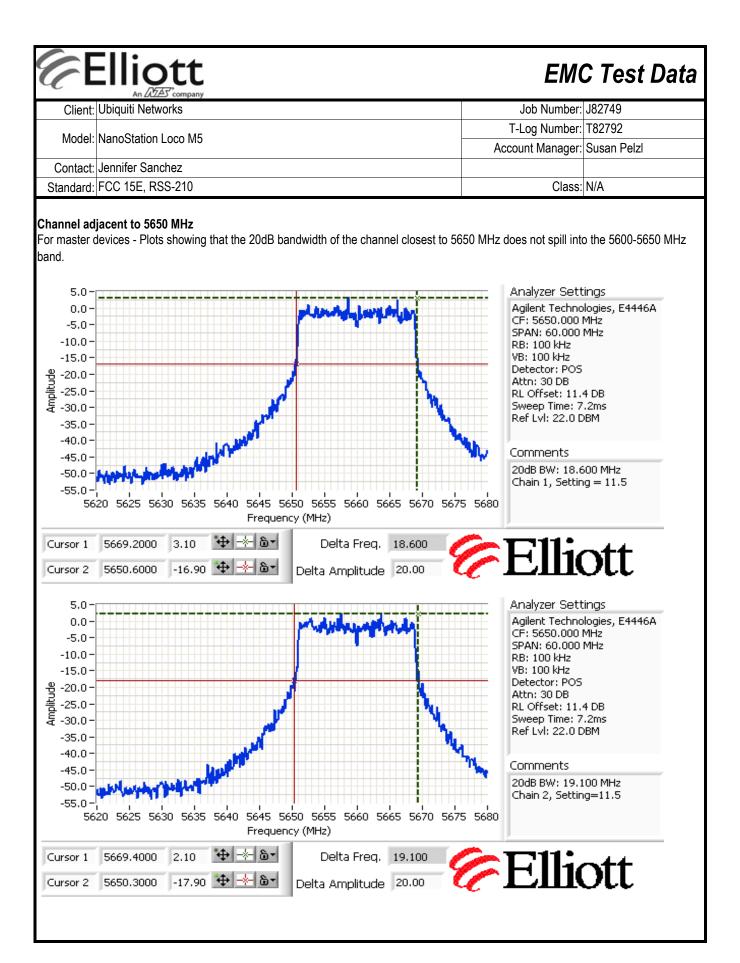








Client: Ubio	An ATAS* company quiti Networks	Job Number:	J82749
Model	noStation Loco M5	T-Log Number:	T82792
wouel: wan		Account Manager:	Susan Pelzl
	nifer Sanchez		
andard: FCC	C 15E, RSS-210	Class:	N/A
master devic 10.0 - 5.0 - 0.0 - -5.0 - -10.0 - -10.0 - -15.0 - -15.0 - -15.0 - -25.0 - -35.0 - -35.0 - -40.0 - -45.0 - -50.0 -	Int to 5600 MHz ces - Plots showing that the 20dB bandwidth of the channel closest to 5 0 5565 5570 5575 5580 5585 5590 5595 5600 5605 5610	Analyzer S HP8564E CF: 5590.0 SPAN: 60.0 RB: 1.000 f VB: 1.000 f Detector: F Attn: 10 D6 RL Offset: Sweep Time Ref Lvl: 10 Comment: Chain 1, se	ettings 100 MHz 100 MHz MHz 11Hz 205 3 11.0 DB e: 50.0ms .0 DBM
Cursor 1 Cursor 2 10.0- 5.0- 0.0- -5.0- -10.0- -15.0- -15.0- -15.0- -20.0- -25.0-	5592.1000       8.00	Analyzer S HP8564E CF: 5590.0 SPAN: 60.0 RB: 1.000 f VB: 1.000 f Detector: F Attn: 10 DE RL Offset: Sweep Tim Ref Lvl: 10	ettings 000 MHz 000 MHz MHz MHz 2005 3 11.0 DB e: 50.0ms
-30.0 - -35.0 - -40.0 - -45.0 - -50.0 - 556	50 5565 5570 5575 5580 5585 5590 5595 5600 5605 5610 Frequency (MHz) 5592.2000 7.17 ↔ - ⓒ Delta Freq. 24.000	Comment: Chain 2, se	5 itting = 11.5



# Client: Ubiquiti Networks

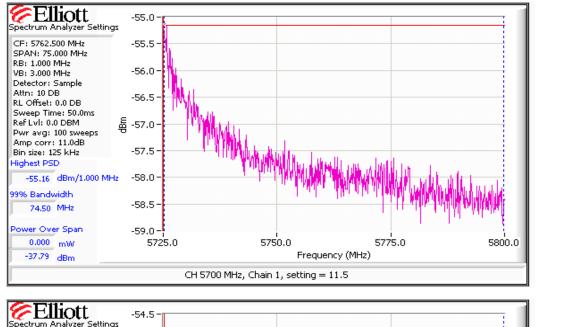
## EMC Test Data

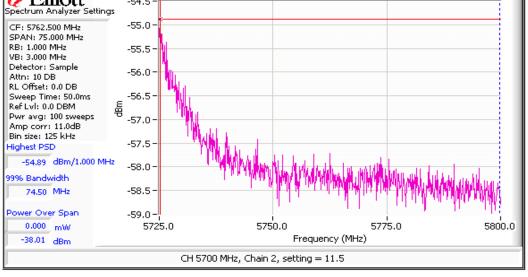
	An Burney		
Client:	Ubiquiti Networks	Job Number:	J82749
Model: NanoStation Loco M5	NanoStation Lago M5	T-Log Number:	T82792
MOUEI.		Account Manager:	Susan Pelzl
Contact:	Jennifer Sanchez		
Standard:	FCC 15E, RSS-210	Class:	N/A

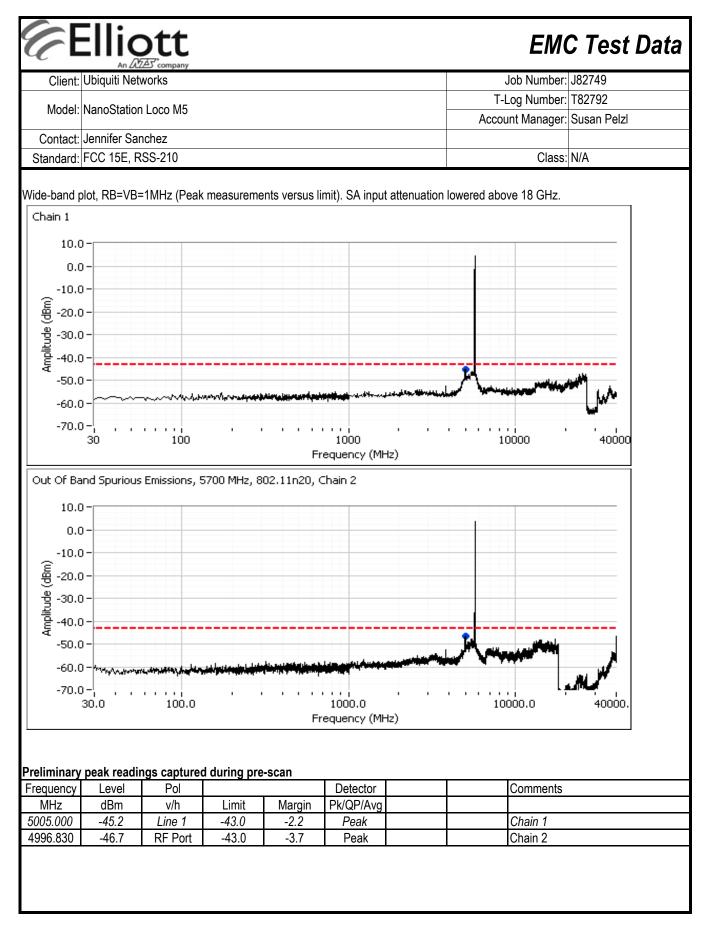
### High channel, 5470 - 5725 MHz Band

Plots for each chain showing compliance with the -27dBm/MHz limit above the 5725MHz band edge. Start and stop frequencies set to 5725-5800 MHz, RB=1MHz, VB=3MHz, power averaging enabled (100 traces):

	Power	Band edge Level		Antenna	EIRP		Total EIRP Limit		Result
	Setting	dBm/MHz	mW/MHz	Gain (dBi)	mW/MHz	dBm/MHz	dBm/MHz	dBm/MHz	Result
Chain 1	11.5	-55.2	0.00000	13.0	6.081E-05	-42.2	-39.0	-27	PASS
Chain 2	11.5	-54.9	0.00000	13.0	6.471E-05	-41.9	-39.0	-21	FA00







		D <b>tt</b>			EM	C Test Data
Client:	Ubiquiti Netv	vorks			Job Number:	J82749
				T-I	Log Number:	T82792
Model:	NanoStation	Loco M5		Αςςοι	unt Manager:	Susan Pelzl
Contact:	Jennifer Sar	ichez			Ŭ	
	FCC 15E, R				Class:	N/A
Test Spe	cific Detail	Antenna F Power, PSD, Peak Excursion	•	ts ourious Er		respect to the
	Objective:	specification listed above.		-		espect to the
[	Date of Test:		Config. Used:	-		
Te	et Enginoor	M. Birgani Joseph Cadigal	Config Change:	-		
Т	est Location:		EUT Voltage:	PoF		
	/ of Result		_0			
Ru	ın #	Test Performed	Limit	Pass / Fail	Result / Mar	gin
	1	Power, 5250 - 5350MHz	15.407(a) (1), (2)	PASS	24.0 mW	
	1	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	PASS	-0.4 dBm/M	Hz
	1	Max EIRP 5250 - 5350MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm.	PASS	EIRP = 29.7	′ dBm (938 mW)
	1	Power, 5470 - 5725MHz	15.407(a) (1), (2)	PASS	24.1 mW	
	1	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	PASS	-0.7 dBm/M	Hz
	1	Max EIRP 5470 - 5725MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold	PASS	EIRP = 23.9	) dBm (244.2 mW)
	1	26dB Bandwidth	15.407 (Determines max power)	-	42.3 MHz	
	1	99% Bandwidth	RSS 210	N/A	27.0 MHz	
	2	Peak Excursion Envelope	15.407(a) (6) 13dB	PASS	10.4 dB	
	3	Antenna Conducted - Out of Band	15.407(b)	PASS	All emission	
	-	Spurious	-27dBm/MHz		-27dBm/MH	z limit

## General Test Configuration

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

Client <sup>.</sup>	Ubiquiti Netv	≥ company v∩rks						Job Number:	.182749	
Cilent.		VOING						Log Number:		
Model:	NanoStation	Loco M5						unt Manager:		
Contact:	Jennifer San	chez								
	FCC 15E, R							Class:	N/A	
Ambient	Conditions	6:		emperature: el. Humidity:			1		l	
No modifi Deviation	ions Made cations were Is From Th ions were ma	made to the e Standar	EUT during t	Ū	lard.					
Run #1: Ba Note 1:	ndwidth, Out Output powe					Systems				
	Output powe		- ·	•		below) RBW	/=1MHz.VB=	=3 MHz, sam	ple detector.	power
Note 1:	averaging or	n (transmitted	l signal was	continuous)	• •	,		nethod 1 of D		•
	averaging or Measured us		-	,	and power in	itegration ove	er <b>50</b> MHz (m	nethod 1 of D	A-02-2138A	•
Note 2:	Measured us 99% Bandwi	sing the same dth measure	e analyzer se d in accorda	ettings used ince with RS	and power in for output po S GEN - RB	tegration ove wer. PSD is > 1% of spar	er <b>50</b> MHz (m highest value and VB >=3	nethod 1 of D e on the plot. 3xRB	A-02-2138A	1).
Note 2:	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t	the same dth measure vstems the to . The antenr MIMO device he highest ga signals are c	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the inc coherent the	ettings used ince with RS ower and tota I to determine als on the no lividual chair n the effectiv	and power in for output po S GEN - RB al PSD are ca the EIRP a pon-coherent l is and the EI e antenna ga	tegration over wer. PSD is > 1% of spar alculated form nd limits for F poetween the RP is the sur	er 50 MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai n of the prod	nethod 1 of D e on the plot. BxRB the powers o power depend ns then the g	A-02-2138A f the individu ds on the ope gain used to and power or	1). al chains erating determin n each
Note 2: Note 4: Note 5:	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t chain. If the the EIRP is t	the same dth measure ystems the to . The antenr MIMO device he highest ga signals are o he product o	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the ind coherent the f the effectiv	ettings used ince with RS ower and tota I to determine als on the no lividual chair n the effectiv	and power in for output po S GEN - RB al PSD are ca the EIRP a pon-coherent l is and the EI e antenna ga	tegration over wer. PSD is > 1% of spar alculated form nd limits for F poetween the RP is the sur	er 50 MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai n of the prod	nethod 1 of D e on the plot. BxRB the powers o power depend ns then the g ucts of gain a	A-02-2138A f the individu ds on the ope gain used to and power or	1). al chains erating determin n each
Note 2: Note 4: Note 5:	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t chain. If the	the same dth measure ystems the to . The antenr MIMO device he highest ga signals are o he product o	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the ind coherent the f the effectiv	ettings used ince with RS ower and tota I to determine als on the no lividual chair n the effectiv e gain and to	and power in for output po S GEN - RB al PSD are ca the EIRP a pon-coherent l as and the EI e antenna ga otal power.	tegration over wer. PSD is > 1% of spar alculated form nd limits for F between the RP is the sur ain is the sur	er 50 MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai n of the prod n (in linear te	nethod 1 of D e on the plot. BxRB the powers o power depend ns then the g ucts of gain a rms) of the ga	A-02-2138A f the individu ds on the ope gain used to and power or ains for each	1). al chains erating determin n each chain ar
Note 2: Note 4: Note 5:	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t chain. If the the EIRP is t	the same dth measure ystems the to . The antenr MIMO device he highest ga signals are o he product o	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the ind coherent the f the effectiv	ettings used ince with RS ower and tota to determine als on the no lividual chair in the effectiv e gain and to Chain 2	and power in for output po S GEN - RB al PSD are ca the EIRP a pon-coherent l is and the EI e antenna ga	tegration over wer. PSD is > 1% of spar alculated form nd limits for F between the RP is the sur ain is the sur Coherent	er 50 MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai n of the prod	nethod 1 of D e on the plot. BXRB the powers o power depend ns then the g ucts of gain a rms) of the ga	A-02-2138A f the individu ds on the ope gain used to and power or	1). al chains erating determin n each chain ar
Note 2: Note 4: Note 5:	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t chain. If the the EIRP is t	the same dth measure vstems the to . The antenr MIMO device he highest ga signals are o he product o	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the inc coherent the f the effectiv Chain 1	ettings used ince with RS ower and tota I to determine als on the no lividual chair n the effectiv e gain and to	and power in for output po S GEN - RB al PSD are ca the EIRP a pon-coherent l as and the EI e antenna ga otal power.	tegration over wer. PSD is > 1% of spar alculated form nd limits for F between the RP is the sur ain is the sur	er 50 MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai m of the prod n (in linear ter Effective <sup>5</sup>	nethod 1 of D e on the plot. BxRB the powers o power depend ns then the g ucts of gain a rms) of the ga	A-02-2138A f the individu ds on the ope gain used to and power or ains for each EIRP (dBm)	1). al chains erating determin n each chain ar
Note 2: Note 4: Note 5:	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t chain. If the the EIRP is t	the same dth measure vstems the to . The antenr MIMO device he highest ga signals are o he product o	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the ind coherent the f the effectiv d Chain 1 13	ettings used ince with RS ower and tota to determine als on the no lividual chair in the effectiv e gain and to Chain 2	and power in for output po S GEN - RB al PSD are ca the EIRP a pon-coherent l as and the EI e antenna ga otal power.	tegration over wer. PSD is > 1% of spar alculated form nd limits for F petween the RP is the sur ain is the sur Coherent Yes	er 50 MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai m of the prod n (in linear ter Effective <sup>5</sup>	e on the plot. SxRB the powers o power depend ns then the g ucts of gain a rms) of the ga EIRP (mW) 937.9	A-02-2138A f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 29.7	1). al chains erating determin n each chain ar
Note 2: Note 4: Note 5:	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t chain. If the the EIRP is t ce - 5250-535 Antenna	the same dth measure ystems the to . The antenr MIMO device he highest ga signals are o he product o <b>50 MHz Banc</b> a Gain (dBi):	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the ind coherent the f the effectiv d Chain 1 13	ettings used nce with RS ower and tota l to determine lals on the no lividual chair n the effectiv e gain and to Chain 2 13	and power in for output po S GEN - RB al PSD are ca the EIRP a pon-coherent l as and the EI e antenna ga otal power.	tegration over wer. PSD is > 1% of spar alculated form nd limits for F petween the RP is the sur ain is the sur Coherent Yes	er <b>50</b> MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai m of the prod n (in linear ter Effective <sup>5</sup> 16.0	nethod 1 of D e on the plot. BXRB the powers o power depend ns then the g ucts of gain a rms) of the ga	A-02-2138A f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 29.7	1). al chains erating determin n each chain ar
Note 2: Note 4: Note 5: MIMO Device Power Frequency (MHz) 5275	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t chain. If the the EIRP is t ce - 5250-535 Antenna	sing the same dth measure /stems the to . The antenr MIMO device he highest ga signals are o he product o <b>50 MHz Banc</b> <b>60 MHz Banc</b> a Gain (dBi): 26dB BW (MHz) 40.3	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the inc coherent the f the effectiv Chain 1 13 Measure	ettings used ince with RS ower and tota I to determine als on the no lividual chair in the effectiv e gain and to Chain 2 13 d Output Po	and power in for output po S GEN - RB al PSD are ca the EIRP a pon-coherent l as and the EI e antenna ga tal power. Chain 3 wer <sup>1</sup> dBm	tegration over wer. PSD is > 1% of spar alculated form nd limits for F between the sur ain is the sur Coherent Yes	er <b>50</b> MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai m of the prod n (in linear ter Effective <sup>5</sup> 16.0	e on the plot. SxRB the powers o power depend ns then the g ucts of gain a rms) of the ga EIRP (mW) 937.9	A-02-2138A f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 29.7 Max Power (W)	1). al chains erating determin each chain ar Pass or PASS
Note 2: Note 4: Note 5: MIMO Devid Power Frequency (MHz) 5275 5300	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t chain. If the the EIRP is t ce - 5250-535 Antenna Software Setting 5.0 8.0	sing the same dth measure ystems the to . The antenr MIMO device he highest ga signals are o he product o 60 MHz Banc a Gain (dBi): 26dB BW (MHz) 40.3 42.2	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the ind coherent their f the effectiv Chain 1 13 Measure Chain 1 2.1 10.8	ettings used nce with RS ower and tota I to determine als on the no lividual chain n the effectiv e gain and to Chain 2 13 d Output Por Chain 2 3.7 10.6	and power in for output po S GEN - RB al PSD are ca the EIRP a pon-coherent l as and the EI e antenna ga tal power. Chain 3 wer <sup>1</sup> dBm	tegration over wer. PSD is > 1% of spar- alculated form nd limits for F between the sum- in is the sum- Coherent Yes To mW 4.0 23.5	er 50 MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai m of the prod n (in linear ter Effective <sup>5</sup> 16.0 otal dBm 6.0 13.7	e on the plot. BXRB the powers o cower depend ns then the g ucts of gain a rms) of the ga EIRP (mW) 937.9 Limit (dBm) 14.0 14.0	A-02-2138A f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 29.7 Max Power	1). al chains erating determin each chain an Pass or PASS PASS
Note 2: Note 4: Note 5: MIMO Devia Power Frequency (MHz) 5275 5300 5315	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t chain. If the the EIRP is t ce - 5250-535 Antenna Software Setting 5.0	sing the same dth measure /stems the to . The antenr MIMO device he highest ga signals are o he product o <b>50 MHz Banc</b> <b>60 MHz Banc</b> a Gain (dBi): 26dB BW (MHz) 40.3	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the ind coherent the f the effectiv Chain 1 13 Measure Chain 1 2.1	ettings used ince with RS ower and tota to determine tals on the no lividual chain in the effectiv e gain and to Chain 2 13 d Output Por Chain 2 3.7	and power in for output po S GEN - RB al PSD are ca the EIRP a pon-coherent l as and the EI e antenna ga tal power. Chain 3 wer <sup>1</sup> dBm	tegration over wer. PSD is > 1% of sparal culated form nd limits for F between the RP is the sur ain is the sur Coherent Yes To mW 4.0	er <b>50</b> MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai m of the prod n (in linear te Effective <sup>5</sup> 16.0 btal dBm 6.0	hethod 1 of D e on the plot. 3xRB the powers o bower depend ns then the g ucts of gain a rms) of the ga EIRP (mW) 937.9 Limit (dBm) 14.0	A-02-2138A f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 29.7 Max Power (W)	1). al chains erating determin n each chain ar Pass or PASS PASS
Note 2:           Note 4:           Note 5:           IIMO Devia           Power           Frequency           (MHz)           5275           5300           5315           PSD	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t chain. If the the EIRP is t ce - 5250-535 Antenna Software Setting 5.0 8.0 5.0	sing the same dth measure vstems the to . The antenr MIMO device he highest ga signals are o he product o <b>50 MHz Banc</b> <b>60 MHz Banc</b> a Gain (dBi): 26dB BW (MHz) 40.3 42.2 41.3	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the ind coherent the f the effectiv f Chain 1 13 Measure Chain 1 2.1 10.8 3.9	ettings used ince with RS ower and tota to determine als on the no lividual chain in the effectiv e gain and to Chain 2 13 d Output Por Chain 2 3.7 10.6 2.4	and power in for output po S GEN - RB al PSD are ca the EIRP a ph-coherent f and the EI e antenna ga that power. Chain 3 wer <sup>1</sup> dBm Chain 3	tegration over wer. PSD is > 1% of spar alculated form nd limits for F between the f RP is the sur ain is the sur Coherent Yes To mW 4.0 23.5 4.2	er <b>50</b> MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai m of the prod n (in linear ter Effective <sup>5</sup> 16.0 tal dBm 6.0 13.7 6.2	hethod 1 of D e on the plot. SxRB the powers o power depend ns then the g ucts of gain a rms) of the ga EIRP (mW) 937.9 Limit (dBm) 14.0 14.0	A-02-2138A f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 29.7 Max Power (W) 0.024	1). al chains erating determin chain ar Pass or PASS
Note 2: Note 4: Note 5: Note 5: MIMO Devia Power Frequency (MHz) 5275 5300 5315 PSD Frequency	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t chain. If the the EIRP is t ce - 5250-535 Antenna Software Setting 5.0 8.0 5.0 99% <sup>4</sup>	sing the same dth measure /stems the to . The antenr MIMO device he highest ga signals are o he product o 60 MHz Banc a Gain (dBi): 26dB BW (MHz) 40.3 42.2 41.3 Total	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the ind coherent the f the effectiv Chain 1 13 Measure Chain 1 2.1 10.8 3.9	ettings used nce with RS ower and tota to determine tals on the no lividual chain n the effectiv e gain and to Chain 2 13 d Output Por Chain 2 3.7 10.6 2.4	and power in for output po S GEN - RB al PSD are ca the EIRP a pon-coherent h is and the EI e antenna ga otal power. Chain 3 Chain 3 Chain 3	tegration over wer. PSD is > 1% of spar alculated form nd limits for F between the RP is the sur ain is the sur Coherent Yes To mW 4.0 23.5 4.2 Tota	er <b>50</b> MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai m of the prod n (in linear te Effective <sup>5</sup> 16.0 btal dBm 6.0 13.7 6.2	hethod 1 of D e on the plot. 3xRB the powers o bower depend ns then the g ucts of gain a rms) of the ga EIRP (mW) 937.9 Limit (dBm) 14.0 14.0 14.0 Lin	A-02-2138A f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 29.7 Max Power (W) 0.024	1). al chains erating determin n each chain ar Pass or PASS PASS
Note 2: Note 4: Note 5: Note 5: Note 5: MIMO Devid Power Frequency (MHz) 5275 5300 5315 PSD Frequency (MHz)	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t chain. If the the EIRP is t ce - 5250-535 Antenna Software Setting 5.0 8.0 5.0 8.0 5.0	sing the same dth measure ystems the to . The antenr MIMO device he highest ga signals are o he product o 60 MHz Banc a Gain (dBi): 26dB BW (MHz) 40.3 42.2 41.3 Total Power	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the inco coherent the f the effectiv Chain 1 2.1 10.8 3.9 P Chain 1	ettings used ince with RS ower and tota to determine als on the no lividual chain in the effectiv e gain and to Chain 2 13 d Output Por Chain 2 3.7 10.6 2.4 SD <sup>2</sup> dBm/Mł Chain 2	and power in for output po S GEN - RB al PSD are ca the EIRP a ph-coherent f and the EI e antenna ga that power. Chain 3 Wer <sup>1</sup> dBm Chain 3	tegration over wer. PSD is > 1% of sparal culated form nd limits for F between the f RP is the sural in is the sural Coherent Yes To mW 4.0 23.5 4.2 Total mW/MHz	er 50 MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai m of the prod n (in linear ter Effective <sup>5</sup> 16.0 0 tal 6.0 13.7 6.2 I PSD dBm/MHz	e on the plot. axRB the powers o bower depend ns then the g ucts of gain a rms) of the ga EIRP (mW) 937.9 Limit (dBm) 14.0 14.0 14.0 Lin FCC	A-02-2138A f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 29.7 Max Power (W) 0.024 mit RSS 210 <sup>3</sup>	1). al chains erating determin n each chain ar Pass or PASS PASS PASS
Note 2: Note 4: Note 5: Note 5: MIMO Devia Power Frequency (MHz) 5275 5300 5315 PSD Frequency	Measured us 99% Bandwi For MIMO sy linear terms) mode of the the limits is t chain. If the the EIRP is t ce - 5250-535 Antenna Software Setting 5.0 8.0 5.0 99% <sup>4</sup>	sing the same dth measure /stems the to . The antenr MIMO device he highest ga signals are o he product o 60 MHz Banc a Gain (dBi): 26dB BW (MHz) 40.3 42.2 41.3 Total	e analyzer se d in accorda tal output po na gain used e. If the sign ain of the ind coherent the f the effectiv Chain 1 13 Measure Chain 1 2.1 10.8 3.9	ettings used nce with RS ower and tota to determine tals on the no lividual chain n the effectiv e gain and to Chain 2 13 d Output Por Chain 2 3.7 10.6 2.4	and power in for output po S GEN - RB al PSD are ca the EIRP a pon-coherent h is and the EI e antenna ga otal power. Chain 3 Chain 3 Chain 3	tegration over wer. PSD is > 1% of spar alculated form nd limits for F between the RP is the sur ain is the sur Coherent Yes To mW 4.0 23.5 4.2 Tota	er <b>50</b> MHz (n highest value and VB >=3 n the sum of PSD/Output p transmit chai m of the prod n (in linear te Effective <sup>5</sup> 16.0 btal dBm 6.0 13.7 6.2	hethod 1 of D e on the plot. 3xRB the powers o bower depend ns then the g ucts of gain a rms) of the ga EIRP (mW) 937.9 Limit (dBm) 14.0 14.0 14.0 Lin	A-02-2138A f the individu ds on the ope gain used to and power or ains for each EIRP (dBm) 29.7 Max Power (W) 0.024	1). al chains erating determin chain an chain an Pass or PASS

