Measurement of RF Emissions from a Rev. C Gen 2 Wireless Bridge

For	Ingersoll Rand 6200 Troup Highway Tyler, TX 75707
P.O. Number	R1249319
Date Tested	November 11th, 14th and 15th, 2012
Test Personnel	Ian F. Carnegie
Test Specification	FCC "Code of Federal Regulations" Title 47 Part15, Subpart C Industry Canada RSS-GEN Industry Canada RSS-210

Test Report By:

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REVISION HISTORY

Revision	Date	Description
—	30 November 2012	Initial release

Measurement of RF Emissions from a Gen 2 Wireless Bridge, Model No. Rev. C

1. INTRODUCTION

1.1. Scope of Tests

This report presents the results of the RF emissions measurements performed on a Gen 2 Wireless Bridge, Model No. Rev. C, Serial No. 24661 and 10047, (hereinafter referred to as the Equipment Under Test (EUT)). The EUT was designed to transmit at 909 MHz using an internal antenna. The EUT was manufactured and submitted for testing by Ingersoll Rand located in in Tyler, TX.

1.2. Purpose

The test series was performed to determine if the EUT meets the conducted and radiated RF emission requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Sections 15.249 for Intentional Radiators. Testing was performed in accordance with ANSI C63.4-2009.

The test series was also performed to determine if the EUT meets the conducted and radiated RF emission requirements of the Industry Canada Radio Standards Specification, RSS-Gen, Section 7.2.4 and Section 6.1 for receivers and the Industry Canada Radio Standards Specification RSS-Gen Section 7.2.4 and RSS-210 Annex 8, for Transmitters.

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 American Association for Laboratory Accreditation (A2LA). A2LA Certificate Number: 1786.01.

1.5. Laboratory Conditions

The temperature at the time of the test was 21^{o}C and the relative humidity was 22%.

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, Subpart C, dated November 2012
- 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"
- Industry Canada Radio Standards Specification, RSS-Gen, “General Requirements and Information for the Certification of Radio Communication Equipment”, Issue 3, December 2010
- Industry Canada Radio Standards Specification, RSS-210, “Low-power License-exempt Radio Communication Devices (All Frequency Bands): Category I Equipment”, Issue 8, December 2010

3. EUT SETUP AND OPERATION

3.1. General Description

The EUT is a Ingersoll Rand, Gen 2 Wireless Bridge, Model No. Rev. C. A block diagram of the EUT setup is shown as Figure 1.

3.1.1. Power Input

The EUT obtained 5 VDC from a brick style transformer connected to 120 VAC 60Hz power via a 2 wire, 9 foot long, unshielded power cord. The high and low leads were connected through a line impedance stabilization network (LISN) which was located on the copper ground plane. The network complies with the requirements of Paragraph 4.1.2 of ANSI C63.4-2009.

3.1.1. Peripheral Equipment

The following peripheral equipment was submitted with the EUT:

Item	Description
Power Supply	120VAC to 5 VDC transformer
Netgear Network Switch	Network switch model GS105

3.1.2. Interconnect Cables

The following interconnect cables were submitted with the EUT:

Item	Description
Ethernet Cable	3 foot long for connecting EUT to a local network switch

3.1.3. Grounding

Since only two wires were used to provide the input power, the EUT was ungrounded during the tests. The third primary input terminal of the transformer was not used.

3.2. Operational Mode

For all tests, the EUT was placed on an 80cm high non-conductive stand. The EUT was energized. The unit with serial number 10047 was programmed to operate in the Modulated Transmit (909 MHz) mode and the unit with serial number 24661 was programmed to operate in the Receive (909 MHz) mode.

3.3. EUT Modifications

The following modifications were performed to the EUT:

The Modulated Transmit (909 MHz) power output was reduced slightly by Ingersoll Rand engineers in order to meet the FCC 15 requirements for radiated emission requirements.

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.

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

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

5. TEST PROCEDURES

5.1. Powerline Conducted Emissions

5.1.1.Receiver

5.1.1.1 Requirements

All radio frequency voltages on the power lines of a receiver shall be below the values shown below when using a quasi-peak or average detector:

CONDUCTED LIMITS FOR A RECEIVER

Frequency MHz	RFI Voltage dBuV(QP)	RFI Voltage dBuV(Average)
0.15-0.5	66 decreasing with logarithm of frequency to 56	56 decreasing with logarithm of frequency to 46
0.5-5	56	46
5-30	60	50

Note 1: The lower limit shall apply at the transition frequencies.
Note 2: If the levels measured using the QP detector meet both the QP and the Average limits, the EUT is considered to have met both requirements and measurements do not need to be performed using the Average detector.

5.1.1.2 Procedures

The interference on each power lead of the EUT was measured by connecting the measuring equipment to the appropriate meter terminal of the Line Impedance Stabilization Network (LISN). The meter terminal of the LISN not under test was terminated with 50 ohms.

a) The EUT was operated in the Receive (909 MHz) mode.

b) Measurements were first made on the 120 VAC high line.

c) The frequency range from 150 kHz to 30 MHz was broken up into smaller frequency sub-bands.

d) Conducted emissions measurements were taken on the first frequency sub-band using a peak detector.

e) The data thus obtained was then searched by the computer for the highest levels. Any emissions levels that were within 10dB of the average limit were then measured again using both a quasi-peak detector and an average detector. (If no peak readings were within 10dB of the average limit, quasi-peak and average readings were taken on the highest emissions levels measured during the peak detector scan.)

f) Steps (d) and (e) were repeated for the remainder of the frequency sub-bands until the entire frequency range from 150kHz to 30MHz was investigated. The peak trace was automatically plotted. The plot also shows quasi-peak and average readings that were taken on discrete frequencies. A table showing the quasi-peak and average readings was also generated. This tabular data compares the quasi-peak and average conducted emissions to the applicable conducted emissions limits.

g) Steps (c) through (f) were repeated on the 120 VAC return line.

5.1.1.3 Results

The plots of the peak, quasi-peak, and average as well as the tabular data for the conducted voltage levels acquired from each input power line with the EUT operated in the Receive (909 MHz) mode are shown on pages 19 through 22. All power line conducted emissions measured from the EUT were within the specification limits. Photographs of the test configuration which yielded the highest or worst case, conducted emission levels are shown on Figure 2.

5.1.1.Transmitter

5.1.1.1 Requirements

All radio frequency voltages on the power lines for any frequency or frequencies of an intentional radiator shall not exceed the limits in the following table:

Frequency MHz	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 – 0.5	66 decreasing with logarithm of frequency to 56	56 decreasing with logarithm of frequency to 46
0.5 - 5	56	46
5 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

5.1.1.2 Procedures

The interference on each power lead of the host Laptop computer was measured by connecting the measuring equipment to the appropriate meter terminal of the Line Impedance Stabilization Network (LISN). The meter terminal of the LISN not under test was terminated with 50 ohms.

a) The EUT was operated in the Modulated Transmit (909 MHz)mode.

b) Measurements were first made on the 120VAC 60Hz L1 lead of the power supply to the laptop.

c) The frequency range from 150 kHz to 30 MHz was broken up into smaller frequency sub-bands.

d) Conducted emissions measurements were taken on the first frequency sub-band using a peak detector.

e) The data thus obtained was then searched by the computer for the highest levels. Any emissions levels that were within 10dB of the average limit were then measured again using both a quasi-peak detector and an average detector. (If no peak readings were within 10dB of the average limit, quasi-peak and average readings were taken on the highest emissions levels measured during the peak detector scan.)

f) Steps (d) and (e) were repeated for the remainder of the frequency sub-bands until the entire frequency range from 150kHz to 30MHz was investigated. The peak trace was automatically plotted. The plot also shows quasi-peak and average readings that were taken on discrete frequencies. A table showing the quasi-peak and average readings was also generated. This tabular data compares the quasi-peak and average conducted emissions to the applicable conducted emissions limits.

g) Steps (c) through (f) were repeated on the 120VAC 60Hz L2 line.

5.1.1.3 Results

The plots of the peak, quasi-peak, and average as well as the tabular data for the conducted voltage levels acquired from each input power line with the EUT operated in the Modulated Transmit (909 MHz)mode are shown on pages 23 through 26. All power line conducted emissions measured from the EUT were within the specification limits.

Photographs of the test configuration which yielded the highest or worst case, conducted emission levels are shown on Figure 2.

5.2. Radiated Measurements

5.2.1.Receiver

5.2.1.1 Requirements

All radio frequency emissions from a receiver shall be below the limits shown on the following table:

RADIATION LIMITS FOR A RECEIVER

Frequency MHz	Distance between EUT And Antenna in Meters	Field Strength uV/m	Field Strength dBuV/m
30-88	3	100	40
88-216	3	150	43.5
216-960	3	200	46
Above 960	3	500	54

Note: The tighter limit shall apply at the edge between the two frequency bands.

5.2.1.2 Procedures

For FCC, testing was performed separately on a low, middle, and high channel. The emissions in the frequency range of 30MHz to 1GHz were measured and plotted using a ‘screen-dump’ utility. Testing was performed with the antenna of the EUT in place.

For Industry Canada, testing was performed on a middle channel. The emissions in the frequency range of 30MHz to 3 times the highest tunable or local oscillator frequency, whichever is the higher, were measured and plotted. Testing was performed with the antenna of the EUT in place.

All tests were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. The walls and ceiling of the shielded chamber are lined with ferrite tiles. 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.

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.

Since a quasi-peak detector and an average detector require long integration times, it is not practical to automatically sweep through the quasi-peak and average levels. Therefore, radiated emissions from the EUT were first scanned using a peak detector and automatically plotted. The frequencies where significant emission levels were noted were then remeasured using the quasi-peak detector or average detector.

The broadband measuring antenna was positioned at a 3 meter distance from the EUT. The frequency range from 30MHz to 1GHz was investigated using a peak detector function with the bilog antenna at several heights, horizontal and vertical polarization, and with several different orientations of the EUT with respect to the antenna. The maximum levels for each antenna polarization were plotted.

Final radiated emissions were performed on all significant broadband and narrowband emissions found in the preliminary sweeps using the following methods:

1) Measurements from 30MHz to 1GHz were made using a quasi-peak detector and a broadband bilog antenna. Measurements above 1GHz were made using an average detector and a broadband double ridged waveguide antenna.
2) To ensure that maximum or worst case, emission levels were 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.
    d) The EUT was rotated through eight axes to determine which orientation produces the highest emission relative to the limit.

5.2.1.3 Results

The preliminary plots and final radiated levels are presented on pages 27 through 32. The plots are presented for a reference only, and are not used to determine compliance. 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 and Figure 4.

5.2.2.Transmitter

5.2.2.1 Requirements

The EUT must comply with the requirements of FCC "Code of Federal Regulations Title 47", Part 15, Subpart C, Section 15.249(a) and Industry Canada RSS-210 Annex 2, Section A2.9. Both standards have the following radiated emission limits:

Fundamental Frequency MHz	Field Intensity mV/m @ 3 meter	Field Strength of Harmonics uV/m @ 3 meter
909 MHz	50	500

The field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits by more than 20 dB under any condition of modulation.

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits, whichever is the lesser attenuation.

5.2.2.2 Procedures

All 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. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4-2009 for site attenuation.

A preliminary radiated emissions test was 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 10GHz was investigated using a peak detector function. The data was then processed by the computer to calculate equivalent field intensity.

The final emission tests were then manually performed over the frequency range of 30MHz to 10GHz. Between 30MHz and 1000MHz, a bilog antenna was used as the pick-up device. A broadband double ridged waveguide antenna was used as the pick-up device for all frequencies above 1GHz. All significant broadband and narrowband signals were measured and recorded.

To ensure that maximum or worst case, emission levels were measured, the following steps were taken:

3) The EUT was rotated so that all of its sides were exposed to the receiving antenna.
4) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
5) The measuring antenna was raised and lowered from 1 to 4 meters for each antenna polarization to maximize the readings.
6) The EUT was rotated through eight axes to determine which orientation produces the highest emission relative to the limit.

5.2.2.3 Results

Preliminary radiated emissions plots with the EUT transmitting at 909 MHz are shown on pages 33 through 37. The plots are presented for a reference only, and are not used to determine compliance. The final radiated levels are presented on pages 38 and 39. As can be seen from the data, all emissions measured from the EUT were within the specification limits.

5.3. Band Edge Compliance

5.3.1.Requirement

In accordance with FCC "Code of Federal Regulations Title 47", Part 15, Subpart C, Section 15.249, emissions outside of the specified frequency bands shall be below the general radiated emissions limits of 15.209. Therefore the radiated emissions at the band edges (902 MHz to 928 MHz) must meet the general limits of 15.209.

In accordance with Industry Canada RSS-210 Annex 2, Section A2.9(b), emissions outside of the specified frequency bands shall be below the general radiated emissions limits of RSS-210 Annex 2, Section A2.9(a). Therefore the radiated emissions at the band edges (902 MHz to 928 MHz) must meet the general limits of Annex 2 Section A2.9.

