

NTS Silicon Valley www.nts.com 41039 Boyce Road Fremont, CA 94538 510-578-3500 Phone 510-440-9525 Fax

EMC Test Report

Application for Grant of Equipment Authorization

Industry Canada RSS-Gen Issue 3 / RSS 210 Issue 8 FCC Part 15, Subpart E

Model: XR2000H

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APPLICANT:	Xirrus, Inc. 2101 Corporate Center Drive Thousand Oaks, CA 91320
TEST SITE(S):	National Technical Systems - Silicon Valley 41039 Boyce Road. Fremont, CA. 94538-2435
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PROGRAM MGR / TECHNICAL REVIEWER:

David W. Bare Chief Engineer

QUALITY ASSURANCE DELEGATE / FINAL REPORT PREPARER:

David Guidotti Senior Technical Writer



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REVISION HISTORY

Rev#	Date	Comments	Modified By
-	January 21, 2014	First release	
1	February 18, 2014	Revised to have a single maximum power for	David Bare
		all antenna types.	

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SCOPE

An electromagnetic emissions test has been performed on the Xirrus, Inc. model XR2000H, pursuant to the following rules:

Industry Canada RSS-Gen Issue 3

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

FCC Part 15, Subpart E requirements for UNII Devices

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in National Technical Systems - Silicon Valley test procedures:

ANSI C63.10-2009 FCC General UNII Test Procedures KDB789033

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

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

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

OBJECTIVE

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

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

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

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

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

STATEMENT OF COMPLIANCE

The tested sample of Xirrus, Inc. model XR2000H complied with the requirements of the following regulations:

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

FCC Part 15, Subpart E requirements for UNII Devices

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

The test results recorded herein are based on a single type test of Xirrus, Inc. model XR2000H and therefore apply only to the tested sample. The sample was selected and prepared by Peter Krebill of Xirrus, Inc.

DEVIATIONS FROM THE STANDARDS

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

TEST RESULTS SUMMARY

UNII / LELAN DEVICES

Operation in the 5.25 – 5.35 GHz Band

Note: The device is used outdoors, therefore the spectral density of spurious emissions in the 5.15 - 5.25 GHz band were limited to the -27 dBm/MHz limit.

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)		26dB Bandwidth	> 20MHz for all modes	N/A – limits output power if < 20MHz	N/A
15.407(a) (2)	A9.2(2)	Output Power	802.11a: 20.4 mW n20: 19.9 mW n40: 4.3 mW (Max eirp: 28.2 dBm (656.3 mW))	24 dBm / 250mW (eirp < 30dBm)	Complies
15.407(a) (2)	-	Maximum Power	a: 3.0 dBm/MHz	5.8 dBm/MHz	Complies
-	A9.2(2) / A9.5 (2)	Spectral Density	n40: -2.0 dBm/MHz	11 dBm / MHz	Complies

Operation in the 5.47 – 5.725 GHz Band

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.407(a) (2)		26dB Bandwidth	> 20MHz for all modes	N/A – limits output power if < 20MHz	N/A
15.407(a) (2)	A9.2(2)	Output Power	802.11a: 20.3 mW n20: 20.5 mW n40: 20.1 mW (Max eirp: 24.2 dBm (264 mW))	24 dBm / 250mW (eirp < 30dBm)	Complies
15.407(a) (2))		Power Spectral	a: 1.6 dBm/MHz	5.8 dBm/MHz	Complies
	A9.2(2) / A9.5 (2)	Density (Dipole)	n40: -1.5 dBm/MHz	11 dBm / MHz	Complies
KDB 443999	A9	Non-operation in 5600 – 5650 MHz sub band	Device cannot operate in the 5600 – 5650 MHz band –refer to Operational Description		Complies

Requirements for all U-NII/LELAN bands					
FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407	A9.5a	Modulation	OFDM Digital Modulation is used	Digital modulation is required	Complies
15.407(b) (5) / 15.209	A9.3	Spurious Emissions below 1GHz	51.8 dBµV/m @ 997.71 MHz (-2.2 dB)	Defende neue 00	Complies
15.407(b) (5) / 15.209	A9.3	Spurious Emissions above 1GHz	53.9 dBµV/m @ 2483.6 MHz (-0.1 dB)	Refer to page 22	Complies
15.407(a)(6)	-	Peak Excursion Ratio	9.5dB	< 13dB	Complies
	A9.5 (3)	Channel Selection	Spurious emissions tested at outermost channels in each band	Device was tested on the top, bottom and	N/A
15			Measurements on three channels in each band if available	center channels in each band	
15.407 (c)	A9.5(4)	Operation in the absence of information to transmit	Operation is discontinued in the absence of information (see Operational Description page 6)	Device shall automatically discontinue operation in the absence of information to transmit	Complies
15.407 (g)	A9.5 (5)	Frequency Stability	Frequency stability is better than 5ppm (Operational Description page 5)	Signal shall remain within the allocated band	Complies
15.407 (h1)	A9.4	Transmit Power Control	Transmit Power Control TCP mechanism is discussed in the Operational Description page 6		Complies
15.407 (h2)	A9.4	Dynamic frequency Selection (device with radar detection)	Refer to separate test report, reference R93627	Threshold -62dBm (- 64dBm if eirp > 200mW) Channel Availability Check > 60s Channel closing transmission time < 260ms Channel move time < 10s Non occupancy period > 30minutes	Complies
	A9.9g	User Manual information	Refer to Quick Install Guide	Warning regarding interference from Satellite Systems	Complies

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Reverse TNC connector	Unique or integral antenna required	Complies
15.207	RSS GEN Table 2	AC Conducted Emissions	56.1 dBµV @ 0.286 MHz (-4.5 dB)	Refer to page 19	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.	Refer to OET 65, FCC Part 1 and RSS 102	Complies
-	RSP 100 RSS GEN 7.1.5	User Manual	Refer to Quick Install Guide	Statement required regarding non- interference	Complies
-	RSP 100 RSS GEN 7.1.5	User Manual	Refer to Quick Install Guide	Statement for products with detachable antenna	Complies
-	RSP 100 RSS GEN 4.4.1	99% Bandwidth	a: 17.04 MHz n20: 18.3 MHz n40: 36.7 MHz	Information only	N/A

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

MEASUREMENT UNCERTAINTIES

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

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

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The Xirrus, Inc. model XR2000H is an 802.11agbn access point that is designed for outdoor usage. It uses four 2x2 radio modules that can operate in either 2.4GHz or 5GHz bands. The 2x2 modules are identical to those previously certified as modules without the integral antenna. The EUT is powered via POE.

The sample was received on September 16, 2013 and tested on September 16, 17, 18, 19, 20, 21, 24, 28 and 30 and October 1, 2, 3, 4, 6, 7 and 8, 2013. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID
Xirrus	XR2000H	Outdoor Access Point	00:0F:7D:20:0C:7D	SK6-XR2425H
Xirrus	XR2000H	Outdoor Access Point	00:0F:7D:20:0C:A1	SK6-XR2425H

ANTENNA SYSTEM

There are four antenna options:

Air802 Model ANRD245X05-RTP Dipole (2.4 GHz and 5 GHz), 5 dBi.

Laird Technologies Model RD2458-5-RTNC, 3dBi (2.4 GHz), 5dBi (5 GHz)

Eahison Communication Co., Ltd, model EHS1GA202A, four element (two vertical (2.4 GHz and 5 GHz) / two horizontal (2.4 GHz and 5 GHz), 14dBi.

Eahison Communication Co., Ltd, model EHS1GA047A, four element (two vertical (2.4 GHz and 5 GHz) / two horizontal (2.4 GHz and 5 GHz), 8dBi.

Note - the Eahison antennas will be used with RF cabling. Minimum cable loss is 1.9dB for 2.4 GHz, and 2.8 dB for 5.3 GHz, 2.9 dB for 5.6 GHz and 3 dB for 5.8 GHz.

The antenna connects to the EUT via a non-standard reverse polarity TNC antenna connector, thereby meeting the requirements of FCC 15.203.

ENCLOSURE

The EUT enclosure is primarily constructed of metal. It measures approximately 29 cm wide by 8.5 cm deep by 30 cm high.

MODIFICATIONS

No modifications were made to the EUT during the time the product was at NTS Silicon Valley.

SUPPORT EQUIPMENT

No local support equipment was used during testing.

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

Company	Model	Description	Serial Number	FCC ID
Xirrus	XP1-75-MSI	POE Adapter	P24100476C1	-
HP	Compaq 8510p	Laptop	CNU8372SGZ	-

EUT INTERFACE PORTS

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

Port	Connected To	Cable(s)			
1 011	Connected 10	Description	Shielded or Unshielded	Length(m)	
GigE POE	POE Adapter	Cat 5	Unshielded	15	
Antenna	Panel Antenna	LMR-195 Coaxial	Shielded	3	
POE Ethernet	Laptop	Cat 5	Unshielded	1	

EUT OPERATION

During emissions testing the EUT was command to transmit continuously on all four radios at the selected powers and frequencies.

TEST SITE

GENERAL INFORMATION

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

Sito	Registration Numbers		Location
Sile	FCC	Canada	Location
Chamber 3	769238	2845B-3	
Chamber 4	211948	2845B-4	41039 Boyce Road
Chamber 5	211948	2845B-5	Fremont,
Chambor 7	A2LA	2845D 7	CA 94538-2435
Chamber /	accreditation	2043D-7	

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

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.10. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

RADIATED EMISSIONS CONSIDERATIONS

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

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

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

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

INSTRUMENT CONTROL COMPUTER

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

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

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

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

FILTERS/ATTENUATORS

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

ANTENNAS

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

ANTENNA MAST AND EQUIPMENT TURNTABLE

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

ANSI C63.10 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 as specified in ANSI C63.4. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

INSTRUMENT CALIBRATION

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

TEST PROCEDURES

EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.10, and the worst-case orientation is used for final measurements.

CONDUCTED EMISSIONS

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



Figure 1 Typical Conducted Emissions Test Configuration

RADIATED EMISSIONS

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

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

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

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



Typical Test Configuration for Radiated Field Strength Measurements



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

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



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

CONDUCTED EMISSIONS FROM ANTENNA PORT

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



Test Configuration for Antenna Port Measurements

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

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

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

BANDWIDTH MEASUREMENTS

The 6dB, 20dB, 26dB and/or 99% signal bandwidth are measured using the bandwidths recommended by ANSI C63.10 and RSS GEN.

SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

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

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

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

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

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

GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

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

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

RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS

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

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

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

FCC 15.407 (a) OUTPUT POWER LIMITS

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

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

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

The peak excursion envelope is limited to 13dB.

OUTPUT POWER LIMITS –LELAN DEVICES

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

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

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

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

 ² If EIRP exceeds 500mW the device must employ TPC
³ If EIRP exceeds 500mW the device must employ TPC

SPURIOUS EMISSIONS LIMITS –UNII and LELAN DEVICES

The spurious emissions limits for signals below 1GHz are the FCC/RSS-GEN general limits. For emissions above 1GHz, signals in restricted bands are subject to the FCC/RSS GEN general limits. All other signals have a limit of -27dBm/MHz, which is a field strength of 68.3dBuV/m/MHz at a distance of 3m. For devices operating in the 5725-5850Mhz bands under the LELAN/UNII rules, the limit within 10MHz of the allocated band is increased to -17dBm/MHz.

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

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

$$R_r - S = M$$

where:

 $R_r = Receiver Reading in dBuV$

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

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

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

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

where:

 $\begin{array}{lll} F_d &=& \text{Distance Factor in dB} \\ D_m &=& \text{Measurement Distance in meters} \\ D_s &=& \text{Specification Distance in meters} \end{array}$

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

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

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

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

 $R_c = R_r + F_d$

and

 $M = R_c - L_s$

where:

 R_r = Receiver Reading in dBuV/m

 F_d = Distance Factor in dB

 R_c = Corrected Reading in dBuV/m

 L_S = Specification Limit in dBuV/m

M = Margin in dB Relative to Spec

SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

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

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

where P is the eirp (Watts)

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

Appendix A Test Equipment Calibration Data

Manufacturer Radiated Emissions, 1	<u>Description</u> 000 - 6,000 MHz, 16-Sep-13	Model	<u>Asset #</u>	<u>Cal Due</u>
EMCO Rohde & Schwarz	Antenna, Horn, 1-18 GHz EMI Test Receiver, 20 Hz-40	3115 ESIB40	1561 2493	7/12/2014 1/18/2014
	GHz	(1088.7490.40)		
Radiated Emissions, 1	000 - 18,000 MHz, 17-Sep-13	0445	4504	7/40/004 4
Micro-Tronics	Band Reject Filter, 5725-5875	BRC50705-02	1682	7/12/2014 3/13/2014
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	2199	2/19/2014
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/11/2013
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	8/24/2014
Radiated Emissions, 1	000 - 18,000 MHz, 18-Sep-13			
EMCO Micro-Tropics	Antenna, Horn, 1-18 GHz Band Reject Filter, 5725-5875	3115 BBC50705-02	1561 1682	7/12/2014
MICIO-HOMICS	MHz	BR030703-02	1002	5/15/2014
Hewlett Packard	High Pass filter, 8.2 GHz (Purple System)	P/N 84300-80039	1767	12/5/2013
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	2199	2/19/2014
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	10/4/2013
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2249	10/11/2013
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	8/24/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	1/18/2014
Radiated Emissions, 1	000 - 18,000 MHz, 19-Sep-13			
EMCO Micro-Tronics	Antenna, Horn, 1-18 GHz Band Reject Filter, 5470-5725 MHz	3115 BRC50704-02	1561 1681	7/12/2014 8/20/2014
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	3/13/2014
Hewlett Packard	High Pass filter, 8.2 GHz (Purple System)	P/N 84300-80039	1767	12/5/2013
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	2199	2/19/2014
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	10/4/2013
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	8/24/2014
Rohde & Schwarz	EMİ Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	1/18/2014
Radiated Emissions, 1	000 - 18,000 MHz, 20-Sep-13			
EMCO Micro-Tronics	Antenna, Horn, 1-18 GHz Band Reject Filter, 5470-5725 MHz	3115 BRC50704-02	1561 1681	7/12/2014 8/20/2014

	Kepori Dale: Jai	iuary 21, 2014 Reissue	Dale: rebru	ary 18, 2014
Manufacturer Micro-Tronics	Description Band Reject Filter, 5725-5875 MHz	<u>Model</u> BRC50705-02	<u>Asset #</u> 1682	<u>Cal Due</u> 3/13/2014
Hewlett Packard	High Pass filter, 8.2 GHz (Purple System)	P/N 84300-80039	1767	12/5/2013
Hewlett Packard	Microwave Preamplifier, 1- 26 5GHz	8449B	2199	2/19/2014
Micro-Tronics	Band Reject Filter, 5150-5350	BRC50703-02	2239	10/4/2013
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	8/24/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	1/18/2014
Radiated Emissions.	1000 - 18.000 MHz. 21-Sep-13			
EMCO Micro-Tronics	Antenna, Horn, 1-18 GHz Band Reject Filter, 5470-5725	3115 BRC50704-02	1561 1681	7/12/2014 8/20/2014
Micro-Tronics	Band Reject Filter, 5725-5875	BRC50705-02	1682	3/13/2014
Hewlett Packard	High Pass filter, 8.2 GHz (Purple System)	P/N 84300-80039	1767	12/5/2013
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	2199	2/19/2014
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	2239	10/4/2013
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40) Purple	8564E (84125C)	2415	8/24/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40	ESIB40 (1088 7490 40)	2493	1/18/2014
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2238	10/4/2013
Radiated Emissions.	1000 - 6.000 MHz. 24-Sep-13			
EMCO Robde & Schwarz	Antenna, Horn, 1-18 GHz EMI Test Receiver, 20 Hz-40	3115 ESIB40	1561 2493	7/12/2014
	GHz	(1088.7490.40)	2400	1/10/2014
Radiated Emissions,	1000 - 18,000 MHz, 28-Sep-13			
EMCO Hewlett Packard	Antenna, Horn, 1-18 GHz SpecAn 9 kHz - 40 GHz, FT	3115 8564E (84125C)	487 1393	7/19/2014 5/9/2014
Micro-Tronics	(ŚA40) Blue Band Reject Filter, 5150-5350	BRC50703-02	1729	8/2/2014
Hewlett Packard	MHz Microwave Preamplifier, 1-	8449B	1780	12/5/2013
Micro-Tronics	26.5GHz Band Reject Filter, 2400-2500	BRM50702-02	2238	10/4/2013
Micro-Tronics	MHz Band Reject Filter, 5470-5725	BRC50704-02	2240	10/4/2013
Micro-Tronics	MHz Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	10/4/2013
Radiated Emissions.	1000 - 40,000 MHz, 30-Sep-13			
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/19/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	1729	8/2/2014

	Kepori Dale: Ja	nuary 21, 2014 Reissue	Dale: Februa	ary 18, 2014
<u>Manufacturer</u> Hewlett Packard	Description Microwave Preamplifier, 1-	<u>Model</u> 8449B	<u>Asset #</u> 1780	<u>Cal Due</u> 12/5/2013
Micro-Tronics	Band Reject Filter, 2400-2500	BRM50702-02	2238	10/4/2013
Micro-Tronics	Band Reject Filter, 5470-5725	BRC50704-02	2240	10/4/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	10/4/2013
Hewlett Packard	Head (Inc flex cable, (1742,1743) Blue)	84125C	1620	5/15/2014
A. H. Systems Micro-Tronics	Purple System Horn, 18-40GHz Band Reject Filter, 2400-2500 MHz	SAS-574, p/n: 2581 BRM50702-02	2160 2249	6/28/2014 10/11/2013
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	1/18/2014
Radiated Emissions.	1000 - 40.000 MHz. 01-Oct-13			
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/19/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	1729	8/2/2014
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	1780	12/5/2013
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	2238	10/4/2013
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	2240	10/4/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	10/4/2013
Hewlett Packard	Head (Inc flex cable, (1742,1743) Blue)	84125C	1620	5/15/2014
A. H. Systems Micro-Tronics	Purple System Horn, 18-40GHz Band Reject Filter, 2400-2500 MHz	SAS-574, p/n: 2581 BRM50702-02	2160 2249	6/28/2014 10/11/2013
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	1/18/2014
Radiated Emissions.	1000 - 40.000 MHz. 02-Oct-13			
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/19/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	1/18/2014
Radiated Emissions,	1 - 40 GHz, 02-Oct-13			
EMCO	Antenna, Horn, 1-18 GHz	3115	487	7/19/2014
Hewlett Packard	High Pass filter, 8.2 GHz (Blu System)	P/N 84300-80039 (84125C)	1392	5/14/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1683	8/2/2014
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	1780	12/5/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	9/18/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	1/18/2014

	Report Date: Jai	nuary 21, 2014 Reissue	Date: Februa	ary 18, 2014
<u>Manufacturer</u> Hewlett Packard	Description Head (Inc flex cable,	<u>Model</u> 84125C	<u>Asset #</u> 1620	<u>Cal Due</u> 5/15/2014
A. H. Systems Micro-Tronics	(1742,1743) Blue) Purple System Horn, 18-40GHz Band Reject Filter, 2400-2500 MHz	SAS-574, p/n: 2581 BRM50702-02	2160 2249	6/28/2014 10/11/2013
Radiated Emissions, 7	1 - 40 GHz, 03-Oct-13	0445	407	7/40/0044
Hewlett Packard	High Pass filter, 8.2 GHz (Blu System)	P/N 84300-80039 (84125C)	487 1392	5/14/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
Micro-Tronics	Band Reject Filter, 2400-2500	BRM50702-02	1683	8/2/2014
Hewlett Packard	Microwave Preamplifier, 1- 26.5GHz	8449B	1780	12/5/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	9/18/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	1/18/2014
Hewlett Packard	Head (Inc flex cable, (1742,1743) Blue)	84125C	1620	5/15/2014
A. H. Systems Micro-Tronics	Purple System Horn, 18-40GHz Band Reject Filter, 2400-2500 MHz	SAS-574, p/n: 2581 BRM50702-02	2160 2249	6/28/2014 10/11/2013
Radiated Emissions, 1	1000 - 40,000 MHz, 04-Oct-13			
Hewlett Packard	High Pass filter, 8.2 GHz (Blu System)	P/N 84300-80039 (84125C)	1392	5/14/2014
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/9/2014
EMCO Hewlett Packard	Antenna, Horn, 1-18 GHz Head (Inc flex cable, (1742-1742) Plus)	3115 84125C	1561 1620	7/12/2014 5/15/2014
Micro-Tronics	(1742, 1743) Blue) Band Reject Filter, 2400-2500 MHz	BRM50702-02	1683	8/2/2014
Micro-Tronics	Band Reject Filter, 5150-5350	BRC50703-02	1729	8/2/2014
Hewlett Packard	Microwave Preamplifier, 1-	8449B	1780	12/5/2013
A. H. Systems Micro-Tronics	Purple System Horn, 18-40GHz Band Reject Filter, 5725-5875 MHz	SAS-574, p/n: 2581 BRC50705-02	2160 2241	6/28/2014 9/18/2014
Radiated Emissions.	30 - 1.000 MHz. 06-Oct-13			
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1683	8/2/2014
Sunol Sciences Rohde & Schwarz	Biconilog, 30-3000 MHz EMI Test Receiver, 20 Hz-40 GHz	JB3 ESIB40 (1088.7490.40)	2197 2493	2/7/2014 1/18/2014
Conducted Emissions	- AC Power Ports, 06-Oct-13			
Rohde & Schwarz Rohde & Schwarz	Pulse Limiter EMI Test Receiver, 20 Hz-40	ESH3 Z2 ESIB40	1594 2493	5/15/2014 1/18/2014
Com-Power	GHz 9KHz-30MHz, 50uH, 15Aac, 10Adc, max	(1088.7490.40) LI-215A	2671	5/24/2014

<u>Manufacturer</u> Radio Antenna Port (P	Description Power). 07-Oct-13	<u>Model</u>	Asset #	Cal Due
Narda West	Attenuator, 10 dB, DC-10 GHz, 50W	774-10	641	8/22/2014
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	1/18/2014

Appendix B Test Data

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EMC Test Data

Client:	Xirrus	Job Number:	J93457
Product	XR2000H	T-Log Number:	T93459
		Project Manager:	Christine Krebill
Contact:	Peter Krebill	Project Coordinator:	-
Emissions Standard(s):	FCC 15.247, 15.407, EN 55022, FCC B	Class:	A
Immunity Standard(s):	-	Environment:	Radio

EMC Test Data

For The

Xirrus

Product

XR2000H

Date of Last Test: 10/11/2013

	NTS	SUCCESS				EMC Test Data
Client:	Xirrus	5000235				Job Number: J93457
onona.					T-	Log Number: T93459
Model:	XR2000H				Proj	ect Manager: Christine Krebill
Contact:	Peter Krebill				Project	Coordinator: -
Standard:	FCC 15.247,	, 15.407, EN 55022, F	CC B		,	Class: A
		(Elliott Labo	Conduct oratories Fremon	ed Emissions t Facility, Semi-An	S echoic Chaml	per)
Test Spe	cific Detail	S				
	Objective:	The objective of this to specification listed ab	est session is to pe ove.	erform final qualifica	tion testing of t	he EUT with respect to the
[Date of Test:	10/5/2013		Config. Us	ed: 1	
Те	est Engineer:	Rafael Varelas		Config Chan	ge: None	
Te	est Location:	Fremont Chamber #5		EUT Volta	ge: 230V/50Hz	& 120V/60Hz
Summon	ipment where Conditions	routed through metal	conduit and when Temperature: Rel. Humidity:	possible passed th 20.8 °C 37 %	rough a ferrite	clamp upon exiting the chamber.
Summers	y of Result	S				
Ru		S 	med	Limit	Result	Margin
Ru	un # 1	S Test Perfor CE, AC Power, 2	med 30V/50Hz	Limit Class B	Result Pass	Margin 56.5 dBµV @ 0.272 MHz (-4.6 dB)
	ın # 1 2	S Test Perfor CE, AC Power, 2 CE, AC Power,1	med 30V/50Hz 20V/60Hz	Limit Class B Class B	Result Pass Pass	Margin 56.5 dBµV @ 0.272 MHz (-4.6 dB) 56.1 dBµV @ 0.286 MHz (-4.5 dB)



EMC Test Data										
Client:	Xirrus			Job Number:	J93457					
				T-Log Number:	T93459					
Model:	XR2000H			Project Manager:	Christine Krebill					
Contact:	Peter Krebil			Project Coordinator:	-					
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	Class:	A					
Preliminary peak readings captured during pre-scan (peak readings vs. average limit)										
Frequency	Level	AC	Clas	Comments	•					
MHz	dBµV	Line	Limit	Margin	QP/Ave					
0.272	58.9	Line 1	51.0	7.9	Peak					
0.340	57.4	Line 1	49.2	8.2	Peak					
2.699	51.5	Line 1	46.0	5.5	Peak					
3.186	53.0	Line 1	46.0	7.0	Peak					
3.463	53.8	Line 1	46.0	7.8	Peak					
3.751	54.4	Line 1	46.0	8.4	Peak					
4.784	54.0	Line 1	46.0	8.0	Peak					
18.244	49.1	Line 1	50.0	-0.9	Peak					
0.181	63.4	Neutral	54.4	9.0	Peak					
0.273	59.3	Neutral	51.0	8.3	Peak					
0.356	58.0	Neutral	48.8	9.2	Peak					
2.980	50.6	Neutral	46.0	4.6	Peak					
3.449	52.4	Neutral	46.0	6.4	Peak					
4.351	55.9	Neutral	46.0	9.9	Peak					
4.784	55.5	Neutral	46.0	9.5	Peak					
18.026	48.9	Neutral	50.0	-1.1	Peak					

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		R SUCCESS					EM	C Test Data	
Client:	Xirrus						Job Number:	J93457	
	V D 0 0 0 0 1			T-Log Number:	T93459				
Model:	XR2000H			Project Manager:	Christine Krebill				
Contact:	Peter Krebil			Project Coordinator:	-				
Standard:	FCC 15.247	. 15.407. EN	55022. FCC	Class:	A				
Final quasi-peak and average readings									
Frequency	Level	AC	Clas	ss B	Detector	Comments			
MHz	dBµV	Line	Limit	Margin	QP/Ave				
0.272	56.5	Line 1	61.1	-4.6	QP	QP (1.00s)			
0.275	55.9	Neutral	61.0	-5.1	QP	QP (1.00s)			
0.354	53.5	Neutral	58.9	-5.4	QP	QP (1.00s)			
0.340	53.4	Line 1	59.2	-5.8	QP	QP (1.00s)			
0.182	58.4	Neutral	64.4	-6.0	QP	QP (1.00s)			
4.784	49.5	Line 1	56.0	-6.5	QP	QP (1.00s)			
4.777	49.3	Neutral	56.0	-6.7	QP	QP (1.00s)			
4.358	48.3	Neutral	56.0	-7.7	QP	QP (1.00s)			
3.751	47.9	Line 1	56.0	-8.1	QP	QP (1.00s)			
3.463	47.3	Line 1	56.0	-8.7	QP	QP (1.00s)			
3.186	47.2	Line 1	56.0	-8.8	QP	QP (1.00s)			
3.473	46.5	Neutral	56.0	-9.5	QP	QP (1.00s)			
0.275	41.1	Neutral	51.0	-9.9	AVG	AVG (0.10s)			
0.272	41.0	Line 1	51.1	-10.1	AVG	AVG (0.10s)			
0.340	38.9	Line 1	49.2	-10.3	AVG	AVG (0.10s)			
2.699	45.7	Line 1	56.0	-10.3	QP	QP (1.00s)			
2.974	45.7	Neutral	56.0	-10.3	QP	QP (1.00s)			
18.244	39.4	Line 1	50.0	-10.6	AVG	AVG (0.10s)			
0.182	43.6	Neutral	54.4	-10.8	AVG	AVG (0.10s)			
17.941	39.1	Neutral	50.0	-10.9	AVG	AVG (0.10s)			
4.784	35.0	Line 1	46.0	-11.0	AVG	AVG (0.10s)			
4.777	35.0	Neutral	46.0	-11.0	AVG	AVG (0.10s)			
4.358	34.8	Neutral	46.0	-11.2	AVG	AVG (0.10s)			
0.354	37.4	Neutral	48.9	-11.5	AVG	AVG (0.10s)			
3.463	34.4	Line 1	46.0	-11.6	AVG	AVG (0.10s)			
3.751	34.4	Line 1	46.0	-11.6	AVG	AVG (0.10s)			
3.186	33.9	Line 1	46.0	-12.1	AVG	AVG (0.10s)			
3.473	32.9	Neutral	46.0	-13.1	AVG	AVG (0.10s)			
18.244	45.4	Line 1	60.0	-14.6	QP	QP (1.00s)			
2.699	31.1	Line 1	46.0	-14.9	AVG	AVG (0.10s)			
17.941	45.0	Neutral	60.0	-15.0	QP	QP (1.00s)			
2.974	30.8	Neutral	46.0	-15.2	AVG	AVG (0.10s)			



EMC Test Data									
Client:	Xirrus				Job Number:	J93457			
				T-Log Number:	T93459				
Model:	XR2000H			Project Manager:	Christine Krebill				
Contact.	Peter Krebil	I			Project Coordinator:	-			
Standard [.]	FCC 15 247	15407 FN	55022 ECC	B			Class:	Α	
Preliminary peak readings captured during pre-scan (peak readings vs. average limit)									
Frequency	Level	AC	Clas	ss B	Detector	Comments			
MHz	dBµV	Line	Limit	Margin	QP/Ave	-			
0.267	56.0	Line 1	51.2	4.8	Peak	-			
0.344	54.1	Line 1	49.1	5.0	Peak	-			
2.324	47.5	Line 1	46.0	1.5	Peak				
2.407	48.5		46.0	2.5	Peak				
3.440	50.0	Line 1	40.0	4.0	Peak				
3.009	50.5	Line 1	40.0	4.5	Peak	-			
4.203	51.2		40.0	4.4 5.2	Peak				
17 605	1/1.8		50.0	-5.2	Poak				
0.286	58.4	Neutral	50.0	7.7	Peak				
0.348	53.2	Neutral	49.1	4 1	Peak				
2 616	47.4	Neutral	46.0	1.1	Peak				
3.127	48.4	Neutral	46.0	2.4	Peak				
3.570	48.6	Neutral	46.0	2.6	Peak				
3.792	49.6	Neutral	46.0	3.6	Peak				
4.839	49.9	Neutral	46.0	3.9	Peak				
17.694	44.2	Neutral	50.0	-5.8	Peak				
3.792 4.839 17.694	49.6 49.9 44.2	Neutral Neutral Neutral	46.0 46.0 50.0	3.6 3.9 -5.8	Peak Peak Peak				
		SUCCESS					EM	C Test Data	
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Client:	Xirrus						Job Number:	J93457	
							T-Log Number:	T93459	
Model:	XR2000H					-	Project Manager	Christine Krehill	
Contact	Dotor Krobil	1					Project Coordinator:		
Curradordu		1 1 15 107 EN	55000 ECC	n			Class:	- 	
Stanuaru.	FUU 13.241	, 15.407, ⊑in	55022, FUU	В			<u>Ulass</u> .	A	
Final quasi	-neak and a	verane readi	nas						
Frequency		AC	Clas	se R	Detector	Comments			
MHz	dBuV	Line	Limit	Margin	OP/Ave	Commonto			
0.286	56.1	Neutral	60.6	-4.5	QP	QP (1.00s)			
0.267	51.9	Line 1	61.2	-9.3	QP	QP (1.00s)			
4.839	45.8	Neutral	56.0	-10.2	QP	QP (1.00s)			
0.286	39.5	Neutral	50.6	-11.1	AVG	AVG (0.10s)			
0.344	47.7	Line 1	59.1	-11.4	QP	QP (1.00s)			
4.528	44.1	Line 1	56.0	-11.9	QP	QP (1.00s)			
0.348	46.8	Neutral	59.0	-12.2	QP	QP (1.00s)			
17.694	37.6	Neutral	50.0	-12.4	AVG	AVG (0.10s)			
17.695	37.5	Line 1	50.0	-12.5	AVG	AVG (0.10s)			
4.283	43.4	Line 1	56.0	-12.6	QP	QP (1.00s)			
3.659	43.3	Line 1	56.0	-12.7	QP	QP (1.00s)			
3.448	43.2	Line 1	56.0	-12.8	QP	QP (1.00s)			
3.127	42.9	Neutral	56.0	-13.1	QP	QP (1.00s)			
3.659	32.7	Line 1	46.0	-13.3	AVG	AVG (0.10s)			
3.570	42.6	Neutral	56.0	-13.4	QP	QP (1.00s)			
3.792	42.6	Neutral	56.0	-13.4	QP	QP (1.00s)			
4.839	32.3	Neutral	46.0	-13.7	AVG	AVG (0.10s)			
3.448	32.1	Line 1	46.0	-13.9	AVG	AVG (0.10s)			
2.616	41.7	Neutral	56.0	-14.3	QP	QP (1.00s)			
4.283	31.6	Line 1	46.0	-14.4	AVG	AVG (0.10s)			
4.528	31.6	Line 1	46.0	-14.4	AVG	AVG (0.10s)			
3.792	31.6	Neutral	46.0	-14.4	AVG	AVG (0.10s)			
3.570	31.1	Neutral	46.0	-14.9	AVG	AVG (0.10s)			
2.467	41.1	Line 1	56.0	-14.9	QP	QP (1.00s)			
2.324	40.7	Line 1	56.0	-15.3	QP	QP (1.00s)			
17.695	43.5	Line 1	60.0	-16.5	QP	QP (1.00s)			
3.127	29.3	Neutral	46.0	-16.7	AVG	AVG (0.10s)			
17.694	43.3	Neutral	60.0	-16.7	QP	QP (1.00s)			
0.267	33.1	Line 1	51.2	-18.1	AVG	AVG (0.10s)			
2.616	26.8	Neutral	46.0	-19.2	AVG	AVG (0.10s)			
2.467	26.6	Line 1	46.0	-19.4	AVG	AVG (0.10s)			
2.324	25.7	Line 1	46.0	-20.3	AVG	AVG (0.10s)			
0.348	27.8	Neutral	49.0	-21.2	AVG	AVG (0.10s)			
0.344	27.2	Line 1	49.1	-21.9	AVG	AVG (0.10s)			

