



**Measurement of RF Interference from a  
M/N: A29100-0001 SPX Genfare WiFi Module with  
Radome antenna, M/N: ANT-2.4-WRT-SMA, and  
Molex antenna, M/N: 47950-0011**

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For	SPX Genfare 751 Pratt Blvd. Elk Grove Village, IL 60007
P.O. Number	8000002657
Date Received	March 26
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Test Personnel	Mark Longinotti
Specification	FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Section 15.247 for Digital Modulation Intentional Radiators Operating within the band 2400-2483.5MHz FCC "Code of Federal Regulations" Title 47, Part15, Subpart 15B, Section 15.109 for Receivers Industry Canada RSS-210 Industry Canada RSS-GEN

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## REVISION HISTORY

Revision	Date	Description
—	06/04/2014	<p>Initial release</p>
A	06/20/2014	<p>Redpine WiFi Module, M/N: RS-9110-N-11-22 was replaced with SPX Genfare WiFi Module, M/N: A29100-0001 throughout the report.</p> <p>Section 3.2 Software:</p> <p>Changed firmware version from RS.CN.22.24.SPX.FCC.UART to RS.CN.22.24.RFTEST.UT.1.4.2_Test.</p> <p>Page 24 and 26:</p> <p>Changed 20Long to 20Log.</p> <p>5.2.1.2 Procedures:</p> <p class="list-item-l1">a. The EUT was placed on the non-conductive stand and set to transmit continuously.</p> <p>Was replaced with:</p> <p class="list-item-l1">a. The EUT was placed on the non-conductive stand. A laptop computer was placed in the test chamber with the EUT. The EUT was programmed to set up a TCP network. The EUT continuously sent messages. The laptop computer joined the network and displayed the messages that it received wirelessly from the EUT.</p>

**Measurement of RF Emissions from Model No. A29100-0001 SPX Genfare WiFi Module with Radome antenna, M/N: ANT-2.4-WRT-SMA, and Molex antenna, M/N: 47950-0011**

## 1 INTRODUCTION

### 1.1 Scope of Tests

This document represents the results of the series of radiated emissions in restricted bands measurements performed on a Model No. A29100-0001 SPX Genfare WiFi Module with Radome antenna, M/N: ANT-2.4-WRT-SMA, and Molex antenna, M/N: 47950-0011, (hereinafter referred to as the EUT). The EUT is a digital modulation transceiver. The transceiver was designed to transmit and receive in the 2400-2483.5 MHz band using a removable external antenna. The EUT was submitted for testing by SPX Genfare located in Elk Grove Village, IL.

### 1.2 Purpose

The SPX Genfare WiFi module, Model No. A29100-0001, originally received a Grant of Equipment Authorization from the FCC, FCC Identifier: XF6-RS9110N1122, and a Technical Acceptance Certificate from Industry Canada, IC: 8407A-RS9110N1122, using different external antennas.

The purpose of this test was to determine if the SPX Genfare WiFi module, Model No. A29100-0001, meets the radiated emissions in restricted bands requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Section 15.247 for Intentional Radiators Operating within the 2400-2483.5 MHz band when tested with a Radome antenna, M/N: ANT-2.4-WRT-SMA, and a Molex antenna, M/N: 47950-0011.

The purpose of this test was also to determine if the SPX Genfare WiFi module, Model No. A29100-0001, meets the radiated emissions in restricted bands requirements of the Industry Canada Radio Standards Specification, RSS-210 Annex 8, for transmitters when tested with a Radome antenna, M/N: ANT-2.4-WRT-SMA, and a Molex antenna, M/N: 47950-0011.

Testing was performed in accordance with ANSI C63.4-2009.

### 1.3 Deviations, Additions and Exclusions

There were no deviations, additions to, or exclusions from the test specification during this test series.

### 1.4 EMC Laboratory Identification

This series of tests was performed by Elite Electronic Engineering Incorporated of Downers Grove, Illinois. The laboratory is accredited by the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code: 100278-0.

### 1.5 Laboratory Conditions

The temperature at the time of the test was 22C and the relative humidity was 19%.

## 2 APPLICABLE DOCUMENTS

The following documents of the exact issue designated form part of this document to the extent specified herein:

- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 15, Subparts B and C, dated 1 October 2013
- ANSI C63.4-2009, "American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz"
- Federal Communications Commission Office of Engineering and Technology Laboratory Division Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under Section 15.247, April 9, 2013
- Industry Canada RSS-210, Issue 8, December 2010, "Spectrum Management and



Telecommunications Radio Standards Specification, Low-power License-exempt radio communication devices (All Frequency Bands): Category I Equipment”

- Industry Canada RSS-GEN, Issue 3, December 2010, “Spectrum Management and Telecommunications Radio Standards Specification, General Requirements and Information for the Certification of radio communication equipment”

### 3 EUT SET-UP AND OPERATION

#### 3.1 General Description

The EUT is a Model No. A29100-0001 SPX Genfare WiFi Module with Radome antenna, M/N: ANT-2.4-WRT-SMA, and Molex antenna, M/N: 47950-0011. A block diagram of the EUT setup is shown as Figure 1 and Figure 2.

##### 3.1.1 Power Input

The EUT was powered with 5VDC via 2 wires of a standard USB cable.

##### 3.1.2 Peripheral Equipment

The following peripheral equipment was submitted with the EUT:

Item	Description
Laptop computer	External to the test chamber. The laptop computer was running hyper terminal to place the EUT in the correct mode.
Digital Optical System	Messtechnik optoRS232-HS fiber optic to RS-232 converter inside the test chamber
Digital Optical System	Messtechnik optoRS232-HS fiber optic to RS-232 converter external to the test chamber
Radome antenna	WRT Compact Radome Antenna, Model No.: ANT-2.4-WRT-SMA, connected to the antenna port of the EUT
Molex antenna	Model No.: 47950-0001, connected to the antenna port of the EUT

##### 3.1.3 Interconnect Cables

The following interconnect cables were submitted with the EUT:

Item	Description
Serial cable	Connected to the RS-232 port of the EUT. The serial cable was used to provide communications between the EUT and the laptop computer (via the RS-232 to fiber optic converters).
USB cable	Connected to the USB port of the EUT. Two of the wires of the USB cable were used to provide 5VDC to the EUT.

##### 3.1.4 Grounding

The EUT was not grounded during testing.

#### 3.2 Software

For duty cycle tests, the EUT had firmware version RS.CN.22.GENR.UT.4.7.1 loaded onto the device. For radiated emissions tests, the EUT had firmware version RS.CN.22.24.RFTEST.UT.1.4.2\_Test loaded onto the device.



### 3.3 Operational Mode

For all tests, the EUT was placed on an 80cm high non-conductive stand. The EUT was energized. The unit was programmed to operate in one of the following modes:

Molex antenna:

802.11b DSSS

- Transmit at 2412MHz (Channel 1), 2 Mb/sec
- Transmit at 2442MHz (Channel 7), 2 Mb/sec
- Transmit at 2462MHz (Channel 11), 2 Mb/sec

802.11b CCK

- Transmit at 2412MHz (Channel 1), 11 Mb/sec
- Transmit at 2442MHz (Channel 7), 11 Mb/sec
- Transmit at 2462MHz (Channel 11), 11 Mb/sec

802.11g

- Transmit at 2412MHz (Channel 1), 54 Mb/sec
- Transmit at 2442MHz (Channel 7), 54 Mb/sec
- Transmit at 2462MHz (Channel 11), 54 Mb/sec

802.11n

- Transmit at 2412MHz (Channel 1), 65 Mb/sec
- Transmit at 2442MHz (Channel 7), 65 Mb/sec
- Transmit at 2462MHz (Channel 11), 65 Mb/sec

Radome antenna:

802.11b DSSS

- Transmit at 2412MHz (Channel 1), 2 Mb/sec
- Transmit at 2442MHz (Channel 7), 2 Mb/sec
- Transmit at 2462MHz (Channel 11), 2 Mb/sec

802.11b CCK

- Transmit at 2412MHz (Channel 1), 11 Mb/sec
- Transmit at 2442MHz (Channel 7), 11 Mb/sec
- Transmit at 2462MHz (Channel 11), 11 Mb/sec

802.11g

- Transmit at 2412MHz (Channel 1), 54 Mb/sec
- Transmit at 2442MHz (Channel 7), 54 Mb/sec
- Transmit at 2462MHz (Channel 11), 54 Mb/sec

802.11n

- Transmit at 2412MHz (Channel 1), 65 Mb/sec
- Transmit at 2442MHz (Channel 7), 65 Mb/sec
- Transmit at 2462MHz (Channel 11), 65 Mb/sec

### 3.4 EUT Modifications

In order to meet the radiated emissions in restricted bands requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Section 15.247 the following modifications were made to the EUT:

- When tested with the Molex antenna, M/N: 47950-0001, the output power from the EUT was reduced to 37.6mW when in the transmit at 2462MHz (Ch. 11), 802.11g, 54 Mb/sec mode
- When tested with the Molex antenna, M/N: 47950-0001, the output power from the EUT was reduced to 40mW when in the transmit at 2412MHz (Ch. 1), 802.11b, DSSS, 2 Mb/sec



## 4 TEST FACILITY AND TEST INSTRUMENTATION

### 4.1 Shielded Enclosure

All tests were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. With the exception of the floor, the reflective surfaces of the shielded chamber are lined with ferrite tiles on the walls and ceiling. Anechoic absorber material is installed over the ferrite tile. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4-2009 for site attenuation.

### 4.2 Test Instrumentation

The test instrumentation and auxiliary equipment used during the tests are listed in Table 9-1. All equipment was calibrated per the instruction manuals supplied by the manufacturer.

Conducted emission tests were performed with a spectrum analyzer in conjunction with a quasi-peak adapter. Radiated emissions were performed with a spectrum analyzer. This receiver allows measurements with the bandwidths specified by the FCC and with the quasi-peak and average detector functions. The spectrum analyzer bandwidth was 120kHz for the 30MHz to 1000MHz radiated emissions data.

### 4.3 Calibration Traceability

Test equipment is maintained and calibrated on a regular basis. All calibrations are traceable to the National Institute of Standards and Technology (NIST).

### 4.4 Measurement Uncertainty

All measurements are an estimate of their true value. The measurement uncertainty characterizes, with a specified confidence level, the spread of values which may be possible for a given measurement system.

The measurement uncertainty for these tests is presented below:

Conducted Emission Measurements			
Combined Standard Uncertainty		1.07	-1.07
Expanded Uncertainty (95% confidence)		2.1	-2.1

Radiated Emission Measurements			
Combined Standard Uncertainty		2.26	-2.18
Expanded Uncertainty (95% confidence)		4.5	-4.4

## 5 TEST PROCEDURES

### 5.1 Receiver

Per the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart B, Section 15.101(b), receivers operating above 960MHz are exempt from complying with the technical provisions of part 15.

Per Industry Notice 2012-DRS0126, Regulatory Standards Notice – Changes to RSS-Gen Issue 3 and RSS-310 Issue 3, section 2.2.3 of RSS-Gen Issue 3 now states that: "Only radiocommunication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to Industry Canada requirements, as described above. All other receivers are excluded from any Industry Canada certification, testing, labeling and reporting requirements." Since the receiver operates above 960MHz, the receiver is exempt



from complying with the technical provisions of the RSS standards.

## 5.2 Transmitter

### 5.2.1 Duty Cycle Factor Measurements

#### 5.2.1.1 Requirements

Unless otherwise specified, when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value. The exact method of calculating the average field strength shall be submitted with any application for certification or shall be retained in the measurement data file for equipment subject to notification or verification.

#### 5.2.1.2 Procedures

- b. The EUT was placed on the non-conductive stand. A laptop computer was placed in the test chamber with the EUT. The EUT was programmed to set up a TCP network. The EUT continuously sent messages. The laptop computer joined the network and displayed the messages that it received wirelessly from the EUT.
- c. A double ridged waveguide antenna was positioned at a 3 meter distance from the EUT. The output of the antenna was connected to the input of a spectrum analyzer.
- d. The center frequency of the spectrum analyzer was set to the transmit frequency of the EUT.
- e. The frequency span of the spectrum analyzer was set to 0Hz so that the time domain trace of the transmitted pulse of the EUT was displayed on the spectrum analyzer.
- f. The sweep time of the spectrum analyzer was adjusted so that the beginning and end of a single pulse could be seen on the display of the spectrum analyzer.
- g. The single sweep function of the spectrum analyzer was used multiple times to determine the maximum pulse width of the EUT.
- h. The maximum pulse width display of the spectrum analyzer was recorded and then plotted using a 'screen dump' utility.
- i. The sweep time of the spectrum analyzer was then adjusted to 100msec.
- j. The single sweep function of the spectrum analyzer was used multiple times to determine the maximum number of transmitted pulses that occurred in a 100msec time period.
- k. The maximum number of pulses transmitted in a 100msec time period was recorded and then plotted using a 'screen dump' utility.
- l. The duty cycle correction was calculated using the following equation:

$$\text{Duty Cycle Correction Factor (dB)} = \text{D.C. (dB)}$$
$$\text{D.C. (dB)} = 20 \times \log [(\text{pulse width (msec)} \times (\#\text{pulses in a 100msec period})) / 100\text{msec}]$$

#### 5.2.1.3 Results

Duty cycle plots are shown on pages 23 through 32. The following duty cycle factors were calculated for the various modes of operation:

Mode	Duty Cycle Correction Factor
802.11b (DSSS), 2 Mb/sec	-41.9dB
802.11b (CCK), 11 Mb/sec	-41.9dB
802.11g, 54 Mb/sec	-41.6dB
802.11n, 65 Mb/sec	-41.7dB

## 5.2.2 Radiated Spurious Emissions Measurements In the Restricted Bands

### 5.2.2.1 Requirements

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must comply with the radiated emission limits specified in §15.209(a).

Paragraph 15.209(a) has the following radiated emission limits:

Frequency MHz	Field Strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	3
30.0-88.0	100	3
88.0-216.0	150	3
216.0-960.0	200	3
Above 960	500	3

### 5.2.2.2 Procedures

Radiated measurements were performed in a 32ft. x 20ft. x 14ft. high shielded enclosure. The shielded enclosure prevents emissions from other sources, such as radio and TV stations from interfering with the measurements. All powerlines and signal lines entering the enclosure pass through filters on the enclosure wall. The powerline filters prevent extraneous signals from entering the enclosure on these leads.

Preliminary radiated emissions tests were performed to determine the emission characteristics of the EUT. For the preliminary test, a broadband measuring antenna was positioned at a 3 meter distance from the EUT. The entire frequency range from 30MHz to 25GHz was investigated using a peak detector function.

The final open field emission tests were then manually performed over the frequency range of 30MHz to 25GHz.

- 1) For all emissions in the restricted bands, the following procedure was used:
  - a) The field strengths of all emissions below 1 GHz were measured using a bi-log antenna. The bi-log antenna was positioned at a 3 meter distance from the EUT. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer.
  - b) The field strengths of all emissions above 1 GHz were measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the EUT. A peak detector with a resolution bandwidth of 1 MHz was used on the spectrum analyzer.
  - c) To ensure that maximum or worst case emission levels were measured, the following steps were taken when taking all measurements:
    - i) The EUT was rotated so that all of its sides were exposed to the receiving antenna.
    - ii) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
    - iii) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.
    - iv) In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer. The measuring antenna was not raised or lowered to ensure maximized readings, instead the EUT was rotated through all axis to ensure the maximum readings were recorded for the EUT.
  - d) For all radiated emissions measurements below 1 GHz, if the peak reading is below the limits listed in

15.209(a), no further measurements are required. If however, the peak readings exceed the limits listed in 15.209(a), then the emissions are re-measured using a quasi-peak detector.

- e) For all radiated emissions measurements above 1 GHz, the peak readings must comply with the 15.35(b) limits. 15.35(b) states that when average radiated emissions measurements are specified, there also is a limit on the peak level of the radiated emissions. The limit on the peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. Therefore, all peak readings above 1 GHz must be no greater than 20 dB above the limits specified in 15.209(a).
- f) Next, for all radiated emissions measurements above 1GHz, the peak reading was converted to an average reading by adding the duty cycle correction factor to the peak reading. These readings must be no greater than the limits specified in 15.209(a).

#### 5.2.2.3 Results

Preliminary radiated emissions plots with the EUT transmitting at low frequency, middle frequency, and high frequency with the WRT Compact Radome Antenna, Model No.: ANT-2.4-WRT-SMA, are shown on pages 33 through 128. Final radiated emissions data are presented on data pages 129 through 152. As can be seen from the data, all emissions measured from the EUT were within the specification limits. Photographs of the test configuration which yielded the highest or worst case, radiated emission levels are shown on Figure 3 through Figure 6.

Preliminary radiated emissions plots with the EUT transmitting at low frequency, middle frequency, and high frequency with the Molex antenna, Model No.: 47950-0001, are shown on pages 153 through 248. Final radiated emissions data are presented on data pages 249 through 272. As can be seen from the data, all emissions measured from the EUT were within the specification limits. Photographs of the test configuration which yielded the highest or worst case, radiated emission levels are shown on Figure 7 through Figure 10.

### 5.2.3 Band Edge Compliance

#### 5.2.3.1 Requirements

Per 15.247(d), the radiated emissions which fall in the restricted band beginning at 2483.5 MHz must meet the general limits of 15.209(a).

#### 5.2.3.2 Procedures

- 1) The EUT was set to transmit continuously at the channel closest to the high band-edge.
- 2) A double ridged waveguide was placed 3 meters away from the EUT. The antenna was connected to the input of a spectrum analyzer.
- 3) The center frequency of the analyzer was set to the high band edge (2483.5MHz)
- 4) The resolution bandwidth was set to 1MHz.
- 5) To ensure that the maximum or worst case emission level was measured, the following steps were taken:
  - a. The EUT was rotated so that all of its sides were exposed to the receiving antenna.
  - b. Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
  - c. The measuring antenna was raised and lowered from 1 to 4 meters for each antenna polarization to maximize the readings.
- 6) The highest measured peak reading was recorded.
- 7) The highest measured average reading was recorded.

#### 5.2.3.3 Results

Pages 273 through 280 show the band-edge compliance results with the EUT transmitting at low frequency,



middle frequency, and high frequency with the WRT Compact Radome Antenna, Model No.: ANT-2.4-WRT-SMA. As can be seen from the data, the radiated emissions at the high end band edge are within the general limits.

Pages 281 through 288 show the band-edge compliance results with the EUT transmitting at low frequency, middle frequency, and high frequency with the Molex antenna, Model No.: 47950-0001. As can be seen from the data, the radiated emissions at the high end band edge are within the general limits.

## 6 CONCLUSIONS

It was determined that the SPX Genfare WiFi Module, M/N: A29100-0001, with Radome antenna, M/N: ANT-2.4-WRT-SMA, digital modulation transceiver, did fully meet the radiated emissions in restricted bands requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Section 15.247 for Intentional Radiators Operating within the 2400-2483.5 MHz band and the radiated emissions in restricted bands requirements of the Industry Canada Radio Standards Specification, RSS-210 Annex 8, for transmitters.

It was also determined that the SPX Genfare WiFi Module, M/N: A29100-0001, with Molex antenna, M/N: 47950-0011, did fully meet the radiated emissions in restricted bands requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Section 15.247 for Intentional Radiators Operating within the 2400-2483.5 MHz band and the radiated emissions in restricted bands requirements of the Industry Canada Radio Standards Specification, RSS-210 Annex 8, for transmitters with the following modifications:

- The output power from the EUT was reduced to 37.6mW when in the transmit at 2462MHz (Ch. 11), 802.11g, 54 Mb/sec mode
- The output power from the EUT was reduced to 40mW when in the transmit at 2412MHz (Ch. 1), 802.11b, DSSS, 2 Mb/sec

## 7 CERTIFICATION

Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the test specifications.

The data presented in this test report pertains to the EUT at the test date. Any electrical or mechanical modification made to the EUT subsequent to the specified test date will serve to invalidate the data and void this certification.

## 8 ENDORSEMENT DISCLAIMER

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the Federal Government.



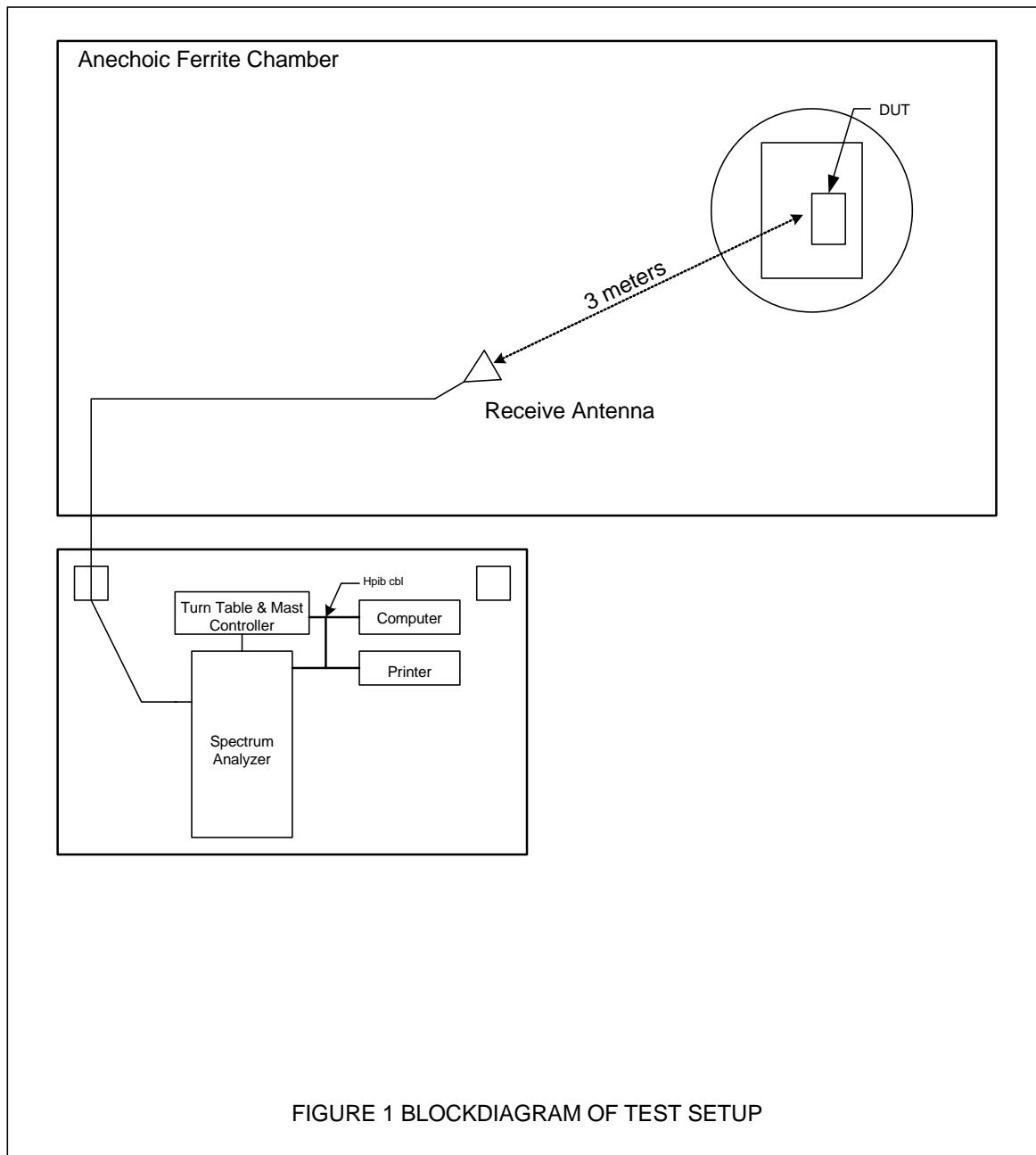
## 9 EQUIPMENT LIST

**Table 9-1 Equipment List**

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW0	PREAMPLIFIER	PLANAR ELECTRONICS	PE2-30-20G20R6G	PL2926/0646	20GHZ-26.5GHZ	3/11/2014	3/11/2015
APW3	PREAMPLIFIER	PLANAR ELECTRONICS	PE2-35-120-5R0-10-12	PL2924	1GHZ-20GHZ	10/8/2013	10/8/2014
CDX7	COMPUTER	ELITE	WORKSTATION			N/A	
CDY0	WORKSTATION	ELITE	WORKSTATION			N/A	
CMA1	Controllers	EMCO	2090	9701-1213	---	N/A	
NHG1	STANDARD GAIN HORN ANTENNA	NARDA	638	---	18-26.5GHZ	NOTE 1	
NTA2	BILOG ANTENNA	TESEQ	6112D	28040	25-1000MHz	8/30/2013	8/30/2014
NWQ1	DOUBLE RIDGED WAVEGUIDE ANTENNA	ETS-LINDGREN	3117	66655	1GHZ-18GHZ	3/11/2014	3/11/2015
RBB0	EMI TEST RECEIVER 20HZ TO 40 GHZ.	ROHDE & SCHWARZ	ESIB40	100250	20 HZ TO 40GHZ	3/11/2014	3/11/2015
SES1	24VDC POWER SUPPLY	P TRANS	FS-32024-1M	002	18-27VDC	NOTE 1	
XOB2	ADAPTER	HEWLETT PACKARD	K281C,012	09407	18-26.5GHZ	NOTE 1	
XPRO0	HIGH PASS FILTER	K&L MICROWAVE	11SH10-4800/X20000	001	4.8-20GHz	9/12/2013	9/12/2014

I/O: Initial Only N/A: Not Applicable

Note 1: For the purpose of this test, the equipment was calibrated over the specified frequency range, pulse rate, or modulation prior to the test or monitored by a calibrated instrument.



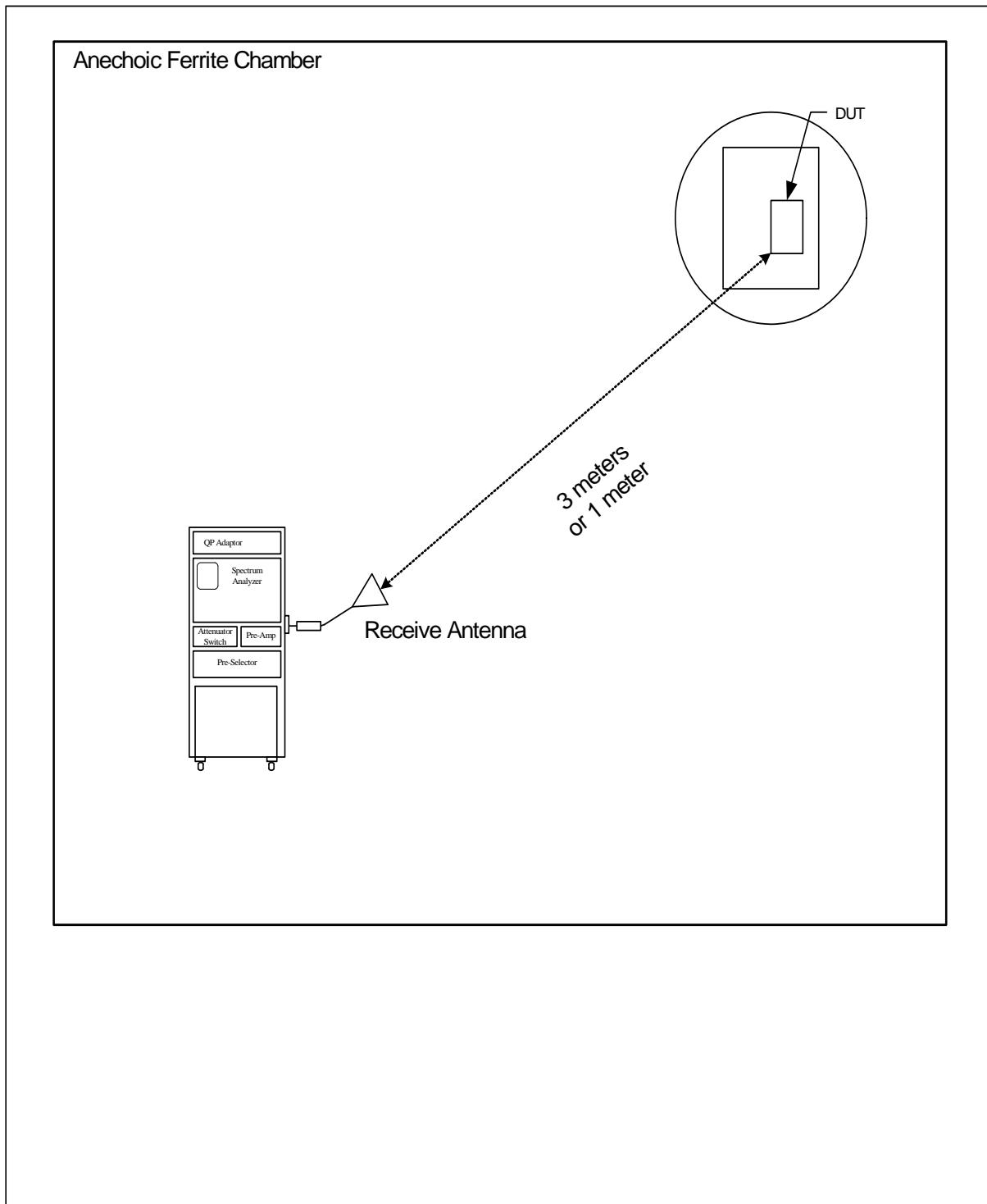


Figure 2: BLOCK DIAGRAM OF TEST SETUP FOR RADIATED EMISSIONS ABOVE 18GHZ

Figure 3



Test Setup for Radiated Emissions – Radome Antenna

Figure 4

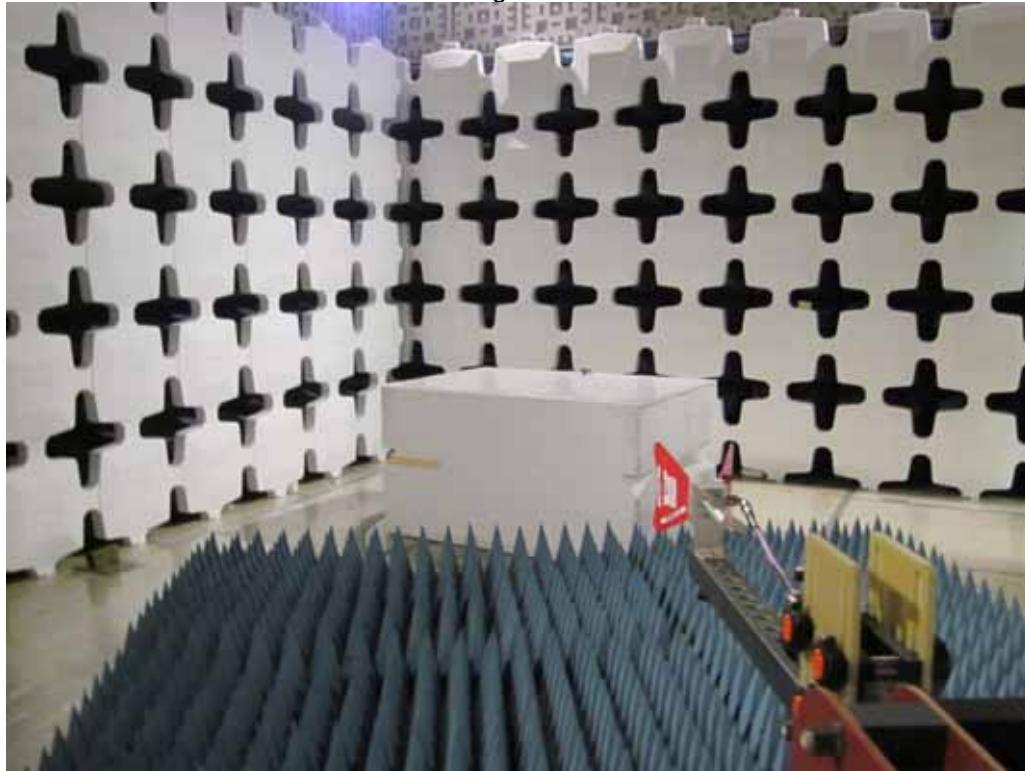


Test Setup for Radiated Emissions, Radome Antenna – 30MHz to 1GHz, Horizontal Polarization

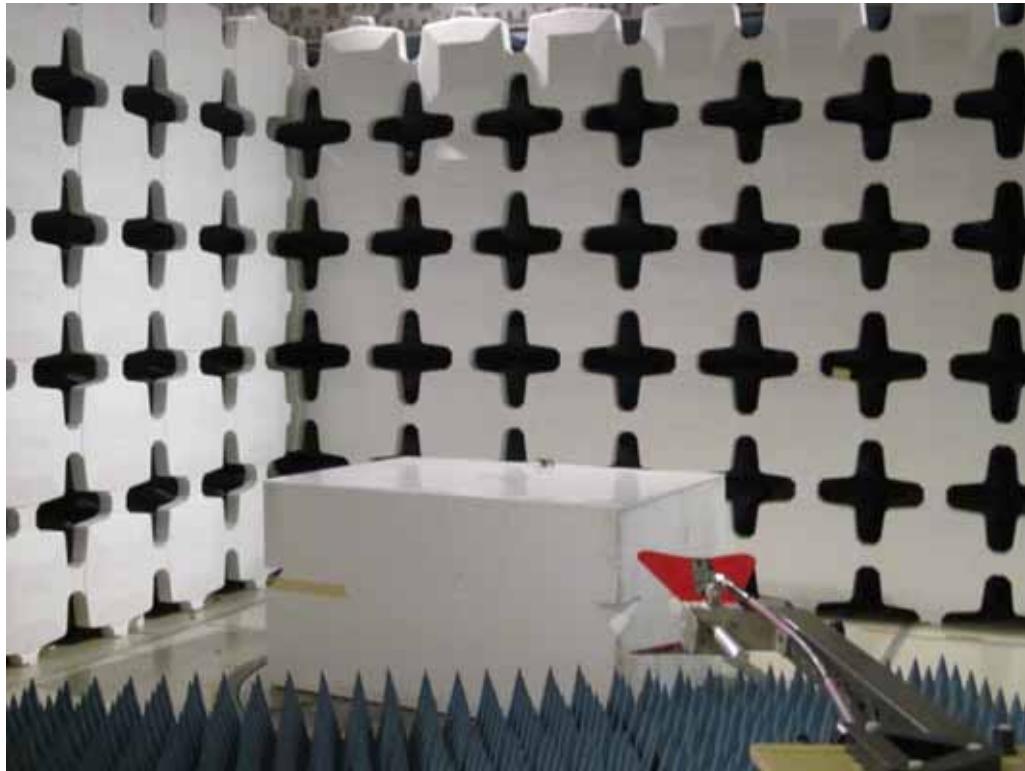


Test Setup for Radiated Emissions, Radome Antenna – 30MHz to 1GHz, Vertical Polarization

Figure 5



Test Setup for Radiated Emissions, Radome Antenna – 1GHz to 18GHz, Horizontal Polarization

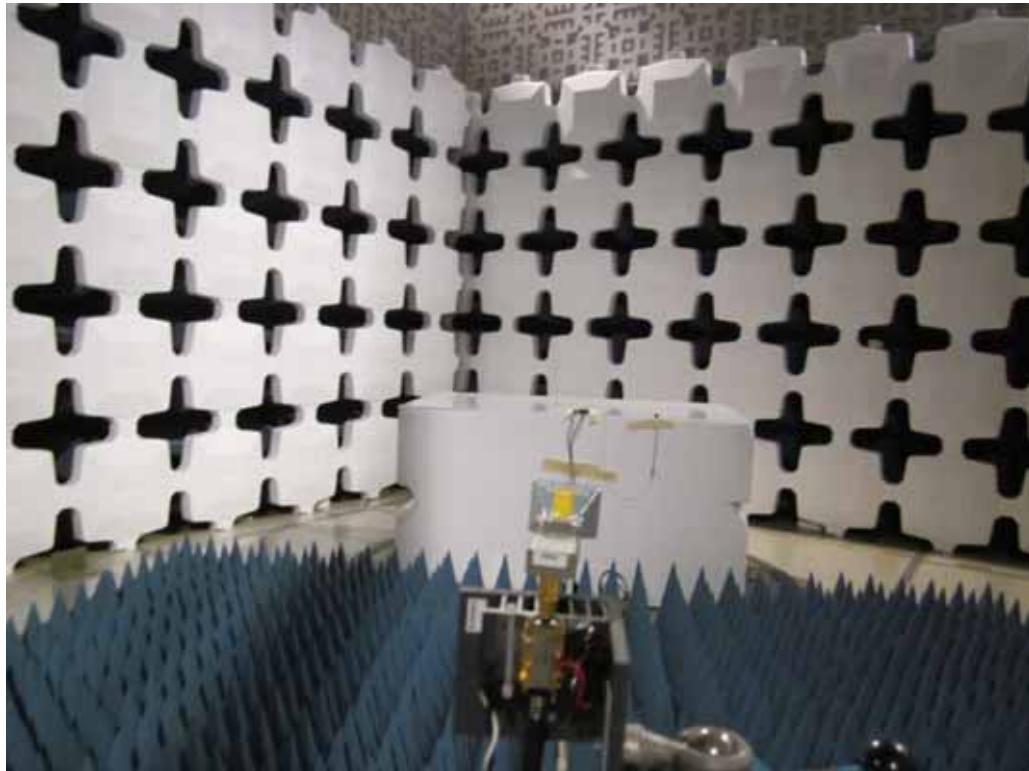


Test Setup for Radiated Emissions, Radome Antenna – 1GHz to 18GHz, Vertical Polarization

Figure 6



Test Setup for Radiated Emissions, Radome Antenna – 18GHz to 25GHz, Horizontal Polarization



Test Setup for Radiated Emissions, Radome Antenna – 18GHz to 25GHz, Vertical Polarization

Figure 7



Test Setup for Radiated Emissions – Molex Antenna

Figure 8

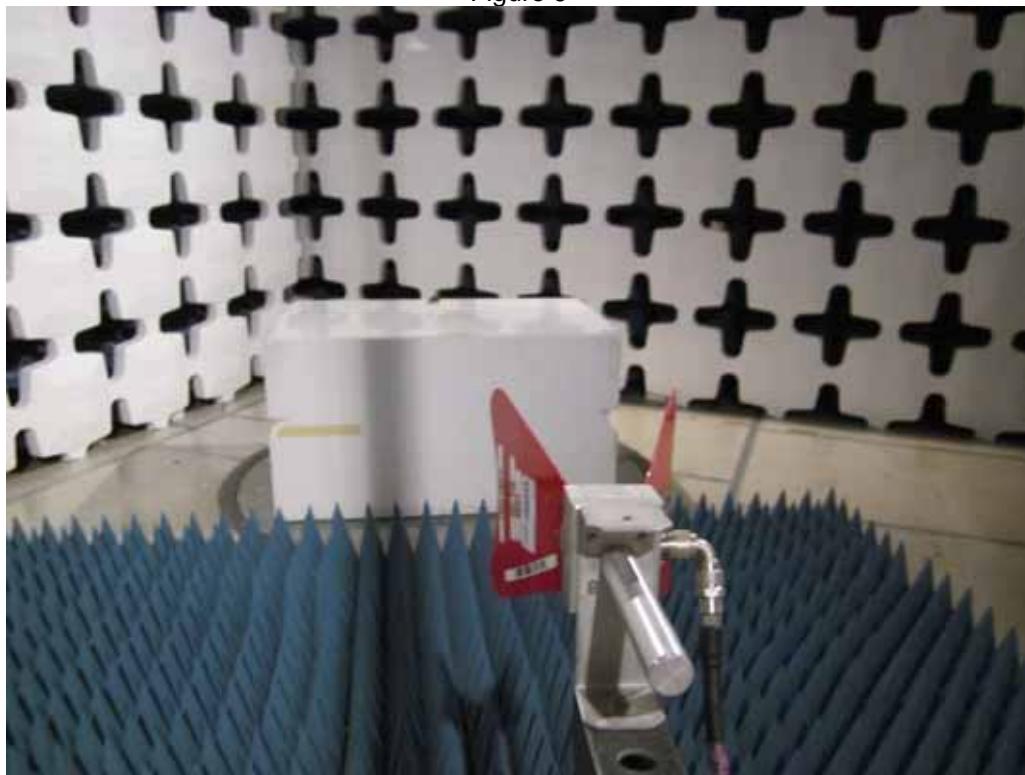


Test Setup for Radiated Emissions, Molex Antenna – 30MHz to 1GHz, Horizontal Polarization

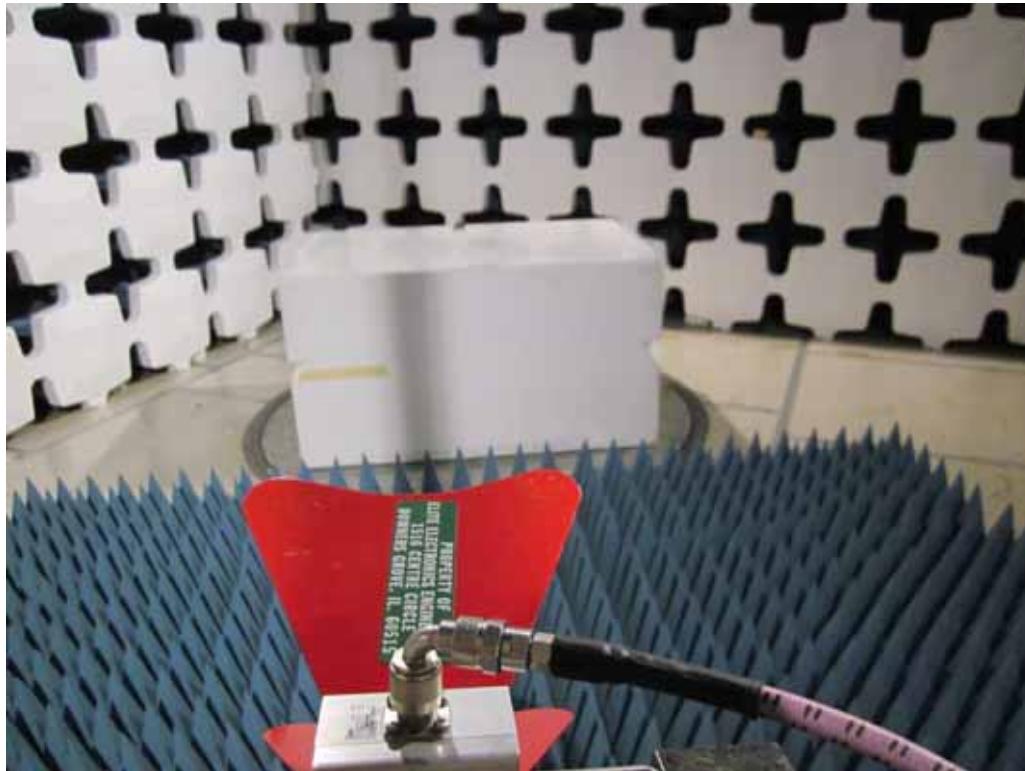


Test Setup for Radiated Emissions, Molex Antenna – 30MHz to 1GHz, Vertical Polarization

Figure 9



Test Setup for Radiated Emissions, Molex Antenna – 1GHz to 18GHz, Horizontal Polarization



Test Setup for Radiated Emissions, Molex Antenna – 1GHz to 18GHz, Vertical Polarization

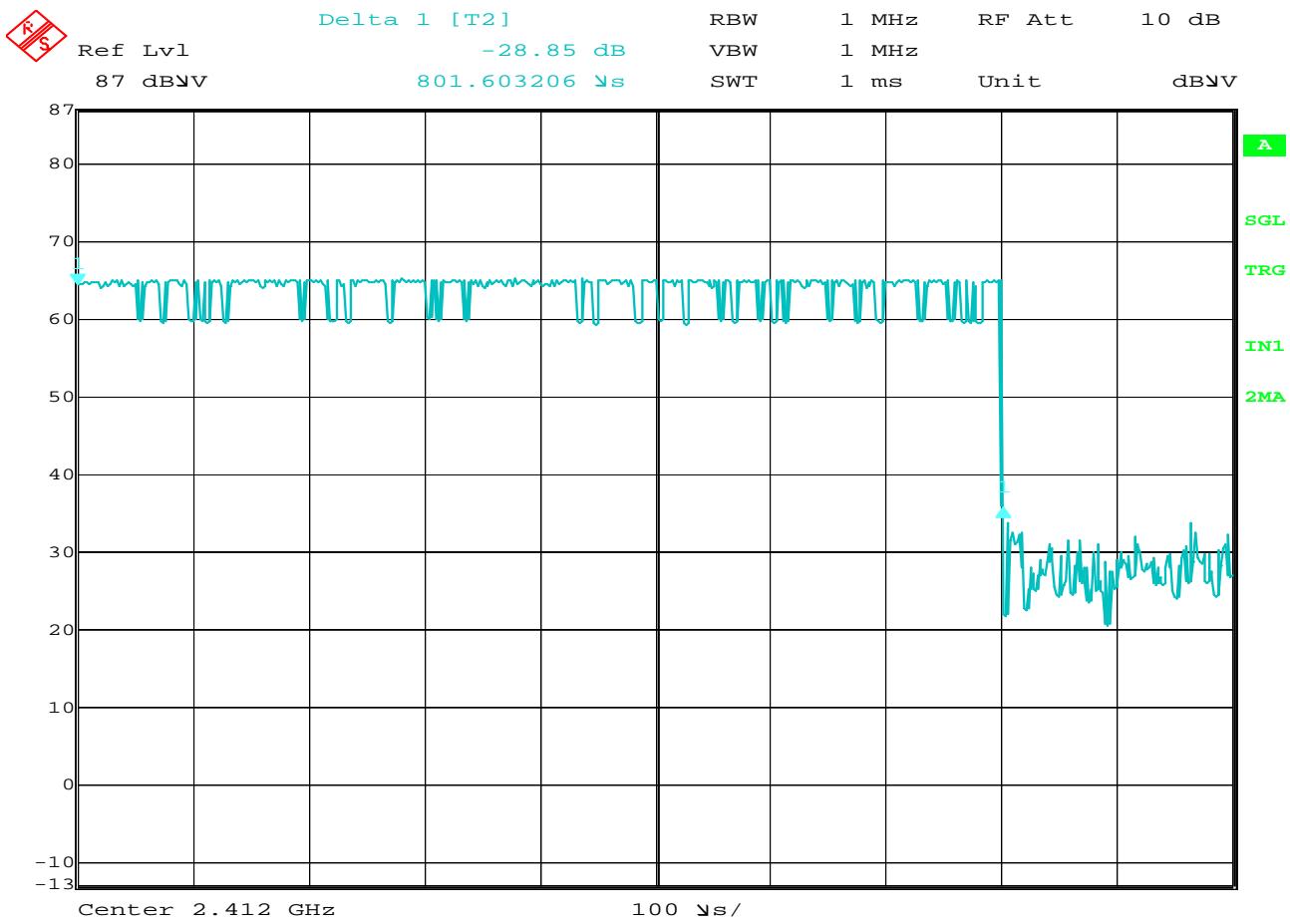
Figure 10



Test Setup for Radiated Emissions, Molex Antenna – 18GHz to 25GHz, Horizontal  
Polarization

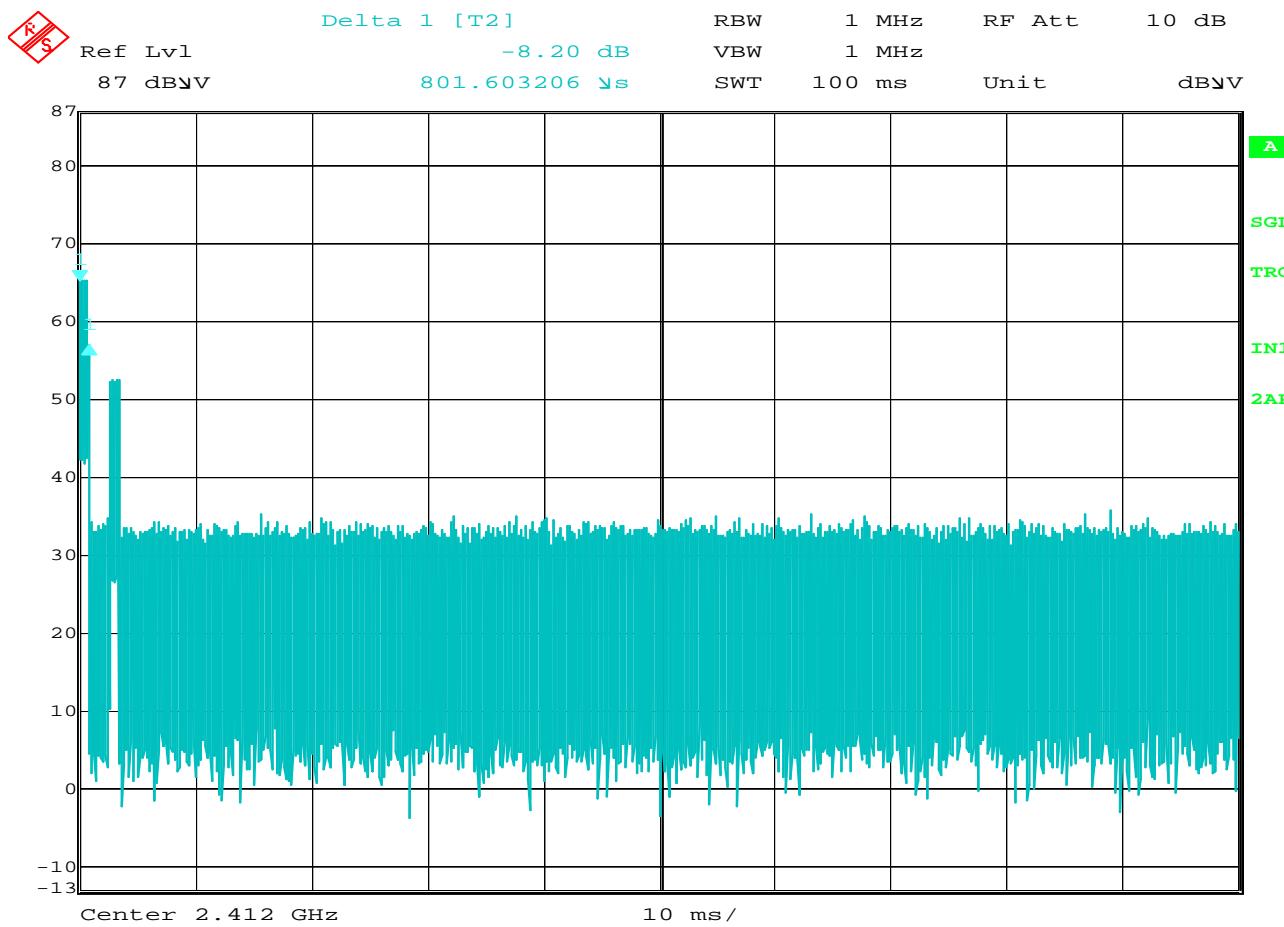


Test Setup for Radiated Emissions, Molex Antenna – 18GHz to 25GHz, Vertical  
Polarization



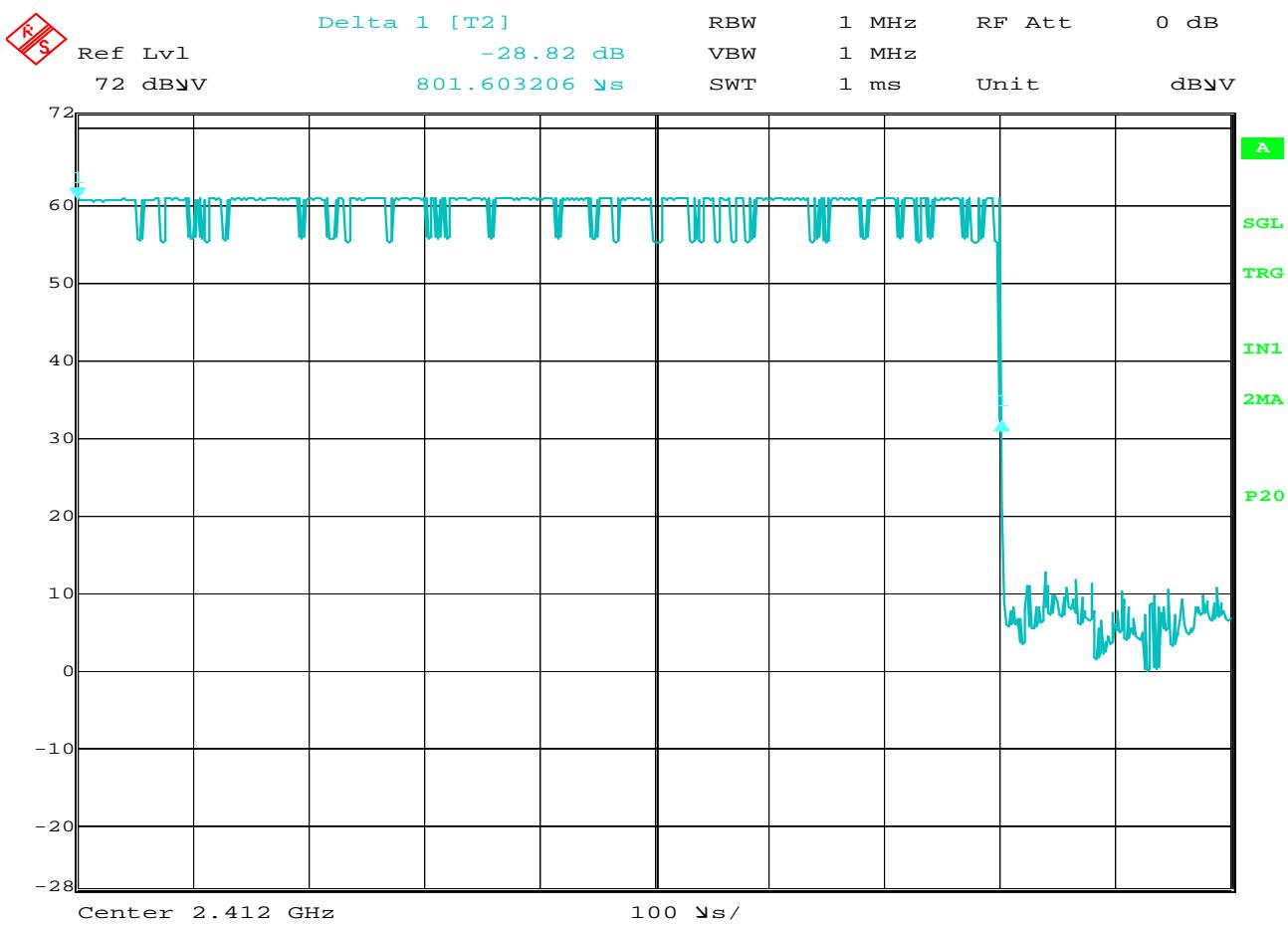
#### DUTY CYCLE FACTOR

MANUFACTURER : SPX Genfare  
MODEL NUMBER : WiFi Module, SPX Genfare P/N: A29100-0001  
SERIAL NUMBER : None Assigned  
TEST MODE : Tx @ 2412MHz (Ch. 1) 802.11b, 2Mb/sec (DSSS)  
TEST PARAMETERS : Pulse width = 800musec  
EQUIPMENT USED : RBB0, NWQ1



### DUTY CYCLE FACTOR

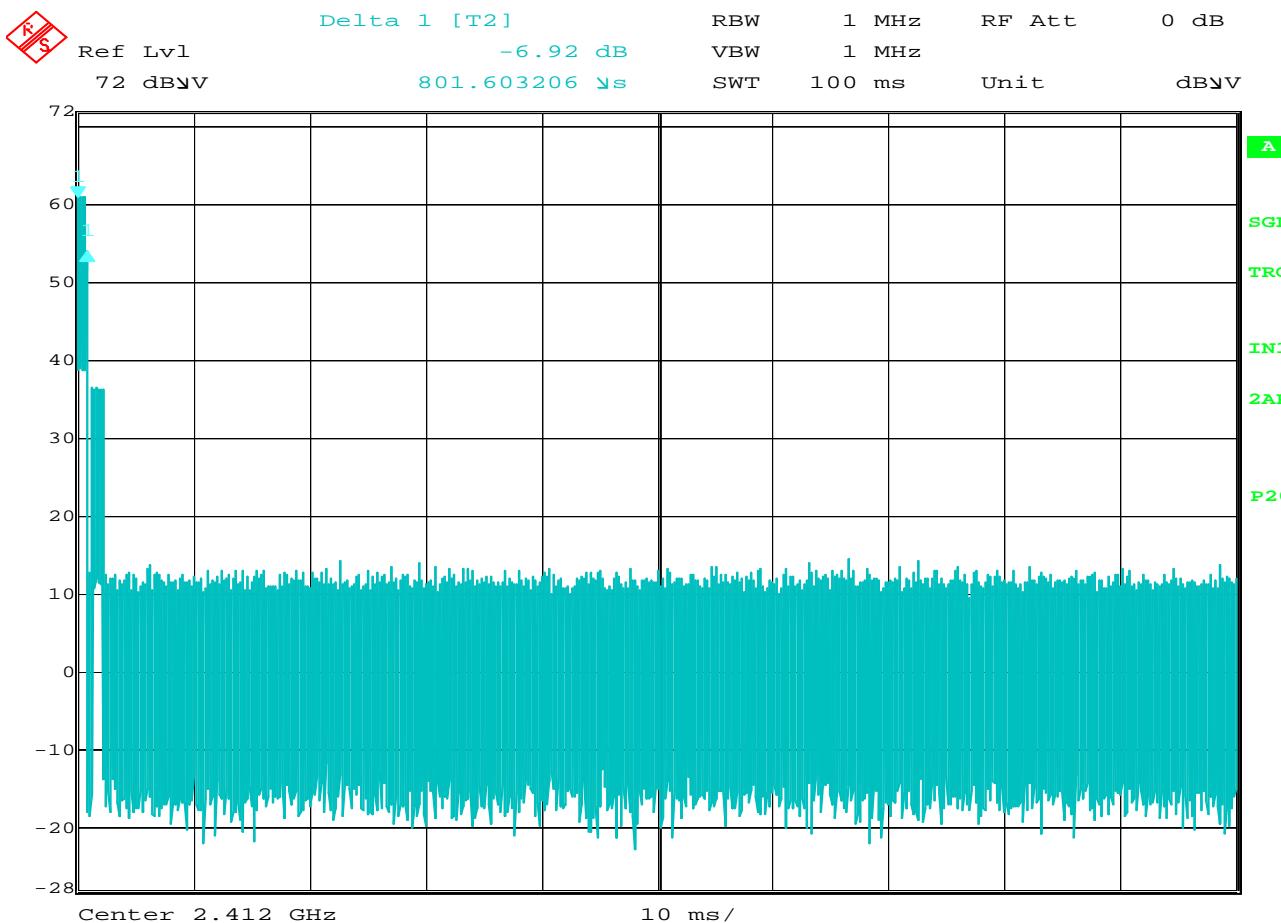
MANUFACTURER	: SPX Genfare
MODEL NUMBER	: WiFi Module, SPX Genfare P/N: A29100-0001
SERIAL NUMBER	: None Assigned
TEST MODE	: Tx @ 2412MHz (Ch. 1) 802.11b, 2Mb/sec (DSSS)
TEST PARAMETER	: Duty Cycle = $20 \log(\text{pulse width} \times \text{number of pulses in 100msec})/100\text{msec}$
TEST PARAMETERS	: Duty Cycle = $20 \log(800\text{usec} \times 1)/100\text{msec}$
EQUIPMENT USED	: RBB0, NWQ1
NOTES	: Lower pulse is from laptop computer communicating with WiFi module



Date: 9.APR.2014 12:13:15

### DUTY CYCLE FACTOR

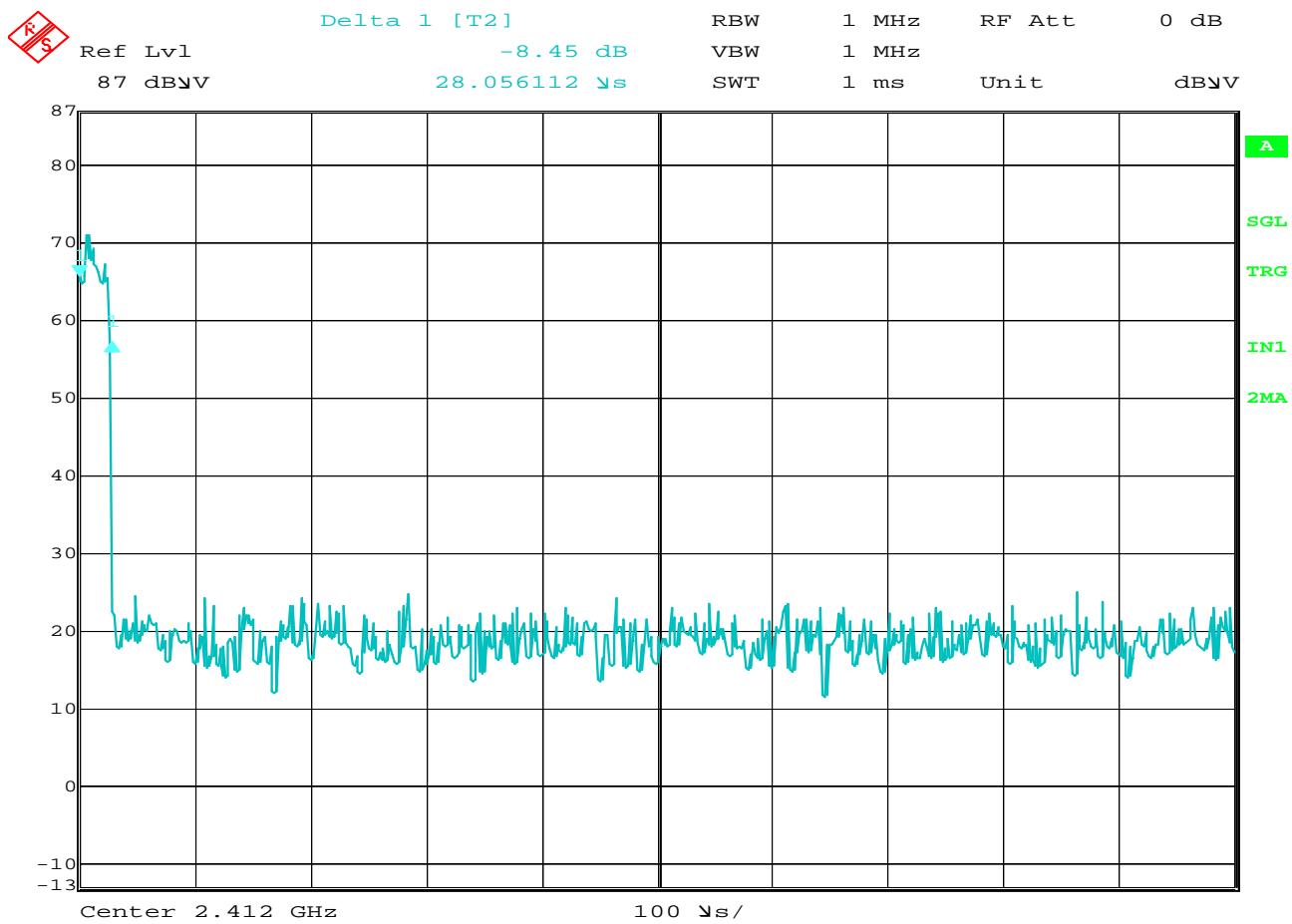
MANUFACTURER	:	SPX Genfare
MODEL NUMBER	:	WiFi Module, SPX Genfare P/N: A29100-0001
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2412MHz (Ch. 1) 802.11b, CCK 11Mb/sec
TEST PARAMETER	:	Pulse Width is 800msec
EQUIPMENT USED	:	RBB0, NWQ1
NOTES	:	



