



ELECTROMAGNETIC COMPATIBILITY (EMC) REPORT

EMISSIONS ONLY

Aerielle Inc.

Model: KIPA II

FCC ID: RKVATBPA12V350

February 10, 2005

Project No.: 05CA05602

Test Report No.: NC5311-021005

REPORT DIRECTORY

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1.0 General Information

1.1 Scope

Underwriters Laboratories Inc., authorizes the above named company to reproduce this Report, provided it is reproduced in it's entirety. The data in this Report reflects only the items tested in the configurations and mode of operations described. All data recorded and photographs represents testing under the worst case conditions permitted by the requirements applied to the product. It is the manufacturer's responsibility to assure that additional production units are manufactured with identical electrical and mechanical components. Any modifications necessary for compliance made during testing must be implemented in all production units for compliance to be maintained.

Underwriters Laboratories Inc., shall have no liability for any deductions, inferences or generalizations drawn from this report. This report shall not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the United States government.

1.2 Purpose

Testing was performed to the following regulations:

Emissions Standards used: CFR 47 Part 15 Subpart C

Except as noted below, all test methods and data contained in this report are covered by NVLAP accreditation.

Exceptions: None

1.3 Test Results

In Compliance

Statements regarding compliance with requirements and criteria in the subsequent sections of this report are opinions and interpretations provided by Underwriters Laboratories Inc. technical staff.

Transmitter Requirements

Environmental Phenomena	Frequency Range	FCC Section	Test Result
Conducted Emissions, AC Mains	0.15 – 30 MHz	15.207	Not Required
Spurious Radiated Emissions	30 – 1000 MHz	15.209,15.239(b)	Complies
Occupied Bandwidth (200 kHz)	88 – 108 MHz	15.239(a)	Complies
Antenna Requirements	88 – 108 MHz	15.203	Complies

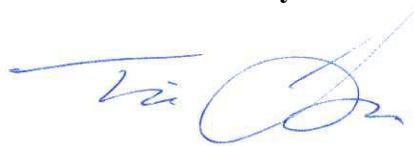
1.4 Documentation Review/Approval

Project Management:



Asim Tirmizi
Project Engineer
International EMC Services
Department 3014A

Technical Review By:



Tim Lee
Staff Engineer
International EMC Services
Department 3014A

2.0 General Product Description

Applicant	: Aerielle Inc.
Manufactured By	: Same as Applicant
License Holder	: Not Applicable
Applicant Address	: 625 Ellis Street, Suite 206 Mountain View, CA 94043
Applicant Contact	: Art Cohen
Model/Type No.	: KIPA2
FCC ID	: RKVATBPA12V350
Date of Issue	: February 10, 2005
File No.	: NC5311
Test Report No.	: NC5311-021005
Project No.	: 05CA05602

Product Description

The KIPA II is a low-powered FM Stereo Transmitter designed to operate in the commercial FM broadcast band used in many parts of the world and utilizes a standard 38 kHz L-R subcarrier signal format. It interfaces with an Apple iPod via the iPod docking connector. Power is supplied by a standard 12V cigarette lighter socket.

Equipment Size, Mobility, and Identification

Dimensions: 3.5 by 1.5 by 1 in.
Mobility: To be connected to an automobile cigarette lighter.
Serial No: Unknown

Electrical Ratings

	Voltage <u>[Volts]</u>	Current or <u>Power</u>	Frequency <u>[Hz]</u>	<u>Phase</u>
EUT	12 Vdc	25 mA	--	--

Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

<u>Voltage</u>	<u>Frequency</u>
12V	DC

Tunable Channels

The KIPA II can be tuned to the following channels:

88.1, 88.3, 88.5, 88.7, 107.1, 107.3, 107.5, and 107.7 MHz

Equipment Type

Pre-Production

Model Differences

Any other model(s) represented by the models tested in this investigation will be documented by the manufacturer.

Device Modifications

The following modifications were necessary for compliance: None

EUT and Peripherals

Description	Manufacturer	Model/Part #	Serial Number
EUT	Aerielle	KIPA 11	Unknown
Power System	MVP	I-6001	Unknown
iPod	Apple	A1040	JQ412F7WQQF

Cables

Cable Type	Shield	Length (meters)	Ferrite	Connector	Connection Point 1	Connection Point 2
I/O	No	1.5	No	Pwr & headphones	EUT	Power System

2.1 FCC Section 15.203 Antenna Requirements

The antenna is permanently attached to the PCB and the antenna is internal on the EUT. Therefore, it meets the 15.203 requirements.

2.2 Justification of Configuration

EUT was considered to be operating in a typical mode of operation.

2.3 EUT Operating Mode(s)

Equipment under test was operated during the measurement under the following conditions:

The EUT was connected to an MP3 player and operated both with and without 1 kHz tone depending on the test performed.

3.0 Environmental Conditions in Test Lab

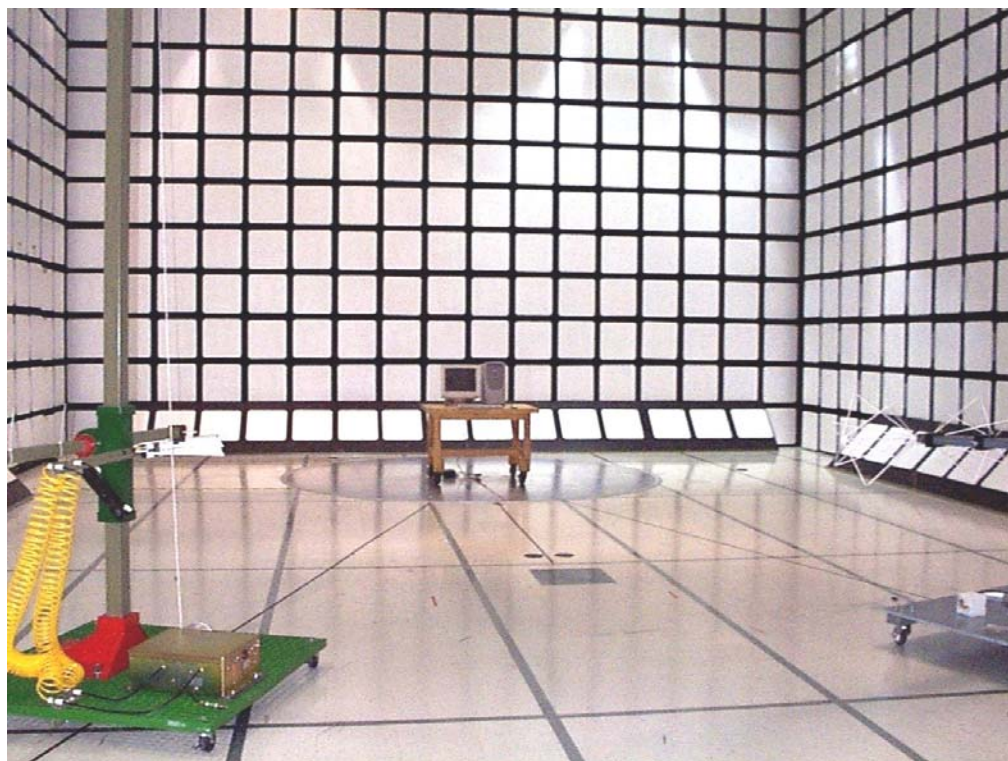
Temperature:	20-25 °C	Atmospheric Pressure:	680-1060 mbar
Relative Humidity:	30-60%		20.1-31.3 in. Hga

4.0 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the National Institute of Standards and Technology (NIST), therefore, all test data recorded in this report is traceable to NIST.

5.0 Test Facility

Underwriters Laboratories Inc.
1655 Scott Blvd.
Santa Clara, CA 95050
Phone: (408) 876-2905 Fax: (408) 556-6071



6.0 Accreditations and Authorizations



NVLAP Lab code: 200252-0

NVLAP: Recognized under the National Voluntary Laboratory Accreditation Program (NVLAP) for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. The specific scope includes IEC/CISPR 22:1997, Amendment 1:1995, Amendment 2:1997, EN 55022:1998, AS/NZS 1044, CNS 13438:1997, ANSI C63.4, FCC Method - 47 CFR Part 15, AS/NZS 3548, AS/NZS CISPR 22, CISPR 14-1, EN 55014-1, CNS 13783-1, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, RSS-112, RSS-117, RSS-118, RSS-119, RSS-123, RSS-125, RSS-128, RSS-129, RSS-130, RSS-131, RSS-132, RSS-133, RSS-134, RSS-135, RSS-136, RSS-137, RSS-139, RSS-141, RSS-142, RSS-170, RSS-181, RSS-182, RSS-187, RSS-188, RSS-191, RSS-192, RSS-193, RSS-210, RSS-212, RSS-213, RSS-215, GR-1089-CORE, SBC-TP-76200 Issue 4, and GR-63-CORE testing.