5.3.2.Procedures

5.3.2.1 Low Band Edge

a) The EUT was set up inside the test chamber on a non-conductive stand.
b) A broadband measuring antenna was placed at a test distance of 3 meters from the EUT.

c) A radiated emissions test was performed to determine the emission characteristics of the EUT. The entire frequency range from 800MHz to 1GHz was investigated using a peak detector function. The data was then processed by the computer to calculate equivalent field intensity.
d) The data was plotted and examined to confirm that the transmit frequency was not below 902 MHz as marked on the plot on page 40.

5.3.2.2 High Band Edge

a) The EUT was set up inside the test chamber on a non-conductive stand.
b) A broadband measuring antenna was placed at a test distance of 3 meters from the EUT.
c) A radiated emissions test was performed to determine the emission characteristics of the EUT. The entire frequency range from 800MHz to 1GHz was investigated using a peak detector function. The data was then processed by the computer to calculate equivalent field intensity.
d) The data was plotted and examined to confirm that the transmit frequency was not above 928 MHz as marked on the plot on page 41.

5.3.3.Results

Pages 40 through 41 show the radiated band-edge compliance results. As can be seen from these plots, the radiated emissions at the low end band edge and the high end band edge are within the general limits.

6. OTHER TEST CONDITIONS

6.1. Test Personnel and Witnesses

All tests were performed by qualified personnel from Elite Electronic Engineering Incorporated. The test series was witnessed by Ingersoll Rand personnel.

6.2. Disposition of the EUT

The EUT and all associated equipment were returned to Ingersoll Rand upon completion of the tests.

7. CONCLUSIONS

It was determined that the Ingersoll Rand Gen 2 Wireless Bridge, Model No. Rev. C, Serial No. 24661 and 10047, did fully meet the conducted and radiated emission requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Section 15.205 et seq. for Intentional Radiators, when tested per ANSI C63.4-2009.

It was determined that the Ingersoll Rand Gen 2 Wireless Bridge, Model No. Rev. C, Serial No. 24661 and 10047, did fully meet the conducted and radiated emission requirements of the Industry Canada Radio Standards Specification, RSS-Gen, Section 7.2.4 and Section 6.1 for receivers and the Industry Canada Radio Standards Specification RSS-Gen Section 7.2.4 and RSS-210 Annex 8, for Transmitters.

8. 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 as operated by Ingersoll Rand personnel. 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.

This report must not be used to claim product endorsement by NVLAP or any agency of the US Government.

9. EQUIPMENT LIST

Table 9-1 Equipment List

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW3	PREAMPLIFIER	PLANAR ELECTRONICS	PE2-35-120-5R0-10-12	PL2924	1GHZ-20GHZ	8/22/2012	8/22/2013
MDA2	MULTIMETER (J. CHELINI)	FLUKE CORPORATION	26	72120784	I;VDC;VAC;R	3/11/2012	3/11/2013
NTA2	BILOG ANTENNA	TESEQ	6112D	28040	25-1000MHz	7/30/2012	7/30/2013
NWH0	RIDGED WAVE GUIDE	TENSOR	4105	2081	1-12.4GHZ	11/3/2011	11/3/2012
PLF1	CISPR16 50UH LISN	ELITE	CISPR16/70A	001	.15-30MHz	6/20/2012	6/20/2013
PLF3	CISPR16 50UH LISN	ELITE	CISPER16/70A	003	.15-30MHz	6/20/2012	6/20/2013
RAKG	RF SECTION	HEWLETT PACKARD	85462A	3549A00284	0.009-6500MHZ	3/12/2012	3/12/2013
RAKH	RF FILTER SECTION	HEWLETT PACKARD	85460A	3448A00324	---	3/12/2012	3/12/2013
RBB0	EMI TEST RECEIVER 20HZ TO 40 GHZ.	ROHDE & SCHWARZ	ESIB40	100250	20 HZ TO 40GHZ	3/5/2012	3/5/2013
XLQH	5W, 50 OHM TERMINATION	JFW INDUSTRIES	50T-052	54	DC-2GHZ	8/6/2012	8/6/2013
XPQ3	HIGH PASS FILTER	K&L MICROWAVE	4IH30-1804/T10000-0	4	1.8GHZ-10GHZ	11/26/2012	11/26/2013

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.

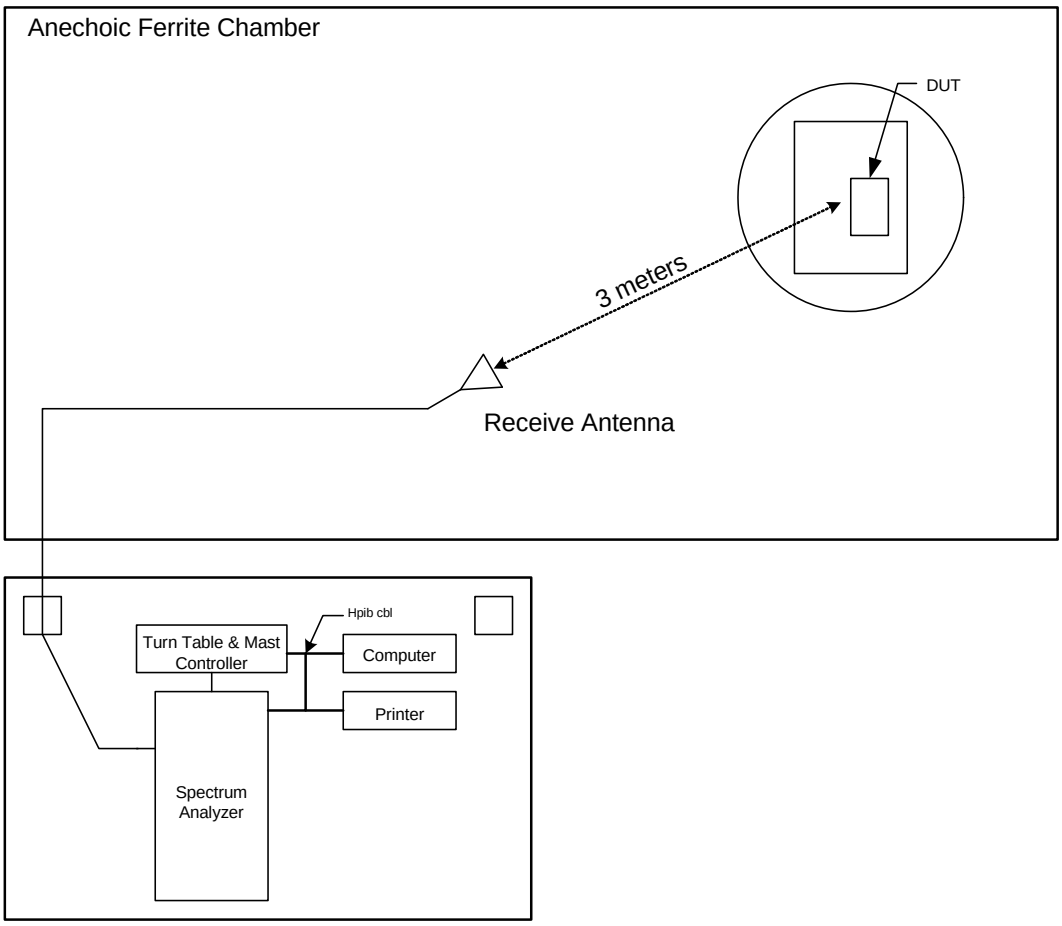


FIGURE 1 BLOCKDIAGRAM OF TEST SETUP

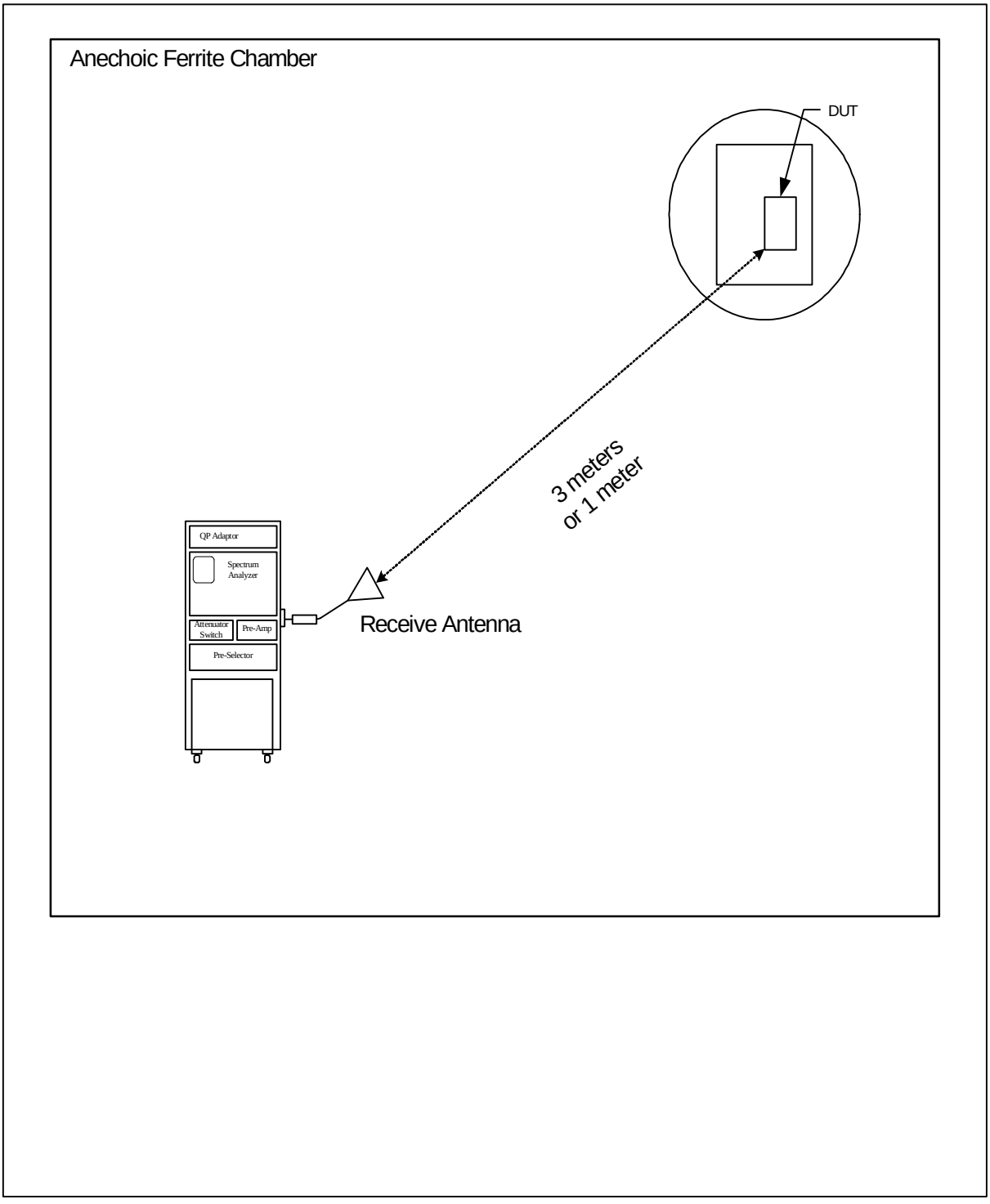

Anechoic Ferrite Chamber
DUT
3 meters
or 1 meter
QP Adaptor
Spectrum
Analyzer
Attenuator
Switch
Pre-Amp
Pre-Selector
Receive Antenna