# Elliott

## EMC Test Data

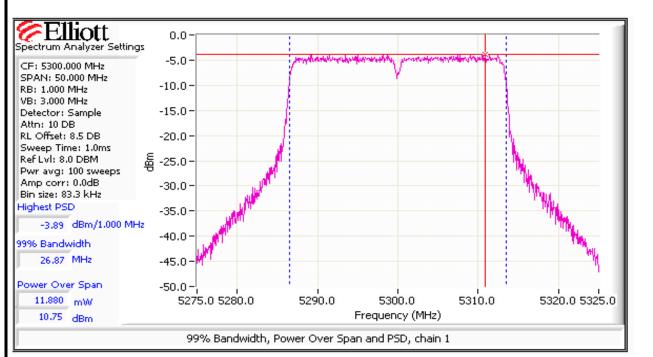
	An 2A22 company		
Client:	Ubiquiti Networks	Job Number:	J82749
Model <sup>.</sup>	Ners Chatian Laga ME	T-Log Number:	T82792
wouer.	NanoStation Loco M5	Account Manager:	Susan Pelzl
Contact:	Jennifer Sanchez		
Standard:	FCC 15E, RSS-210	Class:	N/A

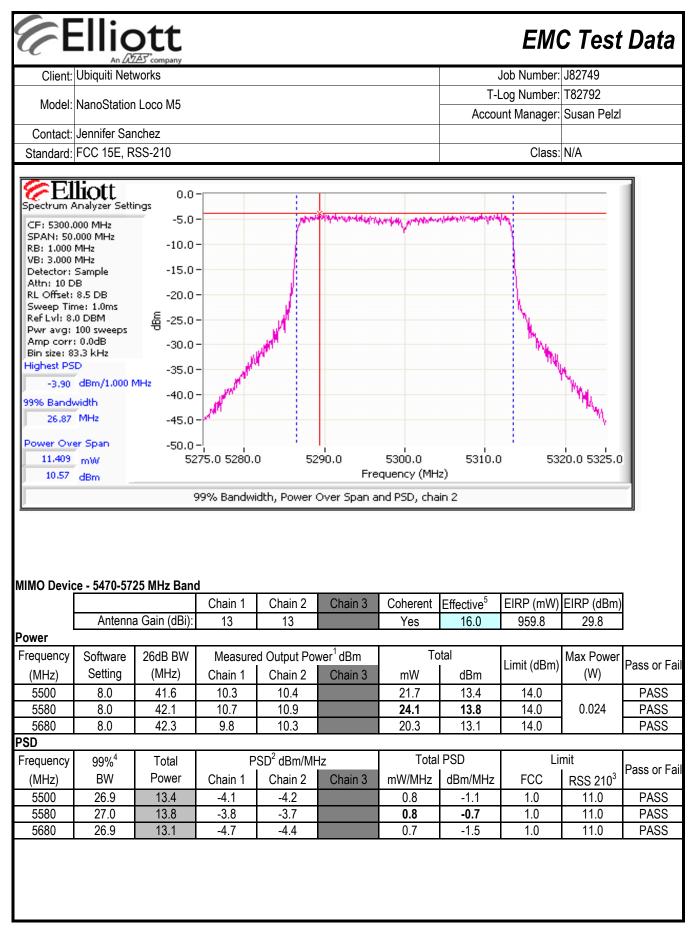
### Output Power at Low Power Setting - 5250-5350 MHz Band

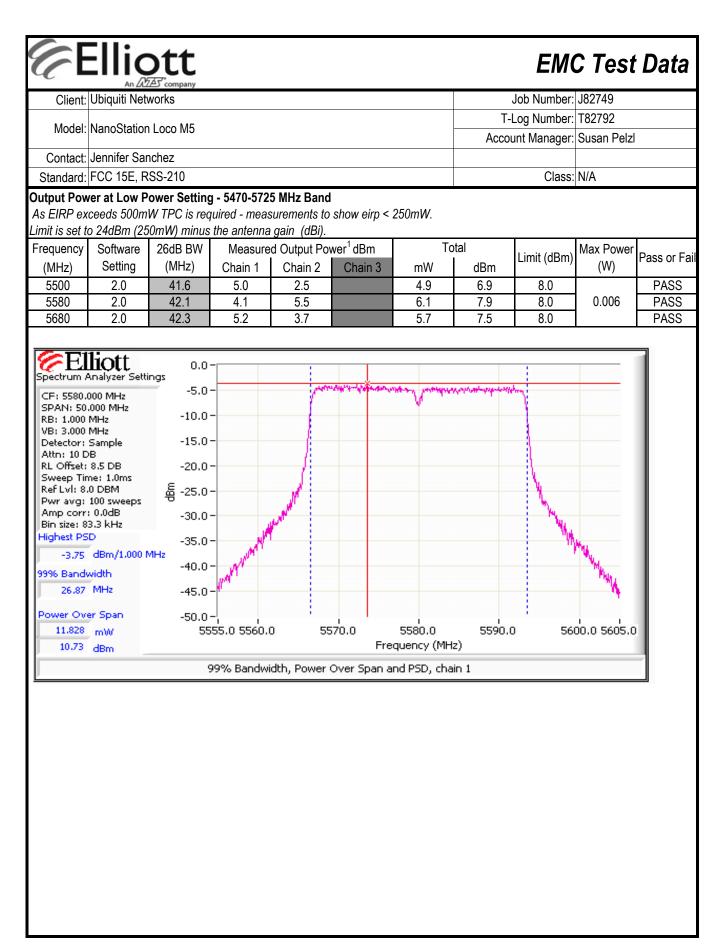
EIRP does not exceed 500mW, therefore TPC is not required and measurements at a low power setting are not required. As EIRP exceeds 500mW TPC is required - measurements to show eirp < 250mW.

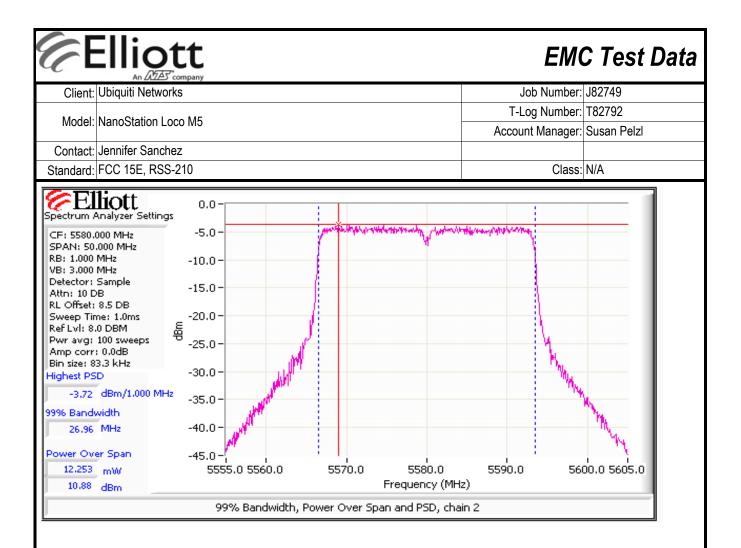
Limit is set to 24dBm (250mW) minus the antenna gain (dBi).

Frequency	Software	26dB BW	Measure	d Output Pov	wer <sup>1</sup> dBm	To	otal	Limit (dBm)	Max Power	Pass or Fail
(MHz)	Setting	(MHz)	Chain 1	Chain 2	Chain 3	mW	dBm	сіпіі (авіп)	(W)	Fass 01 Fall
5275	3.0	40.3	5.1	4.2		5.9	7.7	8.0		PASS
5300	2.0	42.2	5.2	3.9		5.7	7.6	8.0	0.006	PASS
5315	2.5	41.3	5.3	3.0		5.4	7.3	8.0		PASS





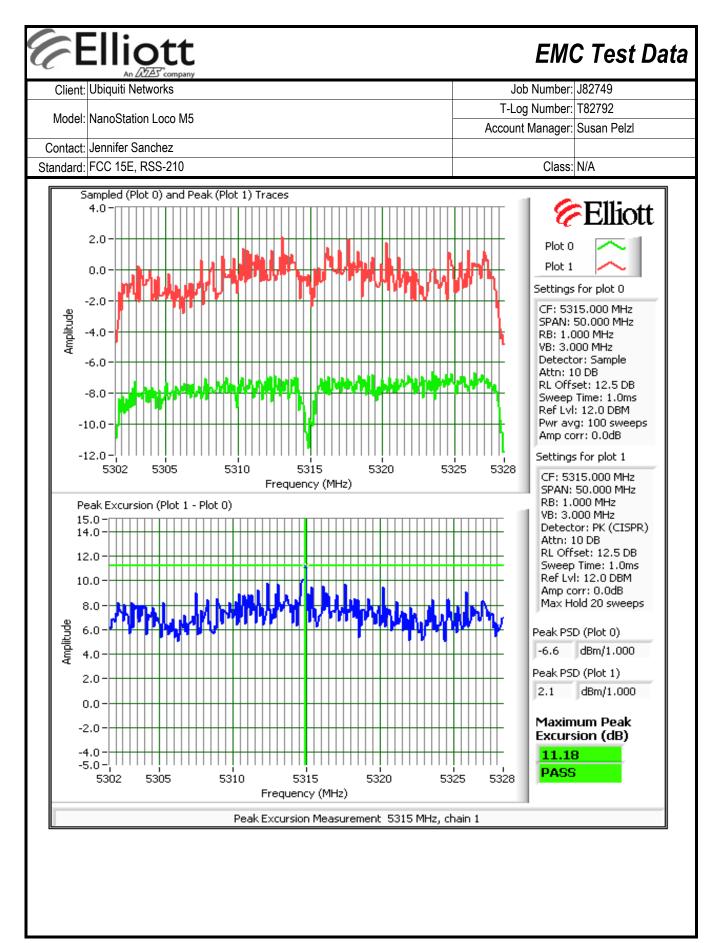




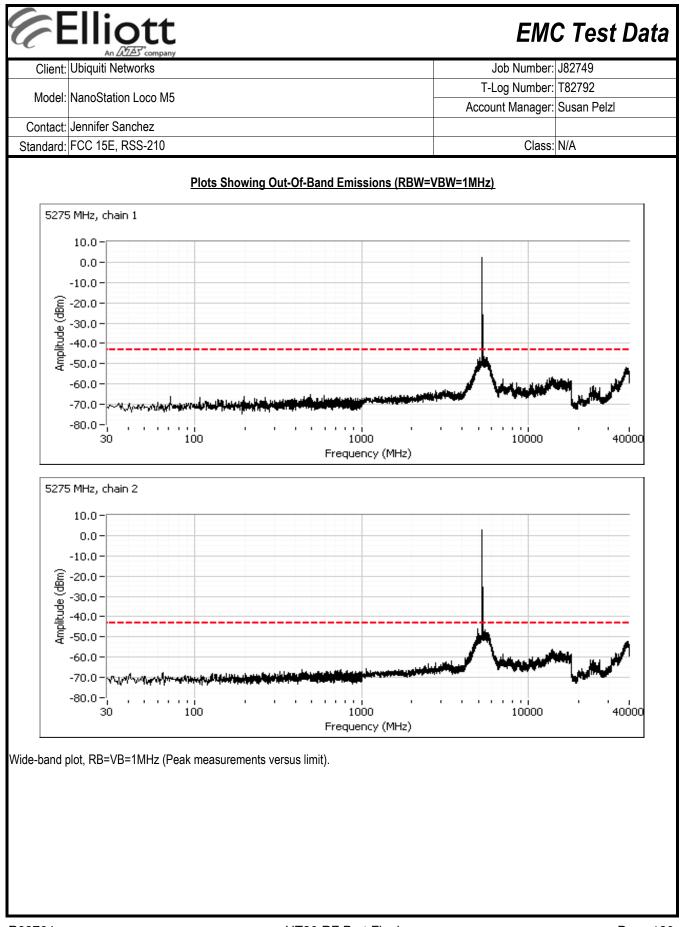
#### Run #2: Peak Excursion Measurement

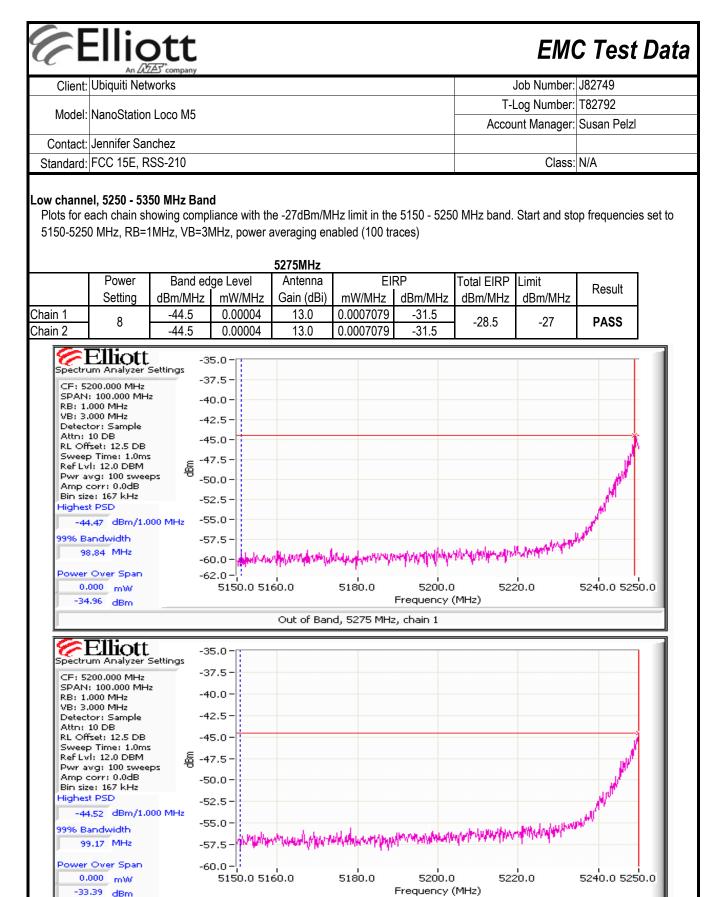
HT 30 Device meets the requirement for the peak excursion

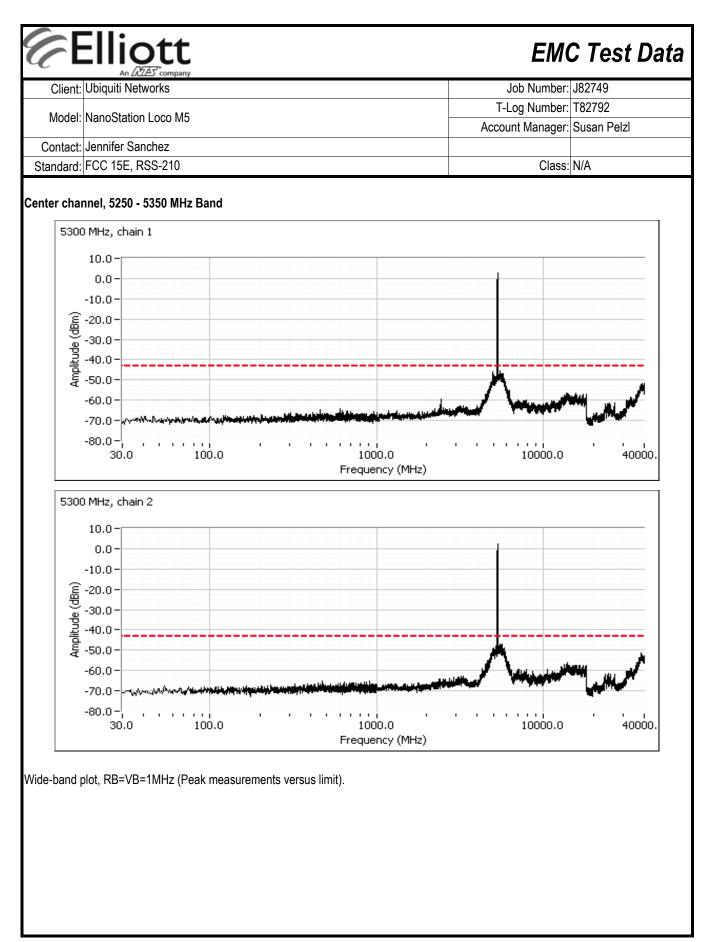
Freq	Peak Excursion(dB)		Freq	Peak Exc	ursion(dB)
(MHz)	Value	Limit	(MHz)	Value	Limit
5275	9.8/9.6	13.0	5500	9.8/8.7	13.0
5300	10.4/10.7	13.0	5580	8.8/8.5	13.0
5315	<b>11.2</b> /11.1	13.0	5680	8.6/8.8	13.0



	Ubiquiti Networks		Job Number:	1827/19
Client.			T-Log Number:	
Model:	NanoStation Loco M5		Account Manager:	
Contact:	Jennifer Sanchez			
Standard:	FCC 15E, RSS-210		Class:	N/A
the limit). simultane	The plots were obtained for each chain indiv ously Number of transmit chains: Maximum Antenna Gain: Spurious Limit: Adjustment for 2 chains: Limit Used On Plots <sup>Note 1</sup> :	ridually and the limit was adjuste 2 13.0 dBi -27.0 dBm/MHz eirp -3.0 dB adjustment for multip -43.0 dBm/MHz Average Lin	ole chains.	
	The -27dBm/MHz limit is an eirp limit. The			
lote 1:	consideration the maximum antenna gain a field strength measurements for signals mo determine compliance as the antenna gain i	nd number of transmitters (limit re than 50MHz from the bands	= -27dBm - antenna gain and that are close to the line	- 10Log[N]). Radiated
	-	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci	= -27dBm - antenna gain and that are close to the lines.	- 10Log[N]). Radiated
Note 1: Note 2: Note 3:	field strength measurements for signals mo determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci rred during digital device radiate Band edge are subject to a limit	= -27dBm - antenna gain and that are close to the lives. and emissions test. it of -17dBm EIRP	- 10Log[N]). Radiated
Note 2: Note 3: Note 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
Note 2: Note 3:	field strength measurements for signals mo determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
lote 2: lote 3: lote 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
lote 2: lote 3: lote 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
lote 2: lote 3: lote 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
lote 2: lote 3: lote 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
Note 2: Note 3: Note 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
lote 2: lote 3: lote 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
lote 2: lote 3: lote 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
lote 2: lote 3: lote 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
lote 2: lote 3: lote 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
lote 2: lote 3: lote 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
lote 2: lote 3: lote 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
lote 2: lote 3: lote 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
lote 2: lote 3: lote 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated
lote 2: lote 3: lote 4:	field strength measurements for signals mon determine compliance as the antenna gain All spurious signals below 1GHz are measu Signals within 10MHz of the 5.725 or 5.825 If the device is for outdoor use then the -270	nd number of transmitters (limit re than 50MHz from the bands is not known at these frequenci red during digital device radiate Band edge are subject to a limit dBm eirp limit also applies in the	= -27dBm - antenna gain and that are close to the lives. ad emissions test. it of -17dBm EIRP e 5150 - 5250 MHz band.	- 10Log[N]). Radiated



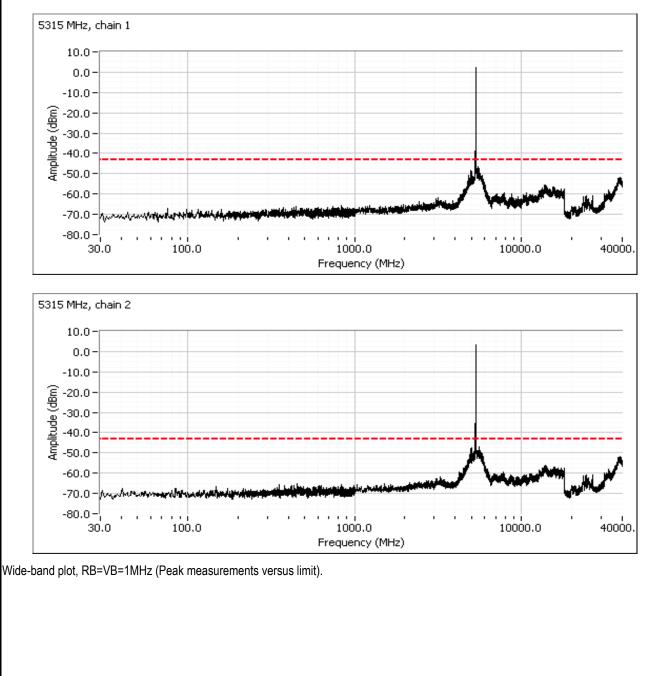


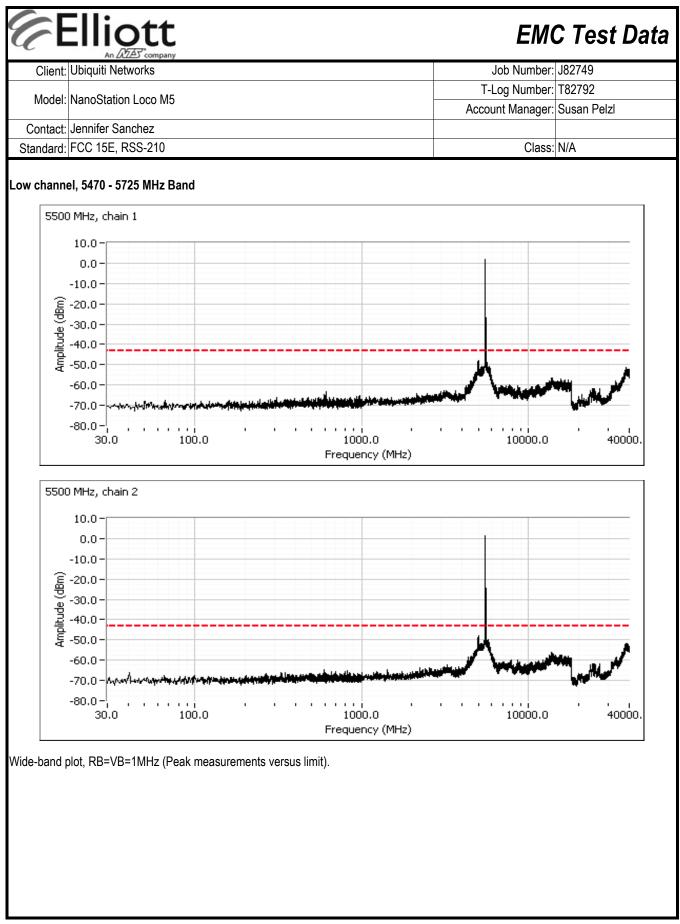


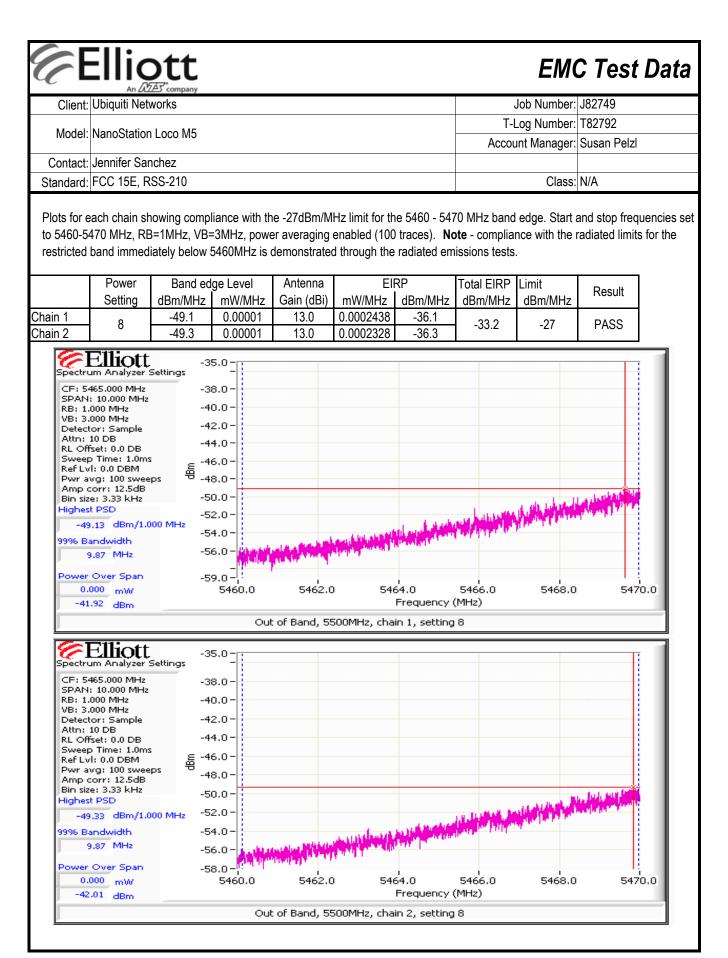
# Client: Ubiquiti Networks Job Number: J82749 Model: NanoStation Loco M5 T-Log Number: T82792 Contact: Jennifer Sanchez Susan Pelzl Standard: FCC 15E, RSS-210 Class: N/A

