| Engineering Test Report No. 2402438-04 Rev. A | | |
|---|---|---|
| Report Date | April 25, 2025 | |
| Manufacturer Name | The Chamberlain Group LLC | |
| Manufacturer Address | 300 Windsor Dr<br>Oak Brook, IL 60523 | |
| Test Item Name<br>Model No. | Vulcan – 900-15607 Rev F<br>Model No. – 900-15607-11, 2200SA, 2200M, C1000LA, 2310M | |
| Date Received | March 7, 2025 | |
| Test Dates | March 10, 2025 – July 16, 2025 | |
| Specifications | FCC “Code of Federal Regulations” Title 47 Part 15, Subpart B, Section 15.109<br>FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247<br>Innovation, Science, and Economic Development Canada, ICES-003<br>Innovation, Science, and Economic Development Canada, RSS-GEN<br>Innovation, Science, and Economic Development Canada, RSS-247 | |
| Test Facility | Elite Electronic Engineering, Inc.<br>1516 Centre Circle,<br>Downers Grove, IL 60515 | FCC Reg. Number: 269750<br>IC Reg. Number: 2987A<br>CAB Identifier: US0107 |
| Signature | Nathaniel Bouchie | |
| Tested by | Nathaniel Bouchie | |
| Signature | Raymond J Klouda | |
| Approved by | Raymond J. Klouda,<br>Registered Professional Engineer of Illinois – 44894 | |
| PO Number | 4900099030 | |

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# 1. Report Revision History

| Revision | Date | Description |
|---|---|---|
| – | 25 APR 2025 | Initial Release of Engineering Test Report No. 2404238-04 |
| A | 22 JUL 2025<br>By NDB | - Throughout report: Report number changed to 2402438-04 Rev. A.<br>- Cover Page and Section 2: Model No.'s 2200SA, 2200M, C1000LA, and 2310M were added.<br>- Cover Page: Added date of most recent testing.<br>- Section 15: Model No.'s 2200SA, 2200M, C1000LA, and 2310M were added to Statement of Conformity.<br>- Section 17: Added photographs of the 2200SA, 2200M, C1000LA, and 2310M EUTs.<br>- Section 18: Equipment List was updated with current calibration dates.<br>- Section 24: Added data for 2200SA, 2200M, C1000LA, and 2310M EUTs.<br>- Section 25: Added data for 2200SA, 2200M, C1000LA, and 2310M EUTs.<br>- Section 27: Added data for 2200SA, 2200M, C1000LA, and 2310M EUTs.<br>- Section 28: Added data for 2200SA, 2200M, C1000LA, and 2310M EUTs.<br>- Section 29: Updated Scope of Accreditation. |

# 2. Introduction

## 2.1. Scope of Tests

This document presents the results of a series of RF emissions tests that were performed on six (6) Vulcan – 900-15607 Rev Fs (hereinafter referred to as the Equipment Under Test (EUT)). The EUTs were manufactured and submitted for testing by The Chamberlain Group LLC located in Oak Brook, IL.

## 2.2. Purpose

The test series was performed to determine if the EUTs meet the RF emission requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, §15.247 for a Digital Modulation intentional radiator operating within the 902 – 928MHz band.

The test series was also performed to determine if the EUTs meet the RF emission requirements of the Innovation, Science, and Economic Development Canada Radio Standards Specification RSS-Gen and Innovation, Science, and Economic Development Canada Radio Standards Specification RSS-247 for a Digital Modulation intentional radiator operating within the 902 – 928MHz band.

Testing was performed in accordance with ANSI C63.10-2013.

## 2.3. Identification of the EUT

The EUTs were identified as follows:

| EUT Identification | |
|---|---|
| Product Description | Vulcan – 900-15607 Rev F |
| Model/Part No. | 900-15607-11<br>2200SA<br>2200M<br>C1000LA<br>2310M |
| Serial No. | Radiated Sample<br>Conducted Sample |
| Size of EUT | 13 in x 9 in x 8 in |
| Software/Firmware Version | FW Version 2.11 |
| Device Type | Frequency Hopping System Device |
| Band of Operation | 902 – 928MHz |
| Antenna Type | Dipole Wire |
| Conducted Output Power | 16.46dBm |
| 20dB Bandwidth | 164.8kHz |
| Occupied Bandwidth (99% CBW) | 189.3kHz |

The EUTs listed above were used throughout the test series.

# 3. Power Input

The EUTs were powered by 120VAC 60Hz a 1 meter, unshielded power cable.

# 4. Grounding

The EUTs were grounded only through the third wire of its input power cord.

## 5. Support Equipment

The EUTs were submitted for testing along with the following support equipment:

| Description | Model # | S/N |
|---|---|---|
| Support Laptop | --- | --- |

## 6. Interconnect Leads

The following interconnect cables were submitted with the test items:

| Item | Description |
|---|---|
| UART | Connects laptop to EUT |

## 7. Modifications Made to the EUTs

No modifications were made to the EUTs during the testing.

## 8. Modes of Operation

The EUTs and all peripheral equipment were energized. The DUTs were programmed to transmit in one of the following modes:

| Mode | Description |
|---|---|
| Tx @ 902.25MHz | The Janus.exe software was used to input the following commands to get the EUT to transmit:<br>- connect com60<br>- system UpdateTestMode 1<br>- system UpdateTestMode 3<br>- radio test RadioTestEnable<br>- radio test RadioTestStart 6 0 0 0 |
| Tx @ 914.75MHz | The Janus.exe software was used to input the following commands to get the EUT to transmit:<br>- connect com60<br>- system UpdateTestMode 1<br>- system UpdateTestMode 3<br>- radio test RadioTestEnable<br>- radio test RadioTestStart 6 25 0 0 |
| Tx @ 926.75MHz | The Janus.exe software was used to input the following commands to get the EUT to transmit:<br>- connect com60<br>- system UpdateTestMode 1<br>- system UpdateTestMode 3<br>- radio test RadioTestEnable<br>- radio test RadioTestStart 6 49 0 0 |
| Rx @ 902.25MHz | The Janus.exe software was used to input the following commands to get the EUT to transmit:<br>- connect com60<br>- system UpdateTestMode 1<br>- system UpdateTestMode 3<br>- radio test RadioTestEnable<br>- radio test RadioTestStart 7 0 0 0 |

| | |
|---|---|
| Rx @ 914.75MHz | The Janus.exe software was used to input the following commands to get the EUT to transmit:<br>- connect com60<br>- system UpdateTestMode 1<br>- system UpdateTestMode 3<br>- radio test RadioTestEnable<br>- radio test RadioTestStart 7 25 0 0 |
| Rx @ 926.275MHz | The Janus.exe software was used to input the following commands to get the EUT to transmit:<br>- connect com60<br>- system UpdateTestMode 1<br>- system UpdateTestMode 3<br>- radio test RadioTestEnable<br>- radio test RadioTestStart 7 49 0 0 |
| Hopping | The Janus.exe software was used to input the following commands to get the EUT to transmit:<br>- connect com60<br>- system UpdateTestMode 1<br>- system UpdateTestMode 3<br>- radio test RadioTestEnable<br>- radio test RadioTestStart 4 0 0 0 |

## 9. Test Specifications

The tests were performed to selected portions of, and in accordance with, the following test specifications.

