

Elliott Laboratories Inc. www.elliottlabs.com

684 West Maude Avenue Sunnyvale, CA 94086-3518 408-245-3499 Fax

408-245-7800 Phone

Electromagnetic Emissions Test Report and Application for Grant of Equipment Authorization pursuant to FCC Part 15, Subpart C (15.247) DTS Specifications, FCC Part 15, Subpart E (UNII Devices) and Industry Canada RSS 210 Issue 6 (LELEAN Devices) on the Xirrus, Inc. Model: XS-3500

> FCC ID: SK6XS35004 UPN: 5428A-XS35004 GRANTEE: Xirrus, Inc. 370 North Westlake Blvd., Suite 200 Westlake Village, CA 91362 TEST SITE: Elliott Laboratories, Inc. 684 W. Maude Avenue Sunnyvale, CA 94086

REPORT DATE:

August 24, 2005

FINAL TEST DATE:

July 22, July 25, July 29, August 1, August 9, August 10 and August 23, 2005

AUTHORIZED SIGNATORY:

Mark Briggs

Principal Engineer



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

DECLARATIONS OF COMPLIANCE

Equipment Name and Model: XS-3500

Manufacturer:

Xirrus, Inc. 370 North Westlake Blvd., Suite 200 Westlake Village, CA 91362

Tested to applicable standards:

RSS-210, Issue 6, September 2005, "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment" RSS-Gen Issue 1, September 2005, "General Requirements and Information for the Certification of Radiocommunication Equipment" FCC Part 15.247 (DTS) FCC Part 15 Subpart E (UNII Devices)

Measurement Facility Description Filed With Department of Industry:

Departmental Acknowledgement Number: IC2845 SV1 Dated August 16, 2007 Departmental Acknowledgement Number: IC2845 SV2 Dated August 16, 2007 Departmental Acknowledgement Number: IC2845 SV3 Dated August 16, 2007

I declare that the testing was performed or supervised by me; that the test measurements were made in accordance with the above mentioned departmental standards (through the use of ANSI C63.4: 2003 as referenced by FCC Part 15 and RSS-212, "Test Facilities and Test Methods for Radio Equipment" as referenced by section 4 of RSS-Gen Issue 1); and that the equipment performed in accordance with the data submitted in this report.

Signature Name Title Company Address

Mark Kry

Mark Briggs Principal Engineer Elliott Laboratories Inc. 684 W. Maude Ave Sunnyvale, CA 94086 USA

Date: August 24, 2005

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

TABLE OF CONTENTS

COVER PAGE	1
DECLARATIONS OF COMPLIANCE	
TABLE OF CONTENTS	3
SCOPE	4
OBJECTIVE	4
SUMMARY OF RESULTS	5
FCC 15.247/RSS 210 (O): 2400 – 2483.5 MHZ BAND	
FCC 15.247/RSS 210 (O): 5725 –5850 MHZ BAND	
FCC 15E / RSS 210 Q1	
OTHER REQUIREMENTS	
MEASUREMENT UNCERTAINTIES	
EQUIPMENT UNDER TEST (EUT) DETAILS	
GENERAL	
OTHER EUT DETAILS	
ENCLOSURE	
MODIFICATIONS	
SUPPORT EQUIPMENT	
EUT INTERFACE PORTS	
EUT INTERFACE PORTS EUT OPERATION DURING TESTING	
ANTENNA REQUIREMENTS	
TEST SITE	
GENERAL INFORMATION CONDUCTED EMISSIONS CONSIDERATIONS	
RADIATED EMISSIONS CONSIDERATIONS	
MEASUREMENT INSTRUMENTATION	
RECEIVER SYSTEM	
INSTRUMENT CONTROL COMPUTER	
LINE IMPEDANCE STABILIZATION NETWORK (LISN)	
POWER METER.	
FILTERS/ATTENUATORS	
ANTENNAS	
ANTENNA MAST AND EQUIPMENT TURNTABLE	13
INSTRUMENT CALIBRATION	
TEST PROCEDURES	
EUT AND CABLE PLACEMENT.	
CONDUCTED EMISSIONS	
RADIATED EMISSIONS	
CONDUCTED EMISSIONS FROM ANTENNA PORT	
SPECIFICATION LIMITS AND SAMPLE CALCULATIONS	
FCC 15.407 (A)AND RSS 210 (O) OUTPUT POWER LIMITS	
FCC 15.407 (A) OUTPUT POWER LIMITS	
RS-210 6.2.2(Q1) OUTPUT POWER LIMITS	18
RSS 210 (O) AND FCC 15.247 TRANSMIT MODE SPURIOUS RADIATED EMISSIONS LIMITS	
RS 210 (Q1) AND FCC 15E TRANSMIT MODE SPURIOUS RADIATED EMISSIONS LIMITS	
RS 210 TABLE 3 RECEIVE MODE SPURIOUS RADIATED EMISSIONS LIMITS	
FCC 15.205 AC POWER PORT CONDUCTED EMISSIONS LIMITS	
RSS-210 SECTION 6.6 AC POWER PORT CONDUCTED EMISSIONS LIMITS	
SAMPLE CALCULATIONS - CONDUCTED EMISSIONS	
SAMPLE CALCULATIONS - RADIATED EMISSIONS	
EXHIBIT 1: Test Equipment Calibration Data	
EXHIBIT 2: Test Data Log Sheets	
EXHIBIT 3: Test Configuration Photographs	
EXHIBIT 4: Proposed FCC ID Label & Label Location	
EXHIBIT 5: Detailed Photographs	
EXHIBIT 6: Operator's Manual	
EXHIBIT 7: Block Diagram	
EXHIBIT 8: Schematic Diagrams	
EXHIBIT 9: Theory of Operation	
EXHIBIT 10: RF Exposure Information	10

SCOPE

An electromagnetic emissions test has been performed on the Xirrus, Inc. model XS-3500 pursuant to Subparts C and E of Part 15 of FCC Rules for Unlicensed National Information Infrastructure (UNII) devices and RSS-210 Issue 6 for licence-exempt local area network (LELAN) devices. Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in ANSI C63.4:2003 and RSS-212 Issue 1 as outlined in Elliott Laboratories test procedures.

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

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

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

The test results recorded herein are based on a single type test of the Xirrus, Inc. model XS-3500 and therefore apply only to the tested sample. The sample was selected and prepared by Ian Laity of Xirrus, Inc.

OBJECTIVE

The primary objective of the manufacturer is compliance with Subparts C and E of Part 15 of FCC Rules and RSS 210 for the radiated and conducted emissions of intentional radiators. Certification of these devices is required as a prerequisite to marketing as defined in Part 2 the FCC Rules and Industry Canada publications RSP 100 and RSS GEN.

Certification is a procedure where the manufacturer or a contracted laboratory makes measurements and submits the test data and technical information to the FCC. The FCC issues a grant of equipment authorization upon successful completion of their review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units which are subsequently manufactured.

SUMMARY OF RESULTS FCC 15.247/RSS 210 (a): 2400 – 2483.5 MHz BAND

	. ,	– 2483.5 MHZ BAND			1
FCC Part 15 Section	RSS 210 Section	Description	Measured Value	Comments	Result
15.247(a)	A8.2	Digital Modulation	Systems uses OFDM and DSSS techniques	System must utilize a digital transmission technology	Complies
15.247 (a) (2)	A8.2(1)	6dB Bandwidth	>12 MHz	Minimum allowed is 500kHz	Complies
	RSP 100	99% Bandwidth	802.11b: 14.6MHz 802.11g: 16.9MHz	For information only	Complies
15.247 (b) (3)	A8.4 (4)	Output Power ¹ 2400 - 2483.5 MHz	802.11b: 26.3dBm (0.428 Watts) 802.11g: 27.2dBm (0.528 Watts)	Maximum permitted is 1Watt, with EIRP limited to 4 Watts.	Complies
15.247(d)	A8.2 (2)	Power Spectral Density	7.8dBm / 3kHz	Maximum permitted is 8dBm/3kHz	Complies
15.247(c)	A8.4 (5)	Antenna Port Spurious Emissions –30MHz – 26 GHz	All spurious emissions < -30dBc	All spurious emissions $<$ - 30 dBc ² .	Complies
15.247(c) / 15.209	A8.4 (5)	Radiated Spurious Emissions –30MHz – 26 GHz	53.8dBµV/m (489.8µV/m) @ 2487.5MHz (-0.2dB)	Emissions in restricted bands must meet the radiated emissions limits detailed in 15.207. All others must be < -30dBc	Complies

FCC 15.247/RSS 210 (o): 5725 -5850 MHz BAND

FCC Part 15 Section	RSS 210 Section	Description	Measured Value	Comments	Result
15.247(a)	A8.2	Digital Modulation	Systems uses OFDM and DSSS techniques	System must utilize a digital transmission technology	Complies
15.247 (a) (2)	A8.2 (1)	6dB Bandwidth	16.8MHz	Minimum allowed is 500kHz	Complies
	RSP 100	99% Bandwidth	17 MHz	For information only	Complies
15.247 (b) (3) 15.247	A8.4 (4)	Output Power 5725 - 5850 MHz	27 dBm ¹ (0.504 Watts)	Maximum permitted is 1Watt, with EIRP limited to 4 Watts.	Complies
15.247(d)	A8.2 (2)	Power Spectral Density	-5.2dBm/3kHz	Maximum permitted is 8dBm/3kHz	Complies
15.247(c)	A8.4 (5)	Antenna Port Spurious Emissions –30MHz – 40 GHz	All spurious emissions < -20dBc	All spurious emissions < -30dBc.	Complies
15.247(c) / 15.209	A8.4 (5)	Radiated Spurious Emissions –30MHz – 40 GHz	53.6dBμV/m (477.5μV/m) @ 11651.7MHz (-0.4dB)	Emissions in restricted bands must meet the radiated emissions limits detailed in 15.207. All others must be < -30dBc	Complies

 2 -30dBc limit used as the UNII measurement method was used to measure output power

¹ Output power is the aggregate power across all transmitters, based on the worst case condition with one, two, three or four transceivers operating the band.

FCC 15E / RSS 210 q1

FCC Part 15 Section	RSS 210 Section	Description	Comments	Result
Operation in tl	he 5.15 – 5.25 GH	Iz Band		
15.407(e)		Indoor operation only	Refer to user's manual in Exhibit 6	Complies
15.407(a) (1)		26dB Bandwidth	> 20MHz	N/A
15.407(a) (1)	A9.2(1)	Output Power	$16.9 \mathrm{dBm} \left(0.049\mathrm{W}\right)^1$	Complies
15.407(a) (1))	A9.2(1)	Power Spectral Density		Complies
	A9.5b	Peak Spectral Density	3.96 dBm/MHz	Complies
density of spuri	he 5.25 – 5.35 GH ious emissions in	Iz Band Note: The device the 5.15 – 5.25 GHz band	is restricted to indoor use only, therefore the were limited to the power spectral limits for i	e spectral
-	$\frac{10 FCC 15.40}{1}$	(1) and RSS 210 6.2.2 q1 (i)	>20MHz	NT/A
15.407(a) (2)	40.2(2)	26dB Bandwidth		N/A
15.407(a) (2)	A9.2(2)	Output Power	$23.7 \text{ dBm} (0.236 \text{W})^1$	Complies
15.407(a) (2))	A9.2(2)	Power Spectral Density	5.7dBm/MHz	Complies
	A9.5b	Peak Spectral Density		Complies
	A9.4	Dynamic frequency selection / Transmit power control	Not evaluated – this is not a requirement for new equipment until after January 2006 (FCC) / May 2008 (RSS)	N/A
General requir	ements for all ba	nds		
	A9.5a	Digital Modulation	Digital Modulation is used, refer to the "Theory of Operations" (Exhibit 9) for a detailed explanation.	Complies
	RSP 100	99% bandwidth	17 MHz	
15.407(b) (5) / 15.209	A9.3	Spurious Emissions below 1GHz	No emissions from transceivers detected below 1GHz (emissions from digital device only)	Complies
15.407(b) (2)	A9.3	Spurious Emissions above 1GHz	53.9dBμV/m (495.5μV/m) @ 5350.0MHz (- 0.1dB)	Complies
15.407(a)(6)		Peak Excursion Ratio	10.9dB	Complies
	A9.5c	Channel Selection	The device was tested at 5180, 5260 and 5320 MHz – the highest, lowest and center channels across the 5150 – 5350 MHz band. Additional measurements for power and PSD made at 5200 MHz and 5240 MHz (highest frequency in the 5150 – 5250 MHz sub-band).	N/A
15.407 (c)	A9.5d	Automatic Discontinuation of Operation in the absence of information to transmit	Operation is discontinued in the absence of information to transmit, refer to the "Theory of Operations" in Exhibit 9 for a detailed explanation.	Complies
15.407 (g)	A9.5e	Frequency Stability	Frequency stability is better than 10ppm, refer to the "Theory of Operations" in Exhibit 9 for a detailed analysis.	Complies
	A9.9f; A9.9g	User Manual information	All relevant statements have been included in the user's manuals. Refer to Exhibit 6 for details	Complies
15.407 (f)		RF Exposure Requirements	Refer to MPE calculations in Exhibit 11	Complies

¹ Output power is the aggregate power across all transmitters, based on the worst case condition with one, two, three or four transceivers operating the band.

	-			
FCC Part 15 Section	RSS 210 Section	Description	Comments	Result
15.203		RF Connector	Integral antenna and external antenna using Reverse polarity TNC	Complies
	RSS GEN 7.2.3/Table 1	Receiver spurious emissions	50.2dBµV/m (323.6µV/m) @ 1452.0MHz (- 3.8dB)	Complies
15.207	RSS GEN Table 2	AC Conducted Emissions	39.3dBµV @ 2.909MHz (-6.7dB)	Complies
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	Complies

OTHER REQUIREMENTS

MEASUREMENT UNCERTAINTIES

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

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

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The Xirrus, Inc. model XS-3500 is a multi-radio 802.11abg Access Point radio which is designed to act as a hub for a wireless local area network (WLAN). The device contains 4 transceivers, all of which can operate in the 2.4 and 5GHz bands. There is one rf connector to allow the use of an external antenna with one of the transceivers.

Normally, the EUT would be ceiling mounted during operation. The EUT was tested as both tabletop equipment and also tested with the EUT raised to a height of 1.5m above the ground plane. The electrical rating of the device is 100 - 240Vac, 50/60Hz, 0.5 - 3 A.

The sample was received on July 22, 2005 and tested on July 22, July 25, July 29, August 1, August 9, August 10 and August 23, 2005. The EUT consisted of the following component(s):

Manufacturer	Model	Description	Serial Number	FCC ID
Xirrus	XS-3500	Wireless access point	-	

OTHER EUT DETAILS

The EUT output power in the 5150 - 5250 MHz band is set on each transceiver to ensure that the aggregate output power in the band does not exceed the 17dBm maximum permitted. This technique is not employed for other channels, where the maximum power on any one transceiver is set such that the aggregate power in that band will always be less than maximum permitted.

ENCLOSURE

The EUT enclosure is primarily constructed of molded plastic. It measures approximately 31 cm in diameter by 6 cm high.

MODIFICATIONS

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

SUPPORT EQUIPMENT

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

Manufacturer/Model/Description	Serial Number	FCC ID Number
Winbook Laptop	-	-

No equipment was used as remote support equipment for emissions testing.

EUT INTERFACE PORTS

Port	Connected To	Cable(s)		
TOIL	Connected 10	Description	Shielded or Unshielded	Length(m)
Ethernet	Laptop Ethernet	CAT 5	Unshielded	3
Console	Laptop serial	Multiwire	Unshielded	1.5
DC in	AC Adapter	2 wire	Unshielded	1

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

EUT OPERATION DURING TESTING

During digital emissions testing the EUT was set to receive mode for all four radios. Each radio was tuned to a different frequency - 2412MHz, 2472MHz, 5260MHz and 5780MHz.

During transmitter testing Radio #4 was set to transmit continuously on either CH #1, 2412MHz, CH6, 2437MHz or CH#11, 2462MHz for 8082.11b and g modes. For 802.11a, the radio was set to continuously transmit on 5180 MHz, 5260MHz, 5320MHz, 5745MHz, 5785MHz or 5825MHz.

The following radiated spurious measurements were made:

2400 – 2483.5 MHz, 802.11b Mode

- 2412 MHz (#1) fundamental, 2390 MHz restricted band and spurious performed at power setting 20 (the actual max power, P=19.8dBm peak) Internal and external antennas.
- 2437 MHz (#6) spurious performed at power setting 20 (the actual max power, P=20.3dBm peak) Internal and external antennas.
- 2462 MHz (#11) –2483.5 MHz restricted band measured at power setting 15; spurious performed at power setting 20 (the actual max power is setting 15, P=17.7dBm peak) Internal and external antennas.

2400 – 2483.5 MHz, 802.11g Mode

- 2412 MHz (#1) fundamental, 2390 MHz restricted band and spurious performed at power setting 16 (the actual max power, P=17.1dBm average) for both internal and external antennas.
- 2437 MHz (#6) spurious performed at power setting 20 (the actual max power, P=21.2dBm average) for both internal and external antennas.
- 2462 MHz (#11) –2483.5 MHz restricted band and other spurious performed at power setting 14 (the actual max power is setting 14, P=13.3dBm average) internal antenna.
- 2462 MHz (#11) –2483.5 MHz restricted band measured at power setting 13; spurious performed at power setting 16 (the actual max power is setting 13, P=12.5dBm average) external antenna.

5150 - 5350 MHz

- 5180 MHz (#36) fundamental, 5150 MHz restricted band and spurious at power setting 10 with the internal antenna and external antenna. Repeated at power setting 11 with the worst case antenna (internal). Power setting 10 (10.8dBm average) is the highest power setting for 3 or more radios in the band. Power setting 11 (12.7dBm average) is the highest power setting with 1 or 2 radios in the sub-band.
- 5200 MHz (#40) spurious emissions at power setting 17 (18dBm) with the internal antenna (worst case antenna for #36). Highest power setting for this channel is 14 (16dBm), so testing at the higher setting would represent higher emissions than at the deployed highest power setting. This test was done to verify compliance at the higher power setting in addition to testing channel 36 (bottom channel) because this channel has a higher output power setting.
- 5260 MHz (#52) spurious emissions at power setting 19 (17.7dBm average) with the internal and external antennas. Highest power setting for this channel is 19 (17.7dBm).
- 5320 MHz (#64) spurious emissions at power setting 19 (17.5dBm average) with the internal antenna and at power setting 19 with the external antenna. Highest power setting for this channel is 19 (17.5dBm) for the internal antenna and 16 (14.9dBm) for the external antenna. *[External antenna output power limited to meet 5350 MHz band edge]*

5725 – 5850 MHz

- 5745 MHz (#149) spurious emissions at power setting 17 with internal antenna. Highest power on this channel with internal antenna is 17 (16.8dBm)
- 5745 MHz (#149) spurious emissions at power setting 13 with external antenna. Highest power on this channel with external antenna is 13 (13.8dBm)
- 5785 MHz (#157) spurious emissions at power setting 18 with internal antenna. Highest power on this channel with internal antenna is 18 (15.9dBm)
- 5785 MHz (#157) spurious emissions at power setting 16 with external antenna. Highest power on this channel with external antenna is 16 (14.2dBm)
- 5825 MHz (#165) spurious emissions at power setting 18 with internal and external antennas. Highest power on this channel with internal or external antenna is 18 (14.2dBm)

ANTENNA REQUIREMENTS

The device uses integral antennas on each of the four transceivers contained within the system. There are two antennas per transceiver, one for the 2.4GHz band and one for the 5GHz band. The gains of these antennas are stated to be 3dBi. One of the transceivers is also capable of connecting to an external antenna. The antenna connector is a reverse TNC that meets the requirements of FCC 15.203. The antennas intended for use with this connector are:

Maxrad model S2403BH, Gain = 3dBd (5.2dBi), Band = 2400 – 2483.5 MHz Maxrad model S2403BP, Gain = 3dBd (5.2dBi), Band = 2400 – 2483.5 MHz Maxrad model S5703BH, Gain = 3dBd (5.2dBi), Band = 5725 – 5850 MHz

Radiated emissions tests were performed with the internal antennas, the Maxrad model S2403BP and the Maxrad model S5703BH.

TEST SITE

GENERAL INFORMATION

Final test measurements were taken on July 22, July 25, July 29, August 1, August 9, August 10 and August 23, 2005 at the Elliott Laboratories Open Area Test Site #1, 2 & 3 located at 684 West Maude Avenue, Sunnyvale, California. The test sites contain separate areas for radiated and conducted emissions testing. Pursuant to section 2.948 of the Rules, construction, calibration, and equipment data has been filed with the Federal Communications Commission. In accordance with Industry Canada rules detailed in RSS 210 Issue 6 and RSS-212, construction, calibration, and equipment data for the test sites have been filed with the Federal Communications Commission.

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

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.4:2003. 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. The test site is maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4:2003 guidelines.

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

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

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz.

INSTRUMENT CONTROL COMPUTER

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

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

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

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

POWER METER

A power meter and **peak** power sensor are used for all direct output power measurements from transmitters as they provide a broadband indication of the power output. Where alternative test methods for measuring output power are used the method is described (or the measurement method is referenced) in the test data

FILTERS/ATTENUATORS

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

ANTENNAS

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

ANTENNA MAST AND EQUIPMENT TURNTABLE

The antennas used to measure the radiated electric field strength are mounted on a nonconductive antenna mast equipped with a motor-drive to vary the antenna height.

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

CONDUCTED EMISSIONS

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

RADIATED EMISSIONS

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

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

Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth which results in the highest emission is then maintained while varying the antenna height from one to four meters. The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain. Emissions which have values close to the specification limit may also be measured with a tuned dipole antenna to determine compliance.

CONDUCTED EMISSIONS FROM ANTENNA PORT

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

Measurement bandwidths (video and resolution) are set in accordance with FCC procedures for the type of radio being tested.

SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

The limits for conducted emissions from the AC power port are given in units of microvolts, the limits for radiated electric field emissions are given in units of microvolts per meter at a specified test distance and the output power limits are given in terms of Watts, milliwatts or dBm. 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.

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp) the following formula is used to determine the field strength limit in terms of microvolts per meter at a distance of 3m from the equipment under test:

 $E = \frac{1000000 \text{ v } 30 \text{ P}}{3} \quad \text{microvolts per meter}$

where P is the eirp (Watts)

For reference, converting the voltage and electric field strength specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. Conversion of power specification limits from linear units (in milliwatts) to decibel form (in dBm) is accomplished by taking the base ten logarithm, then multiplying by 10.

FCC 15.407 (a)and RSS 210 (o) 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
902 - 928	1 Watts (30 dBm)	8 dBm/3kHz
2400 - 2483.5	1 Watts (30 dBm)	8 dBm/3kHz
5725 - 5850	1 Watts (30 dBm)	8 dBm/3kHz

The maximum permitted output power is reduced by 1dB for every dB the antenna gain exceeds 6dBi. Fixed point-to-point applications using the 5725 - 5850 MHz band are not subject to this restriction.

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.

RS-210 6.2.2(q1) 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	200mW (23 dBm)	10 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.

RSS 210 (o) AND FCC 15.247 TRANSMIT MODE SPURIOUS RADIATED EMISSIONS LIMITS

The limits for unwanted (spurious) emissions from the transmitter falling in the restricted bands detailed in Part 15.205 and for all spurious emissions from the receiver are:

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

All other unwanted (spurious) emissions shall be at least 20dB below the level of the highest inband signal level (30dB if the power is measured using the sample detector/power averaging method). RS 210 (q1) and FCC 15E TRANSMIT MODE SPURIOUS RADIATED EMISSIONS LIMITS

The table below shows the limits for unwanted (spurious) emissions falling in the restricted bands detailed in Part 15.205 and Industry Canada RSS-210 Table 2.

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

The table below shows the limits for unwanted (spurious) emissions outside of the restricted bands above 1GHz.

Operating Frequency (MHz)	EIRP Limit (dBm)	Equivalent Field Strength At 3m (dBuV/m)
5150 - 5250	-27 dBm	68.3 dBuV/m
5250 - 5350	-27 dBm (note 1)	68.3 dBuV/m
5725 - 5825	-27 dBm (note 2)	68.3 dBuV/m
	-17 dBm (note 3)	78.3 dBuV/m

Note 1: If operation is restricted to indoor use only then emissions in the band 5.15 – 5.25 GHz must meet the power spectral density limits for the intentional signals detailed in RSS 210 and FCC Subpart E for devices operating in the 5.15 – 5.25 GHz band.
Note 2: Applies to spurious signals separated by more than 10 MHz from the allocated band.

Note 3: Applies to spurious signals within 10 MHz of the allocated band.

RS 210 Table 3 RECEIVE MODE SPURIOUS RADIATED EMISSIONS LIMITS

The table below shows the limits for unwanted (spurious) emissions from the receiver as detailed in table 3of RSS 210:

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
960 to 1610	500	54.0
Above 1610	1000	60.0

FCC 15.205 AC POWER PORT CONDUCTED EMISSIONS LIMITS

The table below shows the limits for emissions on the AC power line as detailed in FCC Part 15.205.

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

RSS-210 SECTION 6.6 AC POWER PORT CONDUCTED EMISSIONS LIMITS

The table below shows the limits for emissions on the AC power line as detailed in Industry Canada RSS-210 section 6.6.

Frequency		
Range	Limit	Limit
(MHz)	(uV)	(dBuV)
0.450 to 30.000	250	48

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

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

$$R_r = C$$

and

$$C - S = M$$

where:

 $R_r = Receiver Reading in dBuV$

C = Corrected 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, is calculated by using the following formula:

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

where:

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

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

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

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:

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

EXHIBIT 1: Test Equipment Calibration Data

1 Page

Manufacturer	and radiated Emissions - 802.11a/b/g Description	Model #	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	26-Apr-06
EMCO	Horn Antenna, D. Ridge 1-18GHz	3115	786	08-Nov-05
Hewlett Packard	EMC Spectrum Analyzer 9kHz - 6.5GHz	8595EM	787	17-Dec-05
Hewlett Packard	EMC Spectrum Analyzer, 9KHz-26.5GHz	8593EM	1141	10-Jun-06
	Horn antenna, D. Ridge 1-18GHz (SA40 system			
EMCO	antenna)30Hz sunnyvale	3115	1142	11-Jun-06
Hewlett Packard	Microwave EMI test system head (includes W1 - W4, Asset 1143 and 1144)	84125C	1145	01-Sep-05
Hewlett Packard	EMC Spectrum Analyzer 30Hz - 40GHz, Sunnyvale (SA40)	8564E (84125C)	1148	01-Sep-05
Hewlett Packard	Microwave EMI test system (SA40, 30Hz - 40GHz), Sunnyvale	84125C	1149	01-Sep-05
EMCO	Horn antenna, 18-26.5 GHz (SA40 30Hz)	3160-09 (84125C)	1150	09-Jun-06
EMCO	Horn antenna, 26.5-40 GHz (SA40 30Hz)	3160-10 (84125C)	1151	09-Jun-06
Hewlett Packard	High Pass filter, 8.2GHz	P/N 84300-80039 (84125C)	1152	16-Aug-06
Hewlett Packard	High Pass filter, 3.5GHz	P/N 84300-80038	1157	28-Apr-06
Digital Device, Radiated em	issions, 24-Aug-05			
Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Biconical Antenna, 30-300 MHz	3110B	1320	25-Aug-05
EMCO	Log Periodic Antenna, 0.2-2 GHz	3148	1321	30-Mar-07
Rohde & Schwarz	Test Receiver, 0.009-2750 MHz	ESN	1332	23-May-06
Power, PSD, bandwidth, 31	-Aug-05			
Manufacturer	Description	Model #	Asset #	<u>Cal Due</u>
	Microwave EMI test system (SA40, 30Hz - 40GHz),			
Hewlett Packard	Sunnyvale	84125C	1149	01-Sep-05
Rohde & Schwarz	Power Sensor 100uW - 10 Watts	NRV-Z53	1236	01-Mar-06
Rohde & Schwarz	Power Meter, Single Channel	NRVS		
		NICO	1290	09-May-06
	s (5725 - 5850 MHz), 07-Sep-05	-		
Manufacturer	s (5725 - 5850 MHz), 07-Sep-05 <u>Description</u>	Model #	Asset #	Cal Due
	s (5725 - 5850 MHz), 07-Sep-05 Description EMC Spectrum Analyzer 9kHz - 6.5GHz	-		
Manufacturer	s (5725 - 5850 MHz), 07-Sep-05 <u>Description</u>	Model #	Asset #	Cal Due
<u>Manufacturer</u> Hewlett Packard	s (5725 - 5850 MHz), 07-Sep-05 Description EMC Spectrum Analyzer 9kHz - 6.5GHz	<u>Model #</u> 8595EM	<u>Asset #</u> 780	<u>Cal Due</u> 26-May-06
<u>Manufacturer</u> Hewlett Packard Rohde & Schwarz	s (5725 - 5850 MHz), 07-Sep-05 <u>Description</u> EMC Spectrum Analyzer 9kHz - 6.5GHz Power Meter, Single Channel	<u>Model #</u> 8595EM NRVS	<u>Asset #</u> 780 1422	<u>Cal Due</u> 26-May-06 01-Nov-05
<u>Manufacturer</u> Hewlett Packard Rohde & Schwarz Rohde & Schwarz	s (5725 - 5850 MHz), 07-Sep-05 <u>Description</u> EMC Spectrum Analyzer 9kHz - 6.5GHz Power Meter, Single Channel Power Sensor, 1uW-100mW, DC-18 GHz, 50ohm Peak Power Sensor 100uW - 2 Watts	<u>Model #</u> 8595EM NRVS NRV-Z51	<u>Asset #</u> 780 1422 1535	<u>Cal Due</u> 26-May-06 01-Nov-05 22-Sep-05
<u>Manufacturer</u> Hewlett Packard Rohde & Schwarz Rohde & Schwarz Rohde & Schwarz	s (5725 - 5850 MHz), 07-Sep-05 <u>Description</u> EMC Spectrum Analyzer 9kHz - 6.5GHz Power Meter, Single Channel Power Sensor, 1uW-100mW, DC-18 GHz, 50ohm Peak Power Sensor 100uW - 2 Watts	<u>Model #</u> 8595EM NRVS NRV-Z51	<u>Asset #</u> 780 1422 1535	<u>Cal Due</u> 26-May-06 01-Nov-05 22-Sep-05
Manufacturer Hewlett Packard Rohde & Schwarz Rohde & Schwarz Rohde & Schwarz Conducted Emissions - AC	s (5725 - 5850 MHz), 07-Sep-05 <u>Description</u> EMC Spectrum Analyzer 9kHz - 6.5GHz Power Meter, Single Channel Power Sensor, 1uW-100mW, DC-18 GHz, 50ohm Peak Power Sensor 100uW - 2 Watts	<u>Model #</u> 8595EM NRVS NRV-Z51	<u>Asset #</u> 780 1422 1535	<u>Cal Due</u> 26-May-06 01-Nov-05 22-Sep-05 09-May-06
Manufacturer Hewlett Packard Rohde & Schwarz Rohde & Schwarz Rohde & Schwarz Conducted Emissions - AC Engineer: Mehran Birgani	s (5725 - 5850 MHz), 07-Sep-05 <u>Description</u> EMC Spectrum Analyzer 9kHz - 6.5GHz Power Meter, Single Channel Power Sensor, 1uW-100mW, DC-18 GHz, 50ohm Peak Power Sensor 100uW - 2 Watts Power Ports, 09-Sep-05	<u>Model #</u> 8595EM NRVS NRV-Z51 NRV-Z32	<u>Asset #</u> 780 1422 1535 1536	<u>Cal Due</u> 26-May-06 01-Nov-05 22-Sep-05 09-May-06
Manufacturer Hewlett Packard Rohde & Schwarz Rohde & Schwarz Rohde & Schwarz Conducted Emissions - AC Engineer: Mehran Birgani Manufacturer	s (5725 - 5850 MHz), 07-Sep-05 <u>Description</u> EMC Spectrum Analyzer 9kHz - 6.5GHz Power Meter, Single Channel Power Sensor, 1uW-100mW, DC-18 GHz, 500hm Peak Power Sensor 100uW - 2 Watts Power Ports, 09-Sep-05 <u>Description</u>	<u>Model #</u> 8595EM NRVS NRV-Z51 NRV-Z32	Asset # 780 1422 1535 1536 Asset #	<u>Cal Due</u> 26-May-06 01-Nov-05 22-Sep-05 09-May-06 <u>Cal Due</u>
Manufacturer Hewlett Packard Rohde & Schwarz Rohde & Schwarz Rohde & Schwarz Conducted Emissions - AC Engineer: Mehran Birgani Manufacturer Elliott Laboratories	s (5725 - 5850 MHz), 07-Sep-05 <u>Description</u> EMC Spectrum Analyzer 9kHz - 6.5GHz Power Meter, Single Channel Power Sensor, 1uW-100mW, DC-18 GHz, 500hm Peak Power Sensor 100uW - 2 Watts Power Ports, 09-Sep-05 <u>Description</u> FCC / CISPR LISN	<u>Model #</u> 8595EM NRVS NRV-Z51 NRV-Z32 <u>Model #</u> LISN-3, OATS	Asset # 780 1422 1535 1536 Asset # 304	<u>Cal Due</u> 26-May-06 01-Nov-05 22-Sep-05 09-May-06 <u>Cal Due</u> 08-Jul-06

File: T61140- final

EXHIBIT 2: Test Data Log Sheets

ELECTROMAGNETIC EMISSIONS

TEST LOG SHEETS

AND

MEASUREMENT DATA

T 61140 89 Pages

Elliott

EMC Test Data

Client:	Xirrus, Inc.	Job Number:	J60437
Model:	XS-3500 Access Point	T-Log Number:	T61140
		Account Manager:	Susan Pelzl
Contact:	Ian Laity / Steve Smith		
Emissions Spec:	FCC 15.247, 15.401, RSS-210	Class:	Radio
Immunity Spec:	-	Environment:	-

EMC Test Data

For The

Xirrus, Inc.

Model

XS-3500 Access Point

Date of Last Test: 11/4/2005

Elliott EMC Test Data Job Number: J60437 Client: Xirrus, Inc. Model: XS-3500 Access Point T-Log Number: T61140 Account Manager: Susan Pelzl Contact: Ian Laity / Steve Smith Emissions Spec: FCC 15.247, 15.401, RSS-210 Class: Radio Immunity Spec: Environment: **EUT INFORMATION** General Description The Xirrus, Inc. model XS-3500 is a multi-radio 802.11abg Access Point radio which is designed to act as a hub for a wireless local area network (WLAN). The device contains 4 transceivers, all of which can operate in the 2.4 and 5GHz bands. There is one rf connector to allow the use of an external antenna with one of the transceivers. Normally, the EUT would be ceiling mounted during operation. The EUT was tested as both table-top equipment and also tested with the EUT raised to a height of 1.5m above the ground plane. The electrical rating of the device is 100 - 240Vac, 50/60Hz, 0.5 - 3 A. Equipment Under Test Manufacturer Model Serial Number FCC ID Description Xirrus XS-3500 Wireless acces point

Other EUT Details

2.4 GHz 3dBd Omni antenna (external) and internal antenna, nominal gain 2dBi 5GHz 3dBd Omni antenna (external) and internal antenna, nominal gain 3dBi

EUT Antenna

The antenna is integral to the device for each of the 4 radios. In addition one radio has a reverse TNC connector to allow the use of external antennas, thereby meeting the requirements of FCC 15.203.

EUT Enclosure

The EUT enclosure is primarily constructed of molded plastic. It measures approximately 31 cm in diameter by 6 cm high.

Modification History

Mod. #	Test	Date	Modification
1			
2			
3			

Modifications applied are assumed to be used on subsequent tests unless otherwise stated as a further modification.

Elliot	t		EM	C Test Data
Client:	Xirrus, Inc.		Job Number:	J60437
Model:	XS-3500 Access Point		T-Log Number:	T61140
			Account Manager:	Susan Pelzl
	Ian Laity / Steve Smith			
Emissions Spec:	FCC 15.247, 15.401, RSS-	-210	Class:	Radio
Immunity Spec:	-		Environment:	-
	Loc	t Configuratio	ent	
Manufacturer	Model	Description	Serial Number	FCC ID
Winbook	Winbook	Laptop	-	-
		iote Support Equipr		
Manufacturer	Model	Description	Serial Number	FCC ID
None				
None				
None	Inter	rface Cabling and P	orts	
		rface Cabling and P	Ports Cable(s)	
Port	Connected To	Description		ded Length(m)
Port Etehrnet	Connected To - Laptop Ethernet	Description CAT 5	Cable(s) Shielded or Unshield Unshielded	3
Port	Connected To	Description	Cable(s) Shielded or Unshield	5()

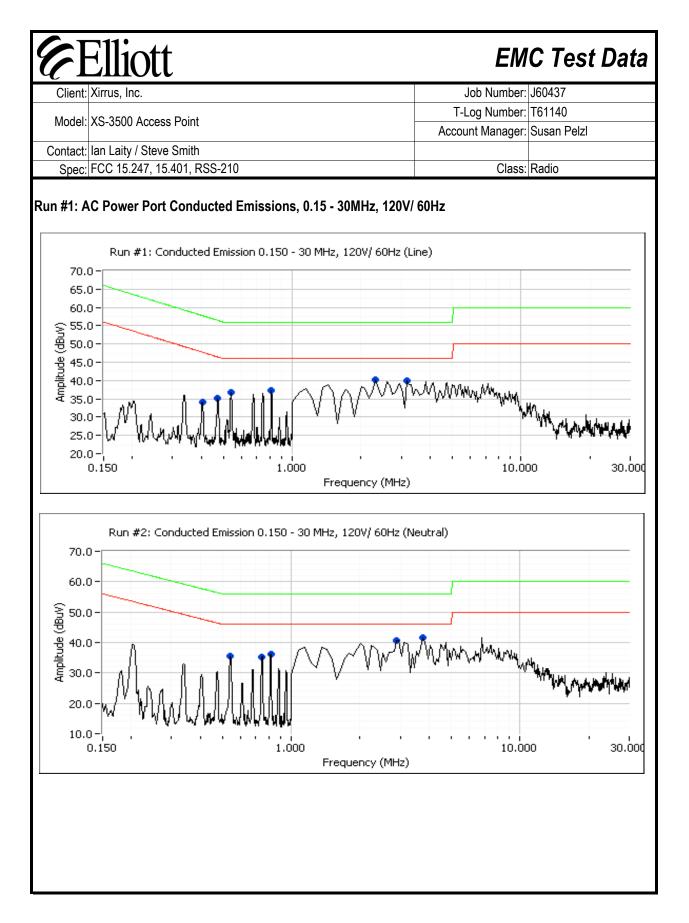
EUT Operation During Emissions Tests

During digital emissions testing the EUT was set to receive mode for all four radios. Each radio was tuned to a different frequency, 2412MHz, 2472MHz, 5260MHz, 5780MHz

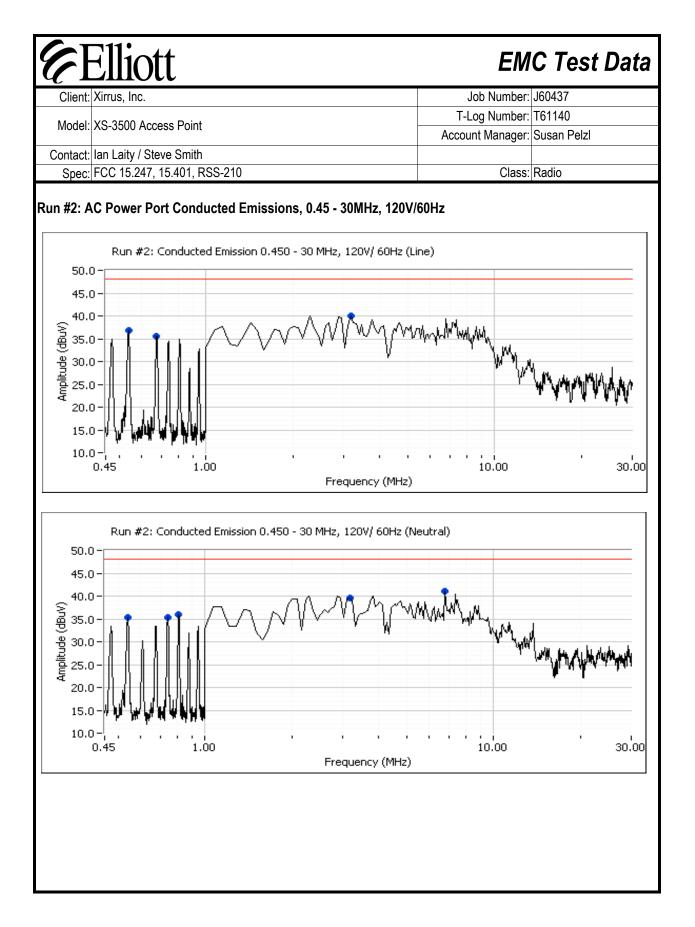
During transmitter testing Radio #4 was set to transmit continuously on either CH #1, 2412MHz, CH6, 2437MHz or CH#11, 2462MHz for 8082.11b and g modes. For 802.11a, the radio was set to continuously transmit on either 5180MHz, 5260MHz, 5320MHz, 5745MHz, 5785MHz or 5825MHz. The transmit data rates were selected as those that gave the highest output power and were 6Mb/s for 802.11g and 802.11a modes, 1Mb/s for 802.11b mode. An additional check was made with all radios operating simultaneously, two in the 2.4GHz band and 2 in the lower 5GHz band. No inter-modulation products were observed and the power on each radio remained the same.