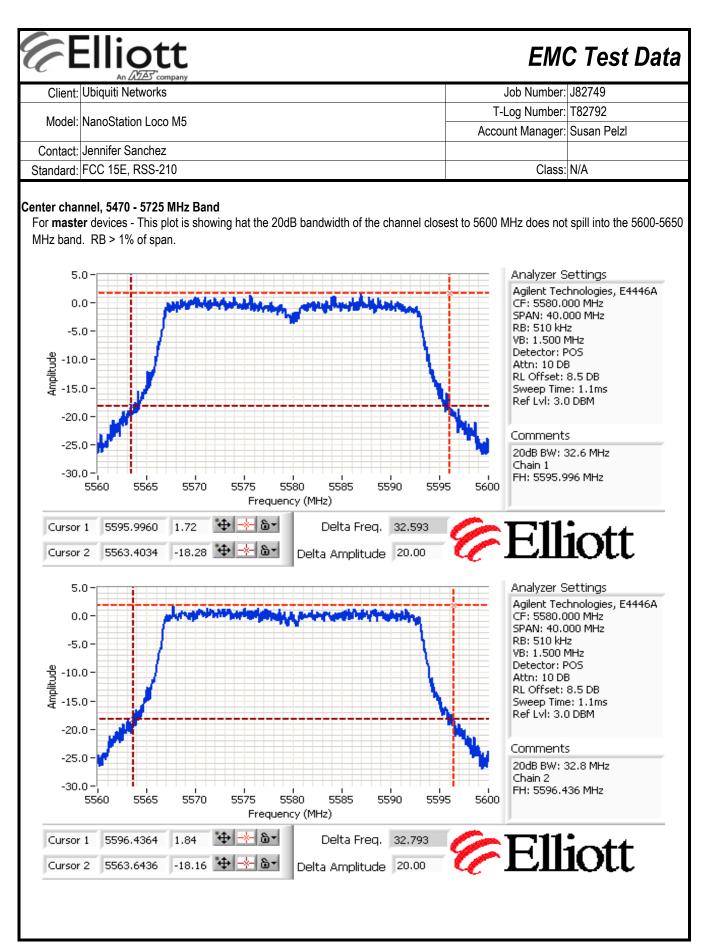
#### High channel, 5250 - 5350 MHz Band

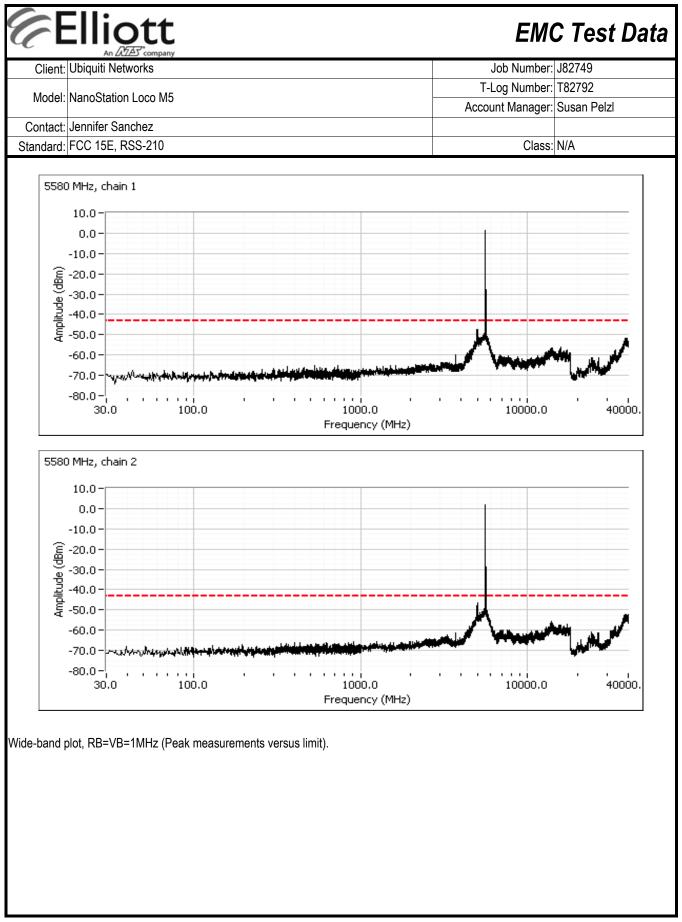
**Note** - compliance with the radiated limits for the restricted band immediately above 5350MHz is demonstrated through the radiated emissions tests.

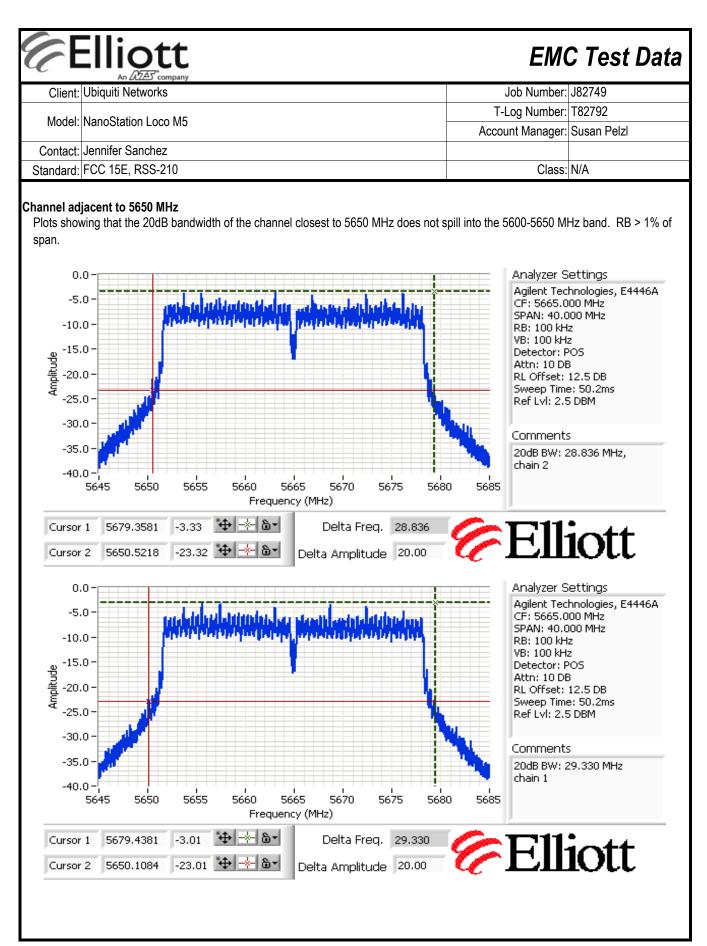


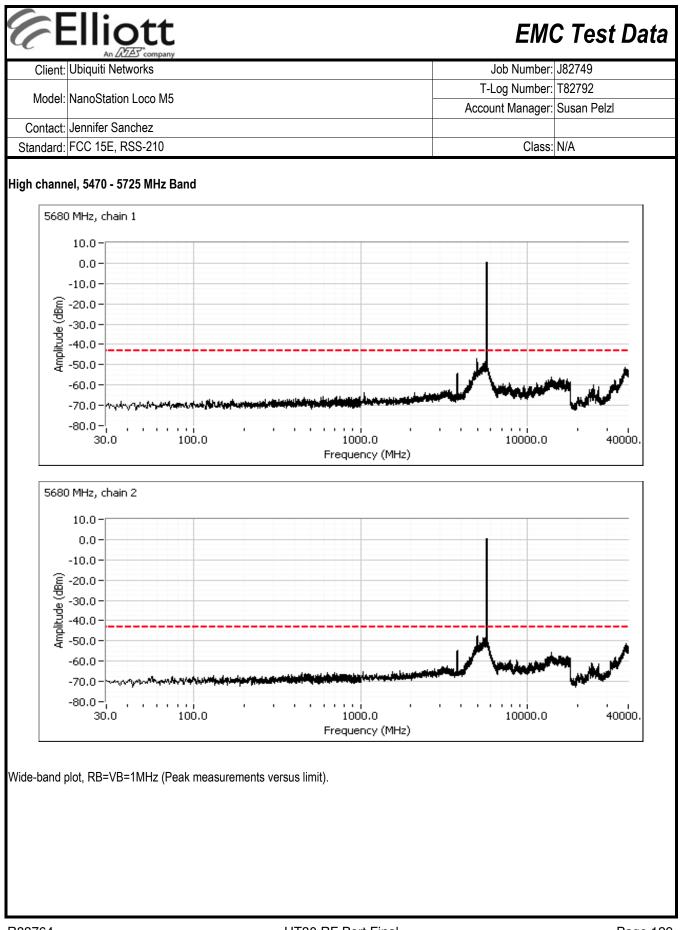












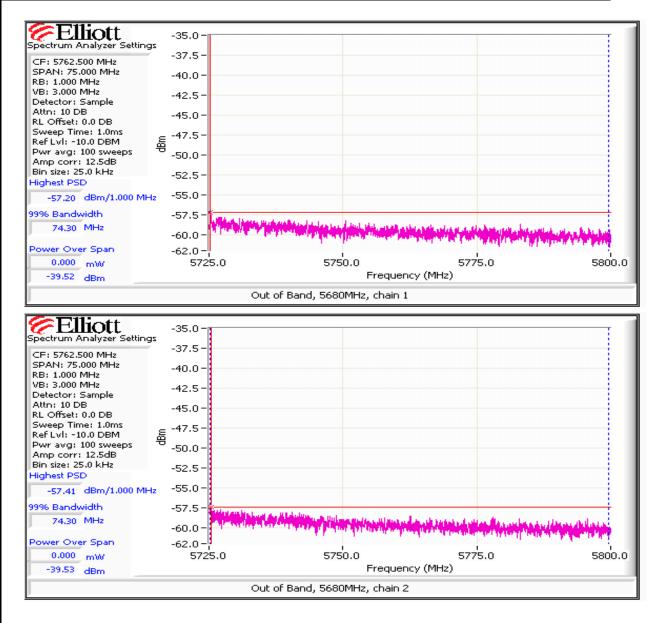
## Elliott

## EMC Test Data

·	An Due company		
Client:	Ubiquiti Networks	Job Number:	J82749
Model: NanoStation	NanoStation Lass M5	T-Log Number:	Т82792
		Account Manager:	Susan Pelzl
Contact:	Jennifer Sanchez		
Standard:	FCC 15E, RSS-210	Class:	N/A

Plots for each chain showing compliance with the -27dBm/MHz limit above the 5725MHz band edge. Start and stop frequencies set to 5725-5800 MHz, RB=1MHz, VB=3MHz, power averaging enabled (100 traces):

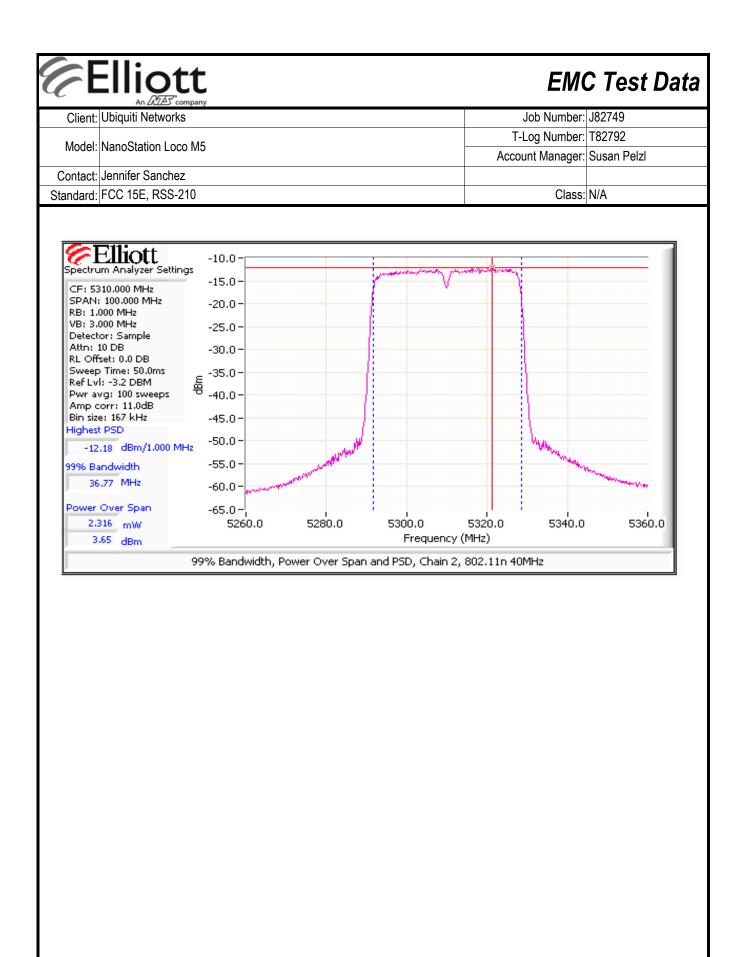
	Power	Band edge Level				Total EIRP	Limit	Result	
	Setting	dBm/MHz	mW/MHz	Gain (dBi)	mW/MHz	dBm/MHz	dBm/MHz	dBm/MHz	Result
Chain 1	Q	-57.2	0.00000	13.0	3.802E-05	-44.2	-41.3	-27	PASS
Chain 2	0	-57.4	0.00000	13.0	3.622E-05	-44.4	-41.5	-21	FA00



					EMC Test Dat
Client: U	Jbiquiti Netv	vorks		,	Job Number: J82749
Model·N	VanoStation	Loco M5			Log Number: T82792
				Αссοι	unt Manager: Susan Pelzl
	Jennifer San				
andard: F	FCC 15E, R	55-210			Class: N/A
		-	N) and FCC 15.40 Port Measuremen n, Bandwidth and Sp	ts	nissions
st Speci <sup>.</sup>	ific Detail	S			
•	Objective:	The objective of this test session is to specification listed above.	perform final qualification	n testing of th	e EUT with respect to the
Test	t Engineer:	4/18/2011 18:24 Rafael Varelas Fremont Chamber #7	Config. Used: Config Change: EUT Voltage:	none	
mmary o	of Result	S			
Run	#	Test Performed	Limit	Pass / Fail	Result / Margin
1		Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	802.11n n40MHz: 15.5 mW
1					
1		PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	802.11n n40MHz: -2.5 dBm/MH
		PSD, 5250 - 5350MHz Max EIRP 5250 - 5350MHz	15.407(a) (1), (2) TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm.	Pass Pass	802.11n n40MHz: -2.5 dBm/MH EIRP = 6.9 dBm (4.9 mW)
1		Max EIRP	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm. 15.407(a) (1), (2)	Pass Pass	EIRP = 6.9 dBm (4.9 mW) 802.11n n40MHz: 22.9 mW
1		Max EIRP 5250 - 5350MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm. 15.407(a) (1), (2) 15.407(a) (1), (2) TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm.	Pass Pass	EIRP = 6.9 dBm (4.9 mW) 802.11n n40MHz: 22.9 mW
1 1 1 1		Max EIRP 5250 - 5350MHz Power, 5470 - 5725MHz PSD, 5470 - 5725MHz Max EIRP	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm. 15.407(a) (1), (2) 15.407(a) (1), (2) TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold	Pass Pass	EIRP = 6.9 dBm (4.9 mW) 802.11n n40MHz: 22.9 mW 802.11n n40MHz: -2.6 dBm/MH
1 1 1 1 1		Max EIRP 5250 - 5350MHz Power, 5470 - 5725MHz PSD, 5470 - 5725MHz Max EIRP 5470 - 5725MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm. 15.407(a) (1), (2) TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm. 15.407	Pass Pass	EIRP = 6.9 dBm (4.9 mW) 802.11n n40MHz: 22.9 mW 802.11n n40MHz: -2.6 dBm/MH EIRP = 29.3 dBm (860.9 mW)
1 1 1 1 1 1		Max EIRP 5250 - 5350MHz Power, 5470 - 5725MHz PSD, 5470 - 5725MHz Max EIRP 5470 - 5725MHz 26dB Bandwidth	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm. 15.407(a) (1), (2) TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm. 15.407 (Information only) RSS 210	Pass Pass Pass	802.11n n40MHz: 22.9 mW 802.11n n40MHz: -2.6 dBm/MH EIRP = 29.3 dBm (860.9 mW) > 20MHz for all modes

Client	Elliott			Job Number:	C Test Data
Clien				T-Log Number:	
Mode	: NanoStation Loco M5			Account Manager:	
Contact	: Jennifer Sanchez			7.000unt Manager.	
	; FCC 15E, RSS-210			Class:	N/A
	Test Configuration			0.000	
nalyzer or	suring the conducted emission power meter via a suitable at e external attenuators and cal	tenuator to prevent overloa			•
Ambient Conditions:Temperature:20 °CRel. Humidity:36 %					
	tions Made During Test ations were made to the EUT	•			
Deviatio	ns From The Standard				
	ns were made from the requir	ements of the standard.			
<b>Run #1: Ba</b> Note 1:	andwidth, Output Power and Output power measured using averaging on (transmitted sing)	ng a spectrum analyzer (se	e plots below). RB\		•
Note 2:	Measured using the same a				
Note 3:	For RSS-210 the limit for the 10dBm/MHz. The limits are PSD (calculated from the me the measured value exceeds	also corrected for instances easured power divided by t s the average by more thar	s where the highest he measured 99% l i 3dB.	measured value of the PSI bandwidth) by more than 3d	D exceeds the average
Note 4:	99% Bandwidth measured in				
NOLE 4.	For MIMO systems the total linear terms). The antenna	gain used to determine the If the signals on the non-co	EIRP and limits for herent between the	PSD/Output power depend transmit chains then the g	s on the operating ain used to determine
Note 5:	mode of the MIMO device. the limits is the highest gain chain. If the signals are coh the EIRP is the product of th	erent then the effective ant	enna gain is the su		•
	the limits is the highest gain chain. If the signals are coh	erent then the effective ant	enna gain is the su		•

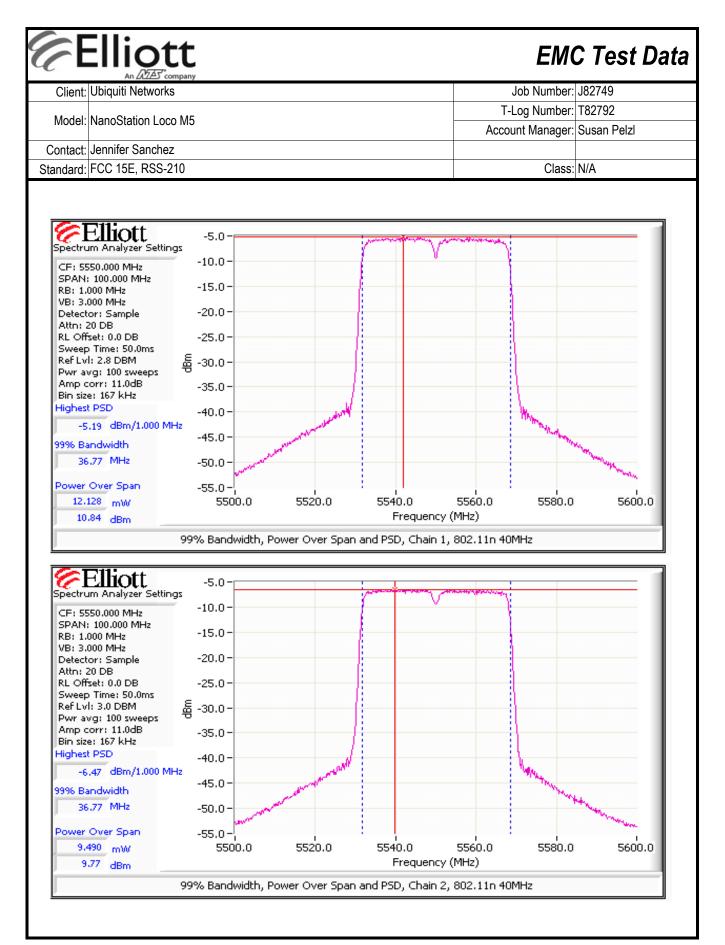
Client:	Ubiquiti Networks							Job Number: J82749		
							T-Log Number: T82792			
Model:	NanoStation Loco M5						Accou	unt Manager:	Susan Pelzl	
	Jennifer Sar									
Standard:	FCC 15E, R	SS-210						Class:	N/A	
MO Devid	ce - 5250-53	50 MHz Band	d							
			Chain 1	Chain 2	Chain 3	Coherent	Effective <sup>5</sup>	EIRP (mW)	EIRP (dBm)	
	Antenna	a Gain (dBi):	13	13		Yes	16.0	225.7	23.5	
wer					1		1.1	1		
requency	Software	26dB BW		ed Output Pov			otal	Limit (dBm)	Max Power	Pass or Fa
(MHz)	Setting	(MHz)	Chain 1	Chain 2	Chain 3	mW	dBm	, ,	(W)	
5275	5.0	49.7	4.6	4.1		5.5	7.4	14.0	0.006	PASS
5310 SD	3.0	45.0	5.2	3.7		5.7	7.5	14.0		PASS
requency	99% <sup>4</sup>	Total		SD <sup>2</sup> dBm/MF	J	Total	I PSD	Li	mit	
		Power		Chain 2	Chain 3	mW/MHz		FCC	RSS 210 <sup>3</sup>	Pass or Fa
									RSS 210	
(MHz)	BW		Chain 1		onaino					DACC
5275 5310 ote - high o	36.6 36.9 channel at 53 <b>ver at Low P</b>	7.4 7.5	-9.9 -10.6 meets band g - 5250-535	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	0.2 0.1 nts when ope	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS PASS elow).
5275 5310 ote - high o	36.6 36.9 channel at 53 <b>ver at Low P</b>	7.4 7.5 310MHz only ower Setting	-9.9 -10.6 meets band g - 5250-535	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 ote - high o <b>itput Pow</b> s <i>EIRP</i> do	36.6 36.9 channel at 53 ver at Low P bes not excee Elliott	7.4 7.5 310MHz only ower Setting ad 500mW TF	-9.9 -10.6 meets band g - 5250-535	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 ote - high o s EIRP do	36.6 36.9 channel at 53 ver at Low P bes not excee Elliott	7.4 7.5 310MHz only ower Setting ad 500mW TF -10 5ettings	-9.9 -10.6 meets band g - 5250-535 PC is not req	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 ote - high o utput Pow s EIRP do	36.6 36.9 channel at 53 ver at Low P bes not excee Elliott	7.4 7.5 310MHz only ower Setting od 500mW TF -10 5ettings -10	-9.9 -10.6 meets band g - 5250-535 PC is not req	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 ote - high o utput Pow s EIRP do	36.6 36.9 channel at 53 ver at Low P bes not excee Elliott um Analyzer 5 310.000 MHz 100.000 MHz 100.000 MHz	7.4 7.5 310MHz only ower Setting ad 500mW TF -10 5ettings -10 5ettings -10 2 -20	-9.9 -10.6 meets band g - 5250-535 PC is not req	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 ote - high o utput Pow s EIRP do Spectru CF: 53 SPAN: RB: 1,1 VB: 3,1 VB: 3,1	36.6 36.9 channel at 53 ver at Low P bes not excee Elliott m Analyzer S 310.000 MHz 100.000 MHz	7.4 7.5 310MHz only ower Setting ad 500mW TF -10 5ettings -10 5ettings -10 2 -20	-9.9 -10.6 meets band g - 5250-535 PC is not req	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 te - high o s EIRP do Spectru CF: 53 SPAN: VB: 3J Detect Attn:	36.6 36.9 channel at 53 ver at Low P bes not excee Elliott um Analyzer 5 310.000 MHz 1000 MHz 000 MHz 000 MHz 000 MHz 001 Sample 10 DB	7.4 7.5 310MHz only ower Setting ad 500mW TF 5ettings -10 5ettings -10 -20 -20 -20	-9.9 -10.6 meets band g - 5250-535 PC is not req	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 ite - high o ite - high o ite - high o s EIRP do Spectru CF: 53 SPAN; RB: 1.0 VB: 3.0 Detect Attn: 3 RL Off Sweep	36.6 36.9 channel at 53 wer at Low P bes not excees Elliott um Analyzer S 310.000 MHz : 100.000 MHz : 50.000 MHz : 50.000 MHz	7.4 7.5 310MHz only ower Setting ad 500mW TF 5ettings -10 5ettings -10 -10 -10 -10 -10 -10 -10 -10 -10 -10	-9.9 -10.6 meets band g - 5250-535 PC is not req 5.0 - 5.0 - 5.0 - 5.0 -	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 ite - high o itput Pow s EIRP do Spectru CF: 53 SPAN; RB: 1,0 VB: 3,0 Detect: RL Off Sweep Ref Lv	36.6 36.9 channel at 53 ver at Low P bes not excees Elliott um Analyzer S 310.000 MHz : 100.000 MHz : 100.000 MHz 000 MHz	7.4 7.5 310MHz only ower Setting od 500mW TF 5ettings -10 5ettings -10 2 -20 -30 -30	-9.9 -10.6 meets band g - 5250-535 PC is not req 5.0 - 5.0 - 5.0 - 5.0 - 5.0 -	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 ote - high of utput Pow s EIRP do Spectru CF: 53 SPAN: RB: 1,1 VB: 3,1 Detect Attn: 3 RL Off Sweep Ref Lv Pwr av Amp of	36.6 36.9 channel at 53 ver at Low P ver	7.4 7.5 310MHz only ower Setting ad 500mW TF 5ettings -10 5ettings -10 -10 5ettings -10 -10 -10 -10 -10 -10 -10 -10 -10 -10	-9.9 -10.6 meets band g - 5250-535 PC is not req 0.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 -	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 te - high of s EIRP do s EIRP do Spectru CF: 53 SPAN: RB: 11, VB: 3, Detect Attn: 1 RL Off Sweep Ref LV Pwr av Amp o Bin size	36.6 36.9 channel at 53 ver at Low P ver	7.4 7.5 310MHz only ower Setting ad 500mW TF 5ettings -10 5ettings -10 -10 5ettings -10 -10 -10 -10 -10 -10 -10 -10 -10 -10	-9.9 -10.6 meets band g - 5250-535 PC is not req 5.0 - 5.0 - 5.0 - 5.0 - 5.0 -	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 ite - high of itput Pow s EIRP do Spectru CF: 53 SPAN: RB: 1,0 VB: 3,0 Detect Attn: RL Off Sweep Ref Lv Pwr av Amp of Bin size	36.6 36.9 channel at 53 ver at Low P ver	7.4 7.5 310MHz only ower Setting od 500mW TF 5ettings -10 5ettings -10 5ettings -10 5ettings -10 -10 5ettings -10 -10 -10 5ettings -10 -10 -10 -10 -10 -10 -10 -10 -10 -10	-9.9 -10.6 meets band g - 5250-535 PC is not req 0.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 -	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 ite - high of itput Pow s EIRP do Spectru CF: 53 SPAN: RB: 1,1 VB: 3,1 Deten: RE: 1,1 VB: 3,1 RE: 1,1 VB: 3,1 Deten: RE: 1,1 VB: 3,1 RE: 1,1 VB: 3,1 VB: 3	36.6 36.9 channel at 53 ver at Low P bes not excees Elliott Im Analyzer S 810,000 MHz 10000 MHz 1000 MHz 1	7.4 7.5 310MHz only ower Setting ed 500mW TF 5ettings -10 5ettings -10 2 -20 -30 -30 -30 -40 -40 -40 -40 -40 -40	-9.9 -10.6 meets band g - 5250-535 PC is not req 5.0 - 5.0 -	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 ite - high of s EIRP do s EIRP do Spectru CF: 53 SPAN: RB: 1,1 VB: 3,1 VB: 3	36.6 36.9 channel at 53 ver at Low P ver	7.4 7.5 310MHz only ower Setting ad 500mW TF 5ettings -10 5ettings -10 -10 5ettings -10 -10 -10 -10 -10 -10 -10 -10 -10 -10	-9.9 -10.6 meets band g - 5250-535 PC is not req 0.0 - 5.0	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 ite - high of s EIRP do s EIRP do Spectru CF: 53 SPAN: RB: 1,1 VB: 3,1 VB: 3	36.6 36.9 channel at 53 wer at Low P bes not exceed Elliott um Analyzer S 810.000 MHz : 100.000 MHZ : 100.0000 MHZ : 100.000 MHZ : 100.000 MHZ : 100.000 MHZ	7.4 7.5 310MHz only ower Setting ad 500mW TF -10 -10 -10 -10 -20 -30 -30 -30 -30 -30 -30 -35 -40 -40 -40 -55 -60	-9.9 -10.6 meets band g - 5250-535 PC is not req 5.0 - 5.0	-11.1 -12.2 edge radiate 0 MHz Band	d requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0	PASS
5275 5310 ite - high of s EIRP do s EIRP do Spectru CF: 53 SPAN: RB: 1,1 VB: 3,1 Detter: RE: 1,1 VB: 3,1 Detter: RE: 1,1 VB: 3,1 Detter: RE: 1,1 VB: 3,1 Detter: RE: 1,1 VB: 3,1 Detter: Sweep Ref Lv Pwr an Amp of Bin izz Highest -10 99% Ba 36 Power	36.6 36.9 channel at 53 ver at Low P ver	7.4 7.5 310MHz only ower Setting ad 500mW TF -10 -10 -10 -10 -20 -30 -30 -30 -30 -30 -30 -35 -40 -40 -40 -55 -60	-9.9 -10.6 meets band g - 5250-535 PC is not req 0.0 - 5.0	-11.1 -12.2 edge radiate 0 MHz Band	ed requireme	<b>0.2</b> 0.1	<b>-7.5</b> -8.3	1.0 1.0	11.0 11.0 etting (see b	PASS elow).