Figure 2

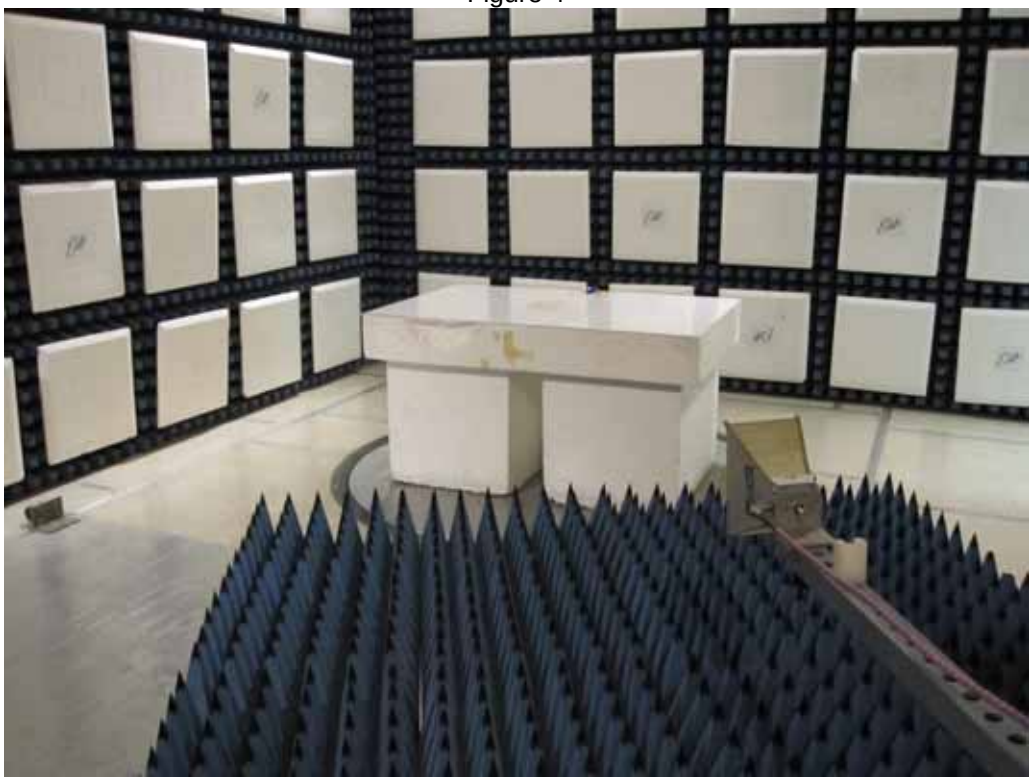
Test Setup for Conducted Emissions

Figure 3

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

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

Figure 4



Test Setup for Radiated Emissions – 1 GHz to 10 GHz, Horizontal Polarization

Test Setup for Radiated Emissions – 1 GHz to 10 GHz, Vertical Polarization

FCC Part 15 Subpart B Conducted Emissions Test

Significant Emissions Data

VB** 02/09/2011

Manufacturer	:	Ingersoll Rand
Model	:	Rev C
Serial Number	:	24661
DUT Mode	:	Rx
Line Tested	:	High
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	Connected to Netgear switch
Test Engineer	:	I. Carnegie
Limit	:	Rx
Test Date	:	Nov 07, 2012 01:47:48 PM
Data Filter	:	Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

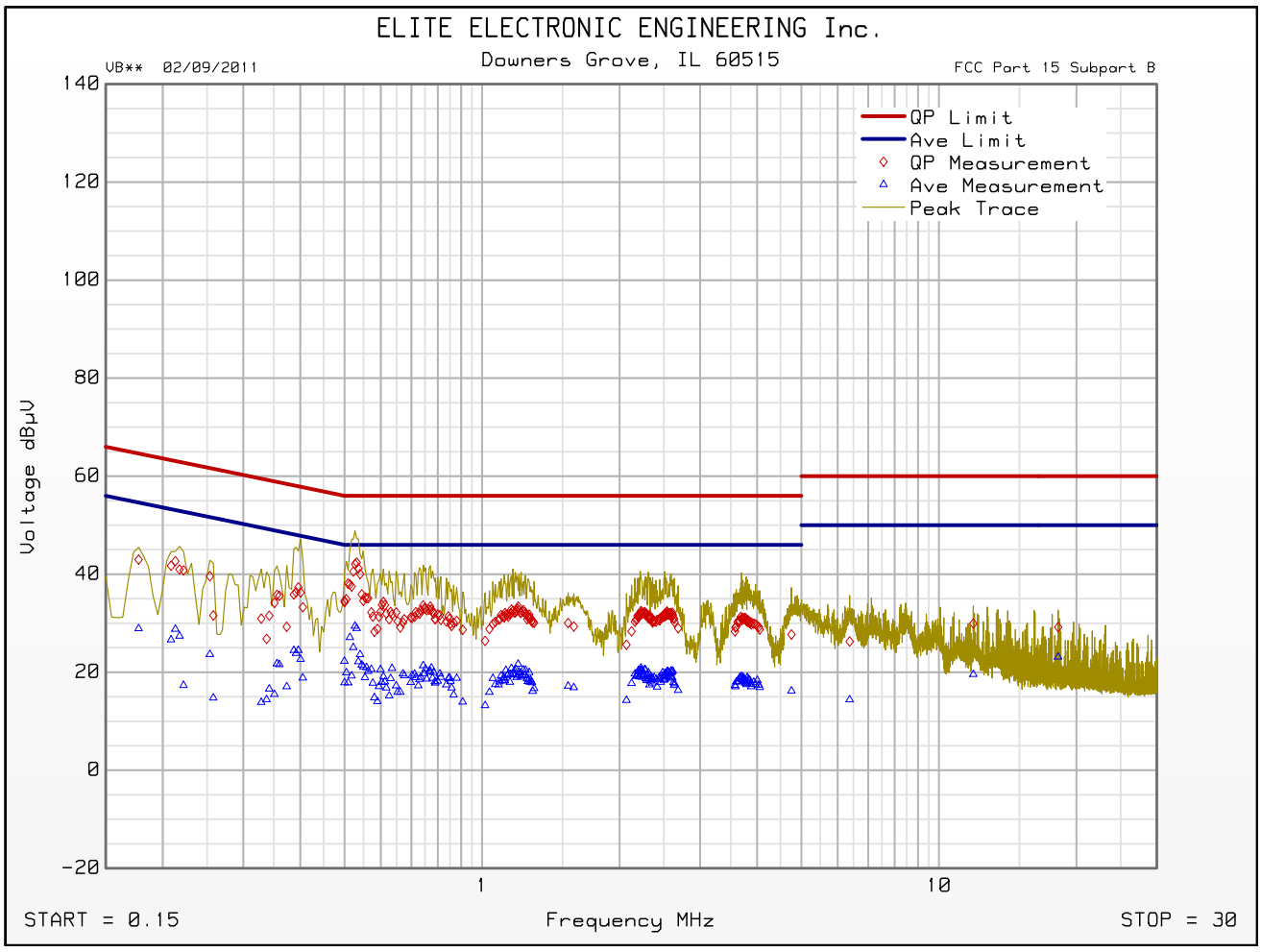
Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.213	42.7	63.1		28.8	53.1	
0.396	37.3	57.9		24.5	47.9	
0.532	42.4	56.0		29.0	46.0	
1.200	33.4	56.0		21.7	46.0	
1.268	31.7	56.0		20.0	46.0	
2.228	32.5	56.0		20.9	46.0	
3.685	31.3	56.0		18.8	46.0	
6.377	26.3	60.0		14.4	50.0	
11.894	29.9	60.0		19.6	50.0	
18.244	29.2	60.0		23.1	50.0	

FCC Part 15 Subpart B Conducted Emissions Test

Cumulative Data

VB** 02/09/2011

Manufacturer	:	Ingersoll Rand
Model	:	Rev C
Serial Number	:	24661
DUT Mode	:	Rx
Line Tested	:	High
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	Connected to Netgear switch
Test Engineer	:	I. Carnegie
Limit	:	Rx
Test Date	:	Nov 07, 2012 01:47:48 PM



Emissions Meet QP Limit
Emissions Meet Ave Limit

FCC Part 15 Subpart B Conducted Emissions Test

Significant Emissions Data

VB** 02/09/2011

Manufacturer	:	Ingersol Rand
Model	:	Rev C
Serial Number	:	24661
DUT Mode	:	Rx
Line Tested	:	Low
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	Connected to Netgear switch
Test Engineer	:	I. Carnegie
Limit	:	Rx
Test Date	:	Nov 07, 2012 01:37:33 PM
Data Filter	:	Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

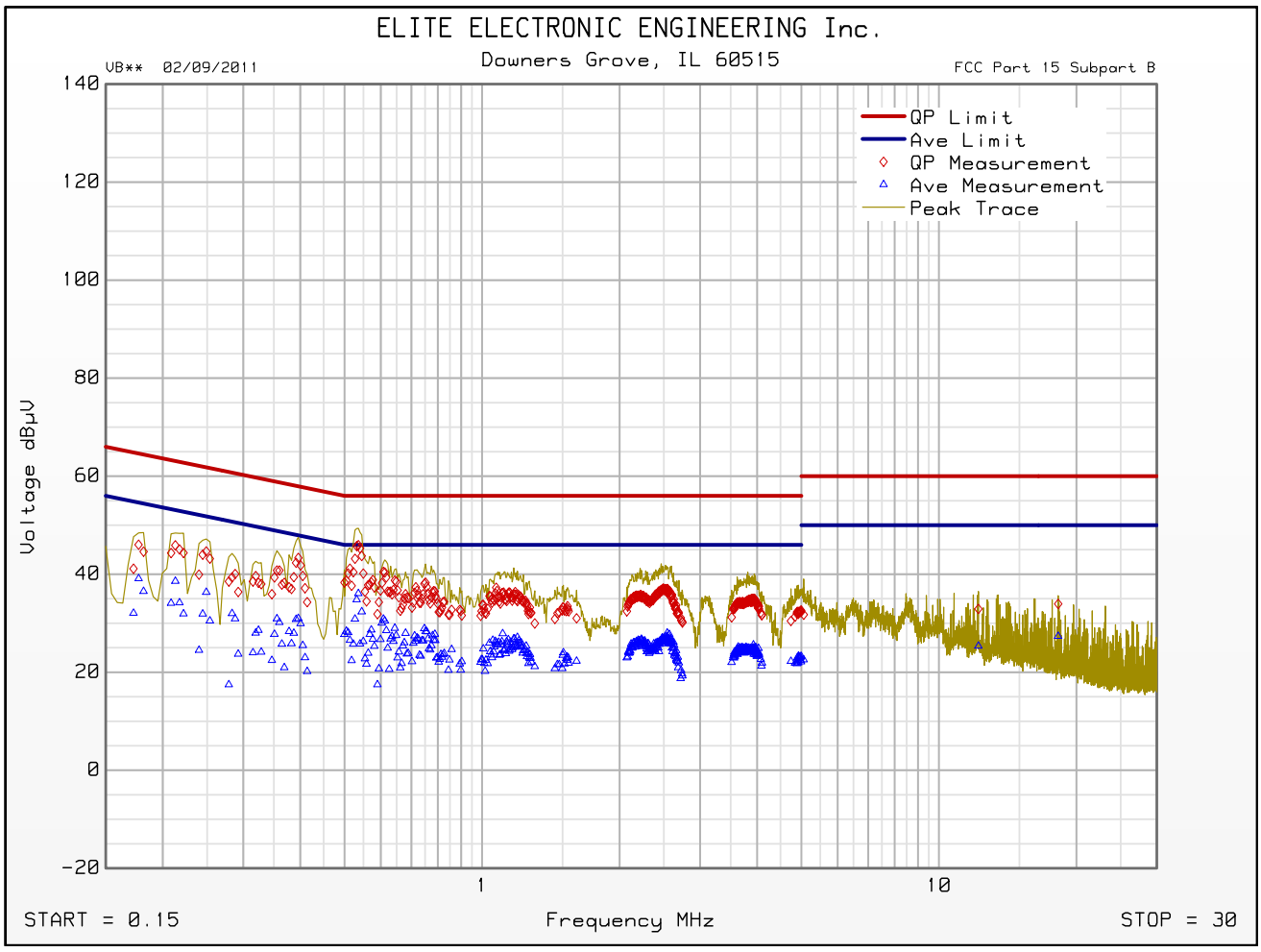
Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.249	44.7	61.8		36.3	51.8	
0.396	43.3	57.9		31.0	47.9	
0.536	45.9	56.0		36.1	46.0	
1.074	37.3	56.0		26.1	46.0	
1.250	33.9	56.0		23.9	46.0	
2.493	37.1	56.0		26.8	46.0	
3.914	35.0	56.0		24.4	46.0	
5.059	31.7	60.0		22.6	50.0	
12.200	32.9	60.0		25.3	50.0	
18.244	33.9	60.0		27.4	50.0	

FCC Part 15 Subpart B Conducted Emissions Test

Cumulative Data

VB** 02/09/2011

Manufacturer	:	Ingersol Rand
Model	:	Rev C
Serial Number	:	24661
DUT Mode	:	Rx
Line Tested	:	Low
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	Connected to Netgear switch
Test Engineer	:	I. Carnegie
Limit	:	Rx
Test Date	:	Nov 07, 2012 01:37:33 PM



Emissions Meet QP Limit
Emissions Meet Ave Limit

FCC Part 15 Subpart C Conducted Emissions Test

Significant Emissions Data

VB** 02/09/2011

Manufacturer	:	Ingersoll Rand
Model	:	REV C (MOD #29)
Serial Number	:	10047
DUT Mode	:	Tx @ 909MHz (MODULATED)
Line Tested	:	High
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	CONNECTED TO NETGEAR SWITCH
Test Engineer	:	I. Carnegie
Limit	:	Tx
Test Date	:	Nov 14, 2012 04:47:33 PM
Data Filter	:	Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

