Measurement of RF Emissions from a WIFI Extender Model Nos. RP-WF12 and RP-WF14 Transmitter

For	Winegard Co. 2541 Technology Drive Elgin, IL 60124
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Test Personnel	Richard King
Test Specification	FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Section 15.247 for Digital Modulation Intentional Radiators Operating within The 2400-2483.5MHz Band Industry Canada RSS-Gen Industry Canada RSS-247

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TABLE OF CONTENTS

PARAGRAPH	DESCRIPTION OF CONTENTS	PAGE NO.
1.	Introduction	5
1.1.	Scope of Tests	5
1.2.	Purpose	5
1.3.	Deviations, Additions and Exclusions	5
1.4.	EMC Laboratory Identification	5
1.5.	Laboratory Conditions	5
2.	Applicable Documents	5
3.	EUT Setup and Operation	6
3.1.	General Description	6
3.1.1.	Power Input	6
3.1.2.	Peripheral Equipment	6
3.1.3.	Signal Input/Output Leads	6
3.1.4.	Grounding	6
3.2.	Operational Mode	6
3.3.	EUT Modifications	7
4.	Test Facility and Test Instrumentation	7
4.1.	Shielded Enclosure	7
4.2.	Test Instrumentation	7
4.3.	Calibration Traceability	7
4.4.	Measurement Uncertainty	7
5.	Test Procedures	7
5.1.	Powerline Conducted Emissions	7
5.1.1.	Requirements	7
5.1.2.	Procedures	8
5.1.3.	Results	8
5.2.	6dB Bandwidth	8
5.2.1.	Requirement	8
5.2.2.	Procedures	9
5.2.3.	Results	9
5.3.	Maximum conducted (average) output power	9
5.3.1.	Requirements	9
5.3.2.	Procedures	9
5.3.3.	Results	9
5.4.	Occupied bandwidth (OBW) — power bandwidth (99%) measurement procedure	9
5.4.1.	Procedures	10
5.4.2.	Results	10
5.5.	Antenna Conducted Spurious Emissions	10
5.5.1.	Requirements	10
5.5.2.	Procedures	10
5.5.3.	Results	11
5.6.	Radiated Spurious Emissions Measurements	11
5.6.1.	Requirements	11

TABLE OF CONTENTS

PARAGRAPH	DESCRIPTION OF CONTENTS	PAGE NO.
5.6.2.	Procedures	11
5.6.3.	Results	12
5.7.	Band Edge Compliance	12
5.7.1.	Requirement	12
5.7.2.	Procedures	12
5.4.2.1	Low Band Edge	12
5.4.2.2	High Band Edge	13
5.7.3.	Results	13
5.8.	Power Spectral Density	13
5.8.1.	Requirements	13
5.8.2.	Procedures	13
5.8.3.	Results	14
6.	Other Test Conditions	14
6.1.	Test Personnel and Witnesses	14
6.2.	Disposition of the EUT	14
7.	Conclusions	14
8.	Certification	14
9.	Equipment List	15

REVISION HISTORY

Revision	Date	Description
—	15 June 2016	Initial release

Measurement of RF Emissions from a WIFI Extender, Model Nos. RP-WF12 and RP-WF14 Transmitter

1. INTRODUCTION

1.1. Scope of Tests

This report represents the results of the series of radio interference measurements performed on a Winegard Co. WIFI Extender, Model Nos. RP-WF12 and RP-WF14, Serial Nos. no serial numbers were assigned transmitter (hereinafter referred to as the EUT). The EUT is a digital modulation transmitter. The transmitter was designed to transmit in the 2400-2483.5 MHz band using an integral antenna. The EUT was manufactured and submitted for testing by Winegard Co. located in Elgin, IL.

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 15.207 and 15.247 for Intentional Radiators. Testing was performed in accordance with ANSI C63.4-2014.

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 22.9^{o}C and the relative humidity was 20%.

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 1 October 2015
- ANSI C63.4-2014, "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"
- ANSI C63.10-2013, " American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices"
- 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 8, 2016
- Federal Communications Commission Office of Engineering and Technology Laboratory Division Emissions Testing of Transmitters with Multiple Outputs in the Same Band (*e.g.,* MIMO, Smart Antenna, etc.), October 31, 2013
- Industry Canada RSS-247, Issue 1,May 2015, “Spectrum Management and
- Telecommunications Radio Standards Specification, Digital Transmission Systems (DTSs),

Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices"

- Industry Canada RSS-GEN, Issue 4, November 2014, "Spectrum Management and Telecommunications Radio Standards Specification, General Requirements for Compliance of Radio Apparatus"

3. EUT SETUP AND OPERATION

3.1. General Description

The EUT is a Winegard Co., WIFI Extender, Model Nos. RP-WF12 and RP-WF14. A block diagram of the EUT setup is shown as Figure 1.

3.1.1.Power Input

The EUT obtained 24VDC power via a CUI Inc. Model EMSA240167 AC/DC power supply. The power supply provided 24VDC to the EUT via a 1.95m long 2-wire power cable. The power supply was powered with 115V, 60Hz AC power. The high and low leads were connected through a line impedance stabilization network (LISN) which was located on the ground plane. The network complies with the requirements of Paragraph 4.1.2 of ANSI C63.4-2014.

3.1.2.Peripheral Equipment

No peripheral equipment was submitted with the EUT.

3.1.3.Signal Input/Output Leads

The EUT was supplied with an Ethernet port which was used for programming purposes. For testing purposes a 1-meter long CAT 5 Ethernet cable was connected to the EUT.

3.1.4.Grounding

The EUT was grounded only through the third wire of its input power cord.

3.2. Operational Mode

For all tests the EUT and all peripheral equipment were placed on a non-conductive stand per ANSI C63.10. ANSI C63.10 states for frequencies below 1GHz the non-conductive stand shall be 80cm and frequencies above 1GHz the non-conductive stand shall be 150cm.

The EUT was energized.

- 802.11 b at 2412MHz Data Rates: 1, 2, 5.5, 11 Mbps
- 802.11 b at 2437MHz Data Rates: 1, 2, 5.5, 11 Mbps
- 802.11 b at 2462MHz Data Rates: 1, 2, 5.5, 11 Mbps

- 802.11 g at 2412MHz Data Rates: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
- 802.11 g at 2437MHz Data Rates: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
- 802.11 g at 2562MHz Data Rates: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
-
- 802.11 n at 2412MHz Data Rates: 7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2 Mbps MIMO
- 802.11 n at 2437MHz Data Rates: 7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2 Mbps MIMO
- 802.11 n at 2462MHz Data Rates: 7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2 Mbps MIMO

- 802.11 n at 2422MHz Data Rates: 15, 30, 45, 60, 90, 120, 135, 150 Mbps MIMO
- 802.11 n at 2437MHz Data Rates: 15, 30, 45, 60, 90, 120, 135, 150 Mbps MIMO
- 802.11 n at 2452MHz Data Rates: 15, 30, 45, 60, 90, 120, 135, 150 Mbps MIMO

3.3. EUT Modifications

No modifications were required for compliance to the FCC 15.247 you tested to 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 C63.4-2014 for site attenuation.

4.2. Test Instrumentation

The test instrumentation and auxiliary equipment used during the tests are listed in Table 9-1.

Conducted and radiated emission measurements were performed with a spectrum analyzer. This receiver allows measurements with the bandwidths and detector functions specified by the FCC. The receiver bandwidth was 120kHz for the 30MHz to 1000MHz radiated emissions data and 1MHz for the 1000MHz and above radiated emissions data.

4.3. Calibration Traceability

Test equipment is maintained and calibrated on a regular basis with calibration interval no greater than 2 years. 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.Requirements

Per the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Per 15.207(a), all radio frequency voltages on the power lines of a transmitter shall be below the values shown below when using a quasi-peak or average detector:

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.
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.

5.1.2.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 video streaming mode.

b) Measurements were first made on the 120V 60Hz 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 120V 60Hz return line.

5.1.3.Results

The plots and tabular data of the peak, quasi-peak, and average conducted voltage levels acquired from each input power line are shown on pages 20 through 23.

All power line conducted emissions measured from the EUT were within the specification limits.

5.2. 6dB (DTS) Bandwidth

5.2.1.Requirement

Per 15.247(a)(2),the minimum 6dB bandwidth shall be at least 500kHz for all systems using digital modulation techniques.

5.2.2.Procedures

The output of the EUT was connected to the spectrum analyzer through 40 dB of attenuation.

The EUT was allowed to transmit continuously. The transmit channel was set separately to low, middle, and high channels. The resolution bandwidth (RBW) was set to 100kHz and the span was set to greater than the RBW.

The 'Max-Hold' function was engaged. The analyzer was allowed to scan until the envelope of the transmitter bandwidth was defined. The analyzer's display was plotted using a 'screen dump' utility.

5.2.3.Results

The data pages 24 through 27 show that the minimum 6 dB bandwidth was 9.98MHz which is greater than minimum allowable 6dB bandwidth requirement of 500kHz for systems using digital modulation techniques. A plot of this measurement is shown on data page 28.

5.3. Maximum conducted (average) output power

5.3.1.Requirements

Per section 15.247(b)(3), for systems using digital modulation the maximum peak output conducted power shall not be greater than 1.0W (30dBm). Per section 15.247(b)(4), this limit is based on the use of antennas with directional gains that do not exceed 6dBi. Since the limit allows for a 6dBi antenna gain, the maximum EIRP can be increased by 6dB to 4 Watt (36dBm).

5.3.2.Procedures

Method AVGSA-1

The output of the EUT was connected to the spectrum analyzer through 40 dB of attenuation.

a) Set span to at least 1.5 times the OBW.
b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
c) Set VBW ≥ 3 x RBW.
d) Number of points in sweep ≥ 2 x span / RBW. (This gives bin-to-bin spacing ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
e) Sweep time = auto.
f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
g) If transmit duty cycle < 98 %, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 %, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run”.
h) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
i) Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum. The maximum meter reading was recorded.

5.3.3.Results

The results are presented on pages 29 through 40. The maximum average conducted output power from the transmitter was below the 1 Watt limit. The maximum EIRP from the transmitter was below the 4 Watt limit.

5.4. Occupied bandwidth (OBW) — power bandwidth (99%) measurement procedure

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency

limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.
The following procedure shall be used for measuring 99% power bandwidth

5.4.1.Procedures

a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.

b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.

c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.

d) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.

e) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

f) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

5.4.2.Results

The data pages 41 through 44 show the OBW bandwidth measurements. A representative plot of this measurement is shown on data page 45.

5.5. Antenna Conducted Spurious Emissions

5.5.1.Requirements

If the maximum peak conducted output power procedure was used to demonstrate compliance as described in 9.1, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).

In either case, attenuation to levels below the 15.209 general radiated emissions limits is not required.

For the 802.11 n protocol, the EUT utilizes MIMO and the Measure and add technique was used.

5.5.2.Procedures

The output of the EUT was connected to the spectrum analyzer through 40 dB of attenuation. The resolution bandwidth (RBW) was set to 100kHz. The peak detector and 'Max-Hold' function were engaged. The emissions in the frequency range from 30MHz to 25GHz were observed and plotted separately with the EUT transmitting at low, middle and high channels.

For the 802.11n protocol the limit was adjusted by -4.7dB per MIMO = 10*log(3) = 4.7 formula.

5.5.3.Results

The results of the antenna conducted emissions levels were plotted. These plots are presented on pages 46 through 84. These plots show that the spurious emissions were at least 30 dB below the level of the fundamental.

5.6. Radiated Spurious Emissions Measurements

5.6.1.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

5.6.2.Procedures

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 C63.4-2014 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.

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.

For the 802.11 n protocol, the EUT utilizes MIMO and the Measure and add technique was used.

Measure and add 10 log(N_{ANT}) dB, where N_{ANT} is the number of outputs. With this technique, spectrum measurements are performed at each output of the device, but rather than summing the spectra or the spectral peaks across the outputs, the quantity 10 log(N_{ANT}) dB is added to each spectrum value before comparing to the emission limit. The addition of 10 log(N_{ANT}) dB serves to apportion the emission limit among the N_{ANT} outputs so that each output is permitted to contribute no more than $1/N_{ANT}^{th}$ of the PSD limit specified in the rules.

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 axes 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 remeasured 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 resolution bandwidth was set to 1MHz. The analyzer was set to linear mode with a 10Hz video bandwidth in order to simulate an average detector. An average reading was taken.

5.6.3.Results

Preliminary radiated emissions plots with the EUT transmitting at Low Frequency, Middle Frequency, and High Frequency are shown on pages 85 through 170. Final radiated emissions data are presented on data pages 171 through 194. 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 Figures 3 through 5.

5.7. Band Edge Compliance

5.7.1.Requirement

Per section 15.247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands (2483.5MHz), as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

5.7.2.Procedures

5.4.2.1 Low Band Edge

1) The output of the EUT was connected to the spectrum analyzer through 40 dB of attenuation.

2) The EUT was set to transmit continuously at the channel closest to the low band-edge.
3) To determine the band edge compliance, the following spectrum analyzer settings were used:
    a. Center frequency = low band-edge frequency.
    b. Span = Wide enough to capture the peak level of the emission operating on the channel closest to the band-edge, as well as any modulation products which fall outside of the authorized band of operation.
    c. Resolution bandwidth (RBW) ≥ 1% of the span.
    d. The 'Max-Hold' function was engaged. The analyzer was allowed to scan until the envelope of the transmitter bandwidth was defined.
    e. The marker was set on the peak of the in-band emissions. A display line was placed 30dB down from the peak of the in-band emissions. All emissions which fall outside of the authorized band of operation must be below the 30dB down display line. (All emissions to the left of the center frequency (band-edge) must be below the display line.)
    f. The analyzer's display was plotted using a 'screen dump' utility.

5.4.2.2 High Band Edge

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.

5.7.3. Results

Pages 195 through 218 show the band-edge compliance results. As can be seen from these plots, the conducted emissions at the low end band edge are within the 30 dB down limits. The radiated emissions at the high end band edge are within the general limits.

5.8. Power Spectral Density

5.8.1. Requirements

Per section 15.247(d), the peak power spectral density from the intentional radiator shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

5.8.2. Procedures

Method AVGPSD-1

1) The output of the EUT was connected to the spectrum analyzer through 42.4 dB of attenuation.
2) Set instrument center frequency to DTS channel center frequency.
3) To determine the power spectral density, the following spectrum analyzer settings were used:

    a) Set instrument center frequency to DTS channel center frequency.
    b) Set span to at least 1.5 times the OBW.
    c) Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
    d) Set VBW ≥ 3 x RBW.
    e) Detector = power averaging (RMS) or sample detector (when RMS not available).

f) Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
g) Sweep time = auto couple.
h) Employ trace averaging (RMS) mode over a minimum of 100 traces.
i) Use the peak marker function to determine the maximum amplitude level.
j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span in order to meet the minimum measurement point requirement as the RBW is reduced).
k) The analyzer's display was plotted using a 'screen dump' utility.

5.8.3.Results

Pages 219 through 222 show the power spectral density results. Pages 223 through 226 are representative plots of the power spectral density. As can be seen from the data, the peak power density is less than 8dBm in a 3kHz band during any time interval of continuous transmission.

6. OTHER TEST CONDITIONS

6.1. Test Personnel and Witnesses

All tests were performed by qualified personnel from Elite Electronic Engineering Incorporated.

6.2. Disposition of the EUT

The EUT and all associated equipment were returned to Winegard Co. upon completion of the tests.

7. CONCLUSIONS

It was determined that the Winegard Co. WIFI Extender, Model Nos. RP-WF12 and RP-WF14, digital modulation transmitter, Serial Nos. no serial numbers were assigned did fully meet the conducted and radiated emission requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Sections 15.207 and 15.247 for Intentional Radiators Operating within the 2400-2483.5 MHz band, when tested per ANSI C63.4-2014 and ANSI C63.10-2013.

It was also determined that the Winegard Co. WIFI Extender, Model Nos. RP-WF12 and RP-WF14, digital modulation transmitter, did fully meet the conducted and radiated emission requirements of the Industry Canada Radio Standards Specification, RSS-Gen, Section 8.8 and Radio Standards and Specification RSS-247 for transmitters, when tested per ANSI C63.4-2014 and ANSI C63.10-2013.

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. 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 certification, approval, or endorsement by A2LA, 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	3/2/2016	3/2/2017
APW11	PREAMPLIFIER	PMI	PE2-35-120-5R0-10-12-SFF	PL11685/1241	1GHZ-20GHZ	4/18/2016	4/18/2017
APW4	PREAMPLIFIER	PLANAR	PE2-36-2D540G-5R0-10	PL3043/0651	26.5GHZ-40GHZ	3/2/2016	3/2/2017
CDW9	COMPUTER	ELITE				N/A	
CDY0	WORKSTATION	ELITE	WORKSTATION		WINDOWS 7	N/A	
CDY3	LAB COMPUTER	ELITE	WORKSTATION		WINDOWS 7	N/A	
NHG0	STANDARD GAIN HORN ANTENNA	NARDA	638	---	18-26.5GHZ	NOTE 1	
NHH1	STANDARD GAIN HORN ANTENNA	NARDA	V637	---	26.5-40GHZ	NOTE 1	
NTA1	BILOG ANTENNA	CHASE EMC LTD.	BILOG CBL6112	2054	0.03-2GHZ	2/29/2016	2/28/2017
NWQ0	DOUBLE RIDGED WAVEGUIDE ANTENNA		3117	66657	1GHZ-18GHZ	5/18/2016	5/18/2018
PLF1	CISPR16 50UH LISN	ELITE	CISPR16/70A	001	.15-30MHz	5/20/2015	5/20/2016
PLF3	CISPR16 50UH LISN	ELITE	CISPER16/70A	003	.15-30MHz	5/16/2016	5/16/2017
RBA1	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB26	100146	20HZ-26.5GHZ	2/12/2016	2/12/2017
RBB0	EMI TEST RECEIVER 20HZ TO 40 GHZ.		ESIB40	100250	20 HZ TO 40GHZ	2/16/2016	2/16/2017
RBD1	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESU40	100009	20Hz-40GHz	2/10/2016	2/10/2017
T1N2	10DB 20W ATTENUATOR	NARDA	766-10	---	DC-4GHZ	7/8/2015	7/8/2016
T1P0	10dB ATTENUATOR (40GHz)	WEINSCHEL	89-10-12	254	DC-40GHz	3/3/2016	3/3/2018
T2D8	20DB, 25W ATTENUATOR	WEINSCHEL	46-20-43	AY9247	DC-18GHZ	9/21/2015	9/21/2016
T2Q2	20DB/20W ATTENUATOR	AEROFLEX/WEINSCHEL	89-20-21	336	DC-40GHZ	8/20/2015	8/20/2017
T2SB	20DB 25W ATTENUATOR	WEINSCHEL	46-20-34	DC5014	DC-18GHZ	10/13/2015	10/13/2016
VBR8	CISPR EN FCC CE VOLTAGE.exe						
XOA2	WAVE-TO-COAX ADAPTER	HEWLETT PACKARD	R281B	01138	26.5-65GHZ	NOTE 1	
XOB2	ADAPTER	HEWLETT PACKARD	K281C,012	09407	18-26.5GHZ	NOTE 1	
XPR0	HIGH PASS FILTER	K&L MICROWAVE	11SH10-4800/X20000	001	4.8-20GHZ	9/22/2015	9/22/2016

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.

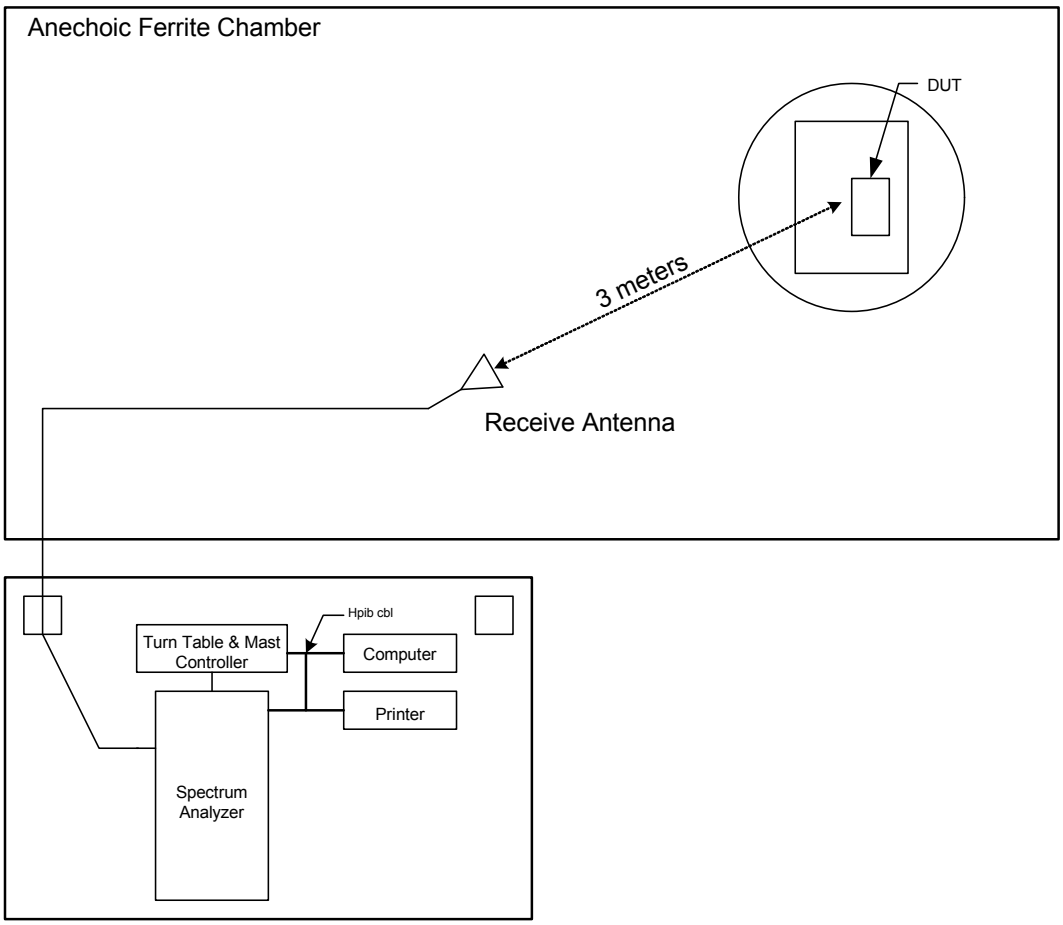
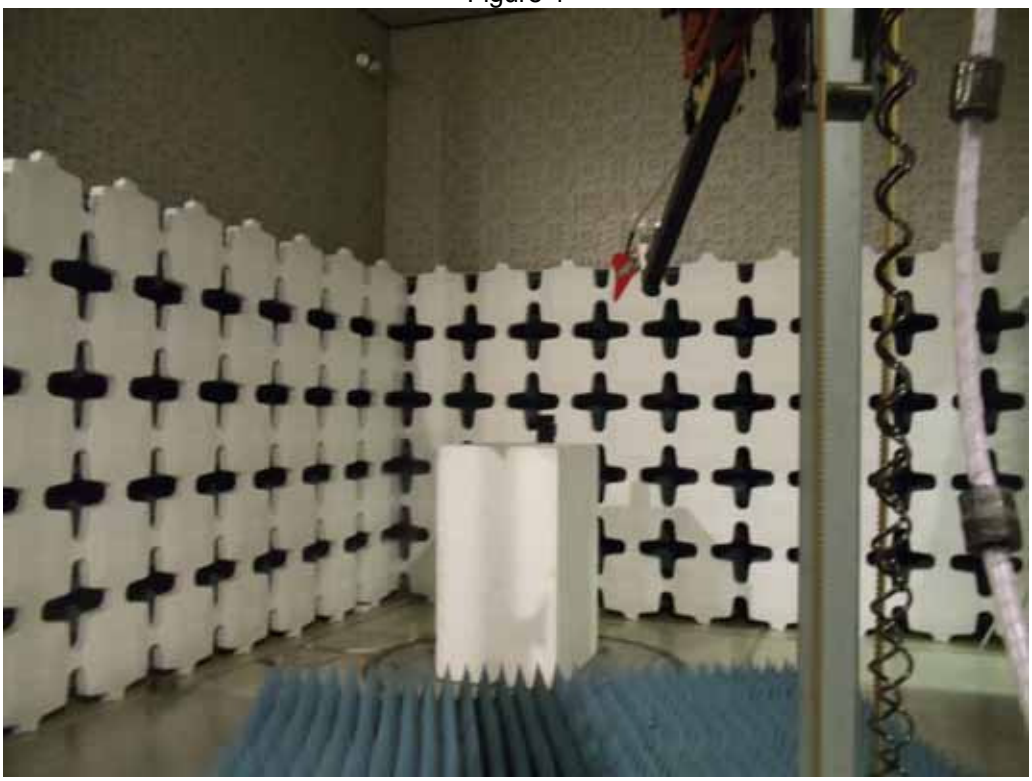


FIGURE 1 BLOCKDIAGRAM OF TEST SETUP

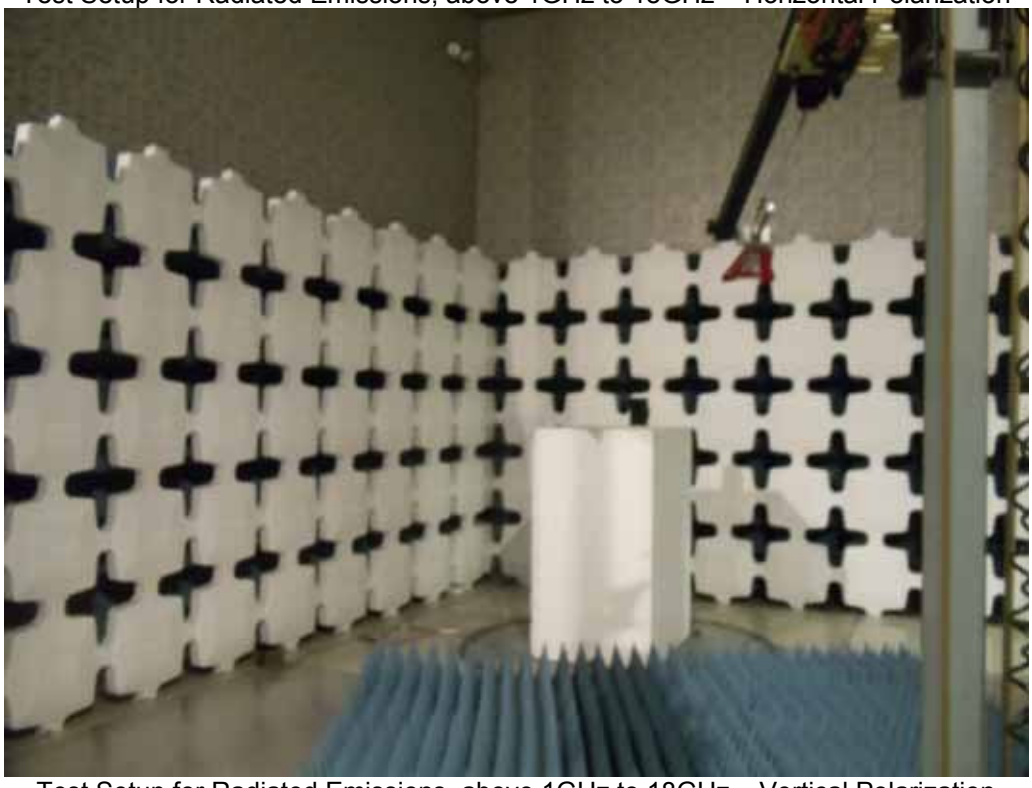
Figure 2

Test Setup for Antenna Conducted Emissions

Figure 4

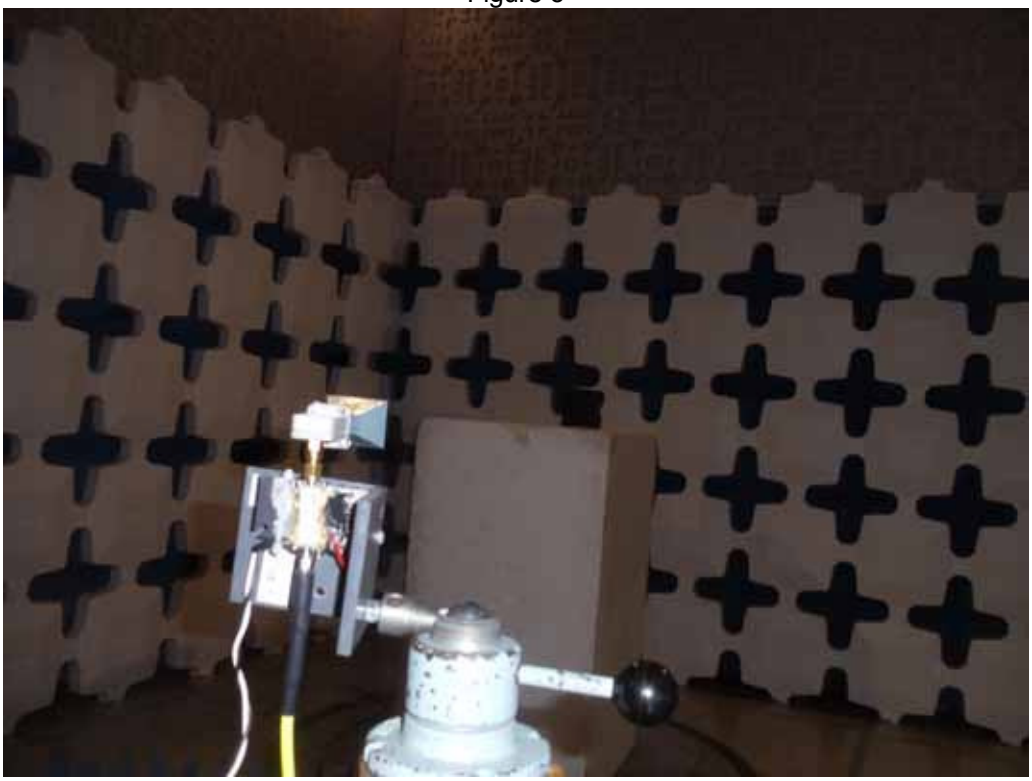


Test Setup for Radiated Emissions, above 1GHz to 18GHz – Horizontal Polarization



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

Figure 5



Test Setup for Radiated Emissions, above 18GHz – Horizontal Polarization

Test Setup for Radiated Emissions, above 18GHz – Vertical Polarization

FCC Part 15 Subpart B Conducted Emissions Test

Significant Emissions Data

VBR8 03/04/2015

Manufacturer	:	WINEGARD
Model	:	RP-WF12
DUT Revision	:	
Serial Number	:	
DUT Mode	:	NORMAL OPERATION
Line Tested	:	L1
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	
Test Engineer	:	R. King
Limit	:	Class B
Test Date	:	Mar 04, 2016 03:14:27 PM
Data Filter	:	Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

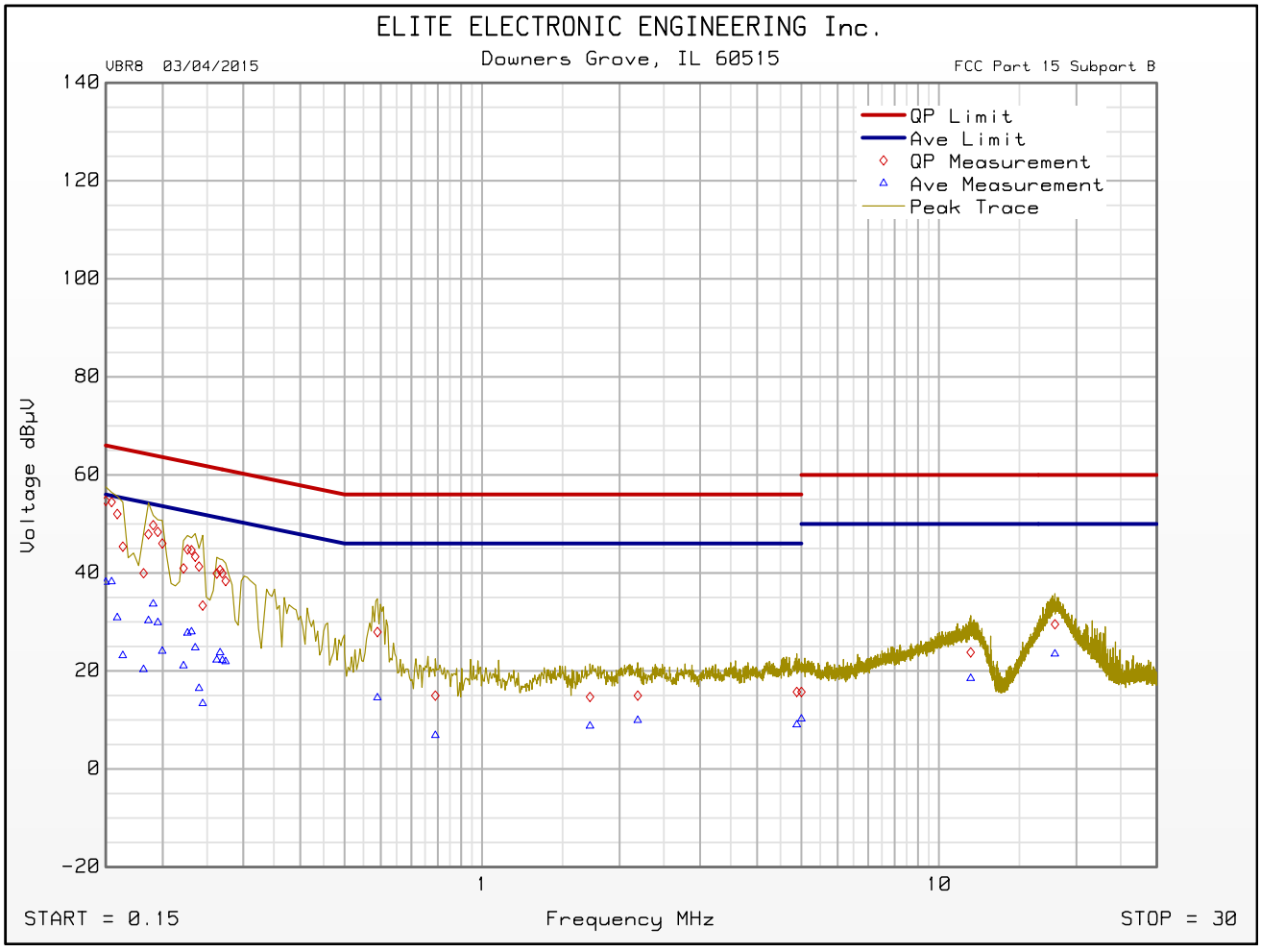
Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.150	54.7	66.0		38.1	56.0	
0.270	39.9	61.1		22.2	51.1	
0.590	27.9	56.0		14.6	46.0	
0.790	15.0	56.0		6.9	46.0	
1.723	14.7	56.0		8.8	46.0	
2.192	15.0	56.0		10.0	46.0	
4.886	15.7	56.0		9.0	46.0	
5.000	15.7	56.0		10.2	46.0	
11.736	23.8	60.0		18.5	50.0	
17.947	29.5	60.0		23.5	50.0	

FCC Part 15 Subpart B Conducted Emissions Test

Cumulative Data

VBR8 03/04/2015

Manufacturer	:	WINEGARD
Model	:	RP-WF12
DUT Revision	:	
Serial Number	:	
DUT Mode	:	NORMAL OPERATION - Transmitting
Line Tested	:	L1
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	
Test Engineer	:	R. King
Limit	:	Class B
Test Date	:	Mar 04, 2016 03:14:27 PM



Emissions Meet QP Limit
Emissions Meet Ave Limit

FCC Part 15 Subpart B Conducted Emissions Test

Significant Emissions Data

VBR8 03/04/2015

Manufacturer	:	WINEGARD
Model	:	RP-WF12
DUT Revision	:	
Serial Number	:	
DUT Mode	:	NORMAL OPERATION - Transmitting
Line Tested	:	L2
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	
Test Engineer	:	R. King
Limit	:	Class B
Test Date	:	Mar 04, 2016 03:21:46 PM
Data Filter	:	Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

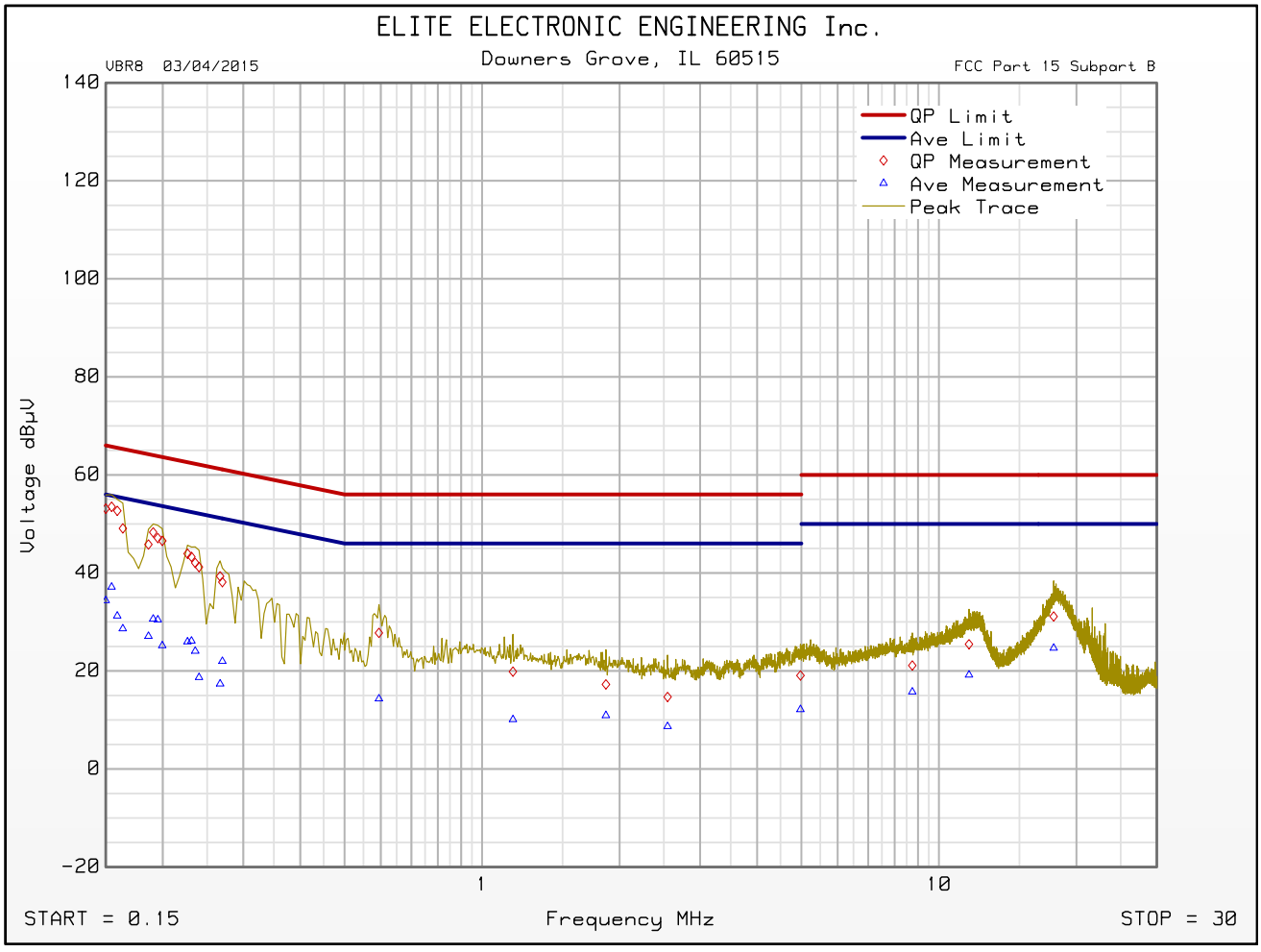
Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.155	53.5	65.8		37.1	55.8	
0.270	38.1	61.1		22.0	51.1	
0.595	27.8	56.0		14.3	46.0	
1.168	19.9	56.0		10.1	46.0	
1.867	17.3	56.0		10.9	46.0	
2.547	14.7	56.0		8.7	46.0	
4.976	19.1	56.0		12.2	46.0	
8.744	21.1	60.0		15.8	50.0	
11.637	25.5	60.0		19.2	50.0	
17.830	31.1	60.0		24.7	50.0	

FCC Part 15 Subpart B Conducted Emissions Test

Cumulative Data

VBR8 03/04/2015

Manufacturer	:	WINEGARD
Model	:	RP-WF12
DUT Revision	:	
Serial Number	:	
DUT Mode	:	NORMAL OPERATION - Transmitting
Line Tested	:	L2
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	
Test Engineer	:	R. King
Limit	:	Class B
Test Date	:	Mar 04, 2016 03:21:46 PM



Emissions Meet QP Limit
Emissions Meet Ave Limit

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : DTS Bandwidth (6dB bandwidth)
TEST DATE : March 28-29, 2016
TEST MODE : See below
PROTOCOL : 802.11b
DATA RATE : See below
NOTES : 20MHz bandwidth
: Antenna Port 0

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	6dB Bandwidth MHz
Lo	1	2412	b	1	10.07
Mid	6	2437	b	1	10.11
Hi	11	2462	b	1	10.1
Lo	1	2412	b	2	9.99
Mid	6	2437	b	2	9.98
Hi	11	2462	b	2	10.07
Lo	1	2412	b	5.5	11.9
Mid	6	2437	b	5.5	10.61
Hi	11	2462	b	5.5	10.4
Lo	1	2412	b	11	10.19
Mid	6	2437	b	11	10.06
Hi	11	2462	b	11	10.22

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : DTS Bandwidth (6dB bandwidth)
TEST DATE : March 28-29, 2016
TEST MODE : See below
PROTOCOL : 802.11g
DATA RATE : See below
NOTES : 20MHz bandwidth
: Antenna Port 0

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	6dB Bandwidth MHz
Lo	1	2412	g	6	16.39
Mid	6	2437	g	6	16.49
Hi	11	2462	g	6	16.5
Lo	1	2412	g	9	16.44
Mid	6	2437	g	9	16.42
Hi	11	2462	g	9	16.48
Lo	1	2412	g	12	16.49
Mid	6	2437	g	12	16.5
Hi	11	2462	g	12	16.48
Lo	1	2412	g	18	16.5
Mid	6	2437	g	18	16.46
Hi	11	2462	g	18	16.53
Lo	1	2412	g	24	16.58
Mid	6	2437	g	24	16.53
Hi	11	2462	g	24	16.53
Lo	1	2412	g	36	16.5
Mid	6	2437	g	36	16.5
Hi	11	2462	g	36	16.53
Lo	1	2412	g	48	16.58
Mid	6	2437	g	48	16.47
Hi	11	2462	g	48	16.47
Lo	1	2412	g	54	16.49
Mid	6	2437	g	54	16.49
Hi	11	2462	g	54	16.53

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : DTS Bandwidth (6dB bandwidth)
TEST DATE : March 28-29, 2016
TEST MODE : See below
PROTOCOL : 802.11n
DATA RATE : See below
NOTES : 20MHz bandwidth
: Antenna Port 0

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	6dB Bandwidth MHz
Lo	1	2412	n	7.2	17.7
Mid	6	2437	n	7.2	17.6
Hi	11	2462	n	7.2	17.6
Lo	1	2412	n	14.4	17.7
Mid	6	2437	n	14.4	17.6
Hi	11	2462	n	14.4	17.7
Lo	1	2412	n	21.7	17.7
Mid	6	2437	n	21.7	17.7
Hi	11	2462	n	21.7	17.69
Lo	1	2412	n	28.9	17.7
Mid	6	2437	n	28.9	17.8
Hi	11	2462	n	28.9	17.78
Lo	1	2412	n	43.3	16.53
Mid	6	2437	n	43.3	16.47
Hi	11	2462	n	43.3	16.53
Lo	1	2412	n	57.8	17.7
Mid	6	2437	n	57.8	17.7
Hi	11	2462	n	57.8	17.7
Lo	1	2412	n	65	17.7
Mid	6	2437	n	65	17.7
Hi	11	2462	n	65	17.7
Lo	1	2412	n	72.2	17.7
Mid	6	2437	n	72.2	17.7
Hi	11	2462	n	72.2	17.77

Checked BY Richard E. King :

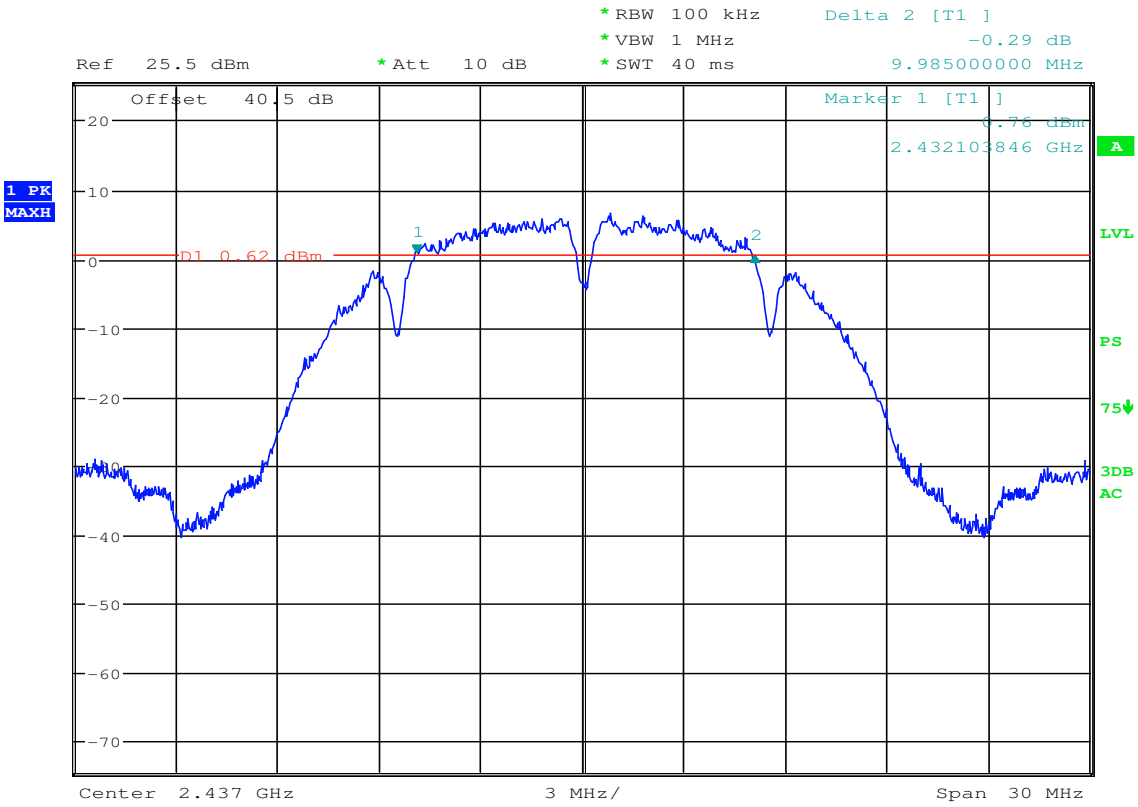
Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : DTS Bandwidth (6dB bandwidth)
TEST DATE : March 28-29, 2016
TEST MODE : See below
PROTOCOL : 802.11n
DATA RATE : See below
NOTES : 40MHz bandwidth
: Antenna Port 0

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	6dB Bandwidth MHz
Lo	3	2422	n	15	36.44
Mid	6	2437	n	15	36.34
Hi	9	2452	n	15	36.44
Lo	3	2422	n	30	36.34
Mid	6	2437	n	30	36.44
Hi	9	2452	n	30	36.44
Lo	3	2422	n	45	36.43
Mid	6	2437	n	45	36.54
Hi	9	2452	n	45	36.44
Lo	3	2422	n	60	36.53
Mid	6	2437	n	60	36.54
Hi	9	2452	n	60	36.54
Lo	3	2422	n	90	36.54
Mid	6	2437	n	90	36.54
Hi	9	2452	n	90	36.54
Lo	3	2422	n	120	36.44
Mid	6	2437	n	120	36.54
Hi	9	2452	n	120	36.54
Lo	3	2422	n	135	36.52
Mid	6	2437	n	135	36.54
Hi	9	2452	n	135	36.54
Lo	3	2422	n	150	36.52
Mid	6	2437	n	150	36.54
Hi	9	2452	n	150	36.54

Checked BY Richard E. King :

Richard E. King



Date: 22.JUN.2003 03:00:48

FCC 15C 15.247 / DTS

MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ LOW Channel (2437MHz)
	:	PEAK detector
NOTES	:	802.11 b (20 MHz)
NOTES	:	2Mbps
NOTES	:	
NOTES	:	

NOTES

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : Maximum conducted (average) output power
TEST DATE : March 29-30, 2016
TEST MODE : See below
PROTOCOL : See below
DATA RATE : See below
NOTES :

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Maximum Conducted Average	
					Output Power (dBm)	Limit (dBm)
Lo	1	2412	b	1	22.63	30
Mid	6	2437	b	1	21.15	30
Hi	11	2462	b	1	21.58	30
Lo	1	2412	b	2	22.56	30
Mid	6	2437	b	2	21.35	30
Hi	11	2462	b	2	22.25	30
Lo	1	2412	b	5.5	22.72	30
Mid	6	2437	b	5.5	22.73	30
Hi	11	2462	b	5.5	23.23	30
Lo	1	2412	b	11	22.37	30
Mid	6	2437	b	11	22.52	30
Hi	11	2462	b	11	22.68	30

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : Maximum conducted (average) output power
TEST DATE : March 29-30, 2016
TEST MODE : See below
PROTOCOL : See below
DATA RATE : See below
NOTES :

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Maximum Conducted Average	
					Output Power (dBm)	Limit (dBm)
Lo	1	2412	g	6	15.45	30
Mid	6	2437	g	6	21.22	30
Hi	11	2462	g	6	15.48	30
Lo	1	2412	g	9	15.73	30
Mid	6	2437	g	9	20.86	30
Hi	11	2462	g	9	15.48	30
Lo	1	2412	g	12	15.18	30
Mid	6	2437	g	12	21.26	30
Hi	11	2462	g	12	15.29	30
Lo	1	2412	g	18	15.61	30
Mid	6	2437	g	18	21.62	30
Hi	11	2462	g	18	15.66	30
Lo	1	2412	g	24	15.61	30
Mid	6	2437	g	24	21.42	30
Hi	11	2462	g	24	15.73	30
Lo	1	2412	g	36	15.5	30
Mid	6	2437	g	36	21.5	30
Hi	11	2462	g	36	15.72	30
Lo	1	2412	g	48	15.5	30
Mid	6	2437	g	48	20.95	30
Hi	11	2462	g	48	15.51	30
Lo	1	2412	g	54	16.06	30
Mid	6	2437	g	54	21.55	30

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : Maximum conducted (average) output power
TEST DATE : March 29-30, 2016
TEST MODE : See below
PROTOCOL : n (20MHz)
DATA RATE : See below
NOTES :

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Maximum Conducted Average	
					Output Power (dBm)	Limit (dBm)
Lo	1	2412	n	7.2	5.11	30
Mid	6	2437	n	7.2	19.39	30
Hi	11	2462	n	7.2	20.08	30
Lo	1	2412	n	14.4	5.42	30
Mid	6	2437	n	14.4	19.53	30
Hi	11	2462	n	14.4	20.03	30
Lo	1	2412	n	21.7	5.59	30
Mid	6	2437	n	21.7	19.5	30
Hi	11	2462	n	21.7	20.15	30
Lo	1	2412	n	28.9	5.93	30
Mid	6	2437	n	28.9	20.17	30
Hi	11	2462	n	28.9	20.57	30
Lo	1	2412	n	43.3	5.77	30
Mid	6	2437	n	43.3	20.27	30
Hi	11	2462	n	43.3	20.57	30
Lo	1	2412	n	57.8	5.82	30
Mid	6	2437	n	57.8	20.38	30
Hi	11	2462	n	57.8	20.72	30
Lo	1	2412	n	65	5.38	30
Mid	6	2437	n	65	20.35	30
Hi	11	2462	n	65	20.64	30
Lo	1	2412	n	72.2	5.72	30
Mid	6	2437	n	72.2	20.34	30

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : Maximum conducted (average) output power
TEST DATE : March 29-30, 2016
TEST MODE : See below
PROTOCOL : n (40MHz)
DATA RATE : See below
NOTES :

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Maximum Conducted Average	
					Output Power (dBm)	Limit (dBm)
Lo	3	2422	n	15	6.92	30
Mid	6	2437	n	15	19.05	30
Hi	9	2452	n	15	16.00	30
Lo	3	2422	n	30	6.79	30
Mid	6	2437	n	30	18.94	30
Hi	9	2452	n	30	15.52	30
Lo	3	2422	n	45	6.79	30
Mid	6	2437	n	45	18.83	30
Hi	9	2452	n	45	15.38	30
Lo	3	2422	n	60	7.14	30
Mid	6	2437	n	60	19.33	30
Hi	9	2452	n	60	15.79	30
Lo	3	2422	n	90	7.10	30
Mid	6	2437	n	90	19.64	30
Hi	9	2452	n	90	15.99	30
Lo	3	2422	n	120	7.11	30
Mid	6	2437	n	120	19.49	30
Hi	9	2452	n	120	15.70	30
Lo	3	2422	n	135	7.12	30
Mid	6	2437	n	135	19.53	30
Hi	9	2452	n	135	15.66	30
Lo	3	2422	n	150	7.08	30
Mid	6	2437	n	150	19.51	30

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : EIRP
TEST DATE : March 29-30, 2016
TEST MODE : See below
PROTOCOL : See below
DATA RATE : See below
NOTES :

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Output Power	Antenna Gain	EIRP dBm	EIRP Watts	EIRP Limit (dBm)	EIRP Limit (Watts)
Lo	1	2412	b	1	22.63	3	25.63	0.366	36	4
Mid	6	2437	b	1	21.15	3	24.15	0.260	36	4
Hi	11	2462	b	1	21.58	3	24.58	0.287	36	4
Lo	1	2412	b	2	22.56	3	25.56	0.360	36	4
Mid	6	2437	b	2	21.35	3	24.35	0.272	36	4
Hi	11	2462	b	2	22.25	3	25.25	0.335	36	4
Lo	1	2412	b	5.5	22.72	3	25.72	0.373	36	4
Mid	6	2437	b	5.5	22.73	3	25.73	0.374	36	4
Hi	11	2462	b	5.5	23.23	3	26.23	0.420	36	4
Lo	1	2412	b	11	22.37	3	25.37	0.344	36	4
Mid	6	2437	b	11	22.52	3	25.52	0.356	36	4
Hi	11	2462	b	11	22.68	3	25.68	0.370	36	4

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : EIRP
TEST DATE : March 29-30, 2016
TEST MODE : See below
PROTOCOL : See below
DATA RATE : See below
NOTES :

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Output Power	Antenna Gain	EIRP dBm	EIRP Watts	EIRP Limit (dBm)	EIRP Limit (Watts)
Lo	1	2412	g	6	15.45	3	18.45	0.070	36	4
Mid	6	2437	g	6	21.22	3	24.22	0.264	36	4
Hi	11	2462	g	6	15.48	3	18.48	0.070	36	4
Lo	1	2412	g	9	15.73	3	18.73	0.075	36	4
Mid	6	2437	g	9	20.86	3	23.86	0.243	36	4
Hi	11	2462	g	9	15.48	3	18.48	0.070	36	4
Lo	1	2412	g	12	15.18	3	18.18	0.066	36	4
Mid	6	2437	g	12	21.26	3	24.26	0.267	36	4
Hi	11	2462	g	12	15.29	3	18.29	0.067	36	4
Lo	1	2412	g	18	15.61	3	18.61	0.073	36	4
Mid	6	2437	g	18	21.62	3	24.62	0.290	36	4
Hi	11	2462	g	18	15.66	3	18.66	0.073	36	4
Lo	1	2412	g	24	15.61	3	18.61	0.073	36	4
Mid	6	2437	g	24	21.42	3	24.42	0.277	36	4
Hi	11	2462	g	24	15.73	3	18.73	0.075	36	4
Lo	1	2412	g	36	15.5	3	18.5	0.071	36	4
Mid	6	2437	g	36	21.5	3	24.5	0.282	36	4
Hi	11	2462	g	36	15.72	3	18.72	0.074	36	4
Lo	1	2412	g	48	15.5	3	18.5	0.071	36	4
Mid	6	2437	g	48	20.95	3	23.95	0.248	36	4
Hi	11	2462	g	48	15.51	3	18.51	0.071	36	4
Lo	1	2412	g	54	16.06	3	19.06	0.081	36	4
Mid	6	2437	g	54	21.55	3	24.55	0.285	36	4
Hi	11	2462	g	54	16.11	3	19.11	0.081	36	4

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : EIRP
TEST DATE : March 29-30, 2016
TEST MODE : See below
PROTOCOL : n (20MHz)
DATA RATE : See below
NOTES :

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Output Power	Antenna Gain	EIRP dBm	EIRP Watts	EIRP Limit (dBm)	EIRP Limit (Watts)
Lo	1	2412	n	7.2	5.11	3	8.11	0.006	36	4
Mid	6	2437	n	7.2	19.39	3	22.39	0.173	36	4
Hi	11	2462	n	7.2	20.08	3	23.08	0.203	36	4
Lo	1	2412	n	14.4	5.42	3	8.42	0.007	36	4
Mid	6	2437	n	14.4	19.53	3	22.53	0.179	36	4
Hi	11	2462	n	14.4	20.03	3	23.03	0.201	36	4
Lo	1	2412	n	21.7	5.59	3	8.59	0.007	36	4
Mid	6	2437	n	21.7	19.5	3	22.5	0.178	36	4
Hi	11	2462	n	21.7	20.15	3	23.15	0.207	36	4
Lo	1	2412	n	28.9	5.93	3	8.93	0.008	36	4
Mid	6	2437	n	28.9	20.17	3	23.17	0.207	36	4
Hi	11	2462	n	28.9	20.57	3	23.57	0.228	36	4
Lo	1	2412	n	43.3	5.77	3	8.77	0.008	36	4
Mid	6	2437	n	43.3	20.27	3	23.27	0.212	36	4
Hi	11	2462	n	43.3	20.57	3	23.57	0.228	36	4
Lo	1	2412	n	57.8	5.82	3	8.82	0.008	36	4
Mid	6	2437	n	57.8	20.38	3	23.38	0.218	36	4
Hi	11	2462	n	57.8	20.72	3	23.72	0.236	36	4
Lo	1	2412	n	65	5.38	3	8.38	0.007	36	4
Mid	6	2437	n	65	20.35	3	23.35	0.216	36	4
Hi	11	2462	n	65	20.64	3	23.64	0.231	36	4
Lo	1	2412	n	72.2	5.72	3	8.72	0.007	36	4
Mid	6	2437	n	72.2	20.34	3	23.34	0.216	36	4
Hi	11	2462	n	72.2	20.53	3	23.53	0.225	36	4

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : EIRP
TEST DATE : March 29-30, 2016
TEST MODE : See below
PROTOCOL : n (40MHz)
DATA RATE : See below
NOTES :

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Output Power	Antenna Gain	EIRP dBm	EIRP Watts	EIRP Limit (dBm)	EIRP Limit (Watts)
Lo	3	2422	n	15	6.92	3.00	9.92	0.010	36	4
Mid	6	2437	n	15	19.05	3.00	22.05	0.160	36	4
Hi	9	2452	n	15	16.00	3.00	19.00	0.079	36	4
Lo	3	2422	n	30	6.79	3.00	9.79	0.010	36	4
Mid	6	2437	n	30	18.94	3.00	21.94	0.156	36	4
Hi	9	2452	n	30	15.52	3.00	18.52	0.071	36	4
Lo	3	2422	n	45	6.79	3.00	9.79	0.010	36	4
Mid	6	2437	n	45	18.83	3.00	21.83	0.152	36	4
Hi	9	2452	n	45	15.38	3.00	18.38	0.069	36	4
Lo	3	2422	n	60	7.14	3.00	10.14	0.010	36	4
Mid	6	2437	n	60	19.33	3.00	22.33	0.171	36	4
Hi	9	2452	n	60	15.79	3.00	18.79	0.076	36	4
Lo	3	2422	n	90	7.10	3.00	10.10	0.010	36	4
Mid	6	2437	n	90	19.64	3.00	22.64	0.184	36	4
Hi	9	2452	n	90	15.99	3.00	18.99	0.079	36	4
Lo	3	2422	n	120	7.11	3.00	10.11	0.010	36	4
Mid	6	2437	n	120	19.49	3.00	22.49	0.177	36	4
Hi	9	2452	n	120	15.70	3.00	18.70	0.074	36	4
Lo	3	2422	n	135	7.12	3.00	10.12	0.010	36	4
Mid	6	2437	n	135	19.53	3.00	22.53	0.179	36	4
Hi	9	2452	n	135	15.66	3.00	18.66	0.073	36	4
Lo	3	2422	n	150	7.08	3.00	10.08	0.010	36	4
Mid	6	2437	n	150	19.51	3.00	22.51	0.178	36	4
Hi	9	2452	n	150	15.67	3.00	18.67	0.074	36	4

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF14
TEST PERFORMED : EIRP
TEST DATE : March 29-30, 2016
TEST MODE : See below
PROTOCOL : See below
DATA RATE : See below
NOTES :

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Output Power	Antenna Gain	EIRP dBm	EIRP Watts	EIRP Limit (dBm)	EIRP Limit (Watts)
Lo	1	2412	b	1	22.63	5	27.63	0.579	36	4
Mid	6	2437	b	1	21.15	5	26.15	0.412	36	4
Hi	11	2462	b	1	21.58	5	26.58	0.455	36	4
Lo	1	2412	b	2	22.56	5	27.56	0.570	36	4
Mid	6	2437	b	2	21.35	5	26.35	0.432	36	4
Hi	11	2462	b	2	22.25	5	27.25	0.531	36	4
Lo	1	2412	b	5.5	22.72	5	27.72	0.592	36	4
Mid	6	2437	b	5.5	22.73	5	27.73	0.593	36	4
Hi	11	2462	b	5.5	23.23	5	28.23	0.665	36	4
Lo	1	2412	b	11	22.37	5	27.37	0.546	36	4
Mid	6	2437	b	11	22.52	5	27.52	0.565	36	4
Hi	11	2462	b	11	22.68	5	27.68	0.586	36	4

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF14
TEST PERFORMED : EIRP
TEST DATE : March 29-30, 2016
TEST MODE : See below
PROTOCOL : See below
DATA RATE : See below
NOTES :

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Output Power	Antenna Gain	EIRP dBm	EIRP Watts	EIRP Limit (dBm)	EIRP Limit (Watts)
Lo	1	2412	g	6	15.45	5	20.45	0.111	36	4
Mid	6	2437	g	6	21.22	5	26.22	0.419	36	4
Hi	11	2462	g	6	15.48	5	20.48	0.112	36	4
Lo	1	2412	g	9	15.73	5	20.73	0.118	36	4
Mid	6	2437	g	9	20.86	5	25.86	0.385	36	4
Hi	11	2462	g	9	15.48	5	20.48	0.112	36	4
Lo	1	2412	g	12	15.18	5	20.18	0.104	36	4
Mid	6	2437	g	12	21.26	5	26.26	0.423	36	4
Hi	11	2462	g	12	15.29	5	20.29	0.107	36	4
Lo	1	2412	g	18	15.61	5	20.61	0.115	36	4
Mid	6	2437	g	18	21.62	5	26.62	0.459	36	4
Hi	11	2462	g	18	15.66	5	20.66	0.116	36	4
Lo	1	2412	g	24	15.61	5	20.61	0.115	36	4
Mid	6	2437	g	24	21.42	5	26.42	0.439	36	4
Hi	11	2462	g	24	15.73	5	20.73	0.118	36	4
Lo	1	2412	g	36	15.5	5	20.5	0.112	36	4
Mid	6	2437	g	36	21.5	5	26.5	0.447	36	4
Hi	11	2462	g	36	15.72	5	20.72	0.118	36	4
Lo	1	2412	g	48	15.5	5	20.5	0.112	36	4
Mid	6	2437	g	48	20.95	5	25.95	0.394	36	4
Hi	11	2462	g	48	15.51	5	20.51	0.112	36	4
Lo	1	2412	g	54	16.06	5	21.06	0.128	36	4
Mid	6	2437	g	54	21.55	5	26.55	0.452	36	4
Hi	11	2462	g	54	16.11	5	21.11	0.129	36	4

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF14
TEST PERFORMED : EIRP
TEST DATE : March 29-30, 2016
TEST MODE : See below
PROTOCOL : n (20MHz)
DATA RATE : See below
NOTES :

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Output Power	Antenna Gain	EIRP dBm	EIRP Watts	EIRP Limit (dBm)	EIRP Limit (Watts)
Lo	1	2412	n	7.2	5.11	5	10.11	0.010	36	4
Mid	6	2437	n	7.2	19.39	5	24.39	0.275	36	4
Hi	11	2462	n	7.2	20.08	5	25.08	0.322	36	4
Lo	1	2412	n	14.4	5.42	5	10.42	0.011	36	4
Mid	6	2437	n	14.4	19.53	5	24.53	0.284	36	4
Hi	11	2462	n	14.4	20.03	5	25.03	0.318	36	4
Lo	1	2412	n	21.7	5.59	5	10.59	0.011	36	4
Mid	6	2437	n	21.7	19.5	5	24.5	0.282	36	4
Hi	11	2462	n	21.7	20.15	5	25.15	0.327	36	4
Lo	1	2412	n	28.9	5.93	5	10.93	0.012	36	4
Mid	6	2437	n	28.9	20.17	5	25.17	0.329	36	4
Hi	11	2462	n	28.9	20.57	5	25.57	0.361	36	4
Lo	1	2412	n	43.3	5.77	5	10.77	0.012	36	4
Mid	6	2437	n	43.3	20.27	5	25.27	0.337	36	4
Hi	11	2462	n	43.3	20.57	5	25.57	0.361	36	4
Lo	1	2412	n	57.8	5.82	5	10.82	0.012	36	4
Mid	6	2437	n	57.8	20.38	5	25.38	0.345	36	4
Hi	11	2462	n	57.8	20.72	5	25.72	0.373	36	4
Lo	1	2412	n	65	5.38	5	10.38	0.011	36	4
Mid	6	2437	n	65	20.35	5	25.35	0.343	36	4
Hi	11	2462	n	65	20.64	5	25.64	0.366	36	4
Lo	1	2412	n	72.2	5.72	5	10.72	0.012	36	4
Mid	6	2437	n	72.2	20.34	5	25.34	0.342	36	4
Hi	11	2462	n	72.2	20.53	5	25.53	0.357	36	4

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF14
TEST PERFORMED : EIRP
TEST DATE : March 29-30, 2016
TEST MODE : See below
PROTOCOL : n (40MHz)
DATA RATE : See below
NOTES :

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Output Power	Antenna Gain	EIRP dBm	EIRP Watts	EIRP Limit (dBm)	EIRP Limit (Watts)
Lo	3	2422	n	15	6.92	5.00	11.92	0.016	36	4
Mid	6	2437	n	15	19.05	5.00	24.05	0.254	36	4
Hi	9	2452	n	15	16.00	5.00	21.00	0.126	36	4
Lo	3	2422	n	30	6.79	5.00	11.79	0.015	36	4
Mid	6	2437	n	30	18.94	5.00	23.94	0.248	36	4
Hi	9	2452	n	30	15.52	5.00	20.52	0.113	36	4
Lo	3	2422	n	45	6.79	5.00	11.79	0.015	36	4
Mid	6	2437	n	45	18.83	5.00	23.83	0.242	36	4
Hi	9	2452	n	45	15.38	5.00	20.38	0.109	36	4
Lo	3	2422	n	60	7.14	5.00	12.14	0.016	36	4
Mid	6	2437	n	60	19.33	5.00	24.33	0.271	36	4
Hi	9	2452	n	60	15.79	5.00	20.79	0.120	36	4
Lo	3	2422	n	90	7.10	5.00	12.10	0.016	36	4
Mid	6	2437	n	90	19.64	5.00	24.64	0.291	36	4
Hi	9	2452	n	90	15.99	5.00	20.99	0.126	36	4
Lo	3	2422	n	120	7.11	5.00	12.11	0.016	36	4
Mid	6	2437	n	120	19.49	5.00	24.49	0.281	36	4
Hi	9	2452	n	120	15.70	5.00	20.70	0.117	36	4
Lo	3	2422	n	135	7.12	5.00	12.12	0.016	36	4
Mid	6	2437	n	135	19.53	5.00	24.53	0.284	36	4
Hi	9	2452	n	135	15.66	5.00	20.66	0.116	36	4
Lo	3	2422	n	150	7.08	5.00	12.08	0.016	36	4
Mid	6	2437	n	150	19.51	5.00	24.51	0.282	36	4
Hi	9	2452	n	150	15.67	5.00	20.67	0.117	36	4

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : OBW Bandwidth (99% bandwidth)
TEST DATE : March 28-29, 2016
TEST MODE : See below
PROTOCOL : 802.11b
DATA RATE : See below
NOTES : 20MHz bandwidth
: Antenna Port 0

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	OBW Bandwidth MHz
Lo	1	2412	b	1	14.08
Mid	6	2437	b	1	13.98
Hi	11	2462	b	1	14.08
Lo	1	2412	b	2	14.08
Mid	6	2437	b	2	14.03
Hi	11	2462	b	2	14.08
Lo	1	2412	b	5.5	13.7
Mid	6	2437	b	5.5	13.75
Hi	11	2462	b	5.5	13.73
Lo	1	2412	b	11	13.89
Mid	6	2437	b	11	13.75
Hi	11	2462	b	11	13.89

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : OBW Bandwidth (99% bandwidth)
TEST DATE : March 28-29, 2016
TEST MODE : See below
PROTOCOL : 802.11g
DATA RATE : See below
NOTES : 20MHz bandwidth
: Antenna Port 0

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	OBW Bandwidth MHz
Lo	1	2412	g	6	17.69
Mid	6	2437	g	6	16.89
Hi	11	2462	g	6	16.68
Lo	1	2412	g	9	17.43
Mid	6	2437	g	9	17.44
Hi	11	2462	g	9	17.34
Lo	1	2412	g	12	17.11
Mid	6	2437	g	12	17.1
Hi	11	2462	g	12	17.1
Lo	1	2412	g	18	17.04
Mid	6	2437	g	18	17.04
Hi	11	2462	g	18	17.07
Lo	1	2412	g	24	17.07
Mid	6	2437	g	24	17.04
Hi	11	2462	g	24	17.04
Lo	1	2412	g	36	17.01
Mid	6	2437	g	36	17.04
Hi	11	2462	g	36	17.02
Lo	1	2412	g	48	17.38
Mid	6	2437	g	48	17.26
Hi	11	2462	g	48	17.41
Lo	1	2412	g	54	17.04
Mid	6	2437	g	54	17.55
Hi	11	2462	g	54	17.04

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : OBW Bandwidth (99% bandwidth)
TEST DATE : March 28-29, 2016
TEST MODE : See below
PROTOCOL : 802.11n
DATA RATE : See below
NOTES : 20MHz bandwidth
: Antenna Port 0

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	OBW Bandwidth MHz
Lo	1	2412	n	7.2	18.01
Mid	6	2437	n	7.2	18.03
Hi	11	2462	n	7.2	18.01
Lo	1	2412	n	14.4	18.19
Mid	6	2437	n	14.4	18.22
Hi	11	2462	n	14.4	18.22
Lo	1	2412	n	21.7	18.16
Mid	6	2437	n	21.7	18.15
Hi	11	2462	n	21.7	18.1
Lo	1	2412	n	28.9	18.19
Mid	6	2437	n	28.9	18.1
Hi	11	2462	n	28.9	18.1
Lo	1	2412	n	43.3	17.02
Mid	6	2437	n	43.3	17.08
Hi	11	2462	n	43.3	17.04
Lo	1	2412	n	57.8	18.13
Mid	6	2437	n	57.8	18.15
Hi	11	2462	n	57.8	18.15
Lo	1	2412	n	65	18.11
Mid	6	2437	n	65	18.13
Hi	11	2462	n	65	18.15
Lo	1	2412	n	72.2	18.12
Mid	6	2437	n	72.2	18.12
Hi	11	2462	n	72.2	18.12

Checked BY Richard E. King :

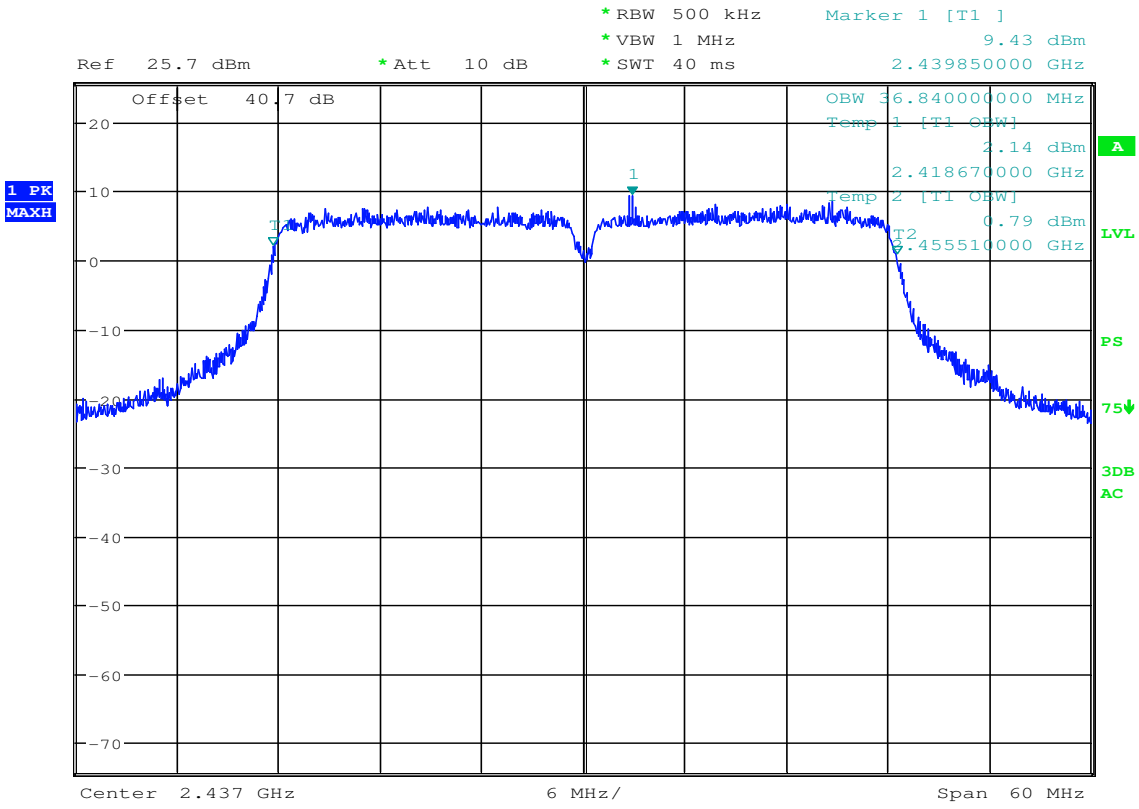
Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : OBW Bandwidth (99% bandwidth)
TEST DATE : March 28-29, 2016
TEST MODE : See below
PROTOCOL : 802.11n
DATA RATE : See below
NOTES : 40MHz bandwidth
: Antenna Port 0

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	OBW Bandwidth MHz
Lo	3	2422	n	15	36.43
Mid	6	2437	n	15	36.81
Hi	9	2452	n	15	36.48
Lo	3	2422	n	30	36.9
Mid	6	2437	n	30	36.9
Hi	9	2452	n	30	36.84
Lo	3	2422	n	45	36.9
Mid	6	2437	n	45	36.81
Hi	9	2452	n	45	36.81
Lo	3	2422	n	60	36.8
Mid	6	2437	n	60	36.8
Hi	9	2452	n	60	36.81
Lo	3	2422	n	90	36.8
Mid	6	2437	n	90	36.8
Hi	9	2452	n	90	36.75
Lo	3	2422	n	120	36.8
Mid	6	2437	n	120	36.81
Hi	9	2452	n	120	36.78
Lo	3	2422	n	135	36.7
Mid	6	2437	n	135	36.75
Hi	9	2452	n	135	36.75
Lo	3	2422	n	150	36.8
Mid	6	2437	n	150	36.84
Hi	9	2452	n	150	36.84

Checked BY Richard E. King :