A N	E ENGINEER SUCCESS		
Client:	Xirrus	Job Number:	J93457
Madal	XD3000H	T-Log Number:	Т93459
Model:		Project Manager:	Christine Krebill
Contact:	Peter Krebill	Project Coordinator:	-
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class:	А

Test Configuration Photograph #1 (Conducted Emissions - Power Port)



NTS

N N	E ENGINEER SUCCESS		
Client:	Xirrus	Job Number:	J93457
Madal	VE2000L	T-Log Number:	Т93459
Client: Xiri Model: XR Contact: Pet Standard: FC	AR2000H	Project Manager:	Christine Krebill
Contact:	Peter Krebill	Project Coordinator:	-
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class:	A

Test Configuration Photograph #2 (Conducted Emissions - Power Port)



NTS

		SUCCESS			EM	C Test Data
Client:	Xirrus				Job Number:	J93457
				T-I	og Number:	T93459
Model:	XR2000H			Proie	ect Manager:	Christine Krehill
Contact [.]	Peter Krebill			Proiect	Coordinator:	-
Standard:	FCC 15.247	, 15.407, EN 55022, FCC B			Class:	N/A
		RSS-210 (LELA Antenna Power, PSD, Peak Excursio	AN) and FCC 15.40 Port Measuremen on, Bandwidth and Sp)7(UNII) ts purious El	missions	
Test Spec	cific Detail	S The objective of this test session is	to perform final qualification	n testina of th	ne EUT with r	espect to the
	Objective:	specification listed above.		, is a marked of the second		
Summary	of Result	S				
Ru	n #	Test Performed	Limit	Pass / Fail	Result / Mar	ain
1	1	Power, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	a: 20.4 mW n20: 19.9 m n40: 4.3 mW	W 1
1	l	PSD, 5250 - 5350MHz	15.407(a) (1), (2)	Pass	a: 1.1 dBm/l n20: 1.2 dBr n40: -9 0 dB	MHz n/MHz m/MHz
1	I	Max EIRP 5250 - 5350MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm	Pass	EIRP = 28.2	dBm (656.3 mW)
1	1	Power, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	a: 20.3 mW n20: 20.5 m n40: 20.1 m	W
1	I	PSD, 5470 - 5725MHz	15.407(a) (1), (2)	Pass	a: 0.6 dBm/l n20: 0.3 dBr n40: -2.6 dB	MHz n/MHz m/MHz
1	l	Max EIRP 5470 - 5725MHz	TPC required if EIRP≥ 500mW (27dBm). EIRP ≥ 200mW (23dBm) DFS threshold		EIRP = 24.2	dBm (264 mW)
1		26dB Bandwidth	15.407 (Information only)	-	> 20MHz for	all modes
1	1	99% Bandwidth	RSS 210 (Information only)	N/A	a: 17.0 MHz n20: 18.2 M n40 [:] 36 7 M	Hz Hz

	RSUCCESS			EMO	C Test Data						
Client: Xirrus			,	Job Number:	J93457						
Model: XP2000H	Model: XR2000H T-Log Numb										
			Proje	Project Manager: Christine Krebill							
Contact: Peter Krebil	l		Project Coordinator: -								
Standard: FCC 15.247	7, 15.407, EN 55022, FCC B		Class: N/A								
Run #	Test Performed	Limit	Pass / Fail	Result / Mar	gin						
2	Peak Excursion Envelope	15.407(a) (6) 13dB	Pass	9.5 dB							
3	Antenna Conducted - Band Edge Spurious	15.215 (c)	Pass	Refer to res	ults with Dipole antenna						

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:

An

Temperature:	20.6 °C
Rel. Humidity:	38 %

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.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 D01 v01r03, dated April 8, 2013

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	6	0.96	Yes	1.35	0.2	0.3	741
n20	6.5	0.97	Yes	1.27	0.1	0.3	787
n40	13.5	0.90	Yes	0.6	0.5	1.0	1667

Sample Notes

Sample S/N: 20:0C:7D

	EMC Test Data									
Client:	Xirrus							Job Number:	J93457	
Mar Lat							T-	Log Number:	T93459	
Model:	XR2000H						Proje	ect Manager:	Christine Kre	ebill
Contact:	Peter Krebil						Project	Coordinator:	-	
Standard:	FCC 15.247	. 15.407. EN	55022. FCC	В			,	Class:	N/A	
		, ,	,							
Antenna Ga	ain Informat	ion								
Frog	ŀ	Antenna Gair	n (dBi) / Chai	n	BE	MultiChain	CDD	Sectorized	Dir G	Dir G
печ	1	2	3	4	Ы	Legacy	CDD	/ Xpol	(PWR)	(PSD)
5250-5350	11.2	11.2			No	Yes	Yes	Yes	11.2	11.2
5470-5725	11.1	11.1			No	Yes	Yes	Yes	11.1	11.1
Notes: BF = beamforming mode supported, Multichain Legacy = 802.11 legacy data rates supported for multichain transmissions, Notes: CDD = Cyclic Delay Diversity (or Cyclic Shift Diversity) modes supported, Sectorized / Xpol = antennas are sectorized or										
Notes:	Dir G (PWR FCC KDB 6 value.) = total gain 62911. Depe	(Gant + Arra anding on the	y Gain) for p modes supp	ower calcula ported, the A	tions; GA (PS rray Gain val	SD) = total g ue for powe	gain for PSD o r could be diff	calculations t ferent from th	based on he PSD
Notes:	Array gain for condition. A	or power/psd Array gain = 1	calculated p 0*log(4/2) =	er KDB 6629 0dB as anter	11 D01, v01	r02. Spatial I polarized.	Multiplexing	with Nant=2,	Nss=1, for w	orse case
Run #1: Ba [Te Te	ndwidth, Ou Date of Test: est Engineer: est Location:	tput Power 10/7/2013 0 David Bare Fremont Ch	and Power S :00 / R. Varelas amber #5	Spectral Den	nsity - MIMO C Con E	Systems config. Used: nfig Change: CUT Voltage:	1 None POE			
Note 1:	Output powe 2*span/RBV power integr based on 10	er measured V, RMS deteo ration over 3 0log(1/x), who	using a spec ctor, trace av 0/60 MHz. A <u>ere x is the d</u>	trum analyze erage 100 tra s the duty cy uty cycle. (m	er (see plots aces, power cle is <98%, nethod SA-2	below). RBW averaging on the measure <u>of KDB 78903</u>	=1MHz, VB (transmitte ments were 33)	=3 MHz, # of ed signal was adjusted by a	points in swe s not contine adding YY. T	eep ≥ uous) and īhis is
Note 2:	Measured u	sing the sam	e analyzer s	ettings used f	for output po	wer.				
Note 3:	99% Bandw	idth measure	ed in accorda	nce with RSS	GEN - RB	> 1% of span	and VB >=3	BXRB	f the start start	al ab a' c
Note 4:	For MIMO s (in linear ter mode of the the limits is chain. If the the EIRP is	ystems the to ms). The an MIMO devic the highest g signals are the product o	otal output po tenna gain u e. If the sign ain of the inc coherent the of the effectiv	ower and tota sed to detern als on the no lividual chain n the effective e cain and to	I PSD are can nine the EIR on-coherent I s and the EI e antenna ga tal power.	acculated form P and limits for petween the t RP is the sum ain is the sum	n the sum of or PSD/Outp ransmit cha n of the proc n (in linear te	the powers of out power dep ins then the lucts of gain a erms) of the g	of the individu bends on the gain used to and power or ains for each	ai chains operating determine a each chain and

		SUCCESS						EM	C Test	Data
Client:	Xirrus							Job Number:	J93457	
M. 1.1	VD0000LL						T-L	og Number:	T93459	
Model:	XR2000H						Proje	ect Manager:	Christine Kre	ebill
Contact:	Peter Krebill						Project	Coordinator:	-	
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	В				Class:	N/A	
MIMO Devid	ce - 5250-53	50 MHz Ban	d - FCC							
Mode:	11a	• (Max	EIRP (mW):	656.3	
Frequency	Chain	Software	26dB BW	Duty Cycle	Power	Total F	Power	FCC Limit	Max Power	Result
(IVIHZ)	4	Setting	(MHZ)	%	dBm	mW	dBm	dBm	(VV)	
5280	2	26	24.05	96	6.8	10.0	10.0	18.8		
5300	1 2	31	24.95	96	10.2 9.1	19.4	12.9	18.8	0.020	
5320	1 2	31	24.65	96	10.0 9.8	20.4	13.1	18.8		
				Tota	I Power in Ba	and (3 20 MF	lz channels)	18.8	0.050	Pass
MIMO Device - 5250-5350 MHz Band - Industry Canada Mode: 11a Max EIRP (mW): 656.3										
Frequency	Chain	Software	99% BW	Duty Cycle	Power'	Total	Power	IC limit	Max Power	Result
(MHZ)	1	Setting	(MHZ)	%	dBm	mW	dBm	dBm	(VV)	
5280	2	26	16.98	96	6.8	10.0	10.0	18.1		
5300	1 2	31	16.98	96	10.2 9.1	19.4	12.9	18.1	0.020	
5320	1 2	31	16.98	96	10.0 9.8	20.4	13.1	18.1		
				Tota	I Power in Ba	and (3 20 MF	Iz channels)	18.1	0.050	Pass
5250-5350 F No overlapp Mode:	PSD - FCC/IC ing channels 11a	c in the same	band	Duty Quela			2021	FOO Limit	17.0 dBm	
(MHz)	Chain	Setting	99% Бүү (MHz)		PSD dBm/MHz	I Otal m\///MHz	PSD ⁻ dBm/MHz	ruc Limit dBm		Result
(10112)	1	ootuniy	(10.14)	/0	-5.0					
5280	2	26	16.98	96	-5.7	0.6	-2.2	5.8	11.0	Pass
5300	1 2	31	16.98	96	-1.4 -3.2	1.3	1.0	5.8	11.0	Pass
5320	1 2	31	16.98	96	-1.6 -2.7	1.3	1.1	5.8	11.0	Pass

		SUCCESS						EM	C Test	Data
Client:	Xirrus							Job Number:	J93457	
Madalı							T-L	og Number:	T93459	
Model:	XR2000H						Proje	ect Manager:	Christine Kre	ebill
Contact:	Peter Krebill						Project	Coordinator:	-	
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	В				Class:	N/A	
MIMO Devic Mode:	ce - 5250-53 n20	50 MHz Ban	d - FCC				Max	EIRP (mW):	652.0	
Frequency	Chain	Software	26dB BW	Duty Cycle	Power	Total F	Power ¹	FCC Limit	Max Power	Result
(MHz)		Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	
5280	1	26	24.65	97	7.0	10.2	10.1	18.8		
5300	1 2	31	23.75	97	10.4 9.2	19.9	13.0	18.8	0.020	
5320	1 2	31	24.349	97	9.6 9.9	19.4	12.9	18.8		
				Tota	I Power in Ba	and (3 20 MF	Hz channels)	18.8	0.049	Pass
MIMO Devid Mode:	16.9 dBm MIMO Device - 5250-5350 MHz Band - Industry Canada Mode: n20 Max EIRP (mW): 652.0									
Frequency	Chain	Software	99% BW	Duty Cycle	Power	Total	Power	IC limit	Max Power	Result
(MHZ)	1	Setting	(MHZ)	%	dBm	mW	dBm	dBm	(VV)	
5280	2	26	18.24	97	6.9	10.2	10.1	18.4		
5300	1 2	31	18.18	97	10.4 9.2	19.9	13.0	18.4	0.020	
5320	1 2	31	18.06	97	9.6 9.9	19.4	12.9	18.4		
				Tota	l Power in Ba	and (3 20 MF	Iz channels)	18.4	0.049 16.9 dBm	Pass
5250-5350 F Mode:	PSD - FCC/IC n20	2								
Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total mW/MHz	PSD ¹ dBm/MHz	FCC Limit dBm	IC Limit /MHz	Result
5280	1 2	26	18.24	97	-4.9 -5.7	0.6	-2.1	5.8	11.0	Pass
5300	1 2	31	18.18	97	-1.9 -3.3	1.2	0.6	5.8	11.0	Pass
5320	1 2	31	18.06	97	-2.2 -2.9	1.2	0.6	5.8	11.0	Pass

		SUCCESS						EM	C Test	' Data
Client:	Xirrus							Job Number:	J93457	
Madal							T-l	og Number:	T93459	
Model:	XR2000H						Proje	ect Manager:	Christine Kr	ebill
Contact:	Peter Krebil						Project	Coordinator:	-	
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	В				Class:	N/A	
			,							
MIMO Devi	ce - 5250-53	50 MHz Ban	d - FCC							
Mode:	n40		-		-		Max	EIRP (mW):	56.5	-
Frequency	Chain	Software	26dB BW	Duty Cycle	Power	Total I	Power ¹	FCC Limit	Max Power	Result
(MHz)		Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	
5310	1 2	30	47.976	90	<u>3.7</u> 1.8	4.3	6.3	18.8	0.004	Pass
			ما المما يما م	Canada						
Mode:	010-52 ce - 5250-53 n/0	SO MHZ BAU	a - Industry	Canada			Max		56 5	
Frequency	1140	Software	99% BW	Duty Cycle	Power ¹	Total	Power	IC limit	Max Power	
(MHz)	Chain	Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	Result
5310	1	30	36.72	90	3.7	4.3	6.3	18.8	0.004	Pass
	2				1.0					
MIMO Devi	ce 5250-535	0 PSD - FCC	/IC							
Mode:	n40								1	
Frequency	Chain	Software	99% BW	Duty Cycle	PSD	Total	PSD ¹	FCC Limit	IC Limit	Result
(MHz)		Setting	(MHz)	%	dBm/MHz	mW/MHz	dBm/MHz	dBm	/MHz	
5310	1 2	30	36.72	90	-11.6 -13.4	0.1	-9.0	5.8	11.0	Pass

	EMC Test Data									
Client:	Xirrus							lob Number:	J93457	
Madal							T-L	og Number:	T93459	
woder.							Proje	ect Manager:	Christine Kre	ebill
Contact:	Peter Krebill						Project	Coordinator:	-	
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	B				Class:	N/A	
MIMO Devid Mode:	ce - 5470-572 11a	25 MHz Ban	d - FCC				Мах	EIRP (mW):	261.7	
Frequency	Chain	Software	26dB BW	Duty Cycle	Power	Total F	Power ¹	FCC Limit	Max Power	Result
(MHz)	4	Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	rtoount
5500	1 2	25	23.57	96	6.0 3.2	6.3	8.0	18.9		
5580	1 2	31	23.93	96	7.8 6.0	10.5	10.2	18.9	0.020	
5700	1	33	23.27	96	11.1 8.2	20.3	13.1	18.9		
				Tota	I Power in Ba	and (4 20 MF	lz channels)	18.9	0.057	Pass
MIMO Devio Mode:	/IMO Device - 5470-5725 MHz Band - Industry Canada Mode: 11a Max EIRP (mW): 261.7									
Frequency	Chain	Software	99% BW	Duty Cycle	Power ¹	Total	Power	IC limit	Max Power	Result
(MHz)	4	Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	
5500	2	25	16.98	96	6.0 3.2	6.3	8.0	18.2		-
5580	1 2	31	16.98	96	7.8 6.0	10.4	10.2	18.2	0.020	
5700	1 2	33	16.98	96	11.1 8.2	20.3	13.1	18.2		
				Tota	I Power in Ba	and (4 20 MF	lz channels)	18.2	0.057	Pass
5470-5700 F Mode:	PSD - FCC/I0 11a	2							17.6 dBm	
Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total mW/MHz	PSD ¹ dBm/MHz	FCC Limit dBm	IC Limit /MHz	Result
5500	1 2	25	16.98	96	-6.5 -9.4	0.4	-4.5	5.9	11.0	Pass
5580	1 2	31	16.98	96	-4.7 -6.4	0.6	-2.2	5.9	11.0	Pass
5700	1 2	33	16.98	96	-1.5 -4.1	1.2	0.6	5.9	11.0	Pass

		SUCCESS						EM	C Test	Data
Client:	Xirrus						J	Job Number:	J93457	
Madalı							T-L	og Number:	T93459	
woder:	XR2000H						Proje	ect Manager:	Christine Kre	ebill
Contact:	Peter Krebill						Project	Coordinator:	-	
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	В				Class:	N/A	
MIMO Devid Mode:	ce - 5470-572 n20	25 MHz Ban	d - FCC				Мах	EIRP (mW):	264.0	
Frequency	Chain	Software	26dB BW	Duty Cycle	Power	Total F	Power ¹	FCC Limit	Max Power	Result
(MHz)	Ondin	Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	Result
5500	1 2	25	25.13	97	6.1 3.1	6.3	8.0	18.9		
5580	1 2	31	24.35	97	8.5 5.6	11.1	10.4	18.9	0.020	
5700	1	32	23.75	97	10.6 9.3	20.5	13.1	18.9		
	_			Tota	I Power in Ba	and (4 20 MH	lz channels)	18.9	0.058	Pass
MIMO Devid Mode:	ce - 5470-572 n20	25 MHz Ban	d - Industry	Canada			Max	EIRP (mW):	264.0	
Frequency	Chain	Software	99% BW	Duty Cycle	Power ¹	Total I	Power	IC limit	Max Power	Posult
(MHz)	Chain	Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	Result
5500	1 2	25	18.06	97	6.1 3.1	6.3	8.0	18.5		-
5580	1 2	31	18.06	97	8.5 5.6	11.1	10.4	18.5	0.020	
5700	1 2	32	18.06	97	10.6 9.3	20.5	13.1	18.5		
				Tota	I Power in Ba	and (4 20 MH	lz channels)	18.5	0.058	Pass
5470-5725 F Mode:	PSD - FCC/IC n20	2							17.7 dBm	
Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total mW/MHz	PSD ¹ dBm/MHz	FCC Limit dBm	IC Limit /MHz	Result
5500	1 2	25	18.06	97	-6.8 -10.0	0.3	-4.9	5.9	11.0	Pass
5580	1 2	31	18.06	97	-4.4 -7.3	0.6	-2.5	5.9	11.0	Pass
5700	1	32	18.06	97	-2.3 -3.4	1.1	0.3	5.9	11.0	Pass

		SUCCESS						EM	C Test	Data
Client:	Xirrus						,	lob Number:	J93457	
M	VD0000LL						T-L	og Number:	T93459	
Model:	XR2000H						Proje	ct Manager:	Christine Kre	ebill
Contact:	Peter Krebill						Project	Coordinator:	-	
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	B				Class:	N/A	
MIMO Devid Mode:	ce - 5470-572 n40	25 MHz Ban	d - FCC				Max	EIRP (mW):	258.8	
Frequency	Chain	Software	26dB BW	Duty Cycle	Power	Total F	Power ¹	FCC Limit	Max Power	Result
(MHz)		Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	rtooun
5510	1 2	15	49.06	90	1.6 -1.9	2.3	3.6	18.9		
5550	1 2	33	52.31	90	9.7 6.1	14.9	11.7	18.9	0.020	
5670	1 2	33	49.06	90	10.9 7.7	20.1	13.0	18.9		
		To	otal Power in	Band (3 40 I	MHz channe	ls and 1 20M	Hz channel)	18.9	0.058	Pass
MIMO Devid Mode:	ce - 5470-572 n40	25 MHz Ban	d - Industry	Canada			Max	EIRP (mW):	258.8	
Frequency	Chain	Software	99% BW	Duty Cycle	Power ¹	Total	Power	IC limit	Max Power	Result
(MHz)	ondin	Setting	(MHz)	%	dBm	mW	dBm	dBm	(W)	rtooun
5510	1 2	15	36.60	90	1.6 -1.9	2.3	3.6	18.9		-
5550	1 2	33	36.60	90	9.7 6.1	14.9	11.7	18.9	0.020	
5670	1 2	33	36.72	90	10.9 7.7	20.1	13.0	18.9		
		To	otal Power in	Band (3 40 I	MHz channe	ls and 1 20M	Hz channel)	18.9	0.058	Pass
5470-5725 F Mode:	PSD - FCC/IC n40)					4		17.6 dBm	
Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total mW/MHz	PSD' dBm/MHz	FCC Limit dBm	IC Limit /MHz	Result
5510	1 2	15	36.60	90	-14.2 -17.7	0.1	-12.1	5.9	11.0	Pass
5550	1 2	33	36.60	90	-6.0 -9.4	0.4	-3.9	5.9	11.0	Pass
5670	1	33	36.72	90	-4.9 -7.7	0.5	-2.6	5.9	11.0	Pass

		SUCCESS						EM	C Test	Data
Client:	Xirrus						J	lob Number:	J93457	
NA	VD0000LL						T-L	og Number:	T93459	
Model:	XR2000H						Proje	ct Manager:	Christine Kre	bill
Contact:	Peter Krebill						Project	Coordinator:	-	
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	В				Class:	N/A	
Run #2: Pe [Te Te	eak Excursio Date of Test: est Engineer: est Location:	n Measuren 10/7/2013 0: David Bare Fremont Cha	nent 00 amber #5		C Cor E	onfig. Used: nfig Change: UT Voltage:	1 None POE			
20MHz:	Device mee	ts the requi	rement for t	he peak exc	ursion				1	
	Freq	Peak Excu	ursion(dB)	Freq	Peak Excu	ursion(dB)	Freq	Peak Excu	ursion(dB)	
	(MHz)	Value	Limit	(MHz)	Value	Limit	(MHz)	Value	Limit	
				5300	8.5	13.0	5580	9.2	13.0	
/0MHz·	Dovico moo	ts the requi	romant for t	ha naak ava	ursion					
40101112.	Freq	Peak Excu	ursion(dB)	Frea	Peak Excu	ursion(dB)	Frea	Peak Exc	ursion(dB)	
	(MHz)	Value	Limit	(MHz)	Value	Limit	(MHz)	Value	Limit	
	(11112)	T aluo	Linit	5310	8.9	13.0	5550	9.5	13.0	
Trac	ce B: Same s	ettings as us	Trace ed for power	A: RBW = 1 /PSD measu	iming Peak B IMHz, VBW = Irements (RB	<u>-xcursion</u> = 3MHz, Pea W = 1 MHz,	k hold VBW = 3MH	z, Integrated	average pov	ver)





N	LE ENGINEER SUCCESS		
Client:	Xirrus	Job Number:	J93457
Madal	VD2000L	T-Log Number:	T93459
MOUEI.		Project Manager:	Christine Krebill
Contact:	Peter Krebill	Project Coordinator:	-
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class:	A

Radiated Emissions

(Elliott Laboratories Fremont Facility, Semi-Anechoic Chamber)

Test Specific Details

ITS

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: 10/6/2013 Test Engineer: Rafael Varelas Test Location: Fremont Chamber #5 Config. Used: 1 Config Change: None EUT Voltage: 120V/60Hz

General Test Configuration

The EUT and any local support equipment were located on the turntable for radiated emissions testing. Any remote support equipment was located outside the semi-anechoic chamber. Any cables running to remote support equipment where routed through metal conduit and when possible passed through a ferrite clamp upon exiting the chamber.

The test distance and extrapolation factor (if applicable) are detailed under each run description.

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

Ambient Conditions:

Temperature:	20.6 °C
Rel. Humidity:	38 %

Summary of Results (ANSI C63.4:2009)

Run #	Test Performed	Limit	Result	Margin
1 (Dipole Antenna)	Radiated Emissions	FCC Part 15.209 /	Dace	35.1 dBµV/m @ 37.54 MHz
	30 - 1000 MHz, Maximized	15.247(c)	r ass	(-4.9 dB)
2 (Panal Antonna)	Radiated Emissions	FCC Part 15.209 /	Deee	51.8 dBµV/m @ 997.71 MHz
2 (Fallel Antenna)	30 - 1000 MHz, Maximized	15.247(c)	F855	(-2.2 dB)



Client:	Xirrus	Job Number:	J93457
Madal	XD2000H	T-Log Number:	Т93459
wouer.		Project Manager:	Christine Krebill
Contact:	Peter Krebill	Project Coordinator:	-
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class:	A

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.

Sample Notes

Sample S/N: 20:0C:7D Antenna: Dipole (x8)

Sample Notes

Sample S/N: 20:0C:7D Antenna: Panel (x4)

Olivert	Virue		I	loh Number	103457
Client:	AII105				T03/50
Model:	XR2000H			Project Manager	Christing Krobi
Contact:	Patar Krahill			Project Coordinator	
Standard:	FCC 15 247 15 407 EN 55022 EC	C B		Class	Α
otandara.	1 00 10.2 H, 10.101, EN 00022, 1 0			01000	
un #1: Pr	reliminary Radiated Emissions, 30	- 1000 MHz			
	T	est Parameters for Preli	minary Scan(s)		
	Frequency Range	Prescan Distance	Limit Distar	nce Extrapola	tion Factor
	(MHz)	(meters)	(meters)	(dB, appli	ed to data)
	30 - 1000	3	3	().0
Run: 1a					
Radio #	Frequency CH Mode	Pwr			
6	2412 1 802.11b	34			
10	2437 6 802.11b	34			
14	2462 11 802.11b	34			
2	5785 157 802.11a	34			
50.0 (w/\ngp 40.0 900 30.0 20.0 10.0		M M 100.0 Frequency (M	Hz)		iooo.c



Client:	Xirrus	Job Number:	J93457
Madal	VD2000L	T-Log Number:	T93459
MOUEI.		Project Manager:	Christine Krebill
Contact:	Peter Krebill	Project Coordinator:	-
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class:	A

Preliminary peak readings captured during pre-scan

		J	<u> </u>					
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
31.441	45.9	V	73.5	-27.6	Peak	157	1.0	Limit is 30dBc from Fundamental
37.546	36.8	V	40.0	-3.2	Peak	92	1.0	
47.803	46.5	V	73.5	-27.0	Peak	360	1.0	Limit is 30dBc from Fundamental
74.569	23.6	V	40.0	-16.4	Peak	170	1.5	
148.139	35.9	V	73.5	-37.6	Peak	98	1.5	Limit is 30dBc from Fundamental
864.811	34.5	V	73.5	-39.0	Peak	161	1.0	Limit is 30dBc from Fundamental

Maximized quasi-peak readings

Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
37.546	34.8	V	40.0	-5.2	QP	93	1.0	QP (1.00s)
74.569	23.4	V	40.0	-16.6	QP	169	1.0	QP (1.00s)

2000H ter Krebill C 15.247, 15.							
ter Krebill C 15.247, 15.						T-	Log Number: T93459
ter Krebill C 15.247, 15.						Proj	ect Manager: Christine Krebill
C 15.247, 15.						Project	t Coordinator: -
	5.407, E	N 55022, FC	C B				Class: A
equency (CH	Mode	Pwr				
5280	56	802.11a	34				
5300	60 64	802.11a	34 24				
0020 0437	6 6	002.11a 802.11b	34 34				
2401	U	002.110	04				
	۶.						
			M~_/	Frequency (M		Manne	
ak readings of level	captur Pol	red during pi	100.0 re-scan	Frequency (M	Land Azimuth	Manna Height	Comments
ak readings of Level F	captur Pol V/h	red during pr 15.209 /	100.0 re-scan 15.247 Maroin	Frequency (M	1Hz)	Height meters	Comments
ak readings of Level F BµV/m v 45.3	captur Pol V/h V	red during pr 15.209 / Limit 68.3	100.0 re-scan / 15.247 Margin -23.0	Frequency (M Detector Pk/QP/Avg Peak	Hz) Azimuth degrees 32	Height 1.0	Comments
ak readings of Level F BµV/m v 45.3 36.9	captur Pol V/h V	red during pr 15.209 / Limit 68.3 40.0	100.0 re-scan /15.247 Margin -23.0 -3.1	Frequency (M Detector Pk/QP/Avg Peak Peak	Azimuth degrees 32 48	Height neters 1.0 1.0	Comments
ак readings o Level F IBµV/m v 45.3 36.9 45.5	captur Pol V/h V V	red during p 15.209 / Limit 68.3 40.0 68.3	100.0 re-scan / 15.247 Margin -23.0 -3.1 -22.8	Detector Pk/QP/Avg Peak Peak Peak	Azimuth degrees 32 48 357	Height 1.0 1.0 1.0	Comments Limit is -27 dBm/MHz Peak
2 ak readings of Level F IBμV/m v 45.3 36.9 45.5 24.8	captur Pol v/h V V V V	red during pr 15.209 / Limit 68.3 40.0 68.3 40.0	re-scan / 15.247 Margin -23.0 -3.1 -22.8 -15.2	Detector Pk/QP/Avg Peak Peak Peak Peak	Azimuth degrees 32 48 357 185	Height Height meters 1.0 1.0 1.0 1.0	Comments Limit is -27 dBm/MHz Peak
ak readings of Level F ΒμV/m V 45.3 36.9 45.5 24.8 37.6 37.6	captur Pol V/h V V V V V	red during pr 15.209 / Limit 68.3 40.0 68.3 40.0 68.3	re-scan /100.0 /100.0 /15.247 Margin -23.0 -3.1 -22.8 -15.2 -30.7	Detector Pk/QP/Avg Peak Peak Peak Peak Peak	Azimuth degrees 32 48 357 185 120	Height meters 1.0 1.0 1.0 1.0 1.0	Comments Limit is -27 dBm/MHz Peak
ak readings (Level F BμV/m N 45.3 36.9 45.5 24.8 37.6 37.6	captur Pol V/h V V V V V	red during p 15.209 / Limit 68.3 40.0 68.3 40.0 68.3	100.0 re-scan /15.247 Margin -23.0 -3.1 -22.8 -15.2 -30.7	Detector Pk/QP/Avg Peak Peak Peak Peak Peak Peak	Azimuth degrees 32 48 357 185 120	Height Height meters 1.0 1.0 1.0 1.0 1.0 1.0	Comments Limit is -27 dBm/MHz Peak
ak readings α Level F BμV/m V 45.3 36.9 45.5 24.8 37.6 37.6	captur Pol v/h V V V V V V V V	red during pr 15.209 / Limit 68.3 40.0 68.3 40.0 68.3	100.0 re-scan /15.247 Margin -23.0 -3.1 -22.8 -15.2 -30.7	Detector Pk/QP/Avg Peak Peak Peak Peak Peak	Azimuth degrees 32 48 357 185 120	Height Height 1.0 1.0 1.0 1.0 Height	Comments Limit is -27 dBm/MHz Peak Limit is -27 dBm/MHz Peak
eak readings of Level F ΒμV/m γ 45.3 36.9 45.5 24.8 37.6 37.6 Build Level F Build Level F	captur Pol V/h V V V V V V V V	red during pu 15.209 / Limit 68.3 40.0 68.3 40.0 68.3 15.209 / Limit	100.0 re-scan (15.247 Margin -23.0 -3.1 -22.8 -15.2 -30.7 (15.247 Margin	Detector Pk/QP/Avg Peak Peak Peak Peak Peak Peak Peak	Azimuth degrees 32 48 357 185 120 Azimuth degrees	Height meters 1.0 1.0 1.0 1.0 1.0 1.0 Height meters	Comments Limit is -27 dBm/MHz Peak Limit is -27 dBm/MHz Peak Limit is -27 dBm/MHz Peak
eak readings of Level F BµV/m V 45.3 36.9 45.5 24.8 37.6 37.6 HSI-peak read Level Level F BµV/m V 35.1 35.1	s captur Pol V/h V V V V V V V V V V V V V V V V V V	red during p 15.209 / Limit 68.3 40.0 68.3 40.0 68.3 15.209 / Limit 40.0	M → M 100.0 re-scan / 15.247 Margin -23.0 -3.1 -22.8 -15.2 -30.7 / 15.247 Margin -4.9	Detector Pk/QP/Avg Peak Peak Peak Peak Peak Peak Peak Peak	Azimuth degrees 32 48 357 185 120 Azimuth degrees 42	Height meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Comments Limit is -27 dBm/MHz Peak Limit is -27 dBm/MHz Peak Limit is -27 dBm/MHz Peak Limit is -27 dBm/MHz Peak
	5280 5300 5320 2437	5280 56 5300 60 5320 64 2437 6	5280 56 802.11a 5300 60 802.11a 5320 64 802.11a 2437 6 802.11b	5280 56 802.11a 34 5300 60 802.11a 34 5320 64 802.11a 34 2437 6 802.11b 34	5280 56 802.11a 34 5300 60 802.11a 34 5320 64 802.11a 34 2437 6 802.11b 34	5280 56 802.11a 34 5300 60 802.11a 34 5320 64 802.11a 34 2437 6 802.11b 34	5280 56 802.11a 34 5300 60 802.11a 34 5320 64 802.11a 34 2437 6 802.11b 34