FCC: Details of the measurement facilities used for these tests have been filed with the Federal Communications Commission's Laboratory in Columbia, Maryland and accepted in a letter dated September 24, 1997 (Ref. No. 31040/SIT 1300F2).



Industry of Canada: Accredited by Industry Canada for performance of radiated measurements. Our test site complies with RSP 100, Issue 7, Section 3.3.
File #: IC 2704



VCCI: Accepted as an Associate Member to the VCCI. The measurement facilities detailed in this test report have been registered in accordance with Regulations for Voluntary Control Measures, Article 8.
Registration Nos.: (Radiated Emissions) R-672, (Conducted Emissions) C-689.



ICASA: ICASA (Independent Communications Authority of South Africa) has appointed UL as a Designated Test Laboratory to test Telecommunications equipment for type approval in compliance with CISPR 22 to assist in fulfilling its mandate under section 54(1) of the Telecommunications Act, 1996 (Act 103 of 1996).



NIST/CAB: Validated by the European Commission as a U.S. Conformity Assessment Body (CAB) of the U.S.-EU Mutual Recognition Agreement (MRA) for the Electromagnetic Compatibility - Council Directive 89/336/EEC, Article 10 (2). Also validated for the Telecommunication Equipment-Council Directive 99/5/EC, Annex III and IV, Identification Number: 0983.

NIST/CAB: Provisioned to act as a U.S. Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the Asia Pacific Economic Cooperation (APEC) MRA between the American Institute in Taiwan (AIT) and the United States. Our laboratory is considered qualified to test equipment subject to the applicable EMC regulations of the Chinese Taipei Bureau of Standards, Metrology and Inspection (BSMI) which require testing to CNS 13438 (CISPR 22).

NIST/CAB: Recognized by the Infocomm Development Authority of Singapore (IDA) under the Asia Pacific Economic Cooperation Mutual Recognition Agreement (APEC MRA). Our laboratory is provisionally designated to act as a Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the APEC MRA. Our scope of designation includes IDA TS EMC (CISPR 22), IEC 61000-4-2, -4-3, -4-4, -4-5, and -4-6.
U.S. Identifier Number: US0114

7.0 Emissions Test Regulations

The emissions tests were performed according to following regulations:

----- United States -----
CFR 47 Part 15 Subpart C : 2004 Code of Federal Regulations, Part 15, Subpart C, Radio Frequency Devices -
Intentional Radiators

7.1 Equipment Classifications

Class A Digital Device: *A digital device that is marketed for use in a commercial, industrial or business environment, exclusive of a device which is marketed for use by the general public or is intended to be used in the home.*

Class B Digital Device: *A digital device that is marketed for use in a residential environment notwithstanding use in commercial, business and industrial environments. Examples of such devices include, but are not limited to, personal computer, calculators, and similar electronic devices that are marketed for use by the general public.*

7.2 Field Strength Calculations

The field strength is calculated by adding the Transducer Factor (Antenna Factor) and Gain/Loss (Cable Loss, Preamp Gain) Factor to the Meter Reading. The basic equation with a sample calculation is as follows:

Field Strength = Meter Reading + Transducer Factor + Gain/Loss

Assume a receiver reading of 53.2 dBuV is obtained. The Transducer Factor of 5.1 dB and a Gain/Loss of -31 dB is added, giving a field strength of 27.3 dBuV.

$$FS = 53.2 + 5.1 + (-31) = 27.3 \text{ dBuV}$$

Use the following formula to convert dBμV to μV: $x = 10^{(y/20)}$, where x is the value in μV and y is the value in dBμV.

$$\text{Level in uV} = 10^{(27.3/20)} = 23.2 \text{ uV}$$

7.3 Measurement Uncertainty

When a measurement is made the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. The following statement of measurement uncertainty is used to reflect the accuracy of the measured result as compared with its “true” value.

Uncertainty (dB)

Test Distance	Probability Distribution	Biconical Antenna			Log Periodic Antenna		
		10m +18 deg	10m -14 deg	3m	10m +18 deg	10m -14 deg	3m
Combined Standard Uncertainty $u_c(y)$	Normal	± 1.24	± 1.25	± 1.29	± 1.14	± 1.13	± 1.9
Expanded uncertainty U (level of confidence = 95%)	Normal (k = 2)	± 2.47	± 2.49	± 2.59	± 2.28	± 2.27	± 2.76

Conducted Voltage Emissions	Probability Distribution
Combined Standard Uncertainty $u_c(y)$	Normal
Expanded uncertainty U (level of confidence = 95%)	Normal (k = 2)
	± 1.08
	± 2.16

$u_c(y)$ = square root of the sum of squares of the individual standard deviation uncertainties.

U = combined standard uncertainty multiplied by the coverage factor: k. This defines an interval about the measured result that will encompass the true value with a confidence level of approximately 95%. If a higher level of confidence is required then k=3 (CL=97%) can be used.

“ISO Guide to the Expression of Uncertainty in Measurements” and ‘NIS81: The Treatment of Uncertainty in EMC Measurements” were the basis for determining the uncertainty levels of our measurements. Details of those calculations are available upon request.

7.4 Measurement Bandwidths

Frequency Range (MHz)	Peak Data BW (kHz)	Quasi-Peak Data BW (kHz)	Average Data BW (kHz)
0.01 - 0.15	1	3	0.2
0.15 - 30	10	9	100
30 - 1000	100	120	120
Above 1000	1000	N/A	1000

7.5 Conducted Voltage Emissions; Section 15.207

UL Procedure

3314-LPG-004

Conducted voltage emissions are performed using a calibrated line impedance stabilization network (LISN), which isolates product emissions. The LISN is connected to a spectrum analyzer which scans the frequency range of measurement.

Remarks

The EUT is powered by A 3V lithium battery, type CR2, therefore, would not connect to the ac mains. This test was not performed.

7.6 Radiated Electric Field Emissions

Test Location

Date Tested: 1/26/05

10 Meter Semi-Anechoic Chamber (Test Station 2) (Last NSA: 1/8/2004; Next NSA 1/8/2005)

Test Instruments

Instrument	Manufacturer	Model	ID#	Last	Cal Next
Spectrum Analyzer	Hewlett-Packard	8572A	8228	6/25/2004	6/25/2005

Test Accessories

Instrument	Manufacturer	Model	ID#	Last	Cal Next
Biconical Antenna	Electro-Metrics	EM-6912A	8082	7/22/2004	7/22/2005
Log Periodic Antenna	Electro-Metrics	EM-6950	8083	7/15/2004	7/15/2005
Pre-amplifier	Sonoma Instruments	310N	8085	2/17/2004	2/17/2005

UL Procedure

3314-LPG-013

Radiated spurious emissions applies to harmonics/spurs that fall in the restricted bands listed in Section 15.205. The maximum permitted average field strength is listed in 15.209. The limit for the fundamental emission is listed in 15.239(b) to be 250 $\mu\text{V/m}$ @ 3m, or 37.5 dB $\mu\text{V/m}$ @ 10m. Radiated spurious emissions tests were performed in a semi-anechoic chamber using a remote controlled turntable and the appropriate measuring antenna. Both antenna and turntable are adjusted to determine maximum emissions levels. The spectrum analyzer scanned up to 1 GHz.