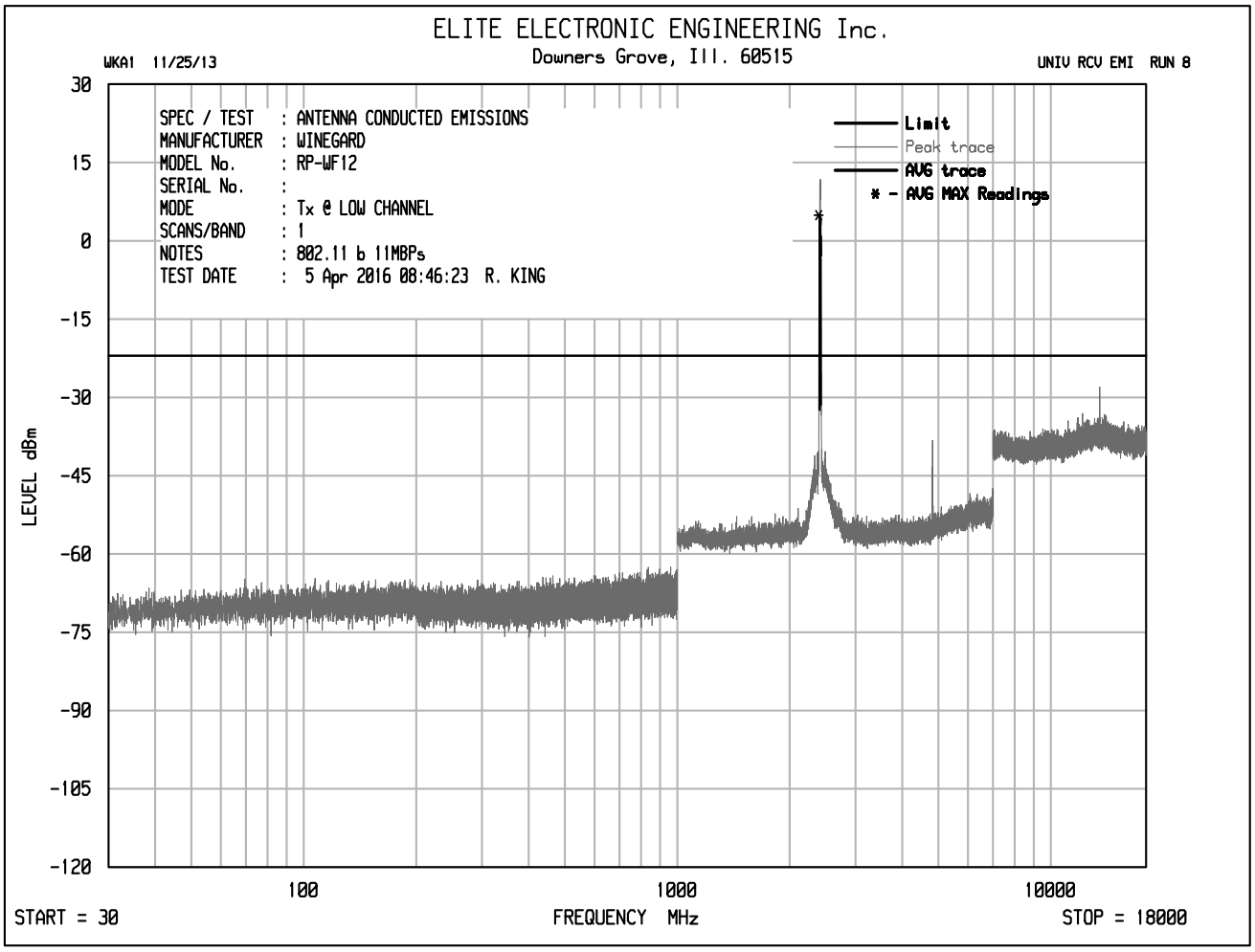
Richard E. King

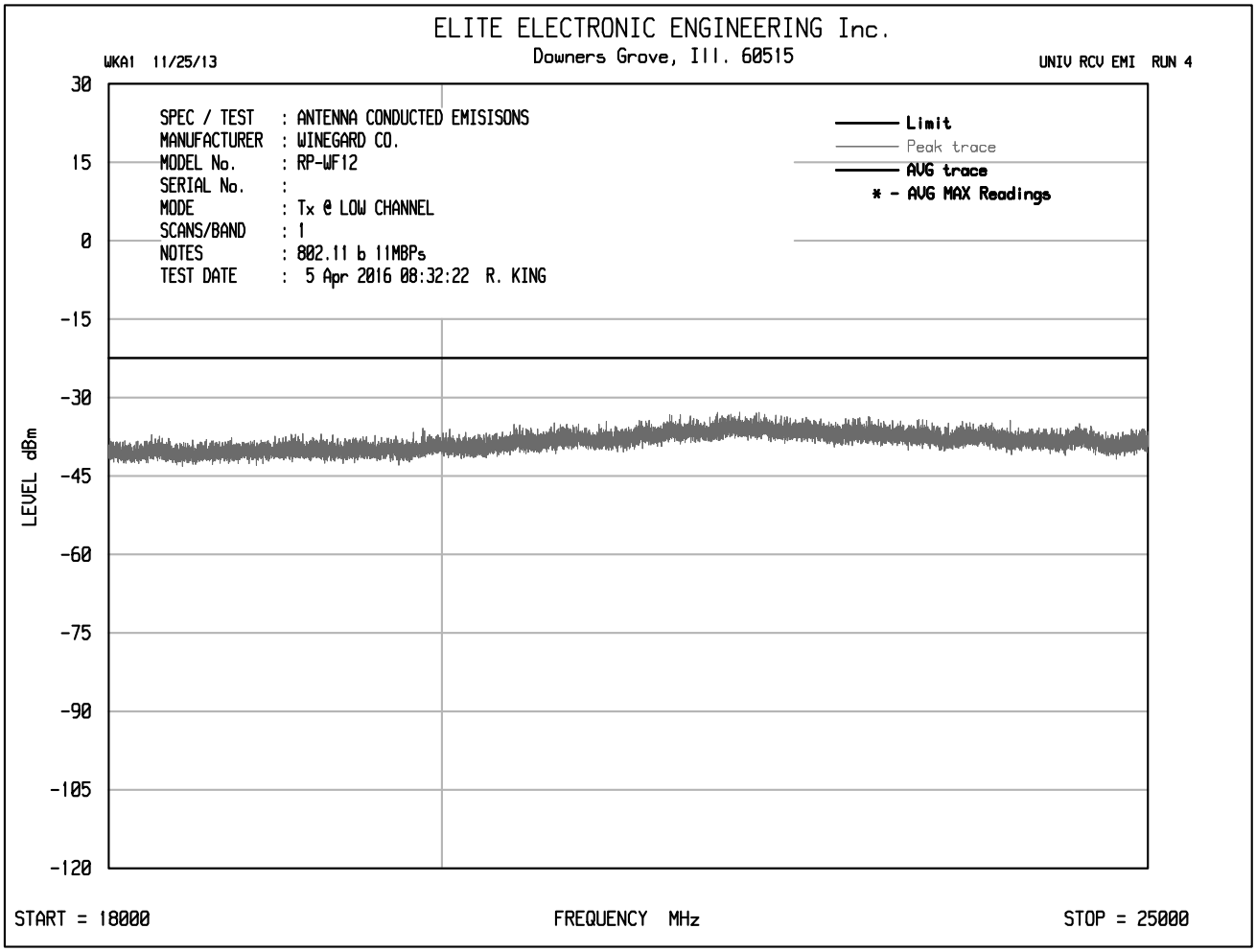


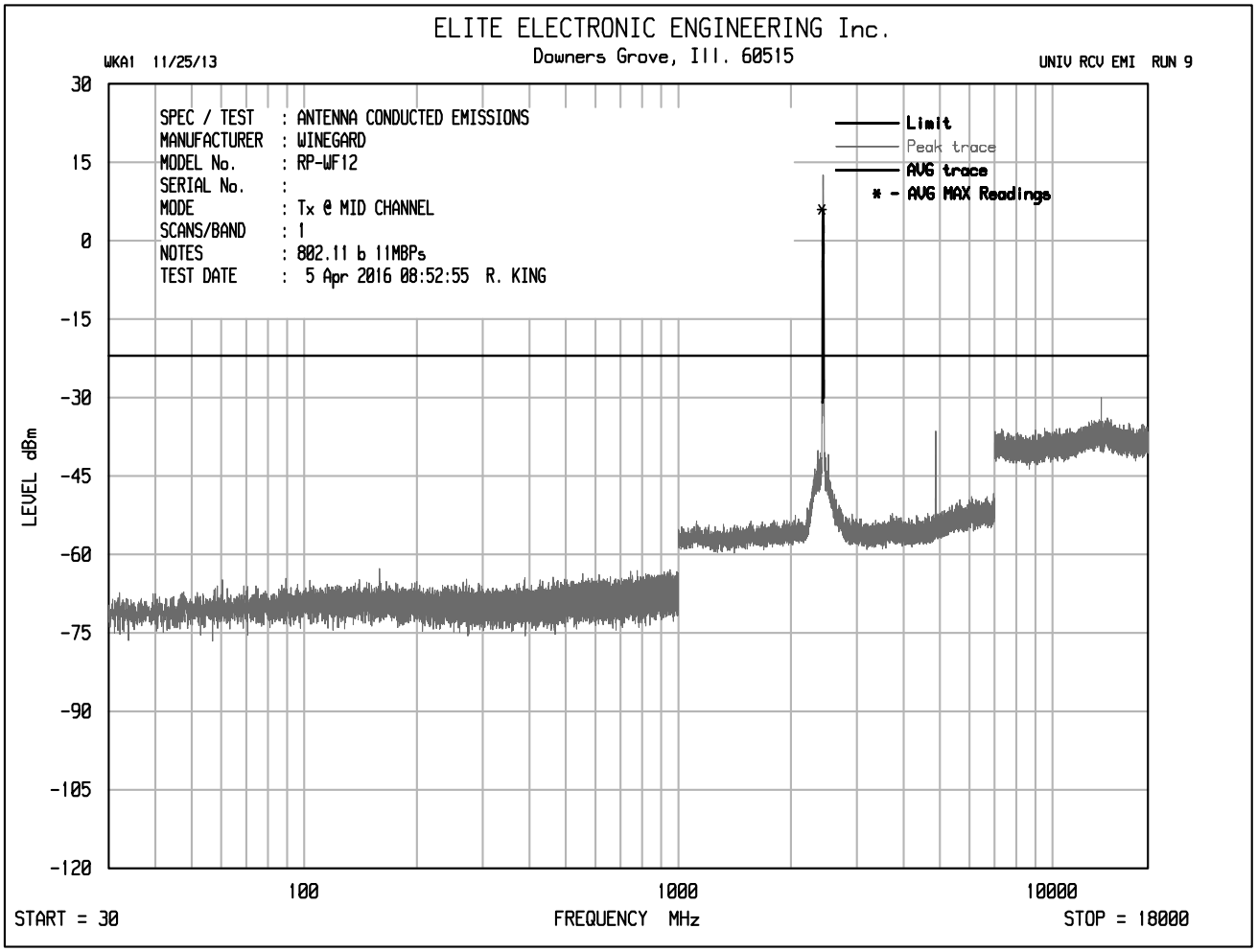
FCC 15C 15.247 / OBW

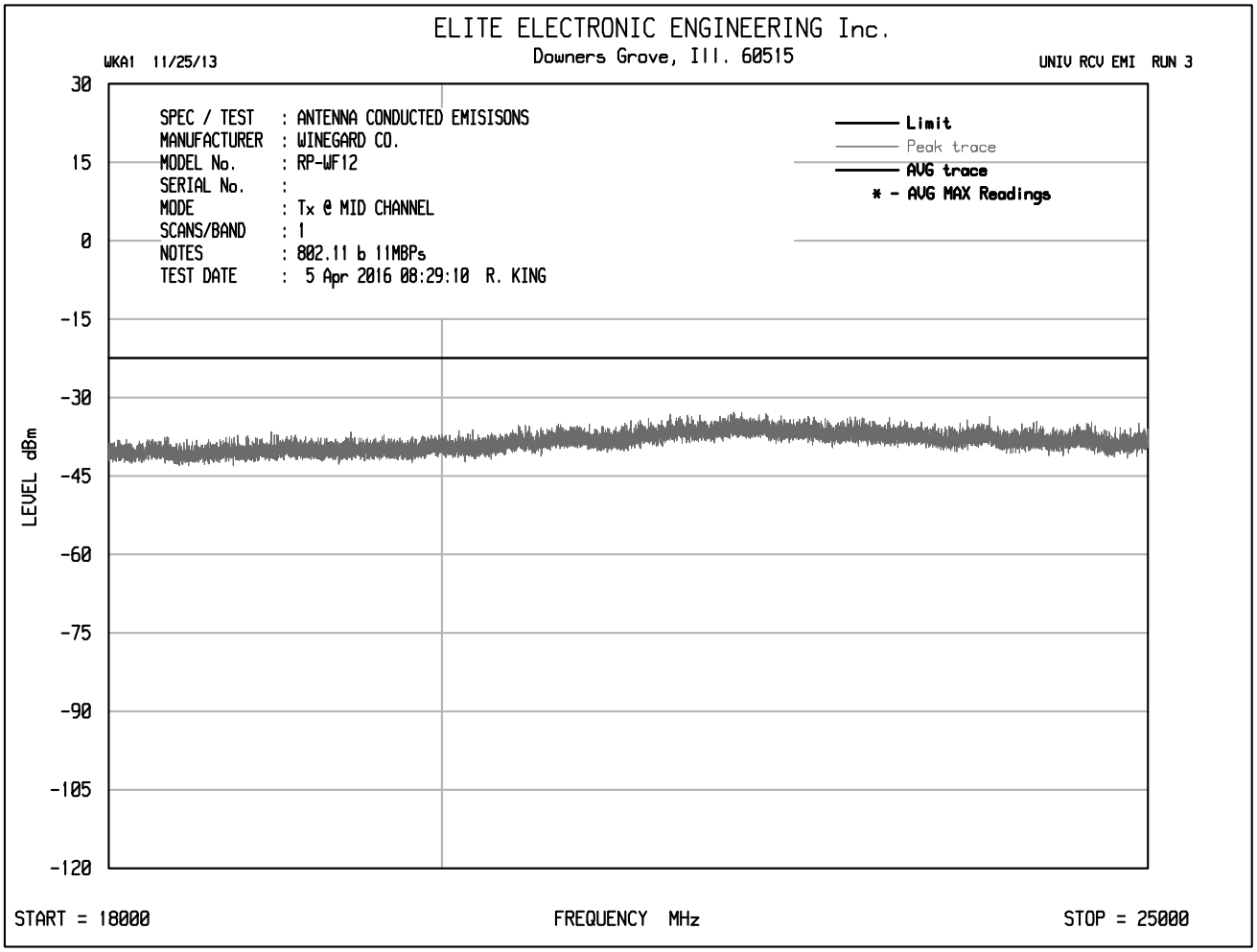
MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ MID Channel (2437MHz)
	:	PEAK detector
NOTES	:	802.11 n (40 MHz)
NOTES	:	150Mbps
NOTES	:	
NOTES	:	

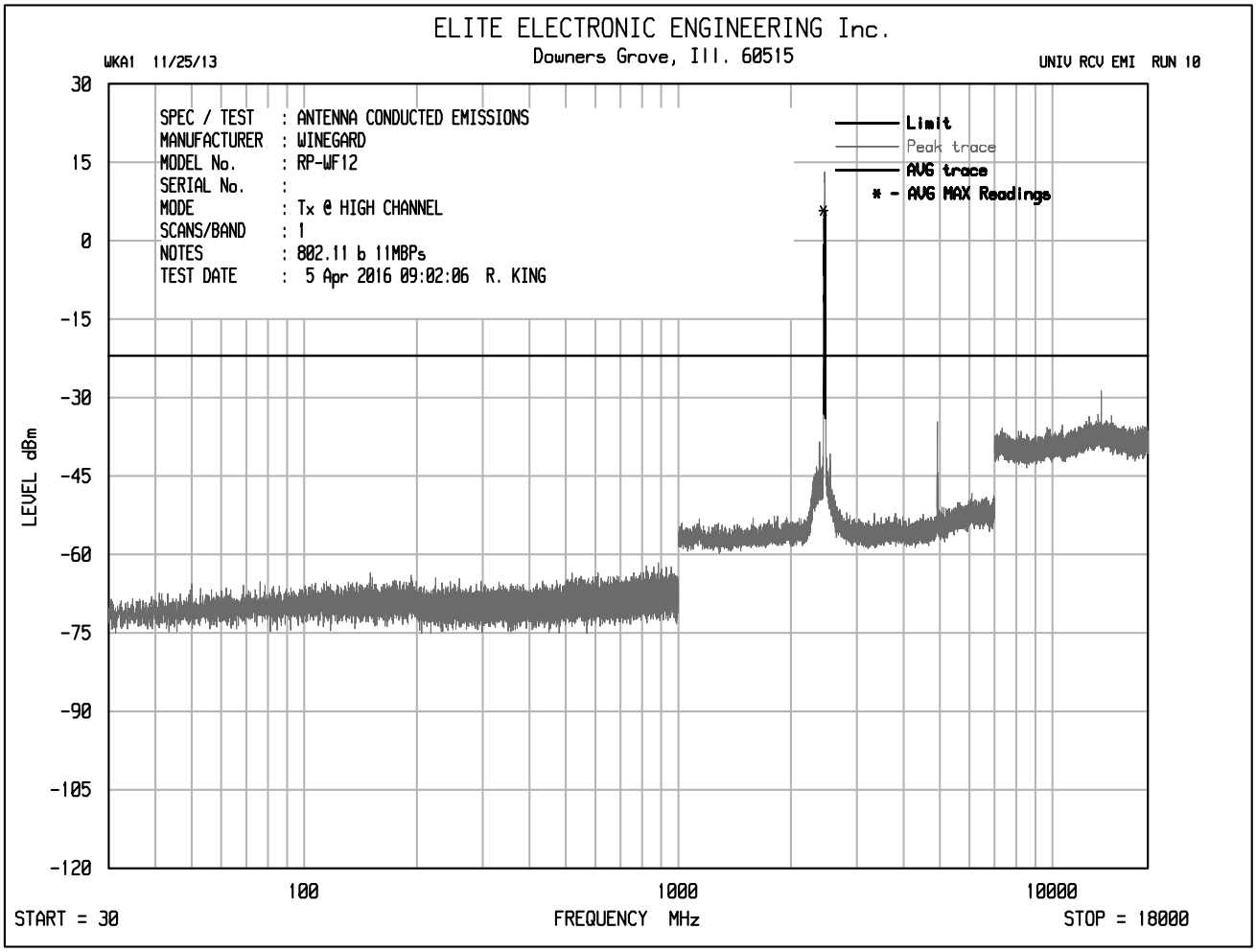
NOTES

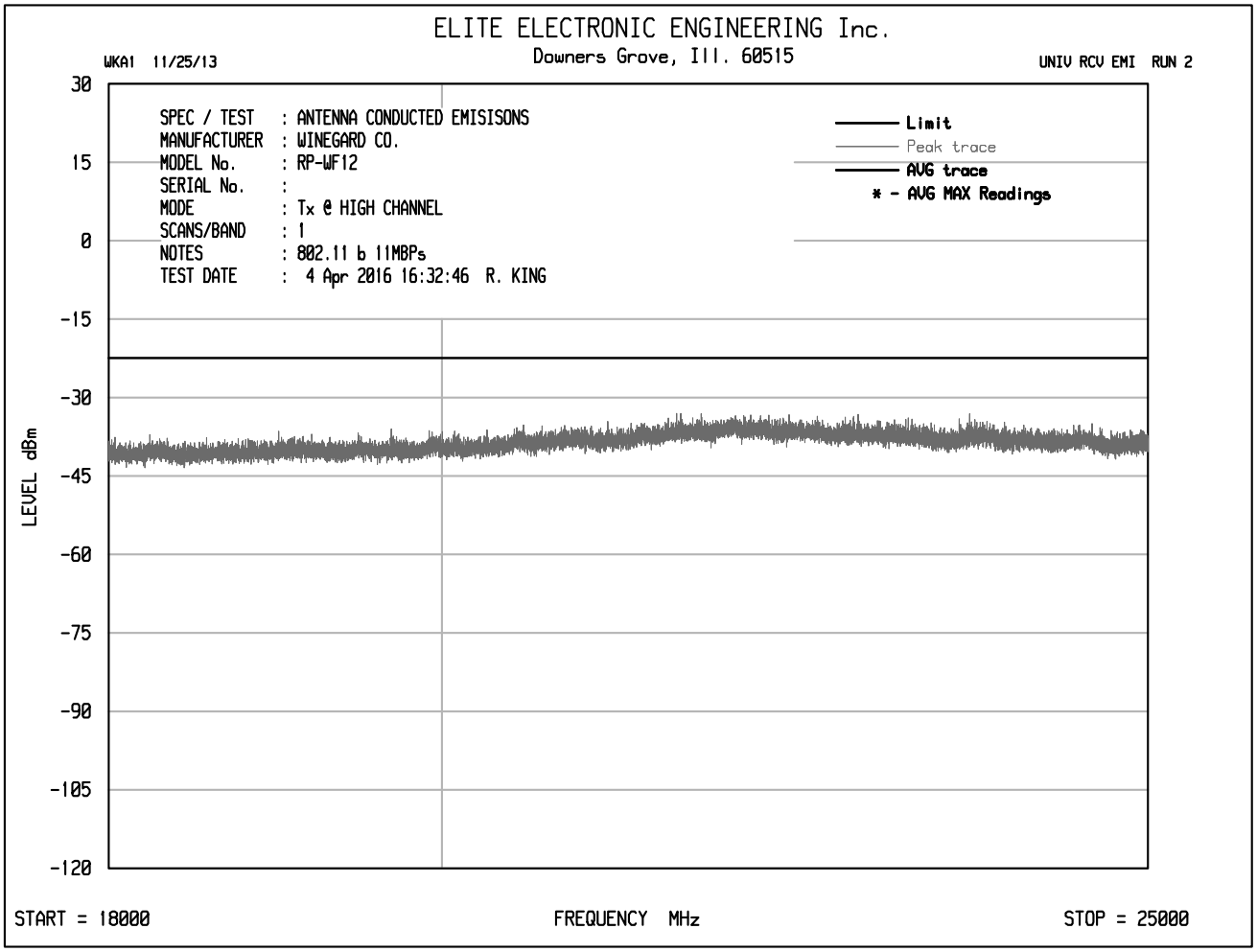

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 8
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 b 11MBPs
TEST DATE : 5 Apr 2016 08:46:23 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

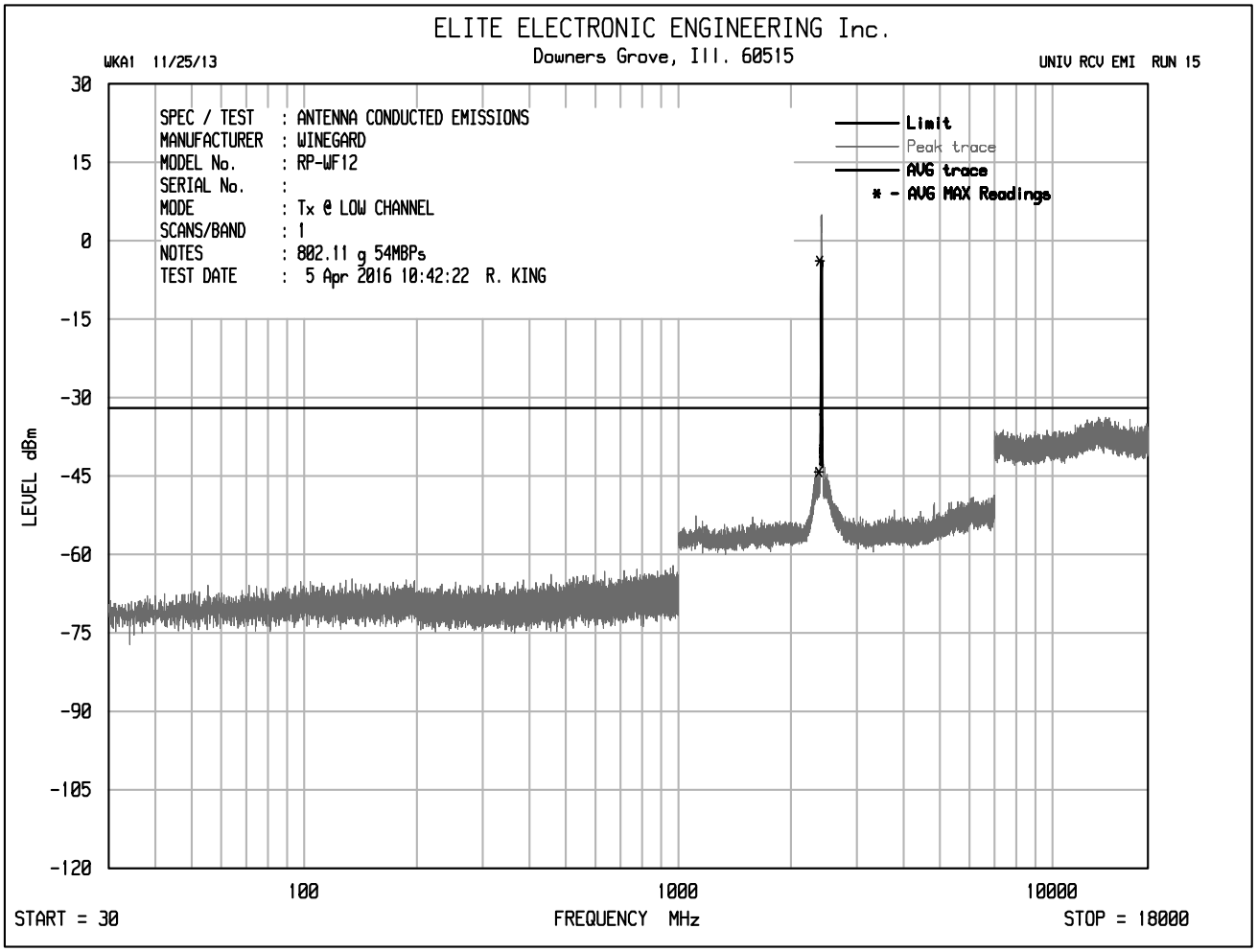

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 4
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 b 11MBPs
TEST DATE : 5 Apr 2016 08:32:22 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

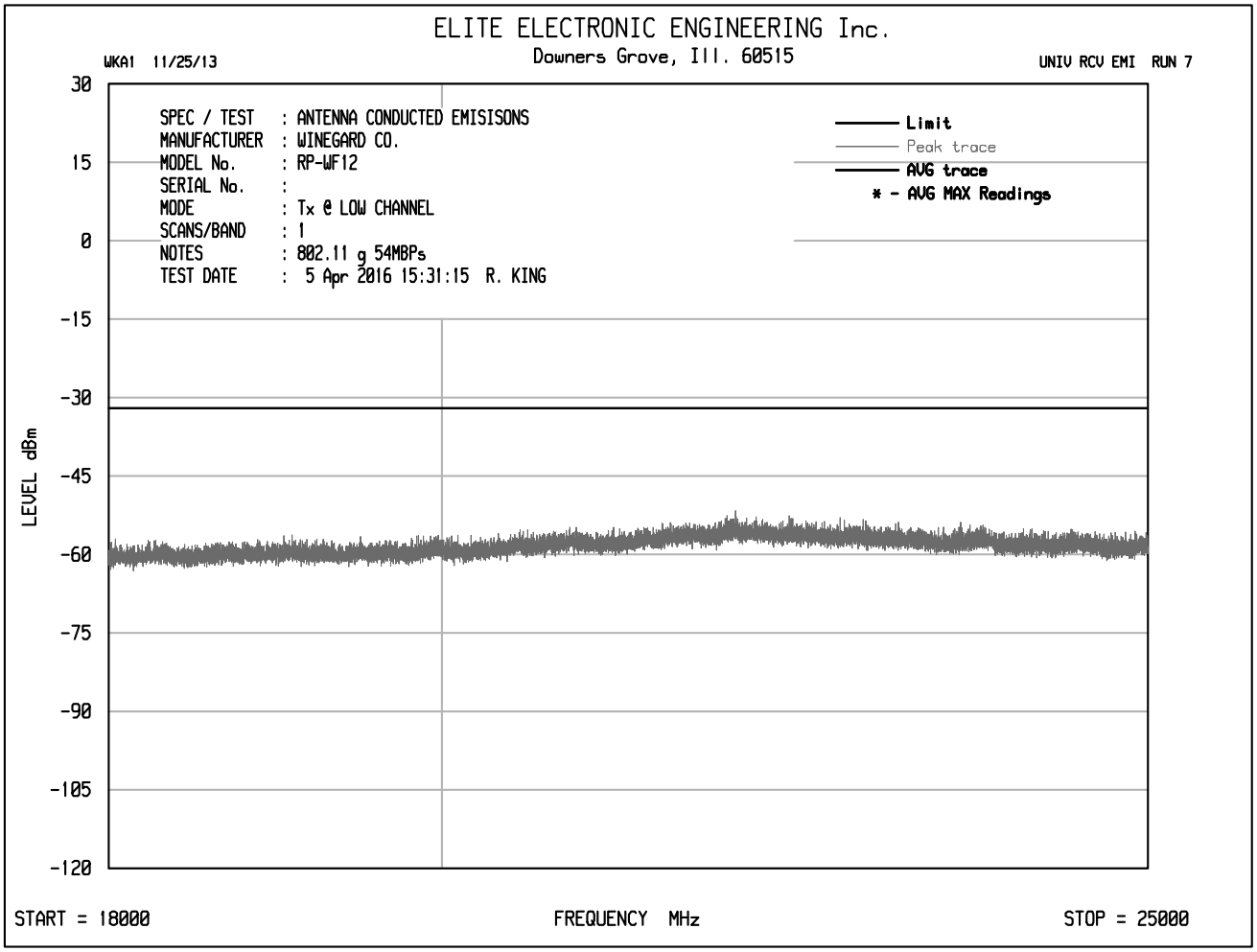

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 9
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 b 11MBPs
TEST DATE : 5 Apr 2016 08:52:55 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

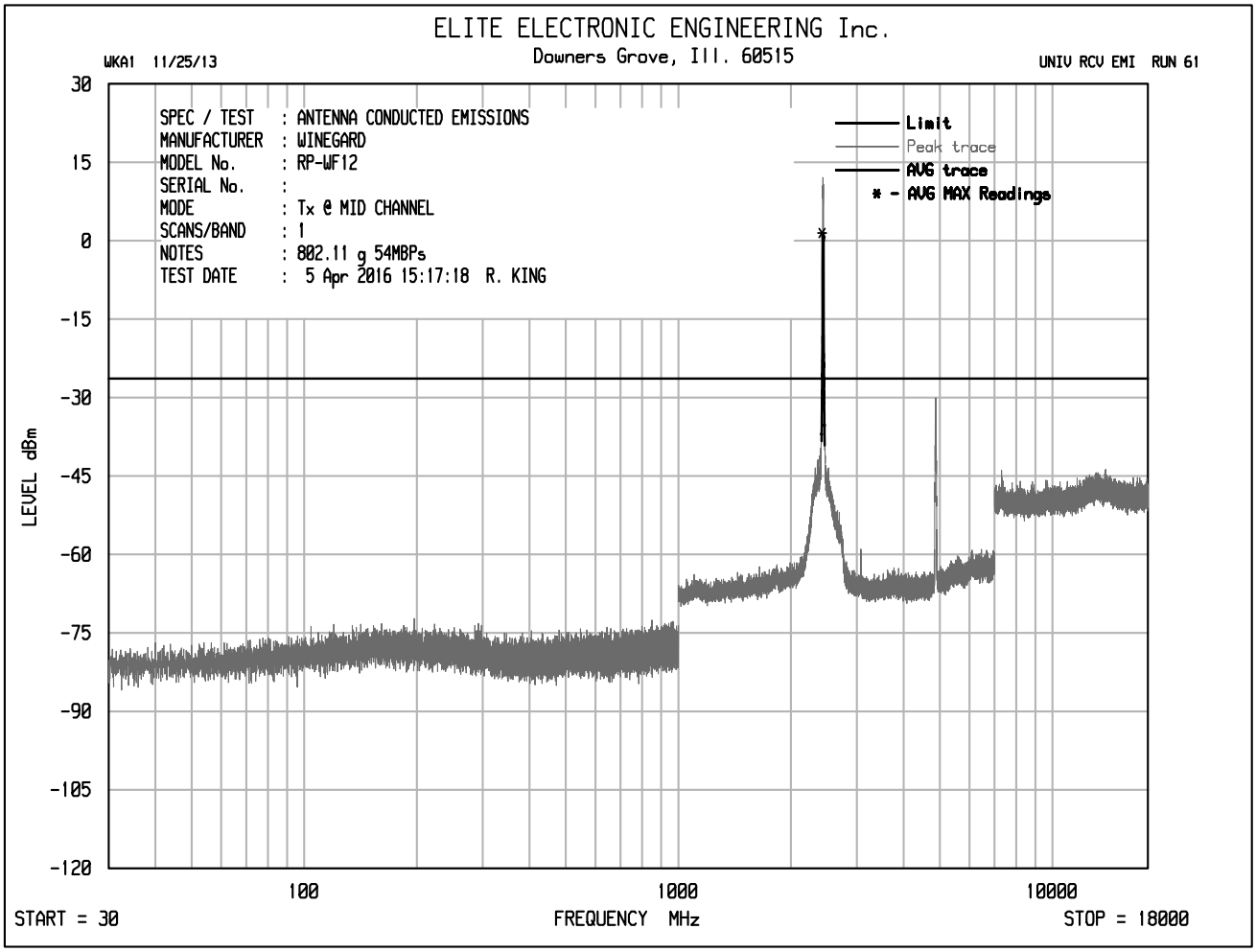

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 3
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 b 11MBPs
TEST DATE : 5 Apr 2016 08:29:10 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

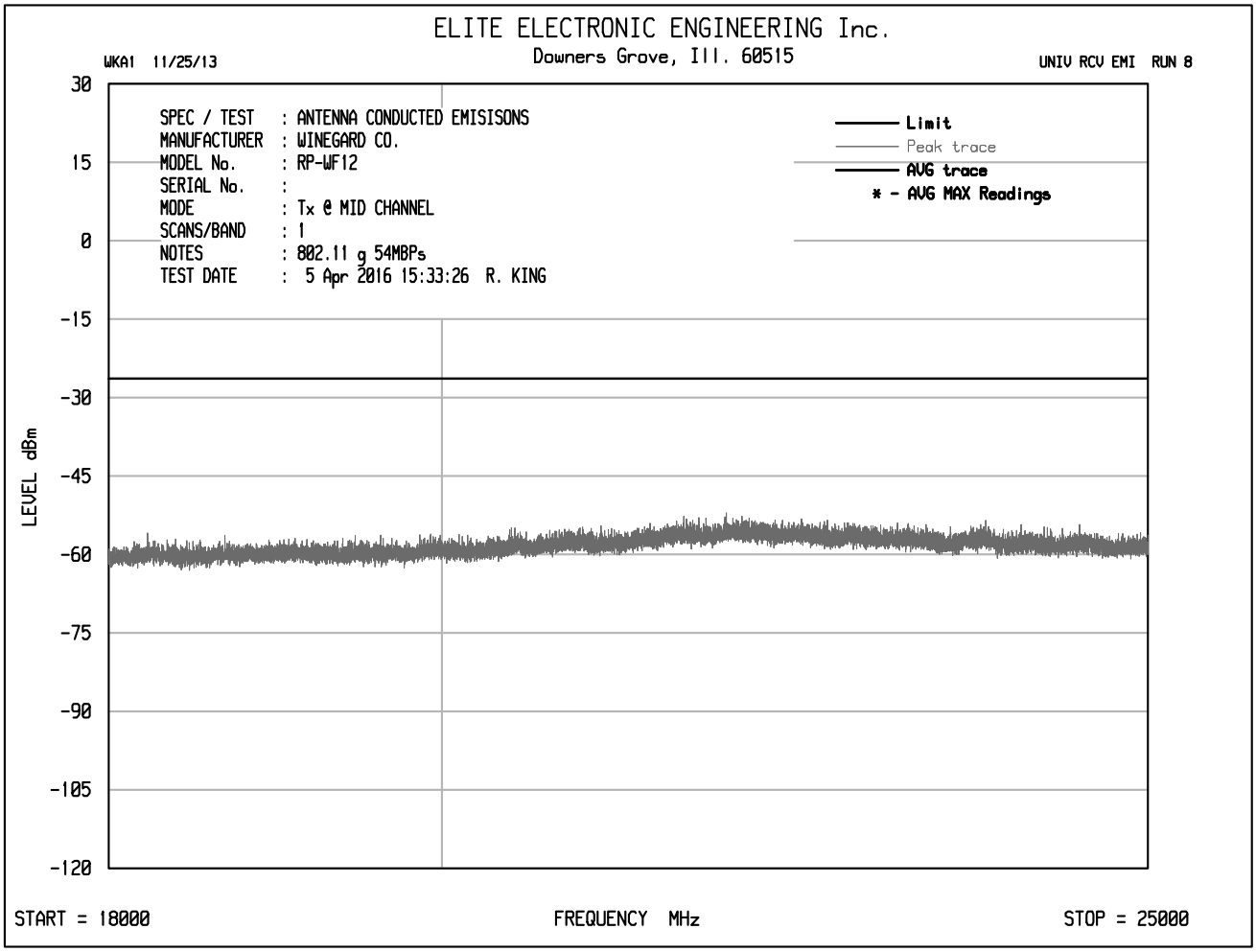

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 10
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 b 11MBPs
TEST DATE : 5 Apr 2016 09:02:06 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

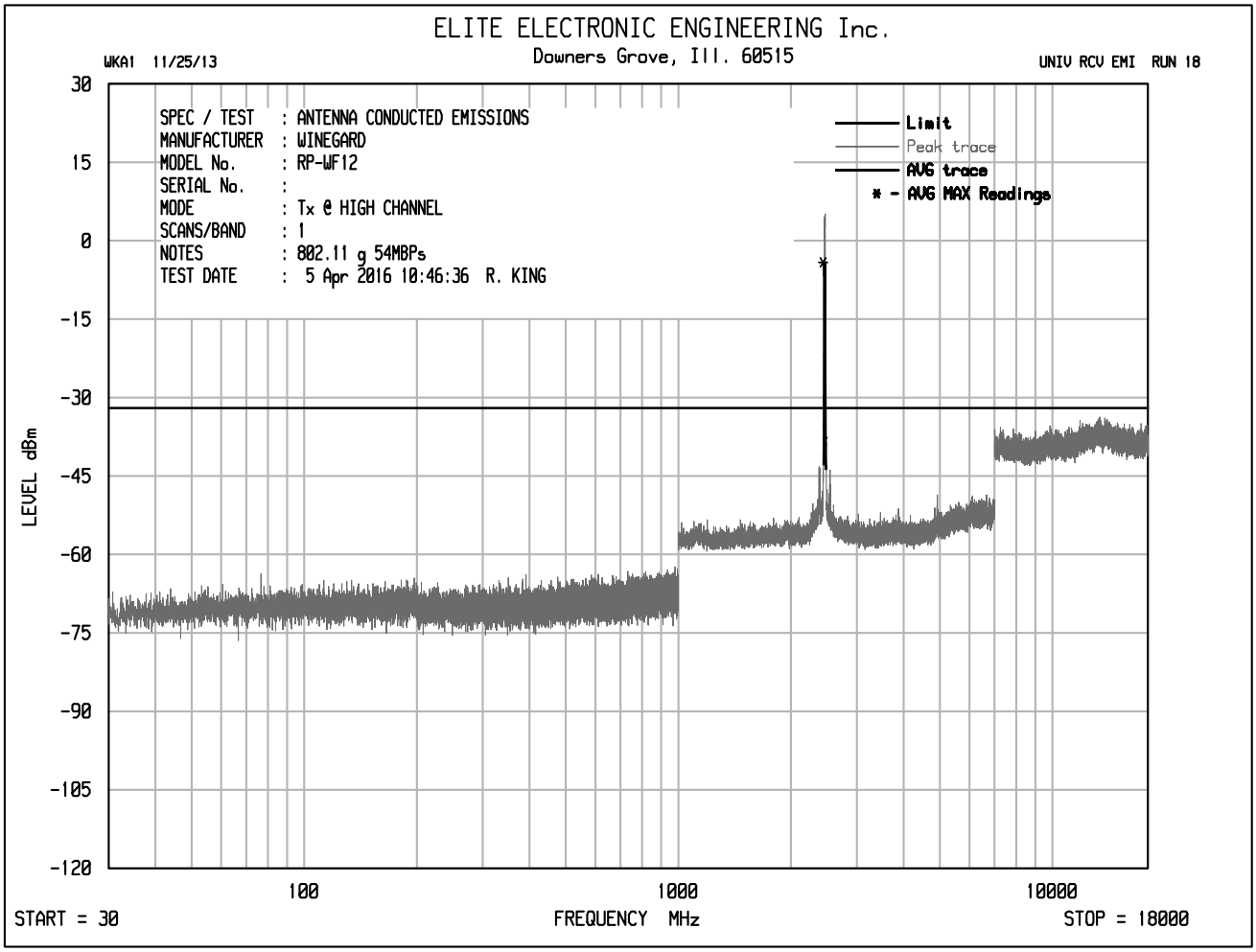

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 2
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 b 11MBPs
TEST DATE : 4 Apr 2016 16:32:46 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

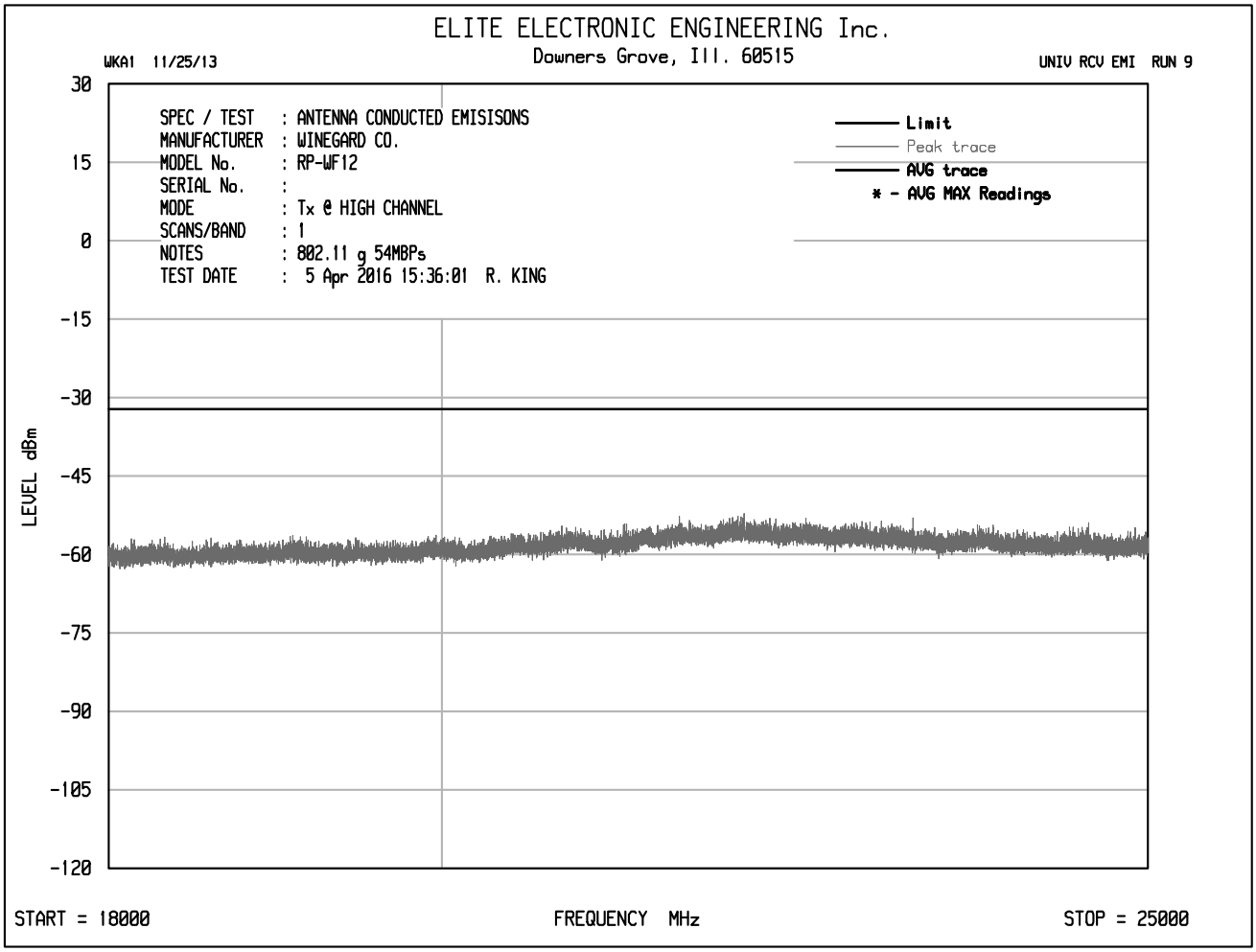

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 15
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g 54MBPs
TEST DATE : 5 Apr 2016 10:42:22 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

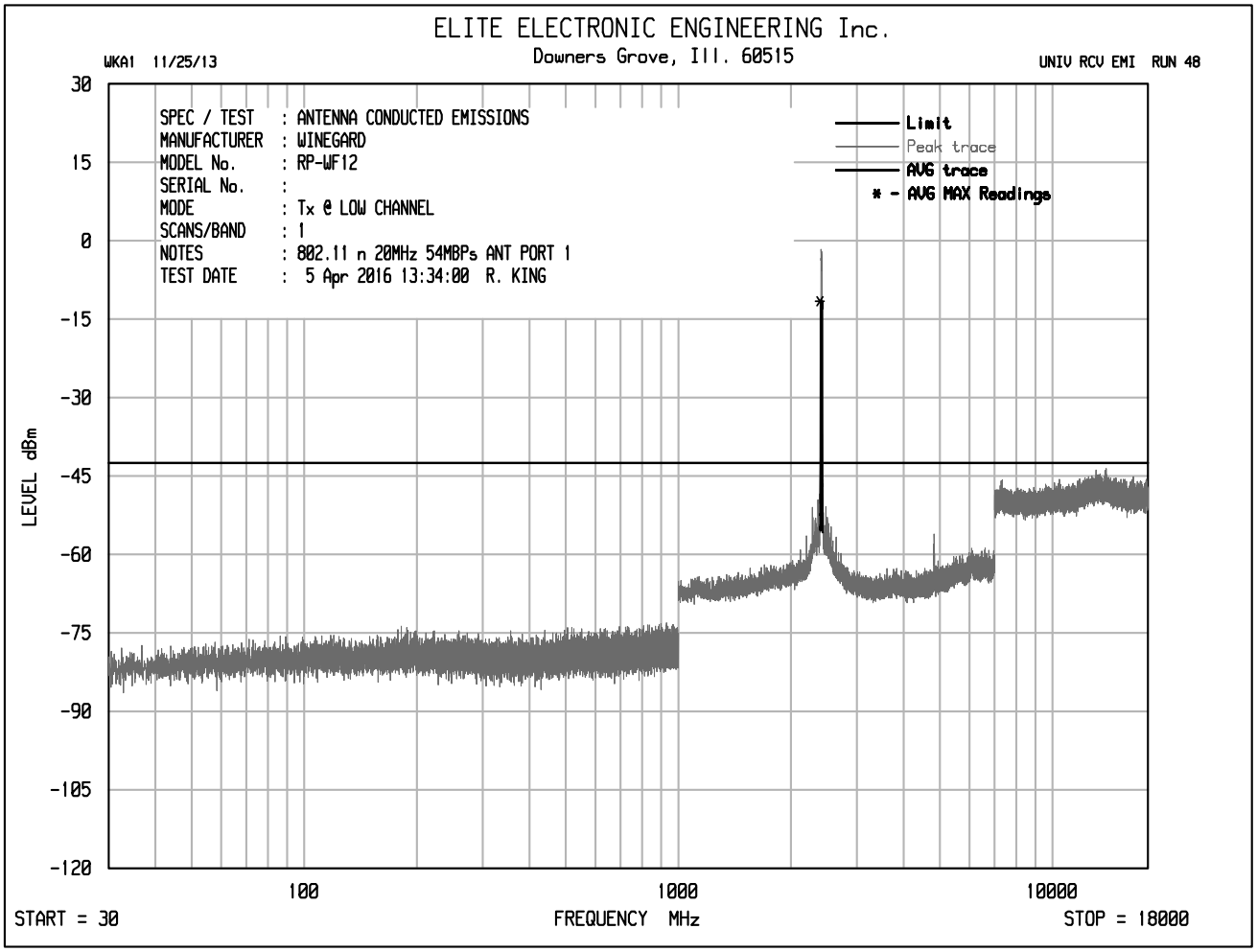

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 7
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g 54MBPs
TEST DATE : 5 Apr 2016 15:31:15 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

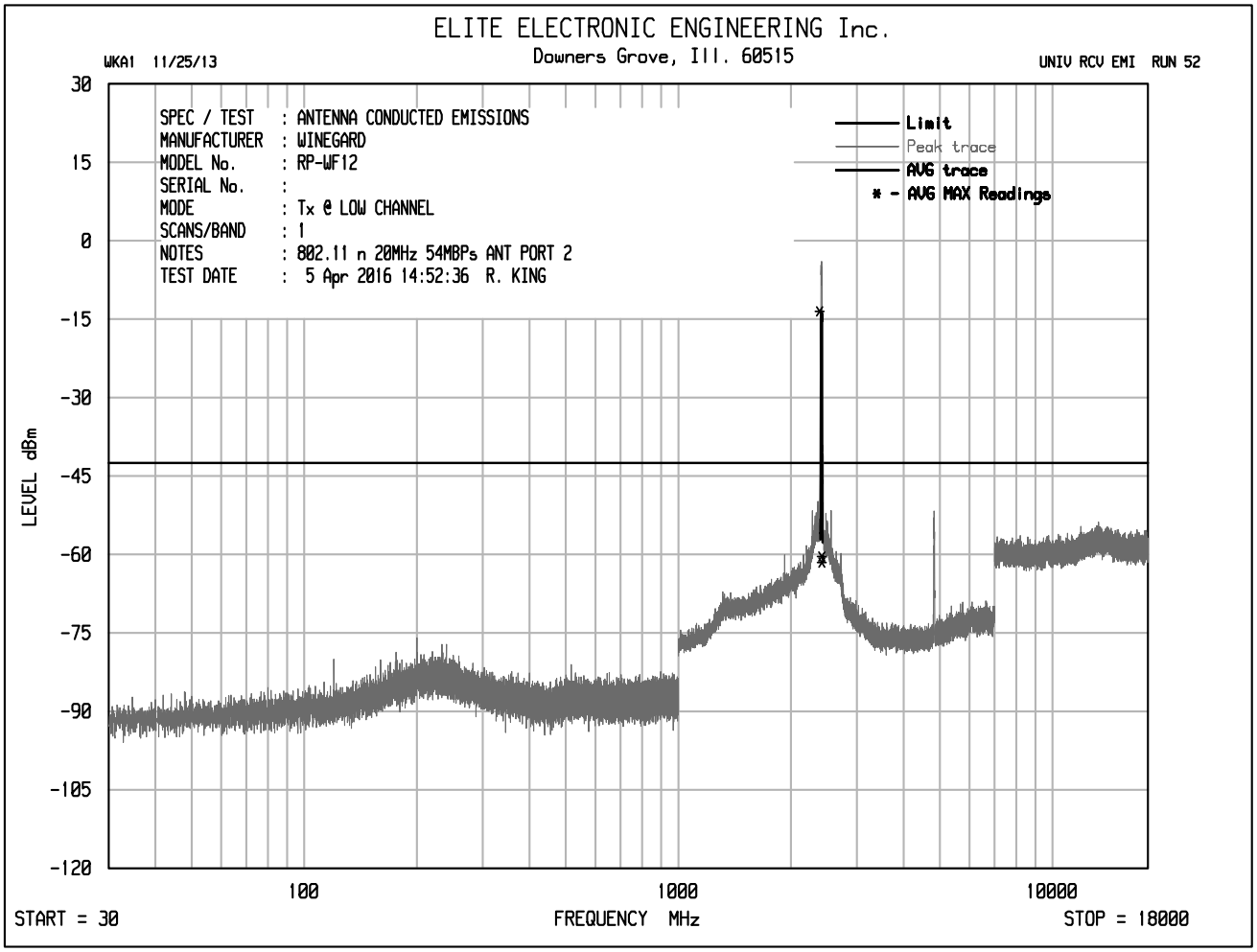

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 61
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g 54MBPs
TEST DATE : 5 Apr 2016 15:17:18 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

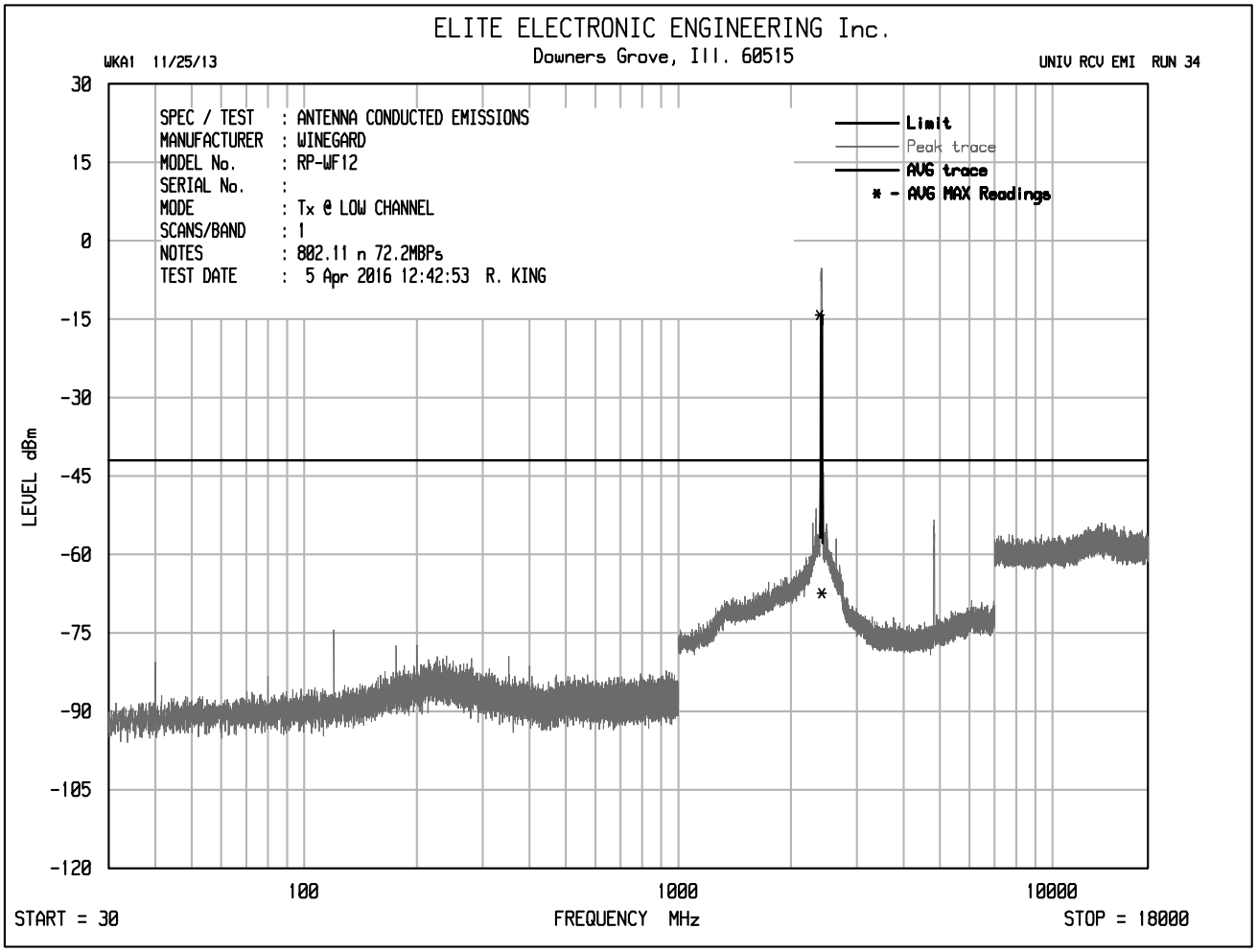

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 8
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g 54MBPs
TEST DATE : 5 Apr 2016 15:33:26 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

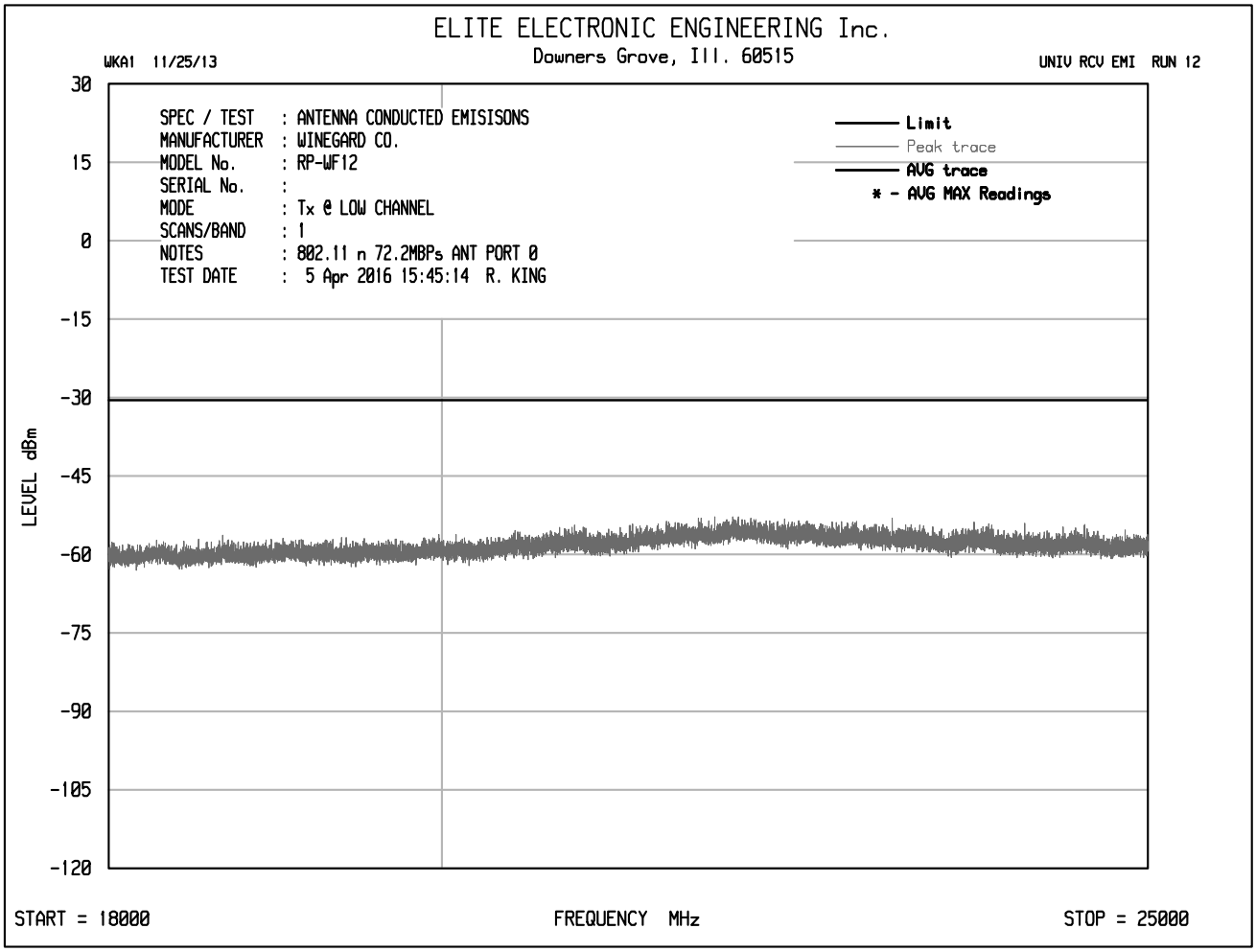

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 18
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g 54MBPs
TEST DATE : 5 Apr 2016 10:46:36 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

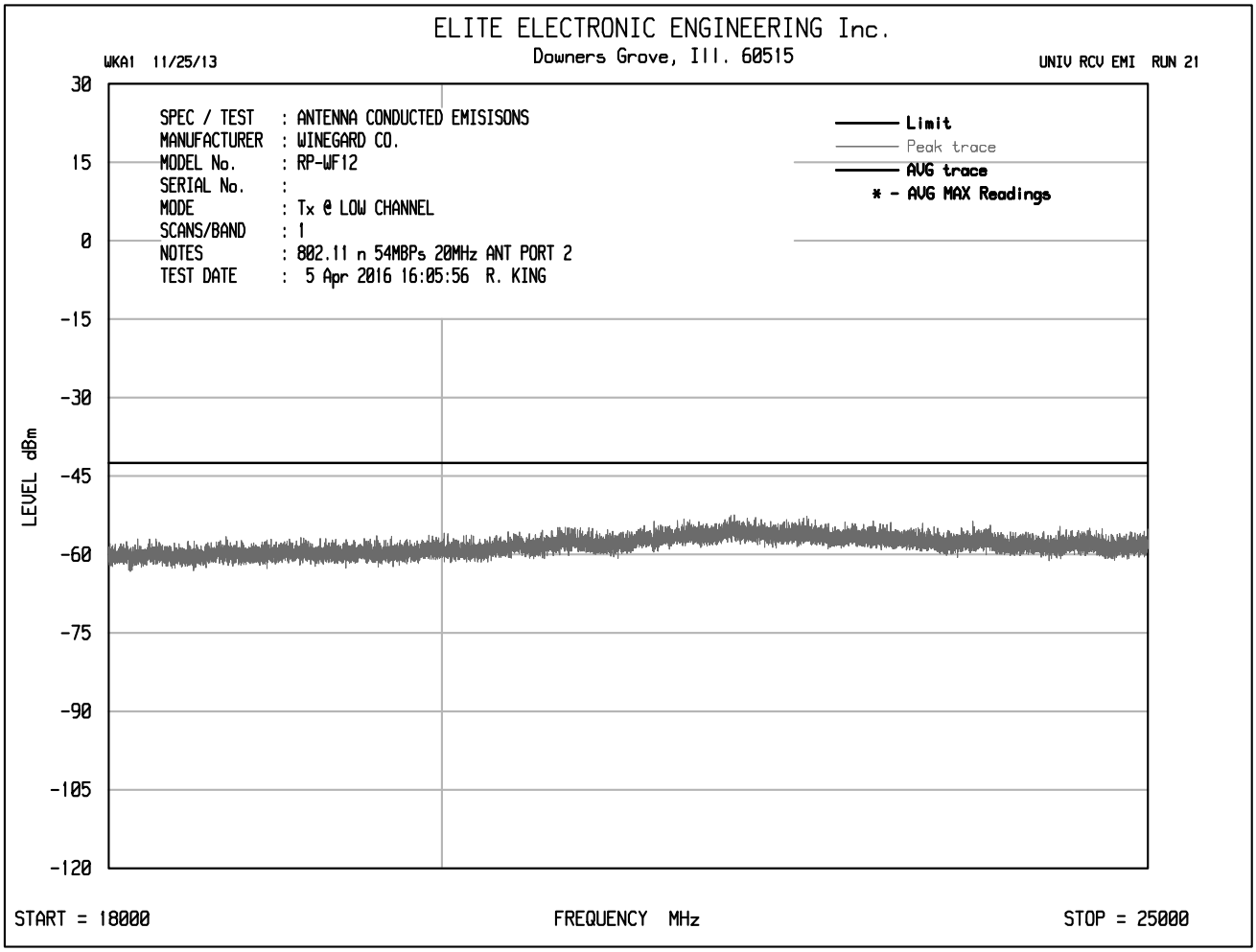

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 9
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g 54MBPs
TEST DATE : 5 Apr 2016 15:36:01 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

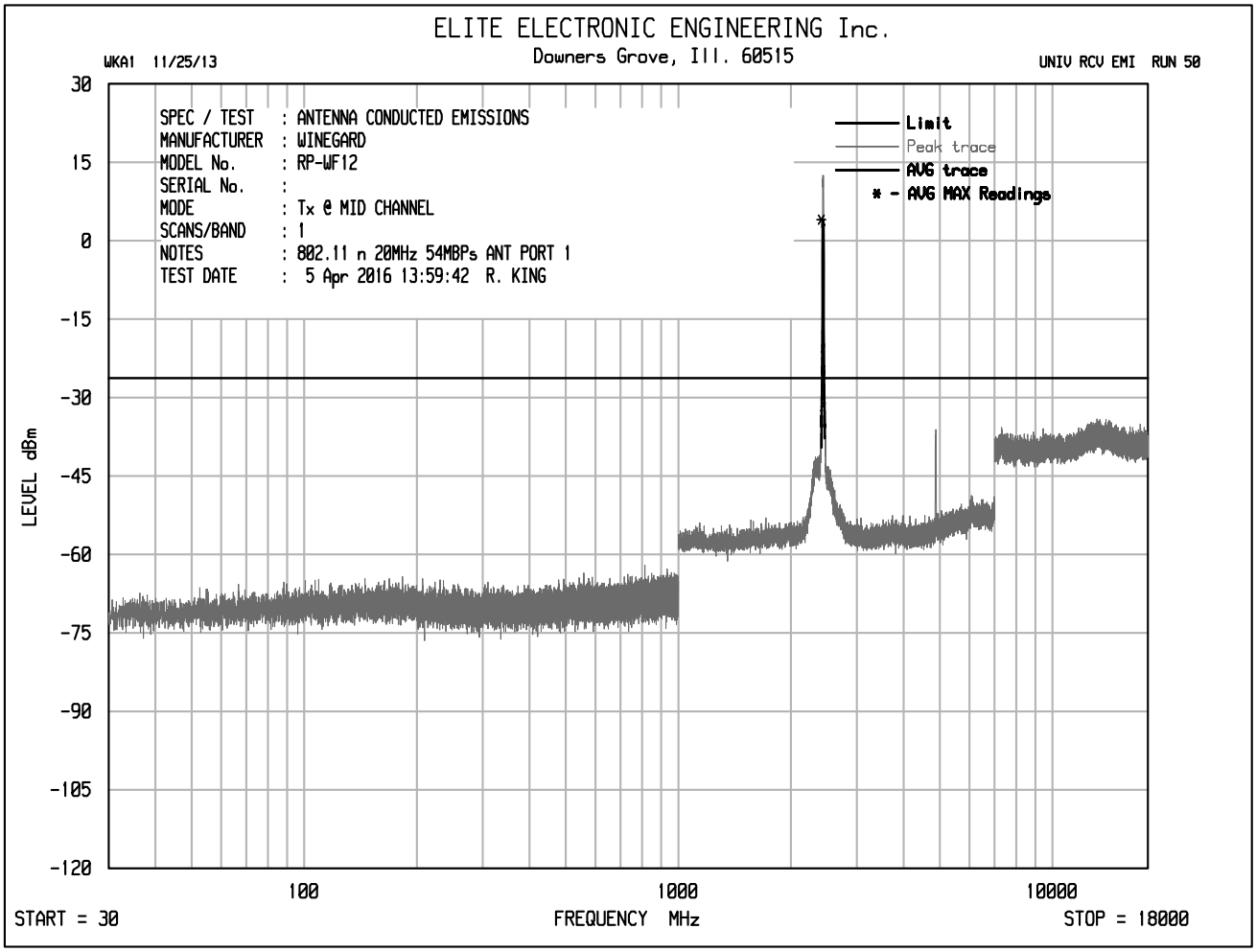

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 48
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 20MHz 54MBPs ANT PORT 1
TEST DATE : 5 Apr 2016 13:34:00 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

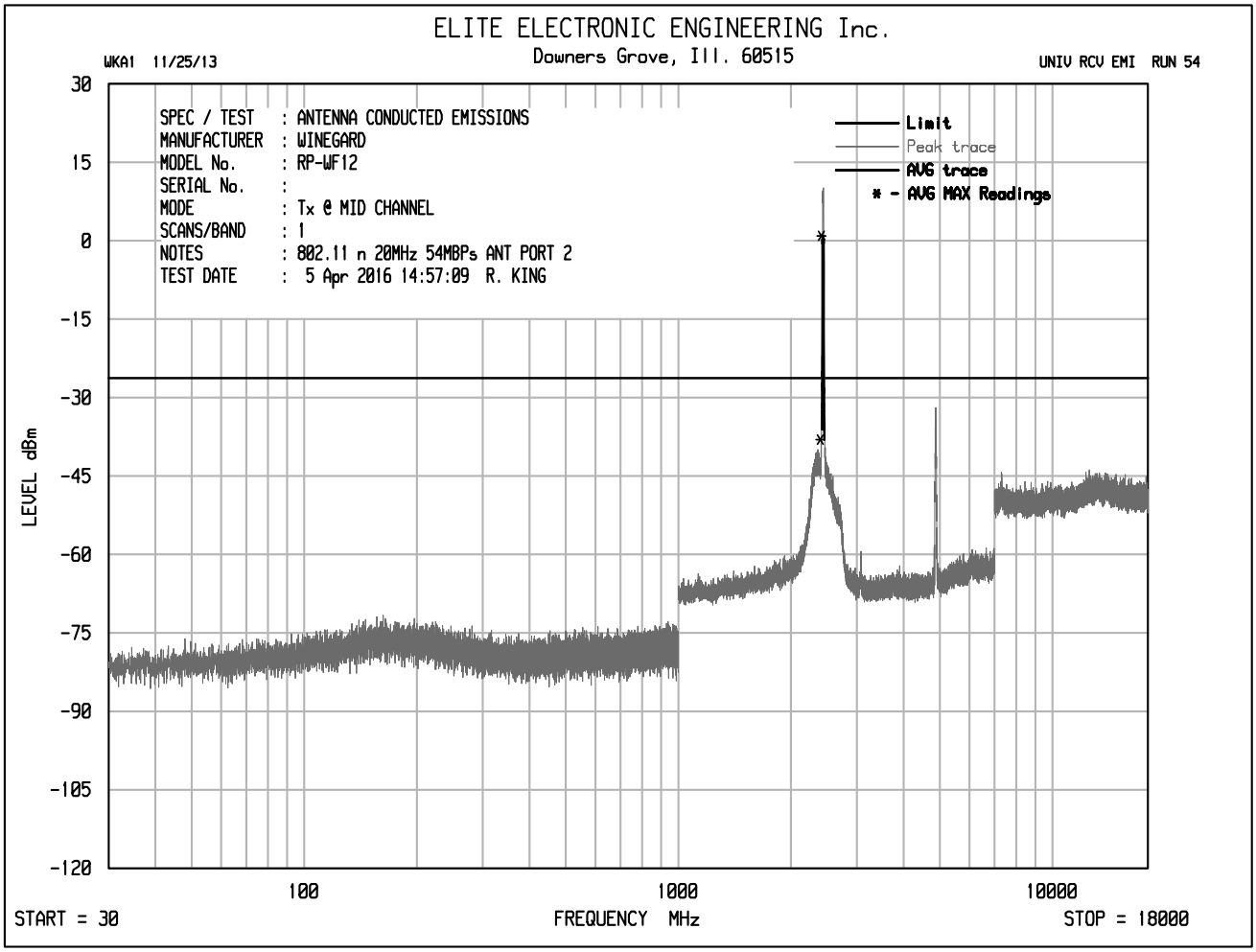

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 52
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 20MHz 54MBPs ANT PORT 2
TEST DATE : 5 Apr 2016 14:52:36 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

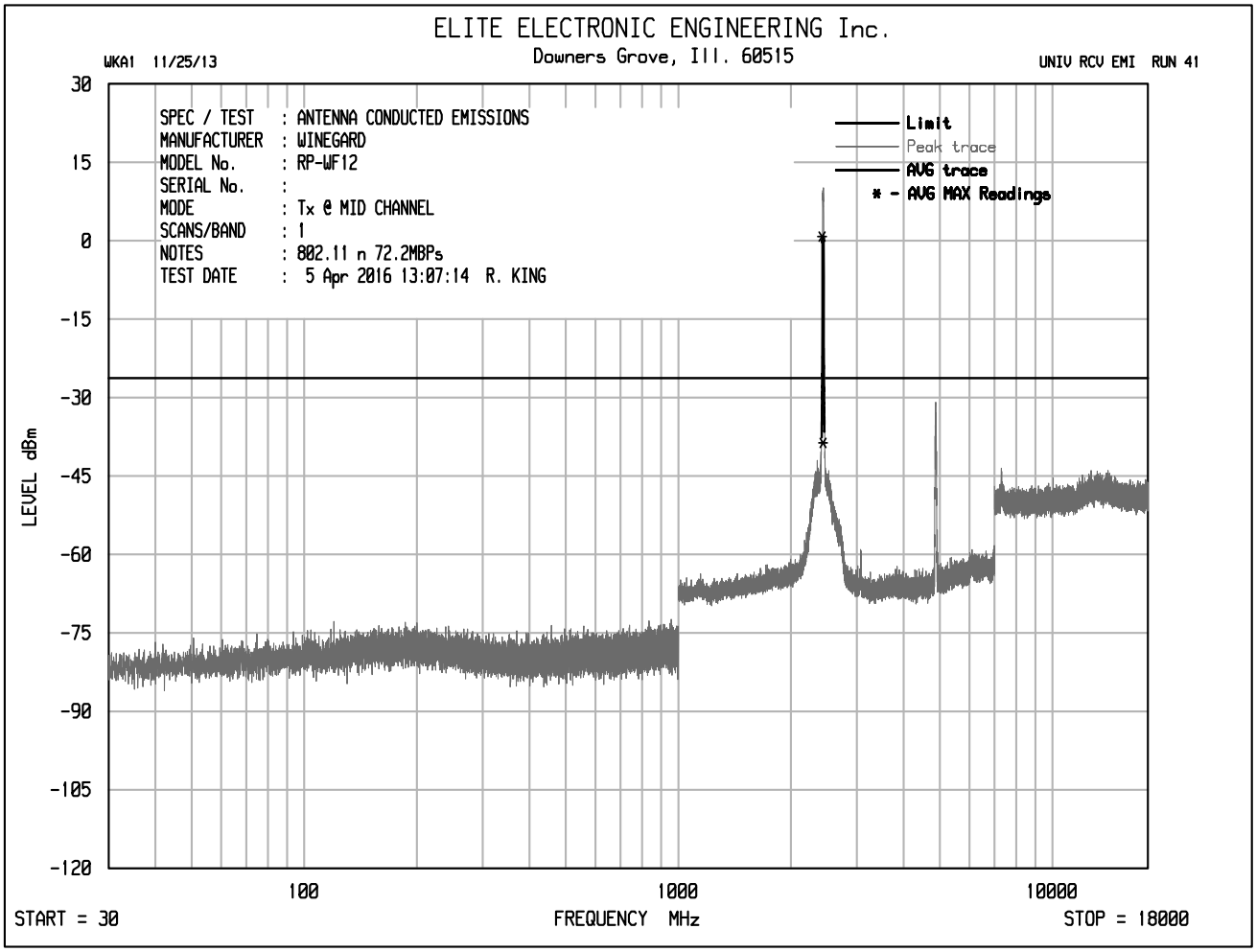

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 34
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 72.2MBPs
TEST DATE : 5 Apr 2016 12:42:53 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

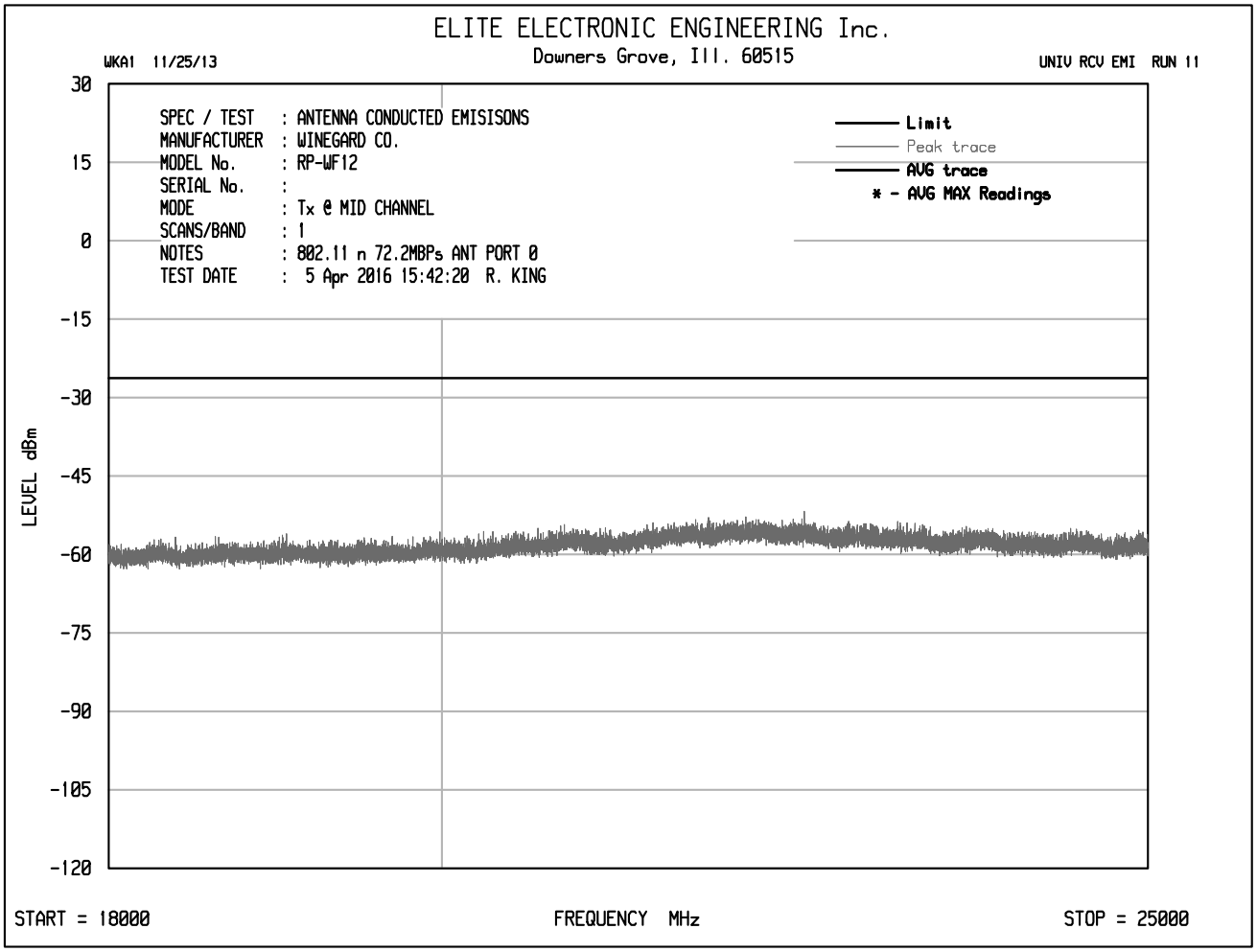

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 12
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 72.2MBPs ANT PORT 0
TEST DATE : 5 Apr 2016 15:45:14 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