				EM	C Test Data
Client:	Xirrus			Job Number:	: J93457
	ND00001			T-Log Number	: T93459
Model:	XK2000H			Project Manager:	Christine Krebill
Contact:	Peter Krebill		P	roject Coordinator:	: -
Standard:	FCC 15.247, 15.407, EN 55022. F	CC B	· · ·	Class	A
Run #2: Pr	eliminary Radiated Emissions, 30) - 1000 MHz	1		
Panel Ante	nna				
		lest Parameters for Preli	minary Scan(s)		
	Frequency Range	Prescan Distance	Limit Distanc	e Extrapola	tion Factor
	(IVIHZ) 30 1000	(meters)	(meters)	(dB, appli	
	30 - 1000	<u>່</u> ບ	10		0.0
Run:2a Radio # 6 10 14 2 60.0 (m/\ngp) apnnildury 40.0 20.0	Frequency CH Mode 2412 1 802.11b 2437 6 802.11b 2462 11 802.11b 5785 157 802.11a	Pwr 32 34 32 34		Auroment	hummender H
10.0	_	100.0 Frequency (M	, Hz)		1000.0



V	E ENGINEER	SUCCESS	1						
Client:	Xirrus							Job Number:	J93457
Model:	XB2000H					_		Log Number:	T93459
woder.	717200011						Project Manager		Christine Krebill
Contact:	Peter Krebill						Project	Coordinator:	-
Standard:	FCC 15.247	, 15.407, E	N 55022, FC	СВ				Class:	A
Preliminary	peak readin	igs captur	ed during p	re-scan	Detector	A	L La Sarla A		
		P0I	15.209 /	15.247 Margin	Detector	Azimuth	Height	Comments	
1VITZ	α <u>β</u> μν/m /0.3	V/11 V/	Z3 5		PK/QP/AVg Dook	247	1 0	Limitic 30d	Bo from Fundamental
37 539	38.4	V	40.0	-16	Peak	247	1.0		
43 773	45.9	V	73.5	-27.6	Peak	359	1.0	Limit is 30d	Bc from Fundamental
74.576	23.9	V	40.0	-16.1	Peak	218	1.0		
125.008	26.4	V	43.5	-17.1	Peak	347	1.5		
914.465	45.3	Н	73.5	-28.2	Peak	334	2.0	Limit is 30d	Bc from Fundamental
Maximized	quasi-peak r	readings							
Frequency	Level	Pol	15.209 /	15.247	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
37.539	33.1	V	40.0	-6.9	QP	267	1.0	QP (1.00s)	
125.008	27.5	V	43.5	-16.0	QP	343	1.0	QP (1.00s)	
/4.5/6	24.0	V	40.0	-16.0	QP	214	1.0	QP (1.00s)	

		SUCCESS						EMC Test Data
Client:	Xirrus							Job Number: J93457
Madalı							T-	Log Number: T93459
Model:	XR2000H						Proj	ect Manager: Christine Krebill
Contact:	Peter Krebill						Project	t Coordinator: -
Standard:	FCC 15.247	, 15.407, E	EN 55022, FC	C B				Class: A
Run:2b								
Radio #	Frequency	СН	Mode	Pwr				
6	5280	56	802.11a	34				
10	5300	60	802.11a	34				
14	5320	64	802.11a	34				
2	2437	6	802.11b	34				
50.0 (W/\ngp) 40.0 900130.0 40.0 20.0 10.0		•		100.0	M M	Л.Л. інz)	And .	Munan nation and management
Preliminary	peak readir	ngs captu	red during p	re-scan				
		P01	15.209	/ 10.247 Morain		Azimuth	metere	Comments
996 157	υσμν/III 53 /	V/11 \/	5/ 0	_0.6	Peak	n Uegrees	10	
31,441	44 0	V	68.3	-24.3	Peak	42	1.0	Limit is -27 dBm/MHz Peak
37.546	37.7	V	40.0	-2.3	Peak	359	1.5	
43.532	45.6	V	68.3	-22.7	Peak	49	1.0	Limit is -27 dBm/MHz Peak
111.588	29.3	V	43.5	-14.2	Peak	318	2.0	
125.008	27.4	V	43.5	-16.1	Peak	359	1.5	
Maximized	quasi-peak i	readings						
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
37.546	34.0	V	40.0	-6.0	QP	360	1.0	QP (1.00s)
996.157	34.0	V	54.0	-20.0	QP	0	1.0	QP (1.00s)
111.588	28.9	V	43.5	-14.6	QP	321	1.0	QP (1.00s)
125.008	28.0	V	43.5	-15.5	U QP	355	2.0	<u>IQ</u> P (1.00S)



		SUCCESS						EIVIC TEST Dala		
Client:	Xirrus							Job Number: J93457		
Model							T-Log Number: T93459			
MOUEI.							Project Manager: Christine Krebill			
Contact:	Peter Krebill						Project	t Coordinator: -		
Standard:	FCC 15.247	, 15.407, E	N 55022, FC			Class: A				
Preliminary peak readings captured during pre-scan										
Frequency	Level	Pol	15.209	15.247	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5790.230	108.3	Н	-	-	PK	12	1.6	POS; RB 100 kHz; VB: 300 kHz		
5792.440	106.3	V	-	-	PK	351	1.2	POS; RB 100 kHz; VB: 300 kHz		
33.454	45.0	V	76.3	-31.3	Peak	280	1.0	Limit is 30dBc from above		
37.552	40.1	V	40.0	0.1	Peak	237	1.0			
43.532	46.3	V	76.3	-30.0	Peak	310	1.0	Limit is 30dBc from above		
74.582	24.6	V	40.0	-15.4	Peak	170	1.0			
110.864	33.2	Н	43.5	-10.3	Peak	227	3.0			
914.854	43.3	Н	78.3	-35.0	Peak	51	1.5	Limit is 30dBc from above		
997.713	56.8	Н	54.0	2.8	Peak	56	2.0			
lavimizod	auasi-noaku	andinas								
	l evel	Pol	15 209	15 247	Detector	Azimuth	Height	Comments		
MH ₇	dBu\//m	v/h	Limit	Margin	Pk/OP/Ava	dearees	meters			
997 713	51.8	H	54.0	-2.2		58	1 2	OP (1.00s)		
37 552	33.8	V	40.0	-6.2	0.P	233	1.2	OP(1.00s)		
110 864	30.4	H	43.5	-13.1	QP	224	1.5	QP (1.00s)		
74.582	24.8	V	40.0	-15.2	QP	164	1.0	QP (1.00s)		

	CILLA VIEWS										
Client:	Xirrus						<u> </u>	Job Number:	J93457		
Model:	XR2000H						T-'	Log Number:	T93459		
							Proj	ect Manager:	Christine Krebill		
Contact:	Peter Krebill						Project	Coordinator:	-		
Standard:	FCC 15.247,	, 15.407, F	EN 55022, FC	С В				Class:	A		
Run:2d	-	211	· · ·	-							
Radio #	Frequency	CH 1	Mode	Pwr 24							
0 10	2412 2462	ו 11	802.1111∠0 802.11n20	54 २ <u>४</u>							
14	5580	116	802.11n20 802.11n20	34							
2	5785	157	802.11n20	34							
Preliminary peak readings captured during pre-scan											
Frequency	Level	Pol	15.209 /	/ 15.247	Detector	Azimuth	Height	Comments			
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters				
922.303	46.1	H	78.3	-32.2	Peak	273	1.5	Limit is 30dE	3c from above		
31.430	42.0		/b.3 40.0	-33.7	Peak	163 205	1.0	Limit is Juan	3c from above		
31.002 13 532	42.0		40.0 76.3		Peak	300	1.0	Limit is 30dF	Do from above		
74 576	24 8	v	40.0	-25.7	Peak	145	1.0				
112.815	29.2	V V	43.5	-14.3	Peak	107	1.0	+			
							1	<u> </u>			
Maximized	juasi-peak r	eadings	15.000		•	<u> </u>	····	<u> </u>			
Frequency	Level	Pol	15.209 /	15.247	Detector	Azimuth	Height	Comments			
MHZ	dBµV/m	v/n		Margin	Pk/QP/Avg	degrees	meters				
71 576	20.3 24.5		43.0 40.0	-15.2		1/5	1.0				
27 552	24.5 31 <u>/</u>		40.0	-10.0		307	1.0				
01.002	<u> </u>	v	1 40.0	-0.0	ן יא ן		1.0				

	EMC Test Data											
Client:	Xirrus							Job Number: J93457				
	VD0000						T-	Log Number: T93459				
Model:	XK2000H						Project Manager: Christine Krebill					
Contact:	Peter Krebill						Project	Coordinator: -				
Standard:	FCC 15.247	, 15.407, E	EN 55022, FC	C B				Class: A				
Run:2e												
Radio #	Frequency	СН	Mode	Pwr								
6	5755	151	802.11n40	34								
10	5795	159	802.11n40	34								
14	5550	110	802.11n40	34								
2	2437	b	ou2.11n40	34								
60.0 50.0 50.0 40.0 20.0 10.0 30.0 100.0 Frequency (MHz)												
Preliminary	peak readir	ngs captu	red during p	re-scan								
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments				
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters					
32.051	43.9	V	76.3	-32.4	Peak	203	1.0	Limit is 30dBc from above				
37.546	36.3	V	40.0	-3.7	Peak	18	1.0					
43.526	46.9	V	76.3	-29.4	Peak	285	1.0	Limit is 30dBc from above				
/4.576	24.9	V	40.0	-15.1	Peak	257	1.0					
117.082	28./		43.5	-14.8	Peak	127	1.5	Limitia 20dDa francistaria				
000 700	45.3		10.3	-33.0	Peak	309	1.5	LIMIT IS JUDEC FOR ADOVE				
990.798	J1.U	П	J4.U	-3.0	Реак	JQ	2.5	I				
Maximized	quasi-peak	readings										
Frequency	Level	Pol	15.209	/ 15.247	Detector	Azimuth	Height	Comments				
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters					
37.546	35.9	V	40.0	-4.1	QP	16	1.0	QP (1.00s)				
74.576	25.0	V	40.0	-15.0	QP	254	1.0	QP (1.00s)				
117.082	28.9	Н	43.5	-14.6	QP	123	1.5	QP (1.00s)				
990.798	46.3	Н	54.0	-7.7	QP	64	1.2	QP (1.00s)				

		R SUCCESS			EMC Test Data						
Client:	Xirrus				Job Number:	J93457					
Model	VD000H				T-Log Number:	T93459					
	XK2000ri				Project Manager:	Christine Krebill					
Contact:	Peter Krebil				Project Coordinator:						
Standard:	FCC 15.247	', 15.407, EN	55022, FCC	; В	Class:	N/A					
Test Spec General T The EUT an For radiated Ambient (RSS 210 and FCC 15.407 (UNII) Radiated Spurious Emissions Test Specific Details Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above. General Test Configuration The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. For radiated emissions testing the measurement antenna was located 3 meters from the EUT, unless otherwise noted. Ambient Conditions: Temperature: 21.2 °C Rel. Humidity: 36 %										
Run #	Mode	.s Channel	Power Setti <u>ng</u>	Test Performed	Limit	Result / Margin					
20MHz Band	dwith Modes										
1	а	56 - 5280MHz	-tp 34	Band Edge 5250MHz	15E	73.9 dBµV/m @ 5248.9 MHz (-0.1 dB)					
	а	64 - 5320MHz	-tp 34	Restricted Band Edge at 5350 MHz	15.209	46.8 dBµV/m @ 5350.2 MHz (-7.2 dB)					
	а	100 - 5500MHz	-tp 34	Restricted Band Edge at 5460 MHz	15.209	46.6 dBµV/m @ 5440.0 MHz (-7.4 dB)					
2	а	100 - 5500MHz	-tp 34	Band Edge 5460 - 5470 MHz) 15E	60.4 dBµV/m @ 5468.0 MHz (-7.9 dB)					
	а	140 - 5700MHz	-tp 34	Band Edge 5725MHz	15E	59.7 dBµV/m @ 5762.4 MHz (-8.6 dB)					

EMC Test Data											
Client:	Xirrus				Job Number:	J93457					
	V D000011				T-Log Number:	T93459					
Model:	XR2000H				Project Manager:	Christine Krebill					
Contact:	Peter Krebil				Project Coordinator:	-					
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	В	Class:	N/A					
20MHz Ban	dwith Modes										
3	n20	56 - 5280MHz	-tp 34	Band Edge 5250MHz	15E	53.7 dBµV/m @ 5249.9 MHz (-0.3 dB)					
0	n20	64 - 5320MHz	-tp 34	Restricted Band Edge at 5350 MHz	15.209	48.4 dBµV/m @ 5350.0 MHz (-5.6 dB)					
	n20	100 - 5500MHz	-tp 34	Restricted Band Edge at 5460 MHz	15.209	46.1 dBµV/m @ 5440.0 MHz (-7.9 dB)					
4	n20	100 - 5500MHz	-tp 34	Band Edge 5460 - 5470 MHz	15E	61.8 dBµV/m @ 5464.0 MHz (-6.5 dB)					
	n20	140 - 5700MHz	-tp 34	Band Edge 5725MHz	15E	66.8 dBµV/m @ 5726.0 MHz (-1.5 dB)					
40MHz Ban	dwith Modes										
5	n40	62 - 5310MHz	-tp 30	Restricted Band Edge at 5250 MHz	15.209	63.0 dBµV/m @ 5247.6 MHz (-5.3 dB)					
Ŭ	n40	62 - 5310MHz	-tp 30	Restricted Band Edge at 5350 MHz	15.209	52.1 dBµV/m @ 5350.0 MHz (-1.9 dB)					
	n40	102 - 5510MHz	-tp 27	Restricted Band Edge at 5460 MHz	15.209	53.3 dBµV/m @ 5460.0 MHz (-0.7 dB)					
6	n40	102 - 5510MHz	-tp 27	Band Edge 5460 - 5470 MHz	15E	53.0 dBµV/m @ 5469.9 MHz (-1.0 dB)					
	n40	134 - 5670MHz	-tp 34	Band Edge 5725MHz	15E	59.8 dBµV/m @ 5755.5 MHz (-8.5 dB)					



WE ENGINEER SUCCESS									
Client:	Xirrus	Job Number:	J93457						
Madal	XD3000H	T-Log Number:	T93459						
MOUEI.		Project Manager:	Christine Krebill						
Contact:	Peter Krebill	Project Coordinator:	-						
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class:	N/A						

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.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
802.11a	6	0.96	Yes	1.35	0.16	0.32	740.74074
802.11n20	MCS0	0.97	Yes	1.27	0.13	0.27	787.40157
802.11n40	MCS0	0.90	Yes	0.6	0.48	0.96	1666.6667

Sample Notes

Sample S/N: 20:0C:7D Driver: Antenna: Dipole (x8)

Measurement Specific Notes:

Note 1:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method
	required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Per KDB 789033 2) c) (i), compliance can be
	demonstrated by meeing the average and peak limits of 15.209, as an alternative.
Nata 0	Emission has duty cycle < 98%, but constant, average measurement performed: RBW=1MHz, VBW=10Hz, peak detector,
NOLE Z.	linear averaging, auto sweep, trace average 100 * 1/DC traces, measurement corrected by Linear Voltage correction factor
Note 2	Plots of the average bandedge do not account for any duty cycle correction. Refer to the tabluar results for final
Note 5.	measurements.

	EMC Test Data										
Client:	Xirrus							Job Number:	J93457		
							T-I	Log Number:	T93459		
Model:	XR2000H						Project Manager: Christine Krebill				
Contact:	Peter Krehill						Project Manager: Onlistine Rebin				
Standard:	FCC 15 2/7	15/07 EN	55022 ECC	B			Појсог	Clase:	NI/Δ		
Standard.	100 10.241	, 10. 1 07, LN	55022,100	D				01033.	N/7		
Run #1: Radiated Bandedge Measurements, 5250-5350MHz											
Date of Test: 9/30/2013 17:00 Config. Used: 1											
Te	st Engineer:	David Bare			Con	fig Change:	None				
Te	est Location:	Fremont Ch	amber #5		E	UT Voltage:	POE				
Charrent											
Unannel:	SD - 528UM	ΠZ									
nx Unam. Mode:	All - Raulo 0	1									
Data Rate [.]	6										
Power settin	g: Tx Power	34 (Commai	nd Line)								
	0	,	,								
5250 MHz B	Band Edge S	Signal Radia	ted Field Sti	ength							
Based on KI	DB 789033 D)01 v01r03 (H	H) 2.c.i					•			
Frequency	Level	Pol	FCC 1	5.209	Detector	Azimuth	Height	Comments			
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters				
5248.860	73.9	V	74.0	-0.1	PK	0	1.5	POS; RB 1	MHZ; VB: 3 MHZ		
5249.990	52.U	V 	54.0	-2.0	AVG	U 110	1.5		MHZ; VB: 10 HZ, Note 3		
5249.920	4J.4 64.0	H	74.0	-0.0	PK	110	1.3	POS: RB 1	MHz: VB: 3 MHz		
0240.400	04.0		14.0	10.0		110	1.0	100,101			
RB 1 MHz; 90.0	; VB 10 Hz A	vg (Black); F	RB 1 MHz; VE) 3 MHz; Pk	(Blue) Vertica	ıl					
80.0 ਵਿ	_										
70.0	-								WWW. MANANA H		
1 Å 2 60.0	_						A start	W AMONIO .			
Line Line	Alleret have	moundarch	human	ala di chanada	a Mar Mar Indea	mappendar	hr Manuta				
50.0		1.0.0.00		·							
40.0 5	40.0- 5210 5215 5220 5225 5230 5235 5240 5245 5250 Frequency (MHz)										



EMC Test Data									
Client:	Xirrus			J93457					
									Т93459
Model:	XR2000H			Project Manager: Christine Krebill					
Contact:	Peter Krebill		Project Coordinator: -						
Standard:	FCC 15.247	, 15.407, EN	Class: N/A						
Date of Test: 9/30/2013 17:00Config. Used: 1Test Engineer: Rafael VarelasConfig Change: NoneTest Location: Fremont Chamber #5EUT Voltage: POE									
Channel: Tx Chain:	64 - 5320MH All - Radio 6	łz							
Data Rate: Power settir	a 6 ig: Tx Power	34 (Commar	nd Line)						
5350 MHz E	Band Edge S	ignal Radia	ted Field Stı	ength					
Frequency	Level	Pol	FCC 1	5.209	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
5350.240	46.8	V	54.0	-7.2	AVG	229	1.4	POS; RB 1	MHz; VB: 10 Hz, Note 3
5351.600	66.5	V	74.0 54.0	-7.5	PK	229	1.4	POS; RB 1	MHz; VB: 3 MHz MHz: VB: 10 Hz, Noto 3
5379.740	56.2	H	74.0	-9.0	PK	314	1.0	POS; RB 1	MHz; VB: 10 Hz, Note 5
5379.740 56.2 H 74.0 -17.8 PK 314 1.0 POS; RB 1 MHz; VB: 3 MHz RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; Pk (Blue) Vertical 80.0 60.0									

Client: Xirrus			EMC Test Data								
		Job Number:	J93457								
Model: XR2000H	XR2000H										
Contact: Peter Krebill	Peter Krebill										
Standard: ECC 15 247 15 407 EN 55022 ECC B		N/A									
Run #2: Radiated Bandedge Measurements 5470-5725MHz											
Date of Test: 9/30/2013 17:00 Config. Used: 1											
Test Engineer: Rafael Varelas	Config Change:	None									
Test Location: Fremont Chamber #5	EUT Voltage:	POE									
Channel: 100 - 5500MHz Tx Chain: All - Radio 6											
Mode: a											
Data Rate: 6											
Power setting: Tx Power 34 (Command Line)											
5460 MHz Band Edge Signal Radiated Field Strength	r Azimuth	Hoight	Commonto								
MHz dBu\//m v/h Limit Margin Pk/OP/A	va dearees	meters	Comments								
5440.040 46.6 V 54.0 -7.4 AVG	289	1.4	POS: RB 1 I	MHz: VB: 10 Hz. Note 3							
5435.150 57.2 V 74.0 -16.8 PK	289	1.4	POS; RB 1 I	MHz; VB: 3 MHz							
5420.720 44.7 H 54.0 -9.3 AVG	315	1.6	POS; RB 1 I	MHz; VB: 10 Hz, Note 3							
5428.740 55.8 H 74.0 -18.2 PK	315	1.6	POS; RB 1 I	MHz; VB: 3 MHz							
5428.740 55.8 H 74.0 -18.2 PK 315 1.6 POS; RB 1 MHz; VB: 3 MHz RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; VB 10 Hz Avg (Black); RB 1 Mz; VB 10 Hz Avg (Black); RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 10 Hz Avg (Black); RB 1 Mz; VB 10 Hz Avg (Black); RB 10 Hz ; VB 10 Hz Avg (Black); RB 10 Hz ; VB											



Client:	Xirrus	Job Number:	J93457
Madalı	XD3000H	T-Log Number:	Т93459
MOUEI.		Project Manager:	Christine Krebill
Contact:	Peter Krebill	Project Coordinator:	-
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class:	N/A

5470 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15	i.E	Detector	etector Azimuth Height		Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5468.020	60.4	V	68.3	-7.9	PK	241	1.3	POS; RB 1 MHz; VB: 3 MHz
5467.330	57.3	Н	68.3	-11.0	PK	315	1.6	POS; RB 1 MHz; VB: 3 MHz



EMC Test Data										
Clie	ent:	Xirrus			Job Number: J93457					
					T-Log Number: T93459					
Moo	del:	XR2000H			Project Manager: Christine Krebill					
Conta	act:	Peter Krebill			Project Coordinator: -					
Standa	ard:	FCC 15.247	. 15.407. EN	55022. FCC	Class: N/A					
Channel: 140 - 5700MHz Tx Chain: All - Radio 10 Mode: a Data Rate: 6 Power setting: Tx Power 34 (Command Line)										
5725 IVIE		and Edge S	Pol	iea Fiela Sil 15	<i>engin</i> S F	Detector	∆zimuth	Height	Comments	
MHz	су	dBuV/m	v/h	Limit	Margin	Pk/QP/Ava	dearees	meters	Comments	
5762.44	40	59.7	V	68.3	-8.6	PK	354	1.8	POS; RB 1 I	MHz; VB: 3 MHz
5759.32	10	56.5	Н	68.3	-11.8	PK	7	1.0	POS; RB 1 I	MHz; VB: 3 MHz
8 7 7 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10	0.0· 0.0· 0.0· 0.0·									
					Fr	equency (MH	z)			

EMC Test Data												
C	lient:	Xirrus							Job Number:	J93457		
Madel: VP2000H								T-Log Number: T93459				
									Project Manager: Christine Krebill			
Cor	ntact:	Peter Krebill			Project Coordinator: -							
Stan	dard:	FCC 15.247	. 15.407. EN	Class: N/A								
Run #3: Radiated Bandedge Measurements, 5250-5350MHz Previous testing shows Vertial antenna polarizarization is worst case Date of Test: 9/30/2013 17:00 Config. Used: 1 Test Engineer: David Bare Config Change: None Test Location: Fremont Chamber #5 EUT Voltage: POE												
Chann Tx Cha Mode: Data R Power 5250 M	Channel: 56 - 5280MHz Tx Chain: All - Radio 2 Mode: n20 Data Rate: MCS0 Power setting: Tx Power 34 (Command Line) <i>5250 MHz Band Edge Signal Radiated Field Strength</i>											
Based	on Kl	DB 789033 D	01 v01r03 (I	H) 2.c.i	E 000	Detector	A _:	11	O a man a m ta			
Frequ M∟	ency	Level	P0I v/b	FUU	5.209 Margin	Detector	Azimuth	Height	Comments			
5249	920	οσμν/m 53.7	V	54 0	-0.3	AVG	n n	1.5	POS' RB 1	MHz· VB· 10 Hz Note 3		
5248.	.930	73.6	V	74.0	-0.4	PK	0	1.5	POS; RB 1	MHz; VB: 3 MHz		
RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3 MHz; Pk (Blue) Vertical 105.3 60.0 60.0 40.0 20.0 20.0 -20.0 -30.0 5210 5215 5215 5220 5210 5215 5210 5215 5210 5215 5210 5215 5210 5215 5210 5220 5220 5225 5230 5235 5240 5245												


XX			SUCCESS						EM	C Test Dat	
C	lient:	Xirrus							Job Number:	J93457	
								T-I	Log Number:	T93459	
M	lodel:	ect Manager:	Christine Krebill								
Coi	ntact:	Peter Krebill						Project	Coordinator:	-	
Stan	dard:	FCC 15.247	, 15.407, EN	55022, FCC	В				Class:	N/A	
Run #4	Run #4: Radiated Bandedge Measurements, 5470-5725MHz										
	Date of Test: 10/1/2013 8:20 Config. Used: 1										
	Test Engineer: David Bare Config Change: None										
	Test Location: Fremont Chamber #5 EUT Voltage: POE										
Chann	el:	100 - 5500N	1Hz								
Tx Cha	Fx Chain: All - Radio 2										
Mode:	Aode: n20										
Data R	Data Rate: MCS0										
Power	'ower setting: Tx Power 34 (Command Line)										
5460	3460 MHz Band Edge Signal Radiated Field Strength										
Frequ	requency Level Pol FCC 15.209 Detector Azimuth Height Comments										
M⊦	MHz dBμV/m v/h Limit Margin Pk/QP/Avg degrees meters										
5439	.960	46.1	V	54.0	-7.9	AVG	289	1.1	POS; RB 1	MHz; VB: 10 Hz, Note	
5422.	.320	57.8	V	74.0	-16.2	PK	289	1.1	POS; RB 1	MHz; VB: 3 MHz	
RB 1	MHz;	VB 10 Hz A	vg (Black); F	RB 1 MHz; VE	3 MHz; Pk	(Blue) Vertica	I				
	70.0	-									
	65.0	-									
1 Q	60.0	_									
Å	00.0	alus in usal	all and a	Carlo Carlos	. A state					d	
은 은	55.0		run vil Maria Vi	naryaphiwaj	Minuhadad	hannen under heren her Heren heren	ryunya ayan y	<u>የና የባለት የስለ የ</u>	hardred and	Contraction forth	
olitic	E0 0										
Am A	50.0										
	45.0						· · ·	· · · ·			
	40.0	-¦		5430	5435	5440	5445	5450	5455	5460	
	-				Fre	equency (MH	z)		0.00		
	······································										





		SUCCESS						EM	C Test Data			
Client:	Xirrus							Job Number:	J93457			
							T-Log Number: T93459					
Model:	XR2000H						Project Manager: Christine Krebill					
Contact:	Peter Krebill						Project	Coordinator:	-			
Standard:	FCC 15.247	. 15.407. EN	55022. FCC	В			- j	Class:	N/A			
		, ,	,									
Run #5: Ra	Run #5: Radiated Bandedge Measurements, 5250-5350MHz											
Date of Test: 9/30/2013 0:00 Config. Used: 1												
Te	Test Engineer: Rafael Varelas Config Change: None											
Test Location: FT Chamber #5 EUT Voltage: POE												
Channel: Tx Chain: Mode: Data Rate: Power settin 5250 MHz E	Channel: 62 - 5310MHz x Chain: All - Radio 6 lode: n40 Data Rate: MCS0 Power setting: Tx Power 30 (Command Line)											
Frequency	requency Level Pol FCC 15.209 Detector Azimuth Height Comments											
MHz	MHz dBμV/m v/h Limit Margin Pk/QP/Avg degrees meters											
5247.600	63.0	V	68.3	-5.3	PK	101	1.0	POS; RB 1	MHz; VB: 3 MHz			
324/.000 03.0 V 08.3 -5.3 PK 101 1.0 PUS; RB1MHz; VB:3 MHz RB 1 MHz; VB 3 MHz Pk (Blue) Vertical												

		SUCCESS						EM	C Test Data			
Client	Xirrus			·				Job Number:	J93457			
Madal	odel: XR2000H T-Log Number: T93459 Project Manager: Christine Krebill											
Moder	XR2000H					F	Proj	ect Manager:	Christine Krebill			
Contact	Contact: Peter Krebill Project Coordinator: -											
Standard: FCC 15.247, 15.407, EN 55022, FCC B Class: N/A												
5350 MHz Band Edge Signal Radiated Field Strength												
Frequency	Level	Pol	FCC 1	15.209	Detector	Azimuth	Height	Comments				
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters					
5350.000	52.1	V	54.0	-1.9	AVG	101	1.0	POS; RB 1	MHz; VB: 10 Hz, Note 3			
5350.400	65.2	V	74.0	-8.8	PK	101	1.0	POS; RB 1	MHz; VB: 3 MHz			
RB 1 MHz 70.0 65.0 (a) 60.0 (a) 60.0 (b) 900 900	;; VB 10 Hz A	vg (Black); F	(B 1 MHz; VB	3 MHz; Pk	(Blue) Vertica	1 5375 z)	5380	5385	5390			

			SUCCESS						EM	C Test Data		
С	lient:	Xirrus							Job Number:	J93457		
		VD0000LL		T-	T93459							
IVI	odel:	XR2000H				Project Manager: Christine Krebill						
Con	ntact:	Peter Krebill				Project Coordinator: -						
Stand	dard:	FCC 15.247	, 15.407, EN	55022, FCC	В				Class:	N/A		
								1		I		
Run #6	Run #6: Radiated Bandedge Measurements, 5470-5725MHz											
	Date of Test: 10/1/2013 9:20 Config. Used: 1											
Date of Lest: 10/1/2013 9:20 Config. Used: 1 Test Engineer: David Bare Config Change: None												
	Te	est Location:	Fremont Ch	amber #5		E	UT Voltage:	POE				
Channel: 102 - 5510MHz												
Tx Chain: All - Radio 2												
Node:	Mode: n40 Data Pata: MCS0											
Power	Data Rate: MCS0 Power setting: Tx Power 27 (Command Line)											
	rower setting: Tx Power 27 (Command Line)											
5460 N	5460 MHz Band Edge Signal Radiated Field Strength											
Freque	Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments											
MH	Z	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	D00 DD 4			
5460.	000 520	53.3 67.7	V	54.0 74.0	-0.7	AVG	0	1.5	POS; RB 1	MHZ; VB: 10 HZ, NOTE 3		
5459.	JZU	07.7	V	74.0	-0.5	ΓN	0	1.0	FU3, ND 1			
DB 1	MHz	VB 10 Hz A	va (Black): B		3 MHz+ Dk	(Blue) Vertica	.1					
	11112,	, VD 10112 A	vy (black), r	(011012,90) () ((12) FK)	(Dide) verdice	II					
	70.0	-										
	65 O	_							. HIL	" MAMM		
	00.0							In Allak	A MARK	Y		
<u>لا</u>	60.0	-			1. In the	r thatthe	AND LIK AND AN	ALLAND THE THE	· 1.1.1			
e		where we are a second	mound	Number	WWWW	M. Andrew Ma	distance dation					
р Р	55.0	-										
blite Life	50.0	_										
F ⊢ F										-		
	45.0	-										
	40.0	_										
	5	420	5425	5430	5435	5440	5445	5450	5455	5460		
					Fre	equency (MH	z)					