The software used during testing to control the radio was test software that allowed the output power and channel to be set by the test operator. Radiated emissions measurements were made at power settings equal to, or greater than, those that will be used for "normal" operation. The end user will not have access to these capabilities to change output power. Further, channel selection will be limited to only those channels that fall in the FCC allocated bands approved for use by this device.

Elli	ott			EM	C Test	Data
Client: Xirrus, Ind				Job Number:	J60437	
Model: XS-3500	Access Point			-Log Number:		
					Susan Pelzl	
Contact: Ian Laity / Steve Smith Spec: FCC 15.247, 15.401, RSS-210				Class	Radio	
	Conducted I	Emissions -	Power	Ports		
Test Specifics						
Objective:	The objective of this test sessio specification listed above.	n is to perform final q	ualification tes	ting of the EU	IT with respect	to the
Date of Test: Test Engineer: Test Location:	Mehran Birgani	Config. U Config Cha EUT Volt		Ηz		
used for all local supp Ambient Conditi Summary of Res	ons: Temperature: Rel. Humidity:					
Run #	Test Performed	Limit	Result		argin	
1	CE, AC Power,120V/60Hz	EN55022 Class	B Pass		@ 2.909MHz .7dB)	
2	CE, AC Power,120V/60Hz	RSS 210 Issue 5	5 Pass	39.5dBµV	@ 3.180MHz .5dB)	
Modifications Ma	ade During Testing: e made to the EUT during testing	3				



E	Ellio	ott					EMC Test Da	ta
Client:	Xirrus, In	C.					Job Number: J60437	
Model	XS-3500	Access P	loint				T-Log Number: T61140	
MOUEI.	X3-3300	ALLESS F	Unit				Account Manager: Susan Pelzl	
Contact:	lan Laity	/ Steve S	mith					
Spec:	FCC 15.2	247, 15.40)1, RSS-210)			Class: Radio	
Frequency MHz	Level dBµV	AC Line	RSS GEN/ Limit	FCC15.207 Margin	Detector QP/Ave	Comments		
		-				Comments		
2.909	39.3	Neutral	46.0	-6.7	Average			
3.180	38.2	Neutral	46.0	-7.8	Average			
3.173	37.7	Line	46.0	-8.3	Average			
2.297	37.1	Line	46.0	-8.9	Average			
0.812	35.9	Neutral	46.0	-10.1	Average			
0.540	35.8	Line	46.0	-10.2	Average			
2.909	40.3	Neutral	56.0	-15.7	QP			
3.180	39.5	Neutral	56.0	-16.5	QP			
2.297	39.4	Line	56.0	-16.6	QP			
3.173	39.3	Line	56.0	-16.7	QP			
0.812	36.4	Neutral	56.0	-19.6	QP			
0.540	36.3	Line	56.0	-19.7	QP			



EMC Test Data				
Job Number: J60437				
T-Log Number: T61140				
Account Manager: Susan Pelzl				
Class: Radio				

Run #2: AC Power Port Conducted Emissions, 0.45 - 30MHz, 120V/60Hz

Frequency	Level	AC	RSS	5 210	Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
3.180	39.5	Neutral	48.0	-8.5	QP	
2.297	39.4	Line	48.0	-8.6	QP	
3.173	39.3	Line	48.0	-8.7	QP	
0.540	36.3	Line	48.0	-11.7	QP	
0.746	35.2	Neutral	48.0	-12.8	QP	
0.812	36.4	Neutral	56.0	-19.6	QP	

-

EMC Test Data

 Client:
 Xirrus, Inc.
 Job Number:
 J60437

 Model:
 XS-3500 Access Point
 T-Log Number:
 T61140

 Contact:
 Ian Laity / Steve Smith
 Account Manager:
 Susan Pelzl

 Spec:
 FCC 15.247, 15.401, RSS-210
 Class:
 Radio

Radiated Emissions - Digital Device (FCC 15 Subpart B)

Test Specifics

Elliott

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

Date of Test: 8/9/2005 Test Engineer: Mehran Birgani Test Location: SVOATS #2 Config. Used: 1 Config Change: None EUT Voltage: 230V/50Hz

General Test Configuration

The EUT was located on the turntable for radiated emissions testing. Remote support equipment was located approximately 30 meters from the test area with all I/O connections running on top of the groundplane routed overhead.

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

Ambient Conditions:	Temperature:	18 - 24 °C
	Rel. Humidity:	40 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
2	RE, 30 - 1000MHz, Maximized	Class A	Deee	42.7dBµV/m @
2	Emissions	Class A	Pass	791.998MHz (-4.3dB)
2	RE, 1000 - 3000 MHz,	FCC Class A	Deee	39.7dBµV/m @
3	Maximized Emissions	FUU Ulass A	Pass	1452.0MHz (-9.8dB)
3	RE, 1000 - 3000 MHz,		Pass	50.2dBµV/m
		RSS 210 Table 3		(323.6µV/m) @
	Maximized Emissions			1452.0MHz (-3.8dB)

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.

E	Ellic	ott						EM	C Test Dat
Client:	Xirrus, Inc				Job Number: J60437				
							T-Log Number: T61140		
Model:	XS-3500 A	Access F	Point				Account Manager:		
Contact:	lan Laity /	Steve S	mith				, 10000	in manager.	
	-)1, RSS-210)				Class:	Radio
Spec.	100 13.2	+7, 10.40	71, NOO-2 N)				01033.	Itaulo
	CPU spee	-	825MHz to	525MHz,	•1000 MHz DDR at 266	SMHz			
Frequency	Level	Pol	EN55022	2 Class A	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters		
791.998	42.7	Н	47.0	-4.3	QP	29	1.8		
593.994	42.1	Н	47.0	-4.9	QP	20	1.0	Signal Sub	
527.996	37.7	Н	47.0	-9.3	QP	0	1.0		
791.998	37.0	V	47.0	-10.0	QP	250	1.0		
132.006	29.0	V	40.0	-11.0	QP	0	1.1	Broadband	
125.007	28.2	V	40.0	-11.8	QP	0	1.0	Broadband	
999.999	35.0	V	47.0	-12.0	QP	35	1.0		
750.015	33.3	Н	47.0	-13.7	QP	250	1.0		
48.040	23.9	V	40.0	-16.1	QP	350	1.8	Broadband	
500.009	30.0	Н	47.0	-17.0	QP	0	1.0		
375.012	30.0	Н	47.0	-17.0	QP	40	1.0		
395.997	29.2	V	47.0	-17.8	QP	167	2.3		
625.021	29.1	V	47.0	-17.9	QP	214	1.0		
500.009	27.0	V	47.0	-20.0	QP	85	1.2		
264.003	26.4	V	47.0	-20.6	QP	10	1.0		
375.012	25.8	V	47.0	-21.2	QP	185	2.0		
100 001	17.2	V	40.0	-22.8	QP	0	1.0		
198.001	22.0	V	47.0	-25.0	QP	60	2.1		

Run #2: Maximized Readings From Run #1 Test distance = 10m

Frequency	Level	Pol	EN55022	2 Class A	Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
791.998	42.7	Н	47.0	-4.3	QP	29	1.8	
593.994	42.1	Н	47.0	-4.9	QP	20	1.0	Signal Sub.
527.996	37.7	Н	47.0	-9.3	QP	0	1.0	
791.998	37.0	V	47.0	-10.0	QP	250	1.0	
132.006	29.0	V	40.0	-11.0	QP	0	1.1	Broadband
125.007	28.2	V	40.0	-11.8	QP	0	1.0	Broadband

E	Elliott	EMC Test Data			
Client:	Xirrus, Inc.	Job Number:	J60437		
Model	XS-3500 Access Point	T-Log Number:	T61140		
wouer.		Account Manager:	Susan Pelzl		
	Ian Laity / Steve Smith				
Spec:	FCC 15.247, 15.401, RSS-210	Class:	Radio		

Run #3: Maximized readings, 1000 - 5000 MHz

Test distance = 3m, data extrapolated to 10m

	υαια ελι	apolateu ti					
Level	Pol	FCC C	Class A	Detector	Azimuth	Height	Comments
dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
39.7	V	49.5	-9.8	Pk	275	1.0	
39.5	V	49.5	-10.0	Pk	215	1.1	
37.7	V	49.5	-11.9	Pk	318	1.1	
37.1	V	49.5	-12.4	Pk	170	1.2	
36.7	V	49.5	-12.9	Pk	337	1.0	
36.4	V	49.5	-13.1	Avg	275	1.0	
36.2	V	49.5	-13.3	Pk	22	1.1	
35.3	V	49.5	-14.2	Avg	215	1.1	
34.5	V	49.5	-15.0	Avg	318	1.1	
33.6	V	49.5	-15.9	Pk	209	1.0	
32.6	V	49.5	-16.9	Avg	170	1.2	
30.6	V	49.5	-19.0	Avg	337	1.0	
28.0	V	49.5	-21.5	Avg	22	1.1	
27.9	V	49.5	-21.7	Avg	209	1.0	
	Level dBµV/m 39.7 39.5 37.7 37.1 36.7 36.4 36.2 35.3 34.5 33.6 32.6 30.6 28.0	Level Pol dBμV/m v/h 39.7 V 39.5 V 37.7 V 37.7 V 36.7 V 36.7 V 36.7 V 36.7 V 36.7 V 36.7 V 36.2 V 35.3 V 34.5 V 32.6 V 30.6 V 28.0 V	Level Pol FCC C dBμV/m v/h Limit 39.7 V 49.5 39.5 V 49.5 37.7 V 49.5 37.7 V 49.5 36.7 V 49.5 36.7 V 49.5 36.2 V 49.5 35.3 V 49.5 35.3 V 49.5 34.5 V 49.5 32.6 V 49.5 32.6 V 49.5 30.6 V 49.5 32.6 V 49.5 30.6 V 49.5	dBμV/m v/h Limit Margin 39.7 V 49.5 -9.8 39.5 V 49.5 -10.0 37.7 V 49.5 -11.9 37.1 V 49.5 -12.4 36.7 V 49.5 -12.9 36.4 V 49.5 -13.1 36.2 V 49.5 -13.3 35.3 V 49.5 -14.2 34.5 V 49.5 -15.0 33.6 V 49.5 -15.0 33.6 V 49.5 -16.9 30.6 V 49.5 -16.9 30.6 V 49.5 -16.9 30.6 V 49.5 -12.5	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	LevelPolFCC Class ADetectorAzimuthdBμV/mv/hLimitMarginPk/QP/Avgdegrees39.7V49.5-9.8Pk27539.5V49.5-10.0Pk21537.7V49.5-11.9Pk31837.1V49.5-12.4Pk17036.7V49.5-12.9Pk33736.4V49.5-13.1Avg27536.2V49.5-13.3Pk2235.3V49.5-15.0Avg31833.6V49.5-15.9Pk20932.6V49.5-16.9Avg17030.6V49.5-19.0Avg23728.0V49.5-21.5Avg22	LevelPolFCC Class ADetectorAzimuthHeightdBμV/mv/hLimitMarginPk/QP/Avgdegreesmeters39.7V49.5-9.8Pk2751.039.5V49.5-10.0Pk2151.137.7V49.5-11.9Pk3181.137.1V49.5-12.4Pk1701.236.7V49.5-12.9Pk3371.036.4V49.5-13.1Avg2751.036.2V49.5-13.3Pk221.135.3V49.5-15.0Avg3181.134.5V49.5-15.0Avg3181.133.6V49.5-15.9Pk2091.032.6V49.5-16.9Avg3371.028.0V49.5-15.0Avg2221.1

No emissions observed above 5 GHz (evaluated 5 - 10 GHz).

Table above using RSS 210 Table 3 limits for receivers:

Test distance = 3m

Frequency	Level	Pol	RSS 210) Table 3	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1451.958	50.2	V	54.0	-3.8	Pk	275	1.0	
1715.945	50.0	V	54.0	-4.0	Pk	215	1.1	
1320.040	48.2	V	54.0	-5.8	Pk	318	1.1	
1583.968	47.6	V	54.0	-6.3	Pk	170	1.2	
1583.970	47.2	V	54.0	-6.8	Pk	337	1.0	

For the above measurements there was one receiver operating in each band (2400 - 2484.5 MHz, 5150 - 5350 MHz and 5725 - 5850 MHz). All are peak readings copared to the average limit unless stated otherwise.

Elliott	ЕМ	C Test Data
Client: Xirrus, Inc.	Job Number:	J60437
Model: XS-3500 Access Point	T-Log Number:	T61140
	Account Manager:	Susan Pelzl
Contact: Ian Laity / Steve Smith		
Spec: FCC 15.247, 15.401, RSS-210	Class:	N/A

FCC 15.247 DTS - Power, Bandwidth and Spurious Emissions

Test Specifics

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

Date of Test: 8/23/2005 Test Engineer: Mark Briggs Test Location: SVOATS #2

Config. Used: #1 Config Change: N/A EUT Voltage: 120V/60Hz

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 used.

Ambient Conditions:	Temperature:	20 °C
	Rel. Humidity:	45 %

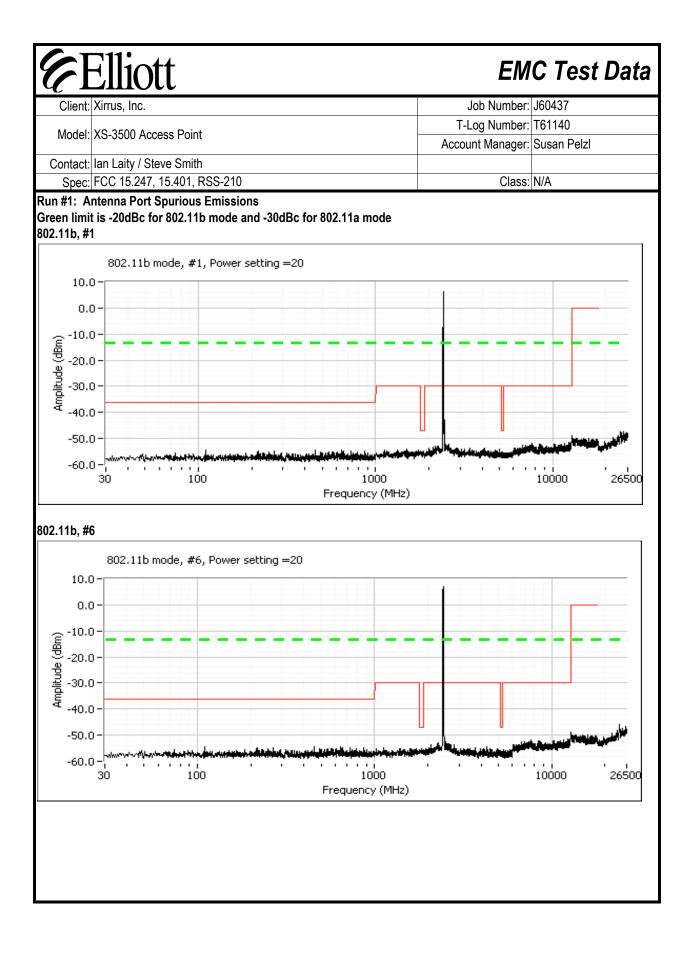
Summary of Results

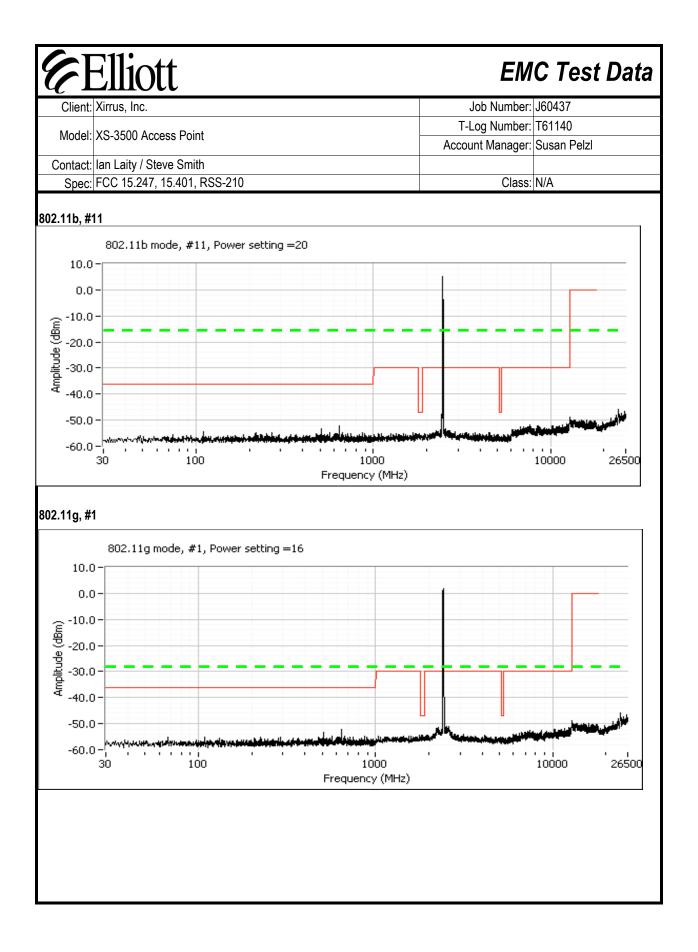
Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Antenna Port Spurious	FCC Part 15.209 /		More than 30dB below
I	Emissions	15.247(c)		in-band level
2	6dB Bandwidth	15.247(a)	Pass	> 12 MHz
3	Output Power 802.11b - Peak	15.247(b)	Deee	20.3dBm (0.107 W);
5	Power (individual / aggregate)	15.247(0)	Pass	26.3dBm (0.428W)
3	Output Power 802.11g - UNII power method (individual / aggregate)	15.247(b)	Pass	21.18dBm (0.131W); 27.18dBm (0.528W)
4	Power Spectral Density (PSD)	15.247(d)	Pass	b mode 7.8dBm/3kHz g mode -3.1dBm/3kHz

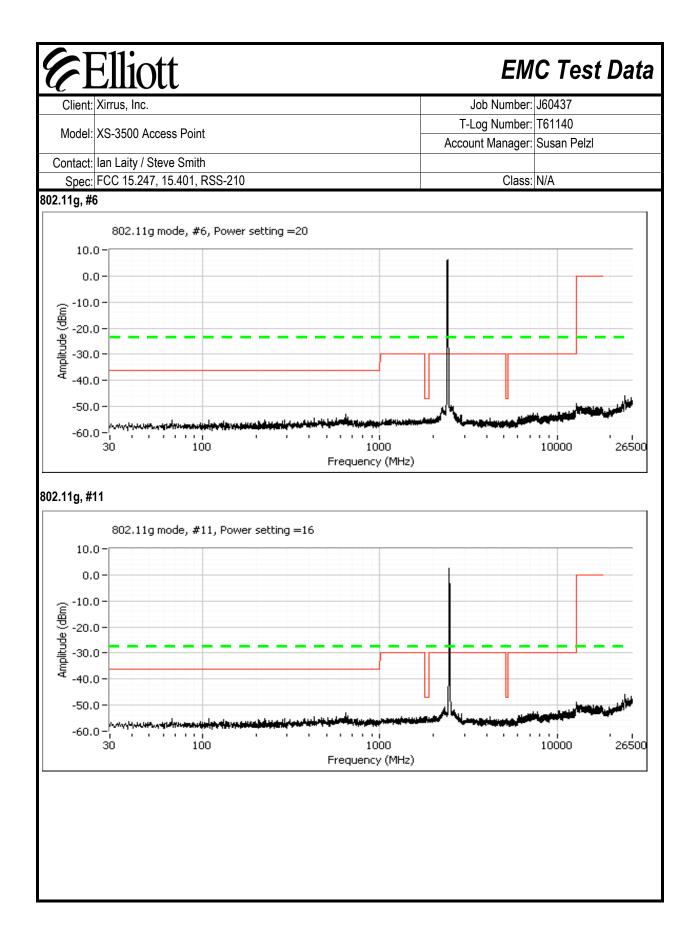
Modifications Made During Testing:

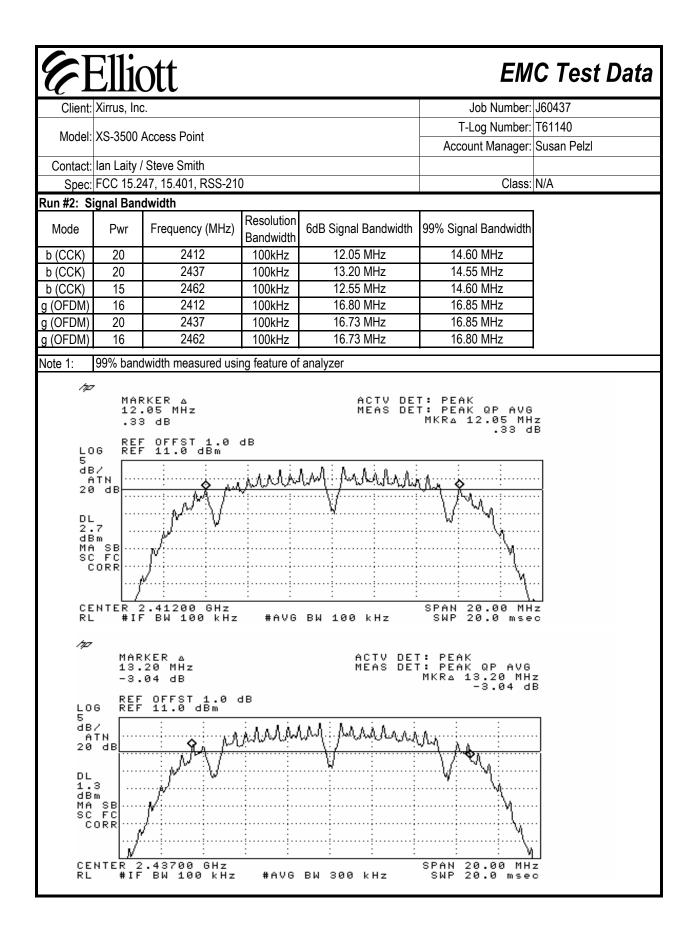
No modifications were made to the EUT during testing

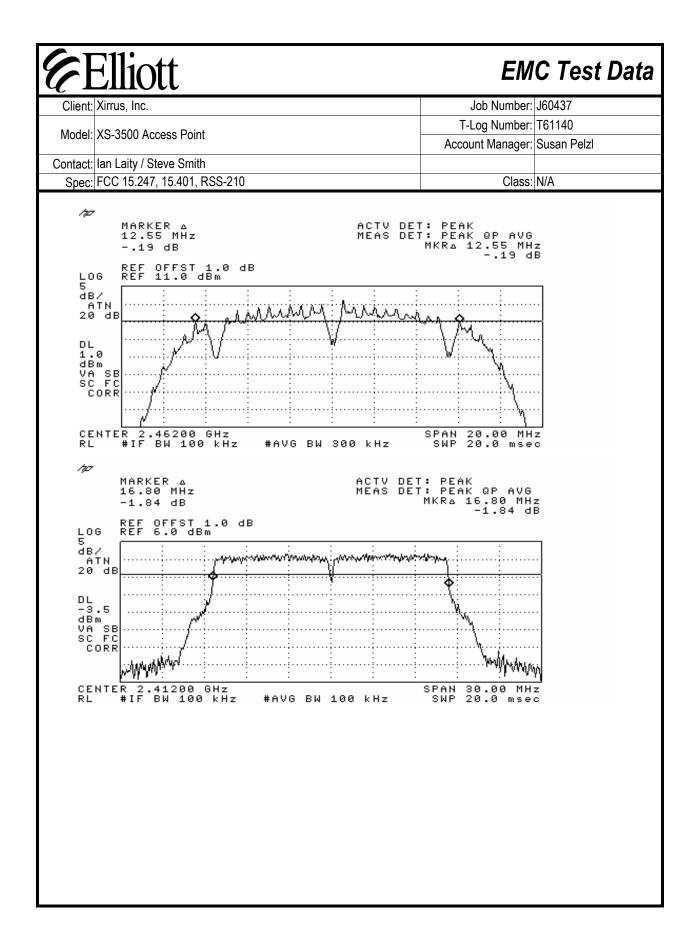
Deviations From The Standard

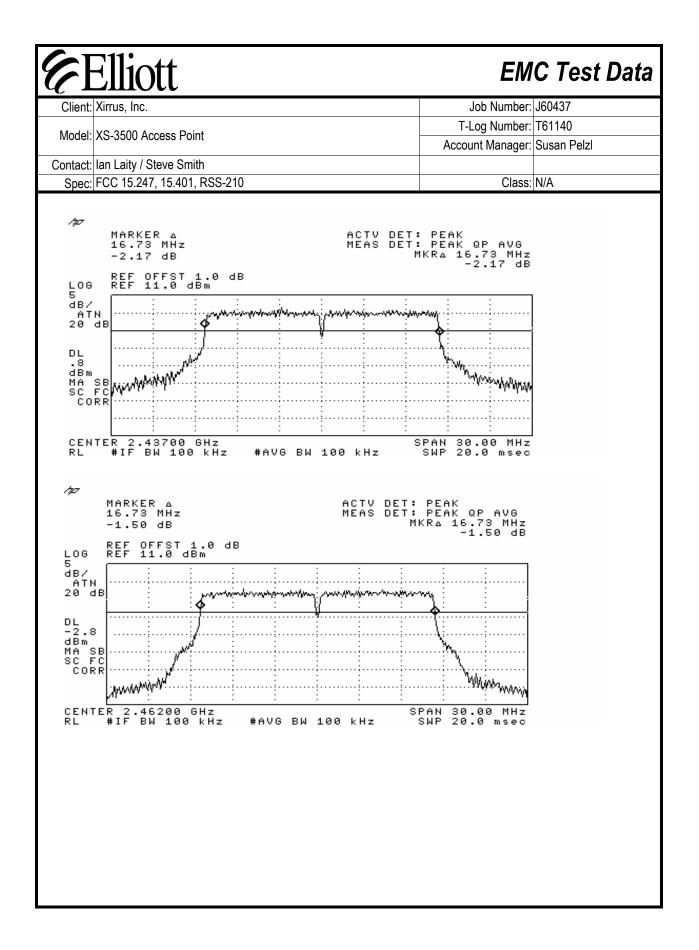






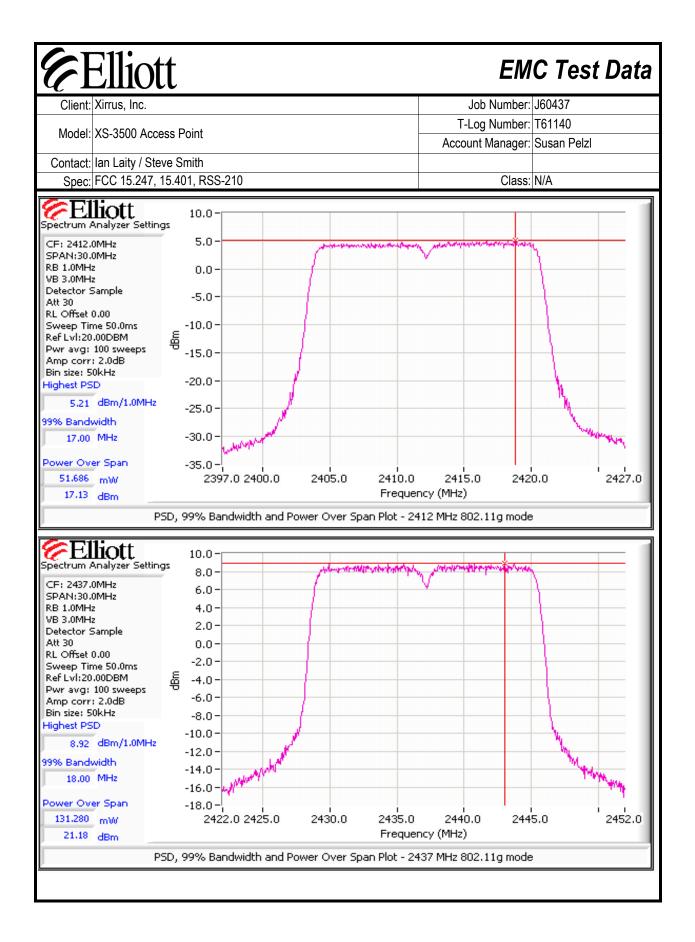


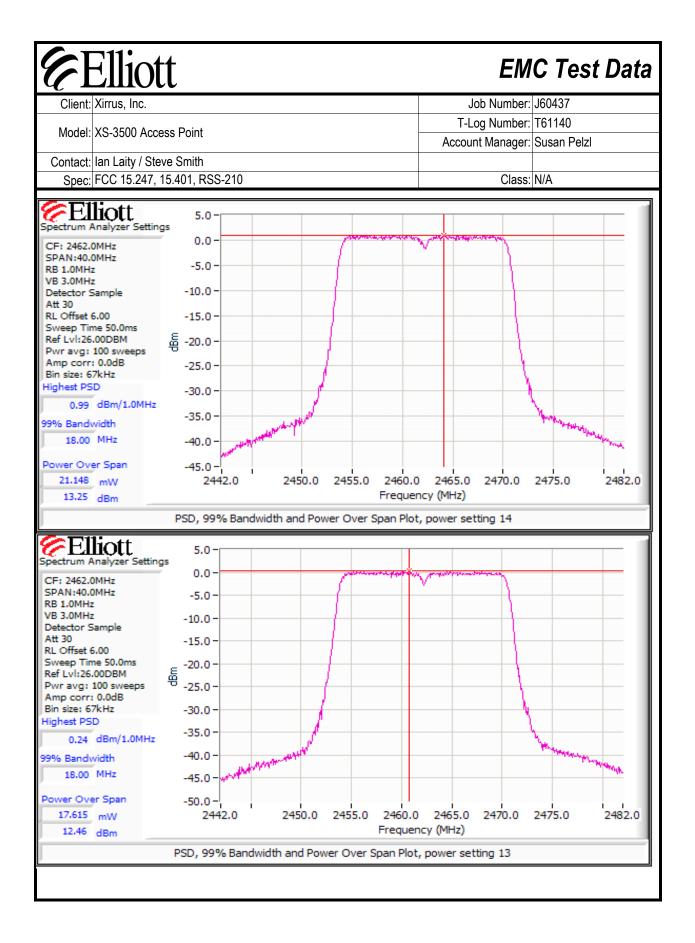


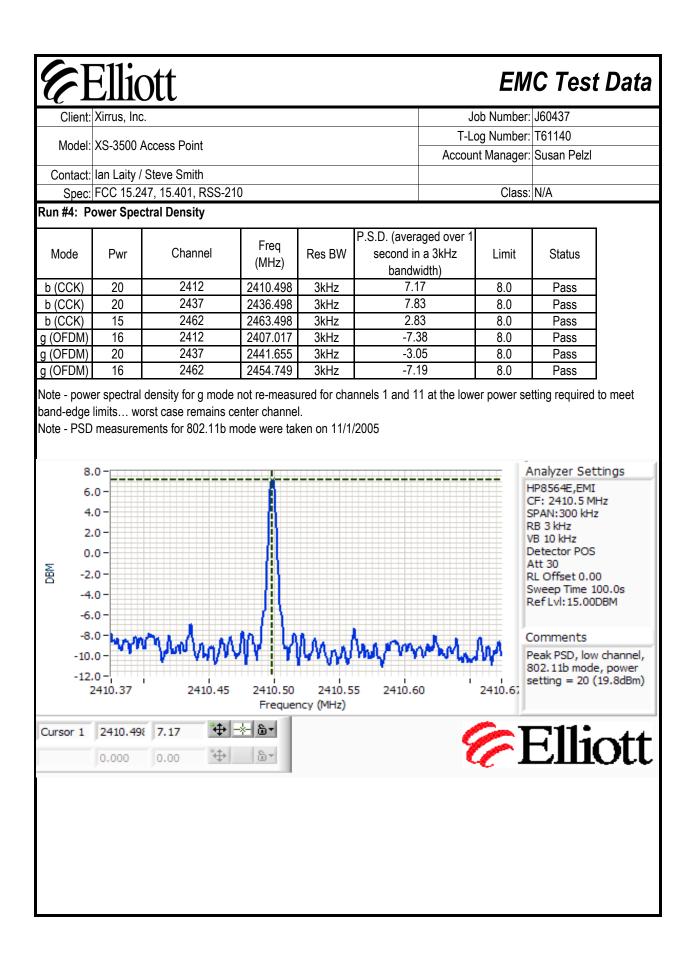


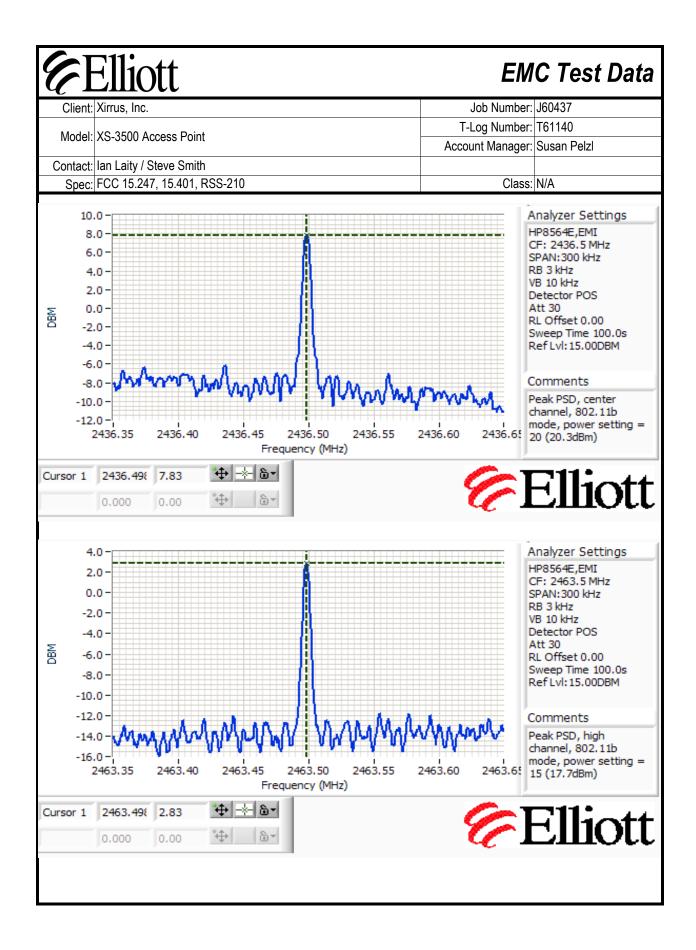
T-Log: T61140- final.xls, Rev 1.0

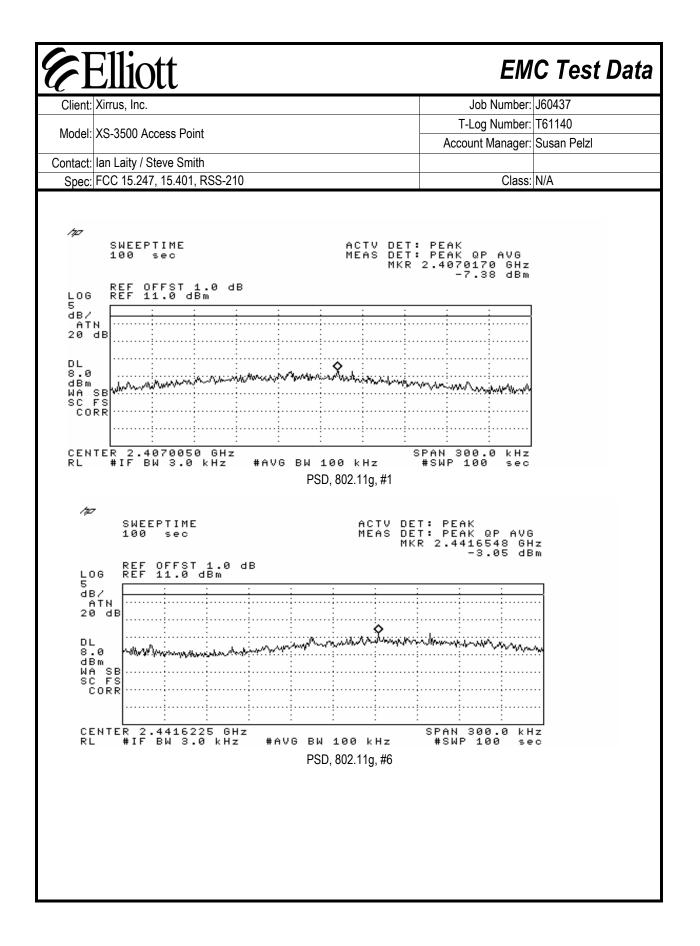
E	Ellic	ott			EM	C Tes	t Data
Client:	Xirrus, Inc).			Job Number:	J60437	
					T-Log Number:	T61140	
Model:	XS-3500 /	Access Point			Account Manager:		
Contact:	lan Laity /	Steve Smith					
Spec:	FCC 15.2	47, 15.401, RSS-210)		Class:	N/A	
Run #3a: 0	Output Po	wer					
Maxin	num anten	na gain: 5.2	dBi				
Mode	Pwr	Frequency (MHz)	Res BW	Output Power (dBm)	Output Power (W)	EIRP (W)	
b (CCK)	20	2412	-	19.8	0.095	0.316	
b (CCK)	20	2437	-	20.3	0.107	0.355	
b (CCK)	15	2462	-	17.7	0.059	0.195	
	here are o		oping chann	on-overlapping channels: els in the 2.4 GHz band)	25.071 dBm 0.321 Watts		
Maxin	num anten	na gain: 5.2	dBi	using UNII test method	I		
Measured	using pea	k power meter - for	reference			-	_
Mode	Pwr	Frequency (MHz)	Res BW	Output Power (dBm)	Output Power (W)	EIRP (W)	
g (OFDM)	16	2412	-	22.4	0.174	0.575	_
g (OFDM)	20	2437	-	24.1	0.257	0.851	_
g (OFDM)	16	2462	-	22.2	0.166	0.550	
(OFDM)	14	2462 2462	-	21.4 20.2	0.138	0.275	internal
g (OFDM)	13	2402 ing UNII test metho	- d voluoo		0.105	0.347	external
Mode	Pwr	Frequency (MHz)	Res BW	Output Power (dBm)	Output Power (W)	EIRP (W)	٦
g (OFDM)	16	2412	1MHz	17.13	0.052	0.171	-
g (OFDM)	20	2412	1MHz	21.18	0.131	0.171	4
g (OFDM)	14	2462	1MHz	13.25	0.021	0.433	internal
g (OFDM)	14	2462	1MHz	12.46	0.021	0.042	external
Aggı	regate Pov here are o	ver - assumes three i nly three non-overlap	radios on no oping chann	on-overlapping channels: els in the 2.4 GHz band)	25.951 dBm 0.394 Watts		
Note 1:	(100 swee	eps). Refer to plots b	elow.	channel, RB=1MHz, VB=	•	·	
Note 1:				enna gain of 3dBd, except external antenna at powe			nai antenna

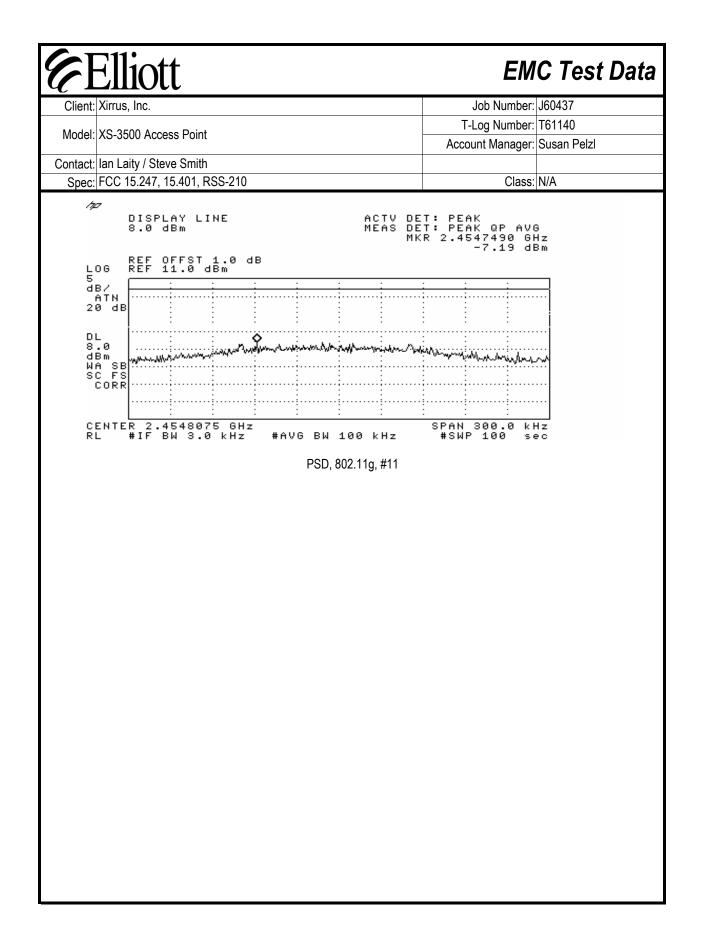












E	Elliott	ЕМ	C Test Data
Client:	Xirrus, Inc.	Job Number:	J60437
Madal	XS-3500 Access Point	T-Log Number:	T61140
wouer.		Account Manager:	Susan Pelzl
Contact:	Ian Laity / Steve Smith		
Spec:	FCC 15.247, 15.401, RSS-210	Class:	N/A

FCC 15.247 Spurious Emissions - 802.11b Internal Antenna

Test Specifics

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

Date of Test: 8/10/2005 Test Engineer: David Bare, Chris Byleckie Test Location: SVOATS #1

Config. Used: 1 Config Change: None EUT Voltage: 120V/60Hz

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 approximately 30 meters from the EUT with all I/O connections running on top of the groundplane or routed in overhead in the GR-1089 test configuration.