Frequency Range of Measurement

30 MHz to 1 GHz

Measurement Distance

10 meters

Test Results

The requirements are:

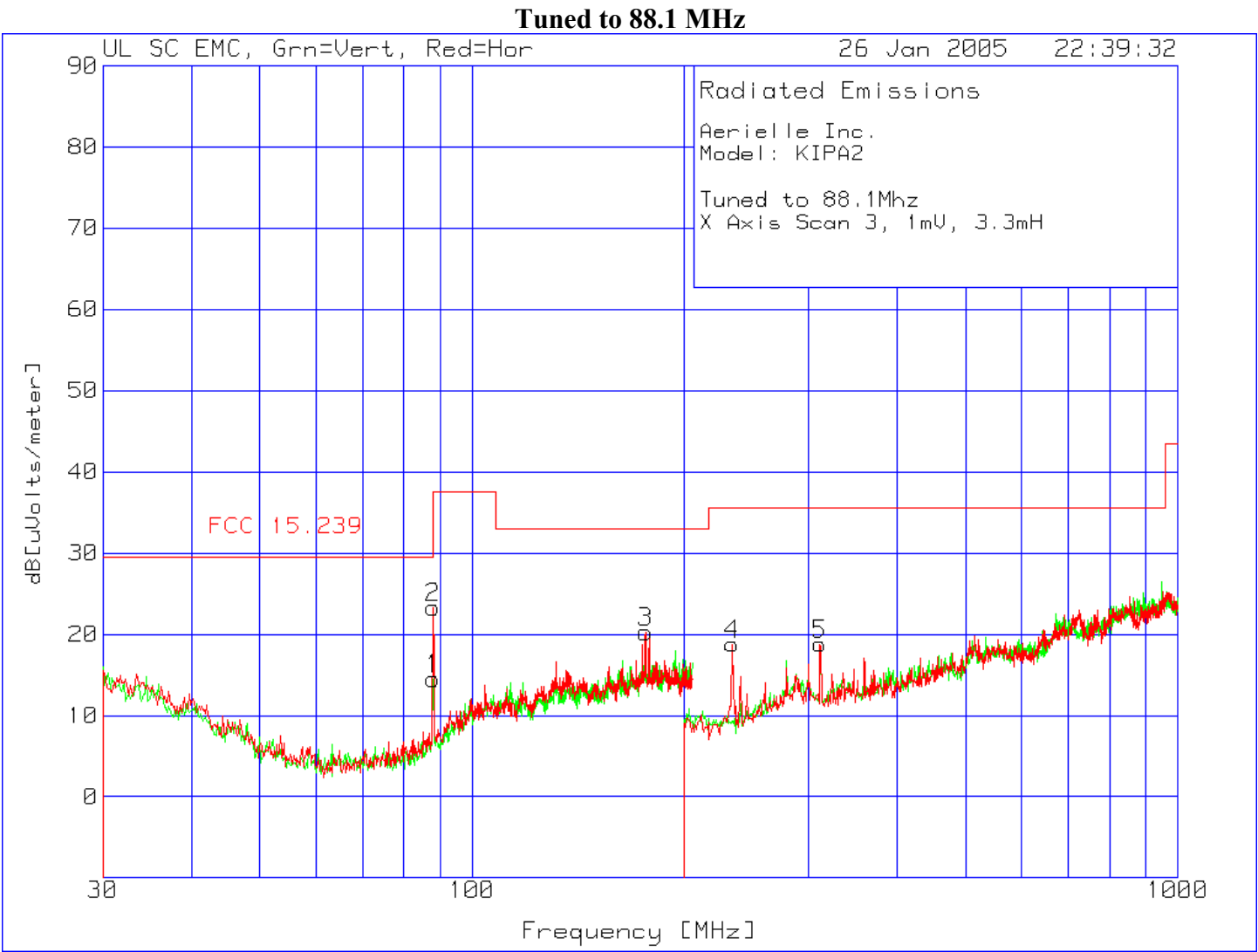
MET

Tuned Frequency (MHz)	Minimum margin (dB)	Test Frequency (MHz)
88.1	12.7	176.125
98.3	7.9	196.425
107.9	5.0	107.875

Remarks

All emissions within 10 dB were maximized.

Test Data



Company: Aerielle Inc.
Project: 05CA05602

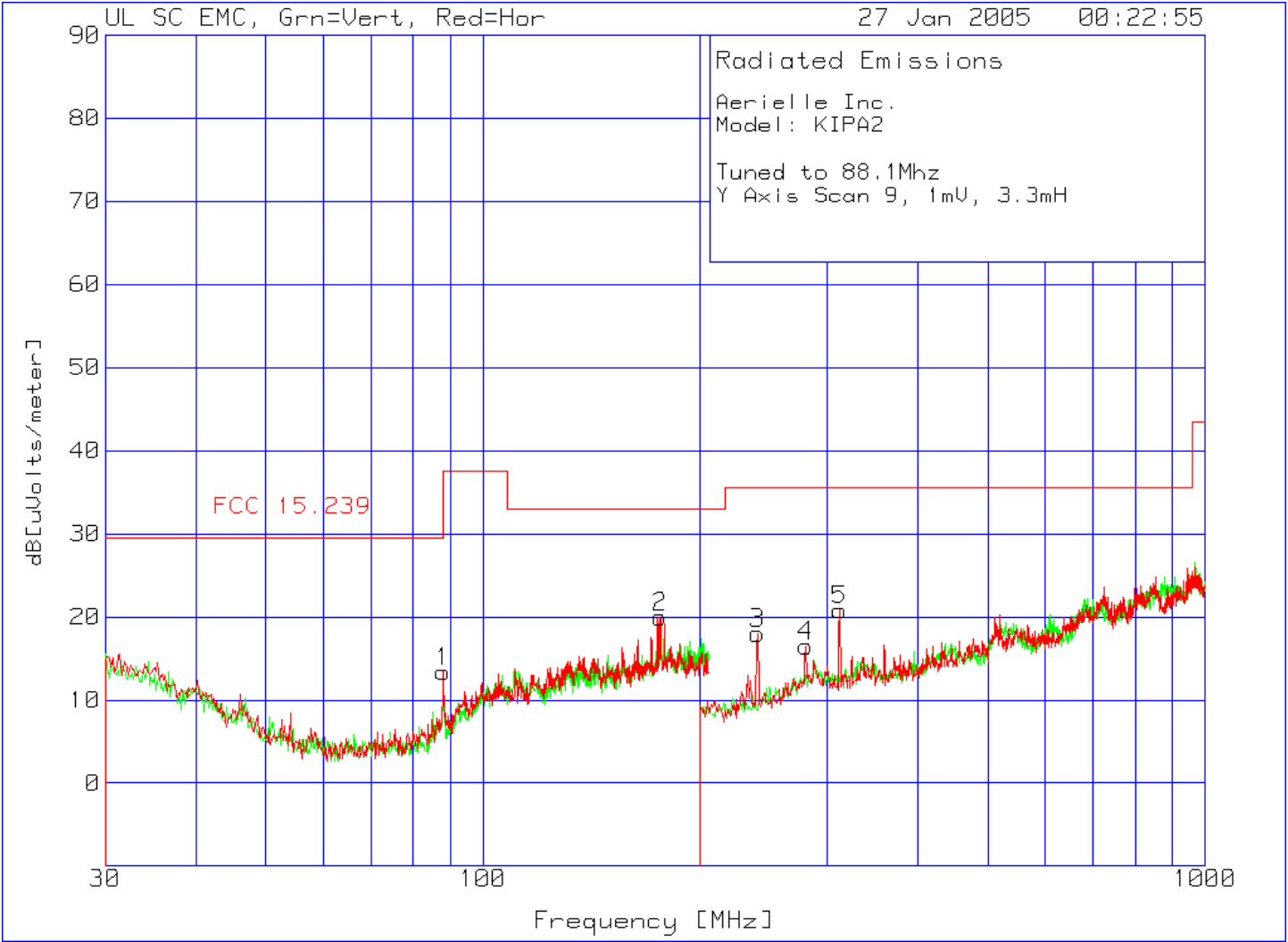
Model #: KIPA II
Report #:NC5311-021005

Aerielle Inc.
Model: KIPA2
Tuned to 88.1Mhz
X Axis Scan 3, 1mV, 3.3mH

No.	Test Frequency [MHz]	Meter Reading [dB (uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====						
Range: 1 30 - 205MHz -----						
1	88.1	32.1 pk	-27	9.4	14.5	37.5
	Azimuth:299	Height:100	Vert	Margin [dB]		-23
Range: 2 30 - 205MHz -----						
2	88.1	40.8 pk	-27	9.5	23.3	37.5
	Azimuth:360	Height:329	Horz	Margin [dB]		-14.2
3	176.125	30.6 pk	-26.1	15.8	20.3	33
	Azimuth:179	Height:329	Horz	Margin [dB]		-12.7
Range: 4 200 - 1000MHz -----						
4	233.6	34.9 pk	-27.2	11.1	18.8	35.5
	Azimuth:360	Height:330	Horz	Margin [dB]		-16.7
5	311.2	32 pk	-26.7	13.5	18.8	35.5
	Azimuth:180	Height:330	Horz	Margin [dB]		-16.7