Client <sup>.</sup>		works						Job Number:	J82749	
onorm.	••••							Log Number:		
Model:	NanoStation	Loco M5					int Manager:			
Contact	Jennifer Sar	aha7						int manager.	Susan reizi	
								Class	N1/A	
	FCC 15E, R		-					Class:	N/A	
MIMO Devid	ce - 5470-572	25 MHz Band					5			1
			Chain 1	Chain 2	Chain 3		Effective <sup>5</sup>	( )	EIRP (dBm)	
		a Gain (dBi):	13	13		Yes	16.0	860.9	29.3	
Power (mea	sured at two	different set				g 9.5 does n	ot meet band	edge require	ements)	
Frequency	Software	26dB BW	Measure	d Output Pov	wer <sup>1</sup> dBm	To	otal	Limit (dBm)	Max Power	Deep or F
(MHz)	Setting	(MHz)	Chain 1	Chain 2	Chain 3	mW	dBm	стин (авти)	(W)	Pass or Fa
5510	9.0	54.0	10.3	9.5		19.6	12.9	14.0		PASS
5550	9.5	53.8	10.8	9.8		21.6	13.3	14.0	0.022	PASS
5670	8.5	52.0	7.8	6.1		10.2	10.1	14.0		PASS
PSD										
Frequency	99% <sup>4</sup>	Total	Р	SD <sup>2</sup> dBm/M⊦	Ηz	Total	PSD	Li	nit	D
(MHz)	BW	Power	Chain 1	Chain 2	Chain 3	mW/MHz	dBm/MHz	FCC	RSS 210 <sup>3</sup>	Pass or Fa
5510	36.8	12.9	-5.6	-6.2		0.5	-2.9	1.0	11.0	PASS
5550	36.8	13.3	-5.2	-6.5		0.5	-2.8	1.0	11.0	PASS
5670	36.6	10.1	-8.0	-9.7		0.3	-5.7	1.0	11.0	PASS

As EIRP exceeds 500mW TPC is required - measurements to show eirp < 250mW. Limit is set to 24dBm (250mW) minus the antenna gain (dBi).

Frequency	Software	26dB BW	Measure	Measured Output Power <sup>1</sup> dBm			Total		Max Power	Doce or Fail			
(MHz)	Setting	(MHz)	Chain 1	Chain 2	Chain 3	mW	dBm	Limit (dBm)	(W)	F 855 UI F 811			
5510	4.0		5.6	3.9		6.1	7.8	8.0		PASS			
5550	4.0		5.6	4.0		6.1	7.9	8.0	0.006	PASS			
5670	4.5		5.3	4.0		5.9	7.7	8.0		PASS			





## EMC Test Data

	An ZALED company		
Client:	Ubiquiti Networks	Job Number:	J82749
Modol:	NanoStation Loco M5	T-Log Number:	T82792
wouer.		Account Manager:	Susan Pelzl
Contact:	Jennifer Sanchez		
Standard:	FCC 15E, RSS-210	Class:	N/A

### Run #2: Peak Excursion Measurement

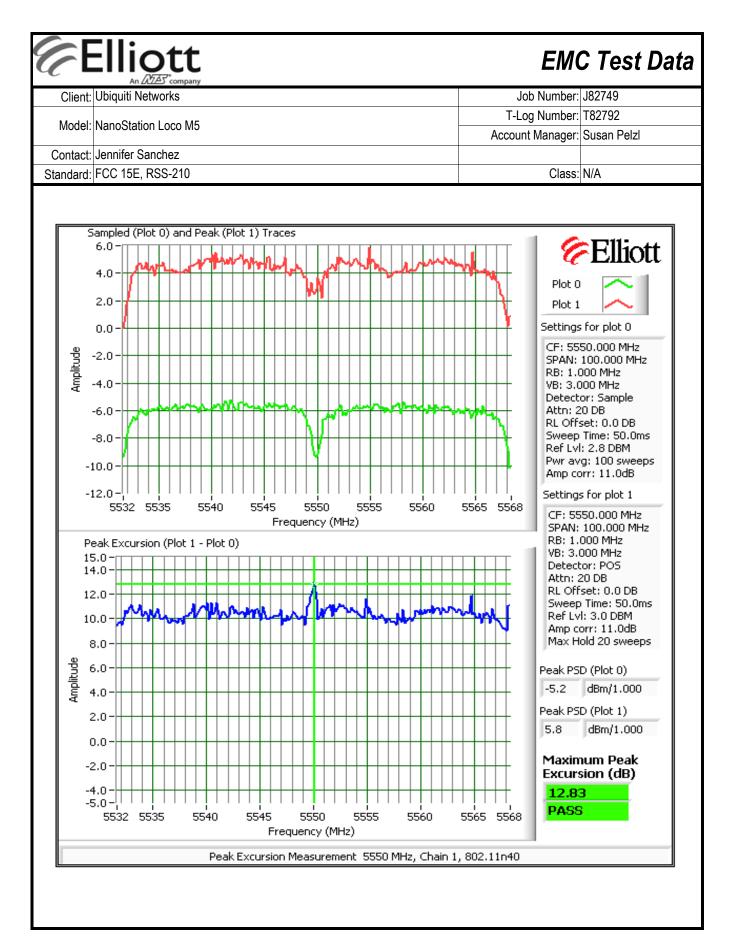
#### 40MHz: Device meets the requirement for the peak excursion

Freq	Peak Excursion(dB)		Freq	Peak Excursion(dB)		Freq	Peak Exc	ursion(dB)
(MHz)	Value	Limit	(MHz)	Value	Limit	(MHz)	Value	Limit
5190		13.0	5275	11.1	11.1 13.0		12.6	13.0
5230		13.0	5310	12.7	13.0	5550	12.8	13.0
						5670	11.8	13.0

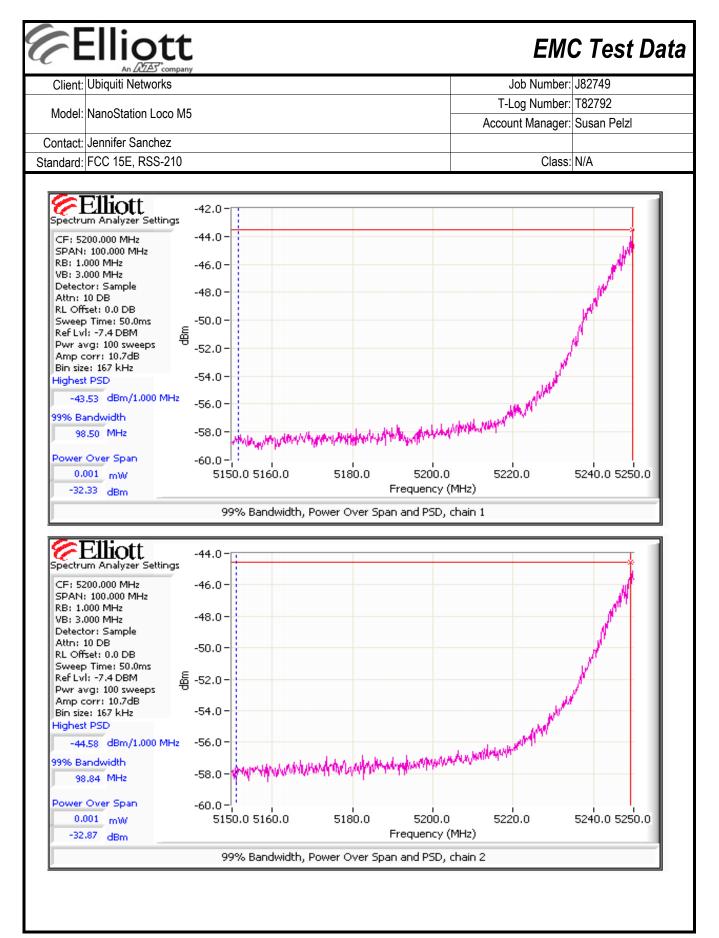
## Plots Showing Peak Excursion

Trace A: RBW = 1MHz, VBW = 3MHz, Peak hold

Trace B: Same settings as used for power/PSD measurements (RBW = 1 MHz, VBW = 3MHz, Integrated average power)



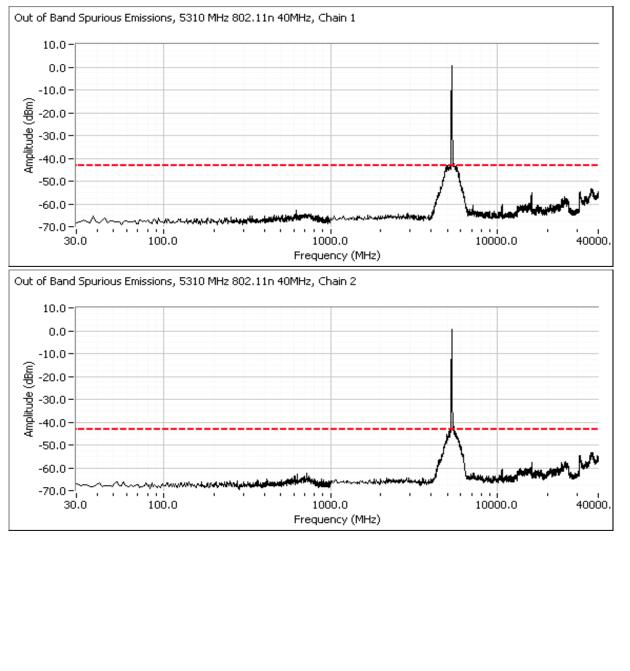
	Ellic	ott						EM	C Test	Dat
	Ubiquiti Net	Company						Job Number:	J82749	
							T-l	_og Number:	T82792	
Model	NanoStatior	n Loco M5						-	Susan Pelzl	
Contact	Jennifer Sa	nchez								
Standard	FCC 15E, R	SS-210						Class:	N/A	
		Spurious Em					-fabia data -		1.4	-in a d fa
		a gain used is nd the limit w		-					lots were obt	ained to
	-	umber of tran	•				inditaneouol	y		
		Maximum An								
			urious Limit:		dBm/MHz e	irp				
		Adjustment			dB adjustme	•	e chains.			
		_imit Used Or		12 0	dBm/MHz			z, VB=10Hz)		
	L		1 11015 .	-23.0	dBm/MHz	Peak Limit (	RB=VB=1MH	łz)		
Note 1: Note 2:	consideration more than 5 known at the	n/MHz limit is on the maximu 0MHz from th ese frequenci signals below	um antenna he bands and ies.	gain (limit = - d that are clo	-27dBm - anto ose to the limi	enna gain). I t are made to	Radiated field	d strength me compliance a	easurements	for sign
Note 3:		in 10MHz of								
Note 4:		is for outdoo			-					
Note 5:		fall in the res								
	ch chain sho	50 MHz Bano wing complian	d (5275 MHz nce with the	<b>z)</b> -27dBm/MHz		·	·		frequencies	set to 51
	Power		ge Level	Antenna		RP	Total EIRP	Limit		1
				Gain (dBi)	mW/MHz	dBm/MHz	dBm/MHz	dBm/MHz	Result	
	Setting	dBm/MHz	mW/MHz							
5250 MHz, Chain 1 Chain 2		dBm/MHz -43.5 -44.6	0.00004	13.0 13.0	0.0008851 0.000695	-30.5 -31.6	-28.0	-27	PASS	



# Client: Ubiquiti Networks Job Number: J82749 Model: NanoStation Loco M5 T-Log Number: T82792 Contact: Jennifer Sanchez Susan Pelzl Standard: FCC 15E, RSS-210 Class: N/A

### High channel, 5250 - 5350 MHz Band

Compliance with the radiated limits for the restricted band immediately above 5350MHz is demonstrated through the radiated emissions tests.



# Elliott

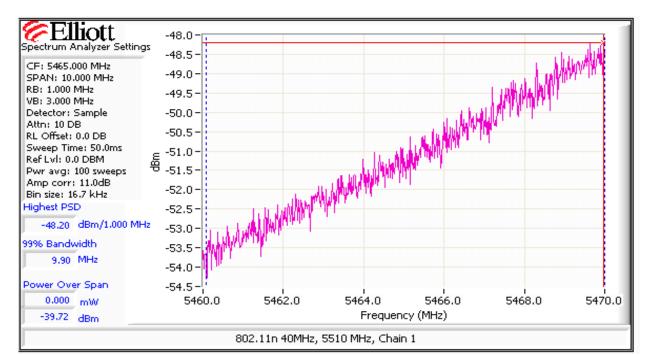
## EMC Test Data

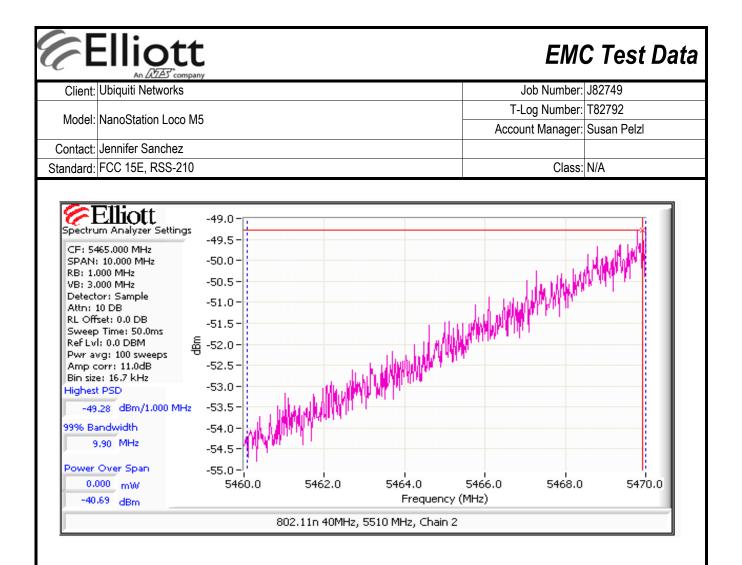
	An Durb company		
Client:	Ubiquiti Networks	Job Number:	J82749
Madal	NanoStation Loco M5	T-Log Number:	T82792
MOUEI.		Account Manager:	Susan Pelzl
Contact:	Jennifer Sanchez		
Standard:	FCC 15E, RSS-210	Class:	N/A

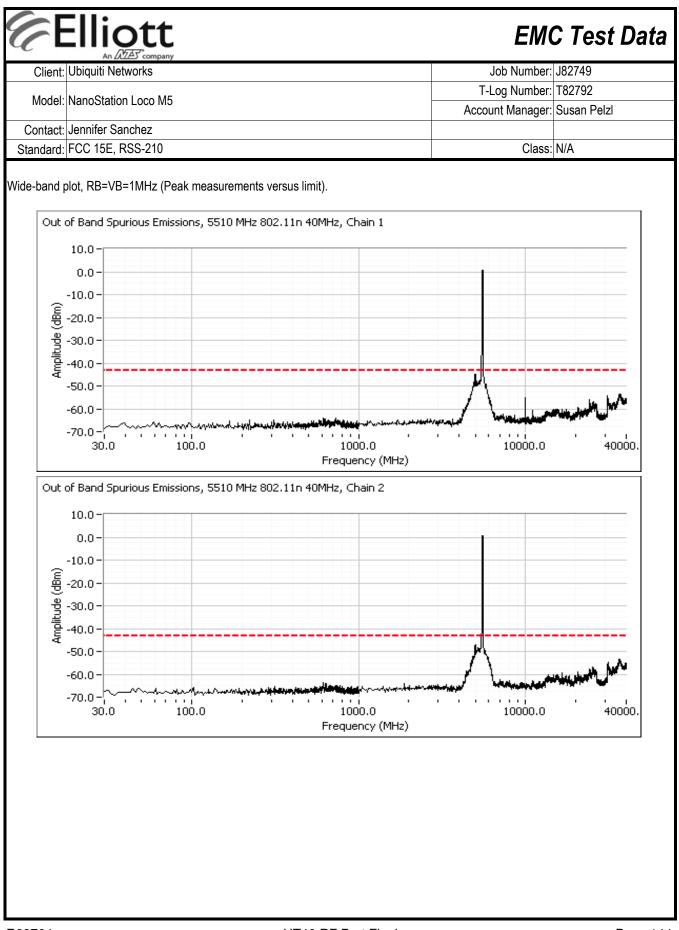
#### Low channel, 5470 - 5725 MHz Band

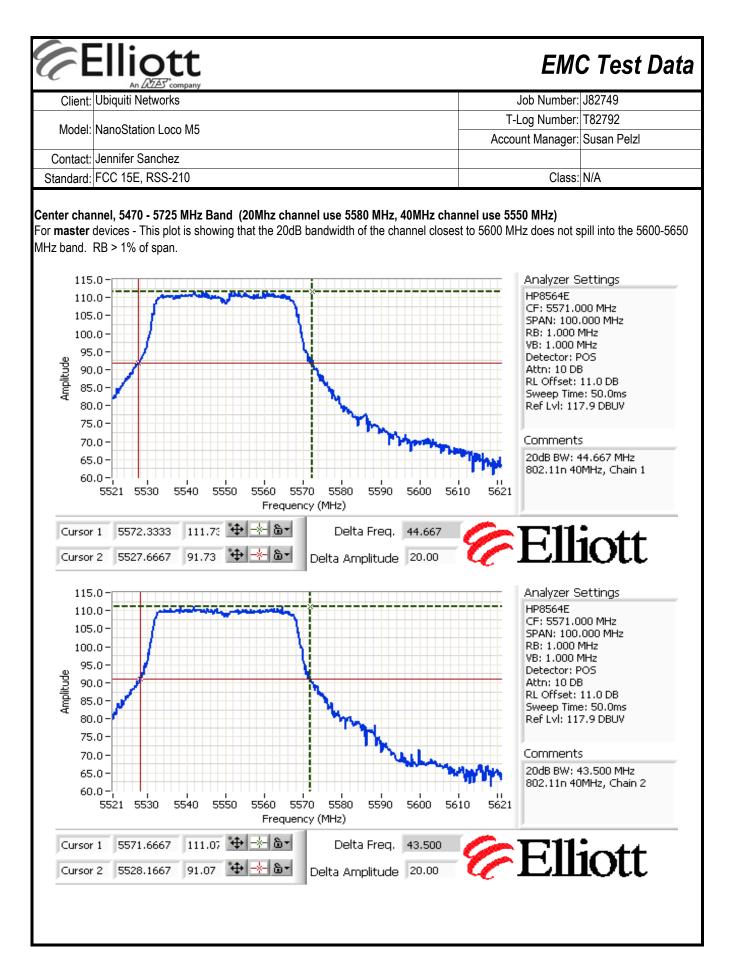
Plots for each chain showing compliance with the -27dBm/MHz limit for the 5460 - 5470 MHz band edge. Start and stop frequencies set to 5460-5470 MHz, RB=1MHz, VB=3MHz, power averaging enabled (100 traces). **Note** - compliance with the radiated limits for the restricted band immediately below 5460MHz is demonstrated through the radiated emissions tests.