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

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 used.

Ambient Conditions:	Temperature:	20 °C
	Rel. Humidity:	56 %

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Radiated Spurious Emissions, 30 - 25000 MHz	FCC Part 15.209 / 15.247(c)	Pass	53.8dBµV/m (489.8µV/m) @ 2487.5MHz (-0.2dB)

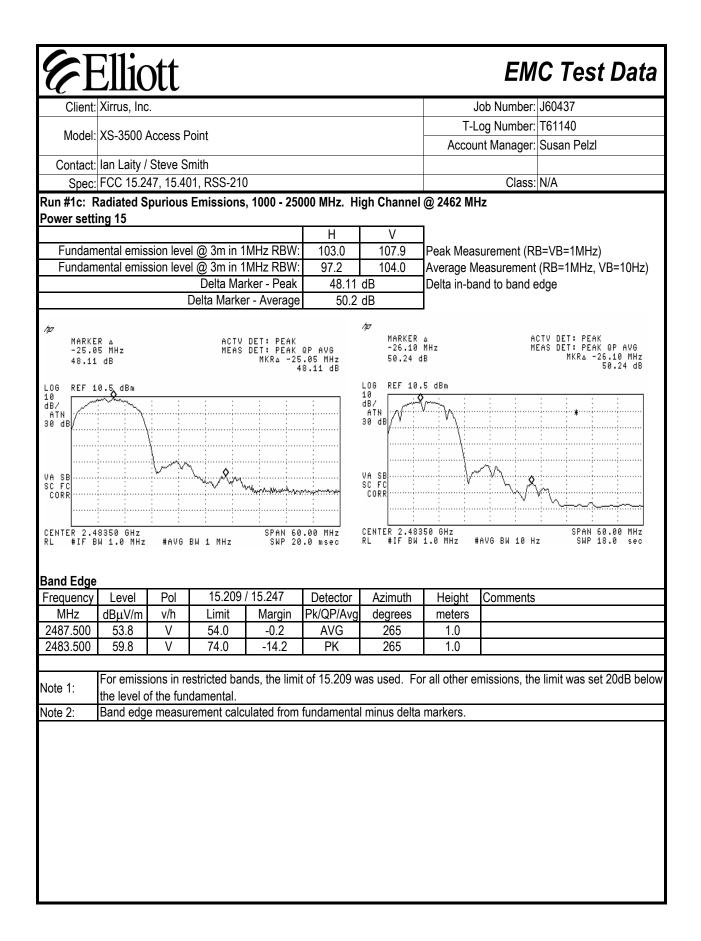
Modifications Made During Testing:

No modifications were made to the EUT during testing

Deviations From The Standard

~ -	Ellic)TT						EMC Test Dat
Client:	Xirrus, Inc						J	lob Number: J60437
Model	XS-3500 A	COOSS D	oint					.og Number: T61140
Model.	NO-0000 P	1000331	oint				Accou	nt Manager: Susan Pelzl
	lan Laity /							
			1, RSS-210					Class: N/A
		-	Emissions	s, 1000 - 250	000 MHz. L	ow Channel	@ 2412 MH	z
adio #2, P	ower setti	ng 20			н	V	1	
Fundam	ental emis	sion leve	I @ 3m in 1	MHz RBW:		v 111.57	Poak Moas	surement (RB=VB=1MHz)
			<u> </u>	MHz RBW:		108.29		leasurement (RB=1MHz, VB=10Hz
			<u> </u>	arker - Peak				
				er - Average				
DG REF 1 3/ ATN 3 dB A SB	.4.5 dBm		/^			LOG REF 14.5 LO ATN 30 dB	dBm	
C FC CORR	y-/aaa.go/Jeria.age	www		SPAN 60	.00 MHz .	CORR		SPAN 60.00 MHz
L #IF E	39000 GHz 3W 1.0 MHz	#AVG E	BW 1 MHz	SWP 20		RL #IF BW 1	.0 MHz #f	AVG BW 10 Hz SWP 18.0 sec
nd Edge		#AVG E		SWP 20		Azimuth	.0 MHz #f	Comments
L #IF E I nd Edge equency MHz	Level dBµV/m				.0 msec R	Azimuth	.0 MHz #A	Comments
nd Edge equency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	.0 MHz #A	
						CENTER 2.3900	0 GHz	

Cilent:	Xirrus, Inc						J	lob Number:	J60437
							T-L	og Number:	T61140
Model:	XS-3500 /	Access P	oint					-	Susan Pelzl
Contact:	lan Laity /	Steve Si	mith					U	
Spec:	FCC 15.24	47, 15.40)1, RSS-210)				Class:	N/A
Other Spur	ious emis	sions							
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
9648.134	43.4	V	54.0	-10.6	AVG	115	1.0		
9648.030	43.1	Н	54.0	-10.9	AVG	236	1.2		
7237.183	42.8	V	54.0	-11.2	AVG	216	1.0		
4825.067	40.2	V	54.0	-13.8	AVG	92	1.0		
7239.767	37.5	Н	54.0	-16.5	AVG	214	1.0		
4821.850	35.2	Н	54.0	-18.8	AVG	190	1.0		
7237.183	54.9	V	74.0	-19.1	PK	216	1.0		
12058.530	34.8	V	54.0	-19.2	AVG	0	1.0	Noise floor	
12058.950	34.6	Н	54.0	-19.4	AVG	344	1.0	Noise floor	
4825.067	52.8	V	74.0	-21.2	PK	92	1.0		
9648.134	51.3	V	74.0	-22.8	PK	115	1.0		
9648.030	49.7	Н	74.0	-24.3	PK	236	1.2		
7239.767	49.1	Н	74.0	-24.9	PK	214	1.0		
4821.850	47.6	Н	74.0	-26.4	PK	190	1.0		
4821.850 12058.950	47.6 46.5	H H	74.0	-27.5	PK	344	1.0	Noise floor	
4821.850 12058.950 12058.530	47.6 46.5 45.7 For emiss	H H V ions in re	74.0 74.0 estricted bar	-27.5 -28.3	PK PK	344 115	1.0 1.0	Noise floor	e limit was set 20dB belo
4821.850 12058.950 12058.530	47.6 46.5 45.7 For emiss the level c	H H V ions in re of the fund	74.0 74.0 estricted bar damental. Emissions	-27.5 -28.3 ids, the limi , 1000 - 25,	PK PK t of 15.209 w	344 115	1.0 1.0 r all other e	Noise floor missions, the MHz	
4821.850 12058.950 12058.530 lote 1: Run #1b: F Radio #2, P Frequency	47.6 46.5 45.7 For emiss the level of Radiated S Power sett Level	H H V ions in re if the fund purious ing 20 Pol	74.0 74.0 estricted bar damental. Emissions 15.209	-27.5 -28.3 ids, the limi , 1000 - 25, / 15.247	PK PK t of 15.209 w 000 MHz. C Detector	344 115 vas used. Fo enter Chanr Azimuth	1.0 1.0 r all other e nel @ 2437 Height	Noise floor missions, the	
4821.850 12058.950 12058.530 lote 1: Run #1b: F Radio #2, P Frequency MHz	47.6 46.5 45.7 For emiss the level c Radiated S Cower sett Level dBµV/m	H H V ions in re f the fund purious ing 20 Pol V/h	74.0 74.0 estricted bar damental. Emissions 15.209 Limit	-27.5 -28.3 ids, the limi , 1000 - 25, (15.247 Margin	PK PK t of 15.209 w 000 MHz. C Detector Pk/QP/Avg	344 115 vas used. Fo enter Chanr Azimuth degrees	1.0 1.0 r all other e nel @ 2437 Height meters	Noise floor missions, the MHz	
4821.850 12058.950 12058.530 1	47.6 46.5 45.7 For emiss the level c Radiated S Power sett Level dBμV/m 44.6	H H V ions in re f the fun purious ing 20 Pol V/h V	74.0 74.0 estricted bar damental. Emissions 15.209 Limit 54.0	-27.5 -28.3 ids, the limi , 1000 - 25 , / 15.247 Margin -9.4	PK PK t of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG	344 115 vas used. Fo enter Chanr Azimuth degrees 94	1.0 1.0 r all other e nel @ 2437 Height meters 1.0	Noise floor missions, the MHz	
4821.850 (2058.950) (2058.530) (2059.530) (2059.530) (2059.530) (2059.530) (2059.530) (2	47.6 46.5 45.7 For emiss the level of Radiated S Power sett Level dBμV/m 44.6 43.3	H H V ions in re if the fund f the fund v/h V V	74.0 74.0 estricted bar damental. Emissions 15.209 Limit 54.0 54.0	-27.5 -28.3 ids, the limi , 1000 - 25, / 15.247 Margin -9.4 -10.7	PK PK t of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG AVG	344 115 vas used. Fo enter Chanr Azimuth degrees 94 114	1.0 1.0 r all other e nel @ 2437 Height meters 1.0 1.0	Noise floor missions, the MHz	
4821.850 (2058.950) (2058.530) (2059.530) (2059.530) (2059.530) (2059.530) (2059.530) (2	47.6 46.5 45.7 For emiss the level of Radiated S Power sett Level dBμV/m 44.6 43.3 40.8	H H ions in re if the fund f the	74.0 74.0 estricted bar damental. Emissions 15.209 Limit 54.0 54.0 54.0	-27.5 -28.3 ids, the limi , 1000 - 25 , (15.247 Margin -9.4 -10.7 -13.2	PK PK t of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG AVG AVG	344 115 vas used. Fo enter Chanr Azimuth degrees 94 114 225	1.0 1.0 r all other e nel @ 2437 Height meters 1.0 1.0 1.0	Noise floor missions, the MHz	
4821.850 12058.950 12058.530 12058.530 12058.530 12058.530 12058.530 12058.530 12058.530 12058.55	47.6 46.5 45.7 For emiss the level of Radiated S Power setti Level dBμV/m 44.6 43.3 40.8 40.7	H H V ions in re f the fund purious ing 20 Pol V/h V V V V V	74.0 74.0 estricted bar damental. Emissions 15.209 Limit 54.0 54.0 54.0 54.0 54.0	-27.5 -28.3 ids, the limi , 1000 - 25 , / 15.247 Margin -9.4 -10.7 -13.2 -13.3	PK PK t of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG AVG AVG AVG	344 115 vas used. Fo enter Chanr Azimuth degrees 94 114 225 217	1.0 1.0 r all other e nel @ 2437 Height meters 1.0 1.0 1.0 1.0	Noise floor missions, the MHz	
4821.850 12058.950 12058.530 12058.530 Iote 1: Run #1b: F Radio #2, P Frequency MHz 4873.400 9747.950 9747.995 7309.835 4872.750	47.6 46.5 45.7 For emiss the level c Radiated S Cower sett Level dBμV/m 44.6 43.3 40.8 40.7 39.0	H H V ions in re f the fun purious ing 20 Pol V/h V V H V H H	74.0 74.0 estricted bar damental. Emissions 15.209 Limit 54.0 54.0 54.0 54.0 54.0 54.0	-27.5 -28.3 ids, the limi , 1000 - 25, (15.247 Margin -9.4 -10.7 -13.2 -13.3 -15.0	PK PK t of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG AVG AVG AVG AVG AVG	344 115 vas used. Fo enter Chanr Azimuth degrees 94 114 225 217 191	1.0 1.0 r all other e nel @ 2437 Height meters 1.0 1.0 1.0 1.0 1.0	Noise floor missions, the MHz	
4821.850 12058.950 12058.530 12058.530 12058.530 12058.530 12058.530 12058.530 12058.530 12058.530 12058.550 1	47.6 46.5 45.7 For emiss the level of Radiated S Power sett Level dBμV/m 44.6 43.3 40.8 40.7 39.0 57.3	H H V ions in re f the fun purious ing 20 Pol V/h V V V H V H V V	74.0 74.0 estricted bar damental. Emissions 15.209 Limit 54.0 54.0 54.0 54.0 54.0 74.0	-27.5 -28.3 ids, the limi , 1000 - 25, / 15.247 / 15.247 / 15.247 / 15.247 -9.4 -10.7 -13.2 -13.3 -15.0 -16.7	PK PK t of 15.209 w t of 15.209 w Detector Pk/QP/Avg AVG AVG AVG AVG AVG AVG PK	344 115 vas used. Fo enter Chanr Azimuth degrees 94 114 225 217 191 94	1.0 1.0 r all other e nel @ 2437 Height meters 1.0 1.0 1.0 1.0 1.0 1.0	Noise floor missions, the MHz	
4821.850 2058.950 2058.530 2058.530 lote 1: Run #1b: F Radio #2, P Frequency MHz 4873.400 9747.950 9747.955 7309.835 7309.835 7309.835 7309.835 7309.835 7309.835 7309.835	47.6 46.5 45.7 For emiss the level of Radiated S Power sett Level dBμV/m 44.6 43.3 40.8 40.7 39.0 57.3 34.8	H H V ions in re f the fund purious ing 20 Pol V/h V V H V H V H H	74.0 74.0 estricted bar damental. Emissions 15.209 Limit 54.0 54.0 54.0 54.0 54.0 74.0 54.0 54.0	-27.5 -28.3 inds, the limi , 1000 - 25, (15.247 (15.247 Margin -9.4 -10.7 -13.2 -13.3 -15.0 -16.7 -19.2	PK PK t of 15.209 w t of 15.209 w Detector Pk/QP/Avg AVG AVG AVG AVG AVG AVG AVG AVG AVG	344 115 vas used. Fo enter Chanr Azimuth degrees 94 114 225 217 191 94 214	1.0 1.0 r all other e nel @ 2437 Height meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Noise floor missions, the MHz	
4821.850 12058.950 12058.530 12058.530 12058.530 12058.530 12058.530 12058.530 12058.530 12058.55	47.6 46.5 45.7 For emiss the level of Radiated S Power setti Level dBμV/m 44.6 43.3 40.8 40.7 39.0 57.3 34.8 52.9	H H V ions in re if the fund f the fund f the fund purious purious ing 20 Pol V/h V V V H V H V V H V V	74.0 74.0 estricted bar damental. Emissions 15.209 Limit 54.0 54.0 54.0 54.0 54.0 74.0 54.0 74.0 74.0	-27.5 -28.3 inds, the limi , 1000 - 25 , / 15.247 / 15.247 / Margin -9.4 -10.7 -13.2 -13.3 -15.0 -16.7 -19.2 -21.2	PK PK t of 15.209 w t of 15.209 w Detector Pk/QP/Avg AVG AVG AVG AVG AVG PK AVG PK AVG PK	344 115 vas used. Fo enter Chanr Azimuth degrees 94 114 225 217 191 94 214 217	1.0 1.0 r all other e nel @ 2437 Height meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Noise floor missions, the MHz	
4821.850 12058.950 12058.530 12058.530 12058.530 12058.530 12058.530 12058.530 12058.530 12058.530 12058.550 1	47.6 46.5 45.7 For emiss the level of Cower sett Level dBμV/m 44.6 43.3 40.8 40.7 39.0 57.3 34.8 52.9 52.6	H H V ions in re f the fun ing 20 Pol V/h V V H V V H V V H V V H V V V	74.0 74.0 estricted bar damental. Emissions 15.209 Limit 54.0 54.0 54.0 54.0 54.0 54.0 74.0 74.0 74.0 74.0 74.0	-27.5 -28.3 ids, the limi , 1000 - 25 , / 15.247 Margin -9.4 -10.7 -13.2 -13.3 -15.0 -16.7 -19.2 -21.2 -21.4	PK PK t of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG AVG AVG AVG AVG AVG AVG PK PK PK PK	344 115 vas used. Fo enter Chanr Azimuth degrees 94 114 225 217 191 94 214 217 114	1.0 1.0 r all other e nel @ 2437 Height meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Noise floor missions, the MHz	
4821.850 12058.950 12058.530 12058.530 12058.530 12058.530 12058.530 12058.530 12058.530 12058.530 12058.550 1	47.6 46.5 45.7 For emiss the level of Cower sett Level dBμV/m 44.6 43.3 40.8 40.7 39.0 57.3 34.8 52.9 52.6 51.2	H H V ions in re f the fun- ing 20 Pol V/h V V H V H V H V H V H V H	74.0 74.0 estricted bar damental. Emissions 15.209 Limit 54.0 54.0 54.0 54.0 54.0 74.0 74.0 74.0 74.0 74.0	-27.5 -28.3 ids, the limi , 1000 - 25 , (15.247 Margin -9.4 -10.7 -13.2 -13.3 -15.0 -16.7 -19.2 -21.2 -21.4 -22.8	PK PK t of 15.209 w t of 15.209 w Detector Pk/QP/Avg AVG AVG AVG AVG AVG AVG PK PK PK PK PK	344 115 vas used. Fo enter Chanr Azimuth degrees 94 114 225 217 191 94 217 191 94 214 217 114 191	1.0 1.0 r all other e nel @ 2437 Height meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Noise floor missions, the MHz	
4821.850 12058.950 12058.530 12058.530 Iote 1: Run #1b: F Radio #2, P Frequency MHz 4873.400 9747.950 9747.955 7309.835 4872.750 4873.400 7310.105 7309.835 9747.950	47.6 46.5 45.7 For emiss the level of Cower sett Level dBμV/m 44.6 43.3 40.8 40.7 39.0 57.3 34.8 52.9 52.6	H H V ions in re f the fun ing 20 Pol V/h V V H V V H V V H V V H V V V	74.0 74.0 estricted bar damental. Emissions 15.209 Limit 54.0 54.0 54.0 54.0 54.0 54.0 74.0 74.0 74.0 74.0 74.0	-27.5 -28.3 ids, the limi , 1000 - 25 , / 15.247 Margin -9.4 -10.7 -13.2 -13.3 -15.0 -16.7 -19.2 -21.2 -21.4	PK PK t of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG AVG AVG AVG AVG AVG AVG PK PK PK PK	344 115 vas used. Fo enter Chanr Azimuth degrees 94 114 225 217 191 94 214 217 114	1.0 1.0 r all other e nel @ 2437 Height meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Noise floor missions, the MHz	



Client: Kirrus, Inc. Job Number: Job Number: Job Number: Tel.ug Number: Tel.ug Number: Susan Pelzi Contact: Ian Laity / Steve Smith Susan Pelzi Class: NA Other Spurious emissions (measured at a power setting of 20) Class: NA Prequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m vh Limit Margin Pk/QP/Avg degrees meters		Ellic								C Test Data
Model: XS-3300 Access Point Account Manager: Susan Pelzl Contact: Ian Laity / Steve Smith Class: N/A Spec: FCC 15.247, 15.401, RSS-210 Class: N/A Other Spurious emissions (measured at a power setting of 20) Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 4925.115 42.0 V 54.0 -12.0 AVG 270 1.2 4925.115 53.8 V 74.0 -20.2 PK 270 1.2 7384.707 34.9 V 54.0 -19.1 AVG 322 1.0 9847.970 39.4 V 54.0 -14.6 AVG 141 1.1 4925.570 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 48.9 H 74.0 -22.7 AVG 10 </td <td>Client:</td> <td>AITUS, INC.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Client:	AITUS, INC.								
Spec: FCC 15.247, 15.401, RSS-210 Class: N/A Other Spurious emissions (measured at a power setting of 20) Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 4925.115 42.0 V 54.0 -12.0 AVG 270 1.2 4925.115 53.8 V 74.0 -20.2 PK 270 1.2 7384.707 34.9 V 54.0 -19.1 AVG 322 1.0 9847.970 39.4 V 54.0 -14.6 AVG 141 1.1 9847.970 51.6 V 74.0 -22.4 PK 141 1.1 9847.970 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 36.7 H 54.0 -22.7 AVG 10 1.4 </td <td>Model:</td> <td>XS-3500 A</td> <td>Access P</td> <td>oint</td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td>	Model:	XS-3500 A	Access P	oint					-	
Other Spurious emissions (measured at a power setting of 20) Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 4925.115 42.0 V 54.0 -12.0 AVG 270 1.2 4925.115 53.8 V 74.0 -20.2 PK 270 1.2 7384.707 34.9 V 54.0 -19.1 AVG 322 1.0 7384.707 46.7 V 74.0 -27.3 PK 322 1.0 9847.970 39.4 V 54.0 -14.6 AVG 141 1.1 9847.970 51.6 V 74.0 -22.4 PK 141 1.1 4925.570 36.7 H 54.0 -17.3 AVG 360 1.0 7385.350 31.3 H 54.0 -22.7 AVG 10 <td>Contact:</td> <td>lan Laity /</td> <td>Steve S</td> <td>nith</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Contact:	lan Laity /	Steve S	nith						
Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 4925.115 42.0 V 54.0 -12.0 AVG 270 1.2 4925.115 53.8 V 74.0 -20.2 PK 270 1.2 7384.707 34.9 V 54.0 -19.1 AVG 322 1.0 7384.707 46.7 V 74.0 -27.3 PK 322 1.0 9847.970 39.4 V 54.0 -14.6 AVG 141 1.1 9847.970 51.6 V 74.0 -22.4 PK 141 1.1 4925.570 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 48.9 H 74.0 -22.1 PK 360 1.0 7385.350 31.3	Spec:	FCC 15.24	7, 15.40	1, RSS-210)				Class:	N/A
Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 4925.115 42.0 V 54.0 -12.0 AVG 270 1.2 4925.115 53.8 V 74.0 -20.2 PK 270 1.2 7384.707 34.9 V 54.0 -19.1 AVG 322 1.0 7384.707 46.7 V 74.0 -27.3 PK 322 1.0 9847.970 39.4 V 54.0 -14.6 AVG 141 1.1 9847.970 51.6 V 74.0 -22.4 PK 141 1.1 4925.570 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 48.9 H 74.0 -22.1 PK 360 1.0 7385.350 31.3	Other Spur	ious emiss	sions (m	easured at	a power s	etting of 20)				
4925.115 42.0 V 54.0 -12.0 AVG 270 1.2 4925.115 53.8 V 74.0 -20.2 PK 270 1.2 7384.707 34.9 V 54.0 -19.1 AVG 322 1.0 7384.707 46.7 V 74.0 -27.3 PK 322 1.0 9847.970 39.4 V 54.0 -14.6 AVG 141 1.1 9847.970 51.6 V 74.0 -22.4 PK 141 1.1 9847.970 51.6 V 74.0 -22.4 PK 141 1.1 9847.970 51.6 V 74.0 -22.4 PK 141 1.1 4925.570 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 48.9 H 74.0 -22.7 AVG 10 1.4 7385.350 31.3 H 54.0 -22.7 AVG 10 1.4 9848.015 35.4 H 54.	Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments	
4925.115 53.8 V 74.0 -20.2 PK 270 1.2 7384.707 34.9 V 54.0 -19.1 AVG 322 1.0 7384.707 46.7 V 74.0 -27.3 PK 322 1.0 9847.970 39.4 V 54.0 -14.6 AVG 141 1.1 9847.970 39.4 V 54.0 -14.6 AVG 141 1.1 9847.970 51.6 V 74.0 -22.4 PK 141 1.1 9847.970 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 36.7 H 54.0 -25.1 PK 360 1.0 4925.570 48.9 H 74.0 -25.1 PK 360 1.0 7385.350 31.3 H 54.0 -22.7 AVG 10 1.4 7385.350 42.4 H 74.0 -31.6 PK 10 1.4 9848.015 35.4 H 54.0					-					
7384.707 34.9 V 54.0 -19.1 AVG 322 1.0 7384.707 46.7 V 74.0 -27.3 PK 322 1.0 9847.970 39.4 V 54.0 -14.6 AVG 141 1.1 9847.970 39.4 V 54.0 -14.6 AVG 141 1.1 9847.970 51.6 V 74.0 -22.4 PK 141 1.1 4925.570 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 48.9 H 74.0 -25.1 PK 360 1.0 7385.350 31.3 H 54.0 -22.7 AVG 10 1.4 7385.350 42.4 H 74.0 -31.6 PK 10 1.4 9848.015 35.4 H 54.0 -18.6 AVG 26 1.0 9848.015 45.5 H 74.0 -28.5 PK 26 1.0										
7384.707 46.7 V 74.0 -27.3 PK 322 1.0 9847.970 39.4 V 54.0 -14.6 AVG 141 1.1 9847.970 51.6 V 74.0 -22.4 PK 141 1.1 9847.970 51.6 V 74.0 -22.4 PK 141 1.1 4925.570 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 48.9 H 74.0 -25.1 PK 360 1.0 7385.350 31.3 H 54.0 -22.7 AVG 10 1.4 7385.350 42.4 H 74.0 -31.6 PK 10 1.4 9848.015 35.4 H 54.0 -18.6 AVG 26 1.0 9848.015 45.5 H 74.0 -28.5 PK 26 1.0 Hore emissions in restricted bands, the limit of 15.209										
9847.970 39.4 V 54.0 -14.6 AVG 141 1.1 9847.970 51.6 V 74.0 -22.4 PK 141 1.1 4925.570 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 48.9 H 74.0 -25.1 PK 360 1.0 7385.350 31.3 H 54.0 -22.7 AVG 10 1.4 7385.350 42.4 H 74.0 -31.6 PK 10 1.4 9848.015 35.4 H 54.0 -18.6 AVG 26 1.0 9848.015 45.5 H 74.0 -28.5 PK 26 1.0										
9847.970 51.6 V 74.0 -22.4 PK 141 1.1 4925.570 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 48.9 H 74.0 -25.1 PK 360 1.0 7385.350 31.3 H 54.0 -22.7 AVG 10 1.4 7385.350 42.4 H 74.0 -31.6 PK 10 1.4 9848.015 35.4 H 54.0 -18.6 AVG 26 1.0 9848.015 45.5 H 74.0 -28.5 PK 26 1.0										
4925.570 36.7 H 54.0 -17.3 AVG 360 1.0 4925.570 48.9 H 74.0 -25.1 PK 360 1.0 7385.350 31.3 H 54.0 -22.7 AVG 10 1.4 7385.350 42.4 H 74.0 -31.6 PK 10 1.4 9848.015 35.4 H 54.0 -18.6 AVG 26 1.0 9848.015 35.4 H 54.0 -18.6 AVG 26 1.0 For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20dB be										
4925.570 48.9 H 74.0 -25.1 PK 360 1.0 7385.350 31.3 H 54.0 -22.7 AVG 10 1.4 7385.350 42.4 H 74.0 -31.6 PK 10 1.4 9848.015 35.4 H 54.0 -18.6 AVG 26 1.0 9848.015 45.5 H 74.0 -28.5 PK 26 1.0 For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20dB be										
7385.350 31.3 H 54.0 -22.7 AVG 10 1.4 7385.350 42.4 H 74.0 -31.6 PK 10 1.4 9848.015 35.4 H 54.0 -18.6 AVG 26 1.0 9848.015 45.5 H 74.0 -28.5 PK 26 1.0 For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20dB be										
7385.350 42.4 H 74.0 -31.6 PK 10 1.4 9848.015 35.4 H 54.0 -18.6 AVG 26 1.0 9848.015 45.5 H 74.0 -28.5 PK 26 1.0 For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20dB be										
9848.015 35.4 H 54.0 -18.6 AVG 26 1.0 9848.015 45.5 H 74.0 -28.5 PK 26 1.0 Jote 1:										
9848.015 45.5 H 74.0 -28.5 PK 26 1.0 Jote 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20dB be										
For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20dB be										
			t the tun	damental.						

Client:	Xirrus, Inc.	Job Number:	J60437
Madal	XS-3500 Access Point	T-Log Number:	T61140
woder.	AS-SSUD ACCess Folin	Account Manager:	Susan Pelzl
Contact:	Ian Laity / Steve Smith		
Spec:	FCC 15.247, 15.401, RSS-210	Class:	N/A

FCC 15.247 Spurious Emissions - 802.11b External Antenna

Test Specifics

Elliott

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

Date of Test: 8/24/2005 Test Engineer: Mark Briggs Test Location: SVOATS #1 Config. Used: 1 Config Change: None (3dBd Omni antenna connected) EUT Voltage: 120V/60Hz

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 approximately 30 meters from the EUT with all I/O connections running on top of the groundplane or routed in overhead in the GR-1089 test configuration.

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

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 used.

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

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Radiated Spurious Emissions, 30 - 25000 MHz	FCC Part 15.209 / 15.247(c)	Pass	53.8dBµV/m (488.7µV/m) @ 2487.5MHz (-0.2dB)

Modifications Made During Testing:

No modifications were made to the EUT during testing

Deviations From The Standard

Cilent.	Xirrus, Inc						J	ob Number:	J60437
Madal	XS-3500 A	\) o int				T-L	og Number:	T61140
Wodel:	XS-3500 F	ACCESS F	oint				Accou	nt Manager:	Susan Pelzl
Contact:	lan Laity /	Steve S	mith						
Spec:	FCC 15.24	47, 15.40)1, RSS-210)				Class:	N/A
Run #1a: F	Radiated S	purious	Emissions	, 1000 - 250)00 MHz. Lo	w Channel (@ 2412 MH	Z	
Radio #2, P	ower setti	ing 20					-		
					Н	V			
			el @ 3m in 1			111.1			B=VB=1MHz)
Fundam	ental emis	sion leve	<u> </u>	MHz RBW:		107.8	Average M	easurement	(RB=1MHz, VB=10Hz
				rker - Peak					
			Deita Marke	er - Average	55.44	aВ			
140					12	7			
MARKE 26.40				DET: PEAK DET: PEAK (,			AC	TV DET: PEAK AS DET: PEAK QP AVG
53.91				MKR∆ 26		25.20 MH 55.44 dB		ИE	MKRA 25.20 MHz 55.44 dB
LOG REF 1	L4.5 dBm						d D -		55.44 OB
10 dB/	: :	: :	: :	: :	Š	0G REF 14.5	dBm		· · · ^ ·
ATN 30 dB	·				N I	B/ ATN			Vin I
30 UD						0 dB			······································
		:	· · · · ·	····;/····	:			······	
			m						,~
VA SB			مبر م			A SB			r J
SC FC		www	e, m		s	A SB C FC CORR		\$ 1 ⁷	~/
SC FC		un and the second	e m		s	C FC	لىرىپ	×./`	~/
CENTER 2.3	39000 GHz		¢ // /	SPAN 60	s	C FC CORR ENTER 2.3900		×./	SPAN 60.00 MHz
SC FC CORR CORR CENTER 2.3 RL #IF E	39000 GHz 3W 1.0 MHz		BW 1 MHz	SPAN 60 SWP 20	s			VG BW 10 Hz	
CORR	39000 GHz 3W 1.0 MHz	#AVG		SWP 20	S .00 MHz .0 msec R	C FC CORR ENTER 2.3900 L #IF BW 1	.0 MHz #A		
CENTER 2.3 RL #IF E Band Edge	39000 GHz 3W 1.0 MHz Level	#AVG Pol	15.209	SWP 20		C FC CORR ENTER 2.3900 L #IF BW 1 Azimuth	.0 MHz #A	V6 BW 10 Hz	
CENTER 2.3 RL #IF E Band Edge Frequency MHz	29000 GHz 3W 1.0 MHz Level dBµV/m	#AVG Pol v/h	15.209 Limit	SWP 20 / 15.247 Margin		C FC CORR ENTER 2.3900 L #IF BW 1 Azimuth degrees	.0 MHz #P Height meters	Comments	
CENTER 2.5 RL #IF E Band Edge Frequency MHz 2386.000	39000 GHz 3W 1.0 MHz Level dBμV/m 52.3	#AVG Pol v/h V	15.209 Limit 54.0	SWP 20 / 15.247 Margin -1.7	Detector Pk/QP/Avg	ENTER 2.3900 L #IF BW 1 Azimuth degrees 43	.0 MHz #P Height meters 1.5	Comments Note 2	
CENTER 2.3 RL #IF E	29000 GHz 3W 1.0 MHz Level dBµV/m	#AVG Pol v/h	15.209 Limit	SWP 20 / 15.247 Margin		C FC CORR ENTER 2.3900 L #IF BW 1 Azimuth degrees	.0 MHz #P Height meters 1.5	Comments	
SC FC CORR, CENTER 2:3 RL #IF E Band Edge Frequency MHz 2386.000 2389.300	Level dBμV/m 52.3 57.2	#AVG Pol v/h V V	15.209 Limit 54.0 74.0	SWP 20 / 15.247 Margin -1.7 -16.8	Detector PK/QP/Avg AVG PK	C FC CORR ENTER 2.3900 H #IF BW 1 Azimuth degrees 43 43	.0 MHz #P Height meters 1.5 1.5	Comments Note 2 Note 2	SWP 18.0 sec
CENTER 2.2 CENTER 2.4 Band Edge Frequency MHz 2386.000	Level dBμV/m 52.3 57.2	#AV6 Pol v/h V V	15.209 Limit 54.0 74.0 estricted bar	SWP 20 / 15.247 Margin -1.7 -16.8	Detector PK/QP/Avg AVG PK	C FC CORR ENTER 2.3900 H #IF BW 1 Azimuth degrees 43 43	.0 MHz #P Height meters 1.5 1.5	Comments Note 2 Note 2	
SC FC CORR, CENTER 2:3 RL #IF E Band Edge Frequency MHz 2386.000 2389.300	Level dBµV/m 52.3 57.2 For emiss the level o	#AV6 Pol V/h V V ions in re	15.209 Limit 54.0 74.0 estricted bar damental.	SWP 20 / 15.247 Margin -1.7 -16.8 nds, the limit	Detector Pk/QP/Avg AVG PK t of 15.209 w	C FC CORR ENTER 2.3900 H #IF BW 1 Azimuth degrees 43 43	Height Height Meters 1.5 1.5 r all other en	Comments Note 2 Note 2	SWP 18.0 sec
SC FC CORR 4000 CENTER 2:3 RL #IF E Band Edge Frequency MHz 2386.000 2389.300 Note 1:	Level dBµV/m 52.3 57.2 For emiss the level o Band edge	#AV6 Pol v/h V V ions in re of the fun e measu	15.209 Limit 54.0 74.0 estricted bar damental. rement calc	SWP 20 / 15.247 Margin -1.7 -16.8 nds, the limit ulated from	Detector Pk/QP/Avg AVG PK t of 15.209 w	C FC CORR ENTER 2.3990 L #IF BW 1 Azimuth degrees 43 43 43 vas used. Fo	Height Height Meters 1.5 1.5 r all other en	Comments Note 2 Note 2	SWP 18.0 sec
SC FC CORR 2: RL #IF E Band Edge Frequency MHz 2386.000 2389.300 Note 1: Note 2: Dther Spur	Level dBµV/m 52.3 57.2 For emiss the level o Band edge	#AV6 Pol v/h V V ions in re of the fun e measu	15.209 Limit 54.0 74.0 estricted bar damental. rement calc	SWP 20 / 15.247 Margin -1.7 -16.8 nds, the limit	Detector Pk/QP/Avg AVG PK t of 15.209 w	C FC CORR ENTER 2.3990 L #IF BW 1 Azimuth degrees 43 43 43 vas used. Fo	Height Height Meters 1.5 1.5 r all other en	Comments Note 2 Note 2	SWP 18.0 sec
SC FC CORR 417 RL 41F E Band Edge Frequency MHz 2386.000 2389.300 Note 1: Note 1: Note 2: Dther Spur Frequency MHz	Level dBμV/m 52.3 57.2 For emiss the level o Band edge ious emiss	Pol V/h V vons in re f the fun e measu sions Pol v/h	15.209 Limit 54.0 74.0 estricted bar damental. rement calc	SWP 20 / 15.247 Margin -1.7 -16.8 nds, the limit ulated from	Detector Pk/QP/Avg AVG PK t of 15.209 w	C FC CORR HIFER 2.3900 Azimuth degrees 43 43 vas used. Fo	. MHz #F Height meters 1.5 1.5 r all other en markers.	Comments Note 2 Note 2 missions, the	SWP 18.0 sec
SC FC CORR 417 RL 41F E Band Edge Frequency MHz 2386.000 2389.300 Vote 1: Note 1: Note 2: Dther Spur Frequency MHz 4823.995	Level dBµV/m 52.3 57.2 For emiss the level o Band edge ious emiss Level dBµV/m 48.8	Pol v/h V v ions in re of the fun e measu sions Pol v/h V	15.209 Limit 54.0 74.0 estricted bar damental. rement calc 15.209 Limit 54.0	SWP 20 / 15.247 Margin -1.7 -16.8 nds, the limit ulated from / 15.247 Margin -5.2	Detector Pk/QP/Avg AVG PK t of 15.209 w fundamental Detector Pk/QP/Avg AVG	Azimuth degrees 43 43 vas used. Fo l minus delta Azimuth degrees 10	.0 MHz #P Height neters 1.5 1.5 r all other en markers. Height	Comments Note 2 Note 2 missions, the	SWP 18.0 sec
SC FC CORR 417 RL 417 E Band Edge Frequency MHz 2386.000 2389.300 Vote 1: Note 2: Dther Spur Frequency MHz 4823.995 4823.998	Level dBµV/m 52.3 57.2 For emiss the level o Band edge ious emiss Level dBµV/m 48.8 48.3	Pol v/h V v ions in re of the fun e measu sions Pol v/h V H	15.209 Limit 54.0 74.0 estricted bar damental. rement calc 15.209 Limit 54.0 54.0	SWP 20 / 15.247 Margin -1.7 -16.8 nds, the limit ulated from / 15.247 Margin -5.2 -5.7	Detector Pk/QP/Avg AVG PK t of 15.209 w fundamental Detector Pk/QP/Avg AVG AVG AVG AVG	Azimuth degrees 43 43 vas used. Fo I minus delta Azimuth degrees 10 129	Height Meters 1.5 1.5 r all other en markers. Height meters 1.3 1.0	Comments Note 2 Note 2 missions, the	SWP 18.0 sec
SC FC CORR 2.2 RL #1F E Band Edge Frequency MHz 2386.000 2389.300 Note 1: Note 2: Dther Spur Frequency MHz 4823.995 4823.998	Level dBµV/m 52.3 57.2 For emiss the level of Band edge ious emiss Level dBµV/m 48.8 48.3 55.0	+AV6 Pol v/h V V v ions in re of the fun e measu sions Pol v/h V V H H	15.209 Limit 54.0 74.0 estricted bar damental. rement calc 15.209 Limit 54.0 54.0 74.0	SWP 20 / 15.247 Margin -1.7 -16.8 nds, the limit ulated from / 15.247 Margin -5.2 -5.7 -19.0	Detector Pk/QP/Avg AVG PK t of 15.209 w fundamental Detector Pk/QP/Avg AVG AVG AVG AVG AVG AVG PK	C FC CORR HITER 2.3900 Azimuth degrees 43 43 43 vas used. Fo I minus delta Azimuth degrees 10 129 129	Height Height 1.5 1.5 r all other en markers. Height Height 1.3	Comments Note 2 Note 2 missions, the	SWP 18.0 sec
SC FC CORR 2 2 3 RL #1F E Band Edge Frequency MHz 2386.000 2389.300 Jote 1: Jote 2: Dther Spur Frequency MHz 4823.995 4823.998 4823.998	Level dBµV/m 52.3 57.2 For emiss the level o Band edge ious emiss Level dBµV/m 48.8 48.3	Pol v/h V v ions in re of the fun e measu sions Pol v/h V H	15.209 Limit 54.0 74.0 estricted bar damental. rement calc 15.209 Limit 54.0 54.0	SWP 20 / 15.247 Margin -1.7 -16.8 nds, the limit ulated from / 15.247 Margin -5.2 -5.7	Detector Pk/QP/Avg AVG PK t of 15.209 w fundamental Detector Pk/QP/Avg AVG AVG AVG AVG	Azimuth degrees 43 43 vas used. Fo I minus delta Azimuth degrees 10 129	Height Meters 1.5 1.5 r all other en markers. Height meters 1.3 1.0	Comments Note 2 Note 2 missions, the	SWP 18.0 sec
SC FC CORR 417 Frequency MHz 2386.000 2389.300 Jote 1: Jote 2: Dther Spur Frequency MHz 4823.995 4823.998	Level dBµV/m 52.3 57.2 For emiss the level o Band edge ious emiss Level dBµV/m 48.8 48.3 55.0 54.4	Pol V/h V V ions in re f the fun e measu sions Pol V/h V H H H V	15.209 Limit 54.0 74.0 estricted bar damental. rement calc 15.209 Limit 54.0 54.0 74.0 74.0	SWP 20 / 15.247 Margin -1.7 -16.8 nds, the limit ulated from / 15.247 Margin -5.2 -5.7 -19.0 -19.7	Detector Pk/QP/Avg AVG PK t of 15.209 w fundamental Detector Pk/QP/Avg AVG AVG AVG AVG AVG AVG PK PK	C FC CORR #IF BW 1 Azimuth degrees 43 43 vas used. Fo I minus delta Azimuth degrees 10 129 129 10	. 0 MHz # P Height meters 1.5 1.5 r all other en markers. Height meters 1.3 1.0 1.0 1.3	Comments Note 2 Note 2 missions, the	SWP 18.0 sec

	• 11 ۲	4 4						
<u>E</u>	<u>1110</u>	<u>)tt</u>						EMC Test Data
Client:	Xirrus, Inc						J	Job Number: J60437
Madal	XS-3500 A		oint				T-L	₋og Number: T61140
MOUEI.	A3-3300 P	AUCESS F	UIII				Accou	int Manager: Susan Pelzl
Contact:	lan Laity /	Steve Si	nith					
Spec:	FCC 15.24	47, 15.40	1, RSS-210)				Class: N/A
Run #1b: F	Radiated S	purious	Emissions	, 1000 - 25,	000 MHz. C	enter Chanr	nel @ 2437	MHz
Radio #2, P	ower setti	ing 20					•	
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4873.996	49.4	Н	54.0	-4.6	AVG	305	1.0	
4873.996	55.8	Н	74.0	-18.2	PK	305	1.0	
4873.996	52.9	V	54.0	-1.1	AVG	361	1.0	
4873.996	57.8	V	74.0	-16.2	PK	361	1.0	
Note 1:	For emiss the level o			nds, the limi	t of 15.209 w	vas used. Fo	r all other e	missions, the limit was set 20dB below
			Emissions	. 1000 - 250	JUU MHZ. HI	igh Channel	@ 2462 MH	HZ
Power setti	ing 15				H	igh Channel V		
Power setti Fundam	i ng 15 iental emis	sion leve	l @ 3m in 1	MHz RBW:	Н	V 108.7	Peak Meas	surement (RB=VB=1MHz)
Power setti Fundam	i ng 15 iental emis	sion leve	l @ 3m in 1 l @ 3m in 1	MHz RBW: MHz RBW:	H	V 108.7 105.7	Peak Meas Average M	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz)
Power setti Fundam	i ng 15 iental emis	sion leve sion leve	l @ 3m in 1 l @ 3m in 1 Delta Mar	MHz RBW: MHz RBW: rker - Peak	H 43.65	V 108.7 105.7 dB	Peak Meas Average M	surement (RB=VB=1MHz)
Power setti Fundam	i ng 15 iental emis	sion leve sion leve	l @ 3m in 1 l @ 3m in 1	MHz RBW: MHz RBW: rker - Peak	H 43.65	V 108.7 105.7 dB	Peak Meas Average M	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz)
Power setti Fundam	ing 15 lental emis lental emis	sion leve sion leve	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke	MHz RBW: MHz RBW: rker - Peak r - Average	H 43.65 51.92	V 108.7 105.7 dB dB # #ARKER / -24.09 f 43.65 df	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz)
Fundam Fundam Fundam	ing 15 lental emis lental emis	sion leve sion leve	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke	MHz RBW: MHz RBW: rker - Peak r - Average	H 43.65 51.92	V 108.7 105.7 dB dB [#] [#] [#] [#] [#] [#] [#] [#]	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge
Power setti Fundam Fundam MARKER -25.75 51.92	ental emis ental emis ental emis	sion leve sion leve	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke	MHz RBW: MHz RBW: rker - Peak r - Average	H 43.65 51.92	V 108.7 105.7 dB dB MARKER -24.09 43.65 df 43.65 df	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge
Power setti Fundam Fundam MARKER -25.75 51.92	ental emis ental emis ental emis	sion leve sion leve	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke	MHz RBW: MHz RBW: rker - Peak r - Average	H 43.65 51.92	V 108.7 105.7 dB dB MARKER -24.09 f 43.65 df 43.65 df	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge
Power setti Fundam Fundam MARKER -25.75 51.92	ental emis ental emis ental emis	sion leve sion leve	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke	MHz RBW: MHz RBW: rker - Peak r - Average	H 43.65 51.92	V 108.7 105.7 dB dB MARKER -24.09 43.65 df 43.65 df	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge
Power setti Fundam Fundam ** ** ** ** ** **	ental emis ental emis ental emis	sion leve sion leve	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke	MHz RBW: MHz RBW: rker - Peak r - Average	H 43.65 51.92	V 108.7 105.7 dB dB MARKER -24.09 43.65 df 43.65 df -06 REF 76.2 08 REF 76.2 09 dB -26.09 f 43.65 df	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge
Power setti Fundam Fundam ** MARKER -25.75 51.92	ental emis ental emis ental emis dental emis	sion leve sion leve	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke	MHz RBW: MHz RBW: rker - Peak r - Average	H 43.65 51.92	V 108.7 105.7 dB dB MARKER 1 -24.09 ft 43.65 dt 43.65 dt 18,7 10,7	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge
Power setti Fundam Fundam ** MARKER -25.75 51.92	ental emis ental emis ental emis dental emis	sion leve sion leve	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke	MHz RBW: MHz RBW: rker - Peak r - Average	H 43.65 51.92	V 108.7 105.7 dB dB MARKER (-24.09 f 43.65 dB 06 REF 76.1 18 43.65 dB 	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge
Power setti Fundam Fundam Fundam	ing 15 iental emis iental emis dB i.2 dBµV	sion leve	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke	MHz RBW: MHz RBW: r - Peak r - Average	H 43.65 51.92	V 108.7 105.7 dB dB MARKER -24.09 43.65 df 43.65 df -06 REF 76.2 08 REF 76.2 09 dB -26.09 f 43.65 df	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge
Power setti Fundam Fundam 27 MARKER -25.75 51.92 0 dB 18 0 dB 14 SB 14 SB 14 SB 14 SB 14 SB 14 SB 14 SB 14 SB 14 SB 14 SB 15 CFC 15 CFC	ing 15 iental emis iental emis dB 5.2 dBµV	sion leve	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke	MHz RBW: MHz RBW: rker - Peak r - Average DET : PEAK DET : PEAK MKRA -25 Stop 2.49(SWP 9.1	H 43.65 51.92	V 108.7 105.7 dB dB MARKER -24.09 43.65 dl 106 REF 76.2 182 43.65 dl 105.7 06 REF 76.2 182 105.7	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge
Power setti Fundam Fundam Fundam	ing 15 iental emis iental emis dB 5.2 dBµV	sion leve	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke	MHz RBW: MHz RBW: rker - Peak r - Average	H 43.65 51.92	V 108.7 105.7 dB dB MARKER -24.09 43.65 dl 106 REF 76.2 182 43.65 dl 105.7 06 REF 76.2 182 105.7	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge
Power setti Fundam Fundam Fundam MARKER -25.75 51.92 06 REF 76 0 06 REF 76 0 06 REF 76 0 06 REF 76 0 0 06 REF 76 0 0 0 0 0 0 0 0 0 0 0 0 0	ing 15 iental emis iental emi	sion leve sion leve [[white sion leve [[white sion leve [[sion leve [sion leve [sion leve [sion leve [[white white sion leve] [white sion leve [sion leve] [white sion leve] [white [white sion leve] [white [white [white [white [white [white [white [white [white [white [white] [white [white] [white [white [white] [white [white] [white [white [white] [white [white] [white [white]] [white [white] [white] [white] [white] [white [white] [white] [white] [white [white] [white] [white] [white] [white] [white] [white [white] [white] [white] [white] [white] [white] [white] [white] [white] [white] [white] [white] [white]] [white] [white] [white] [white] [white] [white] [white] [white] [white] [white] [white]]]]] [white]]]]]]]]]]]]] []]]]]	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke MEAS MEAS	MHz RBW: MHz RBW: rker - Peak r - Average DET : PEAK DET : PEAK MKRA -25 Stop 2.49(SWP 9.1	H 43.65 51.92	V 108.7 105.7 dB dB ** ** ** ** ** ** ** ** ** *	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge $\frac{ACTV DET: PEAK}{MEAS DET: PEAK} @P AVG}{MKR_{4} - 24.09 MHz} 43.65 dB$
Power setti Fundam Fundam Fundam MARKER -25.75 51.92 06 REF 76 8/ A SB C FC C ORR TART 2.456 L 2456 L #IF BH Sand Edge Frequency MHz 2487.500	ing 15 iental emis iental emi	sion leve sion leve [[[[]]]]]]]]]]]]]]]	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke ACTV MEAS	MHz RBW: MHz RBW: r - Peak r - Average DET: PEAK DET: PEAK DET: PEAK SHOP 2.491 SWP 9.3 / 15.247 Margin -0.2	H 43.65 51.92	V 108.7 105.7 dB dB ** ** ** ** ** ** ** ** ** *	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge $\frac{ACTV DET: PEAK}{MEAS DET: PEAK} @P AVG}{MKR_{4} - 24.09 MHz} 43.65 dB$
Power setti Fundam Fundam Fundam MARKER -25.75 51.92 06 REF 76 8/ A SB C FC C ORR TART 2.456 L 2456 L #IF BH Sand Edge Frequency MHz 2487.500	ing 15 iental emis iental emi	sion leve sion leve [[white sion leve [[white sion leve [[sion leve [sion leve [sion leve [sion leve [[white white sion leve] [white sion leve [sion leve] [white sion leve] [white [white sion leve] [white [white [white [white [white [white [white [white [white [white [white] [white [white] [white [white [white] [white [white] [white [white [white] [white [white] [white [white]] [white [white] [white] [white] [white] [white [white] [white] [white] [white [white] [white] [white] [white] [white] [white] [white [white] [white] [white] [white] [white] [white] [white] [white] [white] [white] [white] [white] [white]] [white] [white] [white] [white] [white] [white] [white] [white] [white] [white] [white]]]]] [white]]]]]]]]]]]]] []]]]]	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke MEAS MEAS	MHz RBW: MHz RBW: r - Peak r - Average DET: PEAK DET: PEAK DET: PEAK SHP 9:3 (15.247 Margin	H 43.65 51.92	V 108.7 105.7 dB dB * * * * * * * * * * * * *	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge $\frac{ACTV DET: PEAK}{MEAS DET: PEAK} @P AVG}{MKR_{4} - 24.09 MHz} 43.65 dB$
Power setti Fundam Fundam Fundam ************************************	ing 15 iental emis iental emi	sion leve sion leve [[white	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke MEAS MEAS HI HZ I 5209 Limit 54.0 74.0 rstricted bar	MHz RBW: MHz RBW: r - Peak r - Average DET : PEAK DET : PEAK SWP 2.494 SWP 9.5 / 15.247 Margin -0.2 -8.9	H 43.65 51.92	V 108.7 105.7 dB dB * * * * * * * * * * * * *	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge $\frac{ACTV DET: PEAK}{MEAS DET: PEAK} @P AVG}{MKR_{4} - 24.09 MHz} 43.65 dB$
Power setti Fundam Fundam Fundam ** ** ** ** ** ** ** ** ** *	ing 15 iental emis iental emis dB 5.2 dBµV 2.2 dBµV	sion leve sion leve [[[[]]]]]]]]]]]]]]]	I @ 3m in 1 I @ 3m in 1 Delta Mar Delta Marke MEAS W 10 Hz I5.209 Limit 54.0 74.0 estricted bar damental.	MHz RBW: MHz RBW: rker - Peak r - Average DET: PEAK DET: PEAK DET: PEAK DET: PEAK STOP 2.491 STOP 2.491 SWP 9.3 / 15.247 Margin -0.2 -8.9 mds, the limi	H 43.65 51.92	V 108.7 105.7 dB dB * * * * * * * * * * * * *	Peak Meas Average M Delta in-ba	surement (RB=VB=1MHz) leasurement (RB=1MHz, VB=10Hz) and to band edge ACTV DET: PEAK MEAS DET: PEAK OP AVG MKRA -24.09 MHz 43.65 dB

		<u>ott</u>						lah Number 160427
Client:	Xirrus, Inc	•						Job Number: J60437
Model:	XS-3500 A	Access P	Point					.og Number: T61140 Int Manager: Susan Pelzl
Contact:	lan Laity /	Steve S	mith					
Spec:	FCC 15.24	47, 15.40)1, RSS-210)				Class: N/A
Other Spuri	ious emiss	sions						
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4923.996	45.1	Н	54.0	-8.9	AVG	-45	1.2	
4923.998	44.1	V	54.0	-9.9	AVG	185	1.5	-
4923.996	54.2	H	74.0	-19.9	PK	-45	1.2	
4923.998	53.7	V	74.0	-20.3	PK	185	1.5	

Client:	Xirrus, Inc.	Job Number:	J60437
Madal	XS-3500 Access Point	T-Log Number:	T61140
Model.	AS-SSUD ACCess Folin	Account Manager:	Susan Pelzl
Contact:	Ian Laity / Steve Smith		
Spec:	FCC 15.247, 15.401, RSS-210	Class:	N/A

FCC 15.247 Spurious Emissions - 802.11g Internal Antenna

Test Specifics

Elliott

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

Date of Test: 7/29/2005 Test Engineer: Chris Byleckie Test Location: SVOATS #3 Config. Used: 1 Config Change: None EUT Voltage: 120V/60Hz

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 approximately 30 meters from the EUT with all I/O connections running on top of the groundplane or routed in overhead in the GR-1089 test configuration.

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

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 used.

Ambient Conditions:	Temperature:	23 °C
	Rel. Humidity:	59 %

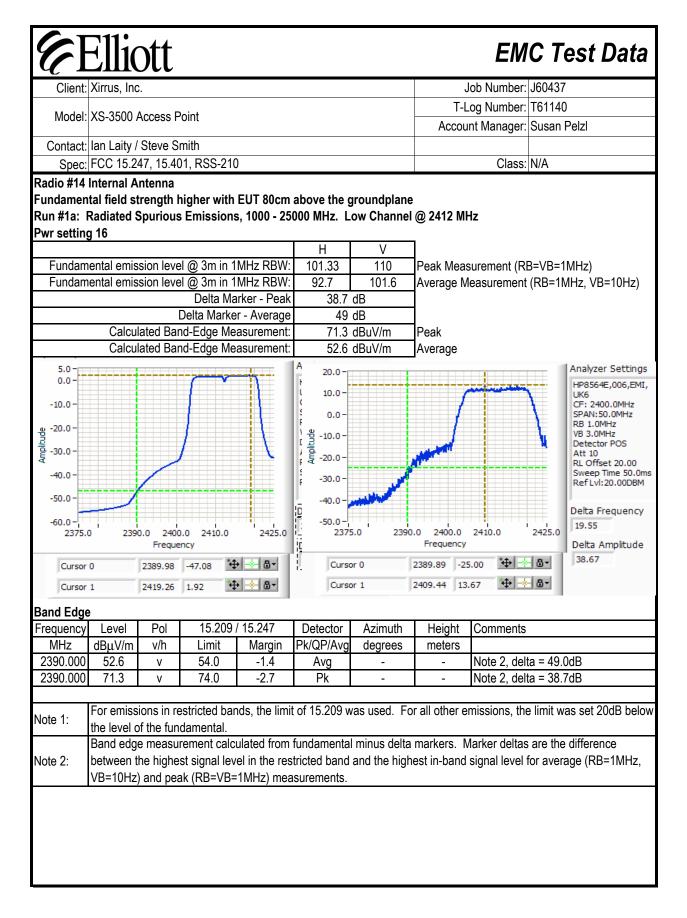
Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	RE, 1000 - 25000 MHz - Spurious Emissions	FCC Part 15.209 / 15.247(c)	Pass	53.3dBµV/m (462.4µV/m) @ 2483.5MHz (-0.7dB)

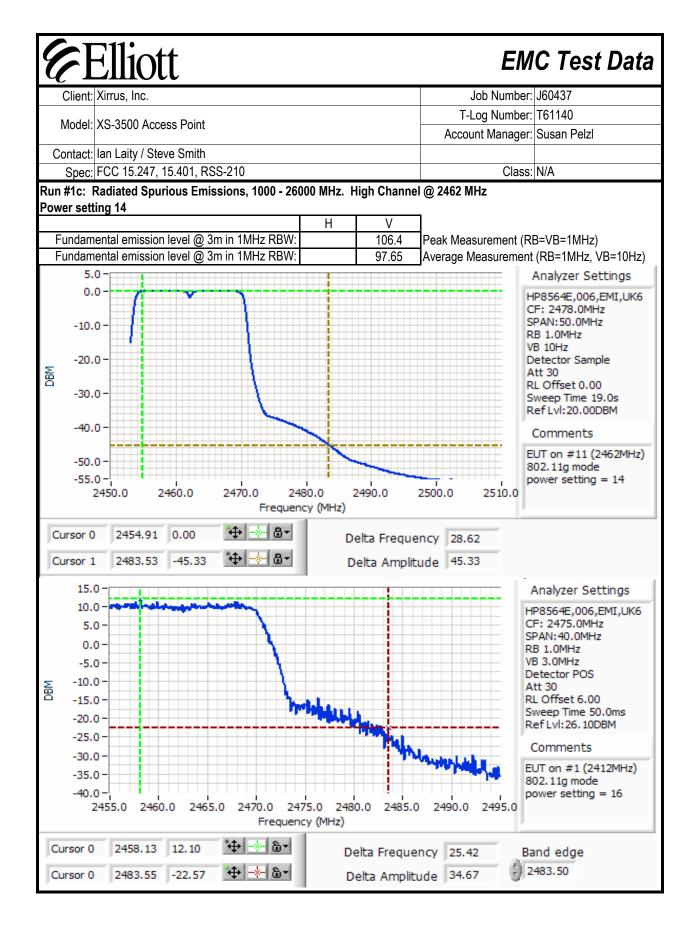
Modifications Made During Testing:

No modifications were made to the EUT during testing

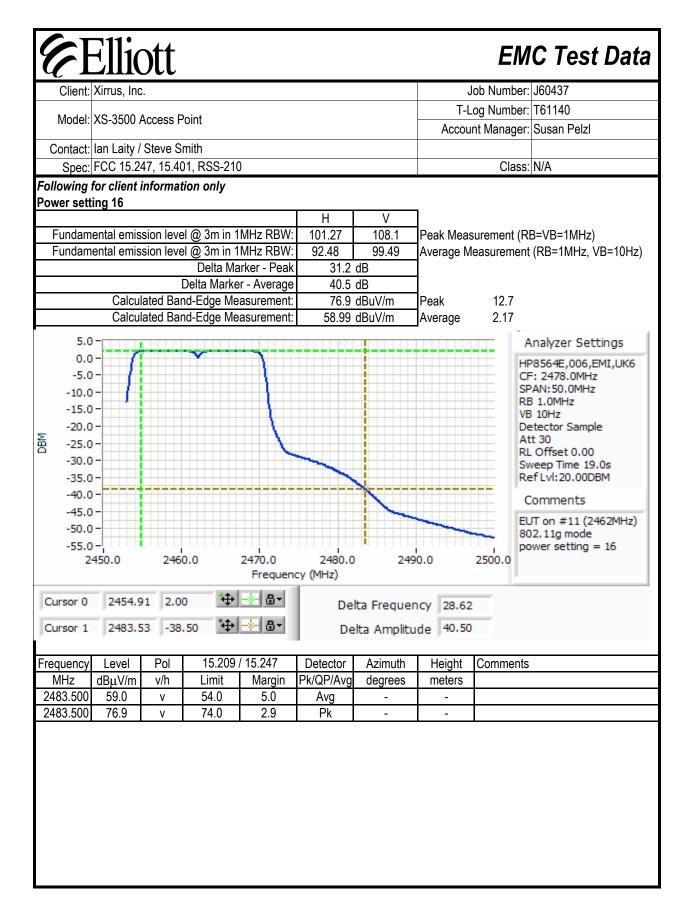
Deviations From The Standard



E	Ellic	ott						EM	C Test Data
	Xirrus, Inc							lob Number:	J60437
		_					T-L	og Number:	T61140
	XS-3500 A							-	Susan Pelzl
Contact:	lan Laity /	Steve S	mith						
Spec:	FCC 15.24	47, 15.40)1, RSS-210)				Class:	N/A
Spurious E	missions								
Frequency	Level	Pol	15.209/	15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
9647.96	47.9	V	54.0	-6.1	AVG	156	1.6		
4822.67	45.9	V	54.0	-8.1	AVG	70	1.4		
12060.33	39.8	Н	54.0	-14.2	AVG	0	1.0		
4823.84	39.7	Н	54.0	-14.3	AVG	61	1.0		
12058.50	39.6	V	54.0	-14.4	AVG	0	1.0		
4822.67	58.2	V	74.0	-15.8	PK	70	1.4		
9646.52	38.1	Н	54.0	-15.9	AVG	195	1.0		
9647.96	53.1	V	74.0	-20.9	PK	156	1.6		
4823.84	52.0	Н	74.0	-22.0	PK	61	1.0		
12058.50	51.3	V	74.0	-22.7	PK	0	1.0		
12060.33	50.7	Η	74.0	-23.3	PK	0	1.0		
9646.52	49.1	Н	74.0	-24.9	PK	195	1.0		
Run #1b: I Power sett		Spurious	s Emissions	s, 1000 - 25	000 MHz. C	enter Chanr	nel @ 2437	MHz	
Frequency	Level	Pol	15 209	15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Commenta	
4873.52	50.1	V	54.0	-3.9	AVG	92	1.2		
9747.99	43.7	V	54.0	-10.3	AVG	157	1.4		
4873.52	62.7	V	74.0	-11.3	PK	92	1.2		
4873.50	42.5	Н	54.0	-11.5	AVG	31	1.0		
12185.60	39.0	V	54.0	-15.0	AVG	81	1.0		
12184.14	39.0	Н	54.0	-15.0	AVG	0	1.0		
9748.02	38.6	Н	54.0	-15.4	AVG	142	1.0		
7310.46	37.9	V	54.0	-16.1	AVG	115	1.0		
7310.79	36.7	Н	54.0	-17.3	AVG	42	1.0		
4873.50	55.0	Н	74.0	-19.0	PK	31	1.0		
9747.99	51.4	V	74.0	-22.6	PK	157	1.4		
12184.14	50.3	Н	74.0	-23.7	PK	0	1.0		
7310.46	50.1	V	74.0	-23.9	PK	115	1.0		
12185.60	49.8	V	74.0	-24.2	PK	81	1.0		
9748.02	48.3	Н	74.0	-25.8	PK	142	1.0		
7310.79	48.0	Н	74.0	-26.0	PK	42	1.0		
Note 1:			estricted bar damental or			as used. Fo	r all other e	missions, the	e limit was set 30dB below



Client:	Xirrus, Inc						J	lob Number:	J60437
Madal	XS-3500 A		loint				T-L	og Number:	T61140
woder.	72-2200 k	ACCESS P	om				Accou	nt Manager:	Susan Pelzl
Contact:	lan Laity /	Steve S	mith						
Spec:	FCC 15.24	47, 15.40)1, RSS-210)				Class:	N/A
Band Edg	e - channe	l 11 at p	ower settin	a = 14			l.		
Frequency		Pol		15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
2483.500		V	54.0	-1.7	Avg	-	-	Note 2, delta	a = 45.3dB
2483.500	71.7	V	74.0	-2.3	Pk	-	-	Note 2, delta	a = 34.7dB
Note 1:						as used. Fo	r all other e	missions, the	e limit was set 30dB b
			damental or		-				
	-								are the difference
Note 2:		-	-			and the high	est in-band	signal level f	or average (RB=1MH
	VB=10Hz)	and pea	ak (RB=VB=	1MHz) mea	surements.				
	Emissions		15 200	/ 15.247	Detector	A inco utila	Llaight	Commonto	
Frequency		Pol				Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
9847.95	47.1	V	54.0	-6.9	AVG	154	1.0		
9847.95 4923.90	47.1 45.3	V V	54.0 54.0	-6.9 -8.7	AVG AVG	154 71	1.0 1.0		
9847.95 4923.90 9848.03	47.1 45.3 40.5	V V H	54.0 54.0 54.0	-6.9 -8.7 -13.5	AVG AVG AVG	154 71 137	1.0 1.0 1.0		
9847.95 4923.90 9848.03 12309.46	47.1 45.3 40.5 38.3	V V H H	54.0 54.0 54.0 54.0	-6.9 -8.7 -13.5 -15.7	AVG AVG AVG AVG	154 71 137 0	1.0 1.0 1.0 1.0		
9847.95 4923.90 9848.03 12309.46 12308.80	47.1 45.3 40.5 38.3 37.8	V V H H V	54.0 54.0 54.0 54.0 54.0	-6.9 -8.7 -13.5 -15.7 -16.2	AVG AVG AVG AVG AVG	154 71 137 0 361	1.0 1.0 1.0 1.0 1.0		
9847.95 4923.90 9848.03 12309.46 12308.80 4924.07	47.1 45.3 40.5 38.3 37.8 37.5	V V H V H	54.0 54.0 54.0 54.0 54.0 54.0	-6.9 -8.7 -13.5 -15.7 -16.2 -16.5	AVG AVG AVG AVG AVG AVG	154 71 137 0 361 347	1.0 1.0 1.0 1.0 1.0 1.0		
9847.95 4923.90 9848.03 12309.46 12308.80 4924.07 7386.94	47.1 45.3 40.5 38.3 37.8 37.5 36.6	V H H V H V	54.0 54.0 54.0 54.0 54.0 54.0 54.0 54.0	-6.9 -8.7 -13.5 -15.7 -16.2 -16.5 -17.5	AVG AVG AVG AVG AVG AVG AVG	154 71 137 0 361 347 318	1.0 1.0 1.0 1.0 1.0 1.0 1.0		
9847.95 4923.90 9848.03 12309.46 12308.80 4924.07 7386.94 7385.51	47.1 45.3 40.5 38.3 37.8 37.5 36.6 36.1	V H H V H V H	54.0 54.0 54.0 54.0 54.0 54.0 54.0 54.0	-6.9 -8.7 -13.5 -15.7 -16.2 -16.5 -17.5 -17.9	AVG AVG AVG AVG AVG AVG AVG AVG	154 71 137 0 361 347 318 42	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0		
9847.95 4923.90 9848.03 12309.46 12308.80 4924.07 7386.94 7385.51 4923.90	47.1 45.3 40.5 38.3 37.8 37.5 36.6 36.1 55.3	V H H V H V H V H V H V H V H V H V H V	54.0 54.0 54.0 54.0 54.0 54.0 54.0 54.0	-6.9 -8.7 -13.5 -15.7 -16.2 -16.5 -17.5 -17.9 -18.7	AVG AVG AVG AVG AVG AVG AVG PK	154 71 137 0 361 347 318 42 71	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0		
9847.95 4923.90 9848.03 12309.46 12308.80 4924.07 7386.94 7385.51 4923.90 9847.95	47.1 45.3 40.5 38.3 37.8 37.5 36.6 36.1 55.3 53.4	V H H V H V H V V V	54.0 54.0 54.0 54.0 54.0 54.0 54.0 54.0	-6.9 -8.7 -13.5 -15.7 -16.2 -16.5 -17.5 -17.9 -18.7 -20.6	AVG AVG AVG AVG AVG AVG AVG AVG PK PK	154 71 137 0 361 347 318 42 71 154	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0		
9847.95 4923.90 9848.03 12309.46 12308.80 4924.07 7386.94 7385.51 4923.90 9847.95 9848.03	47.1 45.3 40.5 38.3 37.8 37.5 36.6 36.1 55.3 53.4 51.0	V H H V H V H V V H	54.0 54.0 54.0 54.0 54.0 54.0 54.0 54.0	-6.9 -8.7 -13.5 -15.7 -16.2 -16.5 -17.5 -17.5 -17.9 -18.7 -20.6 -23.0	AVG AVG AVG AVG AVG AVG AVG PK PK PK	154 71 137 0 361 347 318 42 71 154 137	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0		
9847.95 4923.90 9848.03 12309.46 12308.80 4924.07 7386.94 7385.51 4923.90 9847.95	47.1 45.3 40.5 38.3 37.8 37.5 36.6 36.1 55.3 53.4 51.0	V H H V H V H V V V	54.0 54.0 54.0 54.0 54.0 54.0 54.0 54.0	-6.9 -8.7 -13.5 -15.7 -16.2 -16.5 -17.5 -17.9 -18.7 -20.6	AVG AVG AVG AVG AVG AVG AVG AVG PK PK	154 71 137 0 361 347 318 42 71 154	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0		
9847.95 4923.90 9848.03 12309.46 12308.80 4924.07 7386.94 7385.51 4923.90 9847.95 9848.03 12309.46	47.1 45.3 40.5 38.3 37.8 37.5 36.6 36.1 55.3 53.4 51.0 49.3	V H H V H V H V V H H H	54.0 54.0 54.0 54.0 54.0 54.0 54.0 54.0 74.0 74.0 74.0 74.0 74.0	-6.9 -8.7 -13.5 -15.7 -16.2 -16.5 -17.5 -17.9 -18.7 -20.6 -23.0 -24.7	AVG AVG AVG AVG AVG AVG AVG AVG PK PK PK PK	154 71 137 0 361 347 318 42 71 154 137 0	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0		
9847.95 4923.90 9848.03 12309.46 12308.80 4924.07 7386.94 7385.51 4923.90 9847.95 9848.03 12309.46 12308.80	47.1 45.3 40.5 38.3 37.8 37.5 36.6 36.1 55.3 53.4 51.0 49.3 49.2	V H H V H V H V V H H H V V	54.0 54.0 54.0 54.0 54.0 54.0 54.0 54.0	-6.9 -8.7 -13.5 -15.7 -16.2 -16.5 -17.5 -17.9 -18.7 -20.6 -23.0 -24.7 -24.8	AVG AVG AVG AVG AVG AVG AVG AVG PK PK PK PK PK	154 71 137 0 361 347 318 42 71 154 137 0 361	1.0 1.0		



Ell	ott						EM	C Test Data
Client: Xirrus,						J	ob Number:	J60437
Model: XS-350	0 Access P	oint					og Number:	
						Accour	nt Manager:	Susan Pelzl
Contact: Ian Lai	-						01	N1/A
Spec: FCC 15	0.247, 15.40	1, RSS-210					Class:	N/A
Power setting 15				Н	V	1		
Fundamental er				101.27	107.1	Peak Meas	urement (R	B=VB=1MHz)
Fundamental er	nission leve			92.48	98.42	Average Me	easurement	(RB=1MHz, VB=10Hz)
	г	Delta Mark - Delta Marker		- 42.8	dB dB			
Ca		id-Edge Meas	Ū.		dBuV/m	Peak		
		d-Edge Meas			dBuV/m	Average		
F.0						_		
5.0 0.0 -5.0 -10.0 -15.0 -20.0 -25.0 -30.0 -35.0 -40.0 -45.0 -55.0 -55.0 -2450.0 2450.0	2460.0	o 💠	Frequen	cy (MHz)	490.0 :	2500.0 ncy 28.62	H C S R V D A R R S S R C E I 80 P 2510.0	Analyzer Settings P8564E,006,EMI,UK6 F: 2478.0MHz PAN: 50.0MHz B 1.0MHz B 1.0MHz B 10Hz etector Sample tt 30 L Offset 0.00 weep Time 19.0s ef Lvl: 20.00DBM Comments UT on #11 (2462MHz) 02.11g mode ower setting = 15
	3.53 -41		<u>*</u> 8-	De	elta Ampliti	Jde 42.83		
Frequency Leve		15.209 / 1		Detector	Azimuth	Height	Comments	
MHz dBµV/ 2483.500 55.7	m v/h v	Limit 54.0	Margin 1.7	Pk/QP/Avg Avg	degrees -	meters -		
	· · ·							

E	Elliott	ЕМ	C Test Data
Client:	Xirrus, Inc.	Job Number:	J60437
Model	XS-3500 Access Point	T-Log Number:	T61140
wouer.		Account Manager:	Susan Pelzl
Contact:	Ian Laity / Steve Smith		
Spec:	FCC 15.247, 15.401, RSS-210	Class:	N/A

FCC 15.247 Spurious Emissions - 802.11g External Antenna

Test Specifics

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

Date of Test: 8/24/2005 Test Engineer: Mark Briggs Test Location: SVOATS #1

Config. Used: 1 Config Change: None (3dBd Omni antenna connected) EUT Voltage: 120V/60Hz

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 approximately 30 meters from the EUT with all I/O connections running on top of the groundplane or routed in overhead in the GR-1089 test configuration.

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

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 used.