LIMIT 1: FCC 15.239

pk - Peak detector



Company: Aerielle Inc.
Project: 05CA05602

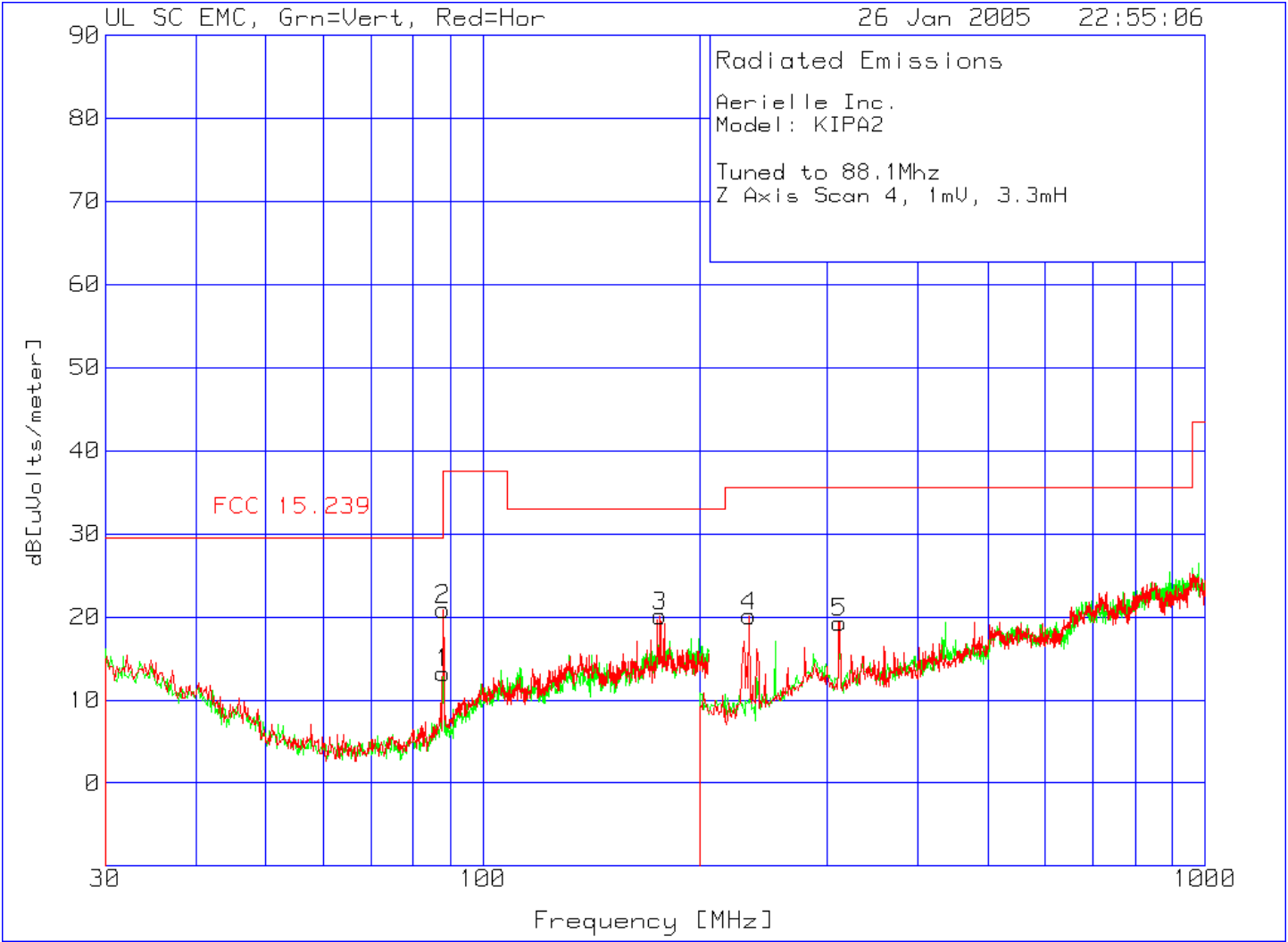
Model #: KIPA II
Report #:NC5311-021005

Aerielle Inc.
Model: KIPA2
Tuned to 88.1Mhz
Y Axis Scan 9, 1mV, 3.3mH

No.	Test Frequency [MHz]	Meter Reading [dB (uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====						
Range: 2 30 - 205MHz -----						
1	88.1	30.9 pk	-27	9.5	13.4	37.5
	Azimuth:179	Height:329	Horz	Margin [dB]		-24.1
2	175.95	30.2 pk	-26	15.8	20	33
	Azimuth:360	Height:329	Horz	Margin [dB]		-13
Range: 4 200 - 1000MHz -----						
3	240	33.8 pk	-27.1	11.3	18	35.5
	Azimuth:360	Height:330	Horz	Margin [dB]		-17.5
4	280	29 pk	-27	14.5	16.5	35.5
	Azimuth:60	Height:330	Horz	Margin [dB]		-19
5	312	34 pk	-26.7	13.5	20.8	35.5
	Azimuth:360	Height:330	Horz	Margin [dB]		-14.7

LIMIT 1: FCC 15.239

pk - Peak detector



Company: Aerielle Inc.
Project: 05CA05602

Model #: KIPA II
Report #:NC5311-021005

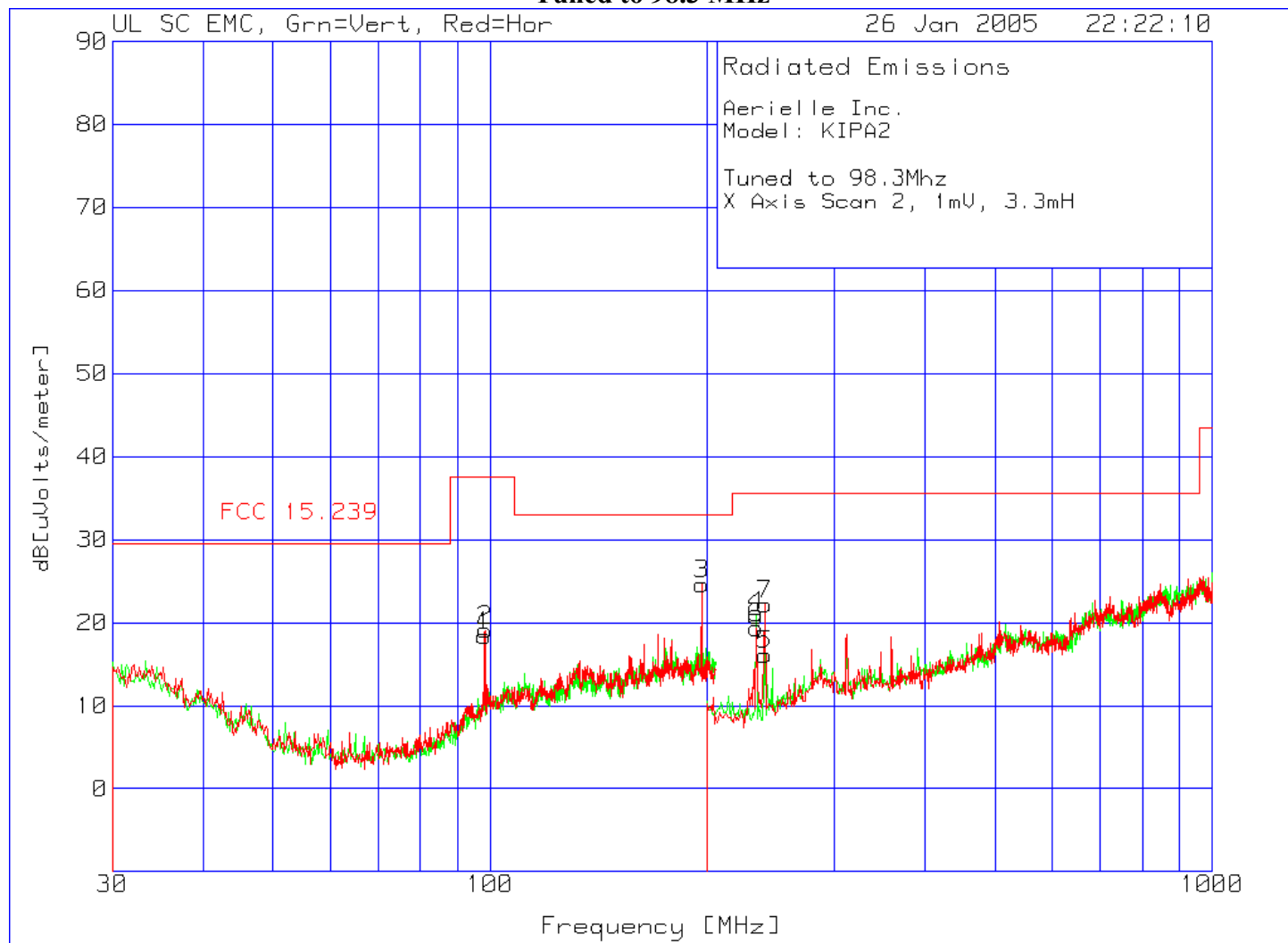
Aerielle Inc.
Model: KIPA2
Tuned to 88.1Mhz
Z Axis Scan 4, 1mV, 3.3mH