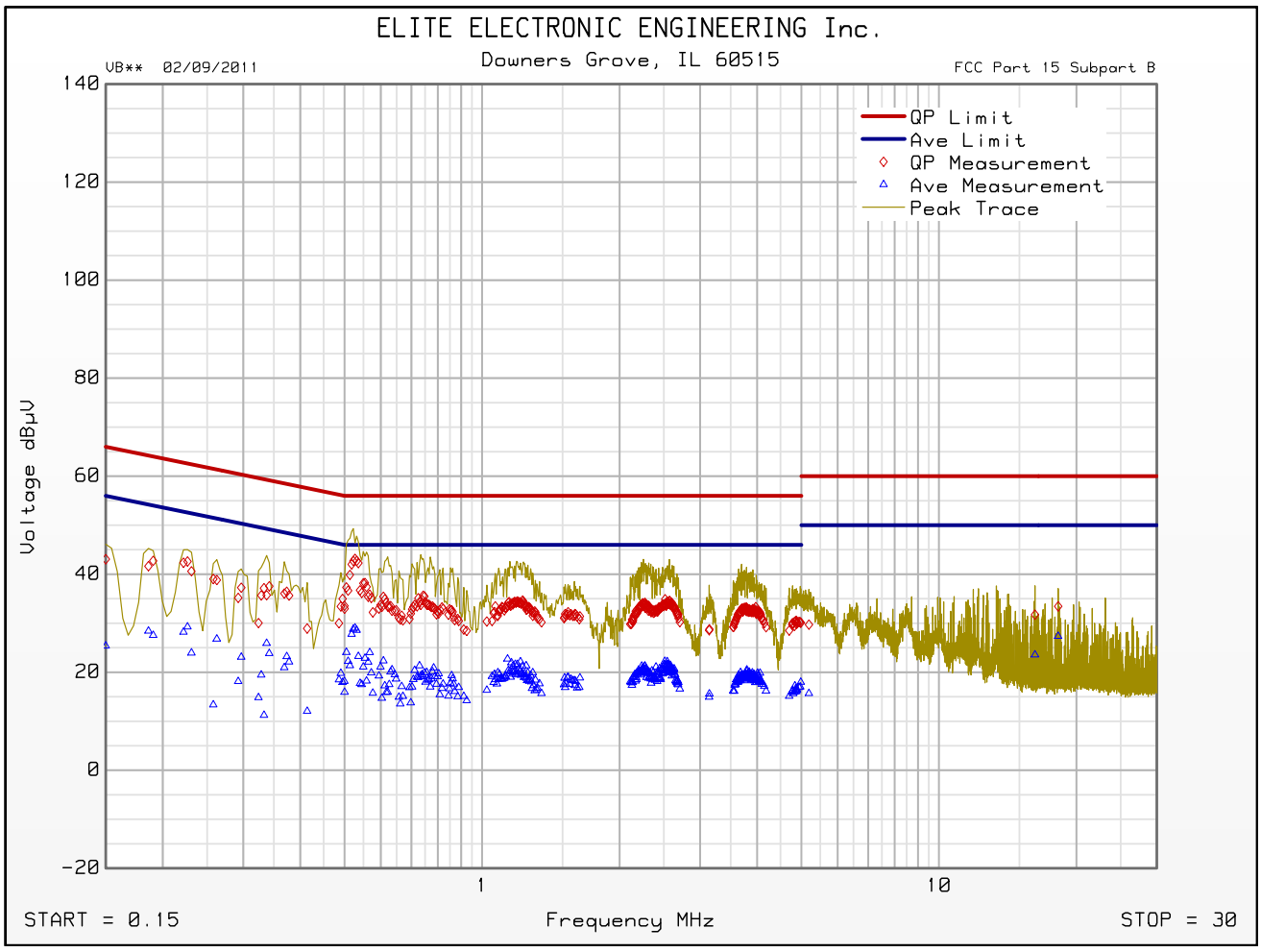
Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.227	42.6	62.6		29.3	52.6	
0.495	35.0	56.1		17.9	46.1	
0.527	43.1	56.0		29.0	46.0	
1.227	34.7	56.0		21.2	46.0	
1.264	33.3	56.0		18.5	46.0	
2.516	34.9	56.0		19.9	46.0	
3.973	33.3	56.0		19.2	46.0	
5.194	29.7	60.0		15.7	50.0	
16.232	31.8	60.0		23.6	50.0	
18.244	33.4	60.0		27.3	50.0	

FCC Part 15 Subpart C Conducted Emissions Test

Cumulative Data

VB** 02/09/2011

Manufacturer	:	Ingersoll Rand
Model	:	REV C (MOD #29)
Serial Number	:	10047
DUT Mode	:	Tx @ 909MHz (MODULATED)
Line Tested	:	High
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	CONNECTED TO NETGEAR SWITCH
Test Engineer	:	I. Carnegie
Limit	:	Tx
Test Date	:	Nov 14, 2012 04:47:33 PM



Emissions Meet QP Limit
Emissions Meet Ave Limit

FCC Part 15 Subpart C Conducted Emissions Test

Significant Emissions Data

VB** 02/09/2011

Manufacturer	:	Ingersoll Rand
Model	:	REV C (MOD #29)
Serial Number	:	10047
DUT Mode	:	Tx @ 909MHz (MODULATED)
Line Tested	:	Low
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	CONNECTED TO NETGEAR SWITCH
Test Engineer	:	I. Carnegie
Limit	:	Tx
Test Date	:	Nov 14, 2012 05:02:22 PM
Data Filter	:	Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

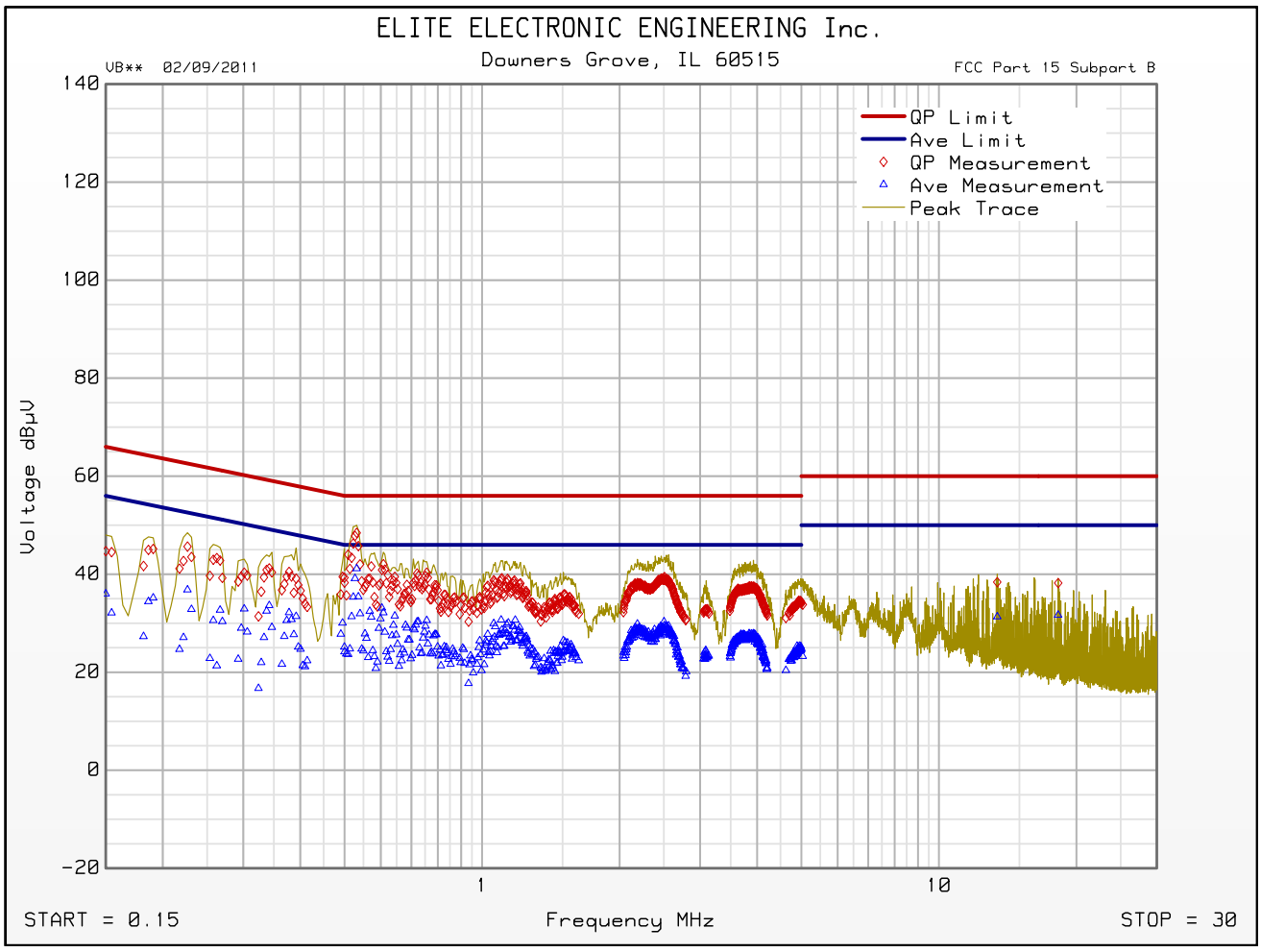
Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.227	45.6	62.6		36.8	52.6	
0.495	39.5	56.1		30.1	46.1	
0.532	48.4	56.0		41.1	46.0	
1.105	39.2	56.0		28.6	46.0	
1.250	36.3	56.0		27.3	46.0	
2.507	39.5	56.0		29.5	46.0	
3.851	37.5	56.0		26.9	46.0	
5.036	33.8	60.0		23.2	50.0	
13.419	38.4	60.0		31.3	50.0	
18.244	38.2	60.0		31.7	50.0	