Client: Xii Model: XF Contact: Pe	irrus R2000H	JUCUES5						EIVIO	
Model: XF Contact: Pe	R2000H							Job Number:	J93457
Model: XF Contact: Pe Standard: FC	R2000H						T-	Log Number:	T93459
Contact: Pe							Proje	ect Manager:	Christine Krebill
Standard FC	eter Krebill						Project	Coordinator:	-
	CC 15.247,	15.407, EN	55022, FCC	В				Class:	N/A
hannel: 13 x Chain: All lode: ata Rate: ower setting:	34 - 5670M II - Radio 10 n40 MCS0 Tx Power	Hz) 34 (Commar	nd Line)						
725 MHz Ban	nd Edge Si	ignal Radia	ted Field Str	ength	Detector	Arringuth	Hoight	Commonto	
MH ₇	dBu\//m	P01	Limit	.⊏ Margin	Detector Dk/OD/Ava	Azimutn	meters	Comments	
5755 540	обрулп 59.8	V	68.3	-8.5	PK	88	13	POS [,] RB 11	MHz [.] VB [.] 3 MHz
U/ngp) 65.0	hangan Martin ya	Norwill Way	AN AN AN		he for the form		ANN MAN	1944-441-44 Marty Adama	WWWW
40.0- 572	25 !	5730	5735	5740 Fr	5745 equency (MH:	5750 z)	5755	5760	5765

EMC Test Data

		SUCCESS				EMO	C Test Data			
Client:	Xirrus					Job Number:	J93457			
Madal						T-Log Number:	T93459			
Model.						Project Manager:	Christine Krebill			
Contact:	Peter Krebil					Project Coordinator:	-			
Standard: FCC 15.247, 15.407, EN 55022, FCC B Class: N/A										
RSS 210 and FCC 15.407 (UNII) Radiated Spurious Emissions Test Specific Details Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above. General Test Configuration The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. For radiated emissions testing the measurement antenna was located 3 meters from the EUT, unless otherwise noted. Ambient Conditions: Temperature: 20.8 °C Rel. Humidity: 39 %										
Summary	of Result	S								
Run #	Mode	Channel	Power Setting		Test Performed	Limit	Result / Margin			
Operating v	vithin 5250-	5350 MHz								
1	802.11a 802.11b	See Below	See Below		Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	67.1 dBµV/m @ 10521.3 MHz (-1.2 dB)			
	802.11a 802.11b	See Below	See Below		Radiated Emissions, 4500 - 5150 MHz	FCC 15.209 / 15 E	See above			
0	802.11n20 802.11n 802.11nb See Below See Below				Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	53.6 dBµV/m @ 10600.0 MHz (-0.4 dB)			
2	802.11n20 802.11b	See Below	See Below		Radiated Emissions, 4500 - 5150 MHz	FCC 15.209 / 15 E	See above			
3	802.11a 802.11a	See Below	See Below		Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	53.5 dBµV/m @ 10600 9 MHz (-0 5 dB)			

802.11n20

802.11n20

802.11n40 802.11n20

802.11n40

802.11n20

802.11n40

802.11n20

See Below

See Below

See Below

See Below

See Below

See Below

See Below See Below

4

5

6

Radiated Emissions,

1 - 40 GHz

Radiated Emissions,

1 - 40 GHz

Radiated Emissions,

4500 - 5150 MHz

Radiated Emissions,

1 - 40 GHz

66.7 dBµV/m @ 6318.5

MHz (-1.6 dB)

67.4 dBµV/m @

10533.0 MHz (-0.9 dB)

See above

66.2 dBµV/m @

10537.0 MHz (-2.1 dB)

FCC 15.209 / 15 E

		SUCCESS				EMC	Test Data
Client:	Xirrus					Job Number: J9	3457
						T-Log Number: T9	03459
Model:	XR2000H					Project Manager: Ch	nristine Krebill
Contact:	Peter Krebill					Project Coordinator: -	
Standard:	FCC 15.247,	15.407, E	EN 55022, FCC E	3		Class: N/	A
	,	·					
System Con	figuration:	O	perating within	5250-5350 MHz			
Radio #	Frequency	СН	Mode	Pwr			
Run: 1	5000	50	000.44				
2	5260	52	802.11a	34			
6	5300	60	802.11a	34			
10	5320	64	802.11a	34			
14	2437	6	802.11b	34			
Run: 2	5000	50	000 11-00	24			
2	5260	52	802.11020	34			
6	5300	60	802.11n20	34			
10	5320	64	802.11h20	34			
14	2437	6	802.110	34			
Run: 3	5000	50	000 11-	20			
2	5260	52	802.11a	32			
6	5300	60	802.11a	32			
10	5320	64	802.11a	34			
14 Dun 4	5785	157	802.11a	34			
	5260	50	000 11-00	24			
2	5200	5Z 60	002.111120 902.11n20	34 24			
0	5300	60 64	002.111120 902.11n20	34 24			
10	5320	04 157	002.111120 902.11n20	34 24			
14 Dupi E	5765	107	002.111120	34			
Run. 5	5270	54	802 11p/0	34			
6	5210	54 62	802.11140 802.11n40	34			
10	5755	151	802.11140 802.11n40	34			
10	5785	151	802.11140 802.11n20	34			
Dup: 6	5765	157	002.11120	54			
xun. 0	5270	54	802 11p/0	34			
6	5210	54 62	802.11140 802.11n40	34			
10	2422	02 3	802.111140 802.11n40	34			
1/	2422	6	802.11140 802.11n20	34			
14	2401	0	002.11120	Ът			
Notes - Mult power, trans	tiple radios ope smitting on all o	erating at chains.	the same time a	as shown above.	In all cases, power se	et to the maximum worse o	case single channel

	EMC	Test	Data
--	-----	------	------

		SUCCESS			EM	C Test Data
Client:	Xirrus				Job Number:	J93457
Madalı					T-Log Number:	T93459
woder.					Project Manager:	Christine Krebill
Contact:	Peter Krebill				Project Coordinator:	-
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	В	Class:	N/A
Run #	Mode	Channel	Power Setting	Test Performed	Limit	Result / Margin
Operating v	within 5470-	5725 MHz				-
7	802.11a 802.11b	See Below	See Below	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	51.6 dBµV/m @ 11003.7 MHz (-2.4 dB)
	802.11a 802.11b	See Below	See Below	Radiated Emissions, 4500 - 5150 MHz	FCC 15.209 / 15 E	See above
0	802.11n20 802.11b	See Below	See Below	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	52.1 dBµV/m @ 10998.5 MHz (-1.9 dB)
0	802.11n20 802.11b	See Below	See Below	Radiated Emissions, 4500 - 5150 MHz	FCC 15.209 / 15 E	See above
9	802.11a 802.11a	See Below	See Below	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	53.2 dBµV/m @ 10998.6 MHz -0.8 dB)
10	802.11n20 802.11n20	See Below	See Below	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	53.1 dBµV/m @ 10998.5 MHz (-0.9 dB)
11	802.11n40 802.11n20	See Below	See Below	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	50.2 dBµV/m @ 11015.9 MHz (-3.8 dB)
	802.11n40 802.11n20	See Below	See Below	Radiated Emissions, 4500 - 5150 MHz	FCC 15.209 / 15 E	See above
12	802.11n40 802.11n20	See Below	See Below	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	53.5 dBµV/m @ 11014.1 MHz (-0.5 dB)

		SUCCESS				EM	C Test Data
Client:	Xirrus					Job Number:	J93457
						T-Loa Number:	T93459
Model:	XR2000H					Project Manager:	Christine Krebill
Contact	Peter Krebill					Project Coordinator:	-
Standard	FCC 15.247	15.407. E	N 55022, FCC F	3		Class:	N/A
System Cor	nfiguration:	Op	perating within	5470-5725 MHz			
Radio #	Frequency	СН	Mode	Pwr			
2	5500	100	802 11a	32			
10	5580	116	802.11a	34			
14	5700	140	802.11a	34			
6	2437	6	802.11b	34			
Run: 8	2101	Ũ	002.110	01			
2	5500	100	802.11n20	31			
10	5580	116	802.11n20	34			
14	5700	140	802.11n20	34			
6	2437	6	802.11b	34			
Run: 9							
2	5500	100	802.11a	32			
10	5580	116	802.11a	34			
14	5700	140	802.11a	34			
6	5785	157	802.11a	34			
Run: 10							
2	5500	100	802.11n20	31			
10	5580	116	802.11n20	34			
14	5700	140	802.11n20	34			
6	5785	157	802.11n20	34			
Run: 11							
2	5510	102	802.11n40	34			
6	5550	110	802.11n40	34			
10	5670	134	802.11n40	34			
14	5785	157	802.11n20	34			
Run: 12							
2	5510	102	802.11n40	34			
6	5550	110	802.11n40	34			
10	5670	134	802.11n40	34			
14	2437	6	802.11n20	34			
Notes - Mul power, trans	tiple radios ope smitting on all o	erating at chains.	the same time a	is shown above.	In all cases, power s	et to the maximum wors	se case single channel



EMC Test Data

Client:	Xirrus	Job Number:	J93457
Madal	XD3000H	T-Log Number:	Т93459
Model:		Project Manager:	Christine Krebill
Contact:	Peter Krebill	Project Coordinator:	-
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class:	N/A

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.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033

Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time

Unless otherwise stated/noted, emissions had duty cycle < 98%, but constant, average measurement performed: RBW=1MHz,

VBW=10Hz, peak detector, linear averaging, auto sweep, trace average 100 traces, measurement corrected by Linear Voltage correction factor.

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11b	1Mb/s	0.99	Yes	4.02	0.0	0.0	249
11a	MB/s	0.96	Yes	1.35	0.2	0.3	741
11n20	MCS	0.97	Yes	1.27	0.1	0.3	787
11n40	MCS	0.90	Yes	0.6	0.5	1.0	1667

Sample Notes

Sample S/N: 20:0C:7D Driver: Antenna: (x8) Dipole

Measurement Specific Notes:

Note 1:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Per KDB 789033 2) c) (i), compliance can be demonstrated by meeing the average and peak limits of 15.209, as an alternative.
Note 2:	Emission has duty cycle < 98%, but constant, average measurement performed: RBW=1MHz, VBW=10Hz, peak detector, linear averaging, auto sweep, trace average 100 * 1/DC traces, measurement corrected by Linear Voltage correction factor

		ICCESS					EM	C Test	Data
Client:	Xirrus					Jo	b Number:	J93457	
M	VD000011					T-Lo	g Number:	T93459	
Model:							t Manager:	Christine Kre	ebill
Contact:	Contact: Peter Krebill						oordinator:	-	
Standard: FCC 15.247, 15.407, EN 55022, FCC B							Class:	N/A	
Run #1, Rac [Te Te	diated Spurious Date of Test: 9/2 st Engineer: Ra est Location: Fre	s Emissions 7/2013 0:00 fael Varelas emont Cham	s, 1,000 - 40,0 ber#5	000 MHz. Op	Deration in the 5250- Config. Used: Config Change: EUT Voltage:	5350 MHz Ban 1 None POE	d, 802.11a	/b	
Radio # 2 6 Tx Chain: Run #1a: R	Frequency 5260 5300 2x2 adiated Spurio	CH Mo 52 80 60 80 us Emissio	ode 2.11a 2.11a ns, 1,000 - 4(Pwr 34 34 0000 MHz.	Radio # 10 14	Frequency 5320 2437	CH 64 6	Mode 802.11a 802.11b	Pwr 34 34
80.0 70.0 (w/\ngp) = 50.0 100 20.0 1				Frequ	ency (MHz)				

Client: Model:	Xirrus			· · · · · · · · · · · · · · · · · · ·					
Model:	+							Job Number:	J93457
Modei:	L'ESSAGUL						T-'	Log Number:	T93459
<u> </u>	XR2000H					ŀ	Proj	ect Manager:	Christine Krebill
Contact:	Peter Krebill						Project	Coordinator:	-
Standard:	FCC 15.247,	15.407, EN	55022, FCC	; B				Class:	N/A
90.0	-								•••••
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Ê 70.0	-	- H							
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20.0	-	0 13000	13500 14	000 14500	15000 1	5500 1600	16500	17000 17	500 18000
	1000 12000) 15005	15500 1.5	500 15365 Fr/	equency (MH	z)	0 10500	17000 17.	300 10000
						·			
Frequency	Level	Pol	15.209	Э / 15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
10521.300	67.1	V	68.3	-1.2	PK	198	1.4	RB 1 MHz;V	B 3 MHz;Peak
10600.090	48.9	<u> </u>	54.0	-5.1	AVG	150	1.0	RB 1 MHz;v	B 10 Hz;Peak
10601.880	60.4	<u> </u>	74.0	-13.6	PK	150	1.0	RB 1 MHz;V	B 3 MHz;Peak
4873.950	49.6	V	54.0	-4.4	AVG	186	1.4	RB 1 MHz;V	B 10 Hz;Peak, Note 2
4873.970	53.2	V	74.0	-20.8	PK	186	1.4	RB 1 MHz;V	B 3 MHz;Peak
2828.420	49.0	V	54.0	-5.0	AVG	215	1.1	RB 1 MHz;V	B 10 Hz;Peak
2825.960	59.7	V	74.0	-14.3	PK	215	1.1	RB 1 MHz;V	B 3 MHz;Peak
2883.040	43.4	V	54.0	-10.6	AVG	191	1.0	RB 1 MHz;V	B 10 Hz;Peak
2886.870	54.2	V	74.0	-19.8	PK	191	1.0	RB 1 MHz;V	B 3 MHz;Peak
10639.680	51.4	<u> </u>	54.0	-2.6	AVG	225	1.1	RB 1 MHz;V	B 10 Hz;Peak
10635.230	62.7	H	74.0	-11.3	PK	225	1.1	RB 1 MHz;V	B 3 MHz;Peak
5000.040	44.6	V	60.0	-15.4	AVG	296	1.3	Digital Bus F	mission, Class A limits
5000.000	49.5	V	80.0	-30.5	PK	296	1.3	Digital Bus F	mission, Class A limits
5421.410	41.9	V	54.0	-12.1	AVG	347	1.6	RB 1 MHz;V	B 10 Hz;Peak
5419.660	51.8	V	74.0	-22.2	PK	347	1.6	RB 1 MHz;V	B 3 MHz;Peak
Note:	Scans made	between 18	- 40 GHz wit	th the measu	Jrement anter	ina moved a	round the E	UT and its an	tennas 30cm from the
Noto 1:		ieu inere we	d bonds the	Jimit of 15 C				and nook ma	
NOLE T.	FOI emission	S III resulue	d banus, the	d hands the	U9 was used y				asurements.
1		S OULSIGE OF		J Danus me i	ITTIL IS -ZTUDI		00.30Du v/m	1). Hie meas	drement method
Note 2:		- ack model			MUT nook	l-tootor)	N N	/	





		SUCCESS						EM	C Test Data
Client:	Xirrus							Job Number:	J93457
							T-I	_og Number:	T93459
Model:	XR2000H						Proje	ect Manager:	Christine Krebill
Contact:	Peter Krebill						Project	Coordinator:	-
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	B				Class:	N/A
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90.0	-								
£ 70.0	-		-				-		
<u>~</u> 위 60.0	_								
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D.00									
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20.0	-¦ ; ; ; ; ; ; ; 2000 - 1250	0 13000	13500 14	;;;;;;; 000 14500	· · · ; · · · · · · · · · · · · · · · ·	. ; ; 5500 - 1600	16500 16500	17000 17	500 18000
-	2000 1200	- 10000	10000 11	Fri	equency (MH	z)		1.000 1.	
Frequency	Level	Pol	15.20	9 / 15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
10600.020	53.6	H	54.0	-0.4	AVG	74	1.7	RB 1 MHz;V	/B 10 Hz;Peak
10600.870	66.1	Н	74.0	-7.9	PK	74	1.7	RB 1 MHz;V	/B 3 MHz;Peak
4999.960	44.8	V	60.0	-15.2	AVG	307	1.4	Digital Bus I	mission, Class A limits
5000.040	51.0	V	80.0	-29.0	PK	307	1.4	Digital Bus I	Emission, Class A limits
2858.110	51.7	V	54.0	-2.3	AVG	247	1.3	RB 1 MHz;∖	'B 10 Hz;Peak
2858.580	61.8	V	74.0	-12.2	PK	247	1.3	RB 1 MHz;∖	'B 3 MHz;Peak
10639.460	51.7	V	54.0	-2.3	AVG	205	1.3	RB 1 MHz;∖	'B 10 Hz;Peak
10641.210	63.2	V	74.0	-10.8	PK	205	1.3	RB 1 MHz;∖	'B 3 MHz;Peak
2819.440	50.4	V	54.0	-3.6	AVG	227	1.2	RB 1 MHz;∖	/B 10 Hz;Peak
2818.630	61.9	V	74.0	-12.1	PK	227	1.2	RB 1 MHz;∖	'B 3 MHz;Peak
5414.340	42.7	V	54.0	-11.3	AVG	183	1.6	RB 1 MHz;∖	'B 10 Hz;Peak
5413.470	53.6	V	74.0	-20.4	PK	183	1.6	RB 1 MHz;∖	/B 3 MHz;Peak
4873.950	50.8	V	54.0	-3.2	AVG	162	1.3	RB 1 MHz;V	'B 10 Hz;Peak, Note 2
4873.990	53.9	V	74.0	-20.1	PK	162	1.3	RB 1 MHz;∖	'B 3 MHz;Peak
10522.210	67.3	V	68.3	-1.0	PK	155	1.0	RB 1 MHz;V	/B 3 MHz;Peak
Note:	Scans made device indica	between 18 ated there we	- 40 GHz wi ere no signifi	th the measu cant emissio	urement anter ns in this frec	nna moved a juency range	around the E	UT and its ar	tennas 30cm from the
Note 1:	For emission	ns in restricte	ed bands, the	limit of 15.2	09 was used	which requir	res average a	and peak me	asurements.
Note 2:	For emissior required is a	ns outside of peak measu	the restricte urement (RB	d bands the =1MHz, VB≥	limit is -27dBı :3MHz, peak	m/MHz eirp (detector).	(68.3dBuV/m). The meas	urement method
	÷			,					





EMC Test Data											
Client:	Xirrus							Job Number:	J93457		
						T-I	Log Number:	T93459			
Model:	XR2000H					Proje	ect Manager:	Christine Krebill			
Contact:	Peter Krebill					Project	Coordinator:	-			
Standard:	FCC 15.247	. 15.407. EN	55022. FCC	В		,	Class:	N/A			
90.0 80.0 (@/\ngp) 60.0 epnjitme 40.0 30.0	90.0 80.0 80.0 60.0 90.0 80.0 90.0 80.0 90.0 90.0 90.0 9										
20.0	30.0- 20.0- 12000 12500 13000 13500 14000 14500 15000 15500 16000 16500 17000 17500 18000 Frequency (MHz)										
	Level	P01	15.208 Limit	1/ IDE Marain	Detector	Azimuth	Height	Comments			
10600 870	α <u>σ</u> μν/m 53.5	V	54 0	-0.5	AVG	125	13	RB 1 MHz·V	'R 10 Hz·Peak		
10600.870	66.2	V	74.0	-7.8	PK	120	1.3	RB 1 MHz;V	B 3 MHz:Peak		
4735.530	50.1	V	54.0	-4.2	AVG	54	1.2	RB 1 MHz;V	'B 10 Hz;Peak		
4740.670	62.8	V	74.0	-11.2	PK	54	1.2	RB 1 MHz;V	B 3 MHz;Peak		
4999.980	46.7	V	60.0	-7.3	AVG	125	1.0	Digital Bus E	Emission, Class A limits		
5000.010	51.5	V	80.0	-22.5	PK	125	1.0	Digital Bus E	Emission, Class A limits		
4855.680	45.9	V	54.0	-8.4	AVG	151	1.0	RB 1 MHz;V	'B 10 Hz;Peak		
4860.260	56.7	V	74.0	-17.3	PK	151	1.0	RB 1 MHz;V	'B 3 MHz;Peak		
10518.670	65.2	Н	68.3	-3.1	PK	197	1.2	RB 1 MHz;V	'B 3 MHz;Peak		

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Client	: Xirrus							Job Number:	J93457
							T-	Log Number:	T93459
Model	XR2000H							ect Manager:	Christine Krebill
Contact	Peter Krebill							Coordinator:	-
Standard	: FCC 15.247	. 15.407. EN	55022. FCC	В			.,	Class:	N/A
		, ,	,						
Frequency	Level	Pol	15.20	9 / 15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
11564.280	48.1	V	54.0	-5.9	AVG	220	1.5	RB 1 MHz;\	/B 10 Hz;Peak
11564.880	59.3	V	74.0	-14.7	PK	220	1.5	RB 1 MHz;\	/B 3 MHz;Peak
10640.060	51.3	Н	54.0	-2.7	AVG	230	1.1	RB 1 MHz;\	/B 10 Hz;Peak
10639.910	63.4	Н	74.0	-10.6	PK	230	1.1	RB 1 MHz;\	/B 3 MHz;Peak
6318.380	67.0	V	68.3	-1.3	PK	265	1.3	RB 1 MHz;∖	/B 3 MHz;Peak
Note 2: Note 3: Note 4:	For emissior required is a 2500MHz is Power reduc	ns outside of peak meas a digital sign ed to setting	the restricte urement (RB nal from PCI 32 on radio	d bands the =1MHz, VB≥ bus. Refer to s 2 and 6	limit is -27dBr :3MHz, peak o test data for	n/MHz eirp (detector). Part 15B.	68.3dBuV/n	n). The meas	urement method

WE ENGINEER SUCCESS	EMC Test Data								
Client: Xirrus	Job Number: J93457								
	T-Log Number: T93459								
Model: XR2000H	Project Manager: Christine Krebill								
Contact: Peter Krebill	Project Coordinator: -								
Standard: FCC 15.247, 15.407, EN 55022, FCC B	Class: N/A								
Run #4, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5250-5350 MHz Band, 802.11n20 Date of Test: 9/27/2013 0:00 Config. Used: 1 Test Engineer: Rafael Varelas Config Change: None Test Location: Fremont Chamber#5 EUT Voltage: POE Radio # Frequency CH Mode Pwr 2 5260 52 802 11n20 34									
2 5260 52 802.11n20 34 10	5320 64 802.11n20 34								
6 5300 60 802.11n20 34 14 Tx Chain: 2x2 Run #4: Radiated Spurious Emissions, 1,000 - 40000 MHz.	5785 157 802.11n20 34								
80.0- 70.0- (@ 60.0- 999) \$50.0- 30.0- 20.0- 1000 Frequency (MHz)									

		SUCCESS						EMO	C Test Data
Client:	Xirrus							Job Number:	J93457
							T-l	Log Number:	T93459
Model:	XR2000H						Proje	ect Manager:	Christine Krebill
Contact:	Peter Krebill						Project	Coordinator:	-
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	В				Class:	N/A
90.0	-								
£ 70.0	-			1					
Ang 60.0	-								
20.0 - 20									
Frequency	Level	Pol	15.209	9 / 15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
6318.470	66.7	V	68.3	-1.6	PK	257	1.2	RB 1 MHz;V	/B 3 MHz;Peak
4999.970	46.5	V	60.0	-13.5	AVG	308	1.0	Digital Bus E	Emission, Class A limits
4999.670	51.6	V	80.0	-28.4	PK	308	1.0	Digital Bus E	Emission, Class A limits
4739.930	49.2	V	54.0	-4.8	AVG	300	1.3	RB 1 MHz;V	'B 10 Hz;Peak
4738.740	61.0	V	74.0	-13.0	PK	300	1.3	RB 1 MHz;V	'B 3 MHz;Peak
10639.800	51.6	Η	54.0	-2.4	AVG	230	1.0	RB 1 MHz;V	'B 10 Hz;Peak
10641.030	63.2	Η	74.0	-10.8	PK	230	1.0	RB 1 MHz;V	'B 3 MHz;Peak
11575.030	47.2	V	54.0	-6.8	AVG	210	1.0	RB 1 MHz;V	/B 10 Hz;Peak
11575.660	59.5	V	74.0	-14.5	PK	210	1.0	RB 1 MHz;V	'B 3 MHz;Peak
10527.050	66.6	Н	68.3	-1.7	PK	217	1.0	RB 1 MHz;V	/B 3 MHz;Peak
10600.020	51.5	V	54.0	-2.5	AVG	172	1.3	RB 1 MHz;V	/B 10 Hz;Peak
10601.240	62.6	V	74.0	-11.4	PK	172	1.3	RB 1 MHz;V	'B 3 MHz;Peak
4859.650	46.6	V	54.0	-7.4	AVG	151	1.3	RB 1 MHz;V	/B 10 Hz;Peak
4856.970	57.7	V	74.0	-16.3	PK	151	1.3	RB 1 MHz;V	B 3 MHz;Peak
Note:	Scans made device indica	between 18 ated there we	- 40 GHz wi ere no signifi	th the measu cant emissio	urement anter ns in this freq	nna moved a juency range	around the E	UT and its an	tennas 30cm from the
Note 2:	For emission required is a	ns outside of peak measu	the restricted	d bands the =1MHz, VB≥	limit is -27dBr 3MHz, peak	m/MHz eirp (detector).	68.3dBuV/m	i). The meas	urement method
Note 3:	2500MHz is	a digital sigr	al from PCI	bus. Refer to	e test data for	Part 15B.			

NTS WE ENGINEER SUCCESS	EMO	C Test Data							
Client: Xirrus	Job Number:	J93457							
	T-Log Number:	T93459							
Model: XR2000H	Project Manager:	Christine Krebill							
Contact: Peter Krebill	Project Coordinator:	-							
Standard: FCC 15.247, 15.407, EN 55022, FCC B	Class:	N/A							
Run #5, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5250-5350 MHz Band, 802.11n40/n20 Date of Test: 9/27/2013 0:00 Config. Used: 1 Test Engineer: Rafael Varelas Config Change: None Test Location: Fremont Chamber#5 EUT Voltage: POE Radio # Frequency CH Mode Pwr 2 5270 54 802.11n40 34 10 5755 151 802.11n40 34									
2 5270 54 802.11n40 34 10	5755 151	802.11n40 34							
6 5310 62 802.11n40 34 14	5785 157	802.11n20 34							
Tx Chain: 2x2									
80.0 70.0 60.0 40.0 30.0 20.0 1000 Frequency (MHz)									

		SUCCESS						EMO	C Test Dat
Client:	Xirrus							Job Number:	J93457
							T-Log Number: T93459		
Model:	XR2000H						Proje	ect Manager:	Christine Krebill
Contact:	Peter Krebill						Proiect	Coordinator:	-
Standard:	FCC 15 247	15407 EN	55022 ECC	: B				Class:	N/A
Stanuaru.	1 00 10.241	, 10. 4 07, LIN	55022,100					01033.	N/A
90.0 80.0 (w/\/ngp) 60.0 50.0 40.0 30.0 20.0 1;	- - - - - - 2000 1250		13500 14	000 14500 Fr	15000 1 equency (MH	ил	,,		500 18000
					oquoney (min	-/			
Frequency	level	Pol	15,209	9 / 15E	Detector	Azimuth	Height	Comments	
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
10532.960	67.4	V	68.3	-0.9	PK	148	1.3	RB 1 MHz;V	/B 3 MHz;Peak
4746.400	49.6	V	54.0	-4.4	AVG	48	1.1	RB 1 MHz;V	/B 10 Hz;Peak
4744.720	60.8	V	74.0	-13.2	PK	48	1.1	RB 1 MHz;V	/B 3 MHz;Peak
11509.430	45.7	Н	54.0	-8.3	AVG	130	1.6	RB 1 MHz;V	/B 10 Hz;Peak
11508.460	56.9	Н	74.0	-17.1	PK	130	1.6	RB 1 MHz;V	/B 3 MHz;Peak
10615.920	51.1	Н	54.0	-2.9	AVG	259	1.4	RB 1 MHz;V	/B 10 Hz;Peak
10615.400	62.9	Н	74.0	-11.1	PK	259	1.4	RB 1 MHz;V	/B 3 MHz;Peak
11562.750	48.7	V	54.0	-5.3	AVG	225	1.5	RB 1 MHz;V	/B 10 Hz;Peak
11562.620	59.4	V	74.0	-14.6	PK	225	1.5	RB 1 MHz;V	/B 3 MHz;Peak
6316.520	64.1	V	68.3	-4.2	PK	261	1.1	RB 1 MHz;V	/B 3 MHz;Peak
4887.290	49.6	V	54.0	-4.4	AVG	302	1.2	RB 1 MHz;V	/B 10 Hz;Peak
4882.890	60.7	V	74.0	-13.3	PK	302	1.2	RB 1 MHz;V	/B 3 MHz;Peak
5000.040	47.8	V	54.0	-6.2	AVG	306	1.2	Digital Bus E	Emission, Class A lim
4999.960	52.4	V	74.0	-21.6	PK	306	1.2	Digital Bus E	Emission, Class A lim
Note: Note 1 [.]	Scans made device indica	between 18 ated there we	- 40 GHz wi ere no signifi	th the measi cant emissio	urement anter ns in this freq	nna moved a uency range which requir	around the E	UT and its an	itennas 30cm from th
Note 2:	For emission required is a	ns outside of peak measu	the restricter	d bands the =1MHz, VB≥	limit is -27dBr 3MHz, peak	m/MHz eirp (detector).	68.3dBuV/m	i). The meas	surement method
Note 3:	2500MHz is	a digital sigr	nal from PCI	bus. Refer to	o test data for	Part 15B.			
Note 3:	2500MHz is	a digital sigr	nal from PCI	bus. Refer to) test data for	Part 15B.			