No.	Test Frequency [MHz]	Meter Reading [dB (uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====						
Range: 1 30 - 205MHz -----						
1	88.1	30.8 pk	-27	9.4	13.2	37.5
	Azimuth:240	Height:100	Vert	Margin [dB]		-24.3
Range: 2 30 - 205MHz -----						
2	88.1	38.4 pk	-27	9.5	20.9	37.5
	Azimuth:360	Height:329	Horz	Margin [dB]		-16.6
3	175.95	30.3 pk	-26	15.8	20.1	33
	Azimuth:180	Height:329	Horz	Margin [dB]		-12.9
Range: 4 200 - 1000MHz -----						
4	233.6	36.2 pk	-27.2	11.1	20.1	35.5
	Azimuth:360	Height:330	Horz	Margin [dB]		-15.4
5	311.6	32.5 pk	-26.7	13.5	19.3	35.5
	Azimuth:59	Height:330	Horz	Margin [dB]		-16.2

LIMIT 1: FCC 15.239

pk - Peak detector

Tuned to 98.3 MHz



Company: Aerielle Inc.
Project: 05CA05602

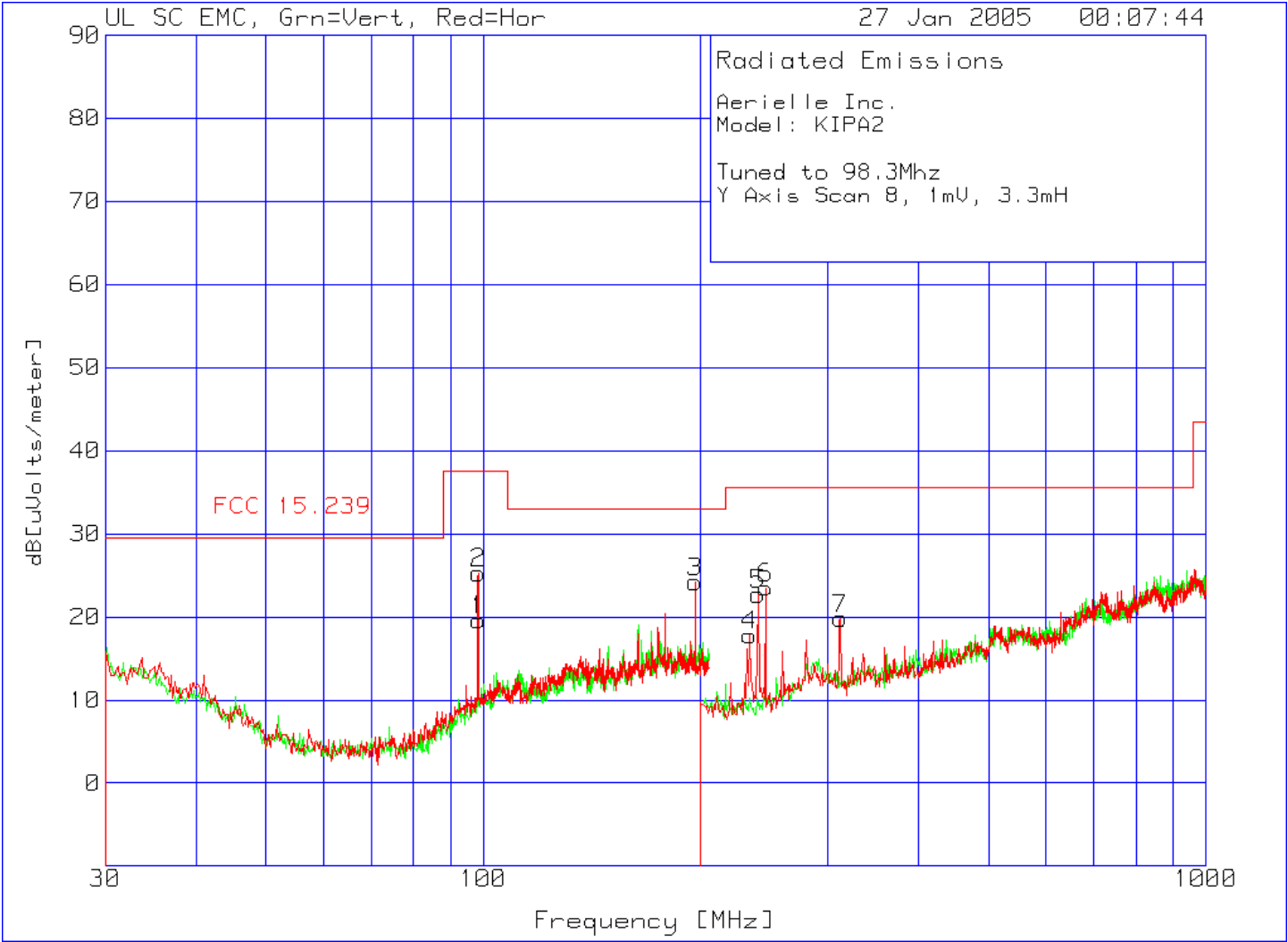
Model #: KIPA II
Report #:NC5311-021005

Aerielle Inc.
Model: KIPA2
Tuned to 98.3Mhz
X Axis Scan 2, 1mV, 3.3mH

No.	Test Frequency [MHz]	Meter Reading [dB (uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====						
Range: 1 30 - 205MHz -----						
1	98.25	34.3 pk	-27	11.1	18.4	37.5
	Azimuth:240	Height:101 Vert		Margin [dB]		-19.1
Range: 2 30 - 205MHz -----						
2	98.425	35 pk	-27	11.1	19.1	37.5
	Azimuth:119	Height:330 Horz		Margin [dB]		-18.4
3	196.425	34.5 pk	-25.9	16	24.6	33
	Azimuth:360	Height:330 Horz		Margin [dB]		-8.4
Range: 3 200 - 1000MHz -----						
4	233.6	36.8 pk	-27.2	11.2	20.8	35.5
	Azimuth:240	Height:100 Vert		Margin [dB]		-14.7
5	240	31.7 pk	-27.1	11.5	16.1	35.5
	Azimuth:240	Height:100 Vert		Margin [dB]		-19.4
Range: 4 200 - 1000MHz -----						
6	233.6	35.5 pk	-27.2	11.1	19.4	35.5
	Azimuth:239	Height:330 Horz		Margin [dB]		-16.1
7	240	38 pk	-27.1	11.3	22.2	35.5
	Azimuth:360	Height:330 Horz		Margin [dB]		-13.3