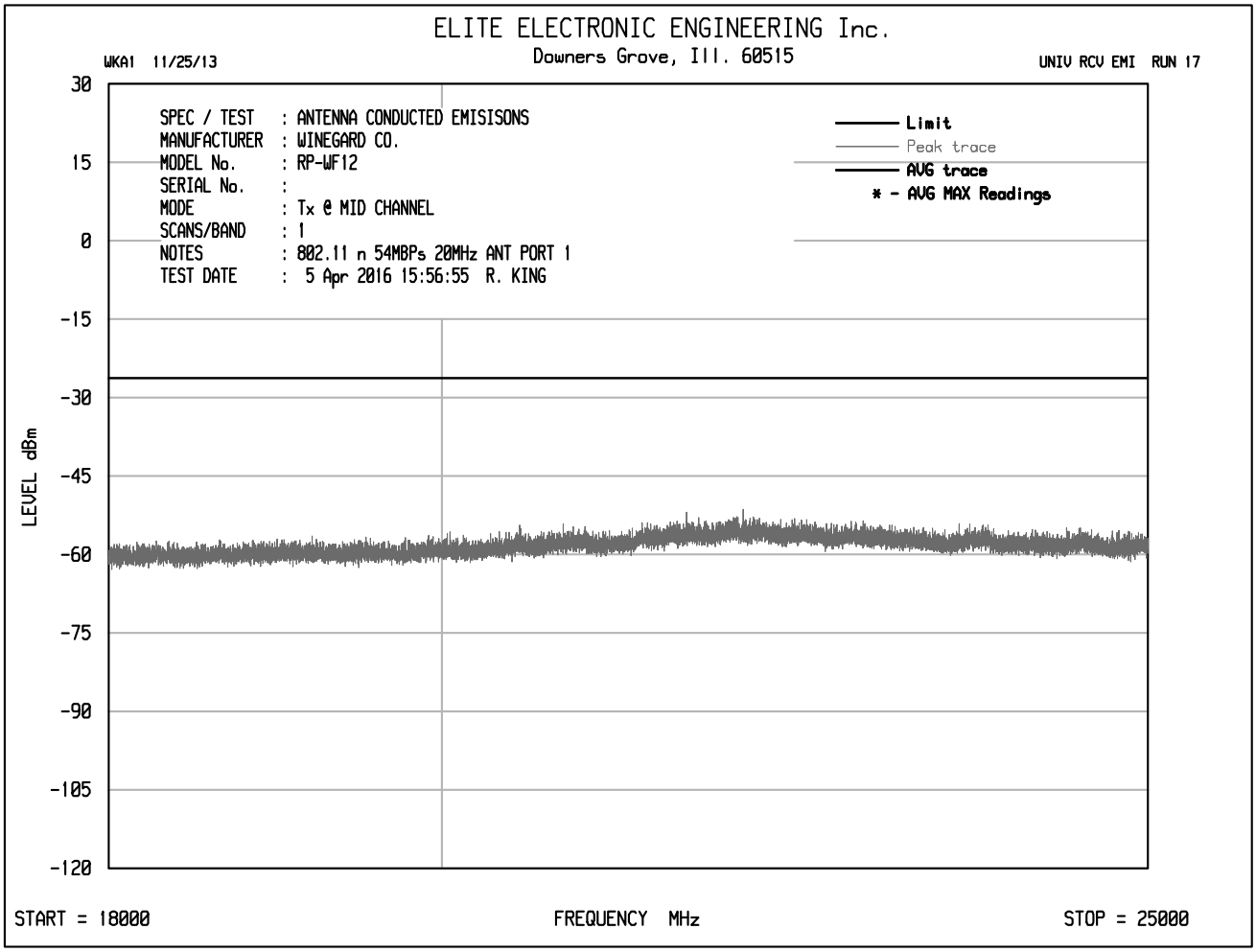

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 21
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 54MBPs 20MHz ANT PORT 2
TEST DATE : 5 Apr 2016 16:05:56 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

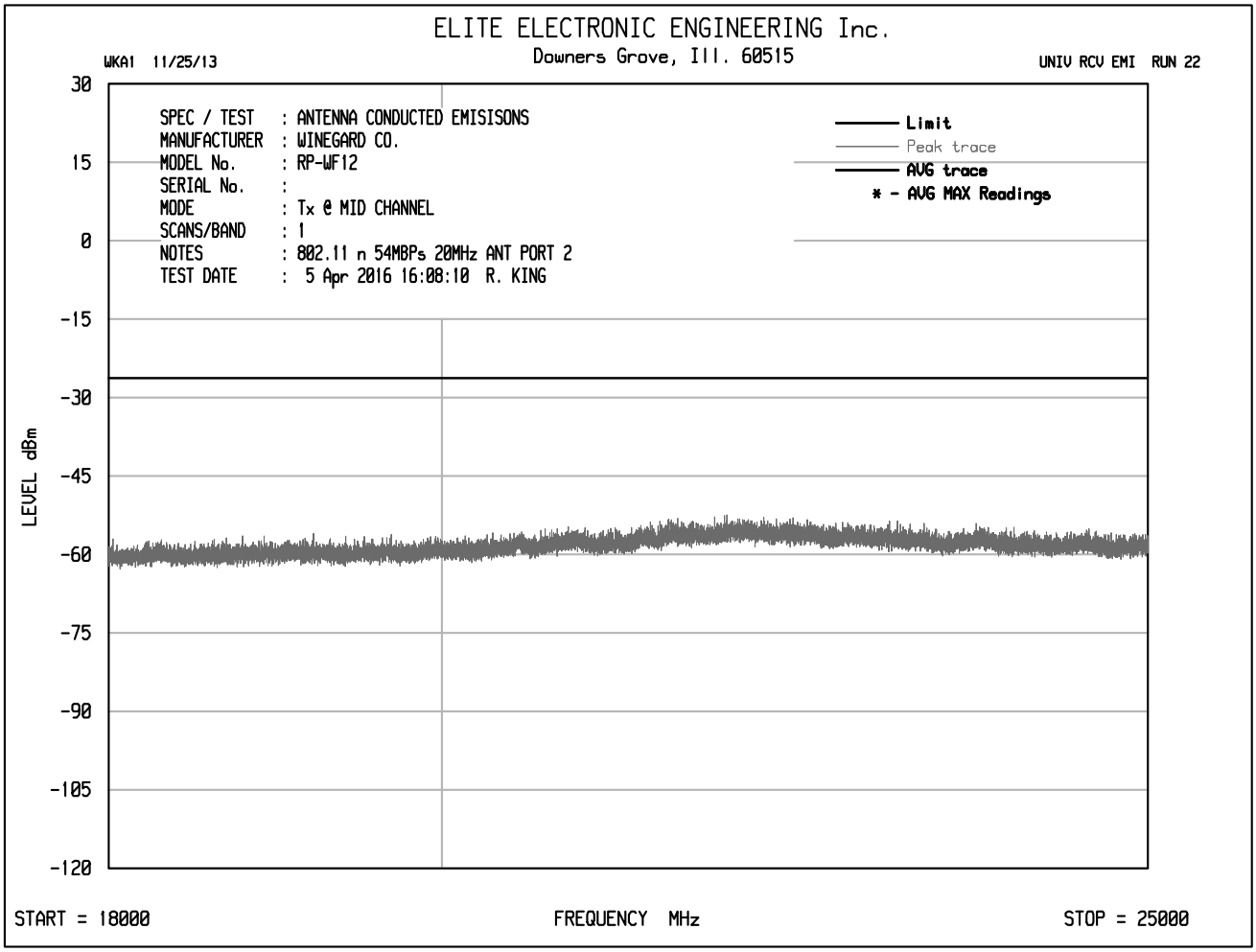

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 50
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 20MHz 54MBPs ANT PORT 1
TEST DATE : 5 Apr 2016 13:59:42 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

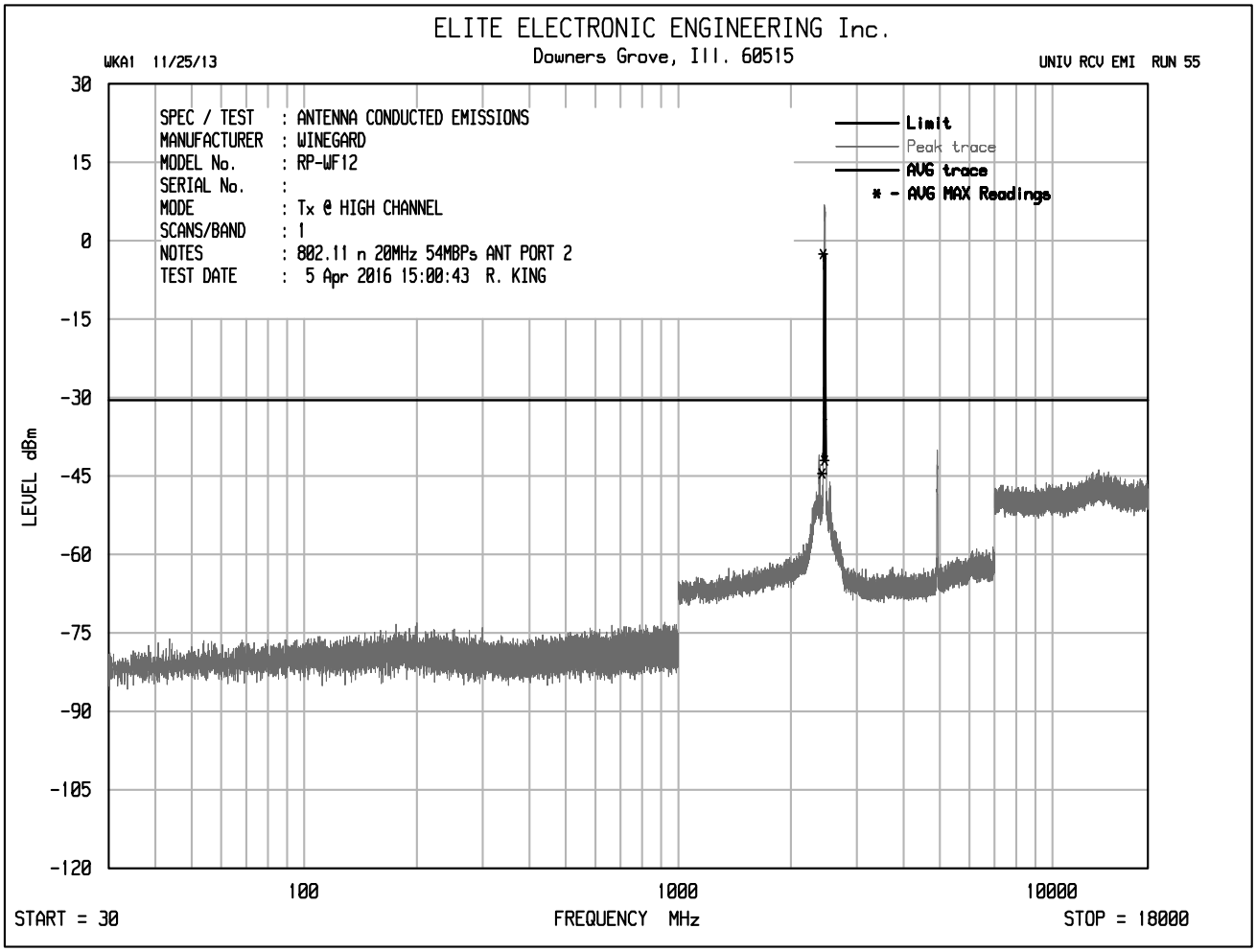

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 54
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 20MHz 54MBPs ANT PORT 2
TEST DATE : 5 Apr 2016 14:57:09 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

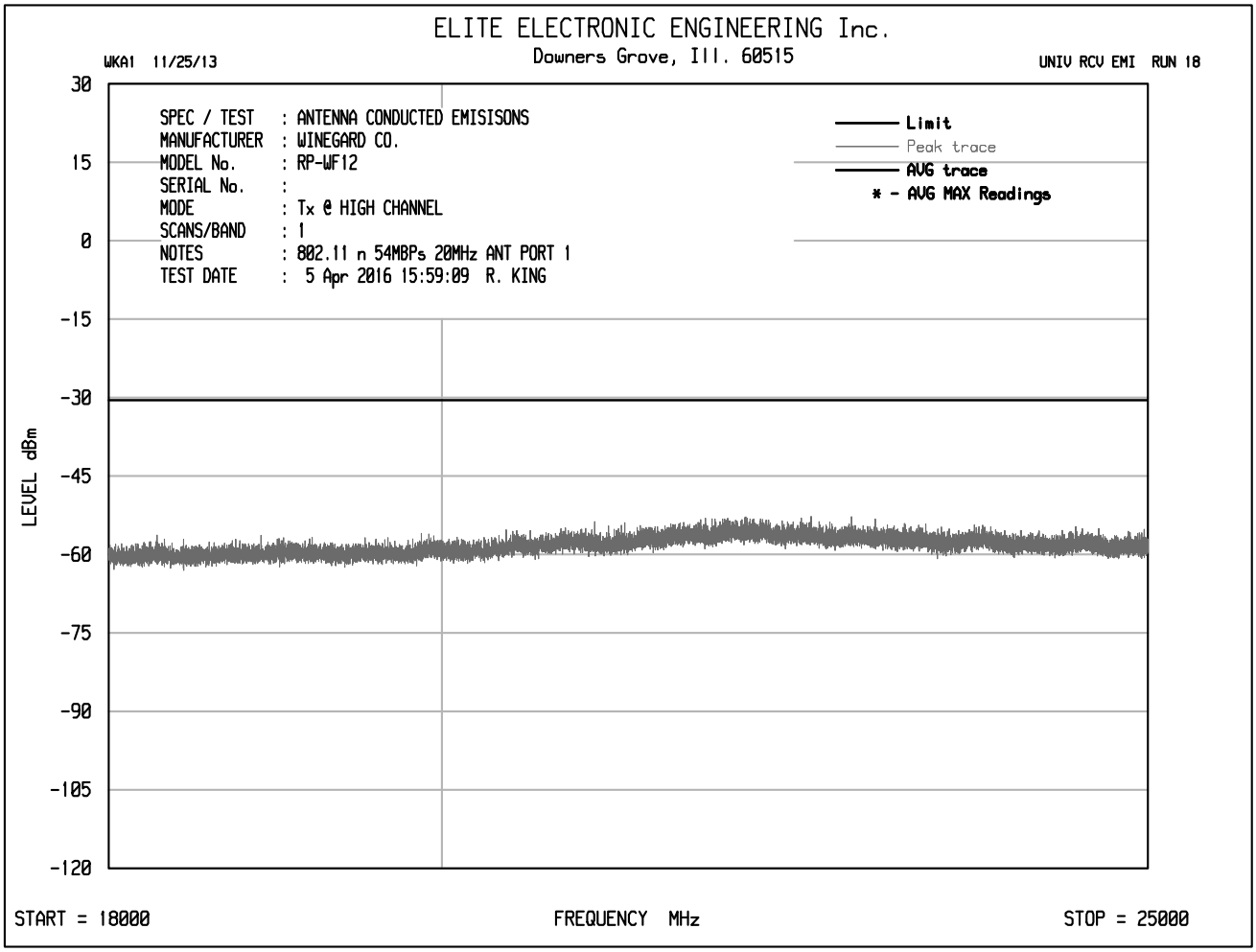

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 41
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 72.2MBPs
TEST DATE : 5 Apr 2016 13:07:14 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

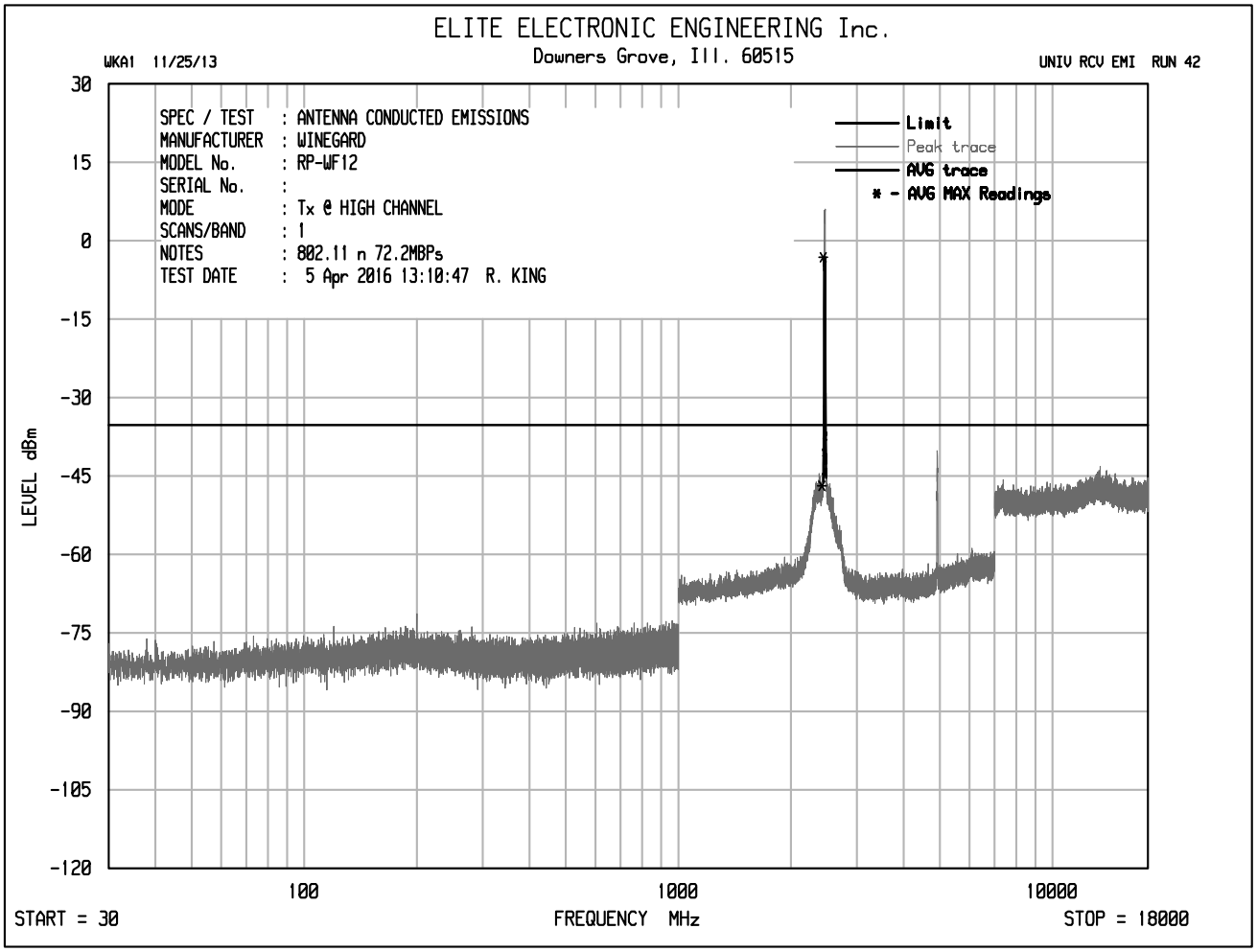

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 11
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 72.2MBPs ANT PORT 0
TEST DATE : 5 Apr 2016 15:42:20 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
LEVEL dBm
START = 18000
FREQUENCY MHz
STOP = 25000

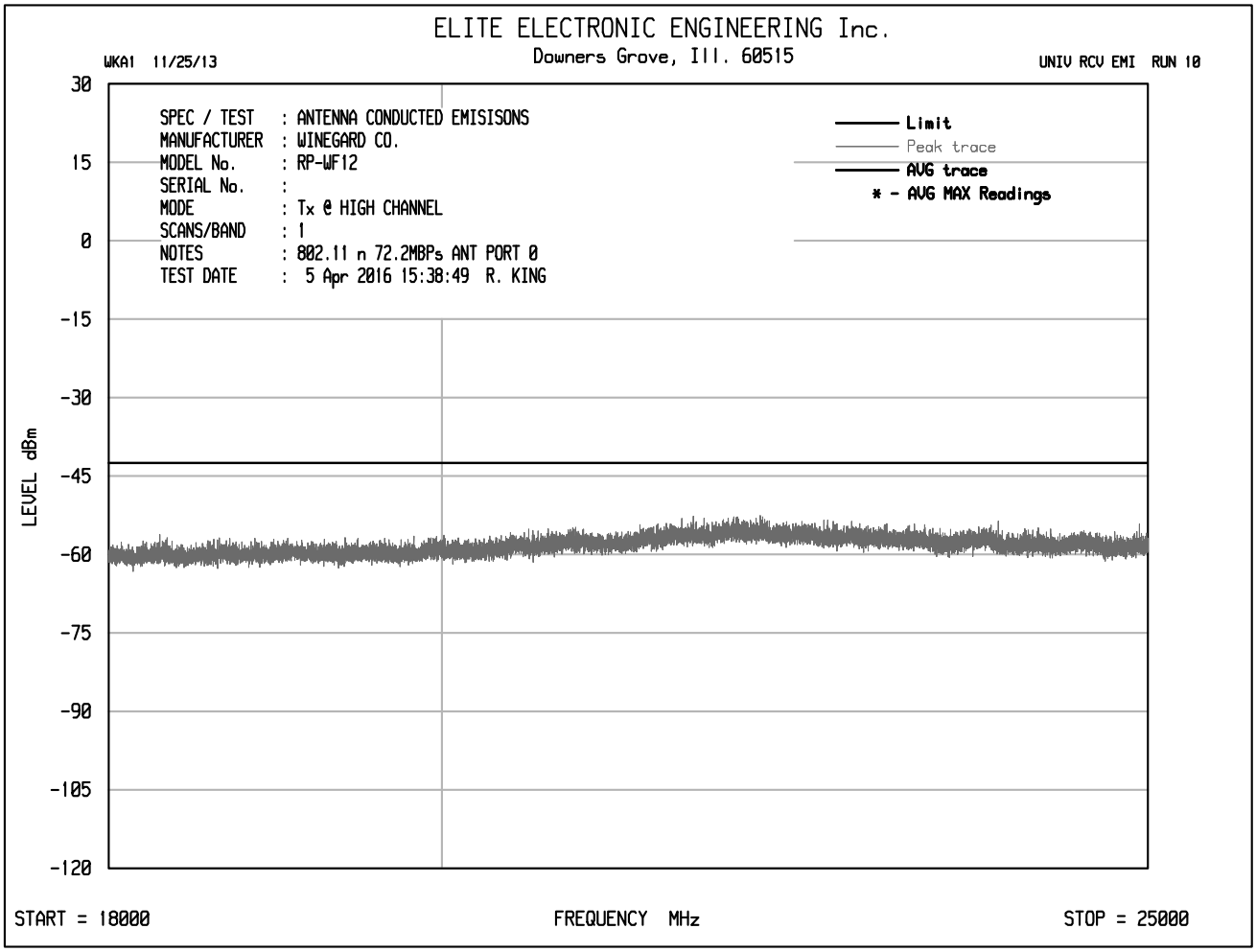

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 17
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 54MBPs 20MHz ANT PORT 1
TEST DATE : 5 Apr 2016 15:56:55 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

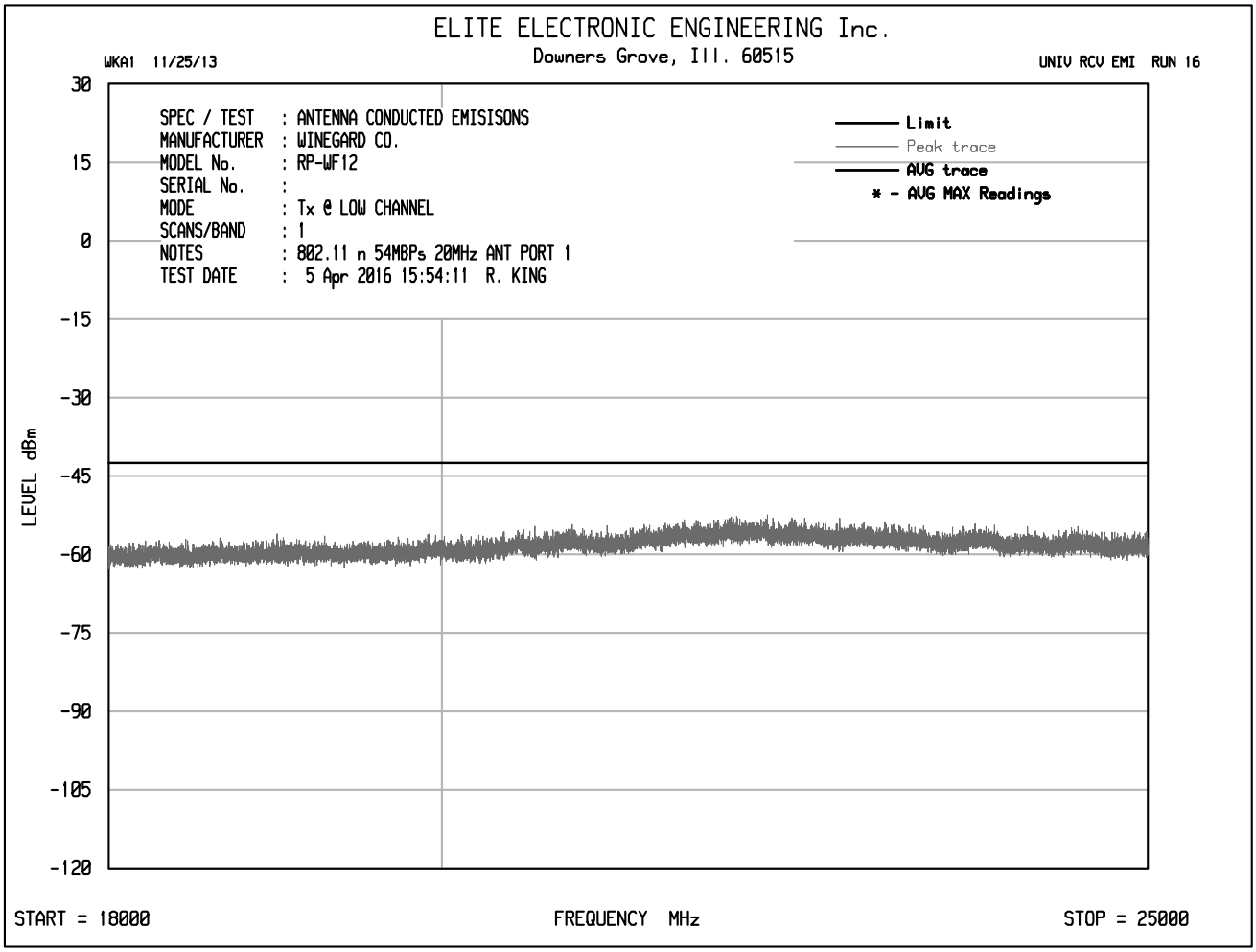

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 22
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 54MBPs 20MHz ANT PORT 2
TEST DATE : 5 Apr 2016 16:08:10 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

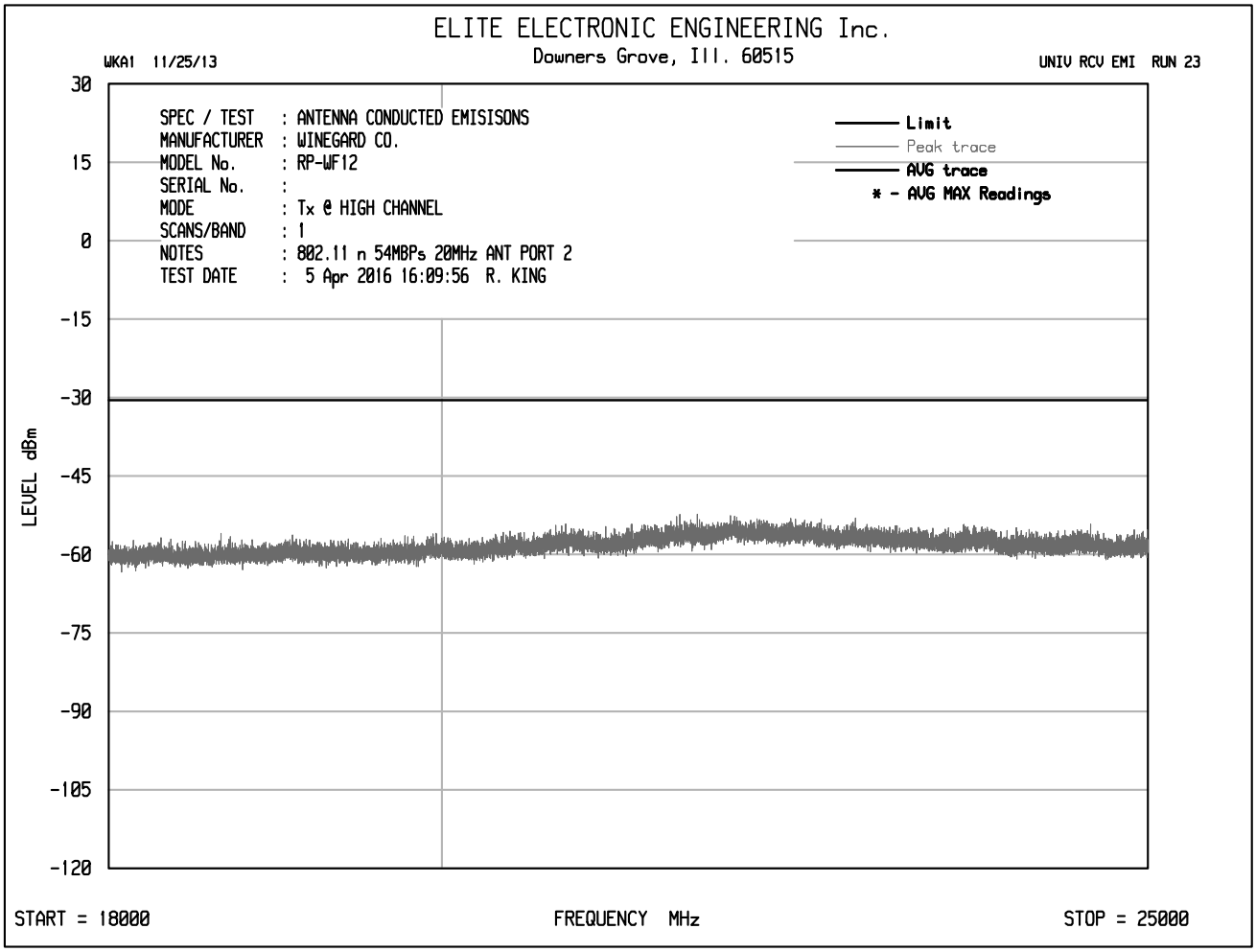

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 55
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 20MHz 54MBPs ANT PORT 2
TEST DATE : 5 Apr 2016 15:00:43 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

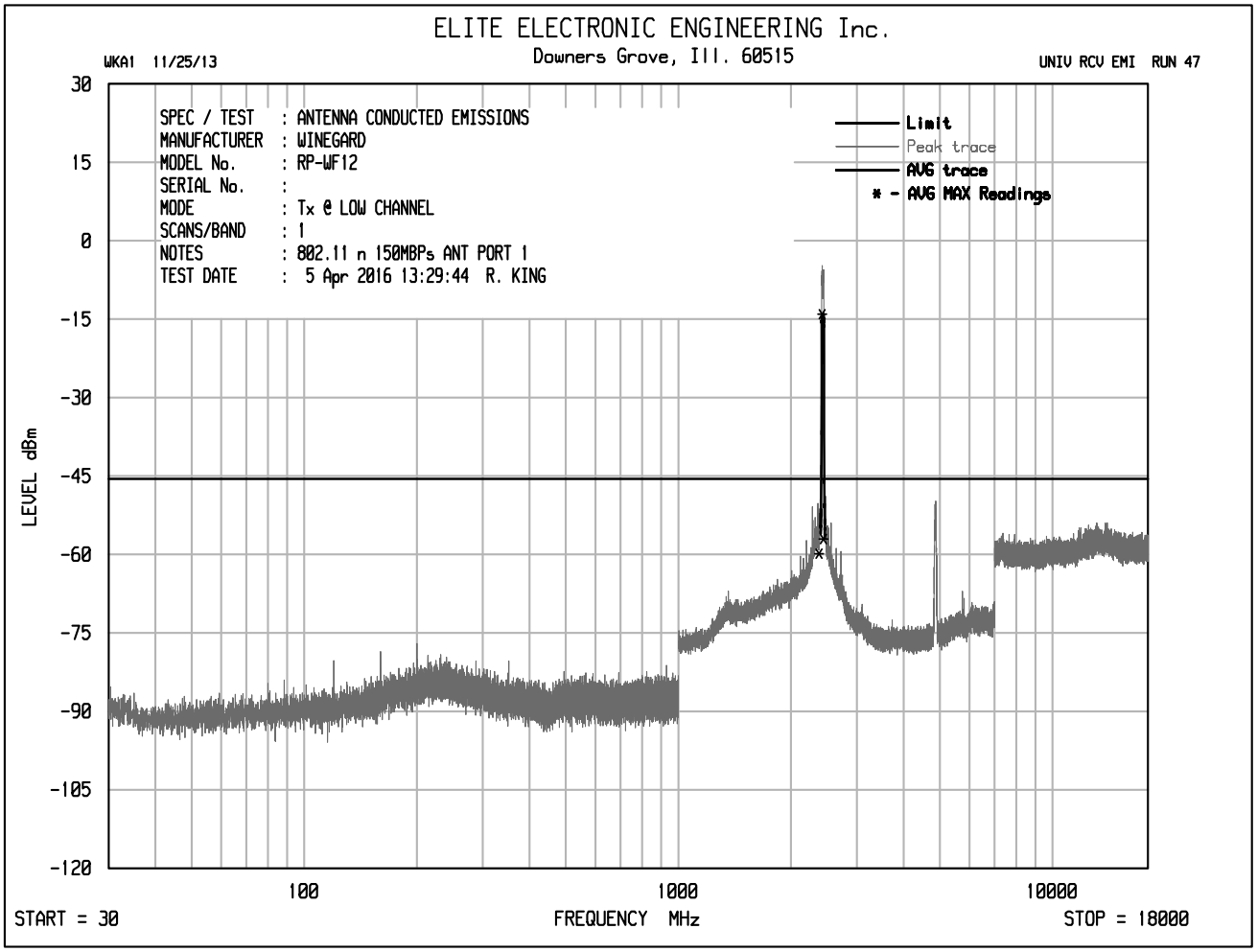

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 18
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 54MBPs 20MHz ANT PORT 1
TEST DATE : 5 Apr 2016 15:59:09 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
LEVEL dBm
START = 18000
FREQUENCY MHz
STOP = 25000

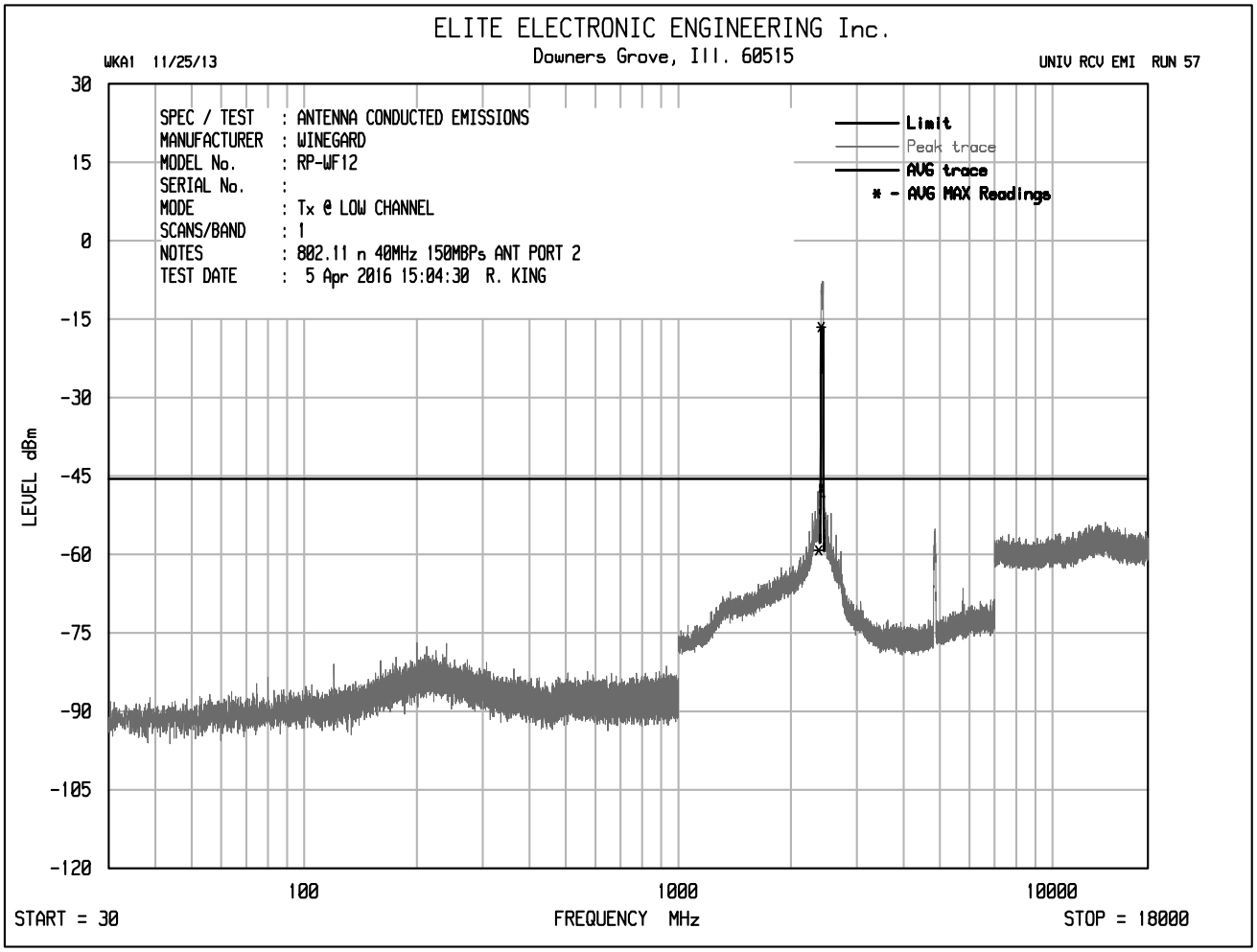

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 42
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 72.2MBPs
TEST DATE : 5 Apr 2016 13:10:47 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

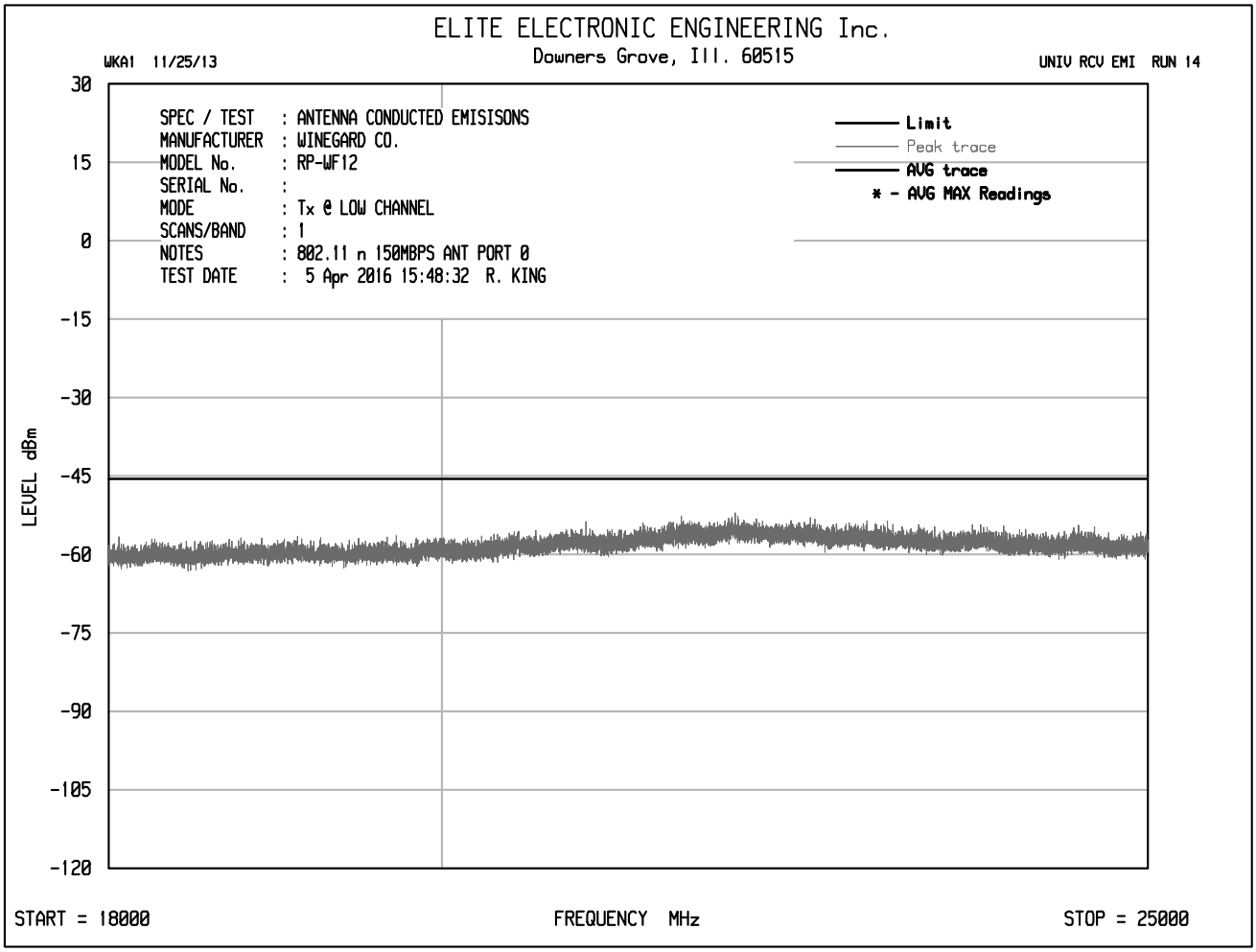

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 10
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 72.2MBPs ANT PORT 0
TEST DATE : 5 Apr 2016 15:38:49 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

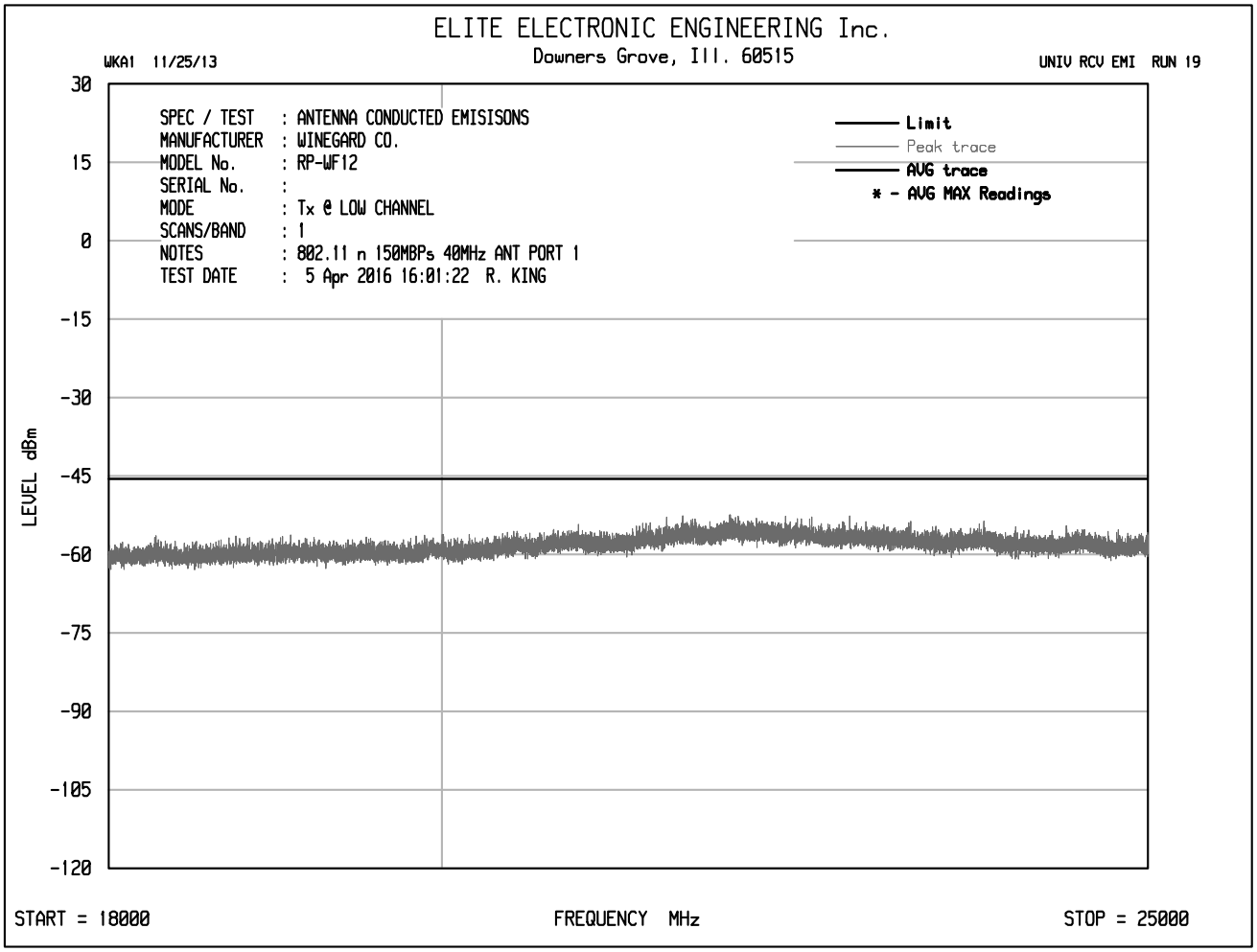

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 16
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 54MBPs 20MHz ANT PORT 1
TEST DATE : 5 Apr 2016 15:54:11 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

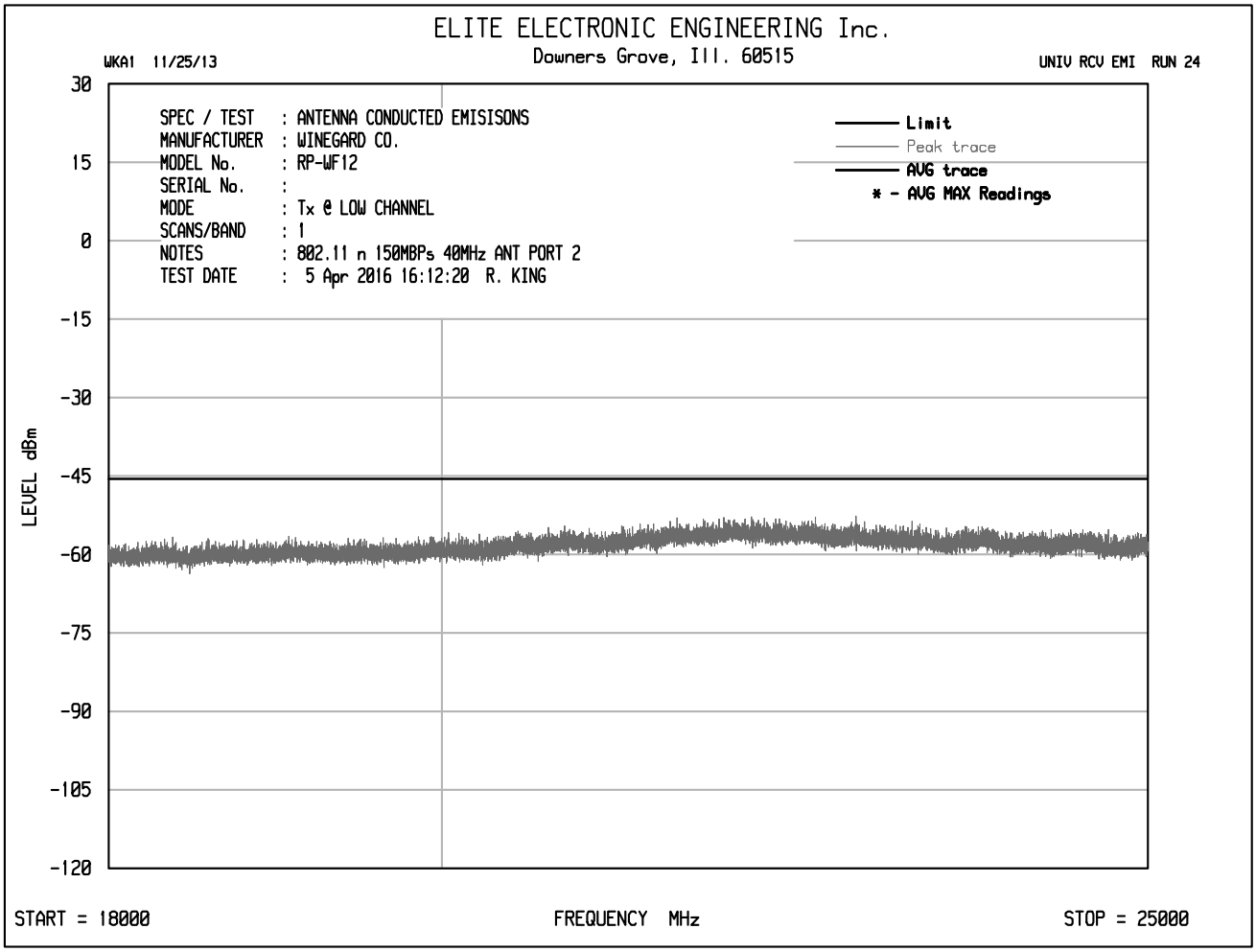

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 23
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 54MBPs 20MHz ANT PORT 2
TEST DATE : 5 Apr 2016 16:09:56 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
LEVEL dBm
START = 18000
FREQUENCY MHz
STOP = 25000

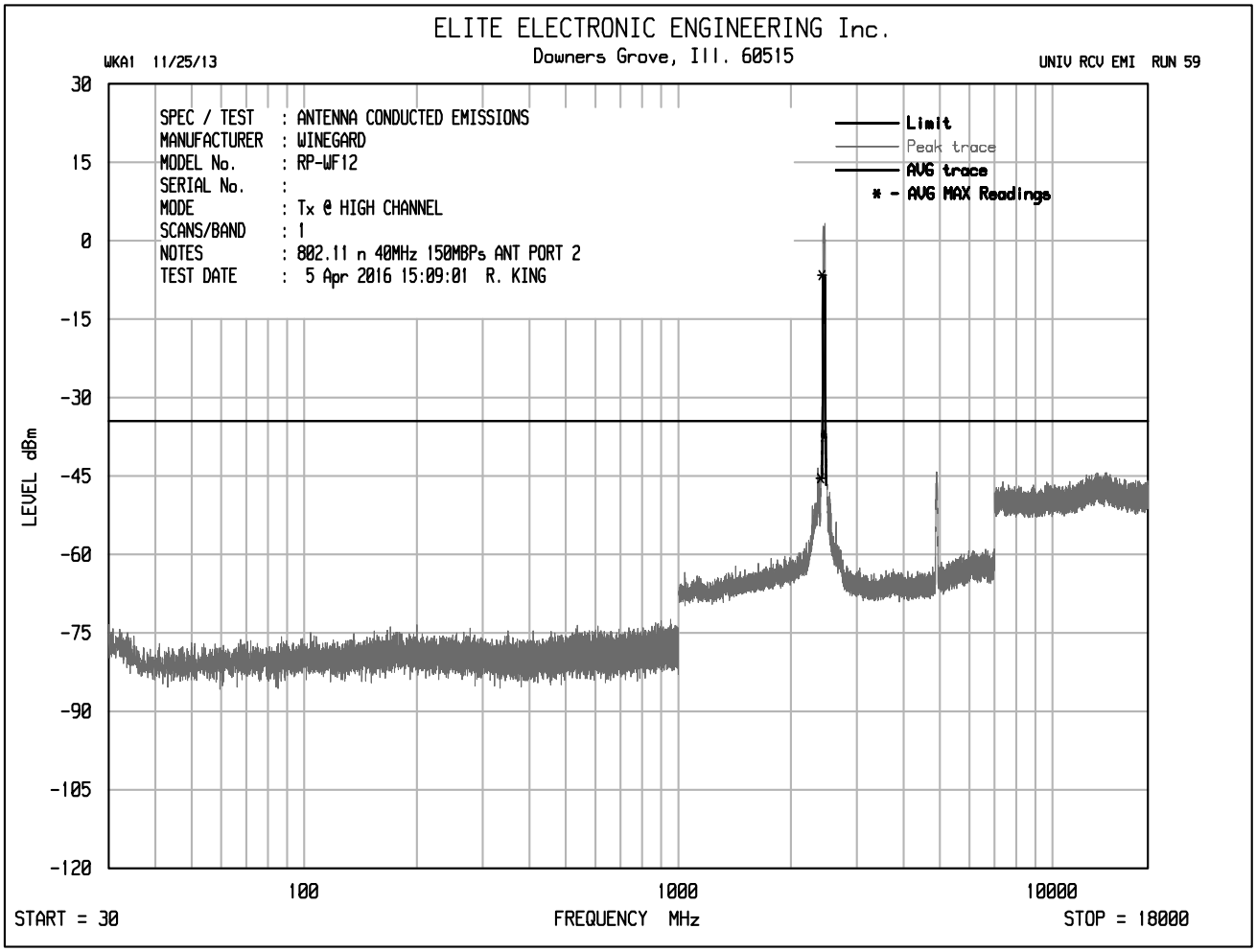

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 47
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 150MBPs ANT PORT 1
TEST DATE : 5 Apr 2016 13:29:44 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

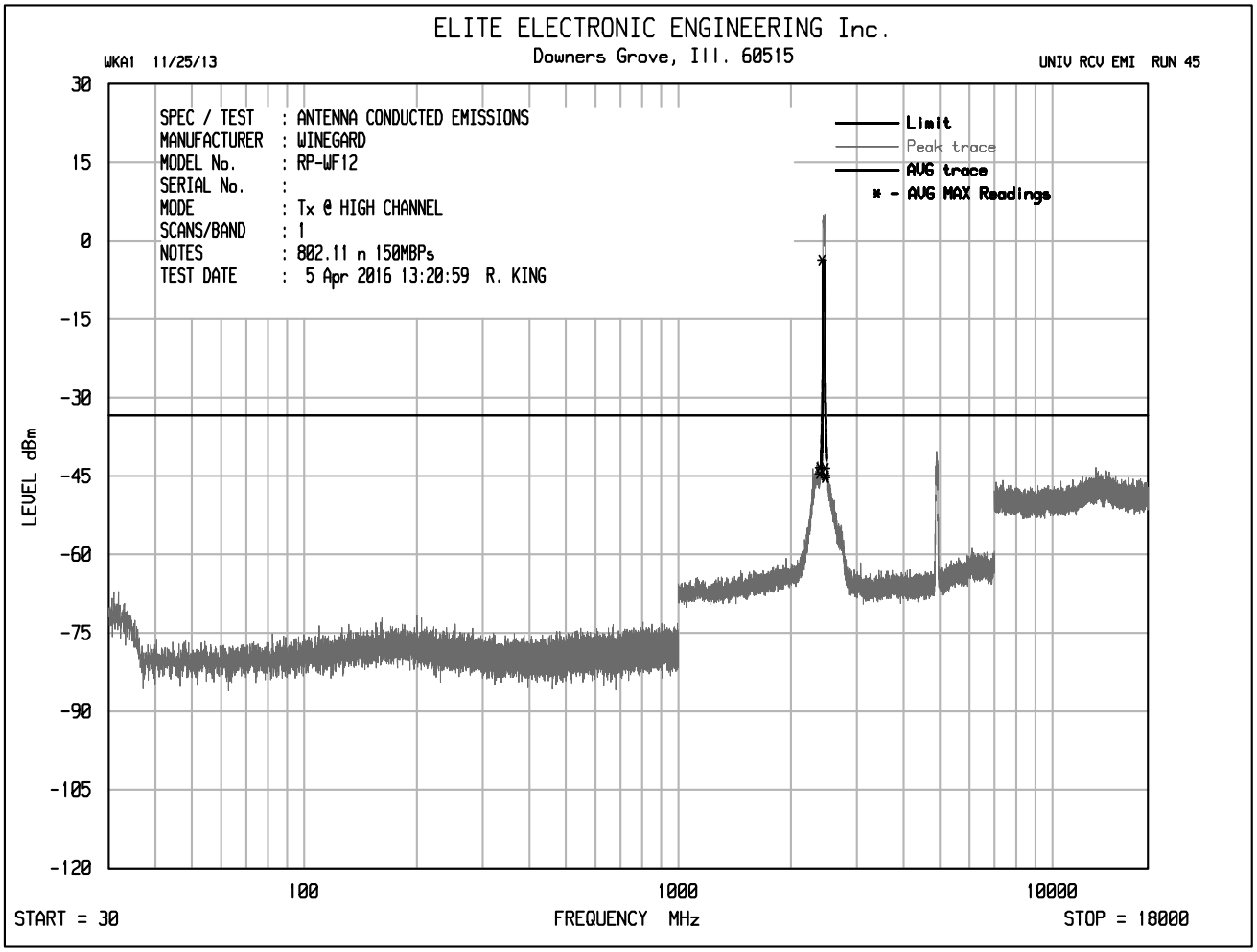

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 57
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 40MHz 150MBPs ANT PORT 2
TEST DATE : 5 Apr 2016 15:04:30 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

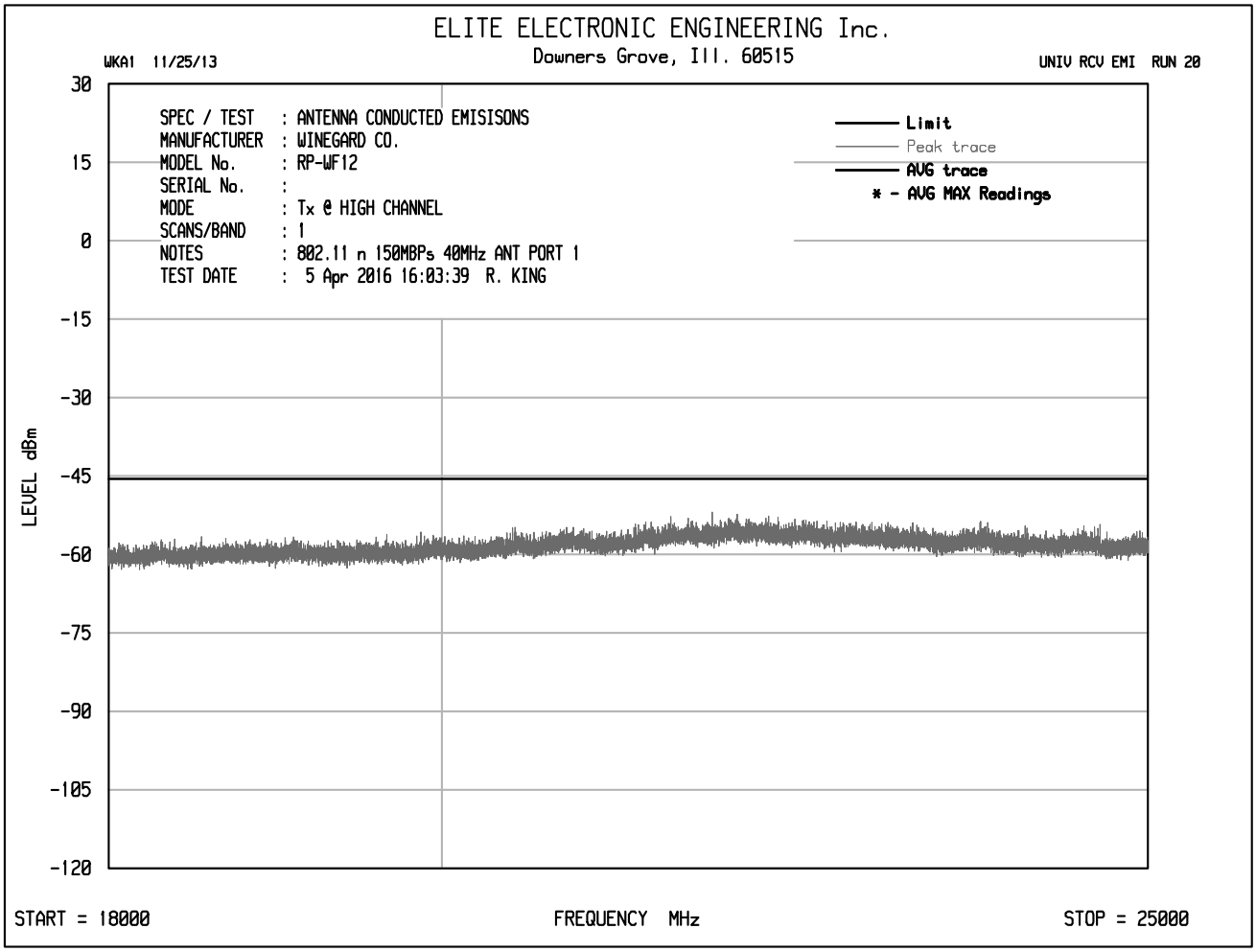

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 14
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 150MBPS ANT PORT 0
TEST DATE : 5 Apr 2016 15:48:32 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

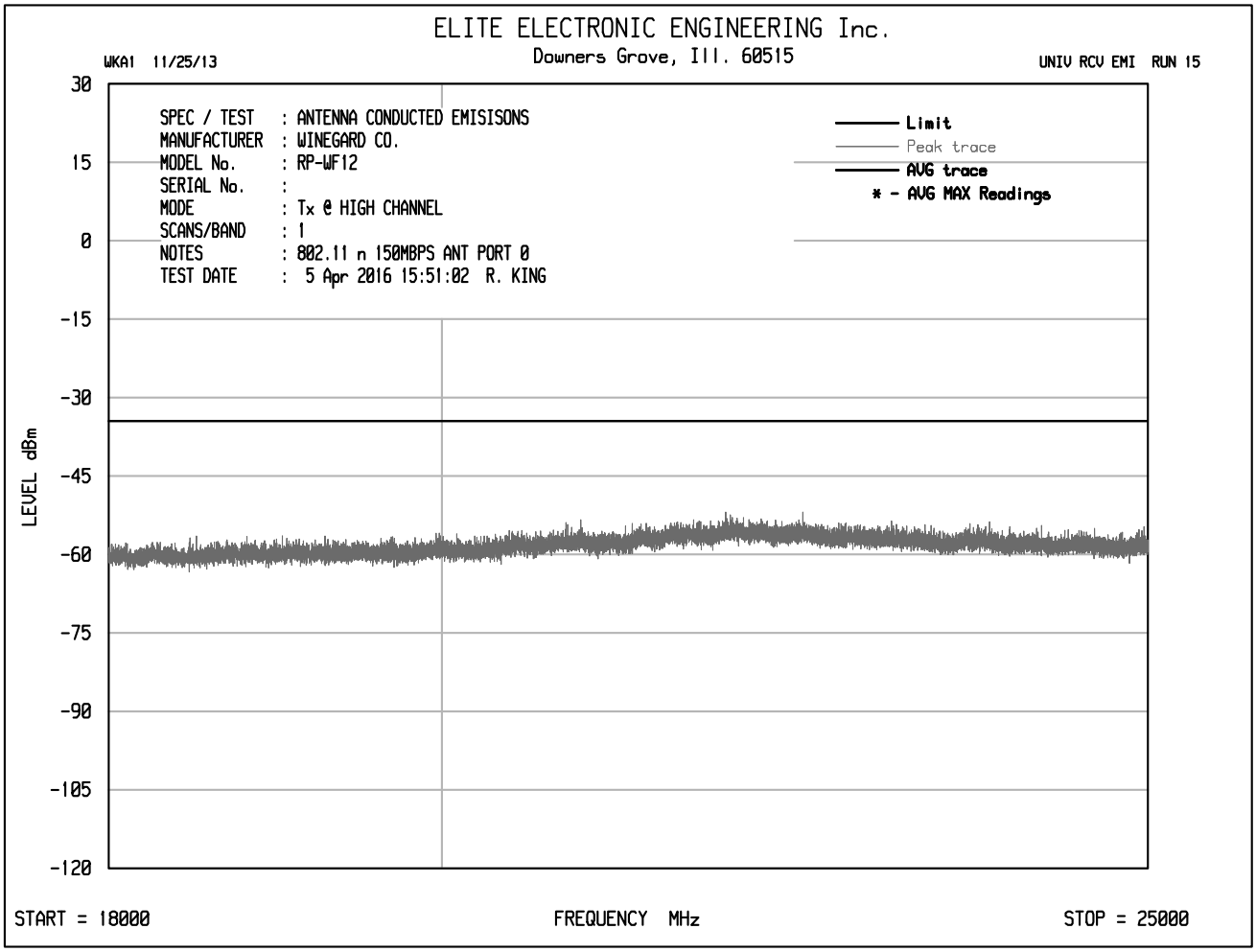

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 19
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 150MBPs 40MHz ANT PORT 1
TEST DATE : 5 Apr 2016 16:01:22 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

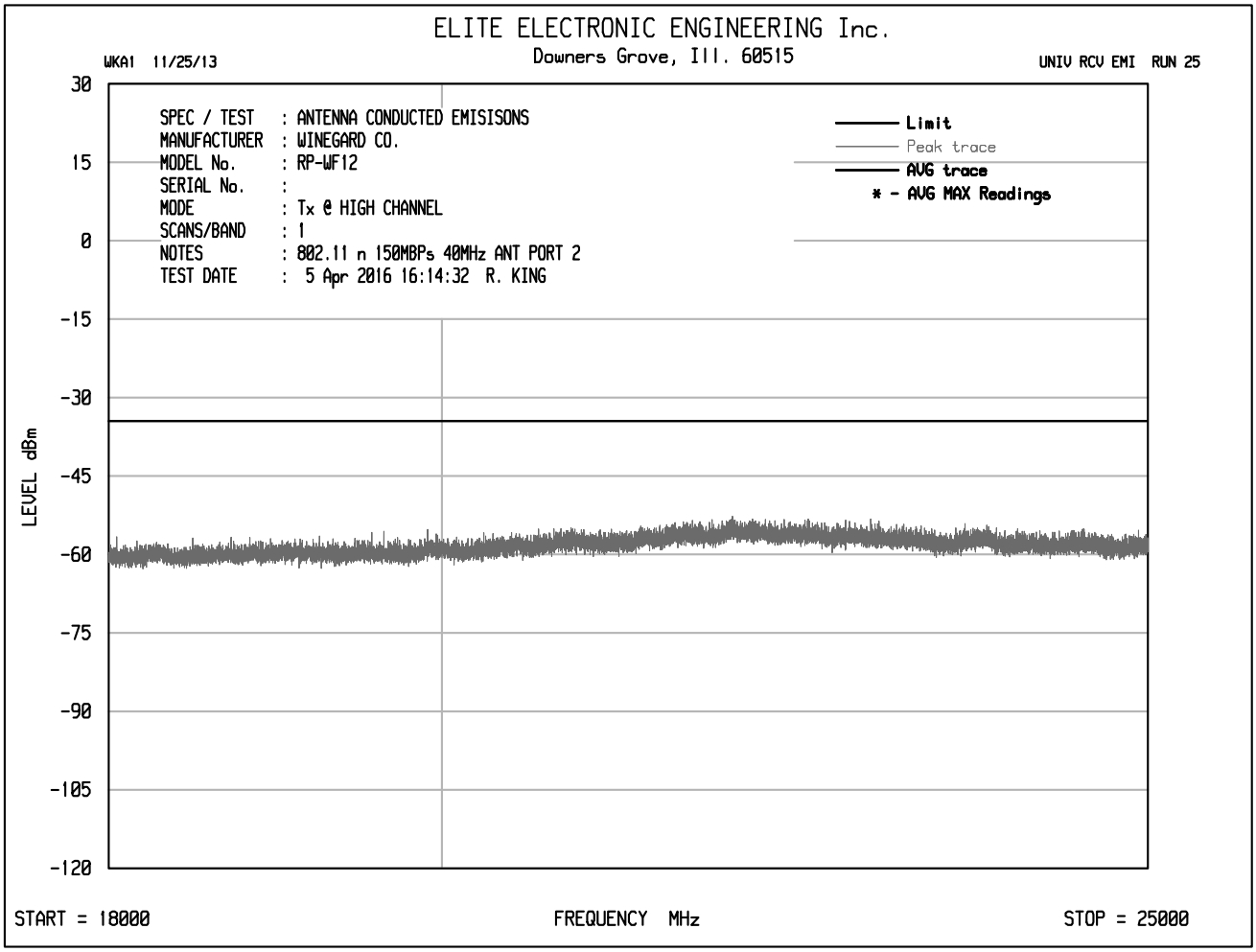

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 24
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 150MBPs 40MHz ANT PORT 2
TEST DATE : 5 Apr 2016 16:12:20 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

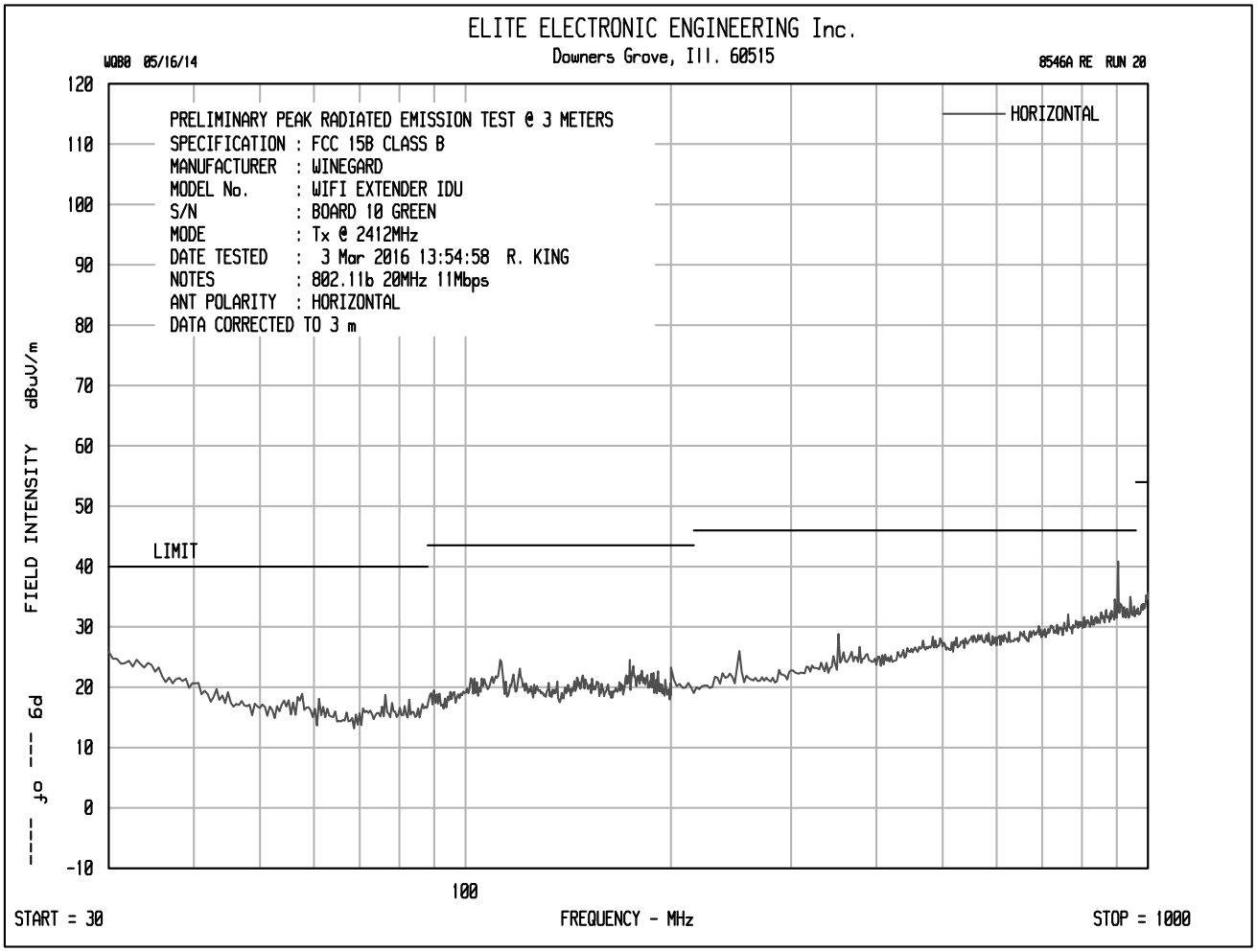

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 59
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 40MHz 150MBPs ANT PORT 2
TEST DATE : 5 Apr 2016 15:09:01 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

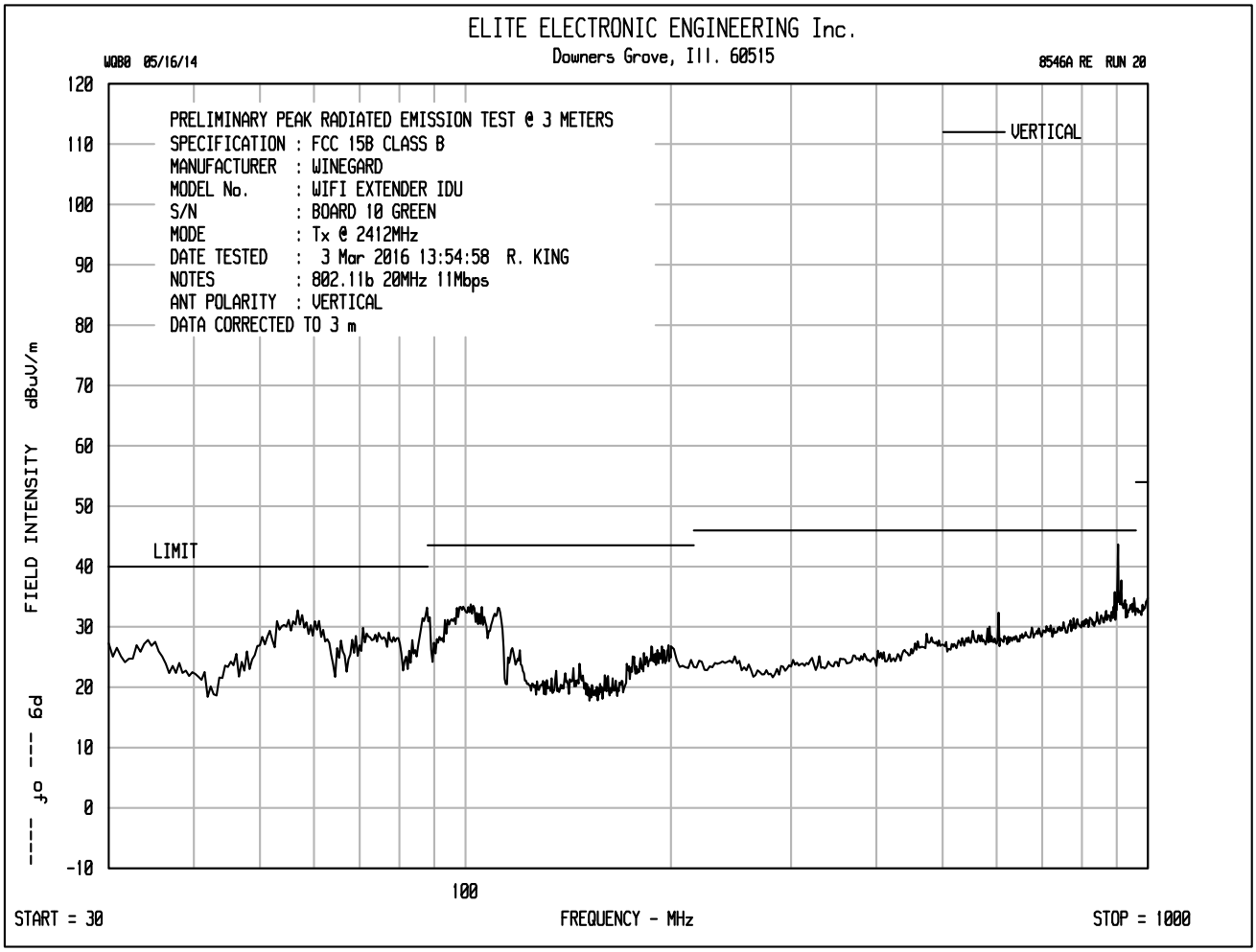

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 45
SPEC / TEST : ANTENNA CONDUCTED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 150MBPs
TEST DATE : 5 Apr 2016 13:20:59 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
100
1000
10000
START = 30
FREQUENCY MHz
STOP = 18000

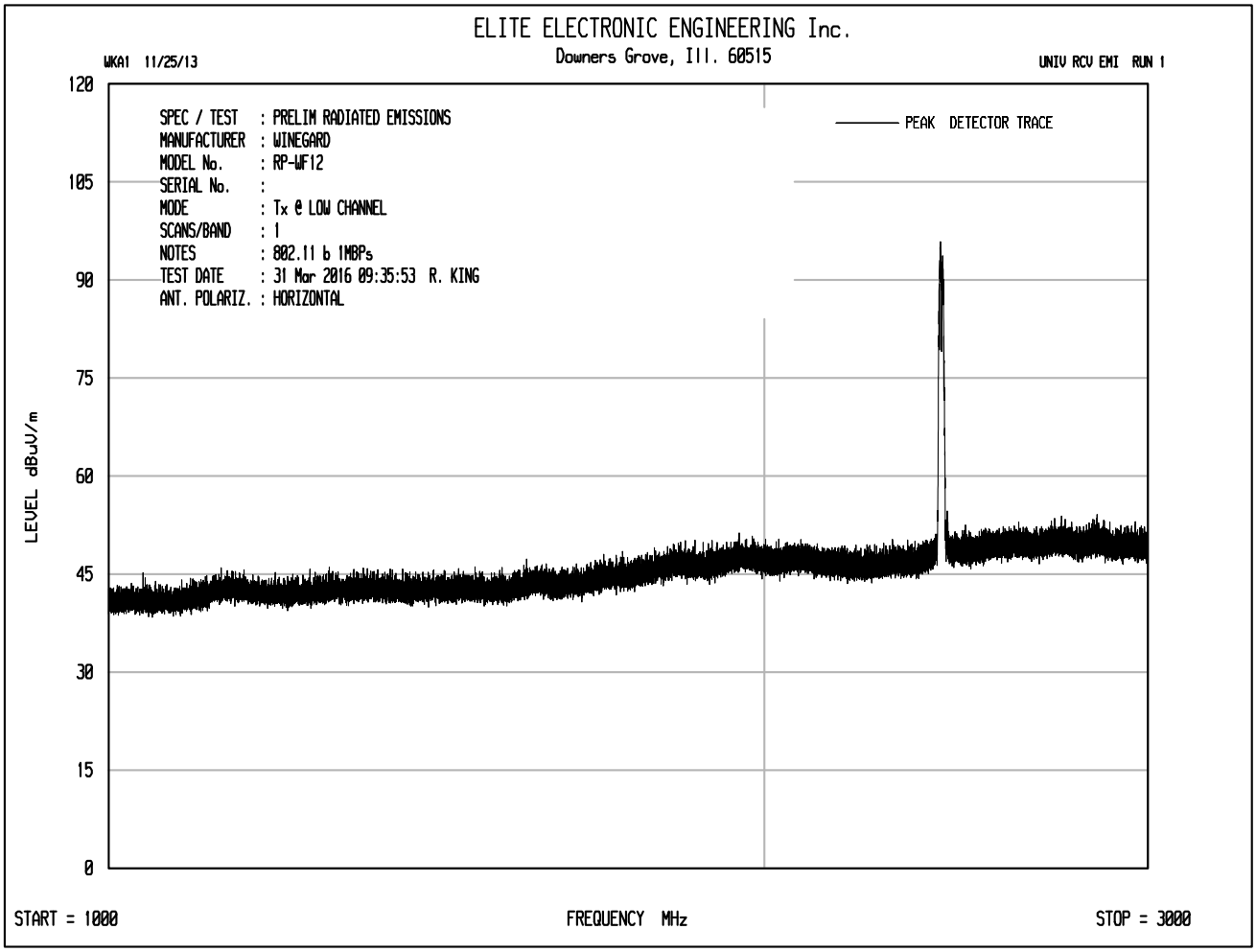

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 20
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 150MBPs 40MHz ANT PORT 1
TEST DATE : 5 Apr 2016 16:03:39 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

