



Measurement of RF Interference from a Model Nugen Accu-Chek Guide Solo

For	Roche Diagnostics 9115 Hague Rd Indianapolis, IN 46256
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Specification	FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Sections 15.207 and 15.247 for Digital Modulation Intentional Radiators Operating within the band 902-928MHz, 2400-2483.5MHz, 5725-5850MHz FCC "Code of Federal Regulations" Title 47, Part 15, Subpart 15B, Section 15.107 and 15.109 for Receivers Industry Canada RSS-247 Industry Canada RSS-GEN

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REVISION HISTORY

Revision	Date	Description
—	27 Jan 2020	Initial release
A	17 July 2020 By Tyler Jozefczyk	- Throughout report: Added Rev A to the report number in the header. - Throughout report: Changed the name of the EUT from Accu-Check Guide Solo to Accu-Chek Guide Solo.

Measurement of RF Emissions from an Accu-Chek Guide Solo, Model No. Nugen

1. INTRODUCTION

1.1 Scope of Tests

This document represents the results of the series of radio interference measurements performed on a Roche Diagnostics Accu-Chek Guide Solo, Part No. Nugen, Serial No. T600000473, transceiver (hereinafter referred to as the EUT). The EUT is a Bluetooth Low Energy transceiver. The transceiver was designed to transmit and receive in the 2400-2483.5MHz band using an integrated antenna. The EUT was manufactured and submitted for testing by Roche Diagnostics located in Indianapolis, IN.

1.2 Purpose

The test series was performed to determine if the EUT meets the conducted RF emission requirements, radiated RF emissions requirements, and additional provisions of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart B, Sections 15.107 and 15.109, for receivers and Subpart C, Sections 15.207 and 15.247 for Intentional Radiators Operating within the 2400-2483.5MHz band.

The test series was also performed to determine if the EUT meets the conducted RF emission requirements, radiated RF emissions requirements, and additional provisions of the Industry Canada Radio Standards Specification RSS GEN Sections 5 and 8.8 for receivers and Industry Canada Radio Standards Specification RSS GEN Section 8 and Industry Canada Radio Standards Specification RSS-247 for Transmitters.

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 Lab Code: 1786-01.

1.5 Laboratory Conditions

The temperature at the time of the test was 23°C and the relative humidity was 24.2%.

2. APPLICABLE DOCUMENTS

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

- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 15, Subparts B and C
- 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 Transmissions Systems (DTS) Operating Under §15.247 January 7, 2016
- Industry Canada RSS-247, Issue 2, February 2017, "Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices"

- Industry Canada RSS-GEN, Issue 5, March 2019, "General Requirements for Compliance of Radio Apparatus"

3. EUT SETUP AND OPERATION

3.1 General Description

The EUT is an Accu-Chek Guide Solo, Model No. Nugen, Serial No. T600000473. Photographs of the EUT are shown on pages 16 and 17. A block diagram of the EUT setup is shown as Figures 1 and 2.

3.1.1 Power Input

The EUT was powered by 3.60V from a rechargeable Li-Ion battery. For the Conducted Emissions test, the EUT was powered by 120VAC through a USB charger.

3.1.2 Peripheral Equipment

The following peripheral equipment was submitted with the EUT:

Item	Description
HP Laptop	Used to put EUT into test modes.

3.1.3 Interconnect Cables

The following interconnect cables were submitted with the EUT:

Item	Description
Antenna Connector Cable	Used to connect to the integrated antenna to an SMA cable. (Antenna Conducted tests only.)
USB Charger	Phihong M/N: PSM03A-050Q

3.1.4 Grounding

The EUT was ungrounded during the tests.

3.2 Operational Mode

The EUT and all peripheral equipment were energized. The cable arrangement which resulted in the worst case emissions was utilized. The unit was programmed to operate in one of the following modes:

Mode	Description
Tx	The EUT was powered on and set to transmit at one of the following frequencies: - 2402MHz - 2440MHz - 2480MHz
Rx	The EUT was powered on and set to receive at one of the following frequencies: - 2402MHz - 2440MHz - 2480MHz

3.3 EUT Modifications

No modifications were required for compliance.

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 tests were performed with an EMI receiver that utilizes the bandwidths and detectors specified by the FCC.

4.3 Calibration Traceability

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

4.4 Measurement Uncertainty

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

Values of Expanded Measurement Uncertainty (95% Confidence) are presented below:

Measurement Type	Expanded Measurement Uncertainty
Conducted disturbance (mains port) (150 kHz – 30 MHz)	2.7
Radiated disturbance (electric field strength on an open area test site or alternative test site) (30 MHz – 1000 MHz)	4.3
Radiated disturbance (electric field strength on an open area test site or alternative test site) (1 GHz – 6 GHz)	3.1
Radiated disturbance (electric field strength on an open area test site or alternative test site) (6 GHz – 18 GHz)	3.2

5. TEST PROCEDURES

5.1 Receiver

5.1.1 Powerline Conducted Emissions

5.1.1.1 Requirements

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

5.1.1.2 Procedure

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.

- 1) The EUT was operated in the Rx mode.
- 2) Measurements were first made on the 120VAC high line.

- 3) The frequency range from 150 kHz to 30 MHz was broken up into smaller frequency sub-bands.
- 4) Conducted emissions measurements were taken on the first frequency sub-band using a peak detector.
- 5) 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.)
- 6) Steps (4) and (5) 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. The resultant voltage level (VL) is a summation in decibels (dB) of the receiver meter reading (MTR) and the cable loss factor (CF).

$$\text{Formula 1: VL (dB}\mu\text{V)} = \text{MTR (dB}\mu\text{V)} + \text{CF (dB)}$$

- 7) Steps (3) through (6) were repeated on the 120VAC neutral line.

5.1.1.3 Results

The plots and tabular data of the peak, quasi-peak, and average conducted voltage levels acquired from each input power line with the EUT operated in the Rx mode are shown on pages 25 through 28. All power line conducted emissions measured from the EUT were within the specification limits. The emissions level closest to the limit (worst case) occurred at 414kHz. The emissions level at this frequency was 14.6dB within the limit. Photographs of the test configuration which yielded the highest or worst case, conducted emission levels are shown in Figure 3.

5.1.2 FCC Antenna Power Conducted Emissions

5.1.2.1 Requirements

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

5.1.3 Radiated Measurements

5.1.3.1 Requirements

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

5.2 Transmitter

5.2.1 Powerline Conducted Emissions

5.2.1.1 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 (dB μ V)	
	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.

5.2.1.2 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.

- 1) The EUT was operated in the Tx mode.
- 2) Measurements were first made on the 120VAC high line.
- 3) The frequency range from 150 kHz to 30 MHz was broken up into smaller frequency sub-bands.
- 4) Conducted emissions measurements were taken on the first frequency sub-band using a peak detector.
- 5) 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.)
- 6) Steps (4) and (5) 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.
- 7) Steps (3) through (6) were repeated on the 120VAC neutral line.

5.2.1.3 Results

The plots and tabular data of the peak, quasi-peak, and average conducted voltage levels acquired from each input power line with the EUT operated in the Tx mode are shown on pages 29 through 32. All power line conducted emissions measured from the EUT were within the specification limits. The emissions level closest to the limit (worst case) occurred at 428kHz. The emissions level at this frequency was 13.4dB within the limit. Photographs of the test configuration which yielded the highest (or worst case) conducted emission levels are shown in Figure 3.

5.2.2 6dB Bandwidth

5.2.2.1 Requirements

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

5.2.2.2 Procedures

The antenna port of the EUT was connected to the spectrum analyzer through 40dB 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, the video bandwidth (VBW) was set to the same as or 3 times greater than the RBW, and the span was set to 3 times 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.

5.2.2.3 Results

The plots on pages 33 through 38 show that the minimum 6 dB bandwidth was 850kHz which is greater than the minimum allowable 6dB bandwidth requirement of 500kHz for systems using digital modulation techniques. The 99% bandwidth was measured to be 1.05MHz.

5.2.3 Peak Output Power

5.2.3.1 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).

5.2.3.2 Procedures

For the radiated method, the EUT was placed on the non-conductive stand and set to transmit. A double ridged waveguide antenna was placed at a test distance of 3 meters from the EUT. The resolution bandwidth (RBW) of the spectrum analyzer was set to greater than the 6dB bandwidth. The EUT was maximized for worst case emissions (or maximum output power) at the measuring antenna. The maximum meter reading was recorded. The peak power output was measured for the low, middle and high channels.

The equivalent power was determined from the field intensity levels measured at 3 meters using the substitution method. To determine the emission power, a double ridged waveguide antenna was then set in place of the EUT and connected to a calibrated signal generator. The output of the signal generator was adjusted to match the received level at the spectrum analyzer. The signal level was recorded. The reading was then corrected to compensate for cable loss and antenna gain, as required. The peak power output was calculated for low, middle, and high hopping frequencies.

For the antenna conducted method, the antenna port of the EUT was connected to the spectrum analyzer through 40dB of attenuation. The maximum meter reading was recorded. The peak power output was calculated for the low, middle and high channels.

The antenna port of the EUT was connected to the spectrum analyzer through 40dB of attenuation. The EUT was set to transmit separately at the low, middle, and high channels. The resolution bandwidth (RBW) was set to greater than the 6dB bandwidth. The 'Max-Hold' function was engaged. The maximum meter reading was recorded. The peak power output was calculated for the low, middle and high channels.

5.2.3.3 Results

The results from the radiated method are presented on page 39. The maximum EIRP measured from the transmitter was 0.00087297W (-0.59dBm), which is below the 1W limit.

The results from the antenna conducted method are presented on pages 40 through 42. The maximum peak conducted output power from the transmitter was 0.000575W (-2.4dBm), which is below the 1W limit.

5.2.4 Antenna Conducted Spurious Emissions

5.2.4.1 Requirements

Per section 15.247(c), the spurious emissions in any 100 kHz BW outside the frequency band must be at least 20dB below the highest 100 kHz BW level measured within the band.

5.2.4.2 Procedures

The antenna port of the EUT was connected to the spectrum analyzer through 40dB 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.

5.2.4.3 Results

The results of the antenna conducted emissions levels were plotted. These plots are presented on pages 43 through 45. These plots show that the spurious emissions were at least 20 dB below the level of the fundamental.

5.2.5 Radiated Spurious Emissions Measurements

5.2.5.1 Requirements

Per section 15.247(d), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated emissions measurement. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must comply with the radiated emission limits specified in §15.209(a).

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

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

5.2.5.2 Procedures

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

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

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

1) For all harmonics not in the restricted bands, the following procedure was used:

- The field strength of the fundamental was measured using a double ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the EUT. The EUT was placed on a 1.5 meter high non-conductive stand. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer.
- The field strengths of all of the harmonics not in the restricted band were then measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the EUT. The EUT was placed on a 1.5 meter high non-conductive stand. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer.

- c) To ensure that maximum or worst case emission levels at the fundamental and harmonics were measured, the following steps were taken when measuring the fundamental emissions and the spurious emissions:
 - i) The EUT was rotated so that all of its sides were exposed to the receiving antenna.
 - ii) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
 - iii) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.
 - iv) In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer. The measuring antenna was not raised or lowered to ensure maximized readings, instead the EUT was rotated through all axis to ensure the maximum readings were recorded for the EUT.
 - d) All harmonics not in the restricted bands must be at least 20 dB below levels measured at the fundamental. However, attenuation below the general limits specified in §15.209(a) is not required.
- 2) 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. The EUT was placed on an 80cm high non-conductive stand. 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. The EUT was placed on a 1.5 meter high non-conductive stand. A peak detector with a resolution bandwidth of 1 MHz was used on the spectrum analyzer.
 - c) To ensure that maximum or worst case emission levels were measured, the following steps were taken when taking all measurements:
 - i) The EUT was rotated so that all of its sides were exposed to the receiving antenna.
 - ii) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
 - iii) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.
 - iv) In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer. The measuring antenna was not raised or lowered to ensure maximized readings, instead the EUT was rotated through all axis to ensure the maximum readings were recorded for the EUT.
 - d) For all radiated emissions measurements below 1 GHz, if the peak reading is below the limits listed in 15.209(a), no further measurements are required. If however, the peak readings exceed the limits listed in 15.209(a), then the emissions are 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.

5.2.5.3 Results

Preliminary radiated emissions plots are shown on pages 46 through 69. Final radiated emissions data are presented on data pages 70 through 78. As can be seen from the data, all emissions measured from the EUT were within the specification limits. The emissions level closest to the limit (worst case) occurred at 12010MHz. The emissions level at this frequency was 14.20dB within the limit. Photographs of the test configuration which yielded the highest (or worst case) radiated emission levels are shown in Figures 5 through 7.

5.2.6 Band Edge Compliance

5.2.6.1 Requirements

Per section 15.247(d), the emissions at the band edges must be at least 20dB below the highest level measured within the band but attenuation below the general limits listed in 15.209(a) is not required.

5.2.6.2 Procedures

5.2.6.2.1 Low Band Edge

- 1) The antenna port of the EUT was connected to the spectrum analyzer through 40dB of attenuation.
- 2) The EUT was set to transmit continuously at the channel closest to the low band edge.
- 3) The maximum meter reading was recorded.
- 4) 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) $\geq$ 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 20dB down from the peak of the in-band emissions. All emissions which fall outside of the authorized band of operation must be below the 20dB 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.

5.2.6.2.2 High Band Edge

- 1) The EUT was set to transmit continuously at the channel closest to the high band edge.
- 2) The center frequency of the analyzer was set to the high band edge (2483.5MHz)
- 3) The resolution bandwidth was set to 1MHz.
- 4) The highest measured peak reading was recorded.
- 5) The highest measured average reading was recorded.

5.2.6.3 Results

Pages 79 and 80 show the radiated band edge compliance results. As can be seen from these plots, the radiated emissions at the low end band edge are within the 20dB down limits. The radiated emissions at the high end band edge are within the general limits.

5.2.7 Power Spectral Density

5.2.7.1 Requirement

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

5.2.7.2 Procedures

- 1) The antenna port of the EUT was connected to the spectrum analyzer through a 20dB pad.
- 2) The EUT was then placed in the Tx mode.
- 3) To determine the power spectral density, the following spectrum analyzer settings were used:
 - a) Center frequency = transmit frequency
 - b) Span = 1.5 times the DTS (6 dB) bandwidth
 - c) Resolution bandwidth (RBW): $3\text{kHz} \leq \text{RBW} \leq 100\text{kHz}$
 - d) Sweep time = auto
 - e) The peak detector and 'Max-Hold' function was engaged.
 - f) The display line represents the 8dBm limit
 - g) The analyzer's display was plotted using a 'screen dump' utility.
- 4) If measured value exceeds limit, reduce RBW (no less than 3kHz) and repeat.

5.2.7.3 Results

Pages 81 through 83 show the power spectral density results. As can be seen from these plots, the peak power density is less than 8dBm in a 3kHz band during any time interval of continuous transmission.

6. CONCLUSIONS

It was determined that the Roche Diagnostics Accu-Chek Guide Solo, Model No. Nugen, Serial No. T600000473, did fully meet the conducted and radiated emission requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart B, Sections 15.107 and 15.109 for receivers and Subpart C, Sections 15.207 and 15.247 for Intentional Radiators Operating within the 2400-2483.5MHz band, when tested per ANSI C63.4-2014.

It was also determined that the Roche Diagnostics Accu-Chek Guide Solo, Model No. Nugen, Serial No. T600000473, did fully meet the conducted and radiated RF emission requirements of the Industry Canada Radio Standards Specification, RSS-Gen, Section 8.8 and Section 7.1.2 for receivers and the Industry Canada Radio Standards Specification RSS-Gen Section 8.8 and Radio Standards Specification RSS-247 for transmitters, when tested per ANSI C63.4-2014.

7. CERTIFICATION

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

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

8. ENDORSEMENT DISCLAIMER

This report must not be used to claim product certification, approval, or endorsement by 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
CDY0	WORKSTATION	ELITE	WORKSTATION		WINDOWS 7	N/A	
GRB0	1MHZ, LISN SIGNAL CHECKER	ELITE	LISNCHKR1M	1	1MHZ	1/9/2019	1/9/2021
GSE0	SIGNAL GENERATOR (40GHZ)	ROHDE & SCHWARZ	SMB100A	175137	100KHZ-40GHZ	8/21/2019	8/21/2020
GSF0	VECTOR SIGNAL GENERATOR	ROHDE & SCHWARZ	SMBV100A	260452	9kHz to 6GHz	8/27/2019	8/27/2020
PLF1	CISPR16 50UH LISN	ELITE	CISPR16/70A	001	.15-30MHz	4/24/2019	4/24/2020
PLF3	CISPR16 50UH LISN	ELITE	CISPR16/70A	003	.15-30MHz	4/24/2019	4/24/2020
RBF0	WIDEBAND RADIO COMM. TESTER	ROHDE & SCHWARZ	CMW500	116582	---	6/17/2019	6/17/2020
RBG0	EMI ANALYZER	ROHDE & SCHWARZ	ESW44	101533	10HZ-44GHZ	12/5/2018	1/5/2020
RBG3	EMI ANALYZER	ROHDE & SCHWARZ	ESW44	101592	2HZ-44GHZ	2/20/2019	2/20/2020
T1N6	10DB 20W ATTENUATOR	NARDA	766-10	---	DC-4GHZ	5/14/2018	5/14/2020
VBR8	CISPR EN FCC CE VOLTAGE.exe						
XLT5	5W, 50 OHM TERMINATION	JFW INDUSTRIES	50T-052	---	DC-2GHZ	1/10/2020	1/10/2022