- Federal Communications Commission "Code of Federal Regulations", Title 47, Chapter I, Subchapter A, Part 15, Subpart B

- ICES-003, Issue 7, October 15, 2020, “Information Technology Equipment (including Digital Apparatus)”

- 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"

- 996369 D04 Module Integration Guide v02, October 13, 2020

- 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 Compliance Measurements On Digital Transmission Systems, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under Section 15.247 April 2, 2019 KDB 558074 D01v05r02

- RSS-Gen Issue 5, February 2020, Amendment 2, Innovation, Science, and Economic Development Canada, “General Requirements for Compliance of Radio Apparatus”

- RSS-247 Issue 3, August 2023, “Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices”

## 10. Test Plan

No test plan was provided. Instructions were provided by personnel from The Chamberlain Group LLC and used in conjunction with the FCC “Code of Federal Regulations” Title 47 Part 15, Subpart B, Section 15.109; FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247; Innovation, Science, and Economic Development Canada, ICES-003; Innovation, Science, and Economic Development Canada, RSS-247; Innovation, Science, and Economic Development Canada, RSS-GEN; and ANSI C63.4-2014 specifications.

## 11. Deviation, Additions to, or Exclusions from Test Specifications

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

## 12. Laboratory Conditions

The ambient parameters of the laboratory during testing were as follows:

| Ambient Parameters | Value |
|---|---|
| Temperature | 23.1°C |
| Relative Humidity | 19% |
| Atmospheric Pressure | 1009mb |

## 13. Summary

The following EMC tests were performed and the results are shown below:

| Test Description | Requirements | Test Method | S/N | Results |
|---|---|---|---|---|
| RF Radiated Emissions | FCC 15B 15.109<br>ISED ICES-003, Section 3.2.2 | ANSI C63.4:2014 | Radiated Sample | Conforms |
| 20dB Bandwidth | FCC 15.247<br>ISED RSS-247 | ANSI C63.10:2013 | Conducted Sample | Conforms |
| Occupied Bandwidth (99%) | FCC 15.247<br>ISED RSS-247 | ANSI C63.10:2013 | Conducted Sample | Conforms |
| Maximum Peak Conducted Output Power | FCC 15.247<br>ISED RSS-247 | ANSI C63.10:2013 | Conducted Sample | Conforms |
| Effective Isotropic Radiated Power (EIRP) | FCC 15.247<br>ISED RSS-247 | ANSI C63.10:2013 | Radiated Sample | Conforms |
| Duty Cycle Factor Measurements | FCC 15.247<br>ISED RSS-247 | ANSI C63.10:2013 | Conducted Sample | — |
| Antenna Conducted Spurious Emissions | FCC 15.247<br>ISED RSS-247 | ANSI C63.10:2013 | Conducted Sample | Conforms |
| Spurious Radiated Emissions | FCC 15.247<br>ISED RSS-247 | ANSI C63.10:2013 | Radiated Sample | Conforms |
| Band-Edge Compliance | FCC 15.247<br>ISED RSS-247 | ANSI C63.10:2013 | Radiated Sample | Conforms |

## 14. Sample Calculations

For Powerline Conducted Emissions:

The resultant voltage level (VL) is a summation in decibels (dB) of the receiver meter reading (MTR) and the cable loss factor (CF).

Formula 1: VL (dBµV) = MTR (dBµV) + CF (dB).

For Radiated Emissions:

The resultant field strength (FS) is a summation in decibels (dB) of the receiver meter reading (MTR), the antenna correction factor (AF), and the cable loss factor (CF). If an external preamplifier is used, the total is reduced by its gain (-PA). If a distance correction (DC) is required, it is added to the total.

Formula 1: FS (dBµV/m) = MTR (dBµV) + AF (dB/m) + CF (dB) + (- PA (dB)) + DC (dB)

To convert the Field Strength dBµV/m term to µV/m, the dBµV/m is first divided by 20. The Base 10 AntiLog is taken of this quotient. The result is the Field Strength value in µV/m terms.

Formula 2: FS (µV/m) = AntiLog [(FS (dBµV/m))/20]

## 15. Statement of Conformity

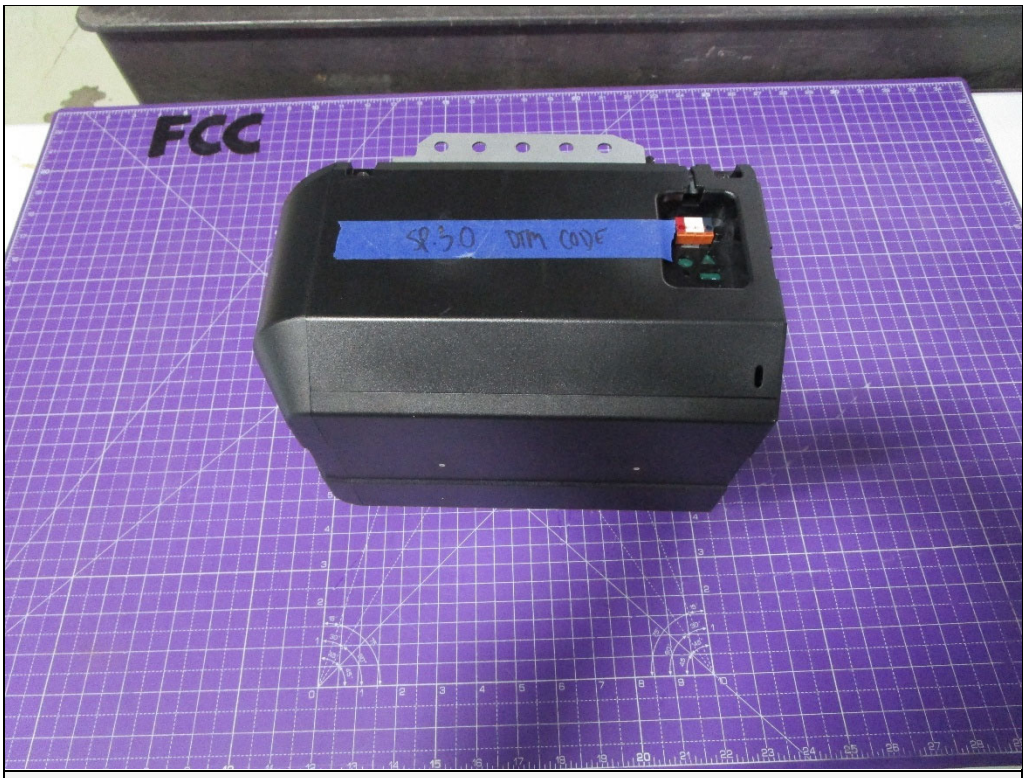
The following The Chamberlain Group LLC EUTs did fully conform to the selected requirements of the FCC “Code of Federal Regulations” Title 47 Part 15, Subpart B, Section 15.109; FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247; Innovation, Science, and Economic Development Canada, ICES-003, Innovation, Science, and Economic Development Canada, RSS-247, and Innovation, Science, and Economic Development Canada, RSS-GEN test specifications:

| EUT | Model Number | Serial Number |
|---|---|---|
| Vulcan – 900-15607 Rev F | 900-15607-11 | Radiated Sample |
| Vulcan – 900-15607 Rev F | 900-15607-11 | Conducted Sample |
| Vulcan – 900-15607 Rev F | 2200SA | Radiated Sample |
| Vulcan – 900-15607 Rev F | 2200M | Radiated Sample |
| Vulcan – 900-15607 Rev F | C1000LA | Radiated Sample |
| Vulcan – 900-15607 Rev F | 2310M | Radiated Sample |