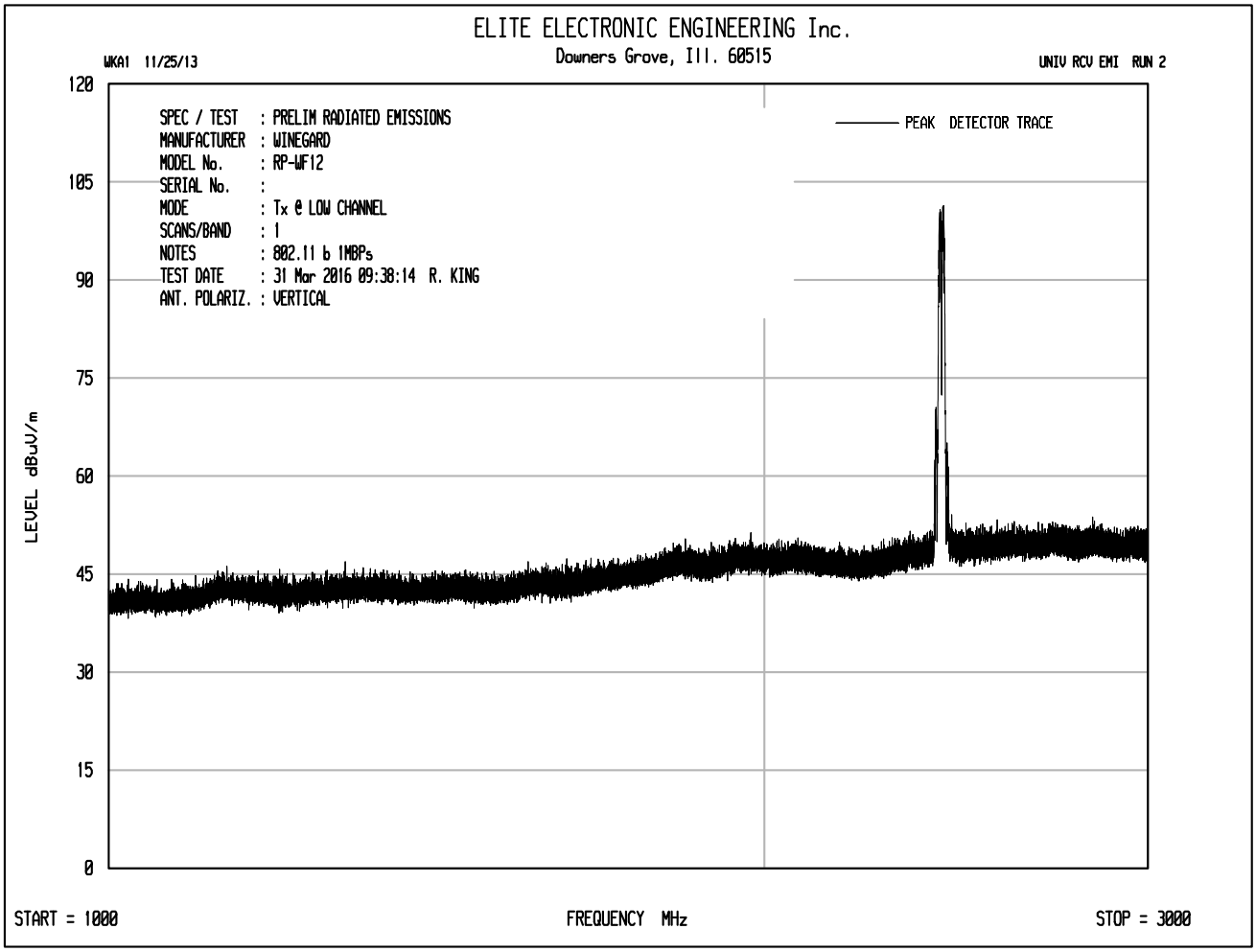

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 15
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 150MBPS ANT PORT 0
TEST DATE : 5 Apr 2016 15:51:02 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

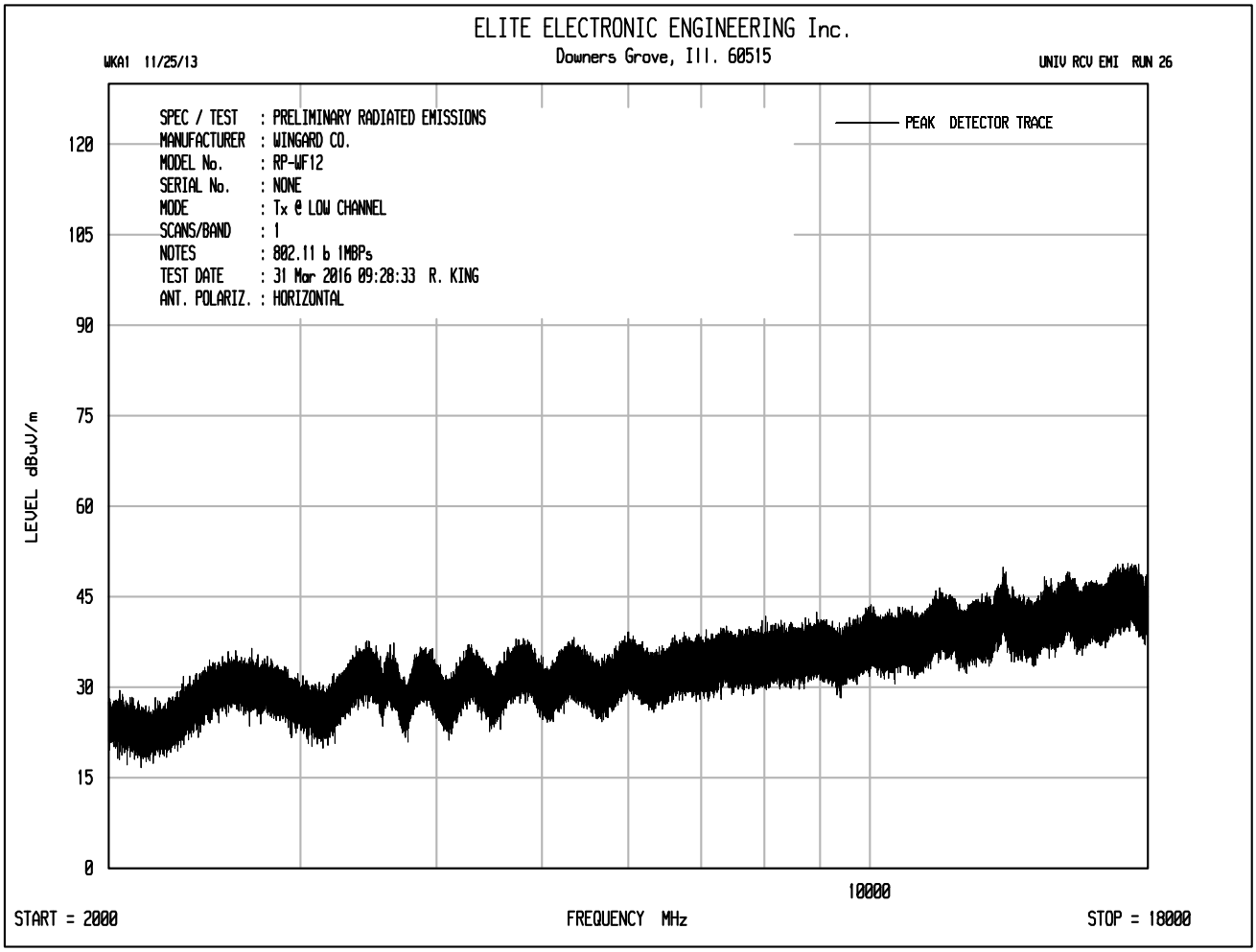

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 25
SPEC / TEST : ANTENNA CONDUCTED EMISISONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 150MBPs 40MHz ANT PORT 2
TEST DATE : 5 Apr 2016 16:14:32 R. KING
Limit
Peak trace
AVG trace
* - AVG MAX Readings
LEVEL dBm
30
15
0
-15
-30
-45
-60
-75
-90
-105
-120
START = 18000
FREQUENCY MHz
STOP = 25000

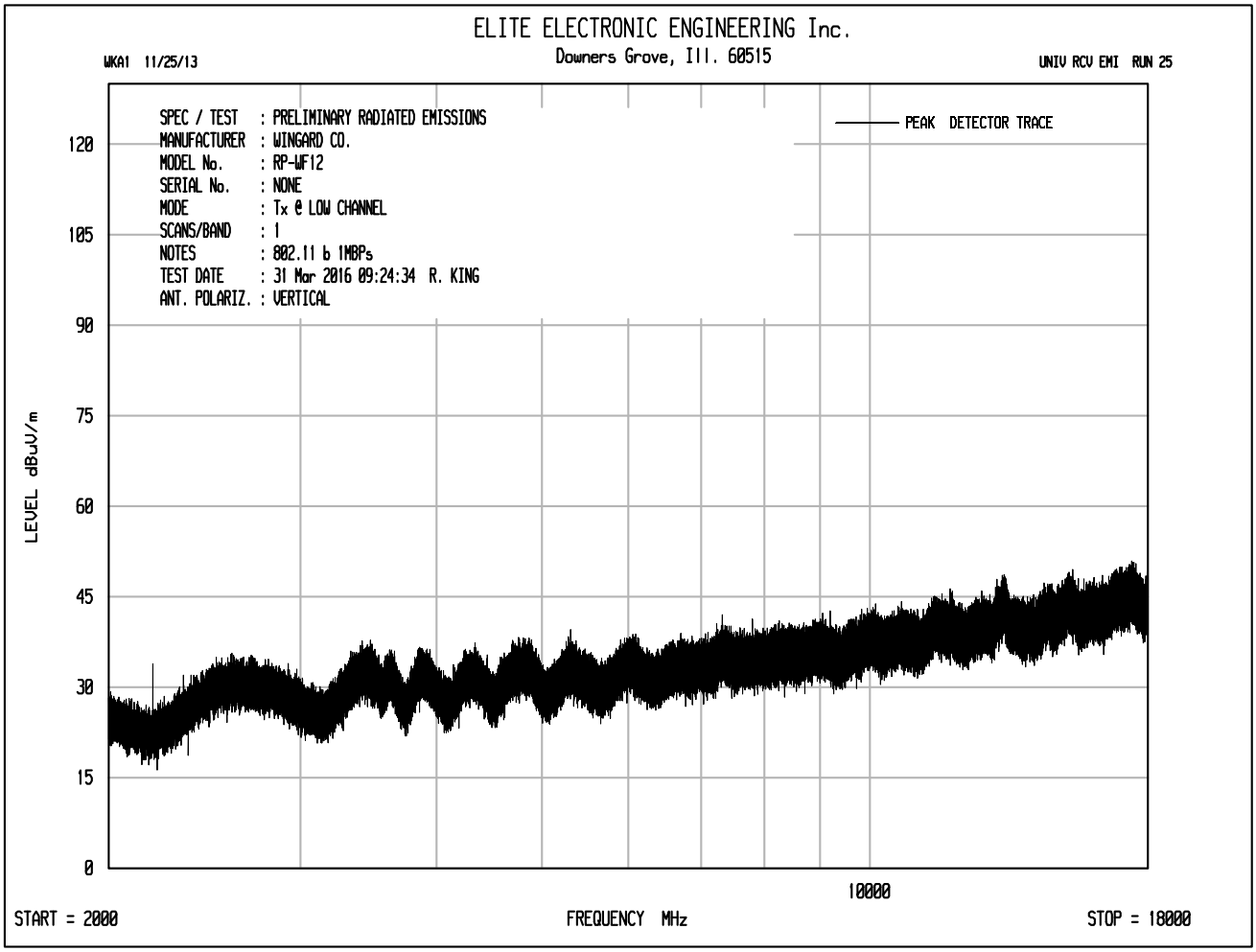

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB0 05/16/14
8546A RE RUN 20
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2412MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11b 20MHz 11Mbps
ANT POLARITY : HORIZONTAL
DATA CORRECTED TO 3 m
HORIZONTAL
LIMIT
FIELD INTENSITY dBuV/m
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
100
START = 30
FREQUENCY - MHz
STOP = 1000

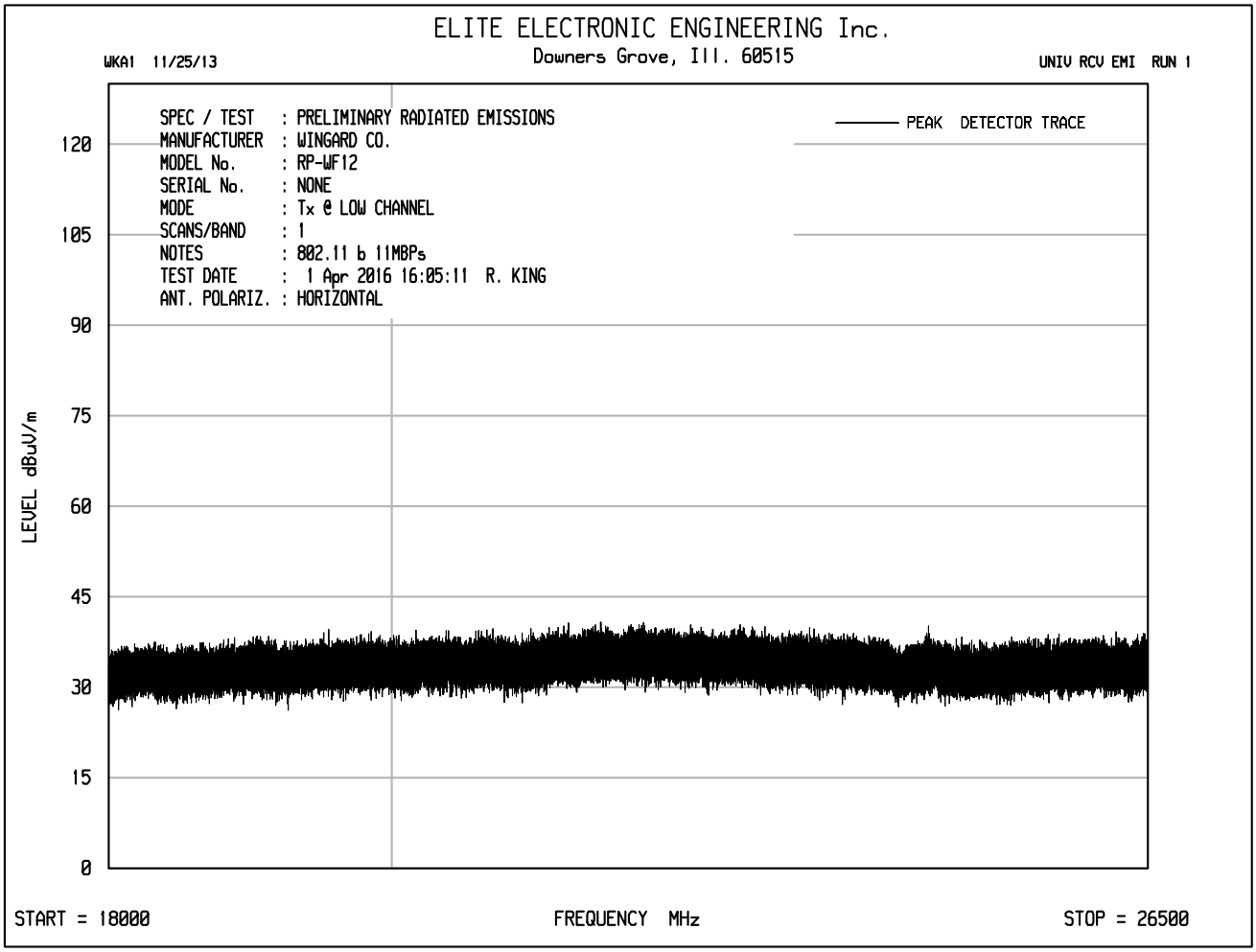

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB0 05/16/14
8546A RE RUN 20
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2412MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11b 20MHz 11Mbps
ANT POLARITY : VERTICAL
DATA CORRECTED TO 3 m
VERTICAL
LIMIT
FIELD INTENSITY dBuV/m
---- uo --- 6d
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
100
START = 30
FREQUENCY - MHz
STOP = 1000

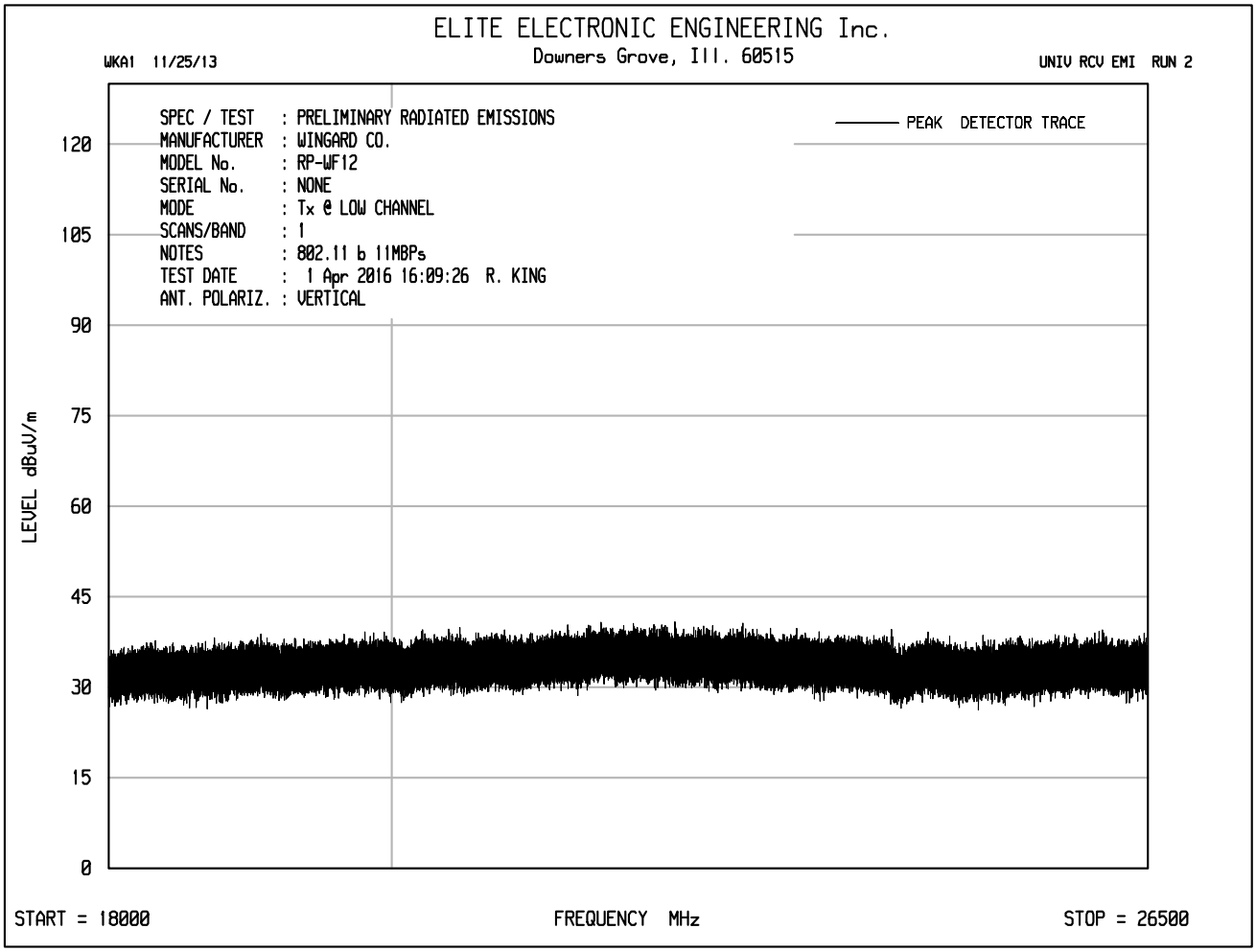

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 1
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 b 1MBPs
TEST DATE : 31 Mar 2016 09:35:53 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

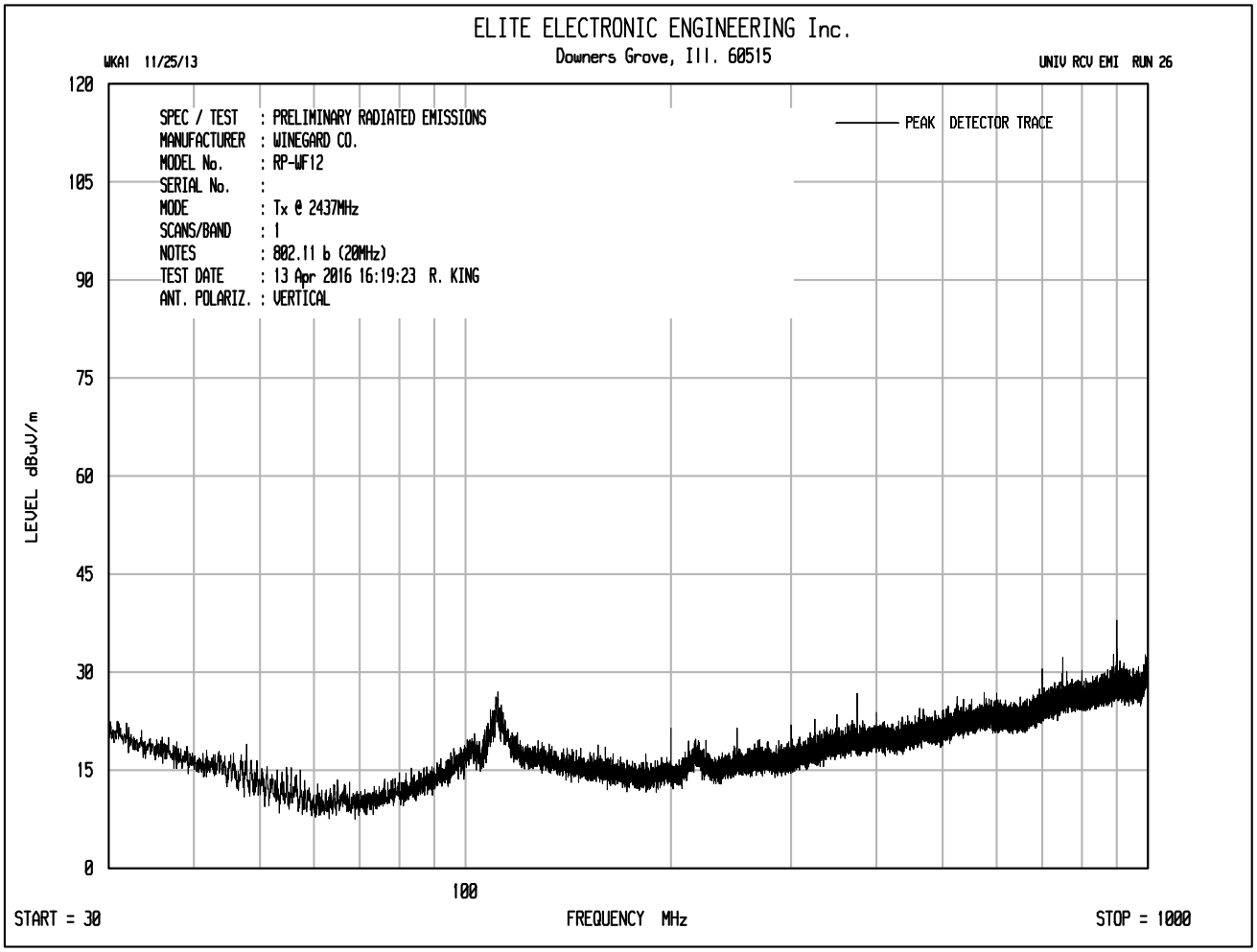

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 2
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 b 1MBPs
TEST DATE : 31 Mar 2016 09:38:14 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

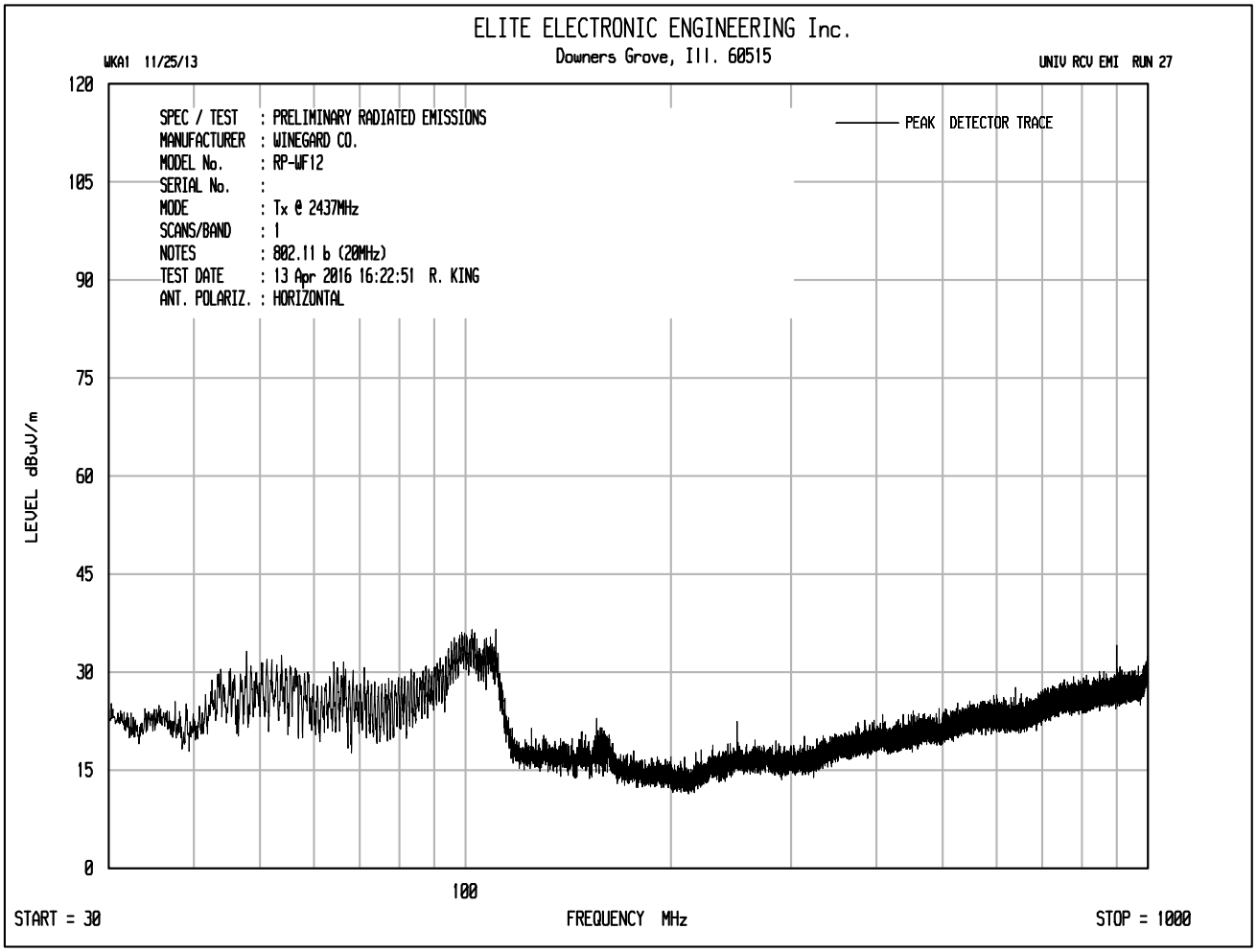

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 26
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 b 1MBPs
TEST DATE : 31 Mar 2016 09:28:33 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 2000
FREQUENCY MHz
STOP = 18000

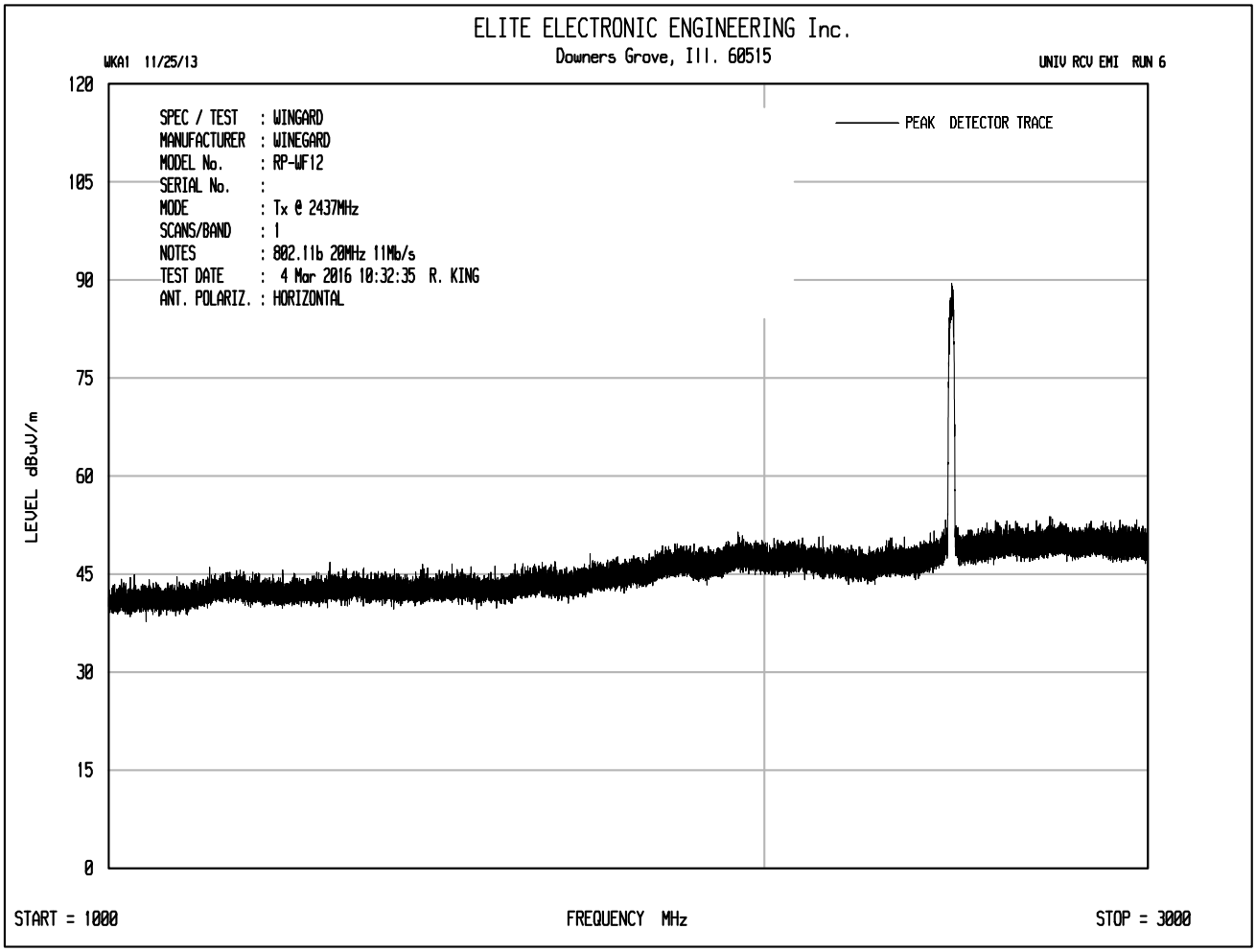

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 25
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 b 1MBPs
TEST DATE : 31 Mar 2016 09:24:34 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 2000
FREQUENCY MHz
STOP = 18000

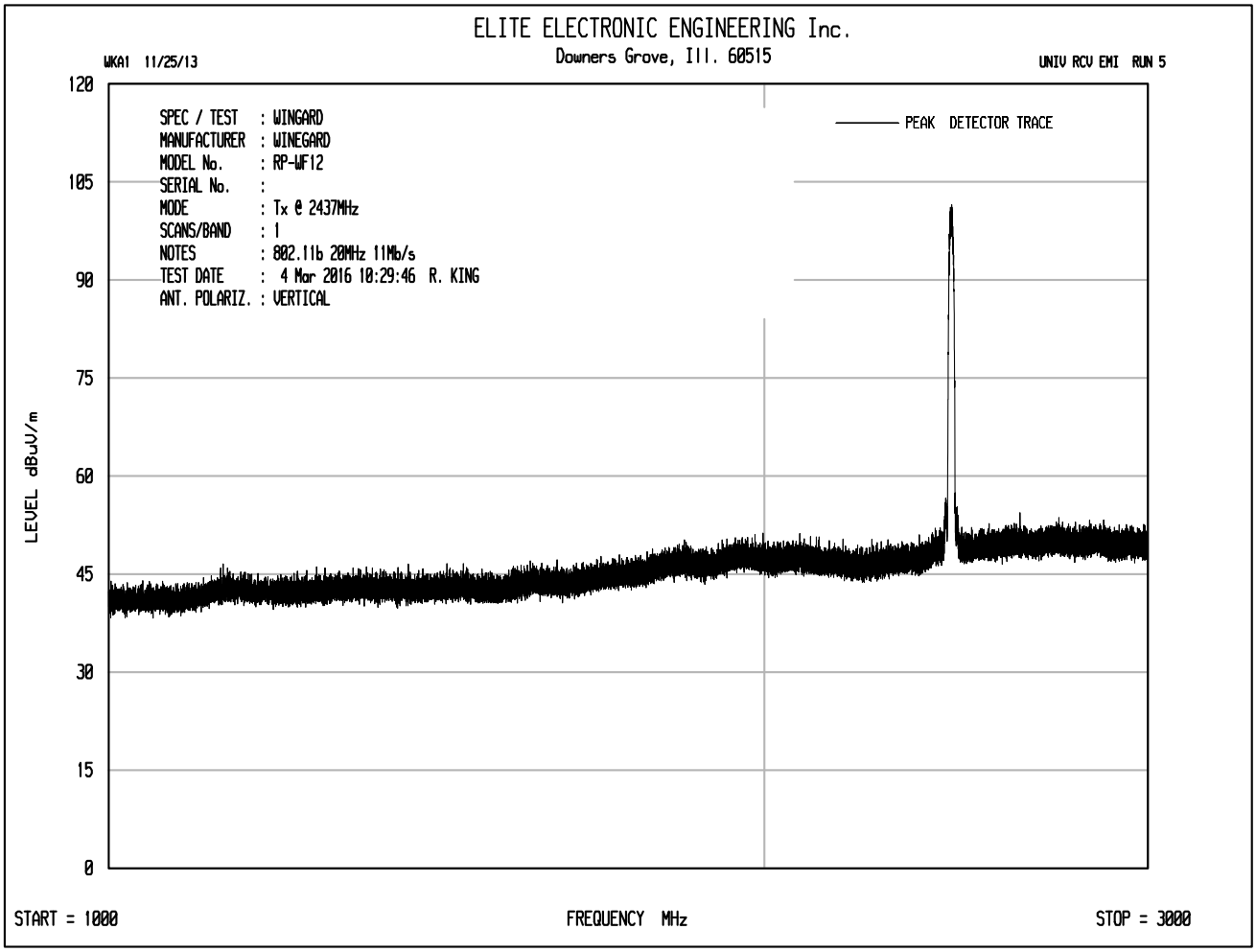

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 1
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 b 11MBPs
TEST DATE : 1 Apr 2016 16:05:11 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

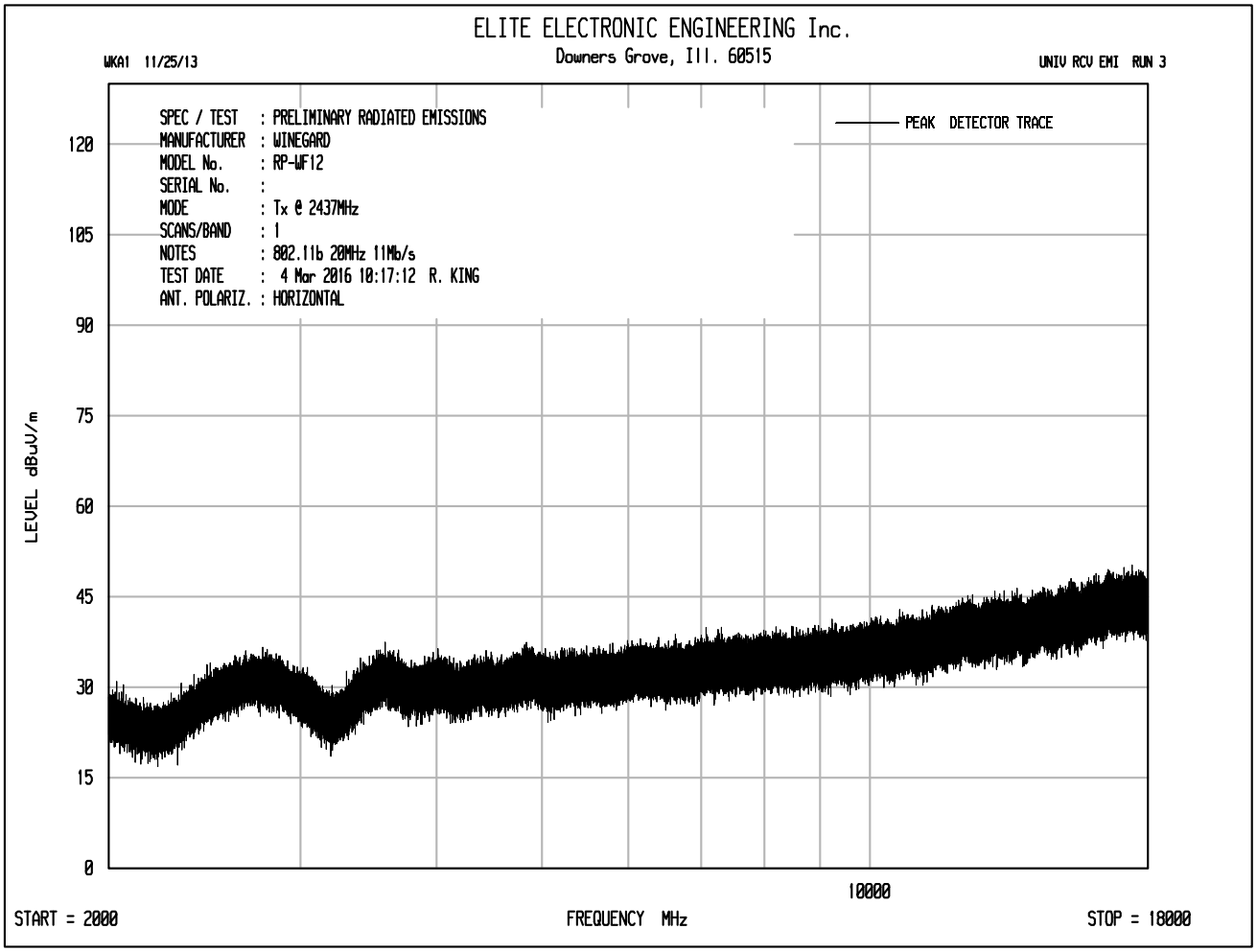

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 2
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 b 11MBPs
TEST DATE : 1 Apr 2016 16:09:26 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

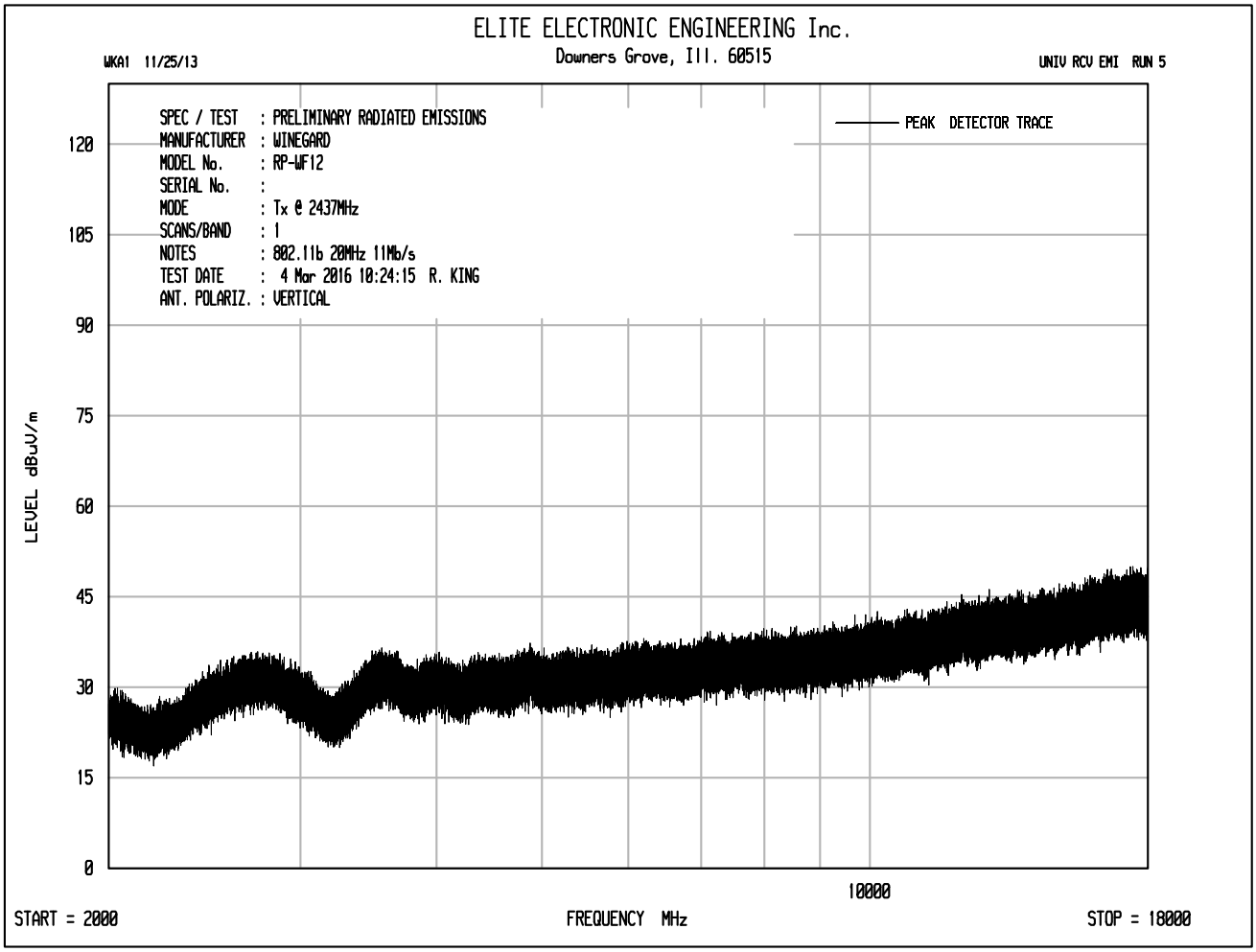

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 26
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : 802.11 b (20MHz)
TEST DATE : 13 Apr 2016 16:19:23 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
100
START = 30
FREQUENCY MHz
STOP = 1000

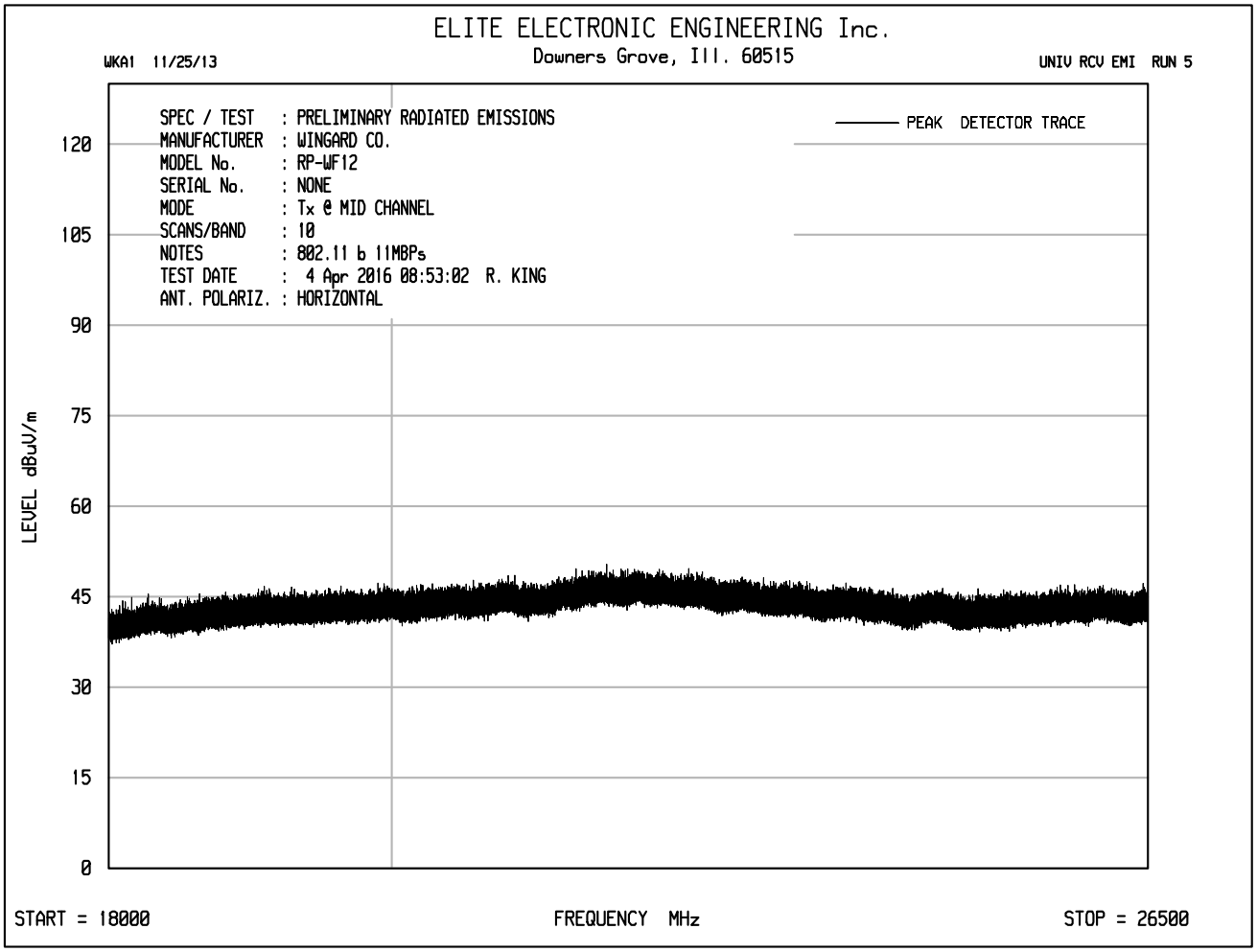

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 27
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : 802.11 b (20MHz)
TEST DATE : 13 Apr 2016 16:22:51 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
100
START = 30
FREQUENCY MHz
STOP = 1000

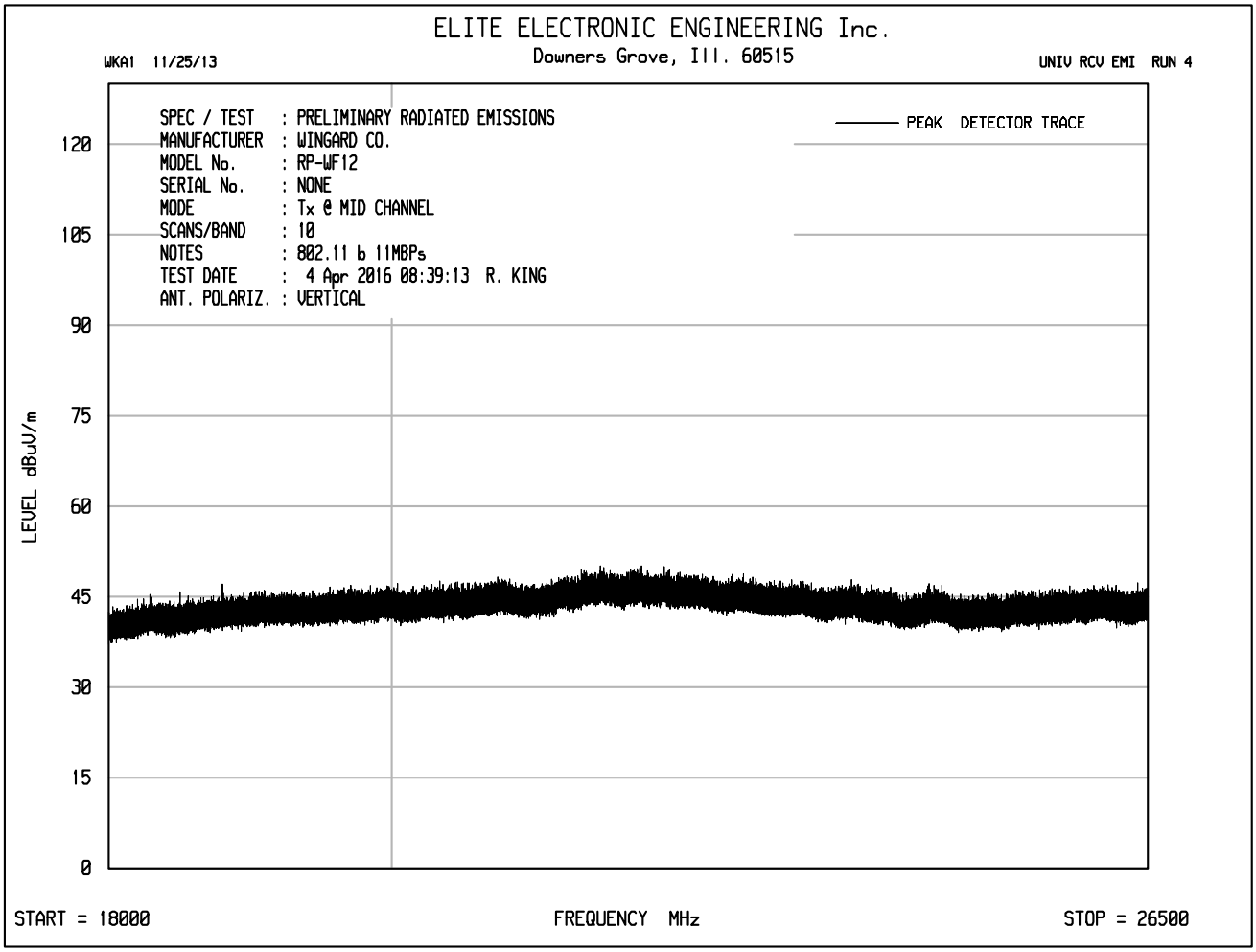

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 6
SPEC / TEST : WINGARD
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : 802.11b 20MHz 11Mb/s
TEST DATE : 4 Mar 2016 10:32:35 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

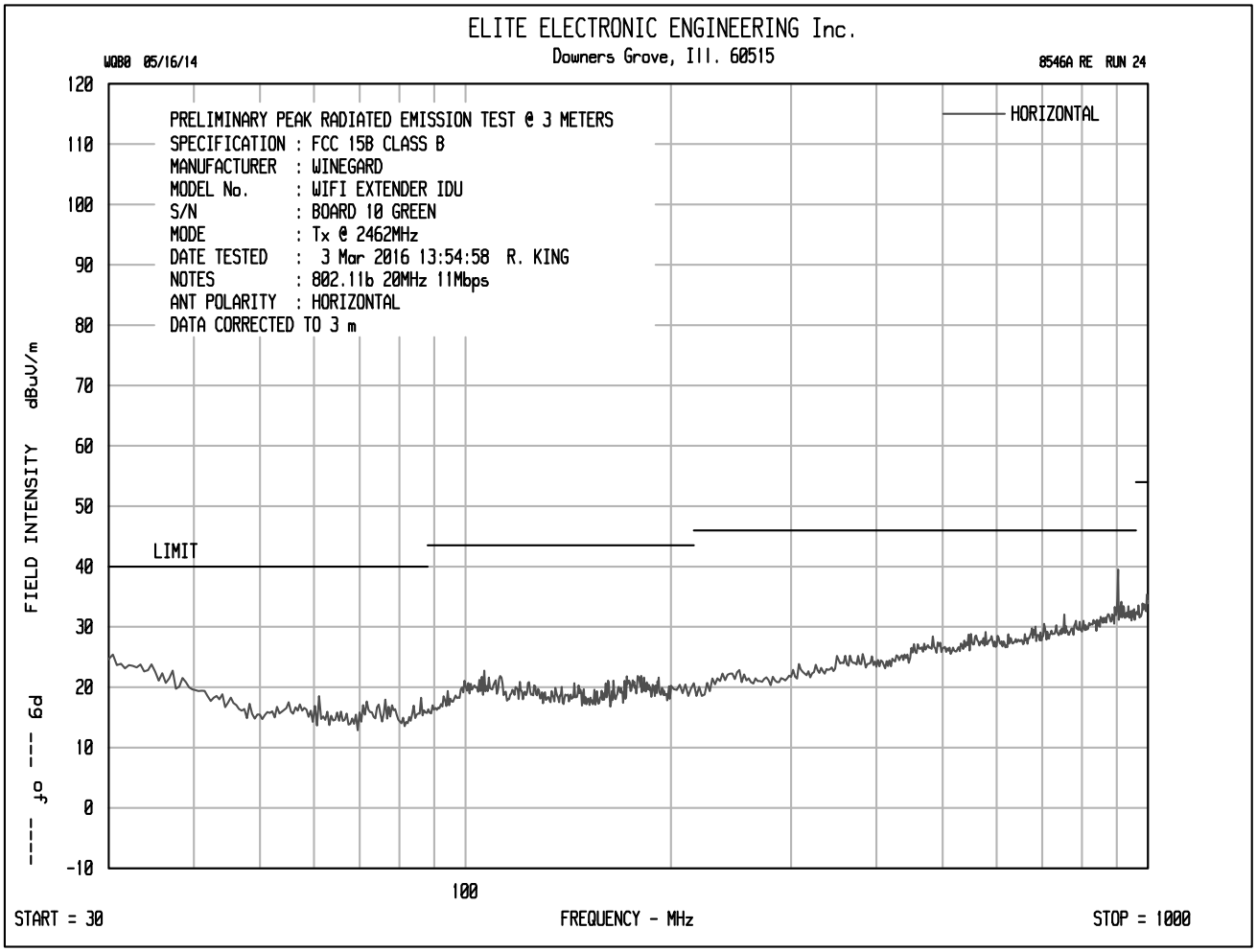

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 5
SPEC / TEST : WINGARD
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : 802.11b 20MHz 11Mb/s
TEST DATE : 4 Mar 2016 10:29:46 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

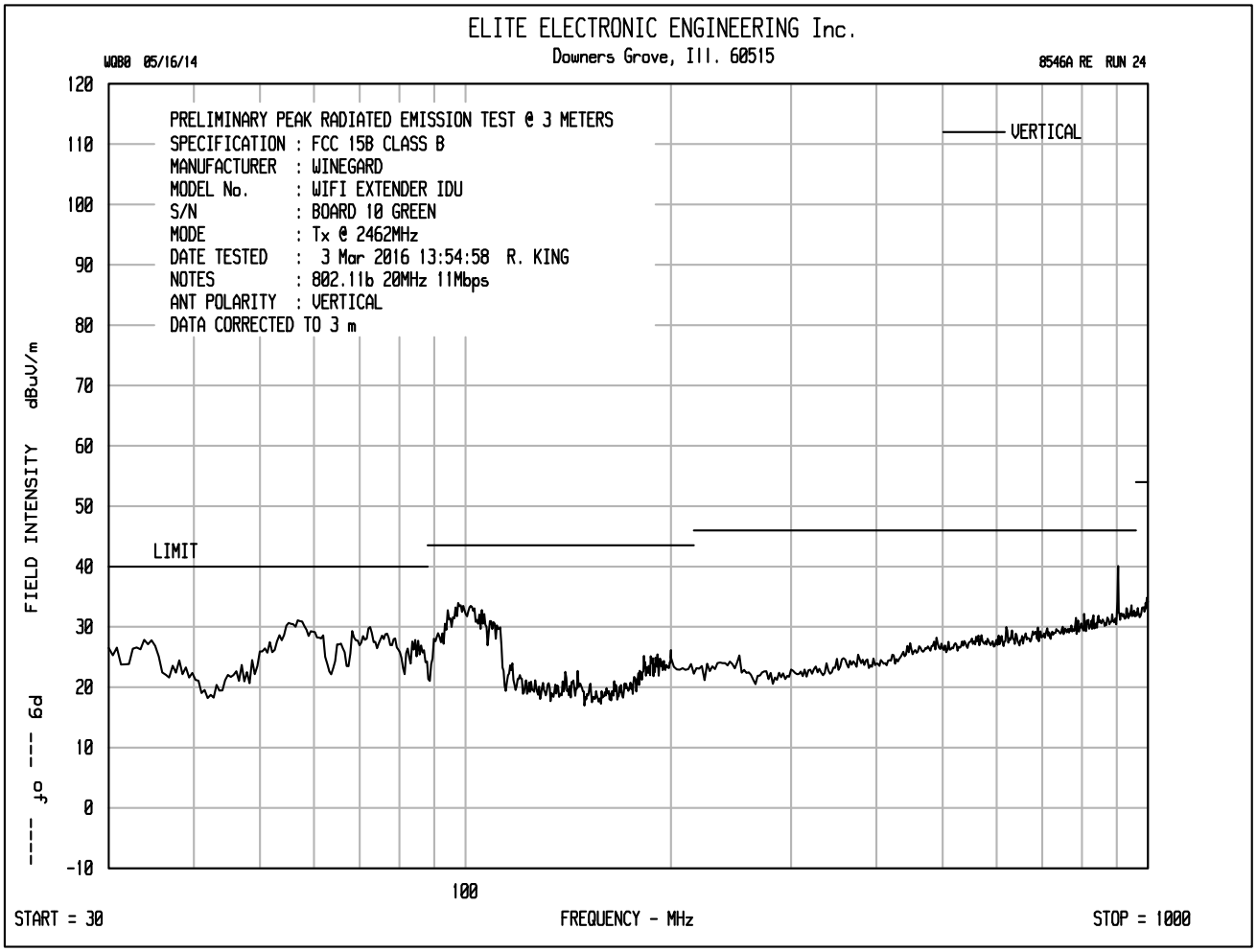

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 3
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : 802.11b 20MHz 11Mb/s
TEST DATE : 4 Mar 2016 10:17:12 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 2000
FREQUENCY MHz
STOP = 18000

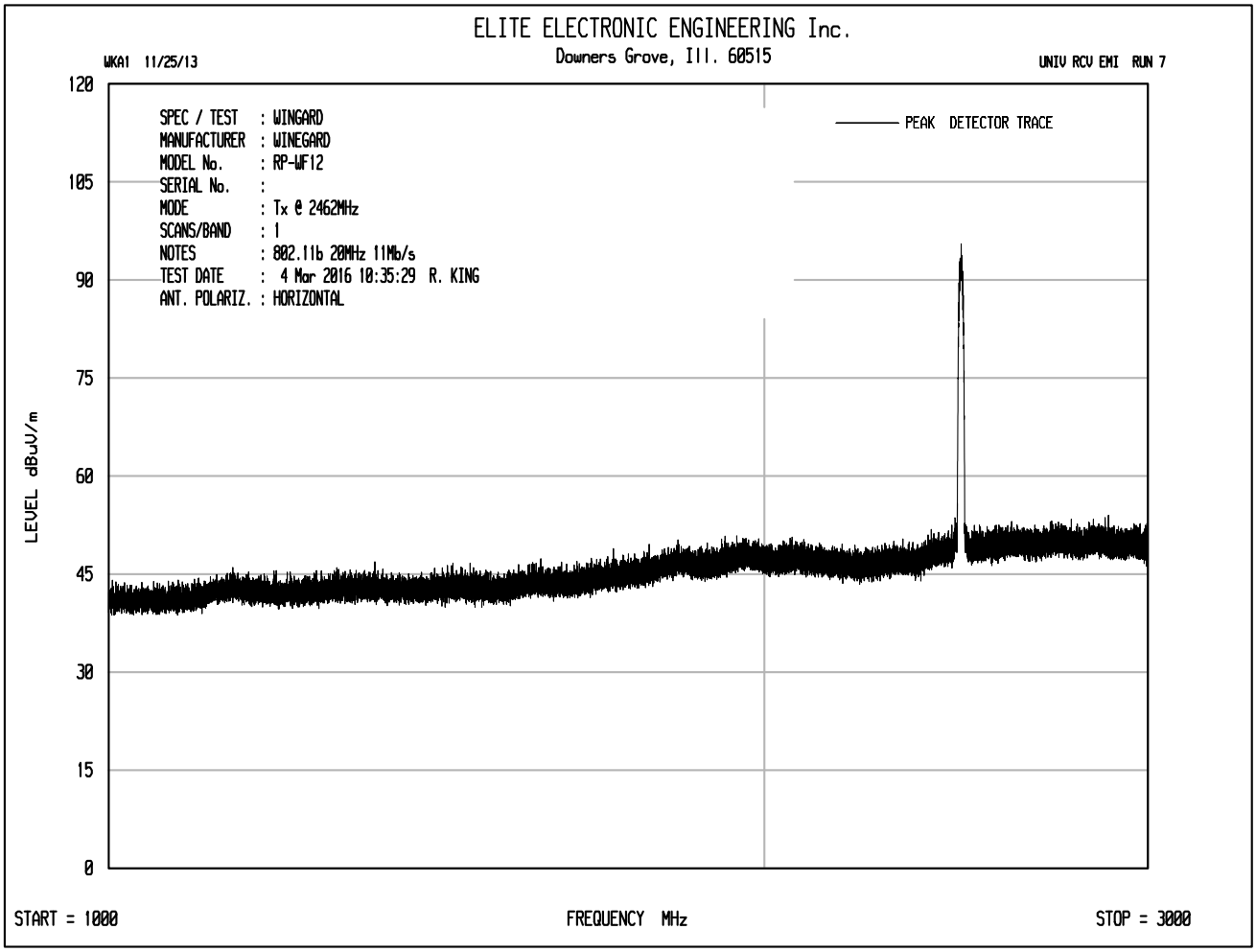

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 5
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : 802.11b 20MHz 11Mb/s
TEST DATE : 4 Mar 2016 10:24:15 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 2000
FREQUENCY MHz
STOP = 18000

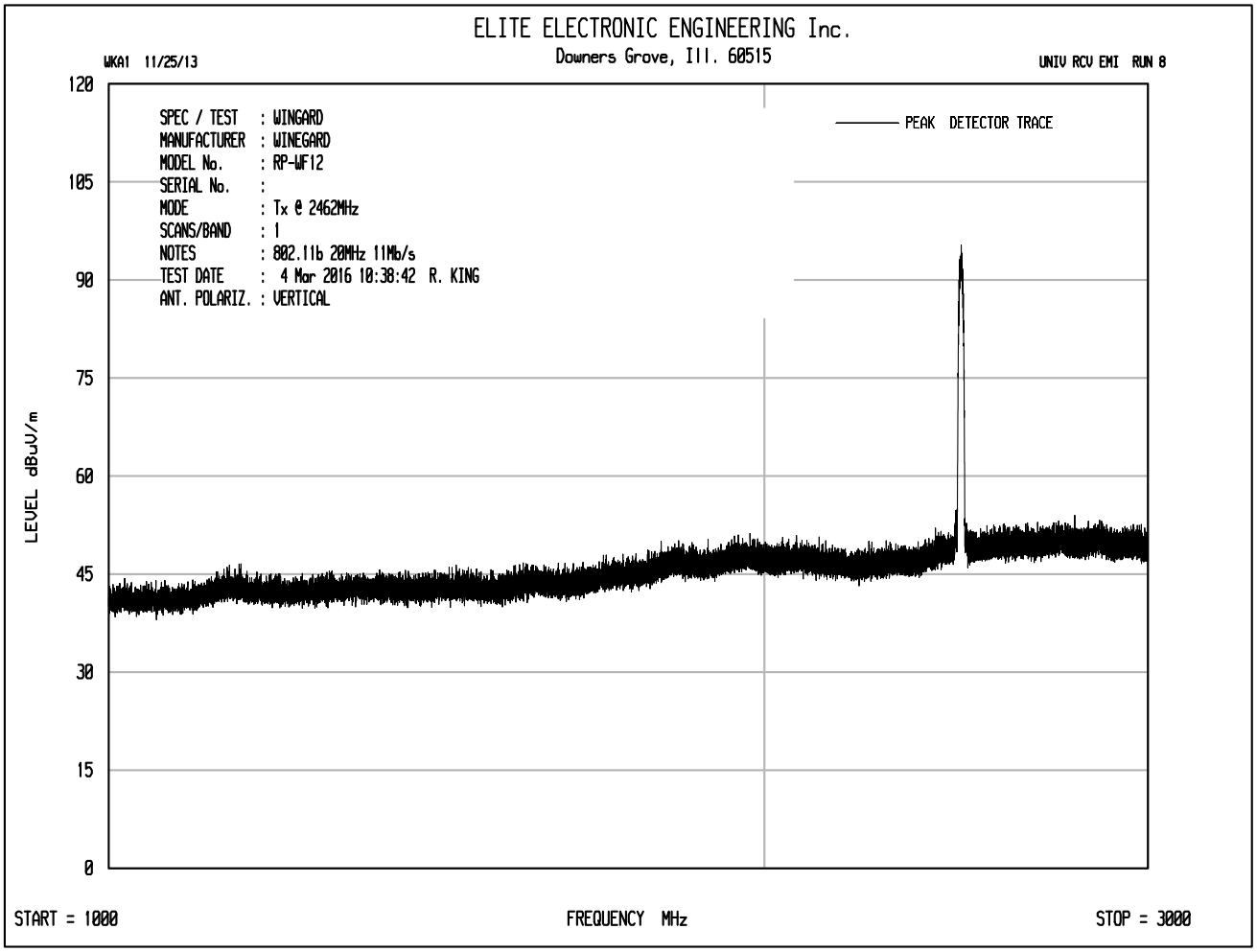

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 5
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ MID CHANNEL
SCANS/BAND : 10
NOTES : 802.11 b 11MBPs
TEST DATE : 4 Apr 2016 08:53:02 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

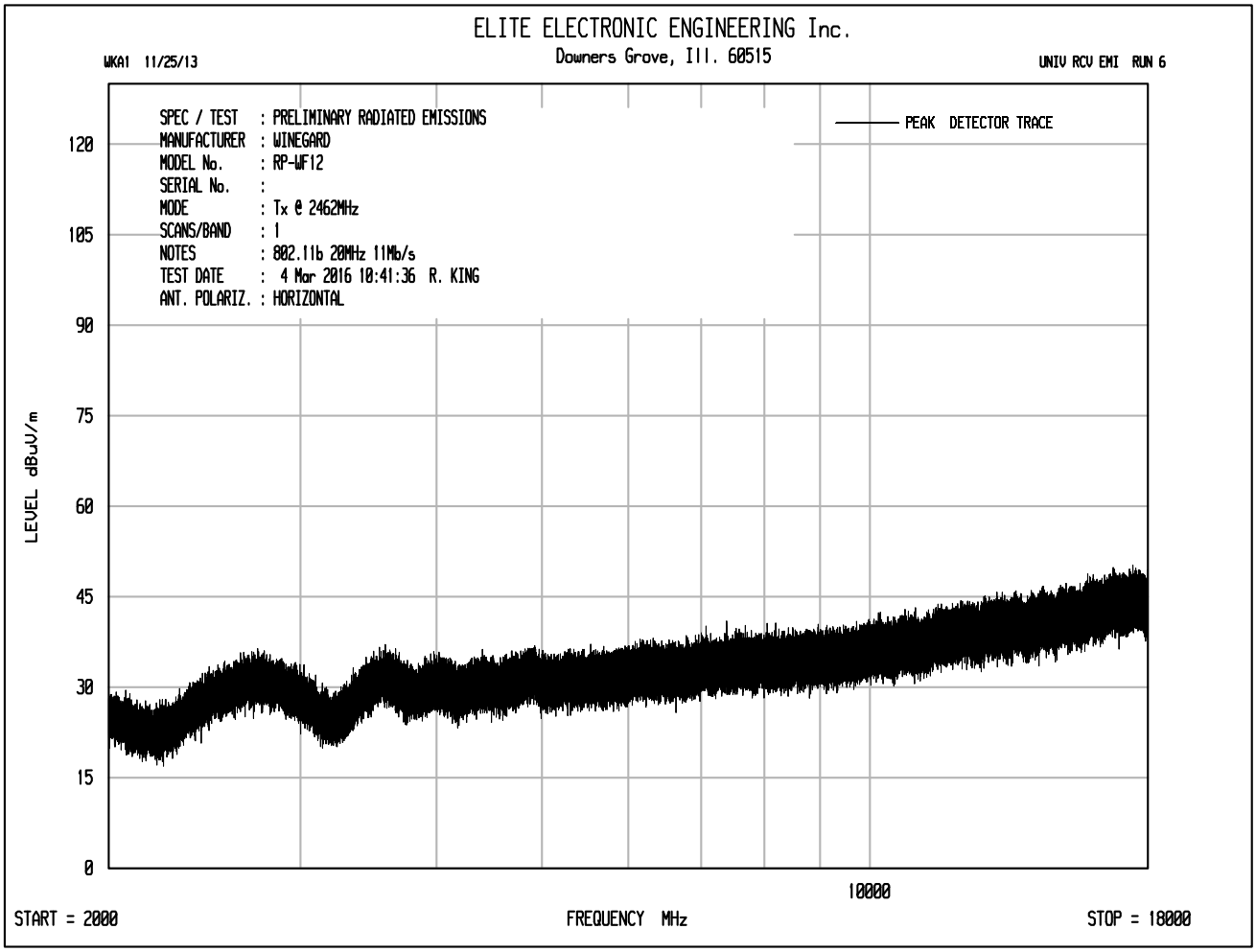

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 4
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ MID CHANNEL
SCANS/BAND : 10
NOTES : 802.11 b 11MBPs
TEST DATE : 4 Apr 2016 08:39:13 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

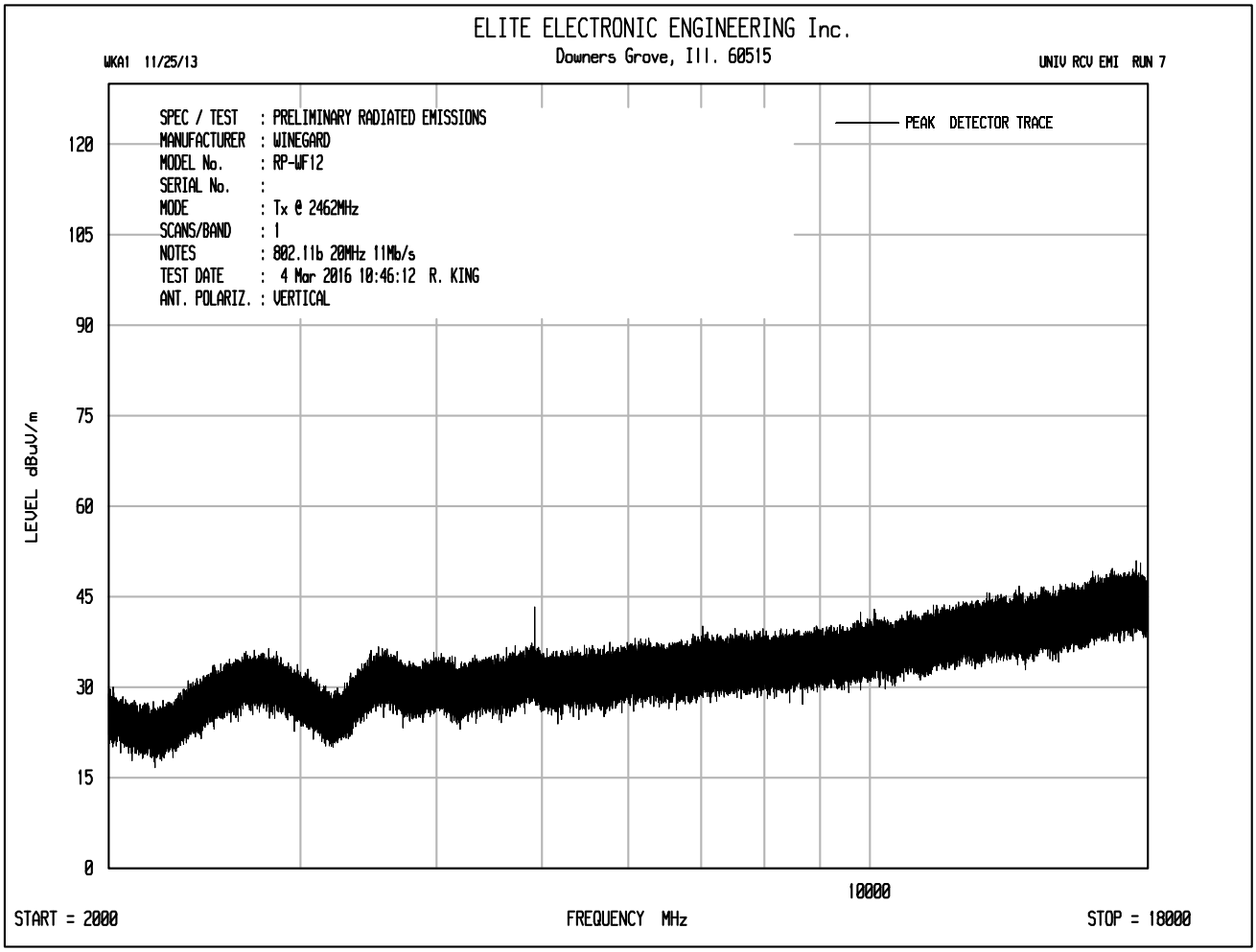

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB0 05/16/14
8546A RE RUN 24
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2462MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11b 20MHz 11Mbps
ANT POLARITY : HORIZONTAL
DATA CORRECTED TO 3 m
HORIZONTAL
LIMIT
FIELD INTENSITY dBuV/m
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
100
START = 30
FREQUENCY - MHz
STOP = 1000

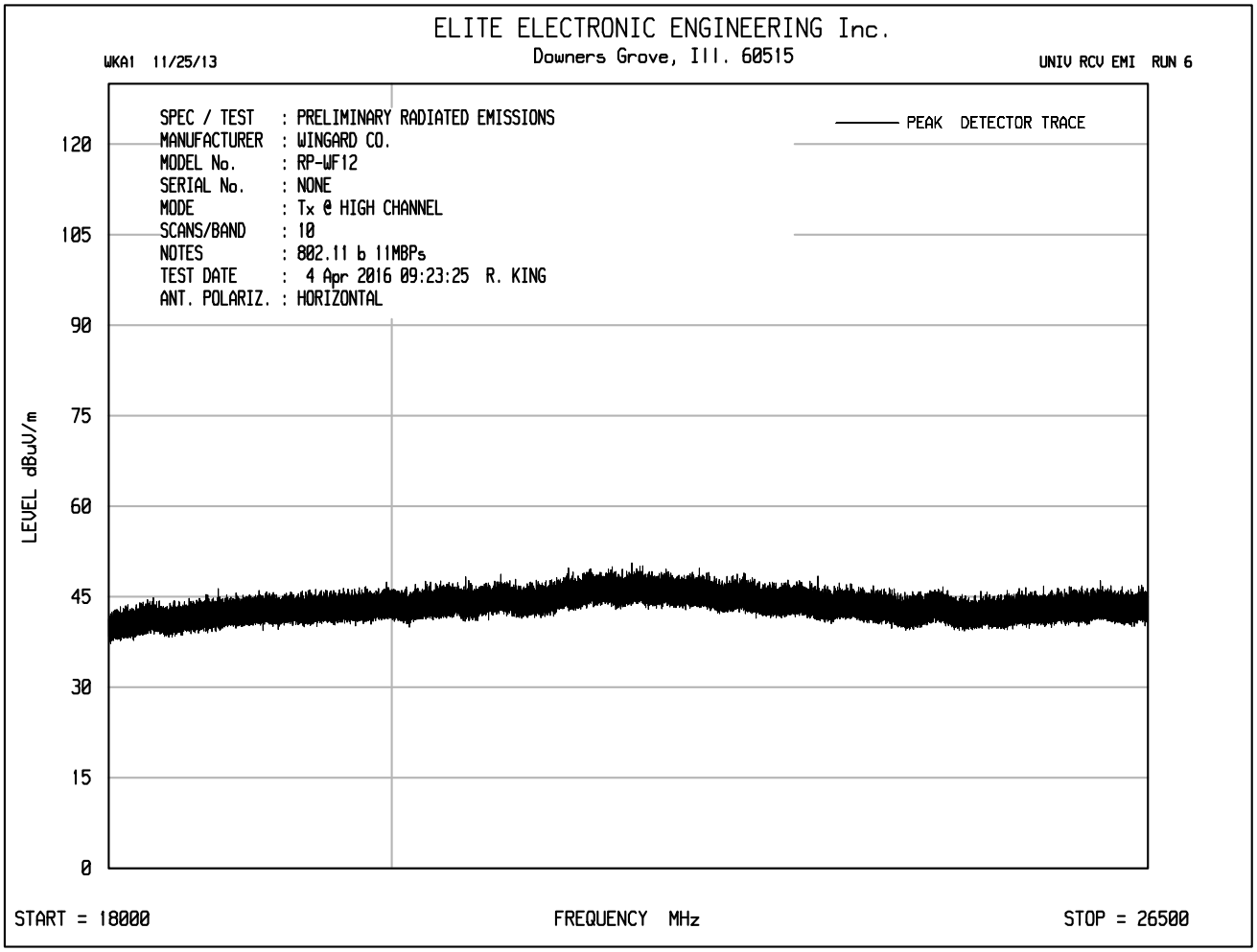

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB0 05/16/14
8546A RE RUN 24
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2462MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11b 20MHz 11Mbps
ANT POLARITY : VERTICAL
DATA CORRECTED TO 3 m
VERTICAL
LIMIT
FIELD INTENSITY dBuV/m
---- uo --- 6d
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
100
START = 30
FREQUENCY - MHz
STOP = 1000