Date: 9.APR.2014 12:15:00

### DUTY CYCLE FACTOR

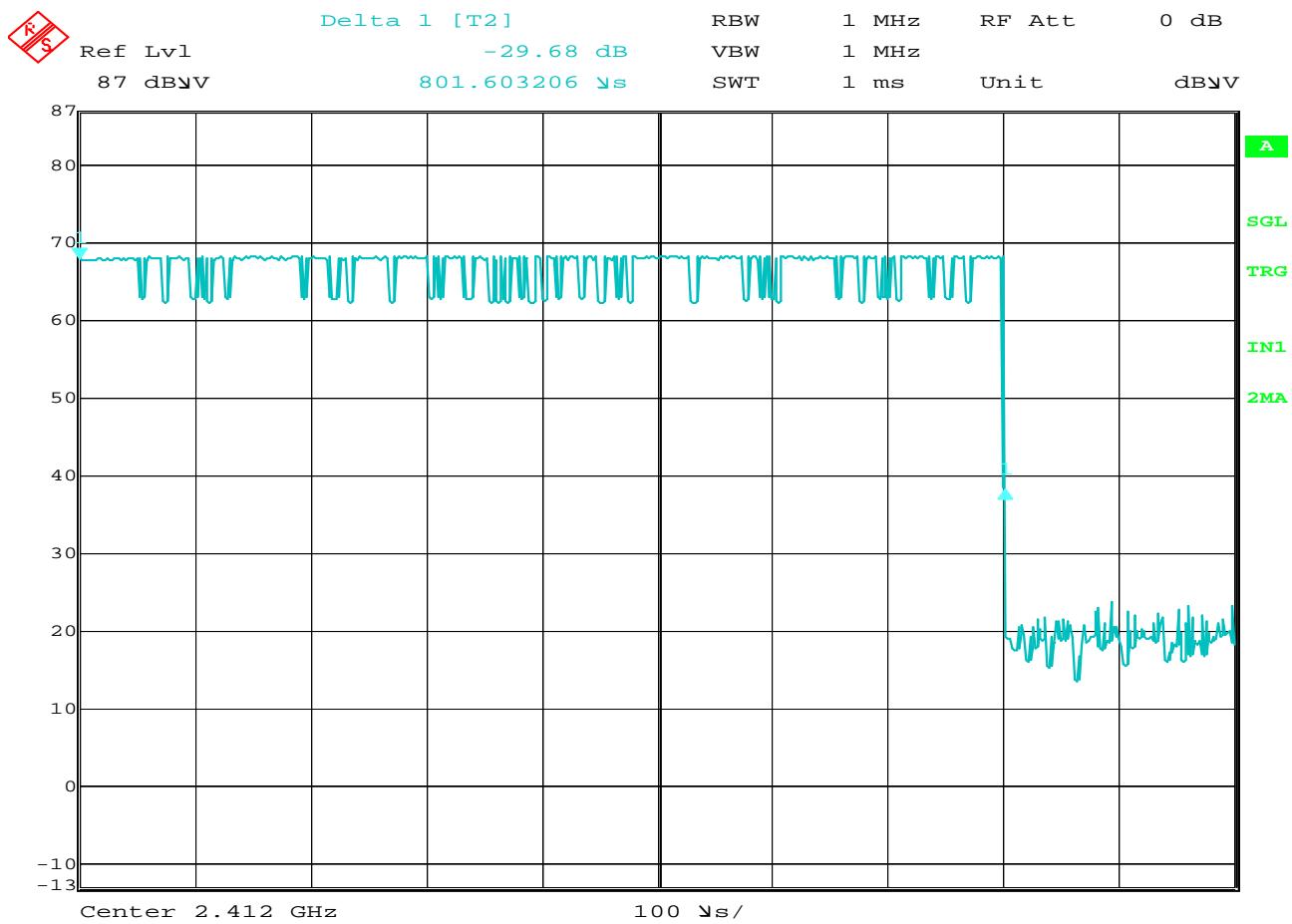
MANUFACTURER	: SPX Genfare
MODEL NUMBER	: WiFi Module, SPX Genfare P/N: A29100-0001
SERIAL NUMBER	: None Assigned
TEST MODE	: Tx @ 2412MHz (Ch. 1) 802.11b, CCK 11Mb/sec
TEST PARAMETER	: Duty Cycle = 20 log (pulse width x number of pulses in 100msec)/100msec : Duty Cycle = 20 log (800usec x 1)/100msec
TEST PARAMETERS	: Pulse width = -41.9dB
EQUIPMENT USED	: RBB0, NWQ1
NOTES	:



Date: 9.APR.2014 15:05:49

### DUTY CYCLE FACTOR

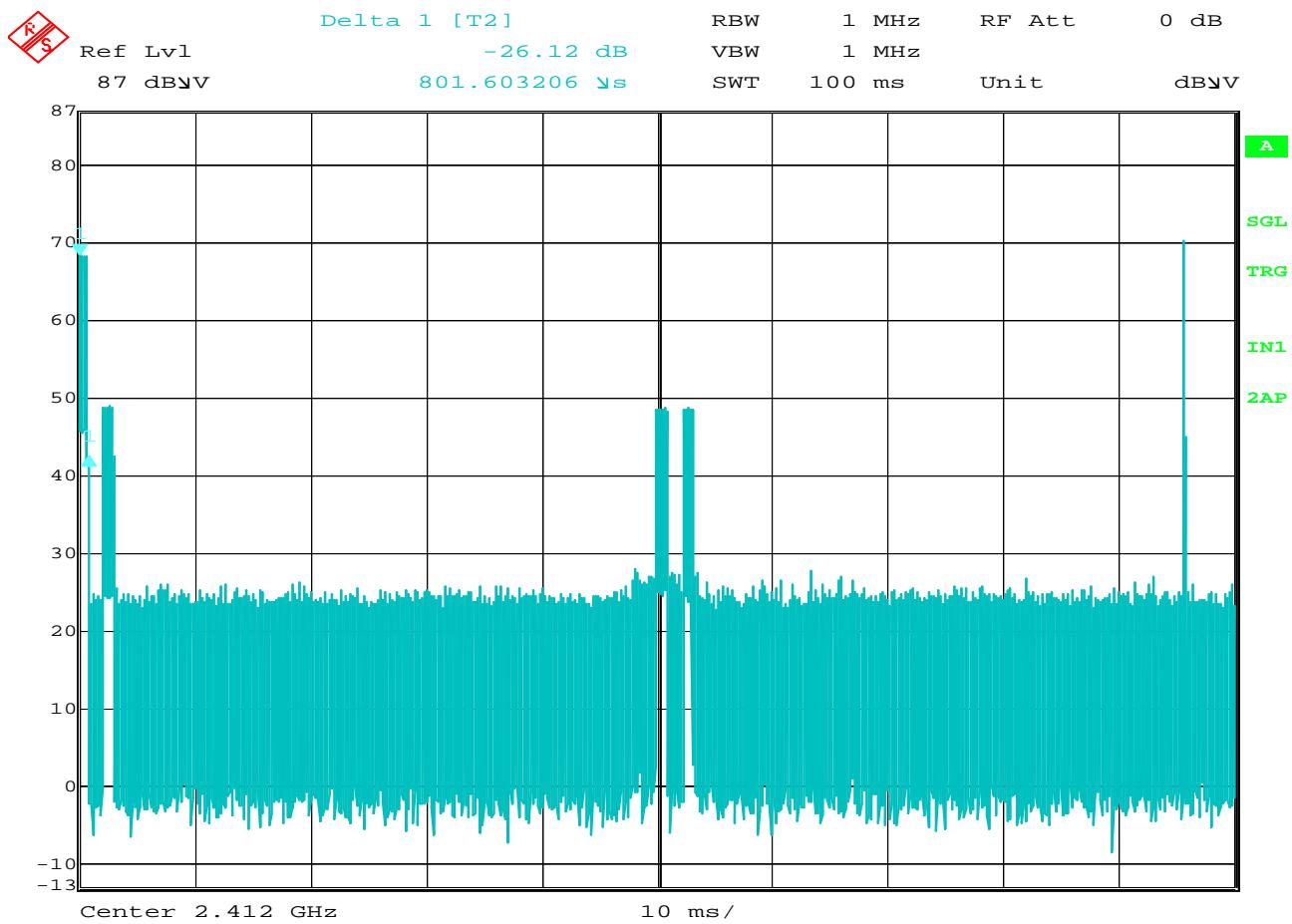
MANUFACTURER	:	SPX Genfare
MODEL NUMBER	:	WiFi Module, SPX Genfare P/N: A29100-0001
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2412MHz (Ch. 1) 802.11g, 54Mb/sec
TEST PARAMETER	:	Pulse width #1 = 28.1usec
EQUIPMENT USED	:	RBB0, NWQ1
NOTES	:	



Date: 9.APR.2014 15:06:58

### DUTY CYCLE FACTOR

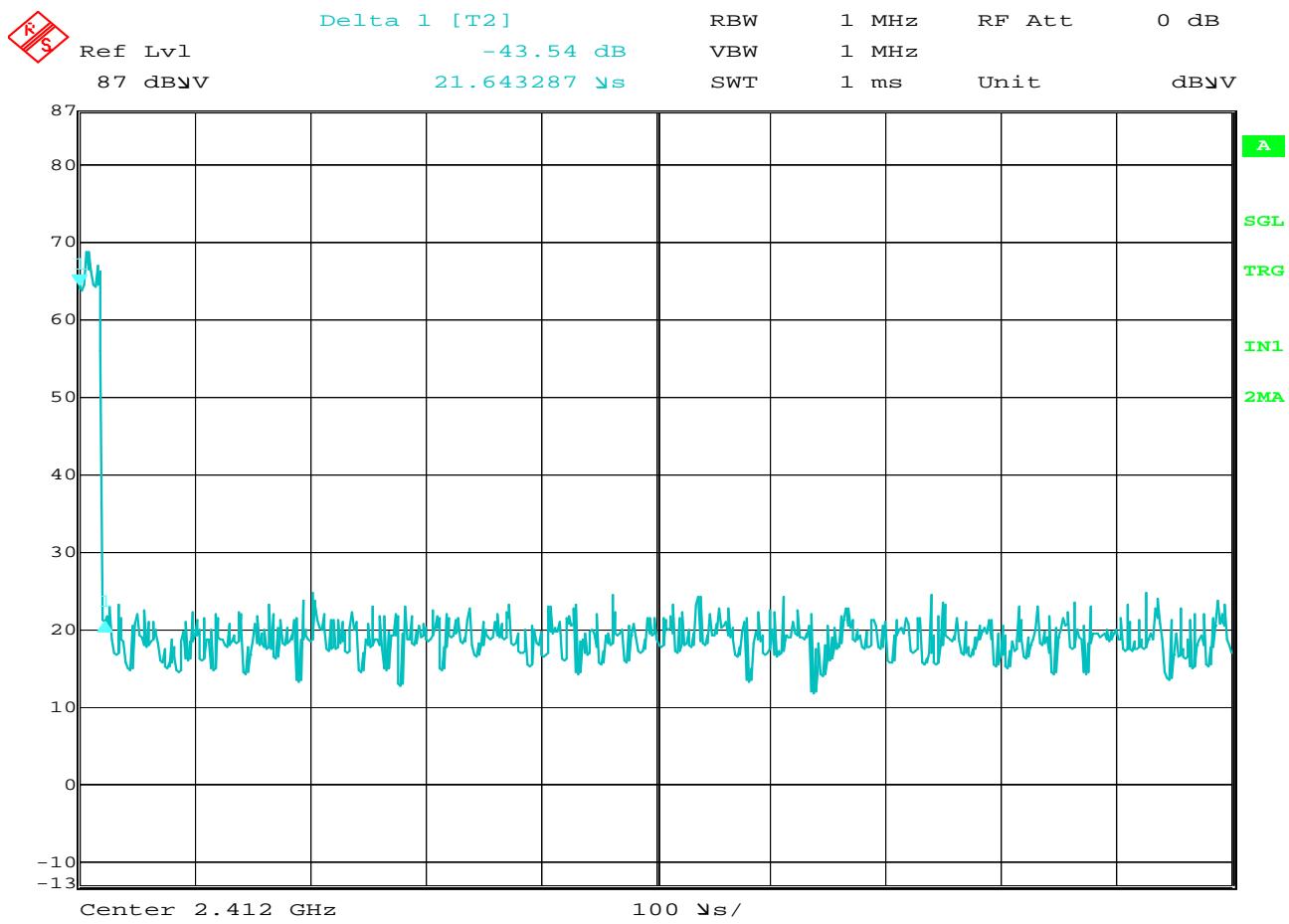
MANUFACTURER	: SPX Genfare
MODEL NUMBER	: WiFi Module, SPX Genfare P/N: A29100-0001
SERIAL NUMBER	: None Assigned
TEST MODE	: Tx @ 2412MHz (Ch. 1) 802.11g, 54Mb/sec
TEST PARAMETER	: Pulse width #2 = 801.6usec
EQUIPMENT USED	: RBB0, NWQ1
NOTES	:



Date: 9.APR.2014 15:09:22

### DUTY CYCLE FACTOR

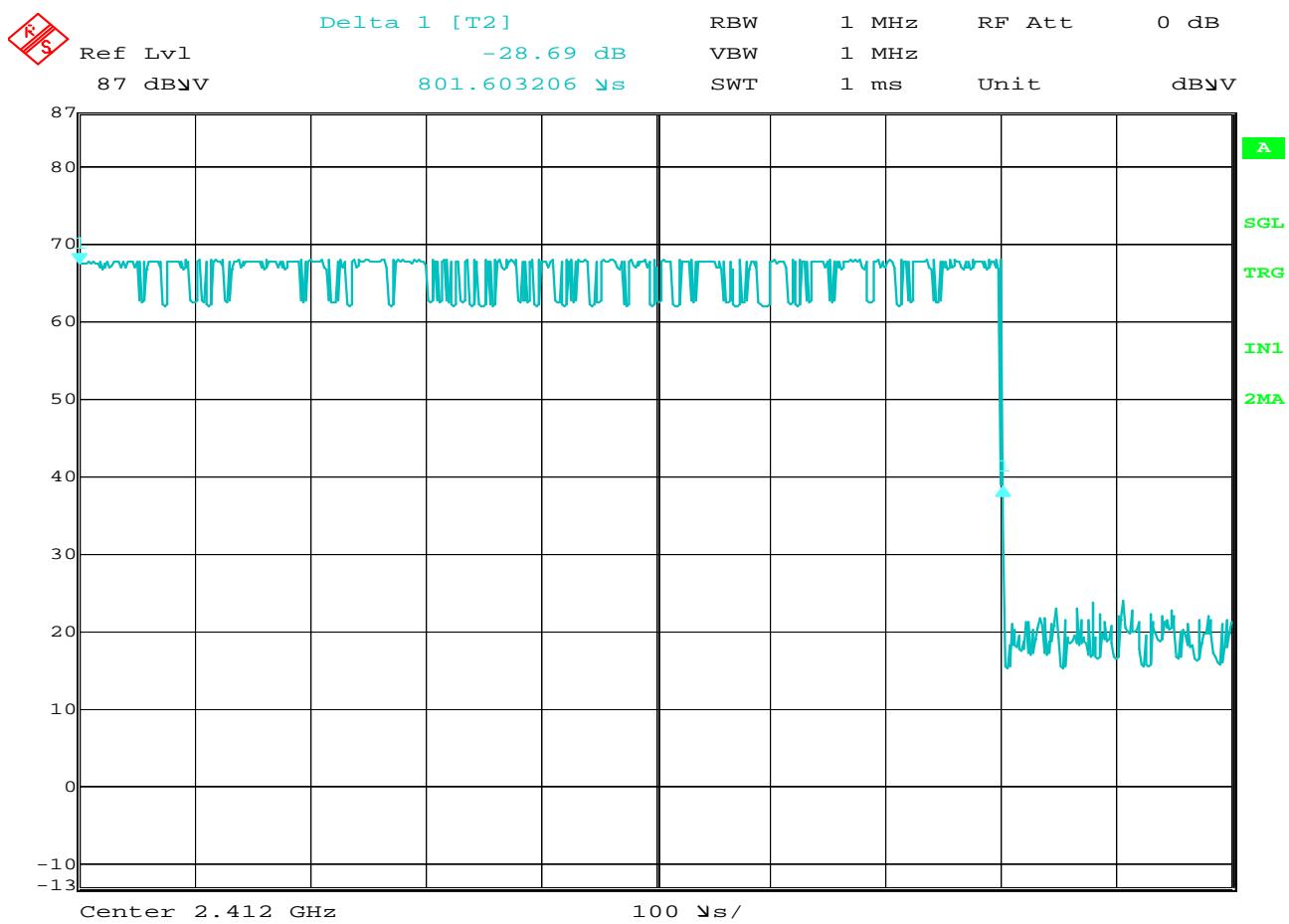
MANUFACTURER	: SPX Genfare
MODEL NUMBER	: WiFi Module, SPX Genfare P/N: A29100-0001
SERIAL NUMBER	: None Assigned
TEST MODE	: Tx @ 2412MHz (Ch. 1) 802.11g, 54Mb/sec
TEST PARAMETER	: Duty cycle factor = $20 \log ((\text{pulse width } \#1 \times \# \text{ pulses}) + (\text{pulse width } \#2 \times \# \text{ pulses})) / 100 \text{ msec}$ : Duty cycle factor = $20 \log ((801.6 \mu\text{sec} \times 1)) + (28.1 \mu\text{sec} \times 1) / 100 \text{ msec}$ : Duty Cycle factor = -41.6dB
EQUIPMENT USED	: RBB0, NWQ1
NOTES	: Lower amplitude pulses are from the PC that is communicating with the WiFi Module



Date: 9.APR.2014 15:38:32

### DUTY CYCLE FACTOR

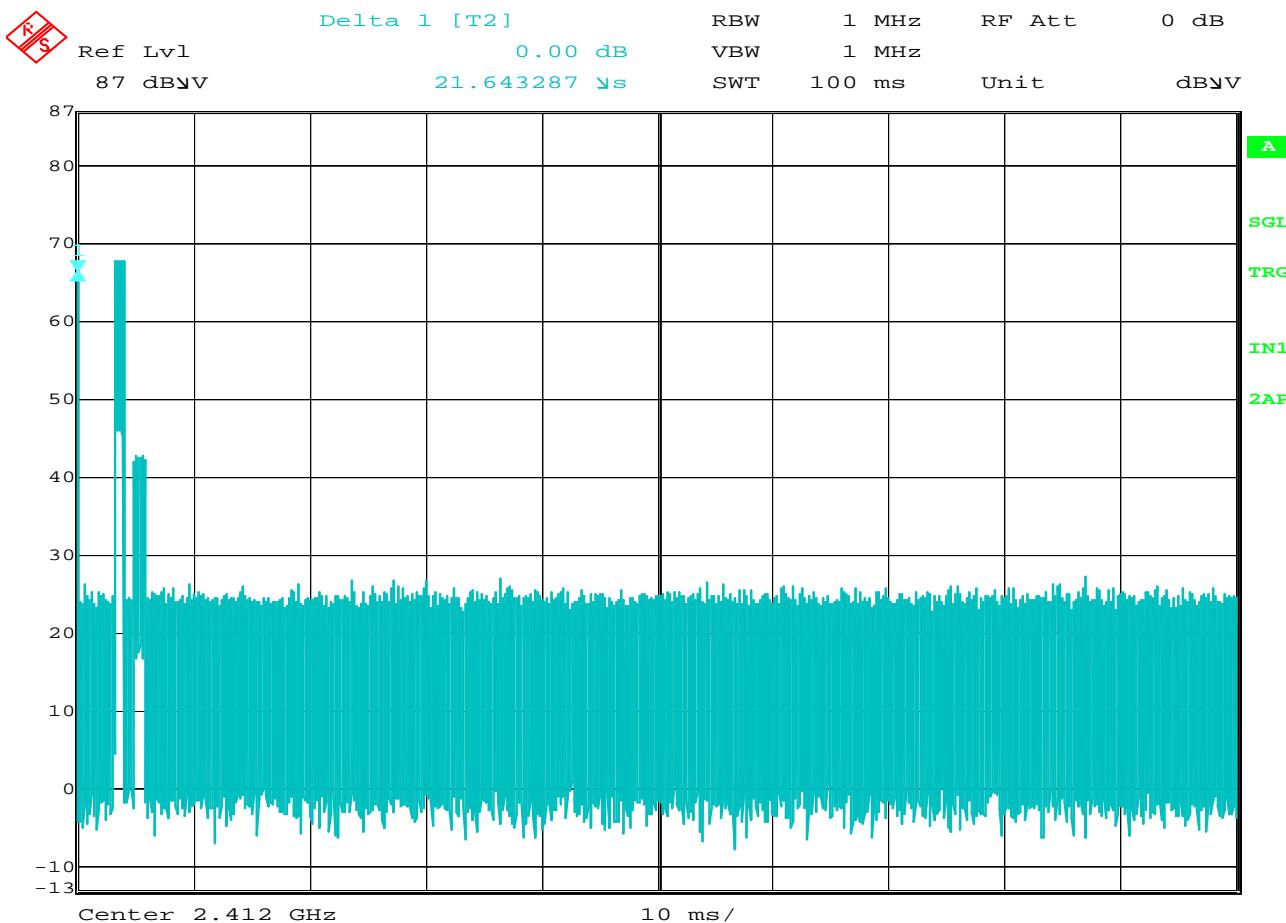
MANUFACTURER	:	SPX Genfare
MODEL NUMBER	:	WiFi Module, SPX Genfare P/N: A29100-0001
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2412MHz (Ch. 1) 802.11n, 65Mb/sec
TEST PARAMETER	:	Pulse #1 width = 21.64usec
EQUIPMENT USED	:	RBB0, NWQ1
NOTES	:	



Date: 9.APR.2014 15:41:26

### DUTY CYCLE FACTOR

MANUFACTURER	:	SPX Genfare
MODEL NUMBER	:	WiFi Module, SPX Genfare P/N: A29100-0001
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2412MHz (Ch. 1) 802.11n, 65Mb/sec
TEST PARAMETER	:	Pulse #1 width = 801.6usec
EQUIPMENT USED	:	RBB0, NWQ1
NOTES	:	



Date: 9.APR.2014 15:40:10

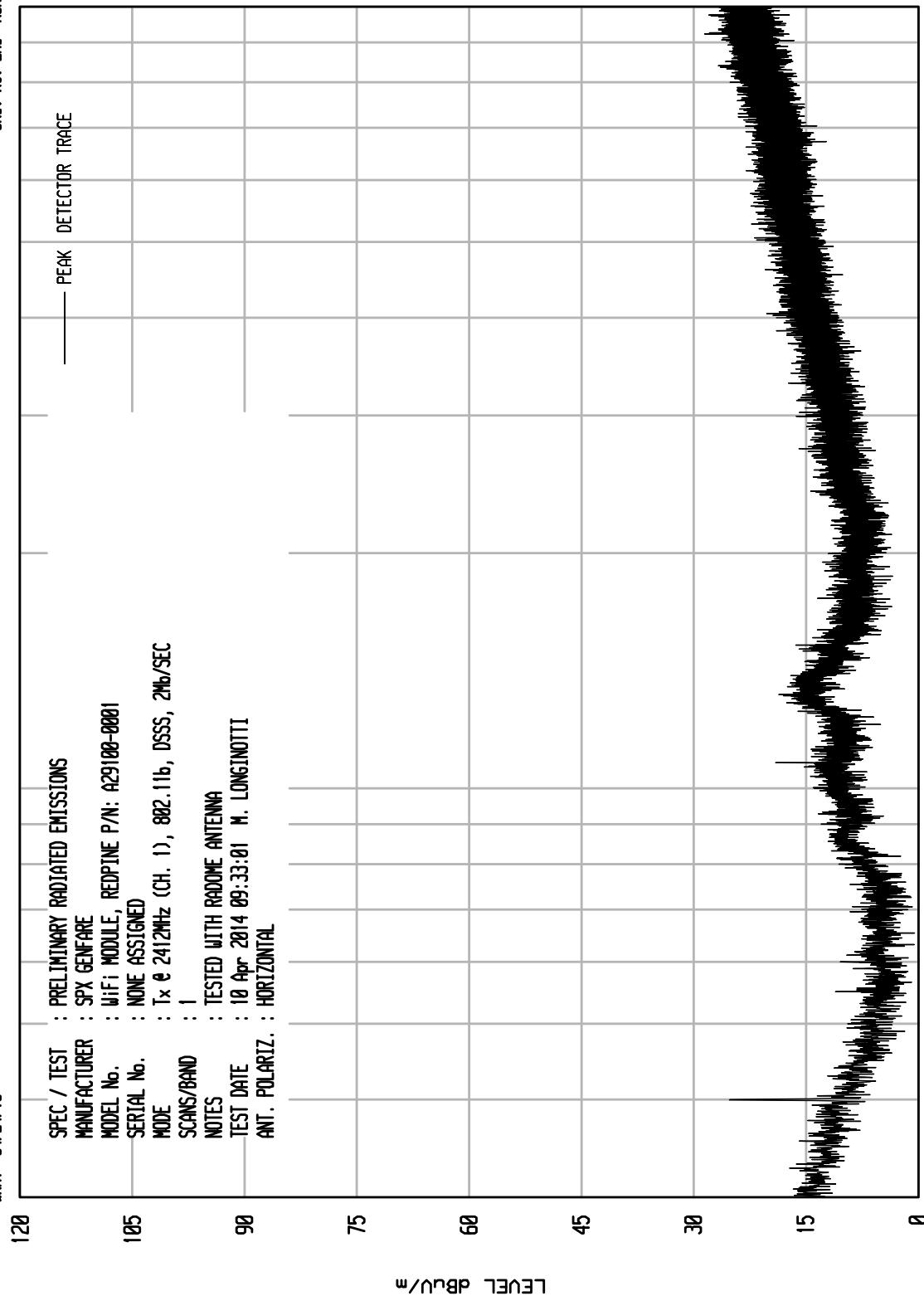
### DUTY CYCLE FACTOR

MANUFACTURER	: SPX Genfare
MODEL NUMBER	: WiFi Module, SPX Genfare P/N: A29100-0001
SERIAL NUMBER	: None Assigned
TEST MODE	: Tx @ 2412MHz (Ch. 1) 802.11n, 65Mb/sec
TEST PARAMETER	: Duty Cycle Factor = $20 \times \log((\text{pulse } \#1 \text{ width} \times \# \text{ pulses}) + (\text{pulse } \#2 \text{ width} \times \# \text{ pulses})) / 100 \text{ msec}$ : Duty Cycle Factor = $20 \times \log((21.64 \mu\text{sec} \times 1) + (801.6 \mu\text{sec} \times 1)) / 100 \text{ msec}$ : Duty Cycle Factor = -41.7dB
EQUIPMENT USED	: RBB0, NWQ1
NOTES	:

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UNIV RCU EMI RUN 58

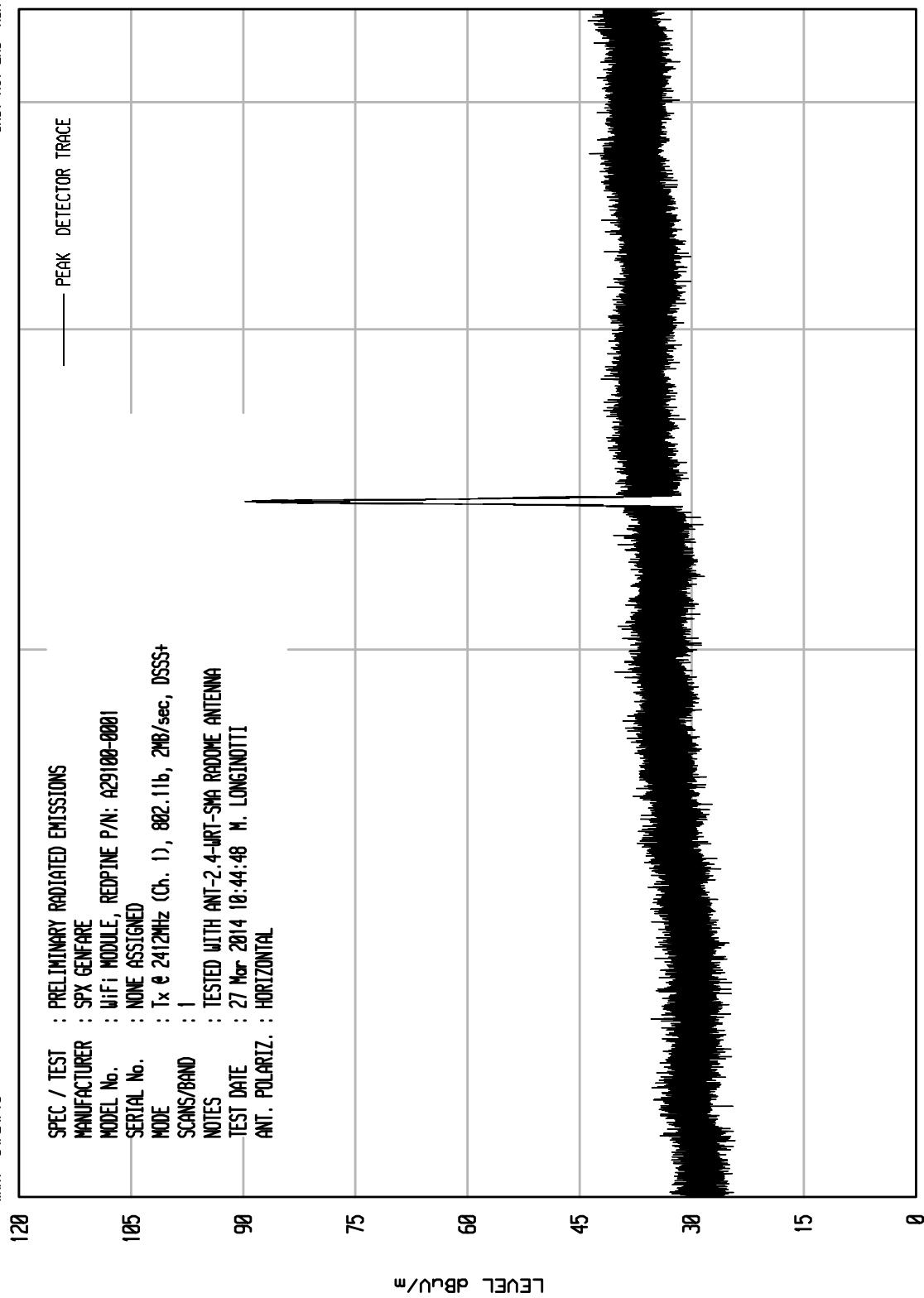
WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEFARE		
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001		
SERIAL No.	NONE ASSIGNED		
MODE	Tx @ 2412MHz (CH. 1), 802.11b, DSSS, 2Mbps		
SCANS/BAND	1		
NOTES	TESTED WITH RADOME ANTENNA		
TEST DATE	10 Apr 2014 09:33:01		M. LONGINOTTI
ANT. POLARIZ.	HORIZONTAL		



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UNIV RCU EMI RUN 1

MKA1 04/24/13



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UNIV RCU EMI RUN 3

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFNARE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx & 2412 (Ch. 1), 882.11b, 2Mbps/SEC, DSSS
SCANS/BAND	: 1
NOTES	
TEST DATE	: 26 Mar 2014 10:12:20 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL

120

105

90

75

60

45

30

15

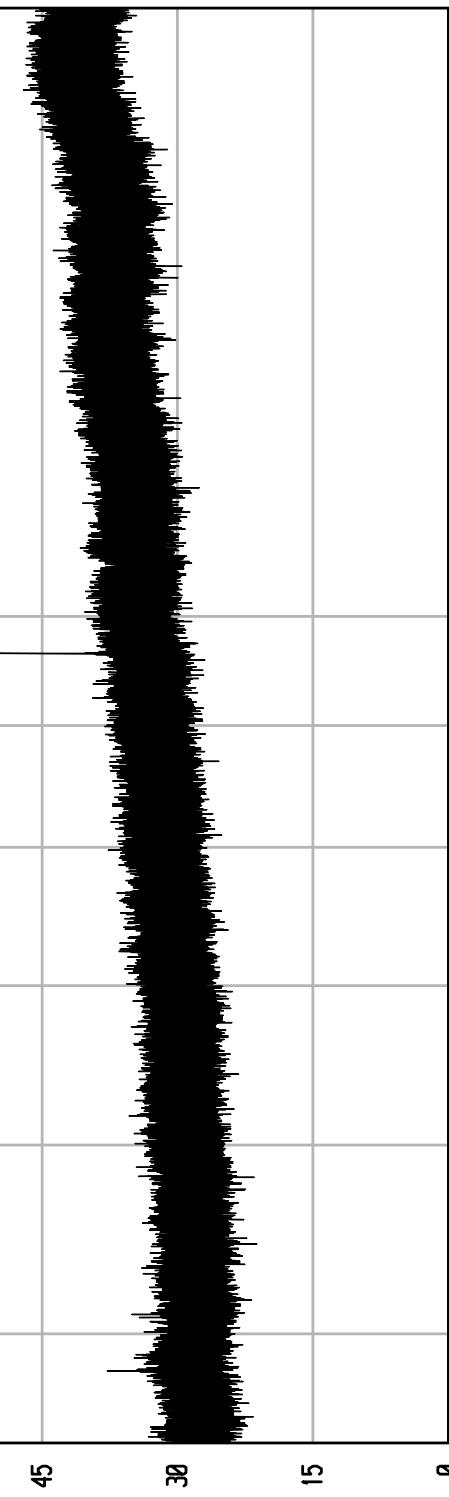
0

LEVEL dB<sub>RU</sub>/m

START = 4500

FREQUENCY MHz

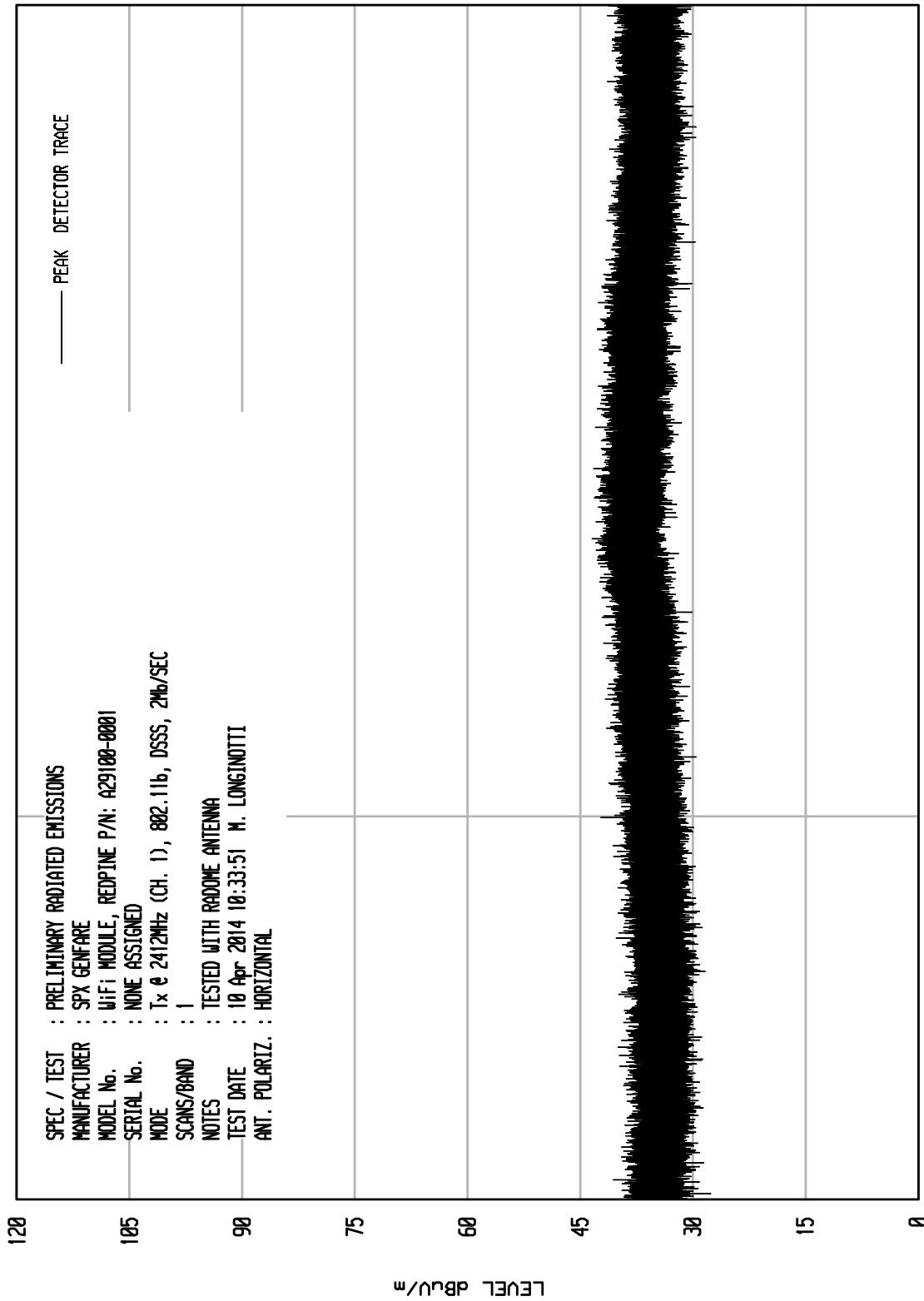
STOP = 18000



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UNIV RCU EMI RUN 2

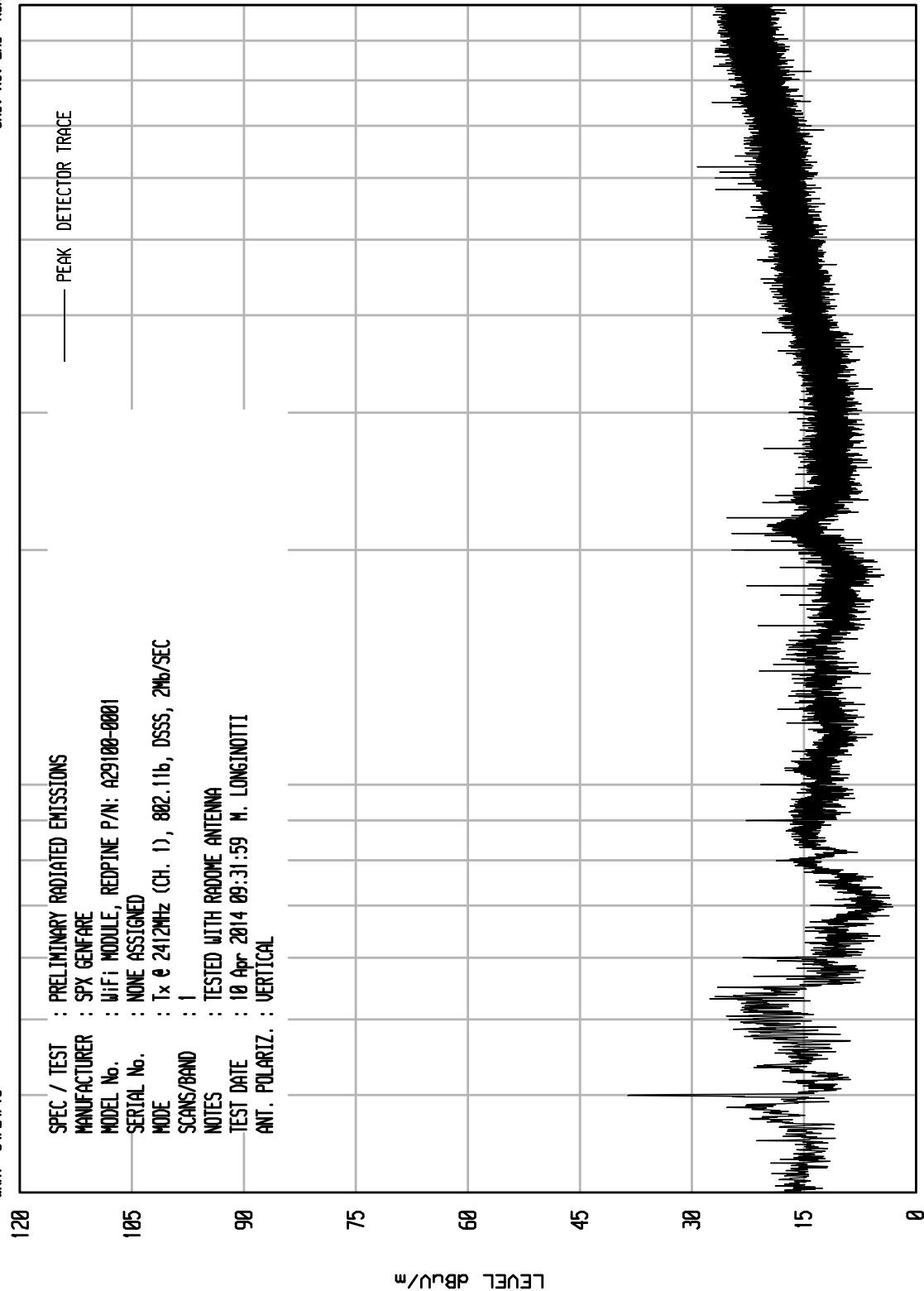
MKA1 04/24/13



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UNIV RCU EMI RUN 57

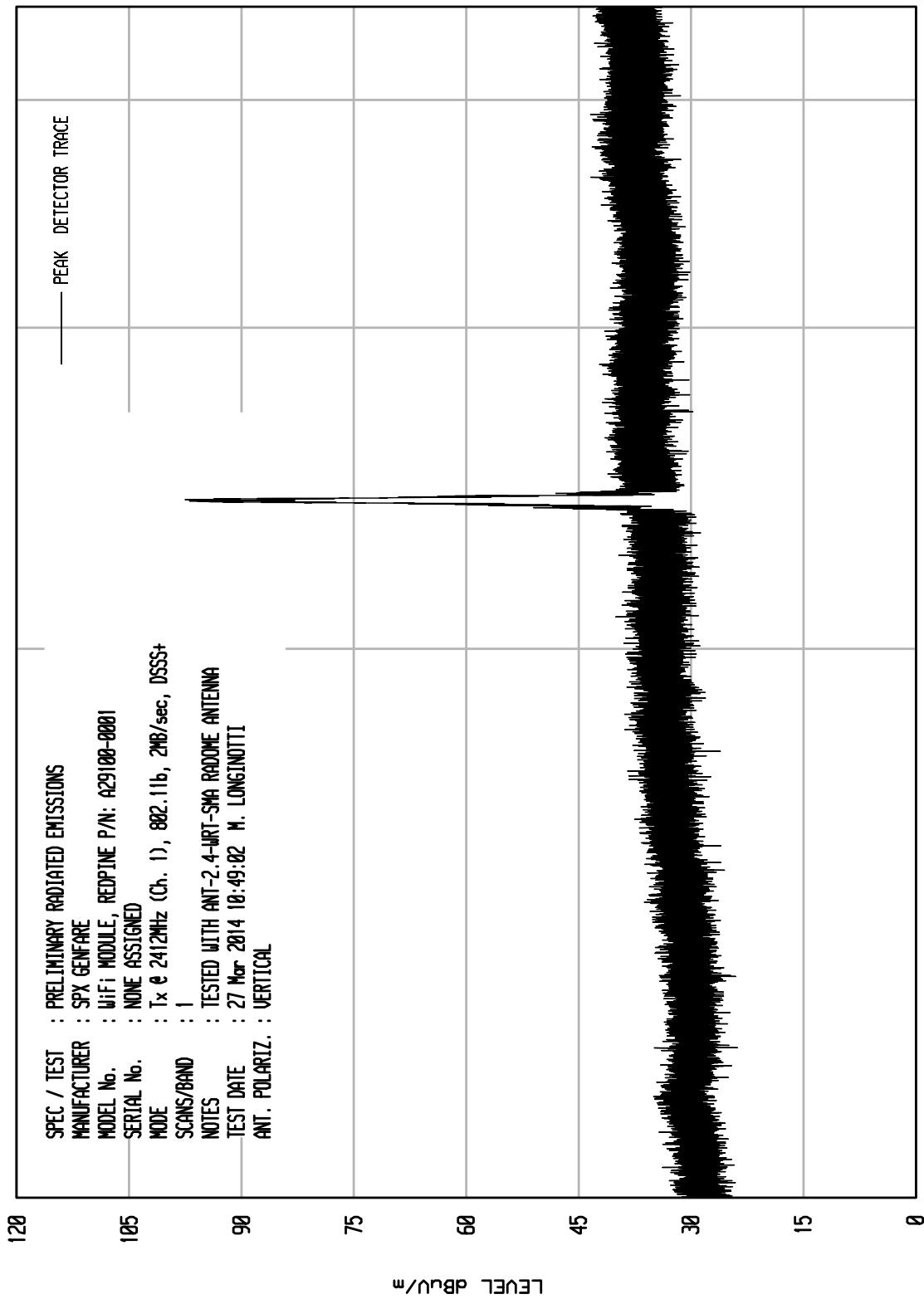
WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPI GENFARE		
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001		
SERIAL No.	NONE ASSIGNED		
MODE	Tx @ 2412MHz (CH. 1), 802.11b, DSSS, 2Mbps		
SCANS/BAND	1		
NOTES	TESTED WITH RADOME ANTENNA		
TEST DATE	10 Apr 2014 09:31:59		
ANT. POLARIZ.	VERTICAL		



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UNIV RCU EMI RUN 2

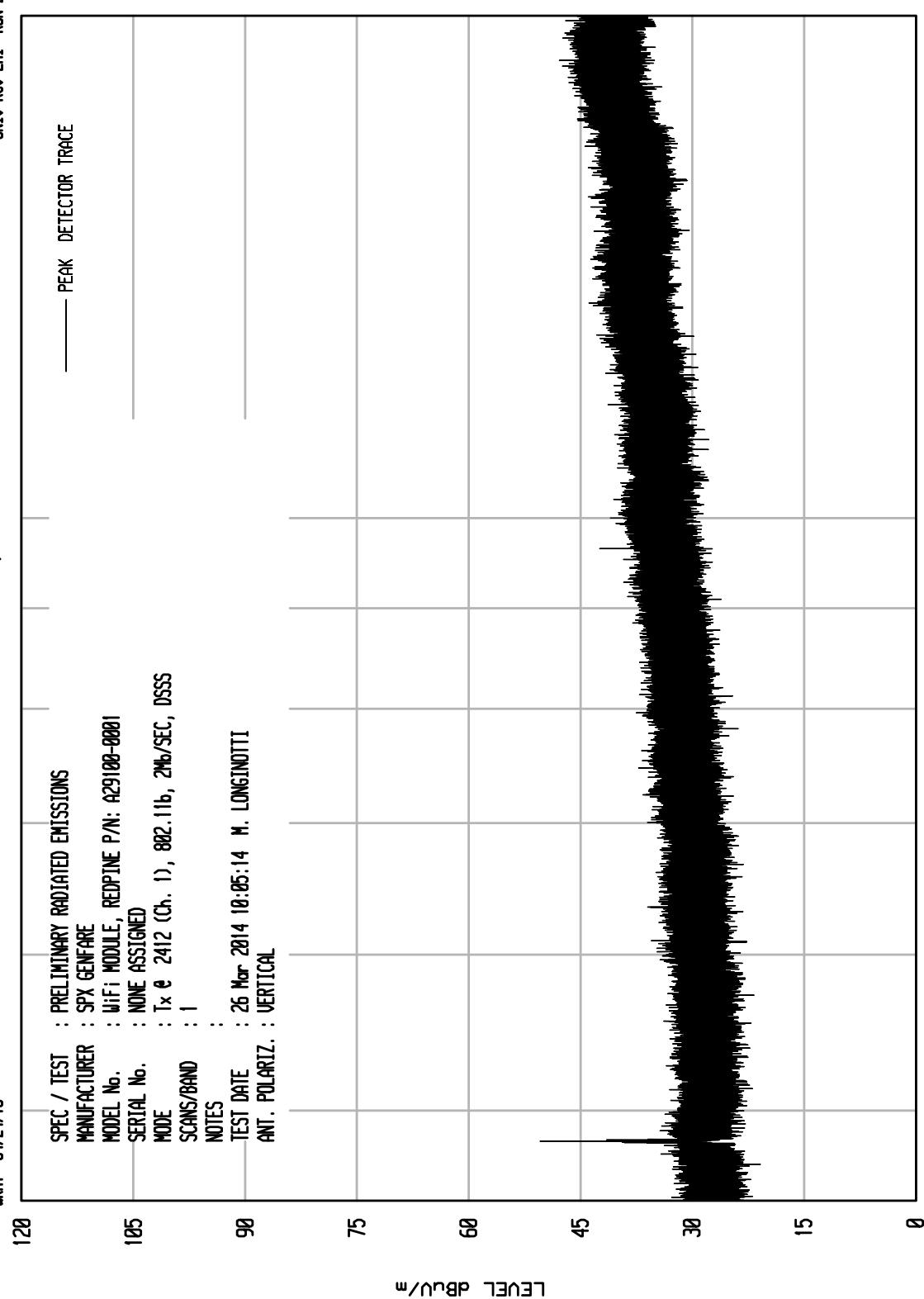
MKA1 04/24/13



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UNIV RCU EMI RUN 2

WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEFNARE	MODE	SPY GEFNARE
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001	SERIAL No.	NONE ASSIGNED
MODE	Tx @ 2412 (Ch. 1), 802.11b, 2Mbps, DSSS	SCANS/BAND	1
NOTES	TEST DATE : 26 Mar 2014 10:05:14 M. LONGINOTTI ANT. POLARIZ. : VERTICAL		



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UNIV RCU EMI RUN 1

WKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARAE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0000
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2412MHz (CH. 1), 802.11b, DSSS, 2Mb/SEC
SCANS/BAND	: 1
NOTES	: TESTED WITH RADOME ANTENNA
TEST DATE	: 10 Apr 2014 10:30:17 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL



START = 18000

STOP = 25000

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 MKEI 04/24/13  
 SPEC / TEST : PRELIMINARY RADIATED EMISSIONS

MANUFACTURER : SPY GEFARE

MODEL No. : WiFi MODULE, REDPINE P/N: A29100-0001

SERIAL No. : NONE ASSIGNED

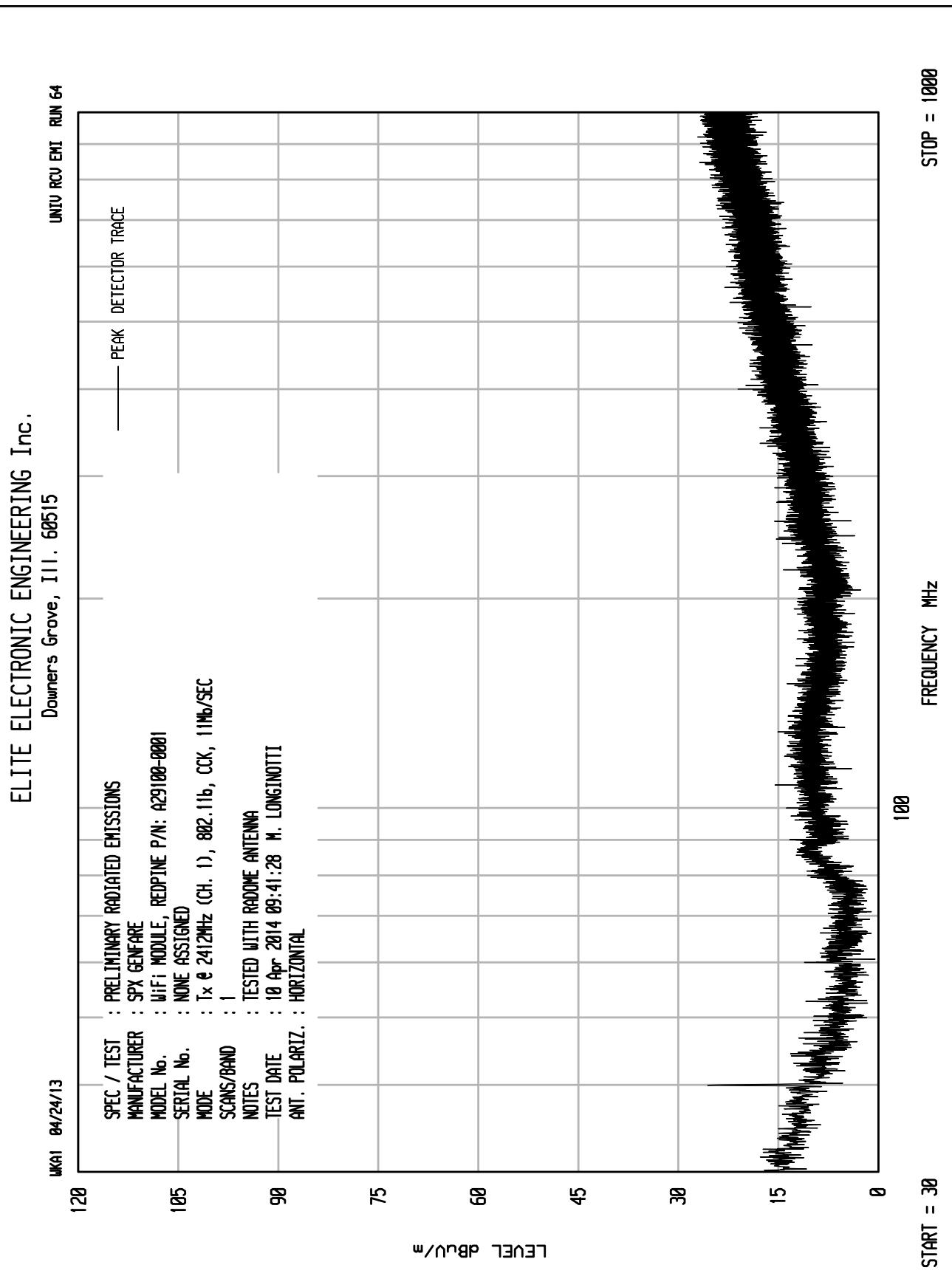
MODE : Tx @ 2412MHz (CH. 1), 802.11b, CCK, 11Mbps/SEC

SCANS/BAND : 1

NOTES : TESTED WITH RADOME ANTENNA

TEST DATE : 10 Apr 2014 09:41:28 M. LONGINOTTI

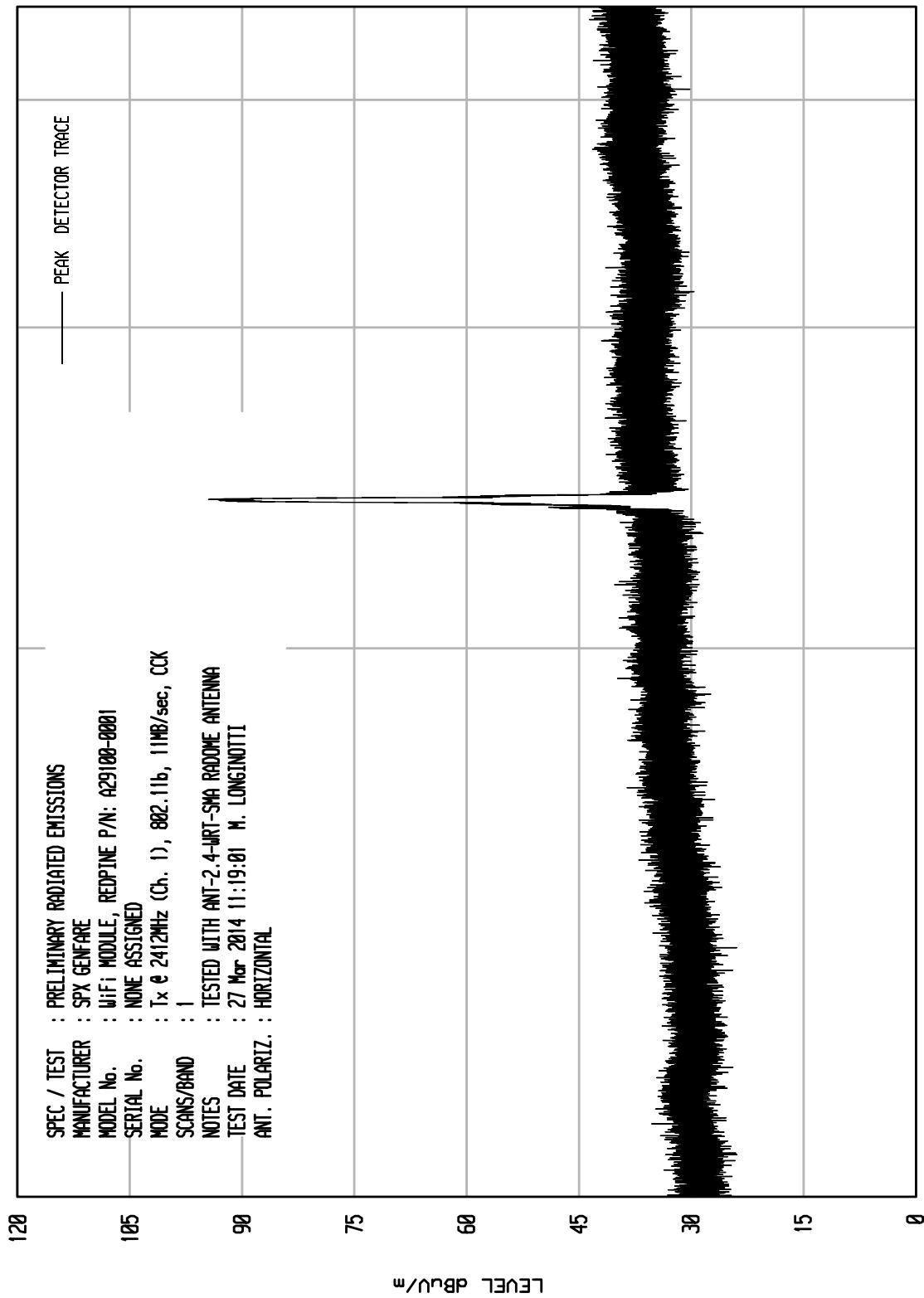
ANT. POLARIZ. : HORIZONTAL



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UNIV RCU EMI RUN 7

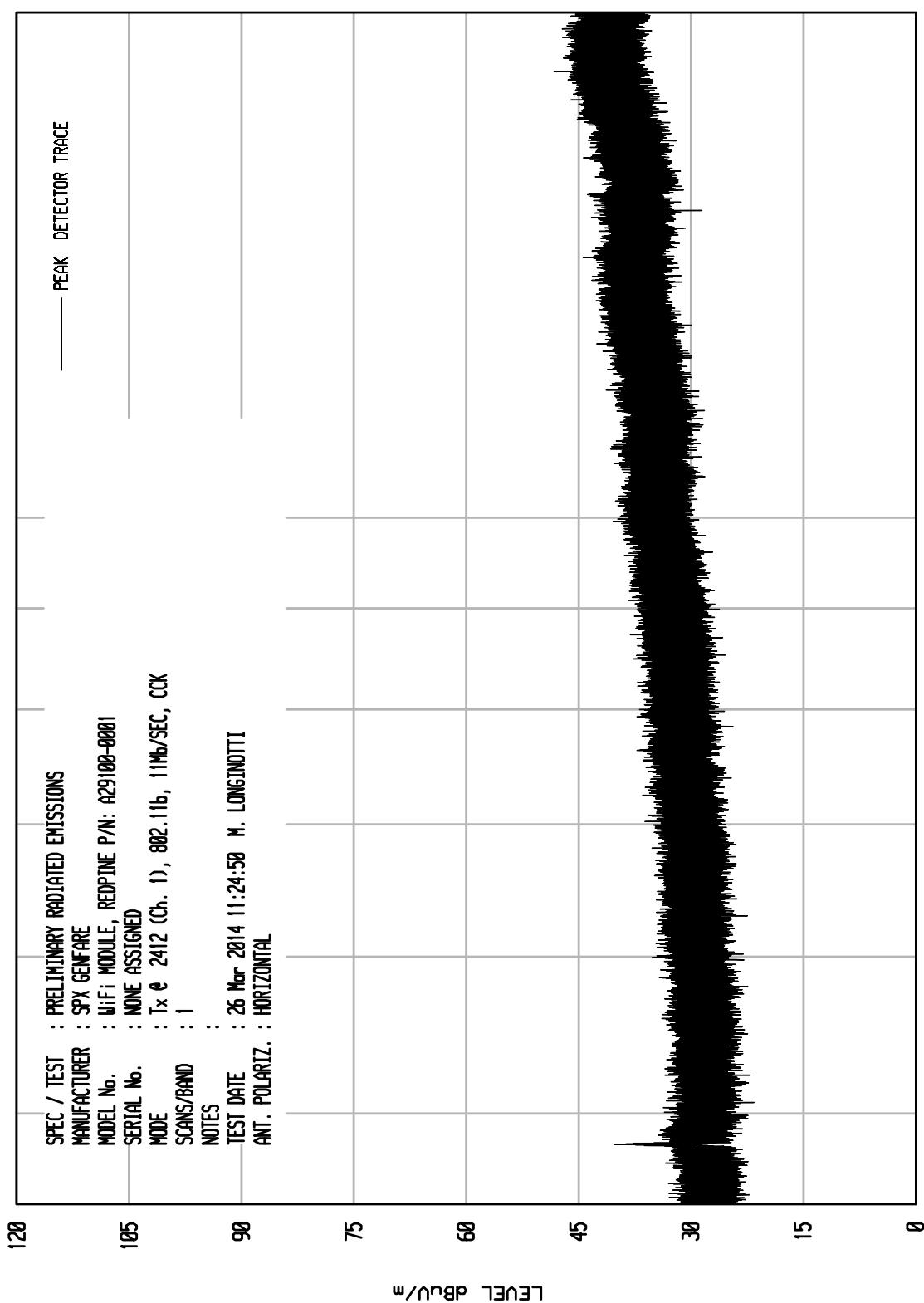
MKA1 04/24/13



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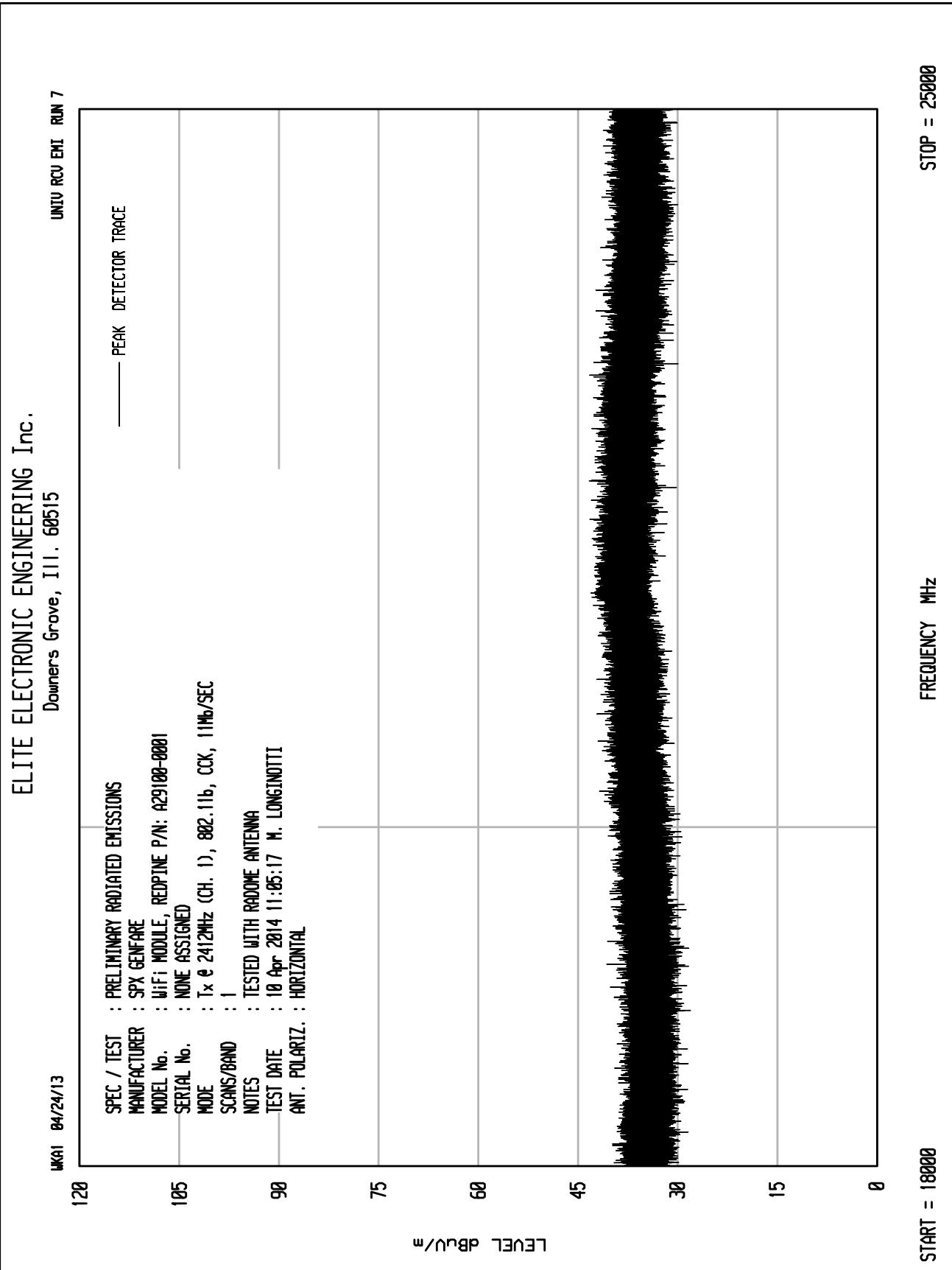
MKA1 04/24/13 UNIV RCU EMI RUN 4