LIMIT 1: FCC 15.239

pk - Peak detector



Company: Aerielle Inc.
Project: 05CA05602

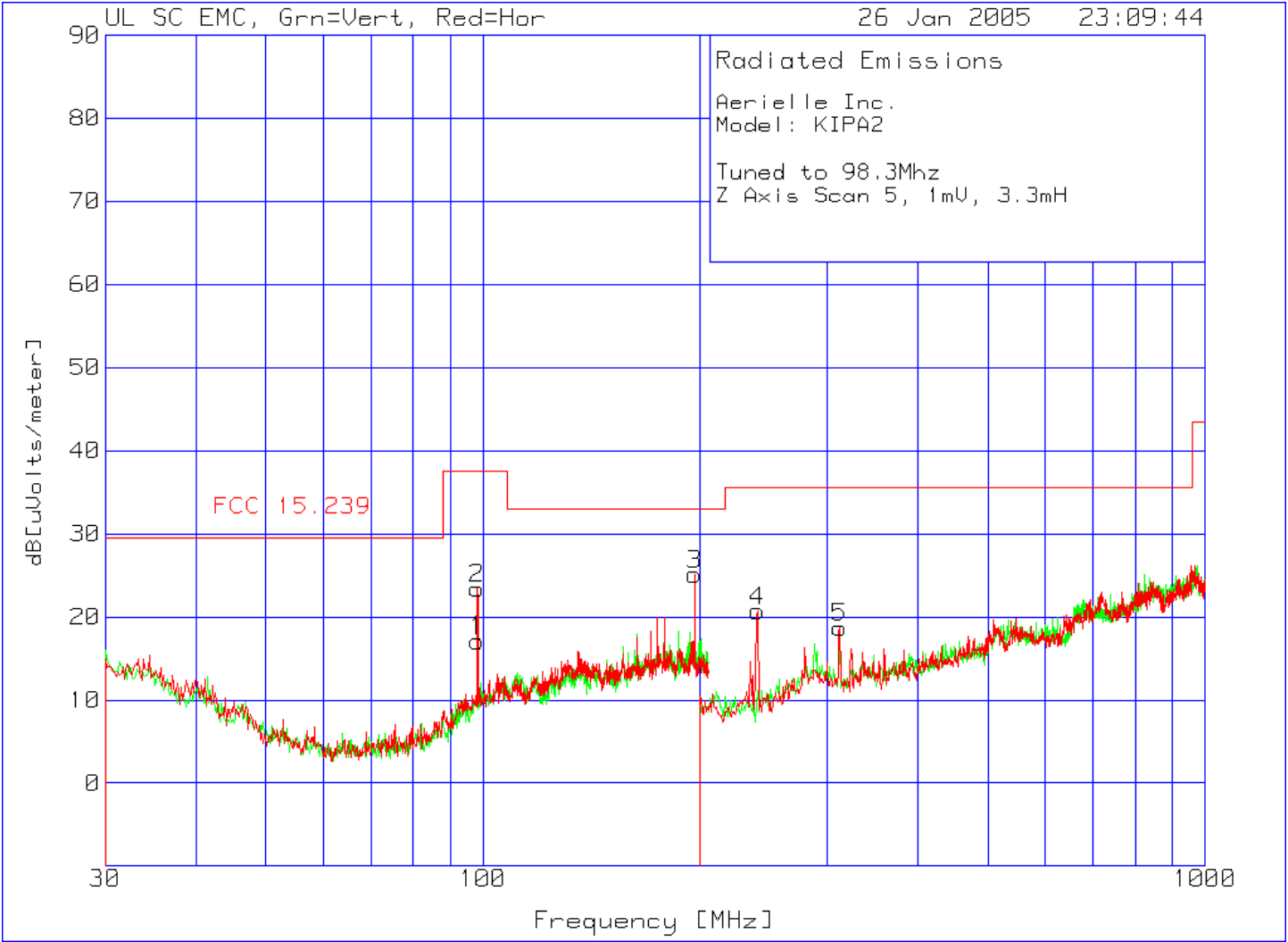
Model #: KIPA II
Report #:NC5311-021005

Aerielle Inc.
Model: KIPA2
Tuned to 98.3Mhz
Y Axis Scan 8, 1mV, 3.3mH

No.	Test Frequency [MHz]	Meter Reading [dB (uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====						
Range: 1 30 - 205MHz -----						
1	98.425	35.4 pk	-27	11.2	19.6	37.5
	Azimuth:119	Height:101	Vert	Margin [dB]		-17.9
Range: 2 30 - 205MHz -----						
2	98.425	41.2 pk	-27	11.1	25.3	37.5
	Azimuth:360	Height:329	Horz	Margin [dB]		-12.2
3	196.425	34.1 pk	-25.9	16	24.2	33
	Azimuth:360	Height:329	Horz	Margin [dB]		-8.8
Range: 4 200 - 1000MHz -----						
4	233.6	33.9 pk	-27.2	11.1	17.8	35.5
	Azimuth:360	Height:330	Horz	Margin [dB]		-17.7
5	240	38.5 pk	-27.1	11.3	22.7	35.5
	Azimuth:239	Height:330	Horz	Margin [dB]		-12.8
6	245.6	39 pk	-27.1	11.6	23.5	35.5
	Azimuth:360	Height:330	Horz	Margin [dB]		-12
7	312	33 pk	-26.7	13.5	19.8	35.5
	Azimuth:360	Height:330	Horz	Margin [dB]		-15.7

LIMIT 1: FCC 15.239

pk - Peak detector



Company: Aerielle Inc.
Project: 05CA05602

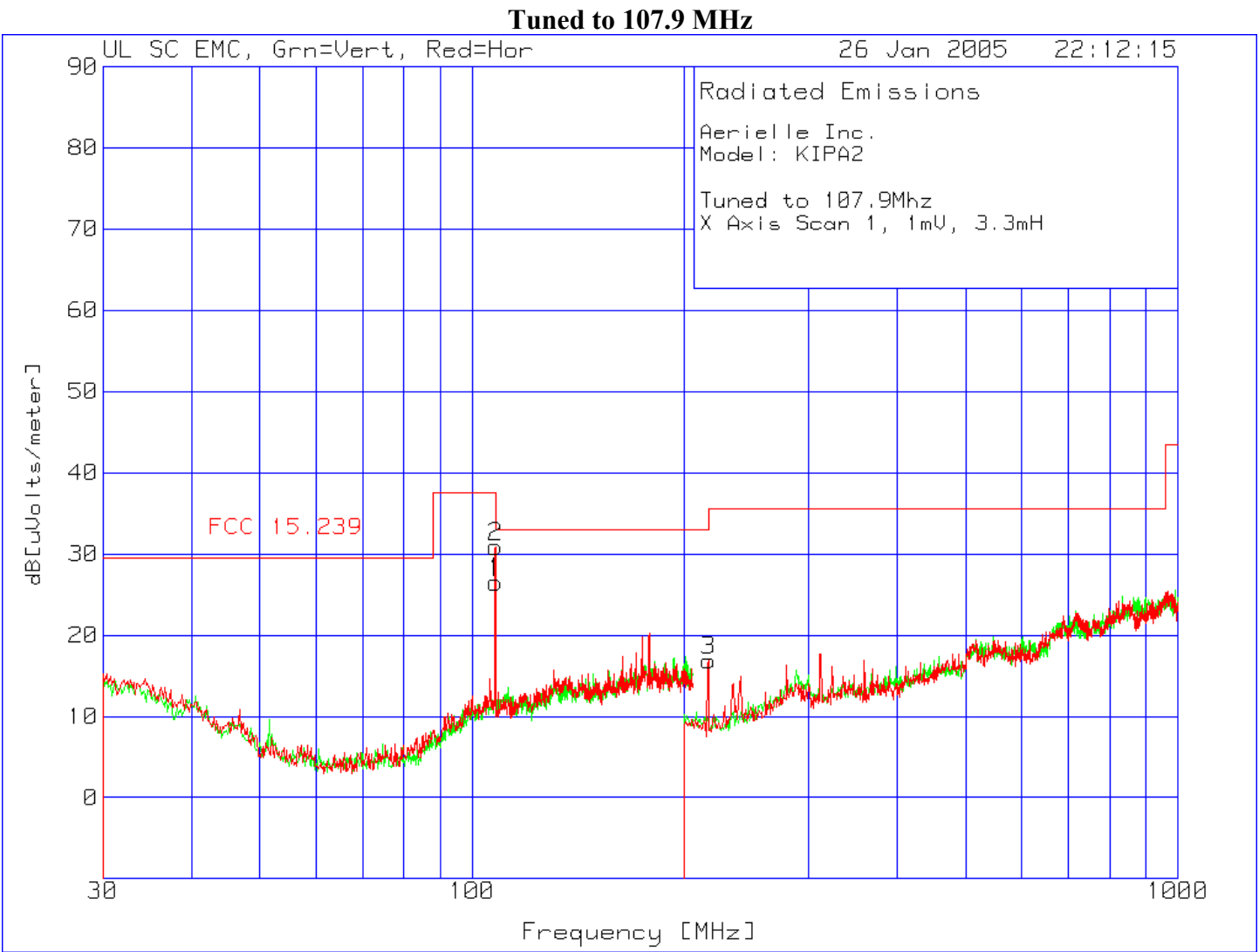
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Aerielle Inc.
Model: KIPA2
Tuned to 98.3Mhz
Z Axis Scan 5, 1mV, 3.3mH