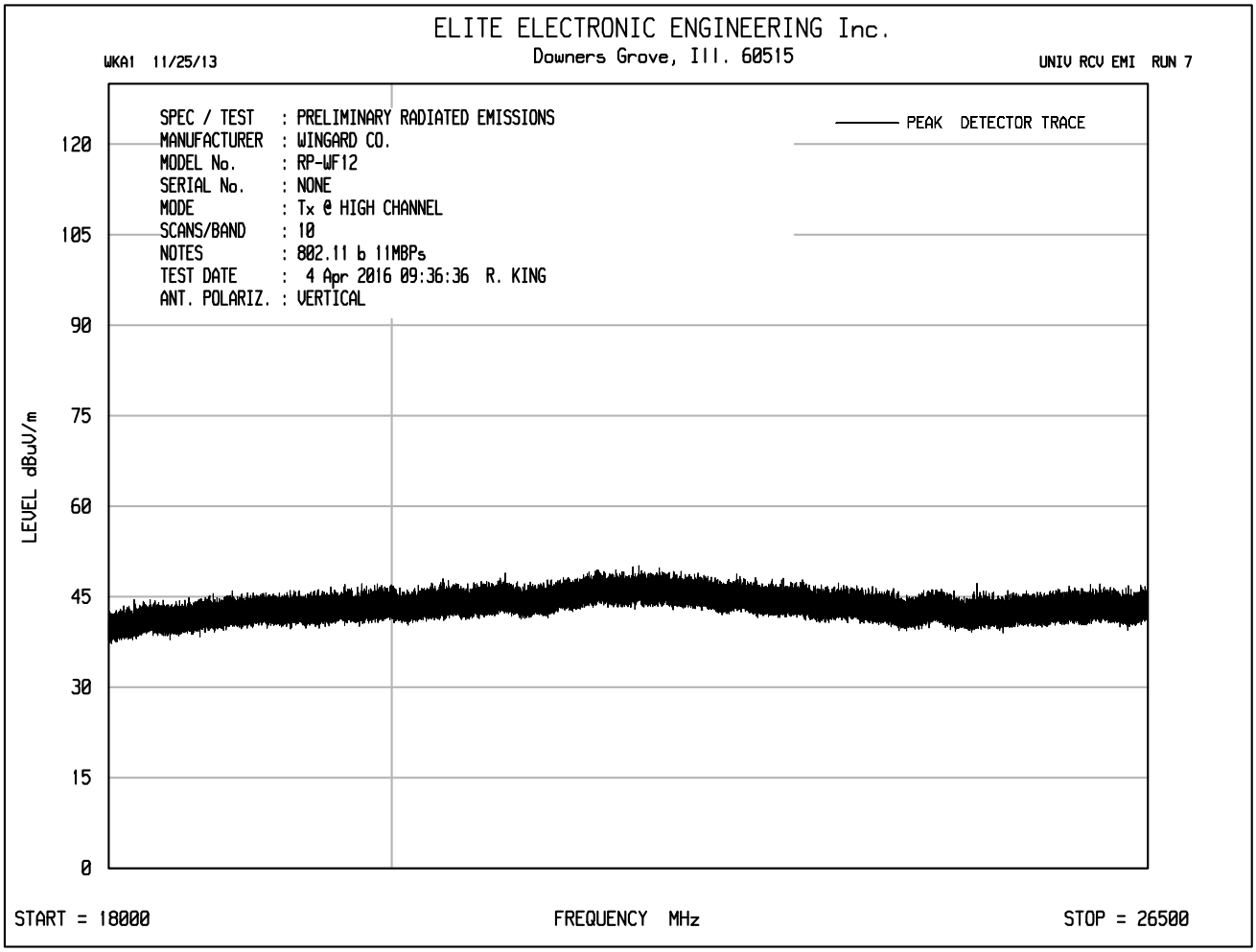

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 7
SPEC / TEST : WINGARD
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2462MHz
SCANS/BAND : 1
NOTES : 802.11b 20MHz 11Mb/s
TEST DATE : 4 Mar 2016 10:35:29 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

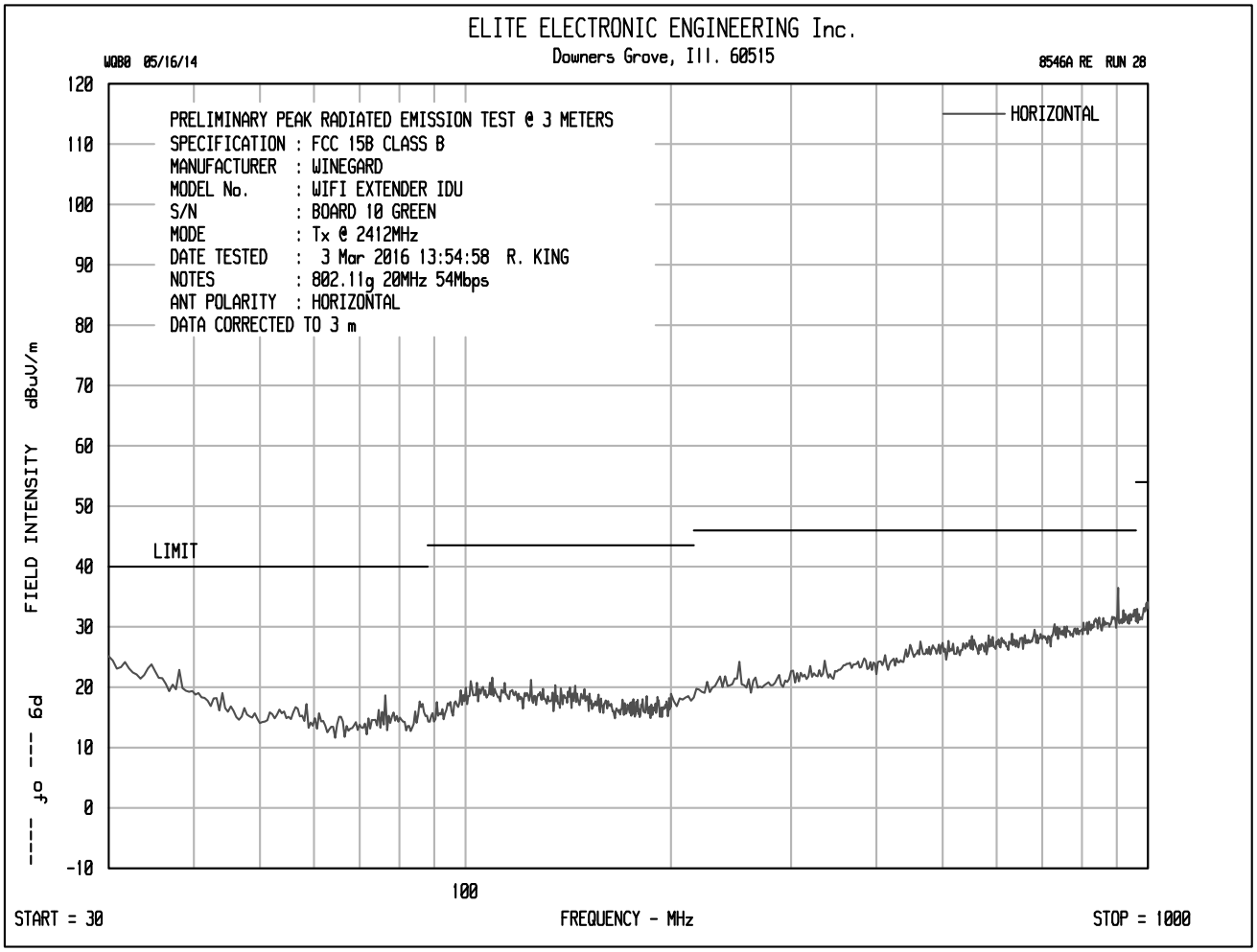

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 8
SPEC / TEST : WINGARD
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2462MHz
SCANS/BAND : 1
NOTES : 802.11b 20MHz 11Mb/s
TEST DATE : 4 Mar 2016 10:38:42 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

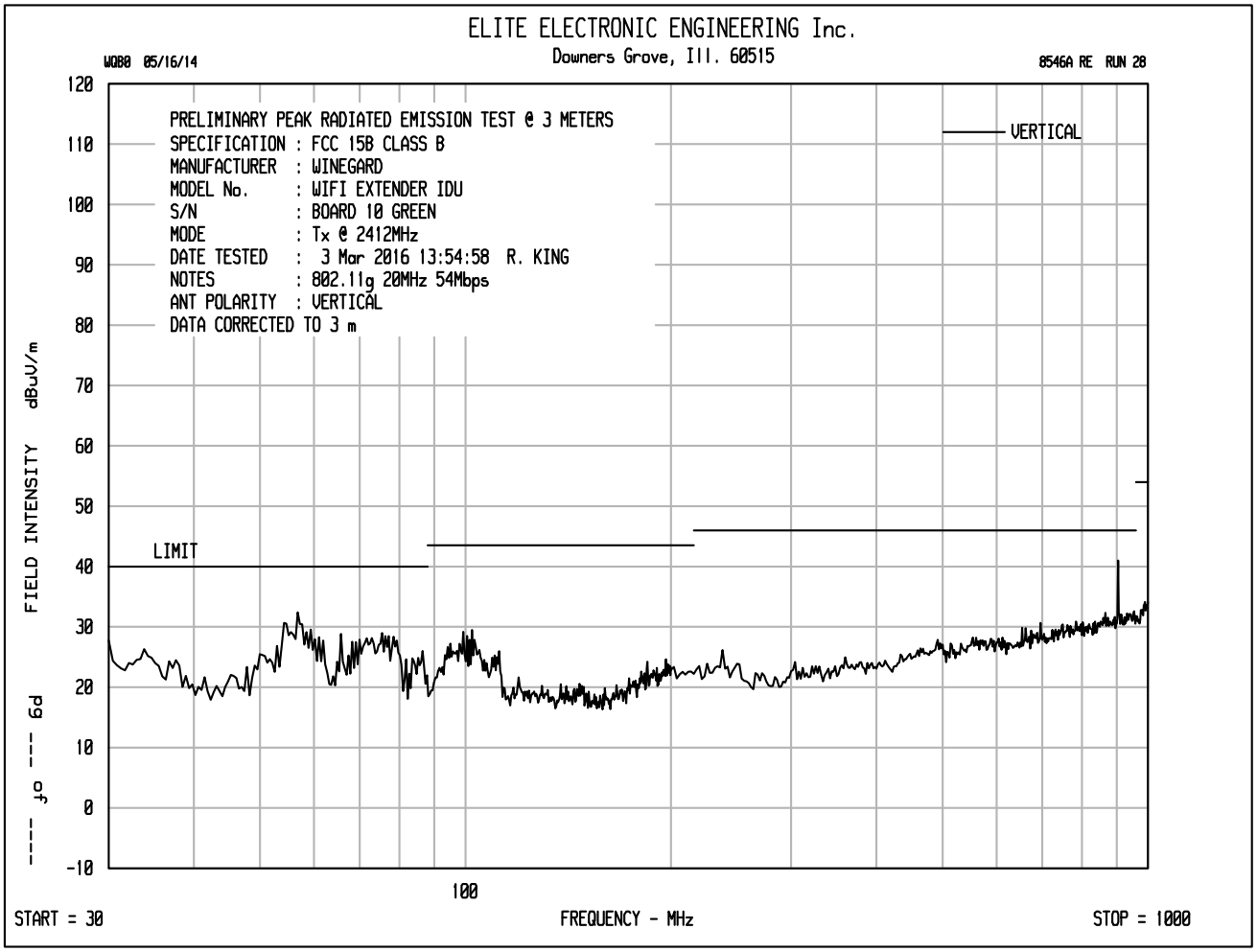

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 6
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2462MHz
SCANS/BAND : 1
NOTES : 802.11b 20MHz 11Mb/s
TEST DATE : 4 Mar 2016 10:41:36 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 2000
FREQUENCY MHz
STOP = 18000

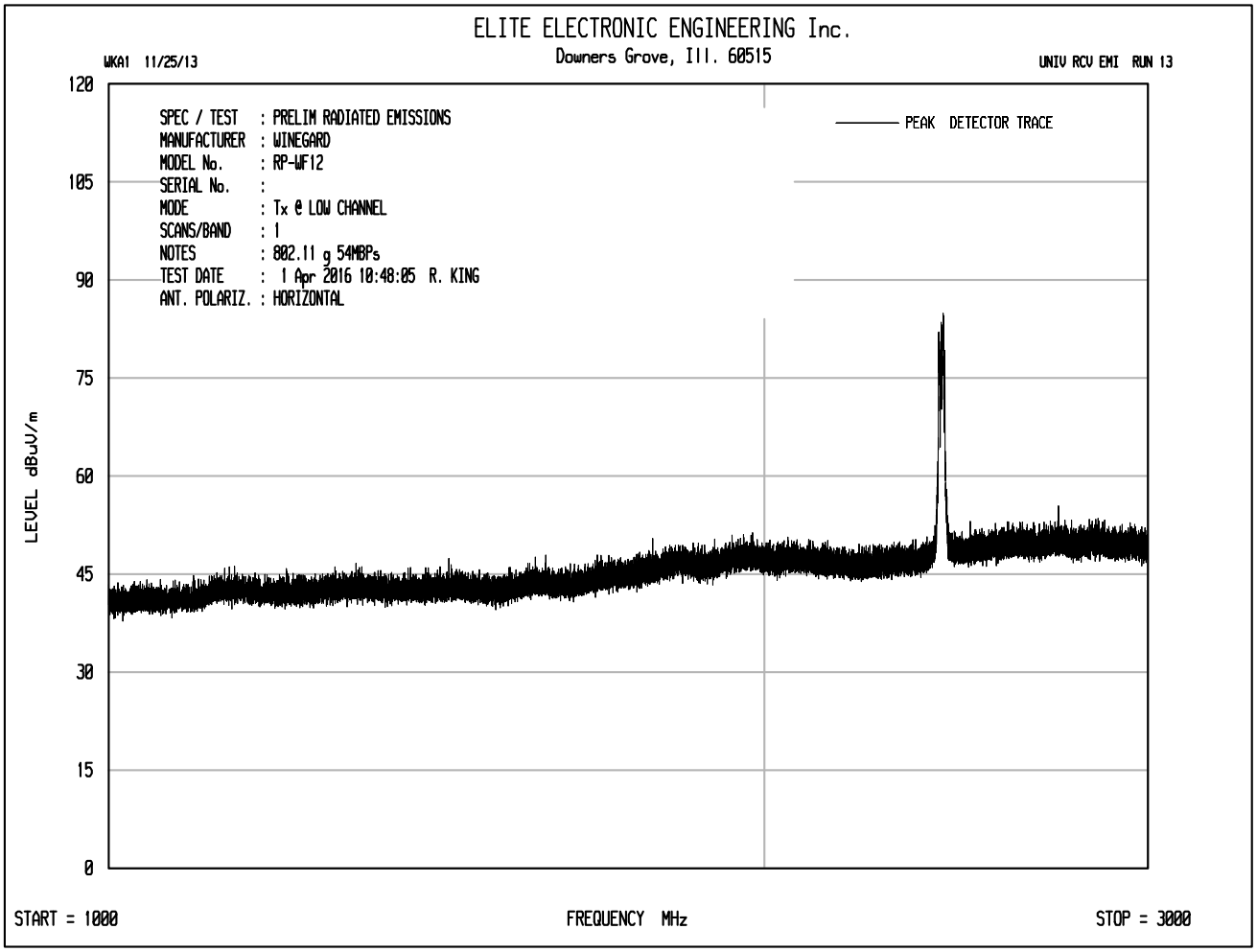

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 7
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2462MHz
SCANS/BAND : 1
NOTES : 802.11b 20MHz 11Mb/s
TEST DATE : 4 Mar 2016 10:46:12 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 2000
FREQUENCY MHz
STOP = 18000

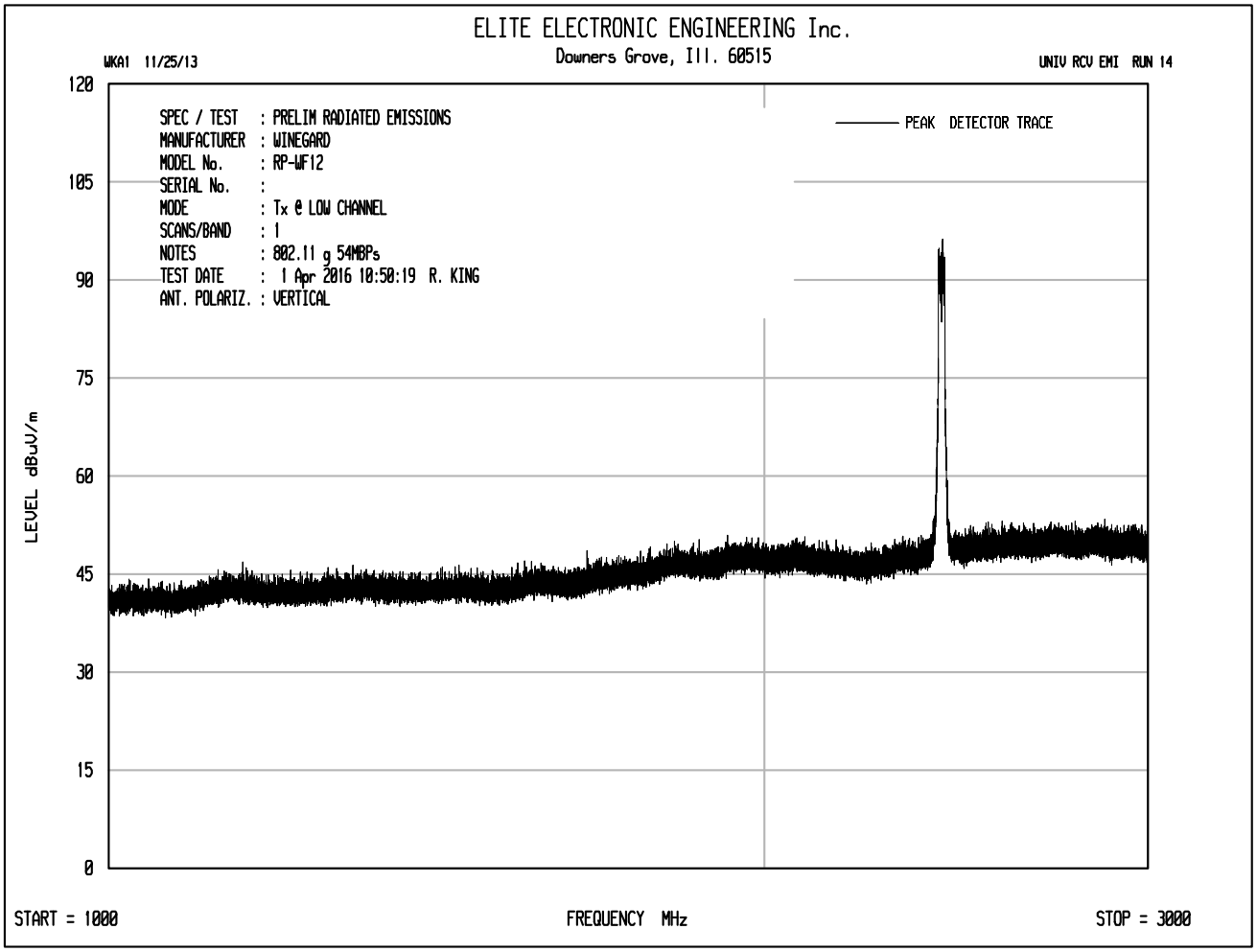

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 6
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 10
NOTES : 802.11 b 11MBPs
TEST DATE : 4 Apr 2016 09:23:25 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

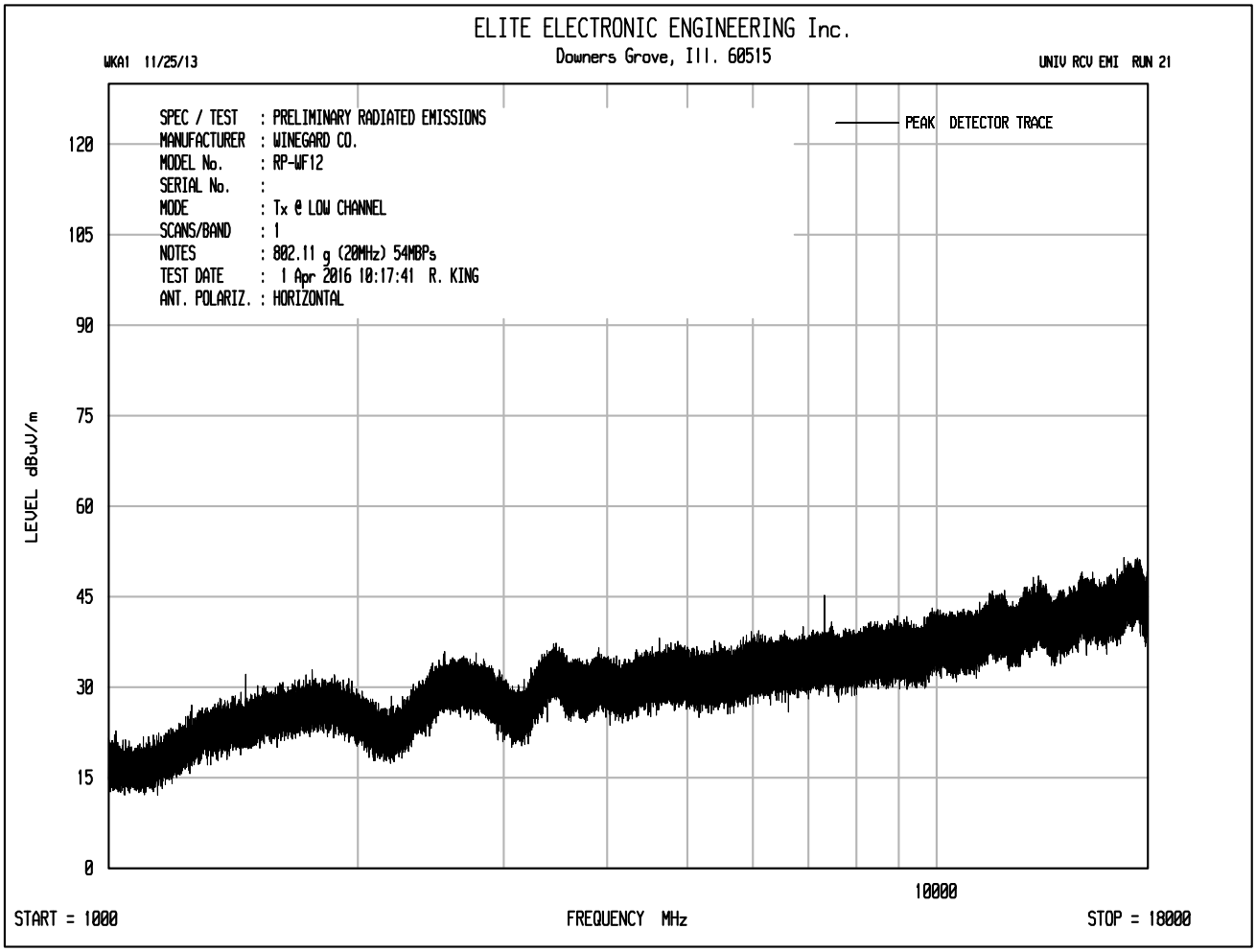

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 7
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 10
NOTES : 802.11 b 11MBPs
TEST DATE : 4 Apr 2016 09:36:36 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

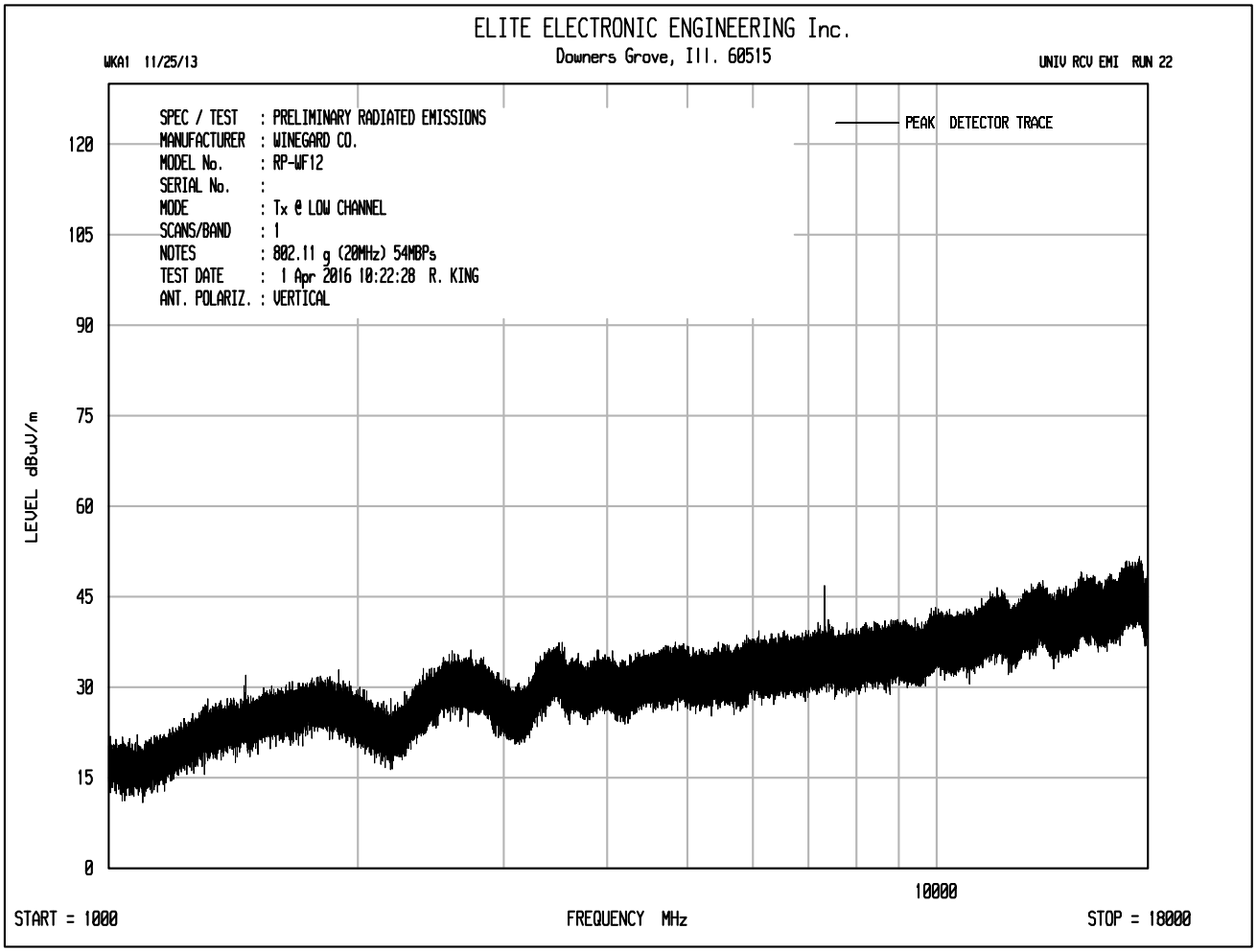

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB0 05/16/14
8546A RE RUN 28
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2412MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11g 20MHz 54Mbps
ANT POLARITY : HORIZONTAL
DATA CORRECTED TO 3 m
HORIZONTAL
LIMIT
FIELD INTENSITY dBuV/m
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
100
START = 30
FREQUENCY - MHz
STOP = 1000

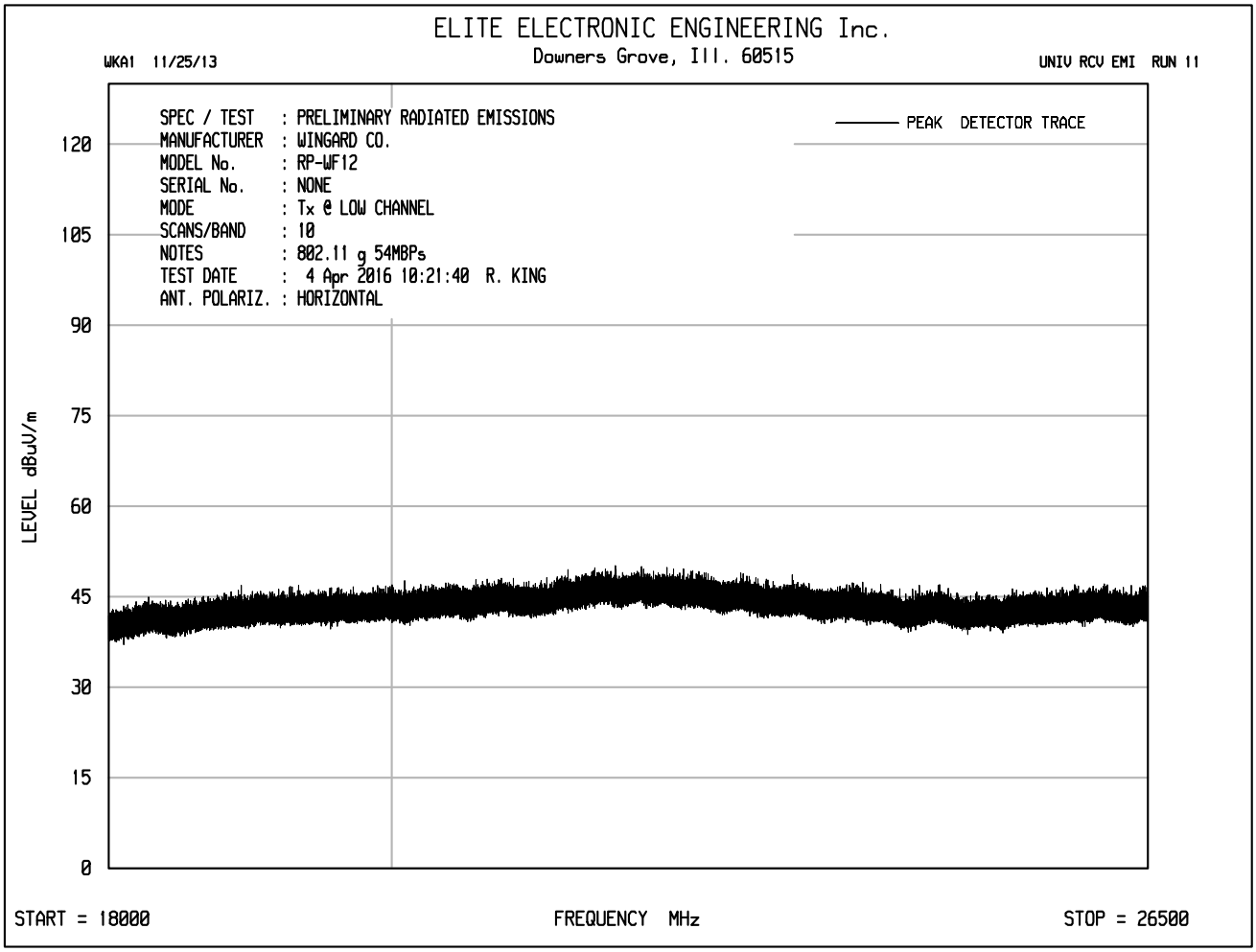

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB0 05/16/14
8546A RE RUN 28
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2412MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11g 20MHz 54Mbps
ANT POLARITY : VERTICAL
DATA CORRECTED TO 3 m
VERTICAL
LIMIT
FIELD INTENSITY dBuV/m
---- uo --- of
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
100
START = 30
FREQUENCY - MHz
STOP = 1000

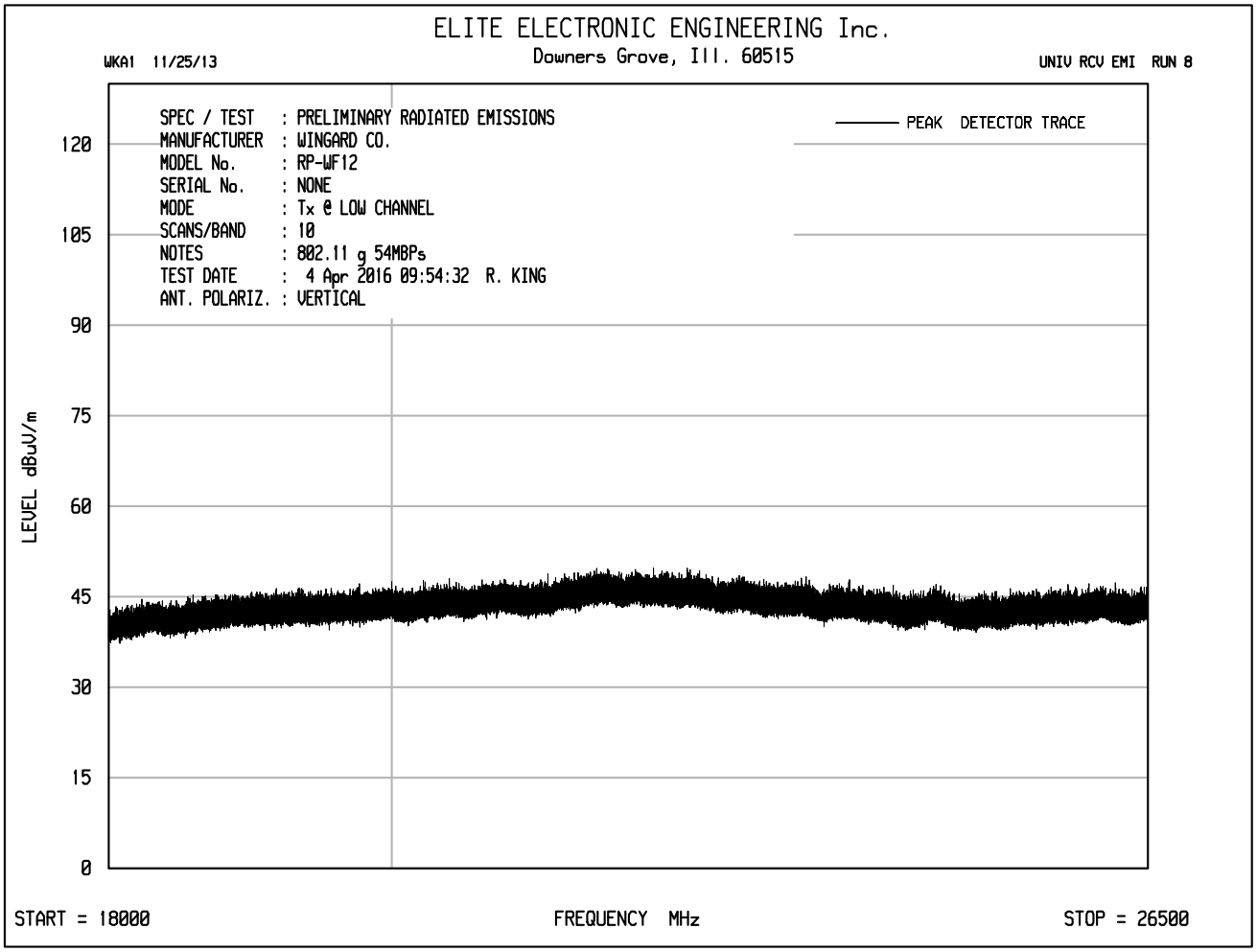

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 13
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g 54MBPs
TEST DATE : 1 Apr 2016 10:48:05 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

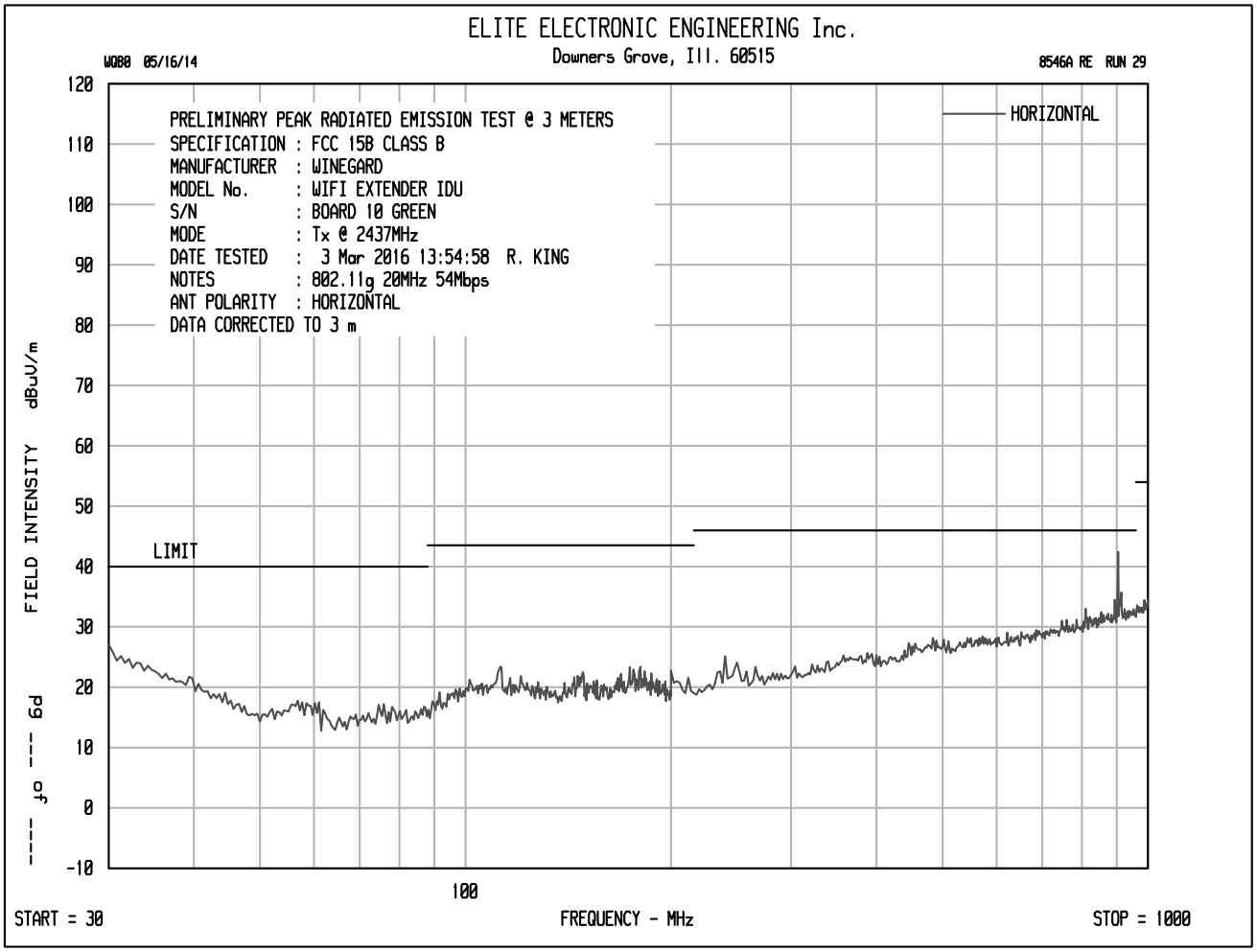

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 14
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g 54MBPs
TEST DATE : 1 Apr 2016 10:50:19 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

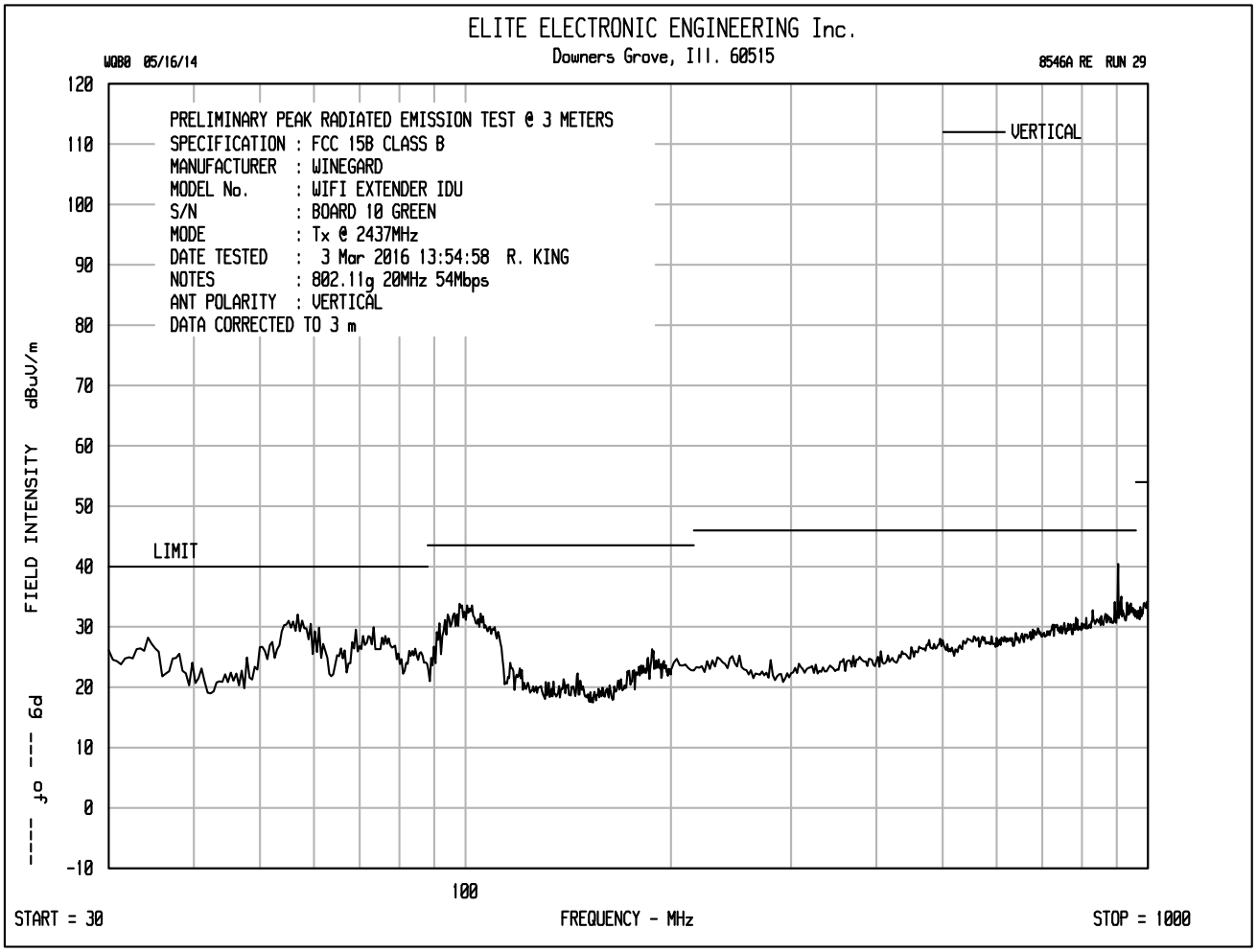

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 21
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g (20MHz) 54MBPs
TEST DATE : 1 Apr 2016 10:17:41 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 1000
FREQUENCY MHz
STOP = 18000

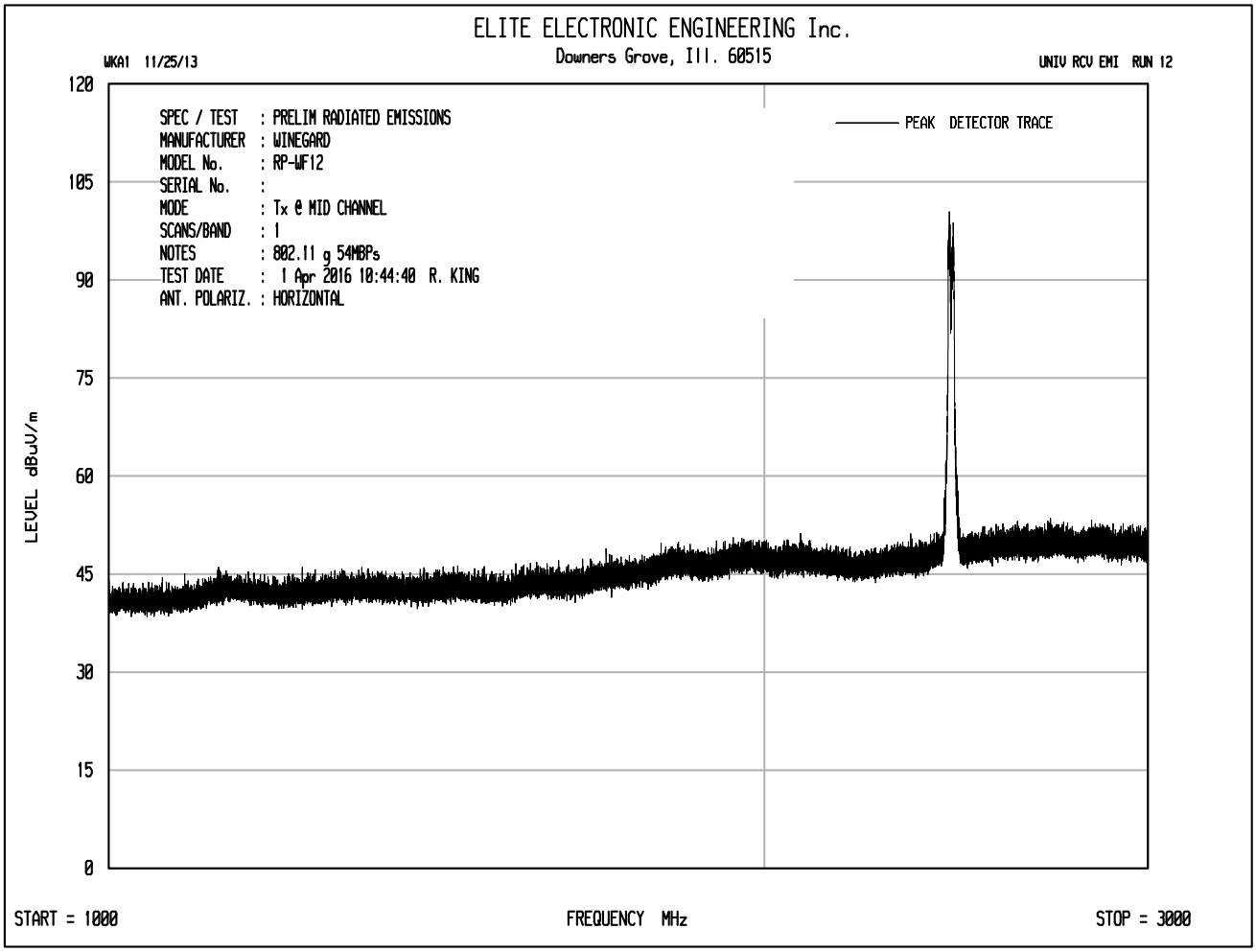

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 22
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g (20MHz) 54MBPs
TEST DATE : 1 Apr 2016 10:22:28 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 1000
FREQUENCY MHz
STOP = 18000

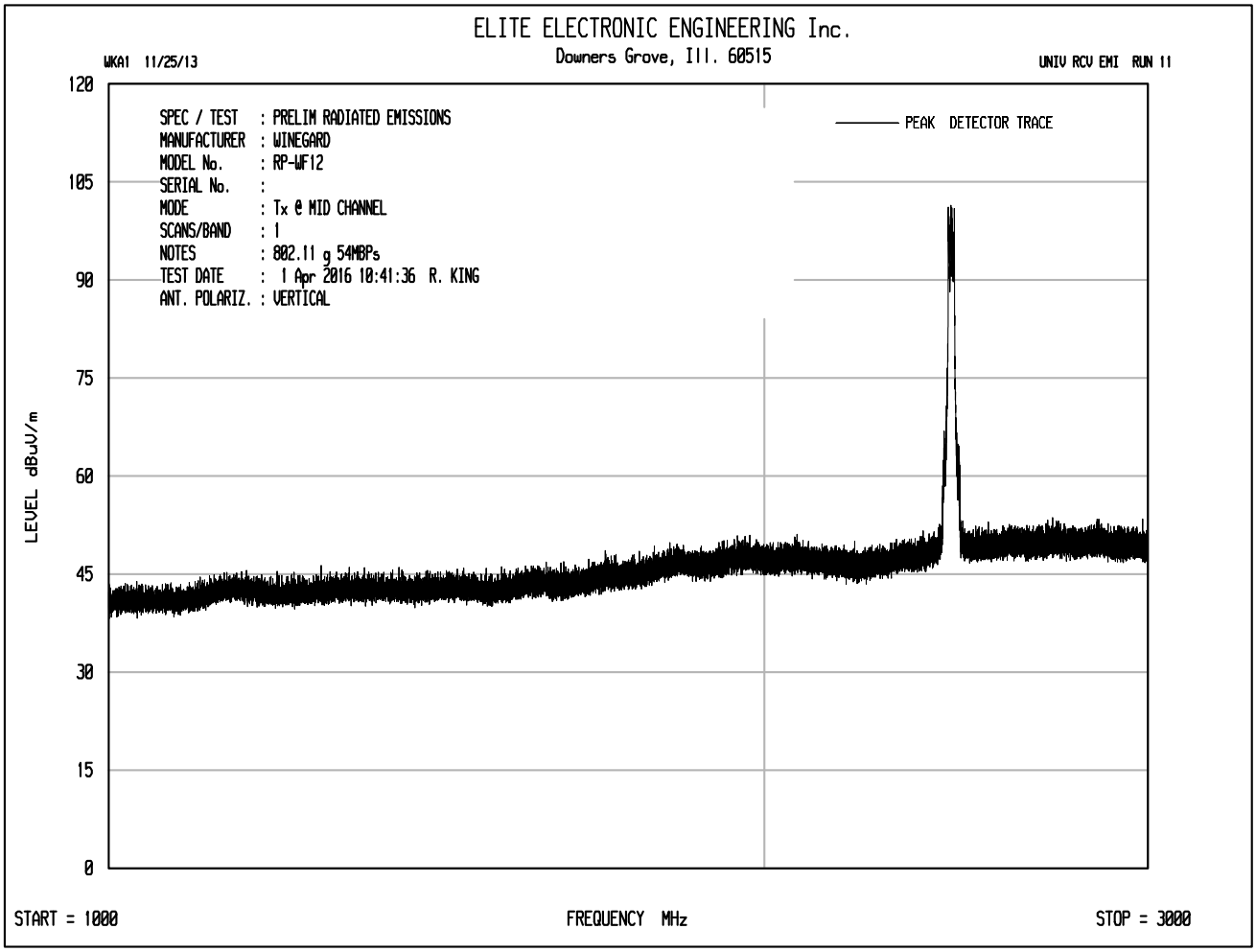

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 11
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 10
NOTES : 802.11 g 54MBPs
TEST DATE : 4 Apr 2016 10:21:40 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

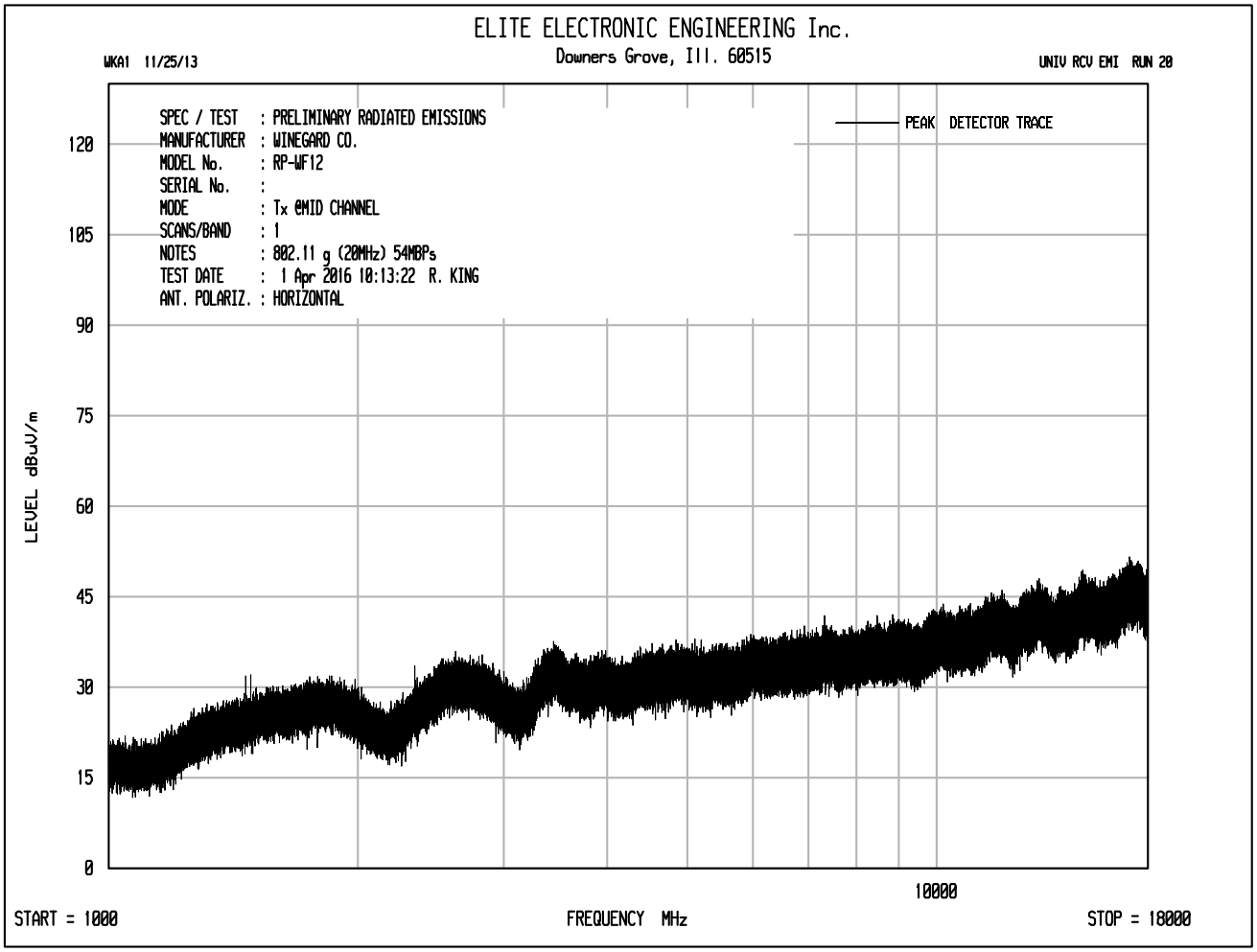

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 8
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 10
NOTES : 802.11 g 54MBPs
TEST DATE : 4 Apr 2016 09:54:32 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

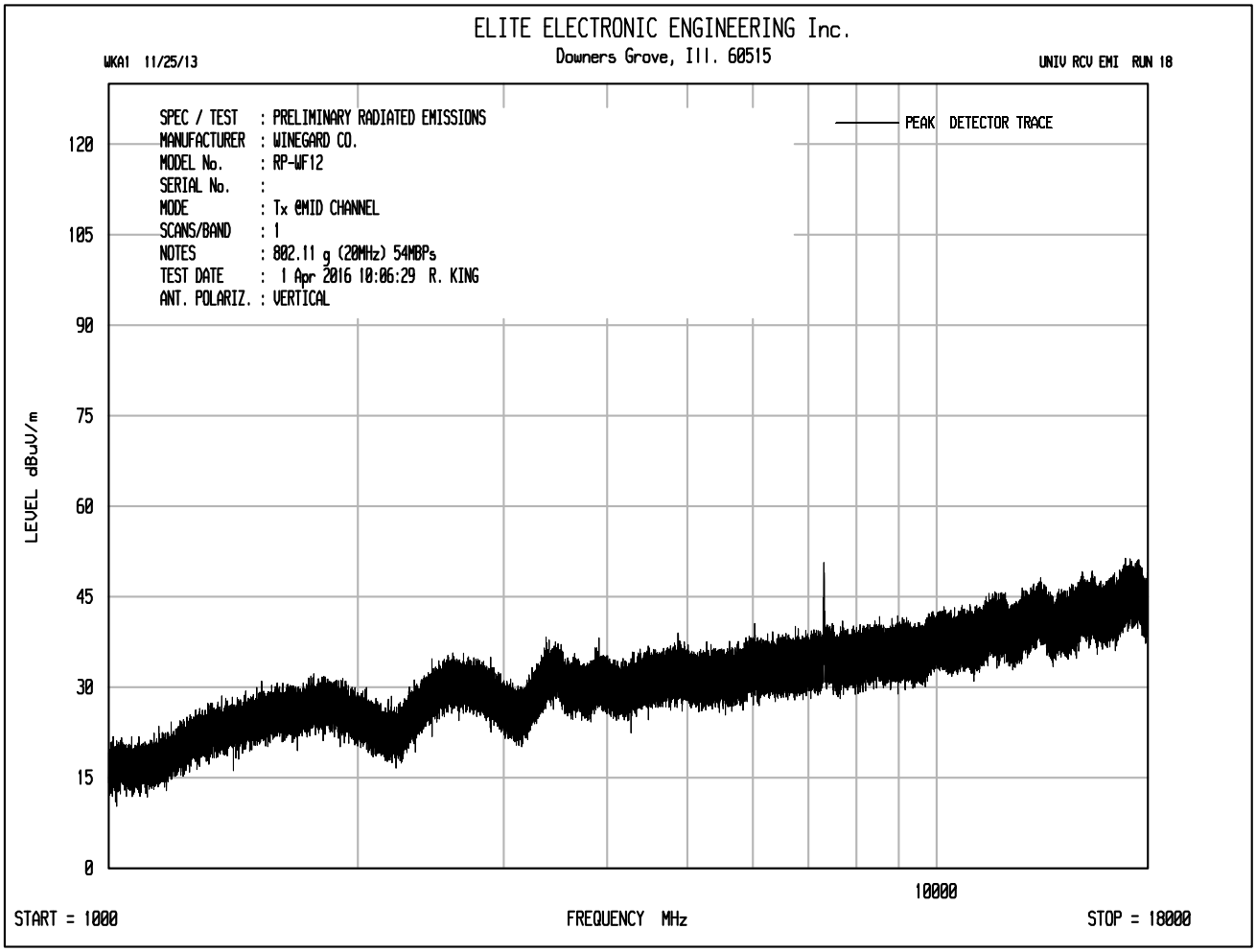

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQ80 05/16/14
8546A RE RUN 29
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2437MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11g 20MHz 54Mbps
ANT POLARITY : HORIZONTAL
DATA CORRECTED TO 3 m
HORIZONTAL
LIMIT
FIELD INTENSITY dBuV/m
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
100
START = 30
FREQUENCY - MHz
STOP = 1000

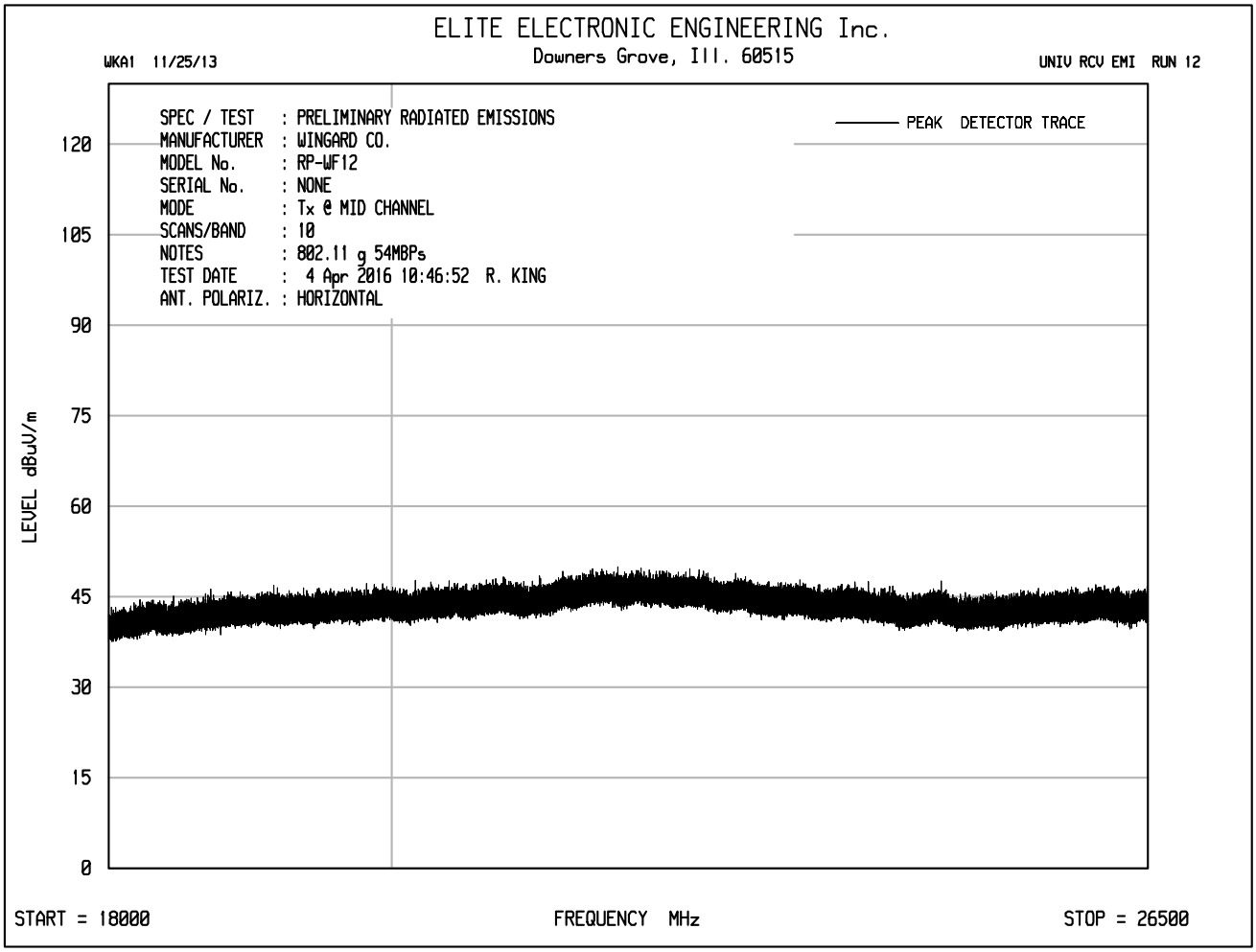

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB0 05/16/14
8546A RE RUN 29
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2437MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11g 20MHz 54Mbps
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
100
START = 30
FREQUENCY - MHz
STOP = 1000

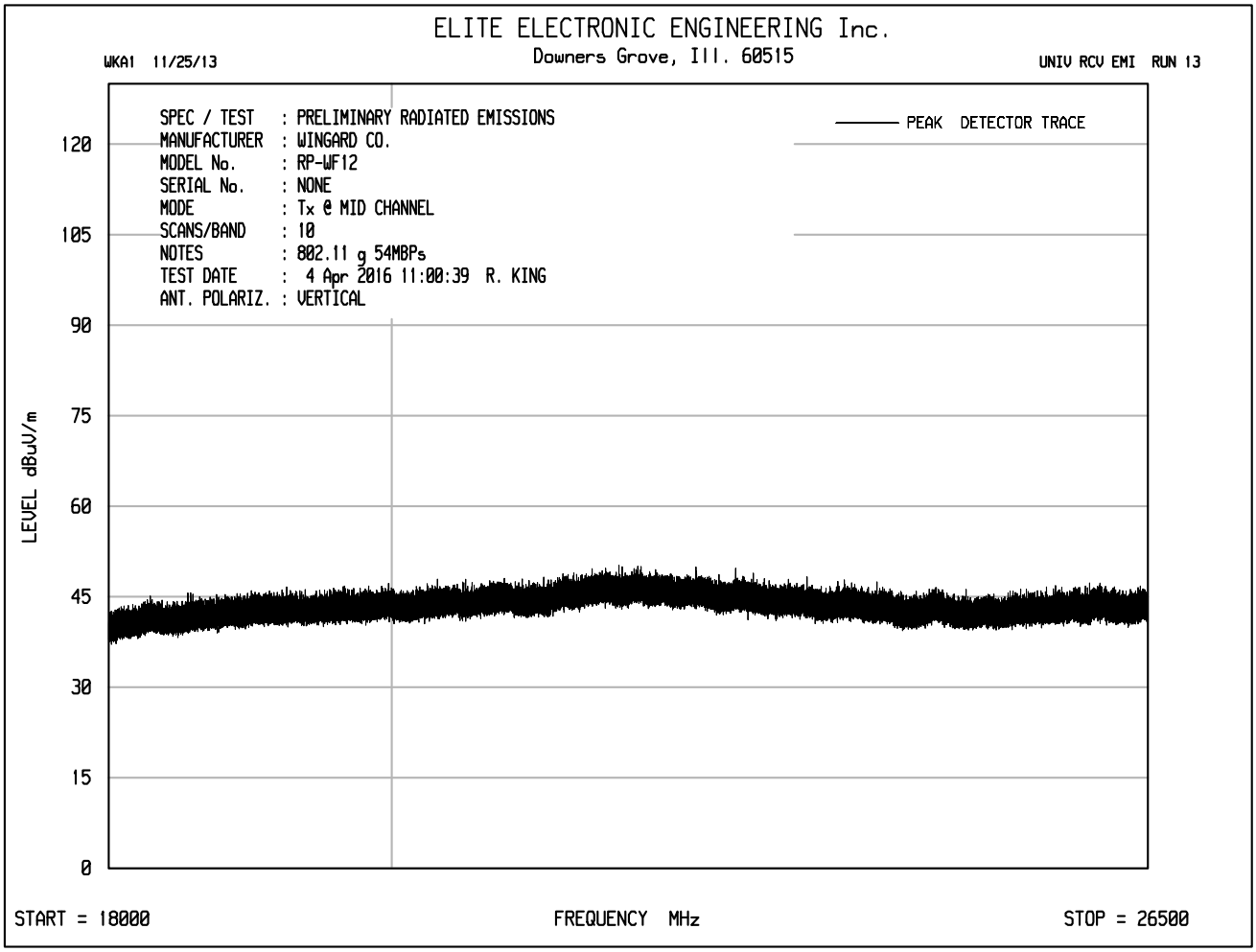

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 12
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g 54MBPs
TEST DATE : 1 Apr 2016 10:44:40 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

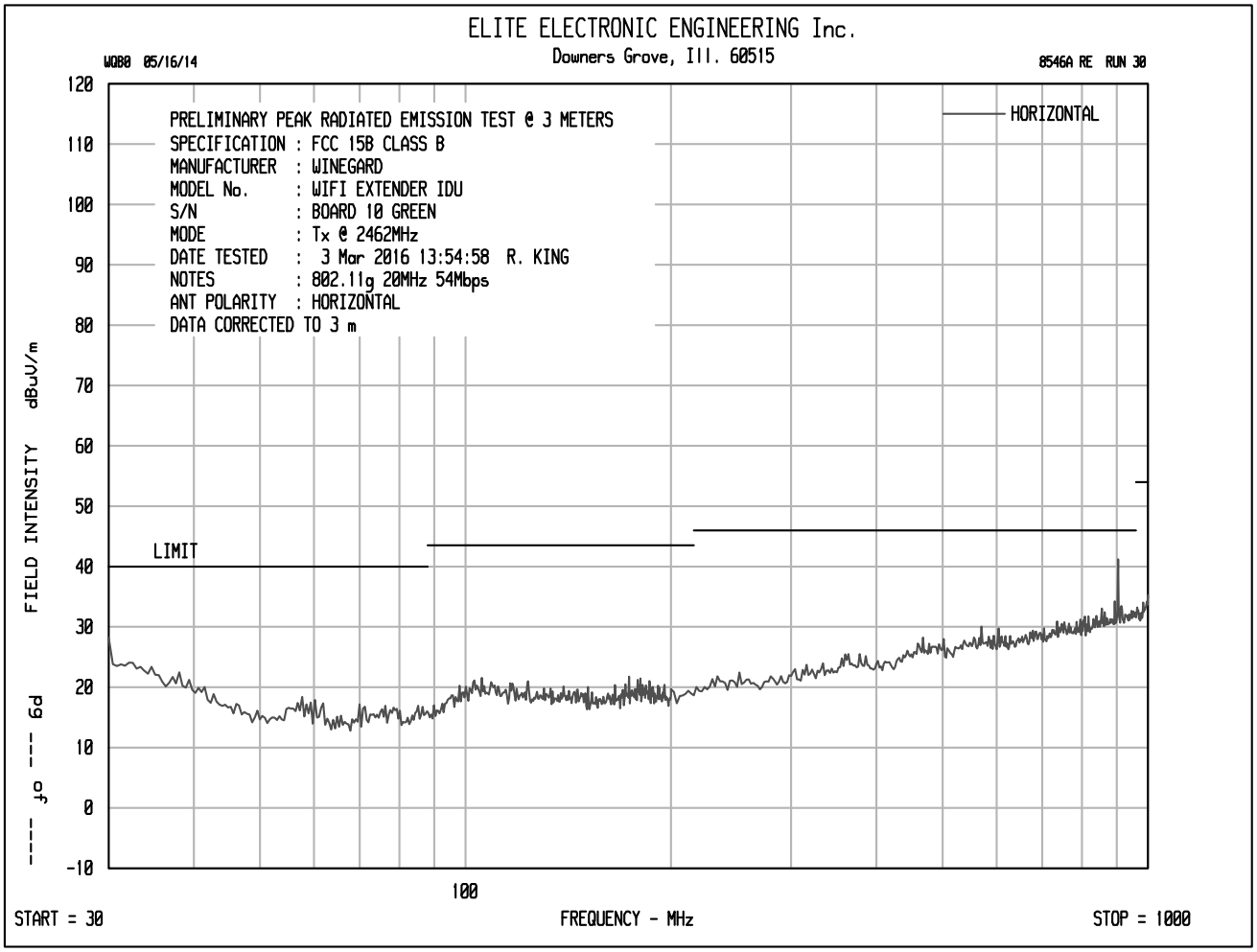

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 11
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g 54MBPs
TEST DATE : 1 Apr 2016 10:41:36 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

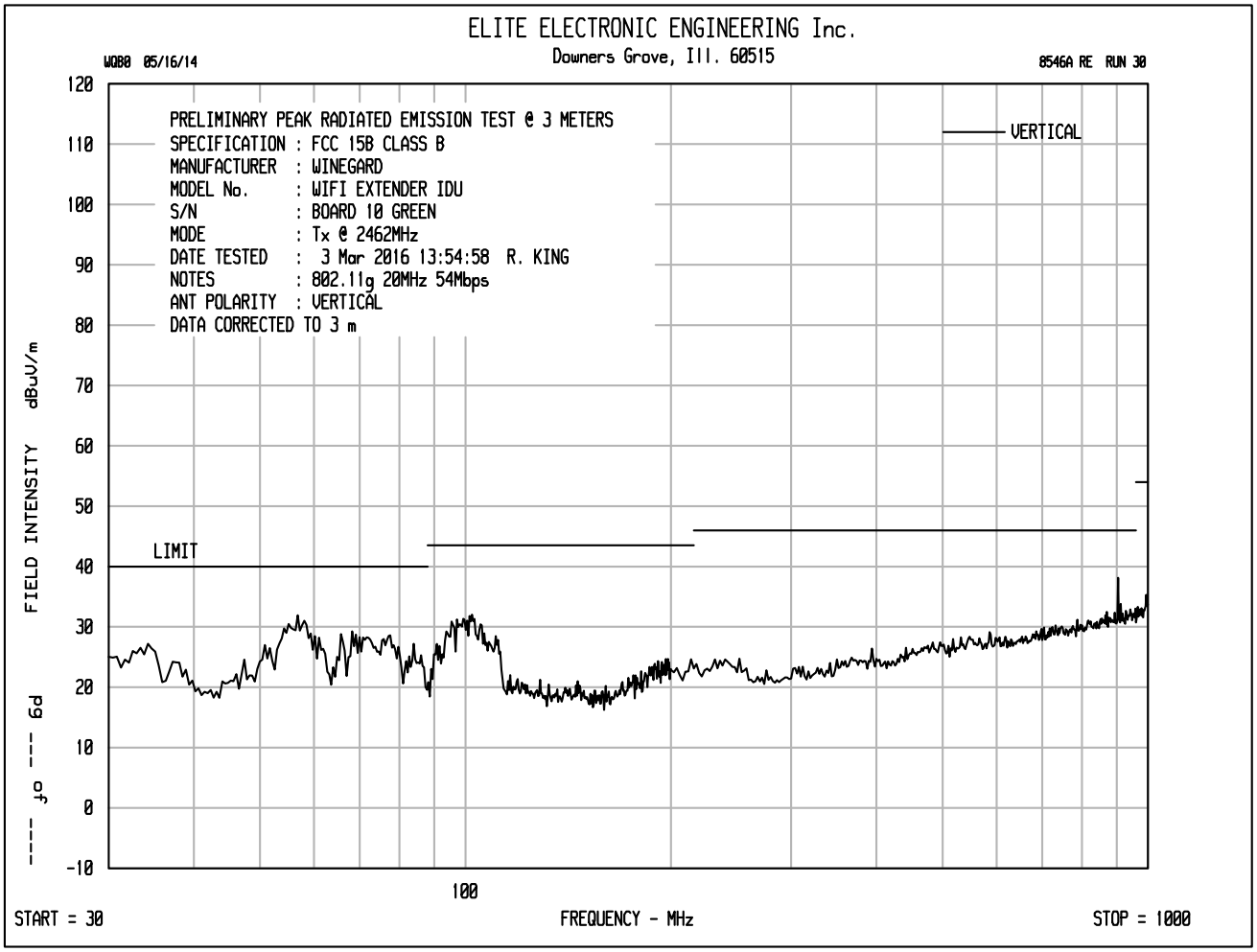

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 20
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g (20MHz) 54MBPs
TEST DATE : 1 Apr 2016 10:13:22 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 1000
FREQUENCY MHz
STOP = 18000

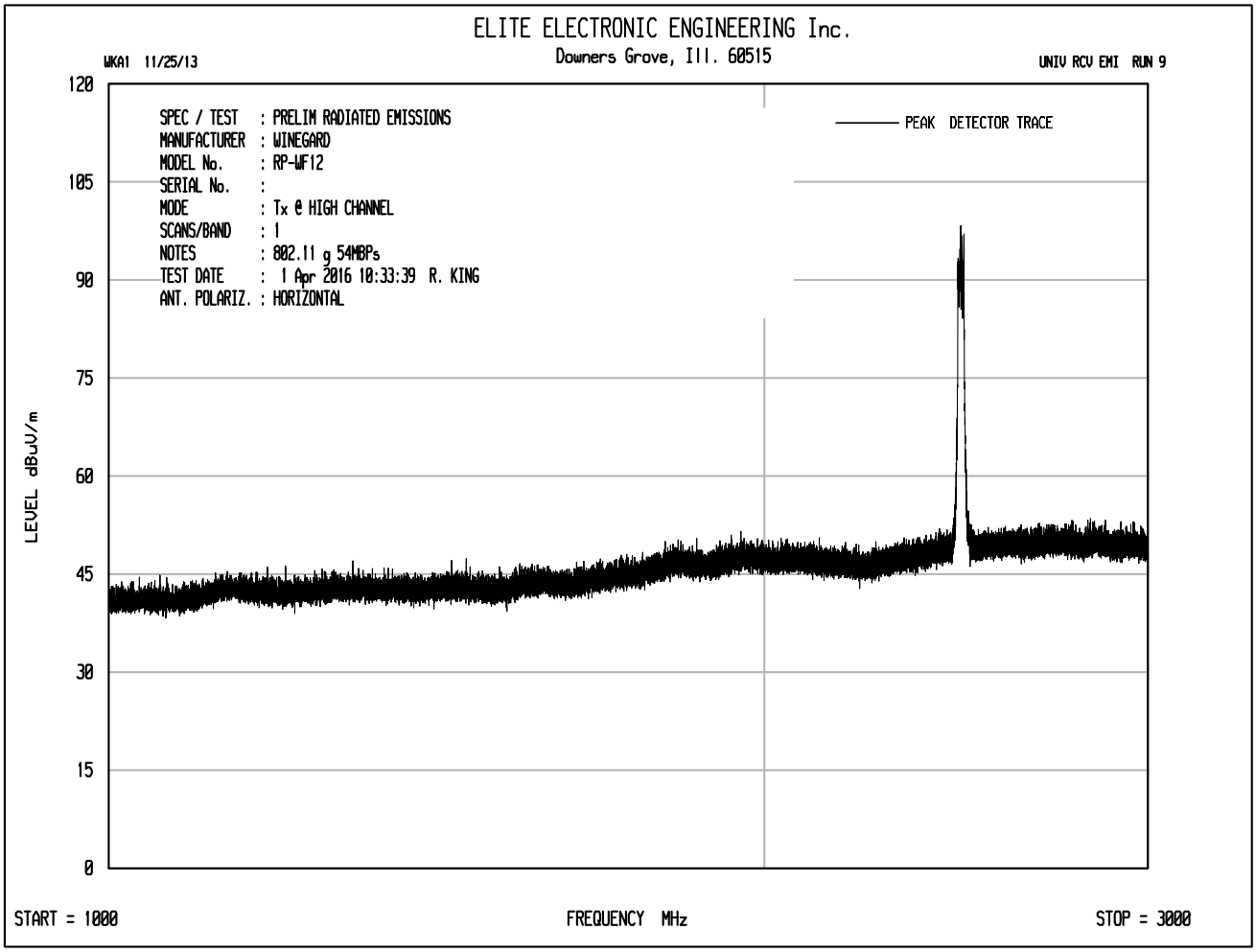

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 18
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g (20MHz) 54MBPs
TEST DATE : 1 Apr 2016 10:06:29 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 1000
FREQUENCY MHz
STOP = 18000

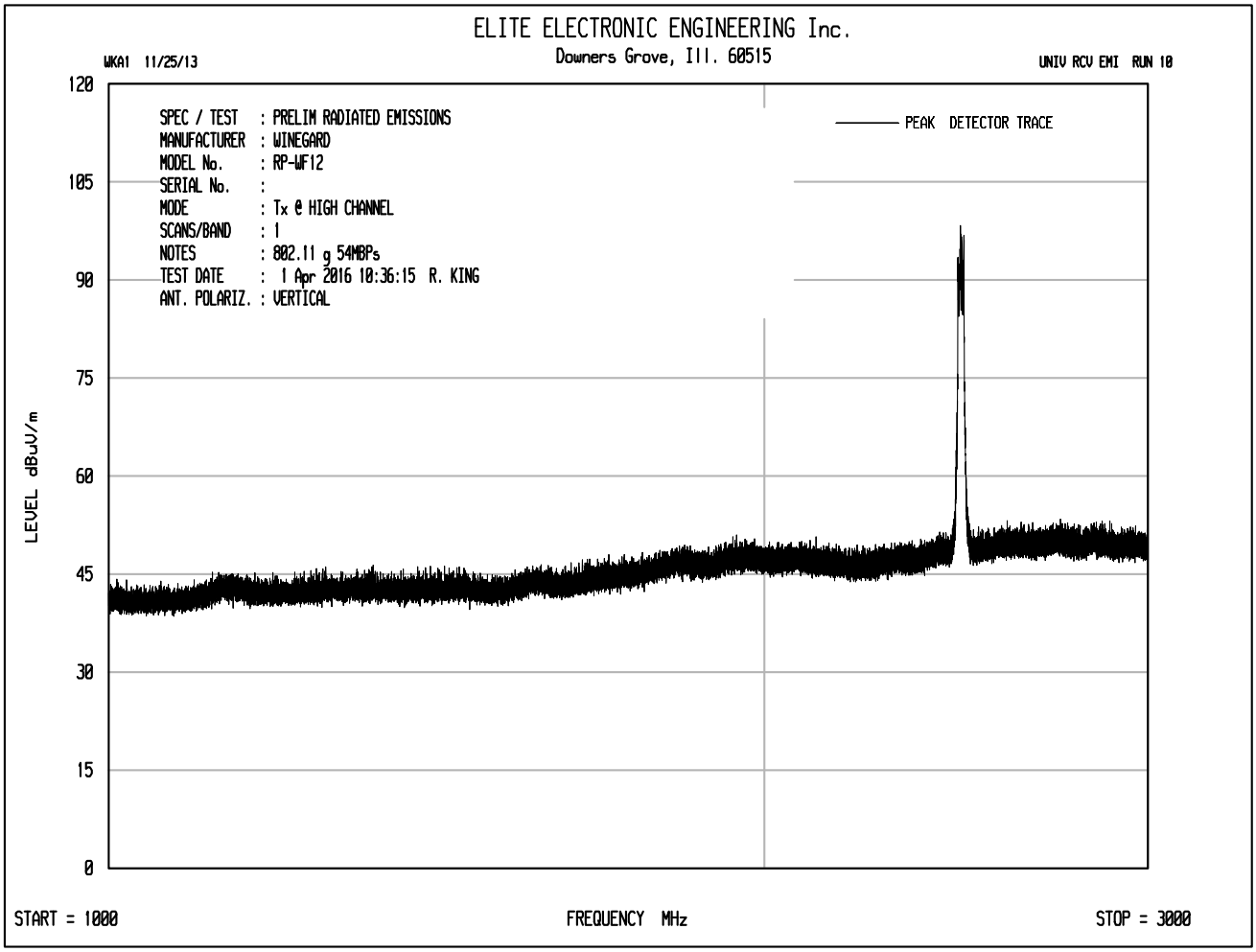

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 12
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ MID CHANNEL
SCANS/BAND : 10
NOTES : 802.11 g 54MBPs
TEST DATE : 4 Apr 2016 10:46:52 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