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



Photograph of EUT



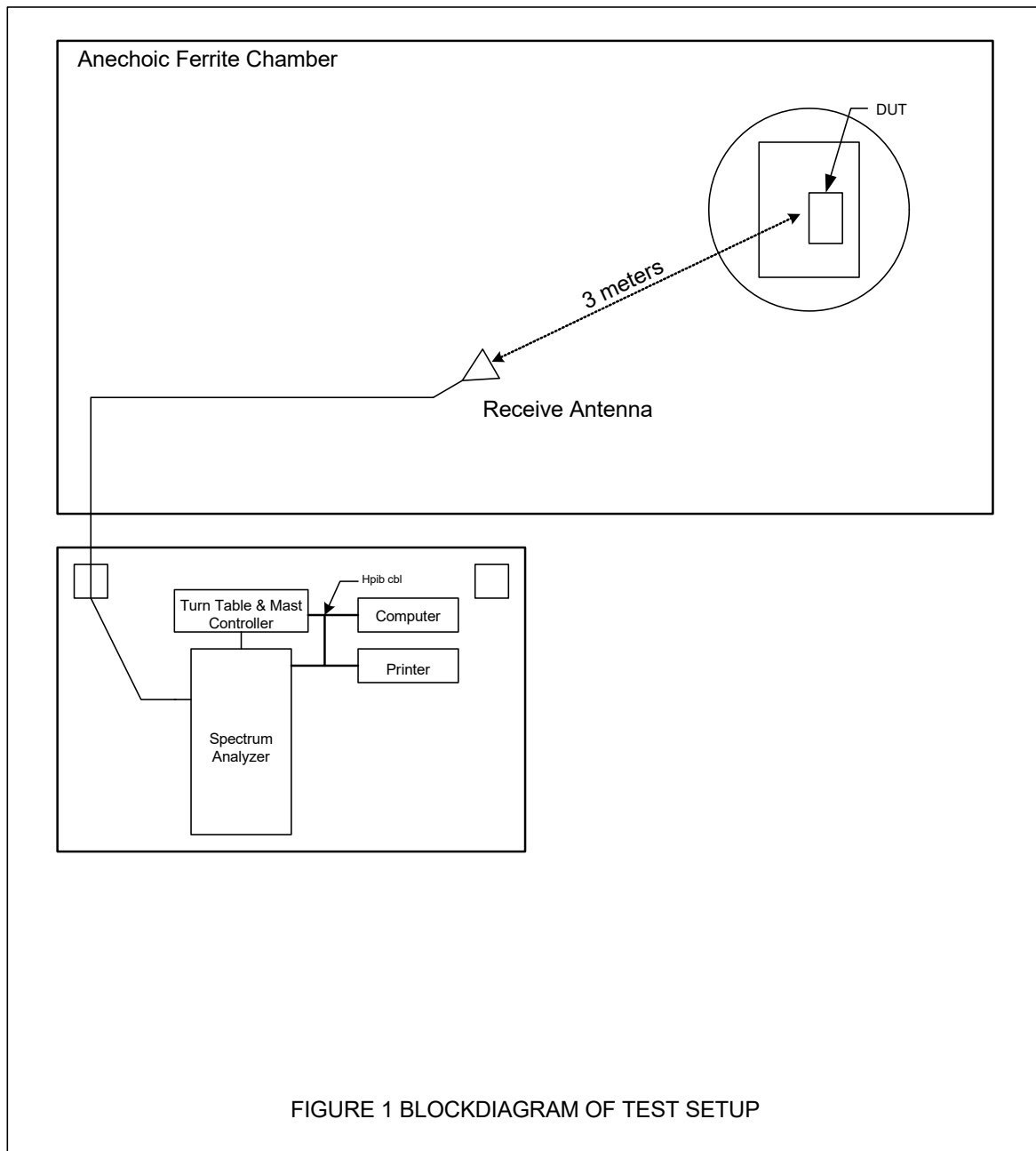
Photograph of EUT



Photograph of EUT



Photograph of EUT



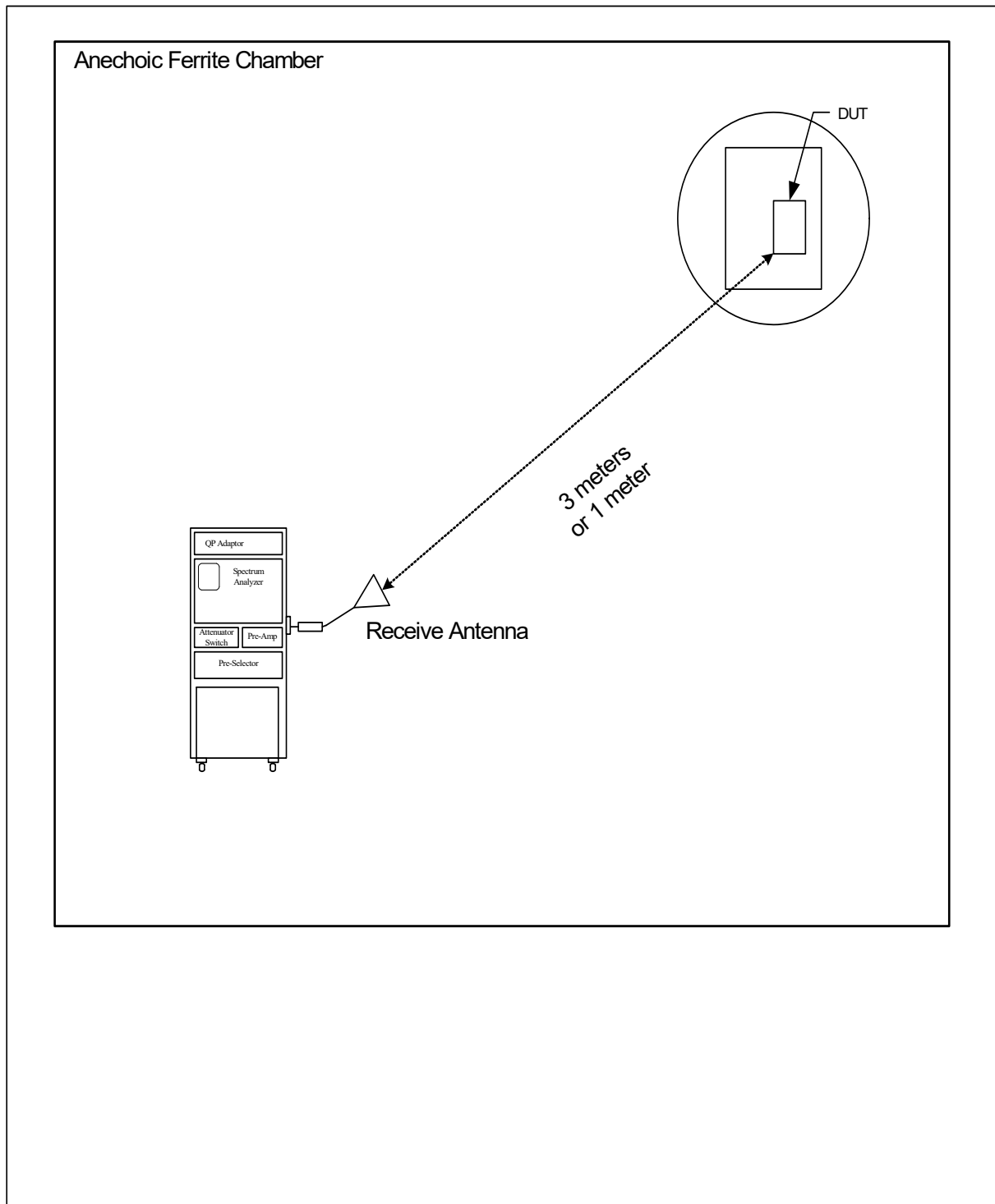


Figure 2: BLOCK DIAGRAM OF TEST SETUP FOR RADIATED EMISSIONS ABOVE 18GHZ

Figure 3



Test Setup for Conducted Emissions



Test Setup for Conducted Emissions

Figure 4



Test Setup for Antenna Conducted Emissions Tests



Test Setup for Antenna Conducted Emissions Tests

Figure 5



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



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

Figure 6



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



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

Figure 7



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



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

FCC Part 15 Subpart B Conducted Emissions Test

Significant Emissions Data

VBR8 01/08/2020

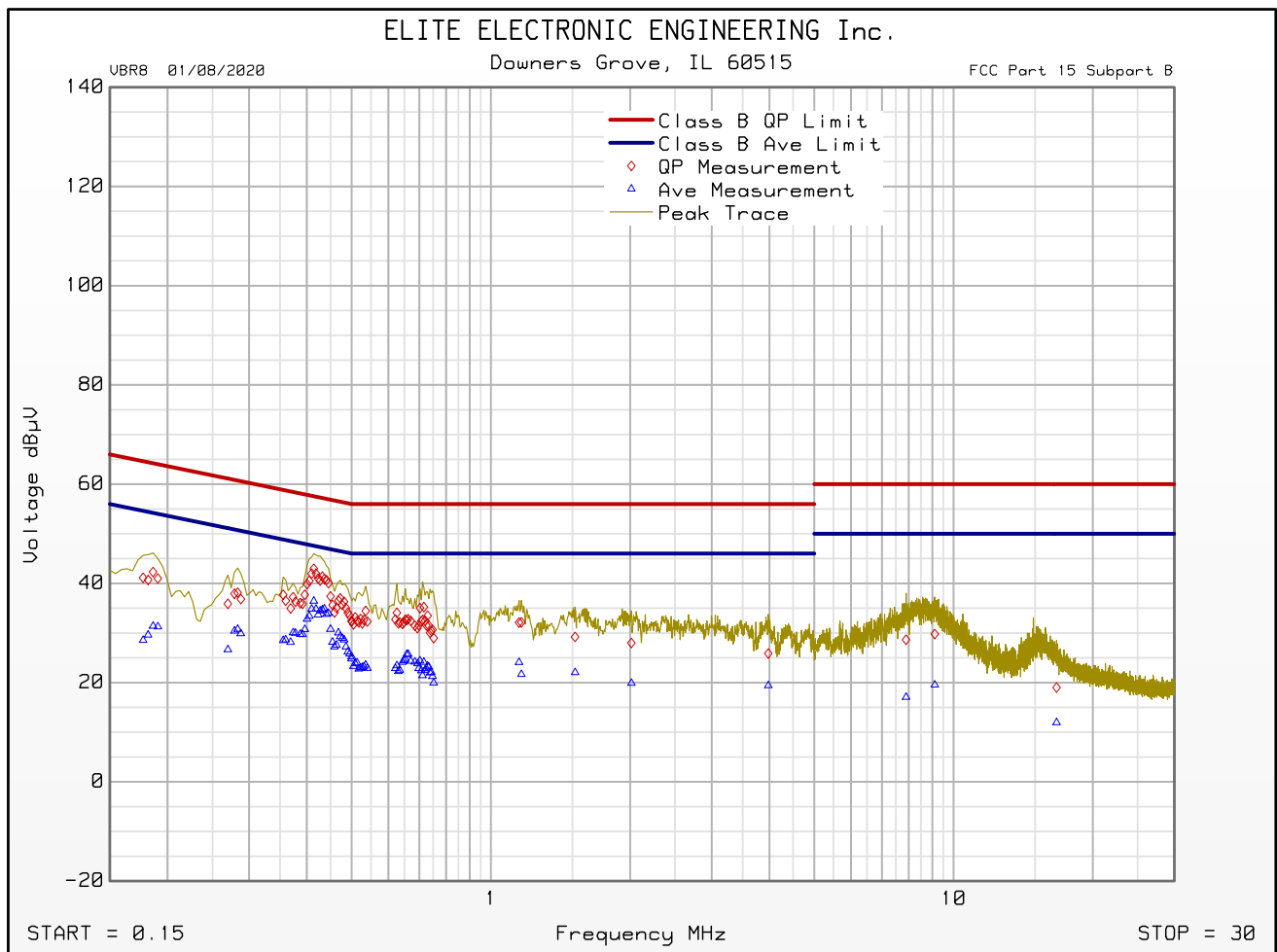
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 DUT Revision : 1.0
 Serial Number : T600000473
 DUT Mode : RX
 Line Tested : 120VAC 60HZ HIGH LINE
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes :
 Test Engineer : T. Jozefczyk
 Limit : Class B
 Test Date : Dec 20, 2019 12:37:36 PM
 Data 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
0.186	42.3	64.2		31.4	54.2	
0.414	43.0	57.6		36.4	47.6	
0.716	35.2	56.0		24.1	46.0	
1.164	32.2	56.0		21.7	46.0	
1.520	29.2	56.0		22.0	46.0	
2.012	28.0	56.0		19.9	46.0	
3.977	25.9	56.0		19.4	46.0	
7.894	28.6	60.0		17.1	50.0	
9.108	29.8	60.0		19.5	50.0	
16.700	19.0	60.0		12.0	50.0	

FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 01/08/2020

Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 DUT Revision : 1.0
 Serial Number : T600000473
 DUT Mode : RX
 Line Tested : 120VAC 60HZ HIGH LINE
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes :
 Test Engineer : T. Jozefczyk
 Limit : Class B
 Test Date : Dec 20, 2019 12:37:36 PM



Emissions Meet QP Limit
 Emissions Meet Ave Limit

FCC Part 15 Subpart B Conducted Emissions Test

Significant Emissions Data

VBR8 01/08/2020

Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 DUT Revision : 1.0
 Serial Number : T600000473
 DUT Mode : RX
 Line Tested : 120VAC 60HZ NEUTRAL LINE
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes :
 Test Engineer : T. Jozefczyk
 Limit : Class B
 Test Date : Dec 20, 2019 12:30:22 PM
 Data Filter : Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

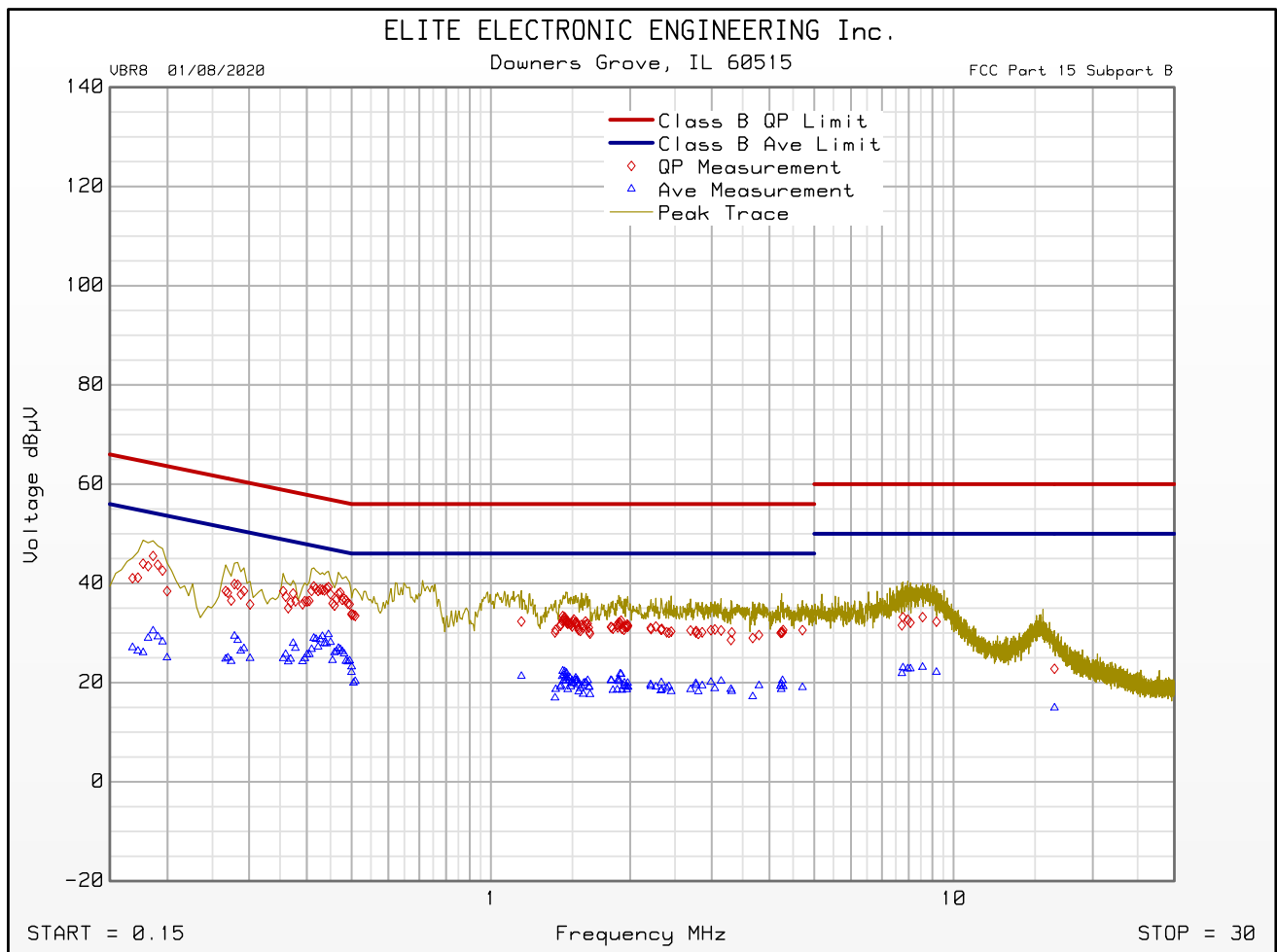
Freq MHz	Quasi-peak Level dBμV	Quasi-peak Limit dBμV	Excessive Quasi-peak Emissions	Average Level dBμV	Average Limit dBμV	Excessive Average Emissions
0.186	45.5	64.2		30.5	54.2	
0.446	39.2	57.0		29.7	47.0	
0.500	33.7	56.0		23.2	46.0	
1.164	32.3	56.0		21.3	46.0	
1.430	33.4	56.0		22.4	46.0	
2.273	31.3	56.0		19.1	46.0	
4.283	30.6	56.0		19.2	46.0	
8.573	33.2	60.0		23.1	50.0	
9.185	32.3	60.0		22.1	50.0	
16.529	22.8	60.0		14.9	50.0	



FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 01/08/2020

Manufacturer : ROCHE
Model : ACCU-CHEK GUIDE SOLO
DUT Revision : 1.0
Serial Number : T600000473
DUT Mode : RX
Line Tested : 120VAC 60HZ NEUTRAL LINE
Scan Step Time [ms] : 30
Meas. Threshold [dB] : -10
Notes :
Test Engineer : T. Jozefczyk
Limit : Class B
Test Date : Dec 20, 2019 12:30:22 PM



Emissions Meet QP Limit
Emissions Meet Ave Limit

FCC Part 15 Subpart B Conducted Emissions Test

Significant Emissions Data

VBR8 04/23/2015

Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 DUT Revision : 1.0
 Serial Number : T600000473
 DUT Mode : TX
 Line Tested : 120VAC 60HZ HIGH LINE
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : CHARGING
 Test Engineer : T. Jozefczyk
 Limit : Class B
 Test Date : Dec 20, 2019 10:22:44 AM
 Data Filter : Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

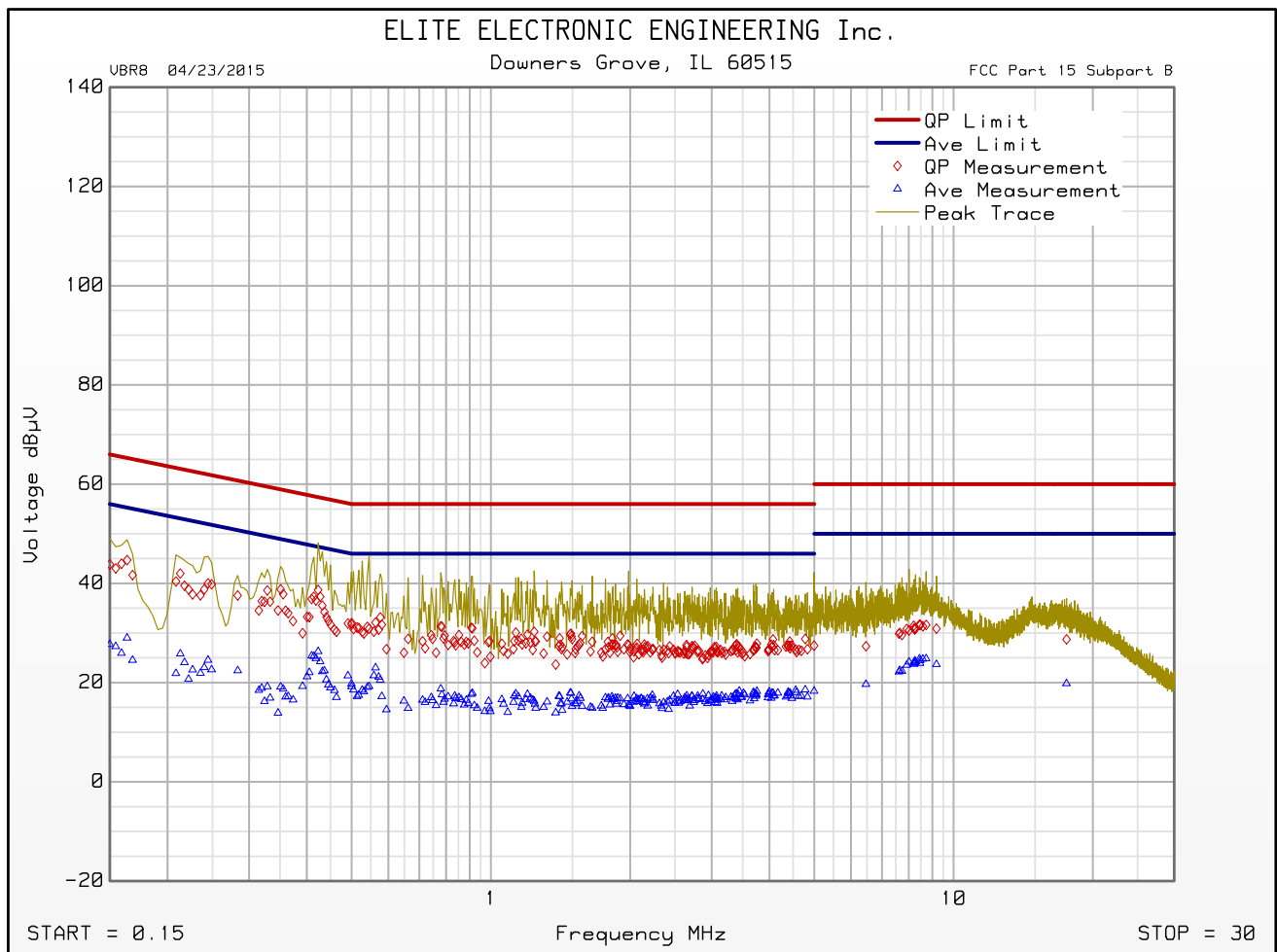
Freq MHz	Quasi-peak Level dBμV	Quasi-peak Limit dBμV	Excessive Quasi-peak Emissions	Average Level dBμV	Average Limit dBμV	Excessive Average Emissions
0.164	44.7	65.3		29.0	55.3	
0.423	38.7	57.4		26.3	47.4	
0.577	33.2	56.0		20.5	46.0	
0.907	31.1	56.0		17.7	46.0	
1.489	29.9	56.0		17.9	46.0	
2.070	27.8	56.0		16.2	46.0	
4.778	28.8	56.0		18.6	46.0	
8.438	31.7	60.0		24.8	50.0	
9.185	30.9	60.0		23.7	50.0	
17.551	28.7	60.0		19.8	50.0	



FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 04/23/2015

Manufacturer : ROCHE
Model : ACCU-CHEK GUIDE SOLO
DUT Revision : 1.0
Serial Number : T600000473
DUT Mode : TX
Line Tested : 120VAC 60HZ HIGH LINE
Scan Step Time [ms] : 30
Meas. Threshold [dB] : -10
Notes : CHARGING
Test Engineer : T. Jozefczyk
Limit : Class B
Test Date : Dec 20, 2019 10:22:44 AM



Emissions Meet QP Limit
Emissions Meet Ave Limit

FCC Part 15 Subpart B Conducted Emissions Test

Significant Emissions Data

VBR8 04/23/2015

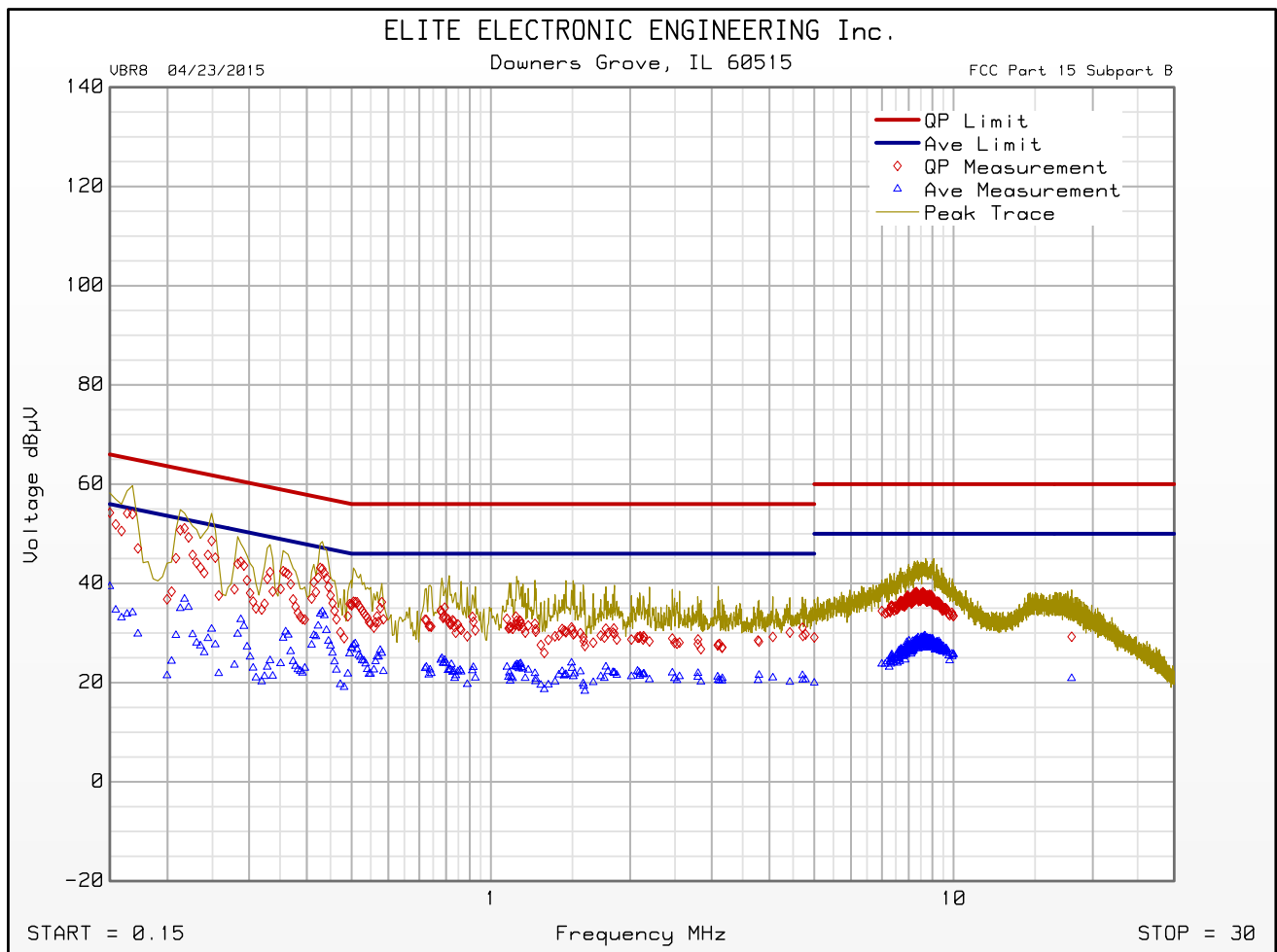
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 DUT Revision : 1.0
 Serial Number : T600000473
 DUT Mode : TX
 Line Tested : 120VAC 60HZ NEUTRAL LINE
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : CHARGING
 Test Engineer : T. Jozefczyk
 Limit : Class B
 Test Date : Dec 20, 2019 10:09:07 AM
 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
0.168	54.0	65.1		34.1	55.1	
0.428	43.1	57.3		33.9	47.3	
0.505	36.3	56.0		27.6	46.0	
0.795	35.1	56.0		24.5	46.0	
1.493	31.1	56.0		24.0	46.0	
2.138	29.4	56.0		21.8	46.0	
4.715	31.1	56.0		21.5	46.0	
8.308	38.3	60.0		28.7	50.0	
9.216	36.3	60.0		28.2	50.0	
17.996	29.2	60.0		20.9	50.0	

FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 04/23/2015

Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 DUT Revision : 1.0
 Serial Number : T600000473
 DUT Mode : TX
 Line Tested : 120VAC 60HZ NEUTRAL LINE
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : CHARGING
 Test Engineer : T. Jozefczyk
 Limit : Class B
 Test Date : Dec 20, 2019 10:09:07 AM