FCC Part 15 Subpart C Conducted Emissions Test

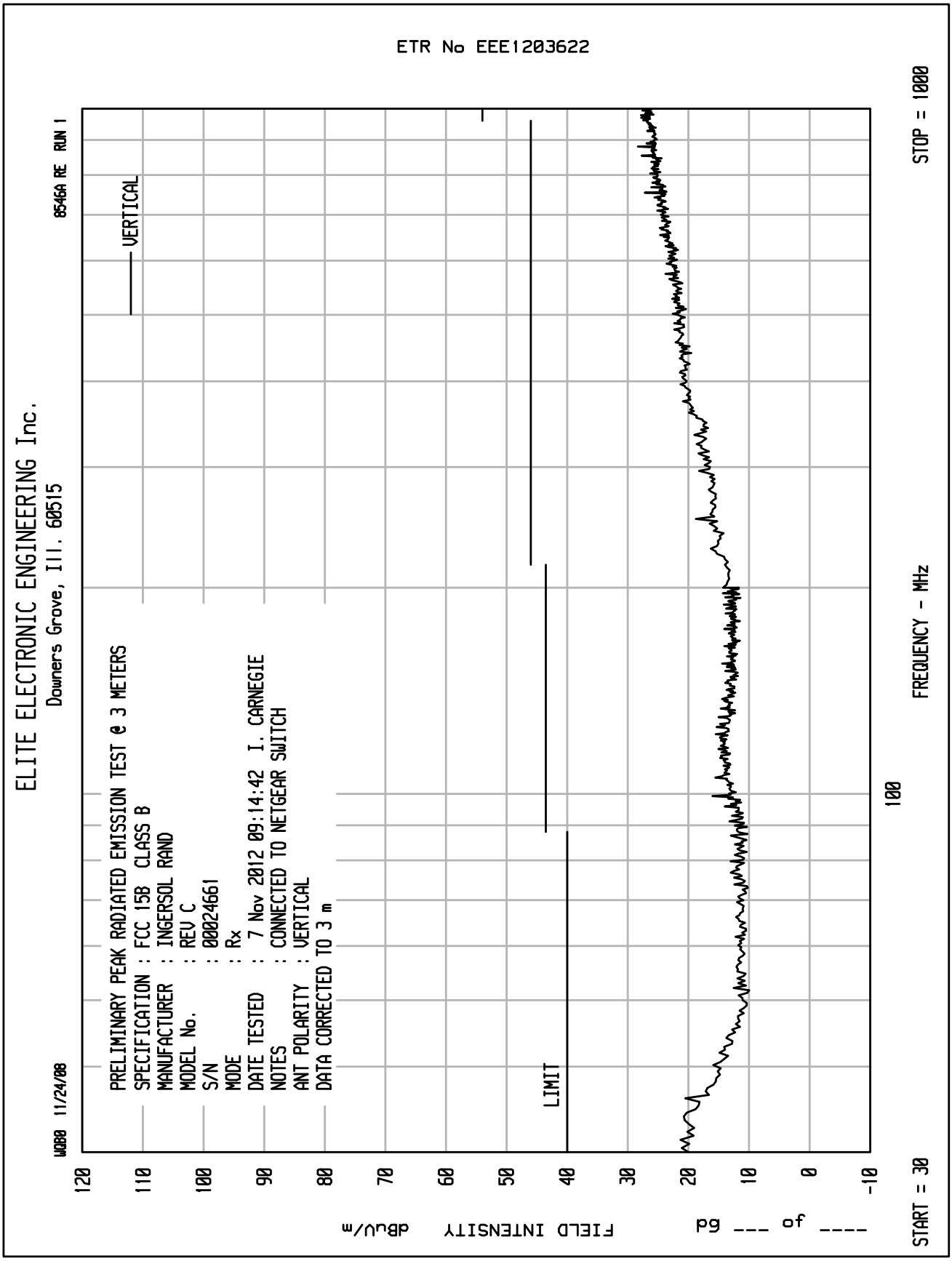
Cumulative Data

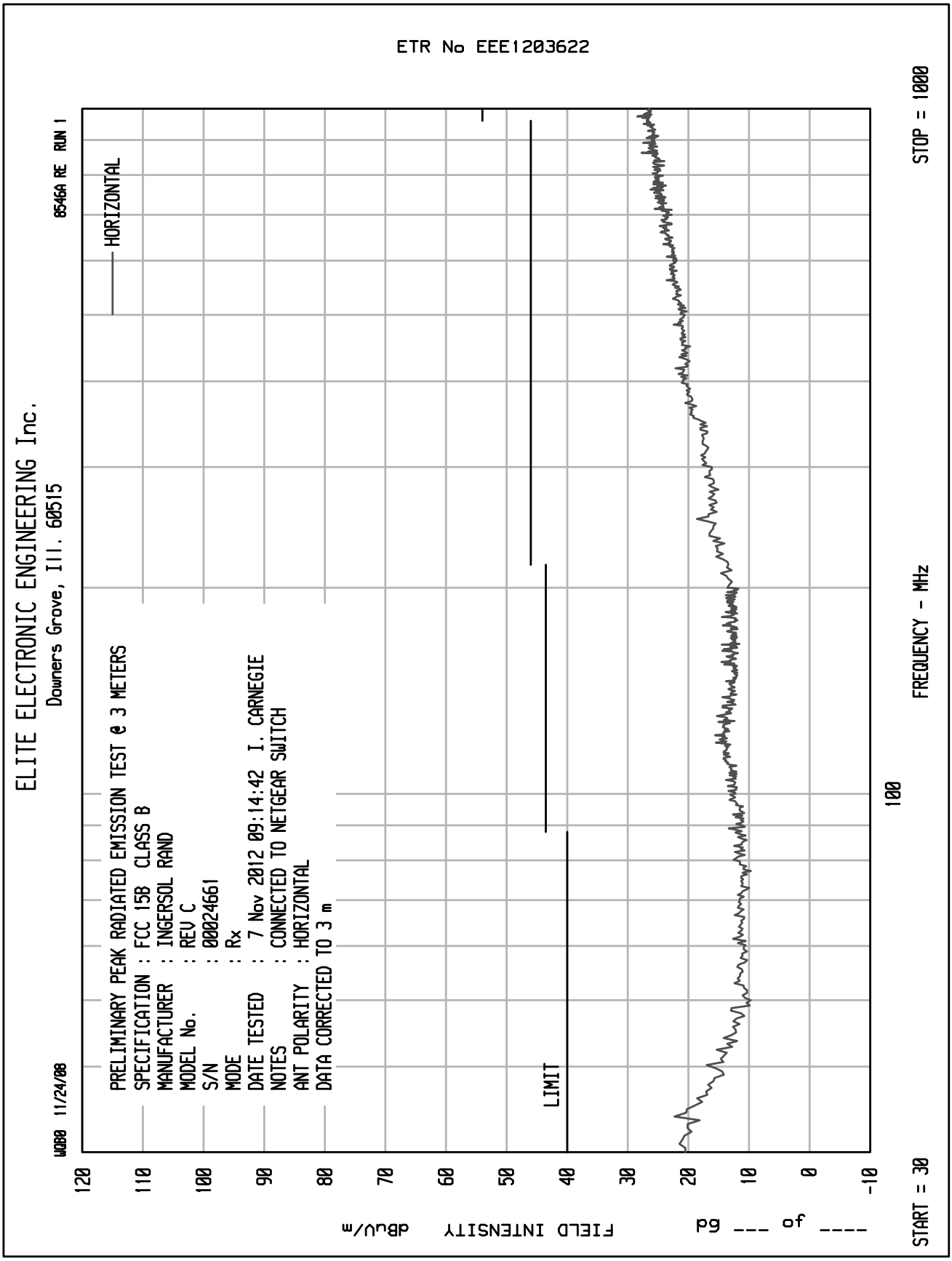
VB** 02/09/2011

Manufacturer	:	Ingersoll Rand
Model	:	REV C (MOD #29)
Serial Number	:	10047
DUT Mode	:	Tx @ 909MHz (MODULATED)
Line Tested	:	Low
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	CONNECTED TO NETGEAR SWITCH
Test Engineer	:	I. Carnegie
Limit	:	Tx
Test Date	:	Nov 14, 2012 05:02:22 PM



Emissions Meet QP Limit
Emissions Meet Ave Limit


ETR No EEE1203622
ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
8546A RE RUN 1
W080 11/24/08
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : INGERSOL RAND
MODEL No. : REV C
S/N : 00024661
MODE : Rx
DATE TESTED : 7 Nov 2012 09:14:42 I. CARNEGIE
NOTES : CONNECTED TO NETGEAR SWITCH
ANT POLARITY : VERTICAL
DATA CORRECTED TO 3 m
VERTICAL
LIMIT
FIELD INTENSITY dBuV/m
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
START = 30
100
STOP = 1000
FREQUENCY - MHz
pg ___ of ____


ETR No EEE1203622
ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
8546A RE RUN 1
WO80 11/24/08
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : INGERSOL RAND
MODEL No. : REV C
S/N : 00024661
MODE : Rx
DATE TESTED : 7 Nov 2012 09:14:42 I. CARNEGIE
NOTES : CONNECTED TO NETGEAR SWITCH
ANT POLARITY : HORIZONTAL
DATA CORRECTED TO 3 m
HORIZONTAL
LIMIT
FIELD INTENSITY dBuV/m
FREQUENCY - MHz
START = 30
100
STOP = 1000
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
pg ___ of ____

.n

ETR No. EEE1203622 854

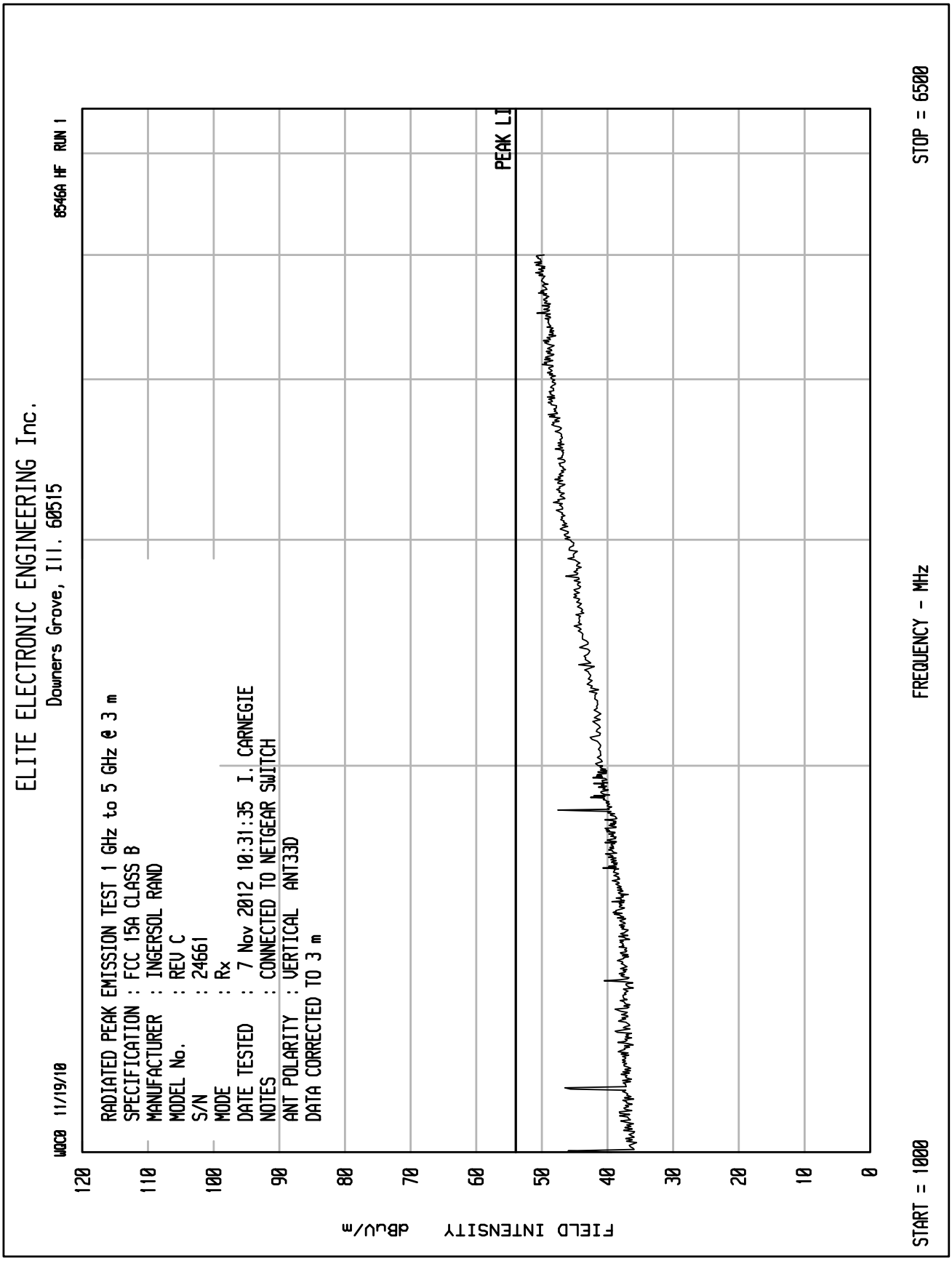
6A

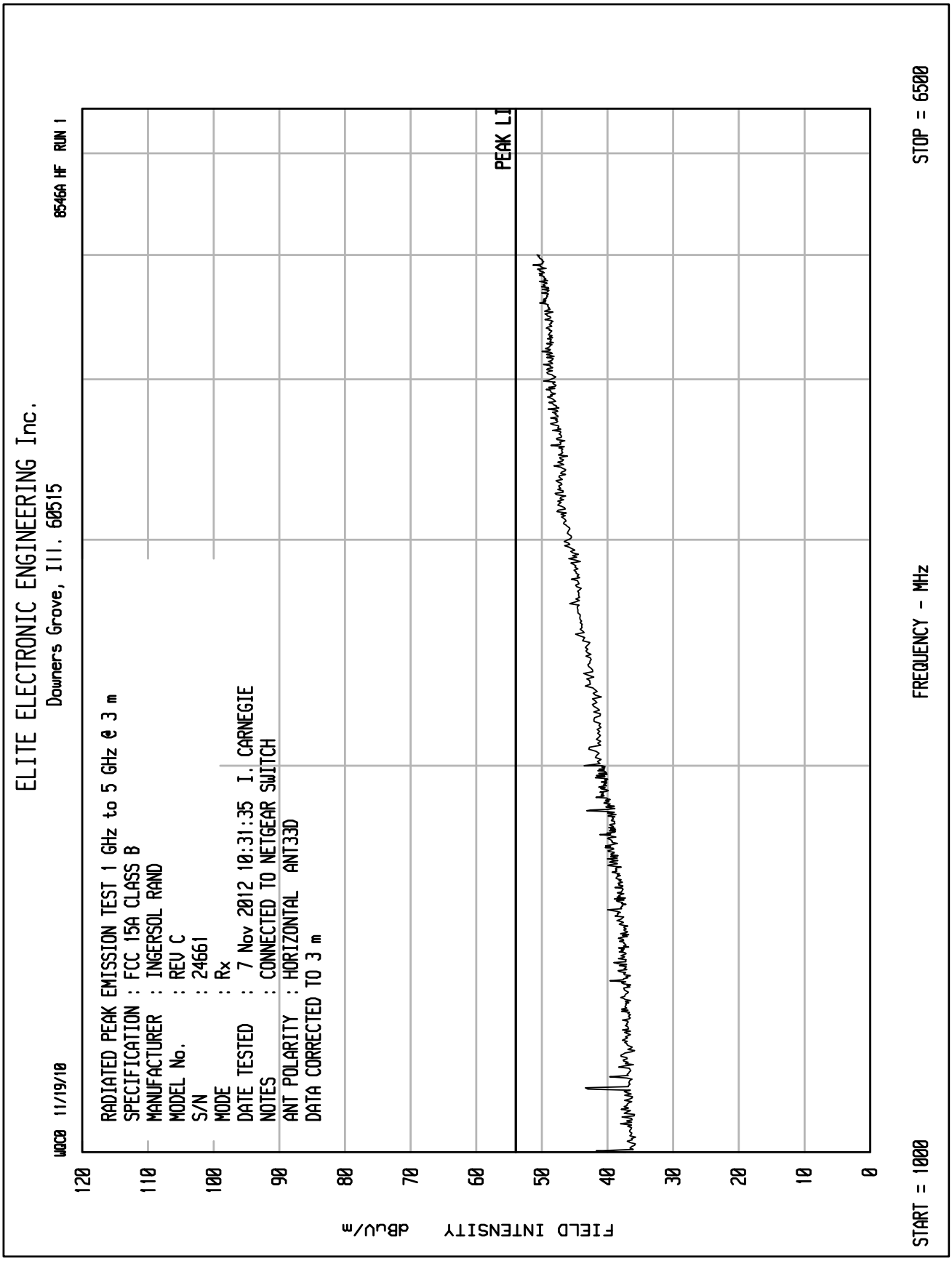
DATA SHEET TEST NO. 1

RADIATED QP EMISSION MEASUREMENTS in a 3 m SEMI-ANECHOIC ROOM
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : INGERSOL RAND
MODEL NO. : REV C
SERIAL NO. : 00024661
TEST MODE : Rx
NOTES : CONNECTED TO NETGEAR SWITCH
TEST DATE : 7 Nov 2012 09:14:42
TEST DISTANCE : 3 m (DATA EXTRAPOLATED TO 3 m)