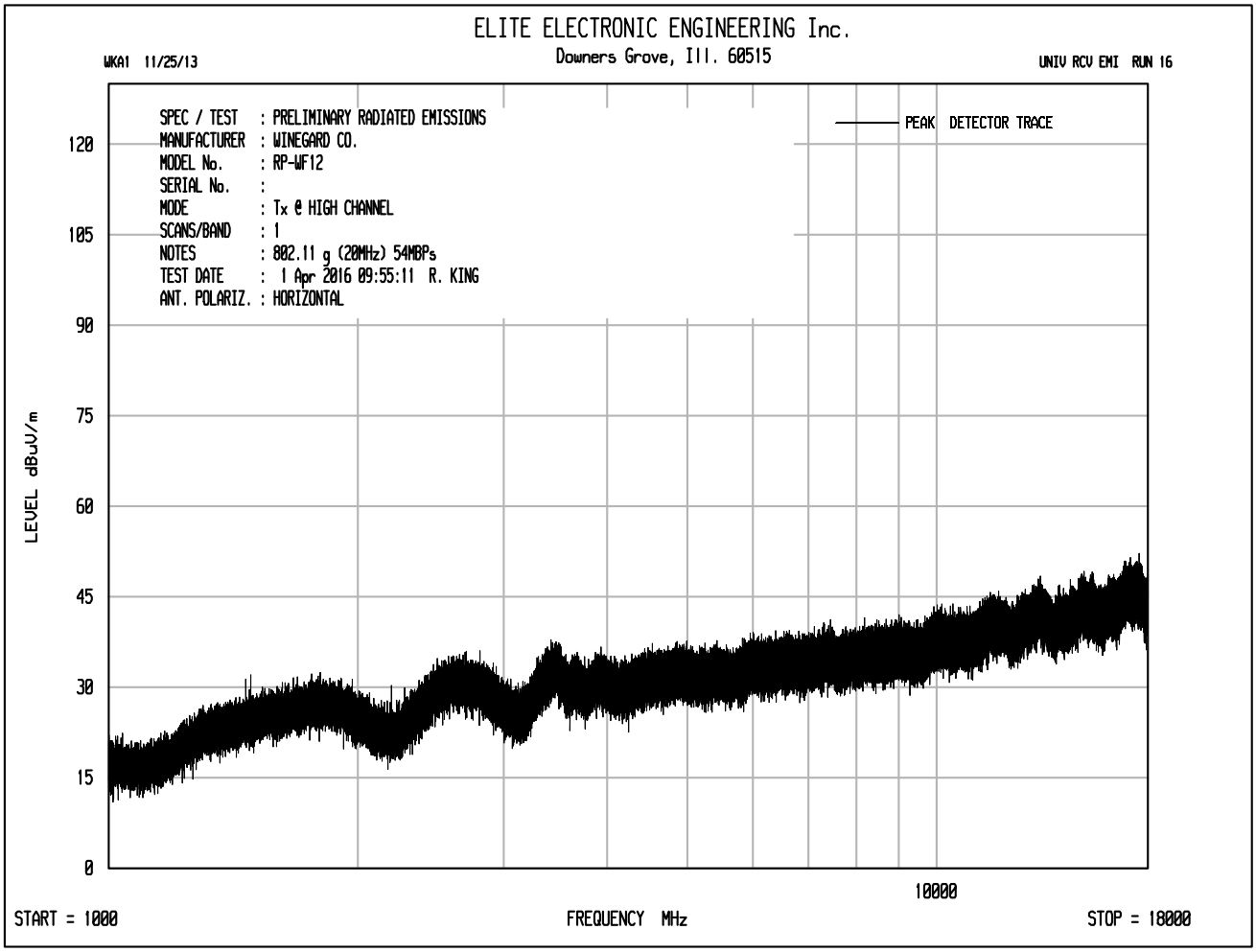

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ MID CHANNEL
SCANS/BAND : 10
NOTES : 802.11 g 54MBPs
TEST DATE : 4 Apr 2016 11:00:39 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

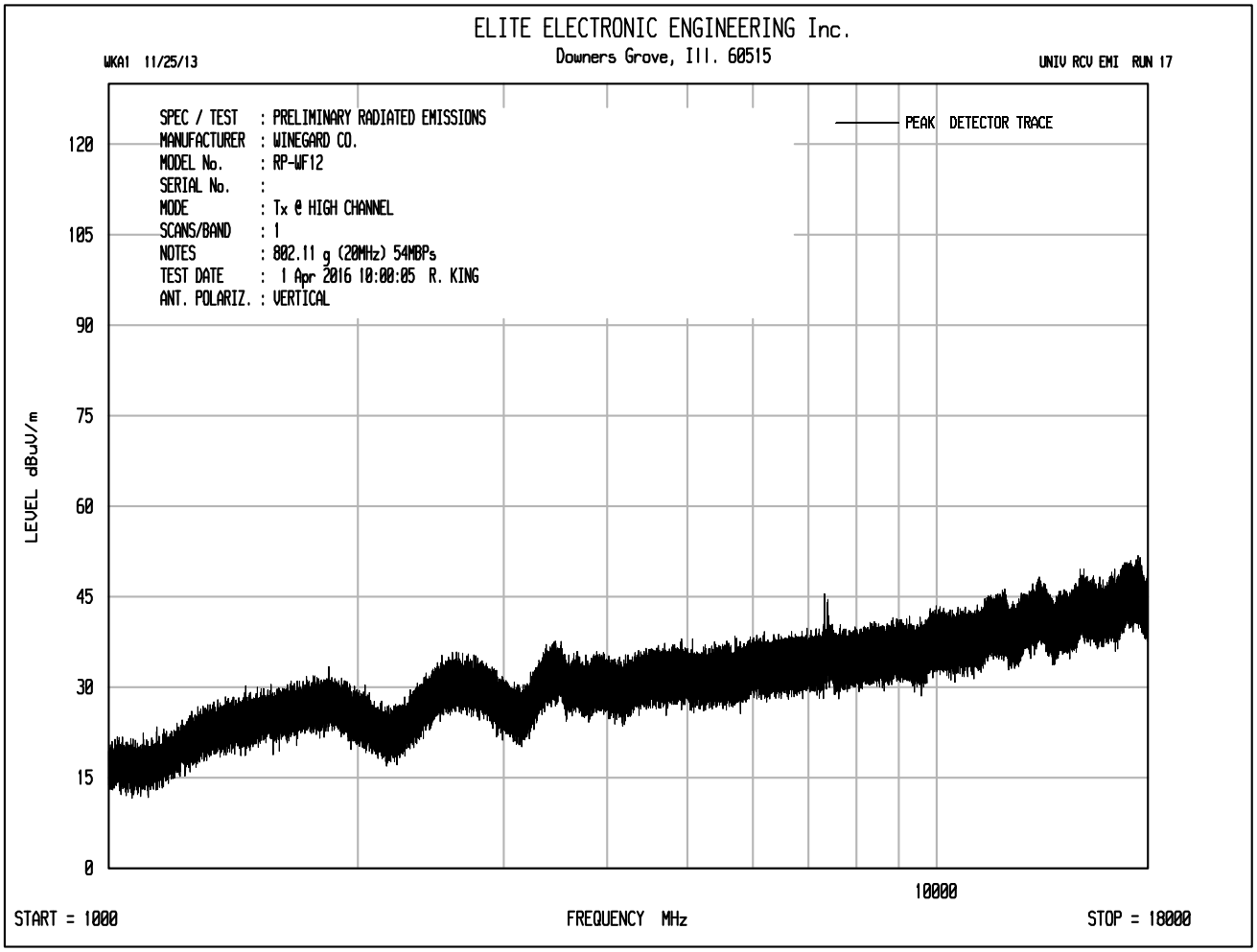

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB8 05/16/14
8546A RE RUN 3B
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2462MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11g 20MHz 54Mbps
ANT POLARITY : HORIZONTAL
DATA CORRECTED TO 3 m
HORIZONTAL
LIMIT
FIELD INTENSITY dBuV/m
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
100
START = 30
FREQUENCY - MHz
STOP = 1000

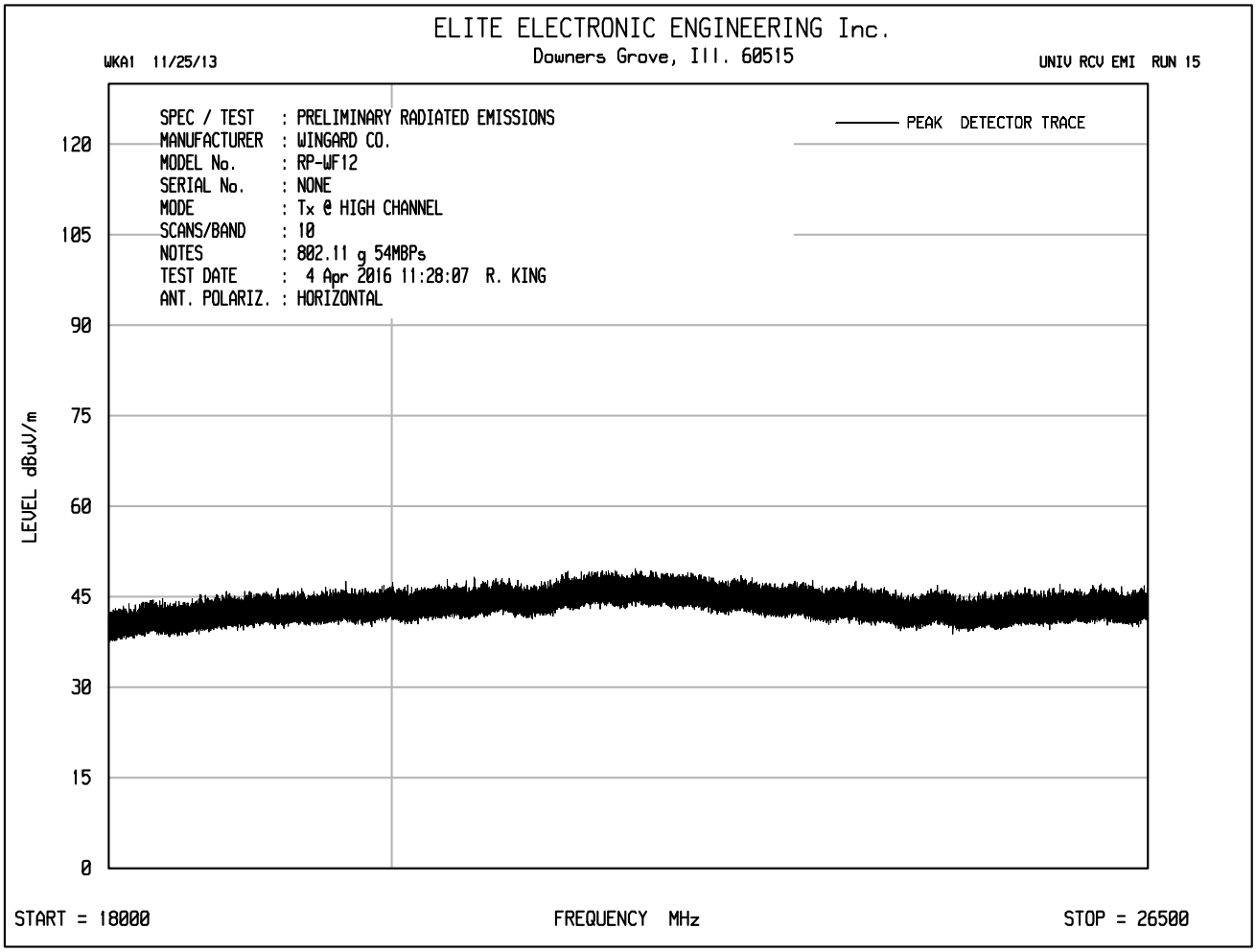

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQ80 05/16/14
8546A RE RUN 30
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2462MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11g 20MHz 54Mbps
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
100
START = 30
FREQUENCY - MHz
STOP = 1000

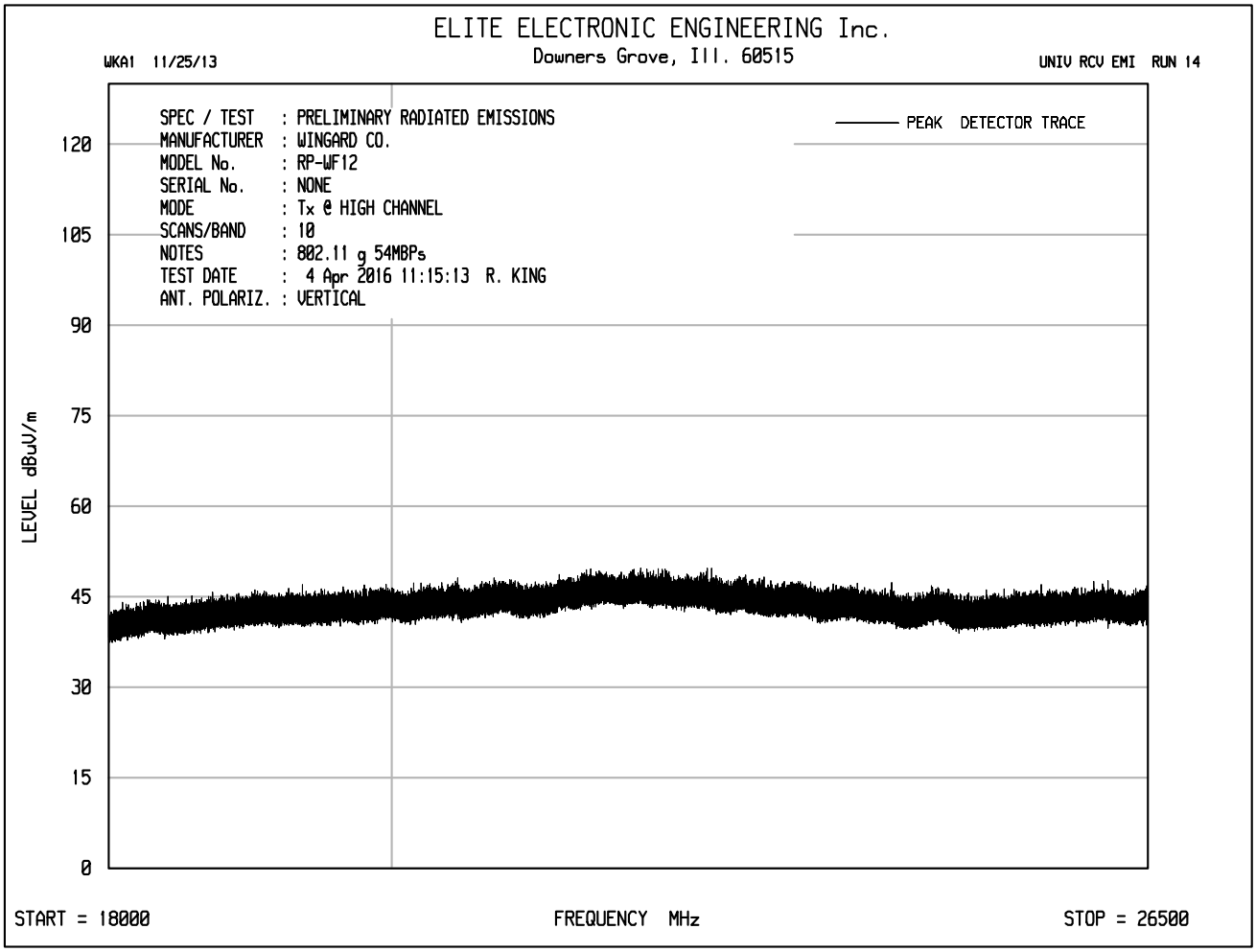

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 9
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g 54MBPs
TEST DATE : 1 Apr 2016 10:33:39 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

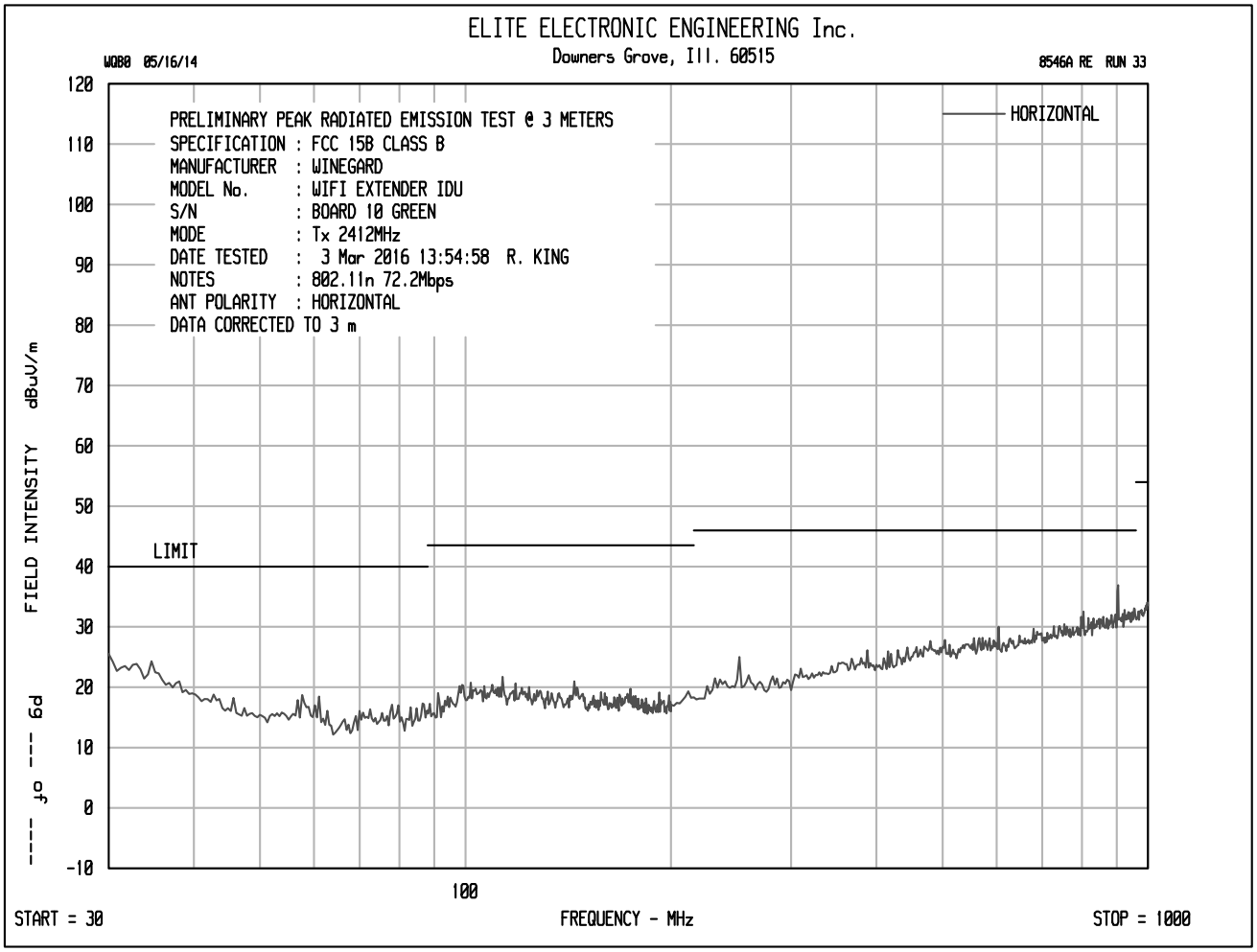

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 10
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g 54MBPs
TEST DATE : 1 Apr 2016 10:36:15 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

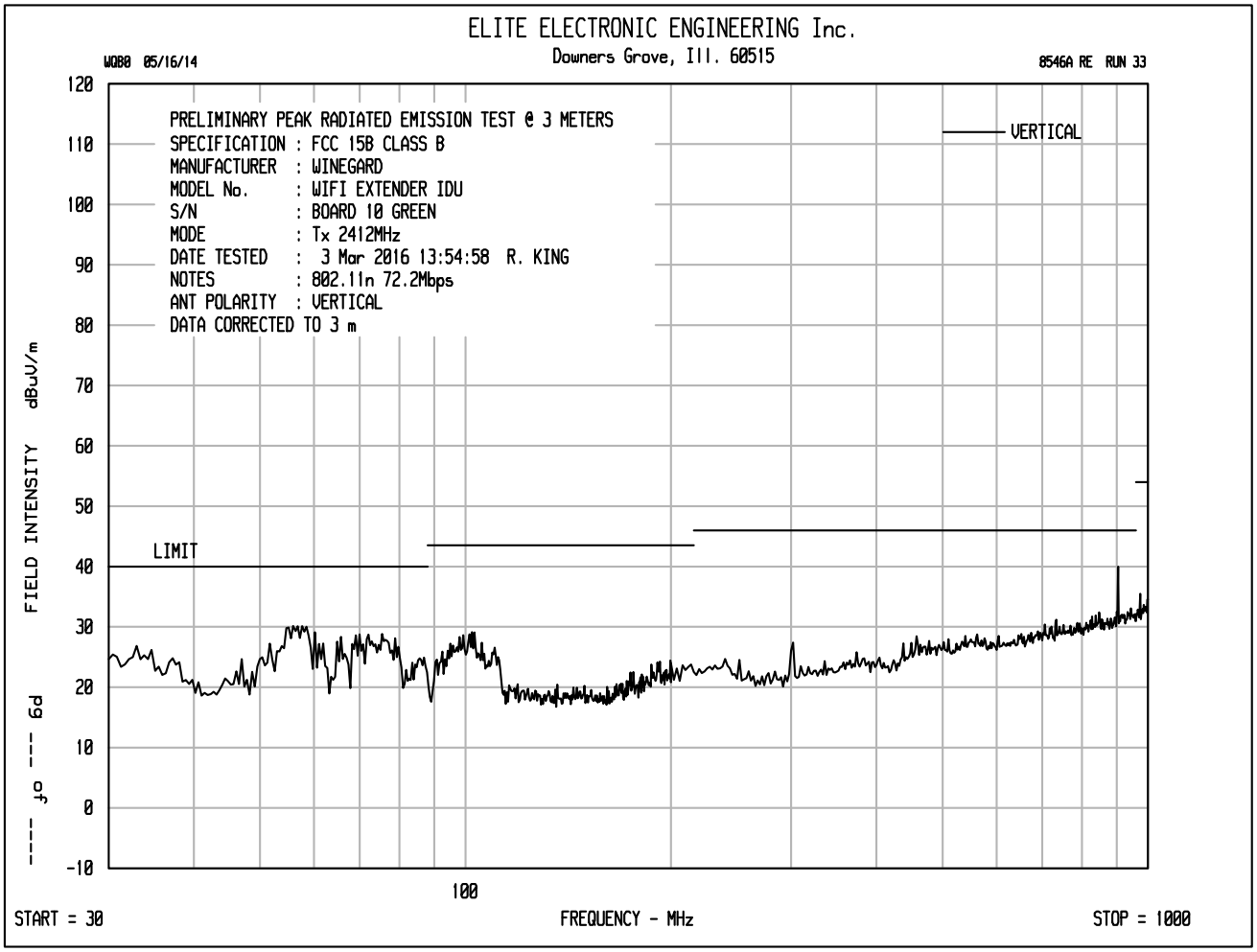

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 16
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g (20MHz) 54MBPs
TEST DATE : 1 Apr 2016 09:55:11 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 1000
FREQUENCY MHz
STOP = 18000

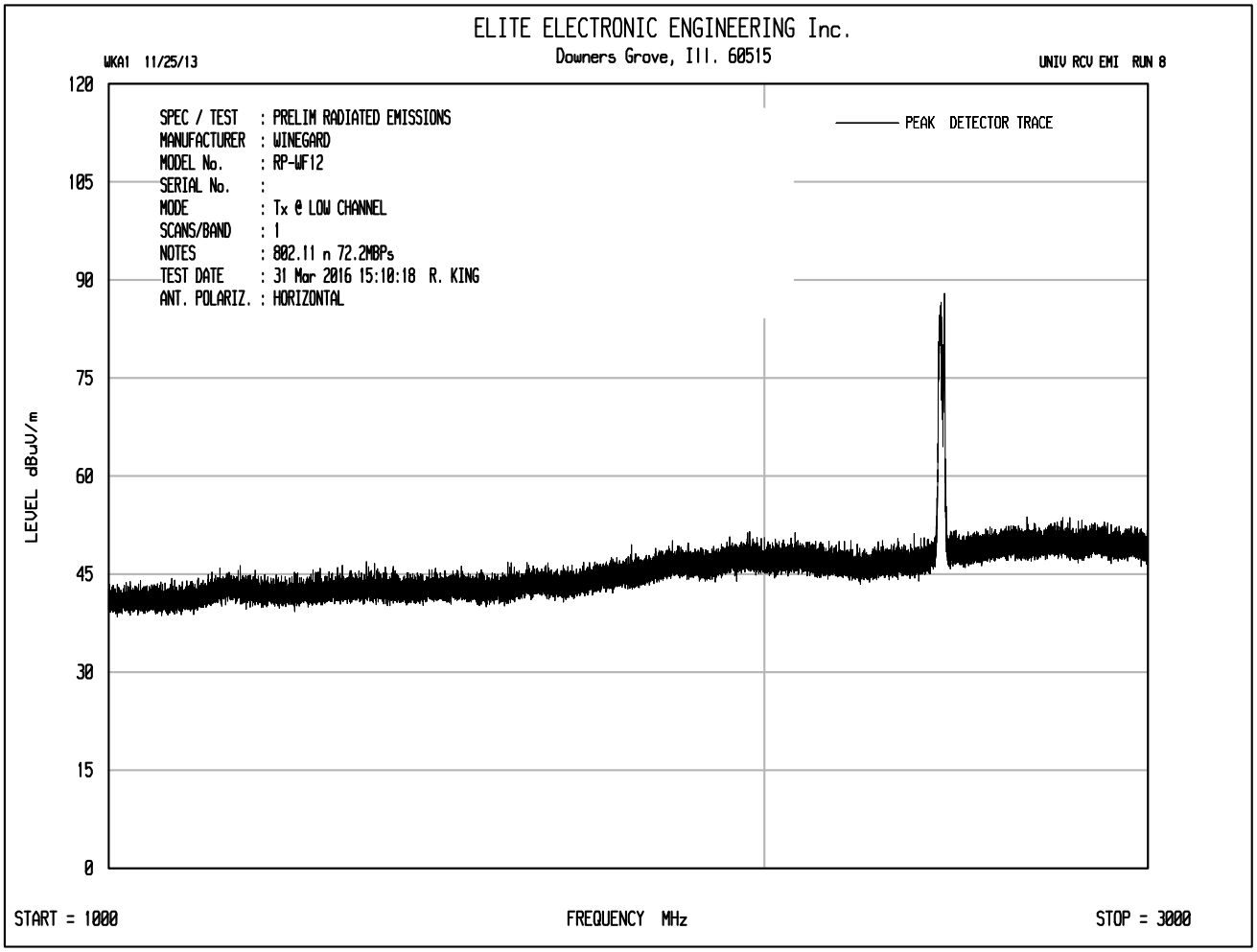

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 17
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 g (20MHz) 54MBPs
TEST DATE : 1 Apr 2016 10:00:05 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 1000
FREQUENCY MHz
STOP = 18000

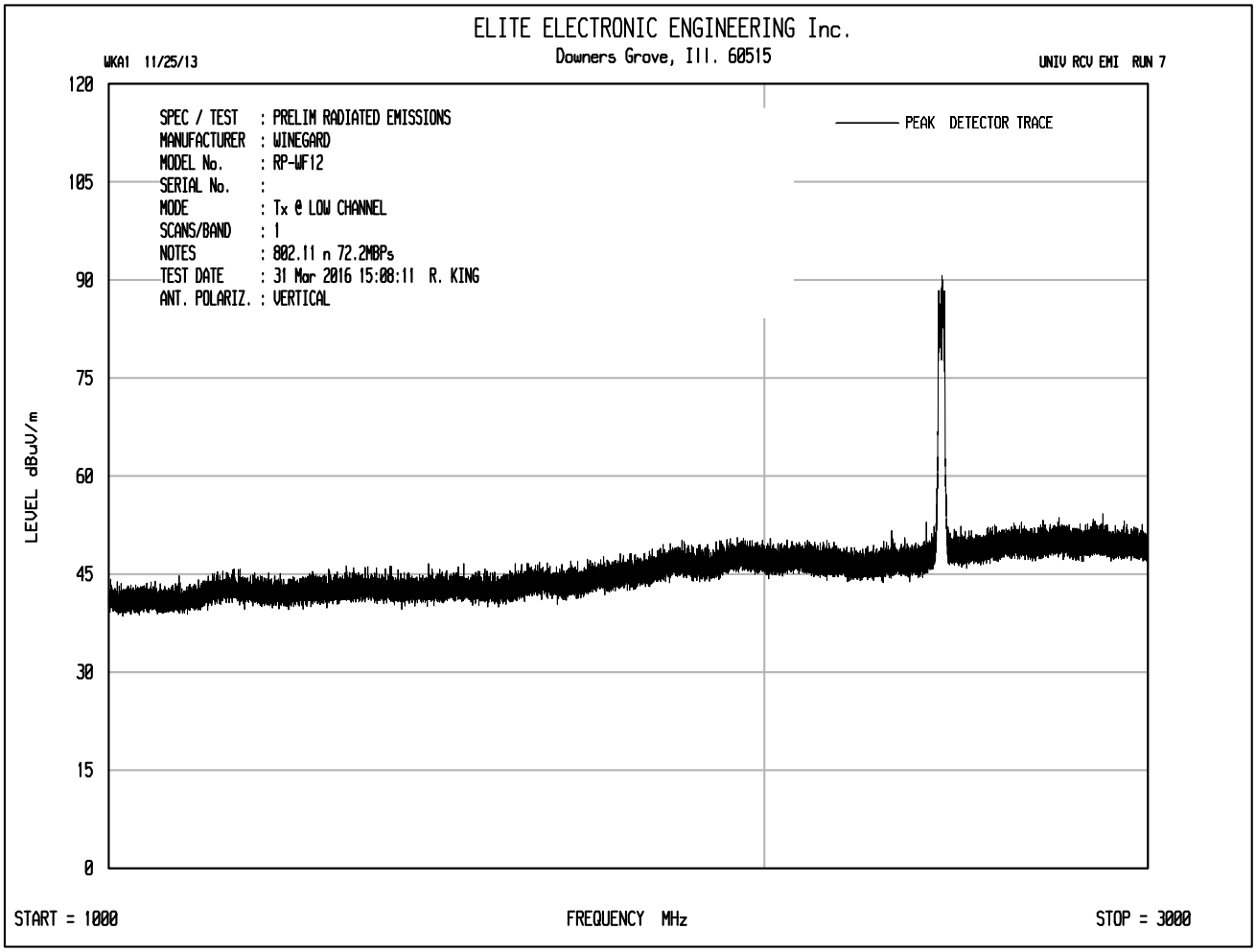

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 15
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 10
NOTES : 802.11 g 54MBPs
TEST DATE : 4 Apr 2016 11:28:07 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

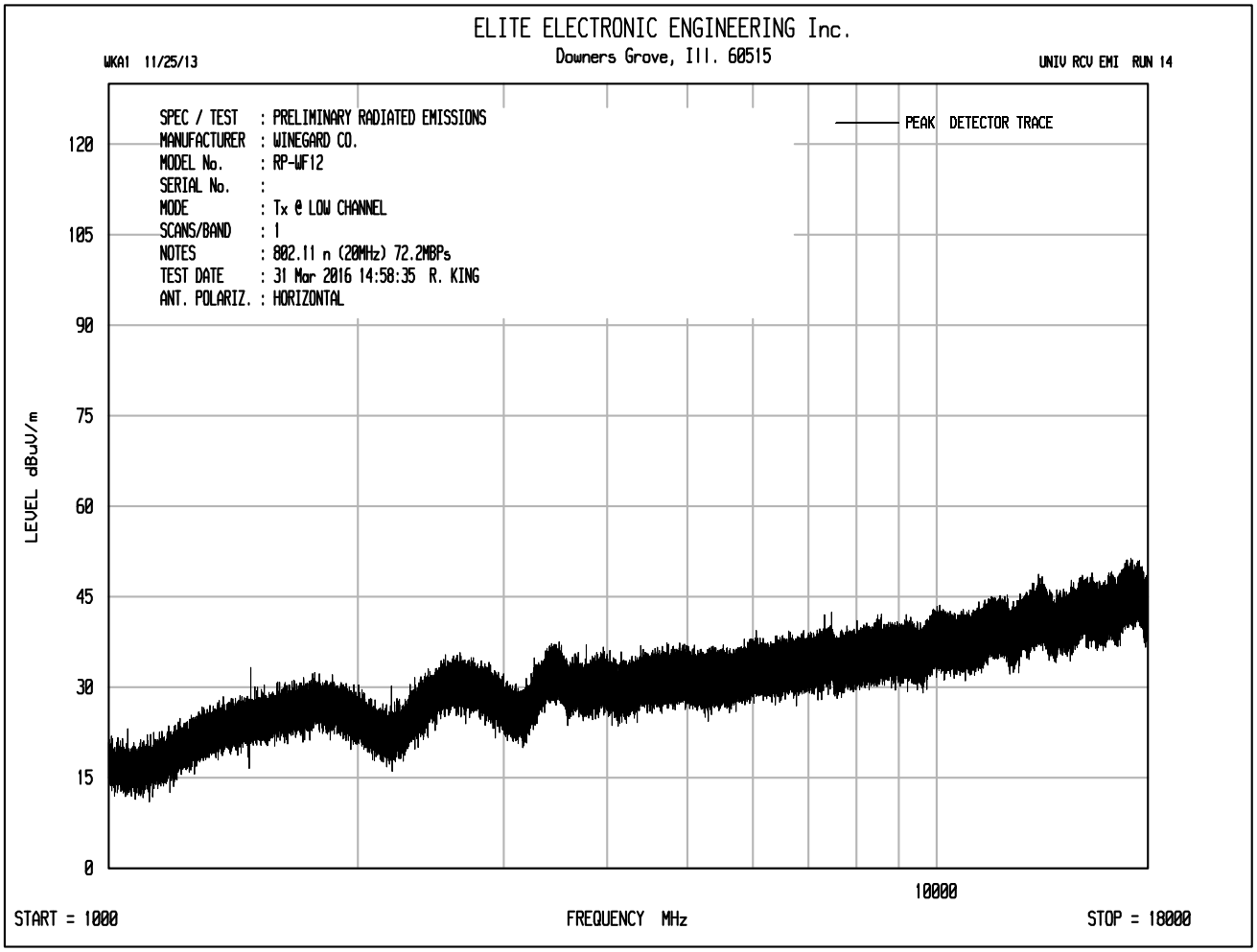

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 14
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 10
NOTES : 802.11 g 54MBPs
TEST DATE : 4 Apr 2016 11:15:13 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

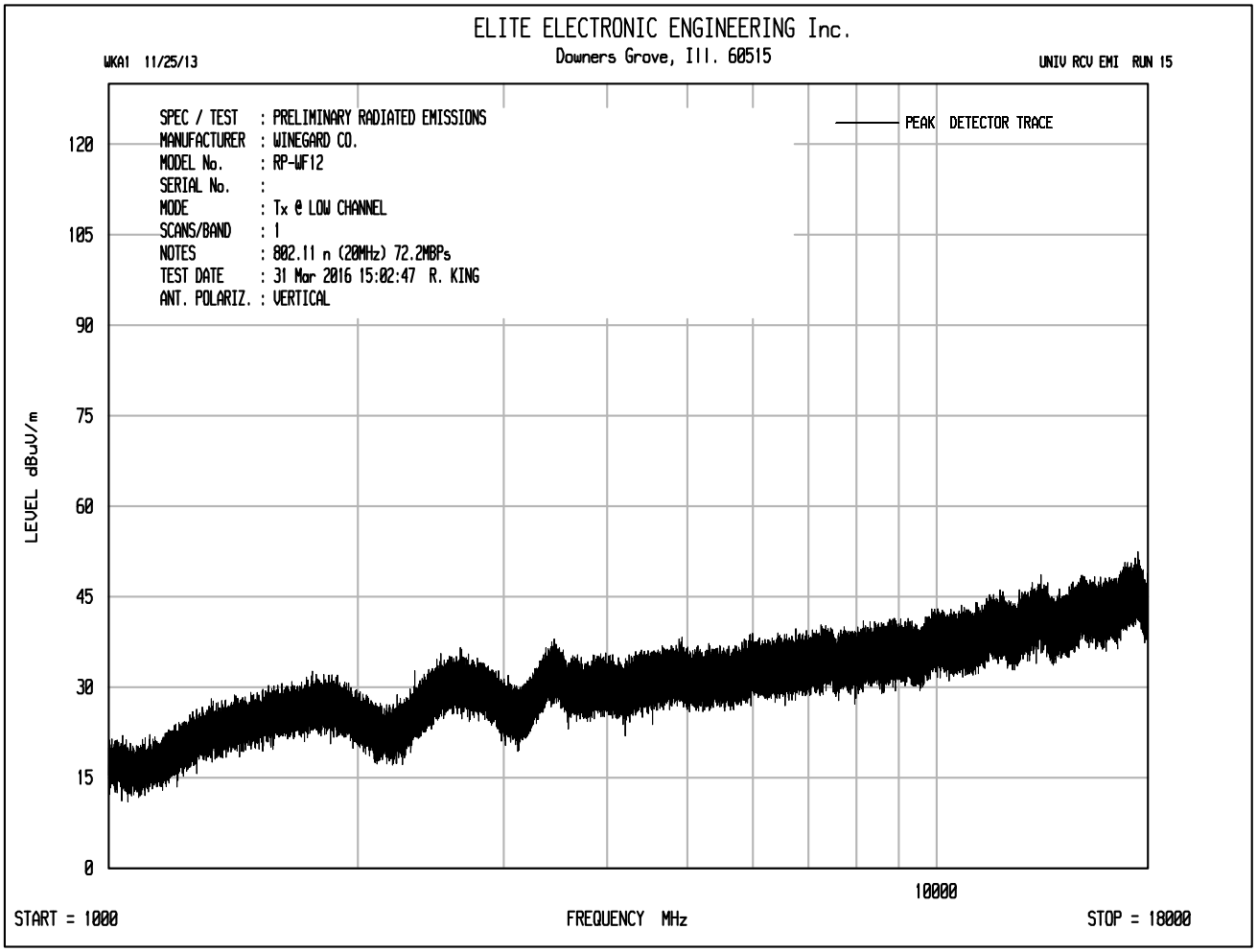

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB8 05/16/14
8546A RE RUN 33
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx 2412MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11n 72.2Mbps
ANT POLARITY : HORIZONTAL
DATA CORRECTED TO 3 m
HORIZONTAL
LIMIT
FIELD INTENSITY dBuV/m
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
100
START = 30
FREQUENCY - MHz
STOP = 1000

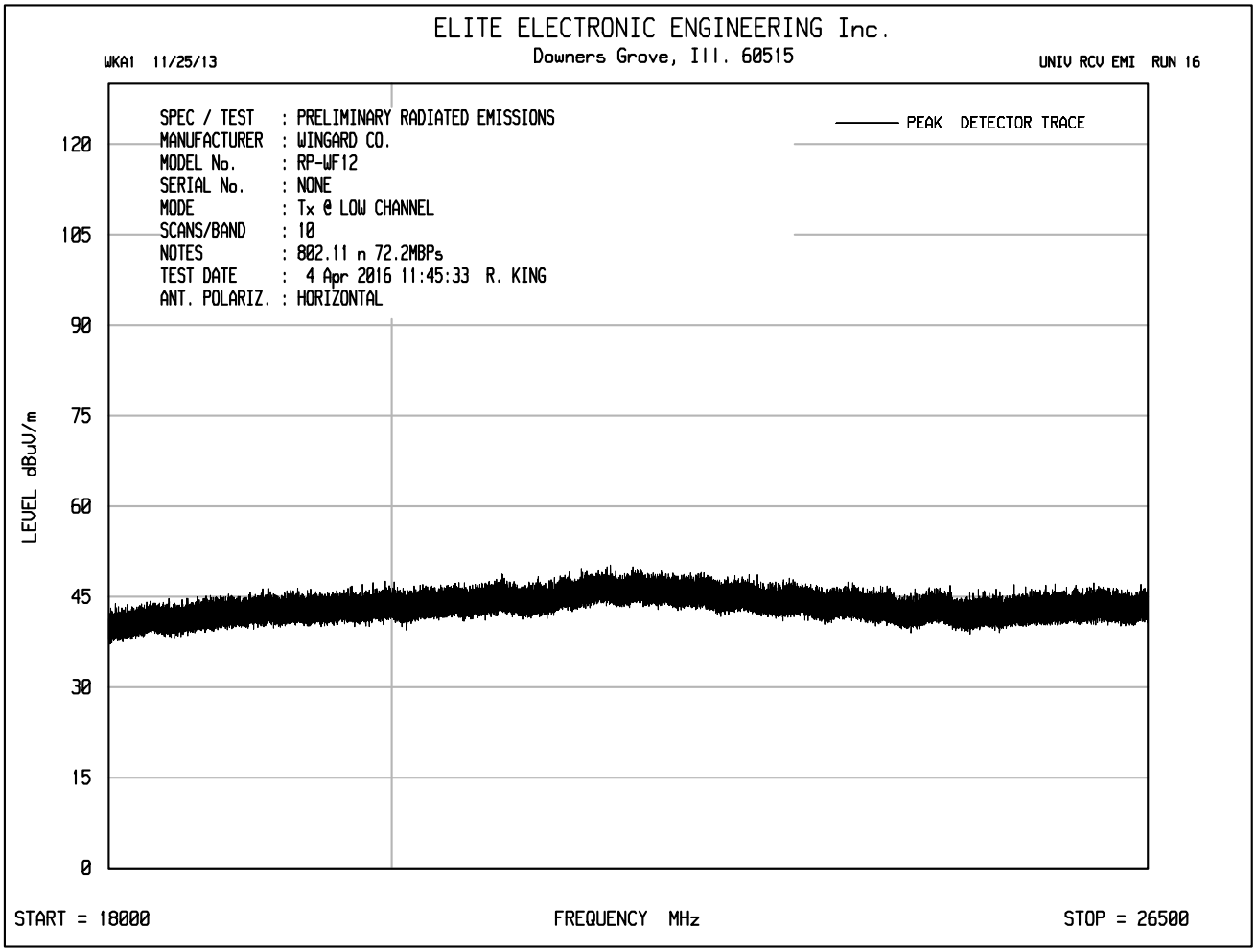

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB0 05/16/14
8546A RE RUN 33
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx 2412MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11n 72.2Mbps
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
100
START = 30
FREQUENCY - MHz
STOP = 1000

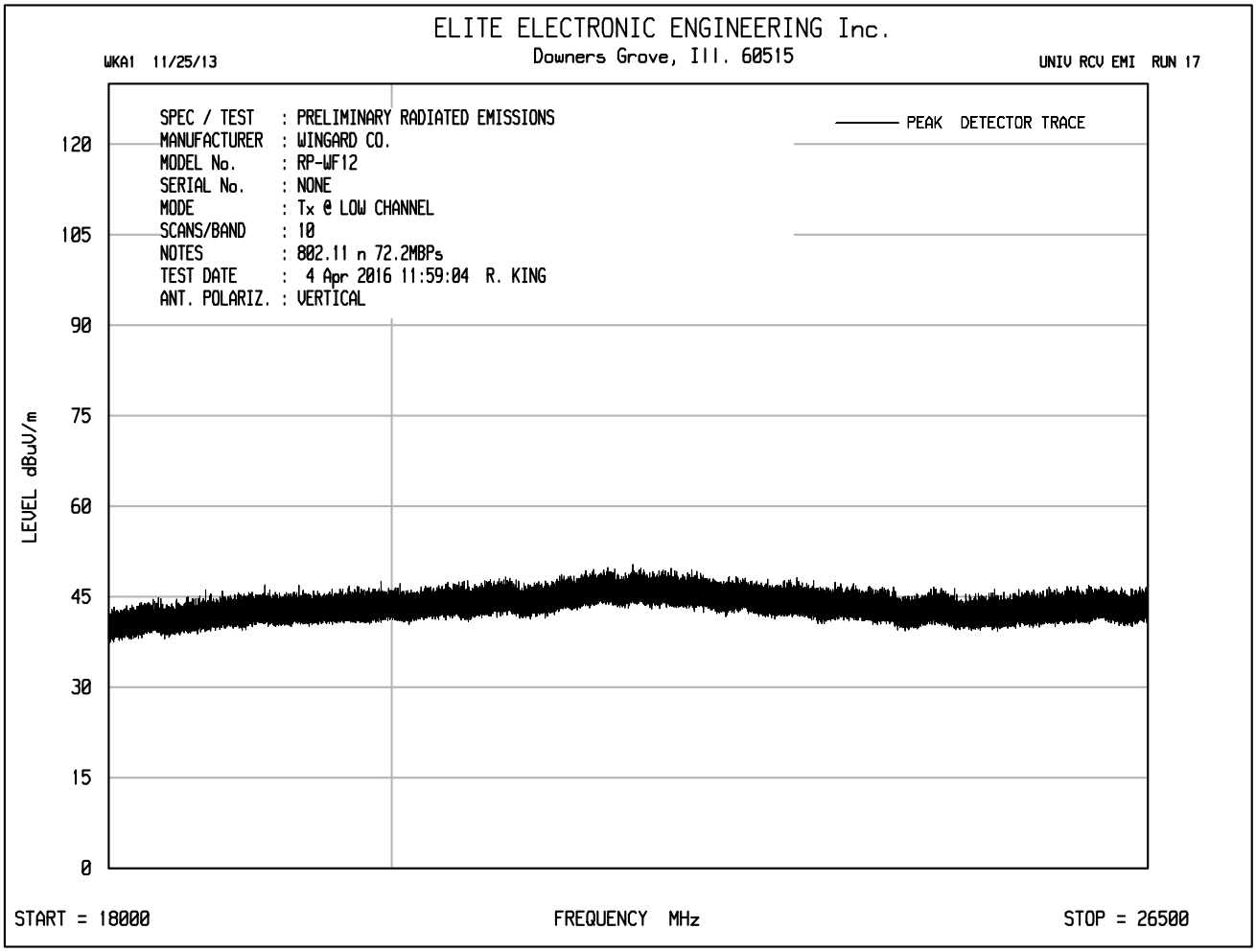

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 8
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 72.2MBPs
TEST DATE : 31 Mar 2016 15:10:18 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

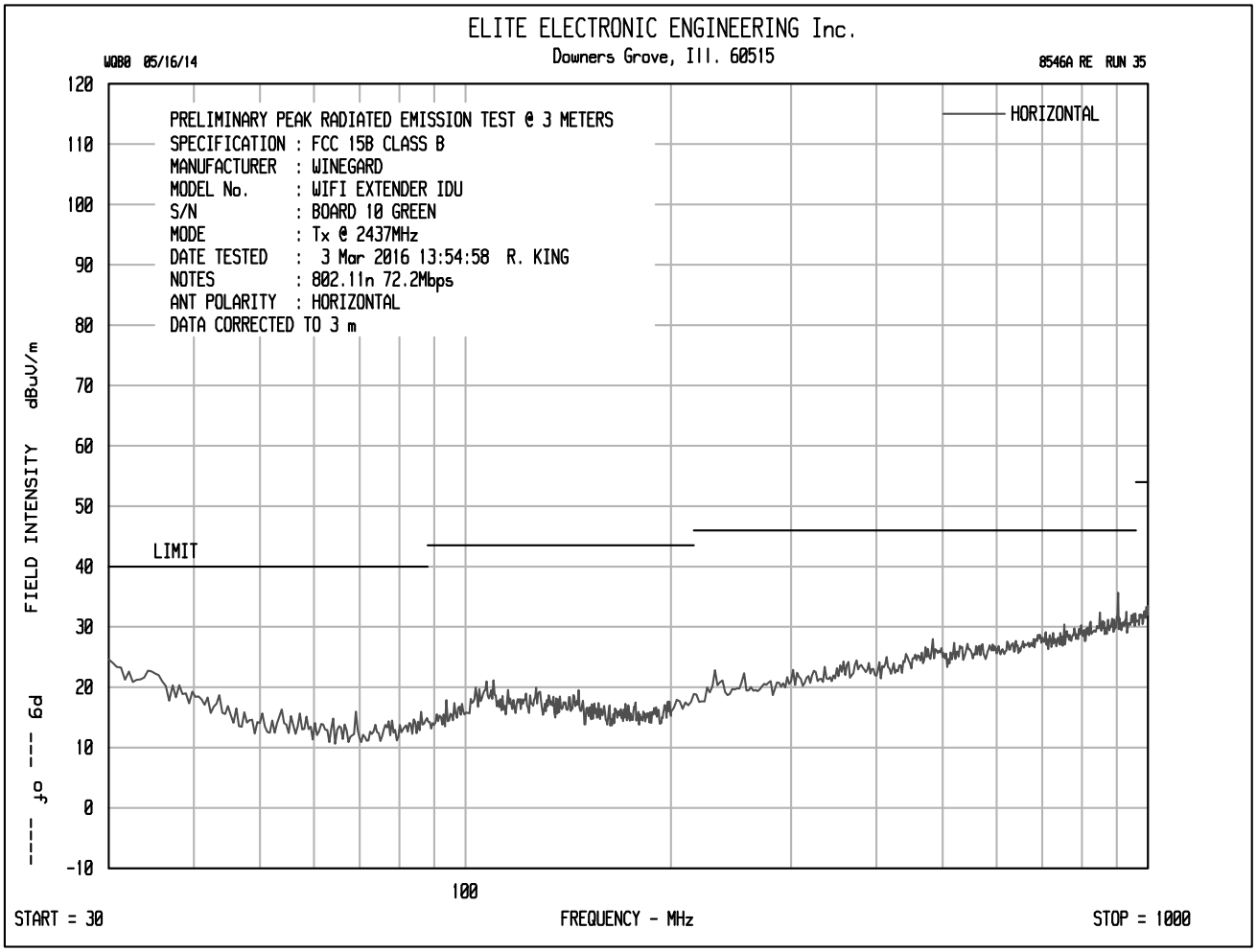

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 7
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 72.2MBPs
TEST DATE : 31 Mar 2016 15:08:11 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

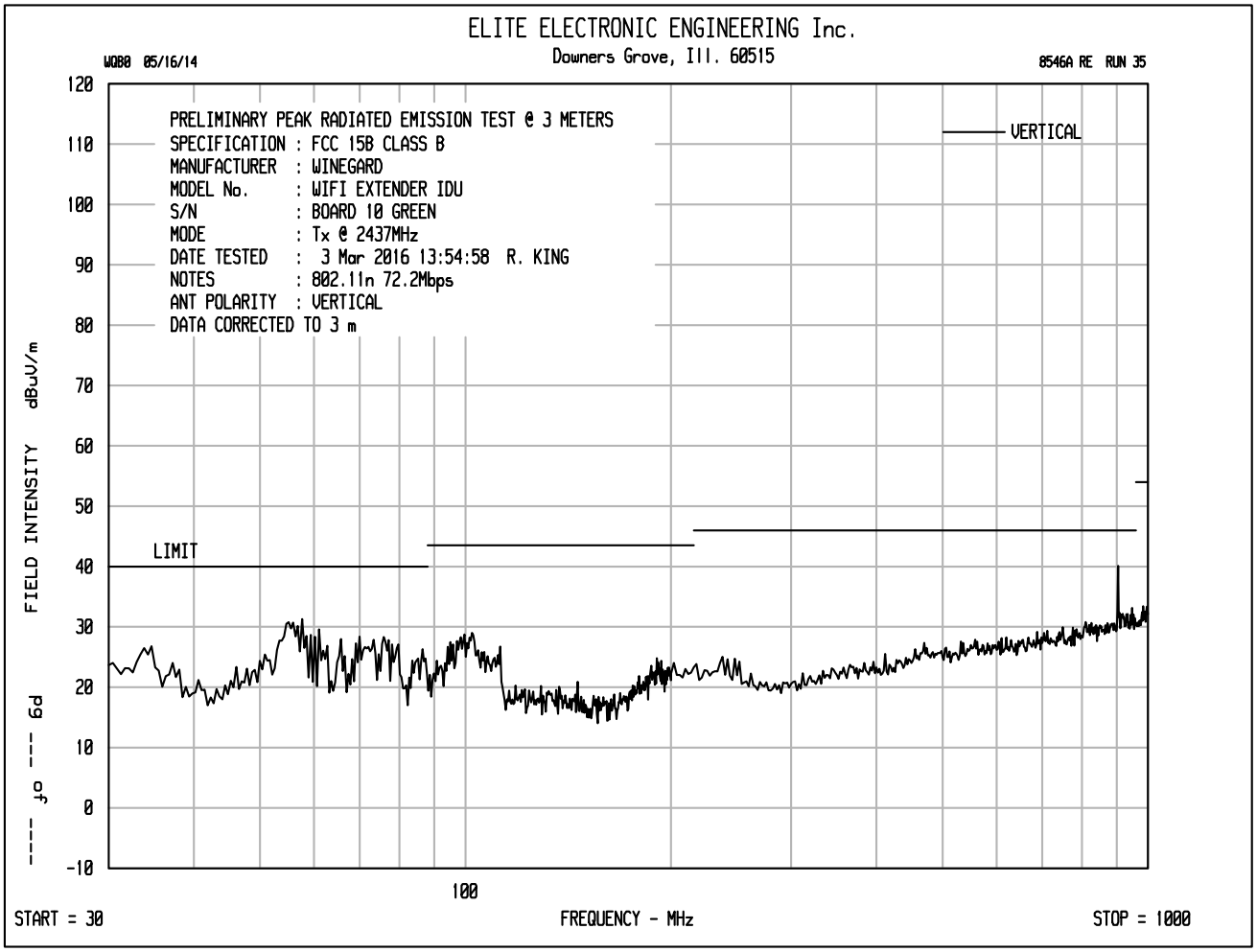

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 14
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n (20MHz) 72.2MBPs
TEST DATE : 31 Mar 2016 14:58:35 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 1000
FREQUENCY MHz
STOP = 18000

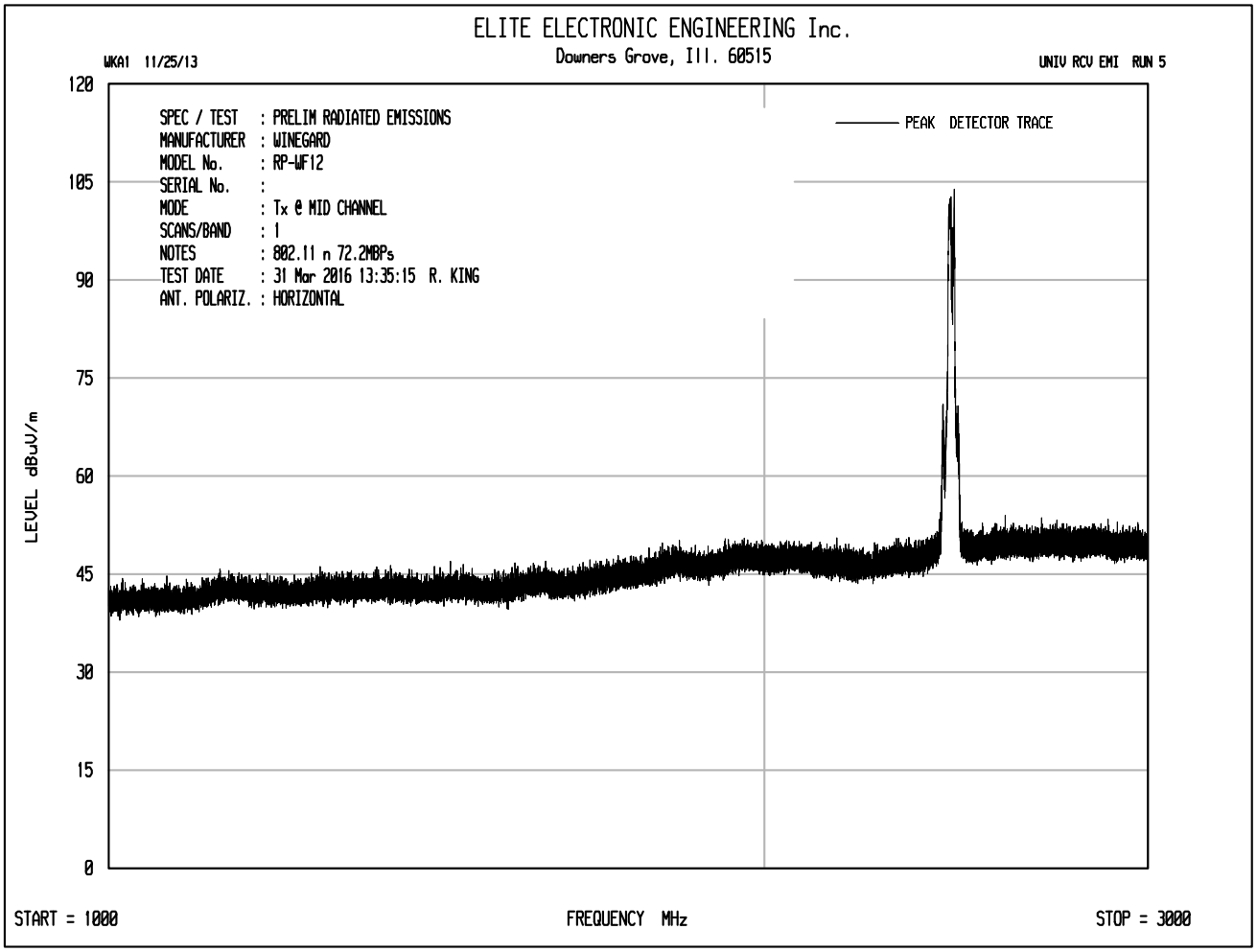

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 15
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n (20MHz) 72.2MBPs
TEST DATE : 31 Mar 2016 15:02:47 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 1000
FREQUENCY MHz
STOP = 18000

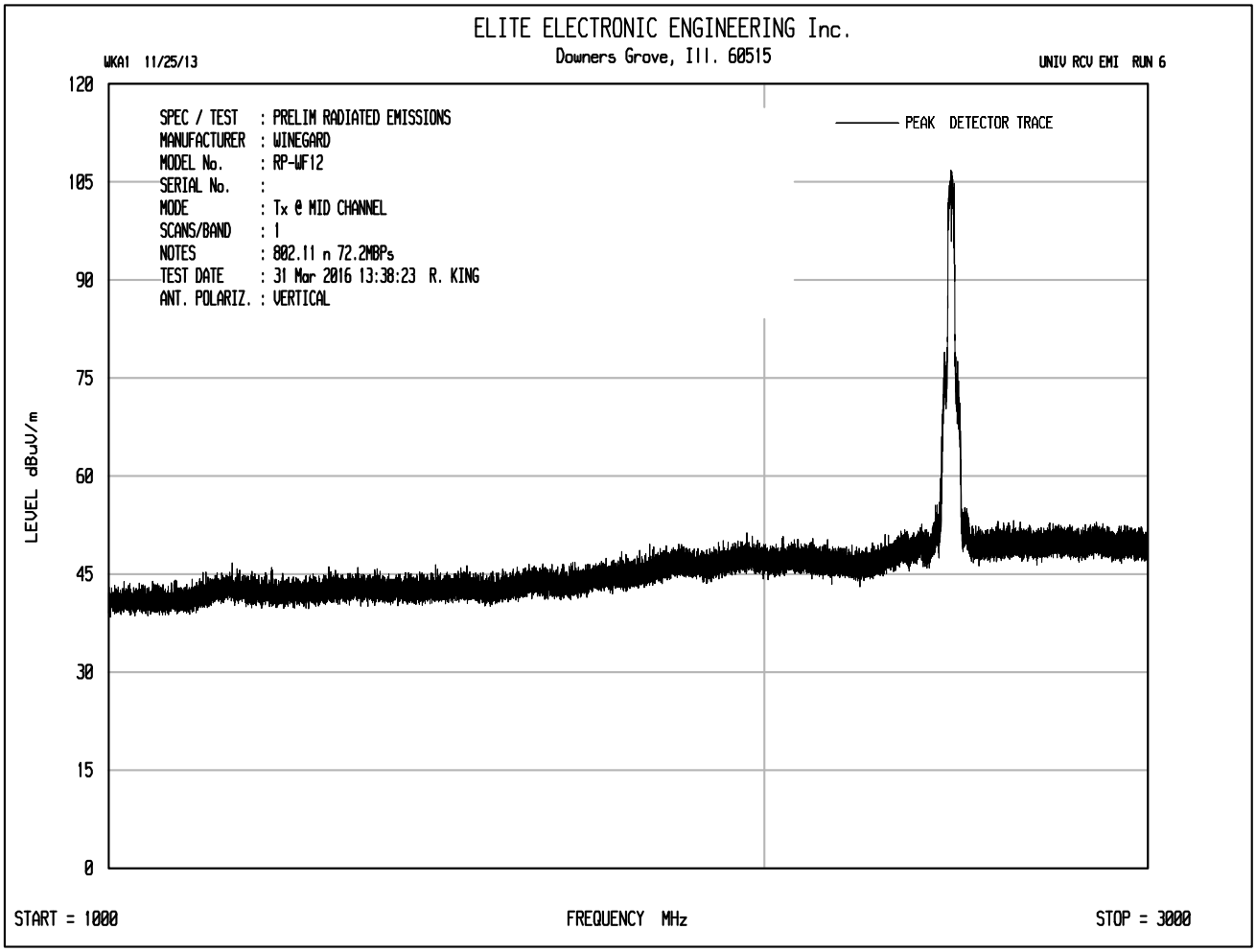

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 16
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 10
NOTES : 802.11 n 72.2MBPs
TEST DATE : 4 Apr 2016 11:45:33 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

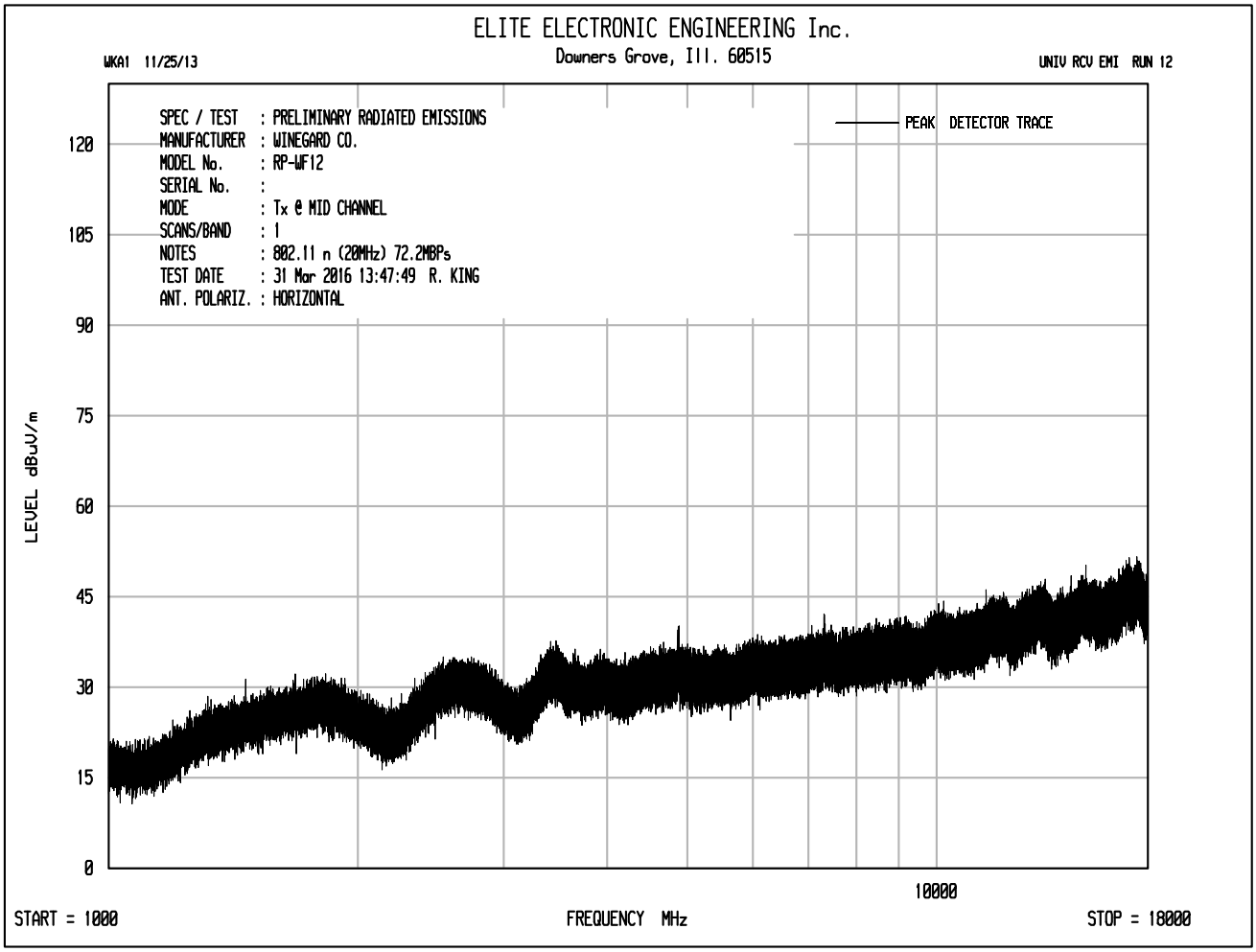

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 17
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 10
NOTES : 802.11 n 72.2MBPs
TEST DATE : 4 Apr 2016 11:59:04 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

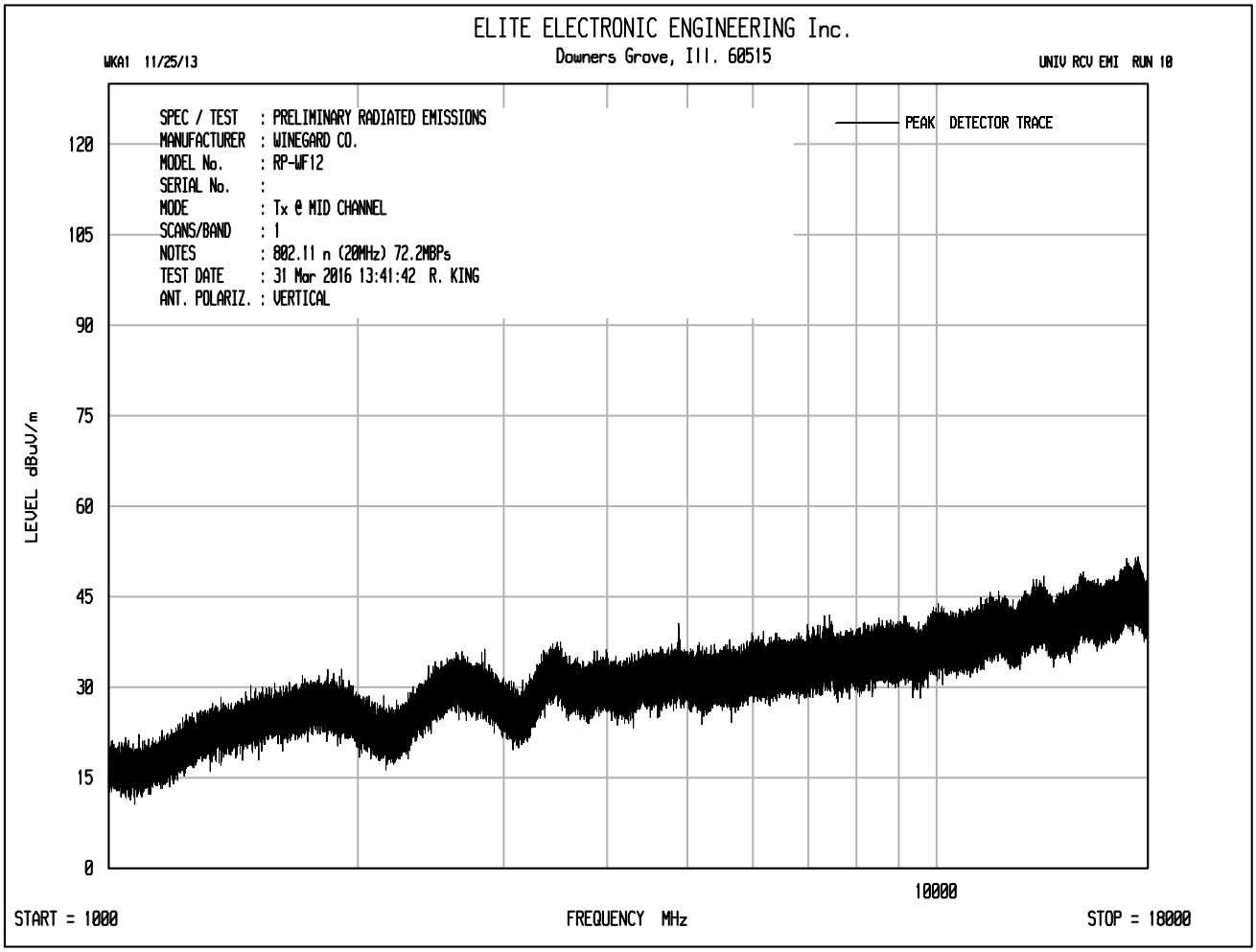

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB0 05/16/14
8546A RE RUN 35
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2437MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11n 72.2Mbps
ANT POLARITY : HORIZONTAL
DATA CORRECTED TO 3 m
HORIZONTAL
LIMIT
FIELD INTENSITY dBuV/m
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
100
START = 30
FREQUENCY - MHz
STOP = 1000

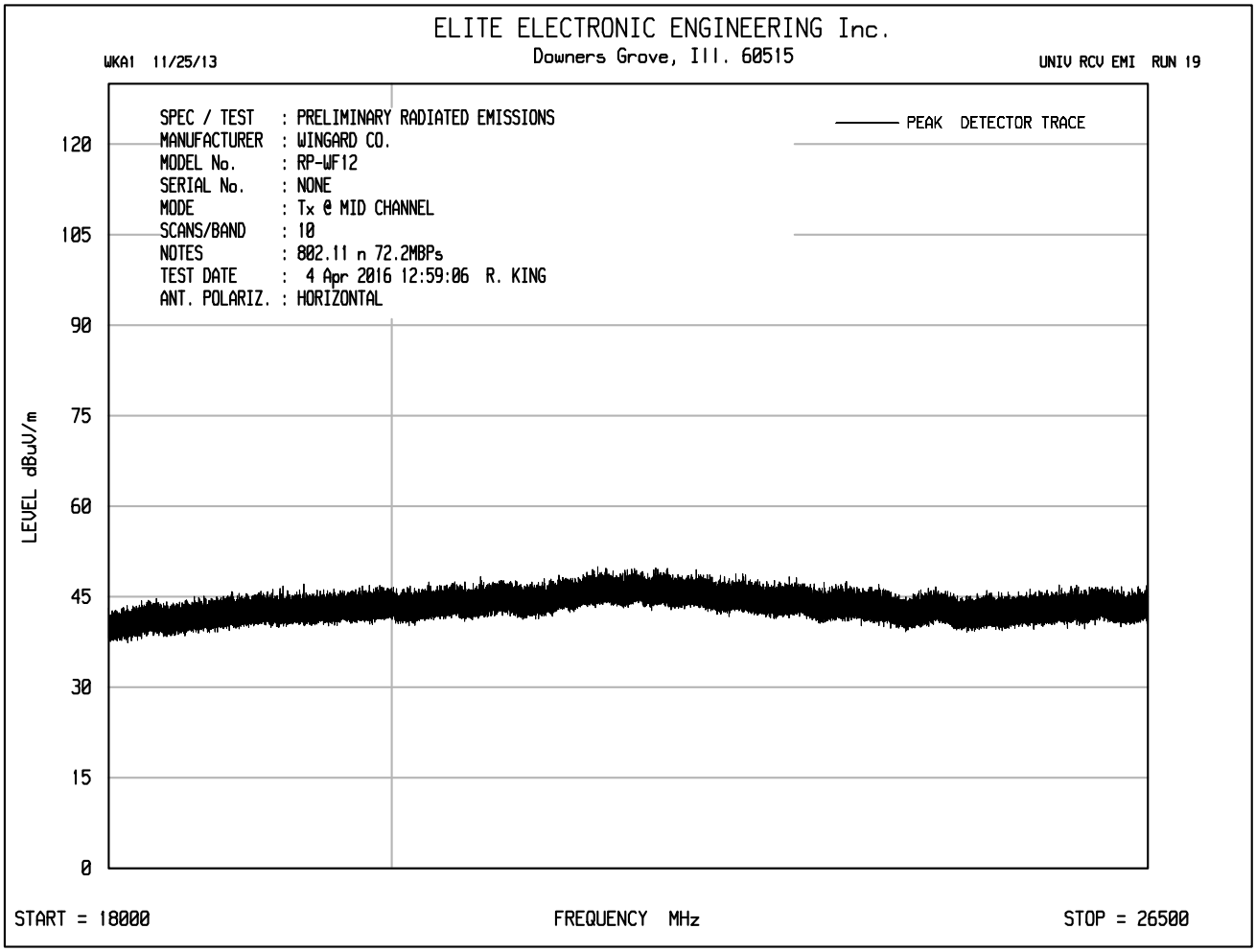

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB8 05/16/14
8546A RE RUN 35
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2437MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11n 72.2Mbps
ANT POLARITY : VERTICAL
DATA CORRECTED TO 3 m
VERTICAL
LIMIT
FIELD INTENSITY dBuV/m
---- µo --- of
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
100
START = 30
FREQUENCY - MHz
STOP = 1000

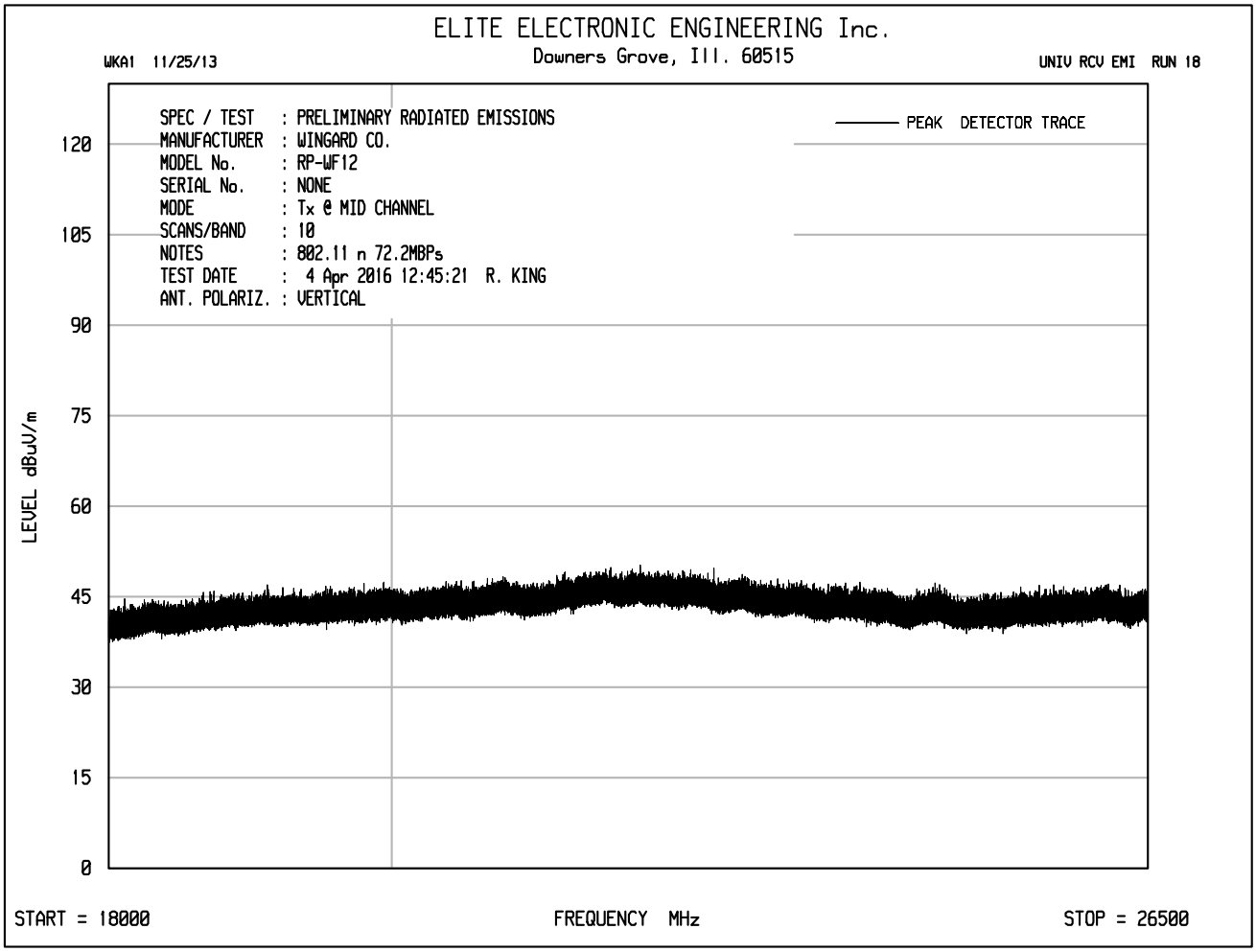

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 5
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 72.2MBPs
TEST DATE : 31 Mar 2016 13:35:15 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