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFNARE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2412 (Ch. 1), 882.11b, 11Mbps, CCK
SCANS/BAND	: 1
NOTES	
TEST DATE	: 26 Mar 2014 11:24:50 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL



START = 4500

STOP = 18000



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UNIV RCU EMI RUN 65

MKEI 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEMFAR
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2412MHz (CH. 1), 802.11b, CCK, 11Mbps/SEC
SCANS/BAND	: 1
NOTES	: TESTED WITH RADOME ANTENNA
TEST DATE	: 10 Apr 2014 09:42:44 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL

120

105

90

75

60

45

30

15

0

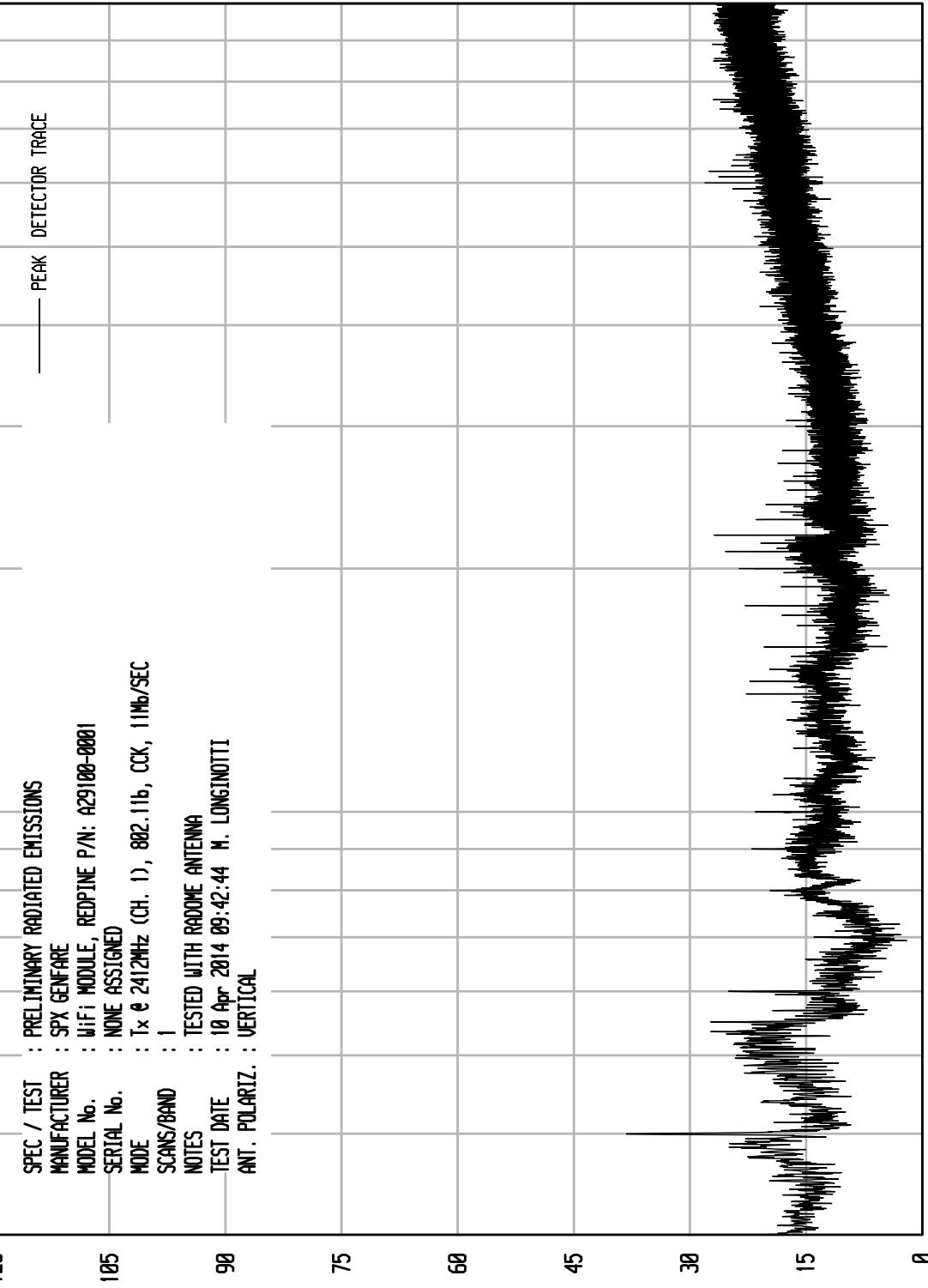
LEVEL dBUL/m

START = 30

100

FREQUENCY MHz

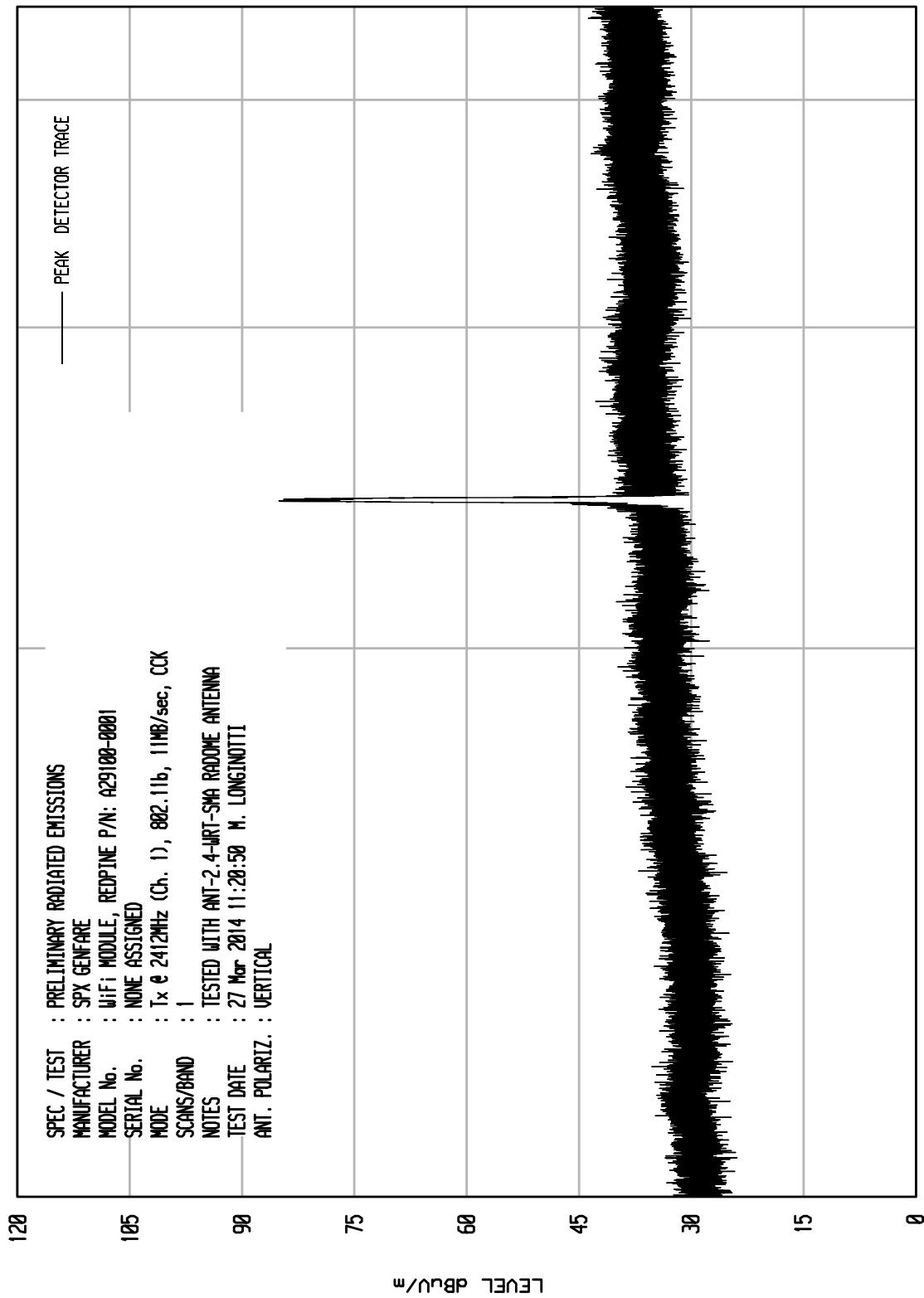
STOP = 1000



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UNIV RCU EMI RUN 8

MKA1 04/24/13

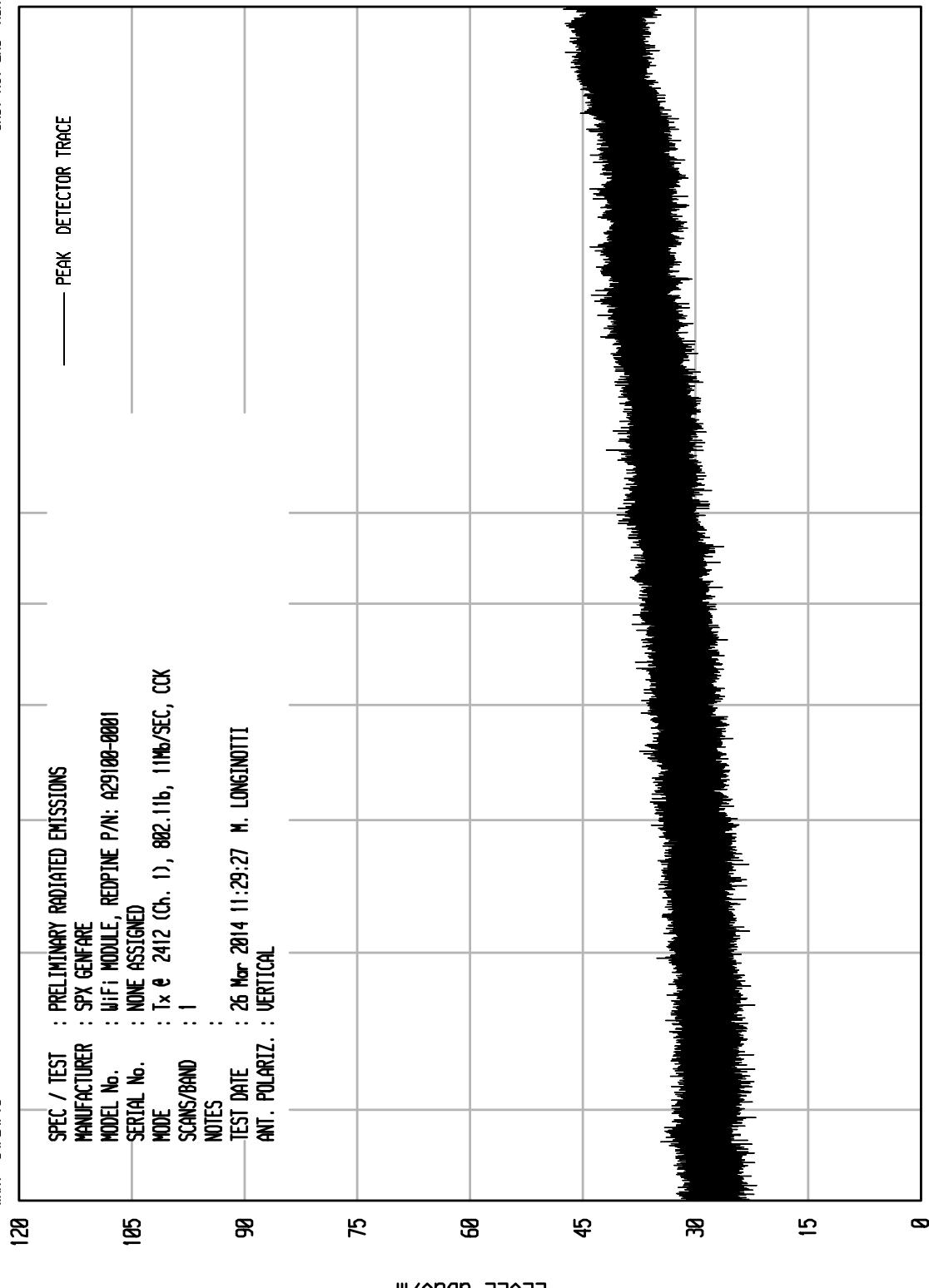


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UNIV RCU EMI RUN 5

WKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFNARE	PEAK	DETECTOR TRACE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001		
SERIAL No.	: NONE ASSIGNED		
MODE	: Tx @ 2412 (Ch. 1), 882.11b, 11Mb/SEC, CCK		
SCANS/BAND	: 1		
NOTES			
TEST DATE	: 26 Mar 2014 11:29:27	M. LONGINOTTI	
ANT. POLARIZ.	: VERTICAL		



START = 4500

STOP = 18000

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UNIV RCU EMI RUN 8

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: SPY GEFARAE
	MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
	SERIAL No.	: NONE ASSIGNED
	MODE	: Tx @ 2412MHz (CH. 1), 802.11b, CCK, 11Mb/SEC
	SCANS/BAND	: 1
	NOTES	: TESTED WITH RADOME ANTENNA
	TEST DATE	: 10 Apr 2014 11:08:22 M. LONGINOTTI
	ANT. POLARIZ.	: VERTICAL

120

105

90

75

60

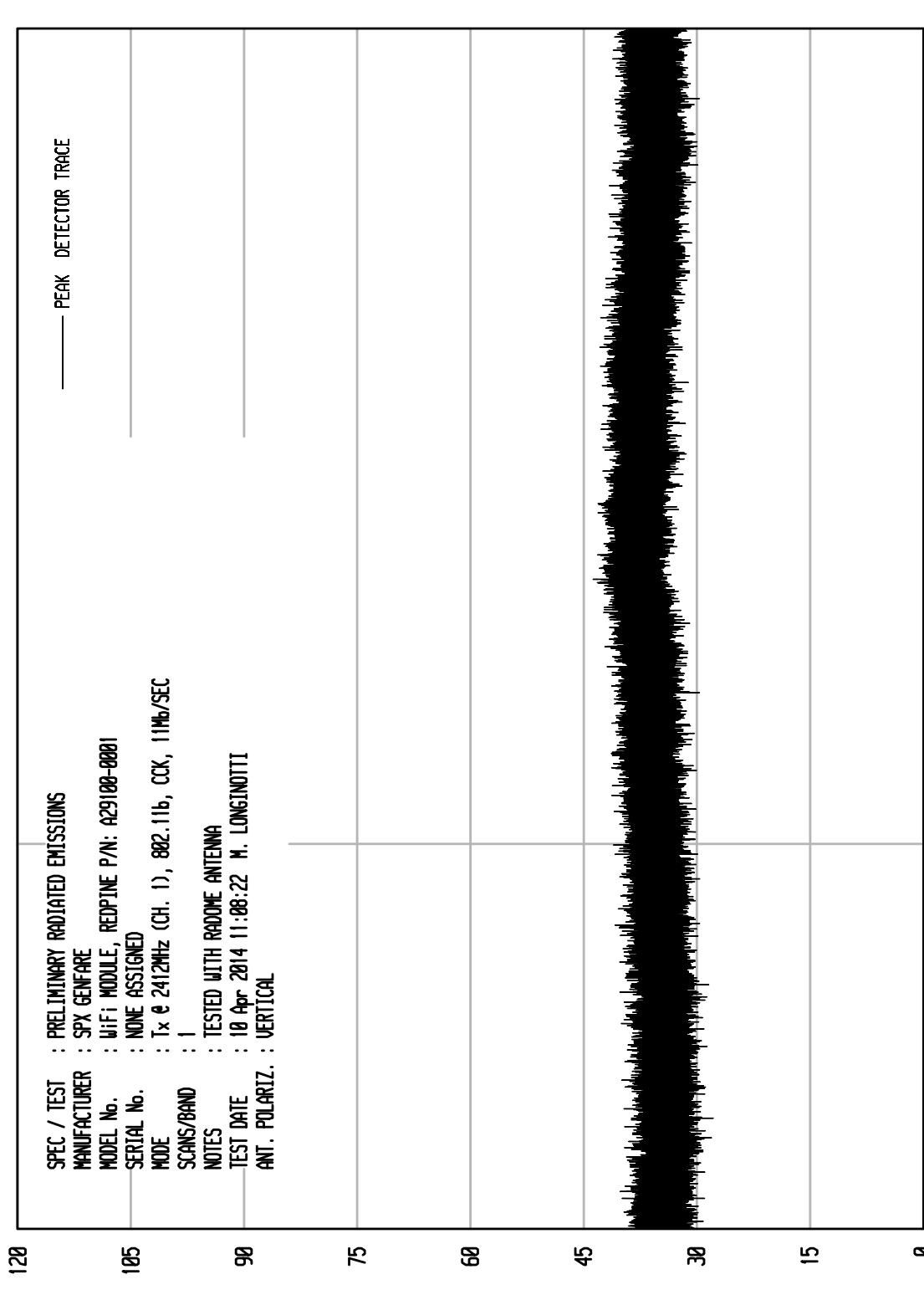
45

30

15

0

LEVEL dBuU/m



START = 180000

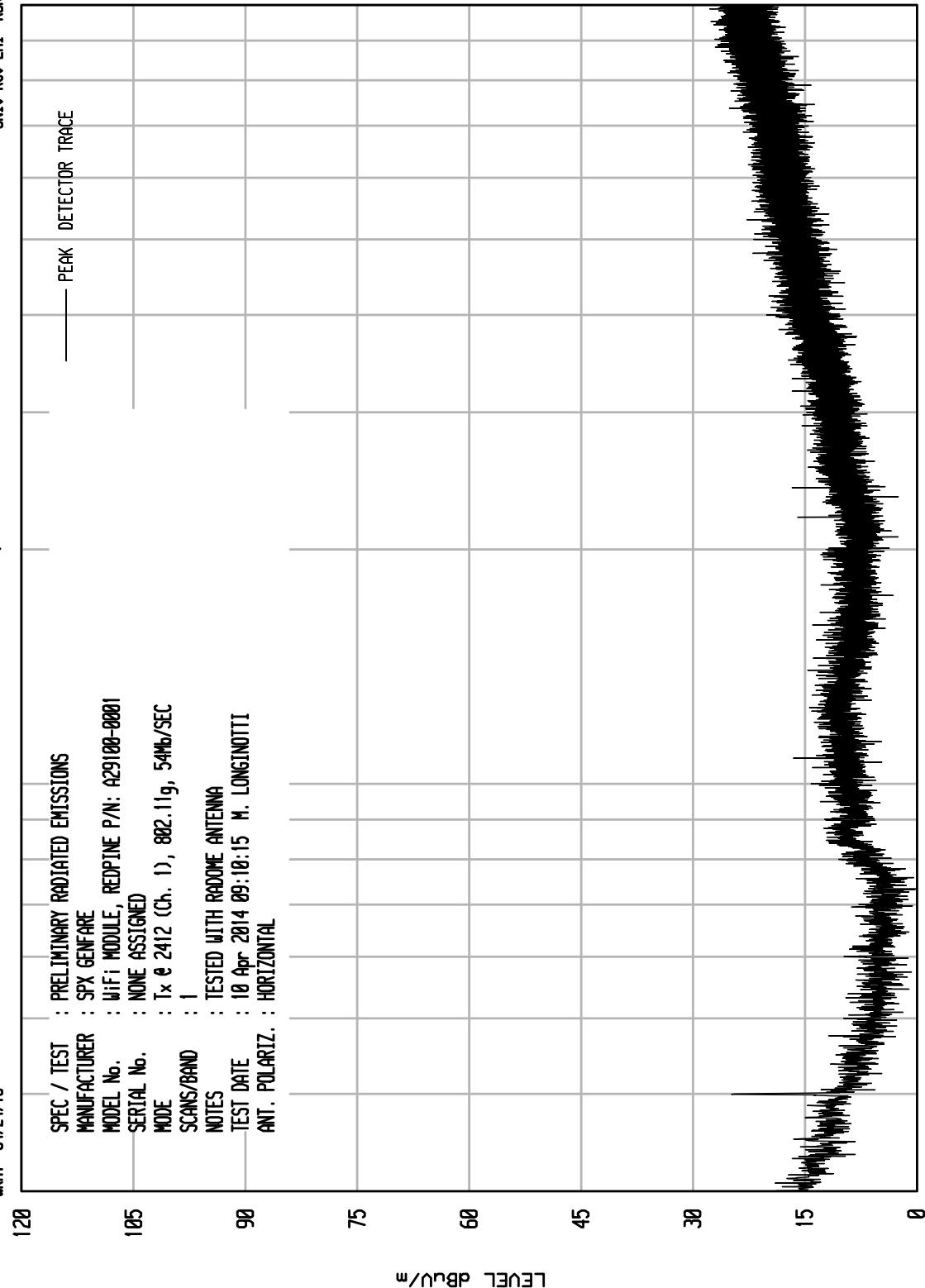
FREQUENCY MHz

STOP = 250000

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UNIV RCU EMI RUN 44

WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEMFAR	MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001
SERIAL No.	NONE ASSIGNED	MODE	Tx @ 2412 (Ch. 1), 802.11g, 54Mb/SEC
SCANS/BAND	1	NOTES	TESTED WITH RADOME ANTENNA
TEST DATE	10 Apr 2014 09:10:15	ANT. POLARIZ.	M. LONGINOTTI

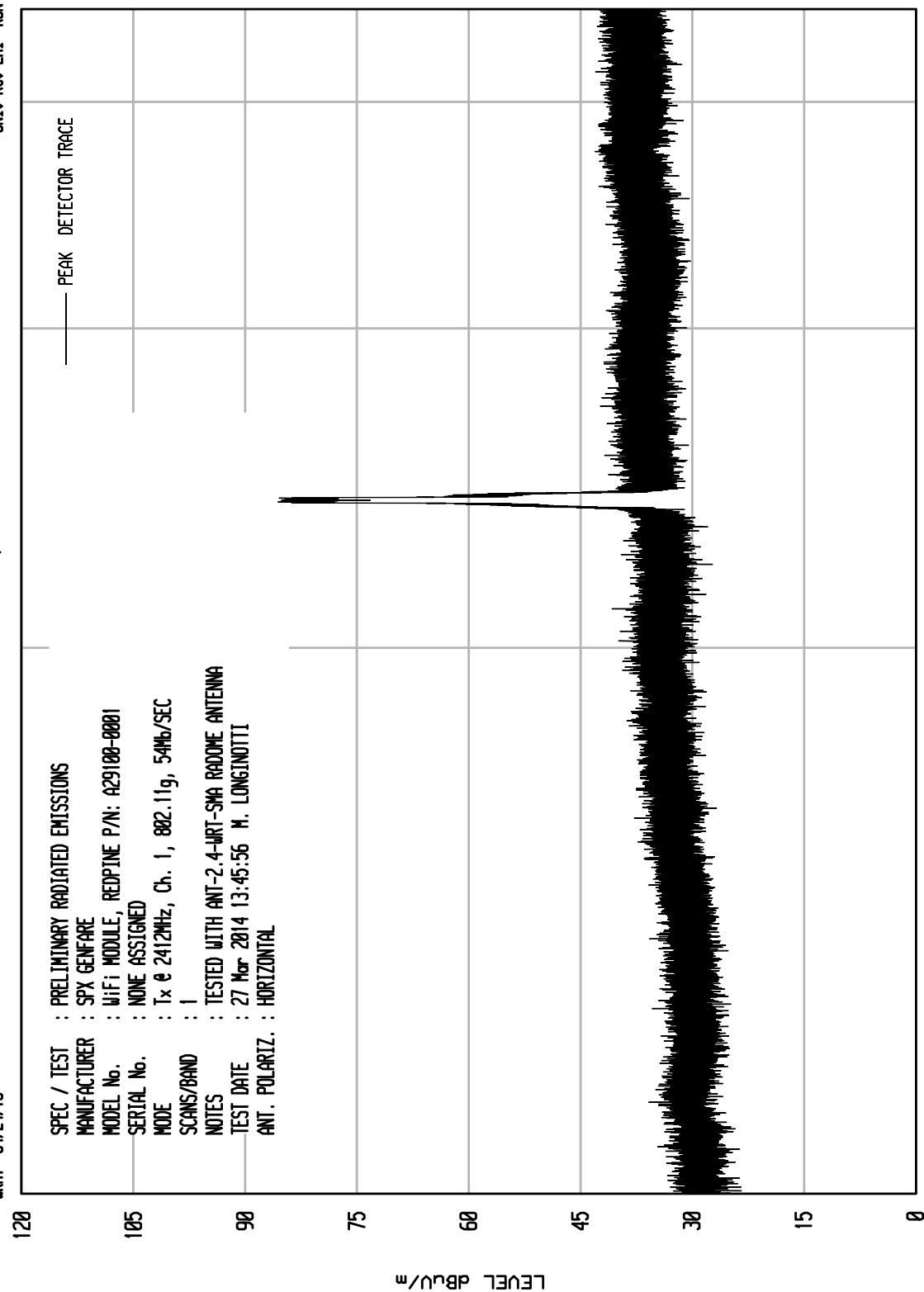


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MKA1 04/24/13

UNIV RCU EMI RUN 25

SPEC / TEST		PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEFNARE	
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0000	
SERIAL No.	NONE ASSIGNED	
MODE	Tx @ 2412MHz, Ch. 1, 802.11g, 54Mbps	
SCANS/BAND	1	
NOTES	TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA	
TEST DATE	27 Mar 2014 13:45:56	M. LONGINOTTI
ANT. POLARIZ.	HORIZONTAL	



## ELITE ELECTRONIC ENGINEERING Inc.

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UNIV RCU EMI RUN 15

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFNARE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2412MHz (Ch. 1), 54Mbps, 802.11g
SCANS/BAND	: 1
NOTES	: TEST DATE : 26 Mar 2014 15:44:58 M. LONGINOTTI ANT. POLARIZ. : HORIZONTAL

120

105

90

75

60

45

30

15

0

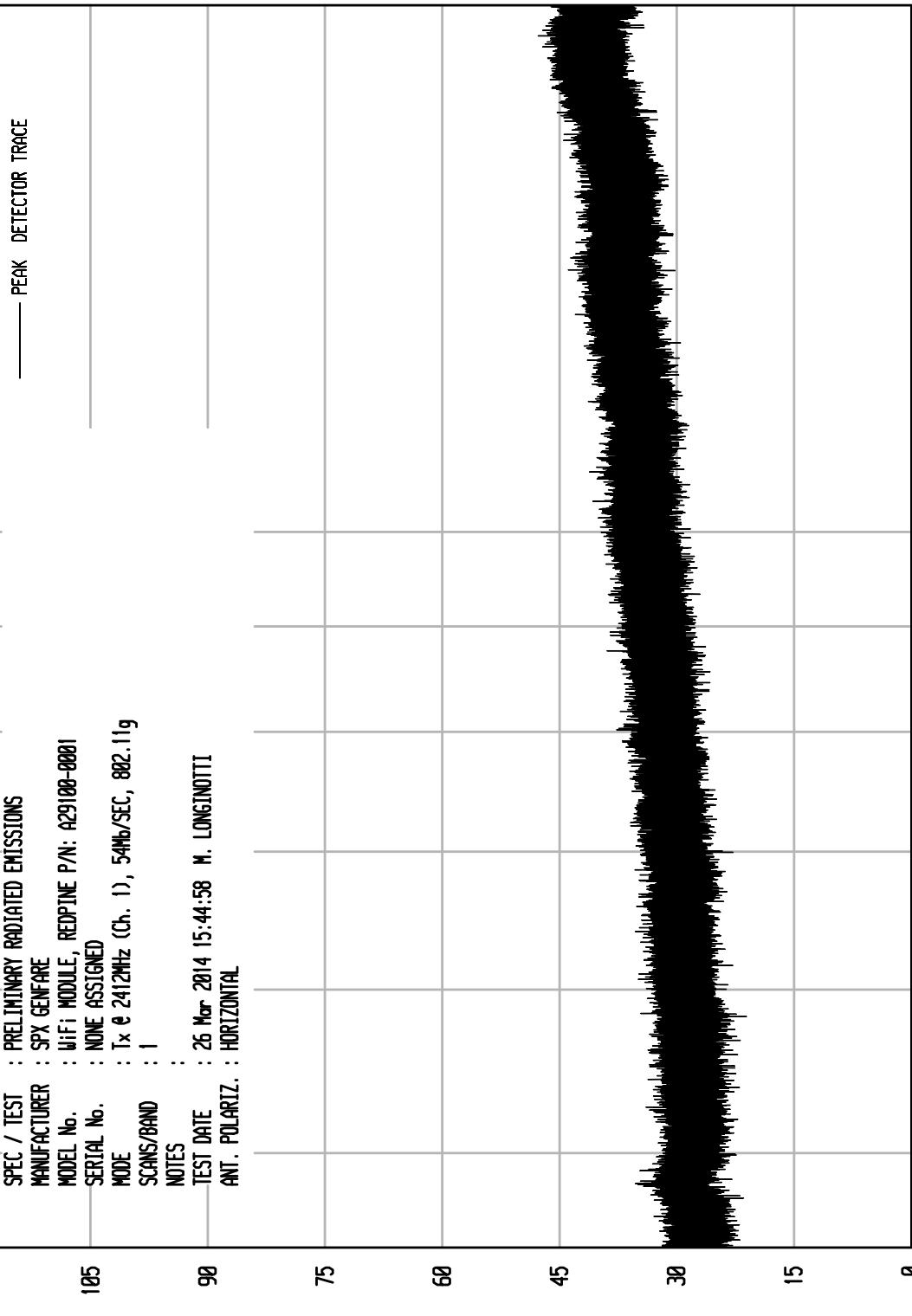
LEVEL dB<sub>RU</sub>/m

START = 4500

FREQUENCY MHz

10000

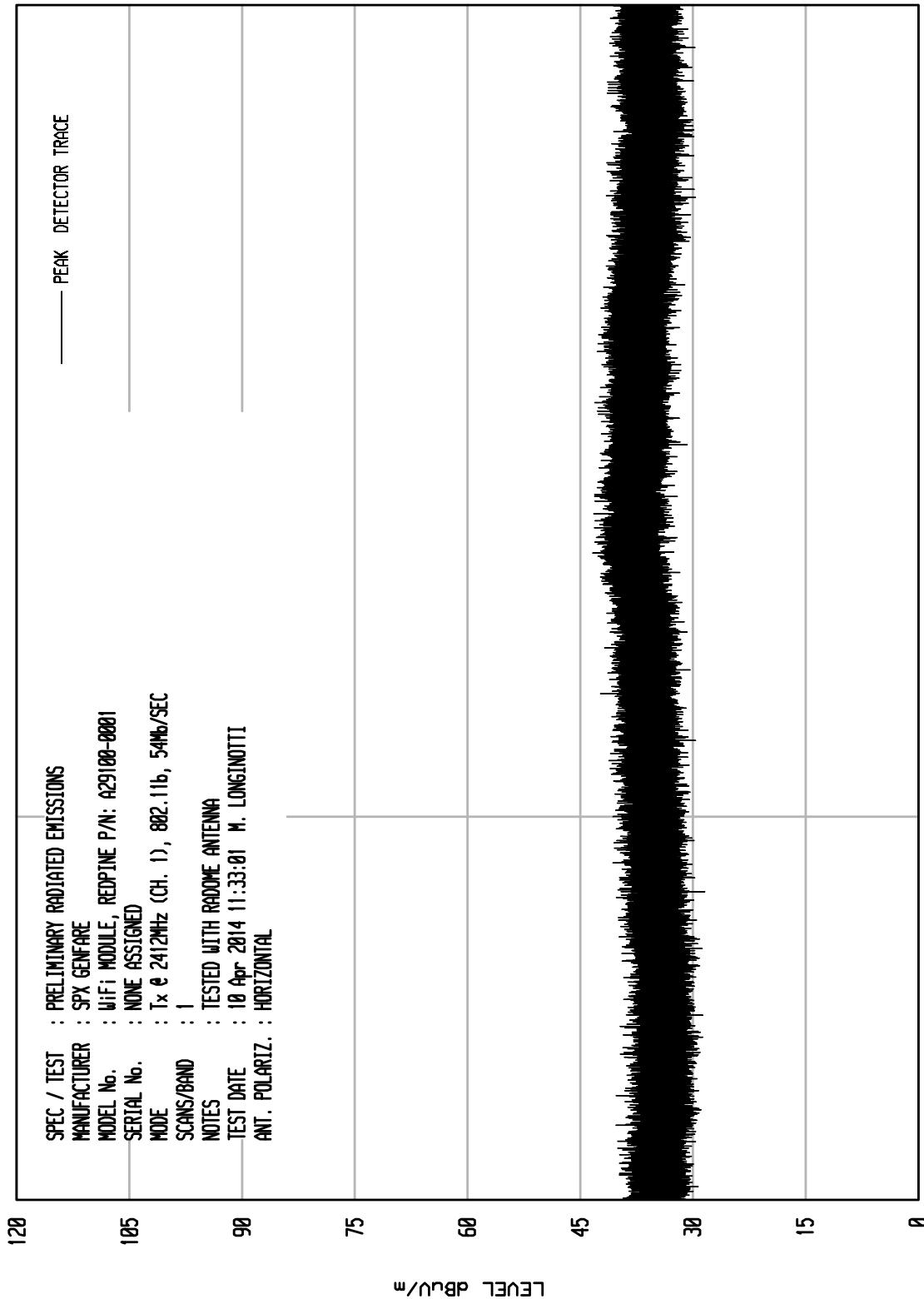
STOP = 18000



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UNIV RCU EMI RUN 13

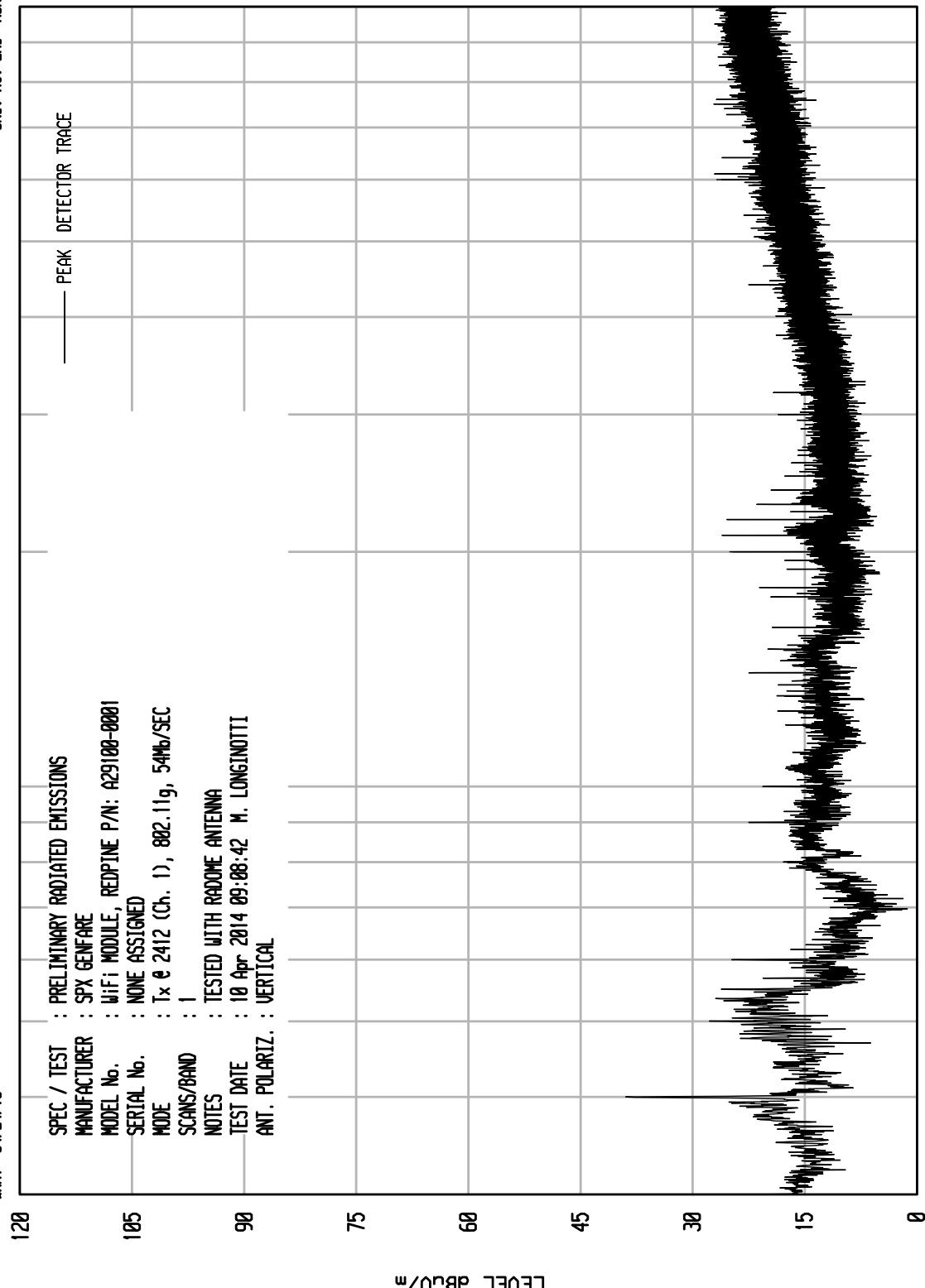
MKA1 04/24/13



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UNIV RCU EMI RUN 43

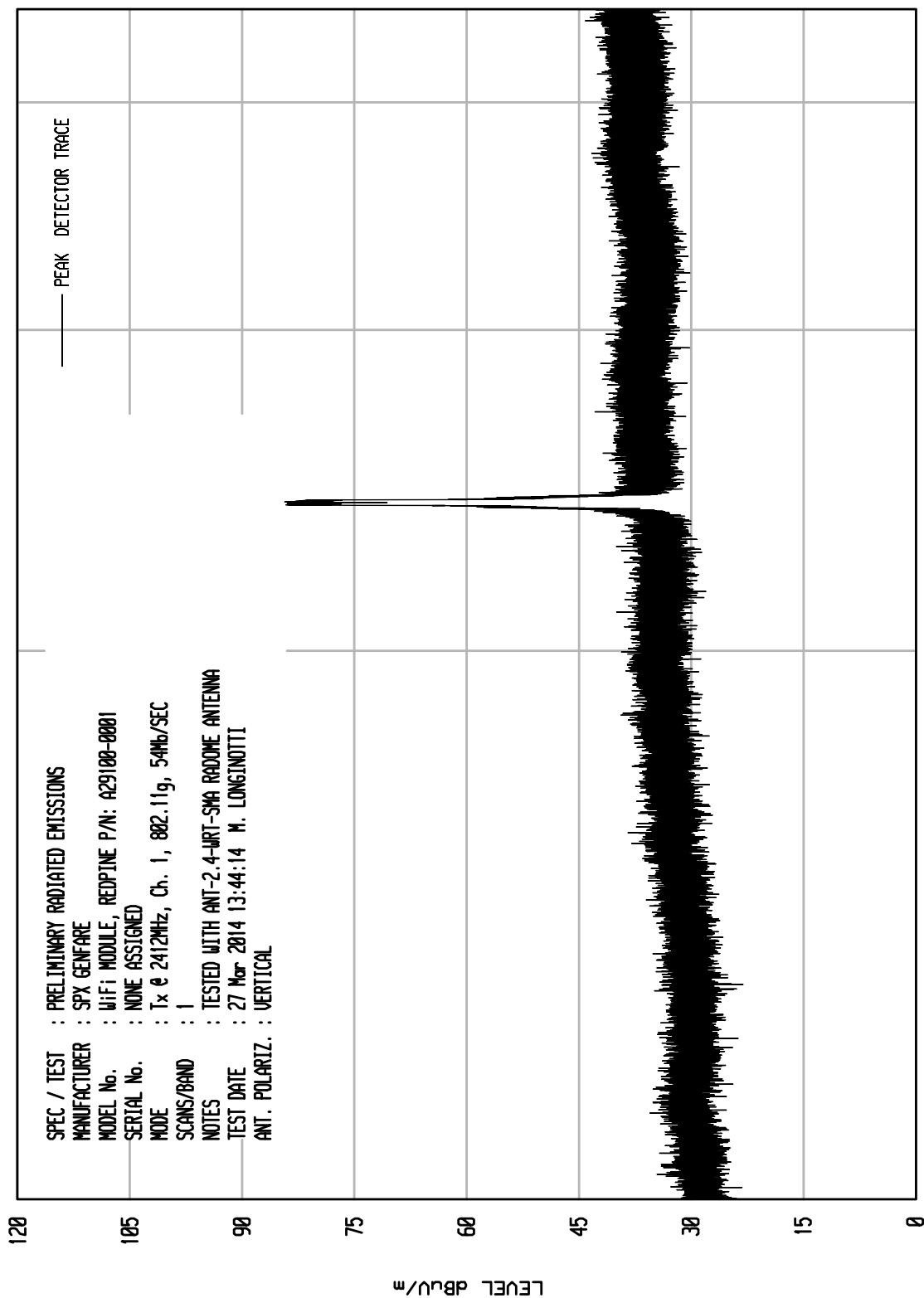
WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEMFAR	MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001
SERIAL No.	NONE ASSIGNED	MODE	Tx @ 2412 (Ch. 1), 802.11g, 54Mb/SEC
SCANS/BAND	1	NOTES	TESTED WITH RADOME ANTENNA
TEST DATE	10 Apr 2014 09:08:42	ANT. POLARIZ.	M. LONGINOTTI VERTICAL



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UNIV RCU EMI RUN 24

MKA1 04/24/13



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UNIV RCU EMI RUN 14

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARAE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2412MHz (Ch. 1), 54Mbps, 802.11g
SCANS/BAND	: 1
NOTES	: TEST DATE : 26 Mar 2014 15:39:58 M. LONGINOTTI ANT. POLARIZ. : VERTICAL

120

105

90

75

60

45

30

15

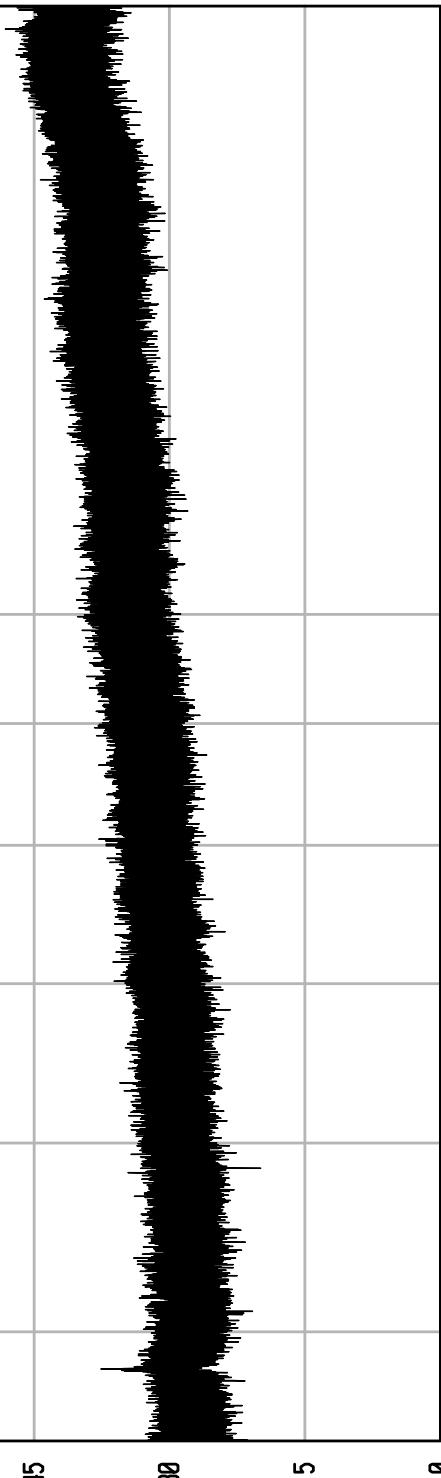
0

LEVEL dB<sub>RU</sub>/m

START = 45000

FREQUENCY MHz  
10000

STOP = 18000



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UNIV RCU EMI RUN 14

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: SPY GEFARÉ
	MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
	SERIAL No.	: NONE ASSIGNED
	MODE	: Tx @ 2412MHz (CH. 1), 802.11b, 54Mbps/SEC
	SCANS/BAND	: 1
	NOTES	: TESTED WITH RADOME ANTENNA
	TEST DATE	: 10 Apr 2014 11:36:32 M. LONGINOTTI
	ANT. POLARIZ.	: VERTICAL

120

105

90

75

60

45

30

15

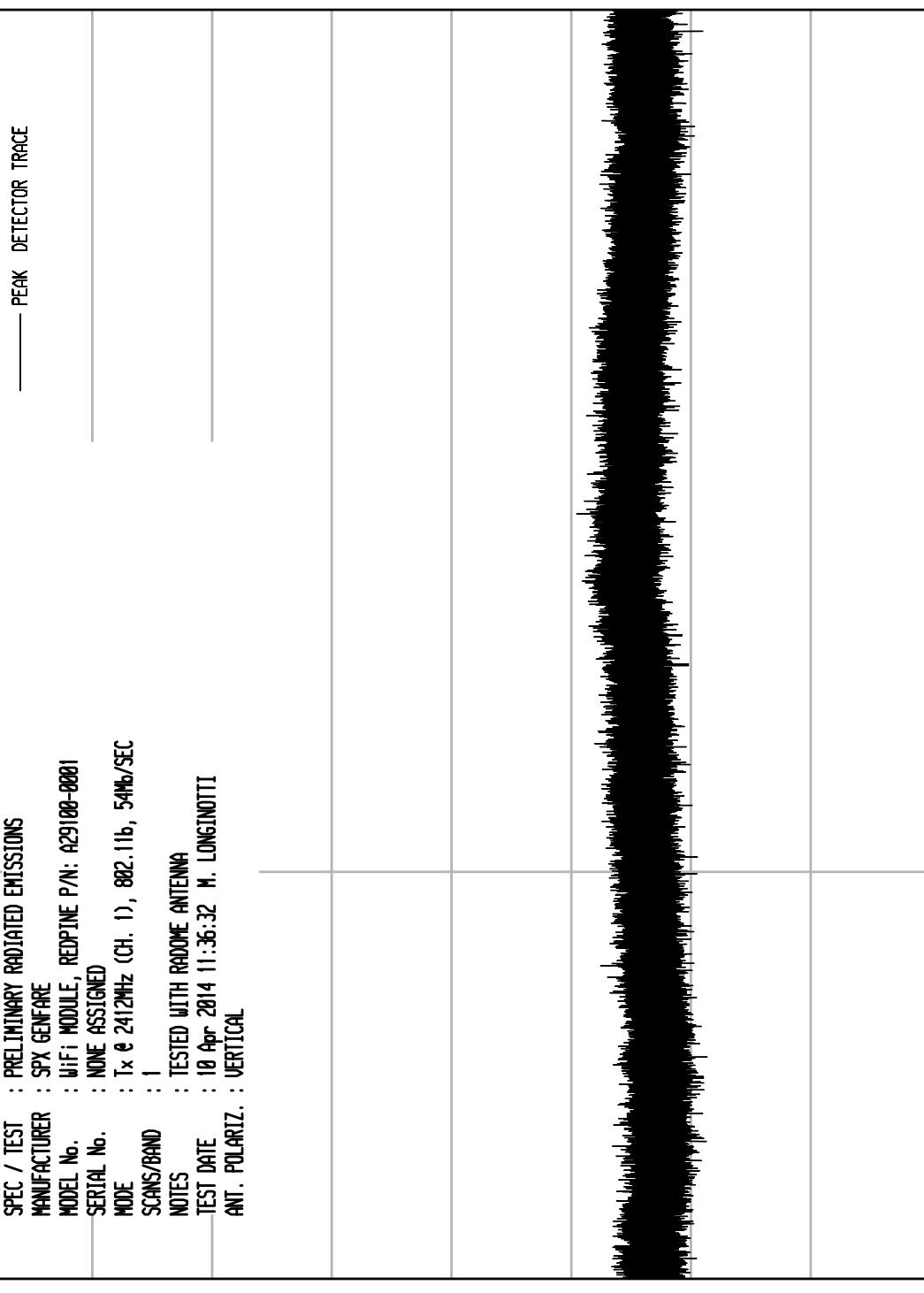
0

LEVEL dBUL/m

START = 180000

FREQUENCY MHz

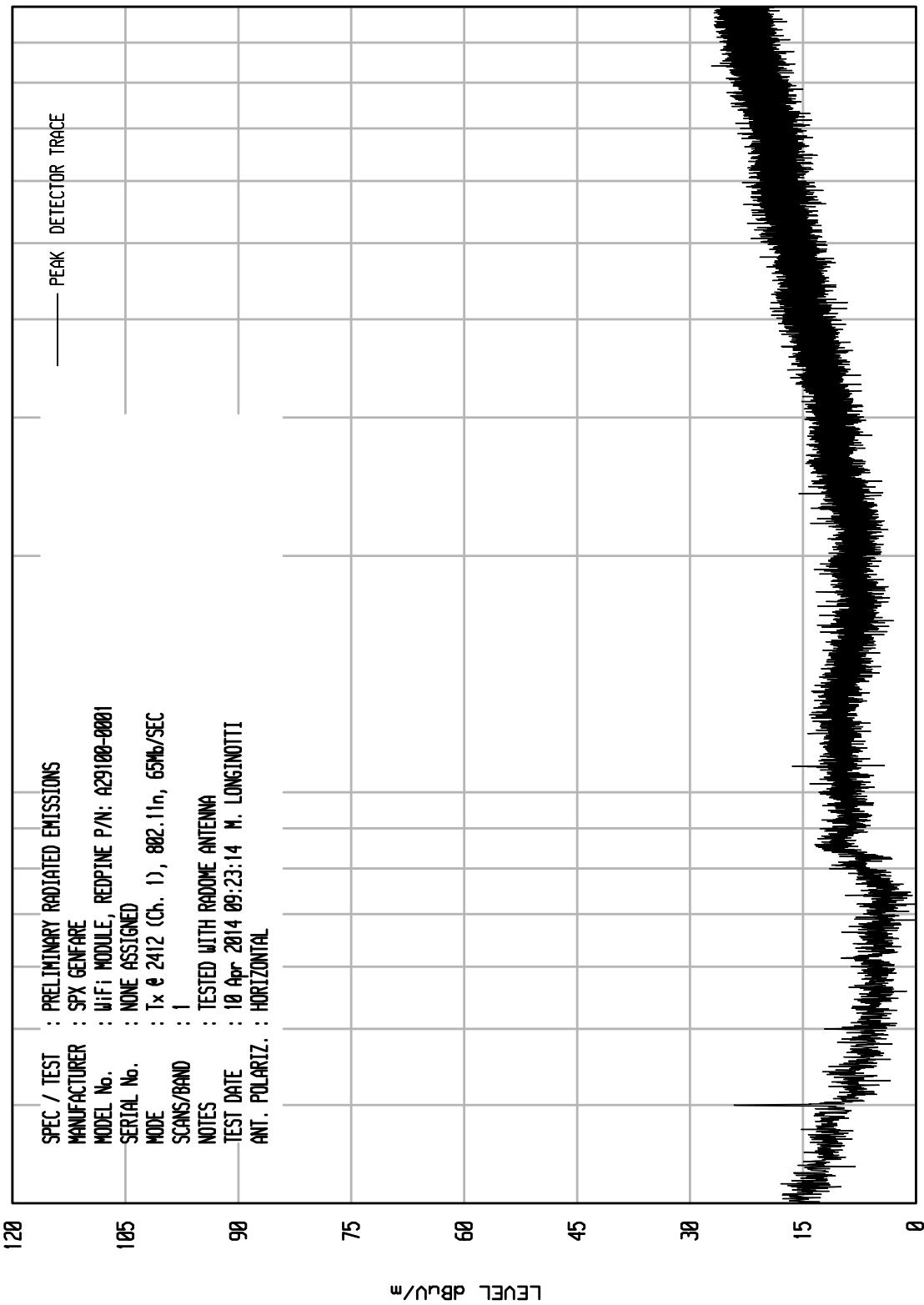
STOP = 250000



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MKEI 04/24/13 UNIV RCU EMI RUN 50

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEMFAR
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2412 (Ch. 1), 802.11n, 65Mb/SEC
SCANS/BAND	: 1
NOTES	: TESTED WITH RADOME ANTENNA
TEST DATE	: 10 Apr 2014 09:23:14 N. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL



START = 30

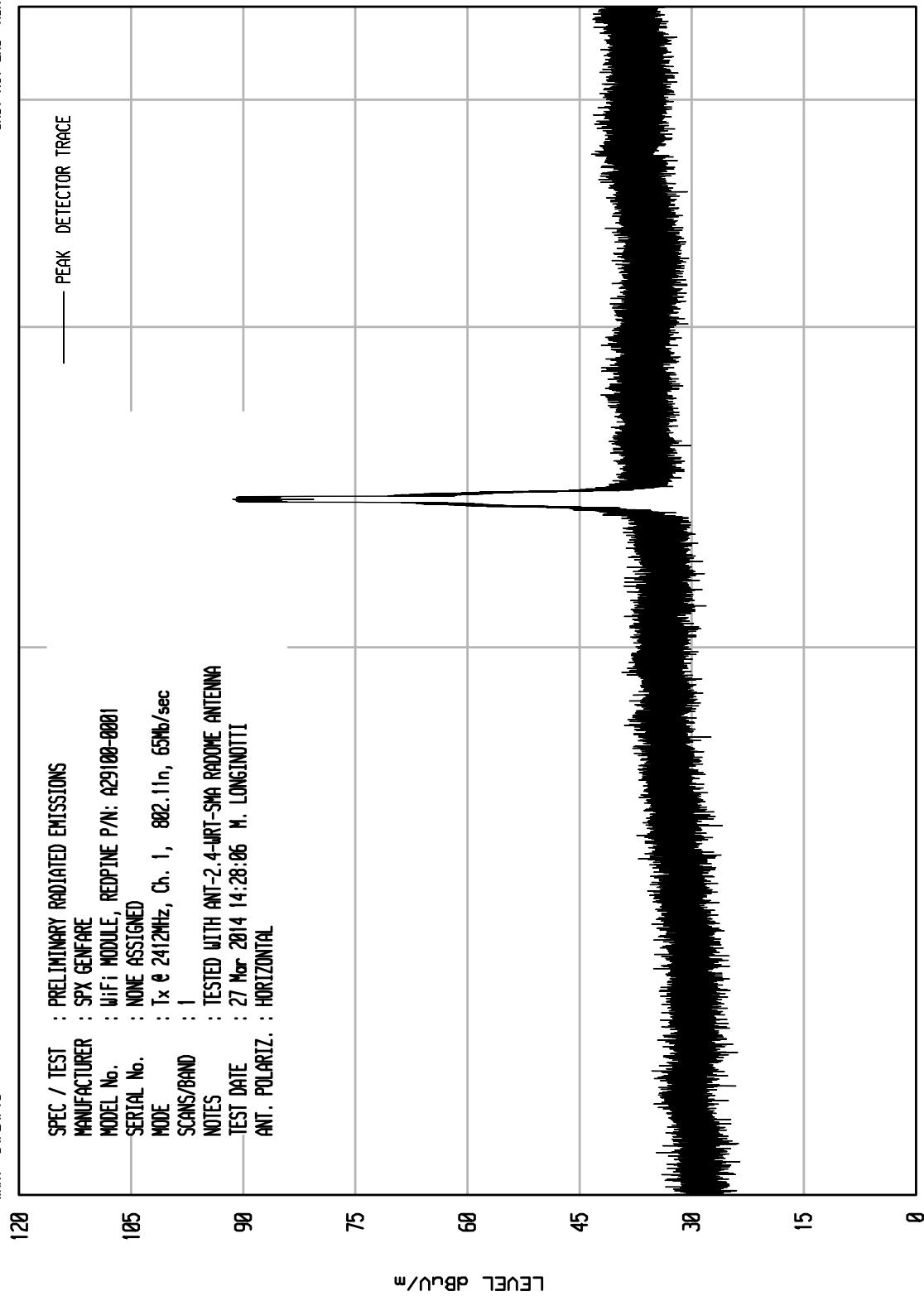
100

STOP = 1000

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UNIV RCU EMI RUN 30

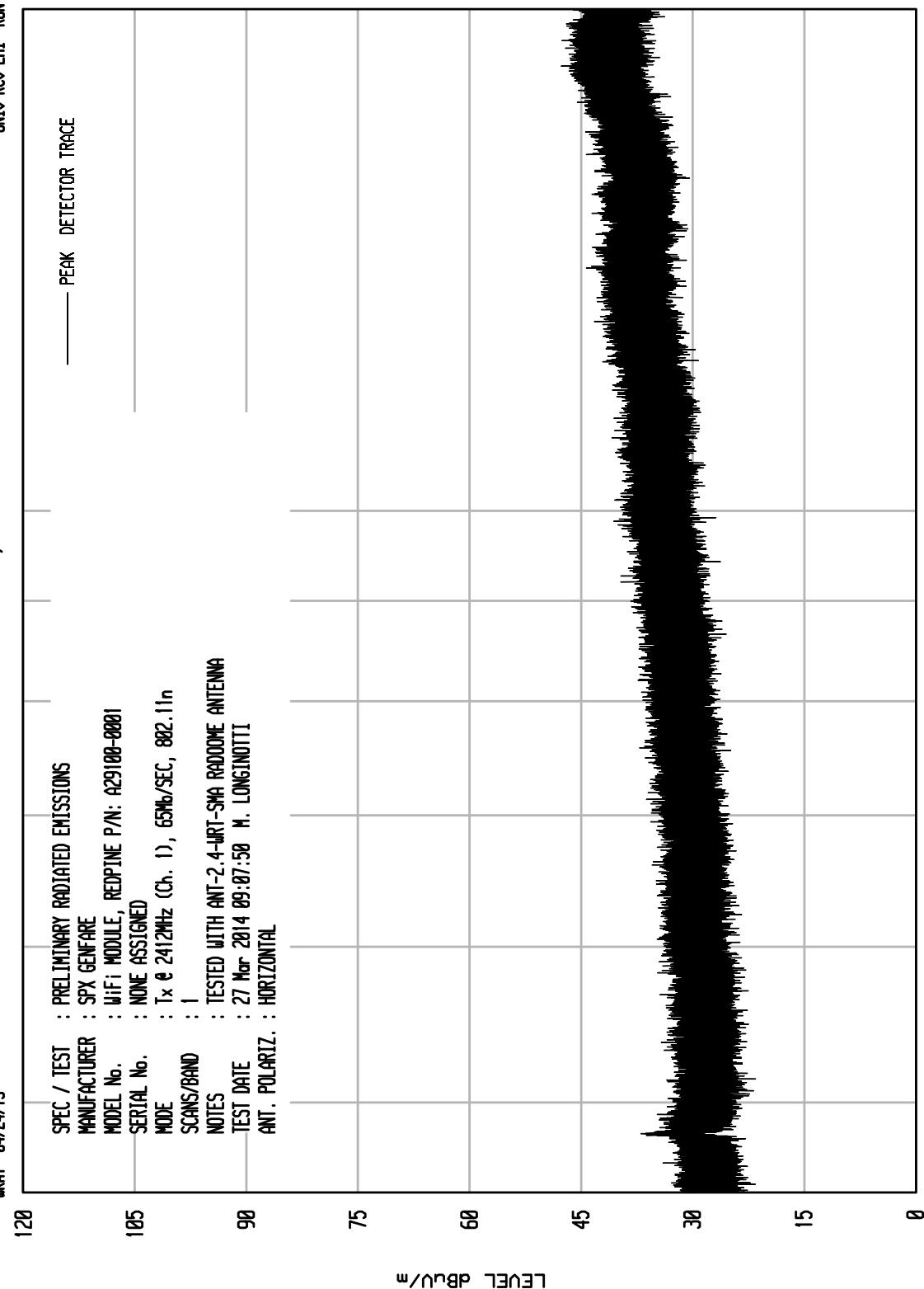
MKA1 04/24/13



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UNIV RCU EMI RUN 21

WKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFNARE	PEAK	DETECTOR TRACE
MODEL No.	: WiFi MODULE, REDPINE P/N: A291008-0001		
SERIAL No.	: NONE ASSIGNED		
MODE	: Tx @ 2412MHz (Ch. 1), 65mb/sec, 802.11n		
SCANS/BAND	: 1		
NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA		
TEST DATE	: 27 Mar 2014 09:07:50	M. LONGINOTTI	
ANT. POLARIZ.	: HORIZONTAL		