WE ENGINEER BUCCESS	EM	C Test Data		
Client: Xirrus	Job Number:	J93457		
Model: XR2000H	T-Log Number:	Т93459		
	Project Manager: Christine Krebill			
Contact: Peter Krebill	Project Coordinator:	-		
Standard: FCC 15.247, 15.407, EN 55022, FCC B	Class:	N/A		
Run #6, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5250- Date of Test: 9/30/2013 13:10Config. Used: Test Engineer: David BareConfig Change: EUT Voltage: Test Location: Fremont Chamber #5	5350 MHz Band, 802.11n : 1 : None : POE	40/n20		
Radio # Frequency CH Mode Pwr Radio #	Frequency CH	Mode Pwr		
2 5270 54 802.11n40 34 10	2422 3	802.11n40 34		
6 5310 62 802.11n40 34 14 Tv Chain: 2v2	2437 6	802.11n20 34		
Run #6: Radiated Spurious Emissions, 1,000 - 40000 MHz.				
90.0- 80.0- 80.0- 90.0-				



		EM	C Test Data
Client: Xirrus		Job Number:	J93457
		T-Log Number:	T93459
Model: XR2000H		Proiect Manager:	Christine Krebill
Contact: Peter Krebill		Project Coordinator:	-
Standard: FCC 15.247, 15.407, EN 55022, FCC	СВ	Class:	N/A
Run #7, Radiated Spurious Emissions, 1,000 - Date of Test: 9/30/2013 11:28 Test Engineer: David Bare Test Location: Fremont Chamber #5	40,000 MHz. Operation in the 547 Config. Use Config Chang EUT Voltag	0-5725 MHz Band d: 1 le: None le: POE	
Radio # Frequency CH Mode	Pwr Radio #	Frequency CH	Mode Pwr
2 5500 100 802.11a	32 14	5700 140	802.11a 34
10 5580 116 802.11a	34 6	2437 6	802.11b 34
Run #7: Radiated Spurious Emissions, 1,000	Frequency (MHz)		0000 12000



		UCCESS					EM	C Test	Data
Client:	Xirrus					Jo	b Number:	J93457	
						T-Lo	g Number:	T93459	
Model:	XR2000H					Projec	t Manager:	Christine Krel	oill
Contact:	Peter Krebill					Project C	oordinator:	-	
Standard:	FCC 15.247, 1	5.407, E	N 55022, FCC	В		,	Class:	N/A	
Run #8, Ra [Te Te	diated Spuriou Date of Test: 9/3 est Engineer: Date est Location: Fr	s Emiss 30/2013 avid Bare emont C	ions, 1,000 - 4 10:48 e hamber #5	0,000 MHz. Op	eration in the 5470- Config. Used: Config Change: EUT Voltage:	5725 MHz Ban 1 None POE	d	-	
Radio #	Frequency	СН	Mode	Pwr	Radio #	Frequency	СН	Mode	Pwr
2	5500	100	802.11n20	31	14	5700	140	802.11n20	34
10	5580	116	802.11n20	34	6	2437	6	802.11b	34
90.0 80.0 (m/\m) 60.0 50.0 50.0									
-₹ 40.0 30.0 20.0		mark	mandiand	Freque	ency (MHz)		· · 1	0000 12000	

		SUCCESS						EM	C Test Data
Client:	Xirrus							Job Number:	J93457
N4 . 1 . 1	VD0000U						T-	Log Number:	T93459
Model:	XR2000H						Proj	ect Manager:	Christine Krebill
Contact:	Peter Krebill						Project	Coordinator:	-
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	B				Class:	N/A
90.0 80.0 70.0 40.0 90.0 90.0 90.0 90.0									
20.0	_h-lu /m 2000 1250	0 13000	13500 14	000 14500 Fr) 15000 1 equency (MH	5500 1600 z)	لمبالسيوم. 00 16500	17000 17	500 18000
Frequency	Level	Pol	15.209	9 / 15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
10998.520	52.1	V	54.0	-1.9	AVG	190	1.6	RB 1 MHz;V	/B 10 Hz;Peak
10999.910	66.0	V	74.0	-8.0	PK	190	1.6	RB 1 MHZ;V	/B 3 MHz;Peak
11160.470	49.1	V	54.0	-4.9	AVG	1/0	1.0	RB 1 MHZ;V	B TU HZ;Peak
11109.040	01.0 /01	V	74.0 54.0	-12.2		330	1.0		/B 3 MITZ, Peak Noto 2
4073.940	40.1 52.5	V	74.0	-0.9		330	1.4		B 10 HZ, Feak, Note 2
5000 000	47 1	v \/	60.0	-12 9	AVG	323	13	Digital Rus F	- mission Class A limits
5000.040	51.9	V	80.0	-28.1	PK	323	1.3	Digital Bus I	Emission, Class A limits
Note: Note 1: Note 2:	Scans made device indica For emissior For emissior required is a	between 18 ated there we is in restricte is outside of peak measu	- 40 GHz wi ere no signifi ed bands, the the restricted urement (RB	th the meas cant emissic limit of 15.2 d bands the =1MHz, VB≥	urement anter ons in this freq 209 was used limit is -27dBr 23MHz, peak	nna moved a uency range which requir n/MHz eirp (detector).	around the E es average 68.3dBuV/m	UT and its ar and peak me n). The meas	asurements. urement method

	EM	C Test Data
Client: Xirrus	Job Number:	J93457
	T-Log Number:	T93459
Model: XR2000H	Proiect Manager:	Christine Krebill
Contact: Peter Krebill	Project Coordinator:	-
Standard: FCC 15.247. 15.407. EN 55022. FCC B	Class:	N/A
Run #9, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5470 Date of Test: 9/30/2013 8:30Config. Use Test Engineer: David BareConfig Chang EUT VoltagTest Location: Fremont Chamber#5EUT Voltag	D-5725 MHz Band d: 1 le: None le: POE	
Radio # Frequency CH Mode Pwr Radio #	Frequency CH	Mode Pwr
2 5500 100 802.11a 32 14	5700 140	802.11a 34
10 5580 116 802.11a 34 6	5785 157	802.11a 34
90.0- 80.0- (iii) 70.0- (iii)		

Client:	Xirrus							Job Number:	J93457
							T-	Log Number:	T93459
Model:	XR2000H						Proj	ect Manager:	Christine Krebill
Contact:	Peter Krebill						Project	t Coordinator:	-
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	В			,	Class:	N/A
		, ,	,						
90.0 80.0 (w(\ngp) 60.0 50.0 50.0 40.0 40.0 20.0	- - - - - -				www.		anter Maar	1. Amerika	
10.0	2000 1250	0 13000	13500 14	000 14500 Fri) 15000 1) equency (MH	5500 1600 z)	0 16500	17000 17	500 18000
10.0 1	2000 1250	0 13000 Pol	13500 14	000 14500 Fr) 15000 1 equency (MH	5500 1600 z) Azimuth	Height	17000 17 Comments	500 18000
10.0 1 Frequency MHz	Level	0 13000 Pol v/h	13500 14 15.209 Limit	000 14500 Fro 9 / 15E Margin) 15000 1 equency (MH Detector Pk/QP/Avg	Azimuth	Height meters	Comments	500 18000
10.0 1 Frequency MHz 10998.550	Level dBμV/m 53.2	0 13000 Pol V/h V	13500 14 15.209 Limit 54.0	000 14500 Fri 9 / 15E Margin -0.8	Detector Pk/QP/Avg	Azimuth degrees	0 16500 Height meters 1.5	17000 17	/B 10 Hz;Peak
Frequency MHz 10998.550 10998.170	Level dBμV/m 53.2 66.7	0 13000 Pol v/h V V	13500 14 15.209 Limit 54.0 74.0	9 / 15E Margin -0.8 -7.3	Detector Pk/QP/Avg AVG PK	Azimuth degrees 138 129	Height Heters 1.5 1.5	17000 17 Comments RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 3 MHz;Peak
10.0 1 Frequency MHz 10998.550 10998.170 1568.500 11568.570	Level dBµV/m 53.2 66.7 53.6 66.0	0 13000 Pol v/h V V V V	13500 14 15.209 Limit 54.0 74.0 54.0 74.0	000 14500 Fro 9 / 15E Margin -0.8 -7.3 -0.4 -8.0	Detector Pk/QP/Avg AVG PK AVG PK	Azimuth degrees 138 138 138 138	Height Height Meters 1.5 1.5 1.7 1.7	Comments RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak
10.0 1 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Level dBμV/m 53.2 66.7 53.6 66.0 48.5	Pol v/h V V V V V V V	13500 14 13500 14 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0	000 14500 Free 9 / 15E Margin -0.8 -7.3 -0.4 -8.0 -5.5	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG	Azimuth degrees 138 138 138 138 138 284	Height meters 1.5 1.5 1.7 1.7 1.7	Comments RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak
10.0 1 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Level dBμV/m 53.2 66.7 53.6 66.0 48.5 61.5	Pol V/h V V V V V V V V V V V	13500 14 13500 14 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0	9 / 15E Margin -0.8 -7.3 -0.4 -8.0 -5.5 -12 5	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 138 138 138 138 138 284 284	Height meters 1.5 1.5 1.7 1.7 1.7 1.9 1.9	Comments RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak
10.0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Level dBµV/m 53.2 66.7 53.6 66.0 48.5 61.5 48.2	Pol v/h V V V V V V V V V V V V	13500 14 13500 14 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 60.0	000 14500 From 14500 F	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG	Azimuth degrees 138 138 138 138 284 284 284 102	Height Height 1.5 1.5 1.7 1.7 1.7 1.9 1.9 1.1	Comments RB 1 MHz;V RB 1 MHz;V Digital Bus F	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak Emission, Class A limits
10.0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Level dBµV/m 53.2 66.7 53.6 66.0 48.5 61.5 48.2 53.4	Pol v/h V V V V V V V V V V V V V V	13500 14 13500 14 13500 14 14 14 14 15 15 14 14 14 14 14 14 14 14 14 14 14 14 14	9 / 15E Margin -0.8 -7.3 -0.4 -8.0 -5.5 -12.5 -11.8 -26.6	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 138 138 138 138 138 284 284 284 102 102	Height meters 1.5 1.5 1.7 1.7 1.7 1.9 1.9 1.1 1.1	Comments RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V Digital Bus F Digital Bus F	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak Emission, Class A limits Emission, Class A limits
	NTS	EM	C Test Data						
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Client:	Xirrus	Job Number:	J93457						
		T-Log Number:	T93459						
Model:	XR2000H	Project Manager:	Christine Krebill						
Contact:	Contact: Peter Krebill Project Coordinator: -								
Standard: FCC 15.247, 15.407, EN 55022, FCC B Class: N/A									
Run #10, Ra [Te Te	adiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5470Date of Test: 9/30/2013 9:48Config. Used:st Engineer: David BareConfig Change:est Location: Fremont Chamber#5EUT Voltage:	-5725 MHz Band 1 None POE							
Radio #	Frequency CH Mode Pwr Radio #	Frequency CH	Mode Pwr						
2	5500 100 802.11n20 31 14	5700 140	802.11n20 34						
10	5580 116 802.11n20 34 6	5785 157	802.11n20 34						
Run #10: R	2x2 adiated Spurious Emissions, 1,000 - 40000 MHz.								
90.0 80.0 (m(70.0 Pp) 60.0 900 50.0 40.0 30.0 20.0 1	Frequency (MHz)		0000 12000						

Client:	Xirrus							Job Number: J93457	
Madal							T-Log Number: T93459		
Model:	XK2000H						Project Manager: Christine Krebill		
Contact:	Peter Krebill						Project	t Coordinator: -	
Standard:	FCC 15.247	, 15.407, EN	I 55022, FCC	В				Class: N/A	
~~ ~									
90.0	-			Ĩ					
80.0	-								
_{ਦੇ} 70.0	-								
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≪ 30.0 20.0	- maryon	han the low and a second s	proved and a second		- manufa	hooren and	dord a north and a	1	
≪ 30.0 20.0 10.0 1	2000 1250	0 13000	13500 14	000 14500) 15000 1	кничение 5500 1600	0 16500	17000 17500 18000	
≪ 30.0 20.0 10.0 1	2000 1250	0 13000	13500 14	000 14500 Fr) 15000 1 equency (MH	5500 1600 z)	0 16500	17000 17500 18000	
≪ 30.0 20.0 10.0 1	2000 1250	0 13000	13500 14	000 14500 Fr) 15000 1 equency (MH	5500 1600 z)	0 16500	17000 17500 18000	
⊲ 30.0 20.0 10.0 1	2000 1250	0 13000	13500 14	000 14500 Fr) 15000 1 equency (MH	5500 1600 z)	0 16500	17000 17500 18000	
4 30.0 20.0 10.0 1 [−] requency Multic	2000 1250	Pol	13500 14	9/15E	Detector	Azimuth	Height	17000 17500 18000 Comments	
◄ 30.0 20.0 10.0 1 1 <u>Trequency</u> MHz 0008 520	2000 1250	Pol v/h	13500 14	000 14500 Fr 9 / 15E Margin	D 15000 1 equency (MH Detector Pk/QP/Avg	Azimuth degrees	Height Heters	Comments	
 ◄ 30.0 20.0 10.0 1 	2000 1250	0 13000 Pol V/h V	13500 14 15.209 Limit 54.0 74.0	9 / 15E Margin -0.9	Detector Pk/QP/Avg AVG	Azimuth degrees 202 202	Height Heters 1.6 1.6	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak	
 ◄ 30.0 20.0 10.0 1 1 	 2000 1250 Level dBμV/m 53.1 66.1 49.3	Pol V/h V V	13500 14 13500 14 15.20 Limit 54.0 74.0 54.0	9 / 15E Margin -0.9 -7.9 -4 7	Detector Pk/QP/Avg AVG AVG	Azimuth degrees 202 202 188	Height 1.6 1.6 1.6 1.6	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 10 Hz;Peak	
- 30.0 20.0 10.0 1 1 <u>5</u> requency MHz 0998.520 0999.910 1160.470 1159.040	Level dBµV/m 53.1 66.1 49.3 61.8	Pol v/h V V V V V	13500 14 13500 14 Limit 54.0 74.0 54.0 74.0 74.0	9 / 15E Margin -0.9 -7.9 -4.7 -12.2	Detector Pk/QP/Avg AVG PK AVG PK	Azimuth degrees 202 202 188 188	Height Height 1.6 1.6 1.6 1.6 1.6 1.6 1.6	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak	
 ◄ 30.0 20.0 10.0 1 1 0 /ul>	Level dBμV/m 53.1 66.1 49.3 61.8 51.0	Pol Vh V V V V V V	13500 144 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0	9 / 15E Margin -0.9 -7.9 -4.7 -12.2 -3.0	Detector Pk/QP/Avg AVG PK AVG PK AVG	Azimuth degrees 202 202 188 188 141	Height meters 1.6 1.6 1.6 1.6 1.6 1.4	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 10 Hz;Peak	
Trequency MHz 0998.520 0999.910 1160.470 1564.350 1564.030	Level dBµV/m 53.1 66.1 49.3 61.8 51.0 64.1	Pol V/h V V V V V V V V V	13500 14 13500 14 13500 14 13500 14 14 13500 14 14 13500 14 14 13500 14 14 13500 14 14 14 14 14 14 14 14 14 14 14 14 14	9 / 15E Margin -0.9 -7.9 -4.7 -12.2 -3.0 -9.9	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 202 202 188 188 141 141	Height meters 1.6 1.6 1.6 1.6 1.4 1.4	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak	
Trequency MHz 0998.520 0999.910 1160.470 1159.040 1564.030 5000.020	Level dBµV/m 53.1 66.1 49.3 61.8 51.0 64.1 46.7	Pol v/h V V V V V V V V V V V V	13500 14 14 15000 14 15000 14 13500 14 15000 150000 15000 100000000	9 / 15E Margin -0.9 -7.9 -4.7 -12.2 -3.0 -9.9 -13.3	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG AVG	Azimuth degrees 202 202 188 188 141 141 141 140	Height meters 1.6 1.6 1.6 1.6 1.4 1.4 1.3	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak	
 ◄ 30.0 20.0 10.0 1 1 0 0 1 0 /ul>	Level dBµV/m 53.1 66.1 49.3 61.8 51.0 64.1 46.7 51.9	Pol v/h V V V V V V V V V V V V	13500 14 13500 14 15.20 Limit 54.0 74.0 54.0 74.0 54.0 74.0 60.0 80.0	9 / 15E Margin -0.9 -7.9 -4.7 -12.2 -3.0 -9.9 -13.3 -28.1	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 202 202 188 188 188 141 141 141 140 140	Height meters 1.6 1.6 1.6 1.6 1.6 1.4 1.4 1.3 1.3	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak Digital Bus Emission, Class A limits Digital Bus Emission, Class A limits	
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Trequency MHz 0998.520 0999.910 1160.470 1159.040 1564.350 1564.030 5000.020 5000.020 ote:	Level dBµV/m 53.1 66.1 49.3 61.8 51.0 64.1 46.7 51.9 Scans made	Pol v/h V V V V V V V V V V V	13500 14 13500 14 13500 14 13500 14 13500 14 13500 14 14 13500 14 14 13500 14 14 13500 14 14 14 14 15.209 14 14 14 14 14 14 14 14 14 14	9 / 15E Margin -0.9 -7.9 -4.7 -12.2 -3.0 -9.9 -13.3 -28.1 ith the meas	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 202 202 188 188 141 141 141 140 140 140	Height meters 1.6 1.6 1.6 1.6 1.4 1.4 1.3 1.3 round the E	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak Digital Bus Emission, Class A limits Digital Bus Emission, Class A limits Digital Bus Emission, Class A limits Digital Bus Emission, Class A limits	
Trequency MHz 10.00	Level dBµV/m 53.1 66.1 49.3 61.8 51.0 64.1 46.7 51.9 Scans made device indica	Pol Vh V V V V V V V V V V	13500 14 13500 14 15.20 Limit 54.0 74.0 54.0 74.0 54.0 74.0 60.0 80.0 80.0 80.0 80.0	9 / 15E Margin -0.9 -7.9 -4.7 -12.2 -3.0 -9.9 -13.3 -28.1 ith the meas cant emissio	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 202 202 188 188 141 141 140 140 140	Height meters 1.6 1.6 1.6 1.6 1.6 1.4 1.4 1.3 1.3 round the E	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak Digital Bus Emission, Class A limits Digital Bus Emission, Class A limits	
 ◄ 30.0 20.0 10.0 /ul>	Level dBμV/m 53.1 66.1 49.3 61.8 51.0 64.1 46.7 51.9 Scans made device indica For emission	Pol V/h V V V V V V V V V V V v v v v	13500 14 13500 14 13500 14 13500 14 14 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 60.0 80.0 80.0 8-40 GHz wi ere no signifi ed bands, the	9 / 15E Margin -0.9 -7.9 -4.7 -12.2 -3.0 -9.9 -13.3 -28.1 ith the meas cant emission e limit of 15.2 d bondo the	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK aVG PK aVG PK avg PK PK PK PK PK PK PK PK PK PK PK PK PK	Azimuth degrees 202 202 188 188 141 141 140 140 140 140 140	Height meters 1.6 1.6 1.6 1.6 1.4 1.3 1.3 round the E	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak Digital Bus Emission, Class A limits Digital Bus Emission, Class A limits	
Trequency 10.0 1	Level dBµV/m 53.1 66.1 49.3 61.8 51.0 64.1 46.7 51.9 Scans made device indica For emission For emission For emission	Pol V/h V V V V V V V V V V V V V V v v v v v	13500 14 13500 14 13500 14 13500 14 13500 14 14 13500 14 14 13500 14 14 13500 14 14 14 14 15.20 14 14 15.20 14 14 14 14 14 14 14 14 14 14	9 / 15E Margin -0.9 -7.9 -7.9 -4.7 -12.2 -3.0 -9.9 -13.3 -28.1 ith the meass cant emission e limit of 15.2 d bands the -1MHz VPS	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK avG PK AVG Detector	Azimuth degrees 202 202 188 188 141 141 140 140 140 140 140 nna moved a uency range which requir n/MHz eirp (Height meters 1.6 1.6 1.6 1.6 1.4 1.4 1.3 1.3 round the E es average 68.3dBuV/n	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak Digital Bus Emission, Class A limits Digital Bus Emission, Class A limits EUT and its antennas 30cm from the and peak measurements. n). The measurement method	
 ◄ 30.0 20.0 10.0 1 1 7requency MHz 0998.520 0999.910 1160.470 1159.040 1564.030 5000.020 5000.020 5000.020 ote 1: ote 2: ote 3: 	Level dBµV/m 53.1 66.1 49.3 61.8 51.0 64.1 46.7 51.9 Scans made device indica For emission For emission For emission For emission	Pol V/h V V V V V V V V V V V V V V v v v v v	13500 14 13500 14 13500 14 15.20 Limit 54.0 74.0 54.0 74.0 54.0 74.0 60.0 80.0 80.0 80.0 80.0 80.0 80.0 80	9 / 15E Margin -0.9 -7.9 -4.7 -12.2 -3.0 -9.9 -13.3 -28.1 ith the meas cant emission ≥ limit of 15.2 d bands the =1MHz, VB≥ bus Refer fr	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK aVG PK aVG PK avG PK avG PK avG PK avG PK avG PK avG PK avG br avG avG br avG avG br av br av br av br av br av br av br av br av br av br av br br av br br av br av br br br br av br br br br br br br br br br br	Azimuth degrees 202 202 188 188 141 141 140 140 140 140 140 140 140 140	Height meters 1.6 1.6 1.6 1.6 1.6 1.4 1.4 1.3 1.3 round the E es average 68.3dBuV/n	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak Digital Bus Emission, Class A limits Digital Bus Emission, Class A limits EUT and its antennas 30cm from the and peak measurements. n). The measurement method	
 ◄ 30.0 20.0 10.0 1 1 0 1 0 1 0 1 0 /ul>	Level dBµV/m 53.1 66.1 49.3 61.8 51.0 64.1 46.7 51.9 Scans made device indica For emissior required is a 2500MHz is	Pol V/h V V V V V V V V V V V v v v v v v v v	13500 14 13500 14 13500 14 13500 14 14 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 60.0 80.0 80.0 80.0 8 - 40 GHz wi ere no signifi ed bands, the the restricter urement (RB hal from PCI	000 14500 Fr 9 / 15E Margin -0.9 -7.9 -4.7 -12.2 -3.0 -9.9 -13.3 -28.1 ith the meas cant emissic e limit of 15.2 d bands the =1MHz, VB≥ bus. Refer to	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG DE S S S S S S S S S S S S S S S S S S	Azimuth degrees 202 202 188 188 141 141 140 140 140 140 140 140 140 140	Height meters 1.6 1.6 1.6 1.6 1.6 1.4 1.4 1.3 1.3 round the E es average 68.3dBuV/n	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak Digital Bus Emission, Class A limits Digital Bus Emission, Class A limits EUT and its antennas 30cm from the and peak measurements. n). The measurement method	
 ◄ 30.0 20.0 10.0 110.0 10.0 110.0 10.0 110.0 10.0 110.0 10.0 110.0 10.0 /ul>	Level dBµV/m 53.1 66.1 49.3 61.8 51.0 64.1 46.7 51.9 Scans made device indica For emissior For emissior For emissior required is a 2500MHz is	Pol V/h V V V V V V V V V V v v v v v v v v v	15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 60.0 80.0 8-40 GHz wi ere no signifi ed bands, the the restricte urement (RB hal from PCI	9 / 15E Margin -0.9 -7.9 -4.7 -12.2 -3.0 -9.9 -13.3 -28.1 ith the meas cant emissic e limit of 15.2 d bands the =1MHz, VB≥ bus. Refer to	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK avG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG Contest data for	Azimuth degrees 202 202 188 188 141 141 140 140 140 140 140 140 140 140	Height meters 1.6 1.6 1.6 1.6 1.4 1.4 1.3 1.3 round the E es average 68.3dBuV/n	Comments RB 1 MHz;VB 10 Hz;Peak RB 1 MHz;VB 3 MHz;Peak RB 1 MHz;VB 3 MHz;Peak Digital Bus Emission, Class A limits Digital Bus Emission, Class A limits EUT and its antennas 30cm from the and peak measurements. n). The measurement method	

WE ENGINEER SUCCESS	EMO	C Test Data	
Client: Xirrus	Job Number:	J93457	
	T-Log Number:	T93459	
Model: XR2000H	Project Manager:	Christine Krebill	
Contact: Peter Krebill	Project Coordinator: -		
Standard: FCC 15 247 15 407 EN 55022 FCC B	Class:	N/Δ	
	01035.	N/A	
Run #11, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5470 Date of Test: 9/27/2013 0:00 Config. Used: Test Engineer: Jack Liu / R. Varelas Config Change: Test Location: Fremont Chamber#5 EUT Voltage: Radio # Frequency CH Mode Pwr Radio #	D-5725 MHz Band 1 1 none 2 POE Frequency CH	Mode Pwr	
2 5510 102 802.11n40 34 10	5670 134	802.11n40 34	
6 5550 110 802.11n40 34 14	5785 157	802.11n20 34	
Run #11: Radiated Spurious Emissions, 1,000 - 40000 MHz.		J. J	
1000	1	2000 12000	
Frequency (MHz)			

Client:	Xirrus							Job Number:	J93457	
Madalı							T-	Log Number:	T93459	
wodel:	XR2000H						Proj	ect Manager:	Christine Krebill	
Contact:	Peter Krebill						Project	Coordinator:	-	
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	B				Class:	N/A	
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80.0	-									
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10.0 1	_ 2000 1250	0 13000	13500 14	000 14500 Fre) 15000 1 equency (MH	5500 1600 z)	0 16500	17000 17	500 18000	
10.0 1 requency	_ 2000 1250 Level	0 13000 Pol	13500 14	000 14500 Fre	15000 1 equency (MH	5500 1600 z) Azimuth	00 16500 Height	17000 17 Comments	500 18000	
10.0 1 requency MHz	_ 2000 1250 Level dBμV/m	0 13000 Pol v/h	13500 144 15.209 Limit	000 14500 Fre 9 / 15E Margin	0 15000 1 equency (MH Detector Pk/QP/Avg	5500 1600 z) Azimuth degrees	Height meters	17000 17 Comments	500 18000	
10.0 1 requency MHz 1015.930	_ 2000 1250 Level dBμV/m 50.2	0 13000 Pol V/h H	13500 144 15.209 Limit 54.0	000 14500 Fro 0/15E Margin -3.8	Detector Pk/QP/Avg	5500 1600 z) Azimuth degrees 98	Height neters	Comments	/B 10 Hz;Peak	
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10.0 1 requency MHz 1015.930 1018.070 1087.430	_ 2000 1250 dBμV/m 50.2 60.7 50.0	0 13000 Pol V/h H H V V	13500 144 15.209 Limit 54.0 74.0 54.0	000 14500 Fre 0/15E Margin -3.8 -13.3 -4.0	Detector Pk/QP/Avg AVG PK AVG	Azimuth degrees 98 98 151	Height meters 1.0 1.0 1.6	Comments RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak	
10.0 1 requency MHz 1015.930 1018.070 1087.430 1087.430	_ 2000 1250 <u>Level</u> <u>dBμV/m</u> 50.2 60.7 50.0 60.6	Pol V/h H H V V V	13500 144 15.209 Limit 54.0 74.0 54.0 74.0	000 14500 Fro 0/15E Margin -3.8 -13.3 -4.0 -13.4	Detector Pk/QP/Avg AVG PK AVG PK AVG	Azimuth degrees 98 98 151 151	Height meters 1.0 1.0 1.6 1.6	Comments RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak	
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10.0 1 requency MHz 1015.930 1018.070 1087.430 1096.130 359.960 359.960	_ 2000 1250 dBμV/m 50.2 60.7 50.0 60.6 39.6 48.7 48.7	Pol V/h H H V V V V V V	13500 144 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0	000 14500 Fre 0/15E Margin -3.8 -13.3 -4.0 -13.4 -14.4 -25.3 -20	15000 1 equency (MH Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG	Azimuth degrees 98 98 151 151 44 44	Height meters 1.0 1.6 1.6 1.6 1.0 1.0	17000 17 Comments RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak	
10.0 1 requency MHz 1015.930 1018.070 1087.430 1096.130 359.960 358.230 1341.030	_ 2000 1250 Level dBμV/m 50.2 60.7 50.0 60.6 39.6 48.7 46.2 57.4	Pol V/h H H V V V V V V V V H	13500 144 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0	000 14500 Free 0/15E Margin -3.8 -13.3 -4.0 -13.4 -14.4 -25.3 -7.8	15000 1 equency (MH Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG	Azimuth degrees 98 98 151 151 44 44 214	Height meters 1.0 1.0 1.6 1.6 1.6 1.0 1.0 1.0 1.0	17000 17 Comments RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak	
10.0 1 requency MHz 1015.930 1018.070 1087.430 1096.130 359.960 358.230 1341.030 1338.700	_ 2000 1250 dBμV/m 50.2 60.7 50.0 60.6 39.6 48.7 46.2 57.1 40.2	Pol V/h H H V V V V V V H H H	13500 144 13500 144 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0	000 14500 Free 0/15E Margin -3.8 -13.3 -4.0 -13.4 -14.4 -25.3 -7.8 -16.9	15000 1 equency (MH Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 98 98 151 151 44 44 214 214 214	Height meters 1.0 1.6 1.6 1.6 1.0 1.0 1.0 1.0 1.0 1.0	17000 17 Comments RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak	
10.0 1 1 1 1015.930 1018.070 1087.430 1096.130 359.960 358.230 1341.030 1338.700 1366.430	_ 2000 1250 Level dBμV/m 50.2 60.7 50.0 60.6 39.6 48.7 46.2 57.1 49.3 60.5	Pol V/h H H V V V V V V V H H V V V V V	13500 144 13500 144 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 7 74.0 7 7 7 7 7 7 7 7 7 7 7 7 7	000 14500 Fre 0/15E Margin -3.8 -13.3 -4.0 -13.4 -14.4 -25.3 -7.8 -16.9 -4.7 -4.7	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG	Azimuth degrees 98 98 151 151 44 44 214 214 220 200	Height meters 1.0 1.6 1.6 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	17000 17 Comments RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak	
10.0 1 requency MHz 1015.930 1018.070 1087.430 1096.130 1359.960 1359.960 1359.960 1359.960 1358.230 1341.030 1338.700 1566.430 1563.030	_ 2000 1250 Level dBμV/m 50.2 60.7 50.0 60.6 39.6 48.7 46.2 57.1 49.3 60.5 54.4	Pol V/h H H V V V V V V V V V V V V V	13500 144 13500 144 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0	000 14500 Free 9 / 15E Margin -3.8 -13.3 -4.0 -13.4 -14.4 -25.3 -7.8 -16.9 -4.7 -13.5 -4.2	15000 1 equency (MH Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 98 98 151 151 44 44 214 214 220 220 242	Height meters 1.0 1.0 1.6 1.6 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.4 1.4	Comments RB 1 MHz;V RB 1 MHz	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak	
10.0 1 requency MHz 1015.930 1018.070 1087.430 1096.130 i359.960 i359.960 i359.960 i358.230 1341.030 1341.030 1566.430 1563.030 i226.310	_ 2000 1250 Level dBμV/m 50.2 60.7 50.0 60.6 39.6 48.7 46.2 57.1 49.3 60.5 54.4 47.4	Pol V/h H H V V V V V V V V V V V V V	13500 144 13500 144 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 68.3 60.0	000 14500 Free 0/15E Margin -3.8 -13.3 -4.0 -13.4 -14.4 -25.3 -7.8 -16.9 -4.7 -13.5 -13.9 42.0	15000 1 equency (MH Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG	Azimuth degrees 98 98 151 151 44 214 214 214 220 220 313 242	Height meters 1.0 1.0 1.0 1.6 1.6 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Comments RB 1 MHz;V RB 1 MHz	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak	
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10.0 1 requency MHz 1015.930 1018.070 1087.430 1096.130 359.960 359.960 359.960 1341.030 1356.430 1566.430 1566.430 1566.430 1563.030 226.310 000.020 000.100	_ 2000 1250 Level dBμV/m 50.2 60.7 50.0 60.6 39.6 48.7 46.2 57.1 49.3 60.5 54.4 47.1 50.6	Pol V/h H H V V V V V V V V V V V V V	13500 144 13500 144 13500 144 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 68.3 60.0 80.0	000 14500 Free 9 / 15E Margin -3.8 -13.3 -4.0 -13.4 -14.4 -25.3 -7.8 -16.9 -4.7 -13.5 -13.9 -12.9 -29.4	15000 1 equency (MH Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 98 98 151 151 44 214 214 220 220 313 312 312	Height meters 1.0 1.6 1.6 1.6 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.4 1.4 1.4 1.3 1.3 1.3	Comments RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MZ 1 M	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak	
10.0 1 requency MHz 1015.930 1018.070 1087.430 1096.130 359.960 358.230 1341.030 1341.030 1366.430 1566.430 1566.430 1563.030 5226.310 5000.020 5000.100	_ 2000 1250 Level dBμV/m 50.2 60.7 50.0 60.6 39.6 48.7 46.2 57.1 49.3 60.5 54.4 47.1 50.6 Scans made	Pol V/h H H V V V V V V V V V V V V V	13500 144 13500 144 15.209 Limit 54.0 74.0 56.0 74.0	000 14500 Free 9 / 15E Margin -3.8 -13.3 -4.0 -13.4 -14.4 -25.3 -7.8 -16.9 -4.7 -13.5 -13.9 -12.9 -12.9 -29.4 th the measu	15000 1 equency (MH Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 98 98 151 151 44 214 214 214 220 220 313 312 312	Height meters 1.0 1.0 1.0 1.6 1.6 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.4 1.4 1.4 1.3 1.3 1.3	Comments RB 1 MHz;V RB 1 MHz;V Digital Bus F Digital Bus F	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak	limi
10.0 1 requency MHz 1015.930 1018.070 1087.430 1096.130 359.960 358.230 1341.030 1341.030 1341.030 1566.430 1566.430 1566.430 1566.310 000.020 000.100 ote:	_ 2000 1250 Level dBμV/m 50.2 60.7 50.0 60.6 39.6 48.7 46.2 57.1 49.3 60.5 54.4 47.1 50.6 Scans made device indica	Pol V/h H V V V <	13500 144 13500 144 15.205 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 68.3 60.0 80.0 80.0	000 14500 Free 7/15E Margin -3.8 -13.3 -4.0 -13.4 -14.4 -25.3 -7.8 -16.9 -4.7 -13.5 -13.9 -12.9 -12.9 -29.4 th the measu cant emissio	15000 1 equency (MH Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 98 98 98 151 151 44 214 214 220 220 313 312 312 312	Height meters 1.0 1.0 1.0 1.6 1.6 1.6 1.0 1.0 1.0 1.0 1.0 1.4 1.4 1.3 1.3 1.3 1.3	Comments RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MZ 1 MZ 1 MZ 1 MZ 1 MZ 1 MZ 1	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak	
10.0 1 requency MHz 1015.930 1018.070 1087.430 1096.130 359.960 358.230 1341.030 1341.030 1338.700 1566.430 1566.430 1566.3030 226.310 000.020 000.100 ote: ote 1:	_ 2000 1250 dBμV/m 50.2 60.7 50.0 60.6 39.6 48.7 46.2 57.1 49.3 60.5 54.4 47.1 50.6 Scans made device indica For emission	Pol v/h H H V V V	13500 144 13500 144 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 68.3 60.0 80.0 80.0 80.0	000 14500 Free 7/15E Margin -3.8 -13.3 -4.0 -13.4 -14.4 -25.3 -7.8 -16.9 -4.7 -13.5 -13.9 -12.9 -29.4 th the measu cant emissio e limit of 15 2	15000 1 equency (MH Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG OF K AVG OF ST ST ST ST ST ST ST ST ST ST ST ST ST	Azimuth degrees 98 98 98 151 151 44 214 214 220 220 313 312 312 312 312	Height meters 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Comments RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB	/B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak	limi 1 the
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10.0 1 requency MHz 1015.930 1018.070 1087.430 1096.130 359.960 358.230 1341.030 1341.030 1566.430 1566.430 1566.430 1563.030 226.310 000.020 000.100 ote: ote 1: ote 2:	 2000 1250 Level dBμV/m 50.2 60.7 50.0 60.6 39.6 48.7 46.2 57.1 49.3 60.5 54.4 47.1 50.6 Scans made device indica For emissior For emissior For emissior For emissior	Pol V/h H H V V V V V V V V V V V V V V V V V	13500 144 13500 144 15.209 Limit 54.0 74.0 74.0	000 14500 Free 0/15E Margin -3.8 -13.3 -4.0 -13.4 -14.4 -25.3 -7.8 -16.9 -4.7 -13.5 -13.9 -12.9 -12.9 -29.4 th the measu cant emissio e limit of 15.2 d bands the =1MHz_VR≥	15000 1 equency (MH Detector Pk/QP/Avg AVG PK A AVG PK A A A A A A A A A A A A A A A A A A	Azimuth degrees 98 98 151 151 44 214 214 214 220 220 313 312 312 312 mna moved a uency range which requir m/MHz eirp (detector).	Height meters 1.0 1.0 1.0 1.6 1.6 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.4 1.4 1.3 1.3 1.3 1.3 es average 68.3dBuV/n	Comments RB 1 MHz;V RB 1 MHz;V CRB 1 MHz;V RB 1 MHz;V CRB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V CRB 1 MHz;V RB 1 MHz;V CRB	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak Emission, Class A Emission, Class A mitennas 30cm fron asurements. surement method	