Ambient Conditions:	Temperature:	23 °C
	Rel. Humidity:	59 %

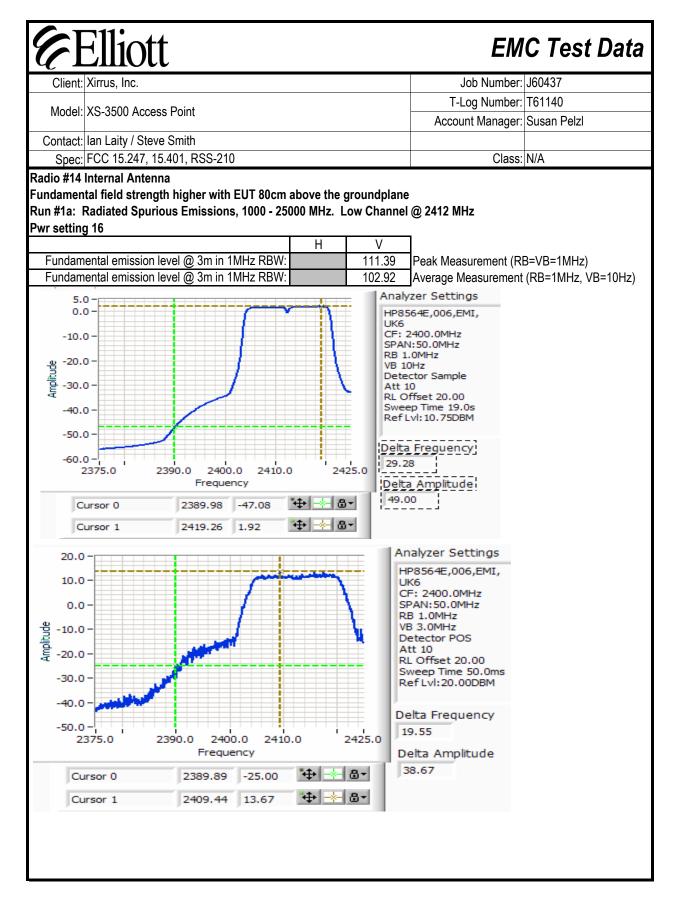
Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	RE, 1000 - 25000 MHz - Spurious Emissions	FCC Part 15.209 / 15.247(c)	Pass	53.8dBµV/m (487.5µV/m) @ 2390.0MHz (-0.2dB)

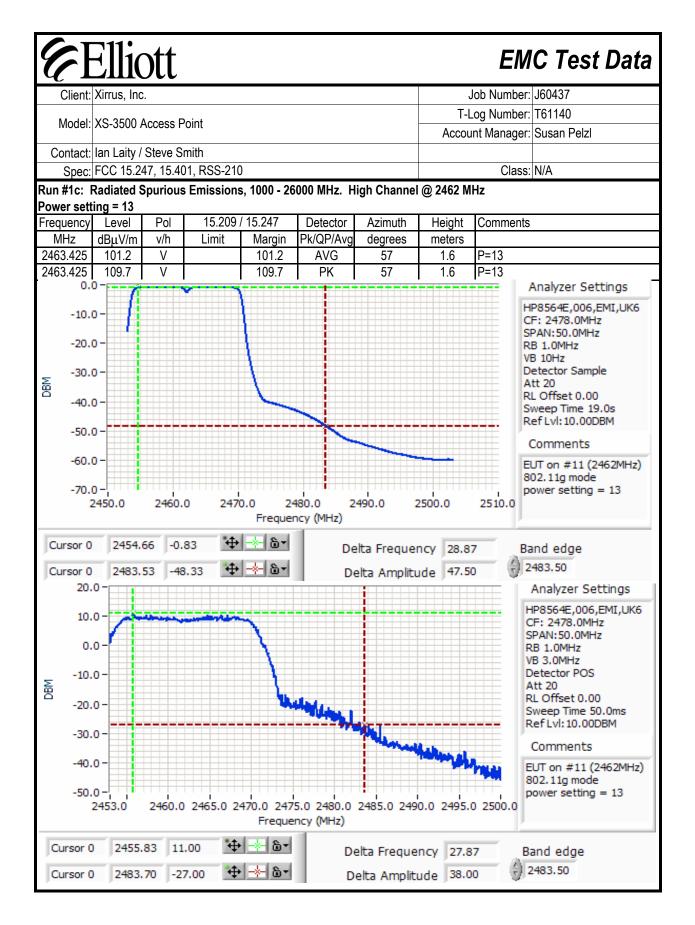
Modifications Made During Testing:

No modifications were made to the EUT during testing

Deviations From The Standard



Client	Xirrus, Inc							Job Number: J60437
onorm	,	·						_og Number: T61140
Model:	XS-3500 A	Access P	oint					Int Manager: Susan Pelzl
Contact:	lan Laity /	Steve Sr	nith					
			1, RSS-210					Class: N/A
			ver setting					
Frequency		Pol	15.209 /		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2390.000		V	54.0	-0.2	Avg	50	1.5	Note 2, delta = 49
2390.000	62.2	V	74.0	-11.8	Pk	50	1.5	Note 2, delta = 38.7
Spurious E		Pol	15.209 /	15 2/7	Detector	Azimuth	Hojaht	Comments
Frequency MHz	Level dBµV/m	v/h	Limit	Margin	Detector Pk/QP/Avg	degrees	Height meters	
4824.013	авµv/ш 42.3	V	54.0	-11.7	AVG	32	1.0	
4824.013	53.2	v	74.0	-20.9	PK	32	1.0	
Note 2:	between t	<u>f the func</u> e measur he highes	damental. ement calcu st signal leve	el in the res		minus delta		Marker deltas are the difference signal level for average (RB=1MH;
	Band edge between ti VB=10Hz) Radiated \$	f the fund e measur he highes and pea	damental. ement calcu st signal leve k (RB=VB=	el in the res 1MHz) mea	fundamental stricted band	minus delta and the high	est in-band	signal level for average (RB=1MH:
Run #1b: I Power sett	Band edge between ti VB=10Hz) Radiated \$ ing 20	f the fund e measur he highes and pea	damental. ement calcu st signal leve k (RB=VB= Emissions	el in the res 1MHz) mea 5, 1000 - 2 5	fundamental stricted band asurements.	minus delta and the high menter Chanr	est in-band nel @ 2437	signal level for average (RB=1MH:
Run #1b: Power sett	Band edg between t VB=10Hz Radiated \$ ing 20 Level	f the fund e measur he highes and pea Spurious	damental. ement calcu st signal leve k (RB=VB= Emissions	el in the res 1MHz) mea 5, 1000 - 25 15.247	fundamental stricted band asurements. 6000 MHz. C Detector	i minus delta and the high center Chanr Azimuth	est in-band nel @ 2437 Height	signal level for average (RB=1MH:
Run #1b: Power sett Frequency MHz	Band edg between ti VB=10Hz) Radiated S ing 20 Level dBμV/m	f the fund e measur he highes and pea Spurious Pol v/h	damental. ement calcu st signal leve k (RB=VB= Emissions 15.209 / Limit	el in the res 1MHz) mea 5, 1000 - 25 15.247 Margin	fundamental stricted band asurements. 6000 MHz. C Detector Pk/QP/Avg	minus delta and the high enter Chanr Azimuth degrees	est in-band nel @ 2437 Height meters	signal level for average (RB=1MH:
Run #1b: 1 Power sett Frequency MHz 4866.540	Band edge between ti VB=10Hz) Radiated S ing 20 Level dBµV/m 42.8	f the fund e measur he highes and pea Spurious Pol V/h H	damental. ement calcu st signal leve k (RB=VB= Emissions 15.209 / Limit 54.0	el in the res 1MHz) mea 5, 1000 - 25 15.247 Margin -11.2	fundamental stricted band asurements. 6000 MHz. C Detector Pk/QP/Avg AVG	minus delta and the high enter Chanr Azimuth degrees 96	est in-band nel @ 2437 Height neters 1.0	signal level for average (RB=1MH:
Run #1b: Power sett Frequency MHz 4866.540 4866.540	Band edge between ti VB=10Hz) Radiated S ing 20 Level dBµV/m 42.8 54.2	f the fund e measur he highes and pea Spurious Pol v/h	damental. ement calcu st signal leve k (RB=VB= Emissions 15.209 / Limit 54.0 74.0	el in the res 1MHz) mea 5, 1000 - 25 15.247 Margin -11.2 -19.8	fundamental stricted band asurements. 6000 MHz. C Detector Pk/QP/Avg AVG PK	enter Chanr Azimuth degrees 96 96	est in-band nel @ 2437 Height neters 1.0 1.0	signal level for average (RB=1MH:
Run #1b: 1 Power sett Frequency MHz 4866.540	Band edga between ti VB=10Hz) Radiated S ing 20 Level dBμV/m 42.8 54.2 47.3 59.6	f the fund e measur he highes and pea Spurious Pol V/h H H V V	damental. ement calcu st signal leve k (RB=VB= Emissions 15.209 / Limit 54.0 74.0 54.0 74.0	el in the res 1MHz) mea 5, 1000 - 25 15.247 Margin -11.2 -19.8 -6.7 -14.4	fundamental stricted band asurements. 6000 MHz. C Detector Pk/QP/Avg AVG PK AVG PK	enter Chanr Azimuth degrees 96 96 361 361	est in-band nel @ 2437 Height meters 1.0 1.0 1.0 1.0	signal level for average (RB=1MH:



U	Ellic	Ott						EMC Test Data
Client:	Xirrus, Inc						J	Job Number: J60437
							T-L	og Number: T61140
Model:	XS-3500 A	Access F	Point					int Manager: Susan Pelzl
Contact:	lan Laity /	Steve S	mith					
Spec:	FCC 15.24	47, 15.40)1, RSS-210)				Class: N/A
and Edge	e - channe	l 11 at p	ower setting	g = 13				
requency	Level	Pol	15.209/	/ 15.247	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.500	53.7	V	54.0	-0.3	Avg	57	1.6	Note 2, delta = 47.5dB
2483.500		V	74.0	-2.3	Pk	57	1.6	Note 2, delta =38.0dB
purious E	missions	(measu	red at powe		· · · · · · · · · · · · · · · · · · ·		-	
requency	Level	Pol	15.209/	15.247	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4924.790	42.5	V	54.0	-11.5	AVG	359	1.0	
4924.790	54.5	V	74.0	-19.5	PK	359	1.0	
		-	st signal lev ak (RB=VB=			and the high	est in-band	signal level for average (RB=1MHz
lote 2:		-	-			and the high	est in-band	signal level for average (RB=1MHz,

Client: Xirrus, Inc. Job Number: J60437 Model: XS-3500 Access Point T-Log Number: T61140 Contact: Ian Laity / Steve Smith Other Susan Pelzl Contact: Ian Laity / Steve Smith Class: N/A Spec: FCC 15.247, 15.401, RSS-210 Class: N/A

Test Specifics

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

Date of Test:7/22/2005 - 9/22/2005,
11/7/2004Test Engineer:Mehran Birgani, M Briggs
Test Location:Chamber #2

Config. Used: #1

Config Change: -EUT Voltage: 120V/60Hz

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.

Ambient Conditions:	Temperature:	16 - 22 °C
	Rel. Humidity:	35 - 45 %

Summary of Results

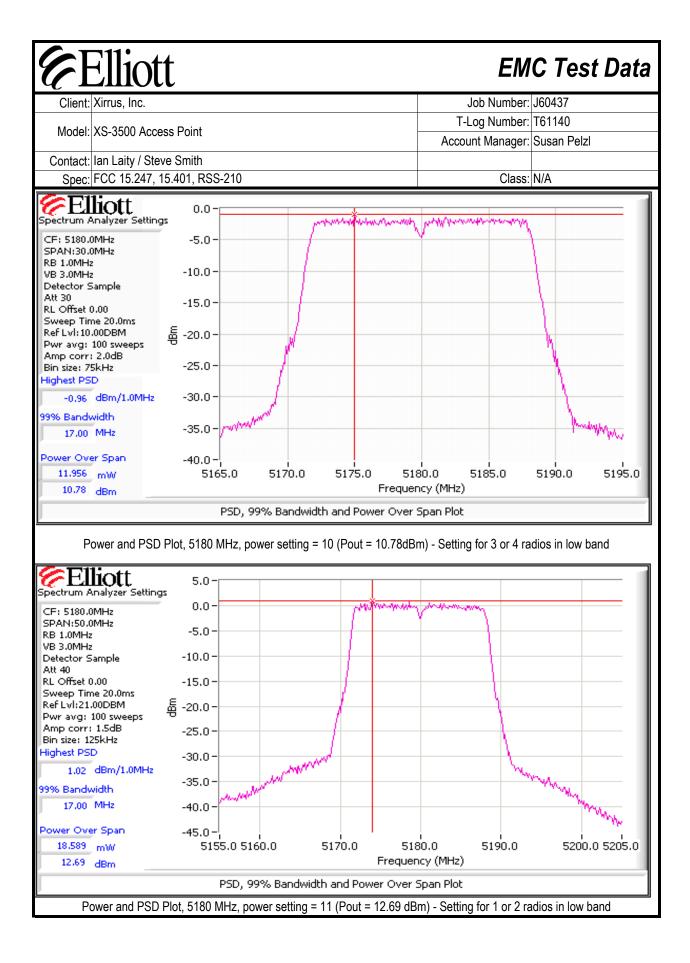
Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Output Power, PSD (5150 - 5250 MHz)	15.407(a) (1), (2)	Pass	Refer to run
1	Output Power, PSD (5250 - 5350 MHz)	15.407(a) (1), (2)	Pass	Refer to run
1	Output Power, Aggregate (5150 - 5250 MHz)	15.407(a) (1), (2)	Pass	16.9dBm 0.049W
1	Output Power, Aggregate (5250 - 5350 MHz)	15.407(a) (1), (2)	Pass	23.7dBm 0.236W
1	26dB Bandwidth	15.407	Pass	> 20 MHz
1	20 dB Bandwidth	RSS 210	Pass	> 20 MHz
2	Peak Excursion Envelope	15.407(a) (6)	Pass	<= 10.89dB
3	Antenna Conducted - Out of Band Spurious	15.407(b)	Pass	All emissions below the -27dBm/MHz limit

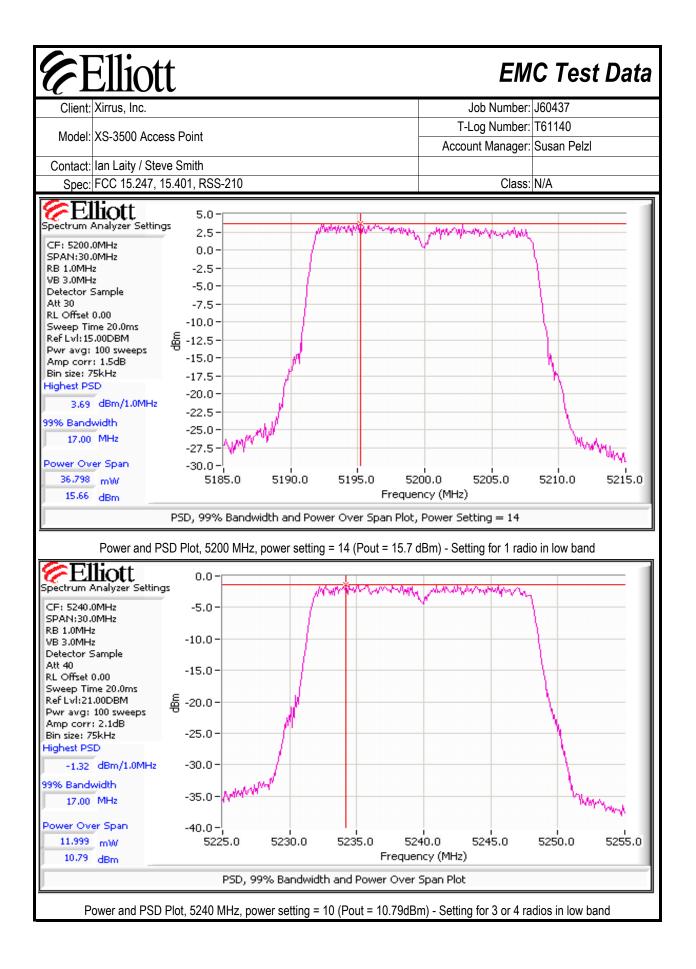
Modifications Made During Testing:

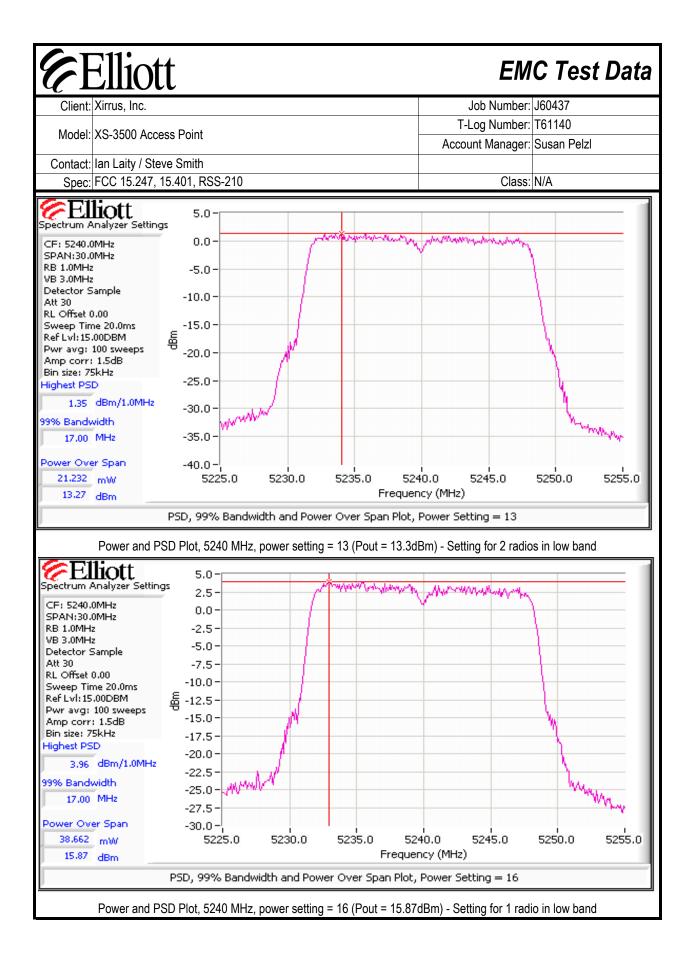
No modifications were made to the EUT during testing

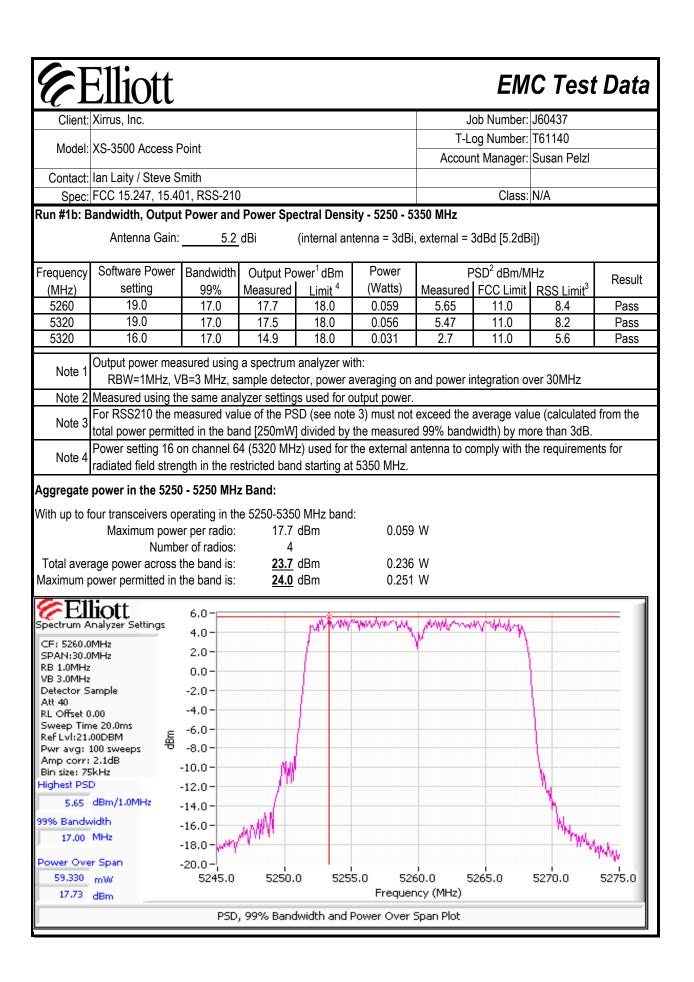
Deviations From The Standard

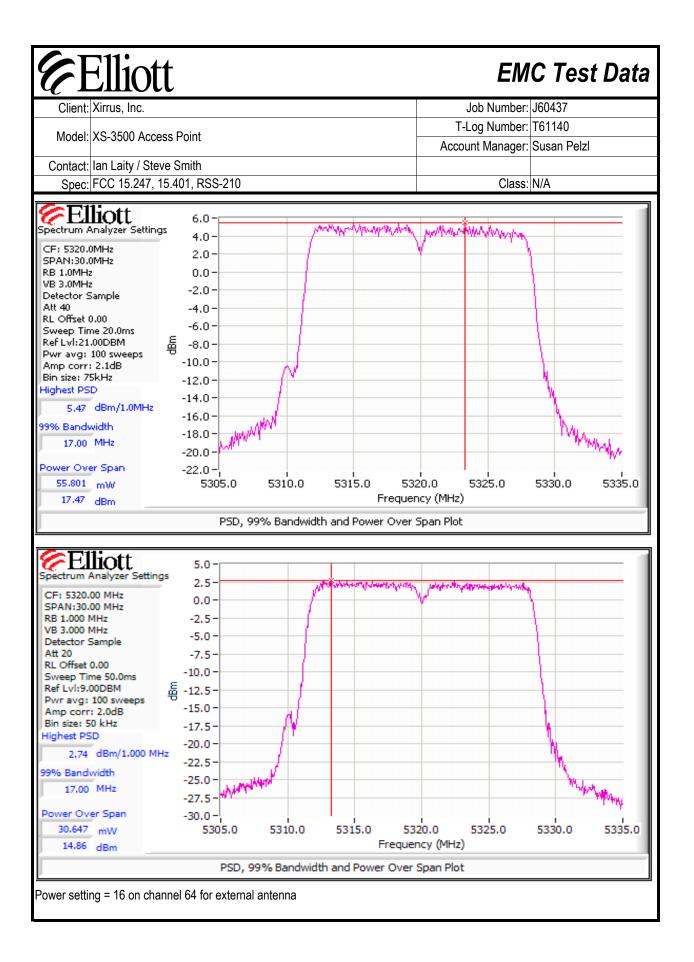
01011	Xirrus, Inc.					J	ob Number:	J60437	
Model [.]	XS-3500 Access F	Point					og Number:		
						Accour	nt Manager:	Susan Pelzl	
	Ian Laity / Steve S)				Classi	N1/A	
	FCC 15.247, 15.40 Bandwidth, Output			otrol Dono	the 5450 54	250 MU-	Class:	N/A	
	for 1, 2 and 3 or 4 Antenna Gain:	radios ope		Itaneously			3dBd [5.2dB	i])	
Frequency	Software Power	Bandwidth	Output Po	wer ¹ dBm	Power	F	PSD ² dBm/M	Hz	
(MHz)	setting	99%	Measured	Limit ⁴	(Watts)			RSS Limit ³	Result
5180	10.0	17.0	10.8	11.0	0.012	-0.96	4.0	1.5	Pass
5180	11.0	17.0	12.7	14.0	0.019	1.02	4.0	3.4	Pass
5200	14.0	17.0	15.7	17.0	0.037	3.69	4.0	6.4	Pass
5240	10.0 13.0	17.0	10.8	11.0	0.012	-1.30	4.0	1.5	Pass
5240 5240	16.0	17.0 17.0	13.3 15.9	14.0 17.0	0.021 0.039	1.35 3.96	4.0 4.0	4.0 6.6	Pass Pass
Note 3 Note 4 Aggregate channels us With one tra	RBW=1MHz, V Measured using th For RSS210 the m measured power of The maximum out transceivers opera other three channe power drops to 13. channel is 10.8dBr power in each ba sed in this sub-band ansceiver operating	te same ana heasured val livided by th put power fo ting in that t els (limited b .3dBm on ch m. nd (The sof d - see note g in the 5150	lyzer setting lue of the PS e measured or any transco band. With o y the power hannels 40, o tware will se 5 above)	is used for c SD (see note 99% bandy eiver in the only one tra spectral de 44 and 48.	putput power. a 3) must not vidth) by more 5150 - 5250 nsceiver the r nsity limit of 4 With more that power in the	exceed the e than 3dB. MHz band is nax power is IdBm/MHz). an two trans 5150 - 5250	average values set depend s 12.7dBm c With two tr ceivers the u	ue (calculated lent on the nui on #36, 15.9dE ansceivers, th max power on	mber of 3m on the e max any
		er of radios:	1		0.039				
	age power across f			dBm	0.039	٧V			
		n per radio: er of radios:	13.3 2	dBm dBm	0.021 0.043				
		operating in n per radio: er of radios:		dBm	0.012				
	age power across f			dBm	0.048				