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UNIV RCU EMI RUN 21

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFNARE	
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001	
SERIAL No.	: NONE ASSIGNED	
MODE	: Tx @ 2412MHz (CH. 1), 802.11b, 65Mb/SEC	
SCANS/BAND	: 1	
NOTES	: TESTED WITH RADOME ANTENNA	
TEST DATE	: 10 Apr 2014 13:00:36	M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL	

120

105

90

75

60

45

30

15

0

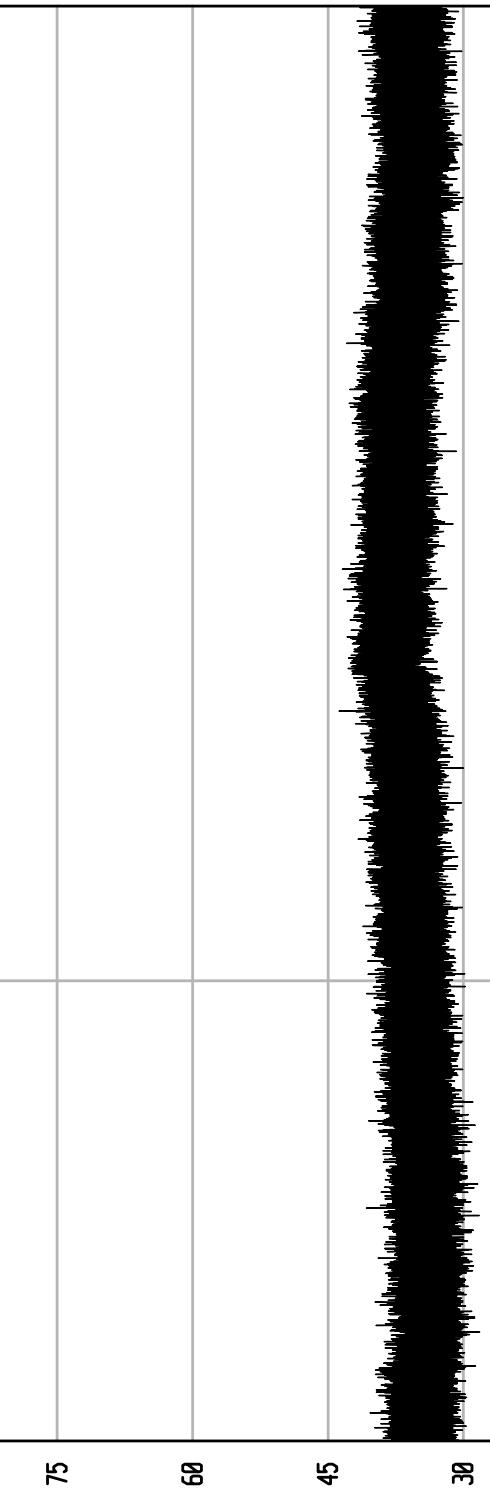
LEVEL dBUL/m

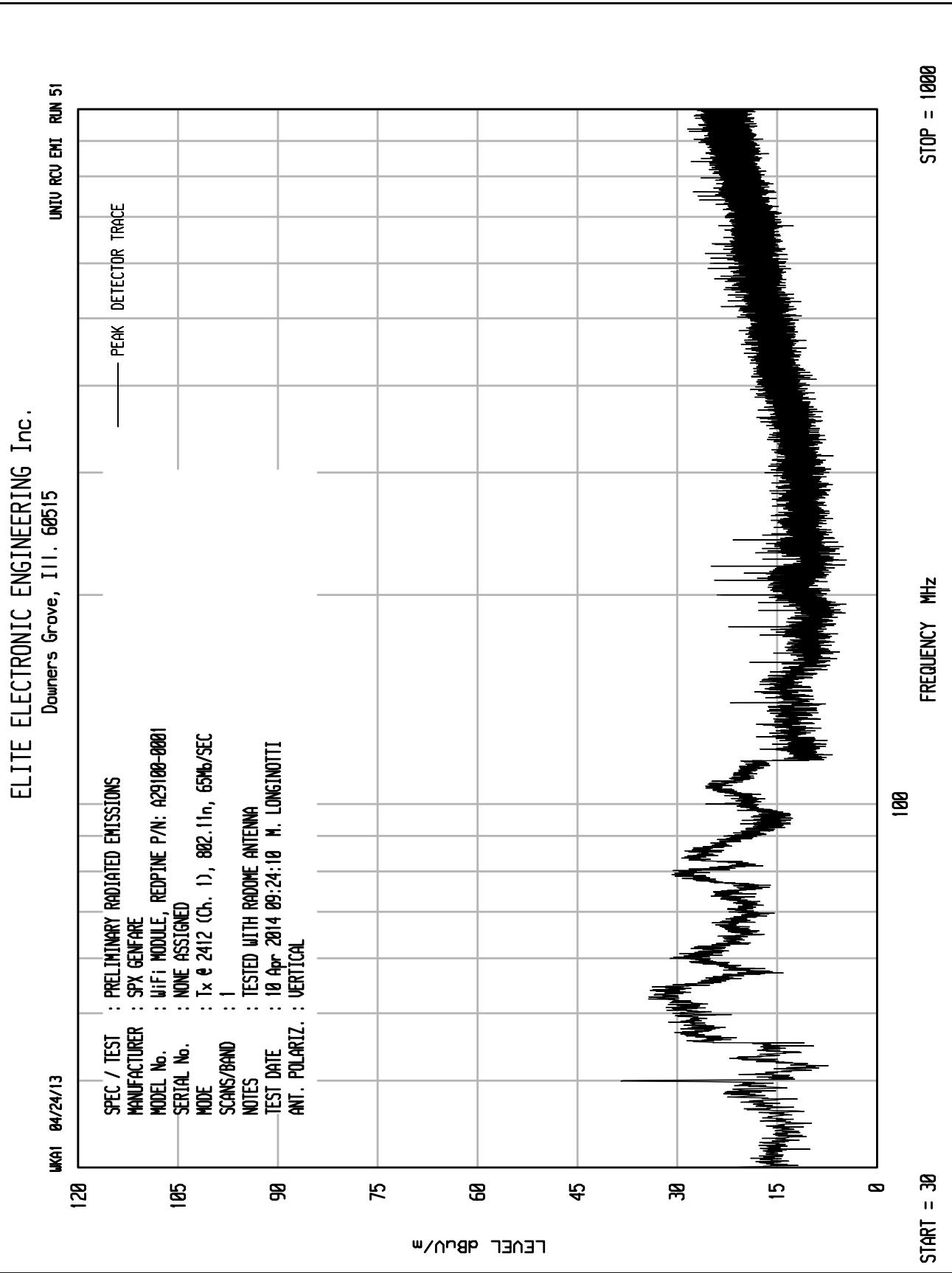
START = 180000

FREQUENCY MHz

STOP = 250000

PEAK DETECTOR TRACE

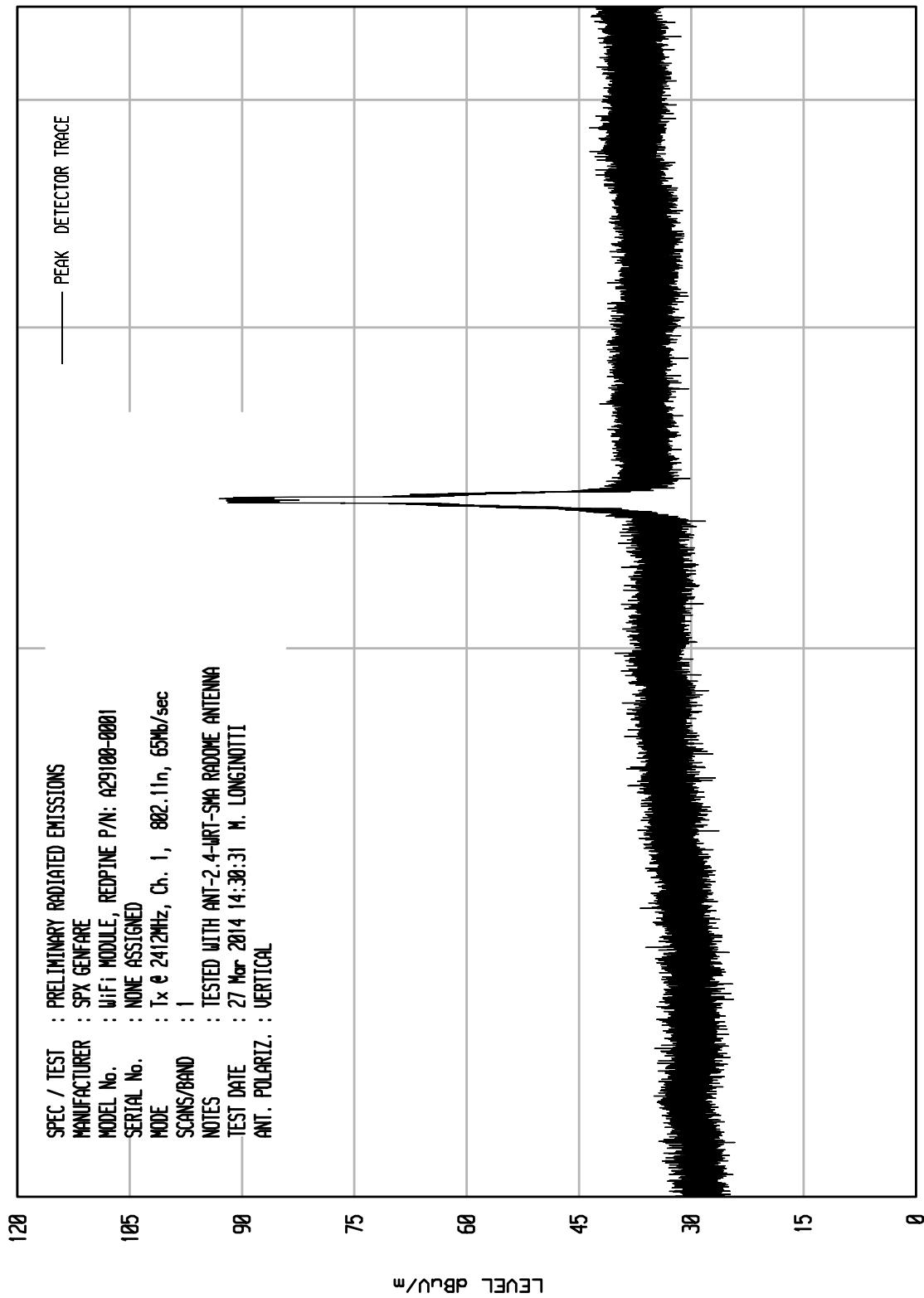




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UNIV RCU EMI RUN 31

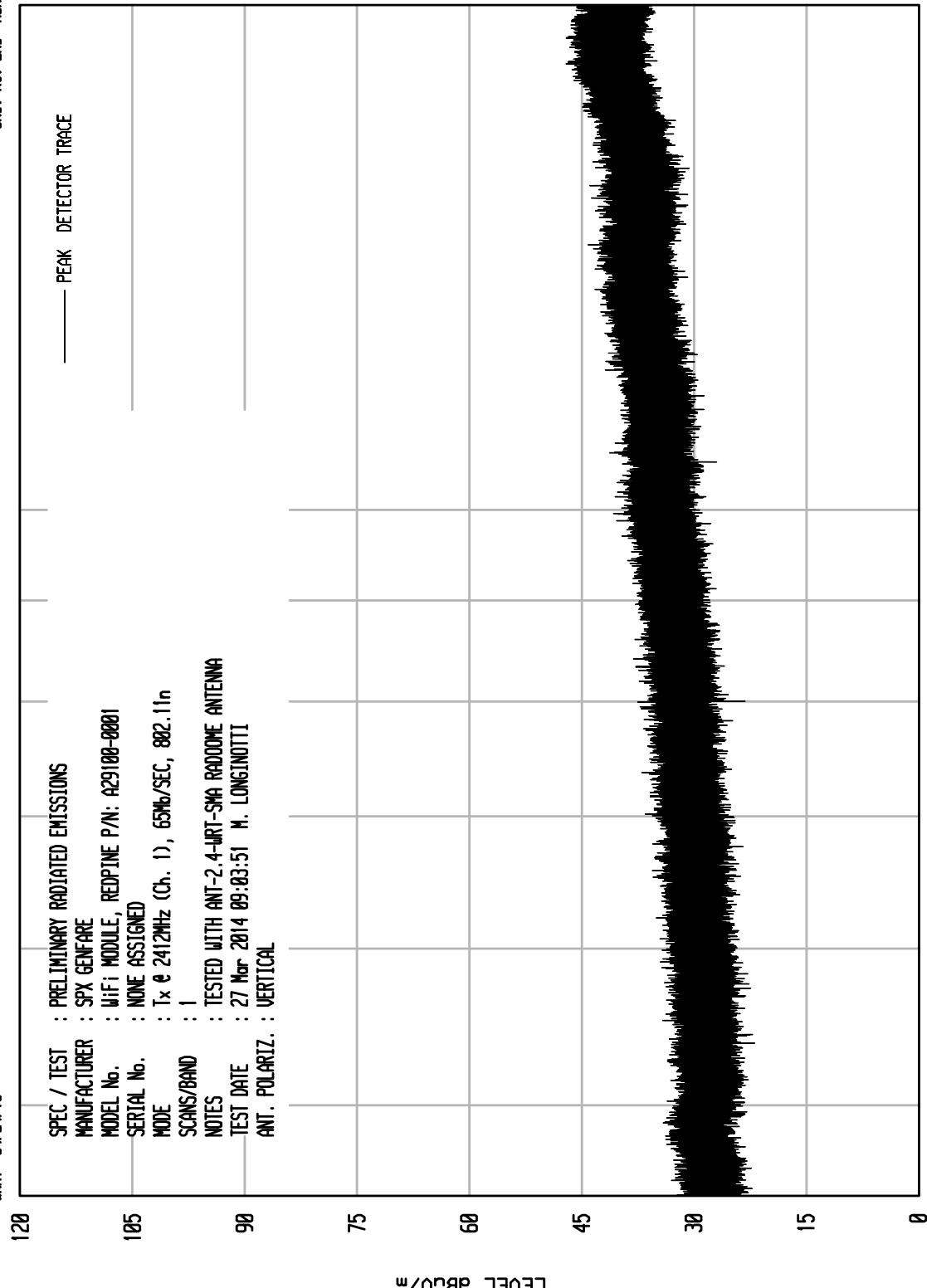
MKA1 04/24/13



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UNIV RCU EMI RUN 2B

MKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARÉ	PEAK	DETECTOR TRACE
MODEL No.	: WiFi MODULE, REDPINE P/N: A291008-0001		
SERIAL No.	: NONE ASSIGNED		
MODE	: Tx @ 2412MHz (Ch. 1), 65mb/sec, 802.11n		
SCANS/BAND	: 1		
NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA		
TEST DATE	: 27 Mar 2014 09:03:51 M. LONGINOTTI		
ANT. POLARIZ.	: VERTICAL		



START = 4500

 STOP = 18000  
 FREQUENCY MHz

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UNIV RCU EMI RUN 22

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: SPY GEFARAE
	MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
	SERIAL No.	: NONE ASSIGNED
	MODE	: Tx @ 2412MHz (CH. 1), 802.11b, 65Mb/SEC
	SCANS/BAND	: 1
	NOTES	: TESTED WITH RADOME ANTENNA
	TEST DATE	: 10 Apr 2014 13:03:03 M. LONGINOTTI
	ANT. POLARIZ.	: VERTICAL



START = 18000

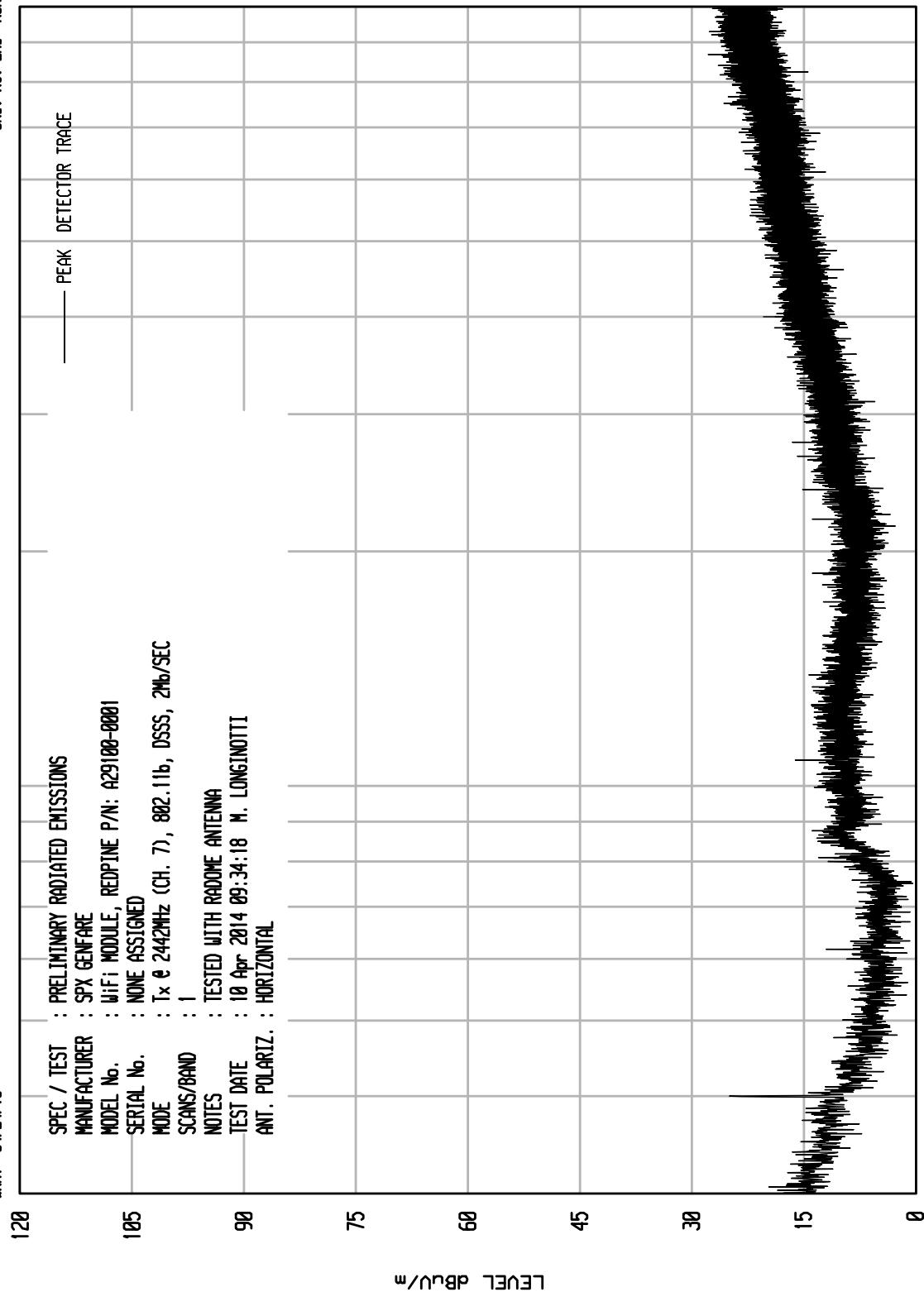
STOP = 25000

PEAK DETECTOR TRACE

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UNIV RCU EMI RUN 59

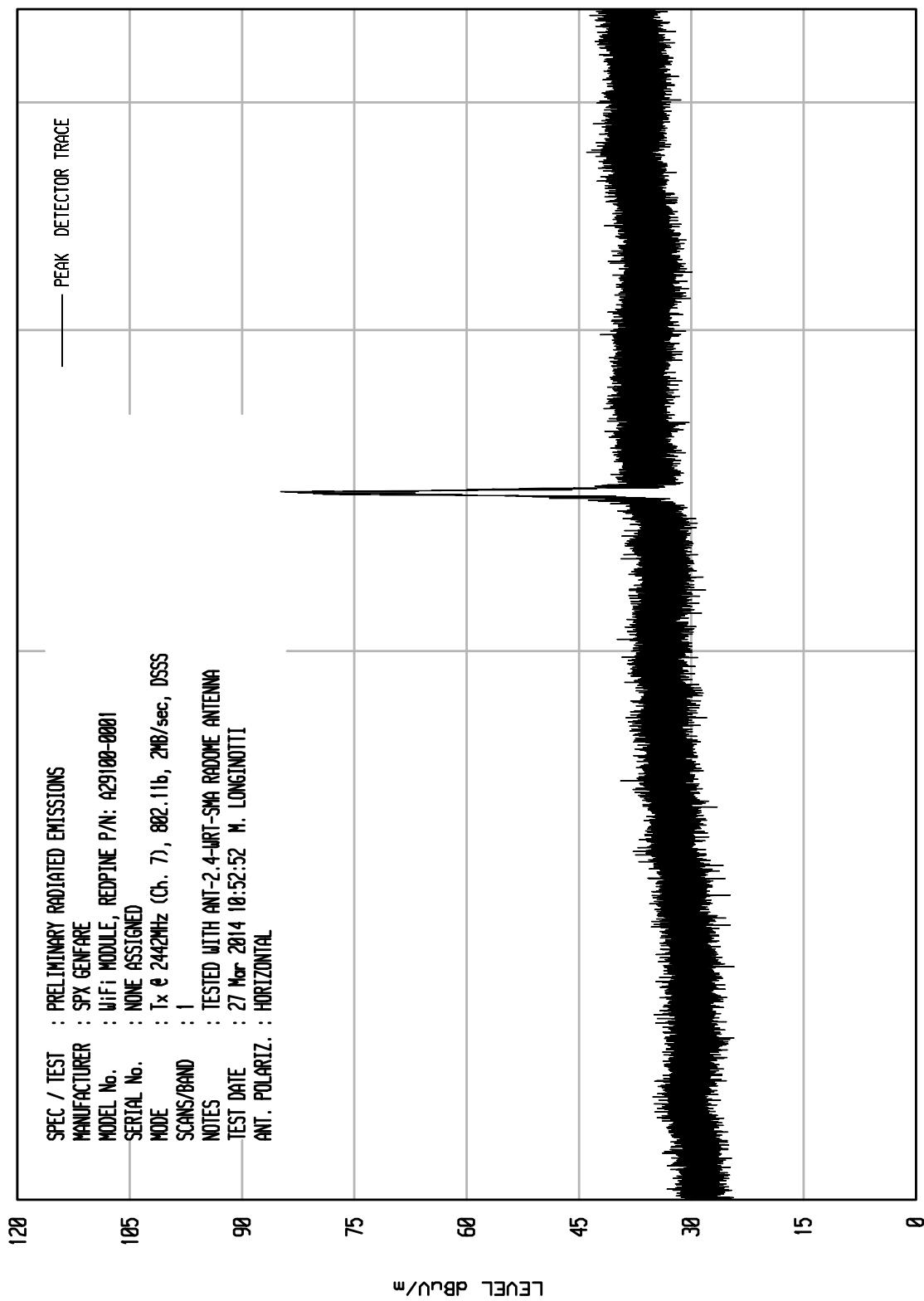
WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEMFAR		
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001		
SERIAL No.	NONE ASSIGNED		
MODE	Tx @ 2442MHz (CH. 7), 802.11b, DSSS, 2Mbps		
SCANS/BAND	1		
NOTES	TESTED WITH RADOME ANTENNA		
TEST DATE	10 Apr 2014 09:34:18		M. LONGINOTTI
ANT. POLARIZ.	HORIZONTAL		



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UNIV RCU EMI RUN 4

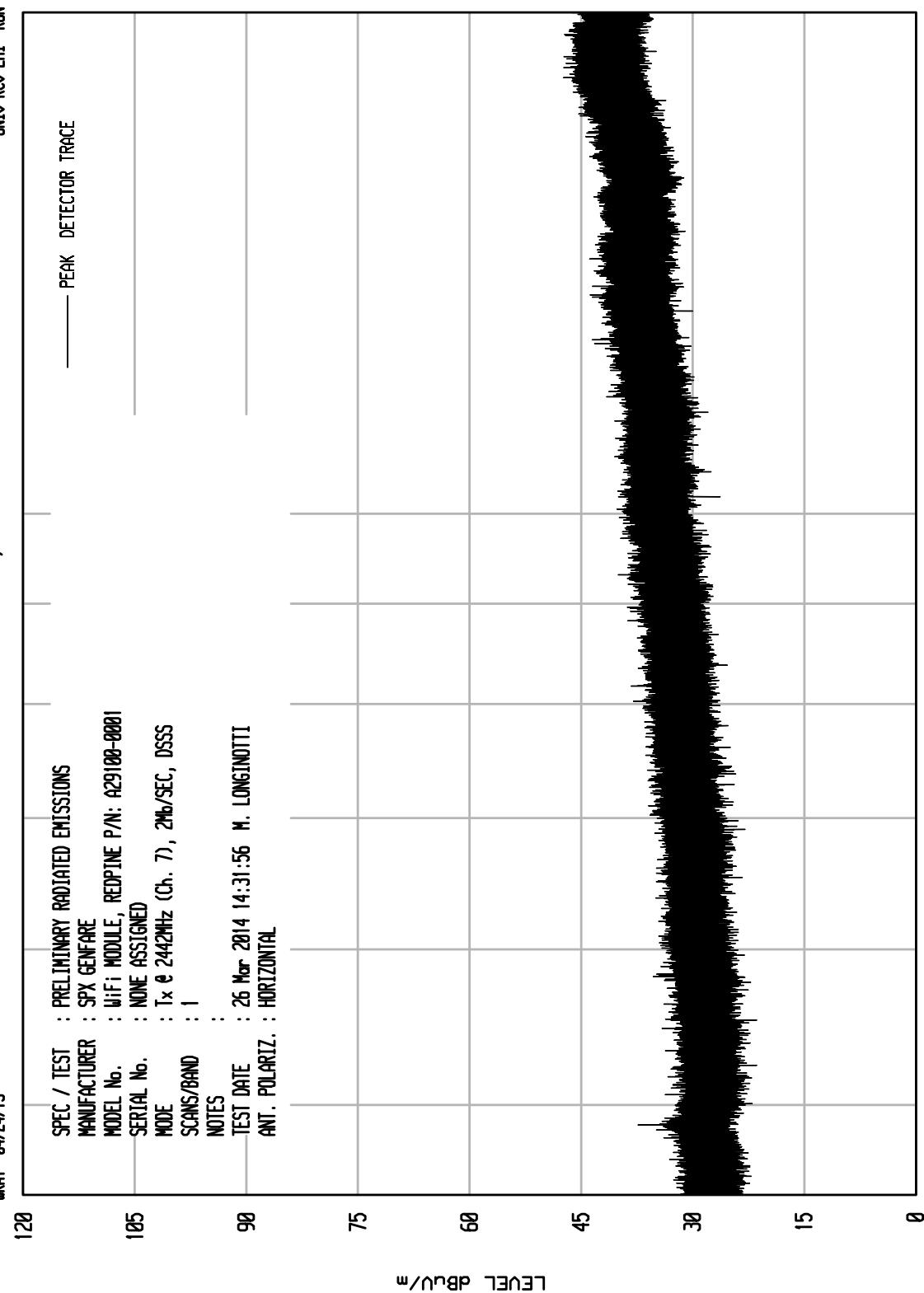
MKA1 04/24/13



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UNIV RCU EMI RUN 10

WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEFNARE	MODE	SPY GEFNARE
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0000	SERIAL No.	NONE ASSIGNED
MODE	Tx @ 2442MHz (Ch. 7), 2Mbps/SEC, DSSS	SCANS/BAND	1
NOTES	TEST DATE : 26 Mar 2014 14:31:56 M. LONGINOTTI ANT. POLARIZ. : HORIZONTAL		



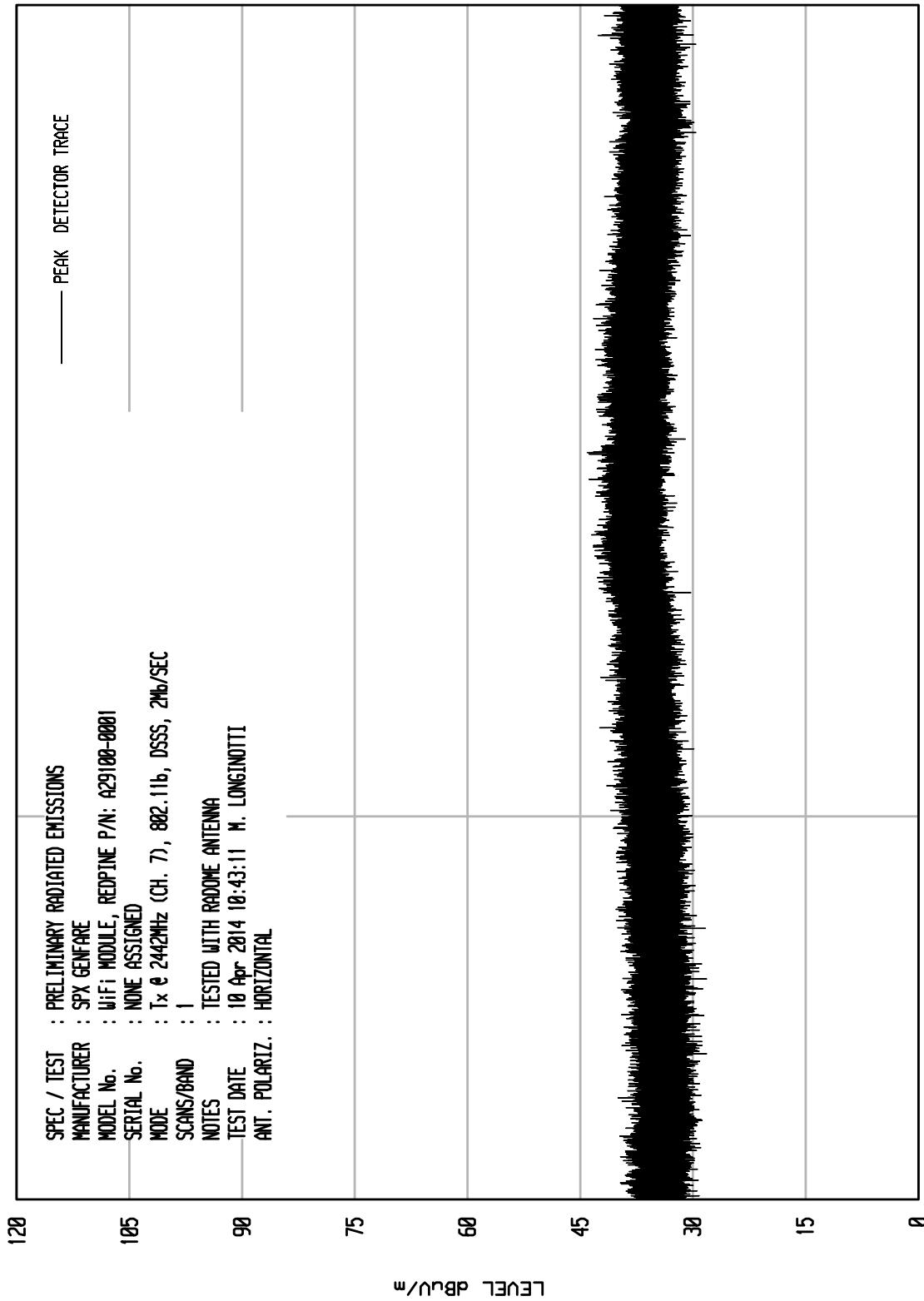
START = 4500

STOP = 10000

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UNIV RCU EMI RUN 3

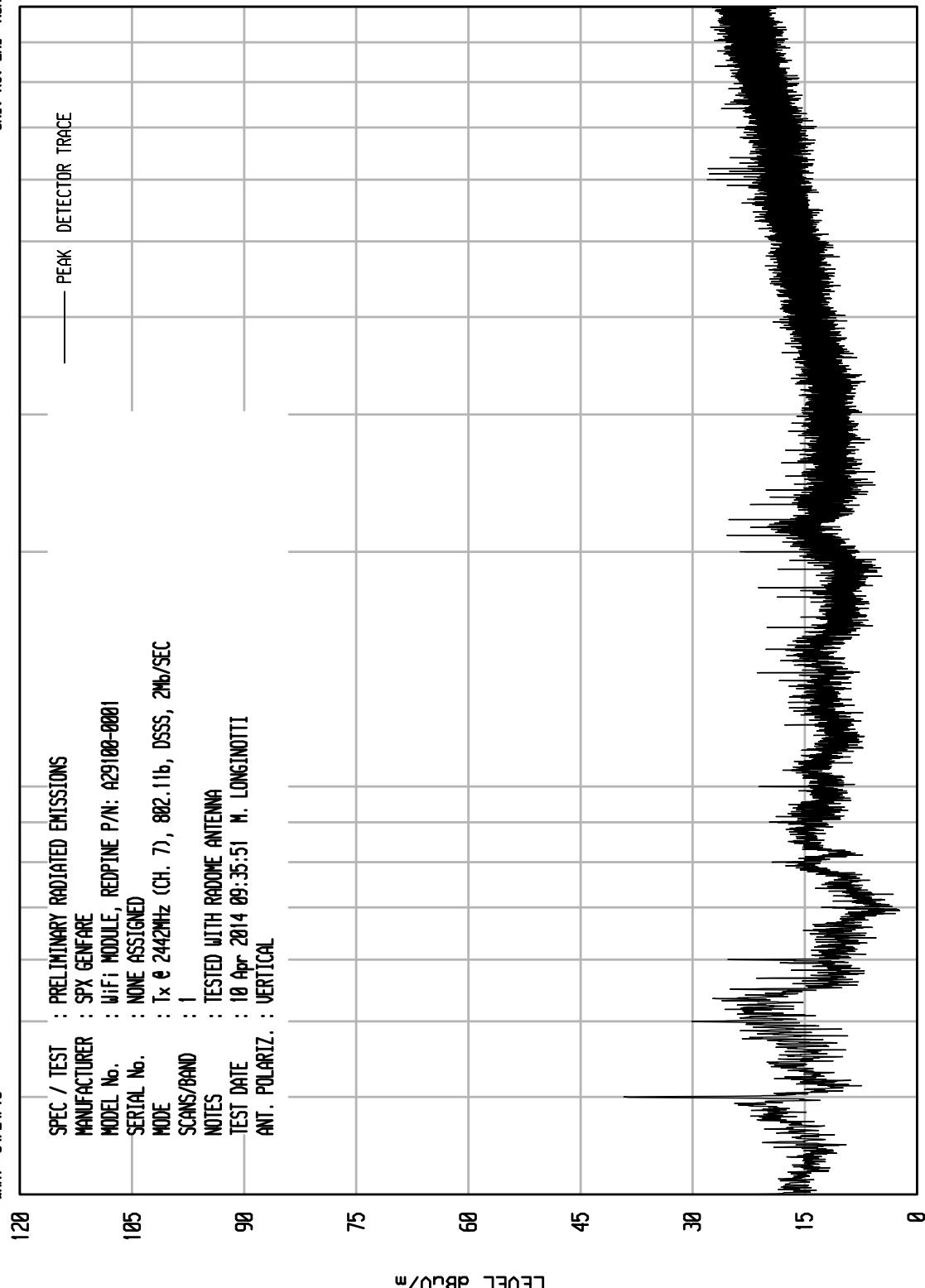
MKA1 04/24/13



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UNIV RCU EMI RUN 61

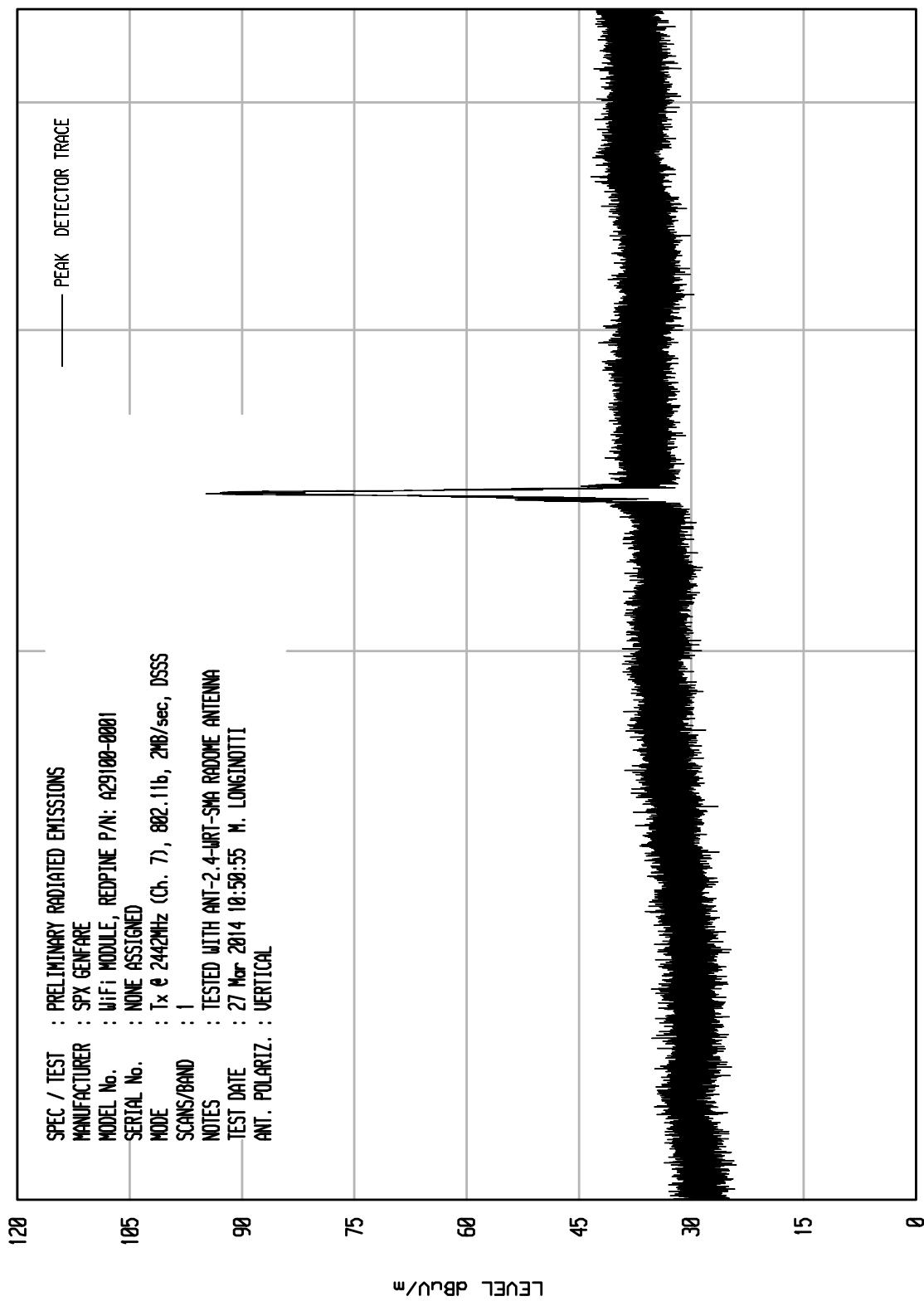
WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPI GENFARE		
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001		
SERIAL No.	NONE ASSIGNED		
MODE	Tx @ 2442MHz (CH. 7), 802.11b, DSSS, 2Mbps		
SCANS/BAND	1		
NOTES	TESTED WITH RADOME ANTENNA		
TEST DATE	10 Apr 2014 09:35:51		
ANT. POLARIZ.	VERTICAL		



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UNIV RCU EMI RUN 3

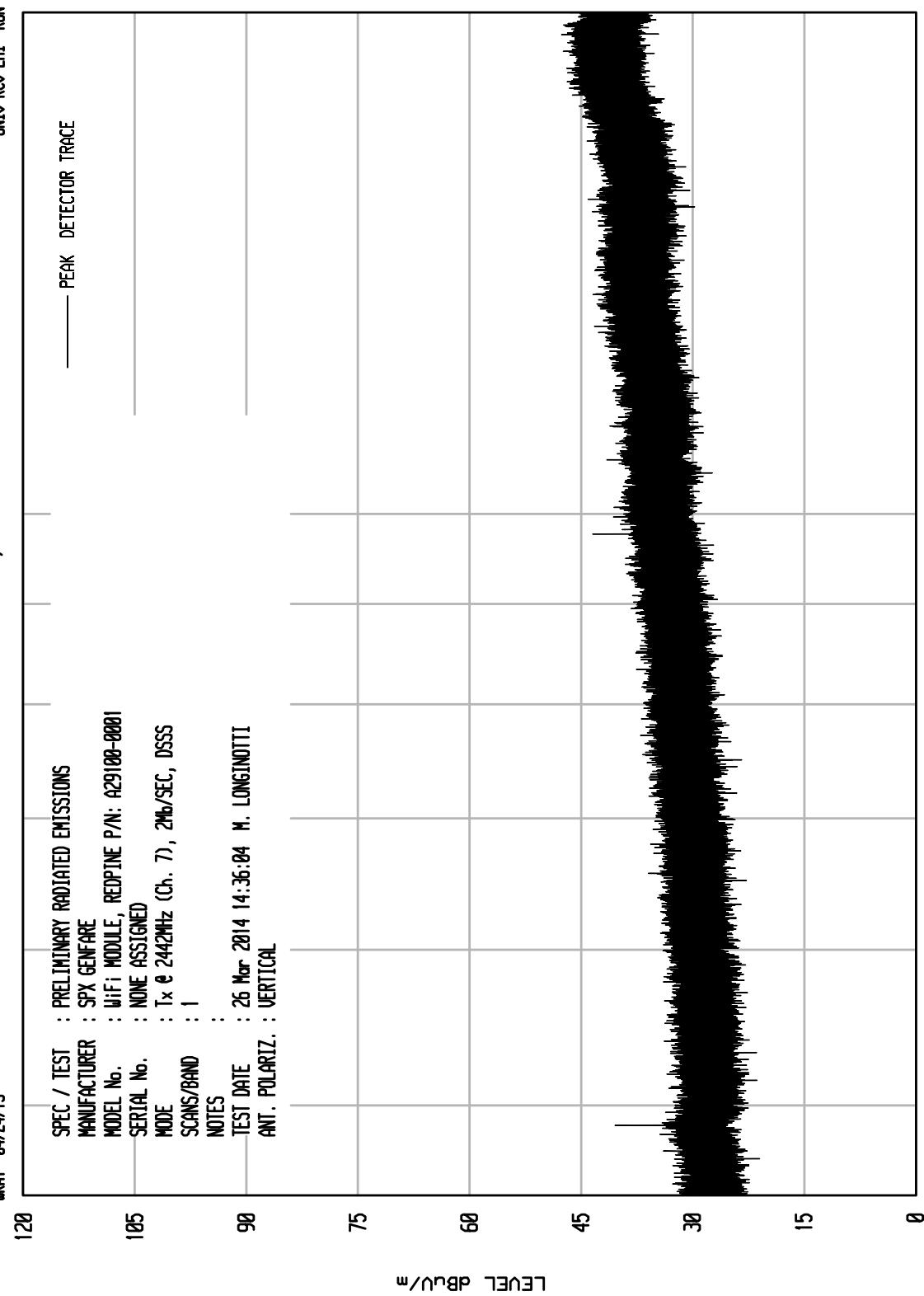
MKA1 04/24/13



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UNIV RCU EMI RUN 11

WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEFNARE	MODE	SPY GEFNARE
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0000	SERIAL No.	NONE ASSIGNED
MODE	Tx @ 2442MHz (Ch. 7), 2Mbps/SEC, DSSS	SCANS/BAND	1
NOTES	TEST DATE : 26 Mar 2014 14:36:04 M. LONGINOTTI ANT. POLARIZ. : VERTICAL		



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UNIV RCU EMI RUN 4

MKA1 04/24/13

120

105

90

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARAE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0000
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2442MHz (CH. 7), 802.11b, DSSS, 2Mb/SEC
SCANS/BAND	: 1
NOTES	: TESTED WITH RADOME ANTENNA
TEST DATE	: 10 Apr 2014 10:45:13 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL

75

60

45

30

15

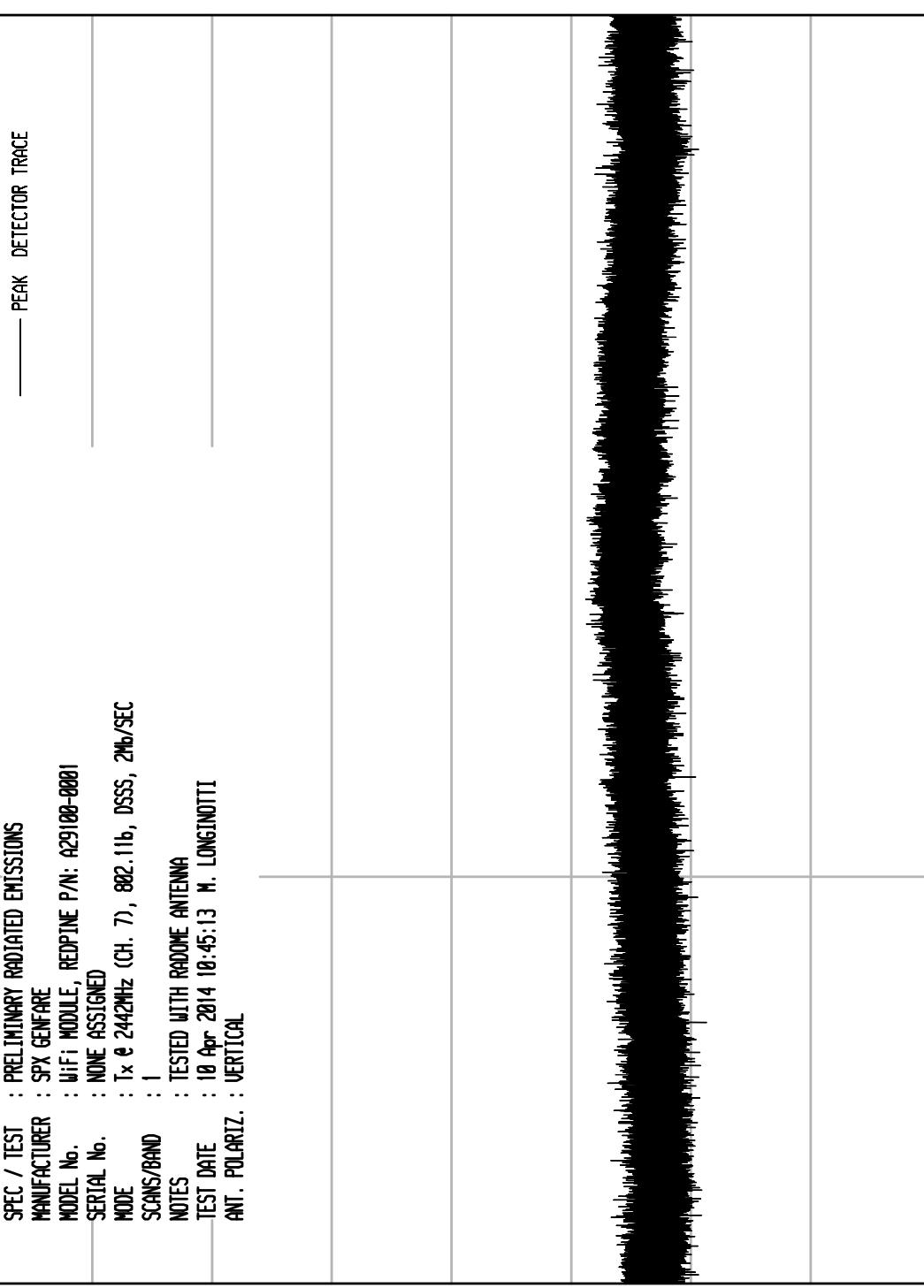
0

LEVEL dBm/m

START = 180000

FREQUENCY MHz

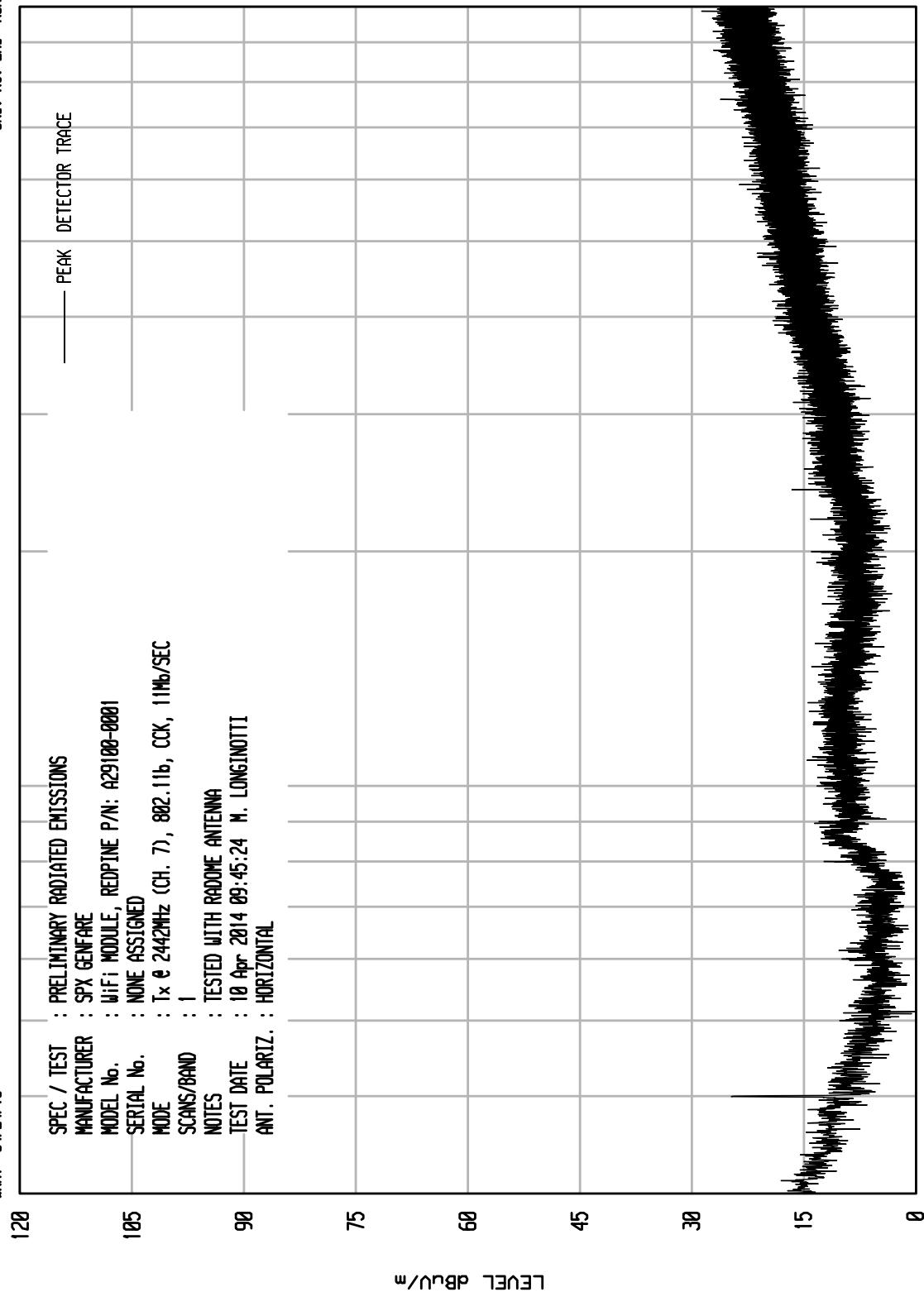
STOP = 250000



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UNIV RCU EMI RUN 67

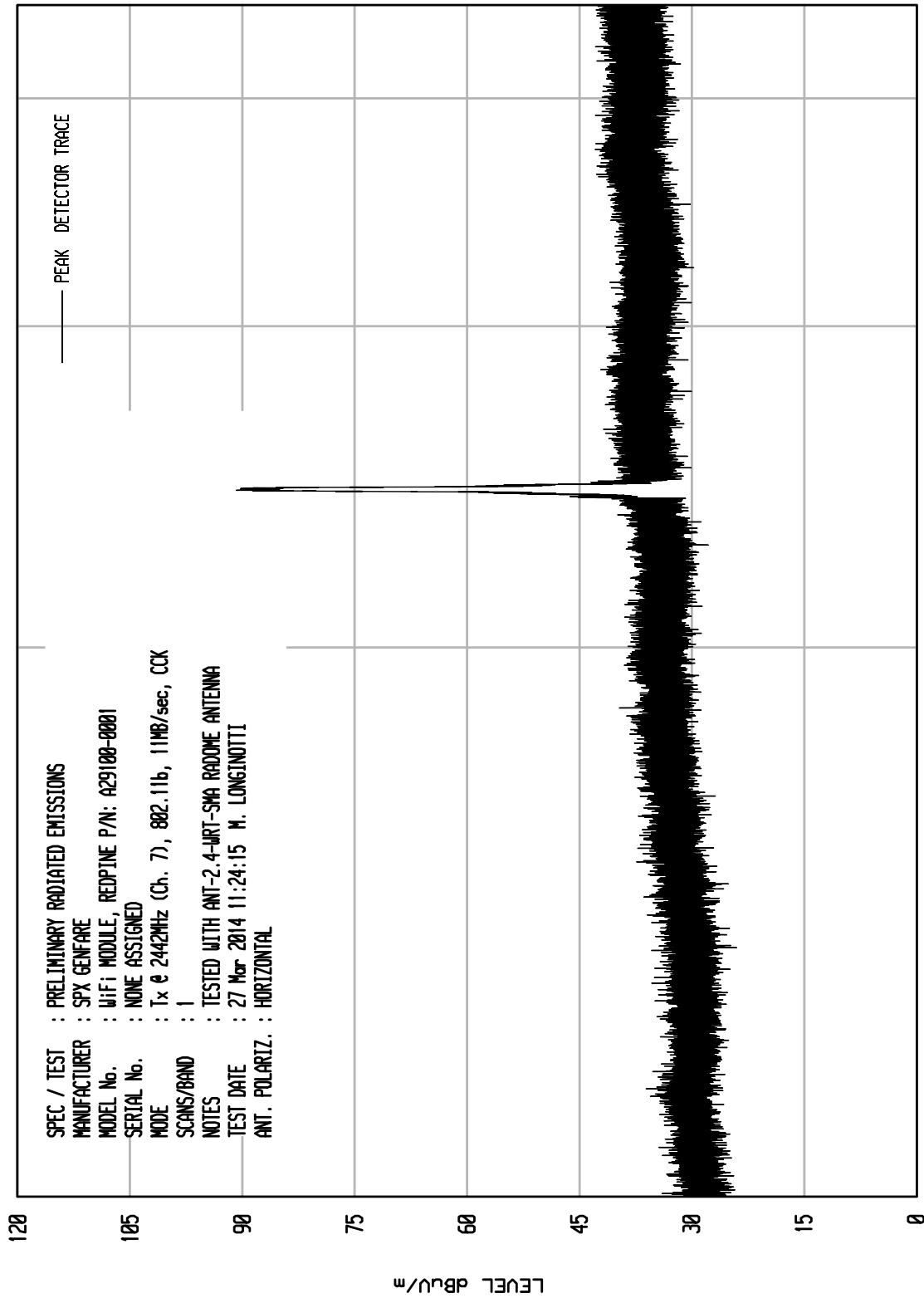
WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPI GENFARE		
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001		
SERIAL No.	NONE ASSIGNED		
MODE	Tx @ 2442MHz (CH. 7), 802.11b, CCK, 11Mbps		
SCANS/BAND	1		
NOTES	TESTED WITH RADOME ANTENNA		
TEST DATE	10 Apr 2014 09:45:24		
ANT. POLARIZ.	HORIZONTAL		



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UNIV RCU EMI RUN 10

MKA1 04/24/13



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UNIV RCU EMI RUN 7

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFNARE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2442 (Ch. 7), 882.11b, 11Mb/SEC, CCK
SCANS/BAND	: 1
NOTES	
TEST DATE	: 26 Mar 2014 13:02:29 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL

120

105

90

75

60

45

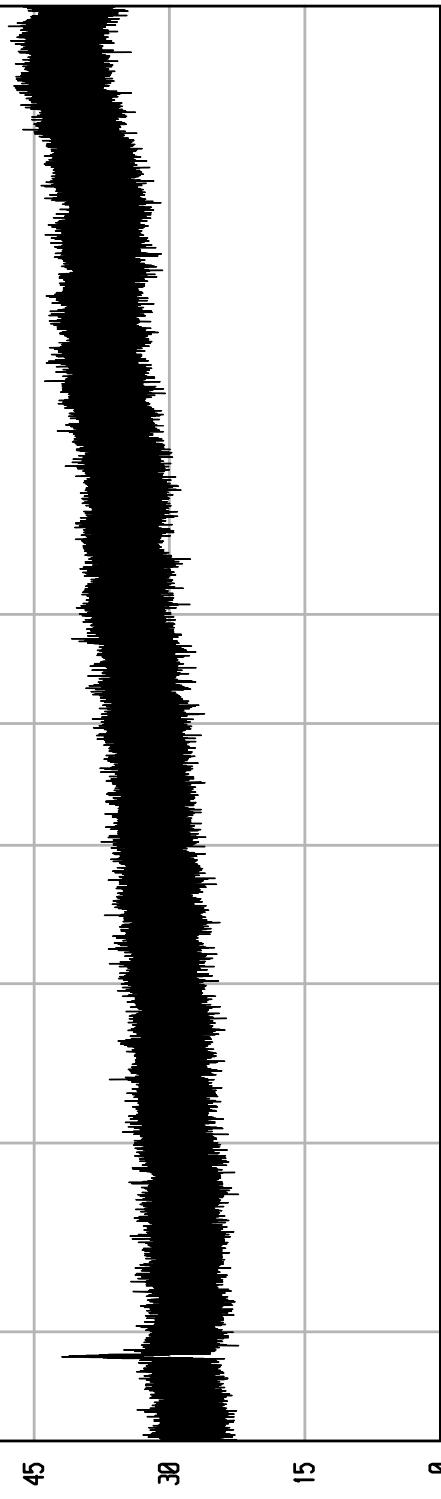
30

15

0

LEVEL dB<sub>RU</sub>/mSTART = 4500  
STOP = 18000FREQUENCY MHz  
10000

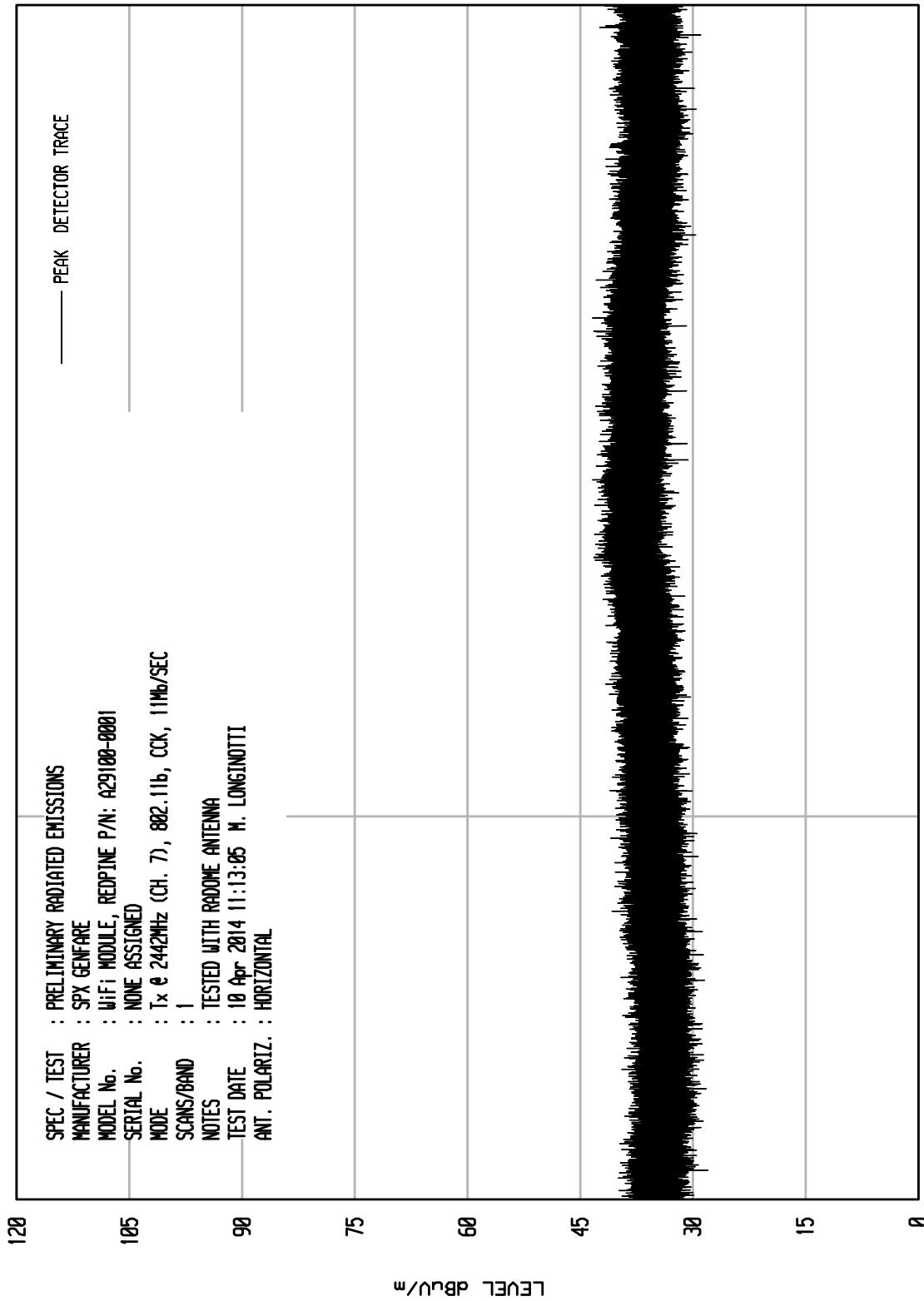
PEAK DETECTOR TRACE



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UNIV RCU EMI RUN 9

MKA1 04/24/13



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UNIV RCU EMI RUN 66

MKEI 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEMFAR
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2442MHz (CH. 7), 802.11b, CCK, 11Mbps
SCANS/BAND	: 1
NOTES	: TESTED WITH RADOME ANTENNA
TEST DATE	: 10 Apr 2014 09:44:02 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL



START = 30

100

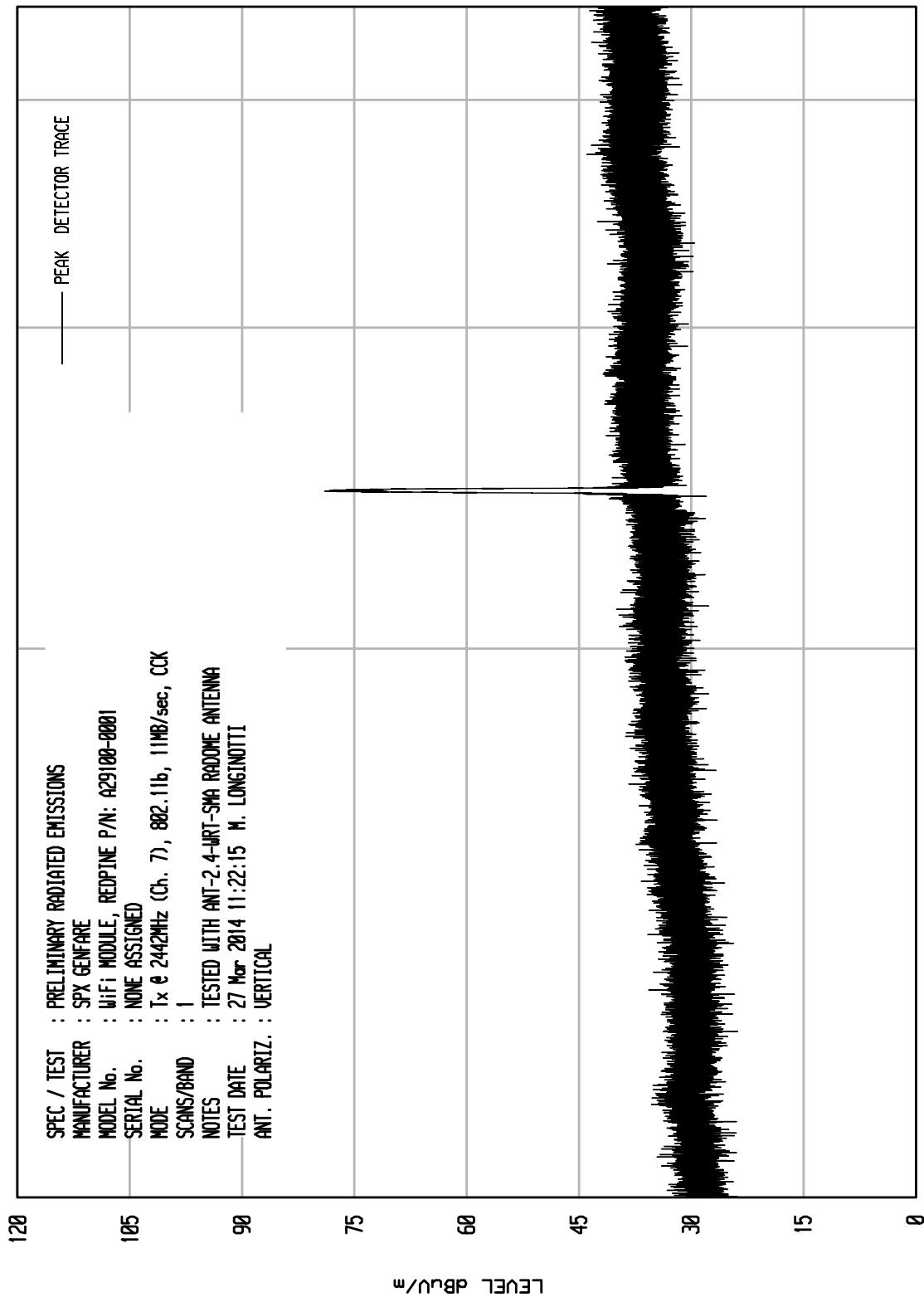
FREQUENCY MHz

STOP = 1000

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UNIV RCU EMI RUN 9

MKA1 04/24/13

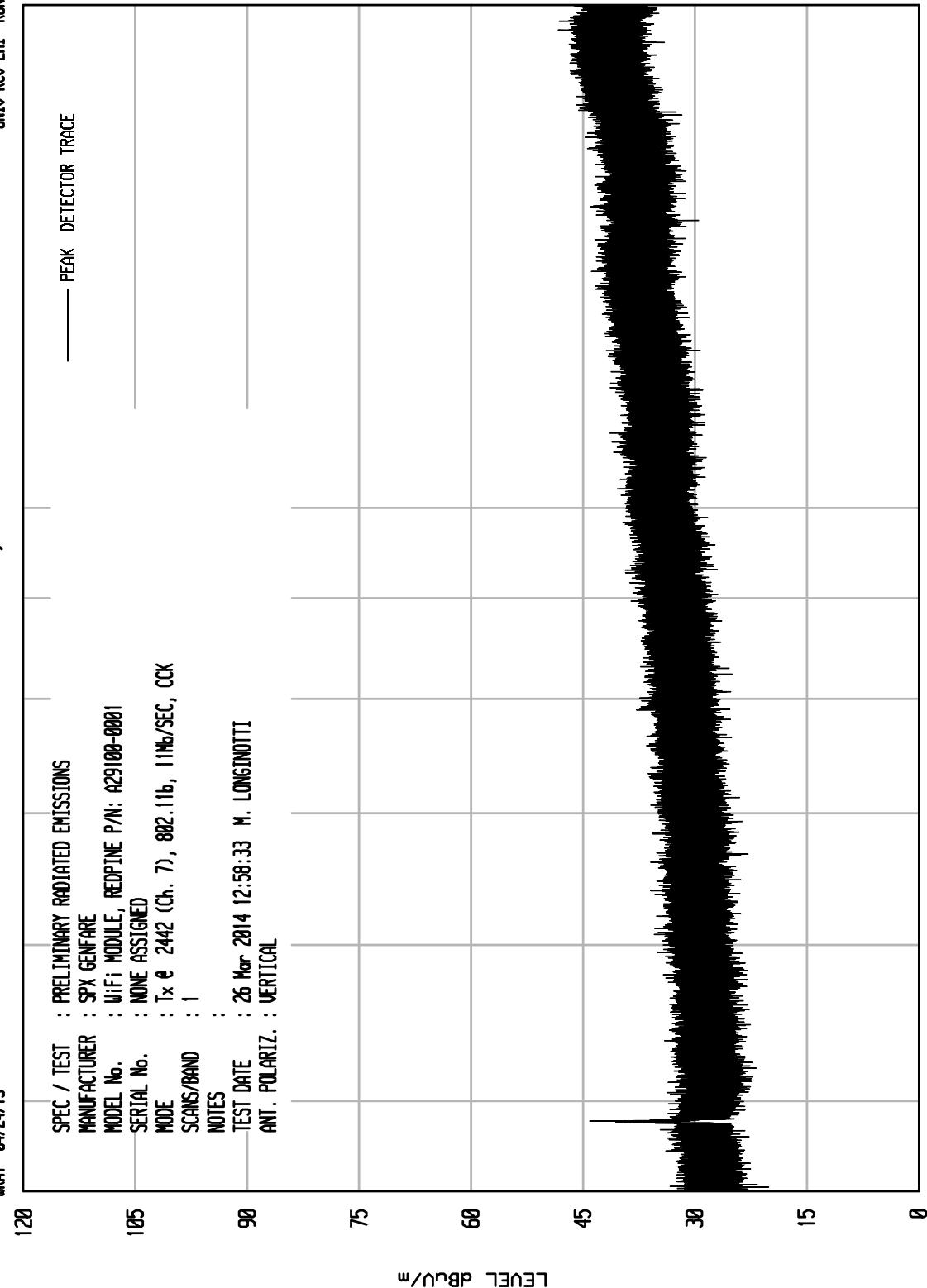


## ELITE ELECTRONIC ENGINEERING Inc.

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UNIV RCU EMI RUN 6

WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
		MANUFACTURER	SPY GEFARAE
		MODEL No.	WiFi MODULE, REDPINE P/N: A29100-0001
		SERIAL No.	NONE ASSIGNED
		MODE	Tx @ 2442 (Ch. 7), 882.11b, 11Mbps, CCK
		SCANS/BAND	1
		NOTES	
		TEST DATE	26 Mar 2014 12:58:33 M. LONGINOTTI
		ANT. POLARIZ.	VERTICAL





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UNIV RCU EMI RUN 10

WKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARÉ
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2442MHz (CH. 7), 802.11b, CCK, 11Mb/SEC
SCANS/BAND	: 1
NOTES	: TESTED WITH RADOME ANTENNA
TEST DATE	: 10 Apr 2014 11:16:55 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL

120

105

90

75

60

45

30

15

0

LEVEL dBm/m

START = 180000

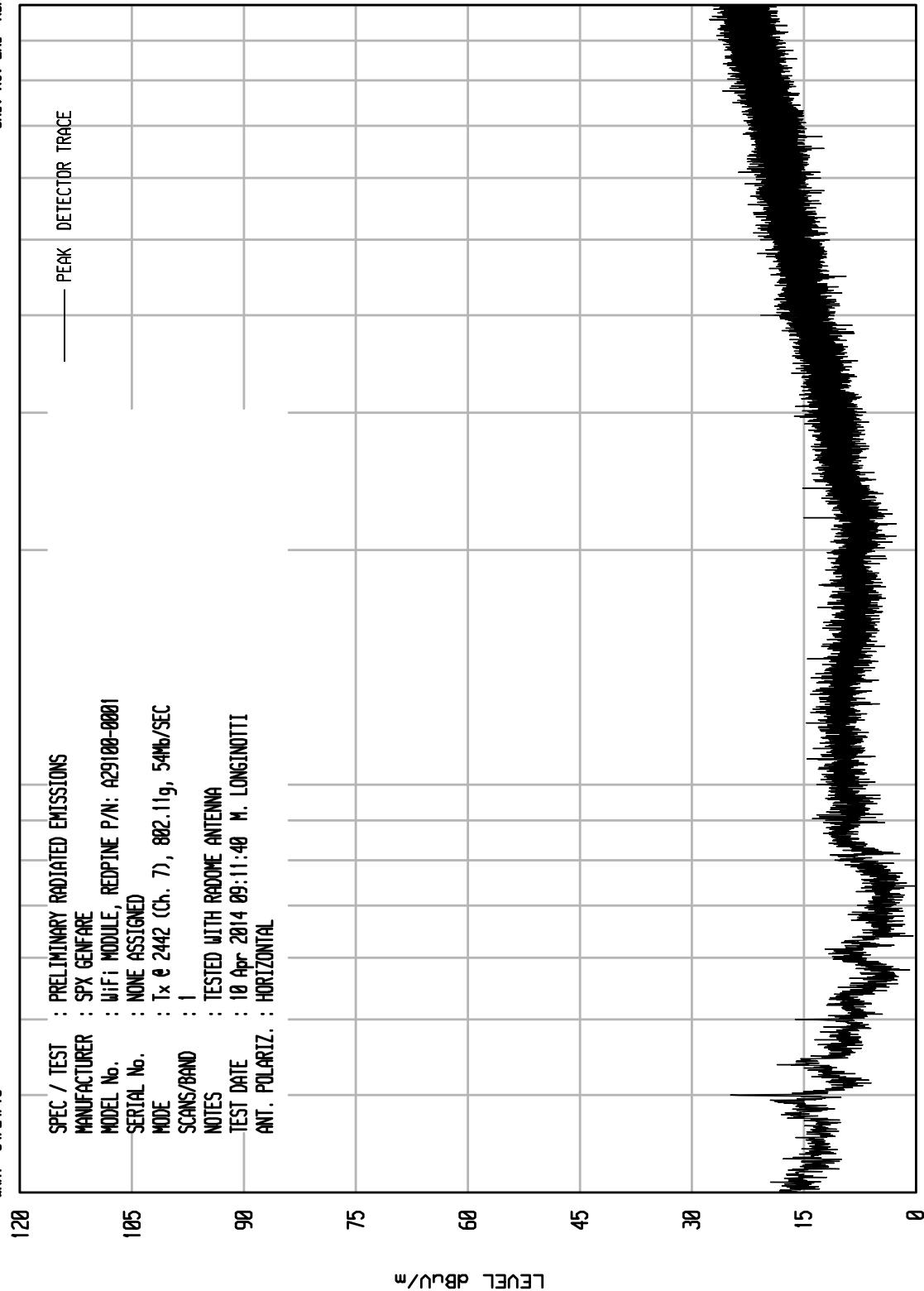
FREQUENCY MHz

STOP = 250000

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UNIV RCU EMI RUN 45

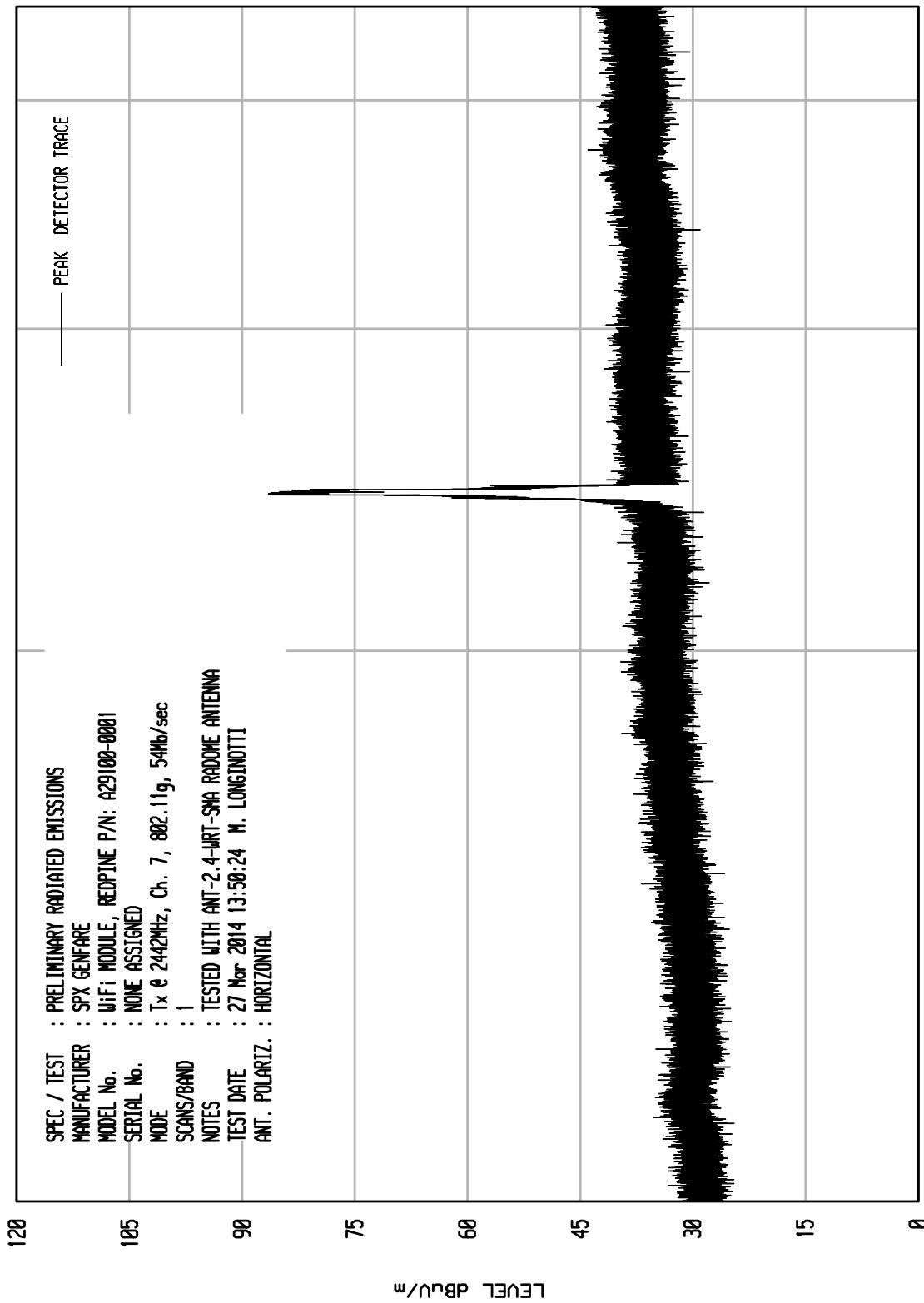
WKEI 04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
105	MANUFACTURER	SPY GEMFAR
	MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001
	SERIAL No.	NONE ASSIGNED
	MODE	Tx @ 2442 (Ch. 7), 802.11g, 54Mb/SEC
	SCANS/BAND	1
	NOTES	TESTED WITH RADOME ANTENNA
	TEST DATE	10 Apr 2014 09:11:40 M. LONGINOTTI
	ANT. POLARIZ.	HORIZONTAL



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UNIV RCU EMI RUN 26

MKA1 04/24/13



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UNIV RCU EMI RUN 17

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFNARE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2442MHz (Ch. 7), 54Mbps, 802.11g
SCANS/BAND	: 1
NOTES	: TEST DATE : 26 Mar 2014 16:17:48 M. LONGINOTTI ANT. POLARIZ. : HORIZONTAL

120

105

90

75

60

45

30

15

0

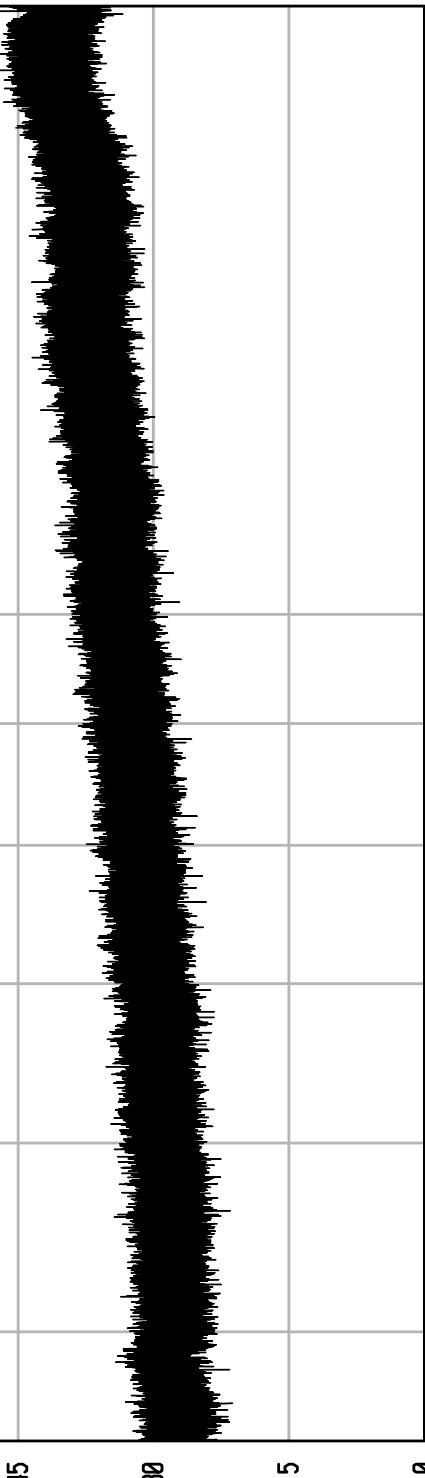
LEVEL dB<sub>RU</sub>/m

START = 4500

FREQUENCY MHz

10000

STOP = 18000



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UNIV RCU EMI RUN 17

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: SPY GEFNARE
	MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
	SERIAL No.	: NONE ASSIGNED
	MODE	: Tx @ 2442MHz (CH. 7), 802.11b, 54Mbps/SEC
	SCANS/BAND	: 1
	NOTES	: TESTED WITH RADOME ANTENNA
	TEST DATE	: 10 Apr 2014 11:42:40 M. LONGINOTTI
	ANT. POLARIZ.	: HORIZONTAL

120

105

90

75

60

45

30

15

0

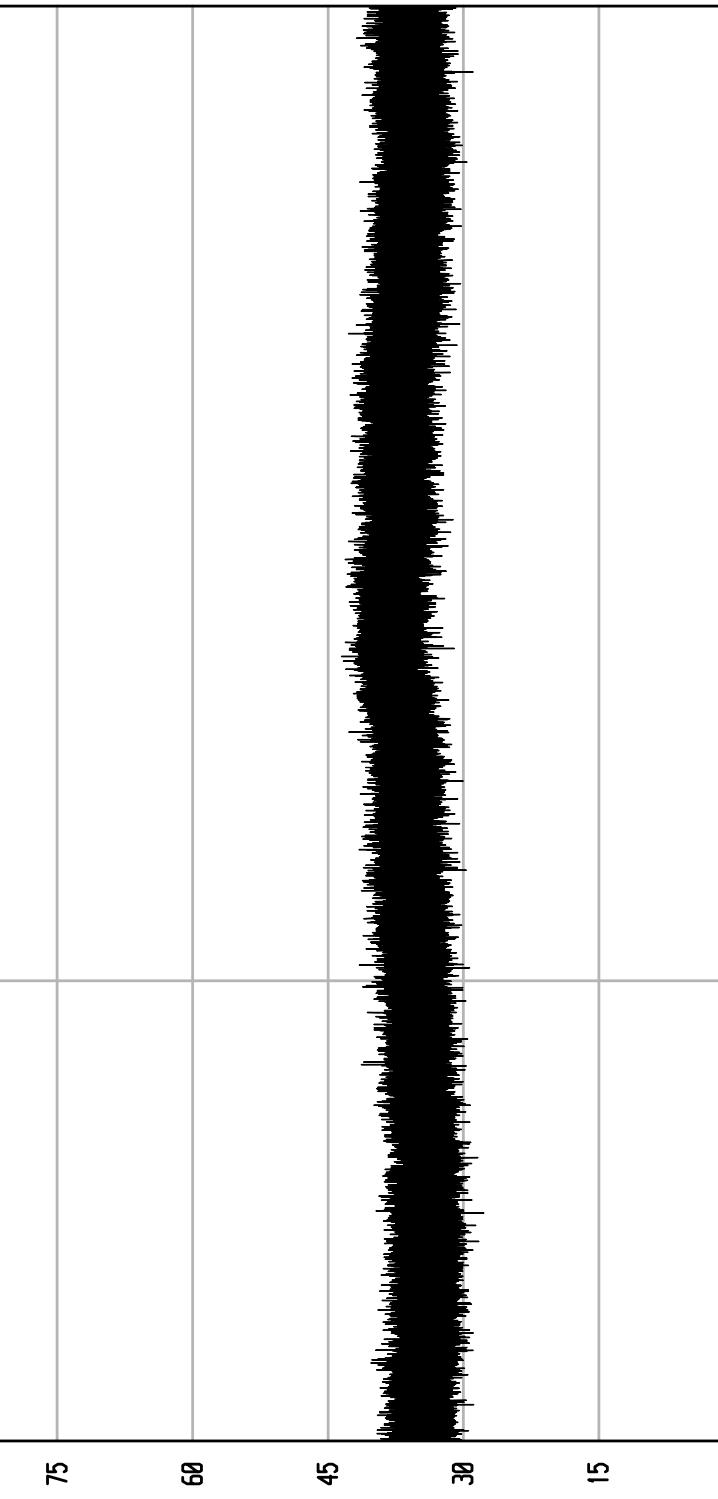
LEVEL dBUL/m

START = 180000

FREQUENCY MHz

STOP = 250000

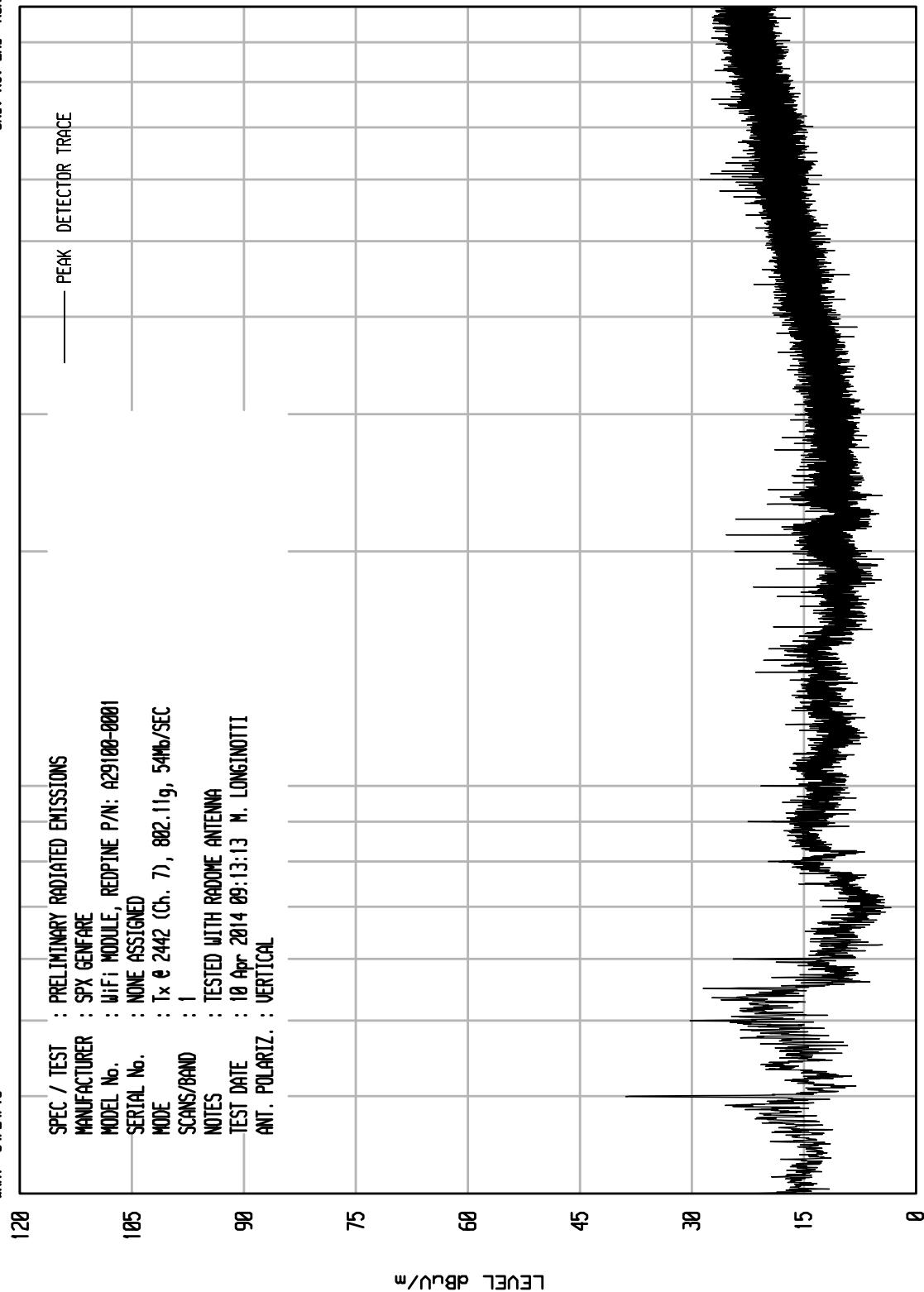
PEAK DETECTOR TRACE



ELITE ELECTRONIC ENGINEERING Inc.  
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UNIV RCU EMI RUN 46

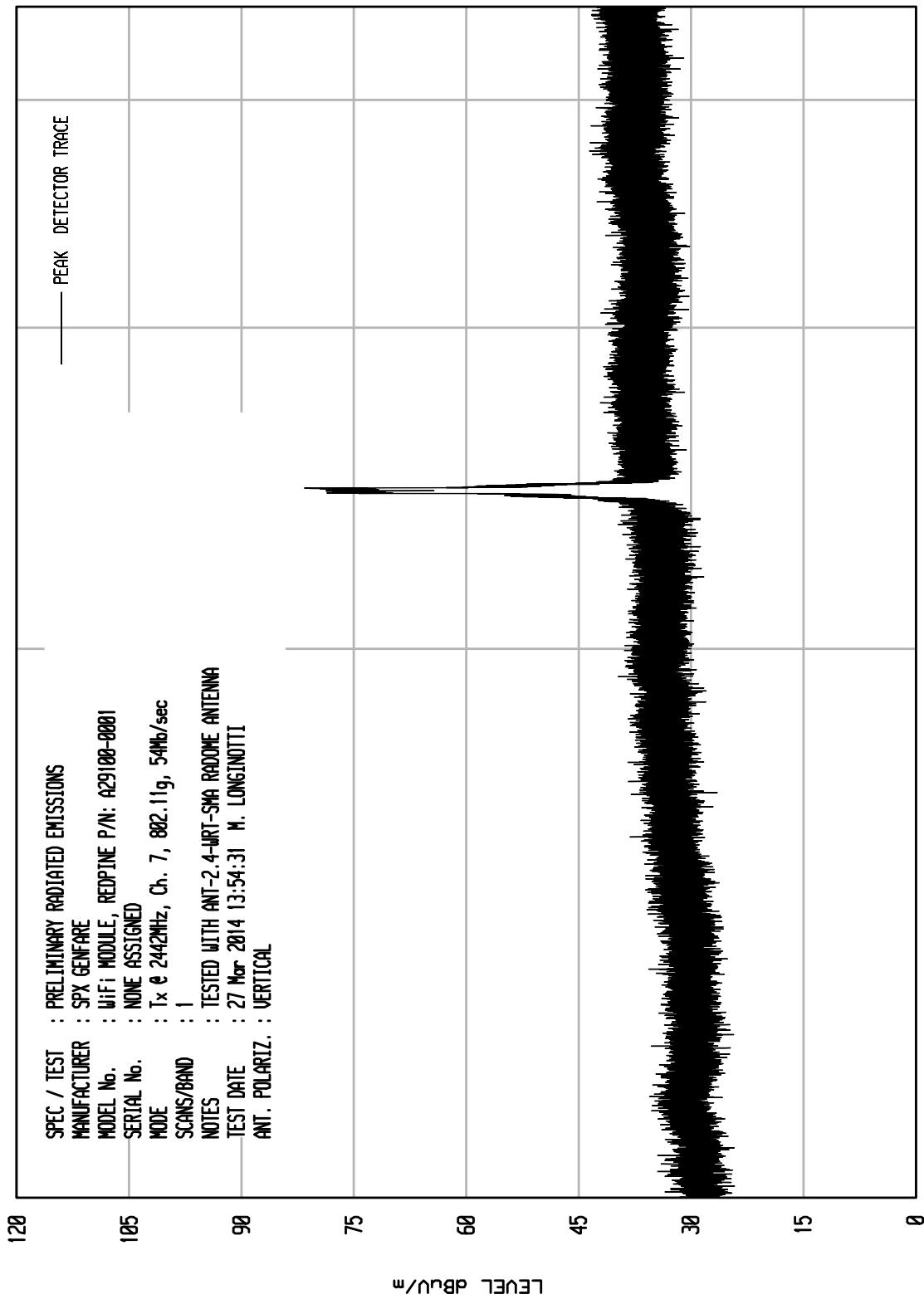
WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPI GENFARE		
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001		
SERIAL No.	NONE ASSIGNED		
MODE	Tx @ 2442 (Ch. 7), 802.11g, 54Mb/SEC		
SCANS/BAND	1		
NOTES	TESTED WITH RADOME ANTENNA		
TEST DATE	10 Apr 2014 09:13:13		M. LONGINOTTI
ANT. POLARIZ.	VERTICAL		



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UNIV RCU EMI RUN 27

MKA1 04/24/13



## ELITE ELECTRONIC ENGINEERING Inc.

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UNIV RCU EMI RUN 16

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFNARE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2442MHz (Ch. 7), 54Mb/SEC, 802.11g
SCANS/BAND	: 1
NOTES	: TEST DATE : 26 Mar 2014 16:13:34 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL

120

105

90

75

60

45

30

15

0

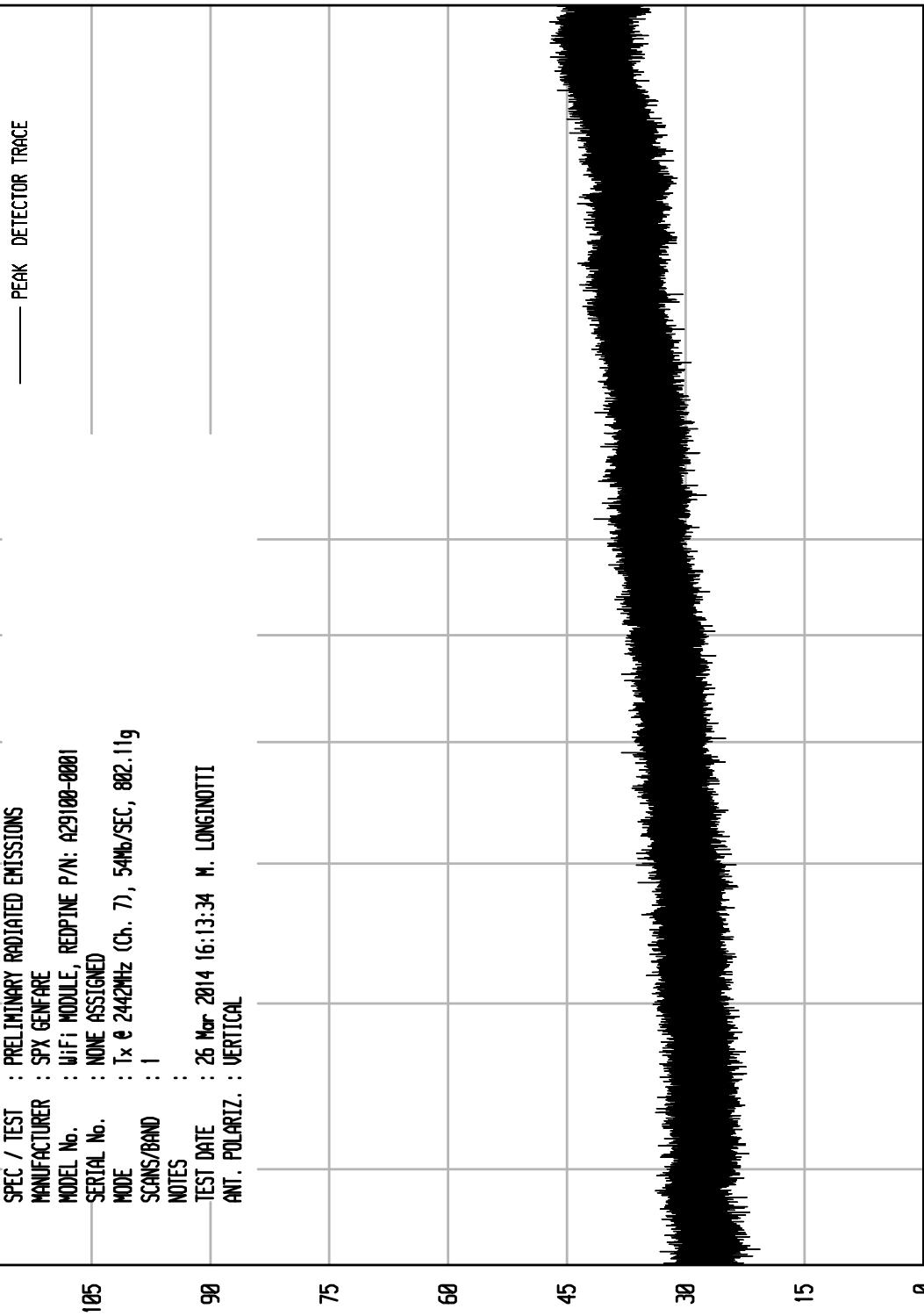
LEVEL dB<sub>RU</sub>/m

START = 4500

FREQUENCY MHz

10000

STOP = 18000



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UNIV RCU EMI RUN 18

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: SPY GEFARÉ
	MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
	SERIAL No.	: NONE ASSIGNED
	MODE	: Tx @ 2442MHz (CH. 7), 802.11b, 54Mbps/SEC
	SCANS/BAND	: 1
	NOTES	: TESTED WITH RADOME ANTENNA
	TEST DATE	: 10 Apr 2014 11:44:54 M. LONGINOTTI
	ANT. POLARIZ.	: VERTICAL

120

105

90

75

60

45

30

15

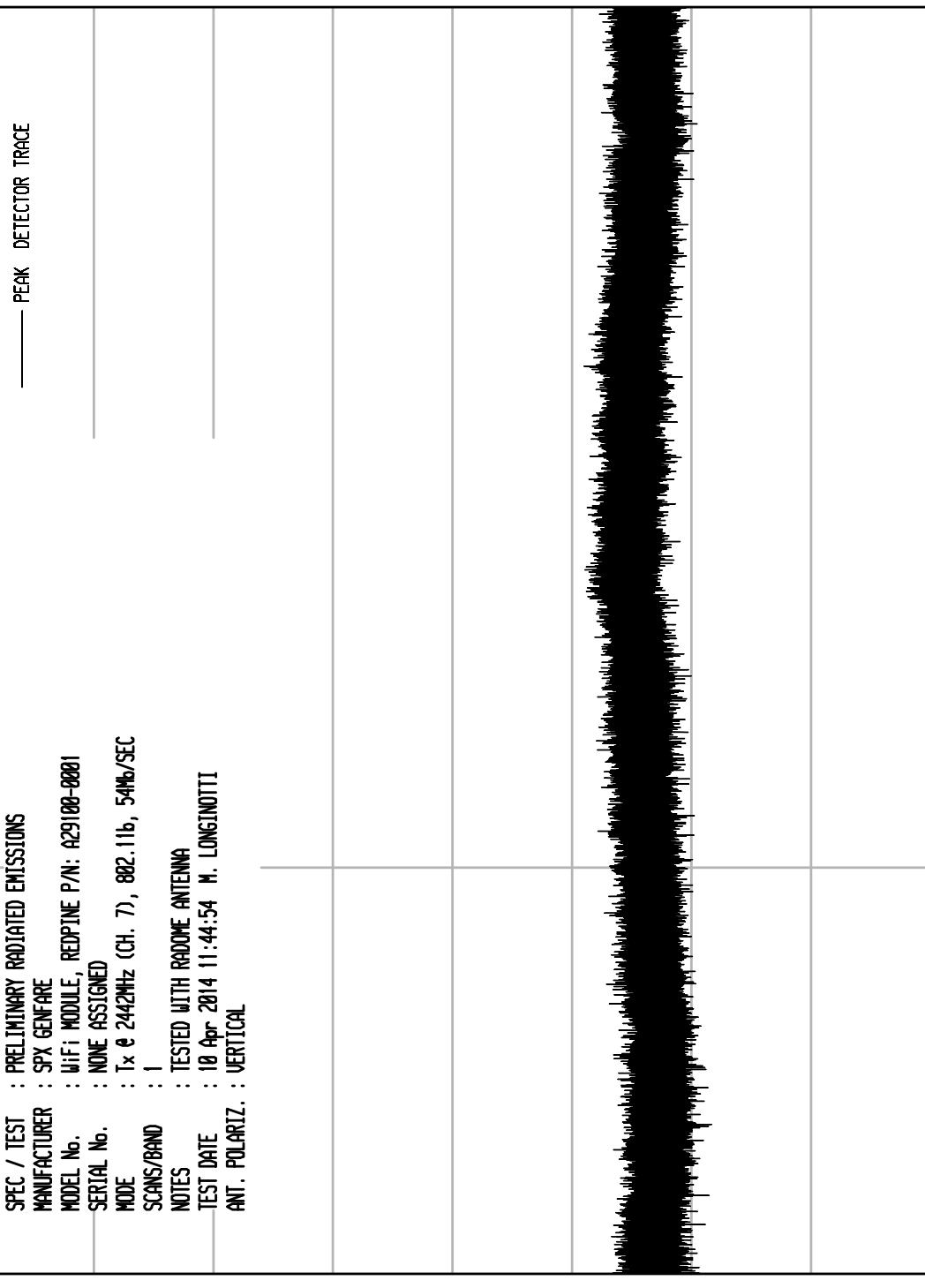
0

LEVEL dBUL/m

START = 180000

FREQUENCY MHz

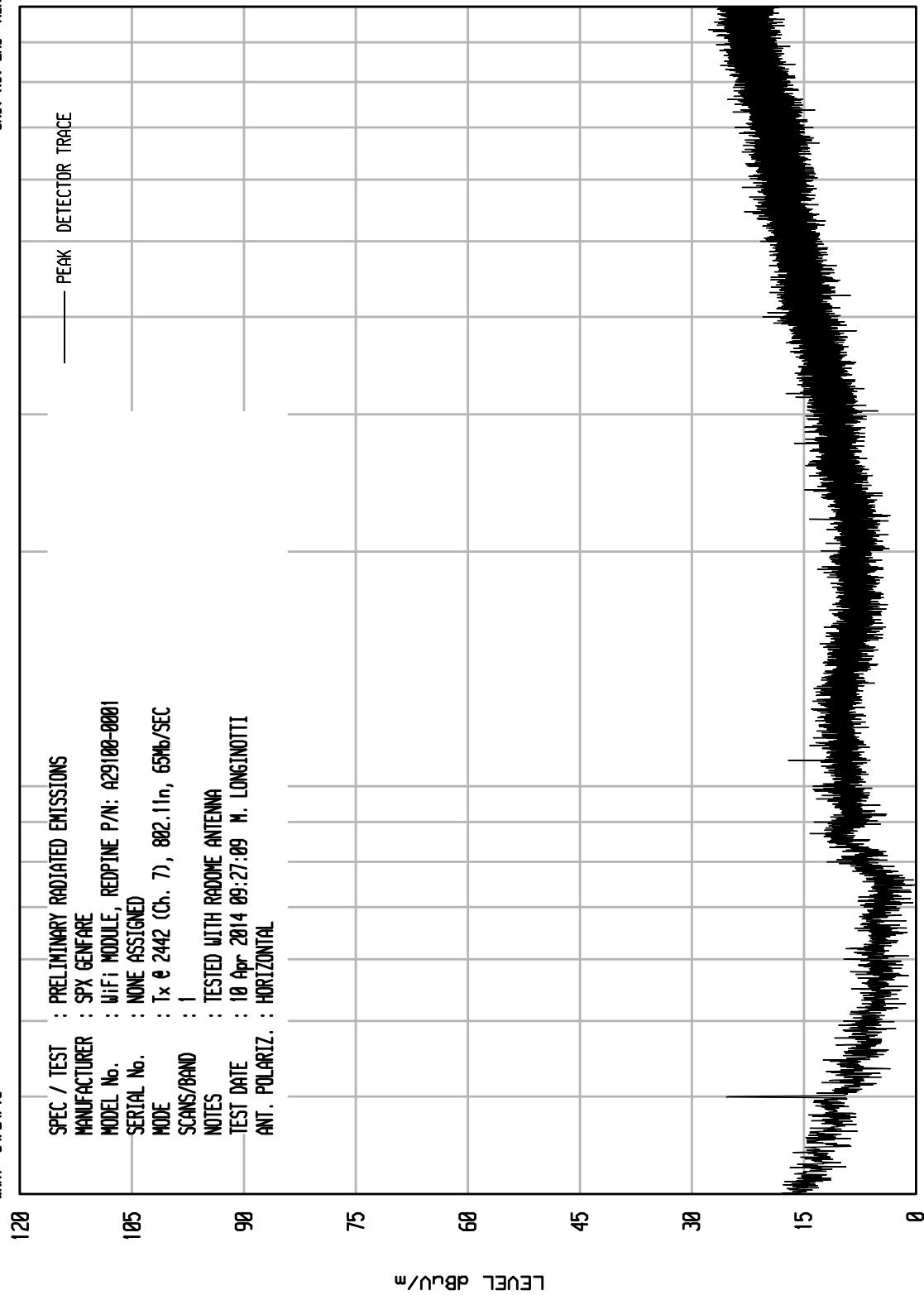
STOP = 250000



ELITE ELECTRONIC ENGINEERING Inc.  
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UNIV RCU EMI RUN 54

WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPI GENFARE		
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001		
SERIAL No.	NONE ASSIGNED		
MODE	Tx @ 2442 (Ch. 7), 802.11n, 65Mb/SEC		
SCANS/BAND	1		
NOTES	TESTED WITH RADOME ANTENNA		
TEST DATE	10 Apr 2014 09:27:09		
ANT. POLARIZ.	HORIZONTAL		



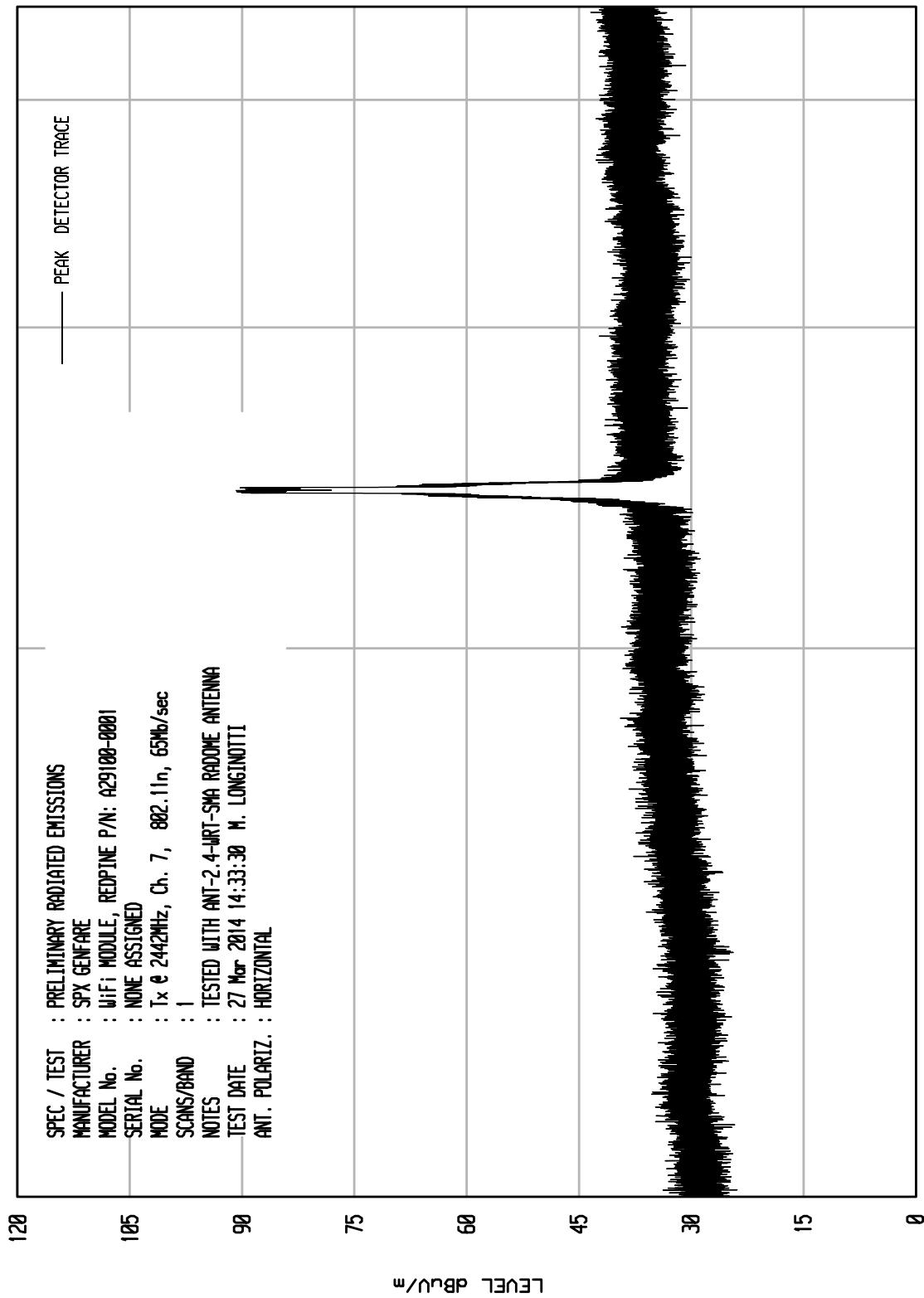
START = 30

STOP = 1000

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UNIV RCU EMI RUN 33

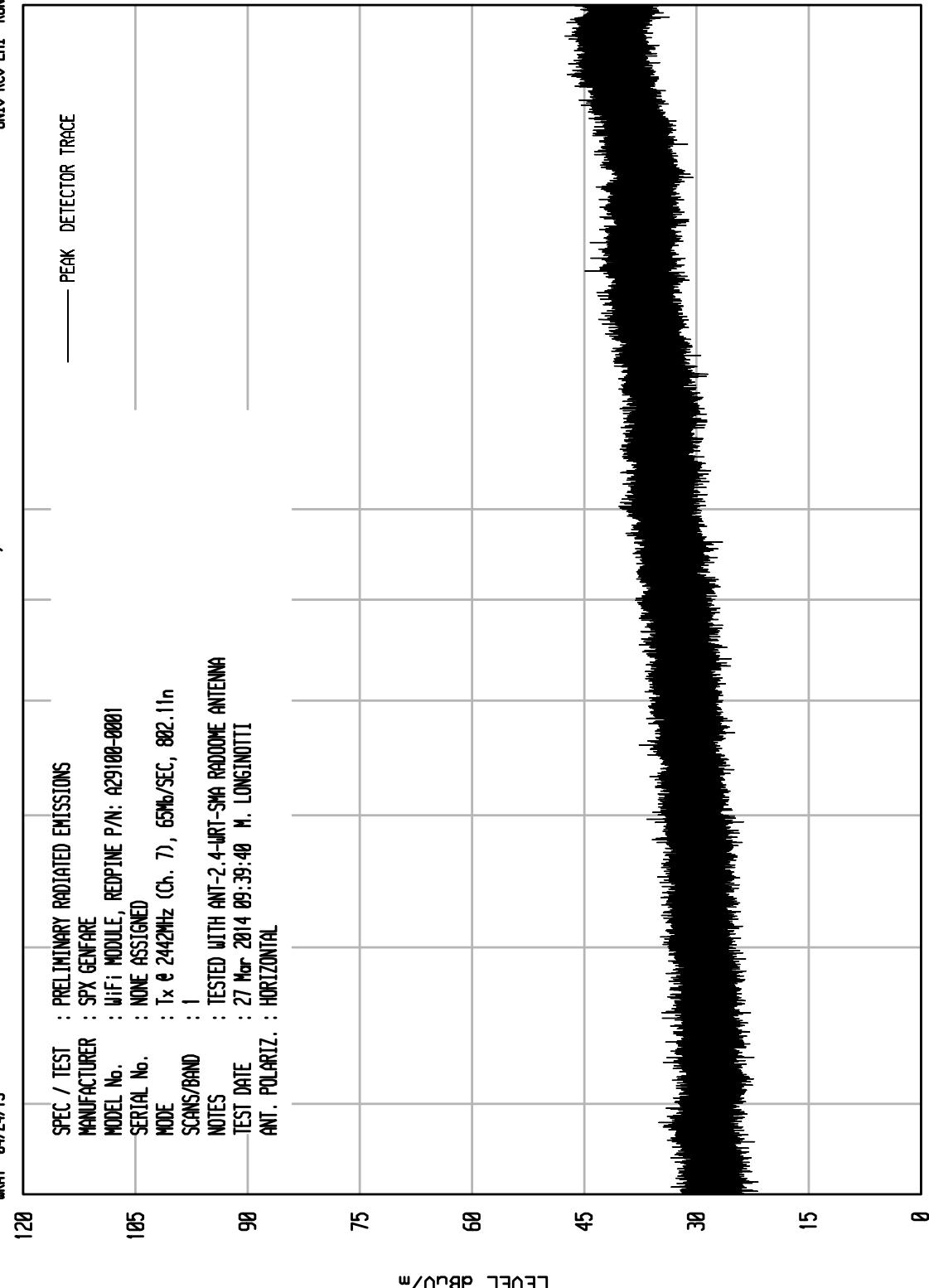
MKA1 04/24/13



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UNIV RCU EMI RUN 22

WKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARÉ	PEAK	DETECTOR TRACE
MODEL No.	: WiFi MODULE, REDPINE P/N: A291008-0001		
SERIAL No.	: NONE ASSIGNED		
MODE	: Tx @ 2442MHz (Ch. 7), 65mb/sec, 802.11n		
SCANS/BAND	: 1		
NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA		
TEST DATE	: 27 Mar 2014 09:39:40	M. LONGINOTTI	
ANT. POLARIZ.	: HORIZONTAL		



START = 4500

STOP = 10000

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UNIV RCU EMI RUN 23

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARAE	
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001	
SERIAL No.	: NONE ASSIGNED	
MODE	: Tx @ 2442MHz (CH. 7), 802.11b, 65Mbps/SEC	
SCANS/BAND	: 1	
NOTES	: TESTED WITH RADOME ANTENNA	
TEST DATE	: 10 Apr 2014 13:08:55	M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL	

120

105

90

75

60

45

30

15

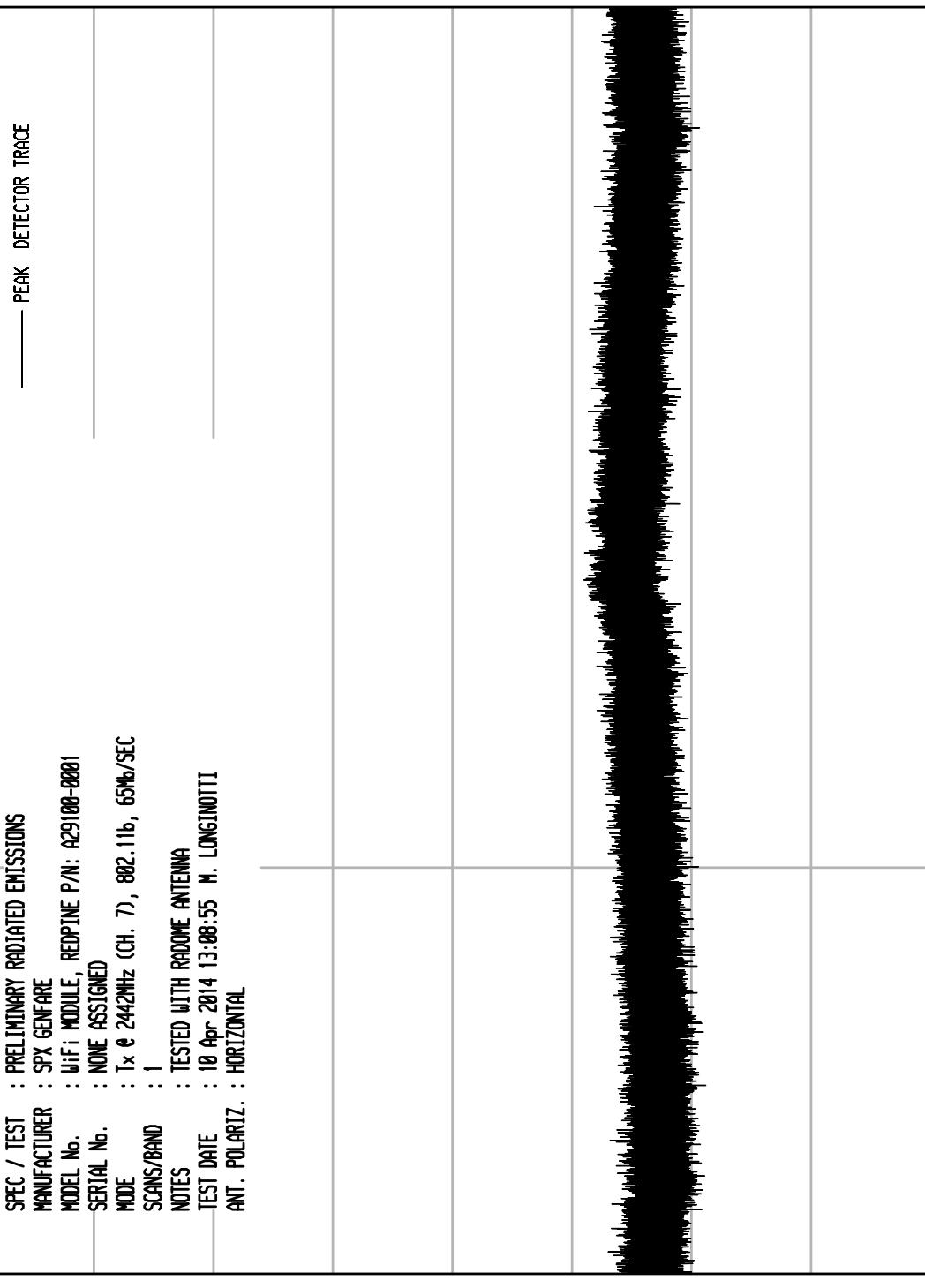
0

LEVEL dBUL/m

START = 180000

FREQUENCY MHz

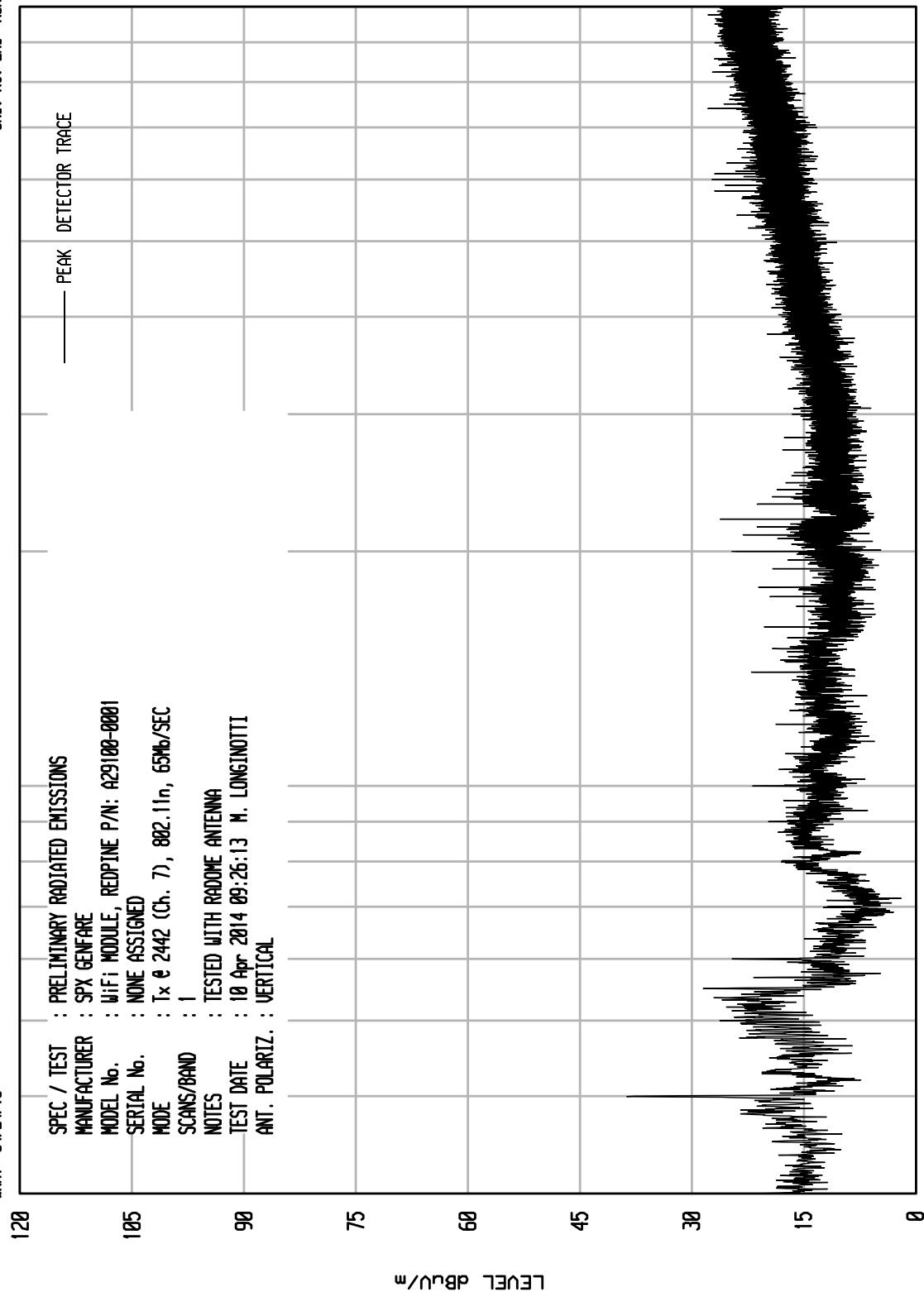
STOP = 250000



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UNIV RCU EMI RUN 53

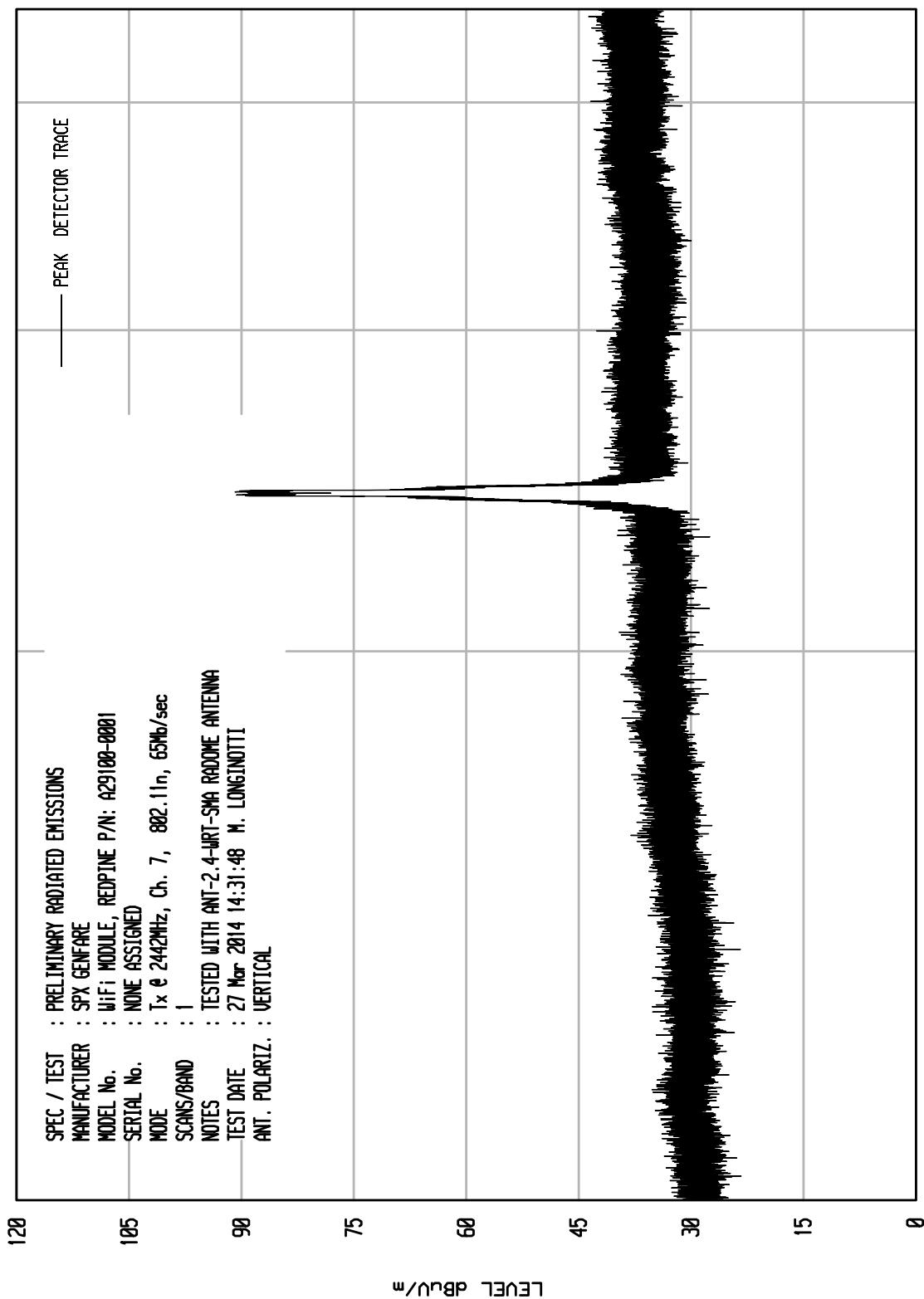
WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPI GENFARE		
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001		
SERIAL No.	NONE ASSIGNED		
MODE	Tx @ 2442 (Ch. 7), 802.11n, 65Mb/SEC		
SCANS/BAND	1		
NOTES	TESTED WITH RADOME ANTENNA		
TEST DATE	10 Apr 2014 09:26:13		
ANT. POLARIZ.	VERTICAL		