	NTS	EM	C Test Dat	
Client:	Xirrus	Job Number:	J93457	
		T-Log Number:	T93459	
Model:	XR2000H	Project Manager: Christine Krebi		
Contact	Peter Krebill	Project Coordinator:	-	
Standard	ECC 15 247 15 407 EN 55022 ECC B	Class:	N/A	
otariaara.	1 00 10.2 m, 10.101, 2100022, 1 00 B	01000.		
Run #12, R Te T	adiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5470Date of Test: 9/27/2013 0:00Config. Used:est Engineer: Jack Liu / R. VarelasConfig Change:est Location: Fremont Chamber#5EUT Voltage:	-5725 MHz Band 1 none POE		
Radio #	Frequency CH Mode Pwr Radio #	Frequency CH	Mode Pwr	
2	5510 102 802.11n40 34 10	5670 134	802.11n40 34	
6	5550 110 802.11n40 34 14	2437 6	802.11n20 34	
Tx Chain: Run #12: F	2x2 Radiated Spurious Emissions, 1,000 - 40000 MHz.			
80.0 70.0 (W/Ange) 50.0 1000 1000 1000 1000 1000 1000 1000				
30.0	- Murray Marrie -			
20.0				
	1000	1	0000 12000	
	Frequency (MHZ)			

Client:	Xirrus							Job Number:	J93457
Madalı					T-	Log Number:	T93459		
wodel:	XR2000H						Proj	ect Manager:	Christine Krebill
Contact:	Peter Krebill						Project	Coordinator:	-
Standard:	FCC 15.247,	15.407, EN	55022, FCC	B				Class:	N/A
90.0	-		f						
80.0	-								
~ 70.0	-								
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20.0 10.0 1	2000 12500	0 13000	13500 14	000 14500 Fr) 15000 1 equency (MH	5500 1600 z)	0 16500	17000 17	500 18000
20.0 10.0 1	2000 12500	D 13000	13500 14	000 14500 Fr) 15000 1 equency (MH	5500 1600 z)	0 16500	17000 17	500 18000
20.0 10.0 1 equency MHz	000 12500	Pol	13500 14	000 14500 Fr) 15000 1: equency (MH	5500 1600 z) Azimuth	0 16500 Height	17000 17	500 18000
20.0 10.0 1 equency MHz 014 100	 2000 12500 Level dBμV/m 53.5	Pol V/h	13500 14 15.209 Limit	000 14500 Fr 9 / 15E Margin	D 15000 1 equency (MH Detector Pk/QP/Avg	Azimuth degrees	Height 16500	17000 17	/500 18000
20.0 10.0 1 equency MHz 014.100 012.800	 2000 12500 Level dBμV/m 53.5 65.2	Pol V/h V	13500 14 15.20 Limit 54.0 74.0	000 14500 Fr 9 / 15E Margin -0.5 -8 8	Detector Pk/QP/Avg PK	Azimuth degrees 158	0 16500 Height meters 1.6 1.6	17000 17 Comments RB 1 MHz;V	/500 18000 /B 10 Hz;Peak
20.0 10.0 1 equency MHz 014.100 012.800 106.670	Level dBμV/m 53.5 65.2 47.5	Pol V/h V H	13500 144 15.209 Limit 54.0 74.0 54.0	000 14500 Fro 9 / 15E Margin -0.5 -8.8 -6 5	Detector Pk/QP/Avg AVG AVG	Azimuth degrees 158 158 134	0 16500 Height meters 1.6 1.6 1.5	17000 17 Comments RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V	/500 18000 /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz:Peak
20.0 10.0 1 equency MHz 014.100 012.800 106.670 106.330	Level dBµV/m 53.5 65.2 47.5 58.5	Pol V/h V H H	13500 14 15.209 Limit 54.0 74.0 54.0 74.0	000 14500 Fr 9 / 15E Margin -0.5 -8.8 -6.5 -15.5	Detector Pk/QP/Avg AVG PK AVG PK AVG	Azimuth degrees 158 158 134 134	Height Height 1.6 1.6 1.5 1.5	17000 17 Comments RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak
20.0 10.0 1 equency MHz 014.100 012.800 106.670 106.330 341.200	Level dBμV/m 53.5 65.2 47.5 58.5 46.9	Pol V/h V V H H V	13500 14 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0	000 14500 Fr 9 / 15E Margin -0.5 -8.8 -6.5 -15.5 -7.1	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG	Azimuth degrees 158 158 134 134 127	Height Height 1.6 1.6 1.5 1.5 1.5 1.5	17000 17 Comments RB 1 MHz;\ RB 1 MHz;\ RB 1 MHz;\ RB 1 MHz;\ RB 1 MHz;\ RB 1 MHz;\	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak
20.0 10.0 1 2 2 2 2 2 2 2 2 2 2 2 2 2	Level dBμV/m 53.5 65.2 47.5 58.5 46.9 57.6	Pol V/h V V H H V V V	13500 14 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0	000 14500 From 14500 9 / 15E Margin -0.5 -8.8 -6.5 -15.5 -7.1 -7.1 -16.4	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 158 158 134 134 127 127	Height Height 1.6 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	17000 17 Comments RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak
20.0 10.0 1 equency MHz 014.100 012.800 106.670 106.330 341.200 343.400 119.970	Level dBμV/m 53.5 65.2 47.5 58.5 46.9 57.6 36.6	Pol V/h V V H H V V V V V V	13500 144 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 54.0	000 14500 From 14500 9 / 15E Margin -0.5 -8.8 -6.5 -15.5 -7.1 -16.4 -17.4	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG	Azimuth degrees 158 158 134 134 127 127 6	0 16500 Height meters 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	17000 17 Comments RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak
20.0 10.0 1 3quency MHz 014.100 012.800 106.670 106.330 341.200 343.400 19.970 20.100	Level dBµV/m 53.5 65.2 47.5 58.5 46.9 57.6 36.6 44.4	Pol V/h V V V H H V V V V V V V	13500 144 15.209 Limit 54.0 74.0 74.0 54.0 74.0 74.0 74.0 54.0 74.0	000 14500 From 14500 9 / 15E Margin -0.5 -8.8 -6.5 -15.5 -7.1 -16.4 -17.4 -29.6	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 158 158 134 134 127 127 6 6	Height meters 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	17000 17 Comments RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak
20.0 10.0 1 equency MHz 014.100 012.800 106.670 106.330 341.200 343.400 119.970 120.100 373.730	Level dBµV/m 53.5 65.2 47.5 58.5 46.9 57.6 36.6 44.4 37.0	Pol V/h V V V H H V V V V V V V V V V	13500 144 15.209 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0	000 14500 Fr 015E Margin -0.5 -8.8 -6.5 -15.5 -7.1 -16.4 -17.4 -29.6 -17.0	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG	Azimuth degrees 158 158 134 134 127 127 6 6 6 240	Height Height meters 1.6 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	Comments RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak
20.0 10.0 1 equency MHz 014.100 012.800 106.670 106.330 341.200 343.400 119.970 120.100 373.730 380.020	Level dBµV/m 53.5 65.2 47.5 58.5 46.9 57.6 36.6 44.4 37.0 49.5	Pol V/h V V V H H V V V V V V V V V V V V V	13500 14 15.209 Limit 54.0 74.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 74.0 54.0 74.0	000 14500 Fri 9 / 15E Margin -0.5 -8.8 -6.5 -15.5 -7.1 -16.4 -7.1 -16.4 -17.4 -29.6 -17.0 -24.5	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 158 158 158 134 134 127 127 6 6 6 240 240	Height meters 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	17000 17 Comments RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak
20.0 10.0 1 equency MHz 014.100 012.800 106.670 106.330 341.200 343.400 119.970 120.100 373.730 380.020 000.050	Level dBμV/m 53.5 65.2 47.5 58.5 46.9 57.6 36.6 44.4 37.0 49.5 45.9	Pol v/h V V V V H H V V V V V V V V V V V	13500 14 15.20 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 60.0	000 14500 From 9 / 15E Margin -0.5 -8.8 -6.5 -15.5 -7.1 -16.4 -17.4 -29.6 -17.0 -24.5 -14.1	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG	Azimuth degrees 158 158 158 134 134 127 127 6 6 6 6 240 240 240 304	Height meters 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	17000 17 Comments RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak
20.0 10.0 1 quency MHz 14.100 12.800 106.670 106.330 341.200 343.400 19.970 20.100 73.730 80.020 00.050 00.120	Level dBμV/m 53.5 65.2 47.5 58.5 46.9 57.6 36.6 44.4 37.0 49.5 45.9 48.4	Pol V/h V V V H H V V V V V V V V V V V V V	13500 14 15.203 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 60.0 80.0	000 14500 From 14500 9 / 15E Margin -0.5 -8.8 -6.5 -15.5 -7.1 -16.4 -17.4 -29.6 -17.0 -24.5 -14.1 -31.6	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG	Azimuth degrees 158 158 158 134 134 127 127 6 6 6 240 240 240 304 304	Height meters 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.4 1.4 1.4 1.8 1.8	17000 17 Comments RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak
20.0 10.0 1 quency MHz 14.100 12.800 06.670 06.330 41.200 43.400 19.970 20.100 73.730 30.020)0.050)0.120	Level dBµV/m 53.5 65.2 47.5 58.5 46.9 57.6 36.6 44.4 37.0 49.5 45.9 48.4	Pol V/h V V V V V V V V V V V V V	13500 144 15.209 Limit 54.0 74.0 50.0 80.0 80.0	000 14500 Fra 9 / 15E Margin -0.5 -8.8 -6.5 -15.5 -7.1 -16.4 -17.4 -29.6 -17.0 -24.5 -14.1 -31.6	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 158 158 134 134 127 127 6 6 6 240 240 240 304 304	Height meters 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.4 1.4 1.4 1.8 1.8	17000 17 Comments RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak
20.0 10.0 1 quency MHz 014.100 012.800 06.670 06.670 06.330 041.200 043.400 19.970 20.100 73.730 80.020 00.050 00.120	Level dBµV/m 53.5 65.2 47.5 58.5 46.9 57.6 36.6 44.4 37.0 49.5 45.9 48.4 Scans made	Pol V/h V V V H H V V V V V V V V V V V V V	13500 144 15.209 Limit 54.0 74.0 60.0 80.0 80.0	000 14500 Fr 9 / 15E Margin -0.5 -8.8 -6.5 -15.5 -7.1 -16.4 -17.4 -29.6 -17.0 -24.5 -14.1 -31.6 th the measure	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG	Azimuth degrees 158 158 134 134 134 127 127 6 6 6 240 240 240 304 304	Height meters 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	17000 17 Comments RB 1 MHz;V RB 1 MHz;V	/B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak
20.0 10.0 1 quency MHz 014.100 012.800 106.670 106.670 106.330 041.200 041.200 041.200 041.200 041.200 00.050 00.050 00.120 e:	Level dBµV/m 53.5 65.2 47.5 58.5 46.9 57.6 36.6 44.4 37.0 49.5 45.9 48.4 Scans made device indica	Pol V/h V V V H H V V V V V V V V V V V V V	13500 144 15.209 Limit 54.0 74.0 54.0 54.0 74.0 54.0	000 14500 Fr 9 / 15E Margin -0.5 -8.8 -6.5 -15.5 -7.1 -16.4 -7.1 -16.4 -7.4 -29.6 -17.0 -24.5 -14.1 -31.6 th the measic cant emission	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK	Azimuth degrees 158 158 134 134 134 127 127 6 6 6 240 240 240 304 304 304	Height meters 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	17000 17 Comments RB 1 MHz;\ RB 1 MHz;\	/B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak
20.0 10.0 1 equency MHz 014.100 012.800 106.670 106.330 341.200 343.400 19.970 20.100 373.730 380.020 000.050 000.120 re: re: re:	Level dBμV/m 53.5 65.2 47.5 58.5 46.9 57.6 36.6 44.4 37.0 49.5 45.9 48.4 Scans made device indica For emission	Pol V/h V V V H H V V V V V V V V V V V V V	13500 14 13500 14 15.20 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 60.0 80.0 8 - 40 GHz wi ere no signifi ad bands the	000 14500 From 9 / 15E Margin -0.5 -8.8 -6.5 -15.5 -7.1 -16.4 -17.4 -29.6 -17.0 -24.5 -14.1 -31.6 The the measurements of the the the second s	Detector Pk/QP/Avg AVG PK PK AVG PK PK AVG PK PK AVG PK PK PK PK PK PK PK PK PK PK PK PK PK	Azimuth degrees 158 158 158 134 134 134 127 127 6 6 6 240 240 240 304 304 304	Height meters 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	Comments RB 1 MHz;V RB 1 MHz;V UT and its ar	/B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak
20.0 10.0 1 equency MHz 014.100 012.800 106.670 106.670 106.330 341.200 343.400 120.100 373.730 380.020 000.050 000.120 te: te 1:	Level dBμV/m 53.5 65.2 47.5 58.5 46.9 57.6 36.6 44.4 37.0 49.5 45.9 48.4 Scans made device indica For emission For emission	Pol V/h V V V V H H V V V V V V V V V V V V V	13500 14 13500 14 15.20 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 60.0 80	000 14500 From 9 / 15E Margin -0.5 -8.8 -6.5 -15.5 -7.1 -16.4 -17.4 -29.6 -17.0 -24.5 -14.1 -31.6 th the measing cant emission e limit of 15.2 d bands the	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG OF N AVG PK AVG DETECTOR OF N OF N OF N OF N OF N OF N OF N OF	Azimuth degrees 158 158 158 134 134 127 127 6 6 6 240 240 240 304 304 304 304	Height meters 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.4 1.4 1.4 1.8 1.8 round the E	Comments RB 1 MHz;V RB 1 MHz;V N RB 1 MZ RB 1 MZ RB 1 MZ RB 1 MZ RB 1 MZ RB 1 MZ	/B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak
20.0 10.0 1 3quency MHz 014.100 012.800 106.670 106.330 341.200 343.400 19.970 20.100 373.730 100.050 100	Level dBµV/m 53.5 65.2 47.5 58.5 46.9 57.6 36.6 44.4 37.0 49.5 45.9 48.4 Scans made device indica For emission For emission For emission	Pol V/h V V V V V V V V V V V V V	13500 14 13500 14 15.20 Limit 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 54.0 74.0 60.0 80.0 8-40 GHz wi ere no signifi ed bands, the the restricter	000 14500 From 9 / 15E Margin -0.5 -8.8 -6.5 -15.5 -7.1 -16.4 -17.4 -29.6 -17.0 -24.5 -14.1 -31.6 th the measing cant emission e limit of 15.2 d bands the =1MHz_V/R>	Detector Pk/QP/Avg AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG PK AVG DETER AVG PK AVG PK AVG DETER AVG PK AVG PK AVG DETER AVG PK PK AVG PK PK AVG PK PK PK PK PK PK PK PK PK PK PK PK PK	Azimuth degrees 158 158 158 134 134 127 127 6 6 6 240 240 240 304 304 304 304 304	Height meters 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.4 1.4 1.4 1.8 1.8 round the E es average 68.3dBuV/n	17000 17 Comments RB 1 MHz;V RB 1 MHz;V RB 1	/B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 3 MHz;Peak /B 10 Hz;Peak /B 3 MHz;Peak /B 3 MHz;Peak

		SUCCESS				EM	C Test Data			
Client:	Xirrus					Job Number:	J93457			
Model						T-Log Number:	T93459			
Model.					Project Manager:	Christine Krebill				
Contact: Peter Krebill Project Coordinator: -										
Standard:	Standard: FCC 15.247, 15.407, EN 55022, FCC B Class: N/A									
	RSS 210 and FCC 15.407 (UNII) Radiated Spurious Emissions									
Test Spec	cific Detai	ls								
	Objective:	The objectiv specification	e of this test listed above	session is to e.	perform final qualification	n testing of the EUT with i	respect to the			
General T The EUT an For radiated	est Confi d all local su emissions to	guration pport equipm esting the me	nent were loc easurement a	cated on the t antenna was	turntable for radiated spur located 3 meters from the	ious emissions testing. EUT, unless otherwise r	ioted.			
Ambient	Condition	S: T Ri	emperature: el. Humidity:	21.2 36	°C %					
Summary	of Result	S	Power	Measured						
Run #	Mode	Channel	Setting	Power	Test Performed	Limit	Result / Margin			
20MHz Ban	dwith Modes			I	1					
	а	56 - 5260MHz	-tp 26		Band Edge 5250MHz	15E	73.3 dBµV/m @ 5248.2 MHz (-0.7 dB)			
1	а	64 - 5320MHz	-tp 31		Restricted Band Edge at 5350 MHz	15.209	72.9 dBµV/m @ 5358.6 MHz (-1.1 dB)			
	а	100 - 5500MHz	-tp 25		Restricted Band Edge at 5460 MHz	15.209	53.1 dBµV/m @ 5421.1 MHz (-0.9 dB)			
2	а	100 - 5500MHz	-tp 25		Band Edge 5460 - 5470 MHz	15E	67.5 dBµV/m @ 5464.7 MHz (-0.8 dB)			
	а	140 - 5700MHz	-tp 33		Band Edge 5725MHz	15E	67.5 dBµV/m @ 5728.0 MHz (-0.8 dB)			

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		R SUCCESS				EM	C Test Data
Client:	Xirrus					Job Number:	J93457
Madalı						T-Log Number:	T93459
Woder.	XKZUUUH					Project Manager:	Christine Krebill
Contact:	Peter Krebil	il				Project Coordinator:	-
Standard:	FCC 15.247	7, 15.407, EN	55022, FCC	СВ		Class:	N/A
	······						
Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
20MHz Ban	dwith Modes	,					
3	n20	56 - 5280MHz	-tp 26		Band Edge 5250MHz	15E/15.209 KDB789033 D01 (H.2.c.i)	73.2 dBµV/m @ 5248.7 MHz (-0.8 dB)
	n20	64 - 5320MHz	-tp 31		Restricted Band Edge at 5350 MHz	15.209	73.2 dBµV/m @ 5350.5 MHz (-0.8 dB)
	n20	100 - 5500MHz	-tp 25		Restricted Band Edge at 5460 MHz	15.209	53.7 dBµV/m @ 5424.4 MHz (-0.3 dB)
4	n20	100 - 5500MHz	-tp 25		Band Edge 5460 - 5470 MHz	15E	67.5 dBµV/m @ 5464.5 MHz (-0.8 dB)
	n20	140 - 5700MHz	-tp 32		Band Edge 5725MHz	15E	67.5 dBµV/m @ 5725.5 MHz (-0.8 dB)
40MHZ Ban	dwith Modes	62		1	Destricted Rand Edge		40.4 dBuV/m @ 5240.0
	n40	5310MHz	-tp 16		at 5250 MHz	15.209	MHz (-4.6 dB)
5	n40	62 - 5310MHz	-tp 16		Restricted Band Edge at 5350 MHz	15.209	53.4 dBµV/m @ 5350.2 MHz (-0.6 dB)
	n40	102 - 5510MHz	-tp 15		Restricted Band Edge at 5460 MHz	15.209	50.8 dBµV/m @ 5440.0 MHz (-3.2 dB)
6	n40	102 - 5510MHz	-tp 15		Band Edge 5460 - 5470 MHz	15E	67.7 dBµV/m @ 5464.8 MHz (-0.6 dB)
	n40	134 - 5670MHz	-tp 33		Band Edge 5725MHz	15E	67.9 dBµV/m @ 5727.4 MHz (-0.4 dB)

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.



A State of the state			
Client:	Xirrus	Job Number:	J93457
Model	VD2000H	T-Log Number:	Т93459
wouer.		Project Manager:	Christine Krebill
Contact:	Peter Krebill	Project Coordinator:	-
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033

Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
802.11a	6	0.96	Yes	1.35	0.2	0.3	741
802.11n20	MCS0	0.97	Yes	1.27	0.1	0.3	787
802.11n40	MCS0	0.90	Yes	0.6	0.5	1.0	1667

Sample Notes

Sample S/N: 20:0C:7D Driver: Antenna: Panel (x4)

Measurement Specific Notes:

mououroi	
Note 1:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Per KDB 789033 2) c) (i), compliance can be
	demonstrated by meeing the average and peak limits of 15.209, as an alternative.
Note 2.	Emission has duty cycle < 98%, but constant, average measurement performed: RBW=1MHz, VBW=10Hz, peak detector,
NOLE Z.	linear averaging, auto sweep, trace average 100 * 1/DC traces, measurement corrected by Linear Voltage correction factor
Noto 3.	Plots of the average bandedge do not account for any duty cycle correction. Refer to the tabluar results for final
Note J.	measurements.





Client: Xirrus Job Number: J93457 Model: KR2000H T-Log Number: 193457 Contact: Peter Krebill Project Manager: Christine Krebill Contact: Peter Krebill Project Manager: Christine Krebill Standard: FCC 15 247, 15 407, EN 55022, FCC B Class: N/A Run #2: Radiated Bandedge Measurements, 5470-5725MHz Class: N/A Date of Test: 10/12013 0:00 Config: Used: 1 Test Engineer: Radiated Bandedge Measurements, 5470-5725MHz Date of Test: 10/12013 0:00 Config: Used: 1 Test Engineer: Radia 2 Mode: a Date action: FT C channer #5 EUT Voltage: POE Channel: 100 - 5500MHz Tx. Tx. The action: FC 15:209 Detector Azimuth Height Comments Frequency EVEN Power 25 (Command Line) 5460 MHz EAder Edge Signal Radiated Field Strength Frequency degrees meters Edge Signal Netz; VB: 10 Hz, Note 3 5421:120 D3:1 V 54.0 -2			SUCCESS						EM	C Test Data
Model: KR2000H T-Log Number: T33459 Contact: Peroject Manager: Christine Krebill Project Coordinator: - Standard: FCC 15.247, 15.407, EN 55022, FCC B Class: N/A N/A Run #2: Radiated Bandedge Measurements, 5470-5725MHz Class: N/A Date of Test: 10/1/2013 0:00 Config Change: None Fest Engineer: Rafael Varelas Config Change: None Test Engineer: Rafael Varelas Config Change: None EUT Voltage: POE Channel: 100 - 5500MHz Tx Chain: All - Radio 2 Mode: a Date Rate: 6 Pour setting: Tx Power 25 (Command Line) FCC 15.209 Detector Azimuth Height Comments MHz adgu/m wh Limit Margin PM/QP/Avg degrees meters 5421.120 53.1 V 54.0 -0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 5451.580 62.9 H 74.0 -11.1 PK 6 1.6	Client:	Xirrus							Job Number:	J93457
Model: RR200H Project Manager: Christine Krebill Contact: Peter Krebill Project Coordinator: - Standard: FCC 15.247, 15.407, EN 55022, FCC B Class: N/A Run #2: Radiated Bandedge Measurements, 5470-5725MHz Config: Used: 1 - Test Engineer: Rafall Variable Config: Change: None Test Engineer: Rafall Variable Config: Change: None Test Location: FT Chamber #5 EUT Voltage: POE Channel: 100 - 5500MHz TX X Chain: All - Radio 2 Mode: a Data Rate: 6 Power setting: TX Power 25 (Command Line) 5440 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15 209 Detector Azimuth Height Comments MHz dBauVim V 54.0 0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 5451.580 62.9 H 74.0 -2.6 AVG 6 1.6								T-Log Number		T93459
Contact: Peter Krebill Project Coordinator: Stendard: FCC 15.247, 15.407, EN 55022, FCC B Class: N/A Run #2: Radiated Bandedge Measurements, 5470-5725MHz Date of Test: 10/1/2013 0:00 Config. Used: 1 Test Engineer: Ratiale Varelas Config. Used: 1 Test Engineer: Ratiale Varelas Config. Used: 1 Test Location: FT Chamber #5 EUT Voltage: POE Channel: 100 - 5500MHz Tx Chain: All - Ratio 2 Mode: a Data Rate: 6 Power setting: Tx Power 25 (Command Line) S460 MHz Band Edge Signal Radiated Field Strength Frequency Level POI FC 15.209 Detector Azimuth Height Comments MHz GBLV/m Vin Limit Margin PVC/P/Avg Gegres meters 5451.120 S3.1 V S4.0 -2.0 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 5451.580 62.9 H 74.0 -2.1 PK 6 1.6 <	Model:	XR2000H						Proie	Christine Krebill	
Optimized Procession Standard: FCC 15:247, 15:407, EN 55022, FCC B Class: IV/A Class: IV/A <th< td=""><td>Contact[.]</td><td>Peter Krebill</td><td> </td><td></td><td></td><td></td><td></td><td>Project</td><td>Coordinator:</td><td>-</td></th<>	Contact [.]	Peter Krebill	 					Project	Coordinator:	-
Run #2: Radiated Bandedge Measurements, 5470-5725MHz Date of Test: 10/1/2013 0:00 Config. Used: 1 Test Engineer: Radia Varelas Test Location: FT Chamber #5 EUT Voltage: POE Chamel: 10:-5500MHz Tx Chain: All - Radia 2 Mode: a Data Rate: 6 Power setting: TX Power 25 (Command Line) S460 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15:209 Detector Azimuth Height: Comments MHz dBju//m Vh Limit Margin S425:770 64.8 V 74.0 -9.2 S45:5800 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 3 MHz S45:5800 62.9 H 74.0 -11.1 PK	Standard	FCC 15 247	15.407 FN	55022 ECC	B			110,000	Class:	N/A
Run #2: Radiated Bandedge Measurements, 5470-5725MHz Date of Test: 10/1/2013 0:00 Config. Used: 1 Test Engineer: Rafael Varelas Config Change: None Test Location: FT Chamber #5 EUT Voltage: POE Channel: 100 - 5500MHz Tx Chain: All - Radio 2 Mode: a Data Rate: 6 Power setting: Tx Power 25 (Command Line) 5400 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15 209 Detector Azimuth Height Comments MHz dBu//m v/h Limit Margin Pk/QP/Avg degrees meters 5421.120 53.1 V 54.0 -0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 5425.770 64.8 V 74.0 -9.2 PK 350 1.5 POS; RB 1 MHz; VB: 30 Htz 5425.770 64.8 V 74.0 -9.2 PK 350 1.5 POS; RB 1 MHz; VB: 30 Htz 5425.780 61.4 H 54.0 -2.2.6 AVG 6 1.6 POS; RB 1 MHz; VB: 30 Htz 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 30 Htz 5451.580 61.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 30 Htz FR 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3MHz; Pk (Blue) Vertical 0.0 0.	otandara.	10010.211	, 10.101, EN	00022,100	5				01000.	
Date of Test: 10/1/2013 0:00 Config. Used: 1 Test Engineer: Rafael Varalas Config. Used: 1 Test Location: FT Chamber #5 EUT Voltage: POE Channel: 100 - 5500MHz Tx Chair: All - Radio 2 Mode: a Data Rate: 6 Power setting: Tx Power 25 (Command Line) 5460 MHz Band Edge Signal Radiated Field Strength Frequency Level Poil FCC 15.209 Detector Azimuth Height Comments MHz dBµV/m Vin Limit Margin Pk/QP/Avg degrees S425.770 64.8 V 74.0 -9.2 PK S451.580 62.9 H 74.0 -9.1 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 S451.580 62.9 H 74.0 -9.1 70.0 - - 6 1.6 POS; RB 1 MHz; VB: 10 Hz, Note 3 60.0 - - - - - - 60.0 - - - </td <td colspan="10">Run #2: Radiated Bandedge Measurements, 5470-5725MHz</td>	Run #2: Radiated Bandedge Measurements, 5470-5725MHz									
Test Engineer: Rafael Varelas Config Change: None Test Location: FT Chamber #5 EUT Voltage: POE Channel: 100 - 5500MHz Tx Chain: All - Radio 2 Mode: a Data Rate: 6 Power setting: Tx Power 25 (Command Line) 5460 MHz Band Edge Signal Radiated Field Strength Frequency Level MHz dBµV/m MHz 09 AVG 5421.120 53.1 V 54.0 5425.770 64.8 62.9 H 74.0 -9.2 PK 350 5425.120 51.4 H 54.0 -2.6 AVG 6 1.6 POS; RB 1 MHz; VB: 10 Hz, Note 3 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 3 MHz 70.0 - - - - 70.0 - - - - 70.0 - - - - 70.0 - <td colspan="9">Date of Test: 10/1/2013 0:00 Config. Used: 1</td> <td></td>	Date of Test: 10/1/2013 0:00 Config. Used: 1									
Test Location: FT C hamber #5 EUT Voltage: POE Channel: 100 - 5500MHz Tx Chain:: All - Radio 2 Mode: a Data Rate: 6 Power setting: Tx Power 25 (Command Line) 5460 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBµU/m vh Limit Margin PVQP/Avg degrees meters 5421.120 53.1 V 54.0 -0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 5425.770 64.8 V 74.0 -9.2 PK 350 1.5 POS; RB 1 MHz; VB: 30 HLz, VB: 30 HLz 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 30 HLz RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3MHz; Pk (Blue) Vertical	Te	est Engineer:	Rafael Vare	las		Con	fig Change:	None		
Channel: 100-5500MHz Tx Chain: All - Radio 2 Mode: a Data Rate: 6 Power 25 (Command Line) 5460 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBjLV/m V/h Limit Margin Pk/QP/Avg degrees meters 5421.120 53.1 V 54.0 -0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 5425.770 64.8 V 74.0 -9.2 PK 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 5459.280 51.4 H 54.0 -2.6 AVG 6 1.6 POS; RB 1 MHz; VB: 3 MHz 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 3 MHz 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 3 MHz RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3MHz; Pk (Blue) Vertical 80.0 70.0 70.0 70.0 54.20 54.25 54.30 5435 5440 5445 5450 5455 5460 Frequency (MHz)	Te	est Location:	FT Chambe	r #5		E	UT Voltage:	POE		
Critatine: 100 - 300UMITZ Tx Chain: All - Radio 2 Mode: a Data Rate: 6 Power setting: Tx Power 25 (Command Line) 5460 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dB _µ V/m V/h Limit Margin Pk/QP/Avg degrees meters 5421.120 53.1 V 54.0 -0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 5425.770 64.8 V 74.0 -9.2 PK 350 1.5 POS; RB 1 MHz; VB: 3 MHz 5459.280 51.4 H 54.0 -2.6 AVG 6 1.6 POS; RB 1 MHz; VB: 3 MHz 5459.280 51.4 H 54.0 -2.6 AVG 6 1.6 POS; RB 1 MHz; VB: 3 MHz 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 3 MHz RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3MHz; Pk (Blue) Vertical 80.0 	Charry	100 5500	411-							
In Virtual: Put instruction 2 Mode: a Data Rate: 6 Power setting: Tx Power 25 (Command Line) 5460 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBjL/m v/h Limit Margin Pk/QP/Avg degrees meters 5421.120 53.1 V 54.0 -0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 3 MHz 5425.770 64.8 V 74.0 -9.2 PK 350 1.5 POS; RB 1 MHz; VB: 3 MHz 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 3 MHz RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3MHz; Pk (Blue) Vertical Image: State	Unannel: Ty Chain:		′I⊓Z)							
Data Rate: 6 Power setting: Tx Power 25 (Command Line) 5460 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments 5411.120 53.1 V 54.0 -0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 5425.770 64.8 V 74.0 -9.2 PK 350 1.5 POS; RB 1 MHz; VB: 30 Hz; S450.26 6 1.6 POS; RB 1 MHz; VB: 30 Hz; S450.26 5450.280 51.4 H 54.0 -2.6 AVG 6 1.6 POS; RB 1 MHz; VB: 30 Hz; VB: 30 Hz; S451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 30 Hz; VB: 30	Mode:	All - Maulu Z								
Power setting: Tx Power 25 (Command Line) 5460 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dB _µ U/m Vh Limit Margin Pk/QP/Avg degrees meters 5421.120 53.1 V 54.0 -0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3. 5425.770 64.8 V 74.0 -9.2 PK 350 1.5 POS; RB 1 MHz; VB: 30 Hz 5459.280 51.4 H 54.0 -2.6 AVG 6 1.6 POS; RB 1 MHz; VB: 30 Hz, Note 3. 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 30 Hz 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 30 Hz RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3MHz; Pk (Blue) Vertical 80.0 	Data Rate:	6								
S460 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBµLV/m v/h Limit Margin Pk/QP/Avg degrees meters 5421.120 53.1 V 54.0 -0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 5425.770 64.8 V 74.0 -9.2 PK 350 1.5 POS; RB 1 MHz; VB: 30 HHz 5459.280 51.4 H 54.0 -2.6 AVG 6 1.6 POS; RB 1 MHz; VB: 30 Hz 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 3 MHz RB 1 MHz; VB 10 Hz Avg (Black); RB 1 MHz; VB 3MHz; Pk (Blue) Vertical \$0.0	Power settir	ng: Tx Power	25 (Commai	nd Line)						
5460 MHz Band Edge Signal Radiated Field Strength Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dB _{1L} V/m v/h Limit Margin Pk/QP/Avg degrees meters 5421.120 53.1 V 54.0 -0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 5425.770 64.8 V 74.0 -9.2 PK 350 1.5 POS; RB 1 MHz; VB: 30 Hz 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 30 Hz 70.0 - - - - 11.1 PK 6 1.6 POS; RB 1 MHz; VB: 30 Hz 80.0 -		-	·							
Frequency Level Pol FCC 15.209 Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 9 5421.120 53.1 V 54.0 -0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3. 5425.770 64.8 V 74.0 -9.2 PK 350 1.5 POS; RB 1 MHz; VB: 3 MHz 5459.280 51.4 H 54.0 -2.6 AVG 6 1.6 POS; RB 1 MHz; VB: 10 Hz, Note 3. 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 3 MHz RB 1 MHz; VB 10 Hz Avg (Black); RB 1MHz; VB 3MHz; Pk (Blue) Vertical 80.0 -	5460 MHz E	Band Edge S	Signal Radia	ted Field Str	ength	_			-	
MHz dB _{IL} //m v/h Limit Margin Pk/QP/Avg degrees meters 5421.120 53.1 V 54.0 -0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 5425.770 64.8 V 74.0 -9.2 PK 350 1.5 POS; RB 1 MHz; VB: 3 MHz 5459.280 51.4 H 54.0 -2.6 AVG 6 1.6 POS; RB 1 MHz; VB: 3 MHz 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 3 MHz 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 3 MHz 60.0 -	Frequency	Level	Pol	FCC 1	5.209	Detector	Azimuth	Height	Comments	
3421.120 53.1 V 54.0 -0.9 AVG 350 1.5 POS; RB 1 MHz; VB: 10 Hz, Note 3 5459.280 51.4 H 54.0 -2.6 AVG 6 1.6 POS; RB 1 MHz; VB: 3 MHz 5459.280 51.4 H 54.0 -2.6 AVG 6 1.6 POS; RB 1 MHz; VB: 10 Hz, Note 3 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB: 3 MHz RB 1 MHz; VB 10 Hz Avg (Black); RB 1MHz; VB 3MHz; Pk (Blue) Vertical 80.0 - - - - 60.0 - - - - - - - - 9 50.0 - - - - - - - - 40.0 - <t< td=""><td>MHz</td><td>dBµV/m</td><td>v/h</td><td>Limit</td><td>Margin</td><td>Pk/QP/Avg</td><td>degrees</td><td>meters</td><td></td><td></td></t<>	MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
3423.770 64.6 V 74.0 -9.2 PK 330 1.5 POS, RB 1 MHz, VB. 3 MHz 5459.280 51.4 H 54.0 -2.6 AVG 6 1.6 POS, RB 1 MHz, VB. 10 Hz, Note 3 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS; RB 1 MHz; VB. 30 MHz RB 1 MHz; VB 10 Hz Avg (Black); RB 1MHz; VB 3MHz; Pk (Blue) Vertical 80.0 - <t< td=""><td>5421.120</td><td>53.1</td><td>V</td><td>54.0</td><td>-0.9</td><td>AVG</td><td>350</td><td>1.5</td><td>POS; RB 1</td><td></td></t<>	5421.120	53.1	V	54.0	-0.9	AVG	350	1.5	POS; RB 1	
3433-200 31.4 11 34.0 42.0 AVG 0 1.0 POS, RB 1 MHz; VB 3 MHz 5451.580 62.9 H 74.0 -11.1 PK 6 1.6 POS, RB 1 MHz; VB 3 MHz RB 1 MHz; VB 10 Hz Avg (Black); RB 1MHz; VB 3MHz; Pk (Blue) Vertical 80.0 -	5425.770	04.0 51.4	V L	74.0 54.0	-9.2		500	1.0	PUS, RD 1	MHz: VB: 3 MHZ MHz: VB: 10 Hz, Note 3
RB 1 MHz; VB 10 Hz Avg (Black); RB 1MHz; VB 3MHz; Pk (Blue) Vertical 80.0 70.0 60.0 70.0 9 50.0 9 50.0 50.0 50.0 51.0 52.0 52.0 54.20 54.25 54.20 54.25 54.30 54.35	5451 580	62.9	H	74.0	-2.0	PK	6	1.0	POS: RB 1	MHz; VB: 3 MHz
RB 1 MHz; VB 10 Hz Avg (Black); RB 1MHz; VB 3MHz; Pk (Blue) Vertical 80.0 70.0 60.0 100	0101.000	02.0		71.0			Ũ	1.0	100,1011	1112, VD. 0 11112
	RB 1 MHz 80.0 70.0 (W/\ngp) epnaji 60.0 (W/ ngp) 50.0 40.0 30.0 5	; VB 10 Hz A	vg (Black); F	28 1MHz; VB	3MHz; Pk (E	Blue) Vertical	<mark>,∧</mark>	 	www.www. 	·····