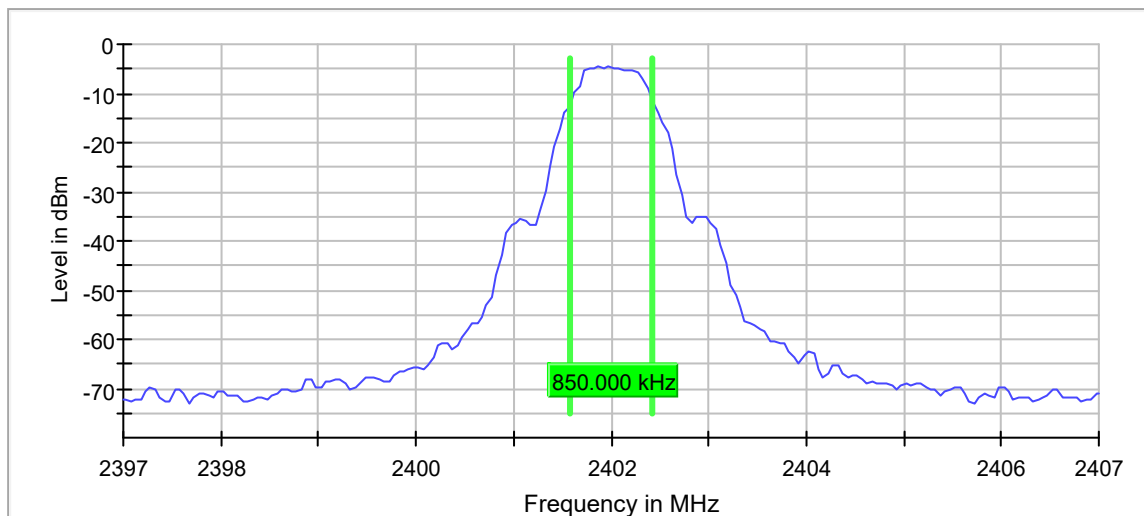
Emissions Meet QP Limit
 Emissions Meet Ave Limit

DATA PAGE

MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Occupied Bandwidth - Conducted
MODE	Tx – 2402MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	6dB BW = 850kHz

OCCUPIED BANDWIDTH – 6DB BW

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Max Level (dBm)	Result
2402.000000	0.850000	0.500000	---	2401.575000	2402.425000	-4.7	PASS

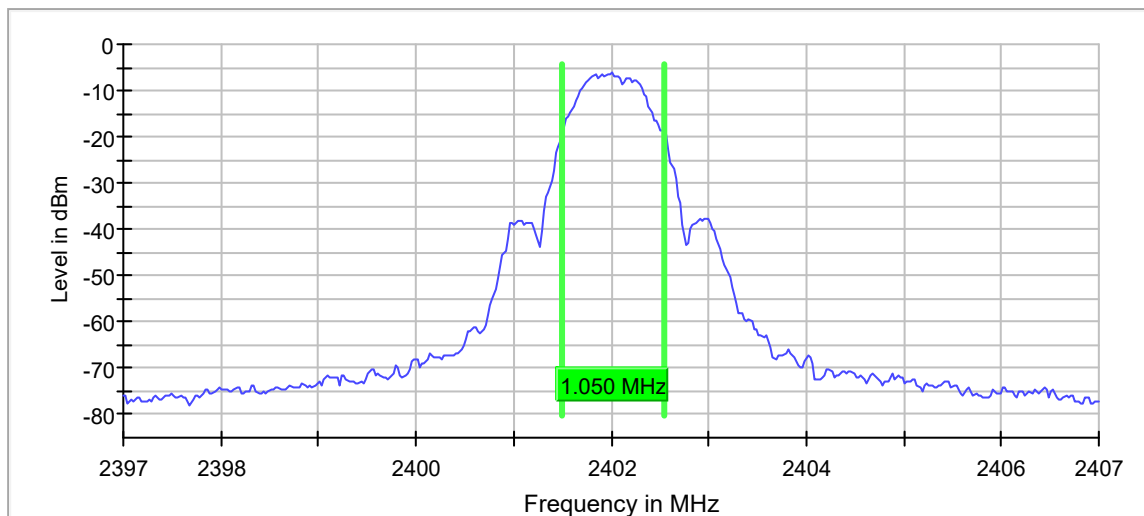


DATA PAGE

MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Occupied Bandwidth - Conducted
MODE	Tx – 2402MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	99% BW = 1.05MHz

OCCUPIED BANDWIDTH – 99% BW

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2402.000000	1.050000	---	---	2401.487500	2402.537500	PASS

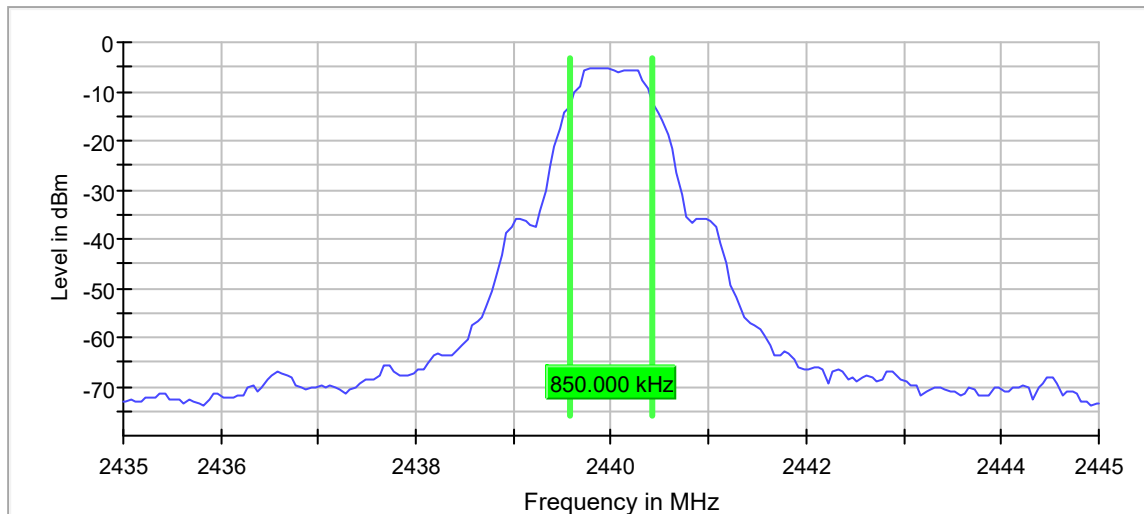


DATA PAGE

MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Occupied Bandwidth - Conducted
MODE	Tx – 2440MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	6dB BW = 850kHz

OCCUPIED BANDWIDTH – 6DB BW

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Max Level (dBm)	Result
2440.000000	0.850000	0.500000	---	2439.575000	2440.425000	-5.1	PASS

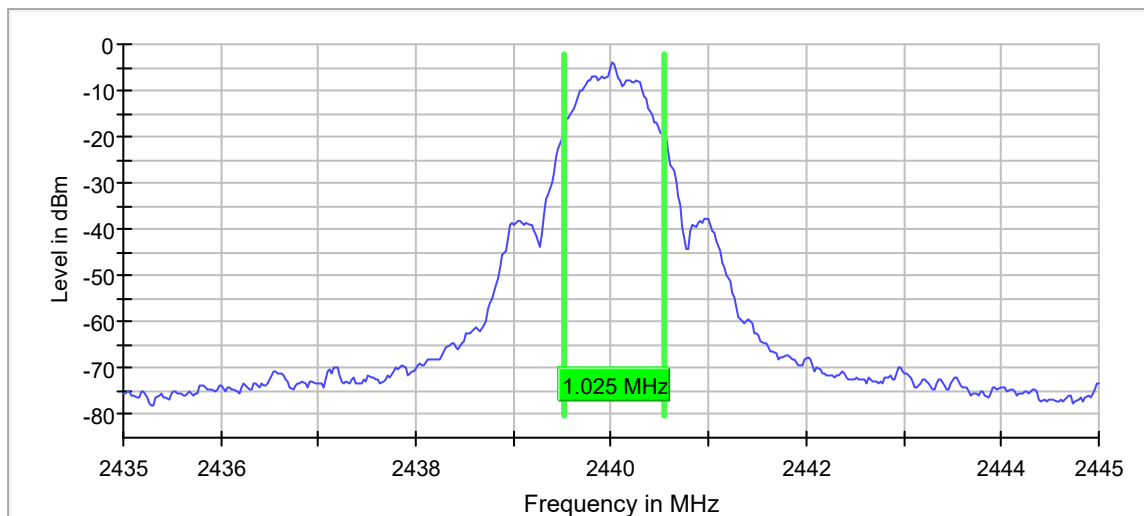


DATA PAGE

MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Occupied Bandwidth - Conducted
MODE	Tx – 2440MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	99% BW = 1.025MHz

OCCUPIED BANDWIDTH – 99% BW

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2440.000000	1.025000	---	---	2439.512500	2440.537500	PASS

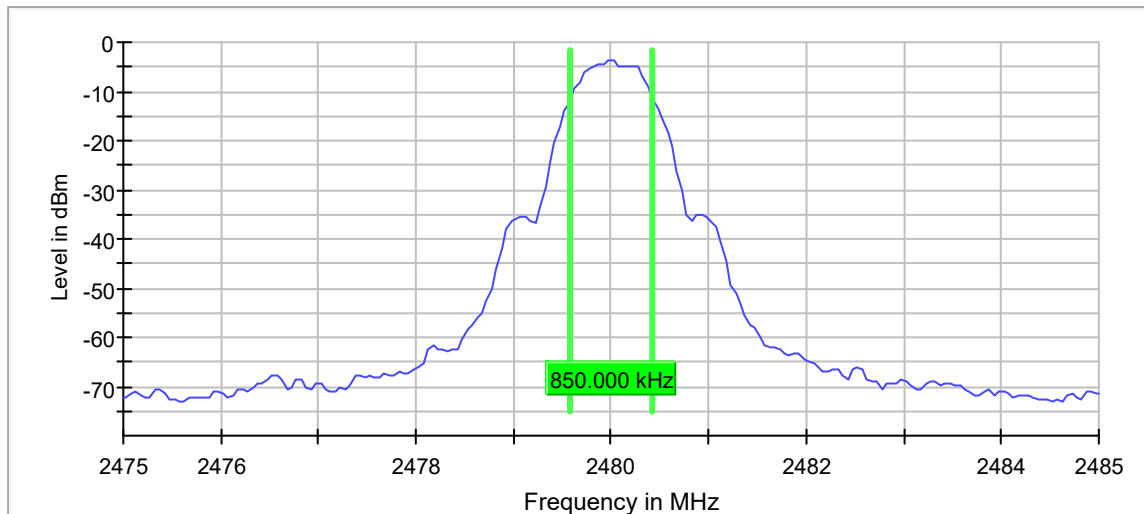


DATA PAGE

MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Occupied Bandwidth - Conducted
MODE	Tx – 2480MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	6dB BW = 850kHz

OCCUPIED BANDWIDTH – 6DB BW

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Max Level (dBm)	Result
2480.000000	0.850000	0.500000	---	2479.575000	2480.425000	-3.5	PASS

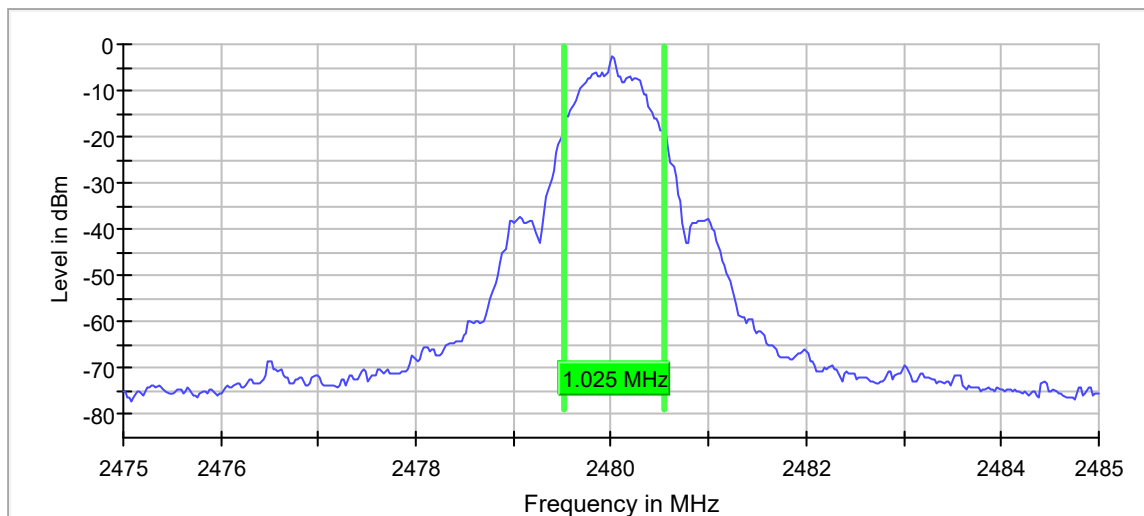


DATA PAGE

MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Occupied Bandwidth - Conducted
MODE	Tx – 2480MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	99% BW = 1.025MHz

OCCUPIED BANDWIDTH – 99% BW

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Result
2480.000000	1.025000	---	---	2479.512500	2480.537500	PASS



DATA PAGE	
MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – RF Output Power - Radiated
MODE	Tx
DATE TESTED	December 20 - 26, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

RF OUTPUT POWER

Freq. (MHz)	Ant Pol	Wide BW Meter Reading (dBμV)	Matched Sig. Gen. Reading (dBm)	Equivalent Antenna Gain (dB)	Cable Loss (dB)	EIRP Total (dBm)	Limit (dBm)	Margin (dB)
2402.00	H	55.57	-6.43	5.66	2.75	-3.51	36.00	-39.51
2402.00	V	54.91	-6.79	5.66	2.75	-3.87	36.00	-39.87
2440.00	H	56.11	-5.81	5.55	2.77	-3.03	36.00	-39.03
2440.00	V	55.57	-6.09	5.55	2.77	-3.31	36.00	-39.31
2480.00	H	57.56	-4.28	5.61	2.80	-1.47	36.00	-37.47
2480.00	V	58.22	-3.40	5.61	2.80	-0.59	36.00	-36.59

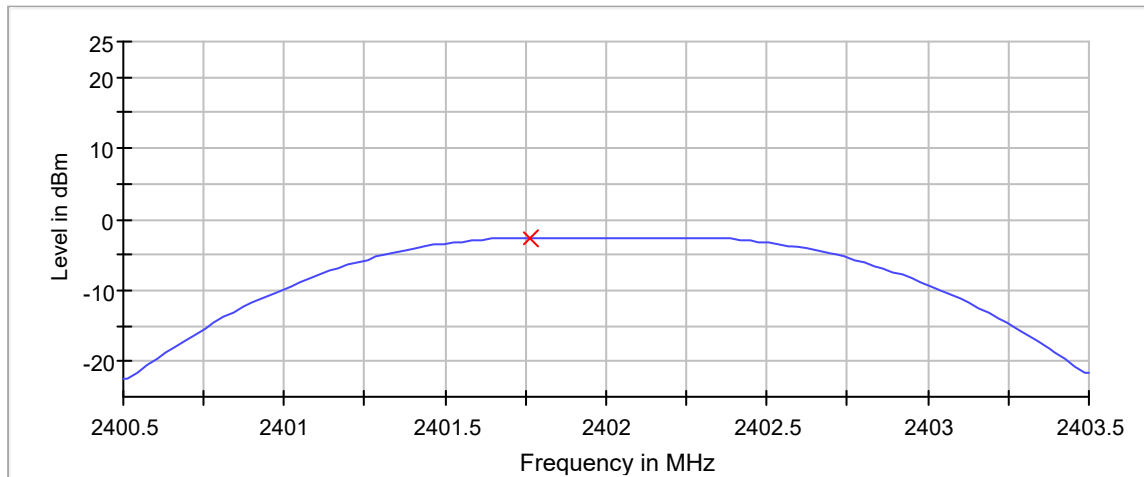
EIRP = Calculated Signal (dBm) + Antenna Gain (dB) – Cable Loss (dB)

DATA PAGE

MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – RF Output Power - Conducted
MODE	Tx – 2402MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

RF OUTPUT POWER - CONDUCTED

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2402.000000	-2.6	30.0	PASS



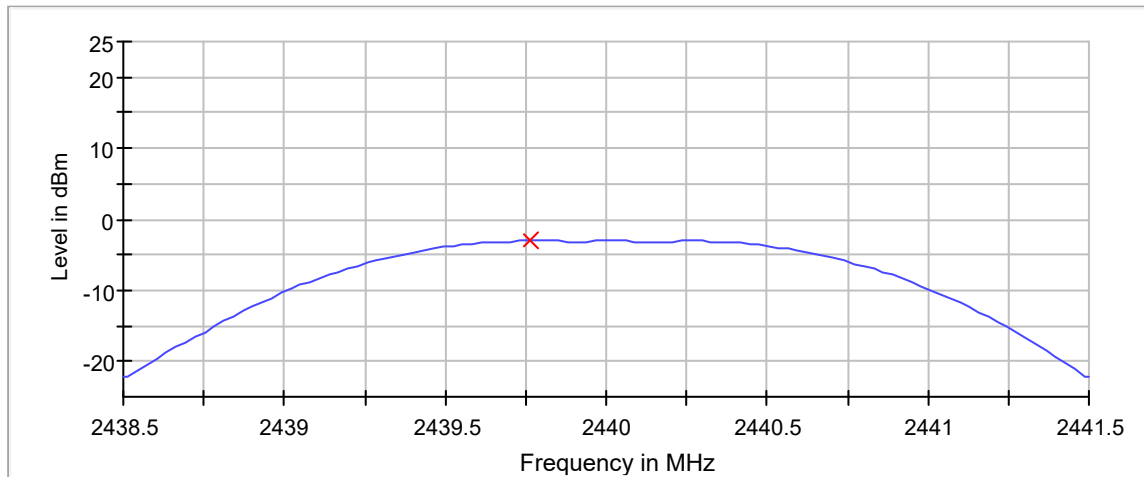
— Connector 1 × Peak Connector 1

DATA PAGE

MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – RF Output Power - Conducted
MODE	Tx – 2440MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

RF OUTPUT POWER - CONDUCTED

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2440.000000	-3.1	30.0	PASS



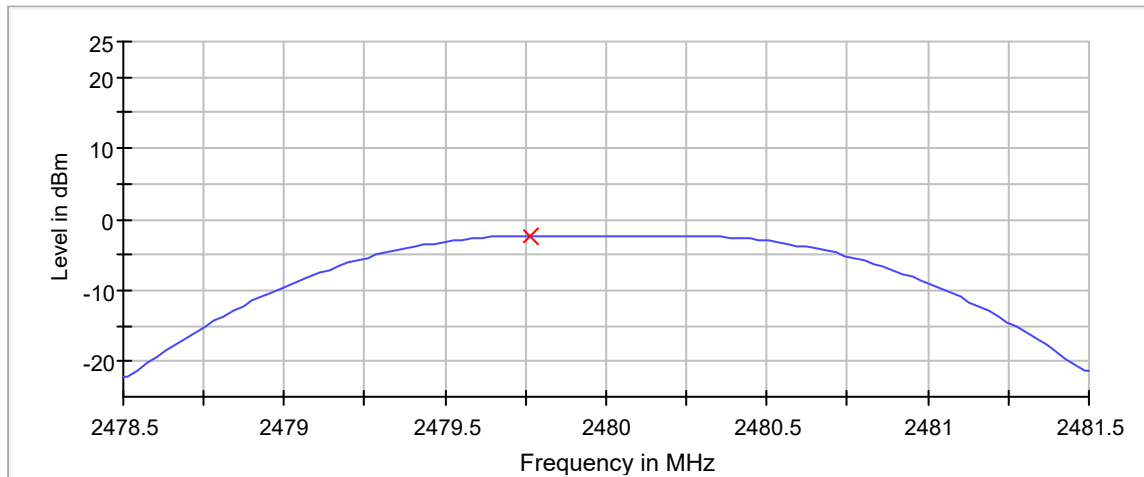
— Connector 1 × Peak Connector 1

DATA PAGE

MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – RF Output Power - Conducted
MODE	Tx – 2480MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

RF OUTPUT POWER - CONDUCTED

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2480.000000	-2.4	30.0	PASS

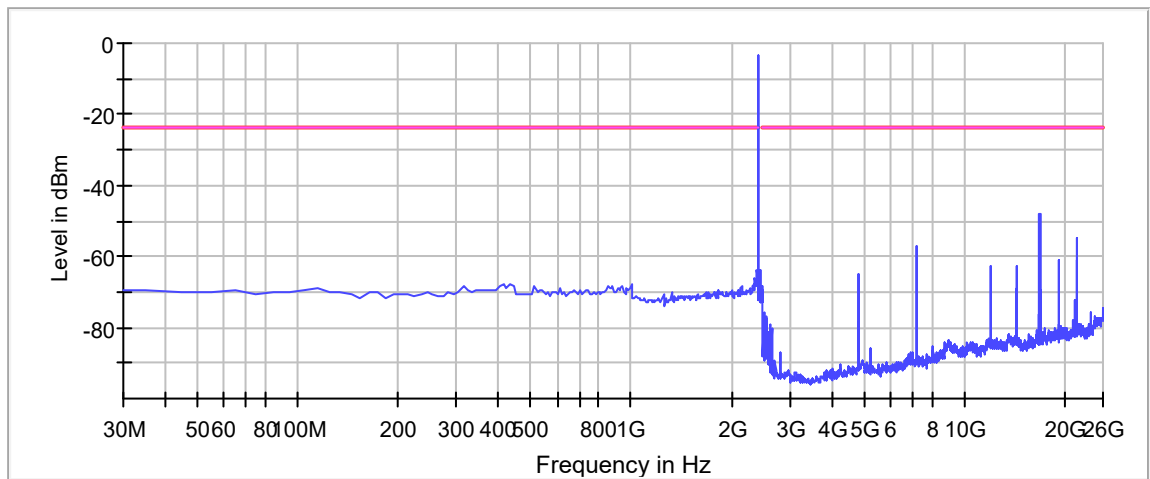


— Connector 1 × Peak Connector 1

DATA PAGE	
MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Antenna Conducted Transmitter Spurious Emissions
MODE	Tx – 2402MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

ANTENNA CONDUCTED TRANSMITTER SPURIOUS EMISSIONS

DUT Frequency (MHz)	Result
2402.000000	PASS

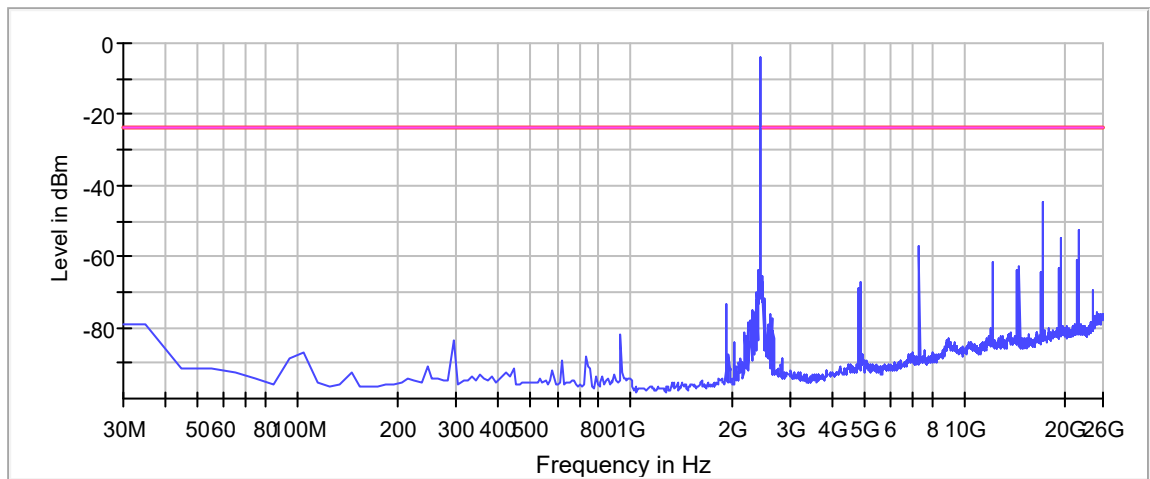


— Limit — Sum Level — Threshold × Critical × Final Critical

DATA PAGE	
MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Antenna Conducted Transmitter Spurious Emissions
MODE	Tx – 2440MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