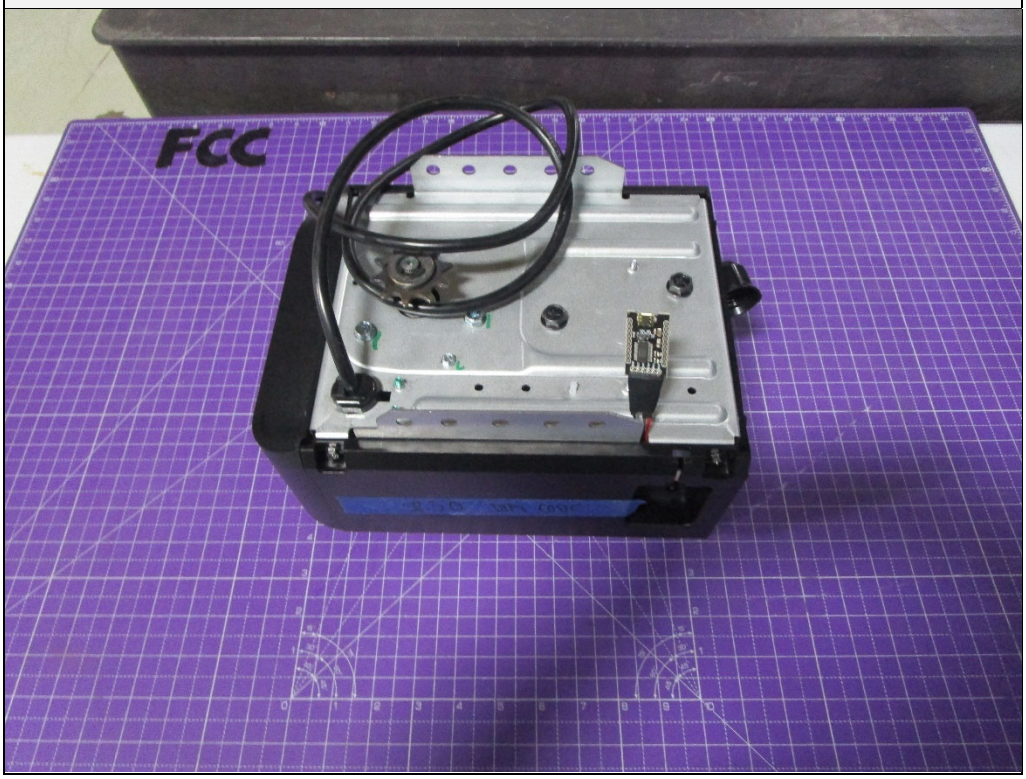
## 16. Certification

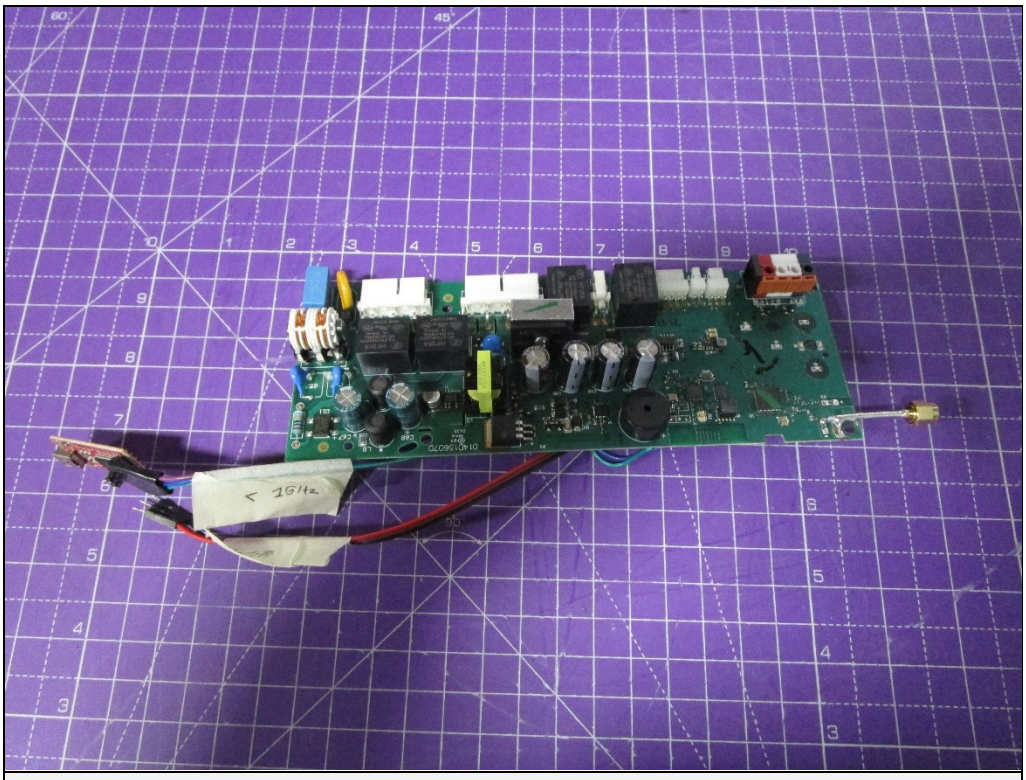
Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the FCC “Code of Federal Regulations” Title 47 Part 15, Subpart B, Section 15.109; FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247; Innovation, Science, and Economic Development Canada, ICES-003; Innovation, Science, and Economic Development Canada, RSS-247; and Innovation, Science, and Economic Development Canada, RSS-GEN test specifications. The data presented in this test report pertains to the EUTs as received by the customer on the test date specified. Any electrical or mechanical modifications made to the EUTs subsequent to the specified test date will serve to invalidate the data and void this certification.

## 17. Photographs of EUTs

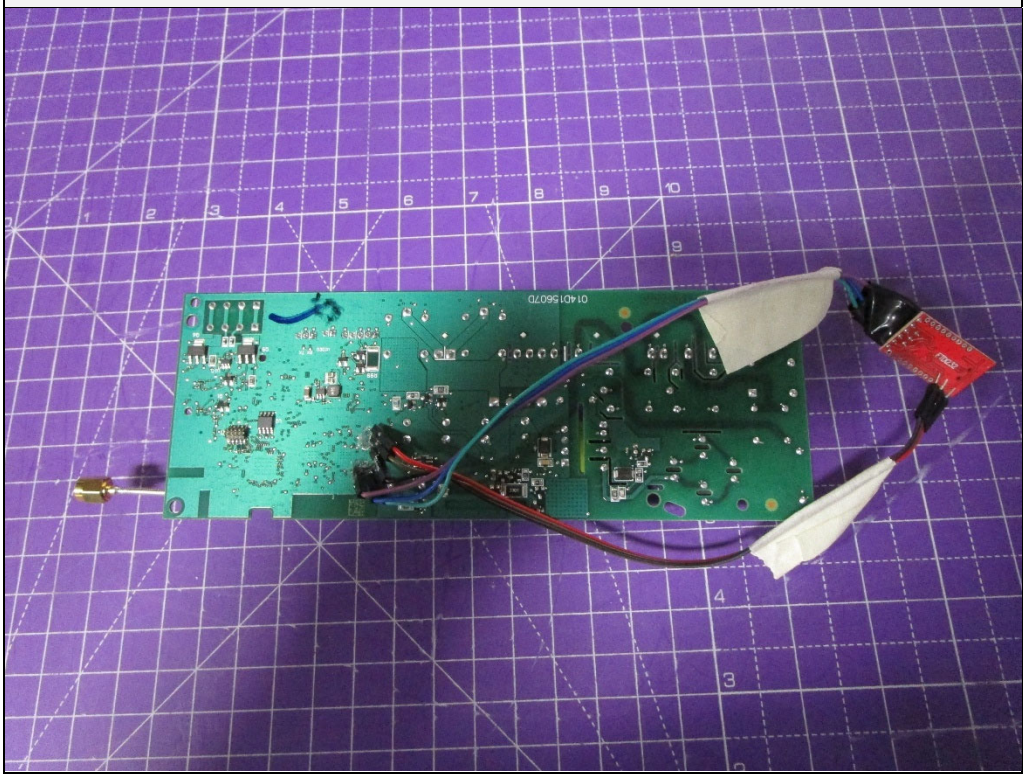



Radiated Sample





Conducted Sample



EUT 2200SA (above) and 2200M (below)