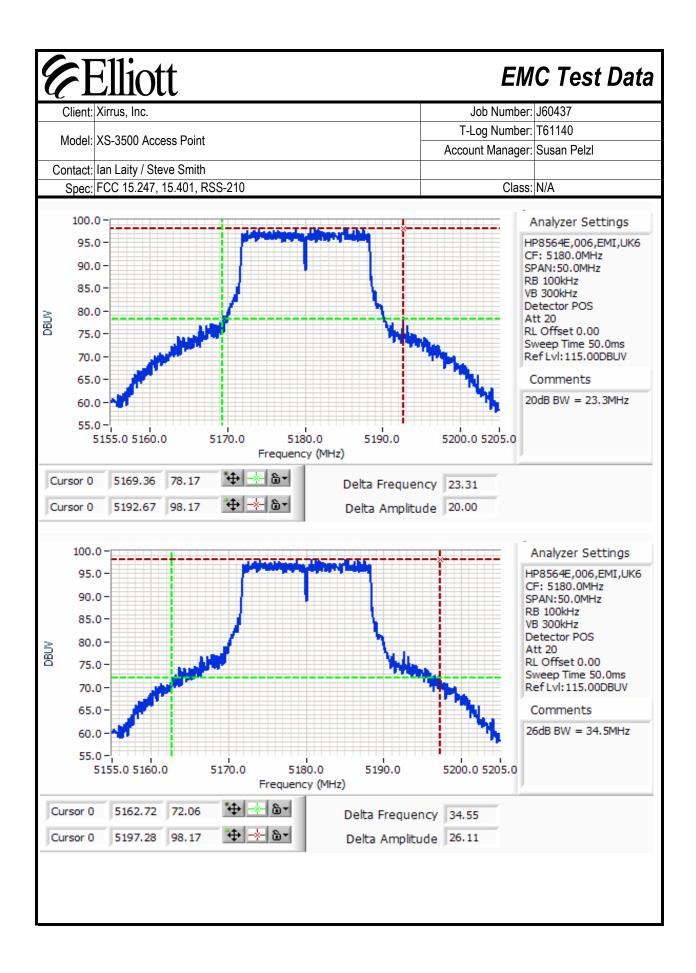


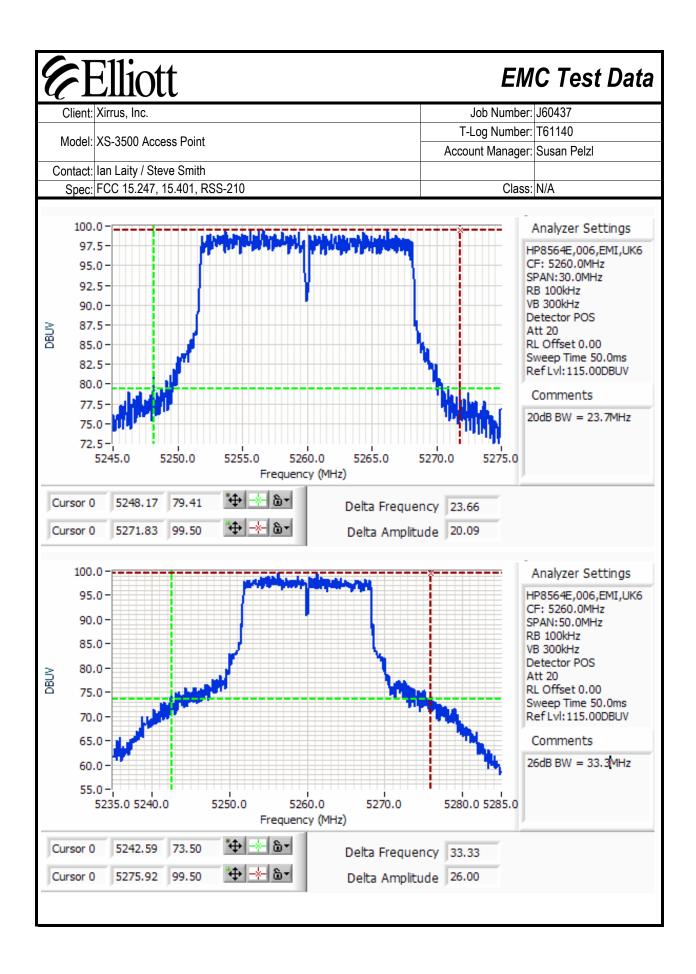


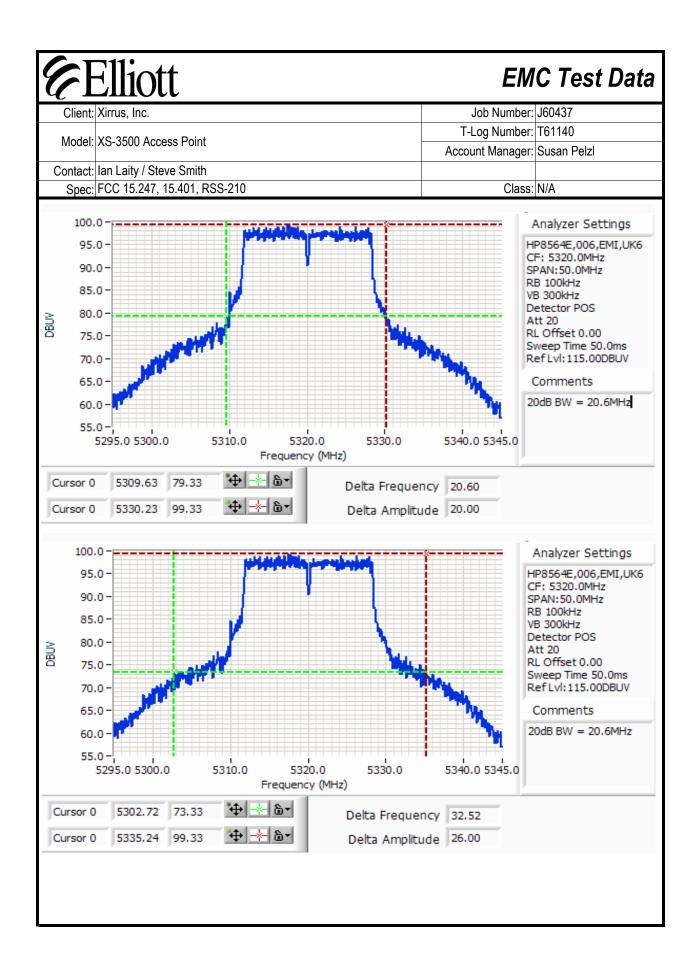


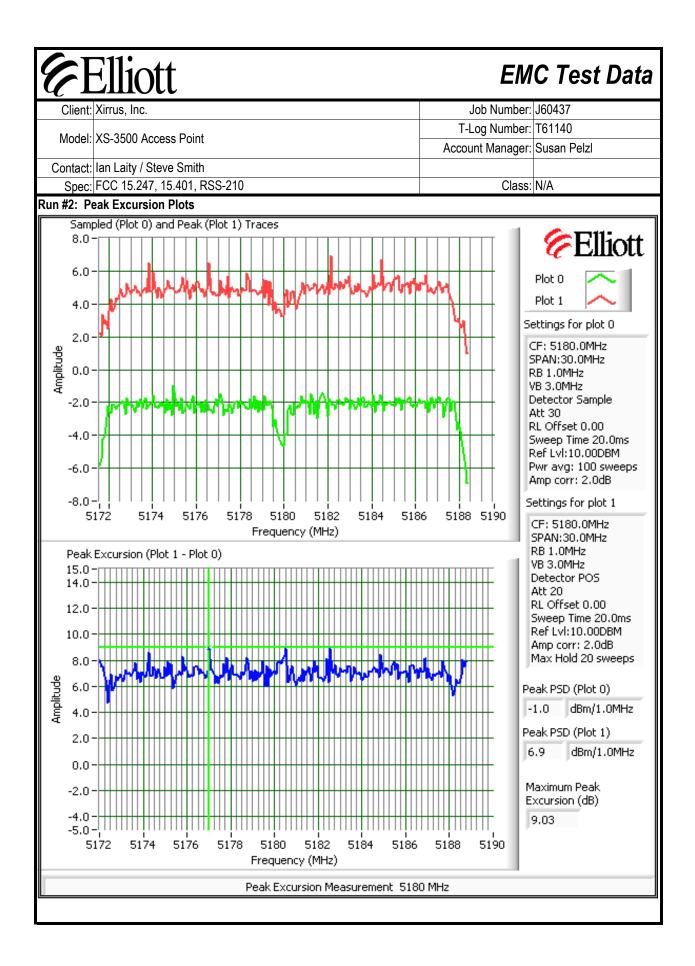


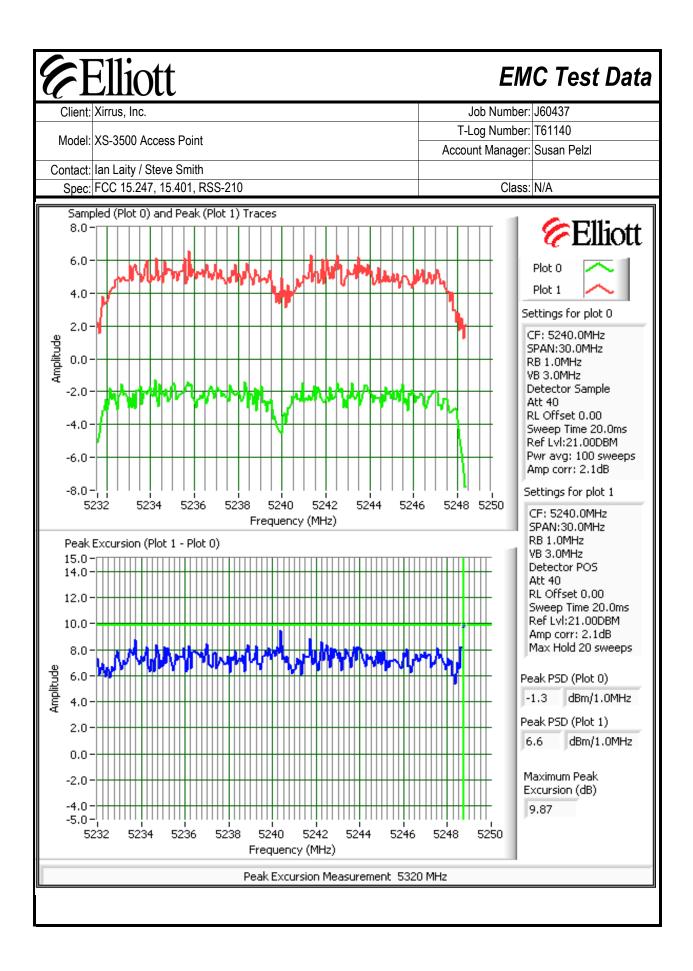


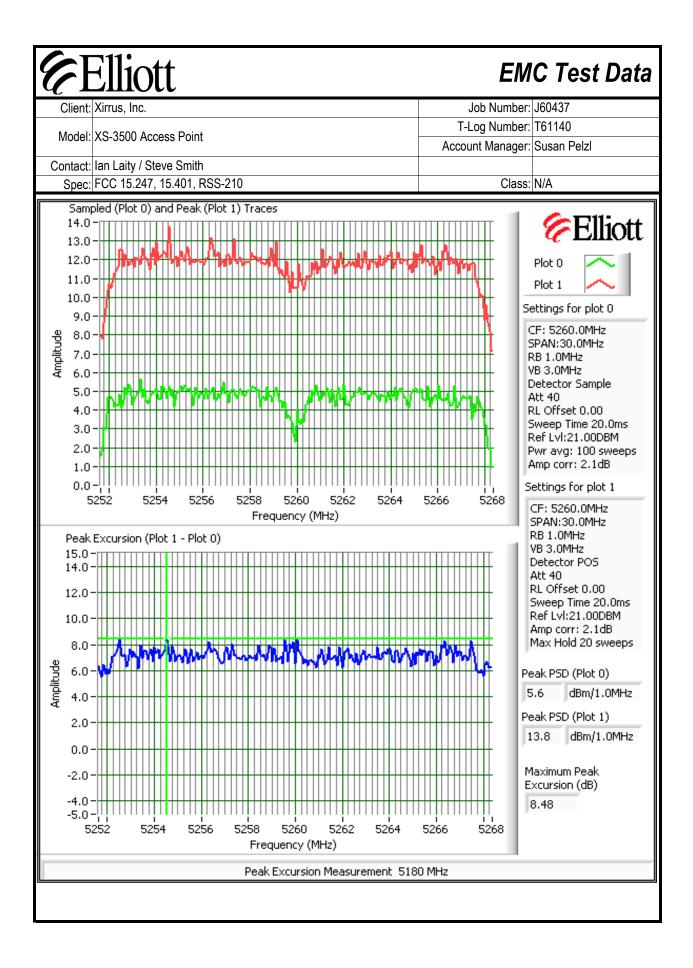


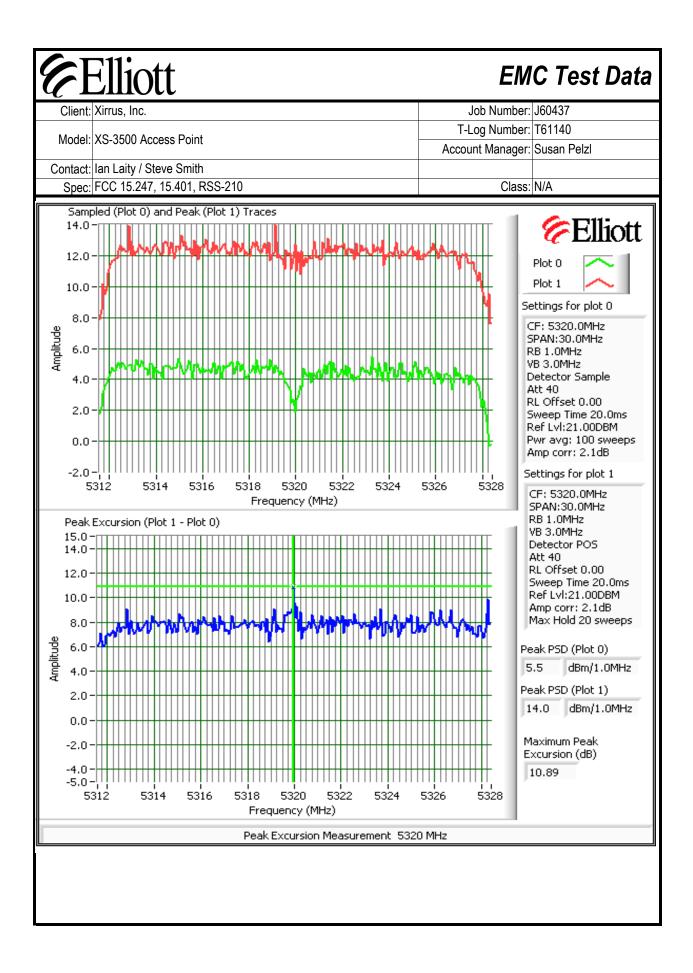


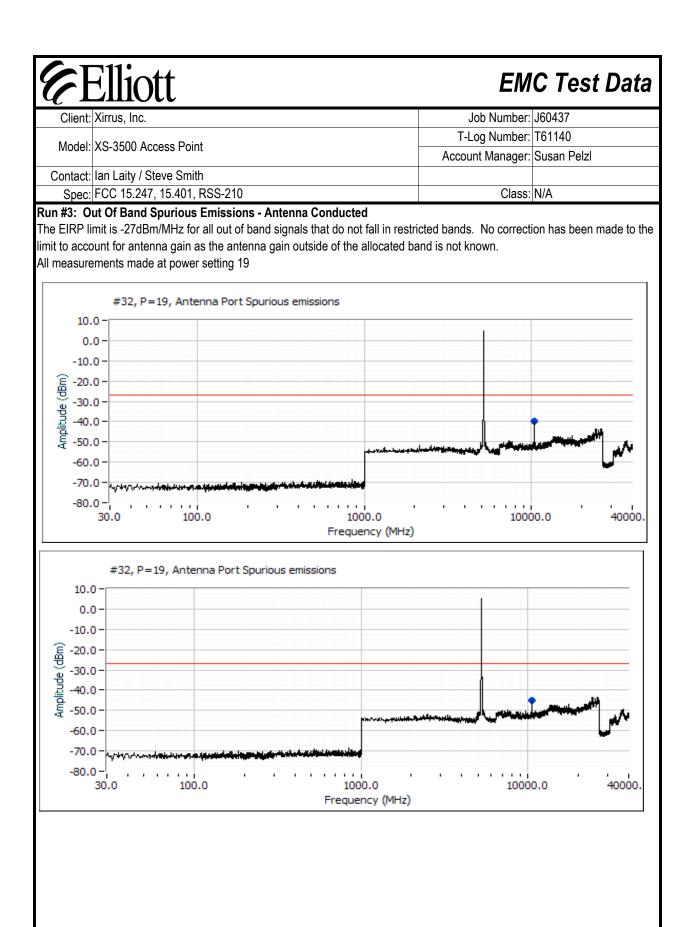


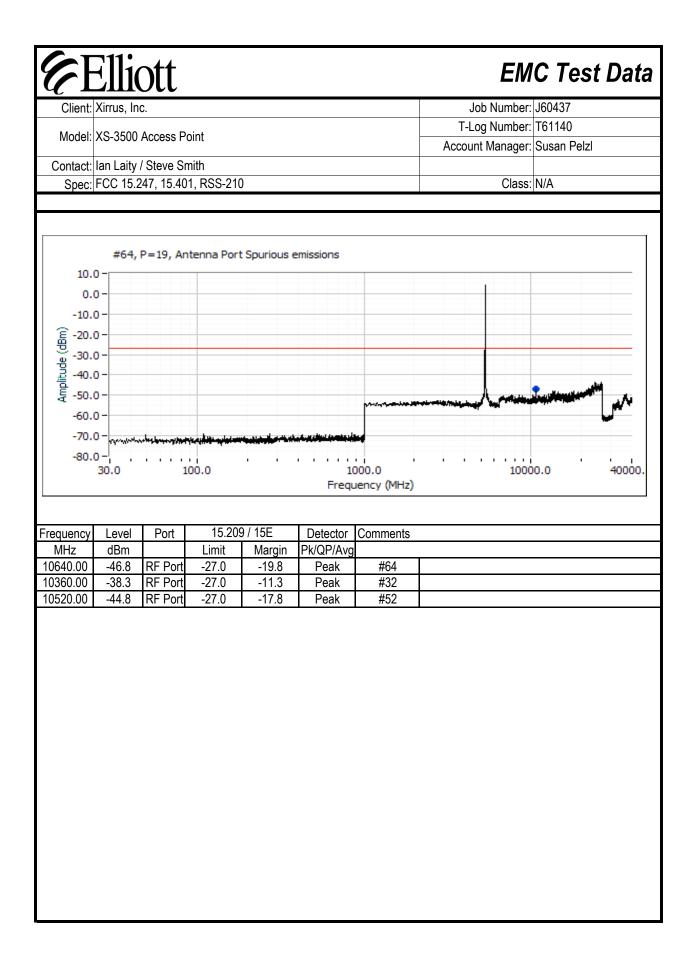












61	Ellic	ott			EM	C Test	Data
_	Xirrus, Inc			Jo	ob Number:	J60437	
Model:	XS-3500 A	Access Point			og Number: ⁻ nt Manager: \$		
	-	Steve Smith					
Spec:	FCC 15.24	47, 15.401, RSS-210			Class: I	N/A	
	F	Radiated Emissior	וs, FCC 15E, ו	Interna	I Anten	na	
Test Spe	Objective:	The objective of this test sessior specification listed above.	ו is to perform final qualit	fication testin	ng of the EUT	with respec	t to the
Test	te of Test: Engineer:		Config. Used: Config Change: EUT Voltage:	None			
General	Test Cor	nfiguration					
PUILUE		illguiatio					
The FUT a	nd all loool	aunnart aquinment were leasted	l on the turntable for radi	ated souriour	s emissions t	tostina	
	nu dii 100di	support equipment were located		ated optition		testing.	
For radiated		s testing the measurement anter	nna was located 3 meters 18 °C			uesung.	
⁻ or radiated	d emission	s testing the measurement anter DNS: Temperature: Rel. Humidity:	nna was located 3 meters 18 °C			esung.	
⁻ or radiated	d emission Condition	s testing the measurement anter DNS: Temperature: Rel. Humidity:	nna was located 3 meters 18 °C		JT. Result /	Margin	
For radiated Ambient Summar	d emission: Conditic	s testing the measurement anter ons: Temperature: Rel. Humidity: ults	nna was located 3 meters 18 °C 78 %	s from the EU	JT.	Margin 3µV/m V/m) @	

_	Ellic									t Dat
Client:	Xirrus, Inc).						Job Number:		
Model:	XS-3500	Access F	Point					Log Number:		
							Acco	unt Manager:	Susan Pelzl	
	lan Laity /									
			01, RSS-210					Class:	N/A	
	-	-		missions tl s, 1000 - 40			height) el @ 5180 N	IHz		
					Н	V				
			el @ 3m in 1		94.69	108.62		surement (RI		
Fundam	nental emis	sion leve	<u> </u>	MHz RBW:	85.48	98.17	Average	Measurement	(RB=1MHz,	VB=10Hz
				arker - Peak	41.83		_			
	Calcul			er - Average easurement:		dB dBuV/m	Peak			
				asurement:		dBuV/m	Average			
ower sett					00.04	3007/11	, wordge			
ATTEN RL -8.	10dB	10d E		R 41.83dE 55MHz	I >	KATTEN Ø RL −10.			KR 47.83c ∴74MHz	B
			24.0		- at ma					
					$A \rightarrow$					<u>₽</u> / *
				+ + /	·					
				have an interest for the stand						
	Marthan Wilder	and the second	toput the							
	R 5.1500			SPAN 54.9			5.15000GH		SPAN 54.	
KRBW 1.	ØMHz	*VBW 1	. ØMHz	SWP 50.	Øms →	KRBW 1.0	MHz ₩VB	W 10Hz	SWP 2.	1.Øsec
and Edge	Signal Ra	diated F	ield Strengtl	า						
requency		Pol		9 / 15E	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg					
5150.000	50.3	-	54.0	-3.7	Avg		-	Note 2		
5150.000	66.8	-	74.0	-7.2	Pk	-	-	Note 2		

Client:	Ellic Xirrus, Inc.							Job Number: J60437
								.og Number: T61140
Model:	XS-3500 A	ccess P	oint					int Manager: Susan Pelzl
Contact:	lan Laity /	Steve Sr	nith					.
			1, RSS-210)				Class: N/A
Run #1a: C			,					
	ious Radiat Level	ed Emis Pol	sions: 15.209) / 15E	Detector	Azimuth	Height	Comments
Frequency MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Comments
10359.88	66.0	V	68.3	-2.3	PK	<u>89</u>	1.0	Non-restricted, pk reading, avg limit
10357.53	64.7	Ĥ	68.3	-3.6	PK	202	1.3	Non-restricted, pk reading, avg limit
15537.22	41.7	H	54.0	-12.3	AVG	235	1.0	Noise Floor
15540.45	41.5	V	54.0	-12.5	AVG	228	1.0	Noise Floor
10359.88	53.8	V	68.3	-14.5	AVG	89	1.0	Non-restricted
10357.53	51.9	Н	68.3	-16.4	AVG	202	1.3	Non-restricted
15537.22	52.7	Н	74.0	-21.3	PK	235	1.0	Noise Floor
15540.45	52.5	V	74.0	-21.5	PK	228	1.0	Noise Floor
lote 2:	27dBm/MF Band-edge delta mark	measu	rement calci	ulated from	the fundame	ntal field stre	ngth (peak	or average) minus the band edge
Note 2: Run #1b:	Band-edge delta mark	e measui er meas	rement calcu urement.		the fundame			
Run #1b: Power sett	Band-edge delta mark Radiated S ing 19	er measur er meas purious	ement calcu urement.	s, 1000 - 40	0000 MHz. C	enter Chanr	nel @ 5260	MHz
Run #1b: Power sett Frequency	Band-edge delta mark Radiated S ing 19 Level	e measur er meas purious Pol	ement calcu urement. Emissions	s, 1000 - 40 / 15.247	0000 MHz. C	enter Chanr Azimuth	nel @ 5260 Height	
Run #1b: Power sett Frequency MHz	Band-edge delta mark Radiated S ing 19 Level dBµV/m	e measur er meas purious Pol v/h	ement calcu urement. Emissions 15.209 / Limit	s, 1000 - 4(/ 15.247 Margin	Dooo MHz. C Detector Pk/QP/Avg	enter Chanr Azimuth degrees	el @ 5260 Height meters	MHz Comments
Run #1b: Power sett Frequency MHz 10518.97	Band-edge delta mark Radiated S ing 19 Level dBµV/m 64.6	e measur er meas purious Pol V/h V	ement calcu urement. Emissions 15.209 / Limit 68.3	5, 1000 - 4(/ 15.247 <u>Margin</u> -3.7	Detector Pk/QP/Avg PK	enter Chanr Azimuth degrees 205	Height 1.0	MHz Comments Peak reading average limit
Run #1b: Power sett Frequency MHz 10518.97 10518.28	Band-edge delta mark Radiated S ing 19 Level dBµV/m 64.6 61.9	er measur er meas purious Pol V/h V H	ement calcu urement. Emissions 15.209 / Limit 68.3 68.3	s, 1000 - 40 (15.247 <u>Margin</u> -3.7 -6.4	Detector Pk/QP/Avg PK PK	enter Chanr Azimuth degrees 205 233	Height Height 1.0 1.3	MHz Comments
Run #1b: Power sett Frequency MHz 10518.97 10518.28 15773.92	Band-edge delta mark Radiated S ing 19 Level dBμV/m 64.6 61.9 41.7	er measur er meas purious Pol V/h V H H	ement calco urement. Emissions 15.209 / Limit 68.3 68.3 54.0	5, 1000 - 40 (15.247 (Margin -3.7 -6.4 -12.3	Detector Pk/QP/Avg PK PK AVG	Azimuth degrees 205 233 80	Height Height 1.0 1.3 1.0	MHz Comments Peak reading average limit
Run #1b: Power sett Frequency MHz 10518.97 10518.28 15773.92 15781.45	Band-edge delta mark Radiated S ing 19 Level dBμV/m 64.6 61.9 41.7 41.6	e measur er meas purious Pol V/h V H H H V	ement calcu urement. Emissions 15.209 / Limit 68.3 68.3 54.0 54.0	5, 1000 - 40 (15.247 (Margin -3.7 -6.4 -12.3 -12.4	Detector Pk/QP/Avg PK PK AVG AVG	Azimuth degrees 205 233 80 205	Height Height 1.0 1.3 1.0 1.0	MHz Comments Peak reading average limit
Run #1b: Power sett Trequency MHz 10518.97 10518.28 15773.92	Band-edge delta mark Radiated S ing 19 Level dBμV/m 64.6 61.9 41.7 41.6 52.4 52.2	e measur er meas purious Pol V/h V H H V V H V V H	ement calcu urement. Emissions 15.209 / Limit 68.3 68.3 54.0 54.0 74.0 74.0 74.0	s, 1000 - 40 (15.247 Margin -3.7 -6.4 -12.3 -12.4 -21.6 -21.8	Detector Pk/QP/Avg PK PK AVG AVG PK PK PK	Azimuth degrees 205 233 80 205 205 80	Height Height 1.0 1.3 1.0 1.0 1.0 1.0 1.0 1.0	MHz Comments Peak reading average limit

		Elli Xirrus, In				_						_			J	lob Nu	umber:	J604	37		
I	Model	XS-3500	Access	Poin	nt												umber:			-	
					-									1	Accou	nt Ma	nager	Susa	an Pel	z	
		lan Laity																			
		FCC 15.2															Class	N/A			
		Radiated	Spurio	us Er	nissi	ons,	1000	- 40	000 M	Hz. F	lig	h Ch	anne	I @ 53	820 M	Hz					
OW	er sett	ing 19							ŀ	4	I	V	,	1							
F	undam	ental emi	ssion le	vel @) 3m i	n 1N	1Hz R	BW:		.69		107.		Peak	Meas	surem	ent (R	B=VB	s=1MF	Hz)	
		ental emi		vel @) 3m i	n 1N	1Hz R	BW:	87.	.56		98.					ement			'	=10H:
					Delta					40.67				1							
		0-1	ilote d D		ta Ma					45.67											
			ulated B ulated B							67.18 52.88				Peak Avera							
		Jailt		unu-L	Luye	ivica		iont.		52.00	uL	JUV/I	11		Jye						
AT	TEN			D /			40.E						Ч Ød 10.0		1 (∂dB∕		MKR 27.2		7d B	
P ^L	3. -3. ∖ 1	4d Bm	10d	<u>в/</u>	-2	5.2	9MHz	<u>:</u>		٦	F		10.0	1200	1			_,			
	$-\lambda$				-+				-	1	ł		ħ.								*
F		HUPPLAN ALLING			-				+		ľ		K								
▫╞					-+			1													
				*******	-	44.es	-ledron	Million.		1							2				
		Hundrad Ala Unit								*								~~~~		·	
											L			. 350					AN 5		
*RE	₃w 1.0 IEdge	5.3500 amHz Signal Ra Level	¥VBW		Stren	igth	зыр / 15E	50.		ector		вы : Azim	1.0M		ight	v 10⊦ ICom	ments		SWP	21.0)sec
	Hz	dBµV/m			Limit	-	Marg		Pk/Q		_	degr			ters						
	60.000	52.9) –		54.0		-1.	1	A١			-			-	Note					
535	0.000	67.2	-		74.0		-6.	8	P	k		-			-	Note	2				
)the	r Spur	on Augu ious Rac	liated E		sions:						-										
	uency		Pol				15.24			ector	_	Azim			ight	Com	ments				
	Hz	dBµV/m	v/h V		Limit	_	Mare	-	Pk/Q			degr			ters	Deve	ar = 10	<u>)</u>			
	39.41 42.03	52.4 45.7	V H		54.0 54.0	_	-1. -8.		Av Av	-	-	18 11			.8 .0		er = 19 er = 19				
	39.41	64.1	V		74.0	+	-9.9			'k	-	18		-	.8		er = 19				
	42.03	57.3	H		74.0		-16			'k	-	11		-	.0		er = 19				

Client: Xirrus, Inc).		Jo	b Number: J604	437
Model: XS-3500	Access Point		T-Lo	g Number: T61	140
			Accoun	t Manager: Sus	an Pelzl
Contact: Ian Laity /					
Spec: FCC 15.2	47, 15.401, RSS-210			Class: N/A	
Test Specifics Objective:	The objective of this test session specification listed above.			g of the EUT wit	th respect
	Chris Byleckie/Rafael	Config. Used Config Change	: None		
Test Location:	SVOATS #3	EUT Voltage	: 120V/60Hz		
	ofiguration				
	support equipment were located	I on the turntable for rad	iated spurious	s emissions test	ing.
The EUT and all local	•				ing.
	support equipment were located s testing the measurement anter				ing.
The EUT and all local For radiated emission	support equipment were located s testing the measurement anter	nna was located 3 meter 17 °C			ing.
The EUT and all local For radiated emission	support equipment were located s testing the measurement anter ons: Temperature: Rel. Humidity:	nna was located 3 meter 17 °C			ing.
The EUT and all local For radiated emission Ambient Conditio	support equipment were located s testing the measurement anter ons: Temperature: Rel. Humidity:	nna was located 3 meter 17 °C		IT. Result / Ma	argin
The EUT and all local For radiated emission Ambient Condition Summary of Res	support equipment were located s testing the measurement anter ons: Temperature: Rel. Humidity: ults	nna was located 3 meter 17 °C 84 %	s from the EL	IT.	argin //m

Deviations From The Standard

<u>v 1</u>	<u>Ellic</u>	<u>ott</u>							_		st D	ata
Client:	Xirrus, Inc).						Job Numbe		-		
Model.	XS-3500	Access F	Point					Log Numbe				
							Acco	unt Manage	er: Sus	an Pel:	zl	
	lan Laity /											
Spec:	FCC 15.2	47, 15.4	01, RSS-21	0				Clas	s: N/A			
	-	-	• •	emissions tl s, 1000 - 40			height) el @ 5180 N	IHz				
					Н	V						
				MHz RBW:	90.75	105.64		isurement (,	 .
Fundam	iental emis	sion leve	<u> </u>	IMHz RBW: arker - Peak	82.57 41.83	96.33	Average I	Measureme	nt (RB:	=1MHz	z, VB=1	UHz)
				er - Average			_					
	Calcu			asurement:		dBuV/m	Peak					
			-	asurement:		dBuV/m	Average					
ower sett		-	0	-								
ATTEN RL -8.		10dE		R 41.83dE 55MHz	۱ ÷	KATTEN Ø. RL −10.1			4MKR 22.74		3d B	
					- nime							
												*
											1	
			بمدينه المرتجر	Mar and the state of the								
	Mar Maria	-law high nexts	rings the						<u></u>			
Provent -								P				
KRBW 1.		*∨вы 1		SPAN 54.5 SWP 50.		CENTER ! krbw 1.0	5.15000GH MHz *VB	z W 10Hz	SP		4.58M⊦ 21.0s€	
requency		Pol		9 / 15E	Detector	Azimuth	Height	Commen	ts			
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg							
5150.000	48.5		54.0	-5.5	Avg	-	-	Note 2				
5150.000	63.8	-	74.0	-10.2	Pk	-	-	Note 2				

J Access Point Account Ma Account Ma Account Ma 247, 15.401, RSS-210 Account Ma d Integer to the second	-	Height Comments	Azimuth)		_		1
/ Steve Smith .247, 15.401, RSS-210 d iated Emissions: Pol 15.209 / 15E Detector Azimuth Height Commonstructure n V/h Limit Margin Pk/QP/Avg degrees meters H 54.0 -9.8 AVG 183 1.0 Nois V 54.0 -9.8 AVG 74 1.0 Nois V 68.3 -15.2 AVG 9 1.0 Non- H 68.3 -15.7 AVG 7 1.0 Non- H 74.0 -18.6 PK 183 1.0 Nois V 74.0 -18.9 PK 74 1.0 Nois V 88.3 -22.6 PK 9 1.0 Non- H 88.3 -22.9 PK 7 1.0 Non- ssions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). Ige measurement calculated from the fundamental field strength (peak or av arker measurement. Aur	Class: N/A	Class: N/A Height Comments	Azimuth)		ccess Pr	XS-3500 A	Model:
247, 15.401, RSS-210 d iated Emissions: Pol 15.209 / 15E Detector Azimuth Height Com n V/h Limit Margin Pk/QP/Avg degrees meters integer H 54.0 -9.8 AVG 183 1.0 Nois V 54.0 -9.8 AVG 74 1.0 Nois V 68.3 -15.2 AVG 9 1.0 Non- H 68.3 -15.7 AVG 7 1.0 Nois V 68.3 -15.7 AVG 7 1.0 Non- H 74.0 -18.6 PK 183 1.0 Nois V 74.0 -18.9 PK 74 1.0 Non- H 88.3 -22.6 PK 9 1.0 Non- ssions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). MHz (~68dBuV/m). dge measurement calculated from the fundamental field strength (peak or avarker measurement. <th>Comments</th> <th>Height Comments</th> <th>Azimuth</th> <th></th> <th>)</th> <th></th> <th></th> <th></th> <th></th>	Comments	Height Comments	Azimuth)				
d Pol 15.209 / 15E Detector Azimuth Height Com n V/h Limit Margin Pk/QP/Avg degrees meters integet H 54.0 -9.8 AVG 183 1.0 Nois V 54.0 -9.8 AVG 74 1.0 Nois V 68.3 -15.2 AVG 9 1.0 Non- H 68.3 -15.7 AVG 7 1.0 Non- H 74.0 -18.6 PK 183 1.0 Nois V 74.0 -18.9 PK 74 1.0 Nois V 74.0 -18.9 PK 74 1.0 Nois V 88.3 -22.6 PK 9 1.0 Non- ssions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). dge measurement calculated from the fundamental field strength (peak or avarker measurement. Augustant and avarker measurement.	Comments	Height Comments	Azimuth)				
Pol 15.209 / 15E Detector Azimuth Height Com n v/h Limit Margin Pk/QP/Avg degrees meters n H 54.0 -9.8 AVG 183 1.0 Nois V 54.0 -9.8 AVG 74 1.0 Nois V 68.3 -15.2 AVG 9 1.0 Non- H 68.3 -15.7 AVG 7 1.0 Nois V 68.3 -15.7 AVG 7 1.0 Nois V 74.0 -18.6 PK 183 1.0 Nois V 74.0 -18.9 PK 74 1.0 Nois V 88.3 -22.6 PK 9 1.0 Non- essions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). Ige measurement calculated from the fundamental field strength (peak or avarker measurement. Auge 5260 MHz			Azimuth			11, RSS-210	7, 15.40		
Pol 15.209 / 15E Detector Azimuth Height Com n v/h Limit Margin Pk/QP/Avg degrees meters meters H 54.0 -9.8 AVG 183 1.0 Nois V 54.0 -9.8 AVG 74 1.0 Nois V 54.0 -9.8 AVG 74 1.0 Nois V 68.3 -15.2 AVG 9 1.0 Non- H 68.3 -15.7 AVG 7 1.0 Non- H 74.0 -18.6 PK 183 1.0 Nois V 74.0 -18.9 PK 74 1.0 Nois V 88.3 -22.6 PK 9 1.0 Non- ssions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). Ige measurement calculated from the fundamental field strength (peak or avan arker measurement. Spurious Emissions, 1000 - 40000 MHz. <td></td> <td></td> <td>Azimuth</td> <td></td> <td></td> <td></td> <td></td> <td>Continued</td> <td>Run #1a: C</td>			Azimuth					Continued	Run #1a: C
Pol 15.209 / 15E Detector Azimuth Height Com n v/h Limit Margin Pk/QP/Avg degrees meters meters H 54.0 -9.8 AVG 183 1.0 Nois V 54.0 -9.8 AVG 74 1.0 Nois V 54.0 -9.8 AVG 74 1.0 Nois V 68.3 -15.2 AVG 9 1.0 Non- H 68.3 -15.7 AVG 7 1.0 Non- H 74.0 -18.6 PK 183 1.0 Nois V 74.0 -18.9 PK 74 1.0 Nois V 88.3 -22.6 PK 9 1.0 Non- ssions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). Ige measurement calculated from the fundamental field strength (peak or avan arker measurement. Spurious Emissions, 1000 - 40000 MHz. <td></td> <td></td> <td>Azimuth</td> <td></td> <td></td> <td>sions.</td> <td>ed Emise</td> <td>ious Radiat</td> <td>Other Souri</td>			Azimuth			sions.	ed Emise	ious Radiat	Other Souri
n v/h Limit Margin Pk/QP/Avg degrees meters H 54.0 -9.8 AVG 183 1.0 Nois V 54.0 -9.8 AVG 74 1.0 Nois V 54.0 -9.8 AVG 74 1.0 Nois V 68.3 -15.2 AVG 9 1.0 Non- H 68.3 -15.7 AVG 7 1.0 Non- H 74.0 -18.6 PK 183 1.0 Nois V 74.0 -18.9 PK 74 1.0 Nois V 88.3 -22.6 PK 9 1.0 Non- ssions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). Ige measurement calculated from the fundamental field strength (peak or avarker measurement. Avarker measurement. Avarker Calculated from the fundamental field strength (peak or avarker measurement.	Noise Floor		Azimutn	Detector	9 / 15E		1	· · · · · · · · · · · · · · · · · · ·	Frequency
V 54.0 -9.8 AVG 74 1.0 Nois V 68.3 -15.2 AVG 9 1.0 Non- H 68.3 -15.7 AVG 7 1.0 Non- H 74.0 -18.6 PK 183 1.0 Nois V 74.0 -18.9 PK 74 1.0 Nois V 74.0 -18.9 PK 74 1.0 Nois V 88.3 -22.6 PK 9 1.0 Non- H 88.3 -22.9 PK 7 1.0 Non- essions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). MHz (~68dBuV/m). age measurement calculated from the fundamental field strength (peak or avan arker measurement. Avan arker Calculated from the fundamental field strength (peak or avan arker measurement.	Noise Floor				Margin	Limit		dBµV/m	MHz
V 68.3 -15.2 AVG 9 1.0 Non- H 68.3 -15.7 AVG 7 1.0 Non- H 74.0 -18.6 PK 183 1.0 Nois V 74.0 -18.9 PK 74 1.0 Nois V 74.0 -18.9 PK 74 1.0 Nois V 88.3 -22.6 PK 9 1.0 Non- H 88.3 -22.9 PK 7 1.0 Non- H 88.3 -22.9 PK 7 1.0 Non- ssions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). MHz (~68dBuV/m). Ige measurement calculated from the fundamental field strength (peak or avan arker measurement. Avan arker Context Channel @ 5260 MHz		1.0 Noise Floor				54.0	Н	44.2	15538.72
H 68.3 -15.7 AVG 7 1.0 Non- H 74.0 -18.6 PK 183 1.0 Nois V 74.0 -18.9 PK 74 1.0 Nois V 88.3 -22.6 PK 9 1.0 Non- H 88.3 -22.9 PK 7 1.0 Non- ssions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). Non- ge measurement calculated from the fundamental field strength (peak or avarker measurement. Aspurious Emissions, 1000 - 40000 MHz. Center Channel @ 5260 MHz	Noise Floor	1.0 Noise Floor	74	AVG	-9.8	54.0	V	44.2	15534.35
H74.0-18.6PK1831.0NoisV74.0-18.9PK741.0NoisV88.3-22.6PK91.0Non-H88.3-22.9PK71.0Non-ssions in restricted bands, the limit of 15.209 was used.For all other emissionMHz (~68dBuV/m).Ige measurement calculated from the fundamental field strength (peak or avarker measurement.Spurious Emissions, 1000 - 40000 MHz.Center Channel @ 5260 MHz	Non-restricted							53.1	10361.00
V 74.0 -18.9 PK 74 1.0 Nois V 88.3 -22.6 PK 9 1.0 Non- H 88.3 -22.9 PK 7 1.0 Non- essions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). Bige measurement calculated from the fundamental field strength (peak or avarker measurement. d Spurious Emissions, 1000 - 40000 MHz. Center Channel @ 5260 MHz			-					52.6	10360.55
V 88.3 -22.6 PK 9 1.0 Non- H 88.3 -22.9 PK 7 1.0 Non- ssions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). -22.9 PK 7 1.0 Non- Idge measurement calculated from the fundamental field strength (peak or avarker measurement. -22.9 PK -22.9 PK -22.9 PK -22.9 Non- Idge measurement calculated from the fundamental field strength (peak or avarker measurement. -22.9 -22.9 -22.9 -22.9 -22.9 -22.9 Non- Id Spurious Emissions, 1000 - 40000 MHz. Center Channel @ 5260 MHz -22.9 -22								55.4	15538.72
H 88.3 -22.9 PK 7 1.0 Non- ssions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). Image: MHz (~68dBuV/						-		55.1	15534.35
ssions in restricted bands, the limit of 15.209 was used. For all other emission MHz (~68dBuV/m). Ige measurement calculated from the fundamental field strength (peak or averarker measurement. A Spurious Emissions, 1000 - 40000 MHz. Center Channel @ 5260 MHz	Non-restricted							65.7	10361.00
MHz (~68dBuV/m). Ige measurement calculated from the fundamental field strength (peak or aver arker measurement.	Non-restricted	1.0 Non-restricted	7	PK	-22.9	88.3	Н	65.5	10360.55
	MHz	@ 5260 MHz	enter Channe)000 MHz. Ce	s, 1000 - 40	Emission	purious		
Del 15 200 / 15 247 Detector Asimuth Height Com	Commonto	Lleight Commonte	A —inequality	Detector	115 017	15 200			
	Comments				-				
¥ ¥ ¥			-						
			-						
	•		02	////0	10.0			V 1.7	101 00.12
			240	PK	-19.4	88.3	V	69.0	10521.30
T V T 54.0 T -19.5 T AVG T 190 T 1.0 T		1.0	240 190	PK AVG	-19.4 -19.5	88.3 54.0	V V	69.0 34.5	10521.30 15780.80
V 54.0 -19.5 AVG 190 1.0 H 74.0 -27.8 PK 32 1.0		1.0 1.0	190	AVG	-19.5	54.0	V	69.0 34.5 46.3	10521.30 15780.80 15780.42
		1.0 1.0 1.0	190 32	AVG PK	-19.5 -27.8	54.0 74.0	V H	34.5	15780.80
H 74.0 -27.8 PK 32 1.0		1.0 1.0 1.0 1.0 1.0	190 32 190	AVG PK PK	-19.5 -27.8 -28.1	54.0 74.0 74.0	V H V	34.5 46.3	15780.80 15780.42
n	Pol15.209 / 15.247DetectorAzimuthHeightmv/hLimitMarginPk/QP/AvgdegreesmetersH88.3-15.5PK51.0	Pol15.209 / 15.247DetectorAzimuthmv/hLimitMarginPk/QP/AvgdegreesH88.3-15.5PK5	Pol 15.209 / 15.247 Detector m v/h Limit Margin Pk/QP/Avg H 88.3 -15.5 PK	Pol 15.209 / 15.247 m v/h Limit Margin H 88.3 -15.5	I Pol 15.209 m v/h Limit H 88.3	I Pol m v/h H H	m	ing 19	Run #1b: I Power sett Frequency MHz 10521.29 15780.42

	Xirrus, Ind	<u>)</u>								J	ob Nu	mber:	J604	37		
M. 1.1	VO 0500		Data							T-L	.og Nu	mber:	T611	140		
Model:	XS-3500	Access	Point						A	CCOU	nt Mar	nager:	Susa	an Pe	z	
Contact:	lan Laity /	Steve	Smith									0				
	-		401, RSS-	-210							(Class:	N/A			
					0 - 40	000 MHz. H	liah C	hanne	0 53	20 M		0.0.001	,			
Measurem					0 40	000 11112. 1	ingir O			20 101						
Power sett																
Note - Ban	d edge plo	ts takei	n at power	setting o	f 19											
ATTEN RL -3.	10dB 4dBm	10d		MKR 40. 25.29MH			*ATTE RL -	IN Ød -10.0		16	3dB∕			45.6 9MHz		
put -3.		180		23.250			• •	-								
								h								*
	How And Ale 14		wideric ration rat		_			\mathbb{T}								
		hi.						+								
	_	1144	where which and		_											
	_				hours and	-		-			·					
					_										<u>+</u>	+
					_			_								
			_		_											
						1 1			1 1		I I					
					_			_								
CENTER *RBW 1.	5.3500 0MHz		1.0MHz	SPAN SWF	54.5 2 50.		CENT *RBW		. 3500 Hz		z 10H	z	SP		54.50 21.1	
			1.ØMHz									z	SP			
*RBW 1.	ØMHz	¥VBW		SWF	° 50.		*RBW	1.0M V	IHz	¥VB⊧	√ 10H			SWP	21.	
*RBW 1. Fundam	øмн∠ ental emis	ж∪вы sion le	vel @ 3m	รพศ in 1MHz	, 50. RBW:	Øms	*RВW ' 11(1.∅M V 0.00	^{⊩rz} Peak	*UBP	и 10н sureme	ent (R	B=VB	≲₩Р 8=1М	21.1 H z)	Øsec
*RBW 1. Fundam	øмн∠ ental emis	ж∪вы sion le	vel @ 3m vel @ 3m	swr in 1MHz in 1MHz	• 50. RBW: RBW:	Øms H	*RВW 11(99	1.0M V	^{⊩rz} Peak	*UBP	√ 10H	ent (R	B=VB	≲₩Р 8=1М	21.1 H z)	Øsec
*RBW 1. Fundam	øмн∠ ental emis	ж∪вы sion le	vel @ 3m vel @ 3m Delta	swr in 1MHz in 1MHz Marker -	RBW: RBW: Peak	Øms H 40.7	*квы 11(99 dB	1.∅M V 0.00	^{⊩rz} Peak	*UBP	и 10н sureme	ent (R	B=VB	≲₩Р 8=1М	21.1 H z)	Øsec
*RBW 1. Fundam	∞mHz ental emis ental emis	жовы ssion le ssion le	vel @ 3m vel @ 3m Delta Delta Ma	รพศ in 1MHz in 1MHz Marker - arker - Av	RBW: RBW: RBW: Peak erage	Øms H 40.7 45.7	*RBW 110 99 dB dB	1.∅M V 0.00 9.6	^{⊩⊢} z Peak Avera	*∪B⊭ Meas age M	и 10н sureme	ent (R	B=VB	≲₩Р 8=1М	21.1 H z)	Øsec
*RBW 1. Fundam	amnz ental emis ental emis Calcu	жовы sion le sion le lated B	vel @ 3m vel @ 3m Delta Delta Ma and-Edge	SWF in 1MHz in 1MHz Marker - arker - Av Measure	RBW: RBW: RBW: Peak erage ment:	Øms H 40.7 45.7 69.3	*RBW 110 99 dB dB dBuV/	1.0M V 0.00 9.6	Hz Peak Avera Peak	*∪B⊭ Meas age M	и 10н sureme	ent (R	B=VB	≲₩Р 8=1М	21.1 H z)	Øsec
Fundam	ental emis ental emis ental emis Calcu Calcu	*UBW ssion le ssion le lated B lated B	vel @ 3m vel @ 3m Delta Delta Ma and-Edge and-Edge	SWF in 1MHz in 1MHz Marker - arker - Av Measure	RBW: RBW: RBW: Peak erage ment:	Øms H 40.7 45.7 69.3	*RBW 110 99 dB dB	1.0M V 0.00 9.6	^{⊩⊢} z Peak Avera	*∪B⊭ Meas age M	и 10н sureme	ent (R	B=VB	≲₩Р 8=1М	21.1 H z)	Øsec
жквы 1. Fundam Fundam Band Edge	ental emis ental emis ental emis Calcu Calcu Radiateo	sion le sion le lated B lated B	vel @ 3m vel @ 3m Delta Delta Ma and-Edge and-Edge sions	swr in 1MHz in 1MHz Marker - arker - Av Measure Measure	RBW: RBW: Peak Peak erage ment: ment:	Øms H 40.7 45.7 69.3 53.9	*RBW 110 99 dB dB dBuV/ dBuV/	1.0M V 0.00 9.6 /m	Peak Avera Peak Avera	*∪B⊭ Meas age M age	sureme easure	ent (R ement	B=VB (RB=	≲₩Р 8=1М	21.1 H z)	Øsec
Fundam Fundam Fundam Band Edge Frequency	ental emis ental emis Calcu Calcu e Radiateo Level	×∪BW ssion le ssion le lated B lated B lated B lated B	vel @ 3m vel @ 3m Delta Delta Ma and-Edge and-Edge sions 15.2	in 1MHz in 1MHz Marker - arker - Av Measure Measure	RBW: RBW: Peak Peak erage ment: ment:	Øms H 40.7 45.7 69.3 53.9 Detector	*RBW 111(99 dB dB dBuV/ dBuV/ Azir	1.0M V 0.00 9.6 /m /m	Peak Avera Peak Avera Avera	Meas age M age	sureme easure	ent (R	B=VB (RB=	≲₩Р 8=1М	21.1 H z)	Øsec
Fundam Fundam Fundam Band Edge Frequency MHz	ental emis ental emis Calcu Calcu Radiateo Level dBµV/m	×∪BW ssion le ssion le lated B lated B l Emis : Pol v/h	vel @ 3m vel @ 3m Delta Delta Ma and-Edge and-Edge sions 15.2 Limit	in 1MHz in 1MHz Marker - arker - Av Measure Measure 209 / 15.2 t Ma	RBW: RBW: RBW: Peak erage ment: ment: 47 rgin	Øms H 40.7 45.7 69.3 53.9 Detector Pk/QP/Avg	*RBW 111(99 dB dB dBuV/ dBuV/ Azir	1.0M V 0.00 9.6 /m	Peak Avera Peak Avera	Meas age M age	sureme easure	ent (R ement	B=VB (RB=	≲₩Р 8=1М	21.1 H z)	Øsec
Fundam Fundam Fundam Band Edge Frequency MHz 5350.00	ental emis ental emis ental emis Calcu Calcu e Radiateo Level dBμV/m 53.9	×∪BW ssion le ssion le lated B lated B lated B lated B	vel @ 3m vel @ 3m Delta Delta Ma and-Edge and-Edge sions 15.2 Limit 54.0	in 1MHz in 1MHz Marker - arker - Av Measure Measure 209 / 15.2 t Ma	RBW: RBW: RBW: Peak erage ment: ment: 47 rgin	Øms H 40.7 45.7 69.3 53.9 Detector Pk/QP/Avg AVG	*RBW 111(99 dB dB dBuV/ dBuV/ Azir	1.0M V 0.00 9.6 /m /m	Peak Avera Peak Avera Avera	Meas age M age	sureme easure	ent (R ement	B=VB (RB=	≲₩Р 8=1М	21.1 H z)	Øsec
*RBW 1. Fundam Fundam Band Edge Frequency MHz 5350.00 5350.00	ental emis ental emis ental emis Calcu Calcu e Radiateo Level dBμV/m 53.9 69.3	*UBW ssion le ssion le lated B lated B lated B lated B lated V/h v/h v	vel @ 3m vel @ 3m Delta Delta Ma and-Edge and-Edge sions 15.2 Limit 54.0 74.0	in 1MHz in 1MHz Marker - Av Measure Measure 209 / 15.2 t Ma	RBW: RBW: RBW: Peak erage ment: ment: 47 rgin .1	Øms H 40.7 45.7 69.3 53.9 Detector Pk/QP/Avg AVG PK	*RBW 11(99 dB dBuV/ dBuV/ dBuV/ Azir deg	1.0M V 0.00 9.6 /m muth rees	Hz Peak Avera Peak Avera Hei met	Meas age M age	sureme easure	ent (R ement	B=VB (RB=	≲₩Р 8=1М	21.1 H z)	Øsec
Fundam Fundam Fundam Fundam Band Edge Frequency MHz 5350.00 5350.00 Spurious e	ental emis ental emis ental emis Calcu Calcu e Radiateo Level dBμV/m 53.9 69.3	*UBW ssion le ssion le lated B lated B lated B lated B lated V/h v/h v	vel @ 3m vel @ 3m Delta Delta Ma and-Edge and-Edge sions 15.2 Limit 54.0 74.0 a t power	in 1MHz in 1MHz Marker - Av Measure Measure 209 / 15.2 t Ma	RBW: RBW: Peak erage ment: ment: 47 rgin .1 .7 = 19 (I	Øms H 40.7 45.7 69.3 53.9 Detector Pk/QP/Avg AVG	*RBW 110 99 dB dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ dBuV/	1.0M V 0.00 9.6 /m muth rees	Hz Peak Avera Peak Avera Hei met	Meas age M age	sureme easure	ent (R ement	B=VE (RB=	≲₩Р 8=1М	21.1 H z)	Øsec
Fundam Fundam Fundam Sand Edge requency MHz 5350.00 5350.00 Spurious e	ental emis ental emis Calcu Calcu e Radiateo Level dBμV/m 53.9 69.3 missions	×∪BW ssion le ssion le lated B lated B lated B lated B lated V/h v v v v v v	vel @ 3m vel @ 3m Delta Delta Ma and-Edge and-Edge sions 15.2 Limit 54.0 74.0 a t power	in 1MHz in 1MHz Marker - arker - Av Measure Measure 209 / 15.2 t Ma -(RBW: RBW: Peak erage ment: ment: 47 rgin .1 .7 = 19 (I	Øms H 40.7 45.7 69.3 53.9 Detector Pk/QP/Avg AVG PK Pout measu	*RBW 110 99 dB dB dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ ared at	1.0M V 0.00 9.6 /m /m muth rees	Hz Peak Avera Peak Avera Hei met	Meas age M age ght ters	sureme easure	ent (R ement	B=VE (RB=	≲₩Р 8=1М	21.1 H z)	Øsec
Fundam Fundam Fundam Band Edge Frequency MHz 5350.00 5350.00 5350.00 Frequency MHz	ental emis ental emis Calcu Calcu e Radiateo Level dBμV/m 53.9 69.3 emissions Level	sion le sion le lated B lated B d Emiss Pol v/h v v v v v v v v v v v v v v	vel @ 3m vel @ 3m Delta Delta Ma and-Edge and-Edge sions 15.2 Limit 54.0 74.0 at power 15.2	in 1MHz in 1MHz Marker - arker - Av Measure Measure 209 / 15.2 t Setting 209 / 15.2 t Ma	 SØ. RBW: RBW: Peak erage ment: ment: 47 rgin .1 .7 = 19 (I 47 	Øms H 40.7 45.7 69.3 53.9 Detector Pk/QP/Avg AVG PK Pout measu Detector	*RBW 110 99 dB dB dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ a dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ dB dB dB dB dB dB dB dB dB dB dB dB dB	1.0M V 0.00 9.6 /m muth rees	Hz Peak Avera Avera Hei met M Hei met	Meas age M age ght ters	Com	ent (R ement	B=VE (RB=	зыр з=1МI =1МН	Hz) z, VB	Øsec
Fundam Fundam Fundam Fundam Frequency MHz 5350.00 5350.00 Spurious e Frequency MHz 10639.20	ental emis ental emis Calcu Calcu Calcu Evel dBµV/m 53.9 69.3 missions Level dBµV/m	sion le sion le lated B lated B lated B d Emiss Pol v/h v v , taken Pol v/h	vel @ 3m vel @ 3m Delta Delta Ma and-Edge and-Edge sions 15.2 Limit 54.0 74.0 at power 15.2 Limit	in 1MHz in 1MHz Marker - arker - Av Measure Measure 209 / 15.2 t Ma cog / 15.2 t Ma	 SØ. RBW: Peak Preak Peak erage ment: ment: 47 rrgin .1 .7 = 19 (I 47 rgin 	Øms H 40.7 45.7 69.3 53.9 Detector Pk/QP/Avg AVG PK Pout measu Detector Pk/QP/Avg	*RBW 110 99 dB dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ actin deg actin deg 3	1.0M V 0.00 9.6 /m /m muth rees	Hz Peak Avera Avera Hei met M Hei met	Meas age M age ght ters .0	Comi Comi 2nd F	ent (R ement ments	B=VE (RB=	SWP 3=1МI =1МН	Hz) z, VB	Øsec
*RBW 1. Fundam Fundam Fundam Band Edge Trequency MHz 5350.00 5350.00 5350.00 Spurious e Trequency MHz 10639.20 10639.20	ental emis ental emis calcu Calcu calcu e Radiateo Level dBμV/m 53.9 69.3 missions Level dBμV/m 52.8	sion le sion le lated B lated B lated B lated B lated B lated B v/h v v v , taken Pol v/h V v V	vel @ 3m vel @ 3m Delta Delta Ma and-Edge and-Edge sions 15.2 Limit 54.0 74.0 at power 15.2 Limit 54.0	Swf in 1MHz in 1MHz Marker - arker - Av Measure Measure 209 / 15.2 t Setting 209 / 15.2 t Setting 209 / 15.2	 SØ. RBW: Peak Preak Peak erage ment: ment: ment: 1 .7 19 (I .7 .7	Øms H 40.7 45.7 69.3 53.9 Detector Pk/QP/Avg AVG PK Detector Pk/QP/Avg AVG	*RBW 110 99 dB dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ adaged ared at Azin deg 3 3 3	1.0M V 0.00 9.6 /m /m muth rees 13	Peak Avera Peak Avera Mei mei mei	Meas age M age ght ters .0	Comi Comi 2nd H 2nd H	ent (R ement ments ments	B=VE (RB=	SWP =1МН =1МН 	21. Hz) z, VB	Øsec
*RBW 1. Fundam Fundam Band Edge Frequency MHz 5350.00 5350.00 Spurious e Frequency	ental emis ental emis ental emis Calcu Calcu e Radiateo Level dBμV/m 53.9 69.3 missions Level dBμV/m 52.8 65.0	*UBW ssion le ssion le lated B lated B l Emiss Pol V/h V taken Pol V/h V V V	vel @ 3m vel @ 3m Delta Delta Ma and-Edge and-Edge sions 15.2 Limit 54.0 74.0 a at power 15.2 Limit 54.0 74.0	Swf in 1MHz in 1MHz Marker - arker - Av Measure Measure 209 / 15.2 t Ma 209 / 15.2 t Ma 209 / 15.2 t Ma 	* 50. RBW: RBW: Peak Peak Peak Peak erage ment: .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	Øms H 40.7 45.7 69.3 53.9 Detector Pk/QP/Avg AVG PK Pout measu Detector Pk/QP/Avg AVG PK	*RBW 110 99 dB dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ abuv/ dBuV/ dBuV/ dBuV/ abuv/ dBuV/ dBuV/ dBuV/ abuv/ dBuV/ dBuV/ dBuV/ dBuV/ abuv/ dBuV/ dBuV/ dBuV/ dBuV/ dBuV/ abuv/ dBuV/ dBuV/ abuv/ dBuV/ abuv/ abuv/ dBuV/ dBuV/ abuv/ abu	1.0M V 0.00 9.6 /m /m muth rees 13 13	Hz Peak Avera Peak Avera Hei met M Hei net	Meas ge M ge M ght ters .0 .0	Comi Comi 2nd H 2nd H 2nd H	ent (R ement ments Harmo Harmo	B=VE (RB=	SWP =1MH =1MH = 5320 f 5320 f 5320	21. Hz) Hz, VB	Øsec