ANTENNA CONDUCTED TRANSMITTER SPURIOUS EMISSIONS

DUT Frequency (MHz)	Result
2440.000000	PASS

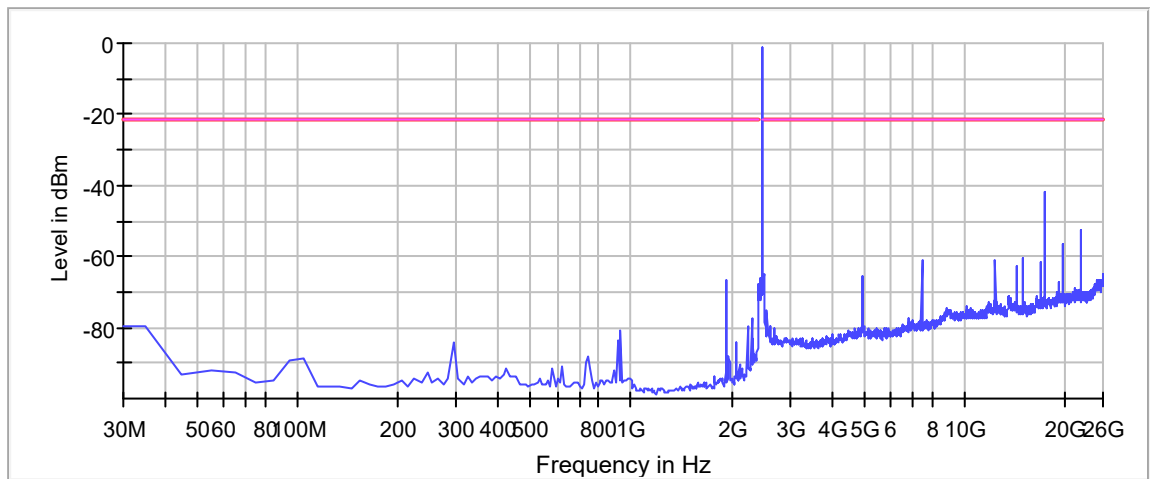


— Limit — Sum Level — Threshold × Critical × Final Critical

DATA PAGE	
MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Antenna Conducted Transmitter Spurious Emissions
MODE	Tx – 2480MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

ANTENNA CONDUCTED TRANSMITTER SPURIOUS EMISSIONS

DUT Frequency (MHz)	Result
2480.000000	PASS

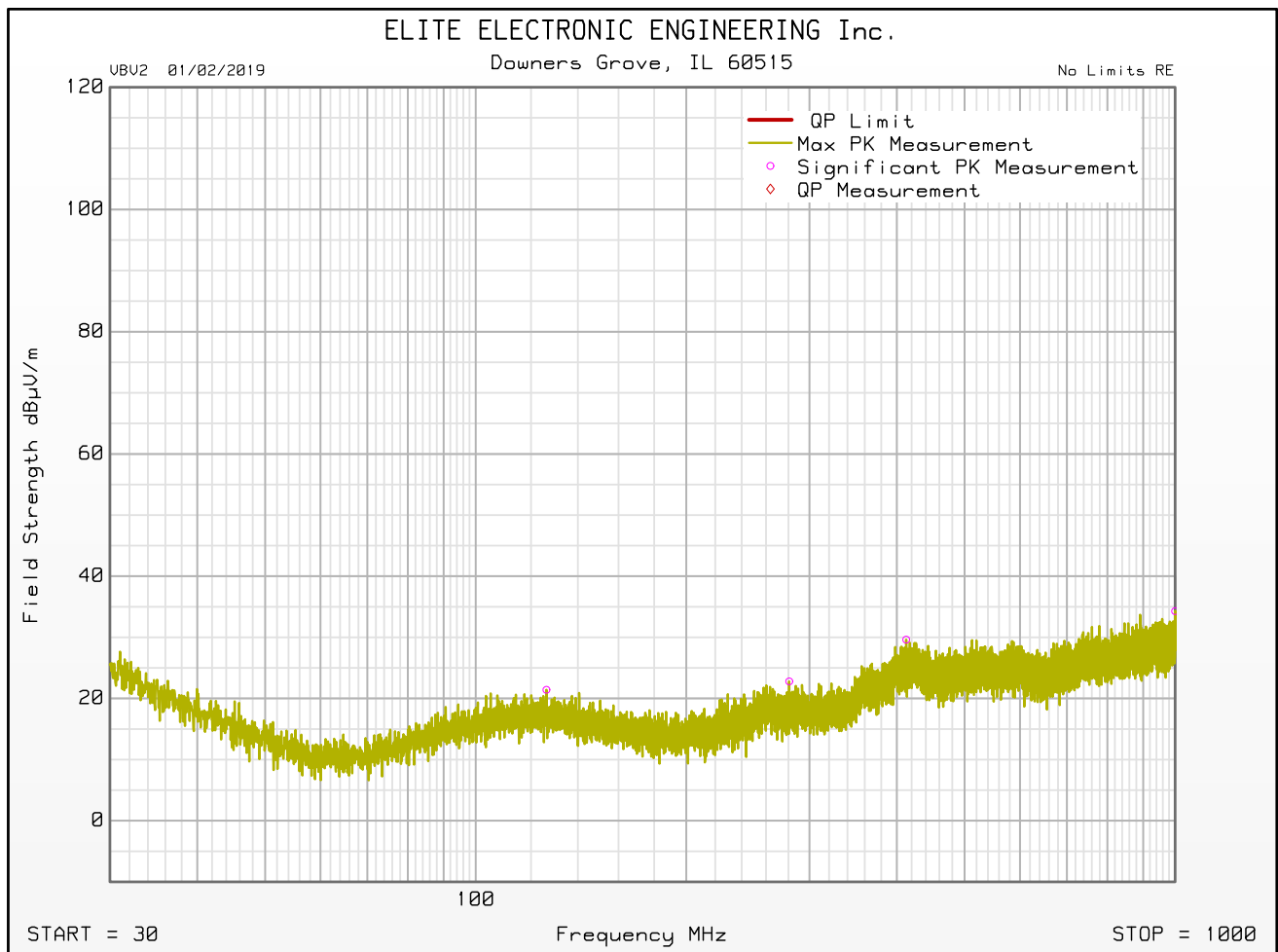


— Limit — Sum Level — Threshold × Critical × Final Critical

No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

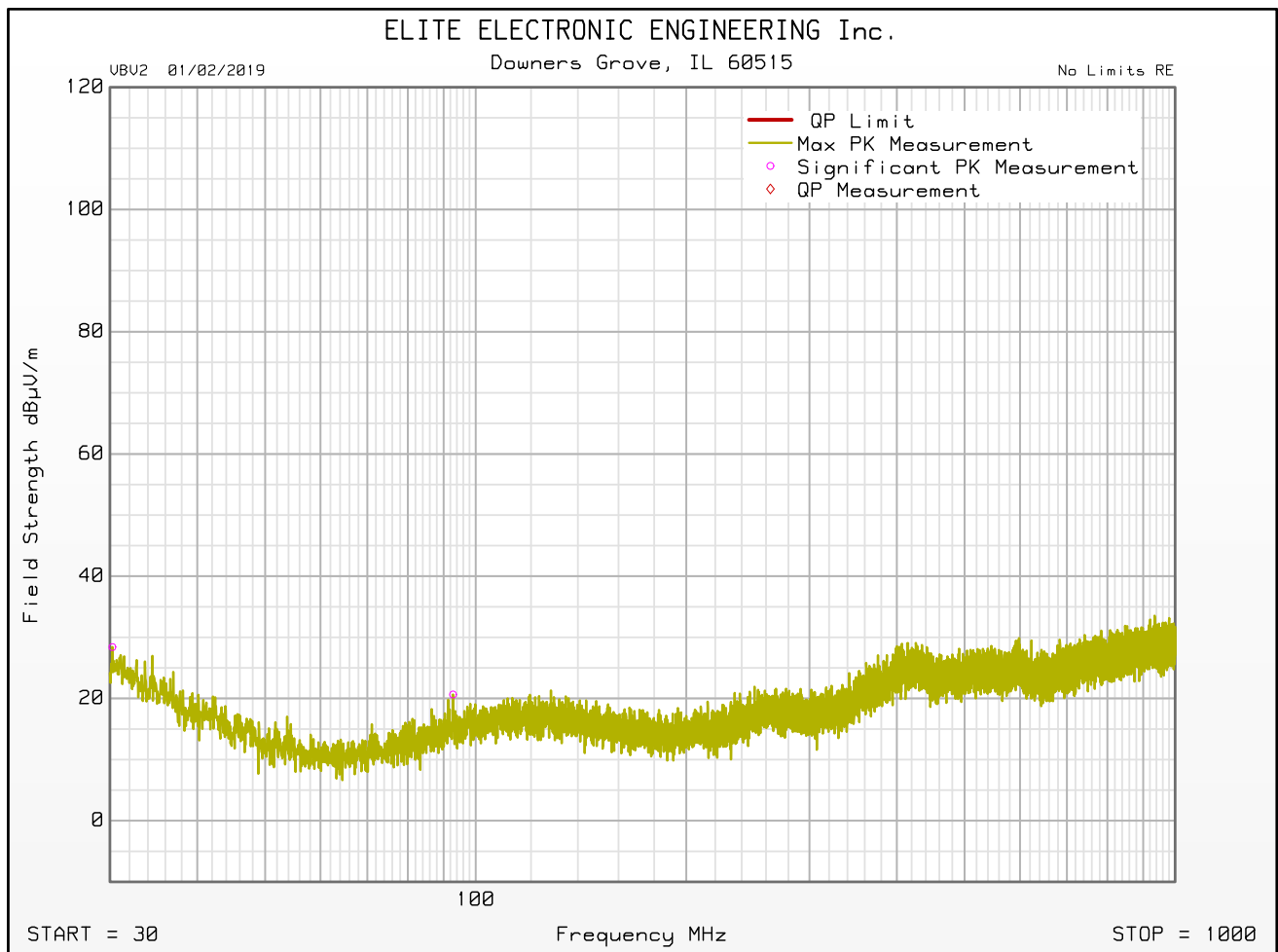
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2402MHZ 1
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 120
 Ant. Polarization(s) : H
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 20, 2019 01:15:41 PM



No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

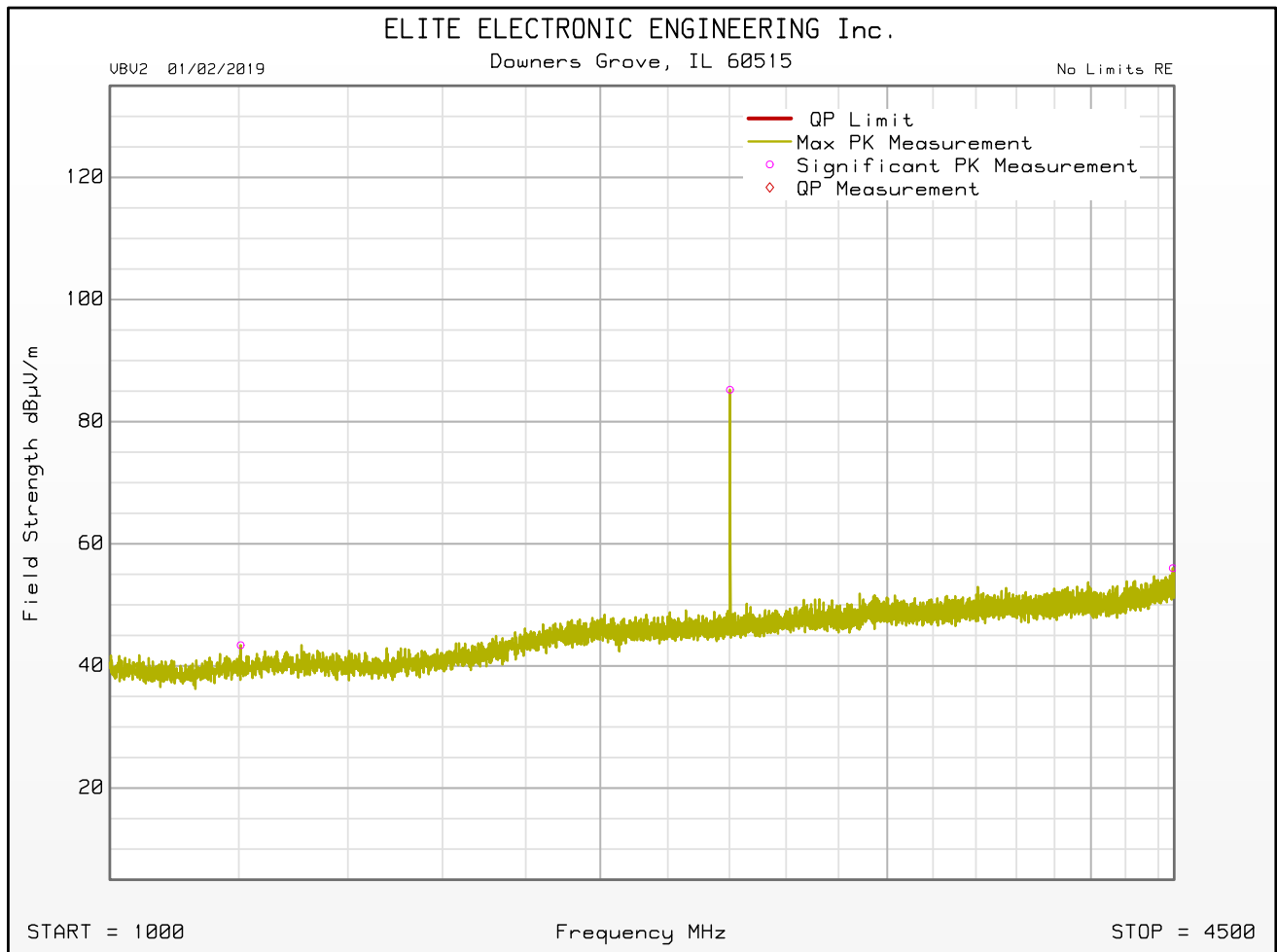
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2402MHZ FINAL
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 120
 Ant. Polarization(s) : V
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 26, 2019 03:58:03 PM



No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

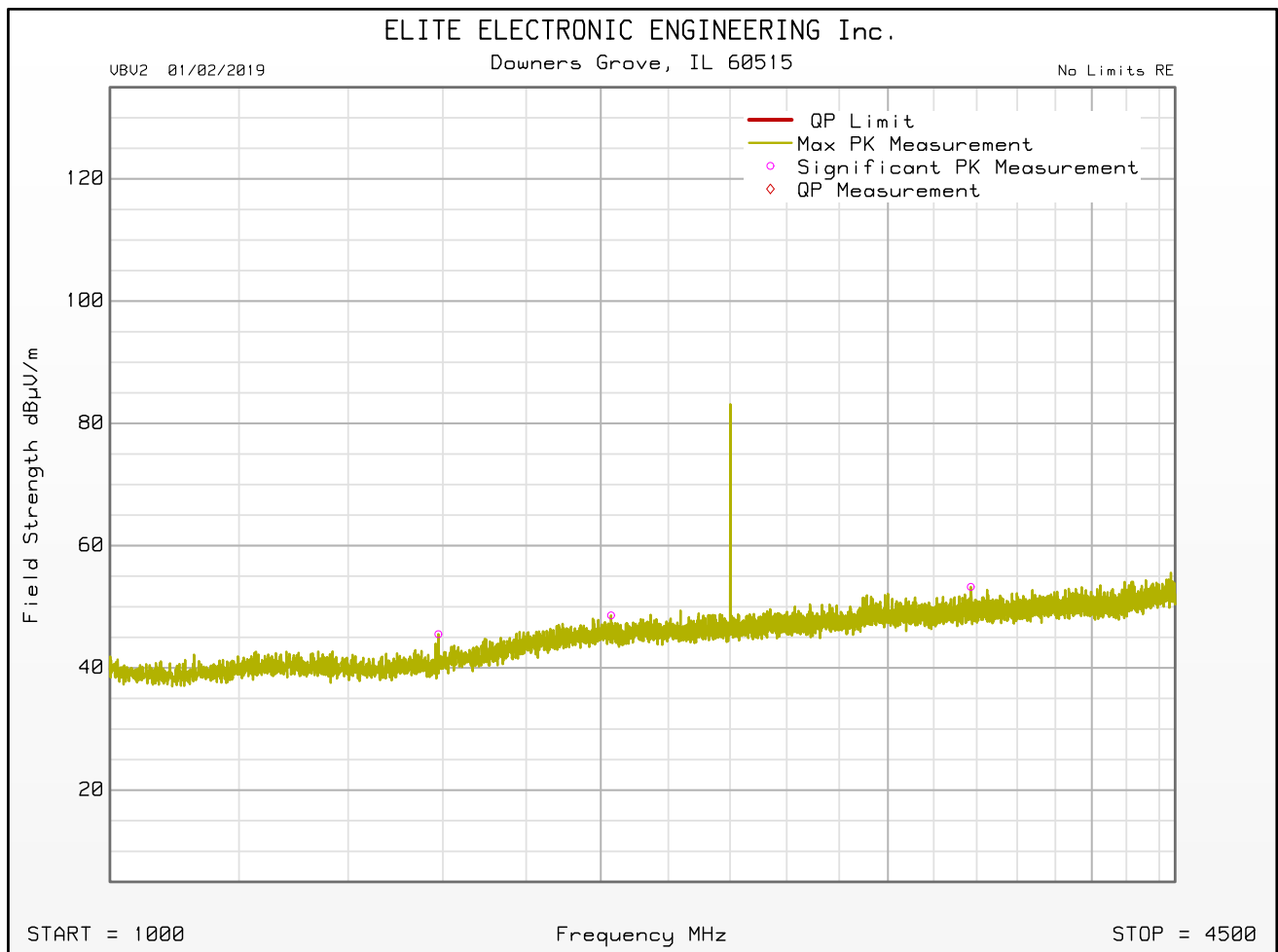
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2402MHZ
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : H
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 20, 2019 02:48:04 PM



No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

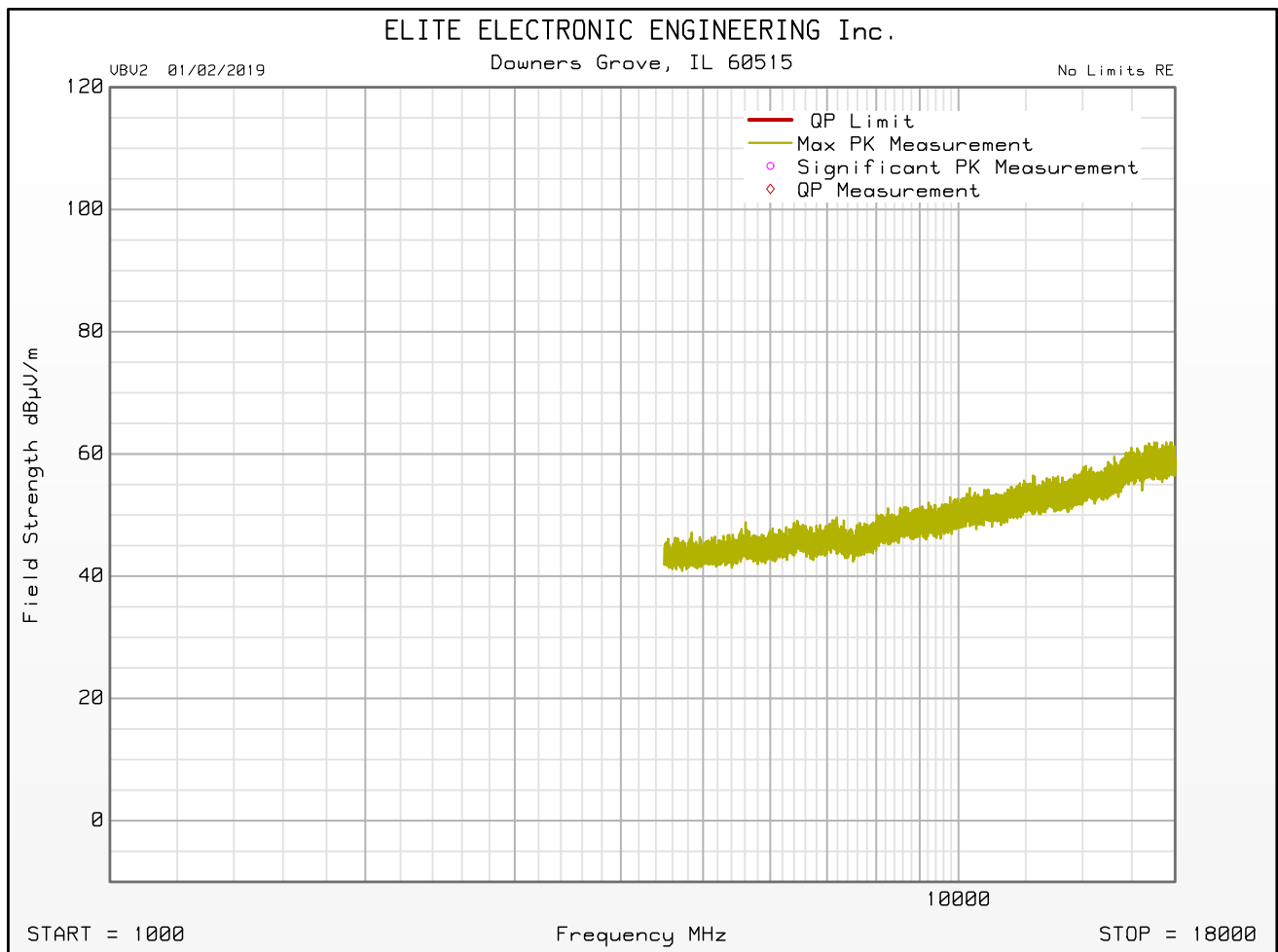
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2402MHZ
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : V
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 20, 2019 02:48:04 PM



No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

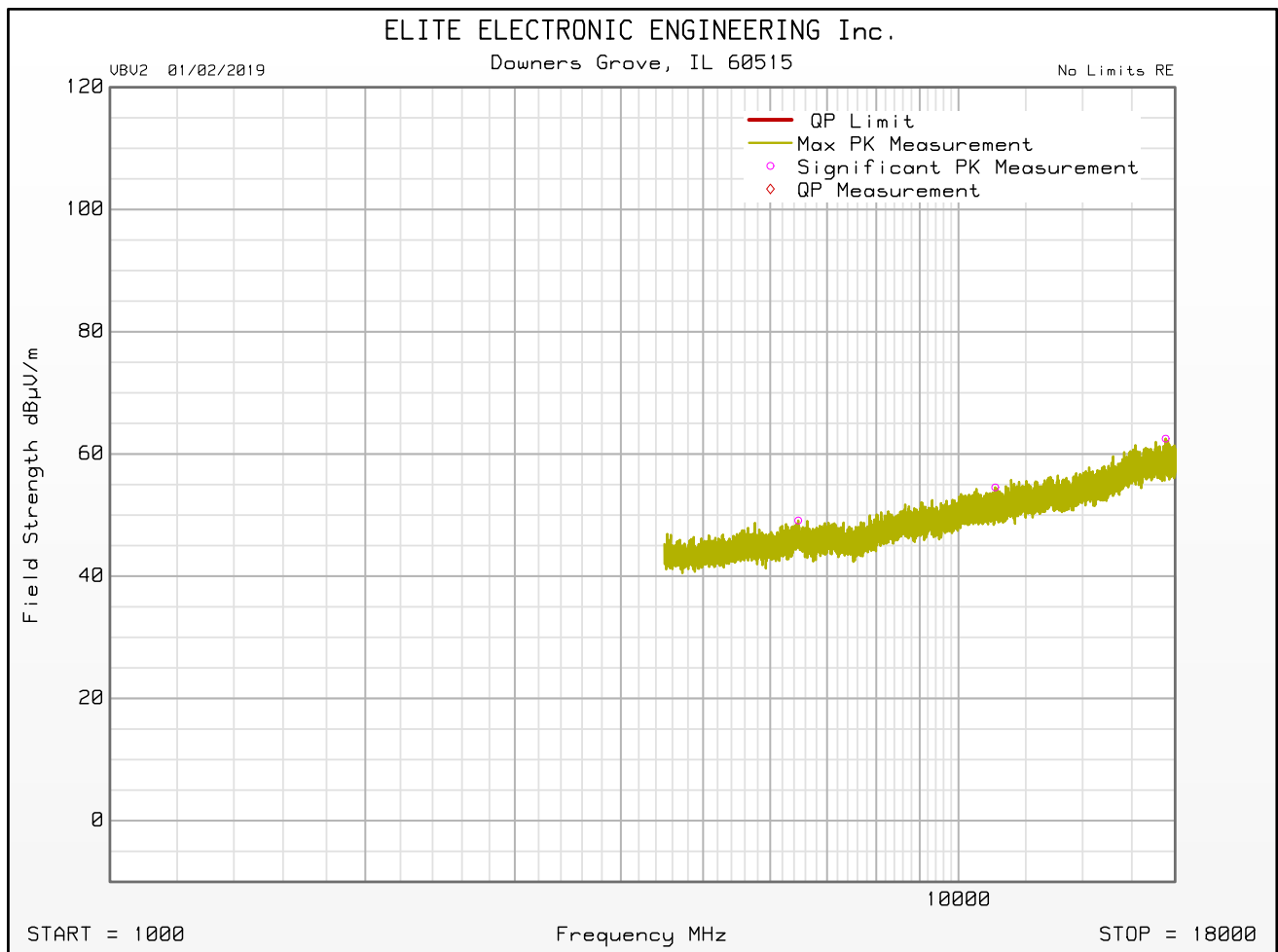
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2402MHZ 2
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : H
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 20, 2019 03:42:26 PM