EUT C1000LA (above) and 2310M (below)

## 18. Equipment List

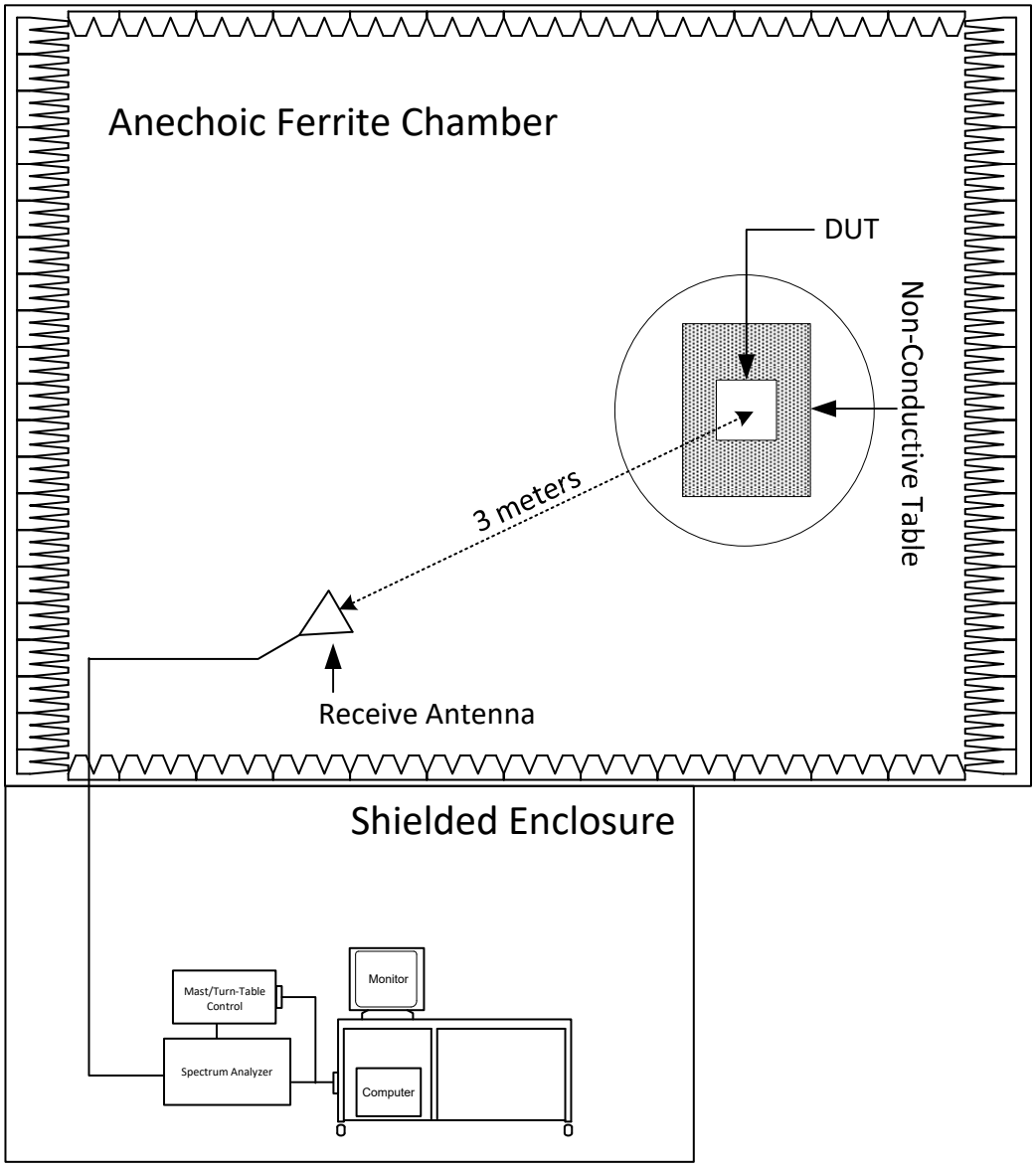
| Eq ID | Equipment Description | Manufacturer | Model No. | Serial No. | Frequency Range | Cal Date | Due Date |
|---|---|---|---|---|---|---|---|
| APW18 | PREAMPLIFER | PLANAR ELECTRONICS | PE2-30-20G20R6G-3R0-10-12-SFF | PL34312/2148 | 18-26.5GHz | 2/11/2025 | 2/11/2026 |
| APW3 | PREAMPLIFIER | PLANAR ELECTRONICS | PE2-35-120-5R0-10-12 | PL2924 | 1-20GHz | 3/24/2025 | 3/24/2026 |
| CDZ4 | LAB WORKSTATION | ELITE | LWS-10 | | WINDOWS 10 | CNR | |
| GSE3 | SIGNAL GENERATOR (40GHZ) | ROHDE & SCHWARZ | SMB100A | 183294 | 100KHZ-40GHZ | 3/23/2025 | 3/23/2027 |
| GSFB | OSP120 BASE UNIT | ROHDE & SCHWARZ | OSP120 | 101071 | --- | 3/30/2023 | 4/30/2025* |
| GSFE | OSP120 | ROHDE & SCHWARZ | OSP120 | 101288 | .01-40GHZ | 4/4/2023 | 4/30/2025* |
| NSDS1 | UNIVERSAL SPHERICAL DIPOLE SOURCE | AET | USDS-H | AET-1116 | | NOTE 1 | |
| NTA3 | BILOG ANTENNA | TESEQ | 6112D | 32853 | 25-2000MHz | 10/3/2024 | 10/3/2026 |
| NWN1 | DOUBLE RIDGED GUIDE ANTENNA | ETS LINDGREN | 3116C | 227802 | 10GHz-40GHz | 9/16/2024 | 9/16/2026 |
| NWQ2 | DOUBLE RIDGED WAVEGUIDE ANTENNA | ETS LINDGREN | 3117 | 66659 | 1GHZ-18GHZ | 4/26/2024 | 4/26/2026 |
| R21F | 3M ANECHOIC CHAMBER NSA | EMC TEST SYSTEMS | 3M ANECHOIC | | 30MHZ-18GHZ | 3/1/2025 | 3/1/2026 |
| RBG3 | EMI ANALYZER | ROHDE & SCHWARZ | ESW44 | 101592 | 2HZ-44GHZ | 5/4/2025 | 5/4/2026 |
| RBG4 | EMI ANALYZER | ROHDE & SCHWARZ | ESW44 | 103007 | 2HZ-44GHZ | 4/5/2025 | 4/5/2026 |
| SHC2 | Power Supplies | HENGFU | HF60W-SL-24 | A11372702 | 24V | NOTE 1 | |
| T2S2 | 20DB 25W ATTENUATOR | WEINSCHEL | 46-20-34 | BV3540 | DC-18GHZ | 12/19/2023 | 12/19/2025 |
| T6A3 | 6DB, 2W ATTENUATOR | KEYSIGHT TECHNOLOGIES | 8491B | MY39269623 | DC-18GHZ | 3/6/2025 | 3/6/2027 |
| WKA1 | SOFTWARE, UNIVERSAL RCV EMI | ELITE | UNIV_RCV_EMI | 1 | --- | I/O | |

N/A: Not Applicable I/O: Initial Only CNR: Calibration Not Required

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.