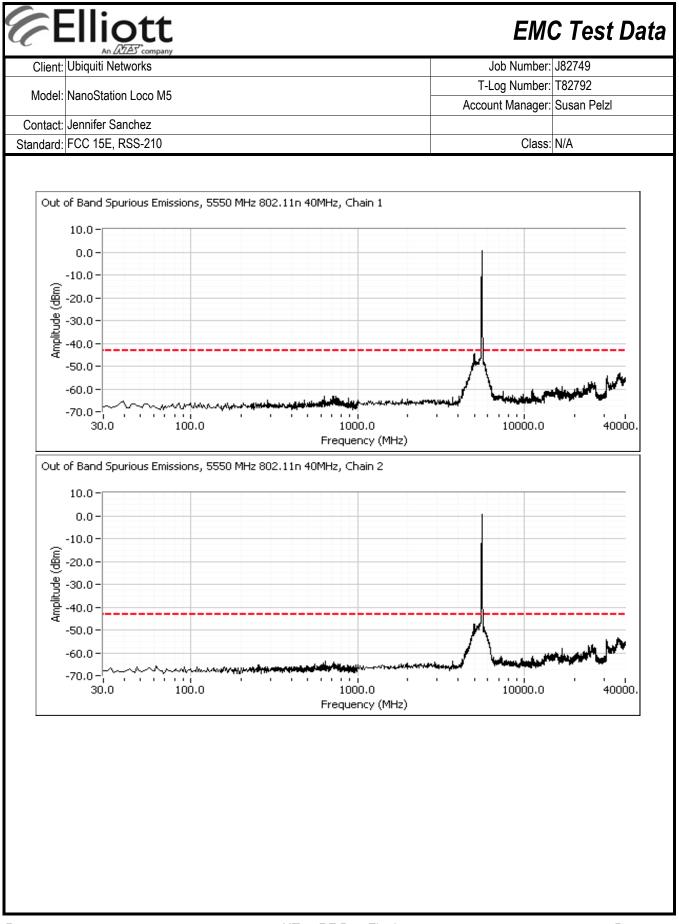
	Power	Band edge Level		Antenna	Ell	EIRP		Limit	Result
	Setting	dBm/MHz	mW/MHz	Gain (dBi)	mW/MHz	dBm/MHz	dBm/MHz	dBm/MHz	Result
Chain 1	9.5	-48.2	0.00002	13.0	0.000302	-35.2	-32.7	-27	PASS
Chain 2	9.0	-49.3	0.00001	13.0	0.0002344	-36.3	-32.1	-21	FA00

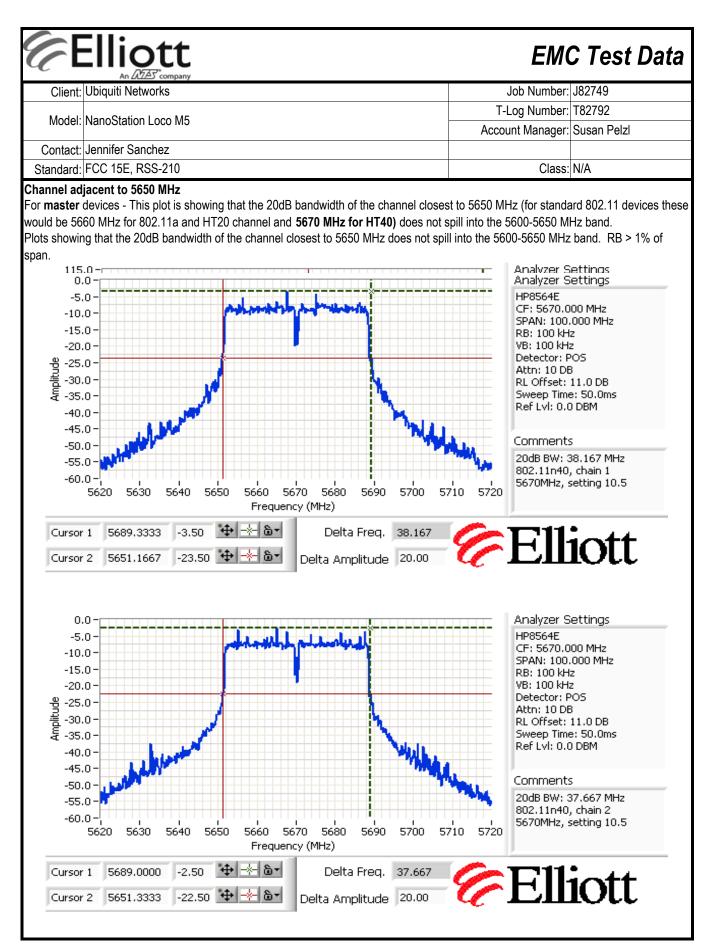










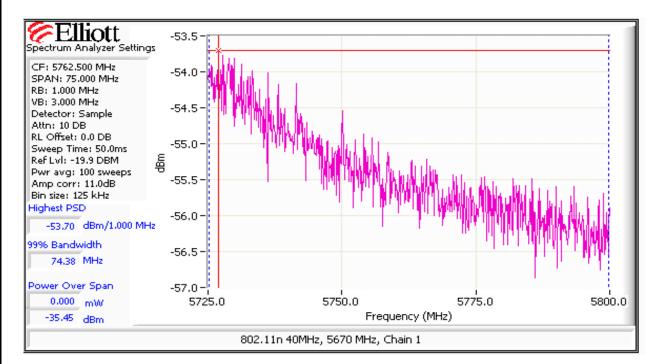


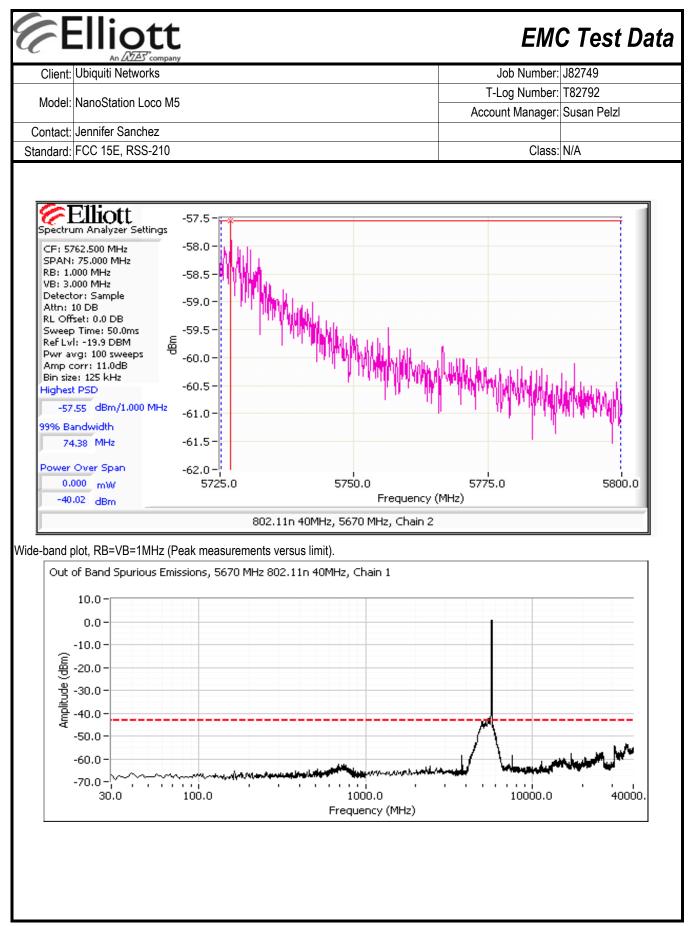
Œ	Elliott An DEAS' company	EMO	C Test Data
Client:	Ubiquiti Networks	Job Number:	J82749
Madalı	NanaStation Loss ME	T-Log Number:	T82792
woder.	NanoStation Loco M5	Account Manager:	Susan Pelzl
Contact:	Jennifer Sanchez		
Standard:	FCC 15E, RSS-210	Class:	N/A

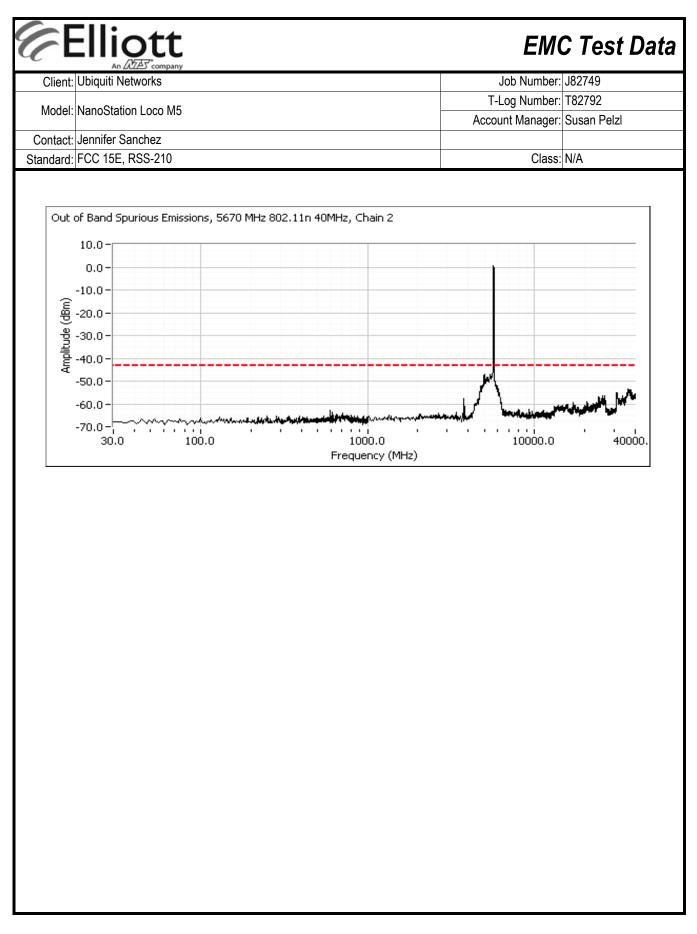
#### High channel, 5470 - 5725 MHz Band

Plots for each chain showing compliance with the -27dBm/MHz limit above the 5725MHz band edge. Start and stop frequencies set to 5725-5800 MHz, RB=1MHz, VB=3MHz, power averaging enabled (100 traces):

	Power	Band ed	ge Level	Antenna	Ell	RP	Total EIRP	Limit	Result
	Setting	dBm/MHz	mW/MHz	Gain (dBi)	mW/MHz	dBm/MHz	dBm/MHz	dBm/MHz	Resuit
Chain 1	10.5	-53.7	0.00000	13.0	8.511E-05	-40.7	-39.2	-27	PASS
Chain 2	10.5	-57.6	0.00000	13.0	3.508E-05	-44.6	-39.2	-21	FA00







# Elliott

## EMC Test Data

	An Z(ZA) company		
Client:	Ubiquiti Networks	Job Number:	J82749
Model	NanoStation Loco M5	T-Log Number:	T82792
Mouel.		Account Manager:	Susan Pelzl
Contact:	Jennifer Sanchez		
Standard:	FCC 15E, 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 and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located outside the chamber with cables routed beneath the floor.

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

#### Ambient Conditions:

Temperature:	20.4 °C
Rel. Humidity:	36 %

#### Summary of Results

Compliance with the -27dBm/MHz eirp limit in the frequency bands 5150-5250MHz, 5460-5470MHz and imediately above 5725 MHz is demonstarted through conducted measurements. Radiated measurements are used to demonstarte compliance in the 5350-5460MHz restricted band for the highest channel in the 5250-5350MHz band and the lowest channel in the 5470-5725 MHz band. Final power setting is the power setting that is at the maximum rating for that particular mode/channel. In all cases the measurements were made at or above the final power level.

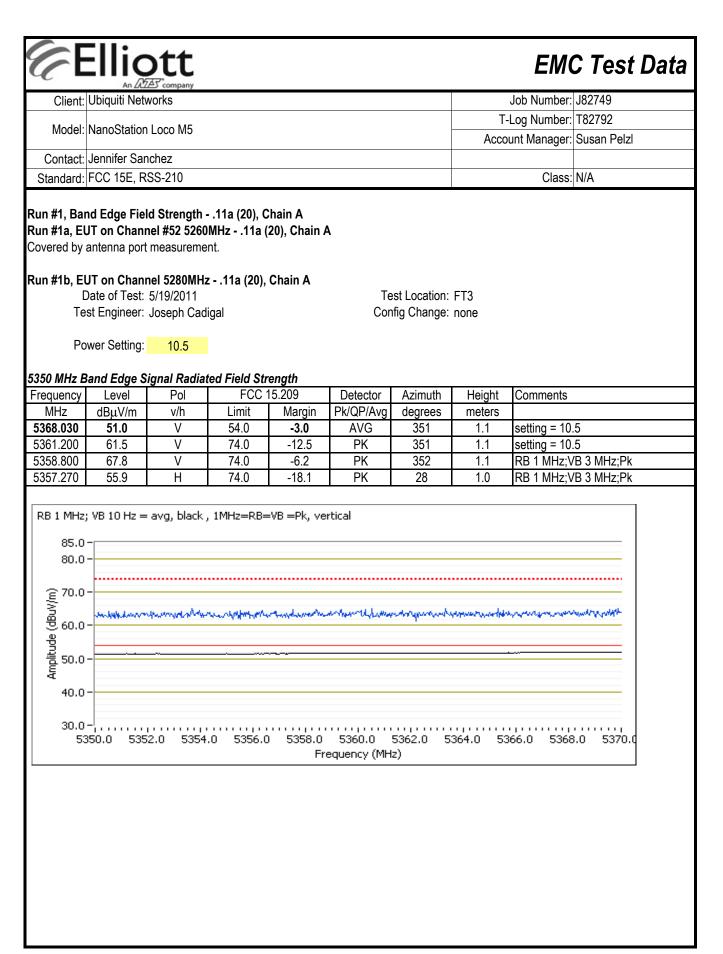
Run #	Mode	Channel	Final power Setting	Power Setting Tested	Test Performed	Limit	Result / Margin
Run #1	.11a (20) Chain A	5320MHz	5.0 (8 for adjacent channel)	11.0	Restricted Band Edge at 5350 MHz	15.209	53.8dBµV/m @ 5351.6MHz (-0.2dB)
		5500 MHz	12.0	12.0	Restricted Band Edge at 5460 MHz	15.209	52.1dBµV/m @ 5455.9MHz (-1.9dB)
Run # 3	HT20	#64 5320MHz	5.0	9.5	Restricted Band Edge at 5350 MHz	15.209	51.7dBµV/m @ 5350.1MHz (-2.3dB)
Kun # 3	Chain A+B	#100 5500MHz	9.0	11.5	Restricted Band Edge at 5460 MHz	15.209	52.1dBµV/m @ 5459.6MHz (-1.9dB)
		5275MHz	5.0	7.0	Restricted Band Edge at 5350 MHz	15.209	52.8dBµV/m @ 5350.3MHz (-1.2dB)
Run #4	HT40 Chain A+B	5310MHz	3.0	3.0	Restricted Band Edge at 5350 MHz	15.209	53.0dBµV/m @ 5350.4MHz (-1.0dB)
		#102 5510MHz	9.0	9.0	Restricted Band Edge at 5460 MHz	15.209	53.7dBµV/m @ 5459.9MHz (-0.3dB)

Client <sup>.</sup>	Ubiquiti Netv	vorks				Job Number:	182749
Oliont.						T-Log Number:	
Model:	NanoStation	Loco M5				Account Manager:	
Contact:	Jennifer Sar	nchez					
Standard:	FCC 15E, R	SS-210				Class:	N/A
Run #	Mode	Channel	Final power Setting	Power Setting Tested	Test Performed	Limit	Result / Margin
Run # 5	HT5	5340MHz	4.5	8.5	Restricted Band Edge at 5350 MHz	15.209	53.3dBµV/m @ 5350.0MHz (-0.7dE
Kull # 5	Chain A+B	5475 MHz	5.0	10.5	Restricted Band Edge at 5460 MHz	15.209	52.9dBµV/m @ 5459.1MHz (-1.1dE
D # C	HT8 Obain A. D	HT8 5330MHz	5.0	11.0	Restricted Band Edge at 5350 MHz	15.209	53.8dBµV/m @ 5350.3MHz (-0.2dE
Run # 6	Chain A+B	HT8 5475 MHz	4.5	11.0	Restricted Band Edge at 5460 MHz	15.209	53.5dBµV/m @ 5459.9MHz (-0.5dE
Jun # 7	HT10 Chain A - D	HT10 5330MHz	5.0	9.0	Restricted Band Edge at 5350 MHz	15.209	53.8dBµV/m @ 5351.7MHz (-0.2dE
Run # 7	Chain A+B	HT10 5480 MHz	6.0	10.5	Restricted Band Edge at 5460 MHz	15.209	52.5dBµV/m @ 5459.4MHz (-1.5dE
Dup # 9	HT30 Chain A - P	HT30 5315MHz	5.0	5.5	Restricted Band Edge at 5350 MHz	15.209	53.9dBµV/m @ 5350.0MHz (-0.1dl
Run # 8	Chain A+B	HT30 5500 MHz	8.0	9.5	Restricted Band Edge at 5460 MHz	15.209	53.7dBµV/m @ 5459.2MHz (-0.3dl

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.



Model: N	Jbiquiti Netv	vorks						Job Number: J82749
								Log Number: T82792
0							Acco	unt Manager: Susan Pelzl
	lennifer San							
Standard: F			44. (00)					Class: N/A
	ate of Test:		z11a (20),	Chain A	Τe	est Location:	FT3	
Test	t Engineer:	Joseph Cad	ligal		Cor	nfig Change:	none	
Pow	ver Setting:	10.0						
FUW	or ocurry.	10.0						
			ted Field Str			A_1	11.2.1.6	O
requency MHz	Level dBµV/m	Pol v/h	Limit	15.209 Margin	Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
5360.400	51.3	V	54.0	-2.7	AVG	350	1.0	setting = 10
5359.530	61.8	V	74.0	-12.2	PK	350	1.0	setting = 10
5361.730	44.5	Н	54.0	-9.5	AVG	31	1.0	RB 1 MHz;VB 10 Hz;Pk
356.830	56.4	Н	74.0	-17.6	PK	31	1.0	RB 1 MHz;VB 3 MHz;Pk
(m//vulture e0.0 - (m//vulture e0.0 - (m//vulture e0.0 - (m//vulture e0.0 - (m//vulture) e0.0 - (m//vultur	ityters og skiller for som					······		hyen bon klass nor et og fin k
-10.0								
30.0 - 535	50.0 535	2.0 5354	.0 5356.0	) 5358.0	5360.0 equency (MH	5362.0 5	364.0 53	366.0 5368.0 5370.0

Page 154

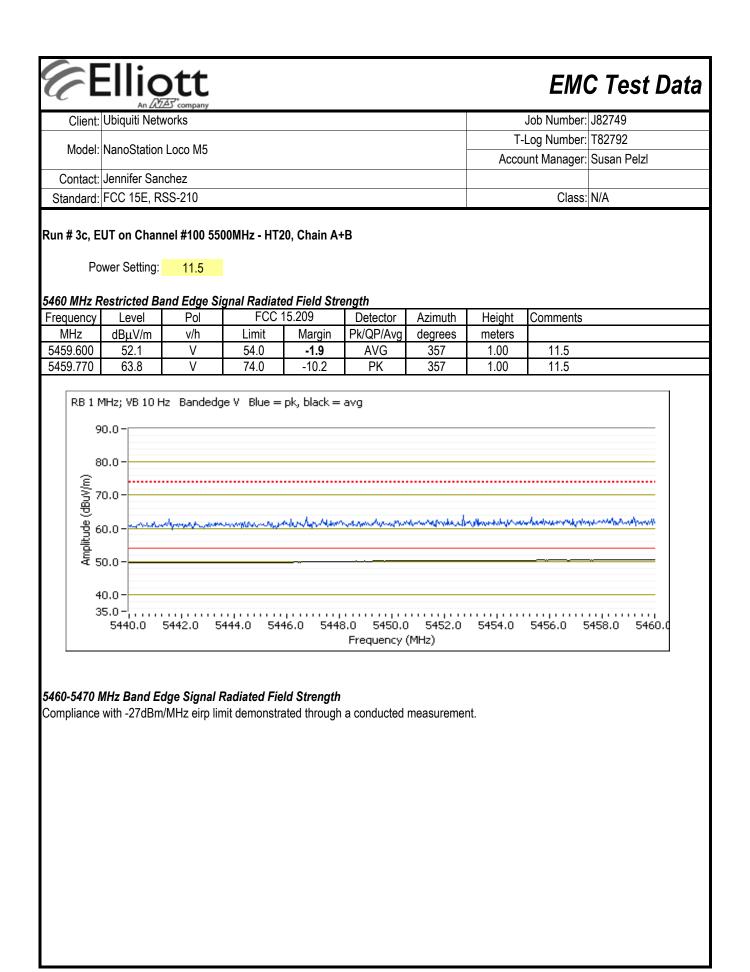
<b>C</b> E	Ellic	D <b>tt</b>						EM	C Test Data
Client:	Ubiquiti Net							Job Number:	J82749
Madal	NanoStation						T-	Log Number:	T82792
							Acco	unt Manager:	Susan Pelzl
	Jennifer Sar								
	FCC 15E, R							Class:	N/A
E Te Po	Date of Test: st Engineer: wer Setting:	5/9/2011 Joseph Cad 11.0			-	est Location: fig Change:			
			ted Field Str FCC 1		Detector	A —inecutio	Llaisht	Commonto	
Frequency MHz	Level dBµV/m	Pol v/h	Limit	5.209 Margin	Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments	
5358.300	53.2	V	54.0	-0.8	AVG	360	1.2	setting =11	
5361.130	65.0	V	74.0	-9.0	PK	360	1.2	setting =11	
5361.970	37.6	Н	54.0	-16.4	AVG	30	1.0	setting =11	
5366.070	49.3	Н	74.0	-24.7	PK	30	1.0	setting =11	
(m/kngp) 50.0 apnjiduw 30.0 20.0 53					5360.0 Sequency (MH	5362.0 53			

<b>E</b>	Ellic	D <b>tt</b>						EMO	C Test Data
Client:	Ubiquiti Netv							Job Number:	J82749
Model	NanoStation	Loso M5					T-	Log Number:	T82792
							Acco	unt Manager:	Susan Pelzl
	Jennifer San FCC 15E, R							Class:	N/A
E Te	<b>JT on Chanr</b> Date of Test: st Engineer: wer Setting:	5/9/2011		Chain A		est Location: ıfig Change:			
	and Edge S								
Frequency	Level	Pol	FCC 1		Detector	Azimuth	Height	Comments	
MHz 5357.600	dBµV/m <b>54.0</b>	v/h V	Limit 54.0	Margin 0.0	Pk/QP/Avg AVG	degrees 358	meters 1.1	setting = 11	
5363.970	<b>54.0</b> 65.3	V	54.0 74.0	-8.7	PK	358	1.1	setting = 11	
///ngp) 50.0 epn1ljdwy 30.0 20.0	- h,, do-bridanh, 							5351.0	

(CE	Elli	ott MAS company						EM	C Test Data
Client:		Networks						Job Number:	J82749
Madali	Nana Ch	tion Loop ME					T-	Log Number:	T82792
wodel:	Nanosta	ation Loco M5					Acco	unt Manager:	Susan Pelzl
		Sanchez							
Standard:	FCC 15	E, RSS-210						Class:	N/A
E Te Po	Date of T st Engine wer Sett <b>and Edg</b>	ge Signal Radiat	ted Field Str	ength	Te Con	st Location: fig Change:	none		
Frequency	Leve			15.209	Detector	Azimuth	Height	Comments	
MHz 5351.570	<u>dBµV/</u> 53.8		Limit 54.0	Margin -0.2	Pk/QP/Avg AVG	degrees 12	meters 1.00	Power Setti	ng
5351.570	70.9		74.0	-0.2	PK	12	1.00	11.0 11.0	
	50.0 - 40.0 -	.0 5352.0				.0 5362.0			