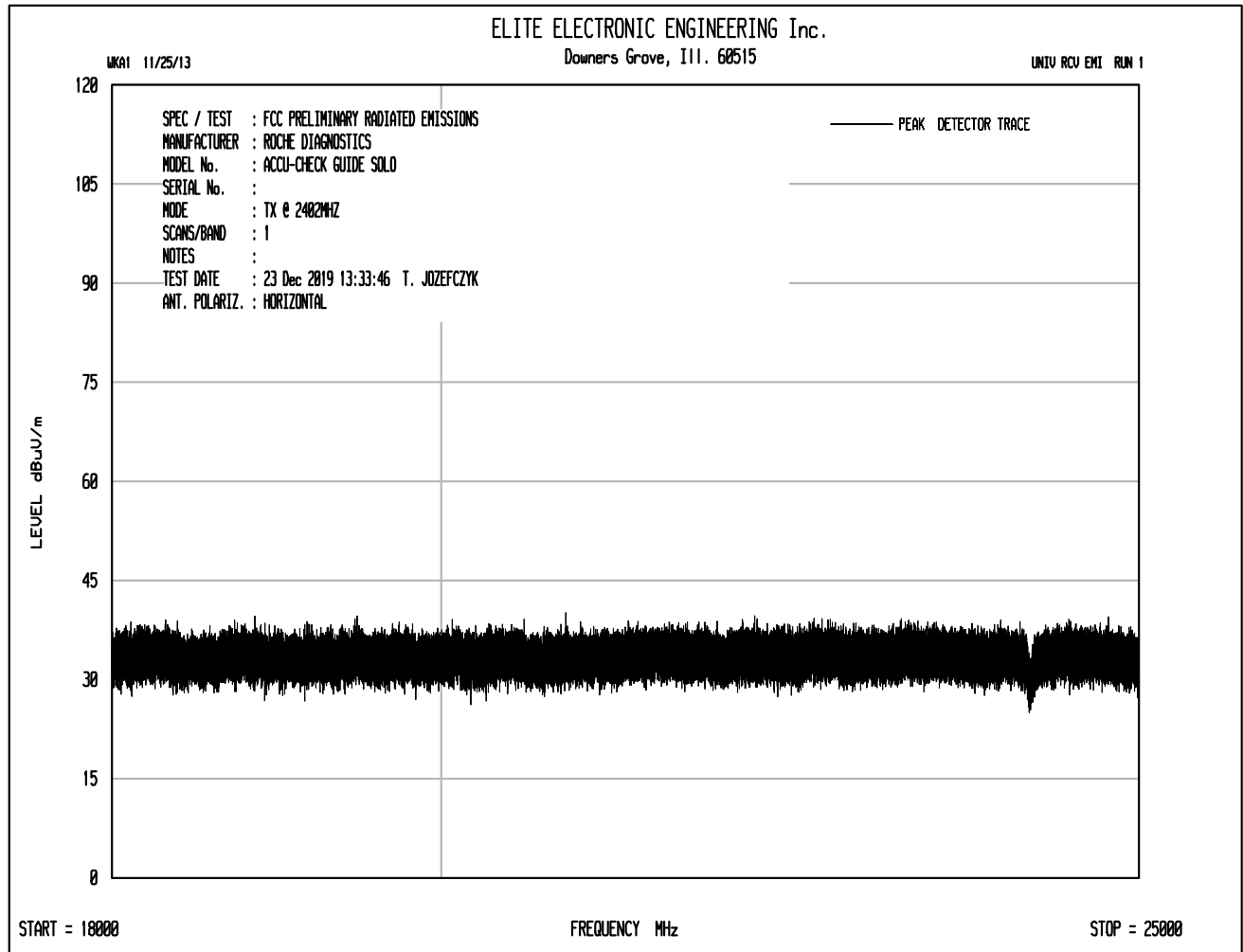


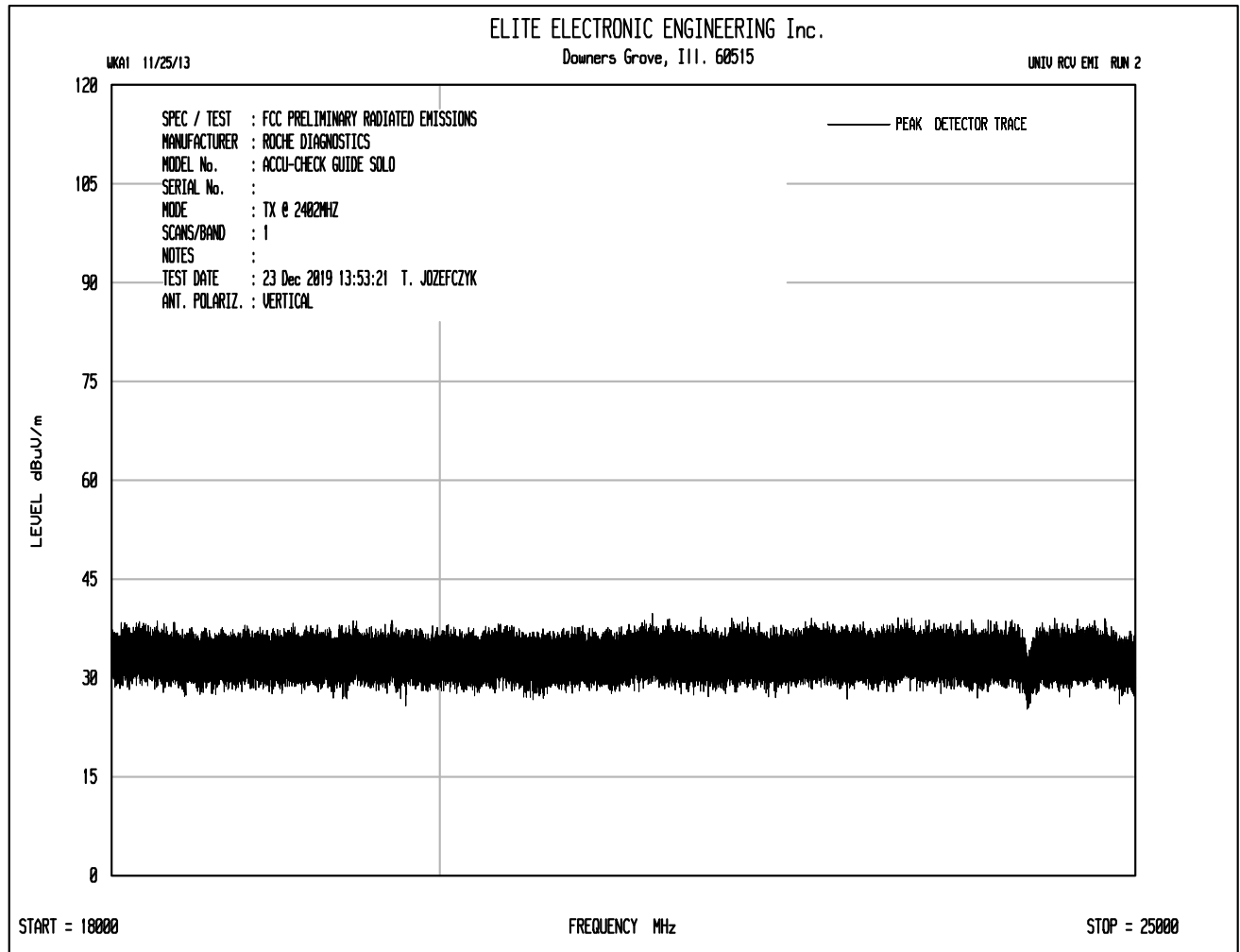
No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2402MHZ 2
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : V
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 20, 2019 03:42:26 PM



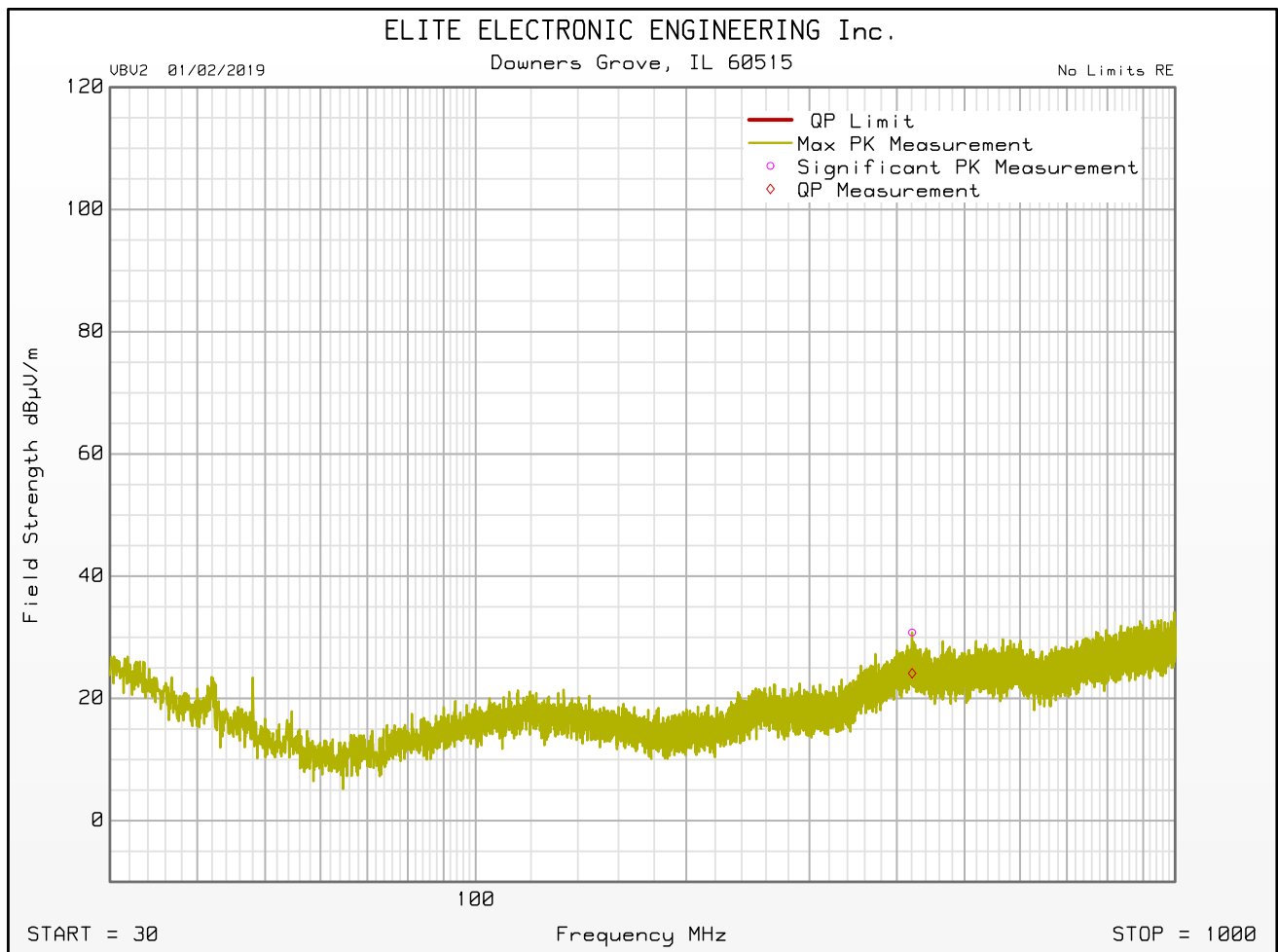




No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

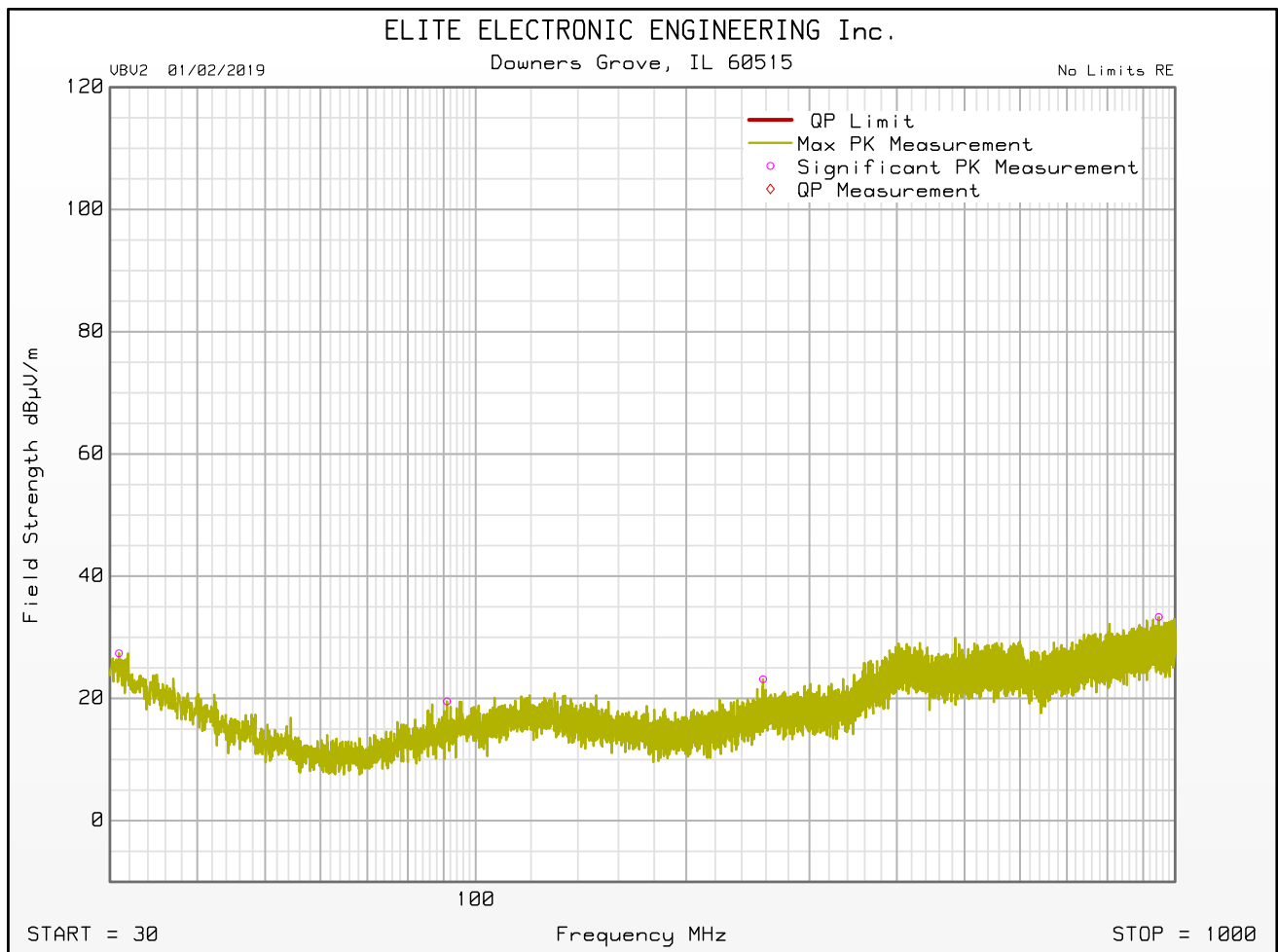
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2440MHZ
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : H
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 20, 2019 02:21:19 PM



No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

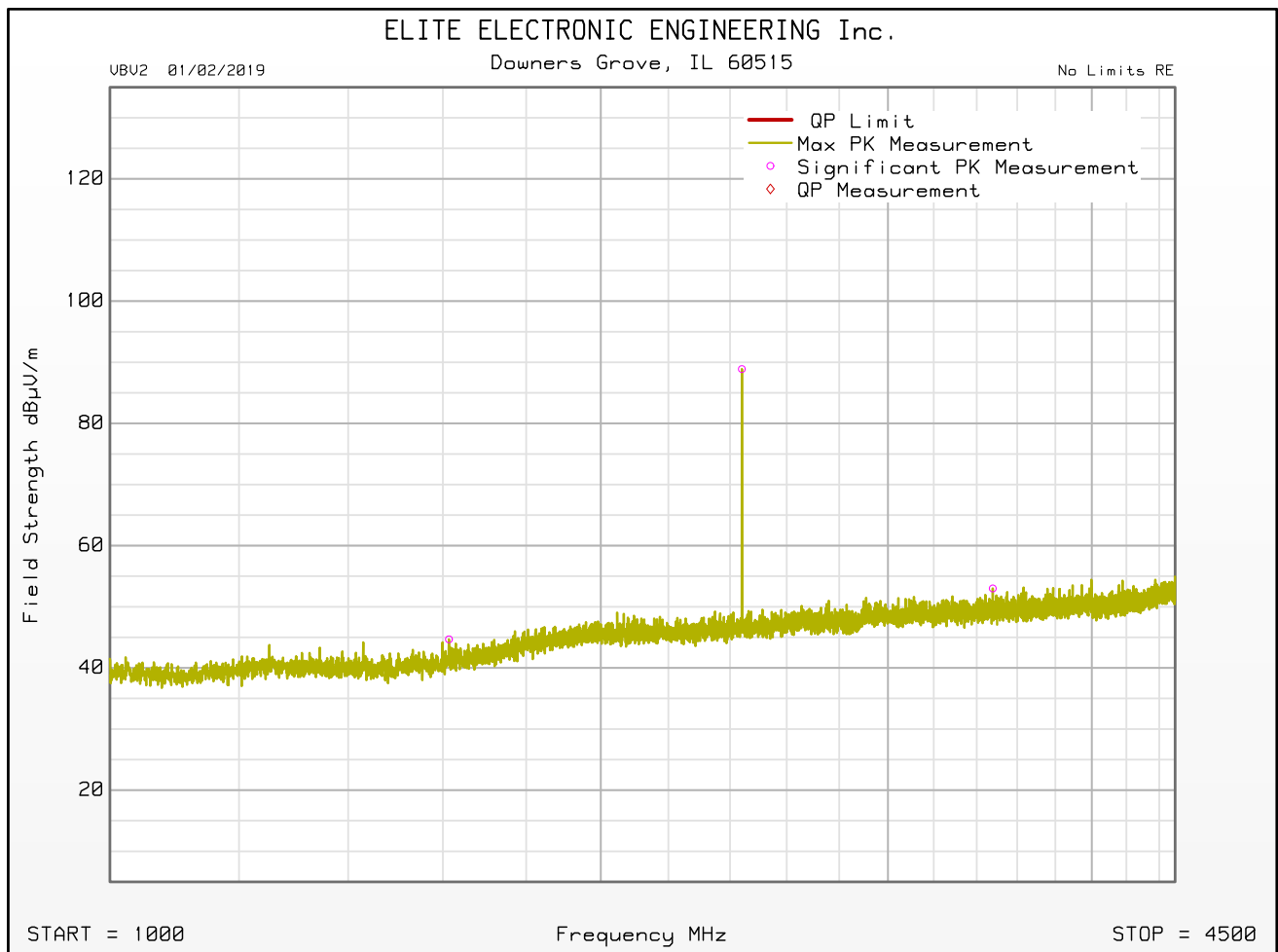
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2440MHZ
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : V
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 20, 2019 02:21:19 PM



No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

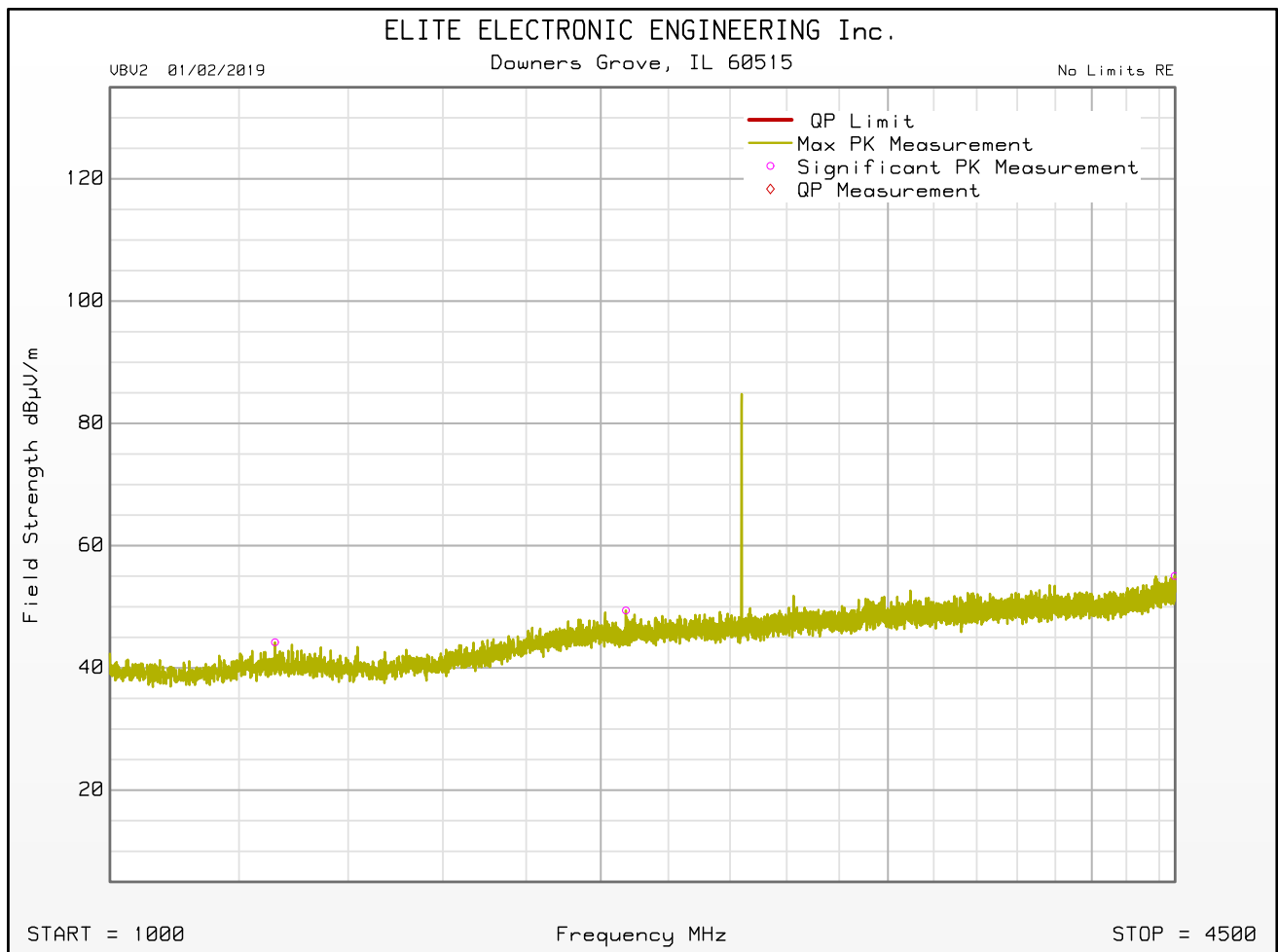
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2440MHZ
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : H
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 20, 2019 03:00:49 PM