E	Elli	ott						EM	C Tes	t Data
0	Xirrus, In							lob Number:	J60437	
								og Number:		
Model:	XS-3500	Access F	Point					0	Susan Pelzl	
Contact:	lan Laity	/ Steve S	mith							
			01, RSS-210)				Class:	N/A	
			-		000 MHz. H	ligh Channe	I @ 5320 M			
ower sett		•				0	_			
					Н	V				
			el @ 3m in 1		87.27	104.02		•	B=VB=1MHz	,
Fundam	iental emis	ssion leve	el @ 3m in 1		78.72	94.92	Average M	leasurement	t (RB=1MHz,	VB=10Hz)
				arker - Peak	45.5					
	Calci			er - Average asurement:	53.67 58.52	dB dBuV/m	Peak			
				asurement:		dBuV/m	Average			
ATTEN			AMKR 45			TEN 10dB	1	AMKR 53	9 6749	
RL 111	.9dBµ V	10d B⁄	-31.381			103.7dBµV	10d B⁄	-37.251		-
										4
					$+$ \vdash					-
J	hursting				- ı					-
		""""""""""""""""""""""""""""""""""""""	,		1 -					-
		1.00	with the mean lines							-
										-
					- [
CENTER KRBW 1.1	5.35000 0MHz *	IGHz VBW 1.0	SPAI MHz SI	N 75.00MHz NP 50.0ms	(III)	NTER 5.350 W 1.0MHz	00GHz *VBW 10H		N 75.00MHz WP 28.0sec	
		1	Field Stren		_		I			
requency		Pol		9 / 15E	Detector	Azimuth	Height	Comments		
<u>MHz</u> 5350.000	dBµV/m		Limit	Margin	Pk/QP/Avg	degrees	meters	Note 2		
5350.000			54.0 74.0	-12.8 -15.5	Avg Pk	-	-	Note 2 Note 2		
	rious Rad			-15.5	ΓN	-	-	NOLE Z		
requency		Pol	-	/ 15.247	Detector	Azimuth	Height	Comments		
MHz	dBµV/m		Limit	Margin	Pk/QP/Avg	degrees	meters			
0639.39	53.4	V	54.0	-0.6	AVG	253	1.1			
0637.88	47.9	Н	54.0	-6.1	AVG	38	1.0			
0639.39	66.4	V	74.0	-7.6	PK	253	1.1			
5953.70	43.7	V	54.0	-10.3	AVG	243	1.0			
5959.91	43.7	Н	54.0	-10.3	AVG	210	1.0			
0637.88	60.3	H	74.0	-13.7	PK	38	1.0			
5953.70	55.0	V	74.0	-19.0	PK	243	1.0			
5959.91	54.6	H	74.0	-19.4	PK	210	1.0	1		
ote 1:				nds, the limit	of 15.209 w	vas used. Fo	or all other e	missions, the	e limit was se	et to -
	27dBm/N									<u> . . </u>
	D · ·									
ote 2:		-	irement calc surement.	ulated from	the fundame	ental field stre	ength (peak	or average)	minus the ba	and edge

EMC Test Data

E	Elliott	EM	C Test Data
Client:	Xirrus, Inc.	Job Number:	J60437
Madal	XS-3500 Access Point	T-Log Number:	T61140
wouer.		Account Manager:	Susan Pelzl
Contact:	Ian Laity / Steve Smith		
Spec:	FCC 15.247, 15.401, RSS-210	Class:	N/A

FCC 15 E UNII - Radiated Spurious Emissions, Low Band, Highest **Power Setting**

Test Specifics

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

Date of Test: 9/16/2005 Test Engineer: Mehran Birgani Test Location: SVOATS #2

Config. Used: 1 Config Change: None EUT Voltage: 120V/60Hz

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 approximately 30 meters from the EUT with all I/O connections running on top of the groundplane or routed in overhead in the GR-1089 test configuration.

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

Ambient Conditions:	Temperature:	17 °C
	Rel. Humidity:	47 %

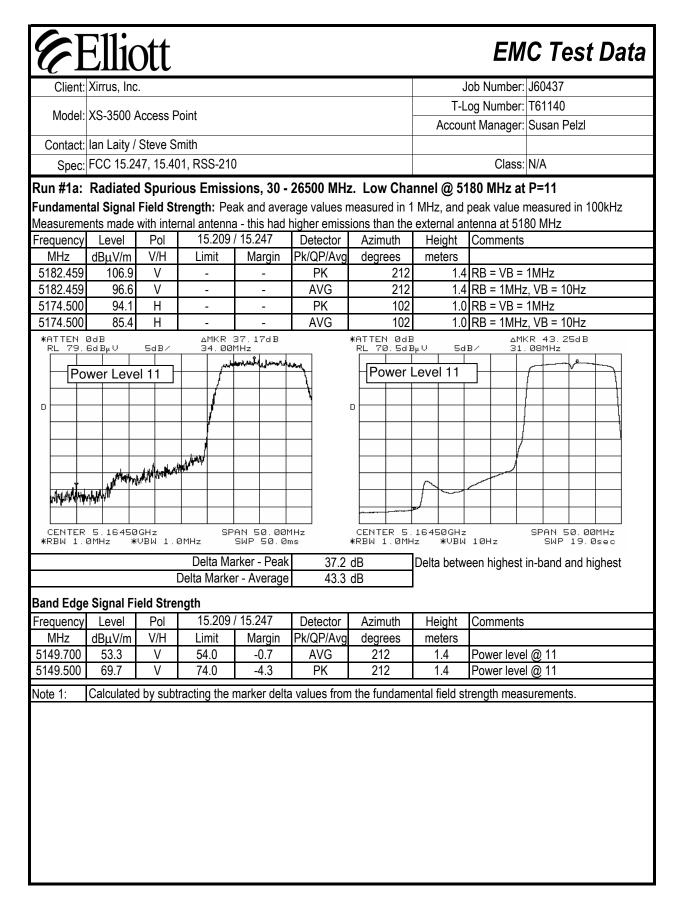
Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	RE, 30 - 40000 MHz -	FCC Part 15.209 /	Dees	53.3dBµV/m
Ι	Spurious Emissions	15.247(c)	Pass	(462.4µV/m) @

Modifications Made During Testing:

No modifications were made to the EUT during testing

Deviations From The Standard



Client Xirrus, Inc. Job Number: J60437 Model: XS-3500 Access Point T-Log Number: T61140 Account Manager: Susan Pelzi Account Manager: Susan Pelzi Contact: Ian Laity / Steve Smith Class: N/A Spec: FCC 15.247, 15.401, RSS-210 Class: N/A Other Spurious Emissions Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters Mon-restricted band 10358.16 57.5 V 68.3 -10.8 AVG 201 1.5 Non-restricted band 10358.16 57.2 V 88.3 -21.5 AVG 192 1.1 Noise Floor 10358.16 71.2 V 88.3 -21.5 AVG 192 1.1 Noise Floor 15530.66 34.2 H 54.0 -27.1 PK 335 1.0		711•							
Model: XS-3500 Access Point T-Log Number: T61140 Account Manager: Susan Pelzl Contact: Ian Laity / Steve Smith Class: N/A Spec: FCC 15.247, 15.401, RSS-210 Class: N/A Other Spurious Emissions Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters meters 10358.16 57.5 V 68.3 -10.8 AVG 201 1.5 Non-restricted band 15530.66 35.3 V 54.0 -18.7 AVG 335 1.0 Noise Floor 10362.66 46.9 H 68.3 -21.5 AVG 192 1.1 Noise Floor 15530.66 46.1 V 74.0 -27.1 PK 335 1.0 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170	U	Ell1(Ott						EMC Test Data
Model: XS-3500 Access Point Account Manager: Susan Pelzl Contact: Ian Laity / Steve Smith Class: N/A Spec: FCC 15.247, 15.401, RSS-210 Class: N/A Other Spurious Emissions Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 10358.16 57.5 V 68.3 -10.8 AVG 201 1.5 Non-restricted band 15530.66 34.2 H 54.0 -18.7 AVG 335 1.0 Noise Floor 15530.66 34.2 H 54.0 -19.8 AVG 192 1.1 Noise Floor 10362.66 46.9 H 74.0 -27.1 PK 335 1.0 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band 10362.66 <td>Client:</td> <td>Xirrus, Inc</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>J</td> <td>lob Number: J60437</td>	Client:	Xirrus, Inc						J	lob Number: J60437
Model: XS-3500 Access Point Account Manager: Susan Pelzl Contact: Ian Laity / Steve Smith Class: N/A Spec: FCC 15.247, 15.401, RSS-210 Class: N/A Other Spurious Emissions Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 10358.16 57.5 V 68.3 -10.8 AVG 201 1.5 Non-restricted band 15530.66 34.2 H 54.0 -18.7 AVG 335 1.0 Noise Floor 15530.66 46.9 H 68.3 -21.5 AVG 192 1.1 Noise Floor 10362.66 60.0 H 88.3 -27.1 PK 335 1.0 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band 10362.66 <td></td> <td colspan="7">T-Log Number: T61140</td>		T-Log Number: T61140							
Contact: Ian Laity / Steve Smith Class: N/A Spec: FCC 15.247, 15.401, RSS-210 Class: N/A Other Spurious Emissions Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 10358.16 57.5 V 68.3 -10.8 AVG 201 1.5 Non-restricted band 15530.66 35.3 V 54.0 -18.7 AVG 335 1.0 Noise Floor 15530.66 34.2 H 54.0 -19.8 AVG 192 1.1 Noise Floor 10362.66 46.9 H 74.0 -27.1 PK 335 1.0 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band 10362.66 60.0 H 88.3 -28.3 AVG 170 1.	Model:	XS-3500 A	Access P	oint					-
Spec: FCC 15.247, 15.401, RSS-210 Class: N/A Dther Spurious Emissions Pol 15.209 / 15.247 Detector Azimuth Height Comments 10358.16 57.5 V 68.3 -10.8 AVG 201 1.5 Non-restricted band 10358.16 57.5 V 68.3 -17.1 AVG 201 1.5 Non-restricted band 10358.16 71.2 V 88.3 -17.1 AVG 201 1.5 Non-restricted band 105530.66 35.3 V 54.0 -18.7 AVG 192 1.1 Noise Floor 10362.66 46.9 H 68.3 -21.5 AVG 192 1.1 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 192 1.1 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band 10520.66 60.0 H 88.3	Contact:	lan Laitv /	Steve Sr	nith					
Other Spurious Emissions Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments 10358.16 57.5 V 68.3 -10.8 AVG 201 1.5 Non-restricted band 10358.16 57.5 V 68.3 -17.1 AVG 201 1.5 Non-restricted band 10358.16 71.2 V 88.3 -17.1 AVG 201 1.5 Non-restricted band 15530.66 35.3 V 54.0 -19.8 AVG 192 1.1 Noise Floor 10362.66 46.9 H 68.3 -21.5 AVG 170 1.0 Non-restricted band 15530.66 46.1 V 74.0 -27.1 PK 335 1.0 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to e					า				Class: N/A
Frequency Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 10358.16 57.5 V 68.3 -10.8 AVG 201 1.5 Non-restricted band 10358.16 71.2 V 88.3 -17.1 AVG 201 1.5 Non-restricted band 15530.66 35.3 V 54.0 -19.8 AVG 192 1.1 Noise Floor 10362.66 46.9 H 68.3 -21.5 AVG 170 1.0 Non-restricted band 15530.66 46.1 V 74.0 -27.1 PK 335 1.0 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band 15530.66 46.1 V 74.0 -27.9 PK 192 1.1 Noise Floor <td< td=""><td></td><td></td><td></td><td>1, 100-21</td><td>5</td><td></td><td></td><td></td><td></td></td<>				1, 100-21	5				
MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 10358.16 57.5 V 68.3 -10.8 AVG 201 1.5 Non-restricted band 10358.16 71.2 V 88.3 -17.1 AVG 201 1.5 Non-restricted band 15530.66 35.3 V 54.0 -18.7 AVG 335 1.0 Noise Floor 10362.66 46.9 H 68.3 -21.5 AVG 192 1.1 Noise Floor 10362.66 46.9 H 68.3 -27.9 PK 192 1.1 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band 10362.66 60.0 H 88.3 -26.3 AVG 170 1.0 Non-restricted band			ī	45.000	145.047		A : 11		
10358.16 57.5 V 68.3 -10.8 AVG 201 1.5 Non-restricted band 10358.16 71.2 V 88.3 -17.1 AVG 201 1.5 Non-restricted band 15530.66 35.3 V 54.0 -18.7 AVG 335 1.0 Noise Floor 10362.66 46.9 H 68.3 -21.5 AVG 192 1.1 Noise Floor 10362.66 46.9 H 68.3 -21.5 AVG 170 1.0 Non-restricted band 15530.66 46.1 V 74.0 -27.1 PK 335 1.0 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to eirp (68.3 dBuV/m). Run #1b: Radiated Spurious Emissions, 30 - 26500 MHz. Channel @ 5200 MHz Dther Spurious Emissions, power setting = 17 (Note that the actual max power on #40 is a setting of 14 (16									Comments
10358.16 71.2 V 88.3 -17.1 AVG 201 1.5 Non-restricted band 15530.66 35.3 V 54.0 -18.7 AVG 335 1.0 Noise Floor 15530.66 34.2 H 54.0 -19.8 AVG 192 1.1 Noise Floor 10362.66 46.9 H 68.3 -21.5 AVG 170 1.0 Non-restricted band 15530.66 46.9 H 74.0 -27.1 PK 335 1.0 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to eirp (68.3 dBuV/m). Run #1b: Radiated Spurious Emissions, 30 - 26500 MHz. Channel @ 5200 MHz Other Spurious Emissions, power setting = 17 (Note that the actual max power on #40 is a setting of 14 (16dBm) - th measurements were made at a setting of 17, ~18dBm). Measurements made with internal antenna - this had higher emissions than the external antenna at 5180 MHz .									Non restricted hand
15530.66 35.3 V 54.0 -18.7 AVG 335 1.0 Noise Floor 15530.66 34.2 H 54.0 -19.8 AVG 192 1.1 Noise Floor 10362.66 46.9 H 68.3 -21.5 AVG 170 1.0 Non-restricted band 15530.66 46.9 H 74.0 -27.1 PK 335 1.0 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to eirp (68.3 dBuV/m). Note 1: For emissions, power setting = 17 (Note that the actual max power on #40 is a setting of 14 (16dBm) - the measurements were made at a setting of 17, ~18dBm). Measurements made with internal antenna - this had higher emissions than the external antenna at 5180 MHz Level Pol 15.209 / 15.247 Detector Azimuth Height <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
15530.66 34.2 H 54.0 -19.8 AVG 192 1.1 Noise Floor 10362.66 46.9 H 68.3 -21.5 AVG 170 1.0 Non-restricted band 15530.66 46.9 H 74.0 -27.1 PK 335 1.0 Noise Floor 15530.66 46.1 V 74.0 -27.9 PK 192 1.1 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to eirp (68.3 dBuV/m). Run #1b: Radiated Spurious Emissions, 30 - 26500 MHz. Channel @ 5200 MHz Other Spurious Emissions, power setting = 17 (Note that the actual max power on #40 is a setting of 14 (16dBm) - the measurements were made at a setting of 17, ~18dBm). Measurements made with internal antenna - this had higher emissions than the external antenna at 5180 MHz . Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m V/h Limit Margin Pk/QP/Avg<									
10362.66 46.9 H 68.3 -21.5 AVG 170 1.0 Non-restricted band 15530.66 46.9 H 74.0 -27.1 PK 335 1.0 Noise Floor 15530.66 46.1 V 74.0 -27.9 PK 192 1.1 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to eirp (68.3 dBuV/m). For emissions, power setting = 17 (Note that the actual max power on #40 is a setting of 14 (16dBm) - the neasurements were made at a setting of 17, ~18dBm). Measurements were made at a setting of 17, ~18dBm). Measurements made with internal antenna - this had higher emissions than the external antenna at 5180 MHz . Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m V/h Limit Margin Pk/QP/Avg degrees meters 10398.83 59.0 V 68.3 -9.3 AVG									
15530.66 46.9 H 74.0 -27.1 PK 335 1.0 Noise Floor 15530.66 46.1 V 74.0 -27.9 PK 192 1.1 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to eirp (68.3 dBuV/m). For all other emissions, the limit was set to eirp (68.3 dBuV/m). Run #1b: Radiated Spurious Emissions, 30 - 26500 MHz. Channel @ 5200 MHz Dther Spurious Emissions, power setting = 17 (Note that the actual max power on #40 is a setting of 14 (16dBm) - the measurements were made at a setting of 17, ~18dBm). Measurements were made at a setting of 17, ~18dBm). Measurements made with internal antenna - this had higher emissions than the external antenna at 5180 MHz Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m V/h Limit Margin Pk/QP/Avg degrees meters 10398.83 59.0 V 68.3 -9.3 AVG 190 1.5 Non-restricted band 15599.33 42.0 H 54.0 -12.0 AVG 180 1.1 Noise Floor 1599.33 42.0 H 54.0 -12.1 AVG 202 1.0 Noise Floor 1599.33 <l< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></l<>									
15530.66 46.1 V 74.0 -27.9 PK 192 1.1 Noise Floor 10362.66 60.0 H 88.3 -28.3 AVG 170 1.0 Non-restricted band Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to eirp (68.3 dBuV/m). For emissions, power setting = 17 (Note that the actual max power on #40 is a setting of 14 (16dBm) - the neasurements were made at a setting of 17, ~18dBm). Measurements were made at a setting of 17, ~18dBm). Measurements made with internal antenna - this had higher emissions than the external antenna at 5180 MHz . Level Pol 15.209 / 15.247 Detector Azimuth Height Comments MHz dBµV/m V/h Limit Margin Pk/QP/Avg degrees meters 10398.83 59.0 V 68.3 -9.3 AVG 190 1.5 Non-restricted band 15599.33 42.0 H 54.0 -12.0 AVG 180 1.1 Noise Floor 10398.83 71.4 V 88.3 -16.9 AV									
10362.6660.0H88.3-28.3AVG1701.0Non-restricted bandNote 1:For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to eirp (68.3 dBuV/m).Run #1b: Radiated Spurious Emissions, 30 - 26500 MHz. Channel @ 5200 MHzOther Spurious Emissions, power setting = 17 (Note that the actual max power on #40 is a setting of 14 (16dBm) - the neasurements were made at a setting of 17, ~18dBm).Measurements made with internal antenna - this had higher emissions than the external antenna at 5180 MHz.LevelPol15.209 / 15.247DetectorAzimuthHeightComments.LevelPol15.209 / 15.247DetectorAzimuthHeightComments.LevelPol15.209 / 15.247DetectorAzimuthHeightComments.LevelPol15.209 / 15.247DetectorAzimuthHeightComments.LevelPol15.209 / 15.247DetectorAzimuthHeightCommentsLevelPol15.209 / 15.247DetectorAzimuthHeightCommentsLevelPol15.209 / 15.247DetectorAzimuthHeightCommentsLevelPol15.209 / 15.247DetectorAzimuthHeightCommentsLevelPol15.209 / 15.247DetectorAzimuthHeightComments <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to eirp (68.3 dBuV/m). Run #1b: Radiated Spurious Emissions, 30 - 26500 MHz. Channel @ 5200 MHz Other Spurious Emissions, power setting = 17 (Note that the actual max power on #40 is a setting of 14 (16dBm) - to neasurements were made at a setting of 17, ~18dBm). Measurements made with internal antenna - this had higher emissions than the external antenna at 5180 MHz MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 10398.83 59.0 V 68.3 -9.3 AVG 190 1.5 Non-restricted band 15599.33 42.0 H 54.0 -12.0 AVG 180 1.1 Noise Floor 15600.53 41.9 V 54.0 -12.1 AVG 202 1.0 Noise Floor 10398.83 71.4 V 88.3 -16.9 AVG 190 1.5 Non-restricted band 10401.80 50.3 H 68.3 -18.0 AVG 190 1.5 Non-restricted band									
Note 1:eirp (68.3 dBuV/m).Run #1b: Radiated Spurious Emissions, 30 - 26500 MHz. Channel @ 5200 MHzOther Spurious Emissions, power setting = 17 (Note that the actual max power on #40 is a setting of 14 (16dBm) - tmeasurements were made at a setting of 17, ~18dBm).Measurements made with internal antenna - this had higher emissions than the external antenna at 5180 MHzLevelPol15.209 / 15.247DetectorAzimuthHeightCommentsMHzdBµV/mv/hLimitMarginPk/QP/Avgdegreesmeters10398.8359.0V68.3-9.3AVG1901.5Non-restricted band15599.3342.0H54.0-12.0AVG1801.1Noise Floor15600.5341.9V54.0-12.1AVG2021.0Noise Floor10398.8371.4V88.3-16.9AVG1901.5Non-restricted band10401.8050.3H68.3-18.0AVG1691.3Non-restricted band	10302.00					1			
Run #1b: Radiated Spurious Emissions, 30 - 26500 MHz. Channel @ 5200 MHzOther Spurious Emissions, power setting = 17 (Note that the actual max power on #40 is a setting of 14 (16dBm) - the measurements were made at a setting of 17, ~18dBm).Measurements were made at a setting of 17, ~18dBm).Measurements made with internal antenna - this had higher emissions than the external antenna at 5180 MHz.LevelPol15.209 / 15.247DetectorAzimuthHeightCommentsMHzdBµV/mv/hLimitMarginPk/QP/Avgdegreesmeters10398.8359.0V68.3-9.3AVG1901.5Non-restricted band15599.3342.0H54.0-12.0AVG1801.1Noise Floor15600.5341.9V54.0-12.1AVG2021.0Noise Floor10398.8371.4V88.3-16.9AVG1901.5Non-restricted band10401.8050.3H68.3-18.0AVG1691.3Non-restricted band	Vote 1:					1 01 13.209 W	as used. FO		
Other Spurious Emissions, power setting = 17 (Note that the actual max power on #40 is a setting of 14 (16dBm) - tmeasurements were made at a setting of 17, ~18dBm).Measurements made with internal antenna - this had higher emissions than the external antenna at 5180 MHzLevelPol15.209 / 15.247DetectorAzimuthHeightCommentsMHzdBµV/mv/hLimitMarginPk/QP/Avgdegreesmeters10398.8359.0V68.3-9.3AVG1901.5Non-restricted band15599.3342.0H54.0-12.0AVG1801.1Noise Floor15600.5341.9V54.0-12.1AVG2021.0Noise Floor10398.8371.4V88.3-16.9AVG1901.5Non-restricted band10401.8050.3H68.3-18.0AVG1691.3Non-restricted band		•		-					
MHz dBμV/m v/h Limit Margin Pk/QP/Avg degrees meters 10398.83 59.0 V 68.3 -9.3 AVG 190 1.5 Non-restricted band 15599.33 42.0 H 54.0 -12.0 AVG 180 1.1 Noise Floor 15600.53 41.9 V 54.0 -12.1 AVG 202 1.0 Noise Floor 10398.83 71.4 V 88.3 -16.9 AVG 190 1.5 Non-restricted band 10401.80 50.3 H 68.3 -18.0 AVG 169 1.3 Non-restricted band				•		,	ions than the	external ar	ntenna at 5180 MHz
10398.83 59.0 V 68.3 -9.3 AVG 190 1.5 Non-restricted band 15599.33 42.0 H 54.0 -12.0 AVG 180 1.1 Noise Floor 15600.53 41.9 V 54.0 -12.1 AVG 202 1.0 Noise Floor 10398.83 71.4 V 88.3 -16.9 AVG 190 1.5 Non-restricted band 10401.80 50.3 H 68.3 -18.0 AVG 169 1.3 Non-restricted band		Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments
15599.33 42.0 H 54.0 -12.0 AVG 180 1.1 Noise Floor 15600.53 41.9 V 54.0 -12.1 AVG 202 1.0 Noise Floor 10398.83 71.4 V 88.3 -16.9 AVG 190 1.5 Non-restricted band 10401.80 50.3 H 68.3 -18.0 AVG 169 1.3 Non-restricted band		dBµV/m				Pk/QP/Avg	degrees	meters	
15600.53 41.9 V 54.0 -12.1 AVG 202 1.0 Noise Floor 10398.83 71.4 V 88.3 -16.9 AVG 190 1.5 Non-restricted band 10401.80 50.3 H 68.3 -18.0 AVG 169 1.3 Non-restricted band							190		Non-restricted band
10398.83 71.4 V 88.3 -16.9 AVG 190 1.5 Non-restricted band 10401.80 50.3 H 68.3 -18.0 AVG 169 1.3 Non-restricted band									
10401.80 50.3 H 68.3 -18.0 AVG 169 1.3 Non-restricted band									Noise Floor
15600 52 52 / V 7/ 0 20 6 DV 202 10 Naisa Flaar									
	15600.53	53.4	V	74.0	-20.6	PK	202	1.0	Noise Floor
15599.33 53.0 H 74.0 -21.0 PK 180 1.0 Noise Floor									
10401.80 63.2 H 88.3 -25.1 AVG 169 1.3 Non-restricted band	10401.80	63.2	Н	88.3	-25.1	AVG	169	1.3	Non-restricted band
lote 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to eirp (68.3 dBuV/m).		For emiss	ions in re	stricted bar	nds. the limi	t of 15.209 w	as used. Fo	r all other e	

EMC Test Data

Client:	Xirrus, Inc.	Job Number:	J60437
Madal	XS-3500 Access Point	Job Number: J60437 T-Log Number: T61140 Account Manager: Susan Pelzl Class: N/A	T61140
Model:		Account Manager:	Susan Pelzl
Contact:	Ian Laity / Steve Smith		
Spec:	FCC 15.247, 15.401, RSS-210	Class:	N/A

FCC 15.247 DTS - Power, Bandwidth and Spurious Emissions

Test Specifics

Elliott

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

Date of Test: 8/23/2005 Test Engineer: Mark Briggs Test Location: SVOATS #2 Config. Used: 1 Config Change: -EUT Voltage: 120V/60Hz

General Test Configuration

The EUT was located on a wooden table. The rf output was connected to the power meter or analyzer via an attenuator.

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 used.