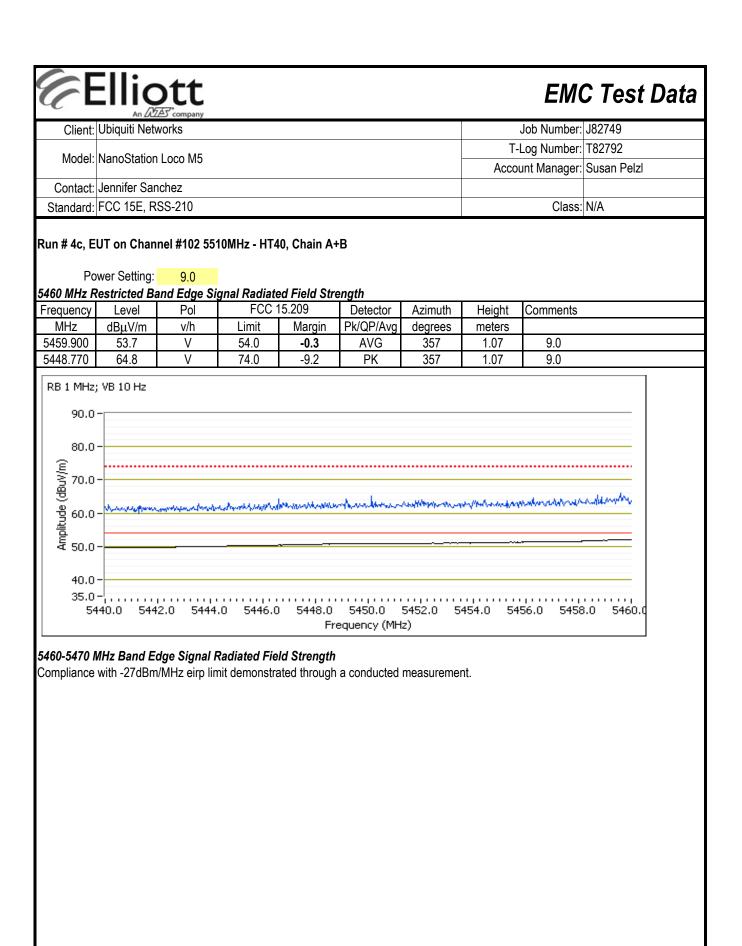
Client:       Ubiquiti Networks       Job Number:       J82749         Model:       NanoStation Loco M5       T-Log Number:       T82792         Contact:       Jennifer Sanchez       Account Manager:       Susan Pelzl         Contact:       Jennifer Sanchez       Class:       N/A         Standard:       FCC 15E, RSS-210       Class:       N/A         un #1c, EUT on Channel #100 5500MHz11a (20), Chain A       Power Setting:       12.0         Model:       12.0       12.0       12.0		Ellic	ott						EMO	C Test Data
Model:         NanoStation Loco M5         Account Manager:         Susan Pelzl           Contact:         Jennifer Sanchez         Class:         N/A           Standard:         FCC 15E, RSS-210         Class:         N/A           un #1c, EUT on Channel #100 5500MHz11a (20), Chain A         Power Setting:         12.0           f60 MHz Restricted Band Edge Signal Radiated Field Strength         For Market Strength           requency         Level         Pol         FCC 15.209         Detector         Azimuth         Height         Comments           MHz         dBµV/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters           455.900         52.1         V         54.0         -1.9         AVG         0         1.00           i457.230         62.8         V         74.0         -11.2         PK         0         1.00           g8.0.0         - <th></th> <th>An ZALZ</th> <th>Company</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>		An ZALZ	Company							
Contact:         Jennifer Sanchez           Standard:         FCC 15E, RSS-210         Class: N/A           un #1c, EUT on Channel #100 5500MHz11a (20), Chain A         Power Setting:         12.0 <i>I60 MHz Restricted Band Edge Signal Radiated Field Strength</i> requency         Level         Pol           FCC 15.2.09         Detector         Azimuth         Height         Comments           MHz         dBµV/m         vh         Limit         Margin         Pk/QP/Avg         degrees         meters           455.900         52.1         V         54.0         -1.9         AVG         0         1.00           457.230         62.8         V         74.0         -1.12         PK         0         1.00           90.0         -         -         -         11.2         PK         0         1.00           90.0         -         -         -         -         1.0         -         -           90.0         -         -         -         -         0         1.00         -           90.0         -         -         -         -         -         -         -         -         -           90.0         -	Model	NanoStation	Loco M5						-	
Standard:         FCC 15E, RSS-210         Class:         N/A           un #1c, EUT on Channel #100 5500MHz11a (20), Chain A         Power Setting:         12.0           f60 MHz Restricted Band Edge Signal Radiated Field Strength         requency         Level         Pol         FCC 15.209         Detector         Azimuth         Height         Comments           MHz         dBµV/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters           3455.900         52.1         V         54.0         -1.9         AVG         0         1.00           i457.230         62.8         V         74.0         -11.2         PK         0         1.00           g9.0         -         -         -         -         -         -         -           g9.0         -         -         -         -         -         -         -           g9.0         -         -         -         -         -         -         -           g9.0         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         <	Contact:	Jennifer San	chez					ACCO	unt manager.	Susan Peizi
Power Setting:       12.0         160 MHz Restricted Band Edge Signal Radiated Field Strength         requency       Level       Pol       FCC 15.209       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters	Standard:	FCC 15E, R	SS-210						Class:	N/A
Ido MHz Restricted Band Edge Signal Radiated Field Strength         requency       Level       Pol       FCC 15.209       Detector       Azimuth       Height       Comments         MHz       dBµV/m       v/h       Limit       Margin       Pk/QP/Avg       degrees       meters         5455.900       52.1       V       54.0       -1.9       AVG       0       1.00         5455.230       62.8       V       74.0       -11.2       PK       0       1.00         RB 1 MHz; VB 10 Hz       Bandedge V       Blue = pk, black = avg       95.0       90.0	un #1c, E	UT on Chanr	iel #100 550	0MHz11a	(20), Chain	A				
requency         Level         Pol         FCC 15.209         Detector         Azimuth         Height         Comments           MHz         dBµV/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters           3455.900         52.1         V         54.0         -1.9         AVG         0         1.00           3457.230         62.8         V         74.0         -11.2         PK         0         1.00           RB 1 MHz; VB 10 Hz         Bandedge V         Blue = pk, black = avg         95.0         90.0         -         -           90.0         -         -         -         -         -         -         -           90.0         -         -         -         -         -         -         -           90.0         -         -         -         -         -         -         -           90.0         -         -         -         -         -         -         -           90.0         -         -         -         -         -         -         -           90.0         -         -         -         -         -         -         <	Po	ower Setting:	12.0							
requency         Level         Pol         FCC 15.209         Detector         Azimuth         Height         Comments           MHz         dBµV/m         v/h         Limit         Margin         Pk/QP/Avg         degrees         meters           3455.900         52.1         V         54.0         -1.9         AVG         0         1.00           3457.230         62.8         V         74.0         -11.2         PK         0         1.00           RB 1 MHz; VB 10 Hz         Bandedge V         Blue = pk, black = avg         95.0         90.0         -         -           90.0         -         -         -         -         -         -         -           90.0         -         -         -         -         -         -         -           90.0         -         -         -         -         -         -         -           90.0         -         -         -         -         -         -         -           90.0         -         -         -         -         -         -         -           90.0         -         -         -         -         -         -         <	160 MHz I	Restricted Ba	nd Edae Si	anal Radiate	ed Field Stre	enath				
S455.900       52.1       V       54.0       -1.9       AVG       0       1.00         S457.230       62.8       V       74.0       -11.2       PK       0       1.00         RB 1 MHz; VB 10 Hz       Bandedge V       Blue = pk, black = avg       95.0       90.0<	requency	Level	Pol	FCC <sup>2</sup>	15.209	Detector		<u> </u>	Comments	
3457.230         62.8         V         74.0         -11.2         PK         0         1.00           RB 1 MHz; VB 10 Hz         Bandedge V         Blue = pk, black = avg         95.0         90.0					<u> </u>	U U				
RB 1 MHz; VB 10 Hz       Bandedge V       Blue = pk, black = avg         95.0       90.0         90.0       90.0         (W) 09       90.0         90.0       90.0         90.0       90.0         (W) 09       90.0         90.0       90.0							-			
Trequency (mrz)	tude (dBuV/m)	70.0-		Arres Brown Mar			unia destrutadore	ahrran	munulastatication	anter a survey and a survey of the

Client:	Ubiquiti Net	works						Job Number:	
Model:	NanoStatior	Loco M5						Log Number:	
Contact	Jennifer Sar	ichez					Accou	unt Manager:	Susan Pelzl
	FCC 15E, R							Class:	N/A
i <b>n # 3a, E</b> 50 MHz E easured c	UT on Chan Band Edge S onducted.	eld Strength nel #52 5260 <i>ignal Radiat</i> nel #64 5320	0MHz - HT20 ted Field Str	), Chain A+E rength					
	Date of Test:					est Location:	FT7		
Те	st Engineer:	John Caizzi			Cor	nfig Change:	none		
Pc	wer Setting:	9.5							
	-								
requency	Level	<b>ignal Radiat</b> Pol		rength 15.209	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
350.130 355.530	51.7 63.7	V	54.0 74.0	<b>-2.3</b> -10.3	AVG PK	0	1.10 1.10	9.5 9.5	
(m//m)	80.0 - 70.0 - 60.0 - 50.0 -	mondation	han an a	and for the state of	da, Azetheringano	un koka da	abor reported	alanat mata	tulistikan prikopy
Amp	50.0								
	40.0-								

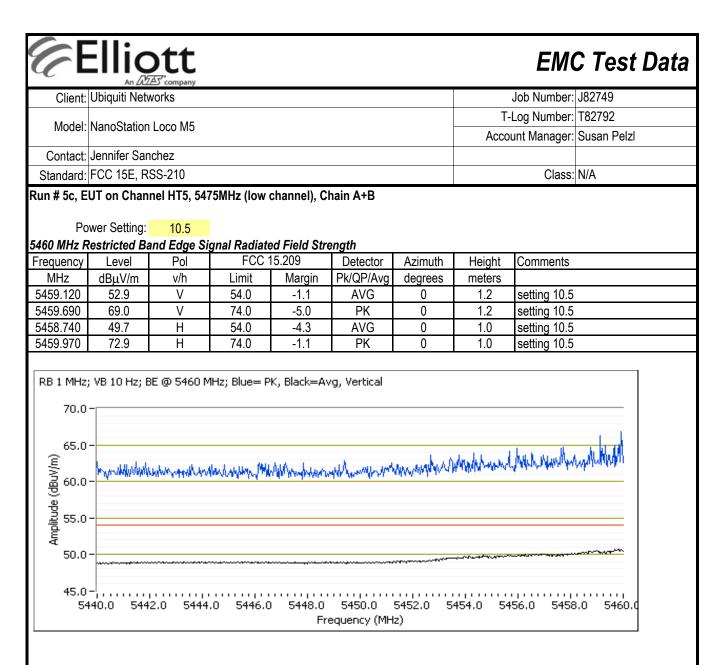


UIGIN	Ubiquiti Netv	works						Job Number:	J82749
							Ţ	Log Number:	
Model	NanoStation	Loco M5						unt Manager:	
Contact	Jennifer Sar	nchez							
tandard	FCC 15E, R	SS-210						Class:	N/A
ipliance # 4b, I	EUT on Chan	MHz eirp lir nel #5275M	nit demonstr	ated through	ain A+B a conducted	measuremei	nt.		
	Date of Test:					st Location:	-		
10	est Engineer:	Joseph Cad	igal		Con	fig Change:	none		
Р	ower Setting:	7.0							
50 MHz requency	Band Edge S Level	ignal Radia Pol	ted Field Sti	r <b>ength</b> 15.209	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Commenta	
350.270	52.8	V	54.0	-1.2	AVG	355	1.0	MHz;VB 10	Hz:Pk
354.230	51.9	Н	54.0	-2.1	AVG	13	1.2	MHz;VB 10	
55.070	64.4	V	74.0	-9.6	PK	355	1.0	MHz;VB 3 M	
50.230	63.0	Н	74.0	-11.0	PK	13	1.2	MHz;VB 3 M	
85.0									
85.0 80.0 (@ 70.0 (@ 70.0 9) 60.0	1- 1- 1-	tah manaharah dari	had all and the second	nn halalan	total and the second second	al francisco	dana dana da	wrwhwy.ww	when the
80.0 (m( 70.0 (m/\m) 60.0	-  -  -  -	ratur and the state of the stat	4,0.1,1.19h-01,00,14-00	mmphayma	44MMMAA4~~~	al que de cara de cara Como de cara de	danda yana ya	wyrwinwy ordd	w.hr.Men

	Ellic	D <b>tt</b>						EMO	C Test Dat
Client	Ubiquiti Net							Job Number:	J82749
Madal	: NanoStation						T-Log Number: T82792		T82792
							Account Manager: Susan Pelzl		
	: Jennifer Sar								
Standard	: FCC 15E, R	SS-210						Class:	N/A
·	E <b>UT on Chan</b> Date of Test:	5/9/2011		), Chain A+	Te	est Location:			
	est Engineer:		igal		Con	fig Change:	none		
	ower Setting: <b>Band Edge S</b>	3.0 Jignal Radiat	tad Fiald Sti	ronath					
requency		Pol		15.209	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
350.400	53.0	V	54.0	-1.0	AVG	0	1.4	setting = 3	
350.370	51.0	H	54.0	-3.0	AVG	360	1.1	setting = 3	
351.230	64.0	V	74.0	-10.0	PK	0	1.4	setting = 3	
350.230	61.8	Н	74.0	-12.2	PK	360	1.1	setting = 3	
(@/\ngp) 40.0 ephilode W 30.0 ephilode 20.0	)							~~~~	
5	350.0 535	2.0 5354	.0 5356.0	) 5358.0	5360.0 equency (MH	5362.0 53	364.0 53	366.0 5368	.0 5370.0

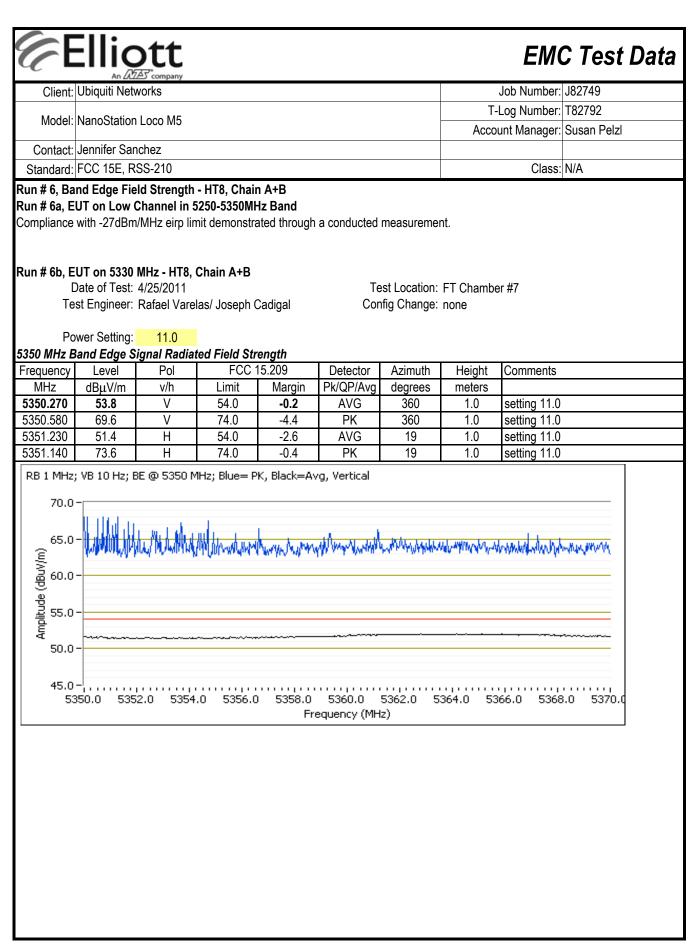


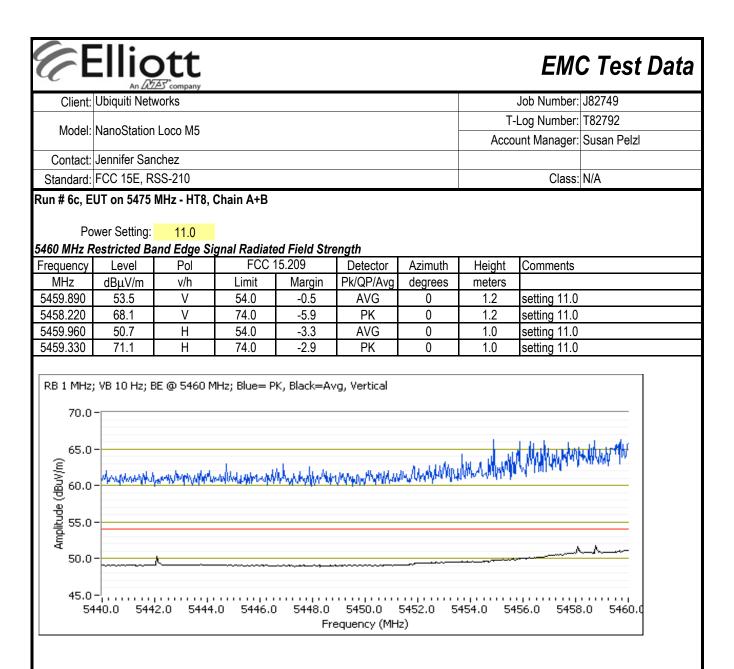
Client:	Ubiquiti Net	works					Job Number: J82749		
Madali	NanoStation						T-I	Log Number: T82792	
				Αссοι	unt Manager: Susan Pelzl				
	Jennifer Sar								
	FCC 15E, R							Class: N/A	
un # 5a, E 250 MHz E	nd Edge Fie UT on Low ( Band Edge S with -27dBm	Channel <i>ignal Radia</i> t	ted Field Str	ength	a conducted	measuremer	nt.		
	<b>UT on 5340</b> Date of Test:		Chain A+B		Te	est Location:	FT Chambe	r #7	
	st Engineer:		las/Joseph C	adigal		fig Change:		1 // /	
n-	wor Cotting	0 5	-						
	ower Setting: Band Edge S	8.5 ignal Radiat	ted Field Str	ength					
Frequency	Level	Pol	FCC <sup>2</sup>	5.209	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
<b>5350.020</b> 5352.850	<b>53.3</b> 68.7	V	54.0 74.0	<b>-0.7</b> -5.3	AVG PK	360 360	1.0 1.0	setting 8.5	
5352.850	51.0	V H	74.0 54.0	-5.5 -3.0	AVG	17	1.0	setting 8.5 RB 1 MHz;VB 10 Hz;Pk	
5352.890	72.0	H	74.0	-2.0	PK	17	1.0	RB 1 MHz;VB 3 MHz;Pk	
70.0 65.0 60.0 55.0 55.0 50.0	- 444444	2.0 5354	.0 5356.0			5362.0 5:		A	



#### 5460-5470 MHz Band Edge Signal Radiated Field Strength

Compliance with -27dBm/MHz eirp limit demonstrated through a conducted measurement.

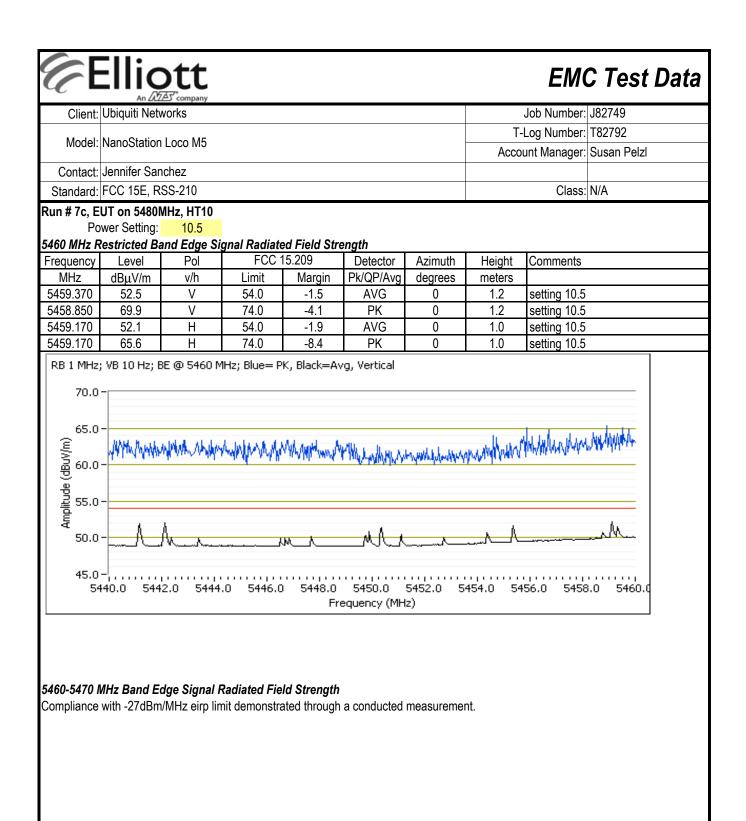


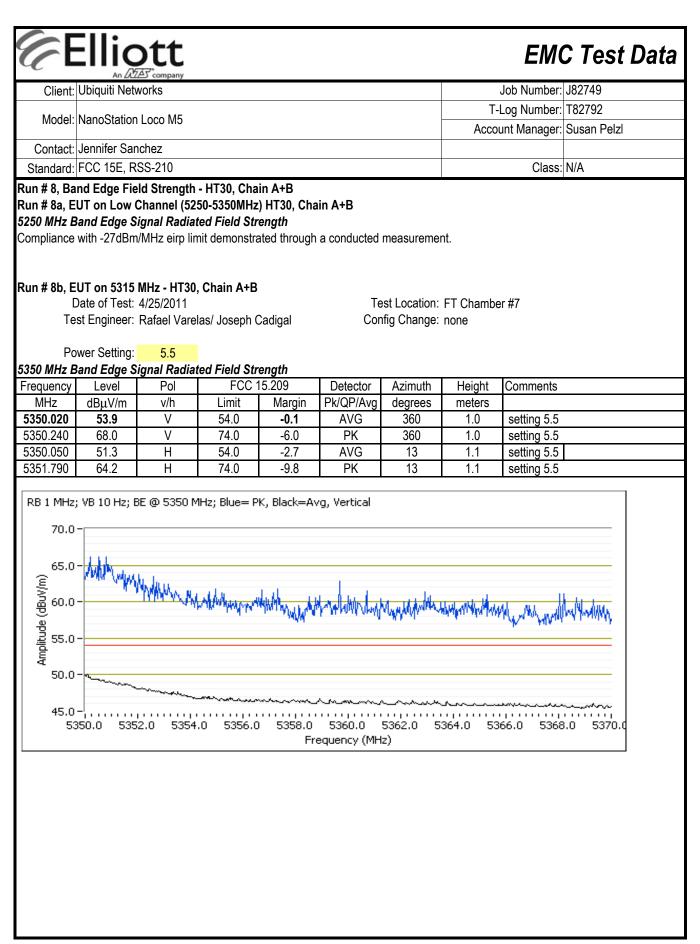


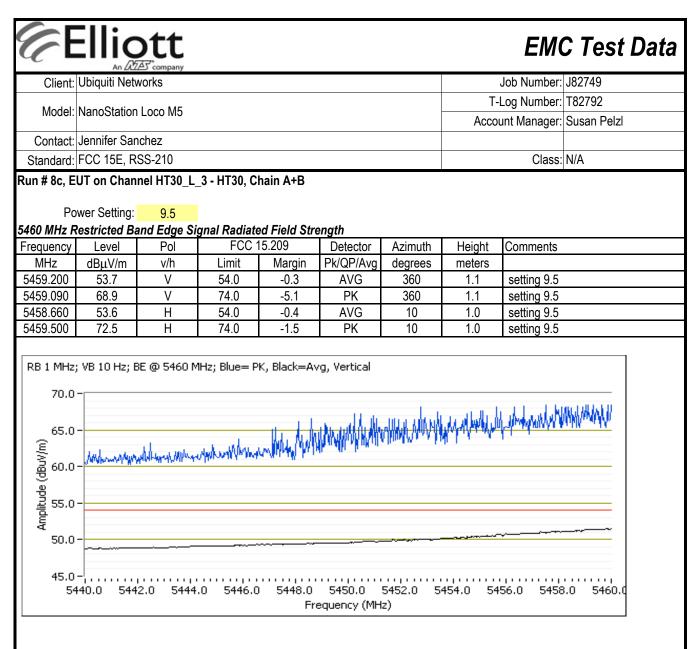
#### 5460-5470 MHz Band Edge Signal Radiated Field Strength

Compliance with -27dBm/MHz eirp limit demonstrated through a conducted measurement.

		∆ company						Job Number:	1827/0
							T-Log Number: T82792		
Model:	NanoStation	Loco M5						-	Susan Pelzl
Contact:	Jennifer Sar	chez							
Standard:	FCC 15E, R	SS-210						Class:	N/A
un # 7a, E 250 MHz E	nd Edge Fie UT on Low ( Band Edge S with -27dBm	Channel (52 ignal Radiat	50-5350MHz ted Field Str	) - HT10, Ch e <i>ngth</i>	ain A+B a conducted	measuremer	nt.		
	UT on 5330		Chain A+B		-			<i>u</i> <b>-</b>	
	Date of Test: est Engineer:		las/Josenh C	adinal		est Location: fig Change:		r#/	
					001				
	ower Setting: Band Edge S	9.0 ional Radiai	ted Field Str	enath					
Frequency	Level	Pol	FCC 2	15.209	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg		meters		
<b>5351.700</b> 5350.200	<b>53.8</b> 67.7	V V	54.0 74.0	<b>-0.2</b> -6.3	AVG PK	0	1.0 1.0	setting 9.0 setting 9.0	
5350.200	52.0	H	54.0	-2.0	AVG	13	1.1	setting 9.0	
5352.130	69.5	Н	74.0	-4.5	PK	13	1.1	setting 9.0	
75.0 70.0 (m/\ng) 65.0 60.0 55.0	- Hanpanad	. 1			nhunnunnun V-VL				undrynadtha v







#### 5460-5470 MHz Band Edge Signal Radiated Field Strength

Compliance with -27dBm/MHz eirp limit demonstrated through a conducted measurement.