No.	Test Frequency [MHz]	Meter Reading [dB (uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====						
Range: 1 30 - 205MHz -----						
1	98.25	33 pk	-27	11.1	17.1	37.5
	Azimuth:299	Height:101	Vert	Margin [dB]		-20.4
Range: 2 30 - 205MHz -----						
2	98.25	39.4 pk	-27	11	23.4	37.5
	Azimuth:179	Height:329	Horz	Margin [dB]		-14.1
3	196.425	35 pk	-25.9	16	25.1	33
	Azimuth:360	Height:329	Horz	Margin [dB]		-7.9
Range: 4 200 - 1000MHz -----						
4	240	36.5 pk	-27.1	11.3	20.7	35.5
	Azimuth:239	Height:330	Horz	Margin [dB]		-14.8
5	312	31.9 pk	-26.7	13.5	18.7	35.5
	Azimuth:360	Height:330	Horz	Margin [dB]		-16.8

LIMIT 1: FCC 15.239

pk - Peak detector



Company: Aerielle Inc.
Project: 05CA05602

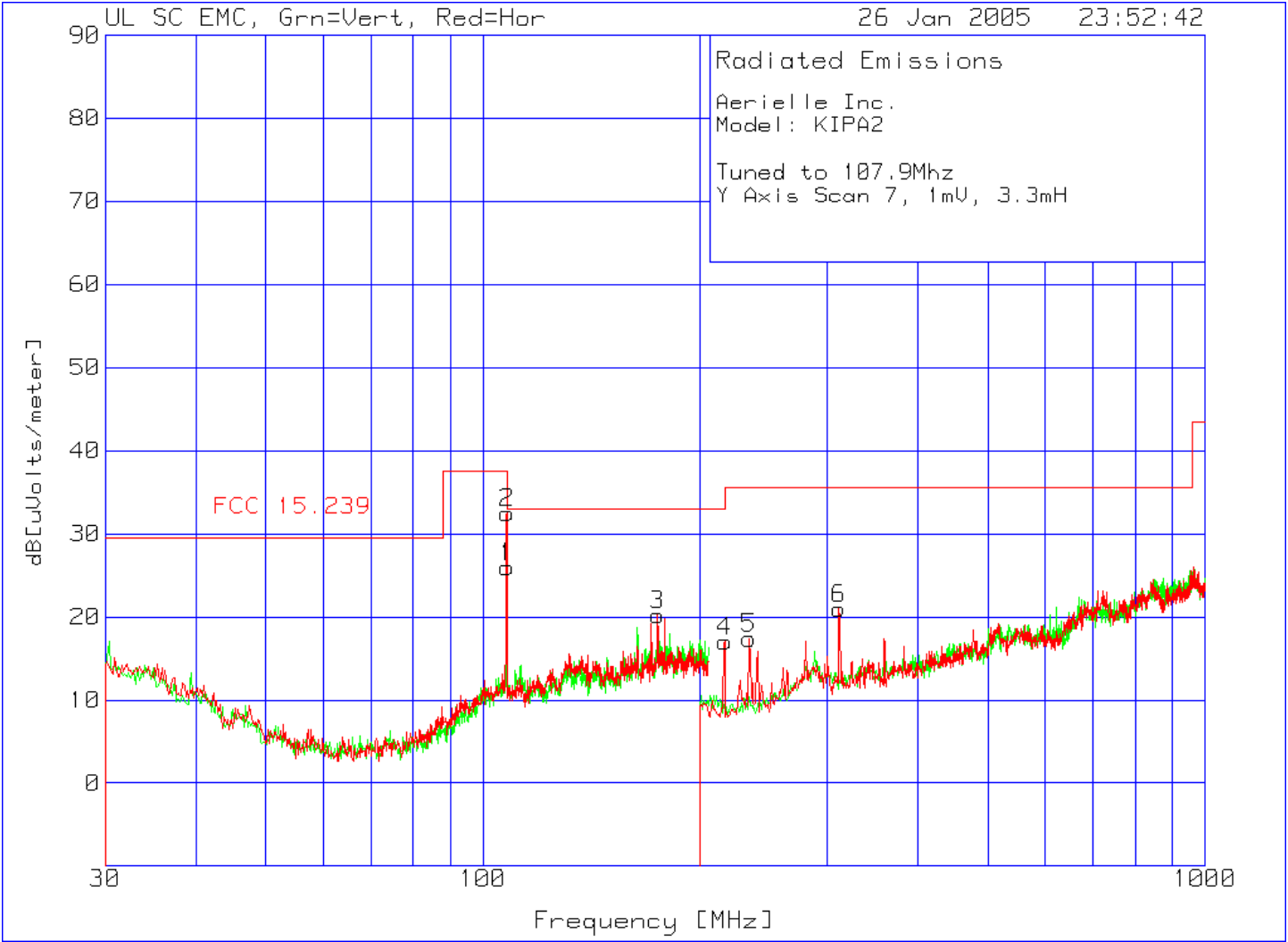
Model #: KIPA II
Report #:NC5311-021005

Aerielle Inc.
Model: KIPA2
Tuned to 107.9Mhz
X Axis Scan 1, 1mV, 3.3mH

No.	Test Frequency [MHz]	Meter Reading [dB (uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====						
Range: 1 30 - 205MHz -----						
1	107.875	40.5 pk	-26.6	12.6	26.5	37.5
	Azimuth:270	Height:100	Vert	Margin [dB]		-11
Range: 2 30 - 205MHz -----						
2	107.875	45.2 pk	-26.6	12.3	30.9	37.5
	Azimuth:179	Height:329	Horz	Margin [dB]		-6.6
Range: 4 200 - 1000MHz -----						
3	216	33.4 pk	-27.3	10.8	16.9	35.5
	Azimuth:44	Height:330	Horz	Margin [dB]		-18.6