Note*: The test including this equipment was run on 3/10/2025 before the calibration expired. This equipment is undergoing calibration and does not have an updated calibration date.

## 19. Block Diagram of Test Setup




Radiated Measurements Test Setup

# 20. RF Radiated Emissions

| EUT Information | |
|---|---|
| Manufacturer | The Chamberlain Group LLC |
| Product | Vulcan – 900-15607 Rev F |
| Model No. | 900-15607-11 |
| Serial No. | Radiated Sample |
| Mode | Rx @ 902.25MHz<br>Rx @ 914.75MHz<br>Rx @ 926.275MHz |

| Test Site Information | |
|---|---|
| Setup Format | Tabletop |
| Type of Test Site | Semi-Anechoic Chamber |
| Test Site Used | R21F |
| Type of Antennas Used | Below 1GHz: Bilog (or equivalent)<br>Above 1GHz: Double-ridged waveguide (or equivalent) |
| Highest Internal Frequency | 2.4GHz |
| Highest Measurement Frequency | 13GHz |
| Notes | The cables were manually maximized during the preliminary emissions sweeps. The cable arrangement which resulted in the worst-case emissions was utilized. |

| Measurement Uncertainty | |
|---|---|
| Measurement Type | Expanded Measurement Uncertainty |
| 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 |
| Radiated disturbance (electric field strength on an open area test site or alternative test site) (18 GHz – 26.5 GHz) | 3.3 |
| Radiated disturbance (electric field strength on an open area test site or alternative test site) (26.5 GHz – 40 GHz) | 3.4 |

| Requirements |
|---|
| The field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the values in the following tables. |

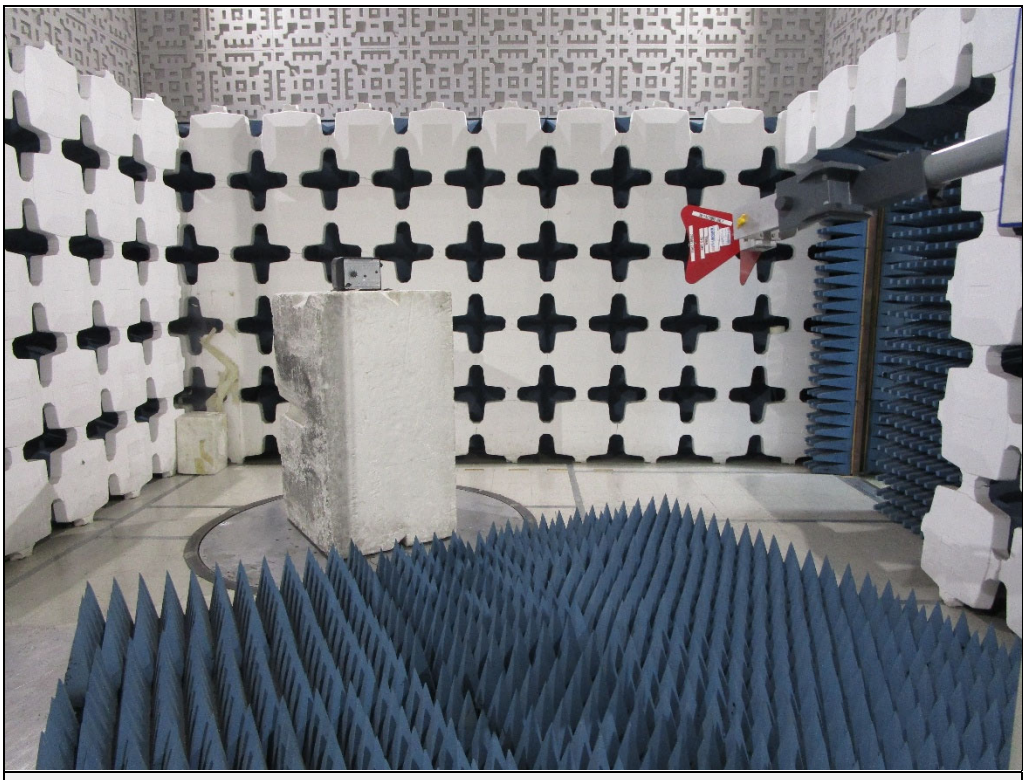
| FCC Part 15 Class B Radiated Emissions Limits (30MHz to 1GHz) | | |
|---|---|---|
| Frequency of Emission (MHz) | Field Strength (µV/m) | Field Strength (dBµV/m) |
| 30 – 88 | 100 | 40 |
| 88 – 216 | 150 | 43.5 |
| 216 – 960 | 200 | 46 |
| Above 960 | 500 | 54 |
| FCC Part 15 Class B Radiated Emissions Limits (Above 1GHz) | | |
| Frequency of Emission (MHz) | Peak Limit (dBµV/m) | Average Limit (dBµV/m) |
| Above 1000 | 74 | 54 |

| ICES-003 Class B Radiated Emissions Limits (30MHz to 1GHz) | | |
|---|---|---|
| Frequency Range (MHz) | Field Strength at 3 meters (dBµV/m) | Field Strength at 10 meters (dBµV/m) |
| 30 – 88 | 40 | 30 |
| 88 – 216 | 43.5 | 33.1 |
| 216 – 230 | 46 | 35.6 |
| 230 – 960 | 47 | 37 |
| 960 – 1000 | 54 | 43.5 |
| ICES-003 Class B Radiated Emissions Limits (At and Above 1GHz) | | |
| Frequency Range (GHz) | Average (dBµV/m) | Peak (dBµV/m) |
| 1 – $F_M$ | 54 | 74 |
| $F_M$ = highest measurement frequency | | |