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UNIV RCU EMI RUN 32

MKA1 04/24/13



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UNIV RCU EMI RUN 23

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARAE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29108-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2442MHz (Ch. 7), 65mb/sec, 802.11n
SCANS/BAND	: 1
NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA
TEST DATE	: 27 Mar 2014 09:43:57 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL

105

90

105

90

LEVEL dBuU/m

75

60

45

30

15

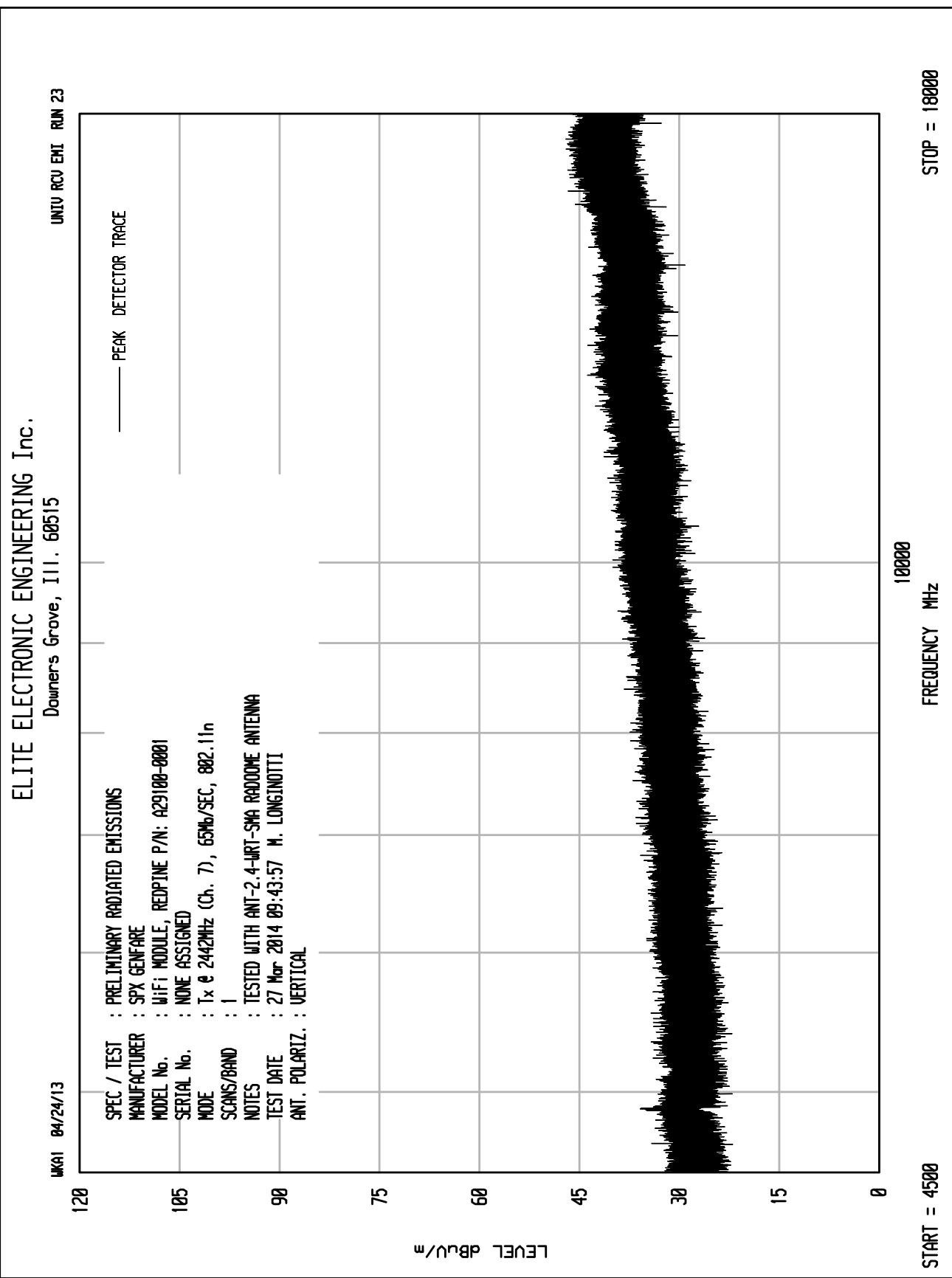
0

START = 4500

FREQUENCY MHz

10000

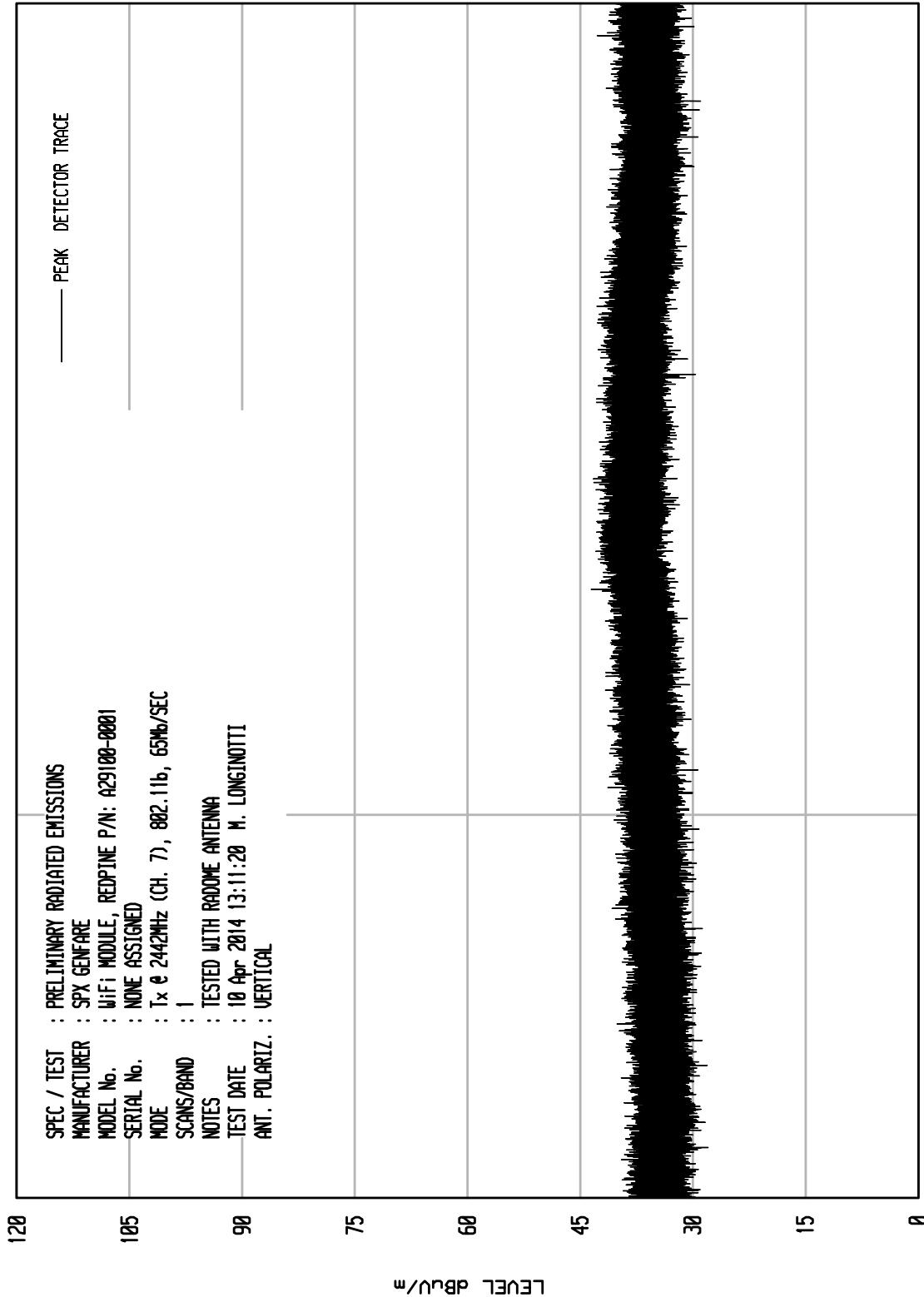
STOP = 18000



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UNIV RCU EMI RUN 24

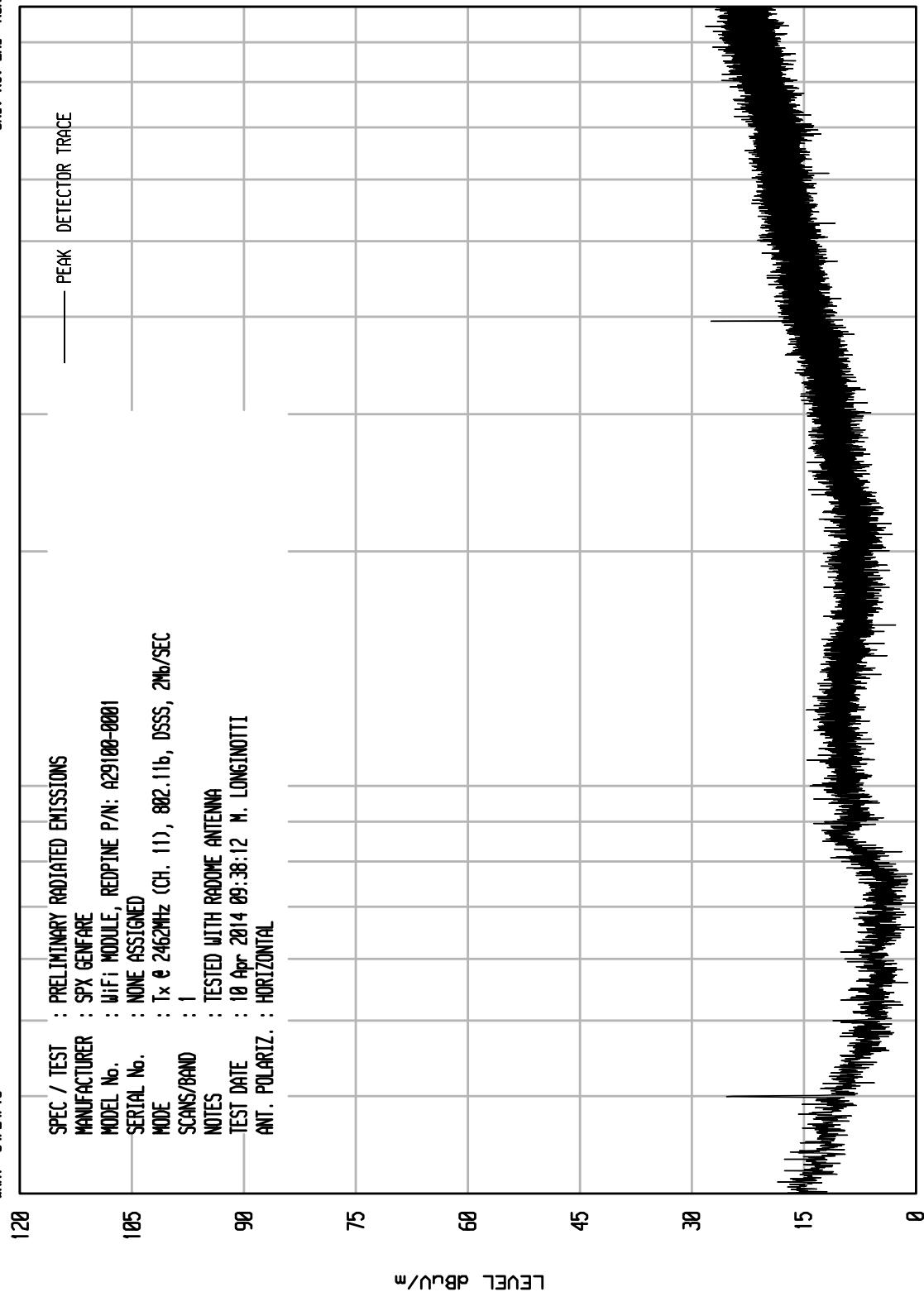
MKA1 04/24/13



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UNIV RCU EMI RUN 63

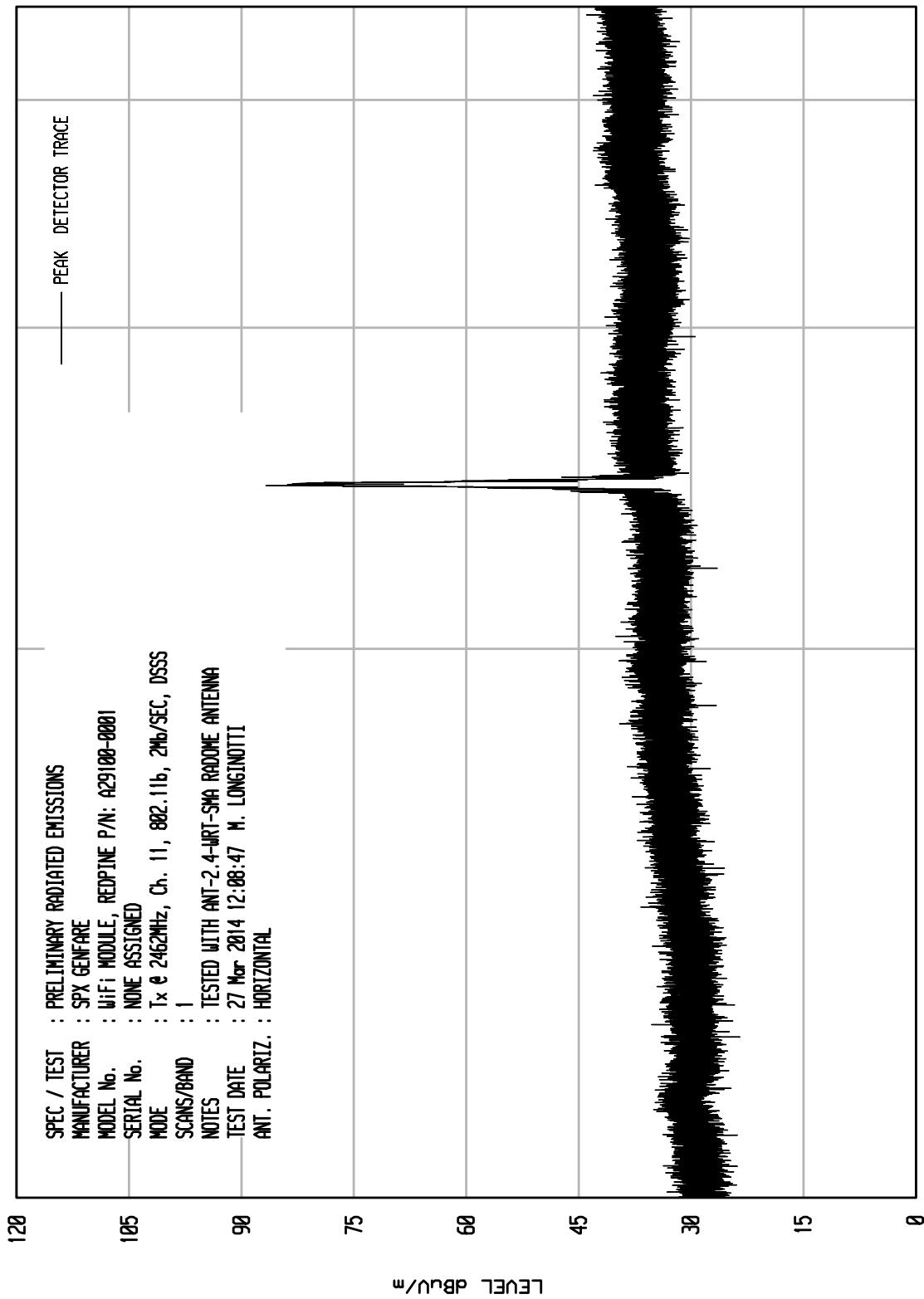
WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPI GENFARE		
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001		
SERIAL No.	NONE ASSIGNED		
MODE	Tx @ 2462MHz (CH. 11), 802.11b, DSSS, 2Mb/SEC		
SCANS/BAND	1		
NOTES	TESTED WITH RADOME ANTENNA		
TEST DATE	10 Apr 2014 09:38:12 M. LONGINOTTI		
ANT. POLARIZ.	HORIZONTAL		



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UNIV RCU EMI RUN 16

MKA1 04/24/13



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UNIV RCU EMI RUN 27

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARÉ
MODEL No.	: WiFi MODULE, REDPINE P/N: A29108-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2462MHz (Ch. 11), 2Mb/SEC, DSSS
SCANS/BAND	: 1
NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA
TEST DATE	: 27 Mar 2014 15:06:16 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL

105

90

75

60

45

30

15

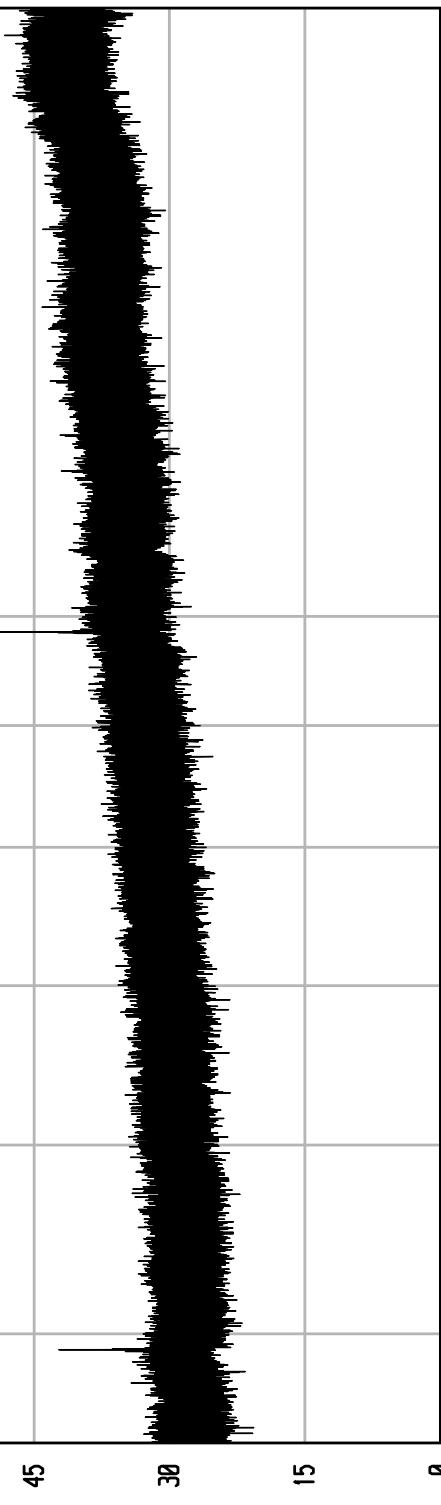
0

LEVEL dBuU/m

START = 4500

 FREQUENCY MHz  
 10000

STOP = 18000



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UNIV RCU EMI RUN 5

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: SPY GEFNARE
	MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
	SERIAL No.	: NONE ASSIGNED
	MODE	: Tx @ 2462MHz (CH. 11), 802.11b, DSSS, 2Mbps
	SCANS/BAND	: 1
	NOTES	: TESTED WITH RADOME ANTENNA
	TEST DATE	: 10 Apr 2014 10:51:36 M. LONGINOTTI
	ANT. POLARIZ.	: HORIZONTAL

120

105

90

75

60

45

30

15

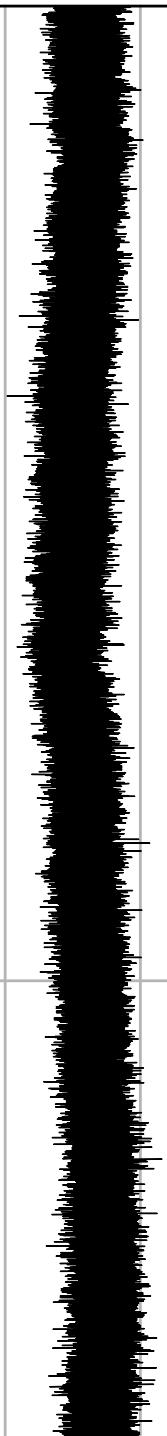
0

LEVEL dBuU/m

START = 180000

FREQUENCY MHz

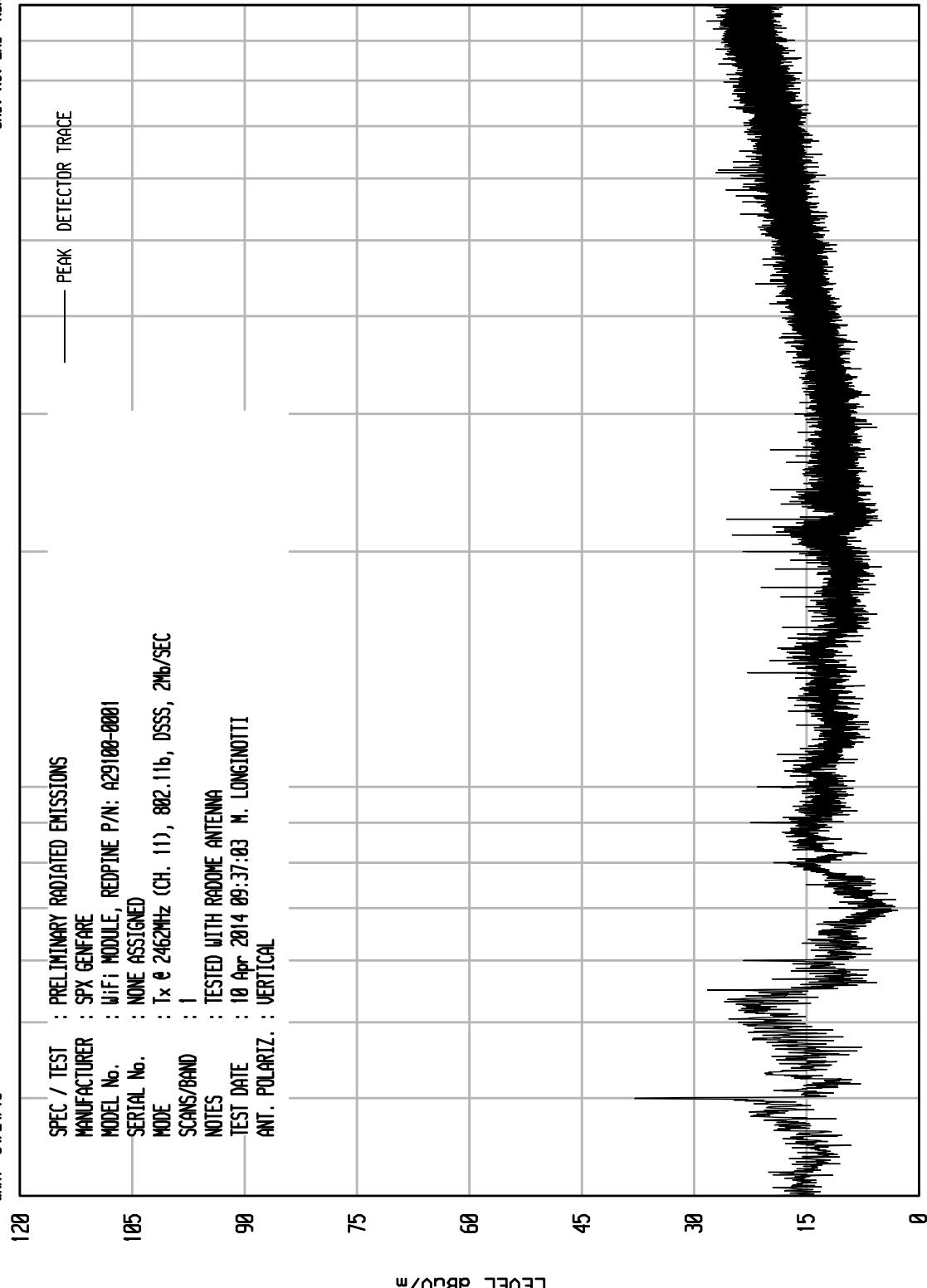
STOP = 250000



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UNIV RCU EMI RUN 62

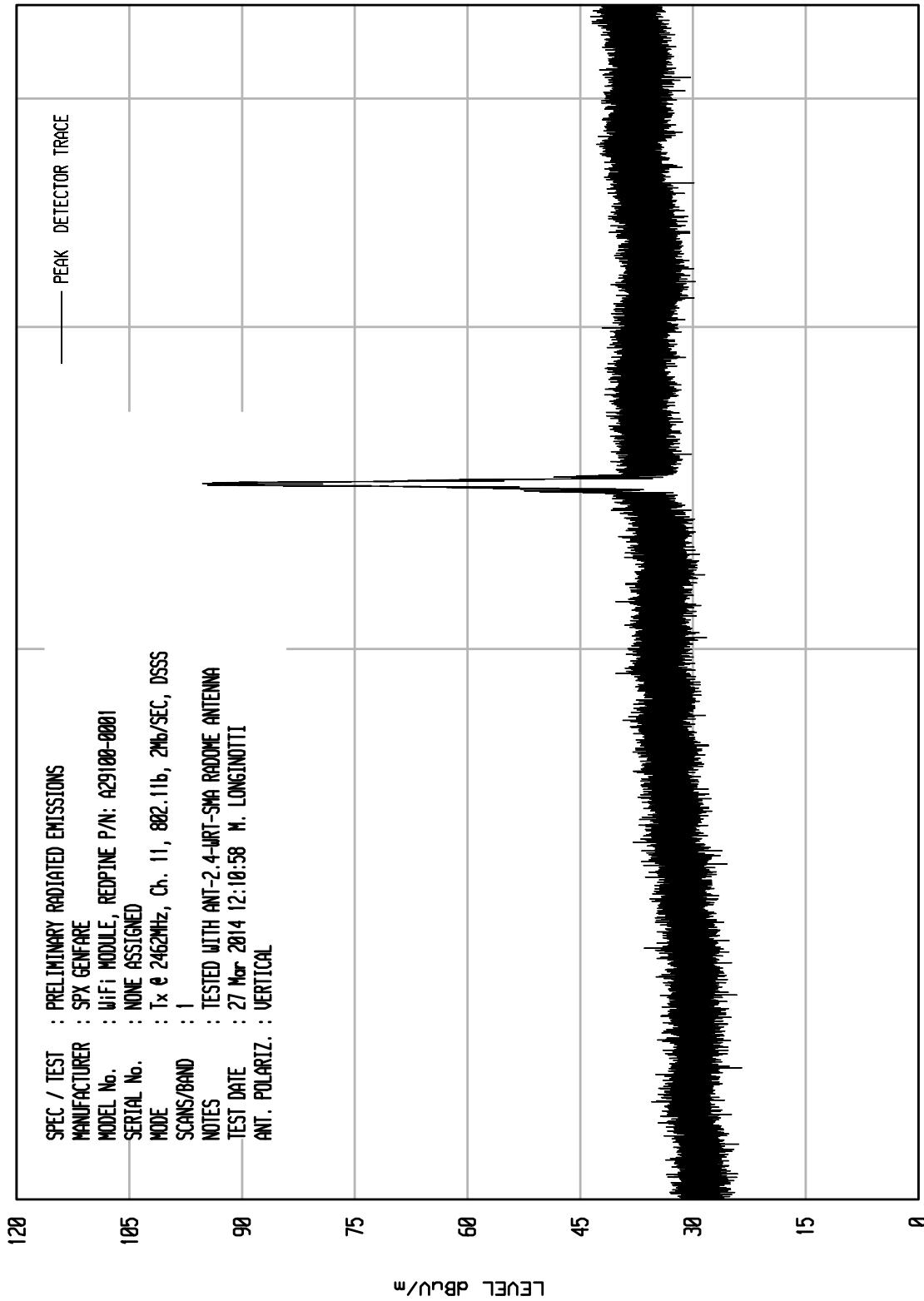
WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPI GENFARE	MODULE	REDPINE P/N: A29100-0001
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001	NONE ASSIGNED	
SERIAL No.			
MODE	Tx @ 2462MHz (CH. 11), 802.11b, DSSS, 2Mb/SEC		
SCANS/BAND	1		
NOTES	TESTED WITH RADOME ANTENNA		
TEST DATE	10 Apr 2014 09:37:03	M.	LONGINOTTI
ANT. POLARIZ.	VERTICAL		



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UNIV RCU EMI RUN 17

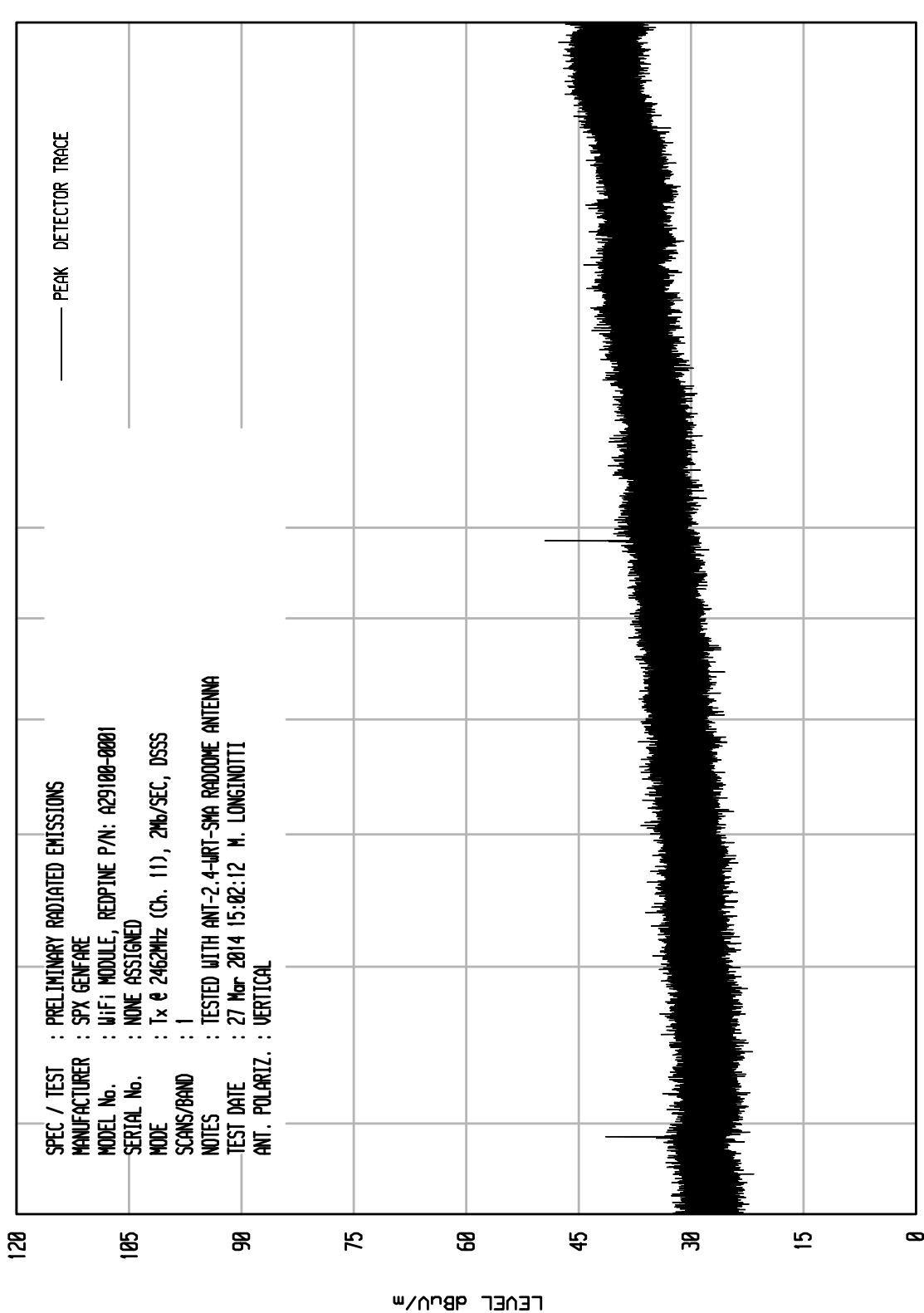
MKA1 04/24/13



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MKA1 04/24/13 UNIV RCU EMI RUN 26

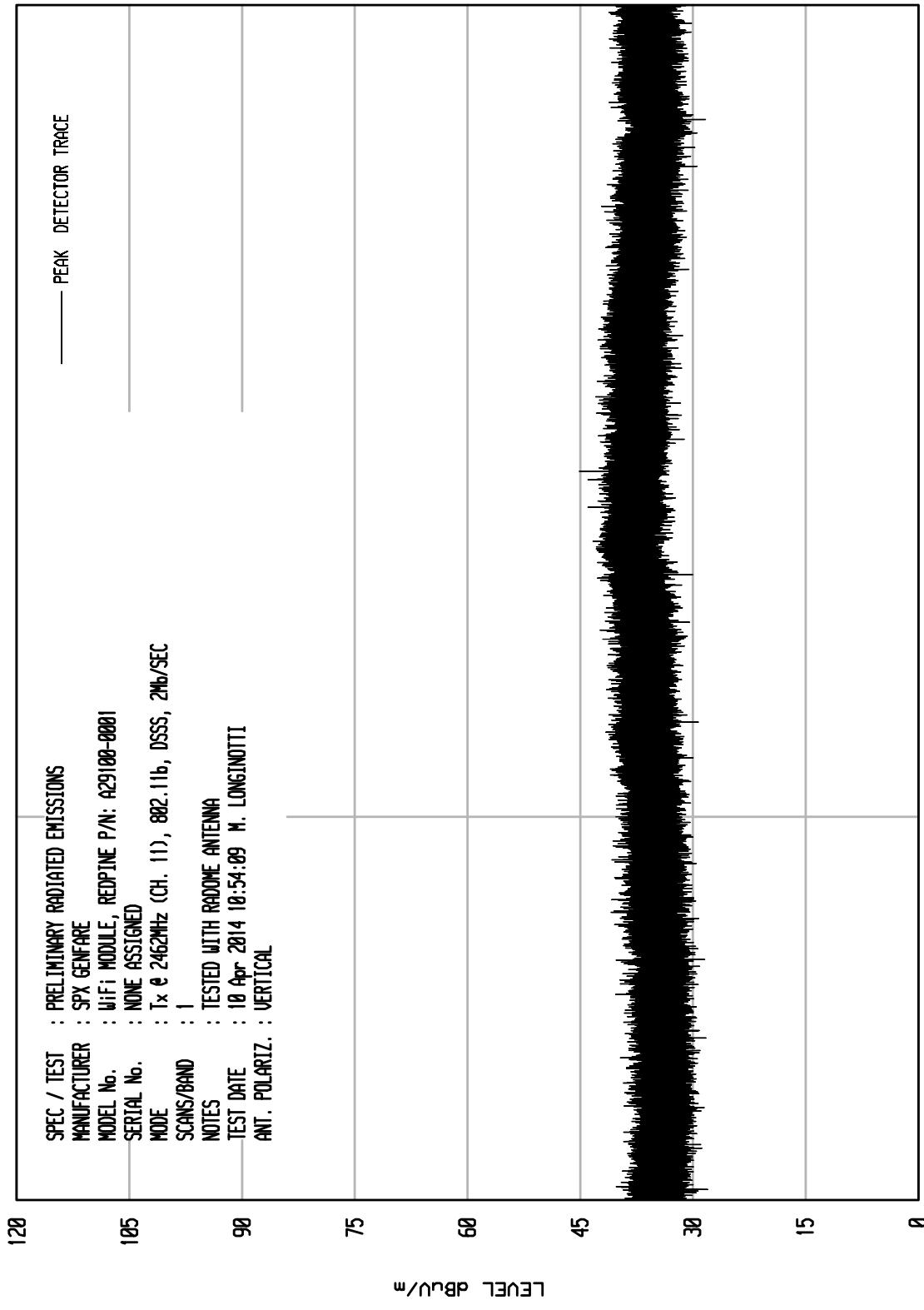
SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARÉ
MODEL No.	: WiFi MODULE, REDPINE P/N: A29108-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2462MHz (Ch. 11), 2Mb/SEC, DSSS
SCANS/BAND	: 1
NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA
TEST DATE	: 27 Mar 2014 15:02:12 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL


 START = 45000  
 FREQUENCY MHz  
 STOP = 18000

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UNIV RCU EMI RUN 6

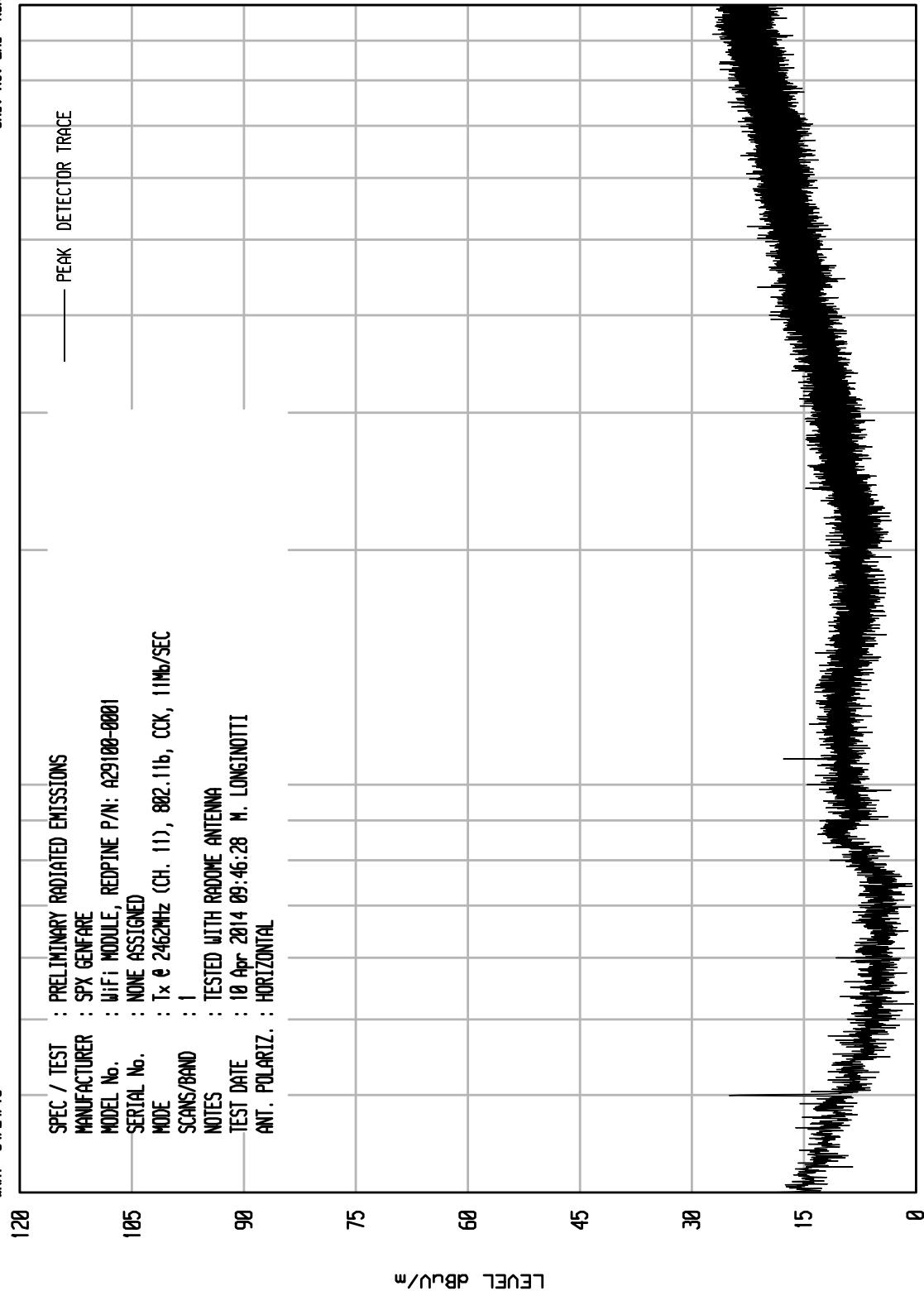
MKA1 04/24/13



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UNIV RCU EMI RUN 68

WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPI GENFARE		
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001		
SERIAL No.	NONE ASSIGNED		
MODE	Tx @ 2462MHz (CH. 11), 802.11b, CCK, 11Mb/SEC		
SCANS/BAND	1		
NOTES	TESTED WITH RADOME ANTENNA		
TEST DATE	10 Apr 2014 09:46:28	M. LONGINOTTI	
ANT. POLARIZ.	HORIZONTAL		



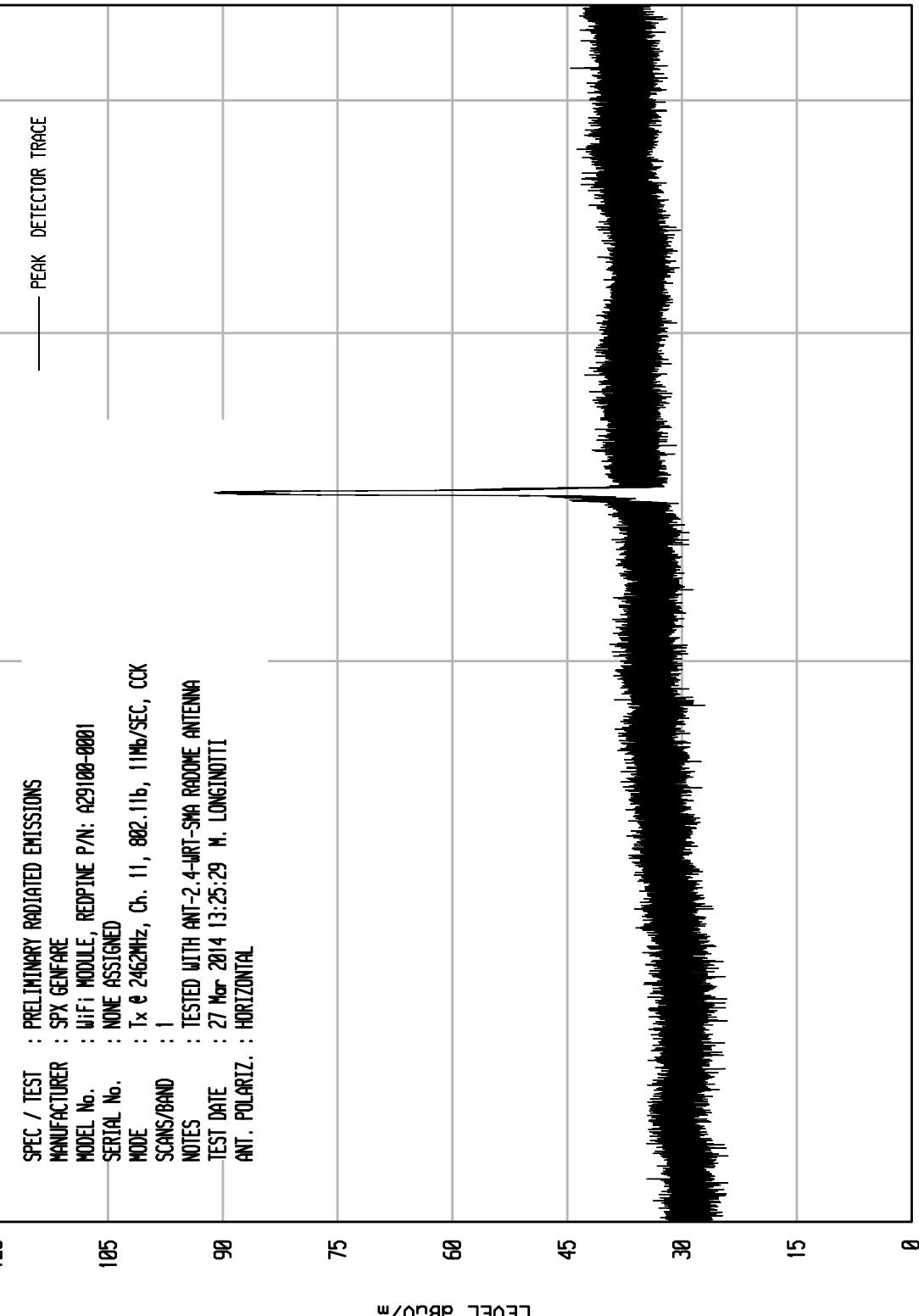
ELITE ELECTRONIC ENGINEERING Inc.  
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MKA1 04/24/13

120

UNIV RCU EMI RUN 22

SPEC / TEST		PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEFNARE	
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001	
SERIAL No.	NONE ASSIGNED	
MODE	Tx @ 2462MHz, Ch. 11, 802.11b, 11Mbps, CCK	
SCANS/BAND	1	
NOTES	TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA	
TEST DATE	27 Mar 2014 13:25:29	M. LONGINOTTI
ANT. POLARIZ.	HORIZONTAL	



START = 1000

STOP = 4500

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UNIV RCU EMI RUN 29

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARÉ
MODEL No.	: WiFi MODULE, REDPINE P/N: A29108-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2462MHz (Ch. 11), 11Mb/SEC, CCK
SCANS/BAND	: 1
NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA
TEST DATE	: 27 Mar 2014 15:48:36 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL

120

105

90

75

60

45

30

15

0

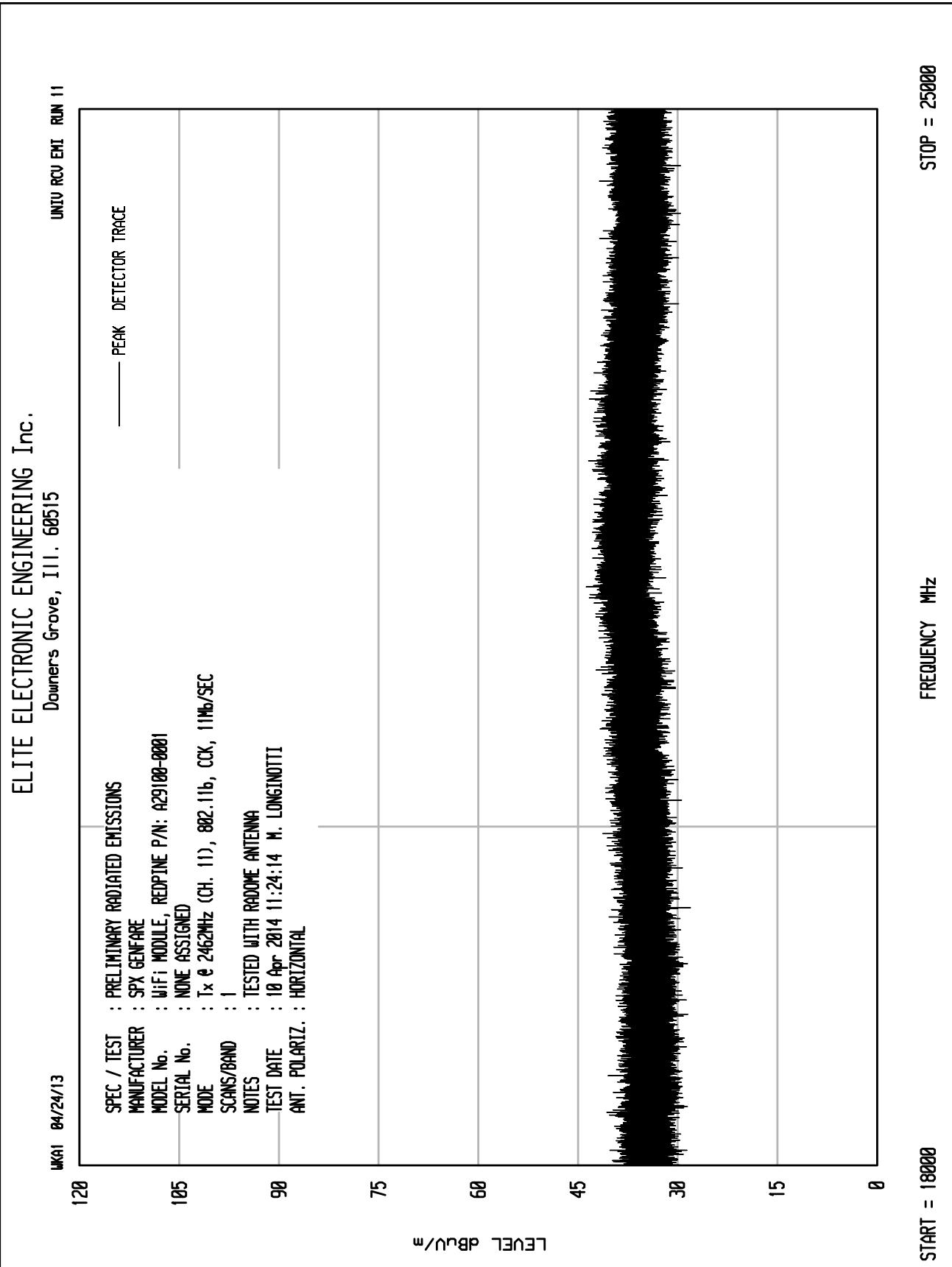
LEVEL dBuU/m

START = 4500

FREQUENCY MHz

10000

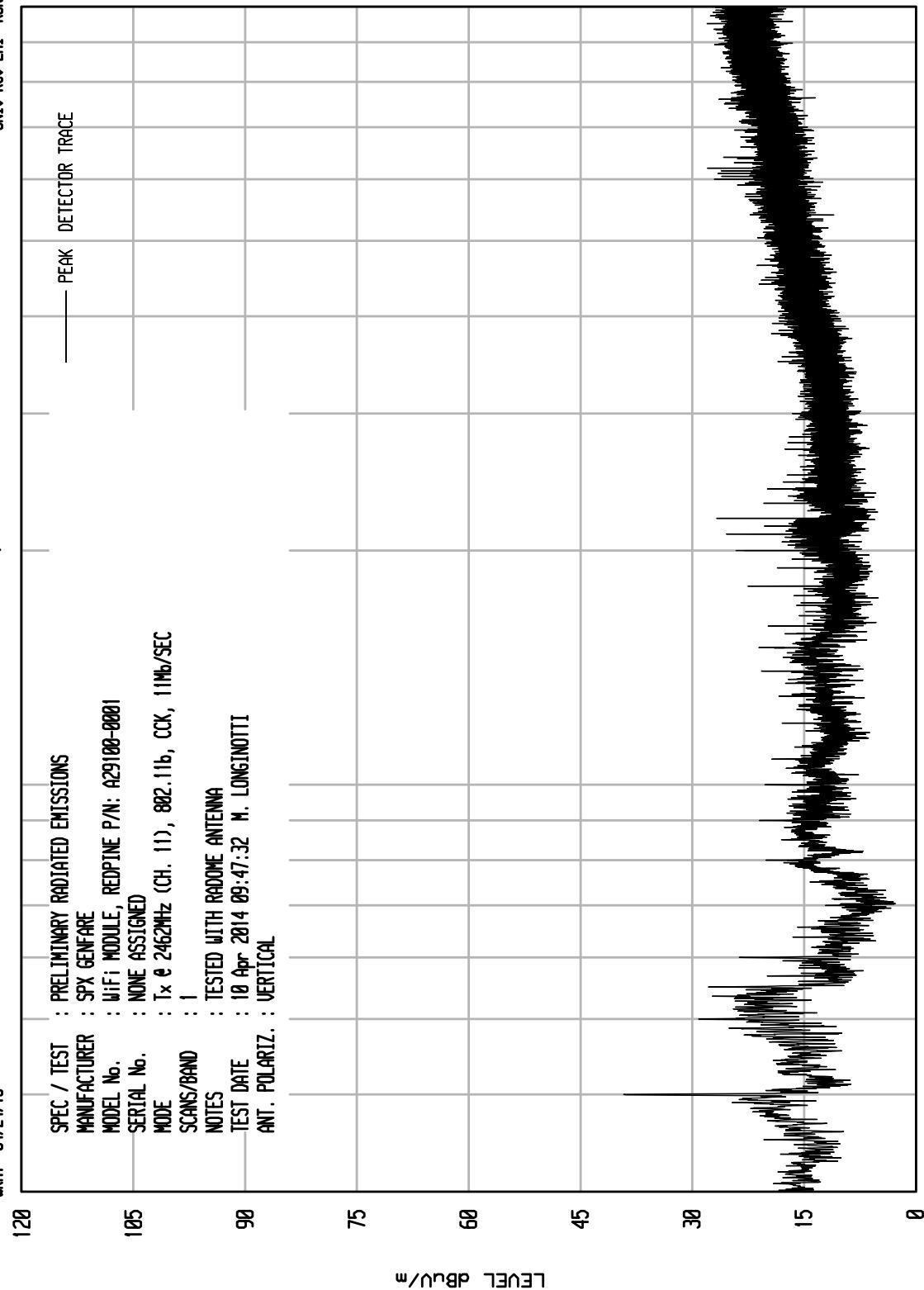
STOP = 18000



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UNIV RCU EMI RUN 69

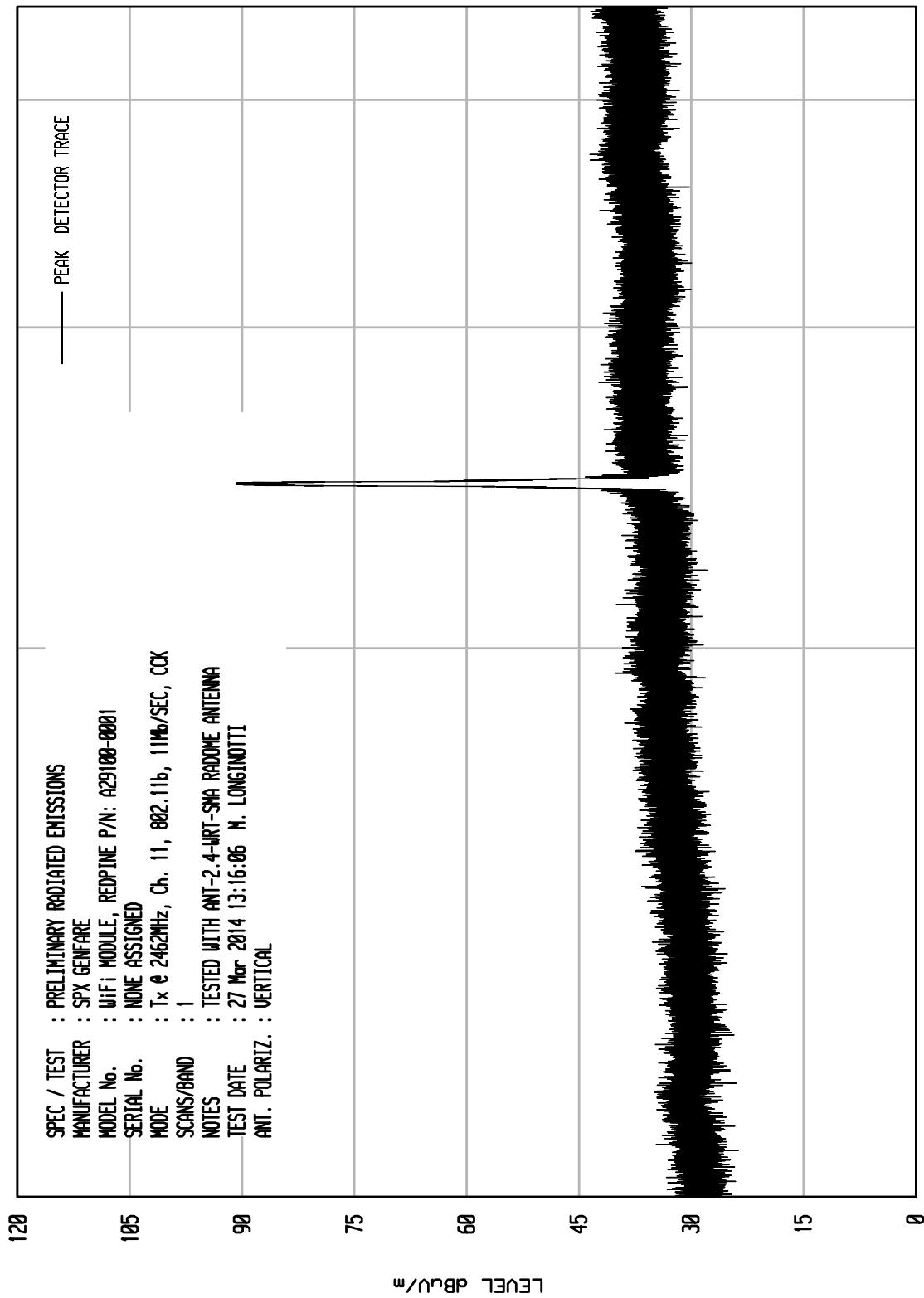
WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEMFAR		
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001		
SERIAL No.	NONE ASSIGNED		
MODE	Tx @ 2462MHz (CH. 11), 802.11b, CCK, 11Mb/SEC		
SCANS/BAND	1		
NOTES	TESTED WITH RADOME ANTENNA		
TEST DATE	10 Apr 2014 09:47:32		M. LONGINOTTI
ANT. POLARIZ.	VERTICAL		



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UNIV RCU EMI RUN 21

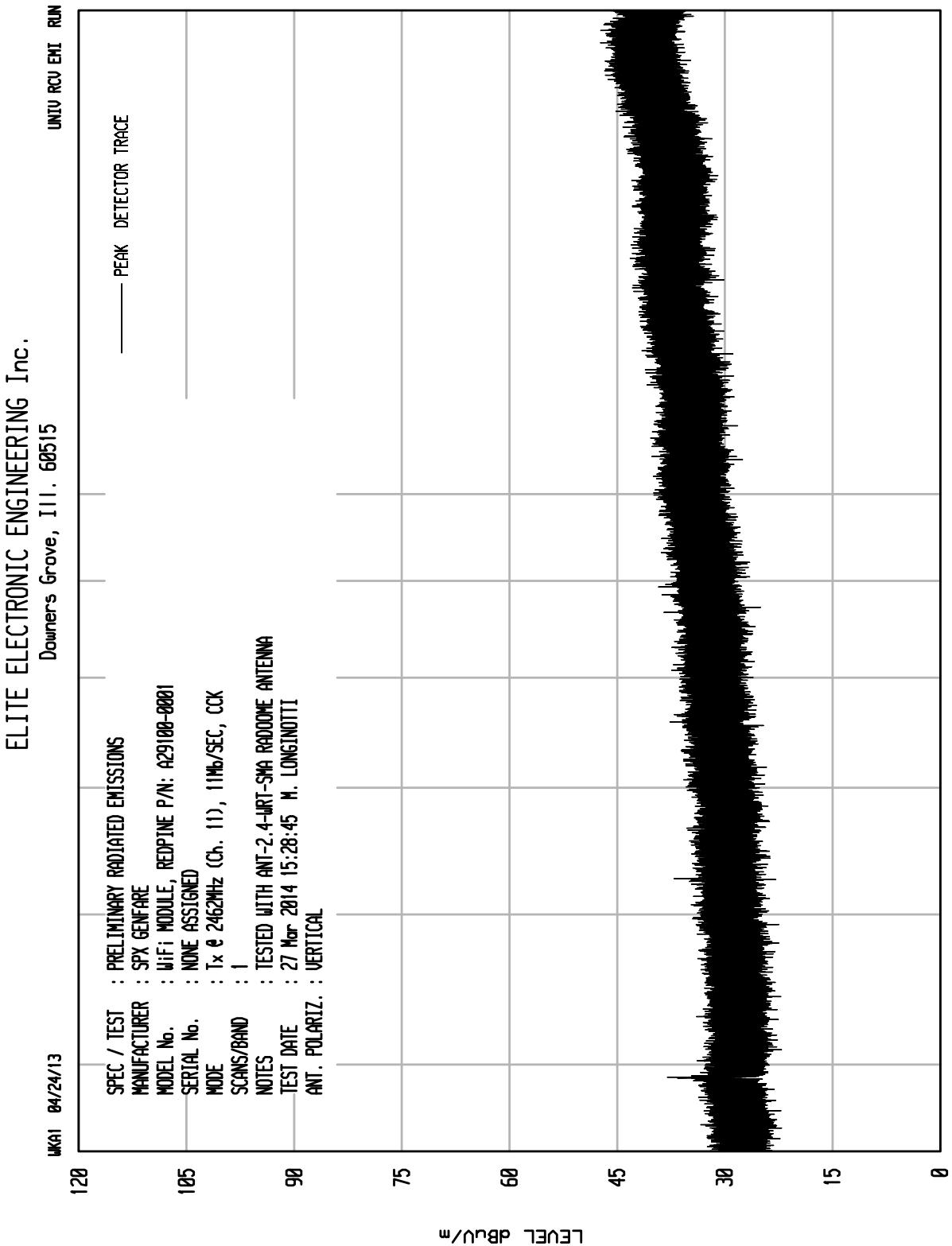
MKA1 04/24/13



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UNIV RCU EMI RUN 28

WKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
		MANUFACTURER	: SPY GEFARAE
		MODEL No.	: WiFi MODULE, REDPINE P/N: A29108-0001
		SERIAL No.	: NONE ASSIGNED
		MODE	: Tx @ 2462MHz (Ch. 11), 11mb/sec, CCK
		SCANS/BAND	: 1
		NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA
		TEST DATE	: 27 Mar 2014 15:28:45 M. LONGINOTTI
		ANT. POLARIZ.	: VERTICAL



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UNIV RCU EMI RUN 12

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARÉ	
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001	
SERIAL No.	: NONE ASSIGNED	
MODE	: Tx @ 2462MHz (CH. 11), 802.11b, CCK, 11Mbps/SEC	
SCANS/BAND	: 1	
NOTES	: TESTED WITH RADOME ANTENNA	
TEST DATE	: 10 Apr 2014 11:26:52	M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL	