		SUCCESS						EM	C Test Data	
Client:	Xirrus							Job Number:	J93457	
				T-	Log Number:	Т93459				
Model:	XR2000H			Proje	ect Manager:	Christine Krebill				
Contact:	Peter Krebill		Project	Coordinator:	-					
Standard:	FCC 15.247	, 15.407, EN	55022, FCC			Class:	N/A			
Run #3: Ra	diated Banc	ledge Meas	urements, 5	250-5350MH	łz					
	Date of Test:	10/1/2013 0	:00		C	onfiq. Used:	1			
Te	st Engineer:	Rafael Vare	as		Con	fig Change:	None			
Te	est Location:	FT Chambe	r #5		E	UT Voltage:	POE			
Channel: 56 - 5280 MHz Tx Chain: All - Radio 2 Mode: n20 Data Rate: MCS0 Power setting: Tx Power 26 (Command Line) 5250 MHz Band Edge Signal Radiated Field Strength										
Frequency	Level	Pol	FCC 15.	209/ 15E	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
Based on KL	DB 789033 D	01 v01r03 (H	H) 2.c.i	5.0	A) (O	0.45	47			
5250.000	49.0	V	54.0	-5.0	AVG	345	1.7	PUS; RB 11		
5250 000	48.6	V H	74.0 54.0	-0.0		353	1.7	POS: RB 11	MHz: VB: 10 Hz Note 3	
5249.120	70.3	H	74.0	-3.7	PK	353	1.3	POS: RB 1 I	MHz; VB: 3 MHz	
RB 1 MHz; 80.0 70.0 (//\/\ngp) aprilidium 50.0 40.0 50.0 50.0	RB 1 MHz; VB 10 Hz Avg (Black); RB 1MHz; VB 3MHz (Blue) Pk; Vertical 80.0 70.0 60.0 60.0 40.0 30.0 5210 5215 5210 5215 5210 5225 5210 5215 5210 5225 5210 5225 5210 5225 5210 5225 5210 5225 5210 5225 5210 5215 5210 5220 5210 5225 5210 5215									
				Fre	equency (MH	z)				

		SUCCESS						EM	C Test Data	
Client:	Xirrus							Job Number:	J93457	
							T-	Log Number:	T93459	
Model:	XR2000H						Proj	ect Manager:	Christine Krebill	
Contact:	Peter Krebill				Proiect	Coordinator:	-			
Standard: FCC 15.247, 15.407, EN 55022, FCC B Class: N/A										
otandara.	1.00.10.2.11	, 10.101, 211		5				010001		
Date of Test: 10/1/2013 0:00Config. Used: 1Test Engineer: Rafael VarelasConfig Change: NoneTest Location: FT Chamber #5EUT Voltage: POE										
Channel: Tx Chain: Mode: Data Rate: Power settir <i>5350 MHz E</i>	64 - 5320MH All - Radio 1 n20 MCS0 ng: Tx Power Band Edge S	lz 0 31 (Commai <i>iqnal Radia</i>	nd Line) <i>ted Field Str</i>	rength						
Frequency	Level	Pol	FCC 1	5.209	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
5350.000	50.6	Н	54.0	-3.4	AVG	348	1.4	POS; RB 1 I	MHz; VB: 10 Hz, Note 3	
5350.480	71.6	Н	74.0	-2.4	PK	348	1.4	POS; RB 1 I	MHz; VB: 3 MHz	
5350.000	51.5	V	54.0	-2.5	AVG	336	1.5	POS; RB 1 I	MHz; VB: 10 Hz, Note 3	
5350.480	73.2	V	74.0	-0.8	PK	336	1.5	POS; RB 11	MHZ; VB: 3 MHZ	
RB 1 MHz 80.0 (W/Nngp) 60.0 (W/Nngp) 50.0 40.0 30.0	; VB 10 Hz A	vg (Black); F	28 1MHz; VB	3MHz (Blue)) Pk; Vertical		5380	иллогил 5385		

	R SUCCESS						EM	C Test Data
Client: Xirrus							Job Number:	J93457
						T-	Loa Number:	T93459
Model: XR2000H						Proie	ect Manager:	Christine Krebill
Contact: Peter Krebil	1					Project	Coordinator:	-
Standard: ECC 15 247	15407 EN	155022 ECC	R			110,000	Class:	N/A
	, 10.407, EN	100022,100	D				01000.	
Run #4: Radiated Ban	dedge Meas	urements, 5	470-5725MH	łz				
Date of Test:	10/1/2013 0):00		C	onfig. Used:	1		
Test Engineer:	Rafael Vare	elas		Con	fig Change:	None		
Test Location:	FT Chambe	er #5		E	UT Voltage:	POE		
Channel: 100 - 5500N Tx Chain: All - Radio 2 Mode: n20 Data Rate: MCS0 Power setting: Tx Power	/Hz 2 25 (Comma Signal Padia	nd Line)	anath					
Frequency Level	Pol	FCC 1	15 209	Detector	Azimuth	Height	Comments	
MHz dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Commenta	
5424.410 53.7	V	54.0	-0.3	AVG	346	1.4	POS: RB 1 I	MHz: VB: 10 Hz. Note 3
5424.410 71.7	V	74.0	-2.3	PK	346	1.4	POS; RB 1 I	MHz; VB: 3 MHz
5459.920 50.9	Н	54.0	-3.1	AVG	357	1.6	POS; RB 1 I	MHz; VB: 10 Hz, Note 3
5454.150 65.8	Н	74.0	-8.2	PK	357	1.6	POS; RB 1 I	MHz; VB: 3 MHz
RB 1 MHz; VB 10 Hz A 80.0 - 70.0 - (E) 60.0 - 90 90 50.0 - 40.0 - 30.0 - 5420	wg (Black); F	RB 1MHz; VB	3MHz (Blue)) Pk; Vertical	5445 z)			Киранија 1. предоктисни 5460



		SUCCESS						EMC Tes	t Data				
Client:	Xirrus						,	Job Number: J93457					
Madalı							T-Log Number: T93459						
wodel:	XR2000H						Proje	ect Manager: Christine Ki	rebill				
Contact:	Peter Krebill	er Krebill Project Coordinator: -											
Standard:	FCC 15.247	15.407, EN	55022, FCC	В				Class: N/A					
Channel: Tx Chain: Mode: Data Rate: Power settir	140 - 5700M All - Radio 1 n20 MCS0 Ig: Tx Power	Hz) 32 (Comma	nd Line)										
5/25 MHZ E	sand Edge S	Ignal Radia	tea Fiela Str	<i>engtn</i>	Detector	Azimuth	Height	Comments					
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	dearees	meters	Comments					
5725.480	67.5	V	68.3	-0.8	PK	348	1.0	POS: RB 1 MHz: VB: 3	MHz				
5754.420	63.8	H	68.3	-4.5	PK	360	1.3	POS; RB 1 MHz; VB: 3	MHz				
(W/NBP) 9000 50.0 40.0			hommundurativativativativativativativativativativ	nan an	Mr www.WrWp	rynnyw	ntrappar	NWWW-WANNAM WAN					
30.0 5	-¦	5730	5735	5740 Fri	5745 equency (MH	5750 z)	5755	5760 5765	5				

		SUCCESS						EM	C Test Data	
Client:	Xirrus						,	Job Number:	J93457	
M	VD0000LL						T-	Log Number:	T93459	
Model:	XR2000H						Proje	ect Manager:	Christine Krebill	
Contact: Peter Krebill Project Coordinator: -										
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	В				Class:	N/A	
Run #5: Ra Channel:	diated Band 62 - 5310M	ledge Measi Iz	urements, 52	250-5350MH	·Ιz					
Tx Chain:	All - Radio 2									
Mode:	n40									
Data Rate:	MCS0									
Power settin	g: Tx Power	16 (Commai	nd Line)							
) and Edge (Samal Dadia	tod Field Ct	an ath						
5250 MHZ E	l evel	Pol	FCC 1	5 209	Detector	Azimuth	Height	Comments		
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Ava	dearees	meters	Commenta		
5239.980	49.4	V	54.0	-4.6	AVG	343	1.5	POS; RB 1 I	MHz; VB: 10 Hz, Note 3	
5240.060	60.5	V	74.0	-13.5	PK	343	1.5	POS; RB 1 I	MHz; VB: 3 MHz	
5239.900	47.5	Н	54.0	-6.5	AVG	360	1.4	POS; RB 1 I	MHz; VB: 10 Hz, Note 3	
5211.520	58.1	Н	74.0	-15.9	PK	360	1.4	POS; RB 1 I	MHz; VB: 3 MHz	
RB 1 MHz 80.0 (W/\ngp) apn110 (W/\ngp) apn110 40.0 30.0 5		vg (Black); F	<pre>%B 1MHz; VB </pre>	3MHz (Blue) Pk; Vertical		wh _{wa} , wh _{waw} 	 5245	www.dww 5250	



v verifier	VE ENGINEER SUCCESS		
Client:	Xirrus	Job Number:	J93457
Model	VD2000H	T-Log Number:	Т93459
MOUEI.		Project Manager:	Christine Krebill
Contact:	Peter Krebill	Project Coordinator:	-
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class:	N/A

5350 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 2	15.209	Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5350.160	53.4	V	54.0	-0.6	AVG	343	1.5	POS; RB 1 MHz; VB: 10 Hz, Note 3
5350.960	68.1	V	74.0	-5.9	PK	343	1.5	POS; RB 1 MHz; VB: 3 MHz
5386.070	52.0	Н	54.0	-2.0	AVG	360	1.4	POS; RB 1 MHz; VB: 10 Hz, Note 3
5385.270	64.6	Н	74.0	-9.4	PK	360	1.4	POS; RB 1 MHz; VB: 3 MHz



		SUCCESS						EM	C Test Data		
Client:	Xirrus							Job Number:	J93457		
							T-I	Log Number:	T93459		
Model:	XR2000H						Proie	ect Manager	Christine Krebill		
Contact:	Peter Krehill						Project	Coordinator:	-		
Standard: FCC 15 247, 15 407, FN 55022, FCC B Class: N/A											
Stanuaru.	1 00 10.247	, 10. 1 07, LIN	55022,100	D				01033.	IN/74		
Run #6: Ra	idiated Band	ledge Meas	urements, 5	470-5725MH	Iz						
[Date of Test:	10/1/2013 0	:00		C	onfig. Used:	1				
Te	st Engineer:	Rafael Vare	las		Con	fig Change:	None				
Te	est Location:	FT Chambe	r #5		E	UT Voltage:	POE				
Channel	102 55100	117									
Tx Chain	All - Radio 2	11 12									
Mode:	n40										
Data Rate:	MCS0										
Power settin	ng: Tx Power	15 (Comma	nd Line)								
5460 MHz E	Band Edge S	Signal Radia	ted Field Str	rength							
Frequency	Level	Pol		5.209	Detector	Azimuth	Height	Comments			
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters				
5439.960	50.8	V	54.0 74.0	-3.Z	AVG	349	1.4	PUS; RB 1			
5/30 060	/01.2	V H	74.0 54.0	-12.0		049 2	1.4	POS, RD 1	MHz: VB: 10 Hz, Note 3		
5423 930	59.0	H	74.0	-15.0	PK	2	1.4	POS: RB 1	MHz; VB: 3 MHz		
0120.000	00.0		11.0	10.0		-		1.00,110.11			
RB 1 MHz 80.0 (w)/Mgp) apn11 (dwy 40.0 30.0 5	; VB 10 Hz A	vg (Black); F	28 1MHz; VB	3MHz (Blue)) Pk; Vertical	5445 z)	5450	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			





N N	E ENGINEER SUCCESS		
Client:	Xirrus	Job Number:	J93457
Model	XD3000H	T-Log Number:	Т93459
MOUEI.		Project Manager:	Christine Krebill
Contact:	Peter Krebill	Project Coordinator:	-
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class:	N/A

RSS 210 and FCC 15.407 (UNII) Radiated Spurious Emissions

Test Specific Details

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

General Test Configuration

NTS

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, unless otherwise noted.

Ambient Conditions:

 Temperature:
 21-25 °C

 Rel. Humidity:
 35-45 %

Summary of Results

Run #	Mode	Channel	Power Setting	Test Performed	Limit	Result / Margin
Operating v	vithin 5250-	5350 MHz				
1	802.11a	See Below	See Below	Radiated Emissions,	ECC 15 209 / 15 E	52.9 dBµV/m @ 4873.9
I	802.11b	See Delow	See Delow	1 - 40 GHz	100 13.2037 13 L	MHz (-1.1 dB)
2	802.11n20	See Below	See Below	Radiated Emissions,	FCC 15 209 / 15 F	52.7 dBµV/m @ 4873.9
2	802.11b			1 - 40 GHz	100 10.2007 10 L	MHz (-1.3 dB)
3	802.11a	See Below	See Below	Radiated Emissions,	FCC 15 209 / 15 F	51.4 dBµV/m @ 4816.7
5	802.11a			1 - 40 GHz	100 10.2007 10 L	MHz (-2.6 dB)
1	802.11n20	See Below	See Below	Radiated Emissions,	FCC 15 209 / 15 F	63.2 dBµV/m @
4	802.11n20			1 - 40 GHz	100 10.2007 10 L	10558.6 MHz (-5.1 dB)
5	802.11n40	See Below	See Below	Radiated Emissions,	FCC 15 209 / 15 F	48.9 dBµV/m @ 4848.5
5	802.11n20			1 - 40 GHz	100 10.2007 10 L	MHz (-5.1 dB)
6	802.11n40	See Below	See Below	Radiated Emissions,	FCC 15 209 / 15 F	50.4 dBµV/m @ 2833.4
0	802.11n20	OFF DEIOM	OFE DEIDM	1 - 40 GHz	100 10.2007 10 E	MHz (-3.6 dB)

		SUCCESS				EMO	C Test Data
Client:	Xirrus					Job Number:	J93457
N4. 1.1						T-Log Number:	T93459
Model:	XR2000H					Project Manager:	Christine Krebill
Contact:	Peter Krebill					Project Coordinator:	-
Standard:	FCC 15.247,	15.407, E	EN 55022, FCC E	3		Class:	N/A
System Cor	nfiguration:	Op	perating within	5250-5350 MHz			
Radio # Run: 1	Frequency	СН	Mode	Pwr			
6	5280	56	802.11a	31			
10	5300	60	802.11a	31			
14	5320	64	802.11a	31			
2	2437	6	802.11b	26			
Run: 2							
6	5280	56	802.11n20	31			
10	5300	60	802.11n20	31			
14	5320	64	802.11n20	31			
2	2437	6	802.11b	26			
Dup: 2							
Run: 3	5290	56	902 110	21			
10	5200	50 60	002.11a 802.11a	31			
1/	5320	64	802.11a	31			
2	5785	157	802.11a	3/			
2	5705	107	002.118	54			
Run: 4							
6	5280	56	802.11n20	31			
10	5300	60	802.11n20	31			
14	5320	64	802.11n20	31			
2	5785	157	802.11n20	34			
Run: 5							
6	5270	54	802.11n40	31			
10	5310	62	802.11n40	31			
14	5755	151	802.11n40	34			
2	5785	157	802.11n20	34			
Run: 6							
6	5270	54	802 11n40	31			
10	5310	62	802 11n40	31			
14	2422	3	802 11n40	26			
2	2437	6	802.11n20	26			
Notes - Mul power, tran	tiple radios ope smitting on all o	erating at chains.	the same time a	is shown above.	In all cases, power s	et to the maximum wors	e case single channel

		SUCCESS			EM	C Test Data
Client:	Xirrus				Job Number:	J93457
Madal	VD0000U				T-Log Number:	T93459
Model:	XK2000H				Project Manager:	Christine Krebill
Contact:	Peter Krebill				Project Coordinator:	-
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	В	Class:	N/A
Run #	Mode	Channel	Power Setting	Test Performed	Limit	Result / Margin
Operating v	vithin 5470-!	5725 MHz				
7	802.11a 802.11b	See Below	See Below	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	50.3 dBµV/m @ 11021.0 MHz (-3.7 dB)
8	802.11n20 802.11b	See Below	See Below	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	52.4 dBµV/m @ 11004.9 MHz (-1.6 dB)
9	802.11a 802.11a	See Below	See Below	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	45.6 dBµV/m @ 11568.8 MHz (-8.4 dB)
10	802.11n20 802.11n20	See Below	See Below	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	47.5 dBµV/m @ 5080.0 MHz (-6.5 dB)
11	802.11n40 802.11n20	See Below	See Below	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	48.2 dBµV/m @ 5080.0 MHz (-5.8 dB)
12	802.11n40 802.11n20	See Below	See Below	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	51.6 dBµV/m @ 5356.1 MHz (-2.4 dB)

		SUCCESS				EM	IC Test Data
Client:	Xirrus					Job Numbe	r: J93457
Madal	VD0000					T-Log Numbe	r: T93459
wodel:	XK2000H					Project Manage	r: Christine Krebill
Contact:	Peter Krebill					Project Coordinato	r: -
Standard:	FCC 15.247,	15.407, E	N 55022, FCC I	3		Class	s: N/A
System Con	figuration:	Op	perating within	5470-5725 MHz			
Radio # Run: 7	Frequency	СН	Mode	Pwr			
6	5500	100	802.11a	33			
10	5540	108	802.11a	33			
14	5660	132	802.11a	33			
2	2437	6	802.11b	26			
Run [.] 8							
6	5500	100	802.11n20	32			
10	5580	116	802.11n20	32			
14	5700	140	802.11n20	32			
2	2437	6	802.11b	26			
Run: 9							
6	5500	100	802.11a	33			
10	5580	116	802.11a	33			
14	5700	140	802.11a	33			
2	5785	157	802.11a	34			
Run: 10							
6	5500	100	802.11n20	32			
10	5580	116	802.11n20	32			
14	5700	140	802.11n20	32			
2	5785	157	802.11n20	34			
Run- 11							
6	5510	102	802 11n40	33			
10	5550	110	802 11n40	33			
14	5670	134	802 11n40	33			
2	5785	157	802.11n20	34			
		-	-				
Run: 12		400	000 44 40	45			
6	5510	102	802.11n40	15			
10	5550	110	802.11n4U	პ პ			
14	50/0	134	802.11n4U	33 00			
2	2437	6	802.11n20	26			
Notes - Mult power, trans	iple radios ope mitting on all o	erating at chains.	the same time a	as shown above.	In all cases, powe	r set to the maximum wo	rse case single channel



Client:	Xirrus	Job Number:	J93457					
Model:	XB3000H	T-Log Number:	T93459					
		Project Manager:	Christine Krebill					
Contact:	Peter Krebill	Project Coordinator:	-					
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class:	N/A					

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.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033

Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time

Unless otherwise stated/noted, emissions had duty cycle < 98%, but constant, average measurement performed: RBW=1MHz,

VBW=10Hz, peak detector, linear averaging, auto sweep, trace average 100 traces, measurement corrected by Linear Voltage correction factor.

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11b	1Mb/s	0.99	Yes	4.02	0.0	0.0	249
11a	MB/s	0.96	Yes	1.35	0.2	0.3	741
11n20	MCS	0.97	Yes	1.27	0.1	0.3	787
11n40	MCS	0.90	Yes	0.6	0.5	1.0	1667

Sample Notes

Sample S/N: 20:0C:7D Driver: Antenna: Panel (x4)

Measurement Specific Notes:

Note 1:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Per KDB 789033 2) c) (i), compliance can be demonstrated by meeing the average and peak limits of 15.209, as an alternative.
Note 2:	Emission have duty cycle < 98%, but constant, average measurement performed: RBW=1MHz, VBW=10Hz, peak detector, linear averaging, auto sweep, trace average 100 * 1/DC traces, measurement corrected by Linear Voltage correction factor

	NTS	EMC Test Data
Client:	Xirrus	Job Number: J93457
Madali	VD2000H	T-Log Number: T93459
wouer.	AR2000H	Project Manager: Christine Krebill
Contact:	Peter Krebill	Project Coordinator: -
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class: N/A
Run #1, Ra	diated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5	250-5350 MHz Band
L Te	Date of Lest: 10/3/2013 Config. L St Engineer: Doniz Domirci	Jsed: 1
Te	est Location: FT Ch# 5 EUT Vol	tage: POE
Radio #	Frequency CH Mode Pwr	
6	5260 56 802.11a 31	
10	5300 60 802.11a 31	
14 2	5320 64 802.11a 31 2437 6 802.11b 26	
∠ Tx Chain:	2x2	
80.0 70.0 (m//ngp) epnijiduwy 40.0 30.0 25.0 1	000 Frequency (MHz)	
80.0 75.0 (ш/ 70.0 (ш/ 65.0		
<u>)</u> <u>9</u> 60.0		
· 1월 55.0		
50.0	-	- market -
45.0	- marine marine and the second	www.water Made Mary Bart and a fland a strand a
40.0	-', ; 000.0	40000.
	Frequency (MHz)	
r		

EMC Test Data								
Client:	Xirrus							Job Number: J93457
								Log Number: T93459
Model:	XR2000H						Proi	ect Manager: Christine Krebill
Contact	Potor Krohill						Project	
Standard:		15/07 EN	55022 ECC	D			Појесі	
Standard.	FUU 13.247	, 13.407, EN	55022, FCC	D				Cidss. IN/A
Fraguanov		Dol	15 200	/ 150	Detector	Azimuth	Hoight	Commonto
		P01	15.208	Marain		Azimum	meigni	Comments
4873 900	υ <u>ομν/</u> π 52.9	V	54 0			344	14	RB 1 MHz·\/B 10 Hz·Peak_Note 2
4873 840	55.8	V	74.0	-18.2	PK	344	1.4	RB 1 MHz·V/B 3 MHz·Peak
2834 710	44.2	V	54.0	-9.8	AVG	347	1.4	RB 1 MHz;VB 10 Hz;Peak
2834 110	55.7	V	74 0	-18.3	PK	347	1.1	RB 1 MHz:VB 3 MHz:Peak
4999.980	50.1	V	60.0	-9.9	AVG	351	1.5	Digital Bus Emission, Class A limits
4999 980	56.0	V	80.0	-24.0	PK	351	1.5	Digital Bus Emission, Class A limits
5479,900	53.8	V	68.3	-14.5	PK	337	1.4	RB 1 MHz:VB 3 MHz:Peak
6323.010	54.1	V	68.3	-14.2	PK	334	1.4	RB 1 MHz;VB 3 MHz;Peak
10562.400	56.8	V	68.3	-11.5	PK	198	1.0	RB 1 MHz:VB 3 MHz:Peak
				-	11			
Note 1:	For emission	ns in restricte	d bands, the	limit of 15.2	09 was used	which requir	es average	and peak measurements.
Nata 0	For emissior	ns outside of	the restricted	bands the	limit is -27dBr	n/MHz eirp (68.3dBuV/m	n). The measurement method
Note 2:	required is a	peak measu	rement (RB=	=1MHz, VB≥	3MHz, peak o	detector).		
Note 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements. Note 2: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).								