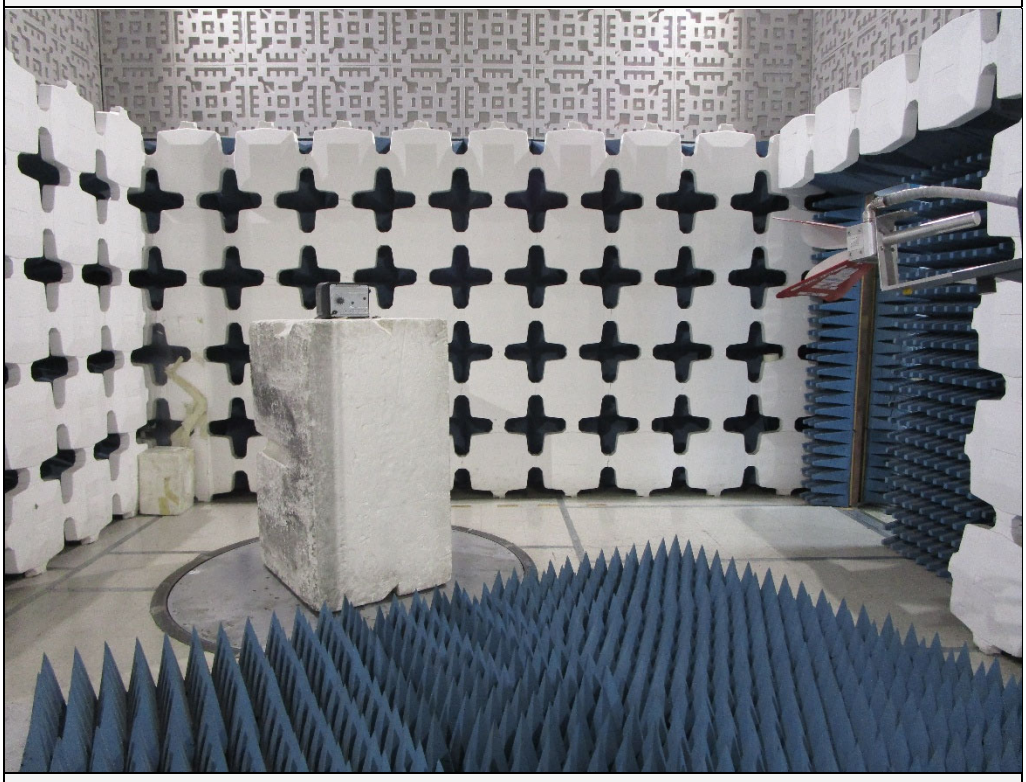
| Procedure |
| --- |
| Since a quasi-peak detector and an average detector require long integration times, it is not practical to automatically sweep through the quasi-peak and average levels. Therefore, radiated emissions from the EUT were first scanned using a peak detector and automatically plotted. The frequencies where significant emission levels were noted were then remeasured using the quasi-peak detector or average detector.<br><br>The EUT and all peripheral equipment were placed on an 80cm high non-conductive stand. The broadband measuring antenna was positioned at a 3 meter distance from the EUT. The frequency range from 30MHz to 1GHz was investigated using a peak detector function with the bilog antenna at several heights, horizontal and vertical polarization, and with several different orientations of the EUT with respect to the antenna. The frequency range from 1GHz to 13GHz was investigated using a peak detector function with the double ridged waveguide antenna at several heights, horizontal and vertical polarization, and with several different orientations of the EUT with respect to the antenna. The maximum levels for each antenna polarization were plotted.<br><br>Final radiated emissions were performed on all significant broadband and narrowband emissions found in the exploratory sweeps using the following methods:<br>1) Measurements from 30MHz to 1GHz were made using a quasi-peak detector and a broadband bilog antenna. Measurements above 1GHz were made using an average detector and a broadband double ridged waveguide antenna.<br>2) To ensure that maximum or worst case, emission levels were measured, the following steps were taken:<br>a) The EUT was rotated so that all sides were exposed to the receiving antenna.<br>b) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.<br>c) The measuring antenna was raised and lowered from 1 to 4 meters for each antenna polarization to maximize the readings.<br>d) For hand-held or body-worn devices, the EUT was rotated through three orthogonal axes to determine which orientation produces the highest emission relative to the limit.<br>3) Steps (b) through (d) were repeated with the EUT operated in the Rx @ 914.75MHz mode.<br>4) Steps (b) through (d) were repeated with the EUT operated in the Rx @ 926.275MHz mode. |

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

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



Test Setup for Radiated Emissions: Above 1GHz, Horizontal Polarization



Test Setup for Radiated Emissions: Above 1GHz, Vertical Polarization

# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

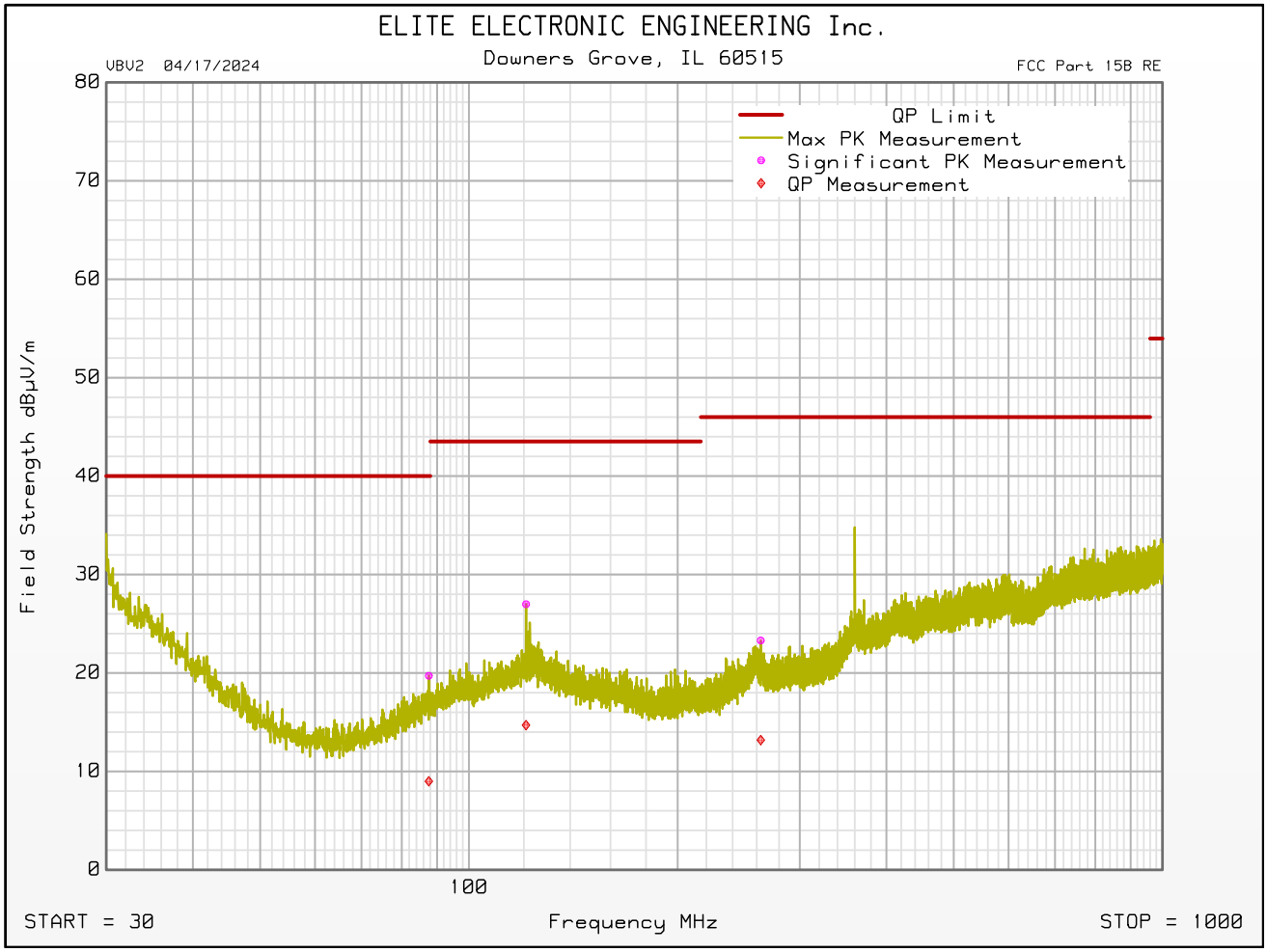
Manufacturer : Chamberlain
Model : 900-15607-11
Serial Number : Radiated Sample
DUT Mode : Rx @ 902.25MHz
Turntable Step Angle (°): 45
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes :
Test Engineer : N. Bouchie
Test Date : Mar 13, 2025 09:38:23 AM