120

105

90

75

60

45

30

15

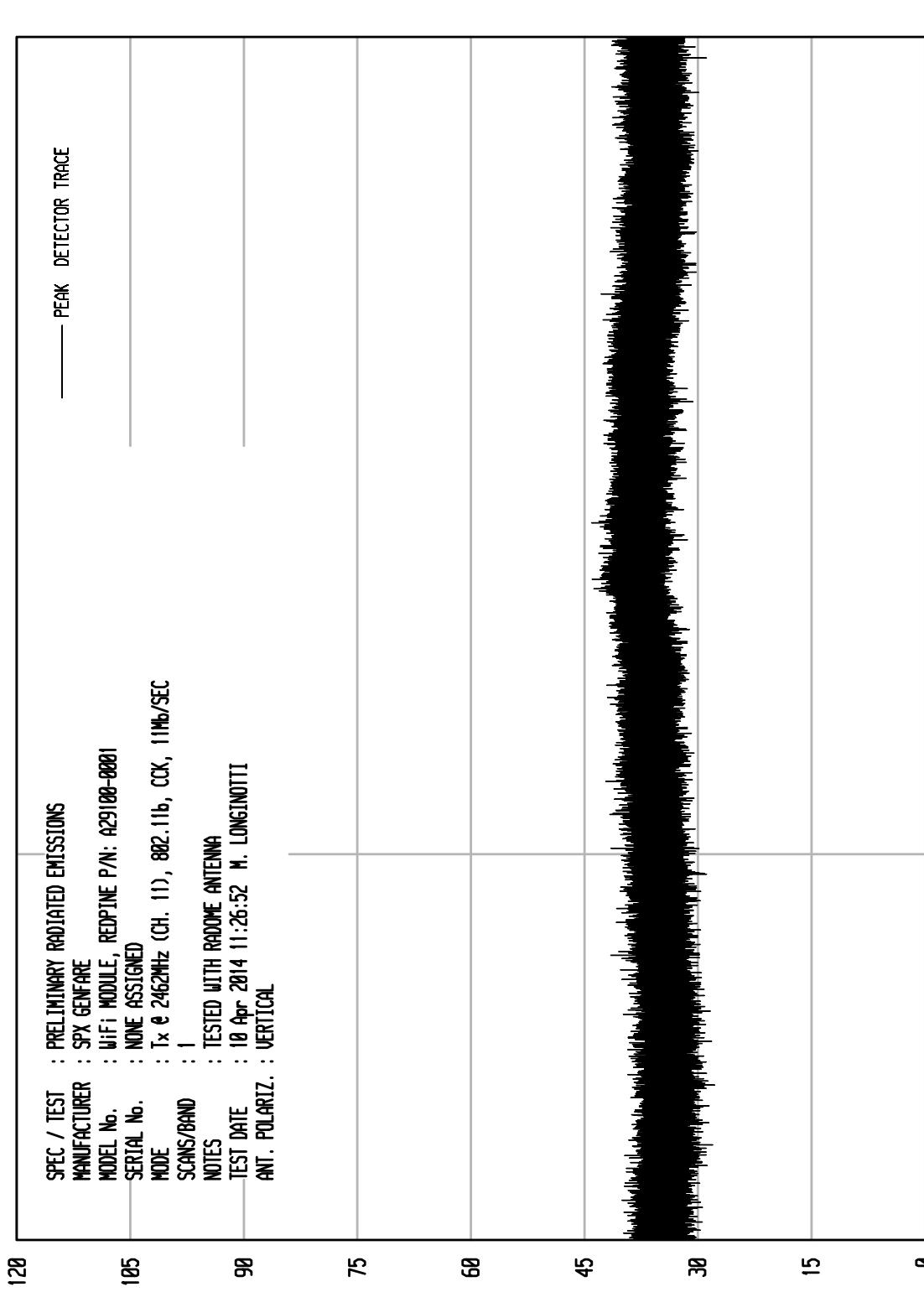
0

LEVEL dBUL/m

START = 180000

FREQUENCY MHz

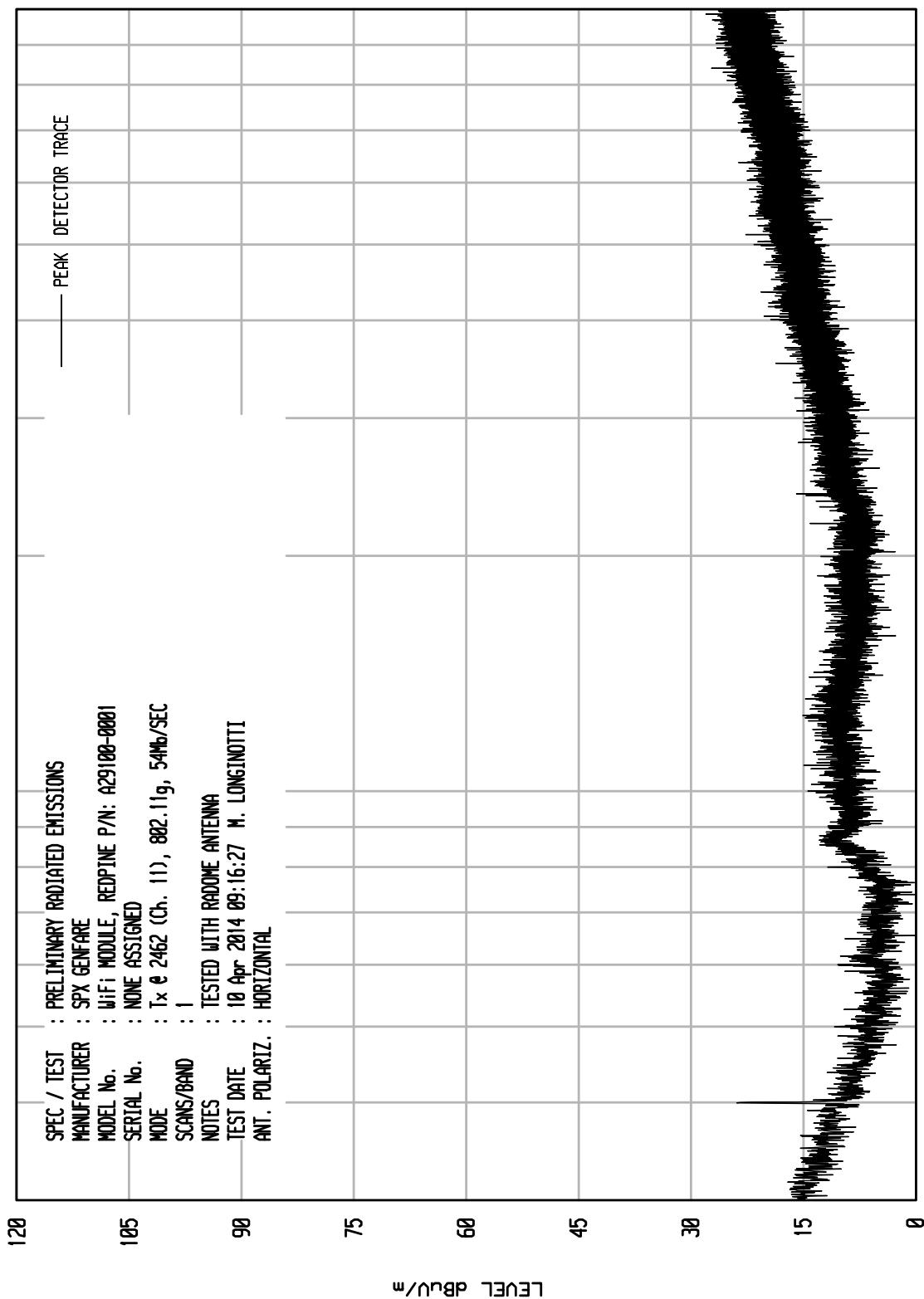
STOP = 250000



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MKEI 04/24/13 UNIV RCU EMI RUN 48

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEMFAR
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2462 (Ch. 11), 802.11g, 54Mbps
SCANS/BAND	: 1
NOTES	: TESTED WITH RADOME ANTENNA
TEST DATE	: 10 Apr 2014 09:16:27 N. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL



START = 30 STOP = 1000

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UNIV RCU EMI RUN 29

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFNARE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2462MHz, Ch. 11, 802.11g, 54Mb/sec
SCANS/BAND	: 1
NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA
TEST DATE	: 27 Mar 2014 14:00:37 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL

120

105

90

75

60

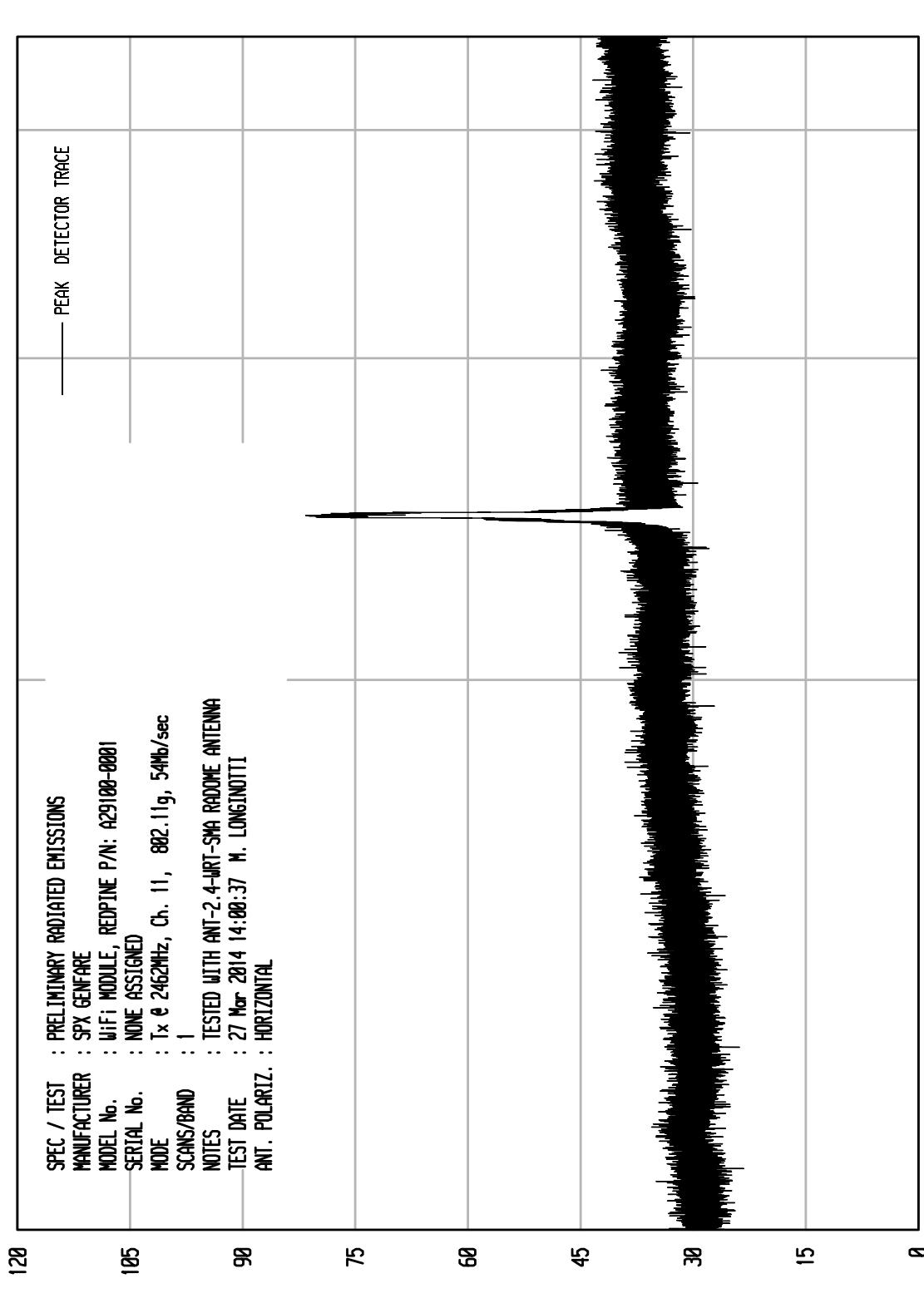
45

30

15

0

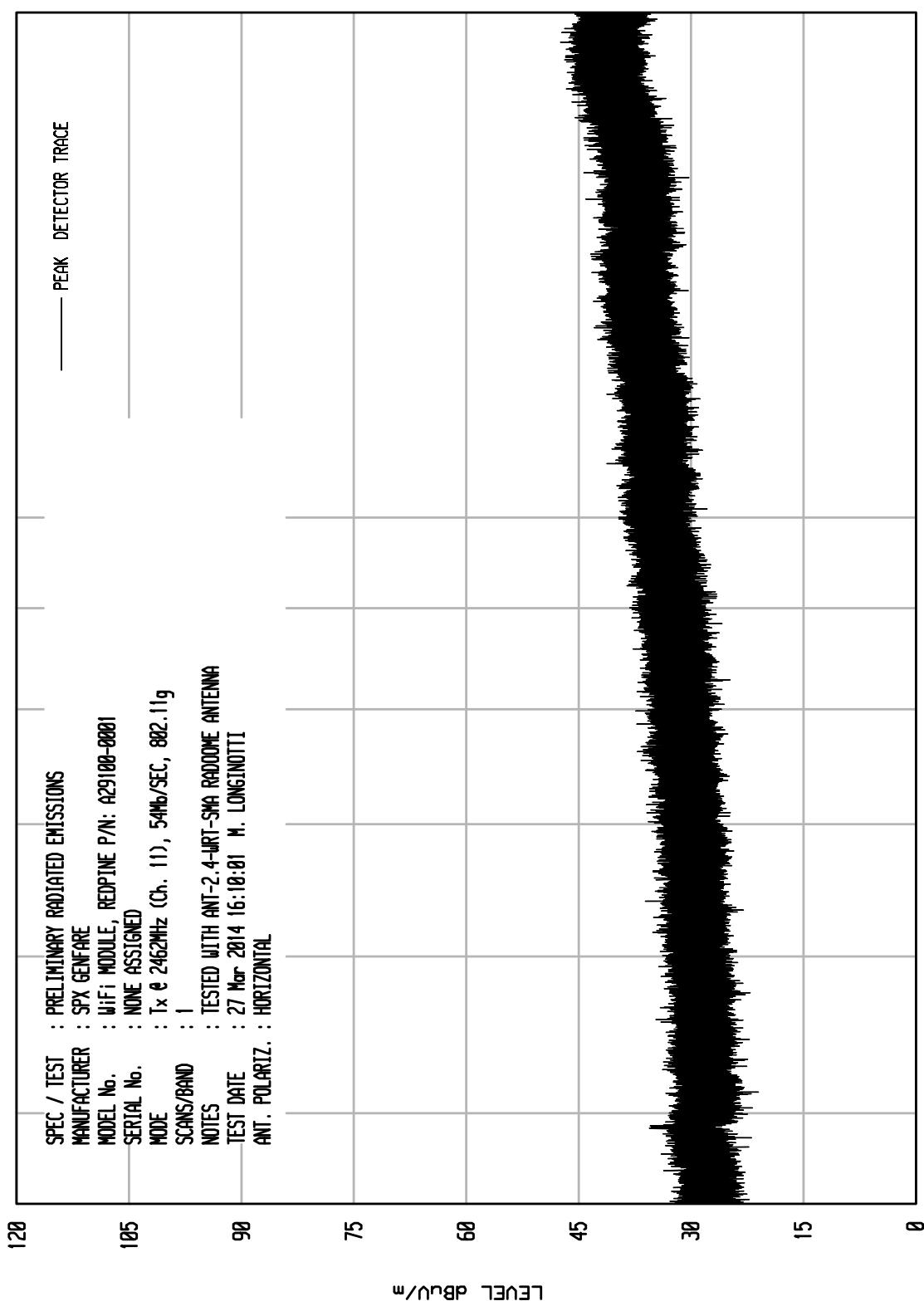
LEVEL dBm/m



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MKA1 04/24/13 UNIV RCU EMI RUN 3B

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARÉ
MODEL No.	: WiFi MODULE, REDPINE P/N: A291008-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2462MHz (Ch. 11), 54Mbps/SEC, 802.11g
SCANS/BAND	: 1
NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA
TEST DATE	: 27 Mar 2014 16:10:01 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL



START = 4500

STOP = 18000

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UNIV RCU EMI RUN 19

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: SPY GEFARÉ
	MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
	SERIAL No.	: NONE ASSIGNED
	MODE	: Tx @ 2462MHz (CH. 11), 802.11b, 54Mbps/SEC
	SCANS/BAND	: 1
	NOTES	: TESTED WITH RADOME ANTENNA
	TEST DATE	: 10 Apr 2014 12:51:12 M. LONGINOTTI
	ANT. POLARIZ.	: HORIZONTAL

120

105

90

75

60

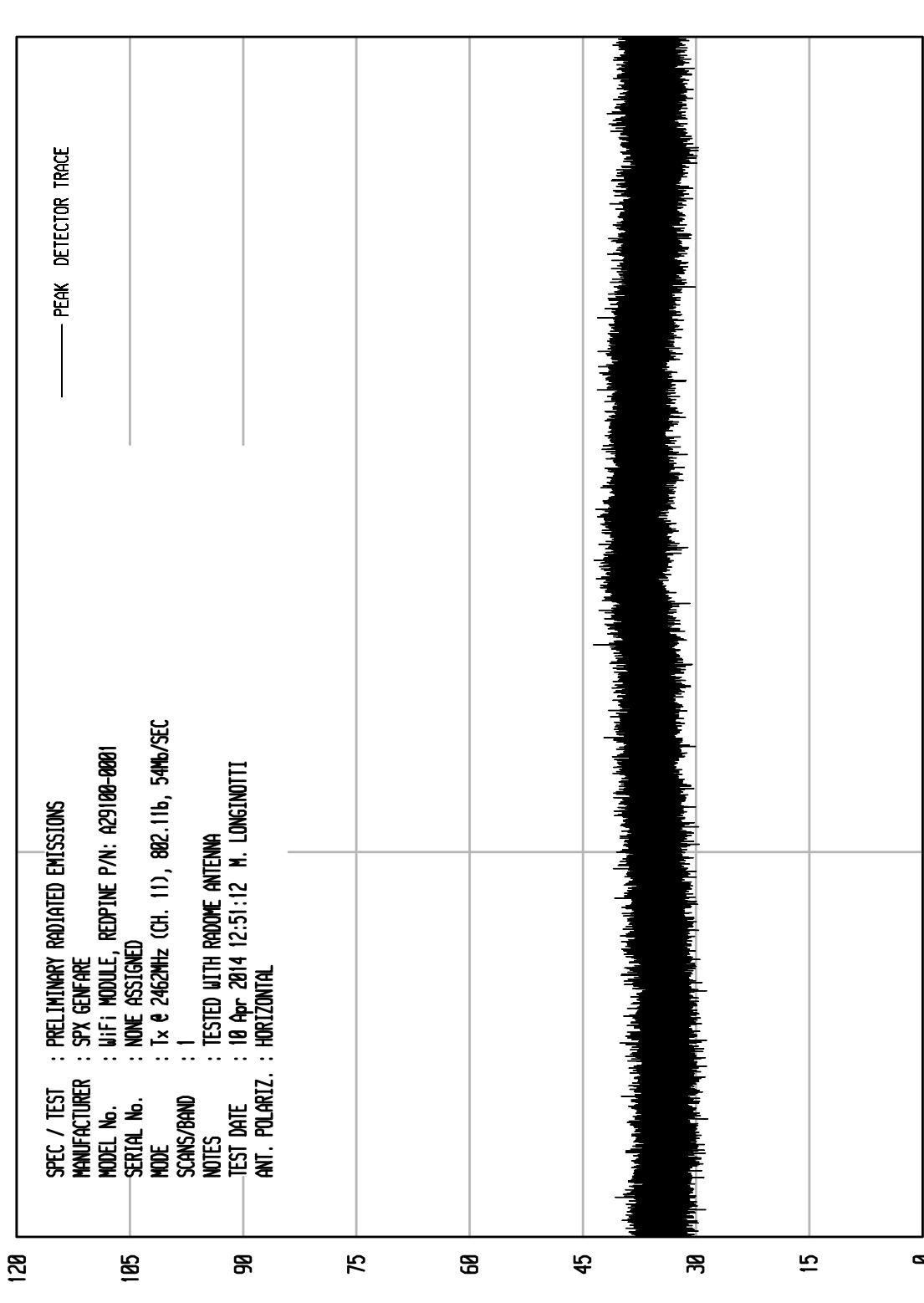
45

30

15

0

LEVEL dBm/m



START = 18000

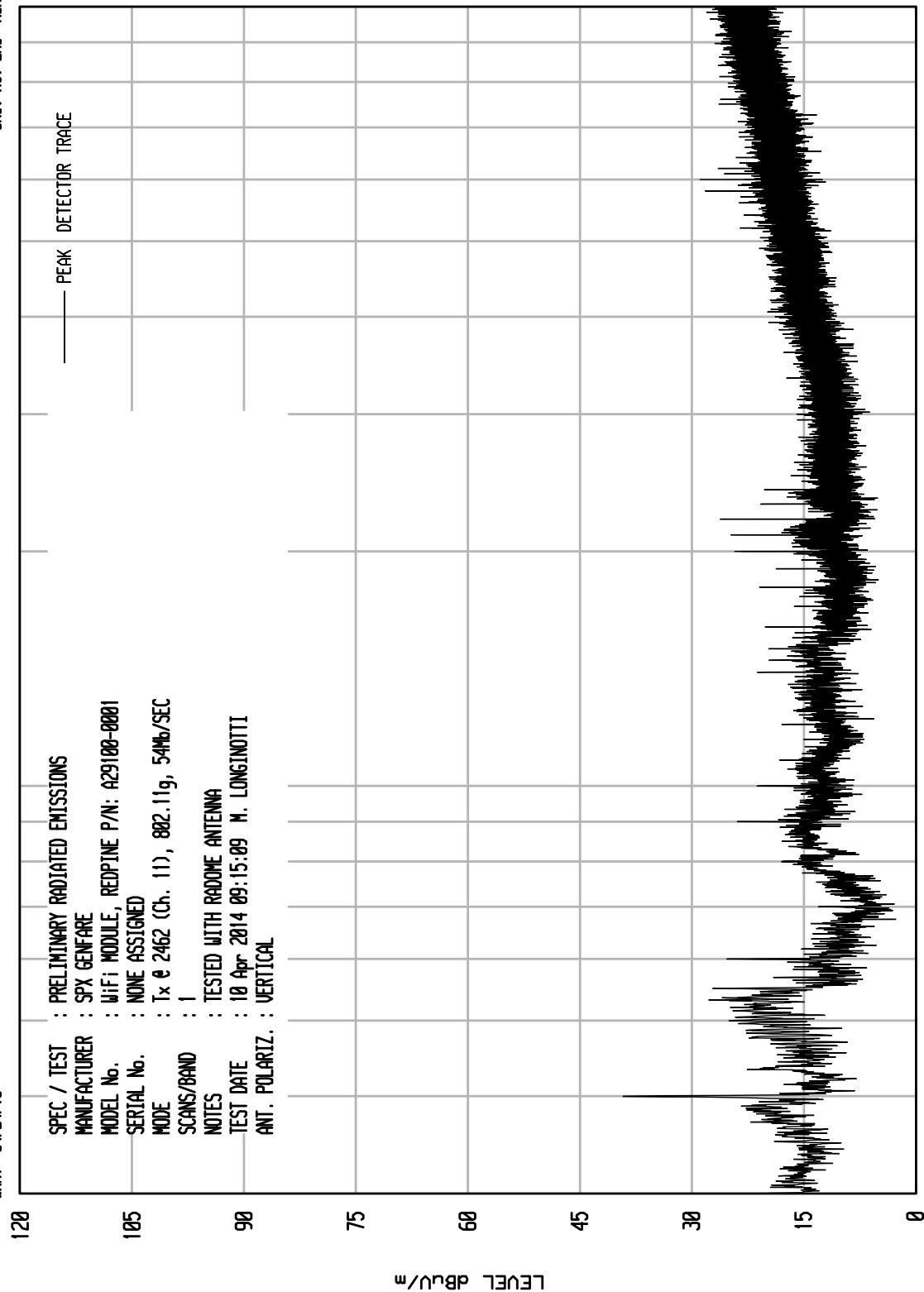
FREQUENCY MHz

STOP = 25000

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UNIV RCU EMI RUN 47

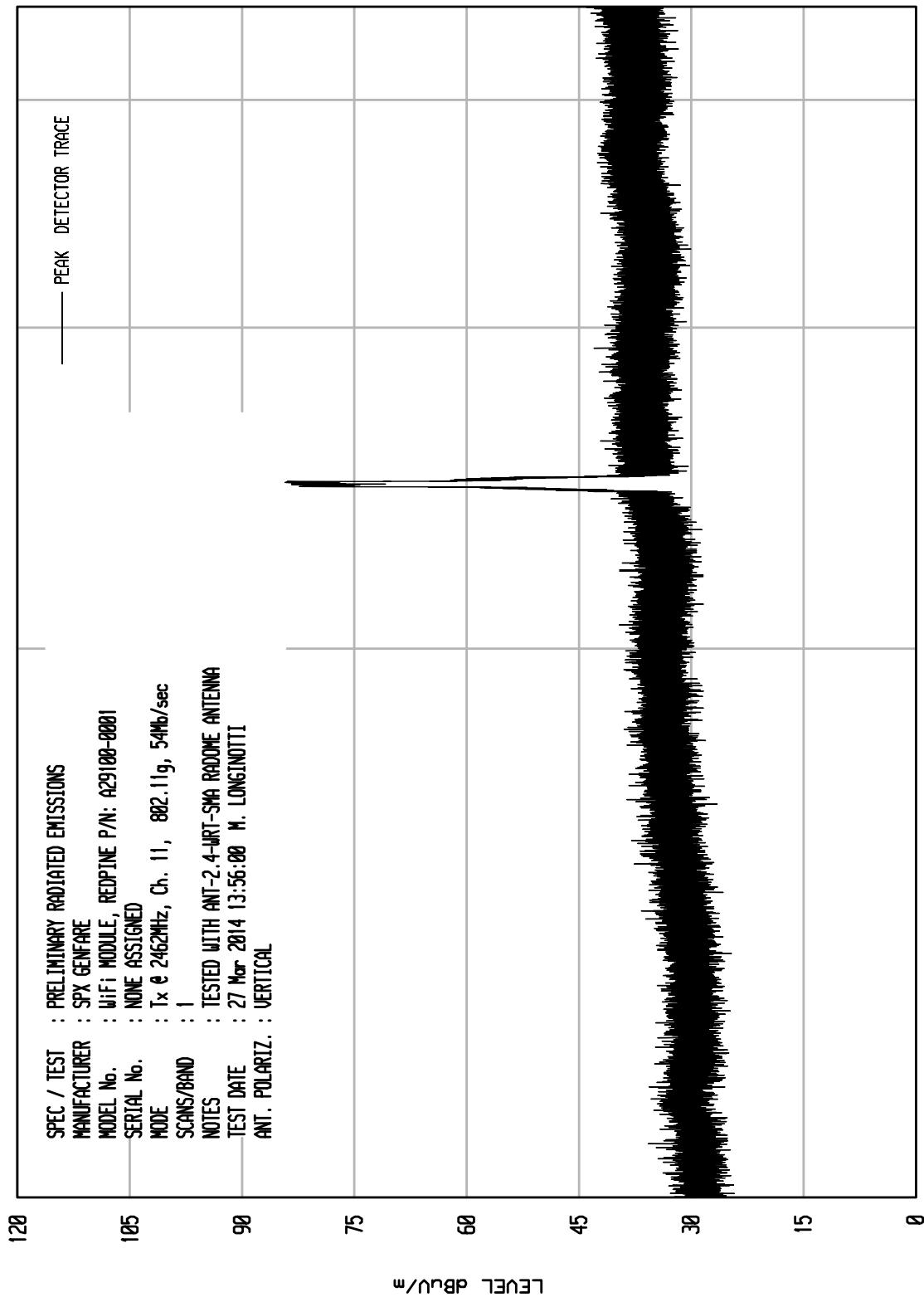
WKEI	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPI GENFARE		
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0001		
SERIAL No.	NONE ASSIGNED		
MODE	Tx @ 2462 (Ch. 11), 802.11g, 54Mbps		
SCANS/BAND	1		
NOTES	TESTED WITH RADOME ANTENNA		
TEST DATE	10 Apr 2014 09:15:09		M. LONGINOTTI
ANT. POLARIZ.	VERTICAL		



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UNIV RCU EMI RUN 28

MKA1 04/24/13



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UNIV RCU EMI RUN 31

MKA1 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARAE
MODEL No.	: WiFi MODULE, REDPINE P/N: A291008-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2462MHz (Ch. 11), 54Mbps/SEC, 802.11g
SCANS/BAND	: 1
NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA
TEST DATE	: 27 Mar 2014 16:13:51 M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL

105

90

75

60

45

30

15

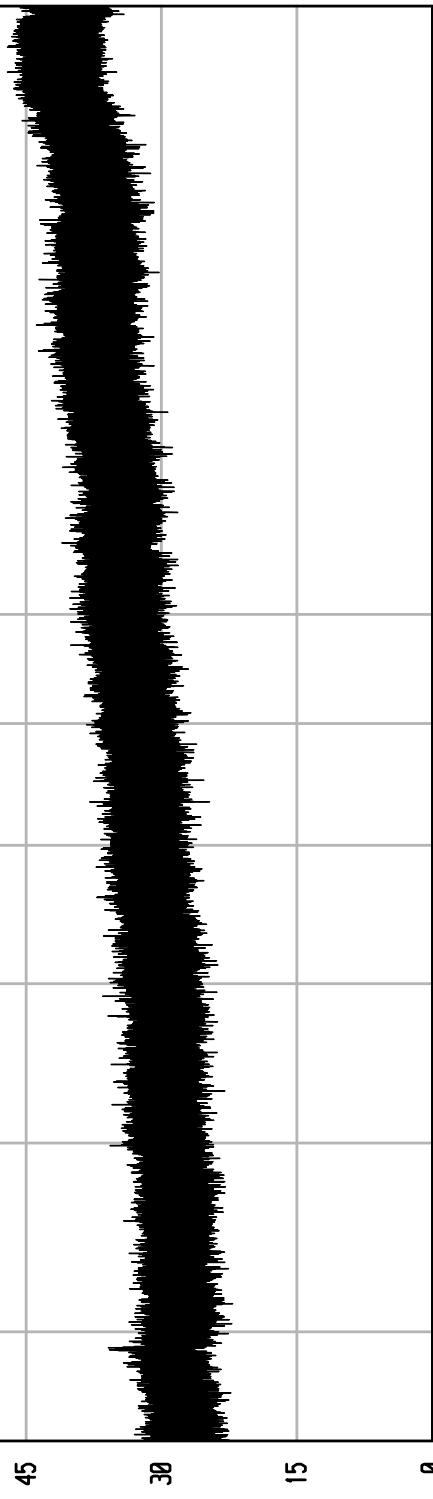
0

LEVEL dBuU/m

 START = 4500  
 STOP = 18000

 FREQUENCY MHz  
 10000

PEAK DETECTOR TRACE



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UNIV RCU EMI RUN 2B

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
	MANUFACTURER	: SPY GEFARÉ
	MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
	SERIAL No.	: NONE ASSIGNED
	MODE	: Tx @ 2462MHz (CH. 11), 802.11b, 54Mbps/SEC
	SCANS/BAND	: 1
	NOTES	: TESTED WITH RADOME ANTENNA
	TEST DATE	: 10 Apr 2014 12:53:59 M. LONGINOTTI
	ANT. POLARIZ.	: VERTICAL

120

105

90

75

60

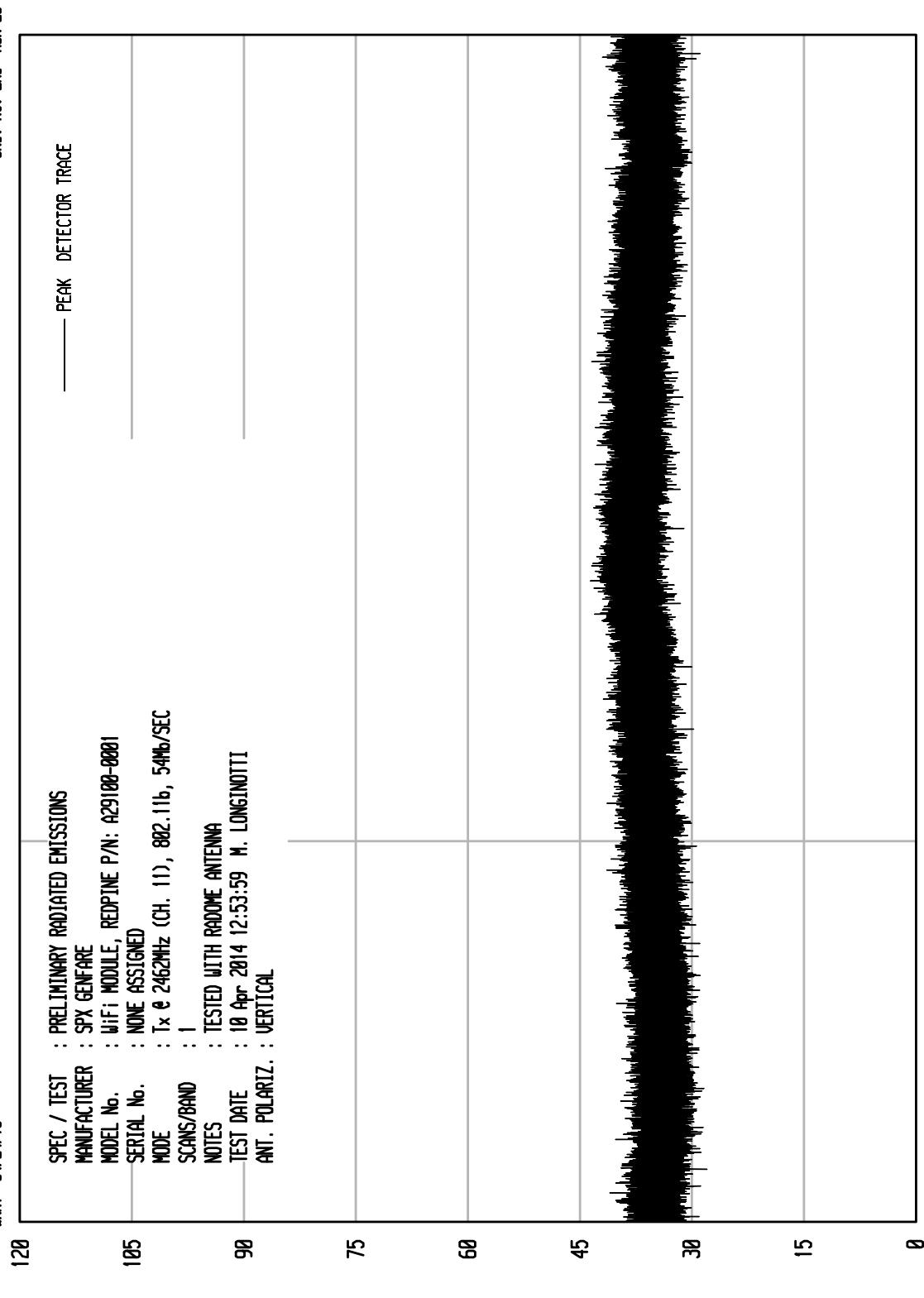
45

30

15

0

LEVEL dBUL/m



ELITE ELECTRONIC ENGINEERING Inc.  
 Downers Grove, Ill. 60515

UNIV RCU EMI RUN 55

MKEI 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEMFAR
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2462MHz (CH. 11), 802.11n, 65Mbps
SCANS/BAND	: 1
NOTES	: TESTED WITH RADOME ANTENNA
TEST DATE	: 10 Apr 2014 09:28:20 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL

120

105

90

75

60

45

30

15

0

LEVEL dBUL/m

START = 30

100

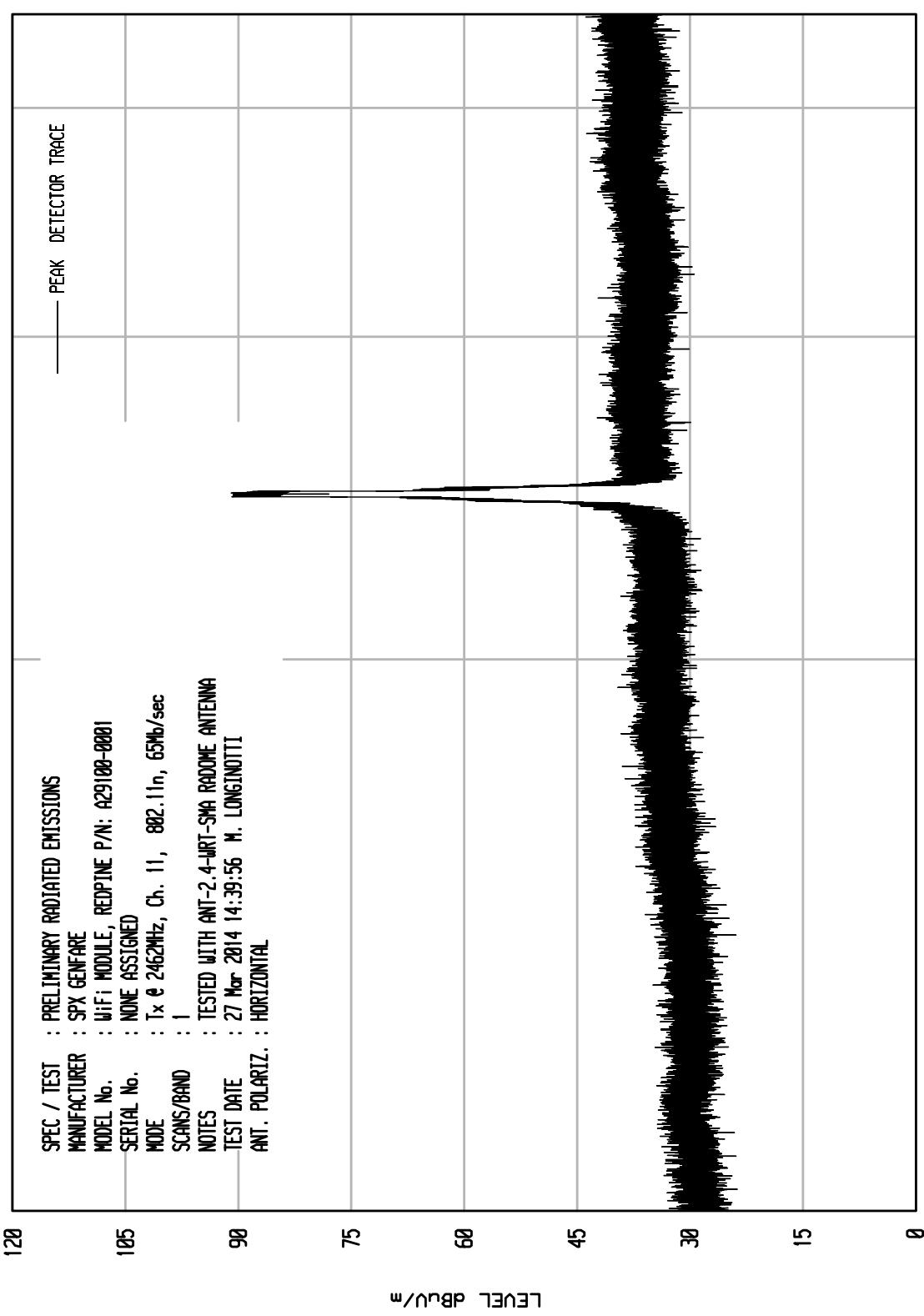
FREQUENCY MHz

STOP = 1000

ELITE ELECTRONIC ENGINEERING Inc.  
 Downers Grove, Ill. 60515

MKA1 04/24/13 UNIV RCU EMI RUN 36

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFNARE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0000
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2462MHz, Ch. 11, 802.11n, 65Mb/sec
SCANS/BAND	: 1
NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA
TEST DATE	: 27 Mar 2014 14:39:56 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL



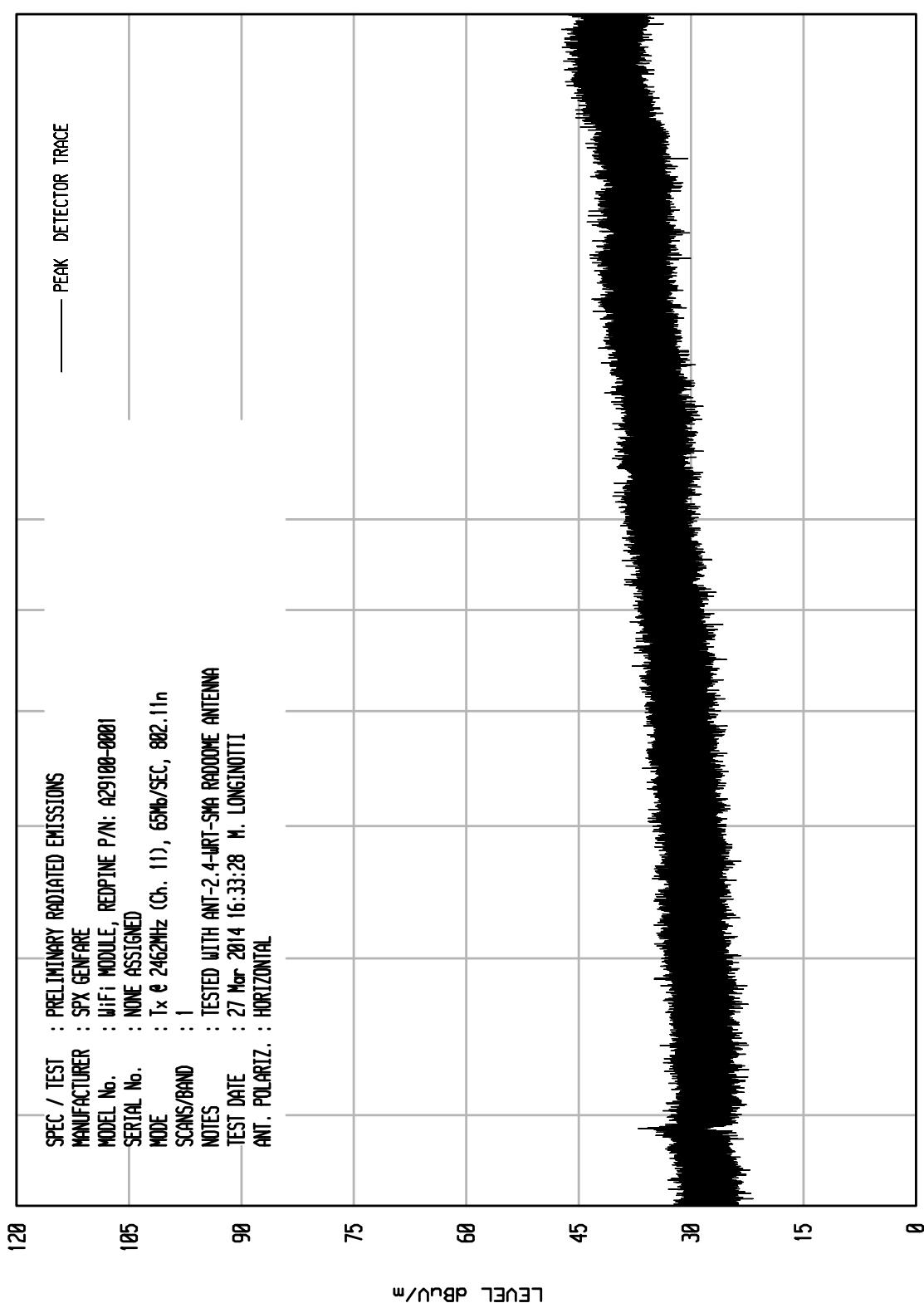
START = 1000

STOP = 4500

ELITE ELECTRONIC ENGINEERING Inc.  
 Downers Grove, Ill. 60515

MKA1 04/24/13 UNIV RCU EMI RUN 32

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARÉ
MODEL No.	: WiFi MODULE, REDPINE P/N: A291008-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2462MHz (Ch. 11), 65mW/SEC, 882.11n
SCANS/BAND	: 1
NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA
TEST DATE	: 27 Mar 2014 16:33:28 M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL



START = 4500

STOP = 18000

ELITE ELECTRONIC ENGINEERING Inc.  
Downers Grove, Ill. 60515

UNIV RCU EMI RUN 25

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARAE	
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001	
SERIAL No.	: NONE ASSIGNED	
MODE	: Tx @ 2462MHz (CH. 11), 802.11n, 65Mb/SEC	
SCANS/BAND	: 1	
NOTES	: TESTED WITH RADOME ANTENNA	
TEST DATE	: 10 Apr 2014 13:29:24	M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL	

120

105

90

75

60

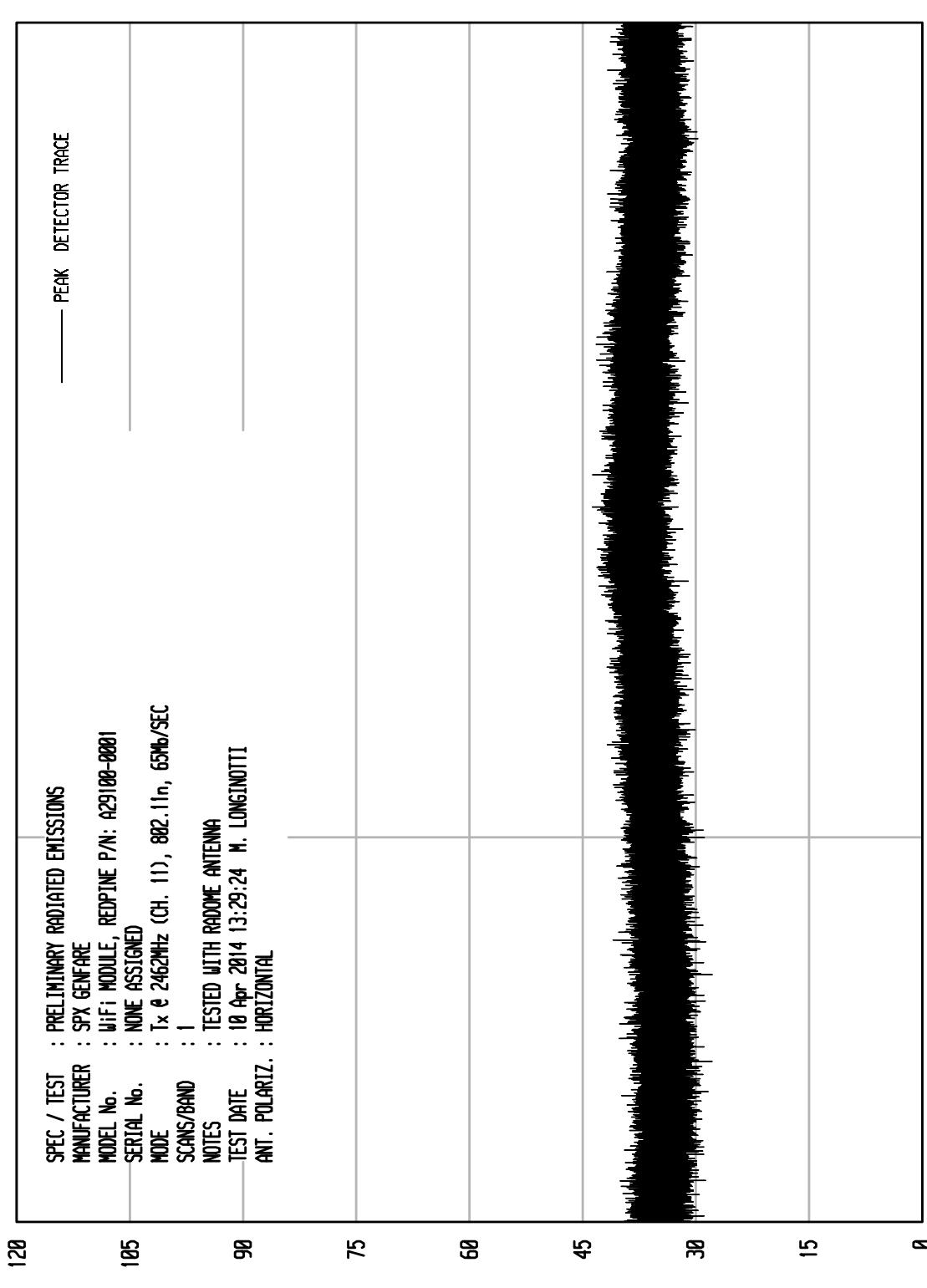
45

30

15

0

LEVEL dBm/m



START = 18000

FREQUENCY MHz

STOP = 25000

ELITE ELECTRONIC ENGINEERING Inc.  
 Downers Grove, Ill. 60515

UNIV RCU EMI RUN 56

MKEI 04/24/13

SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEMFAR
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001
SERIAL No.	: NONE ASSIGNED
MODE	: Tx @ 2462MHz (CH. 11), 802.11n, 65Mbps
SCANS/BAND	: 1
NOTES	: TESTED WITH RADOME ANTENNA
TEST DATE	: 10 Apr 2014 09:30:03
ANT. POLARIZ.	: VERTICAL

120

105

90

75

60

45

30

15

0

LEVEL dBUL/m

START = 30

100

FREQUENCY MHz

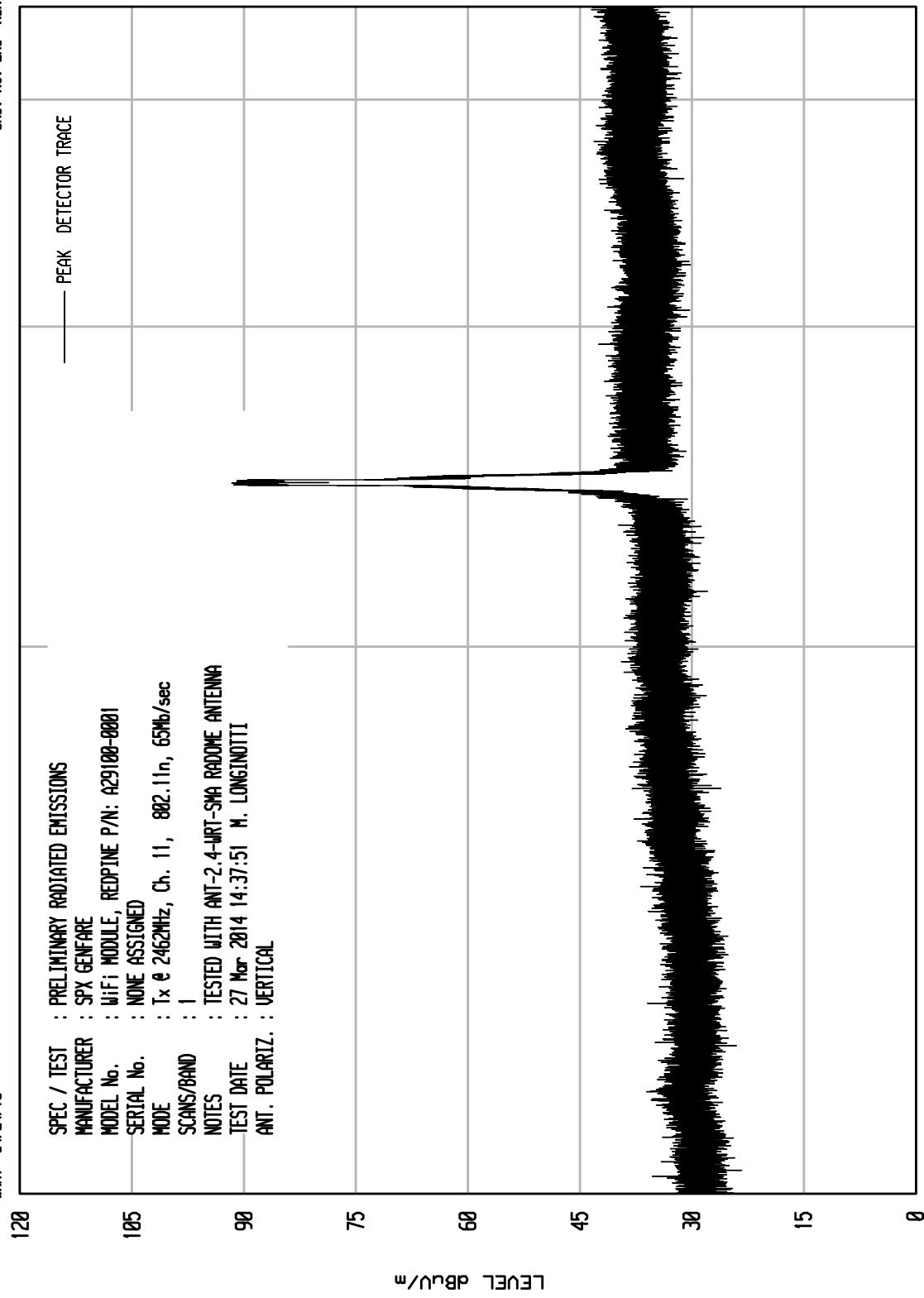
STOP = 1000

ELITE ELECTRONIC ENGINEERING Inc.  
 Downers Grove, Ill. 60515

MKA1 04/24/13

UNIV RCU EMI RUN 35

SPEC / TEST		PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEFNARE	
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0000	
SERIAL No.	NONE ASSIGNED	
MODE	Tx @ 2462MHz, Ch. 11, 802.11n, 65Mb/sec	
SCANS/BAND	1	
NOTES	TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA	
TEST DATE	27 Mar 2014 14:37:51	M. LONGINOTTI
ANT. POLARIZ.	VERTICAL	



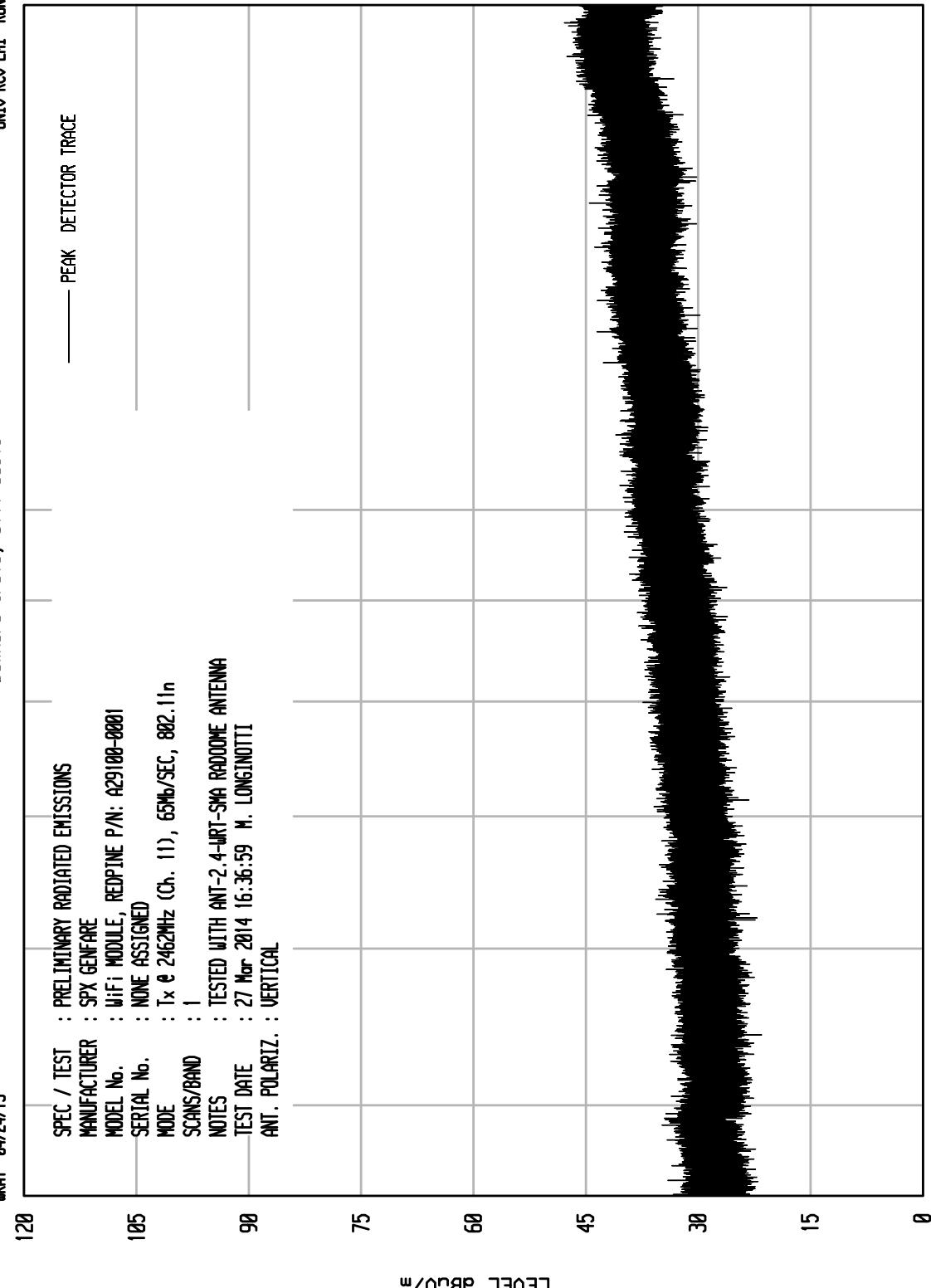
START = 1000

STOP = 4500

ELITE ELECTRONIC ENGINEERING Inc.  
 Downers Grove, Ill. 60515

UNIV RCU EMI RUN 33

WKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFNARE	PEAK	DETECTOR TRACE
MODEL No.	: WiFi MODULE, REDPINE P/N: A291008-0001		
SERIAL No.	: NONE ASSIGNED		
MODE	: Tx @ 2462MHz (Ch. 11), 65mV/SEC, 882.11n		
SCANS/BAND	: 1		
NOTES	: TESTED WITH ANT-2-4-JRT-SMA RADOME ANTENNA		
TEST DATE	: 27 Mar 2014 16:36:59 M. LONGINOTTI		
ANT. POLARIZ.	: VERTICAL		



START = 45000

 FREQUENCY MHz  
 100000

STOP = 180000

ELITE ELECTRONIC ENGINEERING Inc.  
Downers Grove, Ill. 60515

UNIV RCU EMI RUN 26

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARÉ	
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001	
SERIAL No.	: NONE ASSIGNED	
MODE	: Tx @ 2462MHz (CH. 11), 802.11n, 65Mb/SEC	
SCANS/BAND	: 1	
NOTES	: TESTED WITH RADOME ANTENNA	
TEST DATE	: 10 Apr 2014 13:32:18	M. LONGINOTTI
ANT. POLARIZ.	: VERTICAL	

120

105

90

75

60

45

30

15

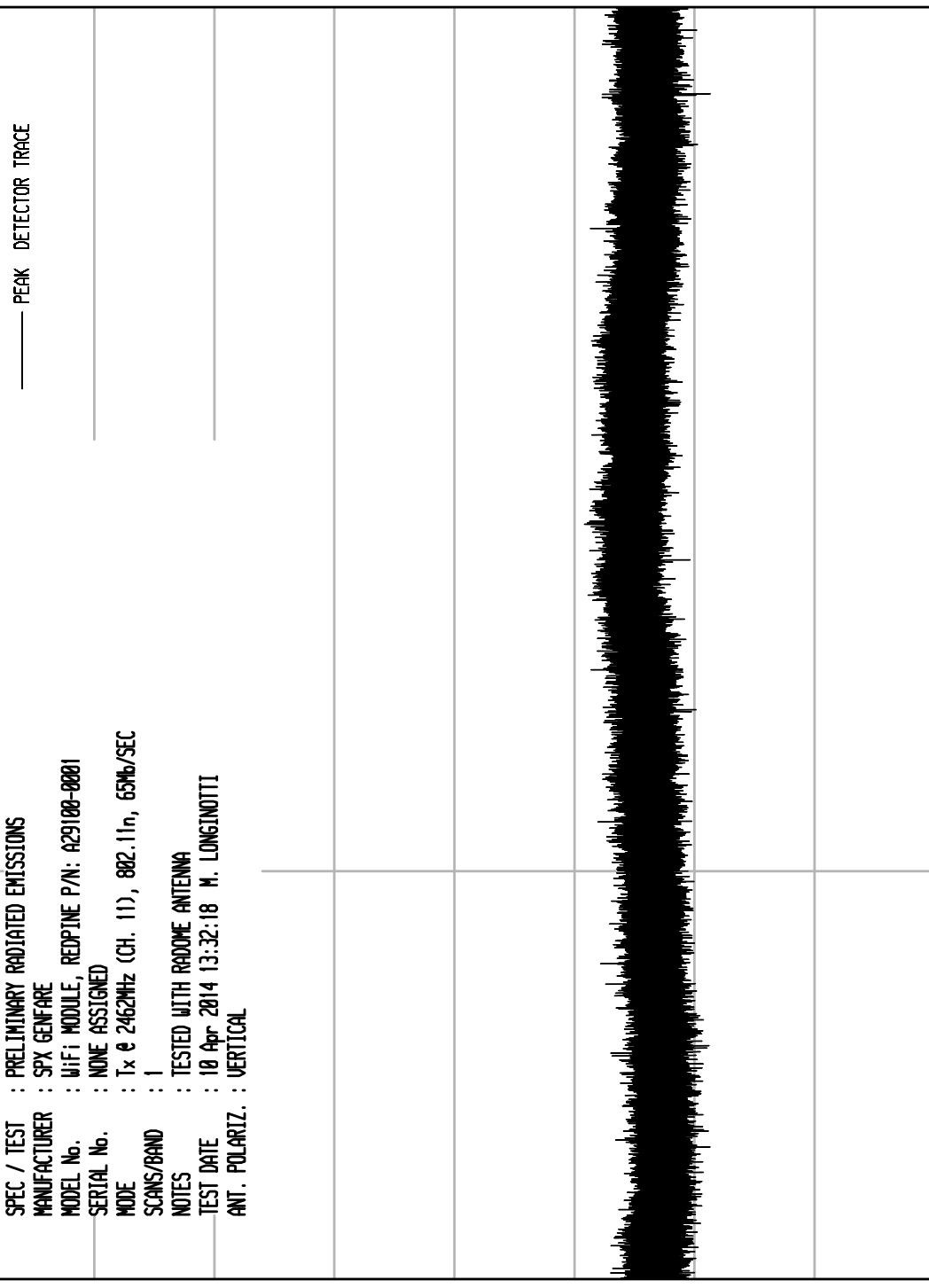
0

LEVEL dBm/m

START = 180000

FREQUENCY MHz

STOP = 250000





Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Peak Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2412MHz (Ch. 1), 802.11b, DSSS, 2Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4824.00	H	60.9		4.8	34.8	-40.1	60.5	1054.8	5000.0	-13.5
4824.00	V	59.6		4.8	34.8	-40.1	59.2	908.2	5000.0	-14.8
12060.00	H	46.0	Ambient	8.0	39.1	-39.6	53.5	471.0	5000.0	-20.5
12060.00	V	46.2	Ambient	8.0	39.1	-39.6	53.7	482.0	5000.0	-20.3
14472.00	H	46.5	Ambient	8.7	39.9	-39.9	55.2	573.8	5000.0	-18.8
14472.00	V	46.5	Ambient	8.7	39.9	-39.9	55.2	573.8	5000.0	-18.8
19296.00	H	35.4	Ambient	2.2	40.4	-27.9	50.1	318.3	5000.0	-23.9
19296.00	V	35.6	Ambient	2.2	40.4	-27.9	50.3	325.7	5000.0	-23.7

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m =  $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2412MHz (Ch. 1), 802.11b, DSSS, 2Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4824.00	H	60.9		4.8	34.8	-40.1	-41.9	18.6	8.5	500.0	-35.4
4824.00	V	59.6		4.8	34.8	-40.1	-41.9	17.3	7.3	500.0	-36.7
12060.00	H	46.0	Ambient	8.0	39.1	-39.6	-41.9	11.6	3.8	500.0	-42.4
12060.00	V	46.2	Ambient	8.0	39.1	-39.6	-41.9	11.8	3.9	500.0	-42.2
14472.00	H	46.5	Ambient	8.7	39.9	-39.9	-41.9	13.3	4.6	500.0	-40.7
14472.00	V	46.5	Ambient	8.7	39.9	-39.9	-41.9	13.3	4.6	500.0	-40.7
19296.00	H	35.4	Ambient	2.2	40.4	-27.9	-41.9	8.2	2.6	500.0	-45.8
19296.00	V	35.6	Ambient	2.2	40.4	-27.9	-41.9	8.4	2.6	500.0	-45.6

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m =  $10^{((\text{Average Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Peak Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2412MHz (Ch. 1), 802.11b, CCK, 11Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4824.00	H	58.9		4.8	34.8	-40.1	58.5	837.9	5000.0	-15.5
4824.00	V	56.5		4.8	34.8	-40.1	56.1	635.6	5000.0	-17.9
12060.00	H	45.8	Ambient	8.0	39.1	-39.6	53.3	460.3	5000.0	-20.7
12060.00	V	45.7	Ambient	8.0	39.1	-39.6	53.2	455.0	5000.0	-20.8
14472.00	H	46.4	Ambient	8.7	39.9	-39.9	55.1	567.2	5000.0	-18.9
14472.00	V	46.9	Ambient	8.7	39.9	-39.9	55.6	600.8	5000.0	-18.4
19296.00	H	34.7	Ambient	2.2	40.4	-27.9	49.4	293.7	5000.0	-24.6
19296.00	V	35.7	Ambient	2.2	40.4	-27.9	50.4	329.5	5000.0	-23.6