No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

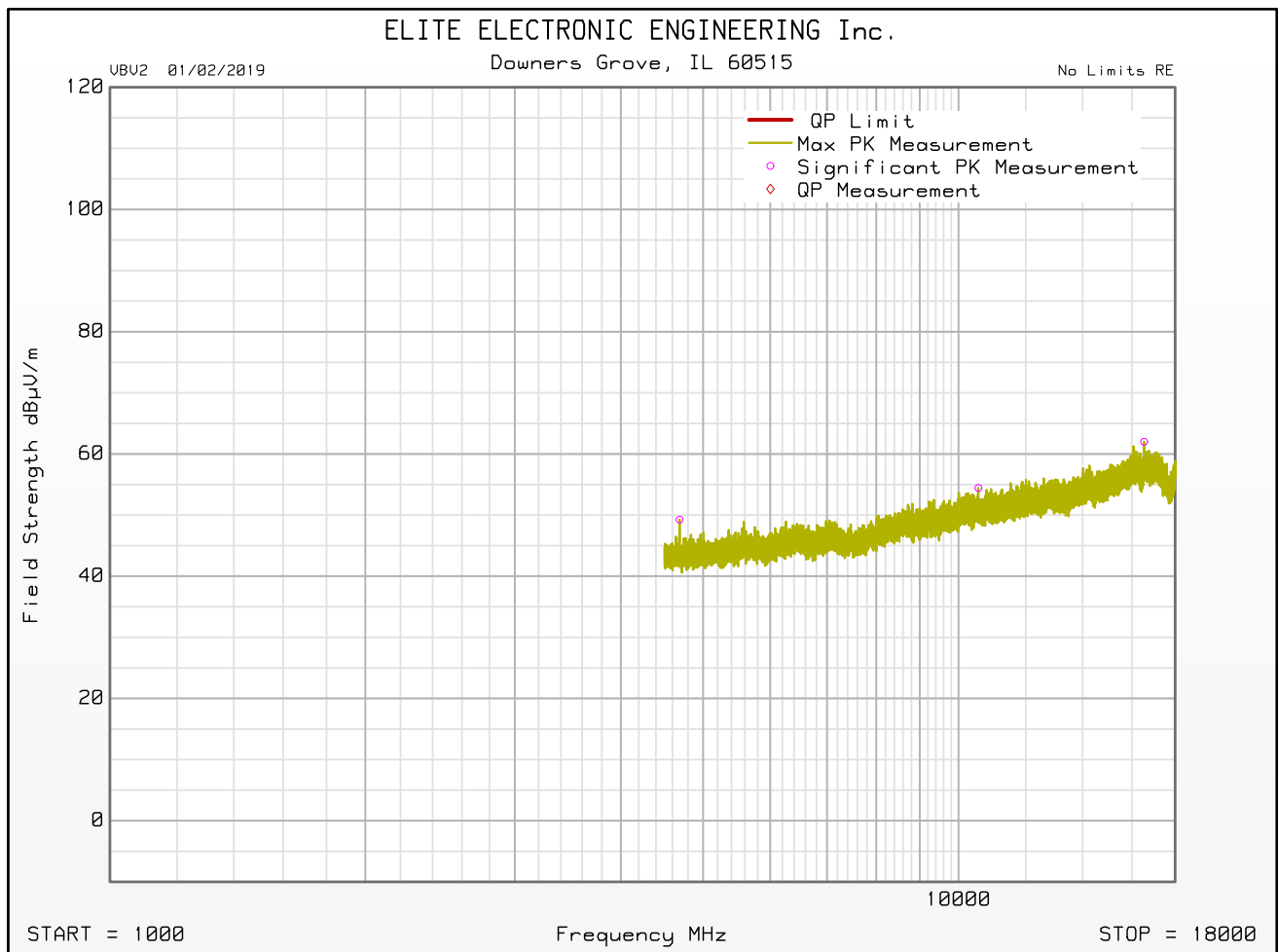
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2440MHZ
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : V
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 20, 2019 03:00:49 PM



No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

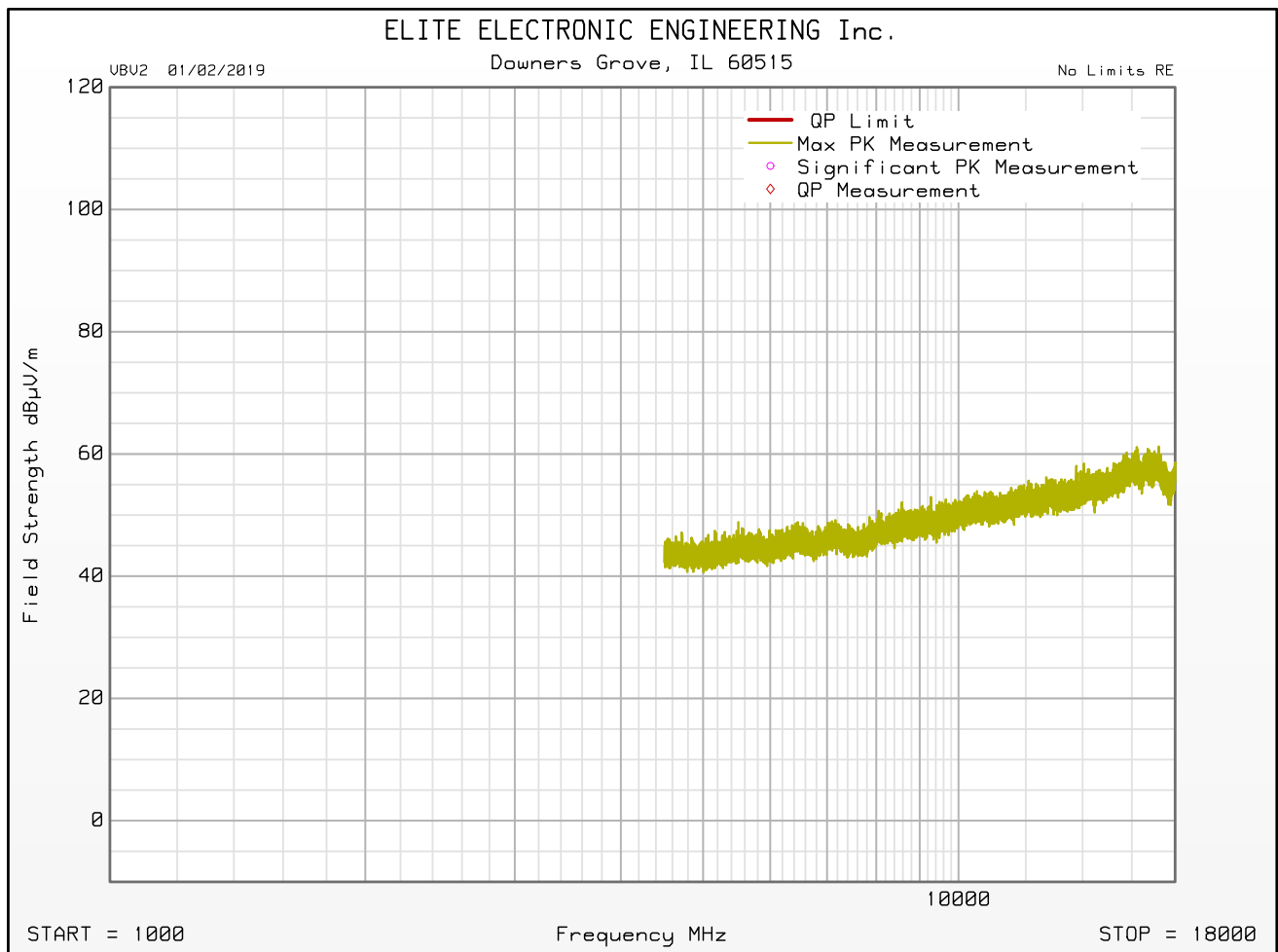
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2440MHZ 2
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : H
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 23, 2019 08:55:06 AM

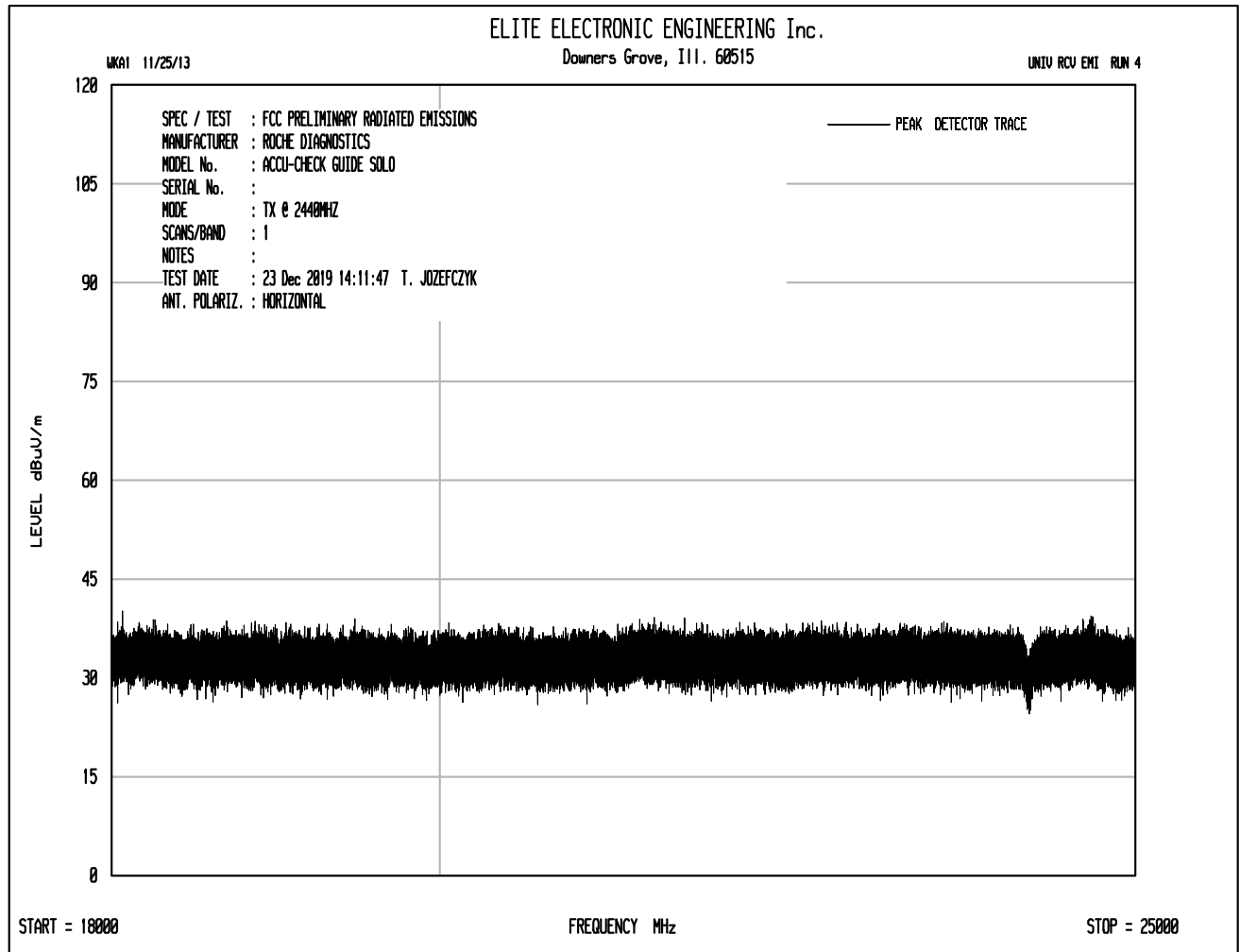


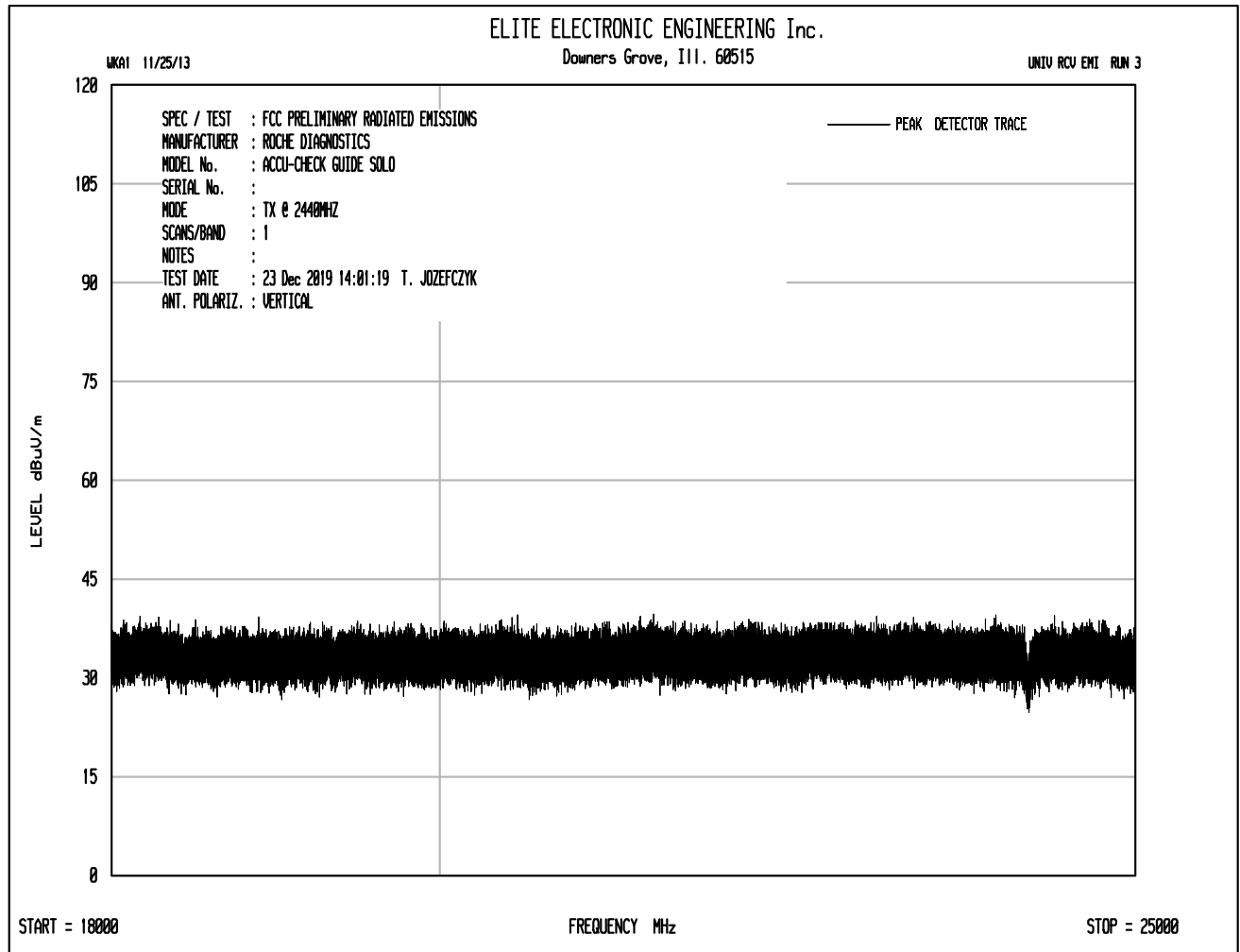
No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2440MHZ 2
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : V
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 23, 2019 08:55:06 AM



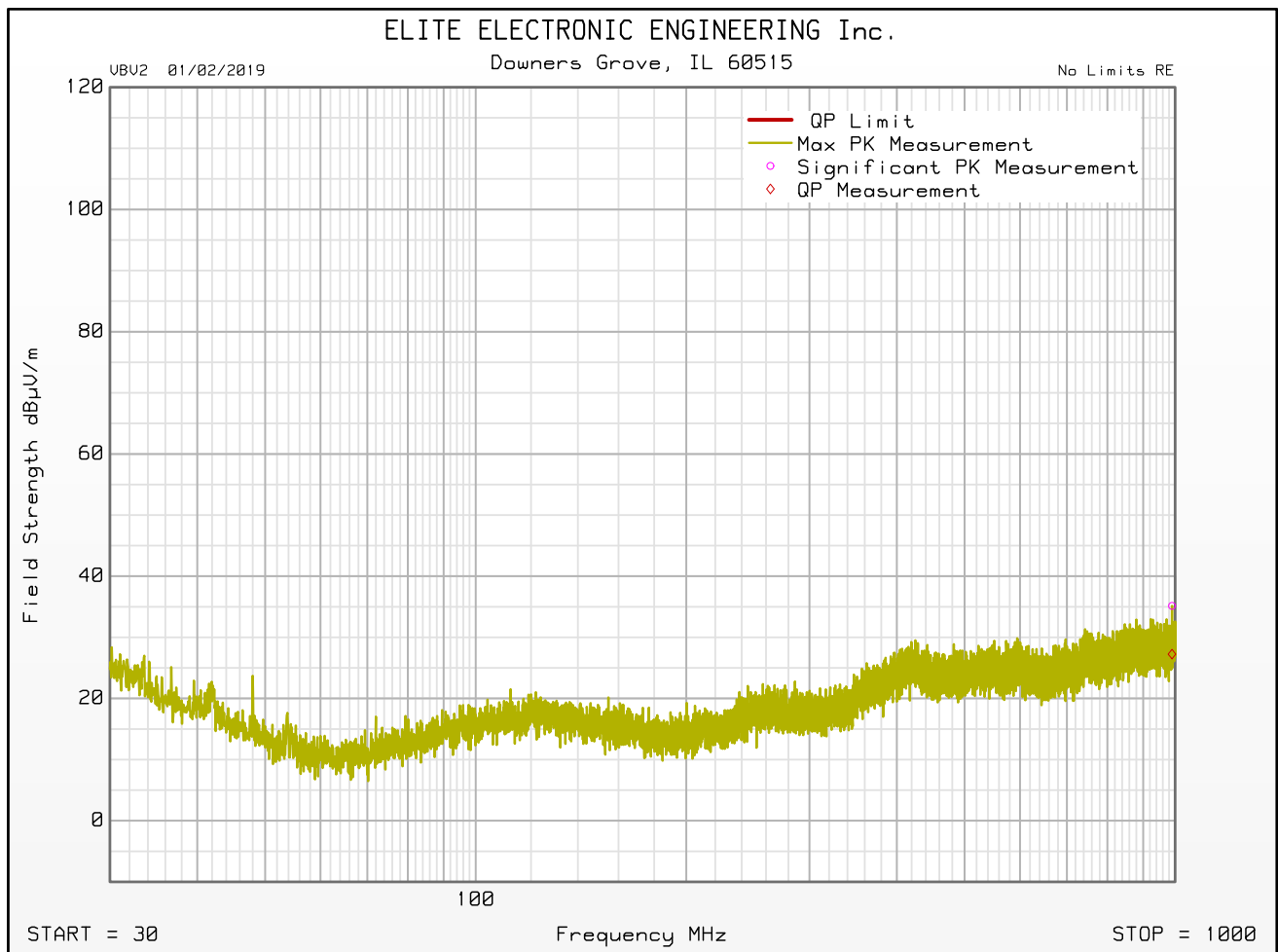




No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

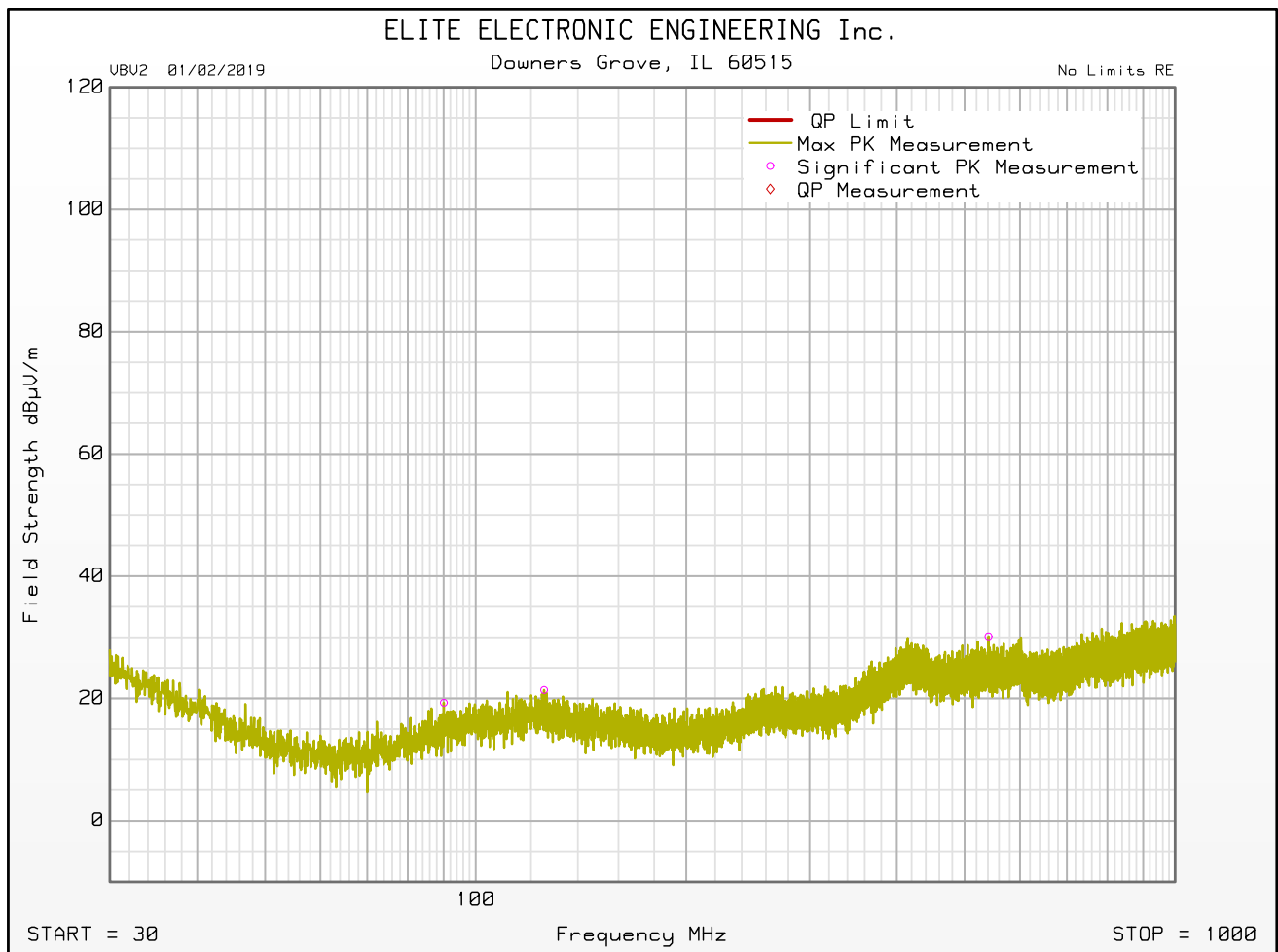
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2480MHZ
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : H
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 20, 2019 02:22:45 PM