FREQUENCY	QP READING	ANT FAC	CBL FAC	EXT ATTN	DIST FAC	TOTAL	QP LIMIT	AZ	ANT HT	POLAR
MHz	dBuV	dB	dB	dB	dB	dBuV/m	dBuV/m	deg	cm	
33.72	-7.3	17.2	.5	0.0	0.0	10.4	40.0	225	120	H
61.19	-7.0	9.4	.5	0.0	0.0	3.0	40.0	1	120	H
80.29	-7.9	10.1	.5	0.0	0.0	2.7	40.0	1	200	V
98.99	-5.2	11.3	.5	0.0	0.0	6.6	43.5	135	120	V
123.23	-8.6	12.9	.7	0.0	0.0	5.0	43.5	45	340	H
153.42	-7.6	11.1	.8	0.0	0.0	4.3	43.5	135	120	H
181.49	-8.0	11.0	.9	0.0	0.0	3.9	43.5	0	340	H
249.99	2.0	12.9	1.0	0.0	0.0	15.9	46.0	45	340	V
356.96	-6.3	15.4	1.3	0.0	0.0	10.4	46.0	315	200	V
413.88	-7.0	16.7	1.5	0.0	0.0	11.3	46.0	315	340	H
567.96	-7.9	19.0	1.5	0.0	0.0	12.6	46.0	90	200	V
670.68	-6.8	19.7	1.7	0.0	0.0	14.7	46.0	180	200	H
750.00	-.9	20.5	1.9	0.0	0.0	21.4	46.0	180	340	V
878.43	-6.9	21.6	2.0	0.0	0.0	16.6	46.0	180	340	V
943.83	-7.0	22.1	2.0	0.0	0.0	17.1	46.0	90	340	H

tested by: I. Carnegie


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQCD 11/19/10
8546A HF RUN 1
RADIATED PEAK EMISSION TEST 1 GHz to 5 GHz @ 3 m
SPECIFICATION : FCC 15A CLASS B
MANUFACTURER : INGERSOL RAND
MODEL No. : REV C
S/N : 24661
MODE : Rx
DATE TESTED : 7 Nov 2012 10:31:35 I. CARNEGIE
NOTES : CONNECTED TO NETGEAR SWITCH
ANT POLARITY : VERTICAL ANT33D
DATA CORRECTED TO 3 m
PEAK LI
FIELD INTENSITY dBuV/m
120
110
100
90
80
70
60
50
40
30
20
10
0
START = 1000
FREQUENCY - MHz
STOP = 6500


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQCD 11/19/10
8546A HF RUN 1
RADIATED PEAK EMISSION TEST 1 GHz to 5 GHz @ 3 m
SPECIFICATION : FCC 15A CLASS B
MANUFACTURER : INGERSOL RAND
MODEL No. : REV C
S/N : 24661
MODE : Rx
DATE TESTED : 7 Nov 2012 10:31:35 I. CARNEGIE
NOTES : CONNECTED TO NETGEAR SWITCH
ANT POLARITY : HORIZONTAL ANT33D
DATA CORRECTED TO 3 m
PEAK LI
FIELD INTENSITY dBuV/m
120
110
100
90
80
70
60
50
40
30
20
10
0
START = 1000
FREQUENCY - MHz
STOP = 6500

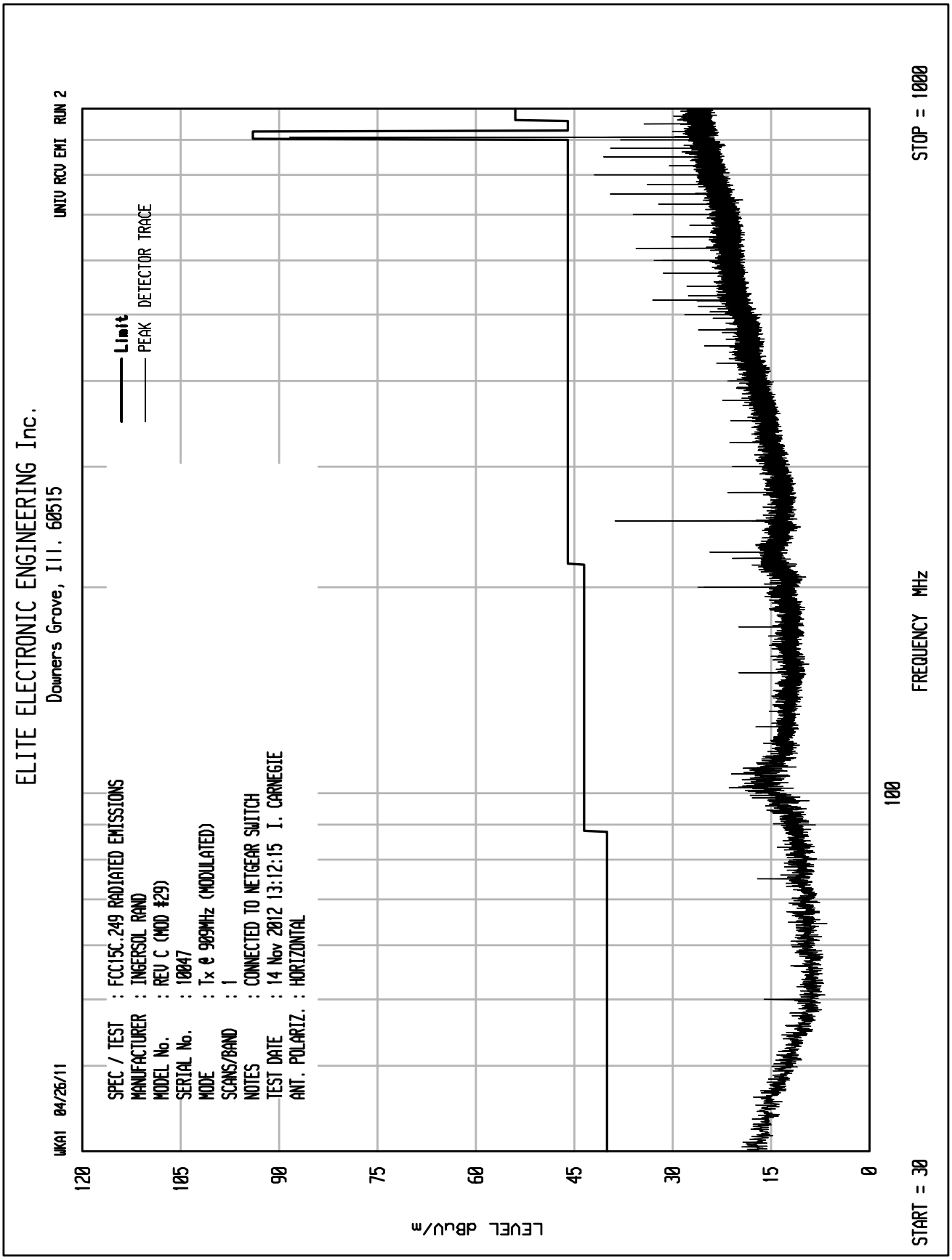
DATA SHEET HF TEST NO. 1

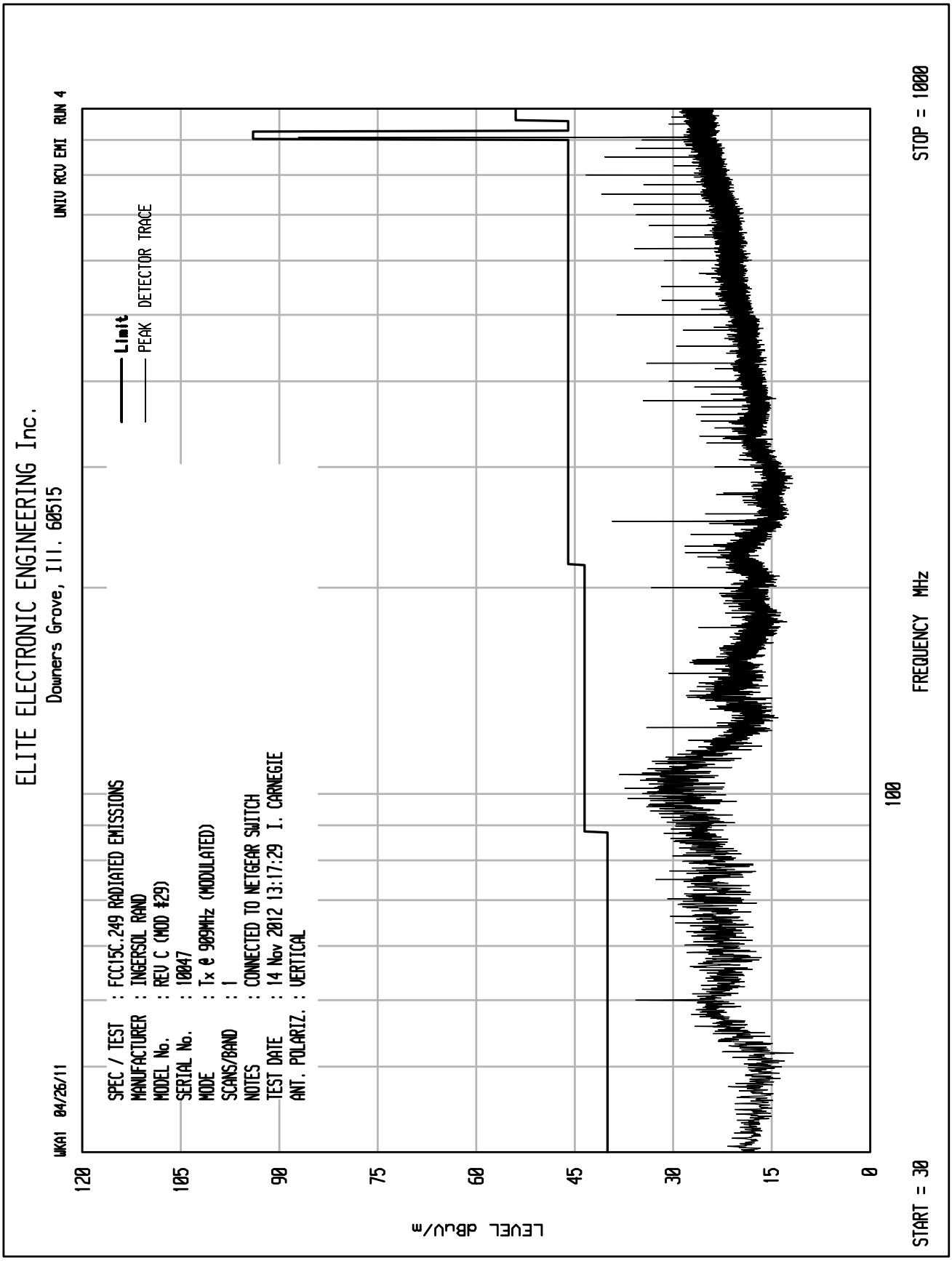
RADIATED AVG EMISSION MEASUREMENTS >=1000 MHz in a 3 m ANECHOIC ROOM