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m =  $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2412MHz (Ch. 1), 802.11b, CCK, 11Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4824.00	H	58.9		4.8	34.8	-40.1	-41.9	16.6	6.7	500.0	-37.4
4824.00	V	56.5		4.8	34.8	-40.1	-41.9	14.2	5.1	500.0	-39.8
12060.00	H	45.8	Ambient	8.0	39.1	-39.6	-41.9	11.4	3.7	500.0	-42.6
12060.00	V	45.7	Ambient	8.0	39.1	-39.6	-41.9	11.3	3.7	500.0	-42.7
14472.00	H	46.4	Ambient	8.7	39.9	-39.9	-41.9	13.2	4.6	500.0	-40.8
14472.00	V	46.9	Ambient	8.7	39.9	-39.9	-41.9	13.7	4.8	500.0	-40.3
19296.00	H	34.7	Ambient	2.2	40.4	-27.9	-41.9	7.5	2.4	500.0	-46.5
19296.00	V	35.7	Ambient	2.2	40.4	-27.9	-41.9	8.5	2.6	500.0	-45.5

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m =  $10^{((\text{Average Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Peak Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2412MHz (Ch. 1), 802.11g, 54Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4824.00	H	57.1		4.8	34.8	-40.1	56.7	681.1	5000.0	-17.3
4824.00	V	53.2		4.8	34.8	-40.1	52.8	434.7	5000.0	-21.2
12060.00	H	45.9	Ambient	8.0	39.1	-39.6	53.4	465.6	5000.0	-20.6
12060.00	V	45.5	Ambient	8.0	39.1	-39.6	53.0	444.7	5000.0	-21.0
14472.00	H	46.3	Ambient	8.7	39.9	-39.9	55.0	560.7	5000.0	-19.0
14472.00	V	46.4	Ambient	8.7	39.9	-39.9	55.1	567.2	5000.0	-18.9
19296.00	H	38.3	Ambient	2.2	40.4	-27.9	53.0	444.5	5000.0	-21.0
19296.00	V	38.9	Ambient	2.2	40.4	-27.9	53.6	476.3	5000.0	-20.4

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m =  $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2412MHz (Ch. 1), 802.11g, 54Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4824.00	H	57.1		4.8	34.8	-40.1	-41.6	15.1	5.7	500.0	-38.9
4824.00	V	53.2		4.8	34.8	-40.1	-41.6	11.2	3.6	500.0	-42.8
12060.00	H	45.9	Ambient	8.0	39.1	-39.6	-41.6	11.8	3.9	500.0	-42.2
12060.00	V	45.5	Ambient	8.0	39.1	-39.6	-41.6	11.4	3.7	500.0	-42.6
14472.00	H	46.3	Ambient	8.7	39.9	-39.9	-41.6	13.4	4.7	500.0	-40.6
14472.00	V	46.4	Ambient	8.7	39.9	-39.9	-41.6	13.5	4.7	500.0	-40.5
19296.00	H	38.3	Ambient	2.2	40.4	-27.9	-41.6	11.4	3.7	500.0	-42.6
19296.00	V	38.9	Ambient	2.2	40.4	-27.9	-41.6	12.0	4.0	500.0	-42.0

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m =  $10^{((\text{Average Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Peak Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2412MHz (Ch. 1), 802.11n, 65 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4824.00	H	56.2		4.8	34.8	-40.1	55.8	614.0	5000.0	-18.2
4824.00	V	55.4		4.8	34.8	-40.1	55.0	560.0	5000.0	-19.0
12060.00	H	46.3	Ambient	8.0	39.1	-39.6	53.8	487.6	5000.0	-20.2
12060.00	V	46.5	Ambient	8.0	39.1	-39.6	54.0	498.9	5000.0	-20.0
14472.00	H	45.8	Ambient	8.7	39.9	-39.9	54.5	529.3	5000.0	-19.5
14472.00	V	45.7	Ambient	8.7	39.9	-39.9	54.4	523.3	5000.0	-19.6
19296.00	H	37.3	Ambient	2.2	40.4	-27.9	52.0	396.2	5000.0	-22.0
19296.00	V	38.2	Ambient	2.2	40.4	-27.9	52.9	439.4	5000.0	-21.1

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m =  $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2412MHz (Ch. 1), 802.11n, 65Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4824.00	H	56.2		4.8	34.8	-40.1	-41.7	14.1	5.0	500.0	-39.9
4824.00	V	55.4		4.8	34.8	-40.1	-41.7	13.3	4.6	500.0	-40.7
12060.00	H	46.3	Ambient	8.0	39.1	-39.6	-41.7	12.1	4.0	500.0	-41.9
12060.00	V	46.5	Ambient	8.0	39.1	-39.6	-41.7	12.3	4.1	500.0	-41.7
14472.00	H	45.8	Ambient	8.7	39.9	-39.9	-41.7	12.8	4.4	500.0	-41.2
14472.00	V	45.7	Ambient	8.7	39.9	-39.9	-41.7	12.7	4.3	500.0	-41.3
19296.00	H	37.3	Ambient	2.2	40.4	-27.9	-41.7	10.3	3.3	500.0	-43.7
19296.00	V	38.2	Ambient	2.2	40.4	-27.9	-41.7	11.2	3.6	500.0	-42.8

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m =  $10^{((\text{Average Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Peak Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2442MHz (Ch. 7), 802.11b, DSSS, 2 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4884.00	H	63.7		4.9	34.9	-40.2	63.3	1465.6	5000.0	-10.7
4884.00	V	60.5		4.9	34.9	-40.2	60.1	1014.0	5000.0	-13.9
7326.00	H	49.4		6.2	35.6	-39.8	51.4	372.3	5000.0	-22.6
7326.00	V	47.6	Ambient	6.2	35.6	-39.8	49.6	302.6	5000.0	-24.4
12210.00	H	46.1	Ambient	8.0	39.2	-39.5	53.8	491.5	5000.0	-20.1
12210.00	V	46.1	Ambient	8.0	39.2	-39.5	53.8	491.5	5000.0	-20.1
19536.00	H	35.4	Ambient	2.2	40.4	-27.8	50.2	322.4	5000.0	-23.8
19536.00	V	37.0	Ambient	2.2	40.4	-27.8	51.8	387.7	5000.0	-22.2

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m =  $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2442MHz (Ch. 7), 802.11b, DSSS, 2 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4884.00	H	63.7		4.9	34.9	-40.2	-41.9	21.4	11.8	500.0	-32.6
4884.00	V	60.5		4.9	34.9	-40.2	-41.9	18.2	8.1	500.0	-35.8
7326.00	H	49.4		6.2	35.6	-39.8	-41.9	9.5	3.0	500.0	-44.5
7326.00	V	47.6	Ambient	6.2	35.6	-39.8	-41.9	7.7	2.4	500.0	-46.3
12210.00	H	46.1	Ambient	8.0	39.2	-39.5	-41.9	11.9	3.9	500.0	-42.0
12210.00	V	46.1	Ambient	8.0	39.2	-39.5	-41.9	11.9	3.9	500.0	-42.0
19536.00	H	35.5	Ambient	2.2	40.4	-27.8	-41.9	8.4	2.6	500.0	-45.6
19536.00	V	37.0	Ambient	2.2	40.4	-27.8	-41.9	9.9	3.1	500.0	-44.1

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m =  $10^{((\text{Average Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Peak Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2442MHz (Ch. 7), 802.11b, CCK, 11 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4884.00	H	62.4		4.9	34.9	-40.2	62.0	1261.9	5000.0	-12.0
4884.00	V	60.5		4.9	34.9	-40.2	60.1	1014.0	5000.0	-13.9
7326.00	H	48.8	Ambient	6.2	35.6	-39.8	50.8	347.5	5000.0	-23.2
7326.00	V	46.6	Ambient	6.2	35.6	-39.8	48.6	269.7	5000.0	-25.4
12210.00	H	46.6	Ambient	8.0	39.2	-39.5	54.3	520.6	5000.0	-19.6
12210.00	V	46.4	Ambient	8.0	39.2	-39.5	54.1	508.8	5000.0	-19.8
19536.00	H	35.9	Ambient	2.2	40.4	-27.8	50.7	341.6	5000.0	-23.3
19536.00	V	35.5	Ambient	2.2	40.4	-27.8	50.3	326.2	5000.0	-23.7

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m =  $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2442MHz (Ch. 7), 802.11b, CCK, 11 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4884.00	H	62.4		4.9	34.9	-40.2	-41.9	20.1	10.1	500.0	-33.9
4884.00	V	60.5		4.9	34.9	-40.2	-41.9	18.2	8.1	500.0	-35.8
7326.00	H	48.8	Ambient	6.2	35.6	-39.8	-41.9	8.9	2.8	500.0	-45.1
7326.00	V	46.6	Ambient	6.2	35.6	-39.8	-41.9	6.7	2.2	500.0	-47.3
12210.00	H	46.6	Ambient	8.0	39.2	-39.5	-41.9	12.4	4.2	500.0	-41.5
12210.00	V	46.4	Ambient	8.0	39.2	-39.5	-41.9	12.2	4.1	500.0	-41.7
19536.00	H	35.9	Ambient	2.2	40.4	-27.8	-41.9	8.8	2.7	500.0	-45.2
19536.00	V	35.5	Ambient	2.2	40.4	-27.8	-41.9	8.4	2.6	500.0	-45.6

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m =  $10^{((\text{Average Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Peak Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2442MHz (Ch. 7), 802.11g, 54 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4884.00	H	59.0		4.9	34.9	-40.2	58.6	853.1	5000.0	-15.4
4884.00	V	57.1		4.9	34.9	-40.2	56.7	685.5	5000.0	-17.3
7326.00	H	47.5	Ambient	6.2	35.6	-39.8	49.5	299.2	5000.0	-24.5
7326.00	V	46.6	Ambient	6.2	35.6	-39.8	48.6	269.7	5000.0	-25.4
12210.00	H	45.7	Ambient	8.0	39.2	-39.5	53.4	469.4	5000.0	-20.5
12210.00	V	46.5	Ambient	8.0	39.2	-39.5	54.2	514.7	5000.0	-19.7
19536.00	H	33.9	Ambient	2.2	40.4	-27.8	48.7	271.3	5000.0	-25.3
19536.00	V	35.5	Ambient	2.2	40.4	-27.8	50.3	326.2	5000.0	-23.7

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m =  $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2442MHz (Ch. 7), 802.11g, 54 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4884.00	H	59.0		4.9	34.9	-40.2	-41.6	17.0	7.1	500.0	-37.0
4884.00	V	57.1		4.9	34.9	-40.2	-41.6	15.1	5.7	500.0	-38.9
7326.00	H	47.5	Ambient	6.2	35.6	-39.8	-41.6	7.9	2.5	500.0	-46.1
7326.00	V	46.6	Ambient	6.2	35.6	-39.8	-41.6	7.0	2.2	500.0	-47.0
12210.00	H	45.7	Ambient	8.0	39.2	-39.5	-41.6	11.8	3.9	500.0	-42.1
12210.00	V	46.5	Ambient	8.0	39.2	-39.5	-41.6	12.6	4.3	500.0	-41.3
19536.00	H	33.9	Ambient	2.2	40.4	-27.8	-41.6	7.1	2.3	500.0	-46.9
19536.00	V	35.5	Ambient	2.2	40.4	-27.8	-41.6	8.7	2.7	500.0	-45.3

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m =  $10^{((\text{Average Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Peak Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2442MHz (Ch. 7), 802.11n, 65 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4884.00	H	59.1		4.9	34.9	-40.2	58.7	863.0	5000.0	-15.3
4884.00	V	57.4		4.9	34.9	-40.2	57.0	709.6	5000.0	-17.0
7326.00	H	47.9	Ambient	6.2	35.6	-39.8	49.9	313.3	5000.0	-24.1
7326.00	V	47.5	Ambient	6.2	35.6	-39.8	49.5	299.2	5000.0	-24.5
12210.00	H	45.8	Ambient	8.0	39.2	-39.5	53.5	474.8	5000.0	-20.4
12210.00	V	46.5	Ambient	8.0	39.2	-39.5	54.2	514.7	5000.0	-19.7
19536.00	H	35.1	Ambient	2.2	40.4	-27.8	49.9	311.5	5000.0	-24.1
19536.00	V	36.5	Ambient	2.2	40.4	-27.8	51.3	366.0	5000.0	-22.7

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m =  $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2442MHz (Ch. 7), 802.11n, 65 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4884.00	H	59.1		4.9	34.9	-40.2	-41.7	17.0	7.1	500.0	-37.0
4884.00	V	57.4		4.9	34.9	-40.2	-41.7	15.3	5.8	500.0	-38.7
7326.00	H	47.9	Ambient	6.2	35.6	-39.8	-41.7	8.2	2.6	500.0	-45.8
7326.00	V	47.5	Ambient	6.2	35.6	-39.8	-41.7	7.8	2.5	500.0	-46.2
12210.00	H	45.8	Ambient	8.0	39.2	-39.5	-41.7	11.8	3.9	500.0	-42.1
12210.00	V	46.5	Ambient	8.0	39.2	-39.5	-41.7	12.5	4.2	500.0	-41.4
19536.00	H	35.1	Ambient	2.2	40.4	-27.8	-41.7	8.2	2.6	500.0	-45.8
19536.00	V	36.5	Ambient	2.2	40.4	-27.8	-41.7	9.6	3.0	500.0	-44.4

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m =  $10^{((\text{Average Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Peak Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2462MHz (Ch. 11), 802.11b, DSSS, 2 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4924.00	H	55.0		4.9	34.9	-40.2	54.7	541.2	5000.0	-19.3
4924.00	V	56.3		4.9	34.9	-40.2	56.0	628.5	5000.0	-18.0
7386.00	H	47.3	Ambient	6.2	35.7	-39.8	49.4	294.1	5000.0	-24.6
7386.00	V	47.5	Ambient	6.2	35.7	-39.8	49.6	300.9	5000.0	-24.4
12310.00	H	46.7	Ambient	8.0	39.2	-39.4	54.5	533.1	5000.0	-19.4
12310.00	V	48.8	Ambient	8.0	39.2	-39.4	56.6	678.9	5000.0	-17.3
19696.00	H	34.6	Ambient	2.2	40.4	-27.8	49.4	294.6	5000.0	-24.6
19696.00	V	35.0	Ambient	2.2	40.4	-27.8	49.8	308.5	5000.0	-24.2
22158.00	H	36.3	Ambient	2.2	40.6	-28.5	50.6	340.2	5000.0	-23.3
22158.00	V	35.8	Ambient	2.2	40.6	-28.5	50.1	321.2	5000.0	-23.8

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m =  $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2462MHz (Ch. 11), 802.11b, DSSS, 2 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4924.00	H	55.0		4.9	34.9	-40.2	-41.9	12.8	4.3	500.0	-41.2
4924.00	V	56.3		4.9	34.9	-40.2	-41.9	14.1	5.1	500.0	-39.9
7386.00	H	47.3	Ambient	6.2	35.7	-39.8	-41.9	7.5	2.4	500.0	-46.5
7386.00	V	47.5	Ambient	6.2	35.7	-39.8	-41.9	7.7	2.4	500.0	-46.3
12310.00	H	46.7	Ambient	8.0	39.2	-39.4	-41.9	12.6	4.3	500.0	-41.3
12310.00	V	48.8	Ambient	8.0	39.2	-39.4	-41.9	14.7	5.5	500.0	-39.2
19696.00	H	34.6	Ambient	2.2	40.4	-27.8	-41.9	7.5	2.4	500.0	-46.5
19696.00	V	35.0	Ambient	2.2	40.4	-27.8	-41.9	7.9	2.5	500.0	-46.1
22158.00	H	36.3	Ambient	2.2	40.6	-28.5	-41.9	8.7	2.7	500.0	-45.2
22158.00	V	35.8	Ambient	2.2	40.6	-28.5	-41.9	8.2	2.6	500.0	-45.7

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m =  $10^{((\text{Average Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Peak Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2462MHz (Ch. 11), 802.11b, CCK, 11 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4924.00	H	55.7		4.9	34.9	-40.2	55.4	586.6	5000.0	-18.6
4924.00	V	57.4		4.9	34.9	-40.2	57.1	713.4	5000.0	-16.9
7386.00	H	46.5	Ambient	6.2	35.7	-39.8	48.6	268.2	5000.0	-25.4
7386.00	V	47.6	Ambient	6.2	35.7	-39.8	49.7	304.4	5000.0	-24.3
12310.00	H	46.7	Ambient	8.0	39.2	-39.4	54.5	533.1	5000.0	-19.4
12310.00	V	46.5	Ambient	8.0	39.2	-39.4	54.3	521.0	5000.0	-19.6
19696.00	H	35.0	Ambient	2.2	40.4	-27.8	49.8	308.5	5000.0	-24.2
19696.00	V	34.8	Ambient	2.2	40.4	-27.8	49.6	301.5	5000.0	-24.4
22158.00	H	35.5	Ambient	2.2	40.6	-28.5	49.8	310.3	5000.0	-24.1
22158.00	V	36.4	Ambient	2.2	40.6	-28.5	50.7	344.2	5000.0	-23.2

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m =  $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2462MHz (Ch. 11), 802.11b, CCK, 11 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4924.00	H	55.7		4.9	34.9	-40.2	-41.9	13.5	4.7	500.0	-40.5
4924.00	V	57.4		4.9	34.9	-40.2	-41.9	15.2	5.7	500.0	-38.8
7386.00	H	46.5	Ambient	6.2	35.7	-39.8	-41.9	6.7	2.2	500.0	-47.3
7386.00	V	47.6	Ambient	6.2	35.7	-39.8	-41.9	7.8	2.4	500.0	-46.2
12310.00	H	46.7	Ambient	8.0	39.2	-39.4	-41.9	12.6	4.3	500.0	-41.3
12310.00	V	46.5	Ambient	8.0	39.2	-39.4	-41.9	12.4	4.2	500.0	-41.5
19696.00	H	35.0	Ambient	2.2	40.4	-27.8	-41.9	7.9	2.5	500.0	-46.1
19696.00	V	34.8	Ambient	2.2	40.4	-27.8	-41.9	7.7	2.4	500.0	-46.3
22158.00	H	35.5	Ambient	2.2	40.6	-28.5	-41.9	7.9	2.5	500.0	-46.0
22158.00	V	34.4	Ambient	2.2	40.6	-28.5	-41.9	6.8	2.2	500.0	-47.1

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m =  $10^{((\text{Average Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Peak Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2462MHz (Ch. 11), 802.11g, 54 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4924.00	H	55.8		4.9	34.9	-40.2	55.5	593.4	5000.0	-18.5
4924.00	V	53.6		4.9	34.9	-40.2	53.3	460.6	5000.0	-20.7
7386.00	H	48.0	Ambient	6.2	35.7	-39.8	50.1	318.8	5000.0	-23.9
7386.00	V	45.9	Ambient	6.2	35.7	-39.8	48.0	250.3	5000.0	-26.0
12310.00	H	46.0	Ambient	8.0	39.2	-39.4	53.8	491.8	5000.0	-20.1
12310.00	V	46.5	Ambient	8.0	39.2	-39.4	54.3	521.0	5000.0	-19.6
19696.00	H	34.9	Ambient	2.2	40.4	-27.8	49.7	305.0	5000.0	-24.3
19696.00	V	34.8	Ambient	2.2	40.4	-27.8	49.6	301.5	5000.0	-24.4
22158.00	H	36.5	Ambient	2.2	40.6	-28.5	50.8	348.2	5000.0	-23.1
22158.00	V	36.5	Ambient	2.2	40.6	-28.5	50.8	348.2	5000.0	-23.1

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m =  $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2462MHz (Ch. 11), 802.11g, 54 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4924.00	H	55.8		4.9	34.9	-40.2	-41.6	13.9	4.9	500.0	-40.1
4924.00	V	53.6		4.9	34.9	-40.2	-41.6	11.7	3.8	500.0	-42.3
7386.00	H	48.0	Ambient	6.2	35.7	-39.8	-41.6	8.5	2.7	500.0	-45.5
7386.00	V	45.9	Ambient	6.2	35.7	-39.8	-41.6	6.4	2.1	500.0	-47.6
12310.00	H	46.0	Ambient	8.0	39.2	-39.4	-41.6	12.2	4.1	500.0	-41.7
12310.00	V	46.5	Ambient	8.0	39.2	-39.4	-41.6	12.7	4.3	500.0	-41.2
19696.00	H	34.9	Ambient	2.2	40.4	-27.8	-41.6	8.1	2.5	500.0	-45.9
19696.00	V	34.8	Ambient	2.2	40.4	-27.8	-41.6	8.0	2.5	500.0	-46.0
22158.00	H	36.5	Ambient	2.2	40.6	-28.5	-41.6	9.2	2.9	500.0	-44.7
22158.00	V	36.5	Ambient	2.2	40.6	-28.5	-41.6	9.2	2.9	500.0	-44.7

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m =  $10^{((\text{Average Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Peak Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2462MHz (Ch. 11), 802.11n, 65 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Peak Readings in a 1MHz bandwidth

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
4924.00	H	51.8		4.9	34.9	-40.2	51.5	374.4	5000.0	-22.5
4924.00	V	55.1		4.9	34.9	-40.2	54.8	547.4	5000.0	-19.2
7386.00	H	45.9	Ambient	6.2	35.7	-39.8	48.0	250.3	5000.0	-26.0
7386.00	V	44.2	Ambient	6.2	35.7	-39.8	46.3	205.8	5000.0	-27.7
12310.00	H	46.1	Ambient	8.0	39.2	-39.4	53.9	497.5	5000.0	-20.0
12310.00	V	43.0	Ambient	8.0	39.2	-39.4	50.8	348.2	5000.0	-23.1
19696.00	H	30.8	Ambient	2.2	40.4	-27.8	45.6	190.2	5000.0	-28.4
19696.00	V	33.1	Ambient	2.2	40.4	-27.8	47.9	247.9	5000.0	-26.1
22158.00	H	32.2	Ambient	2.2	40.6	-28.5	46.5	212.2	5000.0	-27.4
22158.00	V	32.7	Ambient	2.2	40.6	-28.5	47.0	224.8	5000.0	-26.9

Peak Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB)

Peak Total uV/m =  $10^{((\text{Peak Total (dBuV/m)})/20)}$



Manufacturer : SPX Genfare  
Model No. : A29100-0001  
Serial No. : None Assigned  
Test Specification : FCC-15.247(d), Spurious Radiated Emissions in Restricted Bands  
Date : March 26, 2014 through April 11, 2014  
Mode : Transmit at 2462MHz (Ch. 11), 802.11n, 65 Mb/sec  
Notes : Tested with Radome Antenna, M/N: ANT-2.4-WRT-SMA  
Notes : Test Distance is 3 meters  
Notes : Maximized Average Readings

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4924.00	H	51.8		4.9	34.9	-40.2	-41.9	9.6	3.0	500.0	-44.4
4924.00	V	55.1		4.9	34.9	-40.2	-41.9	12.9	4.4	500.0	-41.1
7386.00	H	45.9	Ambient	6.2	35.7	-39.8	-41.9	6.1	2.0	500.0	-47.9
7386.00	V	44.2	Ambient	6.2	35.7	-39.8	-41.9	4.4	1.7	500.0	-49.6
12310.00	H	46.1	Ambient	8.0	39.2	-39.4	-41.9	12.0	4.0	500.0	-41.9
12310.00	V	43.0	Ambient	8.0	39.2	-39.4	-41.9	8.9	2.8	500.0	-45.0
19696.00	H	30.8	Ambient	2.2	40.4	-27.8	-41.9	3.7	1.5	500.0	-50.3
19696.00	V	33.1	Ambient	2.2	40.4	-27.8	-41.9	6.0	2.0	500.0	-48.0
22158.00	H	32.2	Ambient	2.2	40.6	-28.5	-41.9	4.6	1.7	500.0	-49.3
22158.00	V	32.7	Ambient	2.2	40.6	-28.5	-41.9	5.1	1.8	500.0	-48.8

Average Total (dBuV/m) = Meter Reading (dBuV) + Cable Factor (dB) + Antenna Factor (dB) + Pre Amp Gain (dB) + Duty Cycle Correction Factor (dB)

Average Total uV/m =  $10^{((\text{Average Total (dBuV/m)})/20)}$

ELITE ELECTRONIC ENGINEERING Inc.  
 Downers Grove, Ill. 60515

MKA1 04/24/13 UNIV RCU EMI RUN 2

SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GENEFARE
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-00001
SERIAL No.	NONE ASSIGNED
MODE	Tx @ 2412 (Ch.1), 802.11b, DSSS, 2Mbps
SCANS/BAND	1
NOTES	TESTED WITH MOLEX ANTENNA
TEST DATE	10 Apr 2014 06:47:15 M. LONGINOTTI
ANT. POLARIZ.	HORIZONTAL

120

105

90

75

60

45

30

15

0

LEVEL dBUL/m

START = 30

100

FREQUENCY MHz

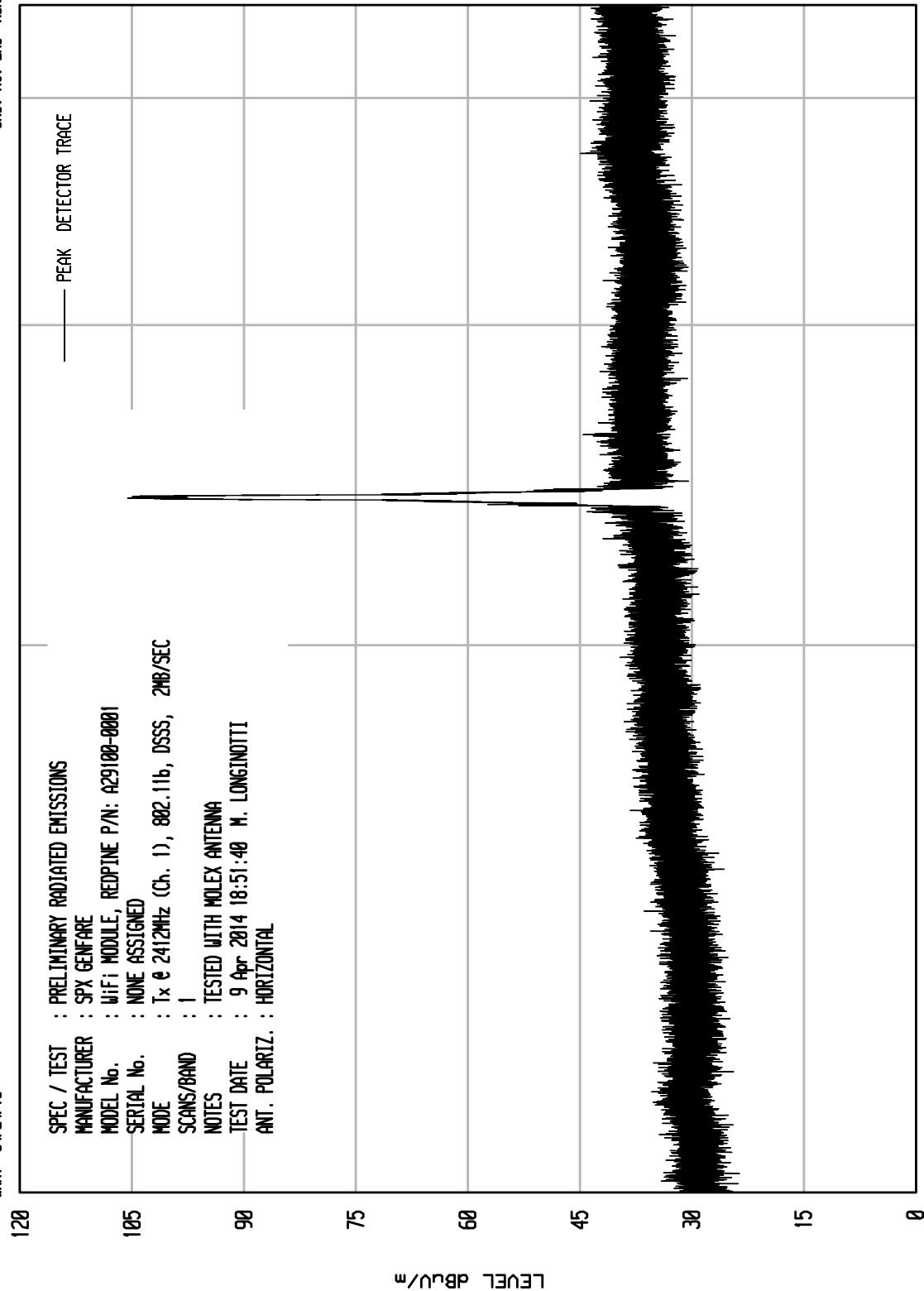
STOP = 1000

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 Downers Grove, Ill. 60515

MKA1 04/24/13

UNIV RCU EMI RUN 25

SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEFNARE
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0000
SERIAL No.	NONE ASSIGNED
MODE	Tx @ 2412MHz (Ch. 1), 802.11b, DSSS, 2MB/SEC
SCANS/BAND	1
NOTES	TESTED WITH MOLEX ANTENNA
TEST DATE	9 Apr 2014 18:51:40
ANT. POLARIZ.	HORIZONTAL



START = 1000

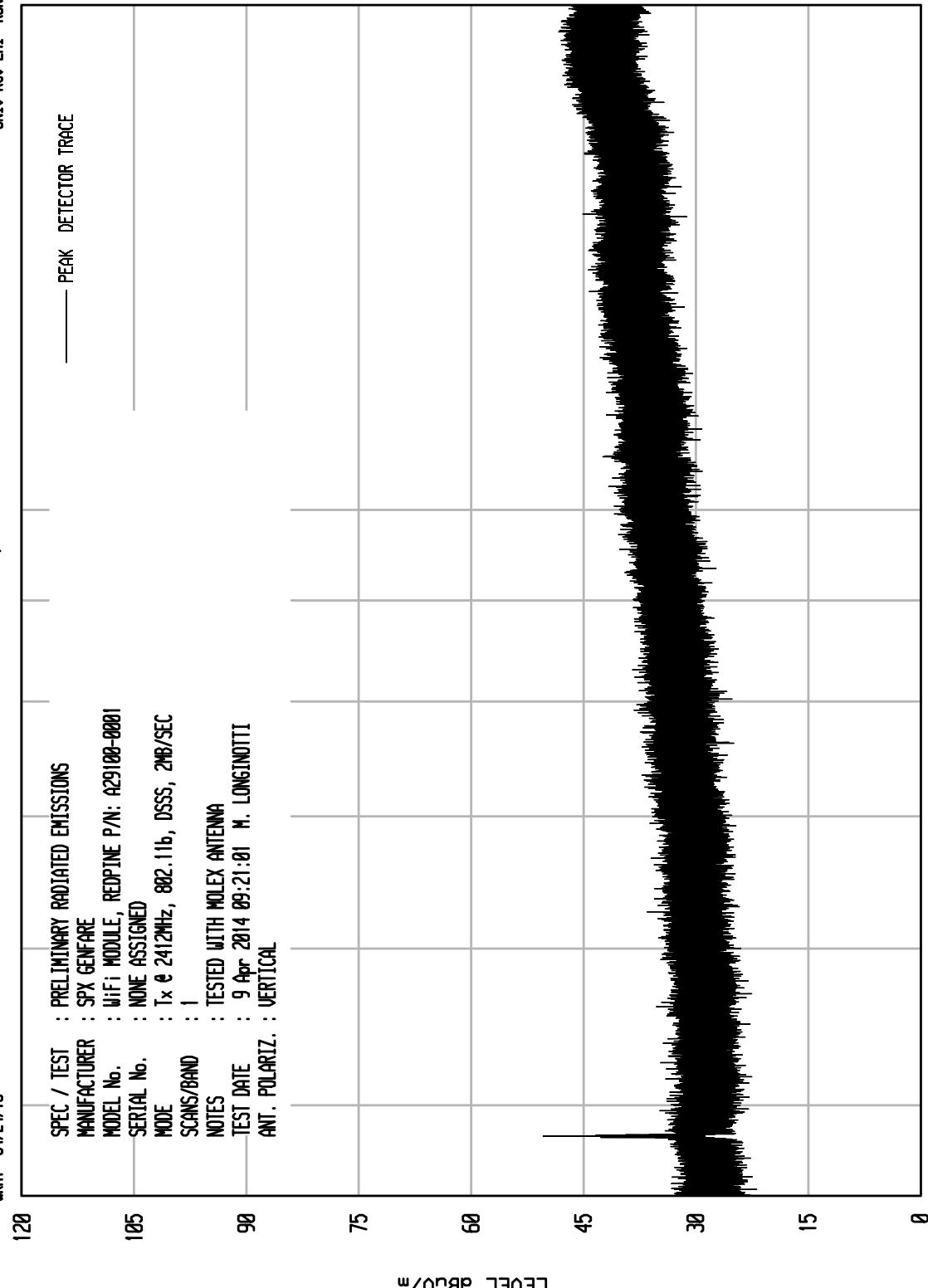
FREQUENCY MHz

STOP = 4500

ELITE ELECTRONIC ENGINEERING Inc.  
Downers Grove, Ill. 60515

UNIV RCU EMI RUN 2

WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEFNARE	MODE	SPY GEFNARE
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0000	SCANS/BAND	1
SERIAL No.	NONE ASSIGNED	NOTES	TESTED WITH MOLEX ANTENNA
MODE	Tx @ 2412MHz, 802.11b, DSSS, 2MB/SEC	TEST DATE	9 Apr 2014 09:21:01 M. LONGINOTTI
ANT. POLARIZ.	VERTICAL		





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Downers Grove, Ill. 60515

UNIV RCU EMI RUN 27

MKA1 04/24/13

	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFARAE	
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0001	
SERIAL No.	: NONE ASSIGNED	
MODE	: Tx @ 2412MHz (CH. 1), 802.11b, 2Mbps	
SCANS/BAND	: 1	
NOTES	: TESTED WITH MOLEX ANTENNA	
TEST DATE	: 10 Apr 2014 13:45:04	M. LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL	

120

105

90

75

60

45

30

15

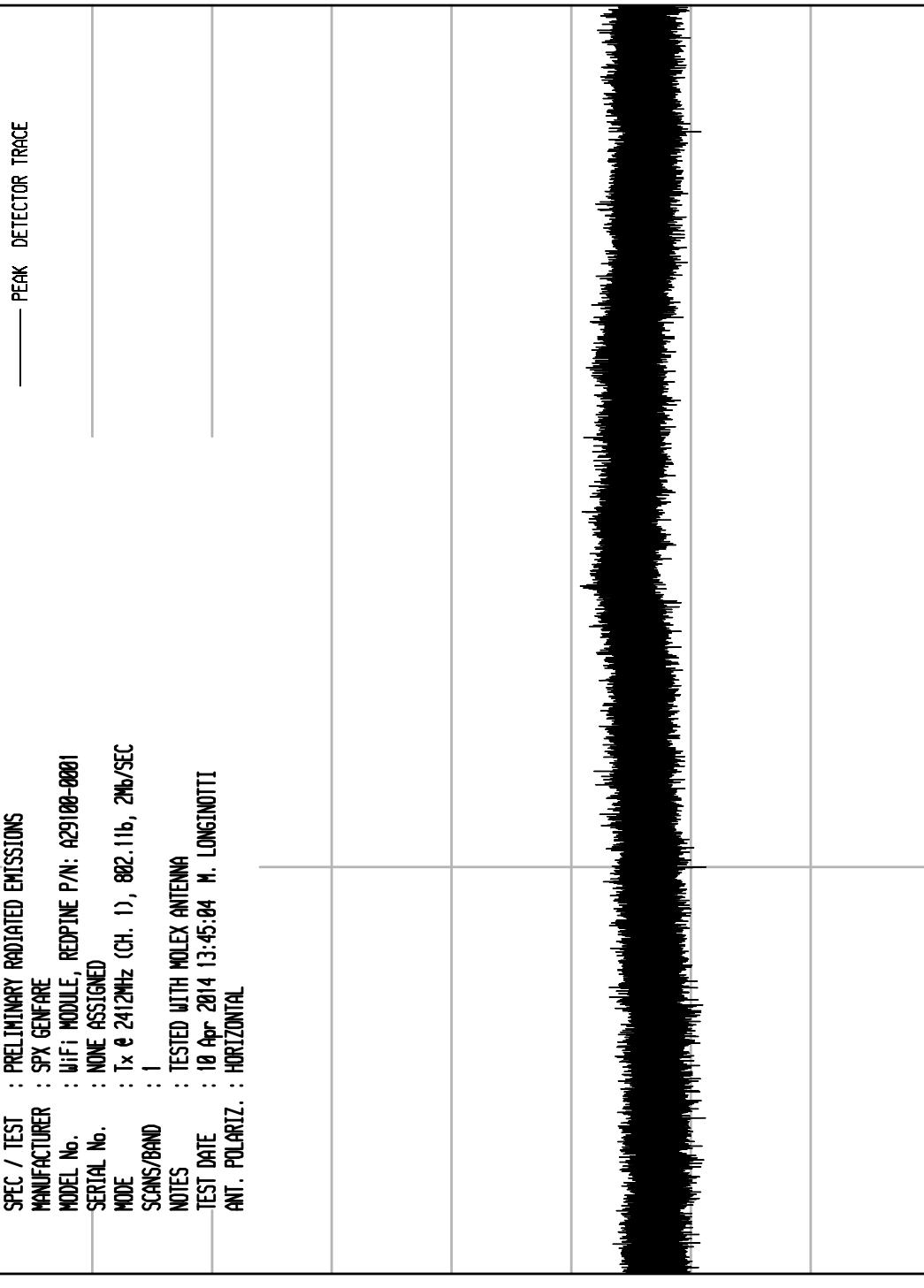
0

LEVEL dB<sub>RU</sub>/m

START = 180000

FREQUENCY MHz

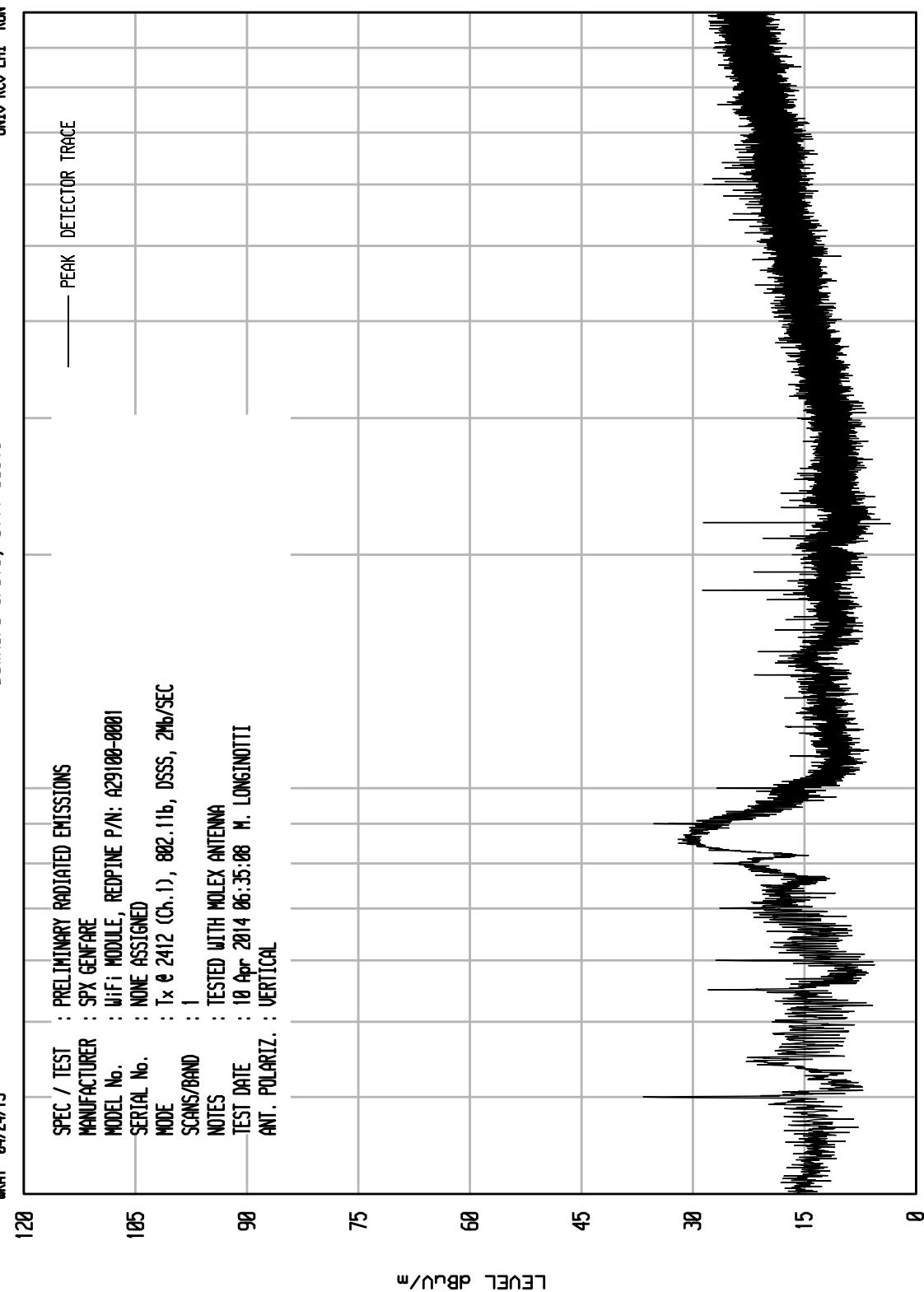
STOP = 250000



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UNIV RCU EMI RUN 1

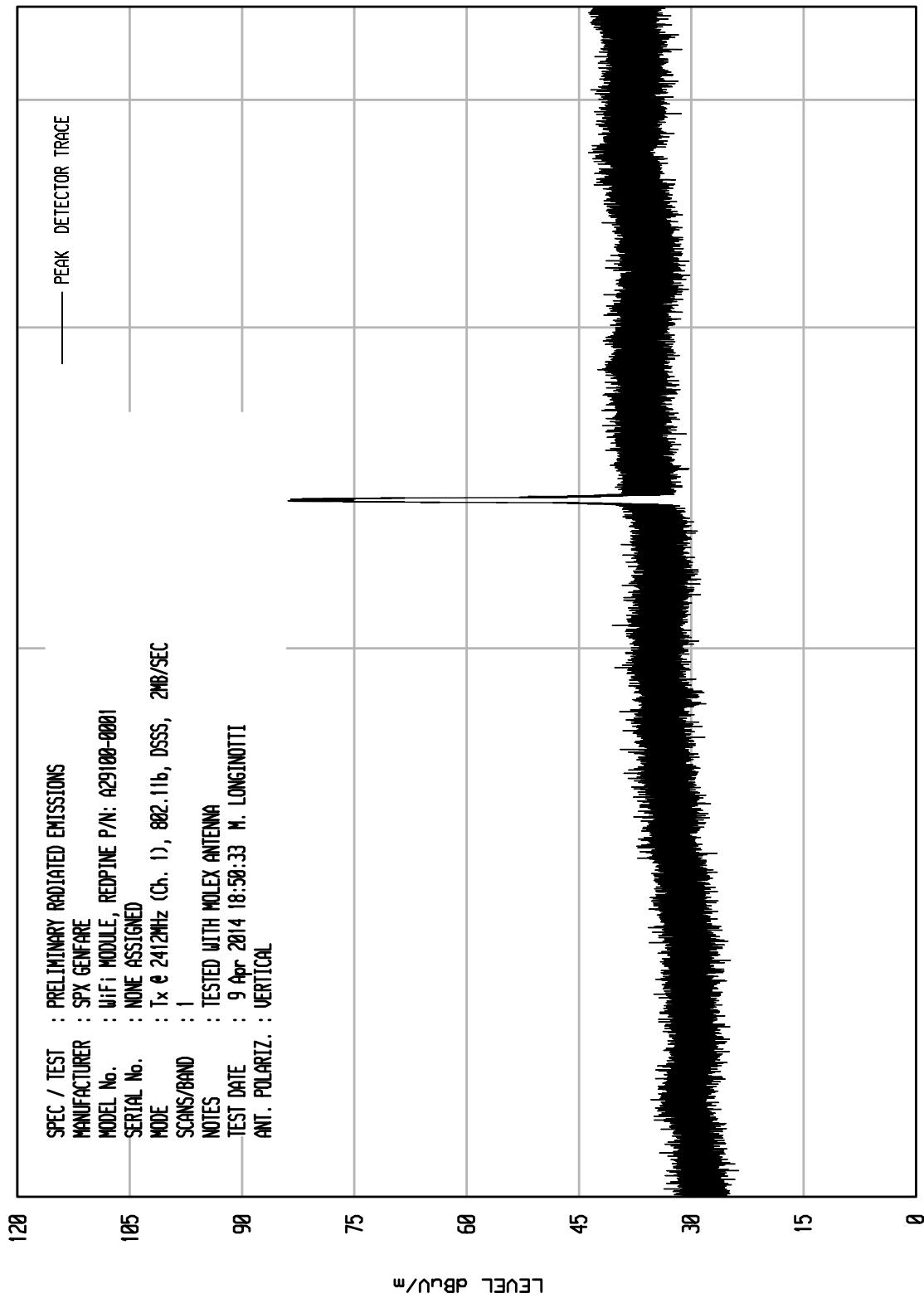
WKA1	04/24/13	SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEFNARE	WIFI MODULE, REDPINE P/N: A29100-0000	
MODEL No.		NONE ASSIGNED	
SERIAL No.	105	Tx @ 2412 (Ch.1), 802.11b, DSSS, 2Mbps	
MODE			
SCANS/BAND			
NOTES		TESTED WITH MOLEX ANTENNA	
TEST DATE		10 Apr 2014 06:35:08	M. LONGINOTTI
ANT. POLARIZ.		VERTICAL	



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 Downers Grove, Ill. 60515

UNIV RCU EMI RUN 24

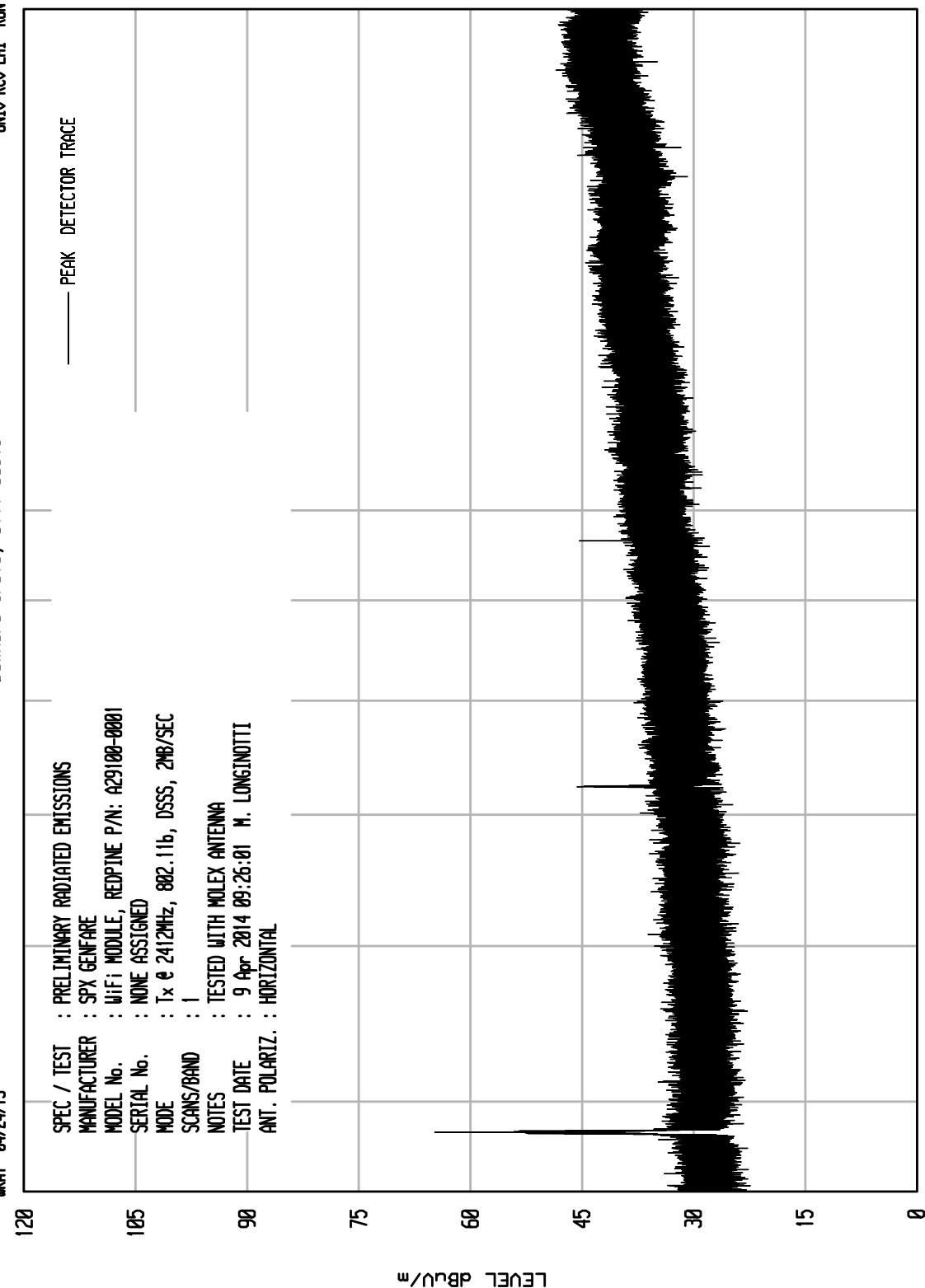
MKA1 04/24/13



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 Downers Grove, Ill. 60515

UNIV RCU EMI RUN 3

WKA1	04/24/13	SPEC / TEST	: PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	: SPY GEFNARE	PEAK	DETECTOR TRACE
MODEL No.	: WiFi MODULE, REDPINE P/N: A29100-0000		
SERIAL No.	: NONE ASSIGNED		
MODE	: Tx @ 2412MHz, 802.11b, DSSS, 2MB/SEC		
SCANS/BAND	: 1		
NOTES	: TESTED WITH MOLEX ANTENNA		
TEST DATE	: 9 Apr 2014 09:26:01	M.	LONGINOTTI
ANT. POLARIZ.	: HORIZONTAL		



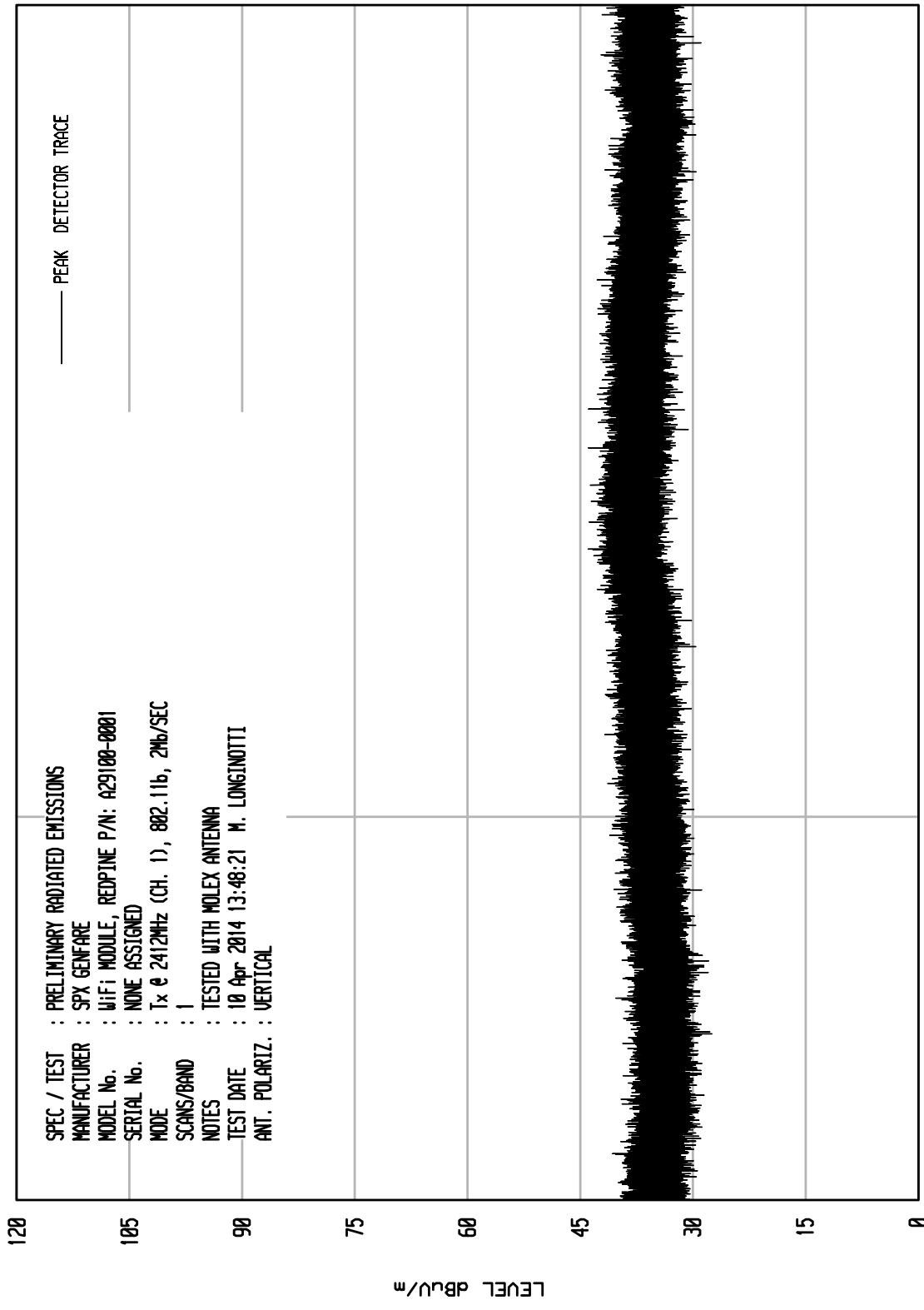
START = 4500

STOP = 18000

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 Downers Grove, Ill. 60515

UNIV RCU EMI RUN 28

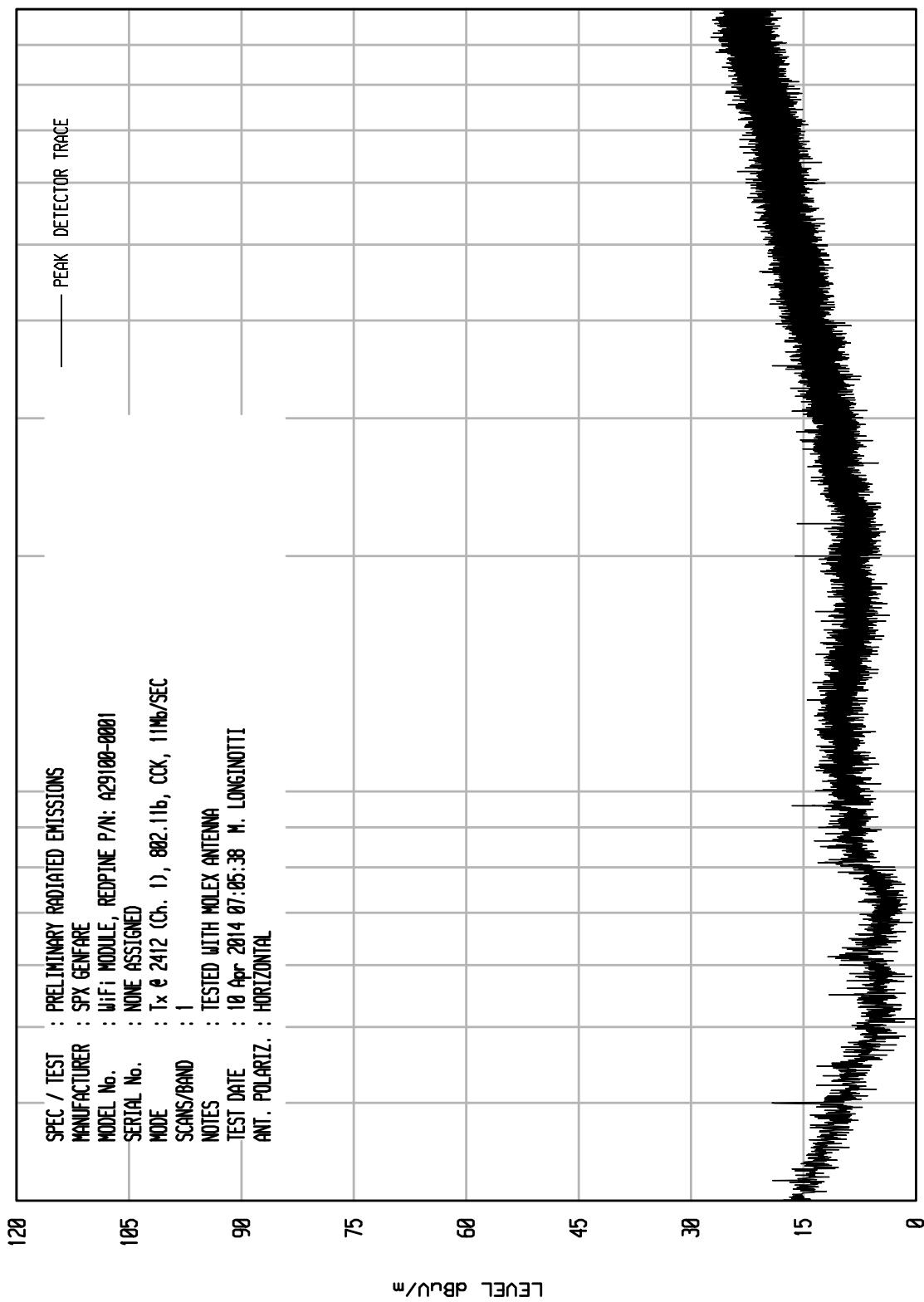
MKA1 04/24/13



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 Downers Grove, Ill. 60515

MKA1 04/24/13 UNIV RCU EMI RUN 12

SPEC / TEST	PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GENEFARE
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-00001
SERIAL No.	NONE ASSIGNED
MODE	Tx @ 2412 (Ch. 1), 802.11b, CCK, 11Mb/SEC
SCANS/BAND	1
NOTES	TESTED WITH MOLEX ANTENNA
TEST DATE	10 Apr 2014 07:05:38 M. LONGINOTTI
ANT. POLARIZ.	HORIZONTAL



START = 30

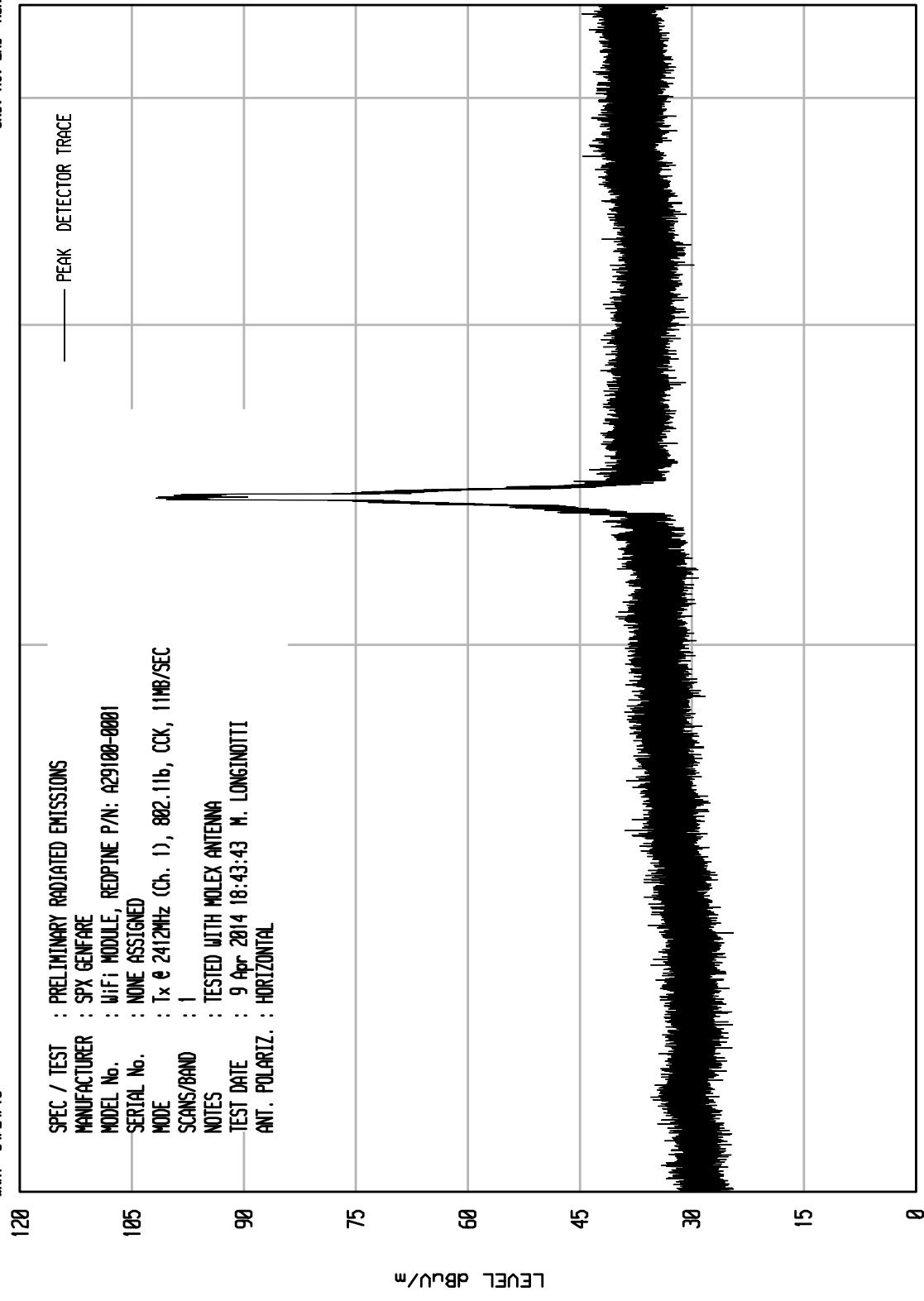
STOP = 1000

ELITE ELECTRONIC ENGINEERING Inc.  
 Downers Grove, Ill. 60515

MKA1 04/24/13

UNIV RCU EMI RUN 21

SPEC / TEST		PRELIMINARY RADIATED EMISSIONS
MANUFACTURER	SPY GEFNARE	
MODEL No.	WIFI MODULE, REDPINE P/N: A29100-0000	
SERIAL No.	NONE ASSIGNED	
MODE	Tx @ 2412MHz (Ch. 1), 802.11b, CCK, 11MB/SEC	
SCANS/BAND	1	
NOTES	TESTED WITH MOLEX ANTENNA	
TEST DATE	9 Apr 2014 18:43:43	M. LONGINOTTI
ANT. POLARIZ.	HORIZONTAL	



START = 1000

STOP = 4500