No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

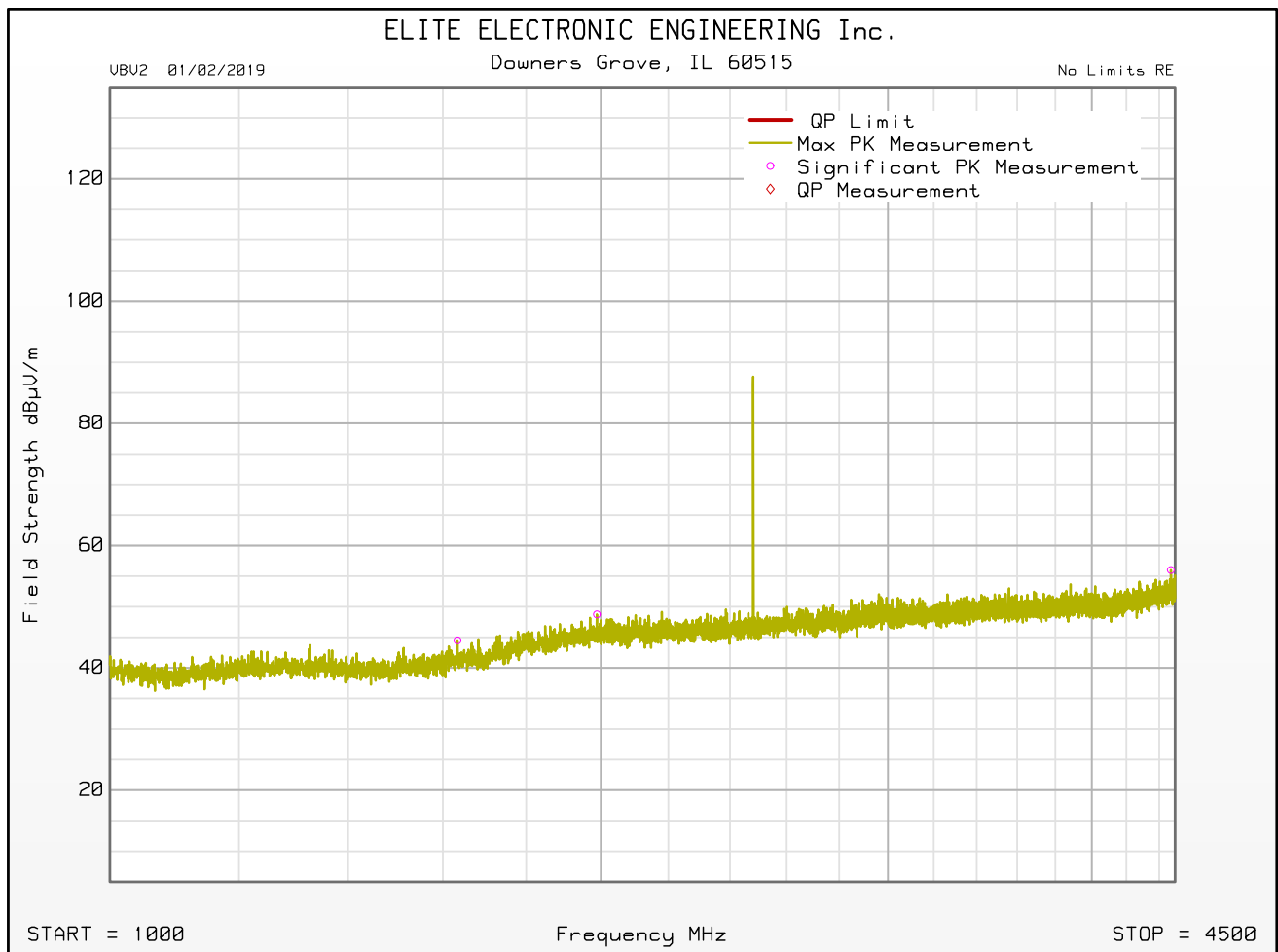
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2480MHZ
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : V
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 20, 2019 02:22:45 PM



No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

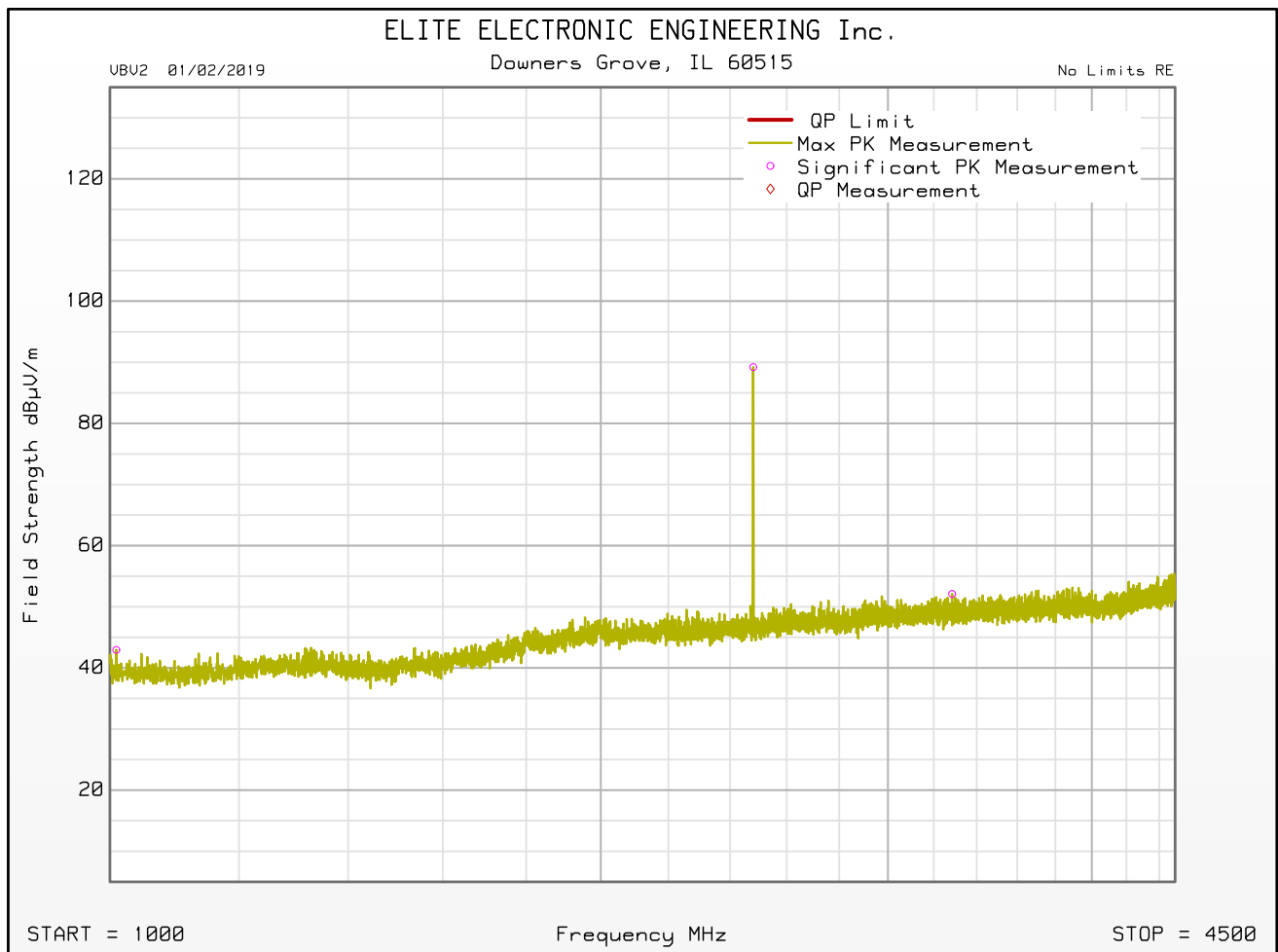
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2480MHZ
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : H
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 20, 2019 03:18:19 PM



No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

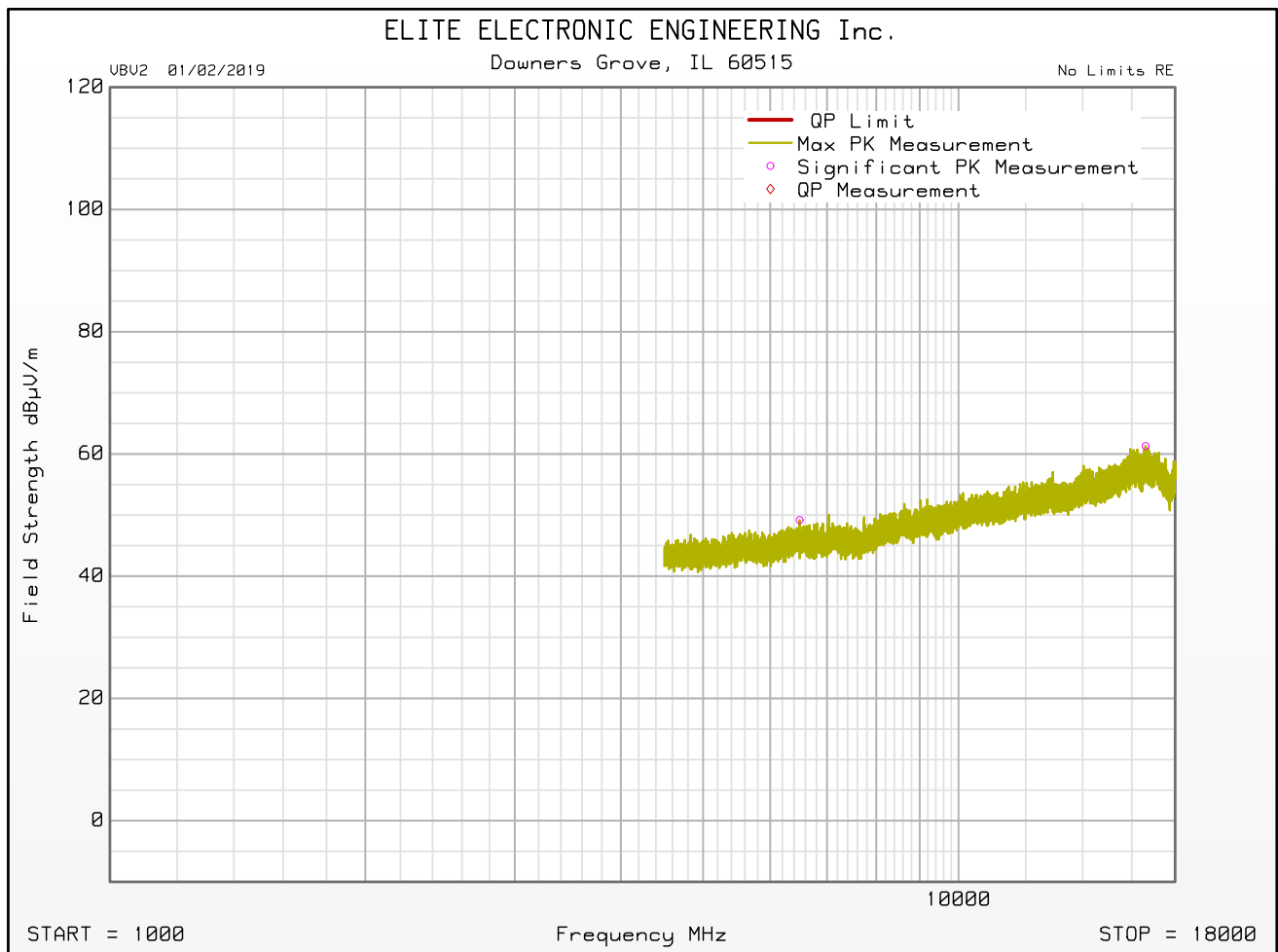
Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2480MHZ
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : V
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 20, 2019 03:18:19 PM



No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

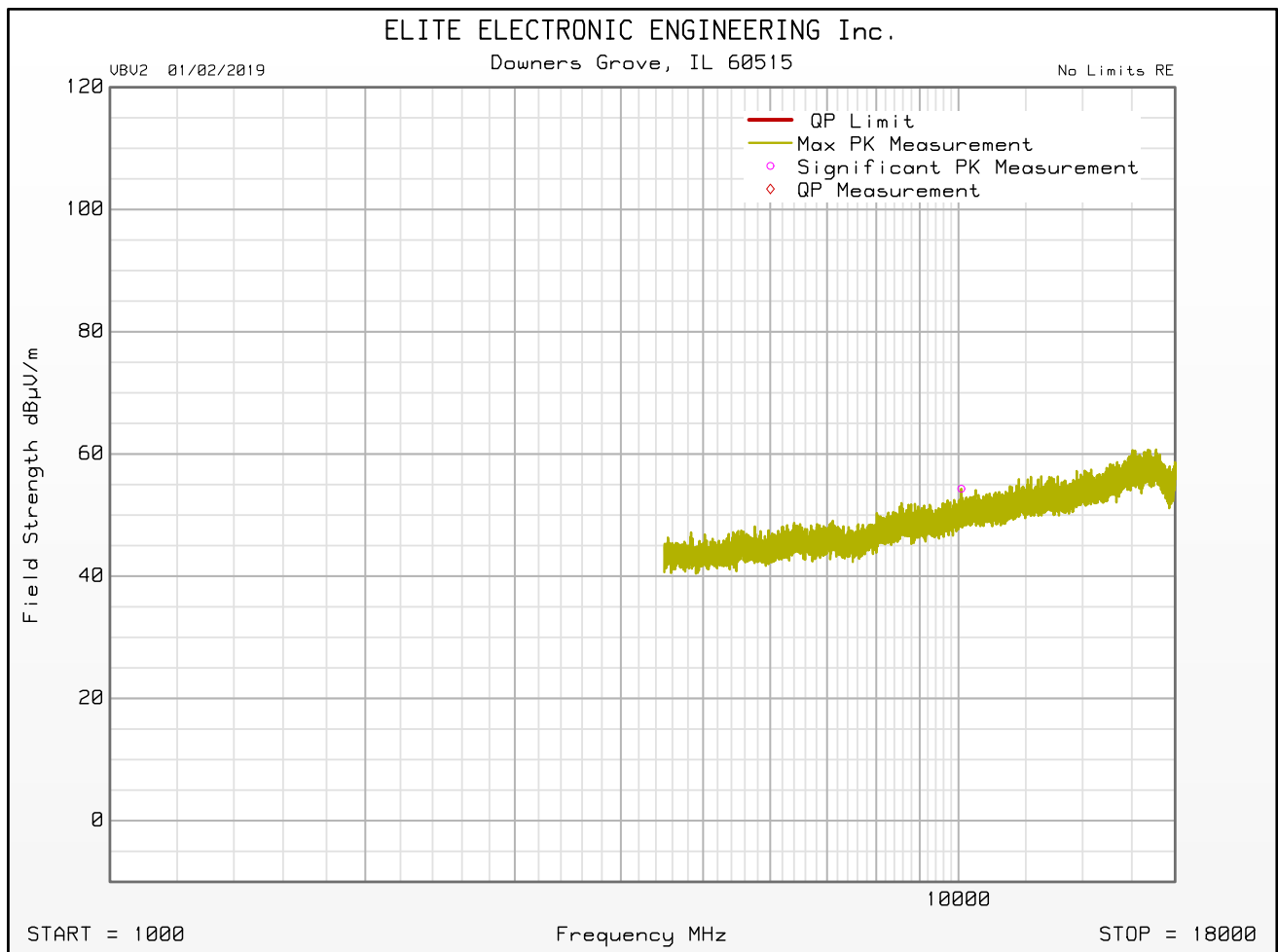
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 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2480MHZ 2
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : H
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 23, 2019 09:56:07 AM

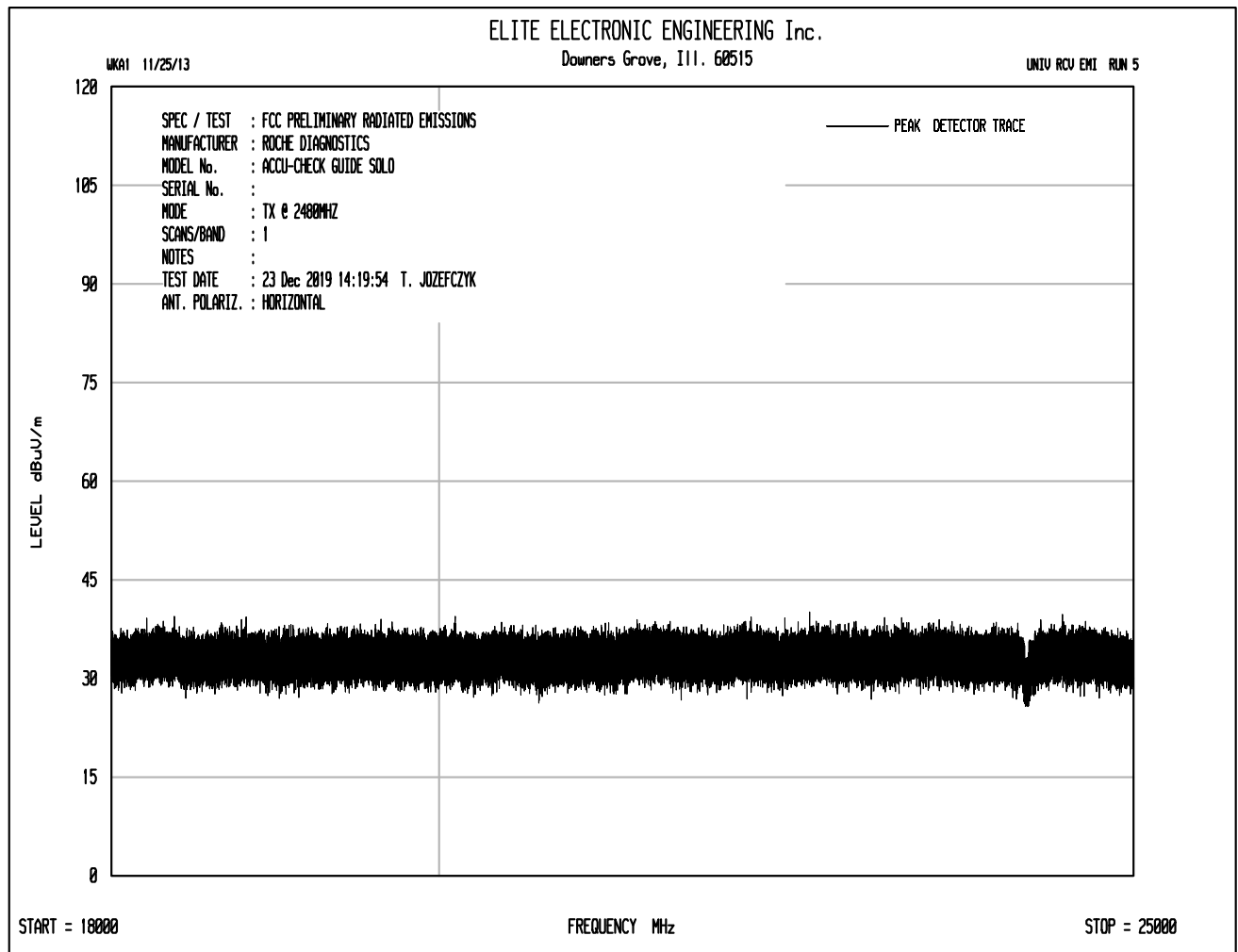


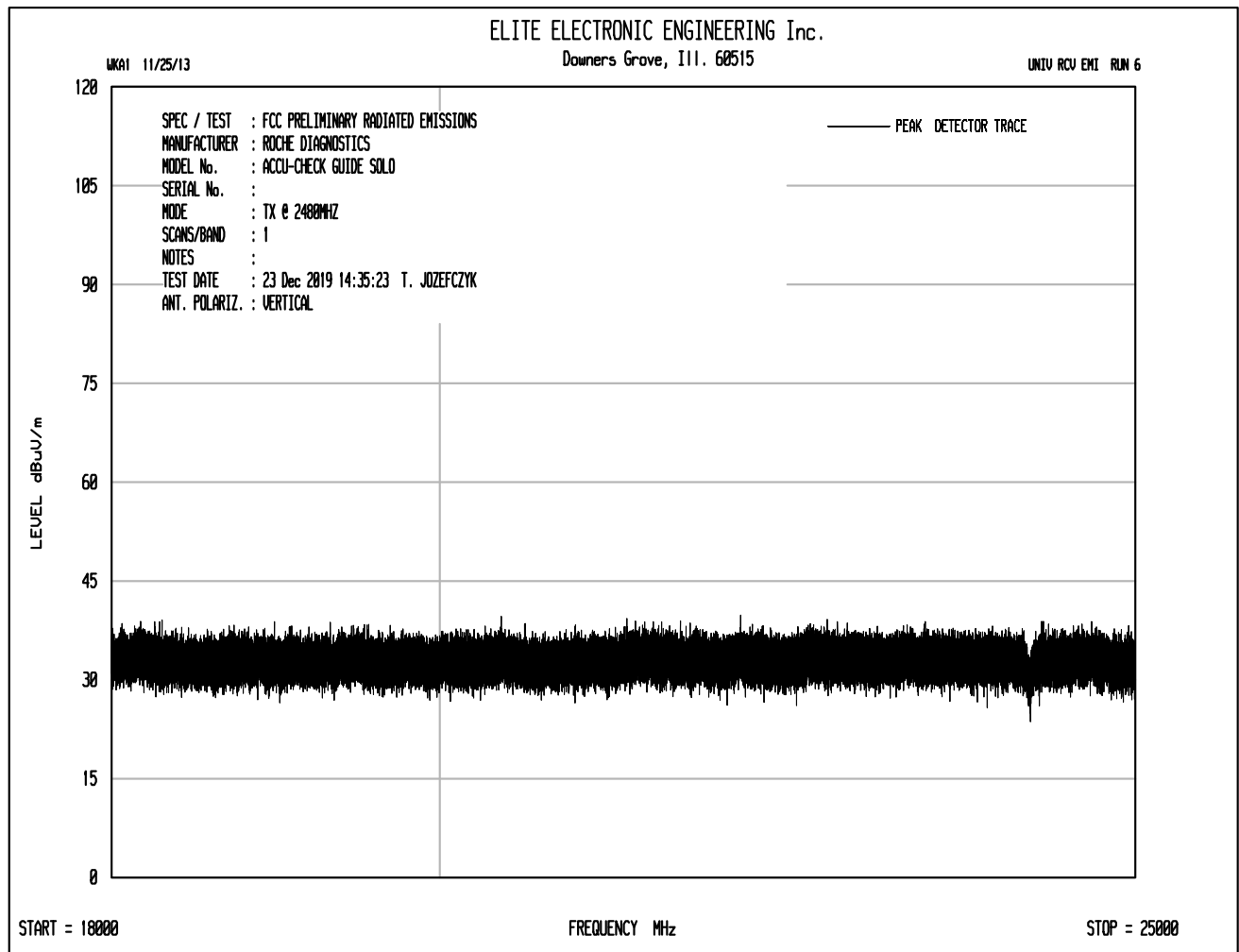
No Limits Radiated RF Emissions Test

SW ID/Rev: VBV2 01/02/2019

Manufacturer : ROCHE
 Model : ACCU-CHEK GUIDE SOLO
 Serial Number : T600000473
 DUT Mode : TX @ 2480MHZ 2
 Turntable Step Angle (°): 360
 Mast Positions (cm) : 285
 Ant. Polarization(s) : V
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes :
 Test Engineer : T. Jozefczyk
 Test Date : Dec 23, 2019 09:56:07 AM







DATA PAGE	
MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Radiated Spurious Emissions – Harmonics in Non-Restricted Bands
MODE	Tx – 2402MHz
DATE TESTED	December 20 - 26, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