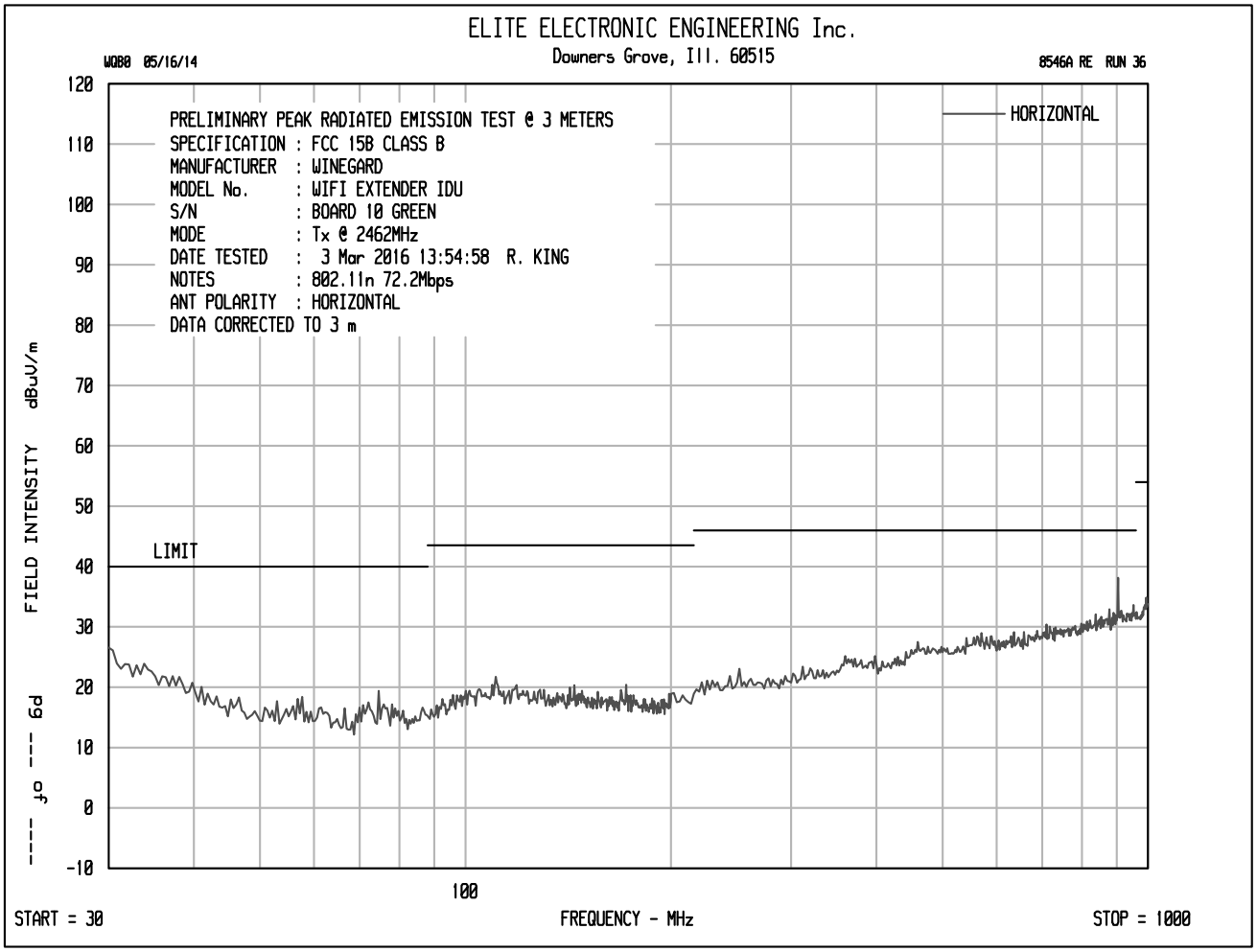

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 6
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 72.2MBPs
TEST DATE : 31 Mar 2016 13:38:23 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

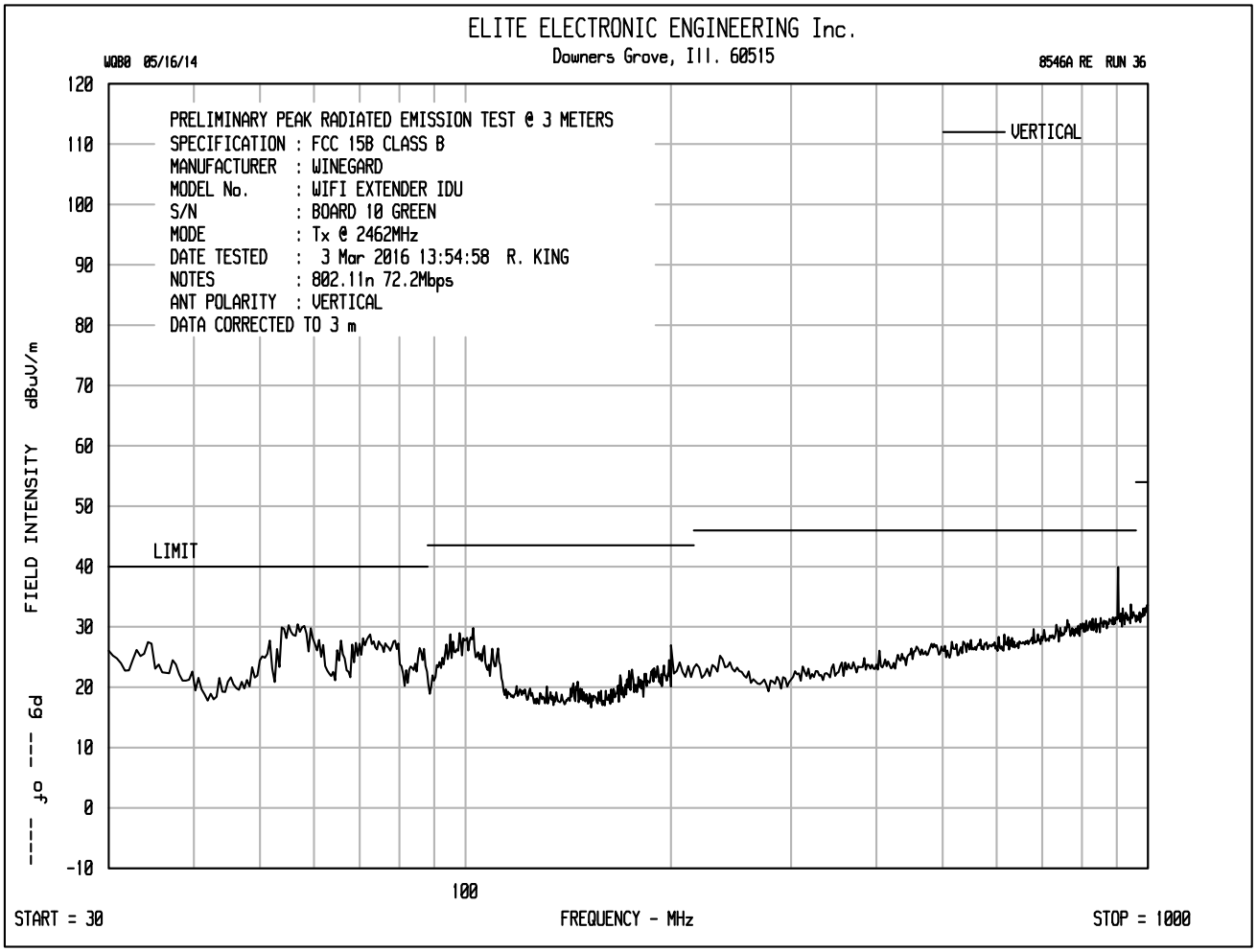

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 12
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n (20MHz) 72.2MBPs
TEST DATE : 31 Mar 2016 13:47:49 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 1000
FREQUENCY MHz
STOP = 18000

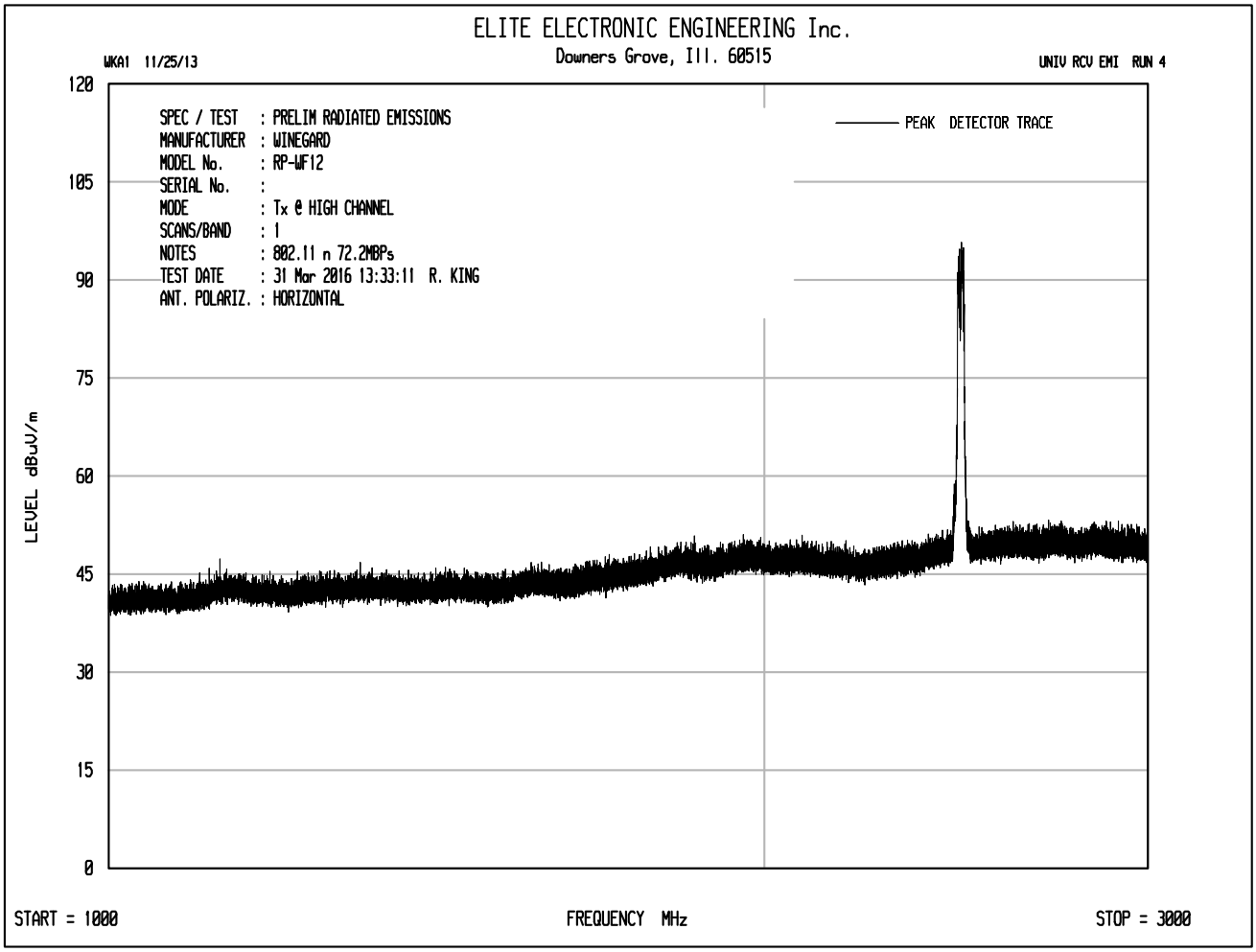

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 10
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ MID CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n (20MHz) 72.2MBPs
TEST DATE : 31 Mar 2016 13:41:42 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 1000
FREQUENCY MHz
STOP = 18000

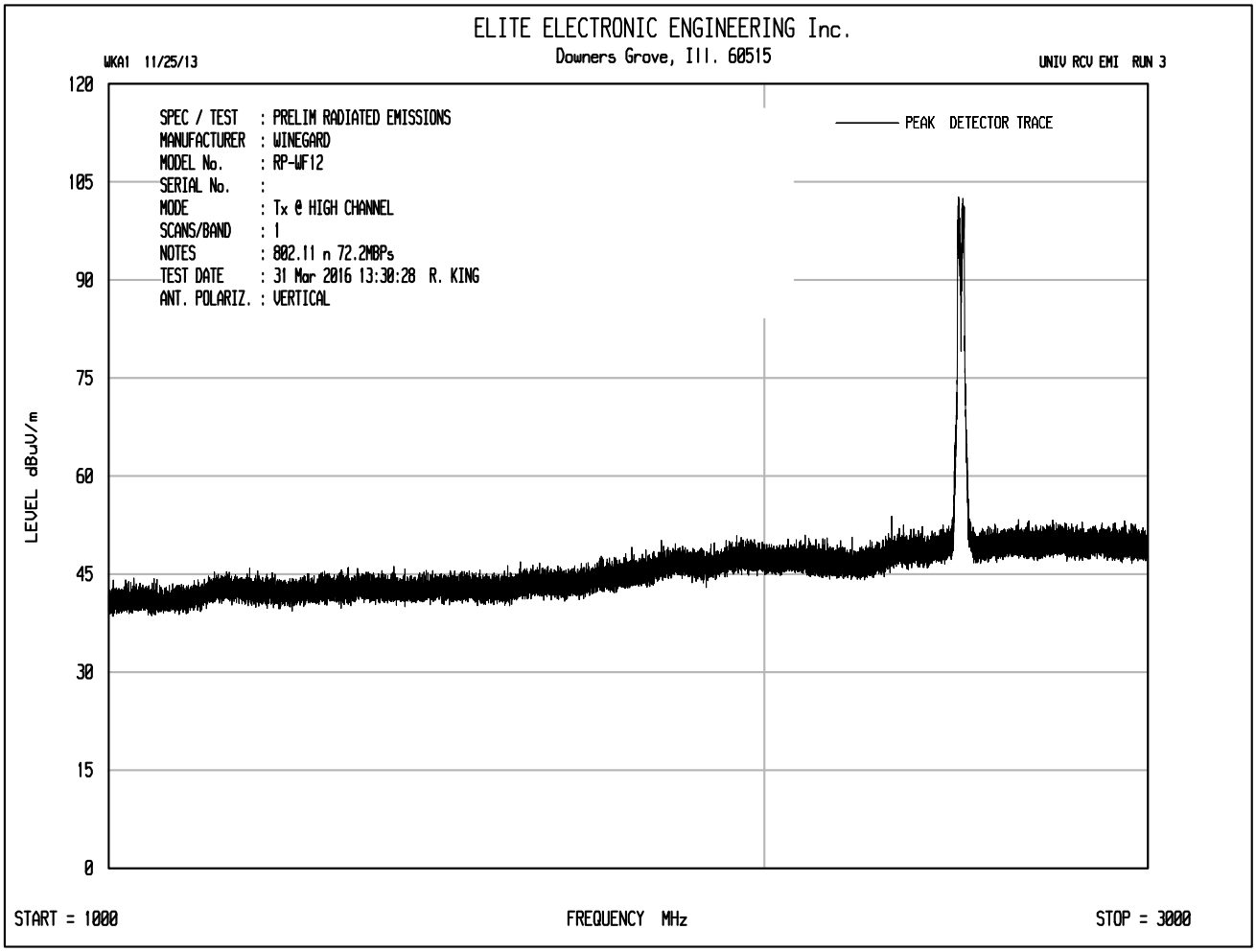

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 19
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ MID CHANNEL
SCANS/BAND : 10
NOTES : 802.11 n 72.2MBPs
TEST DATE : 4 Apr 2016 12:59:06 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

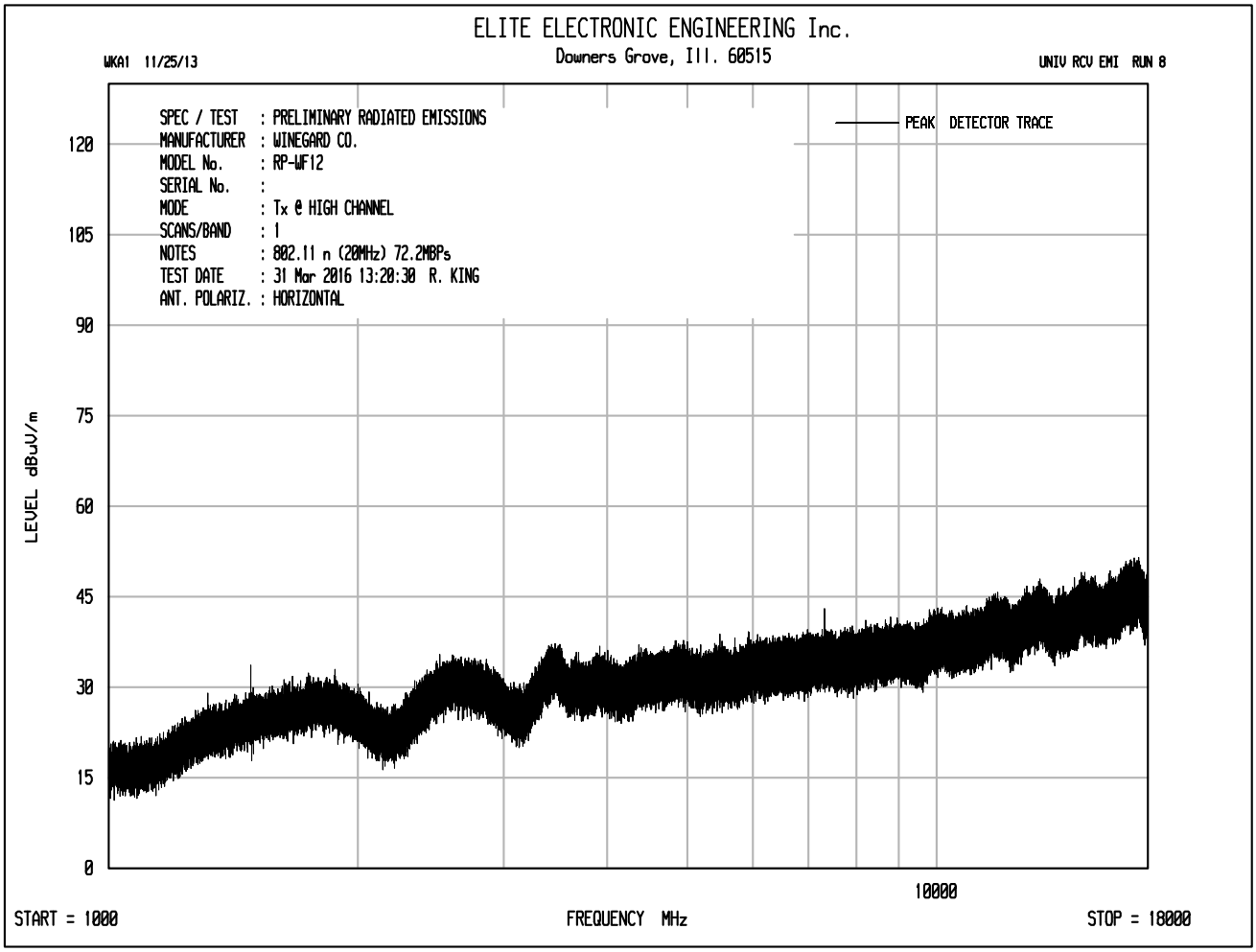

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 18
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ MID CHANNEL
SCANS/BAND : 10
NOTES : 802.11 n 72.2MBPs
TEST DATE : 4 Apr 2016 12:45:21 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

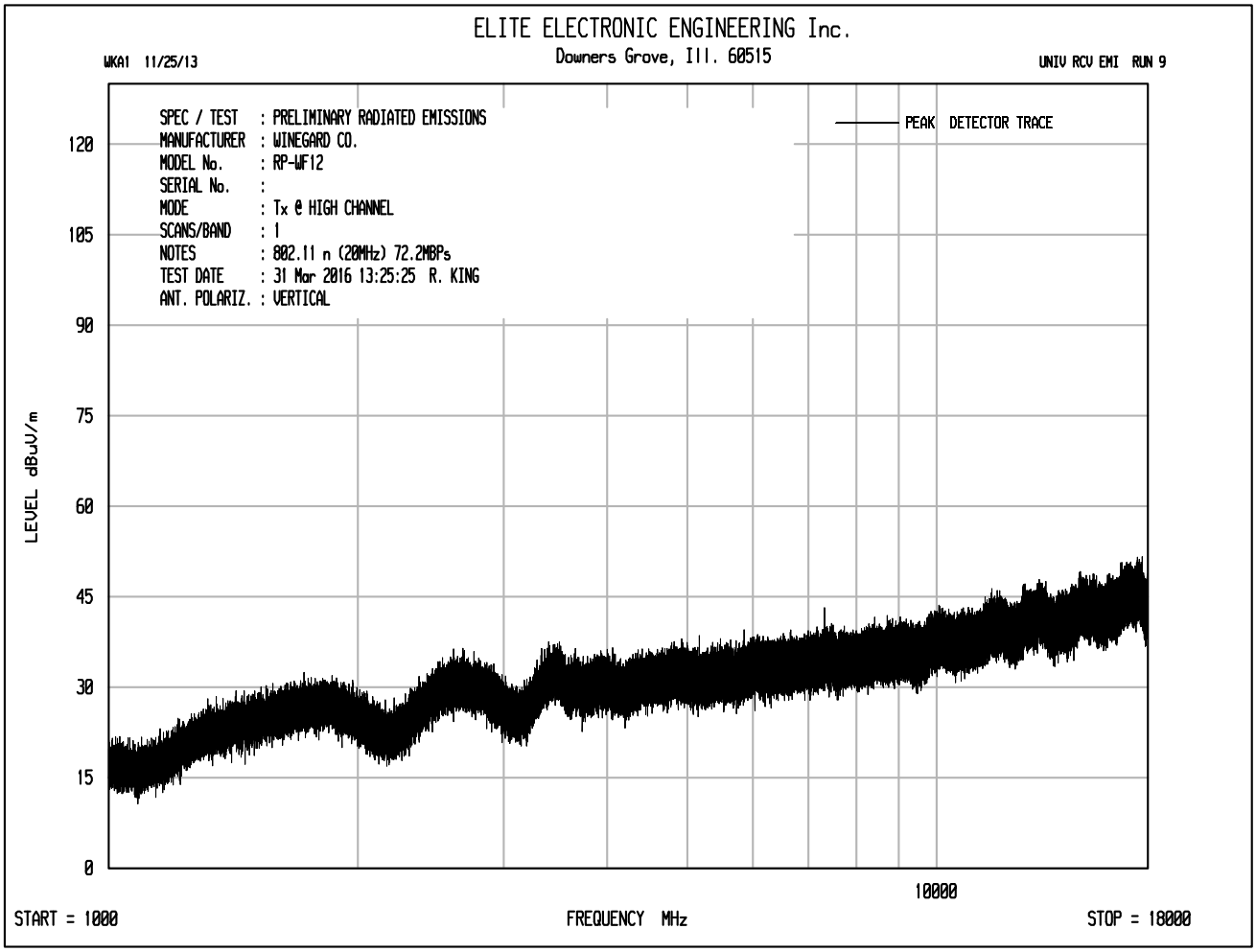

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB8 05/16/14
8546A RE RUN 36
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2462MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11n 72.2Mbps
ANT POLARITY : HORIZONTAL
DATA CORRECTED TO 3 m
HORIZONTAL
LIMIT
FIELD INTENSITY dBuV/m
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
100
START = 30
FREQUENCY - MHz
STOP = 1000

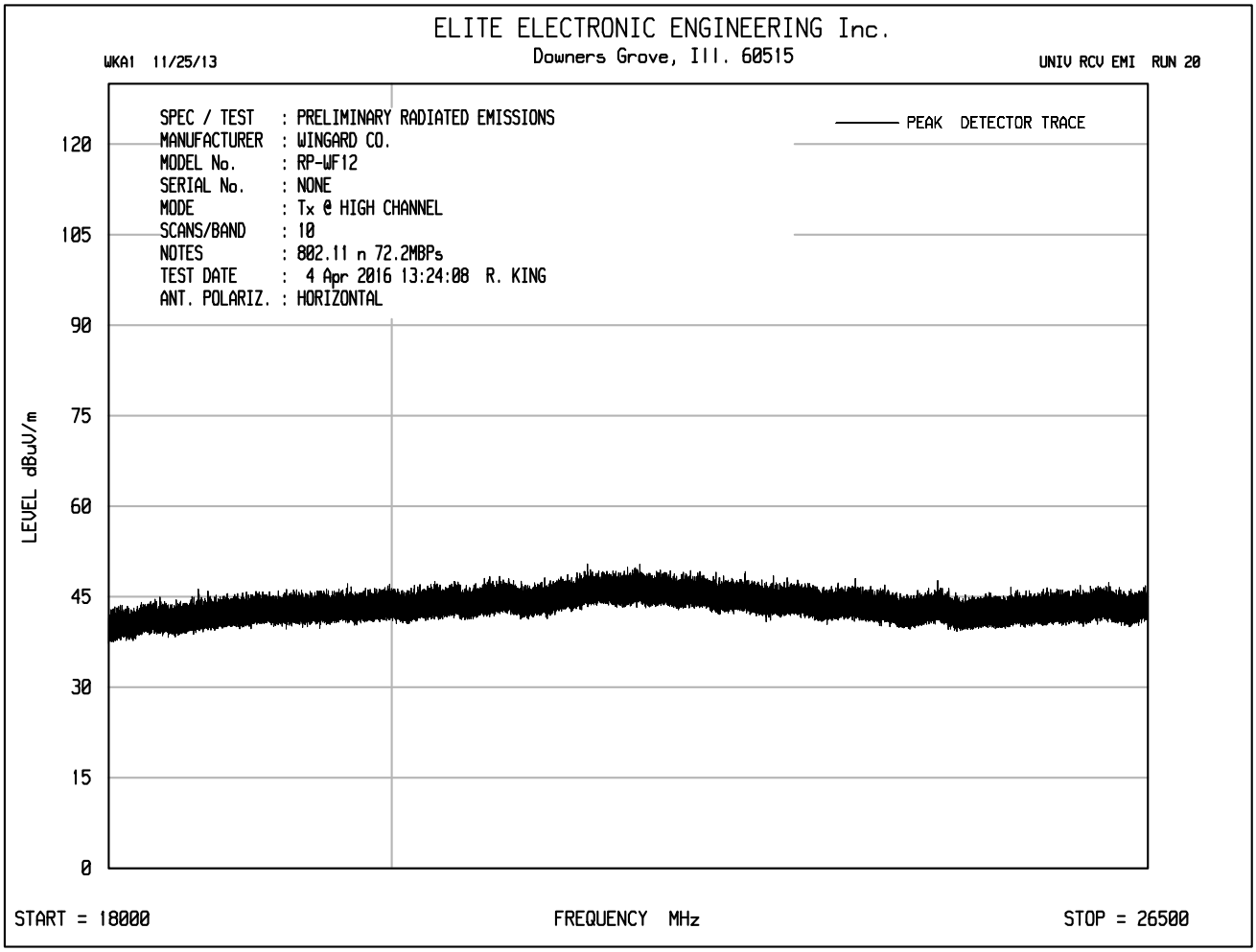

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WQB0 05/16/14
8546A RE RUN 36
PRELIMINARY PEAK RADIATED EMISSION TEST @ 3 METERS
SPECIFICATION : FCC 15B CLASS B
MANUFACTURER : WINEGARD
MODEL No. : WIFI EXTENDER IDU
S/N : BOARD 10 GREEN
MODE : Tx @ 2462MHz
DATE TESTED : 3 Mar 2016 13:54:58 R. KING
NOTES : 802.11n 72.2Mbps
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
100
START = 30
FREQUENCY - MHz
STOP = 1000

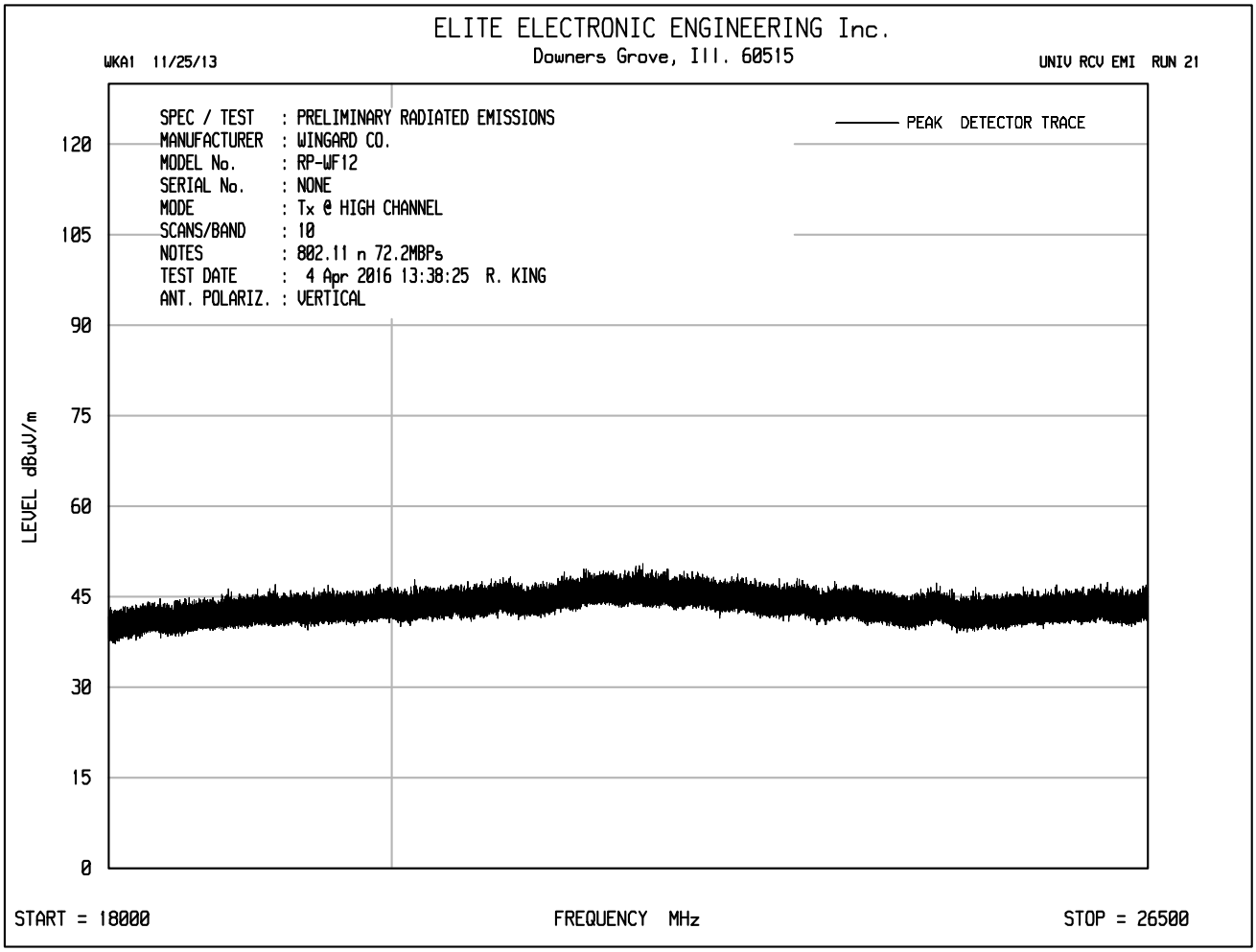

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 4
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 72.2MBPs
TEST DATE : 31 Mar 2016 13:33:11 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

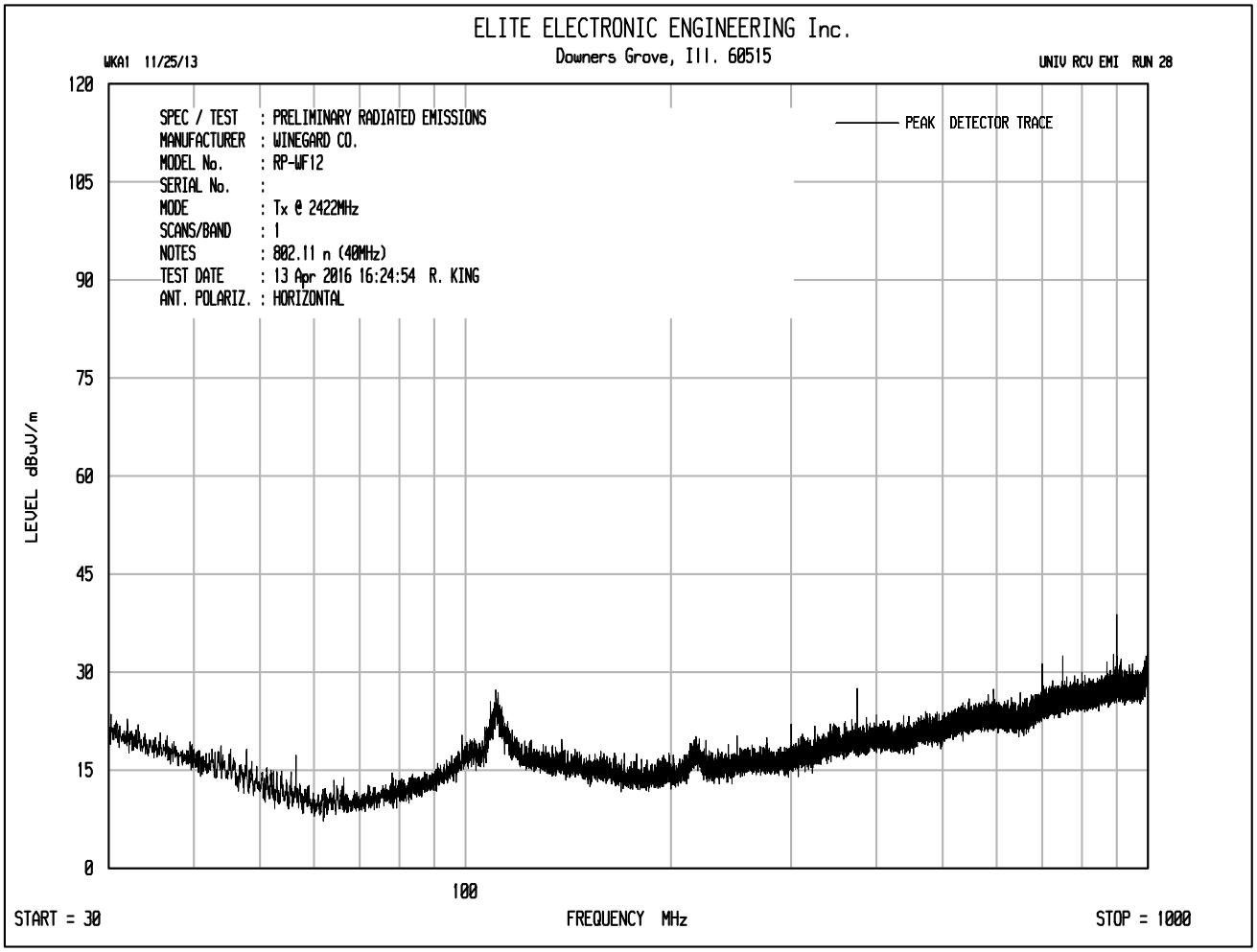

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 3
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 72.2MBPs
TEST DATE : 31 Mar 2016 13:30:28 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

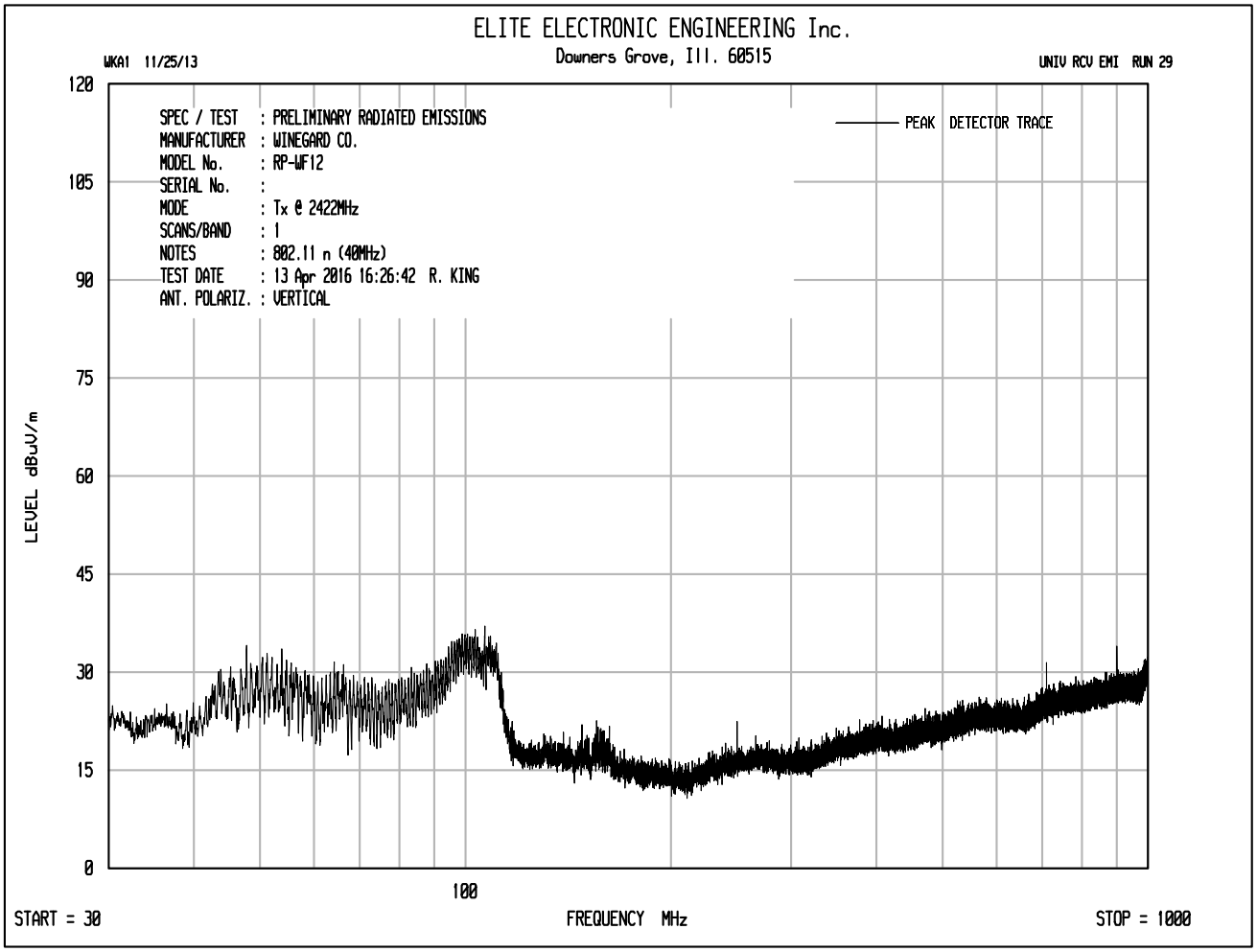

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 8
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n (20MHz) 72.2MBPs
TEST DATE : 31 Mar 2016 13:20:30 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 1000
FREQUENCY MHz
STOP = 18000

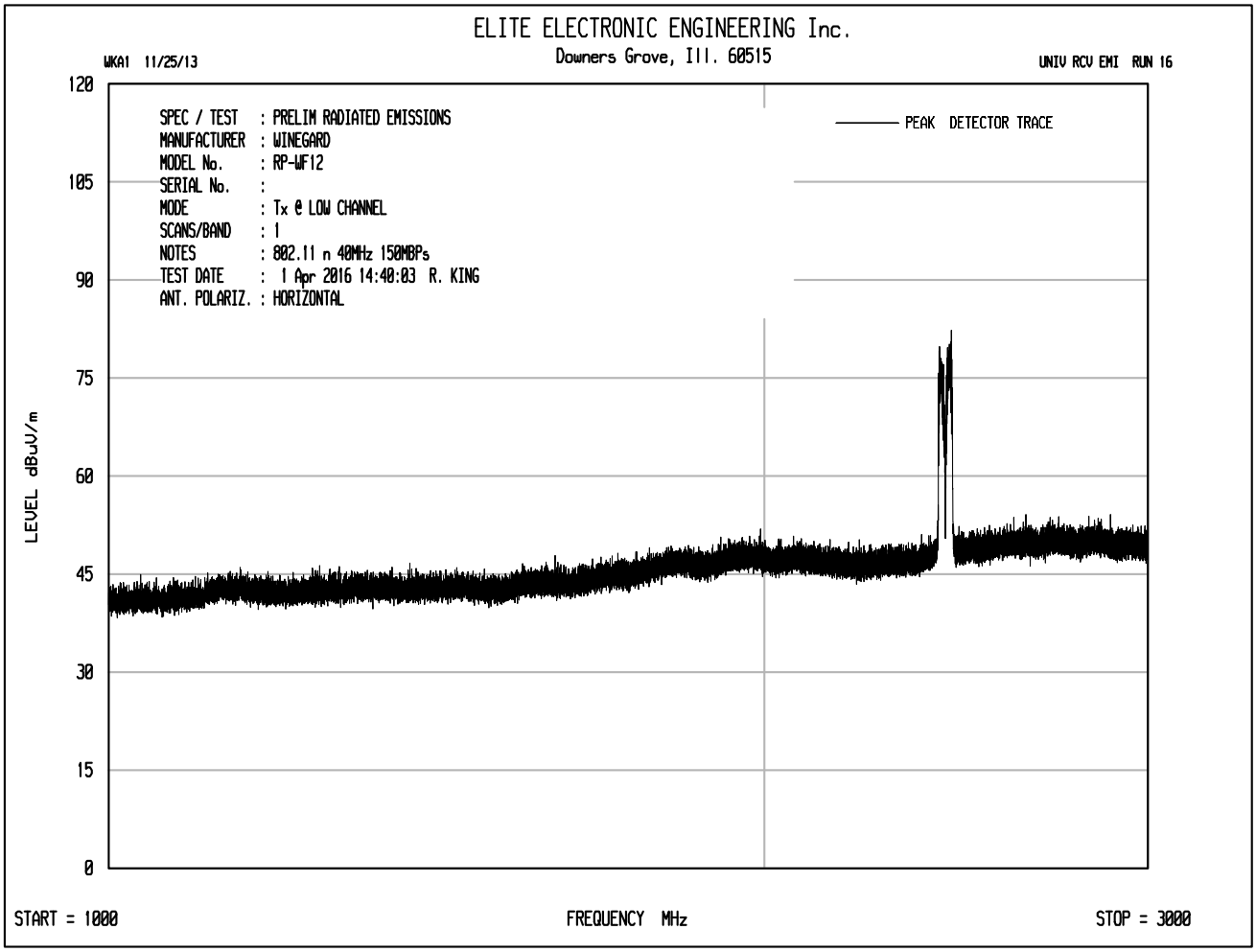

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 9
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n (20MHz) 72.2MBPs
TEST DATE : 31 Mar 2016 13:25:25 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 1000
FREQUENCY MHz
STOP = 18000

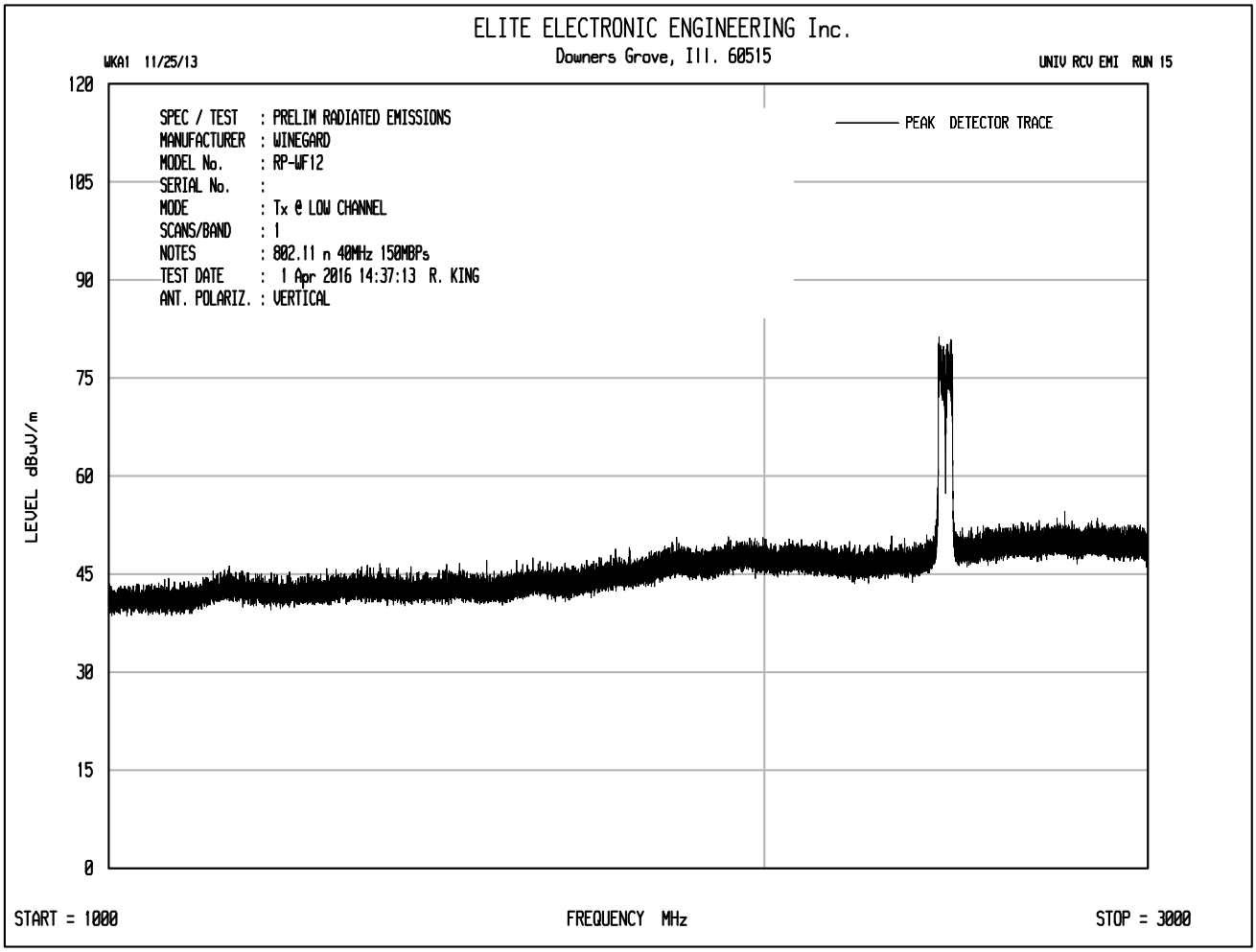

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 20
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 10
NOTES : 802.11 n 72.2MBPs
TEST DATE : 4 Apr 2016 13:24:08 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

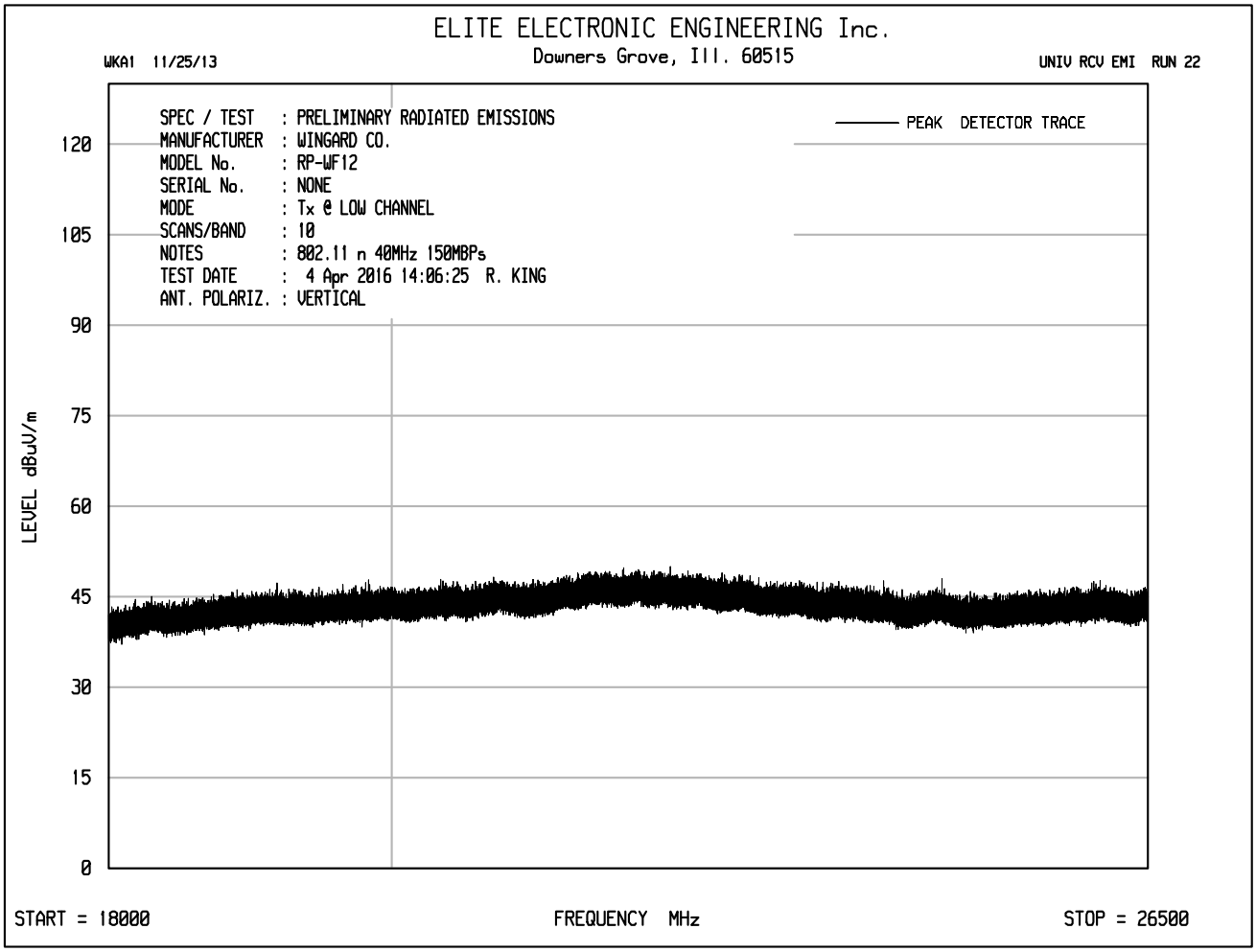

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 21
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 10
NOTES : 802.11 n 72.2MBPs
TEST DATE : 4 Apr 2016 13:38:25 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

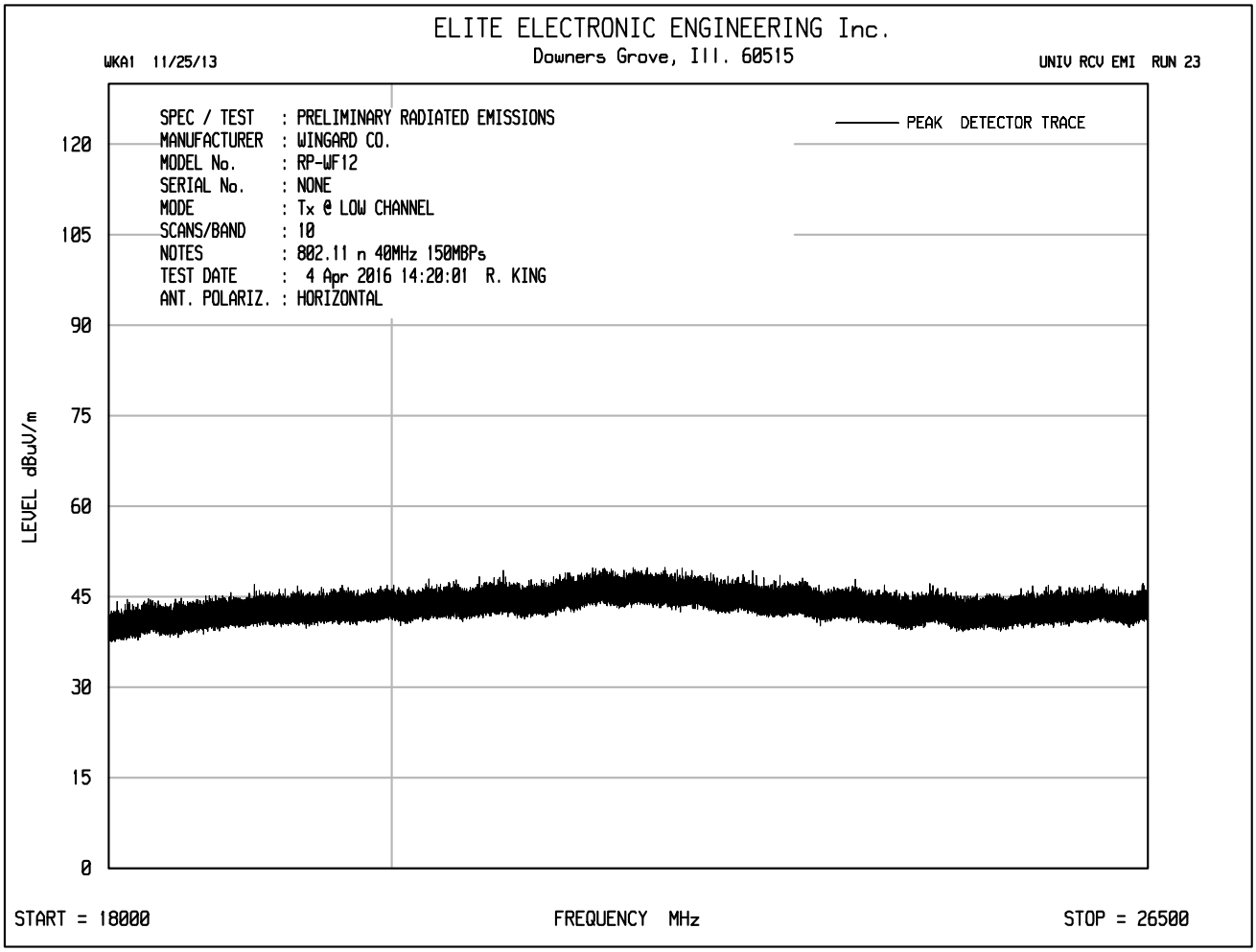

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 28
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2422MHz
SCANS/BAND : 1
NOTES : 802.11 n (40MHz)
TEST DATE : 13 Apr 2016 16:24:54 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
100
START = 30
FREQUENCY MHz
STOP = 1000

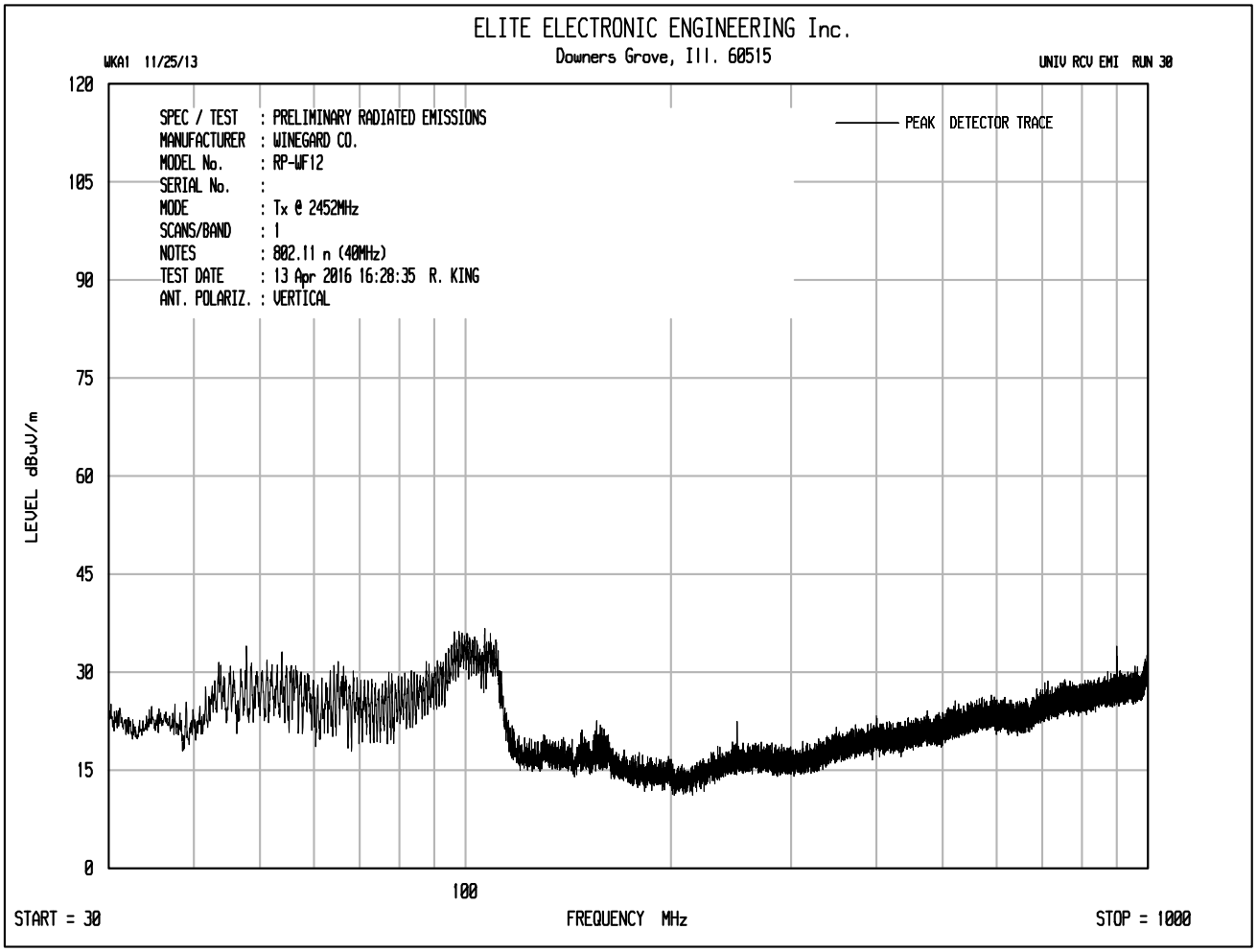

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 29
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2422MHz
SCANS/BAND : 1
NOTES : 802.11 n (40MHz)
TEST DATE : 13 Apr 2016 16:26:42 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
100
START = 30
FREQUENCY MHz
STOP = 1000

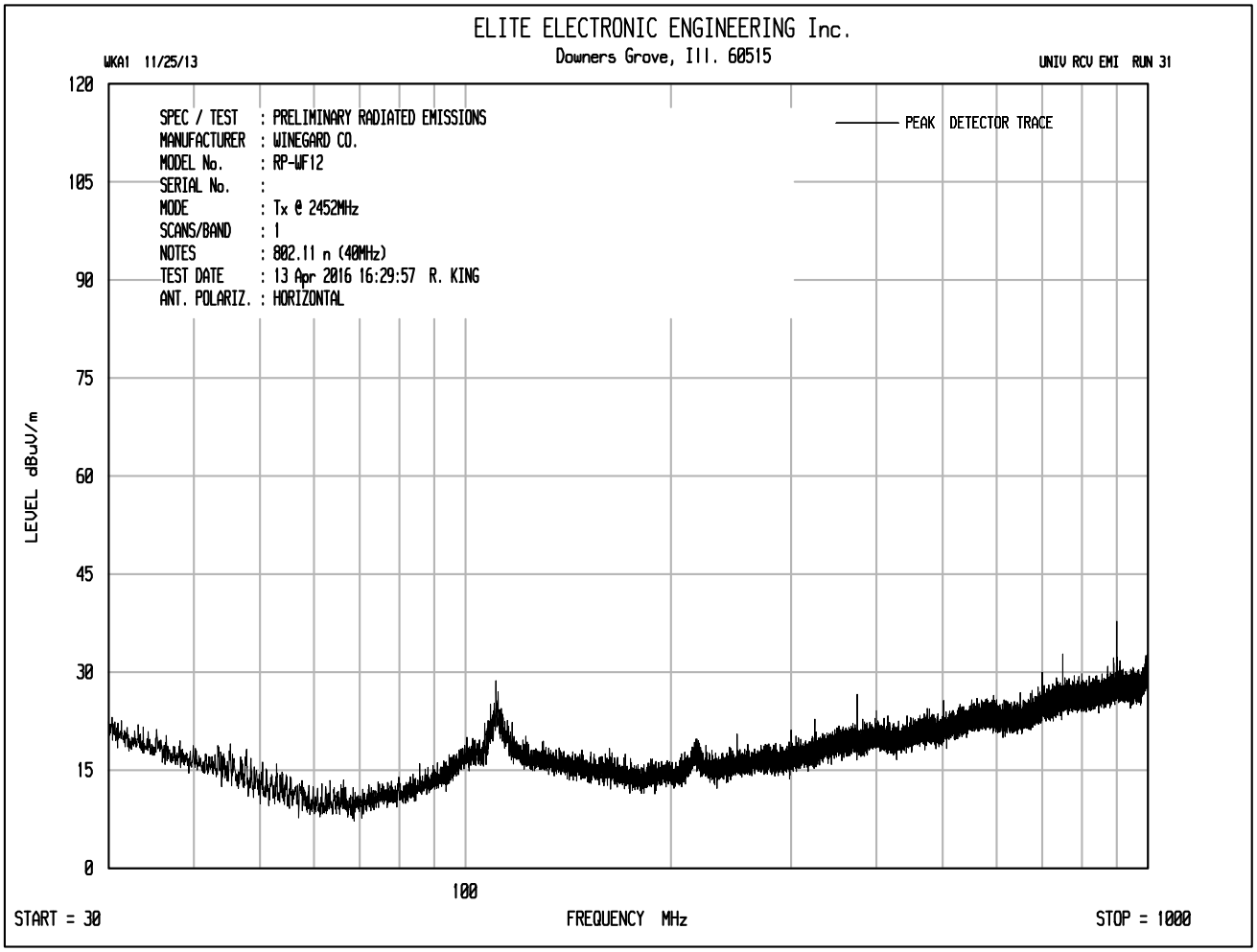

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 16
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 40MHz 150MBPs
TEST DATE : 1 Apr 2016 14:40:03 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

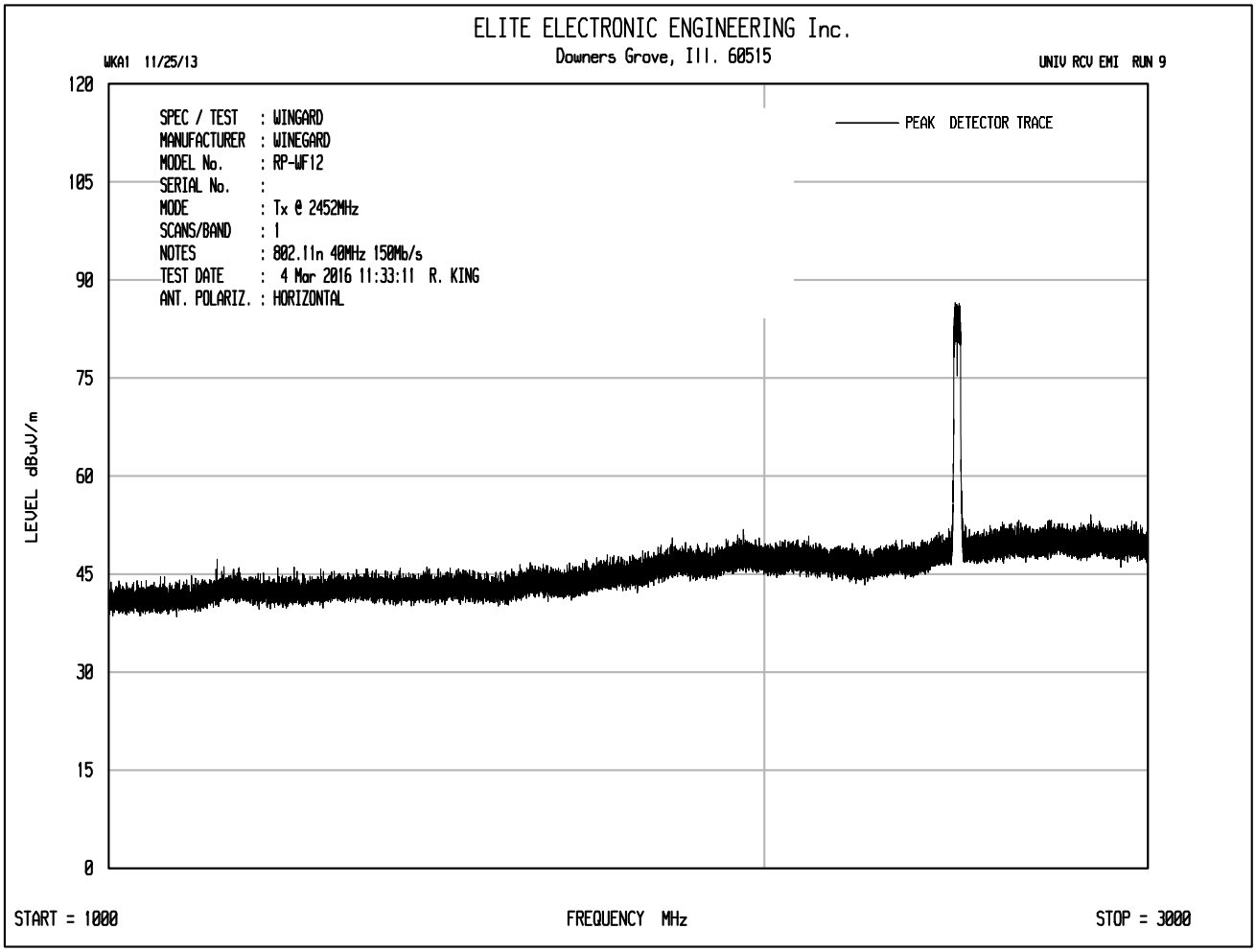

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 15
SPEC / TEST : PRELIM RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 1
NOTES : 802.11 n 40MHz 150MBPs
TEST DATE : 1 Apr 2016 14:37:13 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000

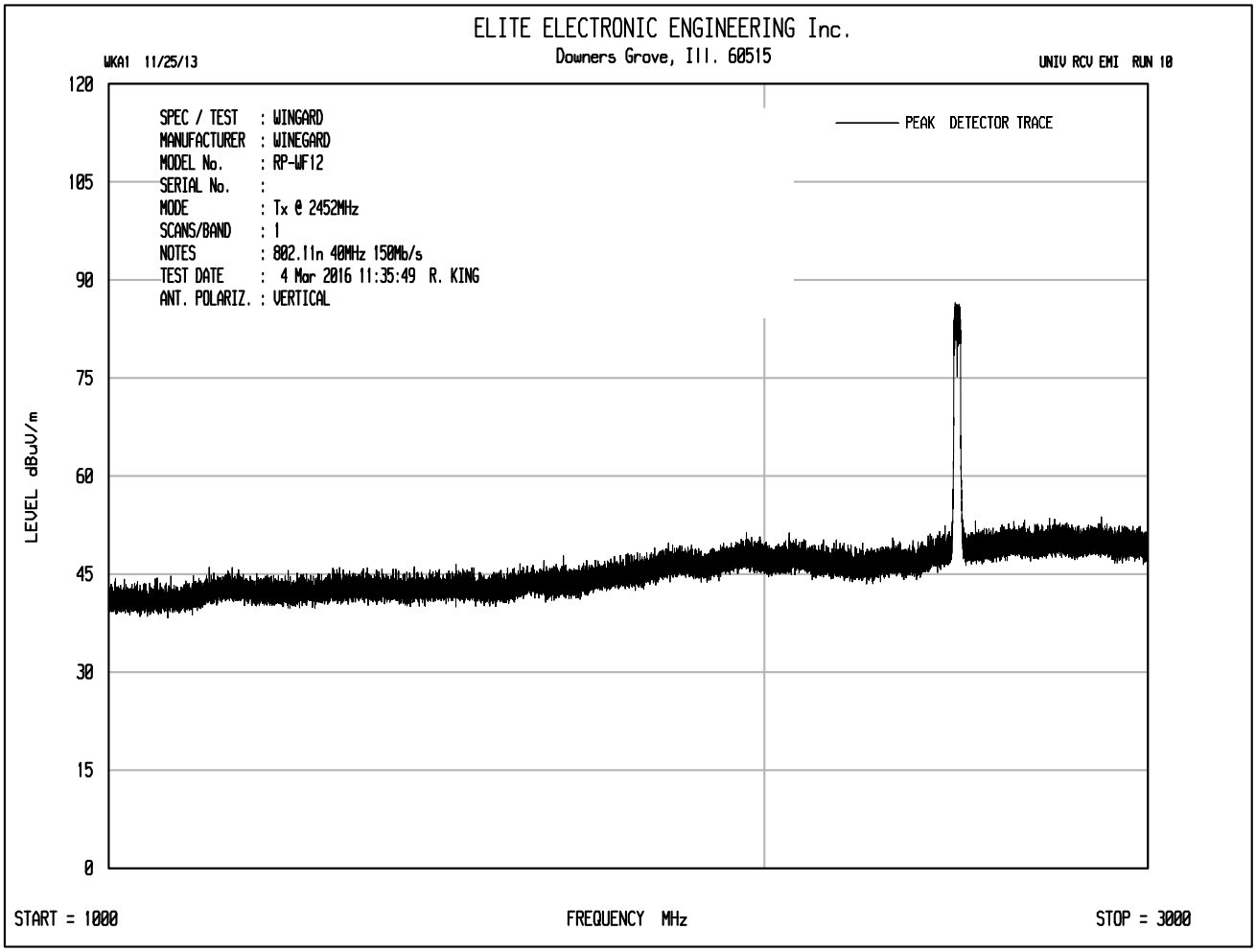

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 22
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 10
NOTES : 802.11 n 40MHz 150MBPs
TEST DATE : 4 Apr 2016 14:06:25 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

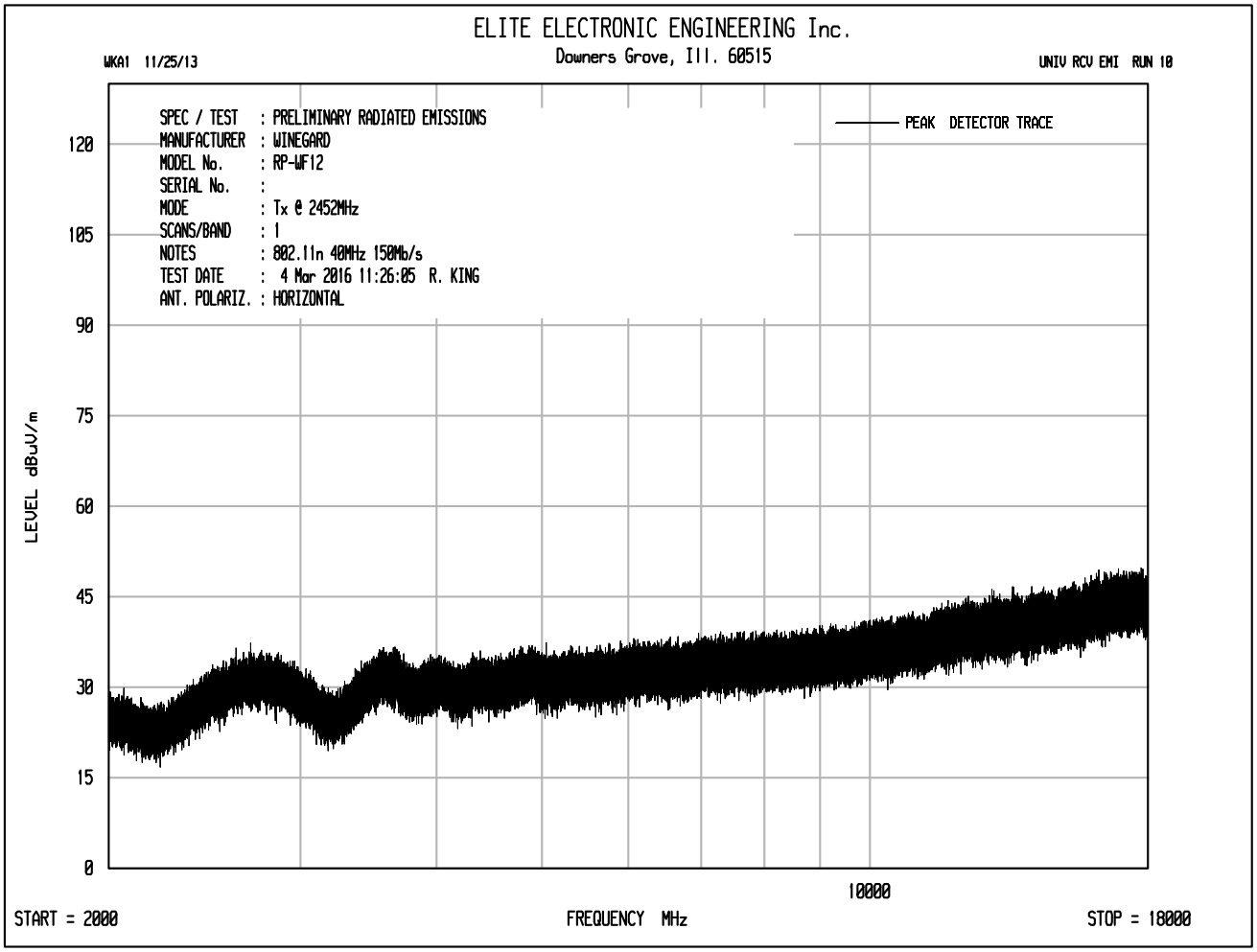

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 23
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ LOW CHANNEL
SCANS/BAND : 10
NOTES : 802.11 n 40MHz 150MBPs
TEST DATE : 4 Apr 2016 14:20:01 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

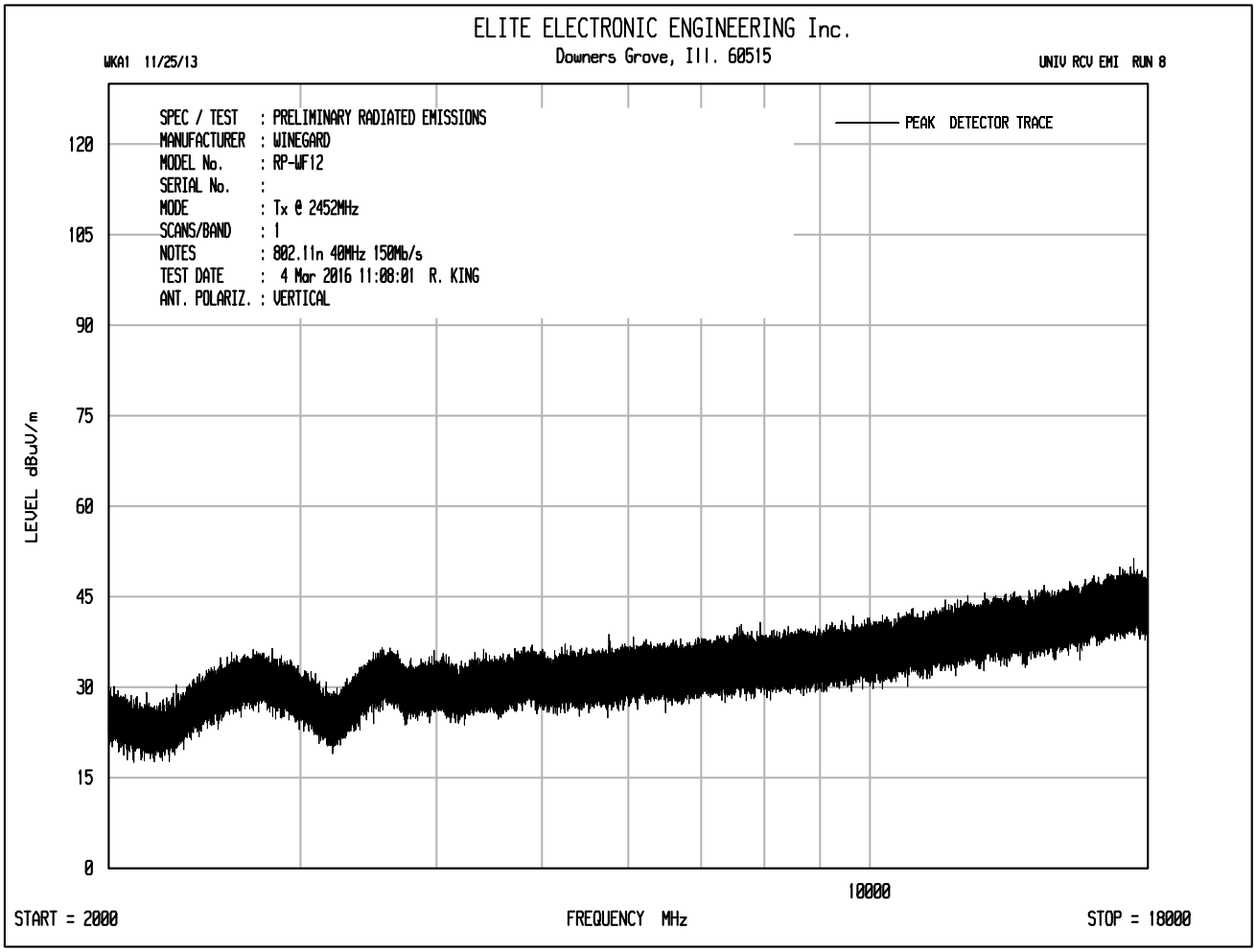

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 30
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2452MHz
SCANS/BAND : 1
NOTES : 802.11 n (40MHz)
TEST DATE : 13 Apr 2016 16:28:35 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
100
START = 30
FREQUENCY MHz
STOP = 1000