LIMIT 1: FCC 15.239

pk - Peak detector



Company: Aerielle Inc.
Project: 05CA05602

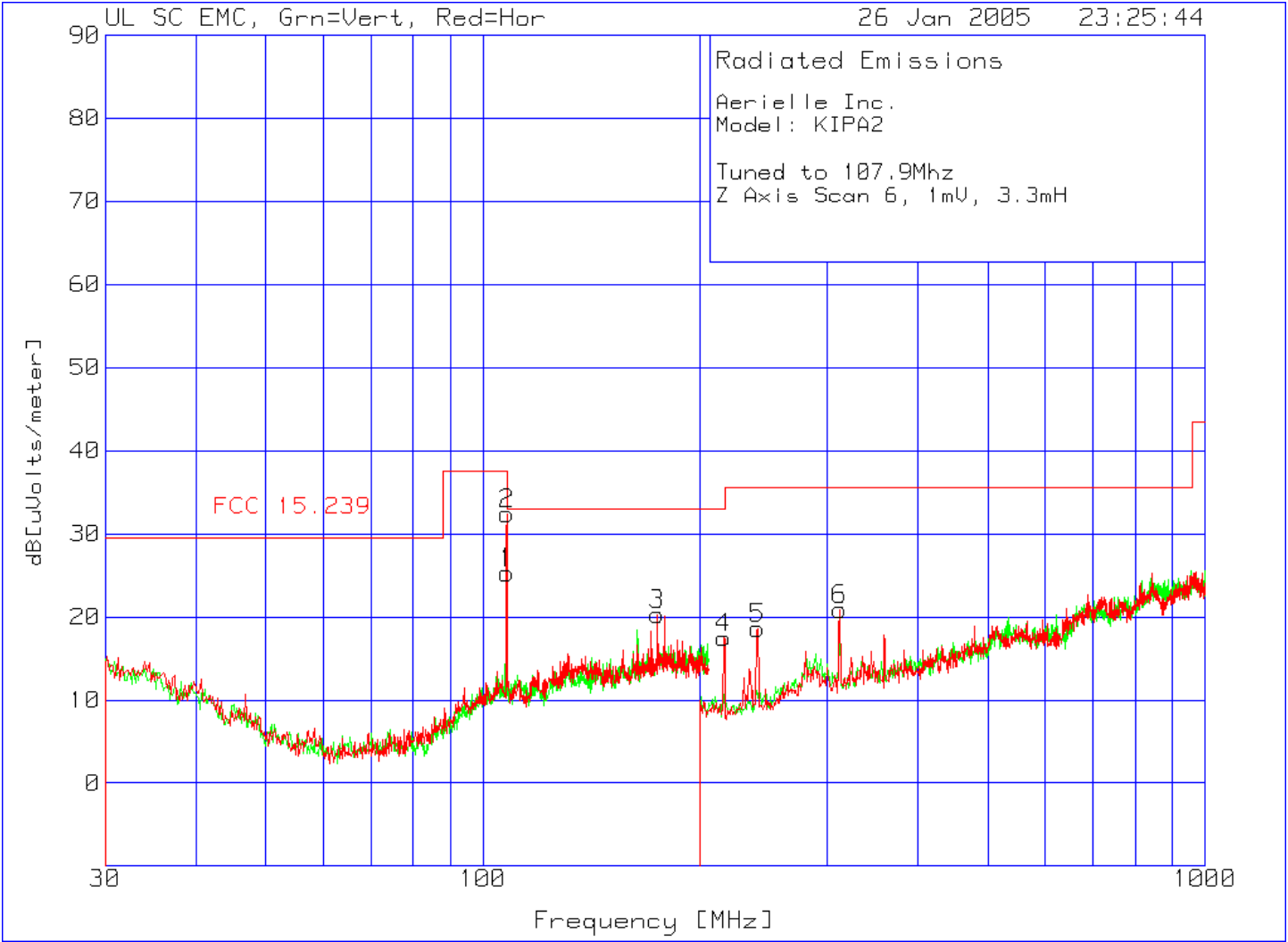
Model #: KIPA II
Report #:NC5311-021005

Aerielle Inc.
Model: KIPA2
Tuned to 107.9Mhz
Y Axis Scan 7, 1mV, 3.3mH

No.	Test Frequency [MHz]	Meter Reading [dB (uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====						
Range: 1 30 - 205MHz -----						
1	107.875	40 pk	-26.6	12.6	26	37.5
	Azimuth:240	Height:101	Vert	Margin [dB]		-11.5
Range: 2 30 - 205MHz -----						
2	107.875	46.8 pk	-26.6	12.3	32.5	37.5
	Azimuth:360	Height:329	Horz	Margin [dB]		-5
3	174.55	30.5 pk	-26.1	15.8	20.2	33
	Azimuth:60	Height:329	Horz	Margin [dB]		-12.8
Range: 4 200 - 1000MHz -----						
4	216	33.5 pk	-27.3	10.8	17	35.5
	Azimuth:179	Height:330	Horz	Margin [dB]		-18.5
5	233.6	33.5 pk	-27.2	11.1	17.4	35.5
	Azimuth:239	Height:330	Horz	Margin [dB]		-18.1
6	311.2	34.2 pk	-26.7	13.5	21	35.5
	Azimuth:239	Height:330	Horz	Margin [dB]		-14.5

LIMIT 1: FCC 15.239

pk - Peak detector



Company: Aerielle Inc.
Project: 05CA05602

Model #: KIPA II
Report #:NC5311-021005

Aerielle Inc.
Model: KIPA2
Tuned to 107.9Mhz
Z Axis Scan 6, 1mV, 3.3mH

Test		Meter	Gain/Loss	Transducer	Level	Limit:1
No.	Frequency	Reading	Factor	Factor	dB[uVolts/meter]	
	[MHz]	[dB (uV)]	[dB]	[dB]		
=====						
Range: 1 30 - 205MHz -----						
1	107.875	39.3 pk	-26.6	12.6	25.3	37.5
	Azimuth:299	Height:101	Vert	Margin [dB]		-12.2
Range: 2 30 - 205MHz -----						
2	107.875	46.7 pk	-26.6	12.3	32.4	37.5
	Azimuth:179	Height:329	Horz	Margin [dB]		-5.1
3	174.375	30.6 pk	-26.1	15.8	20.3	33
	Azimuth:59	Height:329	Horz	Margin [dB]		-12.7
Range: 4 200 - 1000MHz -----						
4	215.2	34 pk	-27.3	10.8	17.5	33
	Azimuth:360	Height:330	Horz	Margin [dB]		-15.5
5	240	34.4 pk	-27.1	11.3	18.6	35.5
	Azimuth:360	Height:330	Horz	Margin [dB]		-16.9
6	312	34.1 pk	-26.7	13.5	20.9	35.5
	Azimuth:360	Height:330	Horz	Margin [dB]		-14.6

LIMIT 1: FCC 15.239

pk - Peak detector

Photographs



7.7 Occupied Bandwidth; Section 15.239(a)

Test Location

Ground Plane #1 (Test Station 5)

Date Tested: 1/26/05

Test Instruments

Instrument	Manufacturer	Model	ID#	Last	Cal
					Next
Spectrum Analyzer	Hewlett-Packard	8546A	8098	8/25/04	8/25/05

UL Procedure

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz. The measurement was made with the spectrum analyzer's resolution bandwidth set to (RBW) = 10 kHz. The VBW = RBW. The frequency difference of two frequencies that are attenuated 26 dB from the peak of the unmodulated signal down the slopes of the modulated signal envelope are recorded. The difference of these two frequencies gives the occupied bandwidth.

Test Data

Fundamental Frequency (MHz)	Bandwidth (kHz)
88.1	160
98.3	170.5
107.9	184.0

Test Results

The requirements are:

MET maximum emission bandwidth is 184.0 kHz.

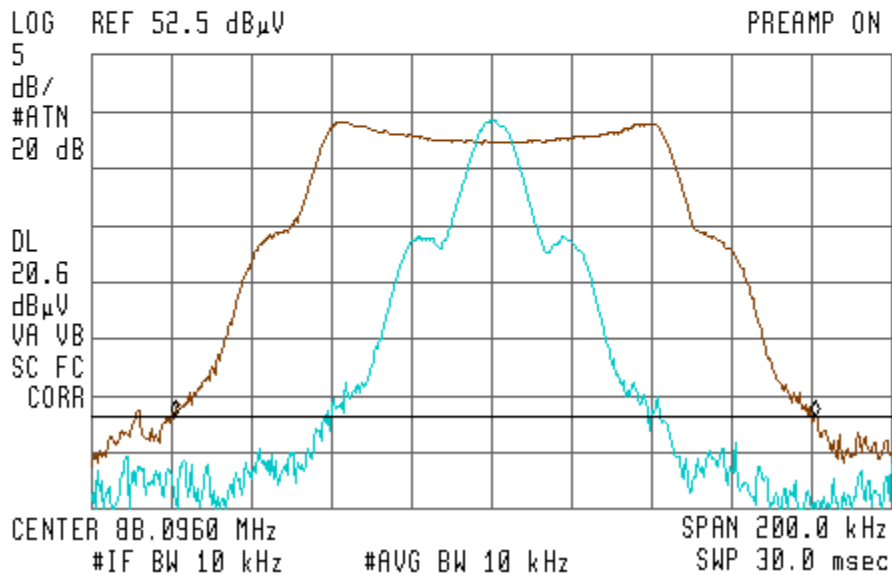
Remarks

None

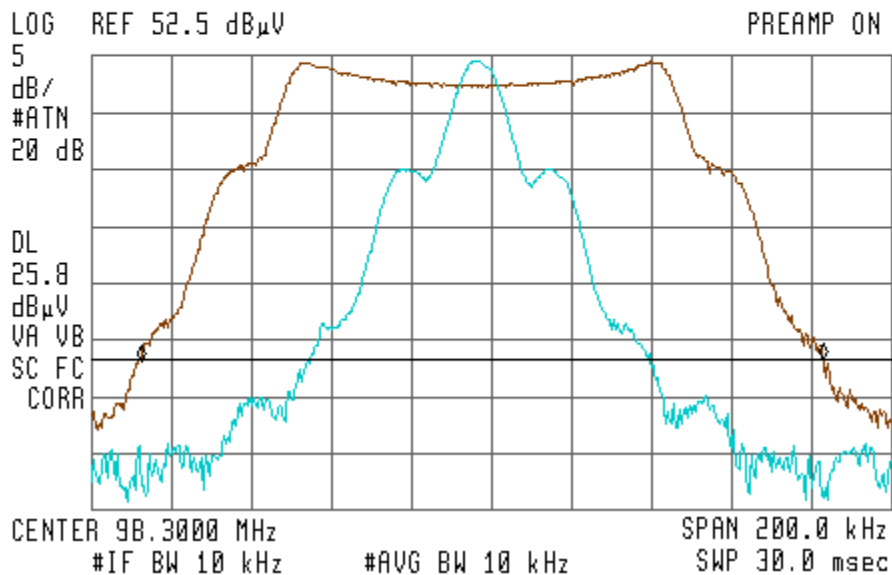
Test Data



ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 88.1770 MHz
20.62 dBμV



ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKRΔ -170.5 kHz
-.25 dB





ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKRΔ 184.0 kHz
-.09 dB