EMC Test Data								
Client:	Xirrus							Job Number: J93457
								Log Number: T93459
Model:	XR2000H						Proj	ect Manager: Christine Krebill
Contact:	Peter Krebill						Proiect	Coordinator: -
Standard:	FCC 15.247.	15.407. EN	55022. FCC	В			.,	Class: N/A
	,	,	,	_				
Frequency	Level	Pol	15.209	/ 15E	Detector	Azimuth	Heiaht	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	dearees	meters	
4873.900	52.7	Н	54.0	-1.3	AVG	340	1.6	RB 1 MHz:VB 10 Hz:Peak. Note 2
4873.900	56.6	Н	74.0	-17.4	PK	340	1.6	RB 1 MHz;VB 3 MHz;Peak
2845.610	48.4	Н	54.0	-5.6	AVG	354	1.0	RB 1 MHz;VB 10 Hz;Peak
2845.110	59.6	Н	74.0	-14.4	PK	354	1.0	RB 1 MHz;VB 3 MHz;Peak
5439.960	46.4	V	54.0	-7.6	AVG	347	1.6	RB 1 MHz;VB 10 Hz;Peak
5439.810	55.6	V	74.0	-18.4	PK	347	1.6	RB 1 MHz:VB 3 MHz:Peak
5000.000	51.1	V	60.0	-8.9	AVG	340	1.6	Digital Bus Emission, Class A limits
4999.900	56.7	V	80.0	-23.3	PK	340	1.6	Digital Bus Emission, Class A limits
10645.100	47.2	V	54.0	-6.8	AVG	149	1.3	RB 1 MHz;VB 10 Hz;Peak
10644.430	60.6	V	74.0	-13.4	PK	149	1.3	RB 1 MHz;VB 3 MHz;Peak
Note 1:	For emission	s in restricte	ed bands, the	limit of 15.2	209 was used	which requir	es average	and peak measurements.
Note 2:	For emission required is a	s outside of peak measu	the restricted urement (RB=	l bands the ⊧1MHz, VB≥	limit is -27dBr ≥3MHz, peak (n/MHz eirp (detector).	68.3dBuV/n	n). The measurement method

		SUCCESS				EMO	C Test Data
Client:	Xirrus					Job Number:	J93457
M. 1.1						T-Log Number:	T93459
Model:	XR2000H					Project Manager:	Christine Krebill
Contact:	Peter Krebill					Project Coordinator:	-
Standard:	FCC 15.247,	15.407, El	N 55022, FCC	В		Class:	N/A
Run #3, Rad [Te Te Radio #	diated Spuric Date of Test: st Engineer: F est Location: F Frequency	ous Emiss 10/3/2013 Rafael Vard FT Ch# 5 CH	ions, 1,000 - elas Mode	40,000 MHz. (Pwr	Dperation in the 5250-5 Config. Used: Config Change: EUT Voltage:	350 MHz Band 1 None POE	
6	5260	56	802.11a	31			
10	5300	60	802.11a	31			
14	5320	64	802.11a	31			
Z Tx Chain:	5785 2x2	157	802.118	34			
80.0- 70.0- 60.0- 900 900 40.0- 30.0- 10000 18000 Frequency (MHz)							

EMC Test Data									
Client:	Xirrus							Job Number:	J93457
							T-	Loa Number:	T93459
Model:	XR2000H						Proj	ect Manager:	Christine Krebill
Contact:	Peter Krebill						Proiect	Coordinator:	-
Standard [.]	FCC 15 247	15 407 EN	55022 ECC	B				Class.	N/A
otanuaru.	10010.241	, 10.407, EN	00022,100	D				01000.	
Frequency	ا مربوا	Pol	15 200)/15E	Detector	∆zimuth	Height	Comments	
MHz	dBu\//m	v/h	l imit	Margin	Pk/QP/Avg	dearees	meters	Commenta	
4816,700	51.4	V	54.0	-2.6	AVG	343	1.4	RB 1 MHz:\	/B 10 Hz:Peak
4817.440	64.5	V	74.0	-9.5	PK	343	1.4	RB 1 MHz:\	/B 3 MHz:Peak
5000.000	52.4	H	60.0	-7.6	AVG	341	1.6	Digital Bus	Emission, Class A limits
5000.060	57.3	Н	80.0	-22.7	PK	341	1.6	Digital Bus I	Emission, Class A limits
5439.850	47.1	V	54.0	-6.9	AVG	345	1.6	RB 1 MHz;\	/B 10 Hz;Peak
5439.960	56.5	V	74.0	-17.5	PK	345	1.6	RB 1 MHz;\	/B 3 MHz;Peak
10564.980	65.1	V	68.3	-3.2	PK	191	1.4	RB 1 MHz;\	/B 3 MHz;Peak
11563.530	46.0	V	54.0	-8.0	AVG	164	1.0	RB 1 MHz;\	/B 10 Hz;Peak
11563.850	59.1	V	74.0	-14.9	PK	164	1.0	RB 1 MHz;\	/B 3 MHz;Peak
10641.370	49.5	V	54.0	-4.5	AVG	150	1.0	RB 1 MHz;\	/B 10 Hz;Peak
10641.000	61.0	V	74.0	-13.0	PK	150	1.0	RB 1 MHz;\	/B 3 MHz;Peak
2499.990	52.0	Н	60.0	-8.0	AVG	136	1.3	Digital Bus I	Emission, Class A limits
2499.950	53.3	Н	80.0	-26.7	PK	136	1.3	Digital Bus	Emission, Class A limits
Note: Note 1:	Scans made the device in For emission	e between 18 idicated there	- 40 GHz wi e were no sig d bands, the	th the measu gnificant emine limit of 15.2	urement anter ssions in this 09 was used	nna moved a frequency ra which reguin	round the cange nge es average	ard and its ar and peak me	itennas 20-50cm from
Note 2:	For emission required is a	ns outside of peak measu	the restricted	d bands the =1MHz, VB≥	limit is -27dBn :3MHz, peak o	n/MHz eirp (detector).	68.3dBuV/m	n). The meas	surement method
Note 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements. Note 2: For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).									

	EMC Test Data										
Client: Xirrus	Job Number: J93457										
	T-Log Number: T93459										
Model: XR2000H	Project Manager: Christine Krebill										
Contact: Peter Krebill	Project Coordinator: -										
Standard: FCC 15.247, 15.407, EN 55022, FCC B	Class: N/A										
Run #4, Radiated Spurious Emissions, 1,000 - 40,0 Date of Test: 10/3/2013 Test Engineer: Rafael Varelas Test Location: FT Ch# 5 Padio # Erequency CH Mode	000 MHz. Operation in the 5250-5350 MHz Band Config. Used: 1 Config Change: None EUT Voltage: POE										
6 5280 56 802.11n20	31										
10 5300 60 802.11n20	31										
14 5320 64 802.11n20	31										
2 5785 157 802.11n20	34										
	Frequency (MHz)										
EMC Test Data											
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Client:	Xirrus							Job Number:	J93457		
							T-	Log Number:	T93459		
Model:	XR2000H						Project Manager: Christine Krebill				
Contact [.]	Peter Krebill						Project	Coordinator:	-		
Standard [.]	FCC 15 247	15.407 EN	55022 ECC	R			Class:	N/A			
otanaara.	10010.211	, 10.101, EN	00022,100	5			01000.				
Frequency	Level	Pol	15,209) / 15E	Azimuth	Height	Comments				
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Ava	dearees	meters	o on internet			
10558.570	63.2	V	68.3	-5.1	PK	108	1.1	RB 1 MHz;\	/B 3 MHz;Peak		
5000.000	51.7	Н	60.0	-8.3	AVG	342	1.6	Digital Bus I	Emission, Class A limits		
4999.860	56.9	Н	80.0	-23.1	PK	342	1.6	Digital Bus I	Emission, Class A limits		
10643.400	47.7	V	54.0	-6.3	AVG	148	1.0	RB 1 MHz;\	/B 10 Hz;Peak		
10645.770	59.7	V	74.0	-14.3	PK	148	1.0	RB 1 MHz;\	/B 3 MHz;Peak		
11570.580	47.3	V	54.0	-6.7	AVG	207	1.1	RB 1 MHz;\	/B 10 Hz;Peak		
11569.950	58.1	V	74.0	-15.9	PK	207	1.1	RB 1 MHz;\	/B 3 MHz;Peak		
4852.730	48.7	V	54.0	-5.3	AVG	339	1.5	RB 1 MHz;\	/B 10 Hz;Peak		
4852.230	60.7	V	74.0	-13.3	PK	339	1.5	RB 1 MHz;\	/B 3 MHz;Peak		
5439.870	46.6	H	54.0	-1.4	AVG	342	1.0	RB 1 MHZ;V	/B 10 HZ;Peak		
2500.000	50.9		74.0 60.0	-10.1		04Z	1.0	RD 1 IVITIZ, V	E S MITZ, Peak		
2500.000	53.3	H	80.0	-7.0	PK	137	1.3	Digital Bus I	Emission, Class A limits		
2300.000	55.5	11	00.0	-20.1	ΓN	107	1.0	Digital Dus I			
Note:	Scans made the device in	between 18 dicated there	- 40 GHz wit e were no sig	th the measu	urement anter ssions in this t	nna moved a frequency ra	round the c nge	ard and its ar	tennas 20-50cm from		
Note 1:	For emission	ns in restricte	d bands, the	limit of 15.2	09 was used	which requir	es average	and peak me	asurements.		
Note 2:	For emissior required is a	is outside of peak measu	the restricted rement (RB=	l bands the l =1MHz, VB≥	limit is -27dBn :3MHz, peak o	n/MHz eirp (detector).	68.3dBuV/m	ı). The meas	surement method		

		CCESS					EMO	C Test Data
Client:	Xirrus						Job Number:	J93457
Martal							T-Log Number:	T93459
Model:	XR2000H						Project Manager:	Christine Krebill
Contact:	Peter Krebill						Project Coordinator:	-
Standard:	FCC 15.247, 15	5.407, EN	1 55022, FCC	В			Class:	N/A
Run #5, Rac E Te Te Radio #	diated Spurious Date of Test: 10/ st Engineer: Ra est Location: FT Frequency	S Emissi 3/2013 fael Vare Ch# 5 CH	ons, 1,000 - 4 elas Mode	40,000 MHz. Pwr	Operation in Col Confi EU	the 5250-5 nfig. Used: g Change: T Voltage:	350 MHz Band 1 None POE	
6	5270	54	802.11n40	31				
10	5310 5755	62	802.11n40	31				
14	5785	151	802.11n40 802.11n20	34 34				
Tx Chain:	2x2	107	002.111120	01				
70.0 (W/Ang) 50.0 40.0 30.0 20.0 1			, and the second		equency (MHz)		· · · · · · · · · · · · · · · · · · ·	

EMC Test Data										
Client:	Xirrus							Job Number: J93457		
						T-	Log Number: T93459			
Wodel:	XR2000H					Project Manager: Christine Krebill				
Contact:	Peter Krebill						Project	Coordinator: -		
Standard:	FCC 15.247	, 15.407, EN	55022, FCC	В				Class: N/A		
Frequency	Level	Pol	15.209) / 15E	Detector	Azimuth	Height	Comments		
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters			
4848.470	48.9	V	54.0	-5.1	AVG	327	1.5	RB 1 MHz;VB 10 Hz;Peak		
4849.440	61.4	V	74.0	-12.6	PK	327	1.5	RB 1 MHz;VB 3 MHz;Peak		
4999.980	52.8	Н	60.0	-7.2	AVG	340	1.6	Digital Bus Emission, Class A limits		
5000.000	58.0	Н	80.0	-22.0	PK	340	1.6	Digital Bus Emission, Class A limits		
5439.980	48.5	V	54.0	-5.5	AVG	338	1.3	RB 1 MHz;VB 10 Hz;Peak		
5440.030	57.5	V	74.0	-16.5	PK	338	1.3	RB 1 MHz;VB 3 MHz;Peak		
10611.910	45.0	V	54.0	-9.0	AVG	156	1.3	RB 1 MHz;VB 10 Hz;Peak		
10600.810	56.5	V	74.0	-17.5	PK	156	1.3	RB 1 MHz;VB 3 MHz;Peak		
11561.730	47.7	V	54.0	-6.3	AVG	192	1.6	RB 1 MHz;VB 10 Hz;Peak		
11560.100	61.2	V	74.0	-12.8	PK	192	1.6	RB 1 MHz;VB 3 MHz;Peak		
11490.000	45.1	V	54.0	-8.9	AVG	141	1.8	RB 1 MHz;VB 10 Hz;Peak		
11506.200	57.2	V	74.0	-16.8	PK	141	1.8	RB 1 MHz;VB 3 MHz;Peak		
2500.000	52.2	Н	60.0	-7.8	AVG	109	1.8	Digital Bus Emission, Class A limits		
2499.990	54.3	H	80.0	-25.7	PK	109	1.8	Digital Bus Emission, Class A limits		
Note:	Scans made the device ir	e between 18 idicated ther	- 40 GHz wi e were no sig	th the measi inificant emi	urement anter ssions in this	nna moved a frequency ra	around the ca	ard and its antennas 20-50cm from		
Note 1:	For emissior	ns in restricte	ed bands, the	limit of 15.2	209 was used	which requir	es average	and peak measurements.		
Note 2:	For emission required is a	ns outside of	the restricted	d bands the =1MHz_VB>	limit is -27dBr 3MHz_peak (n/MHz eirp (detector)	68.3dBuV/m	n). The measurement method		

	NTS	EMC Test Data
Client:	Xirrus	Job Number: J93457
		T-Log Number: T93459
Model:	XR2000H	Project Manager: Christine Krebill
Contact:	Peter Krebill	Project Coordinator: -
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class: N/A
Contact: Standard: Run #6, Rau Te Te Radio # 6 10 14 2 Tx Chain: 80.0 70.0 (W/\ngp) = 50.0 (W/\ngp) = 50.0 (U/\ngp) = 50.0 (U/	Peter Krebill FCC 15.247, 15.407, EN 55022, FCC B diated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 525 Date of Test: 10/3/2013 Config. Usual State of Test:	Project Coordinator: - Class: N/A

		SUCCESS						EIVI	J Test Data
Client:	Xirrus							Job Number:	J93457
Madal							T-	Log Number:	T93459
woder.							Proj	ect Manager:	Christine Krebill
Contact:	Peter Krebill						Project	Coordinator:	-
Standard:	FCC 15.247,	15.407, EN	55022, FCC	В				Class:	N/A
Frequency	Level	Pol	15.209	9 / 15E	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		
2833.400	50.4	V	54.0	-3.6	AVG	342	1.3	RB 1 MHz;∖	/B 10 Hz;Peak
2831.940	61.4	V	74.0	-12.6	PK	342	1.3	RB 1 MHz;V	/B 3 MHz;Peak
10539.900	59.4	V	68.3	-8.9	PK	172	1.3	RB 1 MHz;V	/B 3 MHz;Peak
10610.300	44.5	Н	54.0	-9.5	AVG	206	1.1	RB 1 MHz;V	/B 10 Hz;Peak
10609.120	54.8	Н	74.0	-19.2	PK	206	1.1	RB 1 MHz;V	/B 3 MHz;Peak
5439.900	45.8	Н	54.0	-8.2	AVG	348	1.9	RB 1 MHz;V	/B 10 Hz;Peak
5439.860	53.0	Н	74.0	-21.0	PK	348	1.9	RB 1 MHz;∖	/B 3 MHz;Peak
4999.980	48.5	Н	54.0	-5.5	AVG	354	1.5	Digital Bus	Emission, Class A limits
5000.070	53.4	Н	74.0	-20.6	PK	354	1.5	Digital Bus I	Emission, Class A limits
JOIE 7.		0 0010100 01	line resultie	d bands the	limit is -27dBr	n/MHz eirp (68.3dBuV/n	n). The meas	urement method

	NTS	EMC Test Data
Client:	Xirrus	Job Number: J93457
		T-Log Number: T93459
Model:	XR2000H	Project Manager: Christine Krebill
Contact:	Peter Krebill	Project Coordinator: -
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class: N/A
Run #7, Ra [Te Te	diated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the Date of Test: 10/4/2013 Config st Engineer: Deniz Demirci Config Cost Location: FT Ch# 5 EUT V	e 5470-5725 MHz Band g. Used: 1 Change: None /oltage: POE
Radio # 6 10 14 2 Tx Chain:	FrequencyCHModePwr5500100802.11a335540108802.11a335670134802.11a3324376802.11b262x2	
80.0 70.0 (W/\ngp) = 50.0 1000 40.0 30.0 20.0		

	EMC Test Data											
Client:	Xirrus							Job Number:	J93457			
							T-	Loa Number:	T93459			
Model:	XR2000H						Project Manager: Christine Krebill					
Contact:	Peter Krebill					Proiect	Coordinator:	-				
Standard [.]	FCC 15 247	15 407 EN	55022 ECC	В			,	Class:	N/A			
otandara.	100101211	, 10.101, 211		5				01000.				
Frequency	امريم ا	Pol	15 200) / 15E	Detector	∆zimuth	Height	Comments				
MH ₇	dBuV/m	v/h	l imit	Margin	Pk/OP/Avg	degrees	meters	Commente				
11021.010	50.3	H	54.0	-3.7	AVG	100	1.0	RB 1 MHz:V	/B 10 Hz:Peak			
11022.660	62.7	H	74.0	-11.3	PK	100	1.0	RB 1 MHz:V	/B 3 MHz:Peak			
4999.990	51.9	H	60.0	-8.1	AVG	348	1.7	Digital Bus E	Emission. Class A limits			
4999.940	57.3	Н	80.0	-22.7	PK	348	1.7	Digital Bus E	Emission, Class A limits			
4799.960	43.2	V	54.0	-10.8	AVG	343	1.4	RB 1 MHz;V	/B 10 Hz;Peak			
4800.000	50.8	V	74.0	-23.2	PK	343	1.4	RB 1 MHz;V	/B 3 MHz;Peak			
5119.990	45.1	Н	54.0	-8.9	AVG	331	1.5	RB 1 MHz;V	/B 10 Hz;Peak			
5120.180	54.3	Н	74.0	-19.7	PK	331	1.5	RB 1 MHz;V	/B 3 MHz;Peak			
5374.940	47.4	V	54.0	-6.6	AVG	346	1.3	RB 1 MHz;V	/B 10 Hz;Peak			
5374.820	60.1	V	74.0	-13.9	PK	346	1.3	RB 1 MHz;V	/B 3 MHz;Peak			
11101.330	46.3	V	54.0	-7.7	AVG	176	1.1	RB 1 MHz;V	/B 10 Hz;Peak			
11083.670	58.6	V	74.0	-15.4	PK	176	1.1	RB 1 MHz;V	/B 3 MHz;Peak			
Note 1:	For emissior	ns in restricte	ed bands, the	limit of 15.2	09 was used	which requir	es average	and peak me	asurements.			
Note 2 [.]	For emissior	ns outside of	the restricted	d bands the	limit is -27dBr	n/MHz eirp (68.3dBuV/m	i). The meas	urement method			
1010 2.	required is a	peak measu	urement (RB=	=1MHz, VB≥	:3MHz, peak (detector).						
Note 3 [.]	Scans made	between 18	- 40 GHz wit	th the measu	urement anter	nna moved a	round the ca	ard and its an	tennas 20-50cm from			
1010 0.	the device in	ndicated there	e were no sig	inificant emi	ssions in this	frequency ra	nge					

WE ENGINEER SUCCESS	EMC Test Data
Client: Xirrus	Job Number: J93457
	T-Log Number: T93459
Model: XR2000H	Project Manager: Christine Krebill
Contact: Peter Krebill	Project Coordinator: -
Standard: FCC 15.247, 15.407, EN 55022, FCC B	Class: N/A
Model: AR200H Contact: Peter Krebill Standard: FCC 15.247, 15.407, EN 55022, FCC B Run #8, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5470-5 Date of Test: 10/4/2013 Config. Used: Test Engineer: Deniz Demirci Config Change: Test Location: FT Ch#5 EUT Voltage: Radio # Frequency CH Mode Pwr 6 5500 100 802.11n20 32 10 5580 116 802.11n20 32 14 5700 140 802.11n20 32 2 2437 6 802.11b 26 Tx Chain: 2x2 9	Project Manager: Christine Krebill Project Coordinator: Class: N/A 725 MHz Band 1 None POE 1 1 1 1 1 1 1 1 1 1 1 1

EMC Test Data											
Client:	Xirrus							Job Number: J93457			
							T-Log Number: T93459				
Model:	XR2000H						Project Manager: Christine Krehill				
Contact:	Peter Krebill						Project	Coordinator: -			
Standard:	FCC 15 247	15407 EN	55022 ECC			Class: N/A					
otanadia.	10010.211	, 10.101, EI	00022,100	5							
Frequency	Level	Pol	15.209) / 15E	Azimuth	Height	Comments				
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters				
11004.880	52.4	V	54.0	-1.6	AVG	189	2.0	RB 1 MHz;VB 10 Hz;Peak			
11002.250	65.4	V	74.0	-8.6	PK	189	2.0	RB 1 MHz;VB 3 MHz;Peak			
4800.000	44.8	V	54.0	-9.2	AVG	343	1.4	RB 1 MHz;VB 10 Hz;Peak			
4800.010	51.3	V	74.0	-22.7	PK	343	1.4	RB 1 MHz;VB 3 MHz;Peak			
4873.910	50.7	V	54.0	-3.3	AVG	327	1.4	RB 1 MHz;VB 10 Hz;Peak, Note 2			
4873.850	54.2	V	74.0	-19.8	PK	327	1.4	RB 1 MHz;VB 3 MHz;Peak			
5000.000	51.3	V	60.0	-8.7	AVG	347	1.5	Digital Bus Emission, Class A limits			
4999.890	57.2	V	80.0	-22.8	PK	347	1.5	Digital Bus Emission, Class A limits			
5365.100	51.3	V	54.0	-2.7	AVG	341	1.2	RB 1 MHz;VB 10 Hz;Peak			
5366.900	56.0	V	74.0	-18.0	PK	341	1.2	RB 1 MHz;VB 3 MHz;Peak			
11159.400	48.2	V	54.0	-5.8	AVG	187	1.7	RB 1 MHz;VB 10 Hz;Peak			
11159.400	61.8	V	74.0	-12.2	PK	187	1.7	RB 1 MHz;VB 3 MHz;Peak			
11399.120	47.3	H	54.0	-6.7	AVG	145	1.4	RB 1 MHz;VB 10 Hz;Peak			
11399.750	60.1	Н	74.0	-13.9	PK	145	1.4	RB 1 MHz;VB 3 MHz;Peak			
Note 1:	For emission	ns in restricte	ed bands, the	limit of 15.2	09 was used	which requir	es average	and peak measurements.			
Note 2:	For emission	ns outside of	the restricted	1 bands the	limit is -2/dBr	n/MHz eirp (dotoctor)	68.3dBuV/m	1). The measurement method			
	Scans made	hetween 18		- 11VII IZ, VD≤ th the measu	urement anter	na moved a	round the c	ard and its antennas 20-50cm from			
Note 3:	the device in	dicated ther	e were no sic	inificant emi	ssions in this	frequency ra	inde				
			e were no siç	innicant enn	5510115 111 11115	irequency ra	liige				

		SUCCESS						EM	C Test	Data	
Client:	Xirrus							Job Number:	J93457		
							T-Log Number: T93459				
Model:	XR2000H						Project Manager: Christine Krebill				
Contact:	Peter Krebill										
Standard:	FCC 15 2/7	15/07 EN	55022 ECC	B			1 10,000	Class:	NI/A		
Stanuaru.	1 00 13.247	, 15.407, LIN	55022,100	D				01833.	IN/A		
Run #9, Ra [Te Te	diated Spuri Date of Test: est Engineer: est Location:	ous Emissio 10/4/2013 Deniz Demi FT Ch# 5	ons, 1,000 - 4 rci	40,000 MHz	. Operation in C Cor E	n the 5470-5 onfig. Used: ifig Change: UT Voltage:	5725 MHz Ba 1 None POE	and			
Radio # 6 10 T <u>x Chain:</u>	Frequency 5500 5580 2x2	CH 100 116	Mode 802.11a 802.11a	Pwr set 25 31	Radio # 14 2	Frequency 5700 5785	CH 140 157	Mode 802.11a 802.11a	Pwr set 33 34		
80.0 70.0 (W/ 60.0 9pnjiduy 40.0 30.0 20.0					equency (MH	z)					
Erequency	Loval	Dol	15 200) / 155	Detector	Azimuth	Hoight	Commonto			
MH ₇		r Ul v/h	l imit	Margin		dearees	metere	Comments			
11568 750	45.6	V	54 0	-8.4	AVG	219	16	RB 1 MHz·\	/R 10 Hz·Peal	k	
11568 240	57.7	V	74.0	-16.3	PK	219	1.6	RB 1 MHz·V	/B 3 MHz·Pea	ak	
11399.740	43.3	V	54.0	-10.7	AVG	219	1.6	RB 1 MHz:V	/B 10 Hz:Pea	k	
11411.470	53.8	V	74.0	-20.2	PK	219	1.6	RB 1 MHz V	/B 3 MHz:Pea	ak	
11005.400	39.9	Ĥ	54.0	-14.1	AVG	284	1.6	RB 1 MHz:V	/B 10 Hz:Peal	k	
10997.670	51.2	Н	74.0	-22.8	PK	284	1.6	RB 1 MHz:V	/B 3 MHz:Pea	ak	
11158.540	39.9	V	54.0	-14.1	AVG	230	1.0	RB 1 MHz;V	/B 10 Hz;Peal	k	
11146.000	51.0	V	74.0	-23.0	PK	230	1.0	RB 1 MHz;V	/B 3 MHz;Pea	ak	
	-		-		-		-	- ,	,		
Note 1:	For emissior	ns in restricte	ed bands, the	limit of 15.2	209 was used	which requir	res average	and peak me	asurements.	_	
Note 2:	For emissior required is a	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector)									
Nata 2:	Scans made	between 18	3 - 40 GHz wi	th the meas	urement antei	nna moved a	around the ca	ard and its an	ntennas 20-50	cm from	
INOTE 3:	the device in	ndicated ther	e were no sig	nificant emi	ssions in this	frequency ra	ange				
	-						-				

		SUCCESS						EM	C Test	Data	
Client:	Xirrus							Job Number:	J93457		
							T-I	_oa Number:	T93459		
Model:	XR2000H						Project Manager: Christine Krebill			hill	
Contact	Dotor Krohill						Project Coordinator:				
		45 407 EN		D			FIUJECI		-		
Standard:	FUU 15.247,	15.407, EN	I 55022, FCC	В				Class:	N/A		
Run #10, Ra [Te Te	Run #10, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5470-5725 MHz Band Date of Test: 10/4/2013Config. Used: 1Test Engineer: Deniz DemirciTest Location: FT Ch# 5Config Change: POE										
Radio # 6 10 Tx Chain:	Frequency 5500 5580 2x2	CH 100 116	Mode 802.11n20 802.11n20	Pwr set 25 31		Radio # 14 2	Frequency 5700 5785	CH 140 157	Mode 802.11n20 802.11n20	Pwr set 33 34	
80.0 70.0 (W/Ange) 50.0 50.0 40.0 40.0 30.0 1				,	equency (MH:	z)					
Frequency	Level	Pol	15.209) / 15E	Detector	Azimuth	Height	Comments			
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		D 10 · · · =		
5079.960	47.5	V	54.0	-6.5	AVG	64	1.7	RB 1 MHz;V	/B 10 Hz;Peal	(
5079.960	55.3	V	74.0	-18.7	PK	64	1.7	KB 1 MHz;V	/B 3 MHz;Pea	K	
11569.070	46.2	V	54.0	-7.8	AVG	288	1.0	KB 1 MHz;V	<u>/B 10 Hz;Peal</u>	(
11569.270	58.8	V	74.0	-15.2	PK	288	1.0	KB 1 MHz;V	/B 3 MHz;Pea	K	
11001.000	41.0	V	54.0	-13.0	AVG	342	1.0	KB 1 MHz;V	и 10 Hz;Peal	(
11000.900	53.2	V	/4.0	-20.8	PK	342	1.0	RB 1 MHz;V	ив 3 MHz;Pea	K	
Note 1: Note 2: Note 3:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements. For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from										
	the device in	dicated ther	e were no sig	initicant emi	issions in this	frequency ra	ange				

		SUCCESS						EM	C Test	Data	
Client:	Xirrus							Job Number:	J93457		
							T-Log Number: T93459				
Model:	XR2000H						Project Manager: Christine Krebill				
Contact	Dotor Krohill						Project Manager: Christine Krebin				
Contact.		15 407 EN		D							
Standard:	FUU 15.247	, 15.407, EN	55022, FCC	D				Class.	N/A		
Run #11, Ra [Te Te	Run #11, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5470-5725 MHz Band Date of Test: 10/4/2013 Config. Used: 1 Test Engineer: Deniz Demirci Config Change: None Test Location: FT Ch# 5 EUT Voltage: POE										
Radio # 6 10 Tx Chain:	adio # Frequency CH Mode Pwr set Radio # Frequency CH Mode 6 5510 102 802.11n40 33 14 5670 134 802.11n40 10 5550 110 802.11n40 33 2 5785 157 802.11n20 Chain: 2x2										
Tx Chain: 2x2											
Frequency	Level	Pol	15.205)/15E	Detector	Azimuth	Height	Comments			
	α⊔μν/m /8 2	V/II \/	5/ 0	-F Q	TRIQE/AVG	regrees 60	1 7		R 10 Hz Deal	<i>,</i>	
5079.900	40.2 56.0	V \/	7 <u>/</u> 0	-5.0 _18.0		60	1.7		B TUTIZ, FEAR	k	
5362 //0	<u></u> 175	V \/	5 <u>4</u> 0	-10.0		75	1.7	RB 1 MHz·V	B J WILZ, Fed	л. (
5363 070	57.8	v V	74.0	-0.0	PK	75	1.7	RB 1 MHz·\	B 10 HZ, Fear	k	
11569 910	46.6	v V	54.0	-74		208	1.7	RB 1 MHz·\	/B 10 Hz·Poal	к. (
11570 640	57.5	V	74.0	-16 5	PK	298	11	RB 1 MHz·\	B 3 MHz Pea	k	
11010.040	01.0	v	· r.v	10.0		200	1		<u> </u>		
Note 1:	For emissior	ns in restricte	ed bands, the	limit of 15.2	209 was used	which reaui	res average a	and peak me	asurements.		
Note 2:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).										
Note 3:	Scans made the device in	between 18 adicated ther	8 - 40 GHz wi e were no sig	th the measu nificant emi	urement anter ssions in this	nna moved a frequency ra	around the ca ange	ard and its an	itennas 20-50	cm from	
1											

EMC Test Data										
Client:	Xirrus	Job Number: J93457								
		T-Log Number: T93459								
Model:	XR2000H	Project Manager: Christine Krebill								
Contact:	Peter Krebill	Project Coordinator: -								
Standard:	FCC 15.247, 15.407, EN 55022, FCC B	Class: N/A								
Run #12, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5470-5725 MHz Band Date of Test: 10/4/2013Date of Test: 10/4/2013Config. Used: 1Test Engineer: Deniz DemirciConfig Change: NoneTest Location: FT Ch# 5EUT Voltage: POE										
Radio # 6 10 14 2 Tx Chain:	FrequencyCHModePwr set# 15510102802.11n40155550110802.11n40335670134802.11n403324376802.11n20262x2									
80.0 70.0 (w/\ngp) = 50.0 1000 40.0 30.0 20.0	- Human Manager Million Brequency (MHz)									

EMC Test Data											
Client:	: Xirrus							Job Number: J93457			
	XR2000H					T-Log Number: T93459		T93459			
Model:						Proj	Project Manager: Christine Krebill				
Contact:	Peter Krebill							Project Coordinator: -			
Standard [.]	ECC 15 247 15 407 EN 55022 ECC B						Class: N/A				
otandara.											
Frequency	Level	Pol	15.209) / 15E	Detector	Azimuth	Height	Comments			
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters				
5356.060	51.6	V	54.0	-2.4	AVG	338	1.3	RB 1 MHz;V	/B 10 Hz;Peak		
5352.900	62.6	V	74.0	-11.4	PK	338	1.3	RB 1 MHz;∖	VB 3 MHz;Peak		
5000.050	53.9	Н	60.0	-6.1	AVG	348	1.4	Digital Bus E	Emission, Class A limits		
4999.880	59.3	Н	80.0	-20.7	PK	348	1.4	Digital Bus E	Bus Emission, Class A limits		
5159.900	45.0	Н	54.0	-9.0	AVG	339	1.3	RB 1 MHz;V	IHz;VB 10 Hz;Peak		
5159.990	58.6	Н	74.0	-15.4	PK	339	1.3	RB 1 MHz;V	/Hz;VB 3 MHz;Peak		
11100.330	45.7	V	54.0	-8.3	AVG	208	1.0	RB 1 MHz;V	/Hz;VB 10 Hz;Peak		
11101.400	57.0	V	74.0	-17.0	PK	208	1.0	RB 1 MHz;V	MHz;VB 3 MHz;Peak		
11338.600	44.7	V	54.0	-9.3	AVG	141	1.6	RB 1 MHz;∖	'B 10 Hz;Peak		
11340.730	56.7	V	74.0	-17.3	PK	141	1.6	RB 1 MHz;∖	'B 3 MHz;Peak		
Note 1:	For emission	ns in restricte	d bands, the	limit of 15.2	209 was used	which require	es average	and peak me	asurements.		
Note 2:	For emission	ns outside of	the restricted	bands the	limit is -27dBr	n/MHz eirp (68.3dBuV/m	n). The meas	urement method		
	required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).										
Note 3:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from										
	the device in	the device indicated there were no significant emissions in this frequency range									

End of Report

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