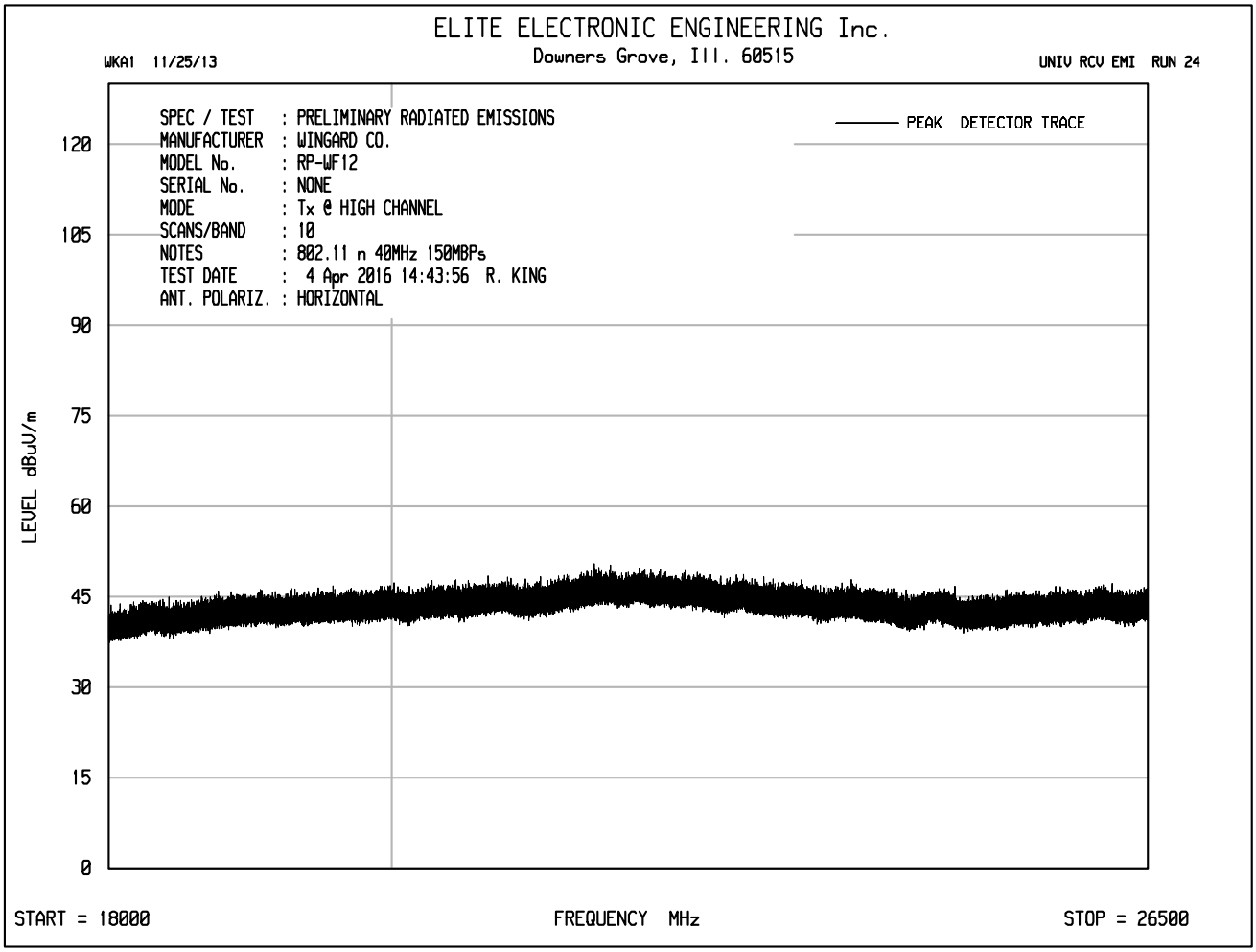

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 31
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD CO.
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2452MHz
SCANS/BAND : 1
NOTES : 802.11 n (40MHz)
TEST DATE : 13 Apr 2016 16:29:57 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
100
START = 30
FREQUENCY MHz
STOP = 1000

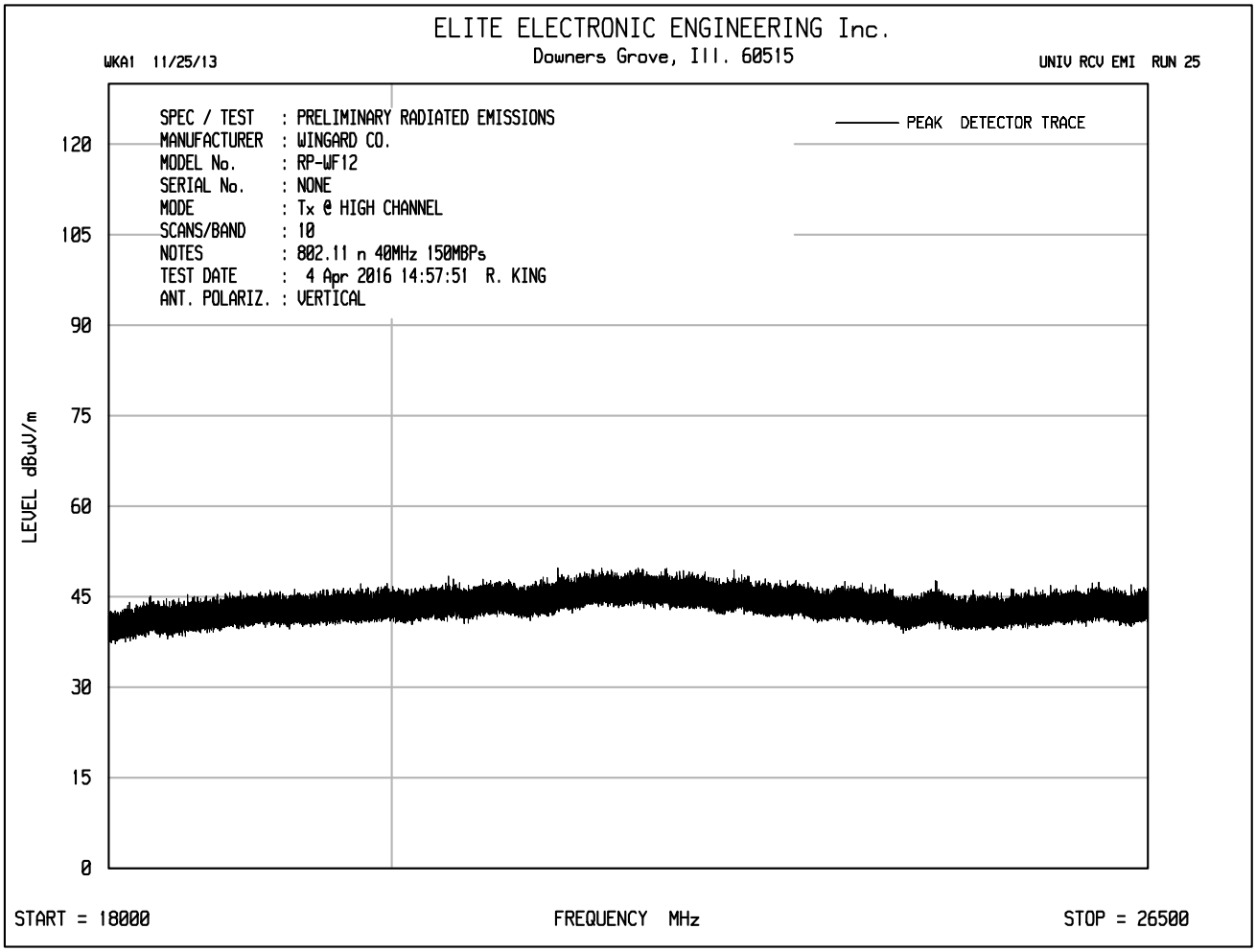

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 9
SPEC / TEST : WINGARD
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2452MHz
SCANS/BAND : 1
NOTES : 802.11n 40MHz 150Mb/s
TEST DATE : 4 Mar 2016 11:33:11 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 10
SPEC / TEST : WINGARD
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2452MHz
SCANS/BAND : 1
NOTES : 802.11n 40MHz 150Mb/s
TEST DATE : 4 Mar 2016 11:35:49 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 3000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 10
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2452MHz
SCANS/BAND : 1
NOTES : 802.11n 40MHz 150Mb/s
TEST DATE : 4 Mar 2016 11:26:05 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 2000
FREQUENCY MHz
STOP = 18000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 8
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINEGARD
MODEL No. : RP-WF12
SERIAL No. :
MODE : Tx @ 2452MHz
SCANS/BAND : 1
NOTES : 802.11n 40MHz 150Mb/s
TEST DATE : 4 Mar 2016 11:08:01 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 2000
FREQUENCY MHz
STOP = 18000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 24
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 10
NOTES : 802.11 n 40MHz 150MBPs
TEST DATE : 4 Apr 2016 14:43:56 R. KING
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 11/25/13
UNIV RCV EMI RUN 25
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : WINGARD CO.
MODEL No. : RP-WF12
SERIAL No. : NONE
MODE : Tx @ HIGH CHANNEL
SCANS/BAND : 10
NOTES : 802.11 n 40MHz 150MBPs
TEST DATE : 4 Apr 2016 14:57:51 R. KING
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 26500

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2412MHz, 802.11b
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	53.8		4.8	34.2	-38.4	54.4	526.4	5000.0	-19.6
4824.00	V	48.4	*	4.8	34.2	-38.4	49.0	281.7	5000.0	-25.0
12060.00	H	46.0	*	8.0	39.1	-38.2	54.9	556.1	5000.0	-19.1
12060.00	V	46.1	*	8.0	39.1	-38.2	55.0	564.5	5000.0	-18.9
14472.00	H	48.3	*	8.7	39.6	-38.3	58.3	822.1	5000.0	-15.7
14472.00	V	48.0	*	8.7	39.6	-38.3	58.0	797.8	5000.0	-15.9
19296.00	H	36.5	*	1.7	40.4	-28.3	50.2	324.5	5000.0	-23.8
19296.00	V	36.5	*	1.7	40.4	-28.3	50.2	324.5	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^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2412MHz, 802.11b
Notes :
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)	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	49.9		4.8	34.2	-38.4	50.5	336.0	500.0	-3.5
4824.00	V	35.0	*	4.8	34.2	-38.4	35.6	59.9	500.0	-18.4
12060.00	H	32.9	*	8.0	39.1	-38.2	41.8	123.1	500.0	-12.2
12060.00	V	32.9	*	8.0	39.1	-38.2	41.8	123.2	500.0	-12.2
14472.00	H	34.9	*	8.7	39.6	-38.3	44.9	176.8	500.0	-9.0
14472.00	V	34.9	*	8.7	39.6	-38.3	44.9	176.0	500.0	-9.1
19296.00	H	21.3	*	1.7	40.4	-28.3	35.0	56.1	500.0	-19.0
19296.00	V	21.3	*	1.7	40.4	-28.3	35.0	56.1	500.0	-19.0

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^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2437MHz, 802.11b
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)
4874.00	H	52.9		4.9	34.2	-38.4	53.6	477.5	5000.0	-20.4
4874.00	V	51.9		4.9	34.2	-38.4	52.6	424.6	5000.0	-21.4
7311.00	H	48.8	*	6.2	36.1	-38.8	52.3	413.0	5000.0	-21.7
7311.00	V	47.9	*	6.2	36.1	-38.8	51.4	371.5	5000.0	-22.6
12185.00	H	45.7	*	8.0	39.2	-38.4	54.6	535.7	5000.0	-19.4
12185.00	V	46.7	*	8.0	39.2	-38.4	55.6	603.8	5000.0	-18.4
19496.00	H	33.3	*	1.7	40.4	-28.6	46.7	217.4	5000.0	-27.2
19496.00	V	33.5	*	1.7	40.4	-28.6	47.0	223.3	5000.0	-27.0

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2437MHz, 802.11b
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)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4874.00	H	41.0		4.9	34.2	-38.4	41.6	120.6	500.0	-12.4
4874.00	V	39.7		4.9	34.2	-38.4	40.3	104.1	500.0	-13.6
7311.00	H	34.73	*	6.2	36.1	-38.8	38.3	81.8	500.0	-15.7
7311.00	V	34.9	*	6.2	36.1	-38.8	38.4	83.0	500.0	-15.6
12185.00	H	33.8	*	8.0	39.2	-38.4	42.7	136.3	500.0	-11.3
12185.00	V	33.9	*	8.0	39.2	-38.4	42.8	138.0	500.0	-11.2
19496.00	H	20.1	*	1.7	40.4	-28.6	33.6	47.9	500.0	-20.4
19496.00	V	20.0	*	1.7	40.4	-28.6	33.5	47.4	500.0	-20.5

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^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11b
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	56.9		4.9	34.2	-38.4	57.6	762.2	5000.0	-16.3
4924.00	V	54.5		4.9	34.2	-38.4	55.2	574.9	5000.0	-18.8
7386.00	H	51.6		6.2	36.2	-38.8	55.2	573.7	5000.0	-18.8
7386.00	V	57.2		6.2	36.2	-38.8	60.8	1096.9	5000.0	-13.2
12310.00	H	46.0	*	8.0	39.3	-38.5	54.8	551.5	5000.0	-19.1
12310.00	V	46.9	*	8.0	39.3	-38.5	55.7	609.6	5000.0	-18.3
19696.00	H	33.7	*	1.7	40.4	-28.3	47.5	238.2	5000.0	-26.4
19696.00	V	33.1	*	1.7	40.4	-28.3	46.9	220.7	5000.0	-27.1
22158.00	H	32.3	*	1.7	40.6	-29.1	45.4	187.2	5000.0	-28.5
22158.00	V	33.0	*	1.7	40.6	-29.1	46.1	202.9	5000.0	-27.8

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11b
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)	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	45.1		4.9	34.2	-38.4	45.8	195.7	500.0	-8.1
4924.00	V	41.6		4.9	34.2	-38.4	42.3	130.6	500.0	-11.7
7386.00	H	40.79		6.2	36.2	-38.8	44.4	166.0	500.0	-9.6
7386.00	V	47.8		6.2	36.2	-38.8	51.4	370.0	500.0	-2.6
12310.00	H	33.3	*	8.0	39.3	-38.5	42.1	127.5	500.0	-11.9
12310.00	V	33.2	*	8.0	39.3	-38.5	42.1	126.8	500.0	-11.9
19696.00	H	20.6	*	1.7	40.4	-28.3	34.4	52.4	500.0	-19.6
19696.00	V	20.6	*	1.7	40.4	-28.3	34.4	52.5	500.0	-19.6
22158.00	H	20.3	*	1.7	40.6	-29.1	33.5	47.1	500.0	-20.5
22158.00	V	20.4	*	1.7	40.6	-29.1	33.6	47.8	500.0	-20.4

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^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2412MHz, 802.11g
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	48.7	*	4.8	34.2	-38.4	49.3	291.3	5000.0	-24.7
4824.00	V	49.7	*	4.8	34.2	-38.4	50.3	327.6	5000.0	-23.7
12060.00	H	47.4	*	8.0	39.1	-38.2	56.3	652.6	5000.0	-17.7
12060.00	V	47.4	*	8.0	39.1	-38.2	56.4	657.9	5000.0	-17.6
14472.00	H	46.2	*	8.7	39.6	-38.3	56.3	651.5	5000.0	-17.7
14472.00	V	46.2	*	8.7	39.6	-38.3	56.2	649.2	5000.0	-17.7
19296.00	H	33.3	*	2.2	40.4	-28.3	47.6	238.7	5000.0	-26.4
19296.00	V	34.2	*	2.2	40.4	-28.3	48.5	266.6	5000.0	-25.5

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2412MHz, 802.11g
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)	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	33.8	*	4.8	34.2	-38.4	34.4	52.2	500.0	-19.6
4824.00	V	35.3	*	4.8	34.2	-38.4	35.9	62.4	500.0	-18.1
12060.00	H	34.3	*	8.0	39.1	-38.2	43.2	145.3	500.0	-10.7
12060.00	V	34.3	*	8.0	39.1	-38.2	43.2	145.3	500.0	-10.7
14472.00	H	33.4	*	8.7	39.6	-38.3	43.4	148.6	500.0	-10.5
14472.00	V	33.4	*	8.7	39.6	-38.3	43.4	148.7	500.0	-10.5
19296.00	H	20.4	*	2.2	40.4	-28.3	34.7	54.2	500.0	-19.3
19296.00	V	20.5	*	2.2	40.4	-28.3	34.7	54.6	500.0	-19.2

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^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2437MHz, 802.11g
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)
4874.00	H	59.3		4.9	34.2	-38.4	59.9	991.8	5000.0	-14.1
4874.00	V	51.3		4.9	34.2	-38.4	52.0	396.2	5000.0	-22.0
7311.00	H	58.1		6.2	36.1	-38.8	61.6	1209.2	5000.0	-12.3
7311.00	V	66.1		6.2	36.1	-38.8	69.7	3044.3	5000.0	-4.3
12185.00	H	47.2	*	8.0	39.2	-38.4	56.0	633.0	5000.0	-18.0
12185.00	V	47.1	*	8.0	39.2	-38.4	56.0	630.8	5000.0	-18.0
19496.00	H	34.0	*	1.7	40.4	-28.6	47.4	235.1	5000.0	-26.6
19496.00	V	34.0	*	1.7	40.4	-28.6	47.4	235.1	5000.0	-26.6

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2437MHz, 802.11g
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)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4874.00	H	42.9		4.9	34.2	-38.4	43.6	151.3	500.0	-10.4
4874.00	V	37.0		4.9	34.2	-38.4	37.7	76.5	500.0	-16.3
7311.00	H	38.1		6.2	36.1	-38.8	41.6	120.5	500.0	-12.4
7311.00	V	43.3		6.2	36.1	-38.8	46.8	219.0	500.0	-7.2
12185.00	H	33.8	*	8.0	39.2	-38.4	42.7	136.6	500.0	-11.3
12185.00	V	33.9	*	8.0	39.2	-38.4	42.7	137.1	500.0	-11.2
19496.00	H	21.5	*	1.7	40.4	-28.6	35.0	56.1	500.0	-19.0
19496.00	V	21.5	*	1.7	40.4	-28.6	35.0	56.1	500.0	-19.0

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^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11g
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	50.6		4.9	34.2	-38.4	51.3	366.1	5000.0	-22.7
4924.00	V	48.5	*	4.9	34.2	-38.4	49.3	290.1	5000.0	-24.7
7386.00	H	60.0		6.2	36.2	-38.8	63.6	1508.9	5000.0	-10.4
7386.00	V	60.0		6.2	36.2	-38.8	63.6	1508.9	5000.0	-10.4
12310.00	H	46.4	*	8.0	39.3	-38.5	55.2	574.2	5000.0	-18.8
12310.00	V	46.3	*	8.0	39.3	-38.5	55.1	570.2	5000.0	-18.9
19696.00	H	33.4	*	1.7	40.4	-28.3	47.2	229.8	5000.0	-26.8
19696.00	V	33.4	*	1.7	40.4	-28.3	47.2	229.8	5000.0	-26.8
22158.00	H	35.2	*	1.7	40.6	-29.1	48.3	261.1	5000.0	-25.6
22158.00	V	35.2	*	1.7	40.6	-29.1	48.3	261.1	5000.0	-25.6

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11g
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)	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	36.1		4.9	34.2	-38.4	36.8	68.9	500.0	-17.2
4924.00	V	34.0	*	4.9	34.2	-38.4	34.7	54.3	500.0	-19.3
7386.00	H	40.04		6.2	36.2	-38.8	43.7	152.3	500.0	-10.3
7386.00	V	40.0		6.2	36.2	-38.8	43.7	152.3	500.0	-10.3
12310.00	H	33.2	*	8.0	39.3	-38.5	42.0	125.9	500.0	-12.0
12310.00	V	33.0	*	8.0	39.3	-38.5	41.8	122.8	500.0	-12.2
19696.00	H	21.3	*	1.7	40.4	-28.3	35.2	57.3	500.0	-18.8
19696.00	V	21.3	*	1.7	40.4	-28.3	35.2	57.3	500.0	-18.8
22158.00	H	23.5	*	1.7	40.6	-29.1	36.6	67.8	500.0	-17.4
22158.00	V	23.5	*	1.7	40.6	-29.1	36.6	67.8	500.0	-17.4

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^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2412MHz, 802.11n
Notes : Test Distance is 3 meters
Notes : Maximized Peak Readings in a 1MHz bandwidth
Notes : MIMO

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	52.6	*	4.8	34.2	-38.4	53.2	458.4	5000.0	-20.8
4824.00	V	52.6	*	4.8	34.2	-38.4	53.2	457.4	5000.0	-20.8
12060.00	H	52.5	*	8.0	39.1	-38.2	61.4	1178.1	5000.0	-12.6
12060.00	V	52.1	*	8.0	39.1	-38.2	61.0	1121.2	5000.0	-13.0
14472.00	H	51.8	*	8.7	39.6	-38.3	61.8	1237.1	5000.0	-12.1
14472.00	V	51.8	*	8.7	39.6	-38.3	61.8	1237.1	5000.0	-12.1
19296.00	H	41.3	*	1.7	40.4	-28.3	55.0	562.6	5000.0	-19.0
19296.00	V	41.3	*	1.7	40.4	-28.3	55.0	562.6	5000.0	-19.0

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2412MHz, 802.11n
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)	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	38.5	*	4.8	34.2	-38.4	39.1	90.0	500.0	-14.9
4824.00	V	38.5	*	4.8	34.2	-38.4	39.1	90.2	500.0	-14.9
12060.00	H	39.2	*	8.0	39.1	-38.2	48.1	255.4	500.0	-5.8
12060.00	V	39.2	*	8.0	39.1	-38.2	48.1	254.5	500.0	-5.9
14472.00	H	33.7	*	8.7	39.6	-38.3	43.7	154.0	500.0	-10.2
14472.00	V	33.7	*	8.7	39.6	-38.3	43.7	154.0	500.0	-10.2
19296.00	H	26.1	*	1.7	40.4	-28.3	39.8	97.8	500.0	-14.2
19296.00	V	26.1	*	1.7	40.4	-28.3	39.8	97.8	500.0	-14.2

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2437MHz, 802.11n
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	54.6		4.8	34.8	-39.3	54.9	557.8	5000.0	-19.0
4824.00	V	54.0		4.8	34.8	-39.3	54.3	520.6	5000.0	-19.6
12060.00	H	51.2	*	8.0	38.9	-39.1	58.9	884.3	5000.0	-15.0
12060.00	V	50.2	*	8.0	38.9	-39.1	57.9	788.1	5000.0	-16.0
14472.00	H	49.4	*	8.7	39.8	-38.3	59.7	964.9	5000.0	-14.3
14472.00	V	49.8	*	8.7	39.8	-38.3	60.1	1010.4	5000.0	-13.9
19296.00	H	31.8	*	2.2	40.4	-28.3	46.1	201.5	5000.0	-27.9
19296.00	V	31.8	*	2.2	40.4	-28.3	46.1	201.5	5000.0	-27.9

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2437MHz, 802.11n
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)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4874.00	H	41.1		4.9	34.8	-39.3	41.4	117.6	500.0	-12.6
4874.00	V	38.8		4.9	34.8	-39.3	39.1	90.3	500.0	-14.9
7311.00	H	37.2	*	6.2	35.6	-39.4	39.5	94.5	500.0	-14.5
7311.00	V	37.1	*	6.2	35.6	-39.4	39.4	93.5	500.0	-14.6
12185.00	H	36.8	*	8.0	39.0	-39.1	44.7	171.5	500.0	-9.3
12185.00	V	36.8	*	8.0	39.0	-39.1	44.7	171.5	500.0	-9.3
19496.00	H	19.0	*	2.2	40.4	-28.6	33.0	44.8	500.0	-20.9
19496.00	V	19.0	*	2.2	40.4	-28.6	33.0	44.8	500.0	-20.9

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11n
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	56.1		4.9	34.2	-38.4	56.8	690.3	5000.0	-17.2
4924.00	V	53.0		4.9	34.2	-38.4	53.7	486.5	5000.0	-20.2
7386.00	H	61.6		6.2	36.2	-38.8	65.2	1816.2	5000.0	-8.8
7386.00	V	60.6		6.2	36.2	-38.8	64.2	1626.2	5000.0	-9.8
12310.00	H	50.9	*	8.0	39.3	-38.5	59.7	966.1	5000.0	-14.3
12310.00	V	50.8	*	8.0	39.3	-38.5	59.6	955.1	5000.0	-14.4
19696.00	H	40.5	*	1.7	40.4	-28.3	54.3	518.1	5000.0	-19.7
19696.00	V	40.5	*	1.7	40.4	-28.3	54.3	518.1	5000.0	-19.7
22158.00	H	40.0	*	1.7	40.6	-29.1	53.1	454.3	5000.0	-20.8
22158.00	V	40.0	*	1.7	40.6	-29.1	53.1	454.3	5000.0	-20.8

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11n
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)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4844.00	H	39.8	*	4.9	34.2	-38.4	40.4	105.0	500.0	-13.6
4844.00	V	39.8	*	4.9	34.2	-38.4	40.4	104.9	500.0	-13.6
7266.00	H	39.79	*	6.1	36.1	-38.8	43.3	145.7	500.0	-10.7
7266.00	V	39.7	*	6.1	36.1	-38.8	43.2	144.9	500.0	-10.8
12110.00	H	38.2	*	8.0	39.2	-38.3	47.1	226.5	500.0	-6.9
12110.00	V	38.2	*	8.0	39.2	-38.3	47.1	227.0	500.0	-6.9
19376.00	H	26.0	*	1.7	40.4	-28.4	39.6	95.6	500.0	-14.4
19376.00	V	26.0	*	1.7	40.4	-28.4	39.6	95.6	500.0	-14.4
4844.00	H	39.8	*	4.9	34.2	-38.4	40.4	105.0	500.0	-13.6
4844.00	V	39.8	*	4.9	34.2	-38.4	40.4	104.9	500.0	-13.6

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2422MHz, 802.11n
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)
4844.00	H	53.4	*	4.9	34.2	-38.4	54.1	504.5	5000.0	-19.9
4844.00	V	53.8	*	4.9	34.2	-38.4	54.4	525.2	5000.0	-19.6
7266.00	H	52.6	*	6.1	36.1	-38.8	56.1	639.7	5000.0	-17.9
7266.00	V	52.5	*	6.1	36.1	-38.8	56.0	628.0	5000.0	-18.0
12110.00	H	58.2	*	8.0	39.2	-38.3	67.1	2267.6	5000.0	-6.9
12110.00	V	53.8	*	8.0	39.2	-38.3	62.7	1363.2	5000.0	-11.3
19376.00	H	37.9	*	1.7	40.4	-28.4	51.5	377.3	5000.0	-22.4
19376.00	V	37.9	*	1.7	40.4	-28.4	51.5	377.3	5000.0	-22.4

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2422MHz, 802.11n
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)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4844.00	H	39.8	*	4.9	34.2	-38.4	40.4	105.0	500.0	-13.6
4844.00	V	39.8	*	4.9	34.2	-38.4	40.4	104.9	500.0	-13.6
7266.00	H	39.79	*	6.1	36.1	-38.8	43.3	145.7	500.0	-10.7
7266.00	V	39.7	*	6.1	36.1	-38.8	43.2	144.9	500.0	-10.8
12110.00	H	38.2	*	8.0	39.2	-38.3	47.1	226.5	500.0	-6.9
12110.00	V	38.2	*	8.0	39.2	-38.3	47.1	227.0	500.0	-6.9
19376.00	H	26.0	*	1.7	40.4	-28.4	39.6	95.6	500.0	-14.4
19376.00	V	26.0	*	1.7	40.4	-28.4	39.6	95.6	500.0	-14.4

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2437MHz, 802.11n
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)
4874.00	H	62.2		4.9	34.2	-38.4	62.9	1393.0	5000.0	-11.1
4874.00	V	58.1		4.9	34.2	-38.4	58.8	866.8	5000.0	-15.2
7311.00	H	64.3		6.2	36.1	-38.8	67.8	2457.5	5000.0	-6.2
7311.00	V	65.5		6.2	36.1	-38.8	69.0	2828.1	5000.0	-4.9
12185.00	H	51.8	*	8.0	39.2	-38.4	60.7	1078.7	5000.0	-13.3
12185.00	V	51.8	*	8.0	39.2	-38.4	60.7	1078.7	5000.0	-13.3
19496.00	H	38.3	*	1.7	40.4	-28.6	51.8	388.9	5000.0	-22.2
19496.00	V	38.3	*	1.7	40.4	-28.6	51.8	388.9	5000.0	-22.2

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2437MHz, 802.11n
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)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4874.00	H	46.3		4.9	34.2	-38.4	46.9	221.8	500.0	-7.1
4874.00	V	40.4		4.9	34.2	-38.4	41.1	113.0	500.0	-12.9
7311.00	H	40.63		6.2	36.1	-38.8	44.2	161.4	500.0	-9.8
7311.00	V	42.9		6.2	36.1	-38.8	46.5	210.6	500.0	-7.5
12185.00	H	38.6	*	8.0	39.2	-38.4	47.4	235.7	500.0	-6.5
12185.00	V	38.9	*	8.0	39.2	-38.4	47.7	243.5	500.0	-6.3
19496.00	H	26.1	*	1.7	40.4	-28.6	39.6	95.6	500.0	-14.4
19496.00	V	26.1	*	1.7	40.4	-28.6	39.6	95.6	500.0	-14.4

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2452MHz, 802.11n
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)
4904.00	H	52.1	*	4.9	34.2	-38.4	52.8	434.0	5000.0	-21.2
4904.00	V	52.5	*	4.9	34.2	-38.4	53.2	457.1	5000.0	-20.8
7356.00	H	53.9	*	6.2	36.2	-38.8	57.4	743.9	5000.0	-16.5
7356.00	V	50.3	*	6.2	36.2	-38.8	53.9	496.0	5000.0	-20.1
12260.00	H	50.2	*	8.0	39.3	-38.5	59.0	895.0	5000.0	-14.9
12260.00	V	49.4	*	8.0	39.3	-38.5	58.2	815.3	5000.0	-15.8
19616.00	H	37.9	*	1.7	40.4	-28.2	51.8	387.6	5000.0	-22.2
19616.00	V	37.9	*	1.7	40.4	-28.2	51.7	386.3	5000.0	-22.2
22068.00	H	40.0	*	1.7	40.6	-29.1	53.1	450.5	5000.0	-20.9
22068.00	V	40.0	*	1.7	40.6	-29.1	53.1	450.5	5000.0	-20.9

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12 and RP-WF14
Specification : FCC-15.247 Spurious Radiated Emissions in Restricted Bands
Date : March 3 through April 28, 2016
Mode : Tx @ 2452MHz, 802.11n
Notes : Test Distance is 3 meters
Notes : Maximized Average Readings

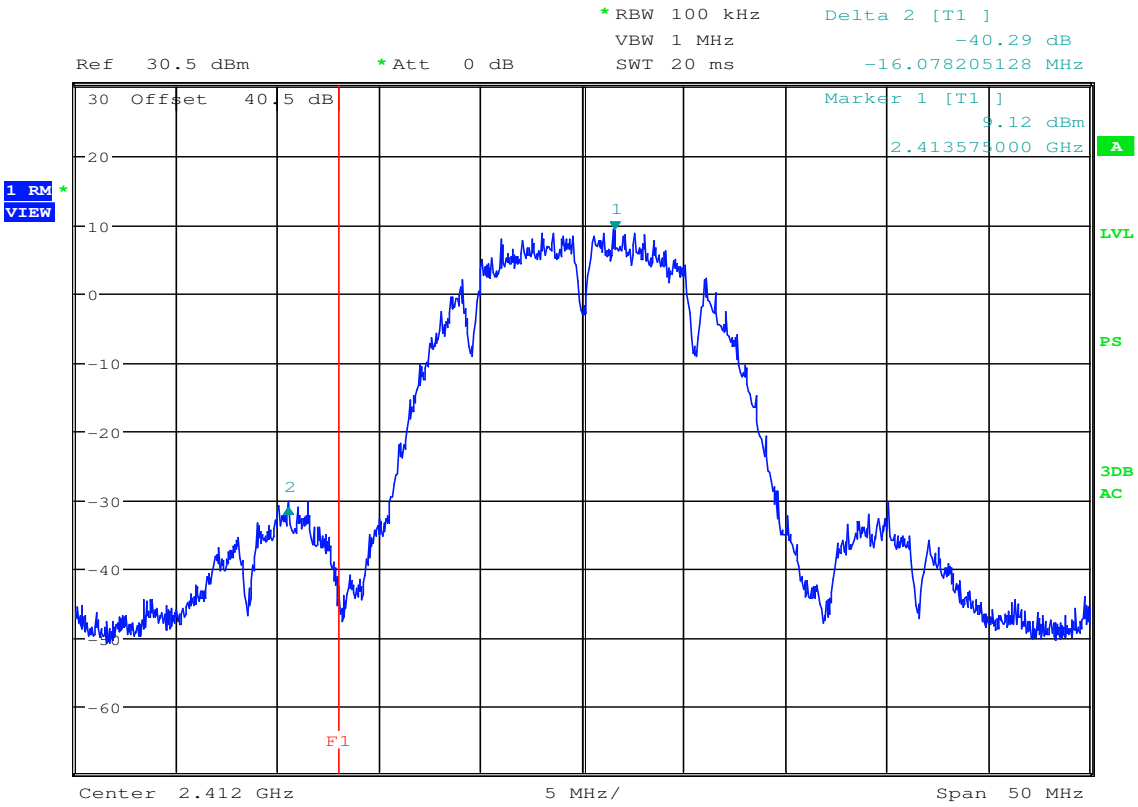
Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4904.00	H	38.2	*	4.9	34.2	-38.4	38.9	88.1	500.0	-15.1
4904.00	V	38.2	*	4.9	34.2	-38.4	38.9	88.3	500.0	-15.1
7356.00	H	40.94	*	6.2	36.2	-38.8	44.5	168.3	500.0	-9.5
7356.00	V	38.2	*	6.2	36.2	-38.8	41.8	123.0	500.0	-12.2
12260.00	H	37.6	*	8.0	39.3	-38.5	46.5	211.0	500.0	-7.5
12260.00	V	37.7	*	8.0	39.3	-38.5	46.5	211.5	500.0	-7.5
19616.00	H	25.8	*	1.7	40.4	-28.2	39.6	95.6	500.0	-14.4
19616.00	V	25.8	*	1.7	40.4	-28.2	39.6	95.9	500.0	-14.3
22068.00	H	27.8	*	1.7	40.6	-29.1	40.9	111.5	500.0	-13.0
22068.00	V	27.8	*	1.7	40.6	-29.1	40.9	111.5	500.0	-13.0

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King



Date: 24.JUN.2003 01:59:10

FCC 15C 15.247 / Band edge Compliance

MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ LOW Channel (2412MHz)
	:	RMS detector
NOTES	:	802.11 b (20 MHz)
NOTES	:	Worst Case 1Mbps
NOTES	:	
NOTES	:	

NOTES

Manufacturer : Winegard Co.
Model No. : RP-WF12
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11b
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)
2483.50	H	30.4		3.5	32.6	0.0	66.5	2116.4	5000.0	-7.5
2483.50	V	31.6		3.5	32.6	0.0	67.6	2404.9	5000.0	-6.4

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11b
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)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
2483.50	H	16.1		3.5	32.6	0.0	52.1	404.7	500.0	-1.8
2483.50	V	16.4		3.5	32.6	0.0	52.5	421.3	500.0	-1.5

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF14
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11b
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)
2483.50	H	20.0		3.5	32.6	0.0	56.1	636.2	5000.0	-17.9
2487.30	V	22.0		3.5	32.6	0.0	58.1	801.9	5000.0	-15.9

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF14
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11b
Notes : Test Distance is 3 meters
Notes : Maximized Average Readings

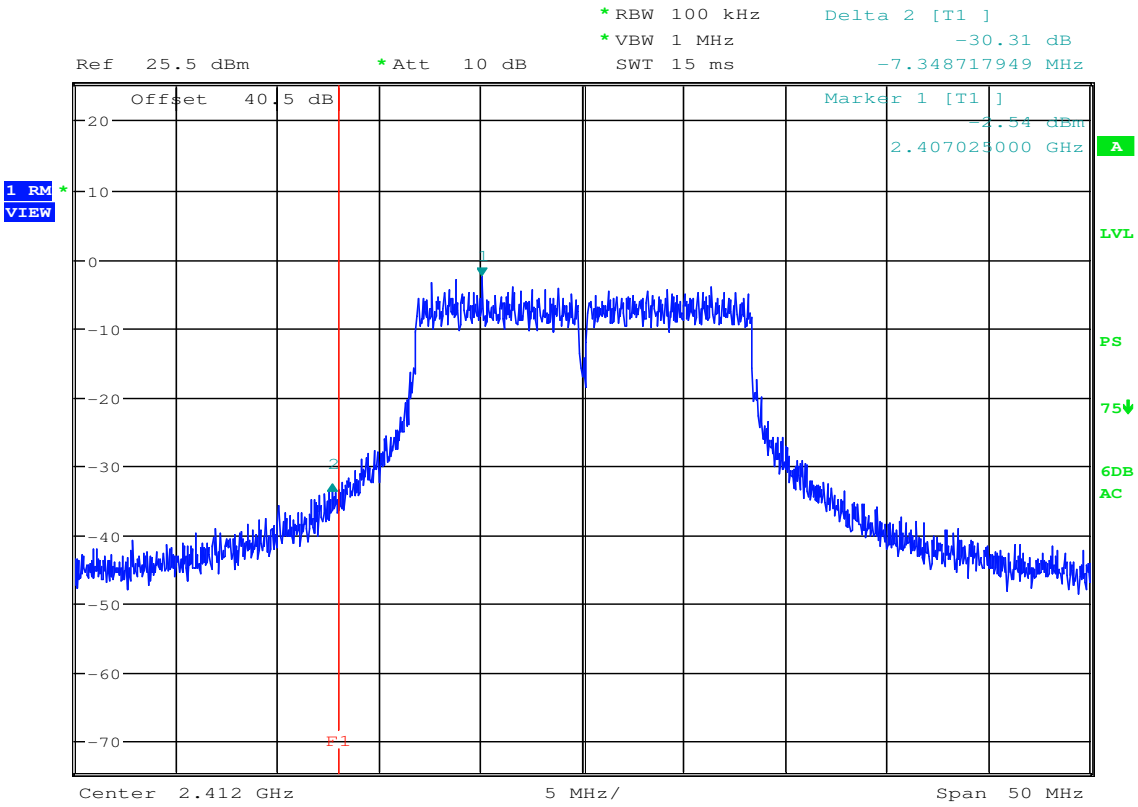
Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
2483.50	H	6.8		3.5	32.6	0.0	42.9	139.2	500.0	-11.1
2487.30	V	7.2		3.5	32.6	0.0	43.3	145.9	500.0	-10.7

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King



Date: 23.JUN.2003 01:30:56

FCC 15C 15.247 / Band edge Compliance

MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ LOW Channel (2412MHz)
	:	RMS detector
NOTES	:	802.11 g (20 MHz)
NOTES	:	Worst Case - 48Mbps
NOTES	:	
NOTES	:	

NOTES

Manufacturer : Winegard Co.
Model No. : RP-WF12
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11g
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)
2483.50	H	21.5		3.5	32.6	0.0	57.6	756.1	5000.0	-16.4
2487.30	V	21.6		3.5	32.6	0.0	57.6	762.3	5000.0	-16.3

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11g
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)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
2483.50	H	6.8		3.5	32.6	0.0	42.9	139.2	500.0	-11.1
2487.30	V	7.2		3.5	32.6	0.0	43.2	145.1	500.0	-10.7

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF14
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11g
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)
2483.50	H	23.6		3.5	32.6	0.0	59.7	962.9	5000.0	-14.3
2487.30	V	23.6		3.5	32.6	0.0	59.7	964.1	5000.0	-14.3

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF14
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11g
Notes : Test Distance is 3 meters
Notes : Maximized Average Readings

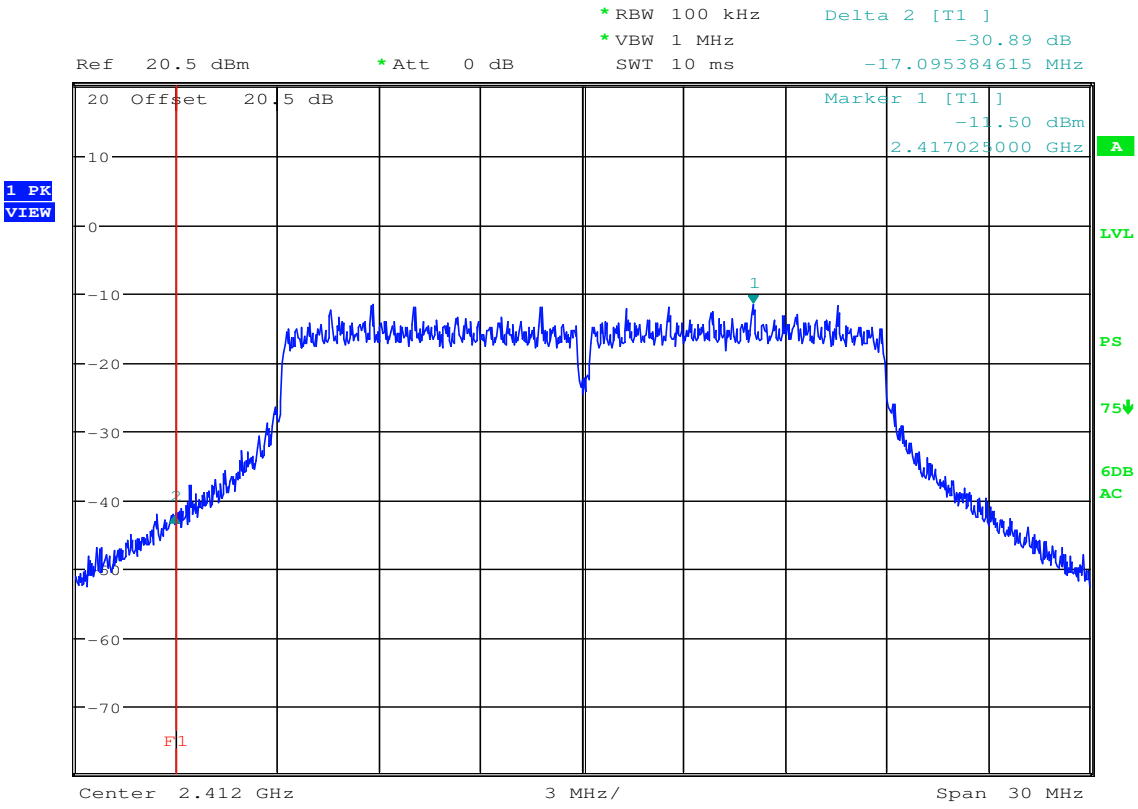
Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
2483.50	H	7.8		3.5	32.6	0.0	43.9	156.2	500.0	-10.1
2487.30	V	7.5		3.5	32.6	0.0	43.6	151.0	500.0	-10.4

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

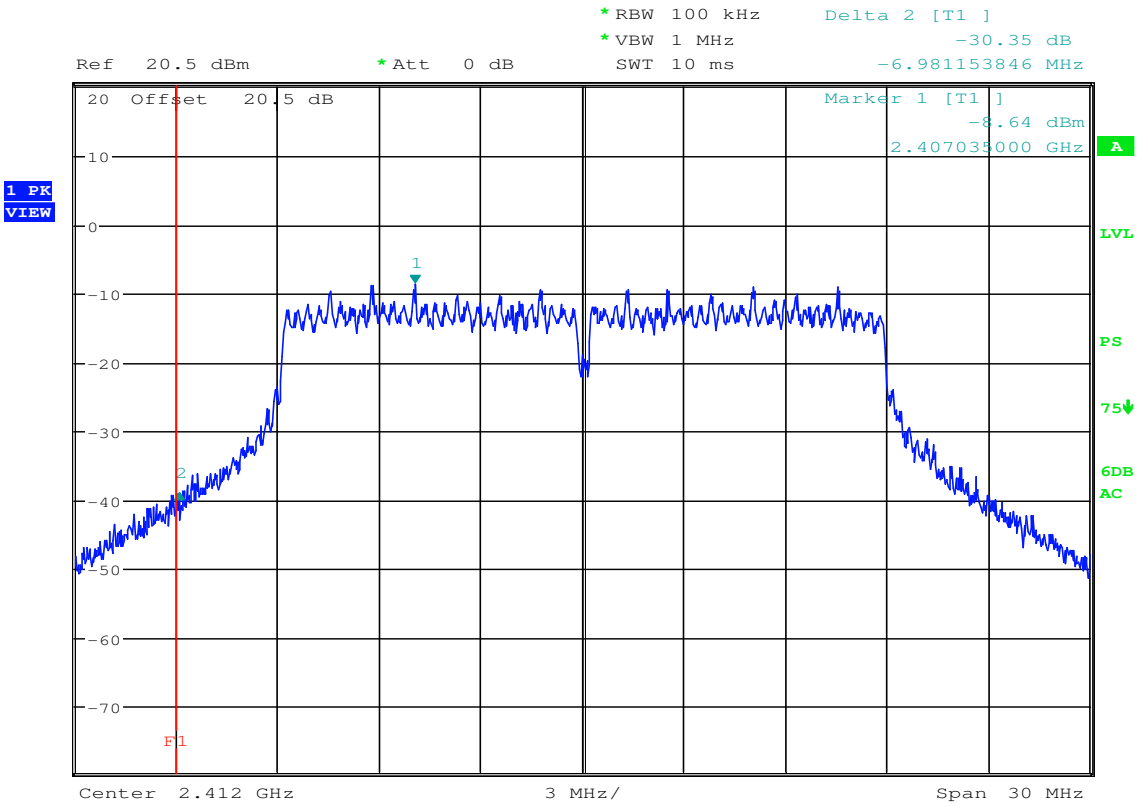


Date: 23.JUN.2003 03:27:44

FCC 15C 15.247 / Band edge Compliance

MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ LOW Channel (2412MHz)
	:	RMS detector
NOTES	:	802.11 n (20 MHz)
NOTES	:	7.2Mbps
NOTES	:	power setting = 5 dBm
NOTES	:	ANT PORT =0

NOTES

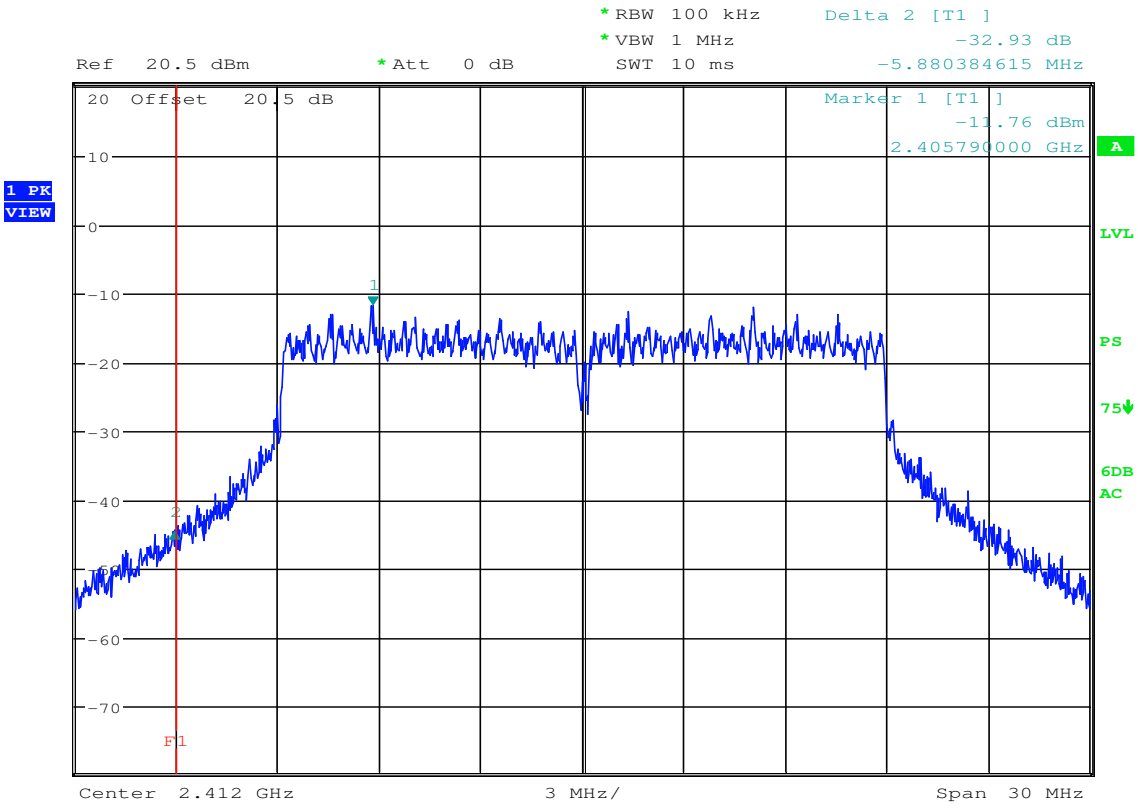


Date: 23.JUN.2003 03:49:04

FCC 15C 15.247 / Band edge Compliance

MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ LOW Channel (2412MHz)
	:	RMS detector
NOTES	:	802.11 n (20 MHz)
NOTES	:	7.2Mbps
NOTES	:	power setting = 5 dBm
NOTES	:	ANT PORT = 1

NOTES



Date: 23.JUN.2003 03:51:54

FCC 15C 15.247 / Band edge Compliance

MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ LOW Channel (2412MHz)
	:	RMS detector
NOTES	:	802.11 n (20 MHz)
NOTES	:	7.2Mbps
NOTES	:	power setting = 5 dBm
NOTES	:	ANT PORT = 2

NOTES

Manufacturer : Winegard Co.
Model No. : RP-WF12
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11n (20MHz)
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)
2483.50	H	28.0		3.5	32.4	0.0	63.9	1562.4	5000.0	-10.1
2483.50	V	30.7		3.5	32.4	0.0	66.6	2132.1	5000.0	-7.4

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11n (20MHz)
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)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
2483.50	H	15.2		3.5	32.6	0.0	51.2	364.8	500.0	-2.7
2483.50	V	16.1		3.5	32.6	0.0	52.2	407.5	500.0	-1.8

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF14
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11n (20MHz)
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)
2483.50	H	30.0		3.5	32.6	0.0	66.1	2011.9	5000.0	-7.9
2483.50	V	30.5		3.5	32.6	0.0	66.6	2131.1	5000.0	-7.4

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF14
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2462MHz, 802.11n (20MHz)
Notes : Test Distance is 3 meters
Notes : Maximized Average Readings

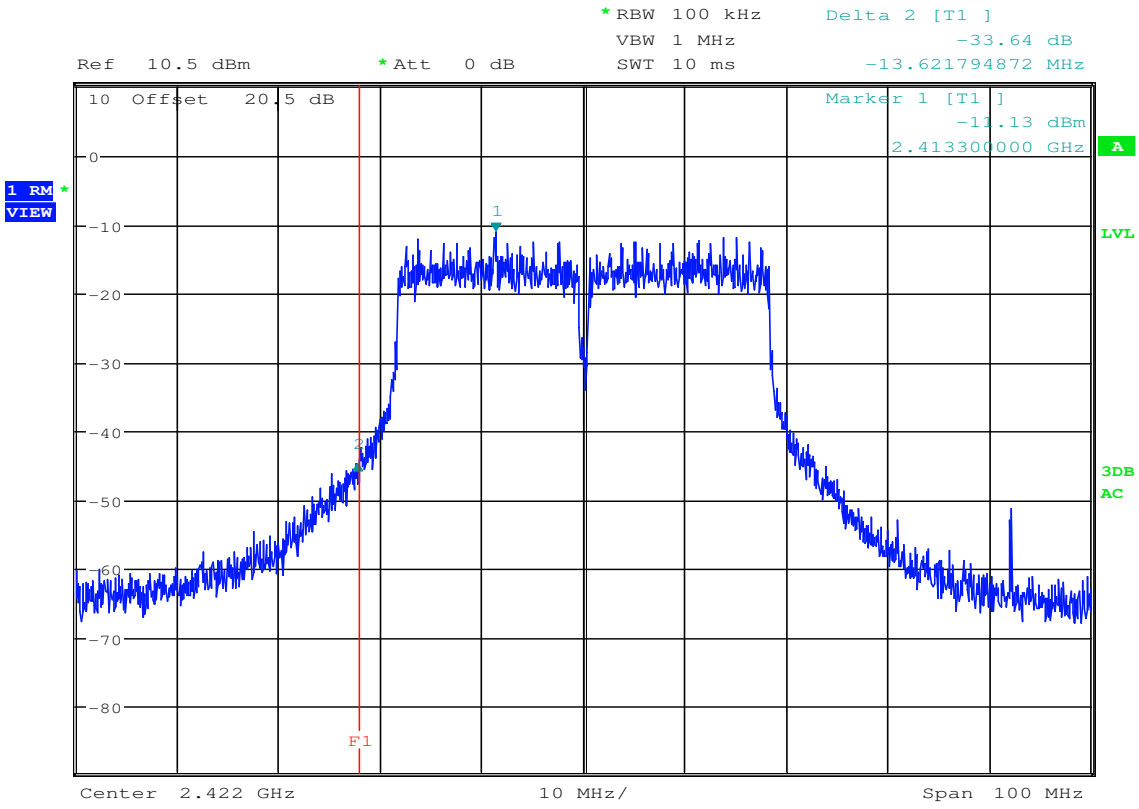
Freq. MHz	Ant Pol	Meter Reading* (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
2483.50	H	16.2		3.5	32.6	0.0	52.3	410.8	500.0	-1.7
2483.50	V	16.3		3.5	32.6	0.0	52.4	415.5	500.0	-1.6

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

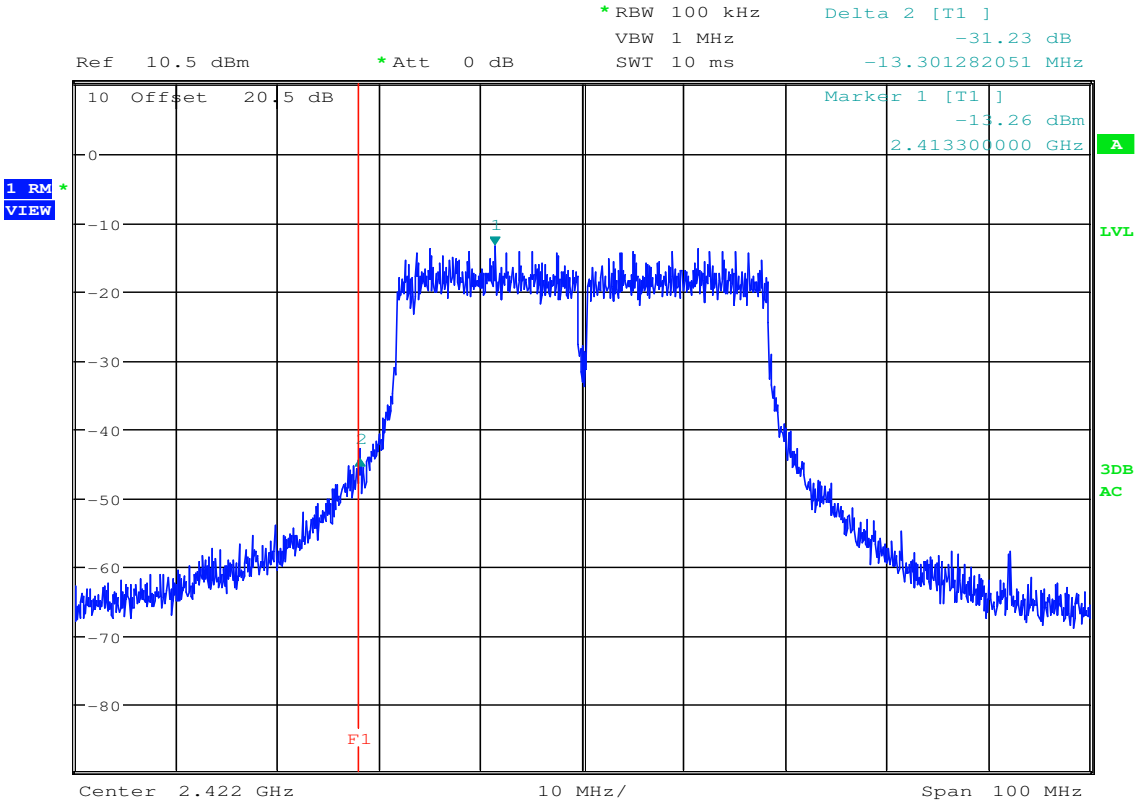


Date: 24.JUN.2003 01:08:22

FCC 15C 15.247 / Band edge Compliance

MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ LOW Channel (2422MHz)
	:	RMS detector
NOTES	:	802.11 n (40 MHz)
NOTES	:	135Mbps
NOTES	:	ANT Port 0
NOTES	:	

NOTES

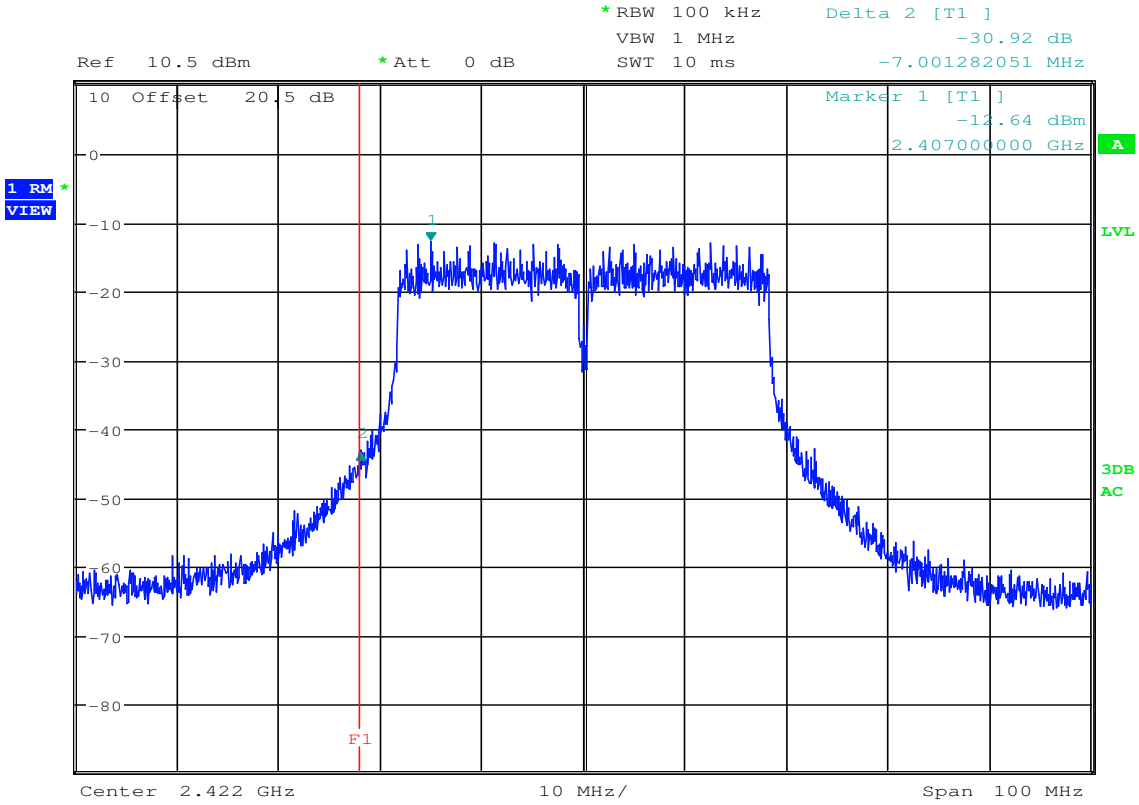


Date: 24.JUN.2003 00:58:38

FCC 15C 15.247 / Band edge Compliance

MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ LOW Channel (2422MHz)
	:	RMS detector
NOTES	:	802.11 n (40 MHz)
NOTES	:	135Mbps
NOTES	:	ANT Port 1
NOTES	:	

NOTES



Date: 24.JUN.2003 01:11:21

FCC 15C 15.247 / Band edge Compliance

MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ LOW Channel (2422MHz)
	:	RMS detector
NOTES	:	802.11 n (40 MHz)
NOTES	:	135Mbps
NOTES	:	ANT Port 2
NOTES	:	

NOTES

Manufacturer : Winegard Co.
Model No. : RP-WF12
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2452MHz, 802.11n (40MHz)
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)
2483.50	H	30.4		3.5	32.6	0.0	66.5	2116.4	5000.0	-7.5
2483.50	V	31.6		3.5	32.6	0.0	67.6	2404.9	5000.0	-6.4

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF12
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2452MHz, 802.11n (40MHz)
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)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
2483.50	H	16.0		3.5	32.6	0.0	52.1	401.4	500.0	-1.9
2483.50	V	16.0		3.5	32.6	0.0	52.1	401.4	500.0	-1.9

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF14
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2452MHz, 802.11n (40MHz)
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)
2483.50	H	30.0		3.5	32.6	0.0	66.1	2011.9	5000.0	-7.9
2483.50	V	30.5		3.5	32.6	0.0	66.6	2131.1	5000.0	-7.4

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

Peak Total uV/m = 10^((Peak Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

Manufacturer : Winegard Co.
Model No. : RP-WF14
Specification : FCC-15.247 Band edge compliance (radiated)
Date : March 3 through April 28, 2016
Mode : Tx @ 2452MHz, 802.11n (40MHz)
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)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
2483.50	H	16.0		3.5	32.6	0.0	52.1	401.4	500.0	-1.9
2483.50	V	16.0		3.5	32.6	0.0	52.1	401.4	500.0	-1.9

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

Average Total uV/m = 10^((Average Total (dBuV/m))/20)

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12
TEST PERFORMED : Power Spectral Density
TEST DATE : March 28-29, 2016
TEST MODE : See below
PROTOCOL : 802.11b
DATA RATE : See below
NOTES : 20MHz bandwidth
:

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Power Spectral Density dBm
Lo	1	2412	b	1	-2.59
Mid	6	2437	b	1	-1.06
Hi	11	2462	b	1	-0.96
Lo	1	2412	b	2	-3.51
Mid	6	2437	b	2	-2.66
Hi	11	2462	b	2	-2.34
Lo	1	2412	b	5.5	-2.68
Mid	6	2437	b	5.5	-3.22
Hi	11	2462	b	5.5	-3.25
Lo	1	2412	b	11	-3.26
Mid	6	2437	b	11	-2.58
Hi	11	2462	b	11	-3.29

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12
TEST PERFORMED : Power Spectral Density
TEST DATE : March 28-29, 2016
TEST MODE : See below
PROTOCOL : 802.11g
DATA RATE : See below
NOTES : 20MHz bandwidth
:

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Power Spectral Density dBm
Lo	1	2412	g	6	-8.89
Mid	6	2437	g	6	-1.23
Hi	11	2462	g	6	-8.7
Lo	1	2412	g	9	-7.67
Mid	6	2437	g	9	-3.36
Hi	11	2462	g	9	-7.91
Lo	1	2412	g	12	-8.49
Mid	6	2437	g	12	-3.5
Hi	11	2462	g	12	-8.51
Lo	1	2412	g	18	-7.52
Mid	6	2437	g	18	-3.76
Hi	11	2462	g	18	-8.98
Lo	1	2412	g	24	-8.2
Mid	6	2437	g	24	-1.91
Hi	11	2462	g	24	-8.52
Lo	1	2412	g	36	-7.22
Mid	6	2437	g	36	-2.6
Hi	11	2462	g	36	-9.32
Lo	1	2412	g	48	-8.11
Mid	6	2437	g	48	-2.36
Hi	11	2462	g	48	-8.97
Lo	1	2412	g	54	-7.15
Mid	6	2437	g	54	-3.3
Hi	11	2462	g	54	-8

Checked BY Richard E. King :

Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12
TEST PERFORMED : Power Spectral Density
TEST DATE : March 28-29, 2016
TEST MODE : See below
PROTOCOL : 802.11n
DATA RATE : See below
NOTES : 20MHz bandwidth
: PSD = Reading + MIMO + duty cycle (which is zero) = PSD (dBm)

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Power Spectral Density dBm
Lo	1	2412	n	7.2	-20.46
Mid	6	2437	n	7.2	-3.57
Hi	11	2462	n	7.2	-7.56
Lo	1	2412	n	14.4	-20.99
Mid	6	2437	n	14.4	-3.29
Hi	11	2462	n	14.4	-7.95
Lo	1	2412	n	21.7	-22.92
Mid	6	2437	n	21.7	-3.89
Hi	11	2462	n	21.7	-7.22
Lo	1	2412	n	28.9	-21.79
Mid	6	2437	n	28.9	-3.02
Hi	11	2462	n	28.9	-7.95
Lo	1	2412	n	43.3	-19.47
Mid	6	2437	n	43.3	-3.78
Hi	11	2462	n	43.3	-7.59
Lo	1	2412	n	57.8	-19.54
Mid	6	2437	n	57.8	-3.58
Hi	11	2462	n	57.8	-7.29
Lo	1	2412	n	65	-19.83
Mid	6	2437	n	65	-3.49
Hi	11	2462	n	65	-7.72
Lo	1	2412	n	72.2	-19.73
Mid	6	2437	n	72.2	-4.63
Hi	11	2462	n	72.2	-8.03

Checked BY Richard E. King :

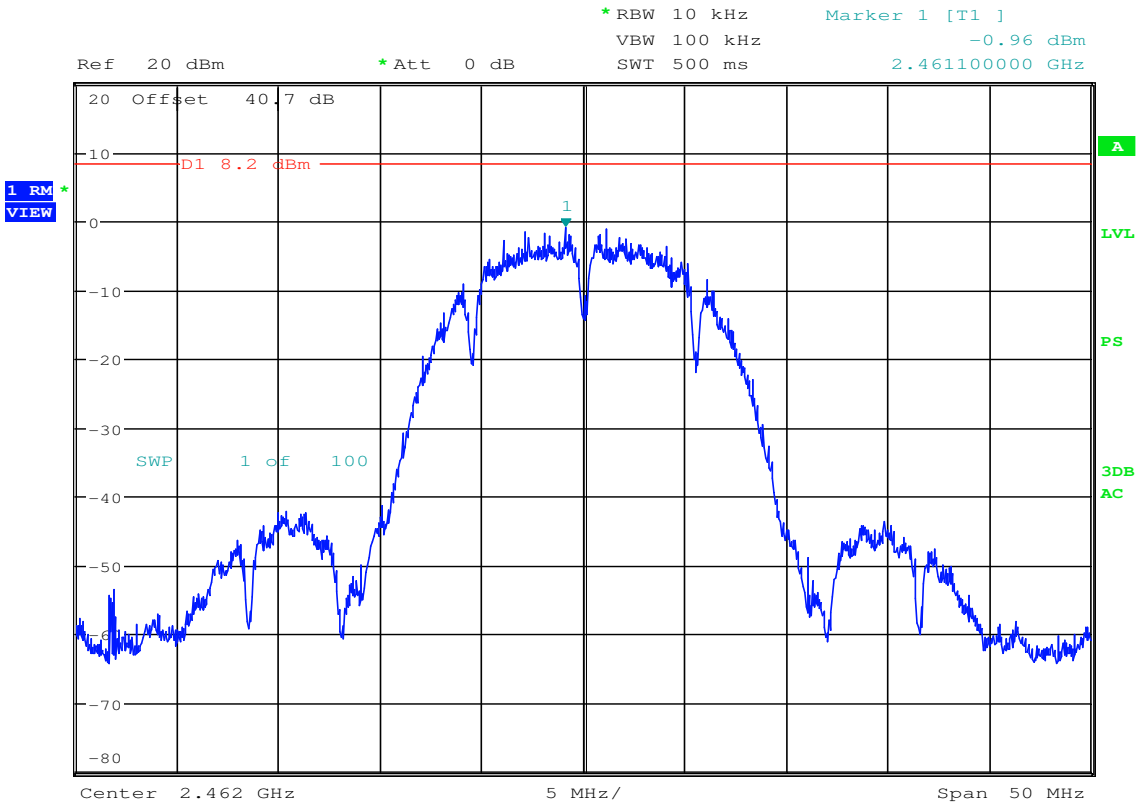
Richard E. King

MANUFACTURER : Winegard Co.
MODEL NUMBER : RP-WF12 and RP-WF14
TEST PERFORMED : Power Spectral Density
TEST DATE : March 28-29, 2016
TEST MODE : See below
PROTOCOL : 802.11n
DATA RATE : See below
NOTES : 40MHz bandwidth
: PSD = Reading + MIMO + duty cycle (which is zero) = PSD (dBm)

Lo/Mid/Hi	Channel	Frequency MHz	802.11 Protocol	Rate Mbps	Power Spectral Density dBm
Lo	3	2422	n	15	-24.13
Mid	6	2437	n	15	-9.57
Hi	9	2452	n	15	-12.78
Lo	3	2422	n	30	-23.67
Mid	6	2437	n	30	-9.64
Hi	9	2452	n	30	-13.19
Lo	3	2422	n	45	-24.05
Mid	6	2437	n	45	-9.92
Hi	9	2452	n	45	-13.52
Lo	3	2422	n	60	-23.89
Mid	6	2437	n	60	-9.76
Hi	9	2452	n	60	-13.59
Lo	3	2422	n	90	-23.26
Mid	6	2437	n	90	-9.63
Hi	9	2452	n	90	-13.29
Lo	3	2422	n	120	-24.02
Mid	6	2437	n	120	-8.11
Hi	9	2452	n	120	-13.38
Lo	3	2422	n	135	-23.63
Mid	6	2437	n	135	-9.54
Hi	9	2452	n	135	-13.54
Lo	3	2422	n	150	-23.33
Mid	6	2437	n	150	-9.43
Hi	9	2452	n	150	-13.54

Checked BY Richard E. King :

Richard E. King

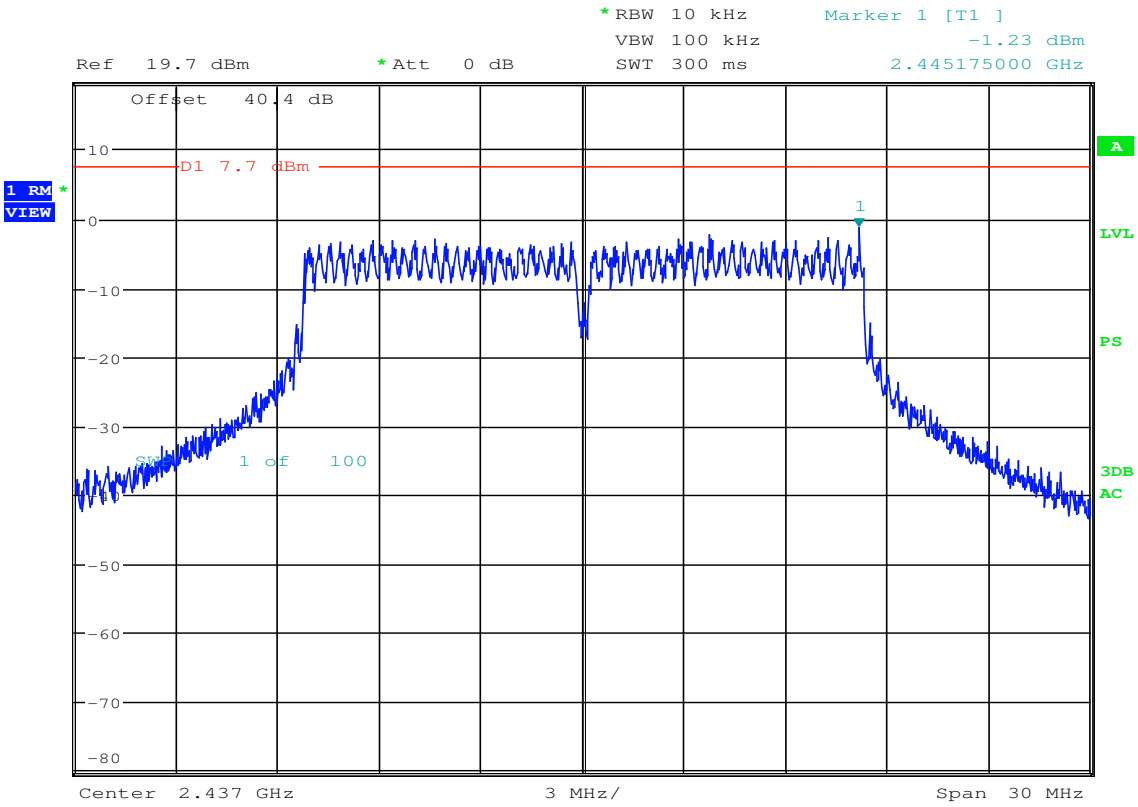


Date: 24.JUN.2003 03:06:31

FCC 15C 15.247 / Power Spectral Density

MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ HIGH Channel (2462MHz)
	:	RMS detector
NOTES	:	802.11 b (20 MHz)
NOTES	:	1Mbps
NOTES	:	
NOTES	:	

NOTES

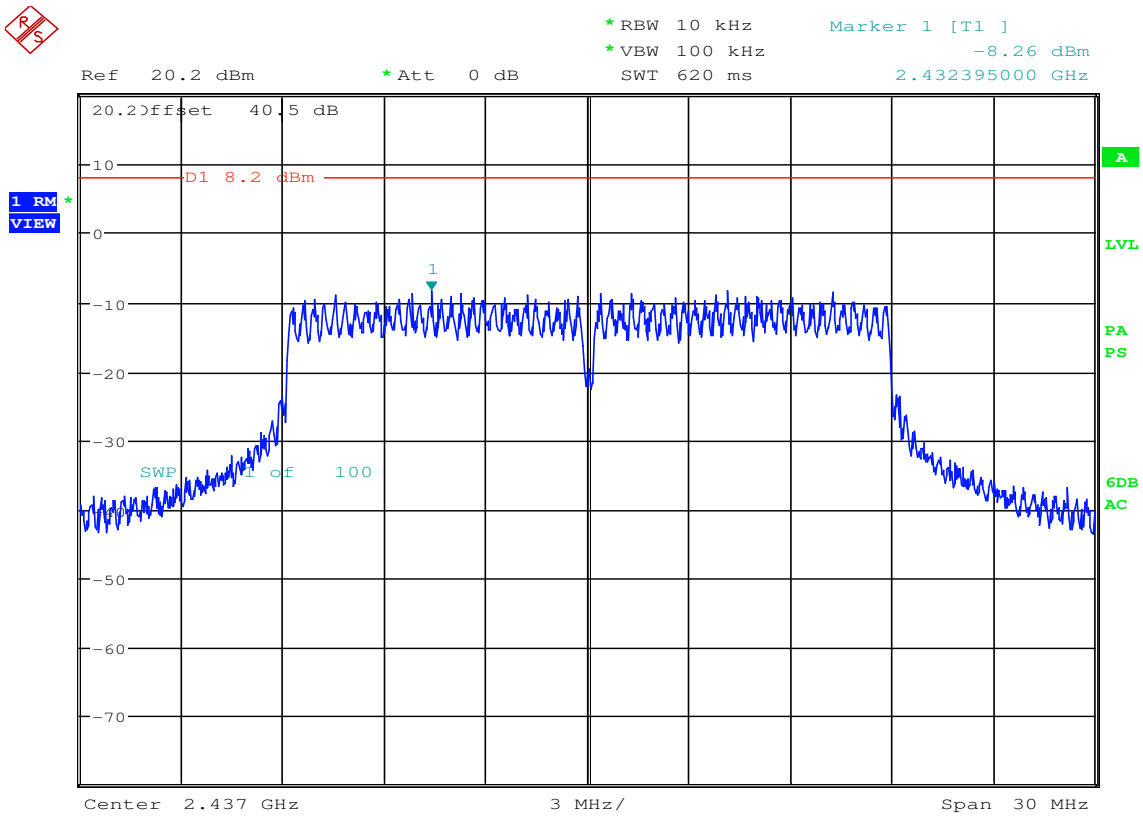


Date: 24.JUN.2003 03:33:11

FCC 15C 15.247 / Power Spectral Density

MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ MID Channel (2437MHz)
	:	RMS detector
NOTES	:	802.11 g (20 MHz)
NOTES	:	6Mbps
NOTES	:	
NOTES	:	

NOTES

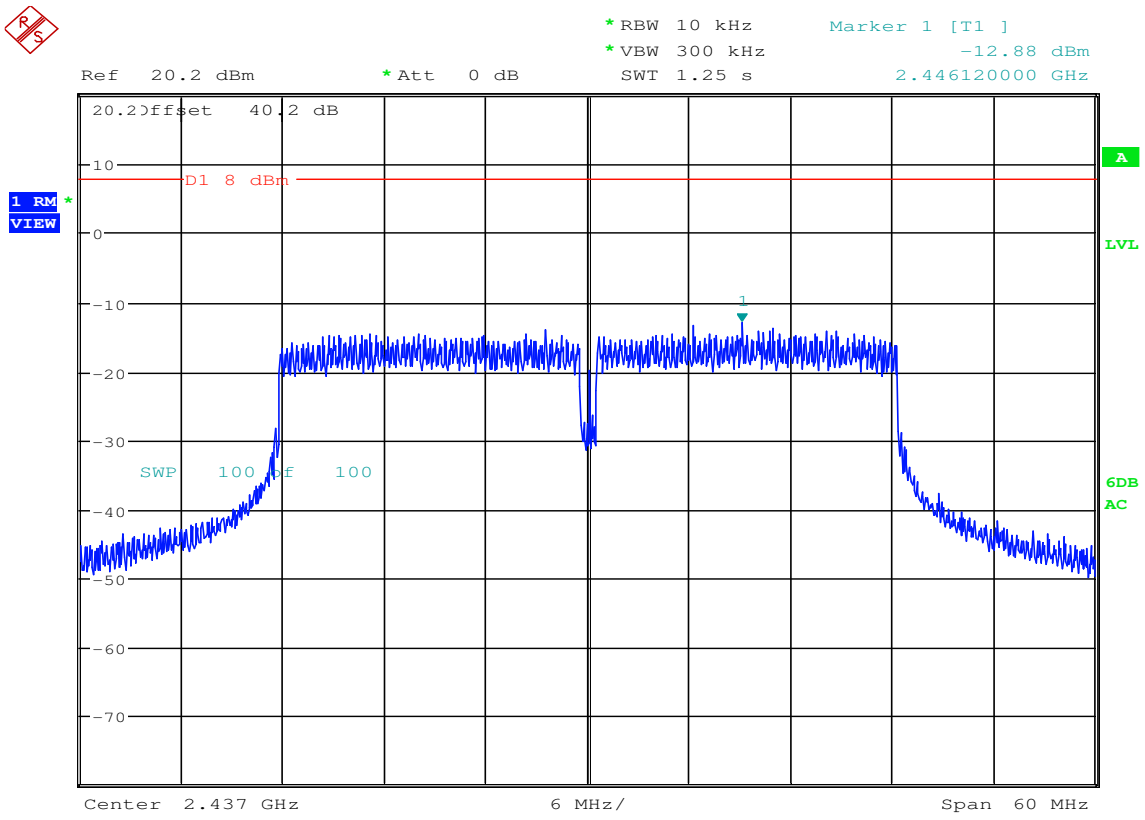


Date: 15.APR.2016 12:58:36

FCC 15C 15.247 / Power Spectral Density

MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ MID Channel (2437MHz)
	:	RMS detector
NOTES	:	802.11 n (20 MHz)
NOTES	:	65Mbps
NOTES	:	

NOTES



FCC 15C 15.247 / Power Spectral Density

MANUFACTURER	:	Winegard Co.
MODEL NUMBER	:	RP-WF12 and RP-WF14
TEST MODE	:	Tx @ MID Channel (2437MHz)
	:	RMS detector
NOTES	:	802.11 n (40 MHz)
NOTES	:	120Mbps
NOTES	:	

NOTES