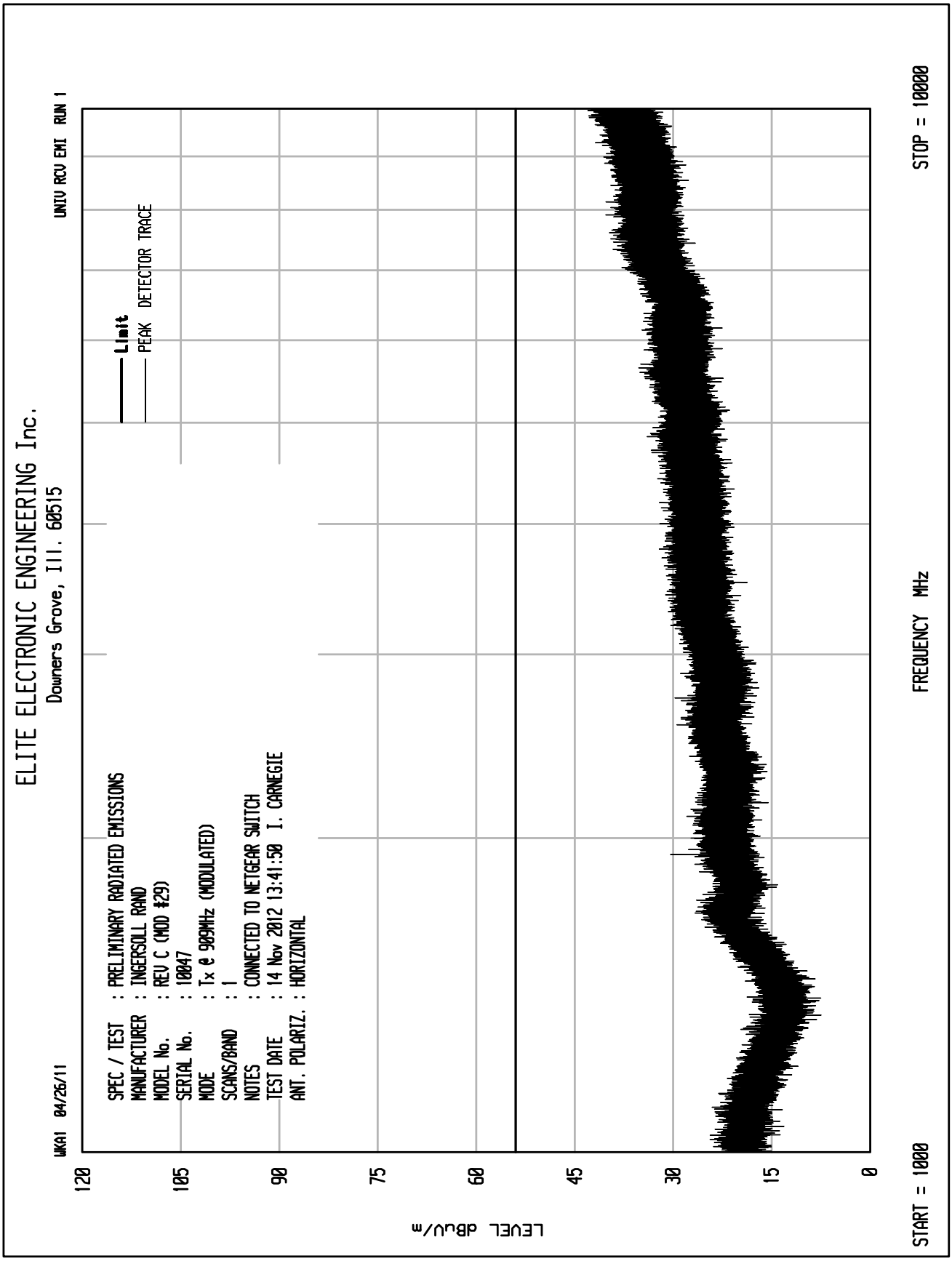
SPECIFICATION : FCC 15A CLASS B
MANUFACTURER : INGERSOL RAND
MODEL NO. : REV C
SERIAL NO. : 24661
TEST MODE : Rx
NOTES : CONNECTED TO NETGEAR SWITCH
TEST DATE : 7 Nov 2012 10:31:35
TEST DISTANCE : 3 m
ANTENNA : ANT33D

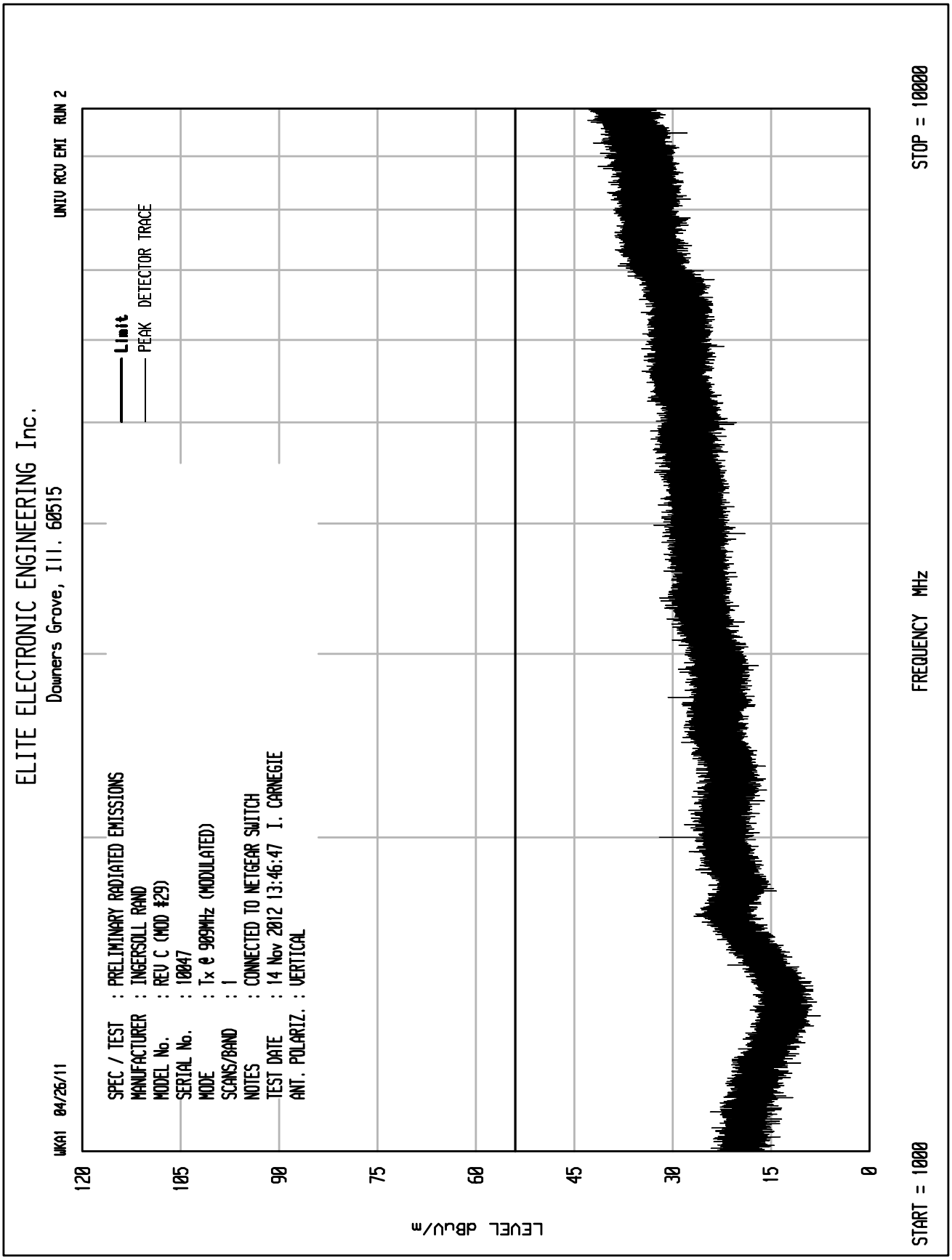
FREQUENCY	AVG READING	ANT FAC	CBL FAC	DIST FAC	TOTAL	AVG LIMIT	PASS/ FAIL	AZ	ANT HT	POLAR
MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m		deg	cm	
1125.09	15.2	24.5	2.2	0.0	41.8	54.0		45	200	V
1125.09	12.7	24.5	2.2	0.0	39.4	54.0		270	340	H
1371.79	-3.1	25.0	2.5	0.0	24.3	54.0		225	120	V
1421.45	-2.9	25.0	2.5	0.0	24.6	54.0		0	200	H
1678.00	-2.8	26.2	2.7	0.0	26.2	54.0		225	340	V
1752.08	-2.8	26.4	2.8	0.0	26.5	54.0		135	120	H
1875.10	-3.0	27.3	2.9	0.0	27.2	54.0		45	340	V
2000.16	4.1	27.6	3.0	0.0	34.8	54.0		45	120	H
2557.29	-2.3	29.5	3.5	0.0	30.7	54.0		135	120	V
3006.18	-2.5	30.7	3.9	0.0	32.1	54.0		0	120	H
3228.65	-2.5	31.8	4.0	0.0	33.3	54.0		180	200	V
3842.31	-2.7	32.9	4.4	0.0	34.6	54.0		135	200	V
4197.08	-2.3	33.0	4.6	0.0	35.3	54.0		45	340	H
4496.63	-2.3	32.9	4.8	0.0	35.4	54.0		315	200	V
4887.19	-2.3	34.1	5.0	0.0	36.7	54.0		315	120	H

tested by: I. Carnegie


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 2
WKA1 04/26/11
SPEC / TEST : FCC15C.249 RADIATED EMISSIONS
MANUFACTURER : INGERSOL RAND
MODEL No. : REV C (MOD #29)
SERIAL No. : 10047
MODE : Tx @ 909MHz (MODULATED)
SCANS/BAND : 1
NOTES : CONNECTED TO NETGEAR SWITCH
TEST DATE : 14 Nov 2012 13:12:15 I. CARNEGIE
ANT. POLARIZ. : HORIZONTAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 30
100
FREQUENCY MHz
STOP = 1000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 4
WKA1 04/26/11
SPEC / TEST : FCC15C.249 RADIATED EMISSIONS
MANUFACTURER : INGERSOL RAND
MODEL No. : REV C (MOD #29)
SERIAL No. : 10047
MODE : Tx @ 909MHz (MODULATED)
SCANS/BAND : 1
NOTES : CONNECTED TO NETGEAR SWITCH
TEST DATE : 14 Nov 2012 13:17:29 I. CARNEGIE
ANT. POLARIZ. : VERTICAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 30
100
FREQUENCY MHz
STOP = 1000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 1
WKA1 04/26/11
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : INGERSOLL RAND
MODEL No. : REV C (MOD #29)
SERIAL No. : 10047
MODE : Tx @ 909MHz (MODULATED)
SCANS/BAND : 1
NOTES : CONNECTED TO NETGEAR SWITCH
TEST DATE : 14 Nov 2012 13:41:50 I. CARNEGIE
ANT. POLARIZ. : HORIZONTAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 10000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 2
WKA1 04/26/11
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : INGERSOLL RAND
MODEL No. : REV C (MOD #29)
SERIAL No. : 10047
MODE : Tx @ 909MHz (MODULATED)
SCANS/BAND : 1
NOTES : CONNECTED TO NETGEAR SWITCH
TEST DATE : 14 Nov 2012 13:46:47 I. CARNEGIE
ANT. POLARIZ. : VERTICAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 10000

SIGNIFICANT EMISSIONS WKA1 04/26/11

SPEC/TEST : FCC15C.249 RADIATED EMISSIONS
MANUFACTURER : INGERSOL RAND
MODEL : REV C (MOD #29)
S/N : 10047
MODE : Tx @ 909MHz (MODULATED)
NOTES : CONNECTED TO NETGEAR SWITCH
ANT. POLARIZ. : HORIZONTAL/VERTICAL
TEST RANGE : 30 - 10000 MHz
TEST DATE : 14 Nov 2012 I. CARNEGIE
PRINT CRITERIA : ALL PEAKS ABOVE 0 dB MARGIN FROM LIMIT
RUN NUMBER : 2

Freq MHz	RBW MHz	MEAS TIME sec.	PEAK dBuV/m	LIMIT dBuV/m

NO PEAKS DETECTED WITH SPECIFIED PRINT CRITERIA

tested by: I. Carnegie

Manufacturer : Ingersoll Rand
Test Item : Gen 2 Wireless Bridge
Model No. : Rev. C
Serial No. : 24661 and 10047
Mode : Transmit at 909MHz
Test Specification : FCC 15.249 and Industry Canada RSS-210 Annex 2, section A2.9
Date : November 14, 2012
Test Distance : 3 meters
Note : Peak readings

Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL FAC (dB)	Ant Fac (dB)	Pre Amp (dB)	Total dBuV/m at 3 m	Total uV/m at 3m	Limit uV/m at 3m	Margin (dB)
909.000	H	67.3	2.0	20.7	0.0	90.0	31647.0	50000.0	-4.0
909.000	V	66.0	2.0	20.7	0.0	88.8	27500.0	50000.0	-5.2
1818.000	H	48.1	2.9	27.1	-40.6	37.5	75.4	5000.0	-36.4
1818.000	V	47.5	2.9	27.1	-40.6	36.9	70.2	5000.0	-37.1
2727.000	H	47.2	3.7	30.0	-40.3	40.5	105.5	5000.0	-33.5
2727.000	V	47.9	3.7	30.0	-40.3	41.2	114.3	5000.0	-32.8
3636.000	H	46.3	4.3	32.5	-40.1	43.0	140.7	5000.0	-31.0
3636.000	V	46.4	4.3	32.5	-40.1	43.0	141.2	5000.0	-31.0
4545.000	H	4.5	4.7	33.3	-40.0	2.6	1.3	5000.0	-71.4
4545.000	V	45.8	4.7	33.3	-40.0	43.8	155.6	5000.0	-30.1
5454.000	H	46.1	5.2	35.4	-40.1	46.6	213.2	5000.0	-27.4
5454.000	V	45.1	5.2	35.4	-40.1	45.6	190.0	5000.0	-28.4
6363.000	H	45.3	5.7	35.2	-39.9	46.2	204.5	5000.0	-27.8
6363.000	V	44.8	5.7	35.2	-39.9	45.7	193.8	5000.0	-28.2
7272.000	H	45.5	6.1	37.7	-39.8	49.6	301.3	5000.0	-24.4
7272.000	V	45.1	6.1	37.7	-39.8	49.2	287.8	5000.0	-24.8
8181.000	H	46.0	6.5	37.7	-39.5	50.7	341.0	5000.0	-23.3
8181.000	V	45.4	6.5	37.7	-39.5	50.1	320.4	5000.0	-23.9
9090.000	H	45.3	6.5	37.6	-39.0	50.5	333.9	5000.0	-23.5
9090.000	V	46.2	6.5	37.6	-39.0	51.3	369.1	5000.0	-22.6

Total (dBuV/m) = Meter Reading + CBL FAC + Ant Fac + Pre Amp

Checked By: Ian Carnegie

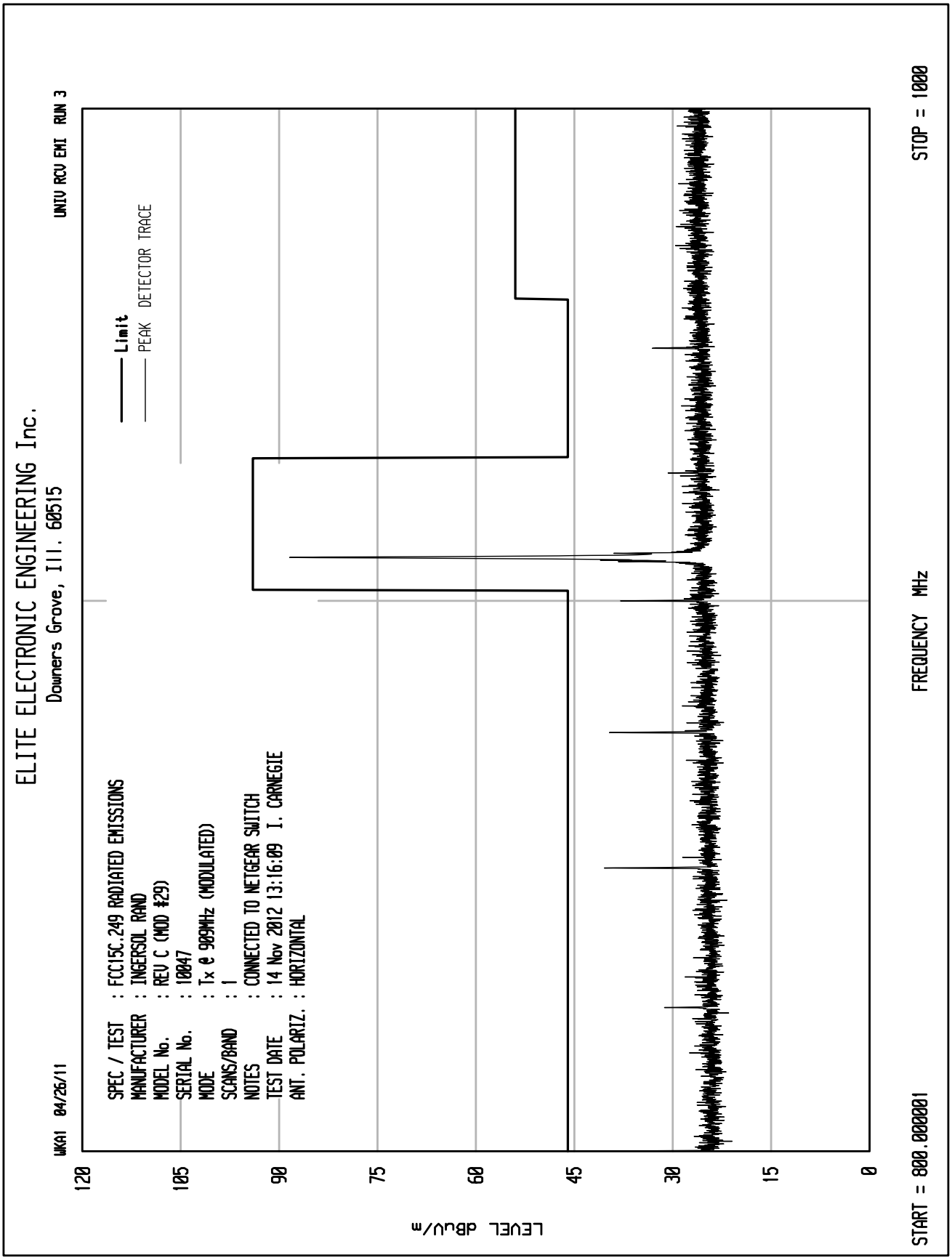
Manufacturer : Ingersoll Rand
Test Item : Gen 2 Wireless Bridge
Model No. : Rev. C
Serial No. : 24661 and 10047
Mode : Transmit at 909MHz
Test Specification : FCC 15.249 and Industry Canada RSS-210 Annex 2, section A2.9
Date : November 14, 2012
Test Distance : 3 meters
Note : Average readings

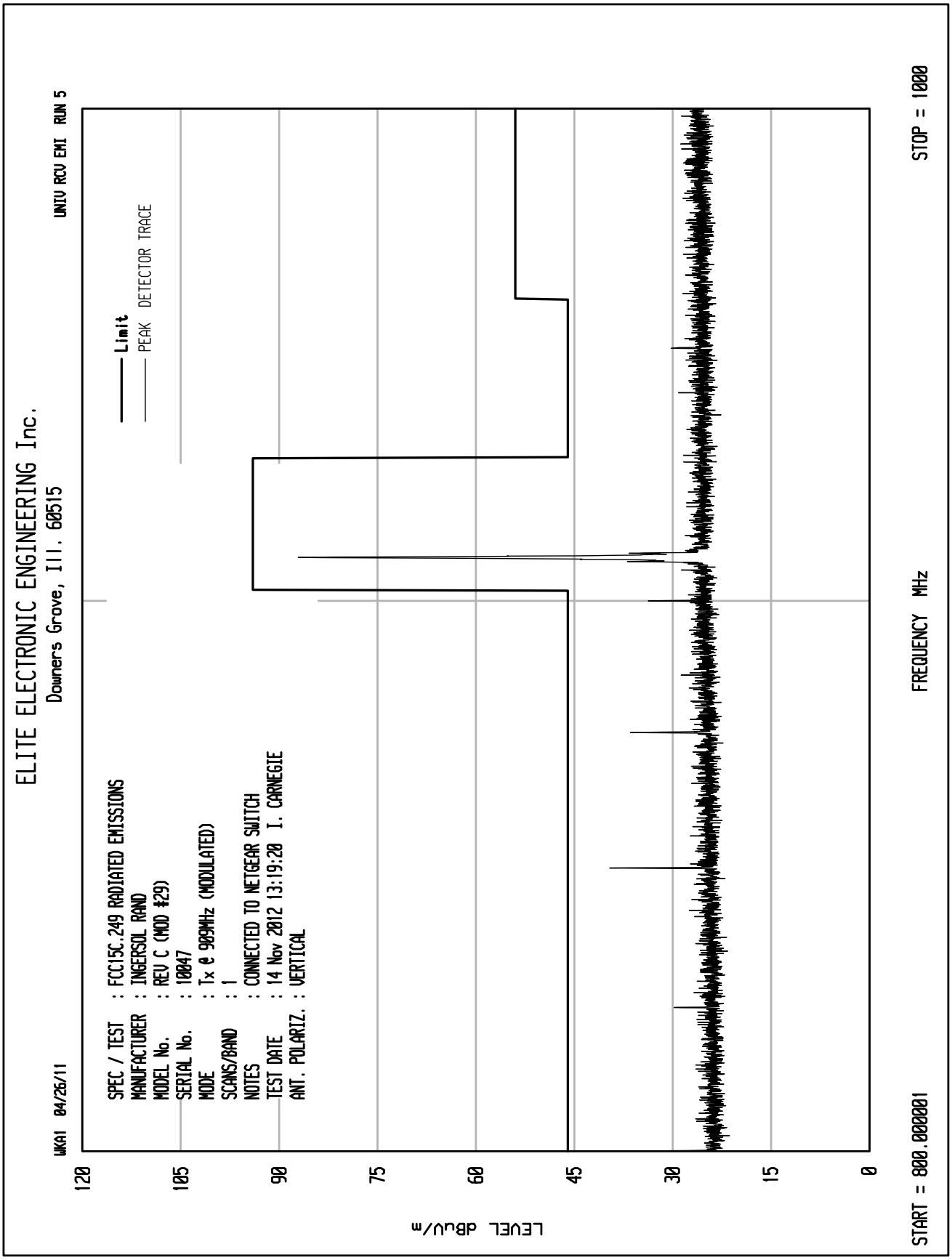
Freq (MHz)	Ant Pol	Meter Reading (dBuV)	CBL FAC (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Total dBuV/m at 3 m	Total uV/m at 3m	Limit uV/m at 3m	Margin (dB)
1818.00	H	35.22	2.9	27.1	-40.6	0.0	24.7	17.1	500.0	-29.3
1818.00	V	35.23	2.9	27.1	-40.6	0.0	24.7	17.1	500.0	-29.3
2727.00	H	34.17	3.7	30.0	-40.3	0.0	27.5	23.7	500.0	-26.5
2727.00	V	38.06	3.7	30.0	-40.3	0.0	31.4	37.0	500.0	-22.6
3636.00	H	32.9	4.3	32.5	-40.1	0.0	29.5	29.8	500.0	-24.5
3636.00	V	32.9	4.3	32.5	-40.1	0.0	29.5	29.9	500.0	-24.5
4545.00	H	32.4	4.7	33.3	-40.0	0.0	30.4	33.0	500.0	-23.6
4545.00	V	32.34	4.7	33.3	-40.0	0.0	30.4	33.0	500.0	-23.6
5454.00	H	31.91	5.2	35.4	-40.1	0.0	32.3	41.4	500.0	-21.6
5454.00	V	31.93	5.2	35.4	-40.1	0.0	32.4	41.5	500.0	-21.6
6363.00	H	31.31	5.7	35.2	-39.9	0.0	32.3	41.0	500.0	-21.7
6363.00	V	31.27	5.7	35.2	-39.9	0.0	32.2	40.8	500.0	-21.8
7272.00	H	32.17	6.1	37.7	-39.8	0.0	36.3	65.2	500.0	-17.7
7272.00	V	32.15	6.1	37.7	-39.8	0.0	36.3	65.0	500.0	-17.7
8181.00	H	32.37	6.5	37.7	-39.5	0.0	37.1	71.4	500.0	-16.9
8181.00	V	32.35	6.5	37.7	-39.5	0.0	37.1	71.2	500.0	-16.9
9090.00	H	32.37	6.5	37.6	-39.0	0.0	37.5	75.0	500.0	-16.5
9090.00	V	32.36	6.5	37.6	-39.0	0.0	37.5	74.9	500.0	-16.5

Amb = Ambient

Total (dBuV/m) = Meter Reading + CBL FAC + Ant Fac + Pre Amp + Duty Cycle

Checked By: _____
Ian Carnegie


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 3
WKA1 04/26/11
SPEC / TEST : FCC15C.249 RADIATED EMISSIONS
MANUFACTURER : INGERSOL RAND
MODEL No. : REV C (MOD #29)
SERIAL No. : 10047
MODE : Tx @ 909MHz (MODULATED)
SCANS/BAND : 1
NOTES : CONNECTED TO NETGEAR SWITCH
TEST DATE : 14 Nov 2012 13:16:09 I. CARNEGIE
ANT. POLARIZ. : HORIZONTAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 800.000001
FREQUENCY MHz
STOP = 1000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 5
WKA1 04/26/11
SPEC / TEST : FCC15C.249 RADIATED EMISSIONS
MANUFACTURER : INGERSOL RAND
MODEL No. : REV C (MOD #29)
SERIAL No. : 10047
MODE : Tx @ 909MHz (MODULATED)
SCANS/BAND : 1
NOTES : CONNECTED TO NETGEAR SWITCH
TEST DATE : 14 Nov 2012 13:19:20 I. CARNEGIE
ANT. POLARIZ. : VERTICAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 800.000001
FREQUENCY MHz
STOP = 1000