						EMO	C Test Dat
Client:	Ubiquiti Net	works				Job Number:	J82749
Madal	NanoStation	Loop M5				T-Log Number:	T82792
Model.	NanoStation					Account Manager:	Susan Pelzl
	Jennifer Sar						
Standard:	FCC 15E, R	SS-210				Class:	N/A
	R	RSS 210 a	and FCC	15.407 (	UNII) Radiated Sr	ourious Emission	IS
Test Spe	cific Detai	Is					
	Objective:		e of this test i listed above		perform final qualification	n testing of the EUT with r	espect to the
I	Date of Test:	5/9 & 6/1/20	11		Config. Used:	1	
	•	•	igal/R. Varela	as	Config Change:		
Te	est Location:	FT Chambe	r#4		EUT Voltage:	POE	
Ambient	Condition	Т	emperature: el. Humidity:	20.4 36			
Summarv	/ of Result	S					
			ng that is at th	ne maximum	rating for that particular n	node/channel. In all case	s the measurements
	at or above t	•					
			•		5350 MHz Band. The cent		
					nels for that worst-case N 5250-5350MHz band.	IIMO mode and for the 80	2.11a SISO mode we
Run #	Mode	Channel	Final power Setting	Power Setting	Test Performed	Limit	Result / Margin
run#	woue	Charmer	Power	Tested	restrenomed	Linin	i tesuit / margin
	802.11a	#60					53.5dBµV/m @
	Chain A	5300MHz	8.0	8.0			5416.7MHz (-0.5dl
		5300MHz	7.5	7.5	1		52.1dBµV/m @
		HT20	1.5	1.J			5418.2MHz (-1.9dl
		5310MHz	3.0	9.0			47.2dBµV/m @
		HT40 5300MHz			Radiated Emissions,		4982.0MHz (-6.8dl 52.1dBµV/m @
Run #1	MIMO	HT5	4.5	4.5	1 - 40 GHz	FCC 15.209 / 15 E	5429.9MHz (-1.9dl
modes							50 EdBui\//m @

5300MHz

HT8 5300MHz

HT10

5300MHz

HT30

5.5

6.0

8.0

6.0

6.0

8.0

Chain A+B

50.5dBµV/m @

5426.6MHz (-3.5dB)

52.4dBµV/m @

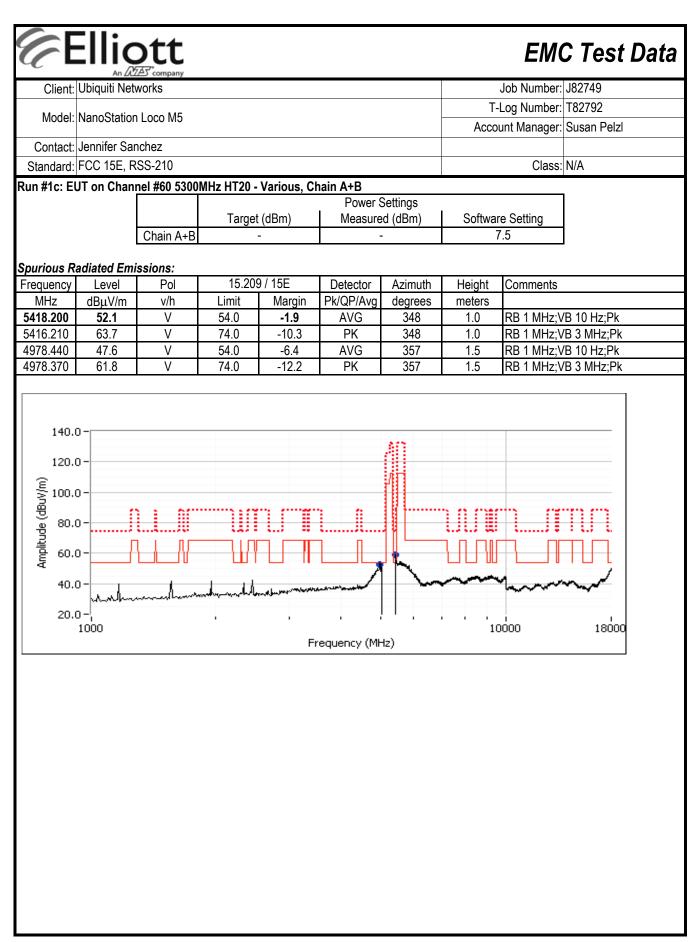
5416.2MHz (-1.6dB)

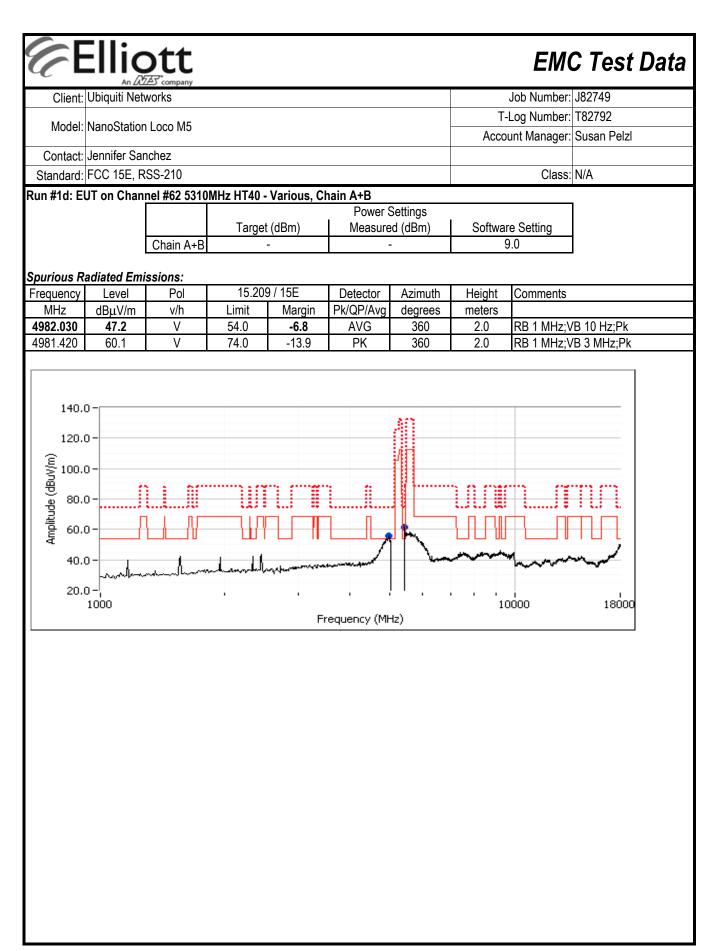
53.4dBµV/m @

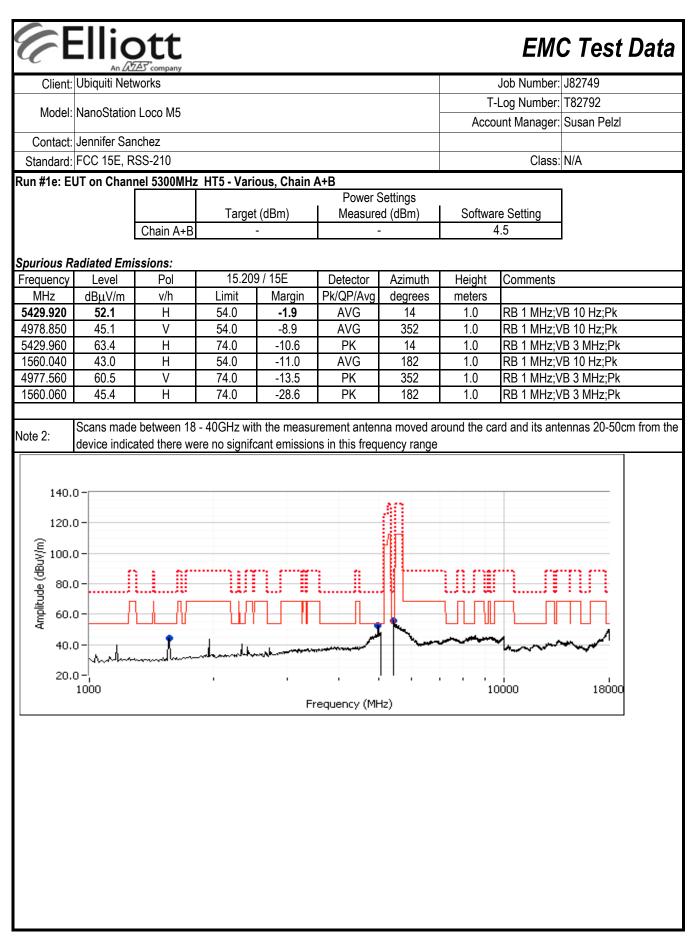
5417.8MHz (-0.6dB)

		A∑ company					100740
Client:	Ubiquiti Netw	vorks				Job Number:	
Model:	NanoStation	Loco M5				T-Log Number: Account Manager:	
Contact:	Jennifer San	ichez					
Standard:	FCC 15E, R	SS-210				Class:	N/A
etermine th	ne worst-case	MIMO mod	e. The high a	nd low chan	5725 MHz Band. The cent nels for that worst-case M 5470-5725MHz band.		
Run #	Mode	Channel	Final power Setting Power	Power Setting Tested	Test Performed	Limit	Result / Margin
	802.11a Chain A	5580MHz 802.11a	12.0	12.0	Radiated Emissions,	FCC 15.209 / 15 E	51.1dBµV/m @ 5370.5MHz (-2.9dB
		5580MHz HT20	11.5	11.5	1 - 40 GHz		53.8dBµV/m @ 5372.8MHz (-0.2dB
		5550MHz HT40	9.5	10.5	Dedicted Emissions	FCC 15.209 / 15 E	52.8dBµV/m @ 5371.8MHz (-1.2dB
Run # 2	MIMO modes	5595MHz HT5	4.5	5.5	Radiated Emissions, 1 - 40 GHz		50.0dBµV/m @ 5372.0MHz (-4.0dB
	Chain A+B	5595MHz HT8	5.5	5.5			46.8dBµV/m @ 5372.6MHz (-7.2dB
		5300 MHz HT10 5300MHz	6.5	6.5	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	52.0dBµV/m @ 5457.3MHz (-2.0dB 52.2dBµV/m @
inal moasu	romonto ton	HT30	8.0 channol in SI	8.0	nd worst case MIMO mode	in each hand:	5451.3MHz (-1.8dB
	rements, top	5270MHz	8.0	8.0			51.4dBµV/m @ 5450.5MHz (-2.6dB
Run # 3	802.11a	5320MHz	5.0	5.0			52.4dBµV/m @ 5456.4MHz (-1.6dB
Rull # 3	Chain A	5500MHz	12.0	12.0			53.2dBµV/m @ 5356.7MHz (-0.8dB
		5700MHz	9.0	9.0	Radiated Emissions,	FCC 15.209 / 15 E	53.5dBµV/m @ 5353.0MHz (-0.5dB
		5275MHz HT30	5.0	5.0	1 - 40 GHz	1 00 10.2037 13 E	53.8dBµV/m @ 5456.0MHz (-0.2dB
Run #4	MIMO modes	5315MHz HT30	5.0	5.0			53.1dBµV/m @ 5451.1MHz (-0.9dB
	Chain A+B	5500MHz HT20	9.0	9.0			52.8dBµV/m @ 5352.5MHz (-1.2dB
		5700MHz HT20	8.5	8.5			52.1dBµV/m @ 5351.9MHz (-1.9dB
eceiver S <sub>l</sub>							
Run #5	Receive Mode	5300 MHz	N/A	-	Radiated Emissions,	RSS GEN	31.8dBµV/m @ 1275.4MHz (-22.2dE
	Chains A+B	5580 MHz	N/A	-	1 - 18 GHz		43.0dBµV/m @ 1440.0MHz (-11.0dB

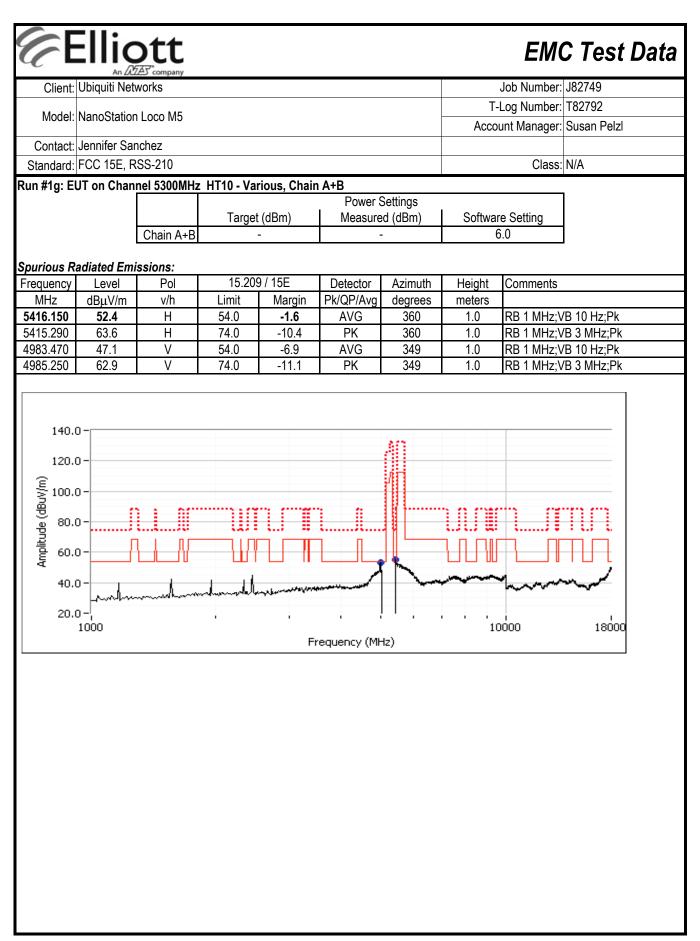
	-11: -									
		Company						EMO	C Test	Data
Client:	Ubiquiti Net	works						Job Number:	J82749	
Model	NanoStation	Loco M5					T-l	Log Number:	T82792	
							Αςςοι	unt Manager:	Susan Pelzl	
	Jennifer Sar FCC 15E, R							Class:	N/A	
			ooting					01000.	14/74	
Modificati No modificat		-	•	tina						
			<b>J</b>	5						
Deviation	s From Th	ne Standar	ď							
No deviation	s were made	e from the red	quirements o	f the standar	rd.					
Run #1, Rad	liated Spuri	ous Emissic	ons. 1-40GH	z. Various. (	Chain A+B					
	Date of Test:			,		st Location:	FTChamber	#4		
Te	st Engineer:	Joseph Cad	igal		Cor	fig Change:	none			
		al have de 14	limit - f 45 O	· ۱۰۰۰	Fac all 10		the line if the f			))) ))
							the limit is -2	zı anm eirb (6	68.3dBuV/m @	<i>უ</i> კლ),
measureu us	sing ther sall			-ballu PSD (	power averag	nny).				
Run #1a: El	JT on Chani	nel #60 5300	<u>MHz 80</u> 2.11	<u>a - Chai</u> n A					_	
					Power S	-				
			Target	(dBm)	Measure	d (dBm)	Software Setting			
		Chain A		-	-		8.0			
Sourious R	adiated Emi	ssions <sup>.</sup>								
Frequency	Level	Pol	15.209	)/15E	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5416.670	53.5	V	54.0	-0.5	AVG	350	1.5	RB 1 MHz;V		
5415.170	63.5	V	74.0	-10.5	PK	350		RB 1 MHz;V		
4975.730	49.6	V	54.0	-4.4	AVG	350	1.5	RB 1 MHz;V		
4974.670	64.0	V	74.0	-10.0	PK	350	1.5	RB 1 MHz;V	/B 3 MHz;Pk	
	Scans made	between 18	- 40GHz wit	h the measu	rement anten	na moved ar	round the car	rd and its ant	ennas 20-50c	m from the
Note 2:					ns in this frequ					
140.0	)-[									
						AO -				
120.0	)-									
Ê 100.0						11				
 	· .									
<u> </u>	)-									
Amplitude (dBuV/m) 9.08 (dBuV/m) 9.09 (dBuV/m)	- F				п п	][[				
면 60.0 북		l I I I I I	Шľ						ΙUΙ	
40.0		8.		a barrent barrent		<b>`</b> ~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	harrow	m	
20.4	2-hr.nlm	موادر سيها ليريب ماود	14-98-5-98/-6-97-98/-64/	14 V m						
20.0	1000							; 1000	18000	
				Fr	requency (MH	łz)				

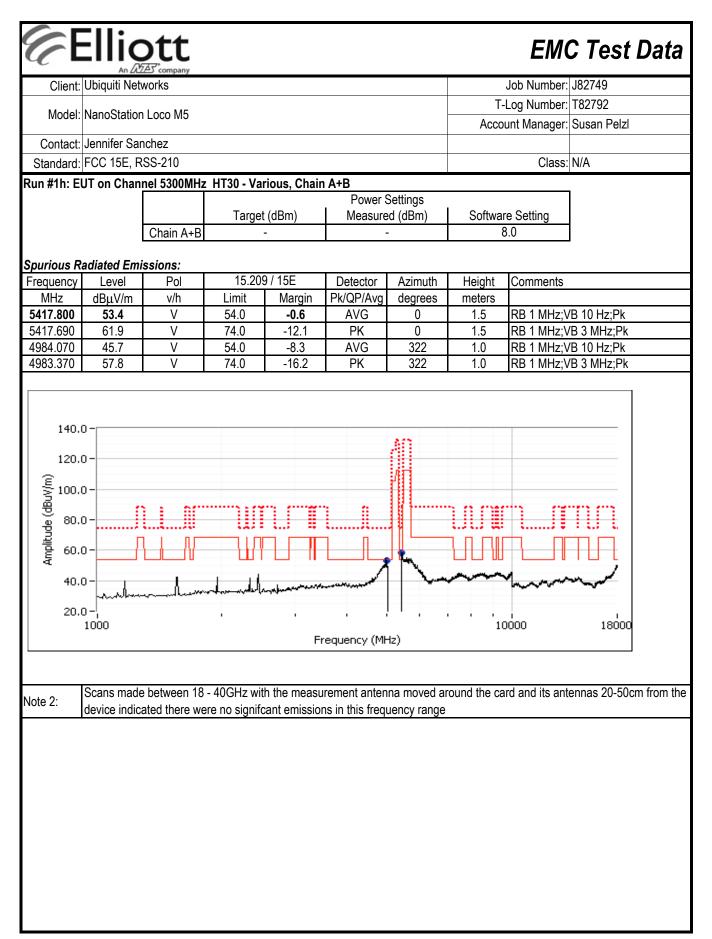


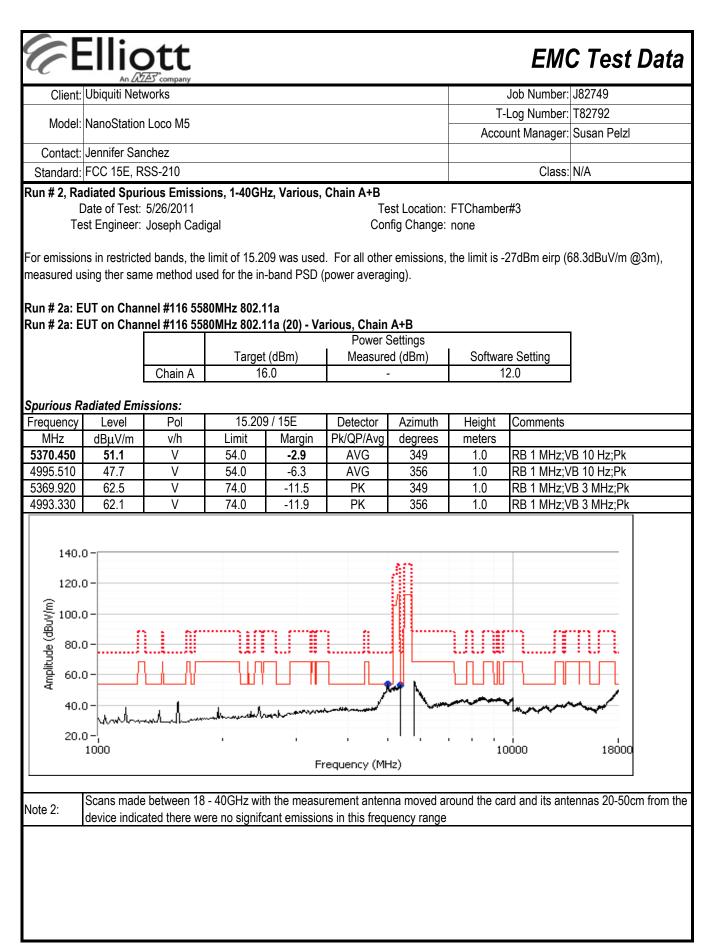




		2								
		Dtt Ar <sup>*</sup> company						EM	C Test Data	
Client:	Ubiquiti Net	works					Job Number: J82749			
Model:	NanoStatior	Loco M5					T-Log Number: T82792			
							Acco	unt Manager:	Susan Pelzl	
	Jennifer Sar							Class	NI/A	
	FCC 15E, R			Chain (				Class:	N/A	
Run #11: EC	on Chanr	el 5300MHz	HIO - Vario	ous, chain r	Power S	Settinas				
	Target (dBm) Measured (dBm)						Softwar	e Setting		
		Chain A+B		-	-		6	5.0		
Sourious P	adiated Emi	ssions.								
Frequency	Level	Pol	15.209	9 / 15E	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5426.640	50.5	Н	54.0	-3.5	AVG	12	1.3	RB 1 MHz;\		
4997.500 1560.010	46.1 43.6	V H	54.0 54.0	-7.9 -10.4	AVG AVG	345 163	1.3 1.0	RB 1 MHz;\ RB 1 MHz;\		
5425.990	43.6 61.4	H H	54.0 74.0	-10.4 -12.6	PK	103	1.0		/B 3 MHz;Pk	
4996.740	60.2	V	74.0	-13.8	PK	345	1.3		/B 3 MHz;Pk	
1560.060	45.9	Н	74.0	-28.1	PK	163	1.0	RB 1 MHz;\	/B 3 MHz;Pk	
120. (w/\ngp) apn1/dwy 60. 40. 20.	0- 0- 0- 0-				requency (MH					