Ambient Conditions:	Temperature:	20 °C
	Rel. Humidity:	45 %

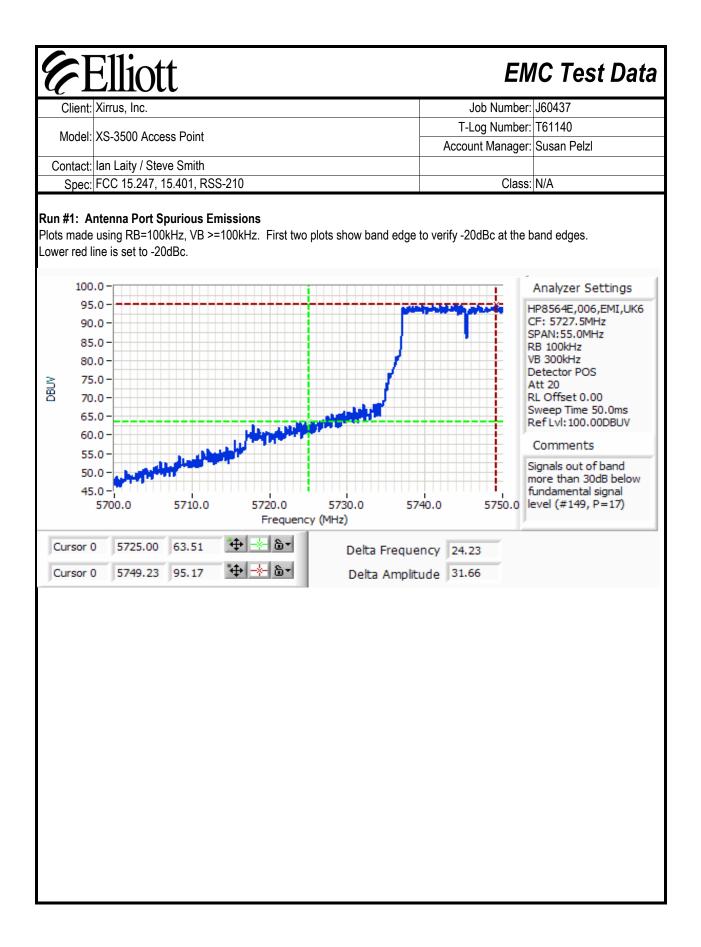
Summary of Results

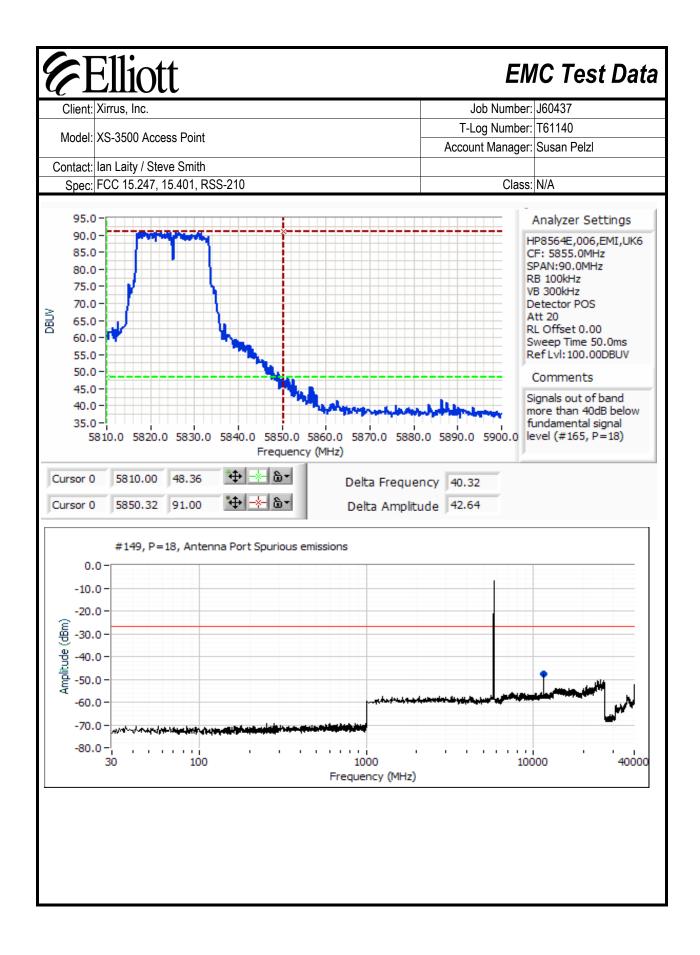
Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	Antenna Port Spurious	FCC Part 15.209 /	Pass	All emissions < -20dBc
1	Emissions	15.247(c)	F 055	
2	6dB Bandwidth	15.247(a)	Pass	16.8MHz
3	Output Power 802.11a - Peak Power (individual / aggregate): Internal Antenna	15.247(b)	Pass	21dBm / 0.251W 27dBm / 0.504 W
3	Output Power 802.11a - Peak Power (individual / aggregate): External Antenna	15.247(b)	Pass	19.9 dBm / 0.098W 25.9dBm / 0.391 W
4	Power Spectral Density (PSD)	15.247(d)	Pass	5.21dBm/3kHz

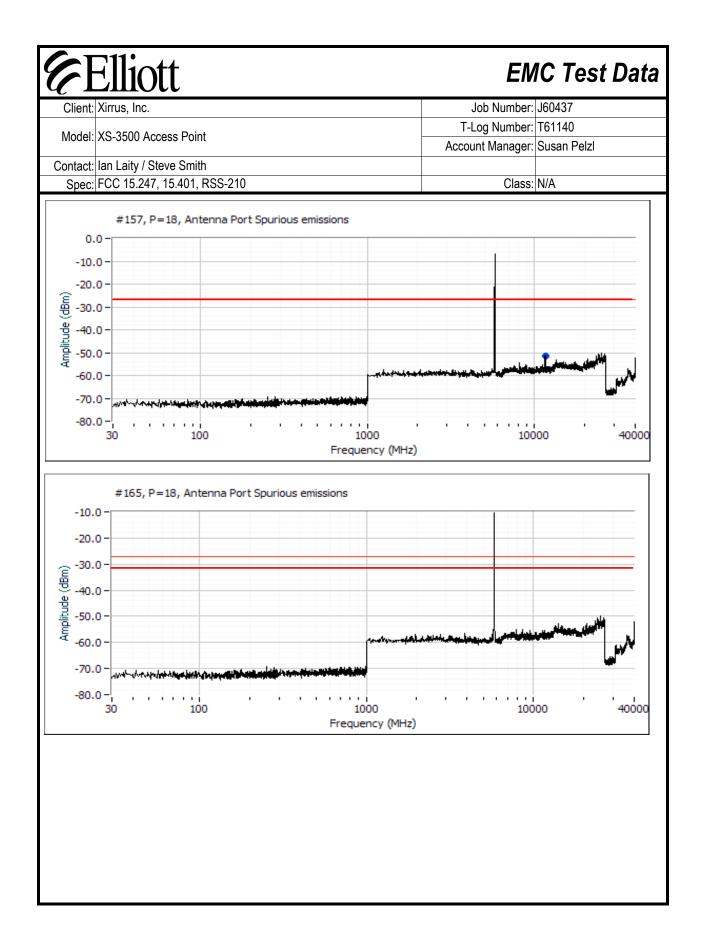
Modifications Made During Testing:

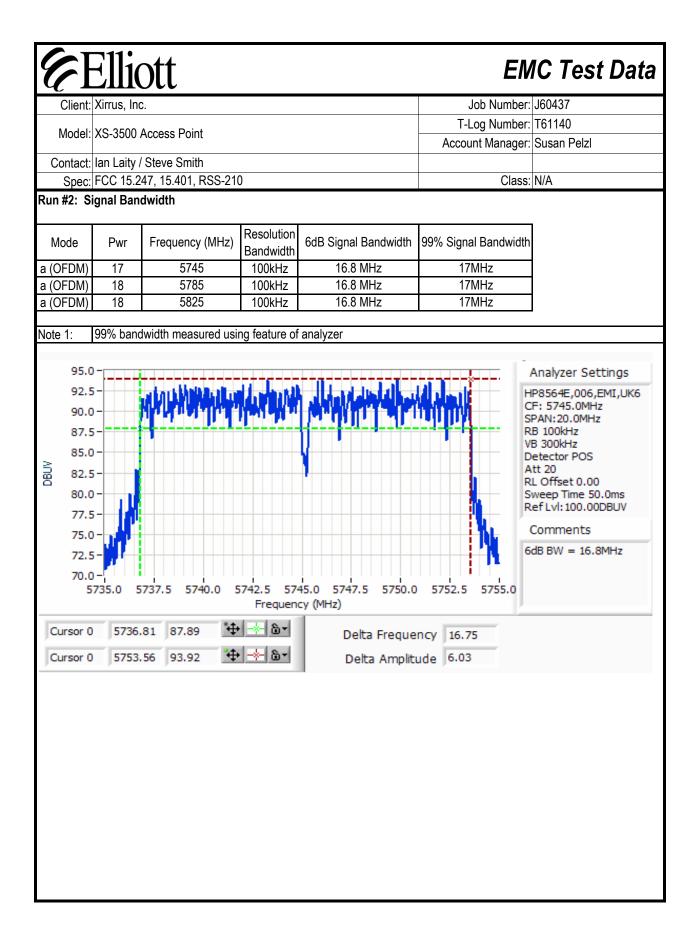
No modifications were made to the EUT during testing

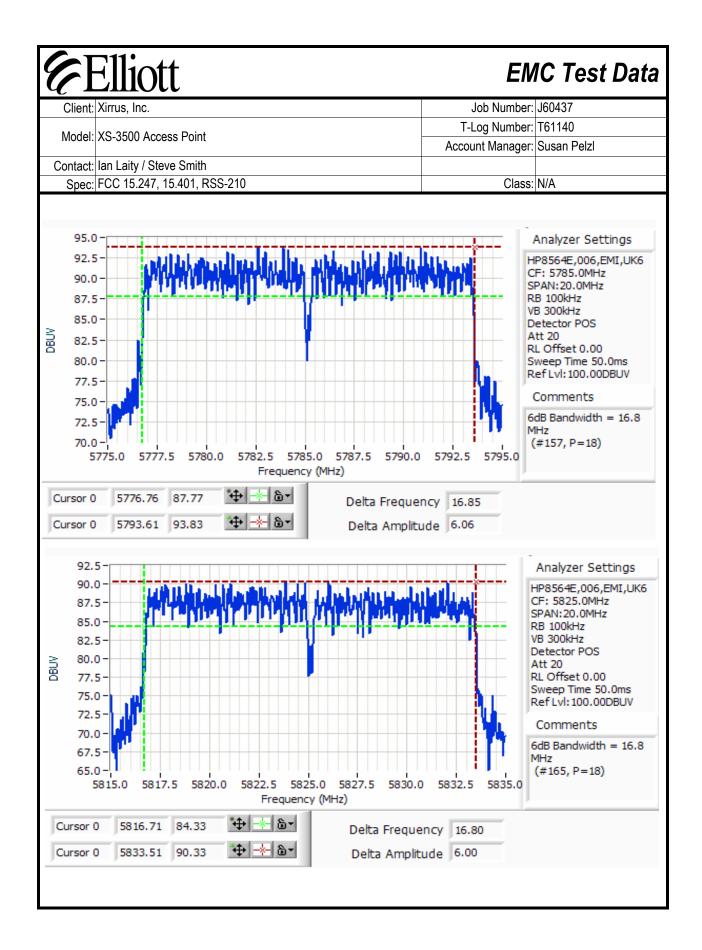
Deviations From The Standard



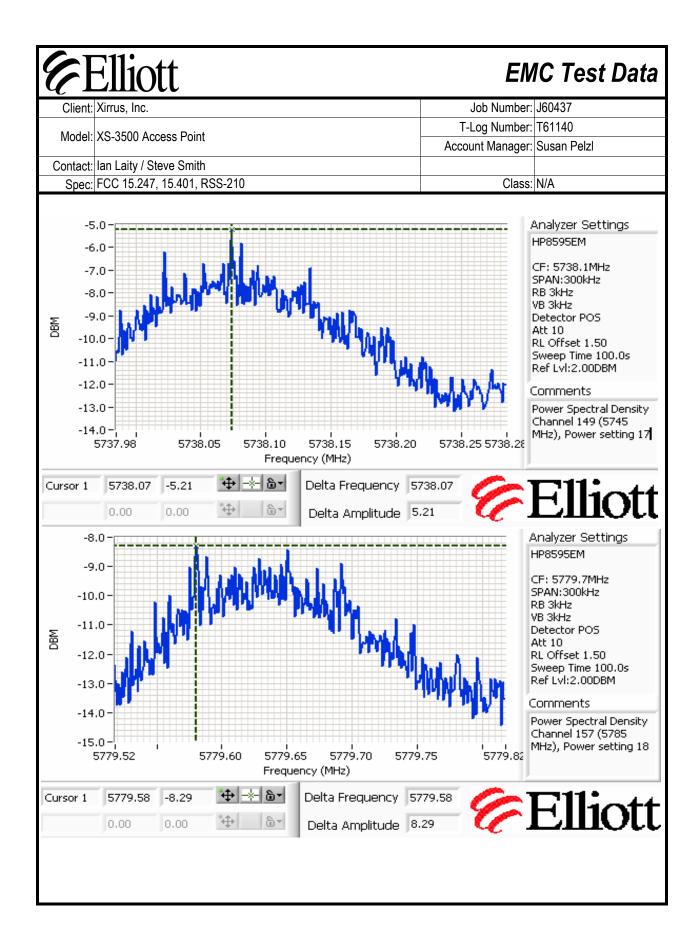


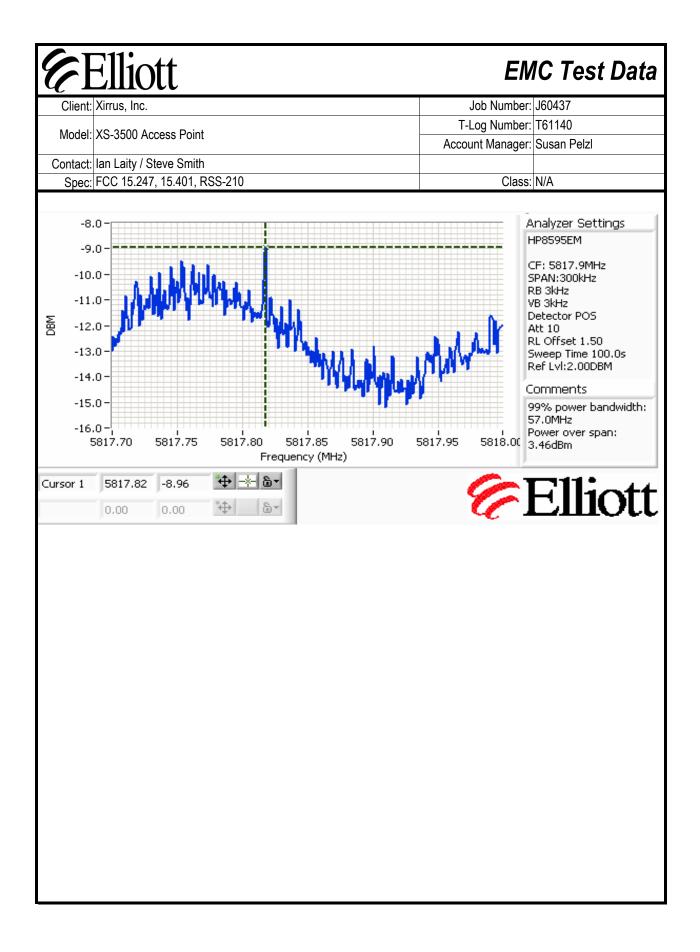






	Ellio	ott					EN	IC Tes	t Data
Client:	Xirrus, Inc).			Job Number: J60437				
Madal	VC 2500	Access Doint				T-Log Number: T61140			
woder.	V2-2200 1	Access Point				Accour	nt Manager:	Susan Pelzl	
Contact:	lan Laity /	Steve Smith							
	-	47, 15.401, RSS-210)				Class:	N/A	
Run #3a: (Internal Ar Maxir	•		dBi						
	Pwr		D D.44	Output P	ower (dBm)	Output P	ower (W)		EIRP (W,
Mode	Setting	Frequency (MHz)	Res BW	Pk ¹	Avg ²	Pk ¹	Avg ²	EIRP (W)	avg)
a (OFDM)	17	5745	-	21.0	16.8	0.126	0.048	0.251	0.095
a (OFDM)	18	5785	-	20.0	15.9	0.100	0.039	0.200	0.078
a (OFDM)	18	5825	-	18.0	14.2	0.063	0.026	0.126	0.052
E xternal A Maxir		e Power - all four rad na gain: <u>5.2</u>	ios operatin dBi	g with interr (=3dBd)	nal antennas:		dBm (pk) Watts		W EIRP Avg W EIRP Pk
	Pwr			Output P	ower (dBm)	Output P	ower (W)		EIRP (W,
Mode	Setting	Frequency (MHz)	Res BW	Pk ¹	Avg ²	Pk ¹	Avg ²	EIRP (W)	avg)
a (OFDM)	13	5745		19.9	13.8	0.098	0.024	0.324	0.079
a (OFDM)	16	5785	-	19.5	14.5	0.089	0.028	0.295	0.093
a (OFDM)	18	5825	-	18.0	14.2	0.063	0.026	0.209	0.087
Aggre		er, 3 radios on interna			rnal antenna:		dBm (pk) Watts		W EIRP Avç W EIRP Pk
Note 2:		wer measured using			sor				
Note 3:	Aggregate band at th considere all four i	e power is calculated ie highest output pov	based on th ver (19.9dBr antennas	ne assumpti	on that all fou		•		
Run #4: P	ower Spe	ctral Density							
Mode	Pwr	Frequency (MHz)	Freq (MHz)	Res BW	P.S.D. (avera second in bandw	i a 3kHz /idth)	Limit	Status	
Mode a (OFDM)	Pwr 17	Frequency (MHz)	(MHz) 5738.07	3kHz	second in bandw -5.2	vidth) 21	8.0	Pass	
Mode	Pwr	Frequency (MHz)	(MHz)		second in bandw	vidth) 21 29			





EMC Test Data

Elliott	ЕМ	C Test Data
Client: Xirrus, Inc.	Job Number:	J60437
Model: XS-3500 Access Point	T-Log Number:	T61140
	Account Manager:	Susan Pelzl
Contact: Ian Laity / Steve Smith		
Spec: FCC 15.247, 15.401, RSS-210	Class:	N/A

FCC 15.247 DTS - Power, Bandwidth and Spurious Emissions

Test Specifics

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

Date of Test: 8/1/2005 Test Engineer: Chris Byleckie Test Location: SVOATS #3

Config. Used: 1 Config Change: -EUT Voltage: 120V/60Hz

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 approximately 30 meters from the EUT with all I/O connections running on top of the groundplane or routed in overhead in the GR-1089 test configuration.

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

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 used.

Ambient Conditions:	Temperature:	27 °C
	Rel. Humidity:	50 %

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
1	RE, 1000 - 40000 MHz - Spurious Emissions In Restricted Bands	FCC Part 15.209 / 15.247(c)	Pass	53.4dBµV/m (467.2µV/m) @ 11649.3MHz (-0.6dB)

Modifications Made During Testing:

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Xirrus, Inc						J	ob Number:	J60437
Madal	VC 2500		a lat				T-L	og Number:	T61140
wodel:	XS-3500 /	Access P	oint				Accou	nt Manager:	Susan Pelzl
Contact:	lan Laity /	Steve Si	mith						
Spec:	FCC 15.2	47, 15.40)1, RSS-210)				Class:	N/A
UT 1.5cm	n above gr	oundpla	ne						
		Spurious	Emission	s, 1000 - 40	00 MHz. Lo	w Channel @) 5745 MHz	2	
ower set	ting 17				L L	V			
Fundam	ontal omis	sion love	l @ 3m in 1	MHz RBW:	H 103.9	v 111.6	Peak		
				MHZ RBW:	94.69	102.9	Avg		
T andan					04.00	102.0	, wg		
requency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	,	meters		
11488.94		V	54.0	-0.8	AVG	97		Restricted I	
11489.32		Н	54.0	-2.8	AVG	321		Restricted I	
11488.94		V	74.0	-6.2	PK	97		Restricted I	
11489.32		H	74.0	-10.4	PK	321		Restricted I	Band
17235.02 17229.67		H V	95.7 95.7	-39.5 -39.9	PK	11 44	1.0 1.0		
1///yn/	53 Å	v	957	-39.9	PK	44	1.0		
		-							
EUT 80cm	above gro	oundplar	ne		AVG	236	10	Restricted I	Band
UT 80cm 11488.53 11488.53	above gro 51.6 65.3	oundplar V V	ne 54.0 74.0	-2.4 -8.7	AVG PK of 15.209 w	236 236 vas used. For	1.0	Restricted I Restricted I missions, the	
UT 80cm 11488.53 11488.53 Inte 1:	above gro 51.6 65.3 For emiss below the	v V V ions in re level of t	1e 54.0 74.0 estricted bar he fundame	-2.4 -8.7 nds, the limit ental.	PK of 15.209 w	236 /as used. For	1.0 all other er	Restricted I	Band
UT 80cm 11488.53 11488.53 lote 1: Run #1b:	above gro 51.6 65.3 For emiss below the Radiated \$	v V V ions in re level of t	1e 54.0 74.0 estricted bar he fundame	-2.4 -8.7 nds, the limit ental.	PK of 15.209 w	236	1.0 all other er	Restricted I	Band
UT 80cm 11488.53 11488.53 Note 1: Note 1: Run #1b: Power sett Frequency	above gro 51.6 65.3 For emiss below the Radiated S ting 18 Level	pundplar V V ions in re level of t Spurious Pol	te 54.0 74.0 estricted bar the fundame the fundame the fundame the fundame	-2.4 -8.7 nds, the limit ental. s, 1000 - 40 / 15.247	PK of 15.209 w 000 MHz. C Detector	236 vas used. For center Chann Azimuth	1.0 r all other er el @ 5785 Height	Restricted I	Band
UT 80cm 11488.53 11488.53 Jote 1: Jote 1: Cover set Frequency MHz	above gro 51.6 65.3 For emiss below the Radiated S ting 18 Level dBµV/m	pundplar V V ions in re level of t Spurious Pol v/h	te 54.0 74.0 estricted bar he fundame s Emissions 15.209 Limit	-2.4 -8.7 nds, the limit ental. s, 1000 - 40 / 15.247 Margin	PK of 15.209 w 000 MHz. C Detector Pk/QP/Avg	236 /as used. For center Chann Azimuth degrees	1.0 all other er el @ 5785 Height meters	Restricted I missions, the MHz Comments	Band e limit was set 20 dB
UT 80cm 11488.53 11488.53 Note 1: Note 1: Power sett Frequency MHz 11563.00	above gro 51.6 65.3 For emiss below the Radiated S ting 18 Level dBµV/m 50.3	pundplar V V ions in re level of t Spurious Pol V/h V	te 54.0 74.0 estricted bar he fundame s Emissions 15.209 Limit 54.0	-2.4 -8.7 nds, the limit ental. s, 1000 - 40 / 15.247 Margin -3.8	PK of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG	236 /as used. For center Chann Azimuth degrees 97	1.0 all other er el @ 5785 Height meters 1.0	Restricted I missions, the MHz Comments Restricted I	Band e limit was set 20 dB
UT 80cm 11488.53 11488.53 1488.53 Note 1: Note 1: Run #1b: Power sett Frequency MHz 11563.00 11566.33	above gro 51.6 65.3 For emiss below the Radiated S ting 18 Level dBμV/m 50.3 46.5	pundplar V V ions in re level of t Spurious Pol v/h V H	16 54.0 74.0 estricted bar he fundame 5 Emissions 15.209 Limit 54.0 54.0	-2.4 -8.7 nds, the limit ental. s, 1000 - 40 / 15.247 Margin -3.8 -7.6	PK of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG AVG	236 /as used. For center Chann Azimuth degrees 97 328	1.0 el @ 5785 Height neters 1.0 1.0	Restricted I missions, the MHz Comments	Band e limit was set 20 dB
UT 80cm 11488.53 11488.53 11488.53 Note 1: Note 1: Power set Frequency MHz 11563.00 11566.33 17350.83	above gro 51.6 65.3 For emiss below the Radiated S ting 18 Level dBμV/m 50.3 46.5 45.9	pundplar V V ions in re level of t Spurious Pol V/h V H H	16 54.0 74.0 estricted bar the fundame 5 Emissions 15.209 Limit 54.0 54.0 54.0	-2.4 -8.7 nds, the limit ental. s, 1000 - 40 / 15.247 / 15.247 Margin -3.8 -7.6 -8.1	PK of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG AVG AVG AVG	236 vas used. For center Chann Azimuth degrees 97 328 37	1.0 el @ 5785 Height neters 1.0 1.0 1.0	Restricted I missions, the MHz Comments Restricted I	Band e limit was set 20 dB
EUT 80cm 11488.53 11488.53 1488.53 Note 1: Note 1: Run #1b: Power settem Frequency MHz 11563.00 11566.33 17350.83 17353.94	above gro 51.6 65.3 For emiss below the Radiated S ting 18 Level dBµV/m 50.3 46.5 45.9 44.4	pundplar V V ions in re level of t Spurious Pol V/h V H H V V	16 54.0 74.0 estricted bar he fundame 5 Emissions 15.209 Limit 54.0 54.0 54.0 54.0 54.0	-2.4 -8.7 nds, the limit ental. s, 1000 - 40 / 15.247 Margin -3.8 -7.6 -8.1 -9.6	PK of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG AVG AVG AVG AVG	236 vas used. For center Chann Azimuth degrees 97 328 37 43	1.0 • all other er el @ 5785 Height meters 1.0 1.0 1.0 1.0	Restricted I missions, the MHz Comments Restricted I Restricted I	Band e limit was set 20 dB Band Band
UT 80cm 11488.53 11488.53 11488.53 10te 1: Note 1: Power sett Power sett Trequency MHz 11563.00 11566.33 17350.83 17350.83 17350.83	above gro 51.6 65.3 For emiss below the Radiated S ting 18 Level dBµV/m 50.3 46.5 45.9 44.4 63.5	pundplar V V ions in re- level of t Spurious Pol V/h V H H V V V	16 54.0 74.0 estricted bar he fundame 5 Emissions 15.209 Limit 54.0 54.0 54.0 54.0 74.0	-2.4 -8.7 nds, the limit ental. s, 1000 - 40 / 15.247 Margin -3.8 -7.6 -8.1 -9.6 -10.5	PK of 15.209 w Dotector Pk/QP/Avg AVG AVG AVG AVG PK	236 vas used. For center Chann Azimuth degrees 97 328 37 43 97	1.0 r all other er el @ 5785 Height meters 1.0 1.0 1.0 1.0 1.0	Restricted I missions, the MHz Comments Restricted I Restricted I Restricted I	Band e limit was set 20 dB Band Band Band
UT 80cm 11488.53 11488.53 11488.53 Note 1: Note 1: Power sett Frequency MHz 11563.00 11566.33 17353.94 11563.00 11566.33	above gro 51.6 65.3 For emiss below the Radiated S ting 18 Level dBµV/m 50.3 46.5 45.9 44.4 63.5 59.9	Pol V/h Spurious Pol V/h V H H V V H H H	16 54.0 74.0 estricted bar he fundame 5 Emissions 15.209 Limit 54.0 54.0 54.0 54.0 74.0 74.0	-2.4 -8.7 nds, the limit ental. s, 1000 - 40 / 15.247 Margin -3.8 -7.6 -8.1 -9.6 -10.5 -14.1	PK of 15.209 w Detector Pk/QP/Avg AVG AVG AVG AVG AVG PK PK	236 /as used. For center Chann Azimuth degrees 97 328 37 43 97 328	1.0 el @ 5785 Height neters 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Restricted I missions, the MHz Comments Restricted I Restricted I	Band e limit was set 20 dB Band Band Band
UT 80cm 11488.53 11488.53 11488.53 Note 1: Note 1: Power sett Power sett Power sett Power sett 11563.00 11566.33 17353.94 11566.33 17350.83	above gro 51.6 65.3 For emiss below the Radiated S ting 18 Level dBµV/m 50.3 46.5 45.9 44.4 63.5 59.9 58.3	Pol V/h Spurious Pol V/h V H H V V H H H H	16 54.0 74.0 estricted bar he fundame 5 Emissions 15.209 Limit 54.0 54.0 54.0 54.0 74.0 74.0 74.0 74.0	-2.4 -8.7 nds, the limit ental. s, 1000 - 40 / 15.247 Margin -3.8 -7.6 -8.1 -9.6 -10.5 -14.1 -15.7	PK of 15.209 w Dotector Pk/QP/Avg AVG AVG AVG AVG AVG PK PK PK PK	236 /as used. For center Chann Azimuth degrees 97 328 37 43 97 328 37 43 97 328 37	1.0 el @ 5785 Height neters 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Restricted I missions, the MHz Comments Restricted I Restricted I Restricted I	Band e limit was set 20 dB Band Band Band
UT 80cm 11488.53 11488.53 11488.53 1000 1: 1000 1: 11488.53 1000 1: 1000 1: 11566.33 17353.94 11566.33 11566.33	above gro 51.6 65.3 For emiss below the Radiated S ting 18 Level dBµV/m 50.3 46.5 45.9 44.4 63.5 59.9	Pol V/h Spurious Pol V/h V H H V V H H H	16 54.0 74.0 estricted bar he fundame 5 Emissions 15.209 Limit 54.0 54.0 54.0 54.0 74.0 74.0	-2.4 -8.7 nds, the limit ental. s, 1000 - 40 / 15.247 Margin -3.8 -7.6 -8.1 -9.6 -10.5 -14.1	PK of 15.209 w Detector Pk/QP/Avg AVG AVG AVG AVG AVG PK PK	236 /as used. For center Chann Azimuth degrees 97 328 37 43 97 328	1.0 el @ 5785 Height neters 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Restricted I missions, the MHz Comments Restricted I Restricted I Restricted I	Band e limit was set 20 dB Band Band Band

	Ellic								C Test Data
Client:	Xirrus, Inc							lob Number:	
Model:	XS-3500 A	Access P	oint					.og Number: Int Manager:	Susan Pelzl
Contact	lan Laity /	Stova S	mith				ACCOU	int manayer.	Susan reizi
)1, RSS-21(า				Class:	N/Δ
					000 MHz. H	iah Channel	@ 5825 M		
Power sett		punous		5, 1000 - 40	000 Williz. 11	ign channe	1 W 3023 W	112	
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
11649.33	53.4	V	54.0	-0.6	AVG	84	1.0	Restricted I	Band
11649.27	46.3	Н	54.0	-7.7	AVG	325	1.0	Restricted I	Band
11649.33	65.0	V	74.0	-9.0	PK	84	1.0	Restricted B	Band
17474.54	43.8	V	54.0	-10.2	AVG	37	1.3		
17473.64	43.6	Н	54.0	-10.4	AVG	34	1.0		
11649.27	57.3	Н	74.0	-16.7	PK	325	1.0	Restricted I	Band
17473.64	56.8	H V	74.0	-17.3	PK	34	1.0		
17474.54	55.9	v	74.0	-18.1	PK	37	1.3		

EMC Test Data

E	Elliott	ЕМ	C Test Data
Client:	Xirrus, Inc.	Job Number:	J60437
Model	XS-3500 Access Point	T-Log Number:	T61140
Model.		Account Manager:	Susan Pelzl
Contact:	lan Laity / Steve Smith		
Spec:	FCC 15.247, 15.401, RSS-210	Class:	N/A

FCC 15.247 DTS - Power, Bandwidth and Spurious Emissions

Test Specifics

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

Date of Test: 8/1/2005 Test Engineer: Chris Byleckie/Rafael Test Location: SVOATS #3

Config. Used: 1 Config Change: -EUT Voltage: 120V/60Hz

General Test Configuration

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

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

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 used.

Ambient Conditions:	Temperature:	17 °C
	Rel. Humidity:	84 %

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
4	RE, 1000 - 40000 MHz -	FCC Part 15.209 /	Dava	53.6dBµV/m
I	Spurious Emissions In Restricted Bands	15.247(c)	Pass	(477.5µV/m) @ 11651.7MHz (-0.4dB)

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.

	Xirrus, Inc	<u>ott</u>						Job Number:	J60437
Madal	VO 2500	A) - ! - 1				T-L	og Number:	T61140
Model:	XS-3500 /	Access P	oint				Accou	int Manager:	Susan Pelzl
	lan Laity /								
Spec:	FCC 15.24	47, 15.40	01, RSS-210)				Class:	N/A
EUT 1.5m a Run #1a: I Power sett	Radiated S	-		s, 1000 - 40	00 MHz. Lo	w Channel (D 5745 MH	Z	
					Н	V			
			el @ 3m in 1			108.99	Peak		
Fundam	ental emis	sion leve	el @ 3m in 1	MHz RBW:	87.1	100.36	Avg		
requency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
11488.83	51.9	V	54.0	-2.1	AVG	208	1.1		
11489.55	46.3	Н	54.0	-7.7	AVG	16	0.0	1	
11488.83	63.8	V	74.0	-10.2	PK	208	1.1		
	58.3	Н	74.0	-15.7	PK	16	0.0		
1489.55	50.5						4.0	Name and the other	
	43.7	Н	-	-	AVG	356	1.0	Non-restric	ted
17233.71		H H	-	-	AVG PK	356 356	1.0	Non-restrict	
11489.55 17233.71 17233.71 17235.35	43.7 55.1 43.5	H H V	-		PK AVG	356 120	1.0 1.0	Non-restrict	ted ted
17233.71 17233.71 17235.35 17235.35	43.7 55.1 43.5 55.1 For emiss	H H V V		- - nds, the limit	PK AVG PK	356 120 120	1.0 1.0 1.0	Non-restrict Non-restrict Non-restrict	ted ted
17233.71 17233.71 17235.35 17235.35 Note 1: Run #1b:	43.7 55.1 43.5 55.1 For emiss below the	H H V V ions in re	the fundame	- - nds, the limit ental.	PK AVG PK t of 15.209 w	356 120 120	1.0 1.0 1.0 r all other e	Non-restrict Non-restrict Non-restrict missions, the	ted ted ted
7233.71 7233.71 7235.35 7235.35 Note 1: Run #1b:	43.7 55.1 43.5 55.1 For emiss below the Radiated S ting 16	H H V V ions in re level of f	the fundame s Emission	- - nds, the limit ental. s, 1000 - 40	PK AVG PK t of 15.209 w 000 MHz. C	356 120 120 vas used. Fo	1.0 1.0 1.0 r all other e	Non-restrict Non-restrict Non-restrict missions, the MHz	ted ted ted
17233.71 17233.71 17235.35 17235.35 Note 1: Run #1b: Power sett Frequency	43.7 55.1 43.5 55.1 For emiss below the Radiated S ting 16 Level	H H V V ions in re level of f Spurious	the fundame s Emission 15.209	- 	PK AVG PK t of 15.209 w 000 MHz. C Detector	356 120 120 vas used. Fo center Chanr Azimuth	1.0 1.0 1.0 r all other e nel @ 5785 Height	Non-restrict Non-restrict Non-restrict missions, the	ted ted ted
7233.71 7233.71 7235.35 7235.35 Note 1: Run #1b: Power sett Frequency MHz	43.7 55.1 43.5 55.1 For emiss below the Radiated S ting 16 Level dBμV/m	H H V V ions in re level of f Spurious Pol v/h	the fundame s Emissions 15.209 Limit	- - - - - - - - - - - - - - - - - - -	PK AVG PK t of 15.209 w 000 MHz. C Detector Pk/QP/Avg	356 120 120 vas used. Fo center Chann Azimuth degrees	1.0 1.0 1.0 r all other e nel @ 5785 Height meters	Non-restrict Non-restrict Non-restrict missions, the MHz	ted ted ted
7233.71 7233.71 7235.35 7235.35 7235.35 Note 1: Run #1b: Power sett Frequency MHz 1570.42	43.7 55.1 43.5 55.1 For emiss below the Radiated S ting 16 Level	H H V V ions in re level of f Spurious	the fundame s Emission 15.209	- 	PK AVG PK t of 15.209 w 000 MHz. C Detector	356 120 120 vas used. Fo center Chanr Azimuth	1.0 1.0 1.0 r all other e nel @ 5785 Height	Non-restrict Non-restrict Non-restrict missions, the MHz	ted ted ted
7233.71 7235.35 7235.35 7235.35 Note 1: Note 1: Power sett Frequency MHz 1570.42 1569.47	43.7 55.1 43.5 55.1 For emiss below the Radiated S ting 16 Level dBμV/m 52.3	H H V V ions in re level of f Spurious Pol V/h V	the fundame s Emission 15.209 Limit 54.0	- nds, the limit ental. s, 1000 - 40 / 15.247 Margin -1.7	PK AVG PK t of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG	356 120 120 vas used. Fo center Chann Azimuth degrees 180	1.0 1.0 1.0 r all other e nel @ 5785 Height meters 1.0	Non-restrict Non-restrict Non-restrict missions, the MHz	ted ted ted
7233.71 7235.35 7235.35 7235.35 Note 1: Note 1: Power sett requency MHz 1570.42 1569.47 1570.42	43.7 55.1 43.5 55.1 For emiss below the Radiated S ting 16 Level dBμV/m 52.3 48.9	H H V V ions in re level of t Spurious Spurious V V H	the fundame s Emissions 15.209 Limit 54.0 54.0	- nds, the limit ental. s, 1000 - 40 / 15.247 Margin -1.7 -5.1	PK AVG PK t of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG AVG	356 120 120 vas used. Fo menter Chann Azimuth degrees 180 299	1.0 1.0 1.0 r all other e nel @ 5785 Height meters 1.0 1.0	Non-restrict Non-restrict Non-restrict missions, the MHz	ted ted ted
7233.71 7235.35 7235.35 7235.35 Note 1: Run #1b: Power sett Frequency MHz 1570.42 1569.47 1569.47	43.7 55.1 43.5 55.1 For emiss below the Radiated S ting 16 Level dBμV/m 52.3 48.9 65.6	H H V V ions in re level of f Spurious Spurious Pol V/h V V H V	the fundame s Emissions 15.209 Limit 54.0 54.0 74.0	- nds, the limit ental. s, 1000 - 40 / 15.247 / 15.247 / Margin -1.7 -5.1 -8.4	PK AVG PK t of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG AVG PK	356 120 120 vas used. Fo enter Chann Azimuth degrees 180 299 180	1.0 1.0 1.0 r all other e nel @ 5785 Height meters 1.0 1.0 1.0	Non-restrict Non-restrict Non-restrict missions, the MHz	ted ted e limit was set 20 dB
17233.71 17235.35 17235.35 17235.35 Note 1: Run #1b: Power sett Frequency MHz 11570.42 11569.47 11569.47 11569.47 11569.47	43.7 55.1 43.5 55.1 For emiss below the Radiated S ting 16 Level dBμV/m 52.3 48.9 65.6 61.9	H H V V ions in re level of f Spurious Spurious V V H V H H H H H	the fundame s Emissions 15.209 Limit 54.0 54.0 74.0	- nds, the limit ental. s, 1000 - 40 / 15.247 / 15.247 / Margin -1.7 -5.1 -8.4	PK AVG PK t of 15.209 w 000 MHz. C Detector Pk/QP/Avg AVG AVG PK PK	356 120 120 was used. Fo menter Chann Azimuth degrees 180 299 180 299 83 83	1.0 1.0 1.0 r all other e nel @ 5785 Height meters 1.0 1.0 1.0 1.0	Non-restrict Non-restrict Non-restrict missions, the MHz Comments	ted ted e limit was set 20 dB
17233.71 17235.35 17235.35 17235.35 Note 1: Run #1b: Power sett Frequency MHz 11570.42 11569.47 11569.47 11569.47 17353.53 17353.53 17354.95	43.7 55.1 43.5 55.1 For emiss below the Radiated S ting 16 Level dBμV/m 52.3 48.9 65.6 61.9 45.0 56.9 46.1	H H V V ions in re level of t Spurious Spurious V V H V H H H H H V	the fundame s Emissions 15.209 Limit 54.0 54.0 74.0	- nds, the limit ental. s, 1000 - 40 / 15.247 / 15.247 / Margin -1.7 -5.1 -8.4	PK AVG PK t of 15.209 w t of 15.209 w Detector Pk/QP/Avg AVG AVG PK PK AVG	356 120 120 vas used. Fo menter Chann Azimuth degrees 180 299 180 299 83 83 83 300	1.0 1.0 1.0 r all other e nel @ 5785 Height meters 1.0 1.0 1.0 1.0 1.0 1.0	Non-restrict Non-restrict Non-restrict missions, the MHz Comments Non-restrict	ted ted e limit was set 20 dB
7233.71 7235.35 7235.35 7235.35 Note 1: Note 1: Power sett Terequency MHz 1570.42 1569.47 1570.42 1569.47 7353.53 7353.53	43.7 55.1 43.5 55.1 For emiss below the Radiated S ting 16 Level dBμV/m 52.3 48.9 65.6 61.9 45.0 56.9	H H V V ions in re level of f Spurious Spurious V V H V H H H H H	the fundame s Emissions 15.209 Limit 54.0 54.0 74.0	- nds, the limit ental. s, 1000 - 40 / 15.247 / 15.247 / Margin -1.7 -5.1 -8.4	PK AVG PK t of 15.209 w t of 15.209 w Detector Pk/QP/Avg AVG AVG PK PK AVG PK	356 120 120 was used. Fo menter Chann Azimuth degrees 180 299 180 299 83 83	1.0 1.0 1.0 r all other e nel @ 5785 Height meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Non-restrict Non-restrict Non-restrict missions, the MHz Comments Non-restrict Non-restrict	ted ted e limit was set 20 dB ted ted ted

Client	Xirrus, Inc							lob Number:	J60437
	VO 0500	_					T-L	og Number:	T61140
Model:	XS-3500 A	CCess F	'oint					-	Susan Pelzl
Contact:	lan Laity /	Steve S	mith						
Spec	FCC 15.24	7, 15.40)1, RSS-210)				Class:	N/A
un #1c:	Radiated S	purious	Emission	s, 1000 - 40	000 MHz. H	igh Channe	I @ 5825 M	Hz	
ower set					_				
requency		Pol		/ 15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
1651.72 1649.45	53.6 47.9	V H	54.0 54.0	-0.4 -6.1	AVG AVG	291 13	1.1 0.0		
1651.72	67.2	V	74.0	-6.8	PK	291	1.1		
1649.45		H	74.0	-13.5	PK	13	0.0	1	
474.88	46.7	H	-	-	AVG	304	1.0		
474.88	58.6	Н	-	-	PK	304	1.0		
475.98	49.1	V	-	-	AVG	298	1.0		
475.98	61.1	V	-	-	PK	298	1.0		
ote 1:	For emissi the level o			nds, the limi	t of 15.209 w	vas used. Fo	r all other e	missions, the	e limit was set 20dB be
				nds, the limi	t of 15.209 w	vas used. Fo	r all other e	missions, the	e limit was set 20dB be
				nds, the limi	t of 15.209 w	/as used. Fo	r all other e	missions, the	e limit was set 20dB be
				nds, the limi	t of 15.209 w	/as used. Fo	r all other e	missions, the	e limit was set 20dB be
				nds, the limi	t of 15.209 w	/as used. Fo	r all other e	missions, the	e limit was set 20dB be
				nds, the limi	t of 15.209 w	/as used. Fo	r all other e	missions, the	e limit was set 20dB be
				nds, the limi	t of 15.209 w	/as used. Fo	r all other e	missions, the	e limit was set 20dB be
				nds, the limi	t of 15.209 w	/as used. Fo	r all other e	missions, the	e limit was set 20dB be

EXHIBIT 3: Test Configuration Photographs

EXHIBIT 4: Proposed FCC ID Label & Label Location

EXHIBIT 5: Detailed Photographs of Xirrus, Inc. Model XS-3500Construction

EXHIBIT 6: Operator's Manual for Xirrus, Inc. Model XS-3500

EXHIBIT 7: Block Diagram of Xirrus, Inc. Model XS-3500

EXHIBIT 8: Schematic Diagrams for Xirrus, Inc. Model XS-3500

EXHIBIT 9: Theory of Operation for Xirrus, Inc. Model XS-3500

EXHIBIT 10: RF Exposure Information