RADIATED SPURIOUS EMISSIONS

Freq. (MHz)	Ant. Pol.	Meter Reading (dBμV)	Ambient	CBL Fac. (dB)	Ant. Fac. (dB)	Pre Amp (dB)	Peak Total dBμV/m at 3m	Peak Total μV/m at 3m	Peak Limit μV/m at 3m	Margin (dB)
2402.00	H	53.89		4.28	32.18	0.00	90.36	32943.44		
2402.00	V	53.04		4.28	32.18	0.00	89.51	29872.32		
7206.00	H	41.96		6.86	35.92	-40.07	44.67	171.21	3294.34	-25.69
7206.00	V	41.45		6.86	35.92	-40.07	44.16	161.44	3294.34	-26.20
9608.00	H	40.57	Ambient	8.20	36.84	-39.59	46.02	200.05	3294.34	-24.33
9608.00	V	41.70		8.20	36.84	-39.59	47.15	227.85	3294.34	-23.20
14412.00	H	40.36	Ambient	9.56	39.56	-39.98	49.51	298.78	3294.34	-20.85
14412.00	V	41.26	Ambient	9.56	39.56	-39.98	50.41	331.40	3294.34	-19.95
16814.00	H	40.44	Ambient	10.94	41.98	-38.90	54.46	528.62	3294.34	-15.89
16814.00	V	40.00	Ambient	10.94	41.98	-38.90	54.02	502.51	3294.34	-16.33
21618.00	H	26.49	Ambient	2.25	40.56	-28.89	40.41	104.79	3294.34	-29.95
21618.00	V	26.19	Ambient	2.25	40.56	-28.89	40.11	101.23	3294.34	-30.25
24020.00	H	27.99	Ambient	2.24	40.62	-30.21	40.64	107.61	3294.34	-29.72
24020.00	V	27.24	Ambient	2.24	40.62	-30.21	39.89	98.71	3294.34	-30.47

DATA PAGE	
MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Radiated Spurious Emissions – Harmonics in Restricted Bands
MODE	Tx – 2402MHz
DATE TESTED	December 20 - 26, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

RADIATED SPURIOUS EMISSIONS

Freq. (MHz)	Ant. Pol.	Meter Reading (dBμV)	Ambient	CBL Fac. (dB)	Ant. Fac. (dB)	Pre Amp (dB)	Peak Total dBμV/m at 3m	Peak Total μV/m at 3m	Peak Limit μV/m at 3m	Margin (dB)
4804.00	H	50.17	Ambient	5.69	34.18	-40.22	49.81	309.40	5000.00	-24.17
4804.00	V	50.49	Ambient	5.69	34.18	-40.22	50.13	321.01	5000.00	-23.85
12010.00	H	52.07	Ambient	8.62	38.67	-39.70	59.67	962.60	5000.00	-14.31
12010.00	V	52.18	Ambient	8.62	38.67	-39.70	59.78	974.87	5000.00	-14.20
19216.00	H	36.37	Ambient	2.21	40.38	-28.78	50.17	322.64	5000.00	-23.80
19216.00	V	36.10	Ambient	2.21	40.38	-28.78	49.90	312.77	5000.00	-24.07

DATA PAGE	
MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Radiated Spurious Emissions – Restricted Band Averages
MODE	Tx – 2402MHz
DATE TESTED	December 20 - 26, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

RADIATED SPURIOUS EMISSIONS

Freq. (MHz)	Ant. Pol.	Meter Reading (dBμV)	Ambient	CBL Fac. (dB)	Ant. Fac. (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBμV/m at 3m	Average Total μV/m at 3m	Average Limit μV/m at 3m	Margin (dB)
4804.00	H	34.75	Ambient	5.69	34.18	-40.22	0.00	34.39	52.42	500.00	-19.59
4804.00	V	35.41	Ambient	5.69	34.18	-40.22	0.00	35.05	56.56	500.00	-18.93
12010.00	H	37.11	Ambient	8.62	38.67	-39.70	0.00	44.71	171.97	500.00	-9.27
12010.00	V	36.83	Ambient	8.62	38.67	-39.70	0.00	44.43	166.51	500.00	-9.55
19216.00	H	21.37	Ambient	2.21	40.38	-28.78	0.00	35.17	57.37	500.00	-18.80
19216.00	V	21.13	Ambient	2.21	40.38	-28.78	0.00	34.93	55.81	500.00	-19.04

DATA PAGE

MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Radiated Spurious Emissions – Harmonics in Non-Restricted Bands
MODE	Tx – 2440MHz
DATE TESTED	December 20 - 26, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

RADIATED SPURIOUS EMISSIONS

Freq. (MHz)	Ant. Pol.	Meter Reading (dBμV)	Ambient	CBL Fac. (dB)	Ant. Fac. (dB)	Pre Amp (dB)	Peak Total dBμV/m at 3m	Peak Total μV/m at 3m	Peak Limit μV/m at 3m	Margin (dB)
2440.00	H	53.91		4.31	32.26	0.00	90.47	33396.63		
2440.00	V	53.70		4.31	32.26	0.00	90.26	32598.87		
9760.00	H	40.75	Ambient	8.24	37.00	-39.55	46.44	209.93	3339.66	-24.03
9760.00	V	41.37	Ambient	8.24	37.00	-39.55	47.06	225.46	3339.66	-23.41
14640.00	H	40.08	Ambient	9.71	39.71	-40.18	49.31	292.16	3339.66	-21.16
14640.00	V	41.04	Ambient	9.71	39.71	-40.18	50.27	326.31	3339.66	-20.20
17080.00	H	40.01	Ambient	10.97	41.81	-38.79	54.00	501.23	3339.66	-16.47
17080.00	V	39.81	Ambient	10.97	41.81	-38.79	53.80	489.82	3339.66	-16.67
21960.00	H	25.88	Ambient	2.20	40.58	-29.39	39.27	91.94	3339.66	-31.20
21960.00	V	26.43	Ambient	2.20	40.58	-29.39	39.82	97.95	3339.66	-30.65
24400.00	H	26.73	Ambient	2.22	40.63	-30.45	39.14	90.56	3339.66	-31.34
24400.00	V	26.09	Ambient	2.22	40.63	-30.45	38.50	84.12	3339.66	-31.98

DATA PAGE	
MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Radiated Spurious Emissions – Harmonics in Restricted Bands
MODE	Tx – 2440MHz
DATE TESTED	December 20 - 26, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

RADIATED SPURIOUS EMISSIONS

Freq. (MHz)	Ant. Pol.	Meter Reading (dBμV)	Ambient	CBL Fac. (dB)	Ant. Fac. (dB)	Pre Amp (dB)	Peak Total dBμV/m at 3m	Peak Total μV/m at 3m	Peak Limit μV/m at 3m	Margin (dB)
4880.00	H	50.27	Ambient	5.74	34.13	-40.25	49.89	312.11	5000.00	-24.09
4880.00	V	50.45	Ambient	5.74	34.13	-40.25	50.07	318.65	5000.00	-23.91
7320.00	H	50.55		6.88	35.89	-40.06	53.26	460.29	5000.00	-20.72
7320.00	V	50.25		6.88	35.89	-40.06	52.96	444.66	5000.00	-21.02
12200.00	H	51.04	Ambient	8.94	38.69	-39.62	59.05	895.95	5000.00	-14.93
12200.00	V	50.95	Ambient	8.94	38.69	-39.62	58.96	886.71	5000.00	-15.02
19520.00	H	35.50	Ambient	2.22	40.39	-28.74	49.37	294.18	5000.00	-24.61
19520.00	V	36.69	Ambient	2.22	40.39	-28.74	50.56	337.38	5000.00	-23.42

DATA PAGE	
MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Radiated Spurious Emissions – Restricted Band Averages
MODE	Tx – 2440MHz
DATE TESTED	December 20 - 26, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

RADIATED SPURIOUS EMISSIONS

Freq. (MHz)	Ant. Pol.	Meter Reading (dBμV)	Ambient	CBL Fac. (dB)	Ant. Fac. (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBμV/m at 3m	Average Total μV/m at 3m	Average Limit μV/m at 3m	Margin (dB)
4880.00	H	35.33	Ambient	5.74	34.13	-40.25	0.00	34.95	55.89	500.00	-19.03
4880.00	V	35.31	Ambient	5.74	34.13	-40.25	0.00	34.93	55.76	500.00	-19.05
7320.00	H	35.41	Ambient	6.88	35.89	-40.06	0.00	38.12	80.54	500.00	-15.86
7320.00	V	34.67	Ambient	6.88	35.89	-40.06	0.00	37.38	73.97	500.00	-16.60
12200.00	H	36.44	Ambient	8.94	38.69	-39.62	0.00	44.45	166.83	500.00	-9.53
12200.00	V	36.42	Ambient	8.94	38.69	-39.62	0.00	44.43	166.45	500.00	-9.55
19520.00	H	20.73	Ambient	2.22	40.39	-28.74	0.00	34.60	53.72	500.00	-19.38
19520.00	V	20.86	Ambient	2.22	40.39	-28.74	0.00	34.73	54.53	500.00	-19.25

DATA PAGE	
MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Radiated Spurious Emissions – Harmonics in Non-Restricted Bands
MODE	Tx – 2480MHz
DATE TESTED	December 20 - 26, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

RADIATED SPURIOUS EMISSIONS

Freq. (MHz)	Ant. Pol.	Meter Reading (dBμV)	Ambient	CBL Fac. (dB)	Ant. Fac. (dB)	Pre Amp (dB)	Peak Total dBμV/m at 3m	Peak Total μV/m at 3m	Peak Limit μV/m at 3m	Margin (dB)
2480.00	H	55.82		4.33	32.33	0.00	92.48	42057.83		
2480.00	V	57.05		4.33	32.33	0.00	93.71	48455.92		
9920.00	H	42.15		8.29	37.14	-39.52	48.06	252.81	4845.59	-25.65
9920.00	V	43.00		8.29	37.14	-39.52	48.91	278.80	4845.59	-24.80
14880.00	H	40.94	Ambient	9.84	39.77	-40.40	50.15	321.68	4845.59	-23.56
14880.00	V	40.71	Ambient	9.84	39.77	-40.40	49.92	313.27	4845.59	-23.79
17360.00	H	39.19	Ambient	10.98	41.68	-39.10	52.75	433.82	4845.59	-20.96
17360.00	V	39.17	Ambient	10.98	41.68	-39.10	52.73	432.82	4845.59	-20.98
24800.00	H	26.16	Ambient	2.21	40.64	-31.18	37.83	77.93	4845.59	-35.87
24800.00	V	25.89	Ambient	2.21	40.64	-31.18	37.56	75.55	4845.59	-36.14

DATA PAGE	
MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Radiated Spurious Emissions – Harmonics in Restricted Bands
MODE	Tx – 2480MHz
DATE TESTED	December 20 - 26, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

RADIATED SPURIOUS EMISSIONS

Freq. (MHz)	Ant. Pol.	Meter Reading (dBμV)	Ambient	CBL Fac. (dB)	Ant. Fac. (dB)	Pre Amp (dB)	Peak Total dBμV/m at 3m	Peak Total μV/m at 3m	Peak Limit μV/m at 3m	Margin (dB)
4960.00	H	49.91	Ambient	5.79	34.13	-40.28	49.55	300.12	5000.00	-24.43
4960.00	V	50.25	Ambient	5.79	34.13	-40.28	49.89	312.10	5000.00	-24.09
7440.00	H	49.95		6.91	35.80	-40.05	52.61	426.99	5000.00	-21.37
7440.00	V	50.65		6.91	35.80	-40.05	53.31	462.82	5000.00	-20.67
12400.00	H	50.16	Ambient	9.40	38.63	-39.54	58.65	856.03	5000.00	-15.33
12400.00	V	50.34	Ambient	9.40	38.63	-39.54	58.83	873.96	5000.00	-15.15
19840.00	H	35.47	Ambient	2.23	40.40	-28.39	49.71	305.96	5000.00	-24.27
19840.00	V	35.64	Ambient	2.23	40.40	-28.39	49.88	312.01	5000.00	-24.10
22320.00	H	36.93	Ambient	2.23	40.59	-29.29	50.45	332.98	5000.00	-23.53
22320.00	V	36.42	Ambient	2.23	40.59	-29.29	49.94	313.99	5000.00	-24.04

DATA PAGE	
MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Radiated Spurious Emissions – Restricted Band Averages
MODE	Tx – 2480MHz
DATE TESTED	December 20 - 26, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

RADIATED SPURIOUS EMISSIONS

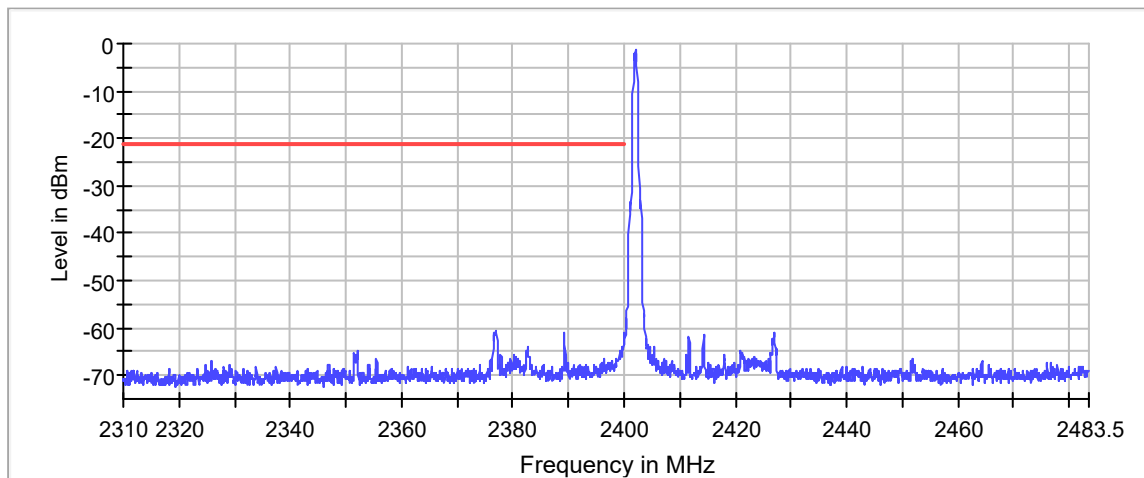
Freq. (MHz)	Ant. Pol.	Meter Reading (dBμV)	Ambient	CBL Fac. (dB)	Ant. Fac. (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBμV/m at 3m	Average Total μV/m at 3m	Average Limit μV/m at 3m	Margin (dB)
4960.00	H	35.20	Ambient	5.79	34.13	-40.28	0.00	34.84	55.18	500.00	-19.14
4960.00	V	35.29	Ambient	5.79	34.13	-40.28	0.00	34.93	55.76	500.00	-19.05
7440.00	H	34.82		6.91	35.80	-40.05	0.00	37.48	74.80	500.00	-16.50
7440.00	V	35.22		6.91	35.80	-40.05	0.00	37.88	78.33	500.00	-16.10
12400.00	H	35.85	Ambient	9.40	38.63	-39.54	0.00	44.34	164.81	500.00	-9.64
12400.00	V	35.96	Ambient	9.40	38.63	-39.54	0.00	44.45	166.91	500.00	-9.53
19840.00	H	20.65	Ambient	2.23	40.40	-28.39	0.00	34.89	55.55	500.00	-19.09
19840.00	V	20.68	Ambient	2.23	40.40	-28.39	0.00	34.92	55.74	500.00	-19.06
22320.00	H	21.75	Ambient	2.23	40.59	-29.29	0.00	35.27	58.00	500.00	-18.71
22320.00	V	21.75	Ambient	2.23	40.59	-29.29	0.00	35.27	58.00	500.00	-18.71

DATA PAGE

MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Band Edge
MODE	Tx – 2402MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

BAND EDGE – LOW

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2376.925000	-60.6	39.3	-21.2	PASS
2376.875000	-60.6	39.4	-21.2	PASS
2376.825000	-60.7	39.5	-21.2	PASS
2377.125000	-60.8	39.6	-21.2	PASS
2377.075000	-60.8	39.6	-21.2	PASS
2389.225000	-60.9	39.7	-21.2	PASS
2399.975000	-60.9	39.7	-21.2	PASS
2376.725000	-61.0	39.8	-21.2	PASS
2376.775000	-61.0	39.8	-21.2	PASS
2376.975000	-61.1	39.9	-21.2	PASS
2389.275000	-61.5	40.3	-21.2	PASS
2376.525000	-61.6	40.4	-21.2	PASS
2377.025000	-61.6	40.4	-21.2	PASS
2376.575000	-61.7	40.5	-21.2	PASS
2376.675000	-61.8	40.6	-21.2	PASS

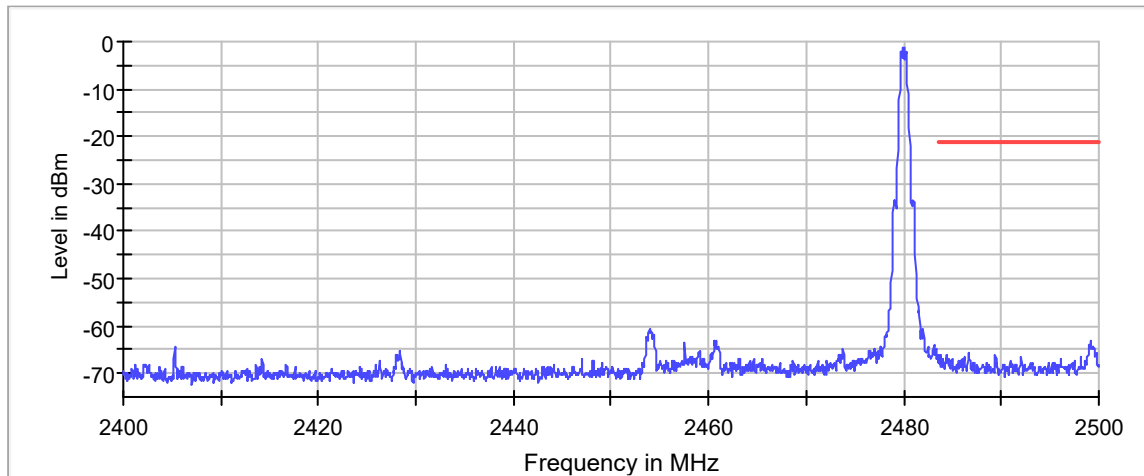


DATA PAGE

MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Band Edge
MODE	Tx – 2480MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	

BAND EDGE – HIGH

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)	Result
2499.175000	-63.3	42.1	-21.2	PASS
2499.225000	-63.5	42.3	-21.2	PASS
2499.025000	-63.9	42.7	-21.2	PASS
2499.075000	-63.9	42.7	-21.2	PASS
2499.125000	-64.0	42.8	-21.2	PASS
2499.375000	-64.2	43.0	-21.2	PASS
2499.475000	-64.5	43.3	-21.2	PASS
2499.275000	-64.7	43.5	-21.2	PASS
2499.325000	-64.7	43.5	-21.2	PASS
2498.925000	-64.8	43.6	-21.2	PASS
2499.525000	-65.0	43.8	-21.2	PASS
2498.975000	-65.0	43.8	-21.2	PASS
2499.425000	-65.0	43.8	-21.2	PASS
2486.625000	-65.6	44.4	-21.2	PASS
2499.725000	-65.9	44.7	-21.2	PASS



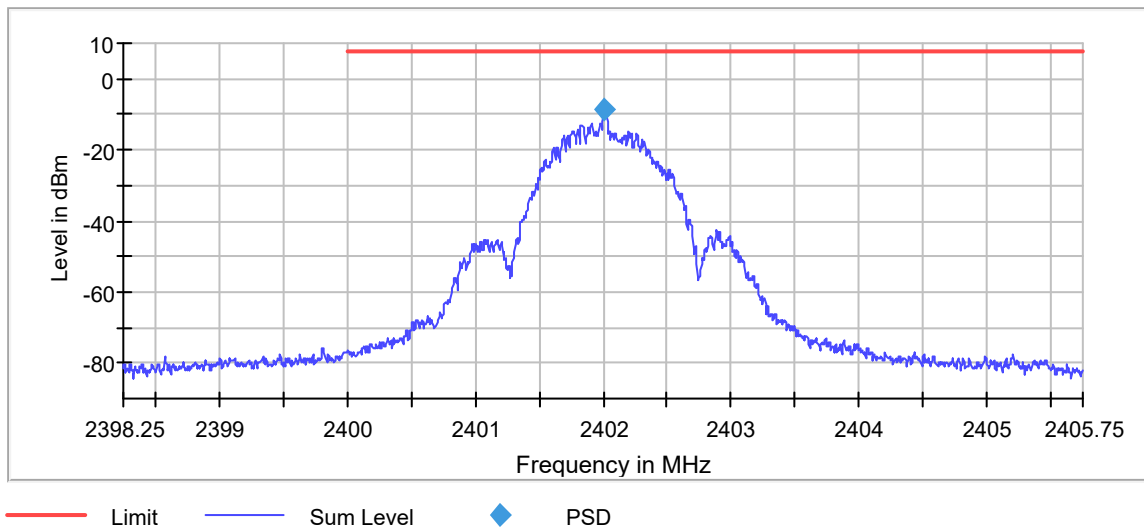
— Limit — Sum Level × Fail

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MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Power Spectral Density
MODE	Tx – 2402MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	PSD = -8.79dBm

POWER SPECTRAL DENSITY

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2402.000000	2402.012500	-8.790	8.0	PASS

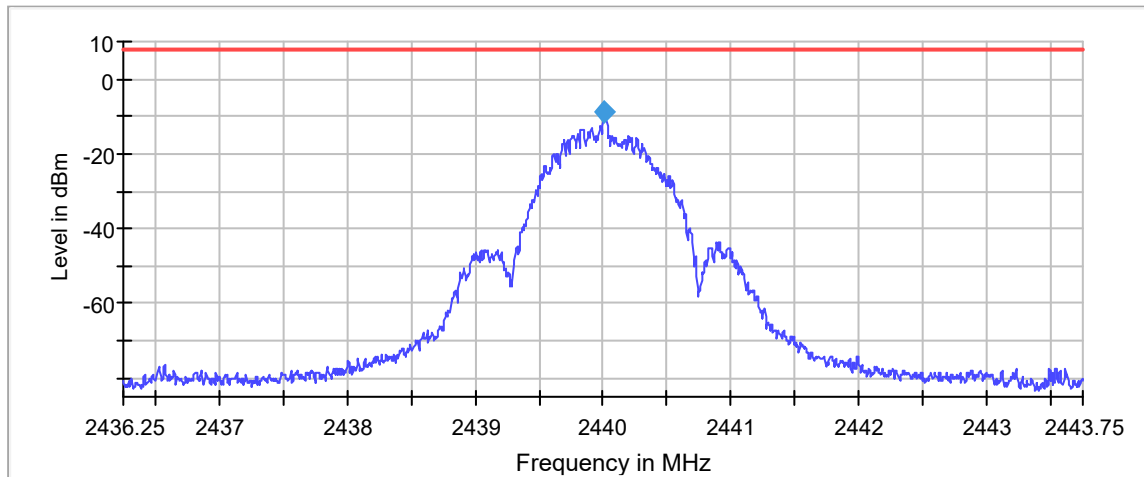


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MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Power Spectral Density
MODE	Tx – 2440MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	PSD = -8.969dBm

POWER SPECTRAL DENSITY

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2440.000000	2440.012500	-8.969	8.0	PASS



— Limit — Sum Level ◆ PSD

DATA PAGE

MANUFACTURER	Roche Diagnostics
EUT	Accu-Chek Guide Solo
MODEL NO.	Nugen
SERIAL NO.	T600000473
TEST	FCC §15.247, RSS-247 – Power Spectral Density
MODE	Tx – 2480MHz
DATE TESTED	December 19, 2019
TEST PERFORMED BY	Tylar Jozefczyk
NOTES	PSD = -8.259dBm

POWER SPECTRAL DENSITY

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2480.000000	2480.012500	-8.259	8.0	PASS