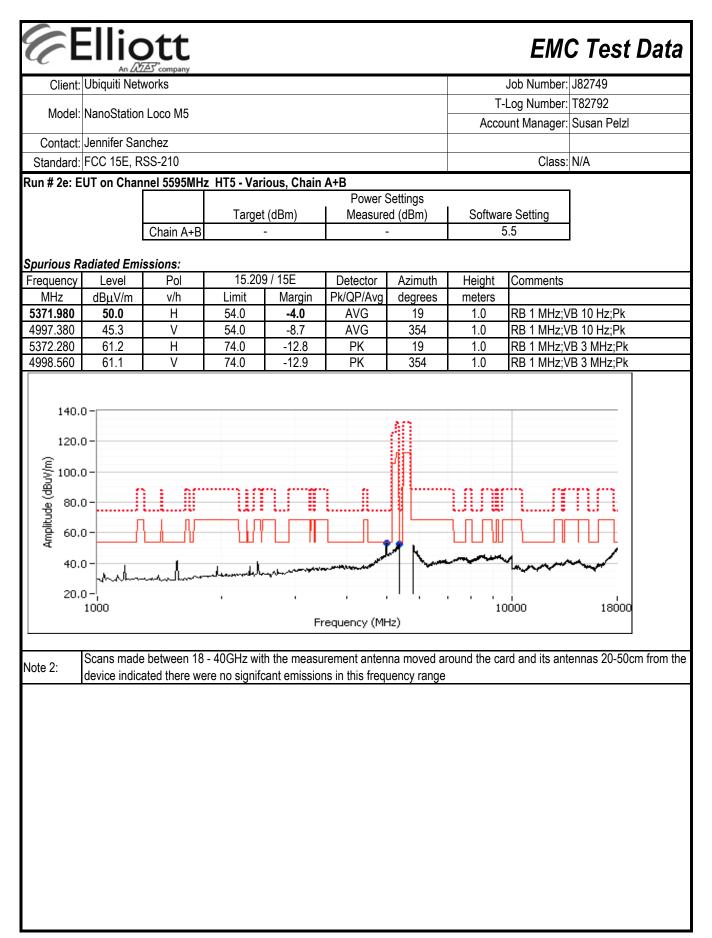


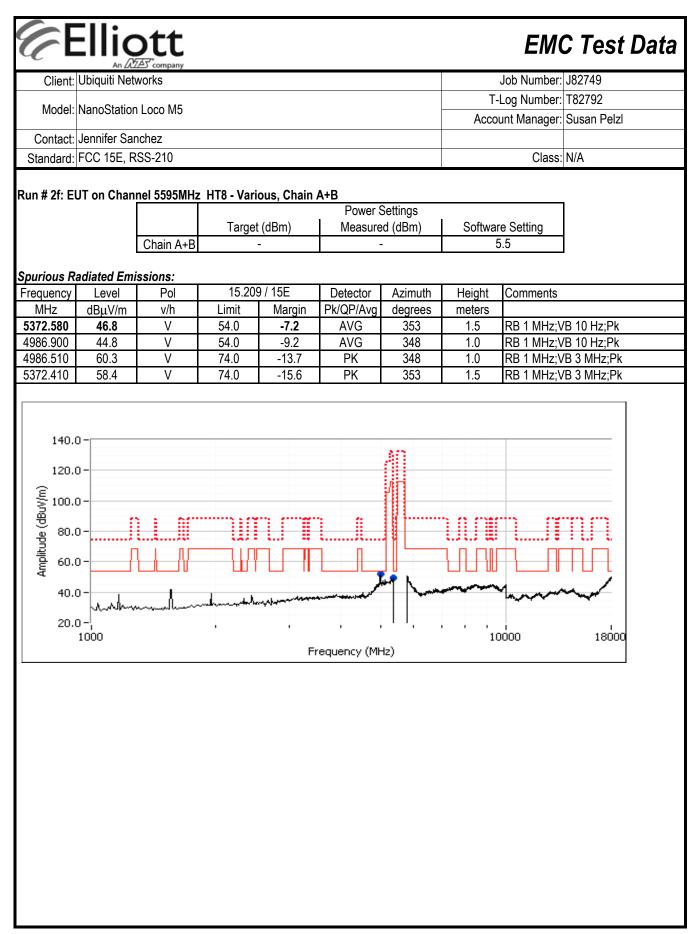


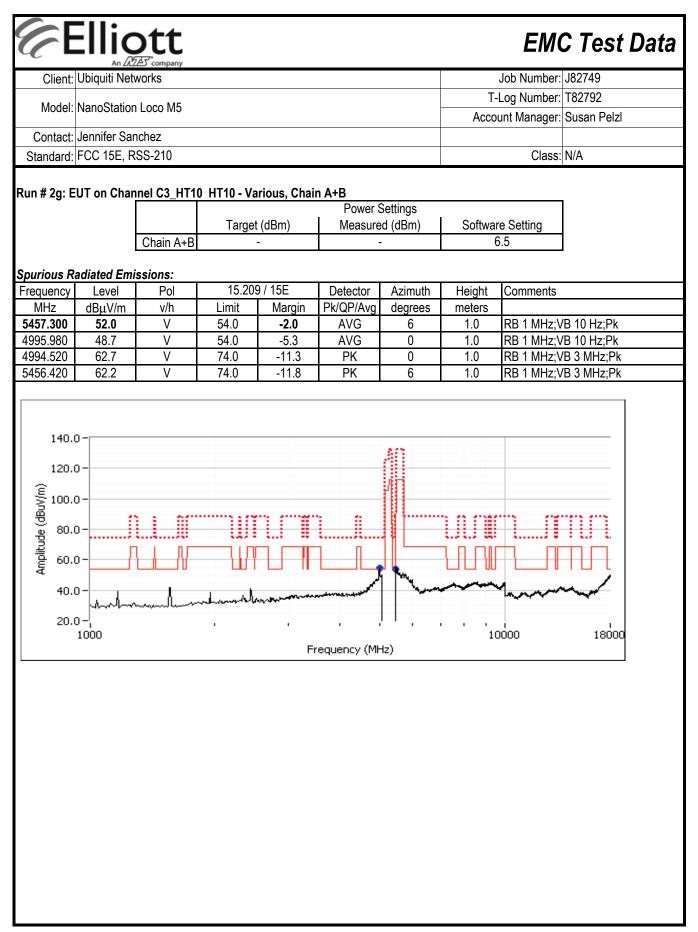


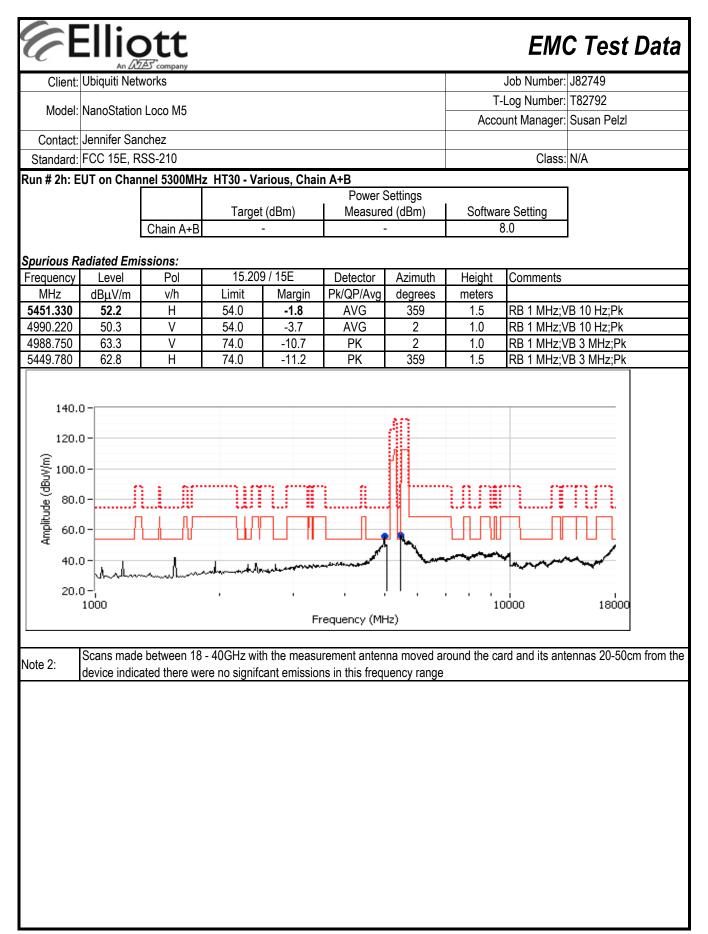
	An AZ								C Test Data
							Job Number: J82749 T-Log Number: T82792		
Model: Na	anoStation	Loco M5					Account Manager: Susan Pelzl		
Contact: Jer								<u> </u>	
Standard: FC								Class:	N/A
Run # 2c: EUT	on Chan	nel #116 558	BOMHz HT20	- Various,		attin			
			Target	(dBm)	Power S Measure		Softwar	e Setting	
		Chain A+B			-			1.5	
									•
Spurious Radia Frequency	iated Emis Level	<b>ssions:</b> Pol	15 200	9 / 15E	Detector	Azimuth	Height	Comments	
	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Commenta	
5372.750	53.8	V	54.0	-0.2	AVG	355	1.0	RB 1 MHz;V	/B 10 Hz;Pk
5142.300	49.8	V	54.0	-4.2	AVG	355	1.0	RB 1 MHz;V	/B 10 Hz;Pk
4997.110	49.4	V	54.0	-4.6	AVG	343	1.0	RB 1 MHz;V	
5374.740 4996.890	64.6 62.5	V V	74.0 74.0	-9.4 -11.5	PK PK	355 343	1.0 1.0		/B 3 MHz;Pk /B 3 MHz;Pk
5142.200	61.0	V	74.0	-11.5	PK	355	1.0		/B 3 MHz;Pk
(W) 100.0 - P 80.0 - P 80.0 - P 80.0 - P 80.0 - P 80.0 - P 80.0 - 40.0 - 20.0 - 100					requency (MH				

Client:	An 22 Ubiquiti Netv	btt Company works						Job Number:	J82749
	•						T-Log Number: T827		T82792
Model:	NanoStation	LOCO M5					Account Manager: Susan Pelzl		Susan Pelzl
	Jennifer Sar								
	FCC 15E, R							Class:	N/A
un # 2d: E	UT on Chan	nel #110 55	50MHz HT40	) - Various,		N - 11 <sup>1</sup>			
			Tarnet	(dBm)	Power S Measure	· ·	Softwar	e Setting	
		Chain A+B	- Turget	-	-			0.5	
					<b>.</b>				
	adiated Emi		45.000						
requency MHz		Pol v/h		9 / 15E Margin	Detector	Azimuth	Height	Comments	
MHZ 5371.830	dBµV/m <b>52.8</b>	V/h H	Limit 54.0	Margin -1.2	Pk/QP/Avg AVG	degrees 19	meters 1.0	RB 1 MHz;V	B 10 Hz·Pk
4989.400	49.1	V	54.0	-4.9	AVG	354	1.0	RB 1 MHz;V	
5133.210	49.1	V	54.0	-4.9	AVG	347	1.0	RB 1 MHz;V	,
5371.960	63.8	Н	74.0	-10.2	PK	19	1.0	RB 1 MHz;V	
4991.310	62.5	V V	74.0	-11.5	PK	354	1.0	RB 1 MHz;V	
5133.230	60.2	V	74.0	-13.8	PK	347	1.0	RB 1 MHz;V	
120.0 (W) 100.0 (MR) 80.0 (MR) 80.0 (MR) 80.0 (MR) 80.0 (MR) 80.0 (MR) 80.0 (MR) 80.0	) )		lite lite alumanor	L T					





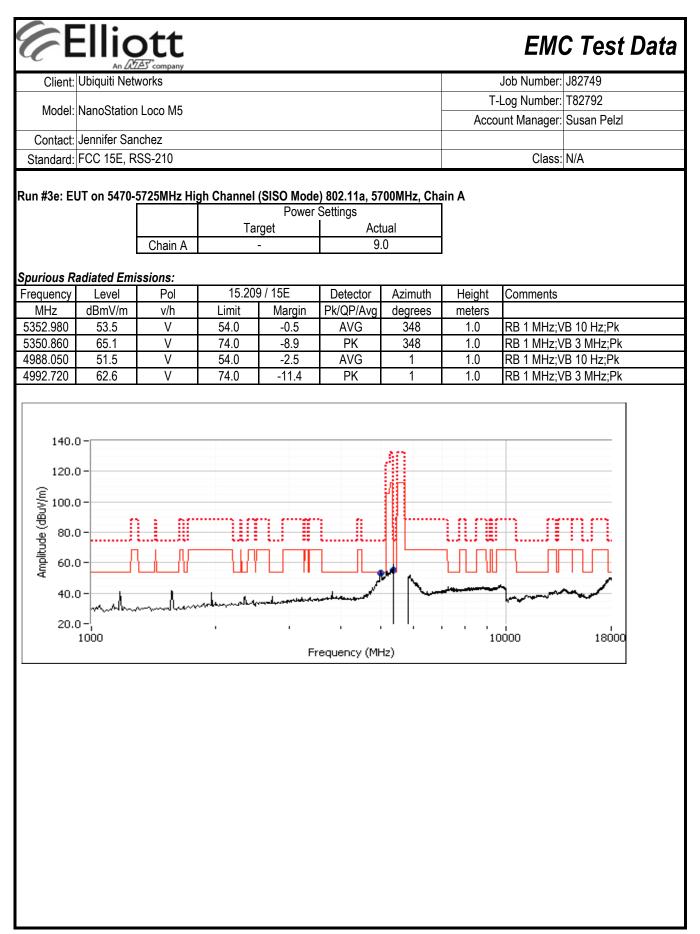


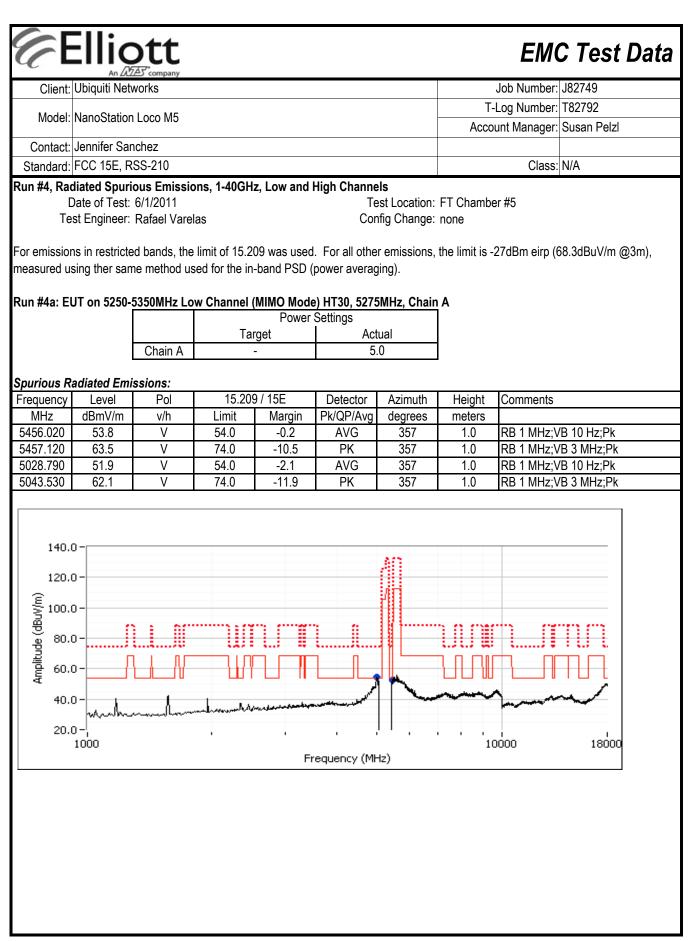


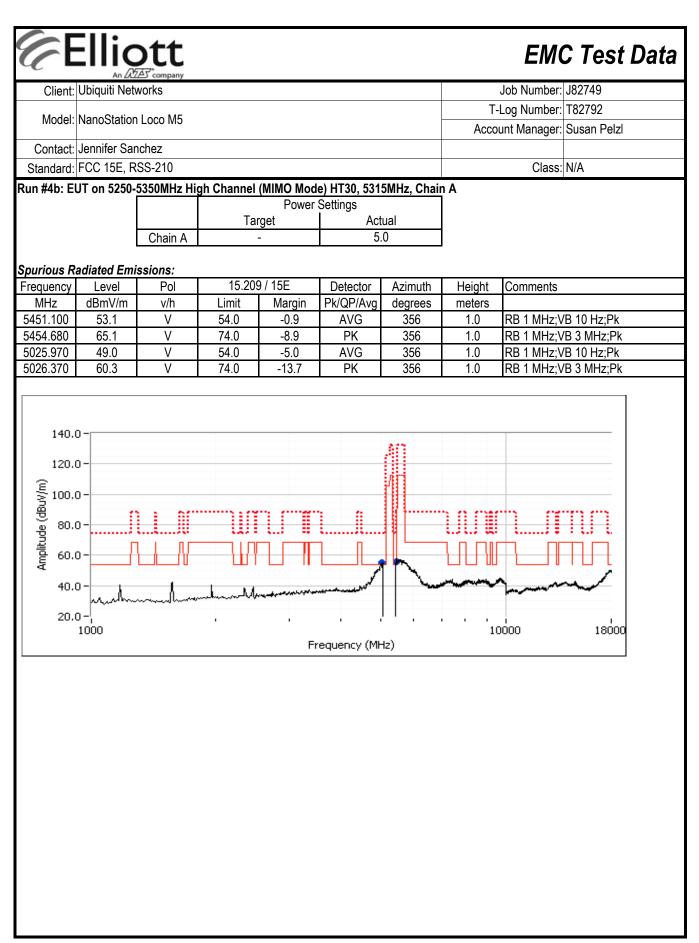
Client: I Model: I	An AZ							EM	C Test Data
Model: I	Ubiquiti Netv	AS company						Job Number:	J82749
wouer.	NanaStation	Loso M5					T-	Log Number:	T82792
	NanoStation						Accou	unt Manager:	Susan Pelzl
	Jennifer Sar								
Standard:	FCC 15E, R	SS-210						Class:	N/A
D Tes For emission	eate of Test: st Engineer: s in restricte	6/1/2011 Rafael Varel d bands, the	as limit of 15.20	)9 was used	Con	est Location: fig Change: r emissions,			\$8.3dBuV/m @3m),
Run #3a: EU	JT on 5250-	5350MHz Lo	w Channel (	SISO Mode)	802.11a, 52	70MHz, Cha	in A		
				Power	Settings				
		Oheir A		get	Act				
	l	Chain A	•		8.	U	l		
Spurious Ra	adiated Emi	ssions:							
Frequency	Level	Pol		) / 15E	Detector	Azimuth	Height	Comments	
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
5450.500 5451.460	51.4 62.5	V V	54.0 74.0	-2.6 -11.5	AVG PK	358 358	1.0 1.0	RB 1 MHz;\ RB 1 MHz;\	
4984.030	48.9	V	54.0	-11.5	AVG	<u> </u>	1.0	RB 1 MHz;V	
4974.970	64.0	V	74.0	-10.0	PK	6	1.2	RB 1 MHz;V	
1560.150	42.9	Н	54.0	-11.1	Peak	183	1.0		•
140.0 120.0 (Janovinge) 100.0 (Janovinge) 100.0 (Janovinge) 100.0 (Janovinge) 120.0 (Janovinge) 120.0 (Janovinge) 140.0 (Janovinge) 120.0	) - ) - ) - ) - ) -		   		equency (MH	1z)			

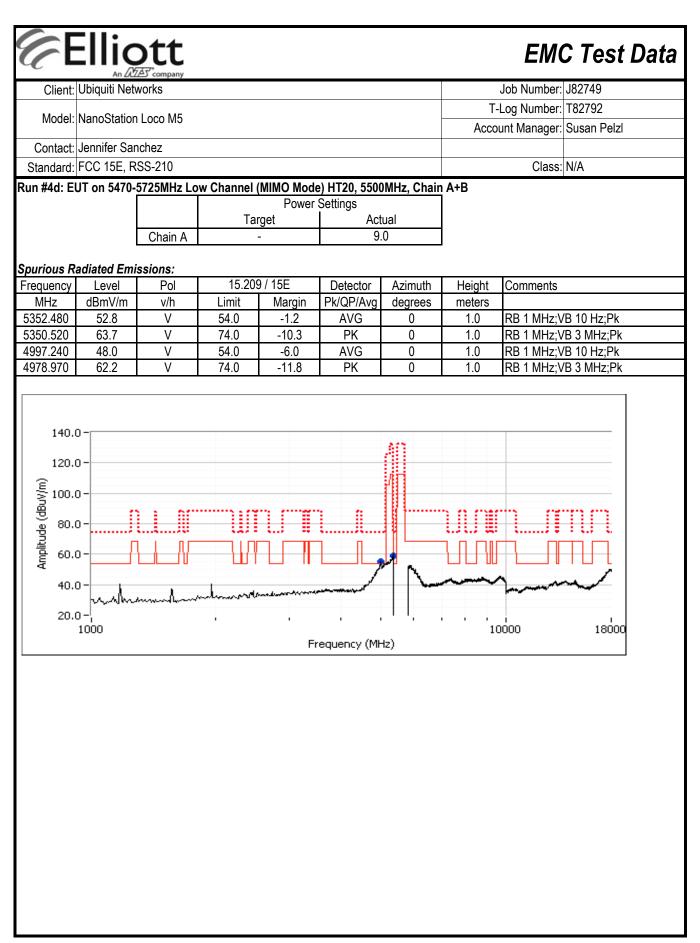
		A company						EMC Test Dat	
Client:	Ubiquiti Netv	vorks					Job Number: J82749		
Model:	NanoStation	Loco M5				-		Log Number: T82792 unt Manager: Susan Pelzl	
Contact:	Jennifer San	ichez					7,000		
Standard:	FCC 15E, R	SS-210						Class: N/A	
un #3b: E	UT on 5250-	5350MHz Hig	gh Channel		e) 802.11a, 53	20MHz, Cha	in A		
			То		Settings				
		Chain A	Ta	rget -	Act				
	l	Ondin A			0.	•			
	adiated Emi		15.00		<u> </u>				
requency MHz	Level dBmV/m	Pol v/h	15.209 Limit	9 / 15E Margin	Detector Pk/QP/Avg	Azimuth	Height meters	Comments	
1VIHZ 5456.390	68mv/m 52.4	V/n V	54.0	Margin -1.6	AVG	degrees 357	1.0	RB 1 MHz;VB 10 Hz;Pk	
453.440	63.4	V	74.0	-10.6	PK	357	1.0	RB 1 MHz;VB 3 MHz;Pk	
979.120	51.2	V	54.0	-2.8	AVG	352	1.2	RB 1 MHz;VB 10 Hz;Pk	
1975.190 1560.150	65.3 41.2	V H	74.0 54.0	-8.7 -12.8	PK Peak	352 174	<u>1.2</u> 1.6	RB 1 MHz;VB 3 MHz;Pk	
120.1 (m/\n00.1 80.1 80.1 40.1 40.1	0- 0- 0- 0-		  	- derererer	requency (MH				

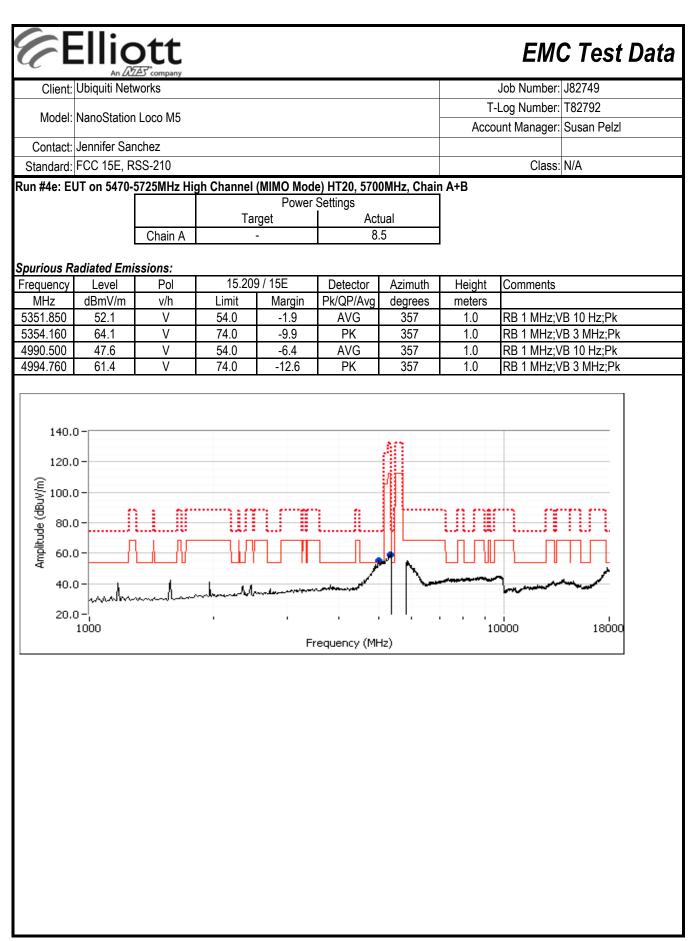
	Ubiquiti Netv	≧r <sup>*</sup> company vorks						Job Number:	J82749
Model:	NanoStation	Loco M5						Log Number:	
Contact	Jennifer San	choz					Acco	unt Manager:	Susan Pelzl
	FCC 15E, R							Class:	N/A
			w Channel	SISO Mode	e) 802.11a, 55	00MHz. Cha	in A	0.0.001	
	]				Settings				
			Tai	rget	Act				
		Chain A		-	12	.0			
Spurious R	adiated Emis	ssions:							
Frequency	Level	Pol		9 / 15E	Detector	Azimuth	Height	Comments	
MHz	dBmV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
5356.650 5356.760	53.2 64.9	V V	54.0 74.0	-0.8 -9.1	AVG PK	355 355	<u>1.1</u> 1.1	RB 1 MHz;V RB 1 MHz;V	
4980.920	64.9 50.4	V	54.0	-9.1	AVG	355	1.1	RB 1 MHZ;V	
4979.450	64.6	V	74.0	-9.4	PK	355	1.1	RB 1 MHz;V	
1560.150	40.7	Н	54.0	-13.3	Peak	189	1.0		
Amplitude (dBuV/m) 80. 90.	o		ll ll dhreader						

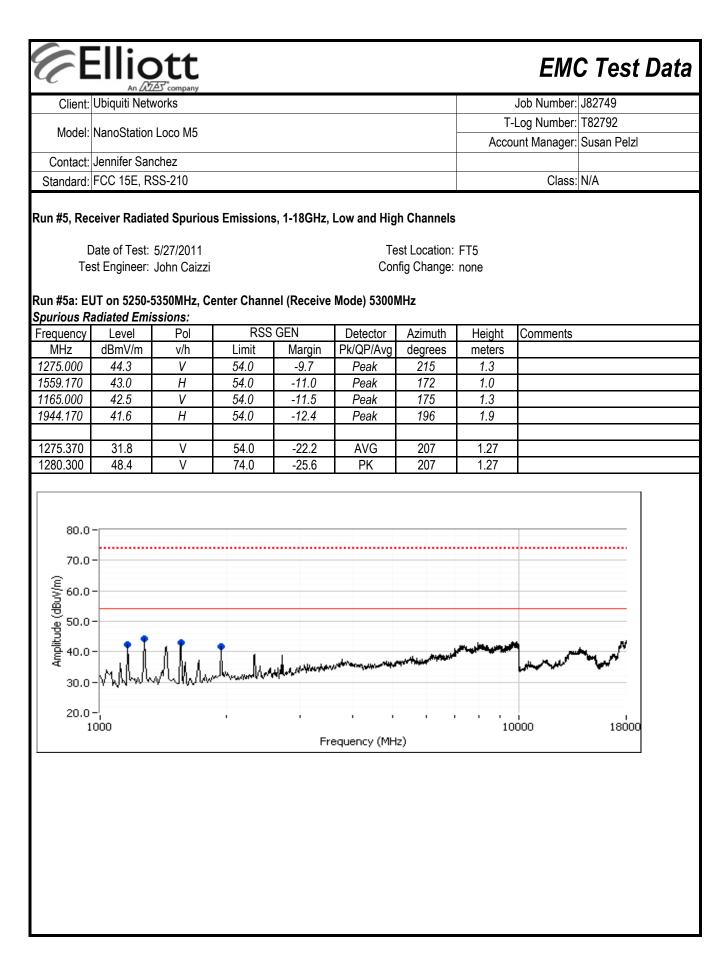


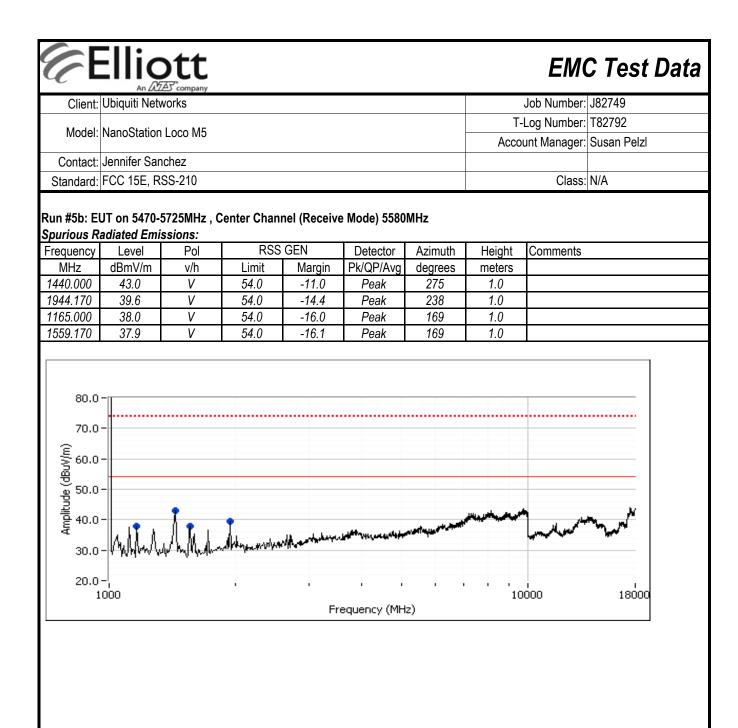












# Appendix C Photographs of Test Configurations

## Appendix D Industry Canada / FCC ID Label & Label Location

# Appendix E Operator's Manual

## Appendix F Block Diagram

# Appendix G Theory of Operation

#### Appendix H RF Exposure Information

The device is a fixed mounted device. The user's manual specifies a minimum separation distance of at least 20cm, consistent with this classification.

FCC part 1.1310, Table 1 limits the power density for uncontrolled exposure. The power density,  $P_d$  (mW/cm<sup>2</sup>) calculated from the maximum EIRP,  $P_t$  (mW) and the distance, d (m), between the transmitting antenna and the closest person, can be calculated using:

Frequency	MPE Limit (mW/cm <sup>2</sup> )	Output Power (mW)	Max. Antenna Gain (dBi)	EIRP (mW)	Pd at 20cm (mW/cm <sup>2</sup> )	Distance where Pd = limit (cm)
5250 to 5350 MHz	1.00	23.5	16.0	935.4	0.2	8.6
5470 to 5725 MHz	1.00	24.1	16.0	959.4	0.2	8.7

$$P_d = P_t / (4 \pi d^2)$$

As shown in the calculations above, the power density 20cm from the device is below the maximum permitted level for uncontrolled exposure.

#### End of Report

This page is intentionally blank and marks the last page of this test report.