| Freq MHz | Peak Mtr Rdg dBuV | QP Mtr Rdg dBuV | Ant Fac dB/m | Amp Fac dB | Cbl Fac dB | Dist Corr dB | Peak Total dBµV/m | QP Total dBµV/m | QP Limit dBµV/m | QP Lim Mrg dB | Ant Pol | Mast Ht cm | Azim ° | Excessive QP Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30.060 | 16.8 | 8.0 | 25.1 | 0.0 | 0.5 | 0.0 | 42.4 | 33.6 | 40.0 | -6.4 | Vertical | 120 | 225 | |
| 43.080 | 11.4 | -0.5 | 17.9 | 0.0 | 0.5 | 0.0 | 29.8 | 17.9 | 40.0 | -22.1 | Vertical | 120 | 270 | |
| 45.180 | 12.4 | -1.4 | 16.8 | 0.0 | 0.5 | 0.0 | 29.7 | 15.9 | 40.0 | -24.1 | Vertical | 200 | 135 | |
| 87.540 | 3.0 | -7.8 | 16.3 | 0.0 | 0.5 | 0.0 | 19.7 | 9.0 | 40.0 | -31.0 | Horizontal | 340 | 90 | |
| 120.880 | 6.8 | -5.5 | 19.5 | 0.0 | 0.6 | 0.0 | 27.0 | 14.7 | 43.5 | -28.8 | Horizontal | 340 | 180 | |
| 263.520 | 3.0 | -7.1 | 19.3 | 0.0 | 1.0 | 0.0 | 23.3 | 13.2 | 46.0 | -32.8 | Horizontal | 200 | 90 | |
| 360.000 | 11.9 | -6.6 | 22.2 | 0.0 | 1.3 | 0.0 | 35.5 | 16.9 | 46.0 | -29.1 | Vertical | 340 | 0 | |
| 862.800 | 4.8 | -6.7 | 27.1 | 0.0 | 2.0 | 0.0 | 33.8 | 22.3 | 46.0 | -23.7 | Vertical | 200 | 45 | |

# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

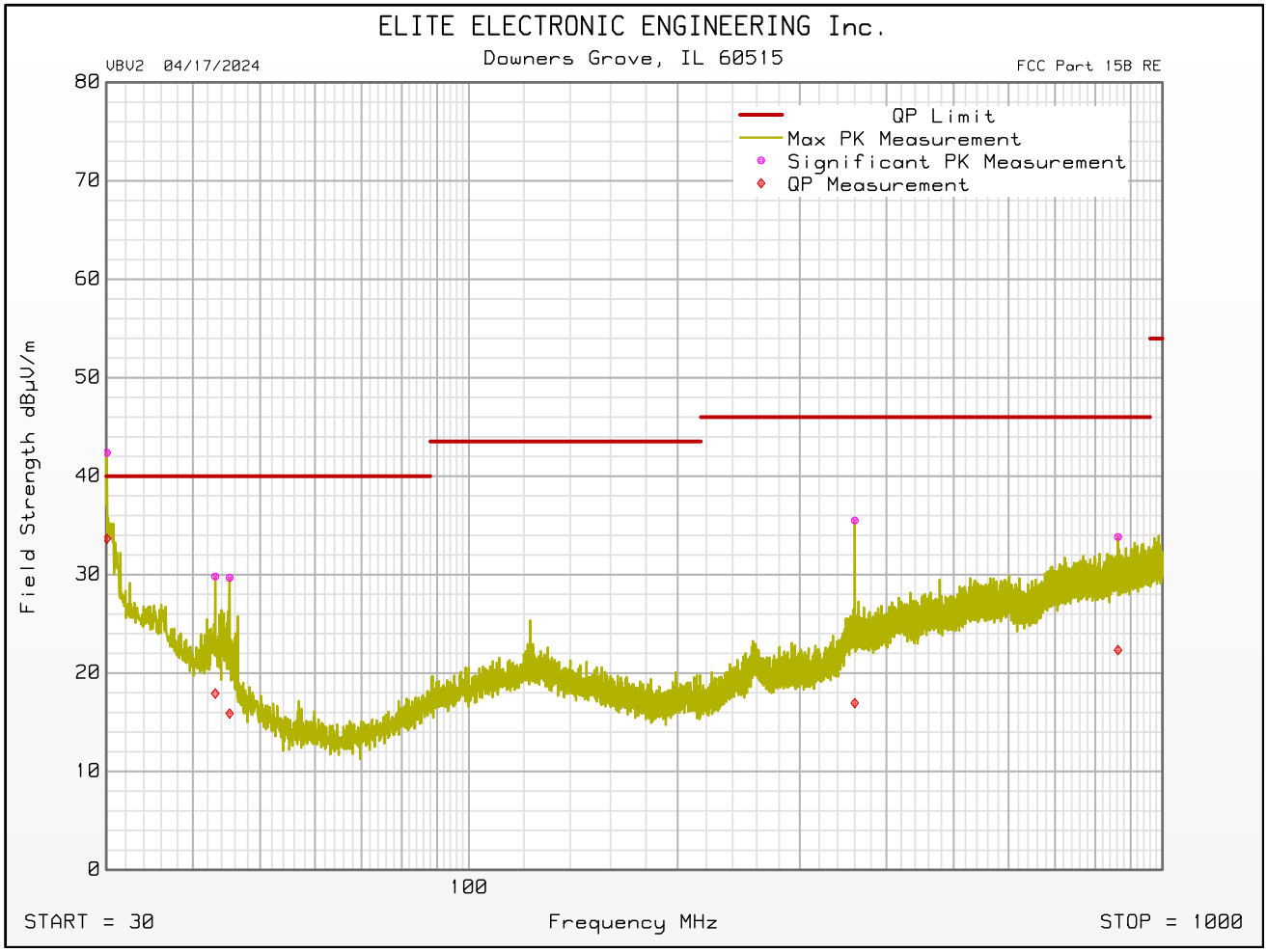
| | | |
|---|---|---|
| Manufacturer | : | Chamberlain |
| Model | : | 900-15607-11 |
| Serial Number | : | Radiated Sample |
| DUT Mode | : | Rx @ 902.25MHz |
| Turntable Step Angle (°) | : | 45 |
| Antenna Polarization | : | Horizontal |
| Scan Type | : | Stepped Scan |
| Test RBW | : | 120 kHz |
| Prelim Dwell Time (s) | : | 0.0001 |
| Notes | : | |
| Test Engineer | : | N. Bouchie |
| Test Date | : | Mar 13, 2025 09:38:23 AM |



# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

| | | |
|---|---|---|
| Manufacturer | : | Chamberlain |
| Model | : | 900-15607-11 |
| Serial Number | : | Radiated Sample |
| DUT Mode | : | Rx @ 902.25MHz |
| Turntable Step Angle (°) | : | 45 |
| Antenna Polarization | : | Vertical |
| Scan Type | : | Stepped Scan |
| Test RBW | : | 120 kHz |
| Prelim Dwell Time (s) | : | 0.0001 |
| Notes | : | |
| Test Engineer | : | N. Bouchie |
| Test Date | : | Mar 13, 2025 09:38:23 AM |



# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

Manufacturer : Chamberlain
Model : 900-15607-11
Serial Number : Radiated Sample
DUT Mode : Rx @ 902.25MHz
Turntable Step Angle (°): 45
Scan Type : Stepped Scan
Test RBW : 1 MHz
Prelim Dwell Time (s) : 0.0001
Notes :
Test Engineer : N. Bouchie
Test Date : Mar 21, 2025 08:23:04 AM

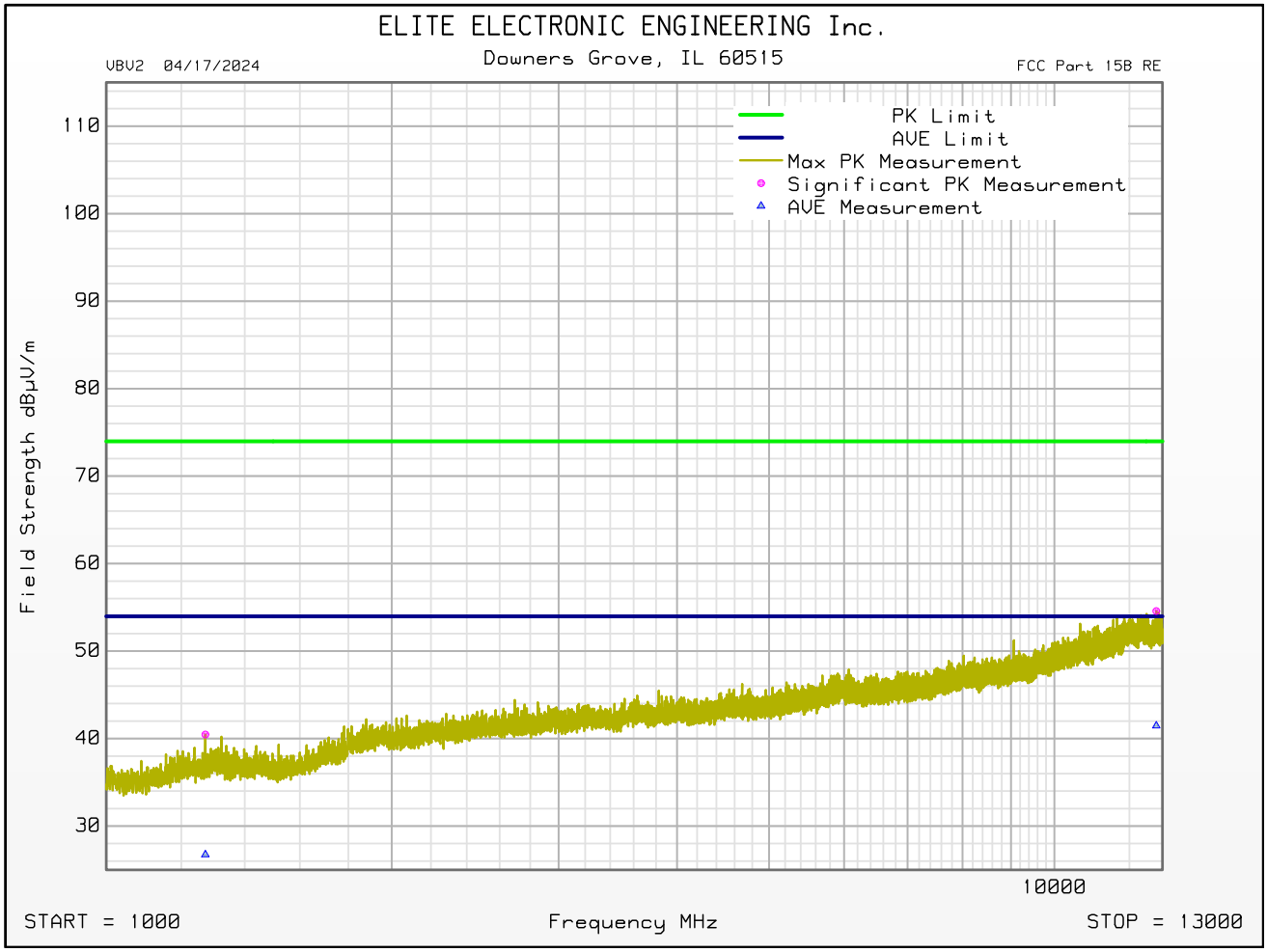
| Freq MHz | Peak Mtr Rdg dBuV | Ant Fac dB/m | Amp Fac dB | Cbl Fac dB | Dist Corr dB | Peak Total dBµV/m | Peak Limit dBµV/m | Peak Lim Mrg dB | Ant Pol | Mast Ht cm | Azim ° | Excessive Peak Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1272.000 | 51.2 | 28.9 | -42.0 | 2.3 | 0.0 | 40.5 | 74.0 | -33.5 | Horizontal | 340 | 0 | |
| 2257.500 | 49.7 | 31.7 | -41.0 | 3.3 | 0.0 | 43.6 | 74.0 | -30.4 | Vertical | 200 | 135 | |
| 3170.000 | 49.4 | 33.0 | -41.2 | 4.0 | 0.0 | 45.3 | 74.0 | -28.7 | Vertical | 120 | 0 | |
| 5323.500 | 47.5 | 34.6 | -40.8 | 5.2 | 0.0 | 46.5 | 74.0 | -27.5 | Vertical | 120 | 225 | |
| 7582.000 | 48.8 | 36.1 | -41.0 | 6.3 | 0.0 | 50.2 | 74.0 | -23.8 | Vertical | 340 | 225 | |
| 12805.500 | 48.3 | 38.9 | -40.7 | 8.0 | 0.0 | 54.6 | 74.0 | -19.4 | Horizontal | 340 | 270 | |

| Freq MHz | Average Mtr Rdg dBuV | Ant Fac dB/m | Amp Fac dB | Cbl Fac dB | Dist Corr dB | Average Total dBµV/m | Average Limit dBµV/m | Average Lim Mrg dB | Ant Pol | Mast Ht cm | Azim ° | Excessive Average Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1272.000 | 37.4 | 28.9 | -42.0 | 2.3 | 0.0 | 26.7 | 54.0 | -27.2 | Horizontal | 340 | 0 | |
| 2257.500 | 35.5 | 31.7 | -41.0 | 3.3 | 0.0 | 29.4 | 54.0 | -24.6 | Vertical | 200 | 135 | |
| 3170.000 | 35.4 | 33.0 | -41.2 | 4.0 | 0.0 | 31.3 | 54.0 | -22.7 | Vertical | 120 | 0 | |
| 5323.500 | 33.9 | 34.6 | -40.8 | 5.2 | 0.0 | 33.0 | 54.0 | -21.0 | Vertical | 120 | 225 | |
| 7582.000 | 34.0 | 36.1 | -41.0 | 6.3 | 0.0 | 35.4 | 54.0 | -18.6 | Vertical | 340 | 225 | |
| 12805.500 | 35.2 | 38.9 | -40.7 | 8.0 | 0.0 | 41.5 | 54.0 | -12.5 | Horizontal | 340 | 270 | |

# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

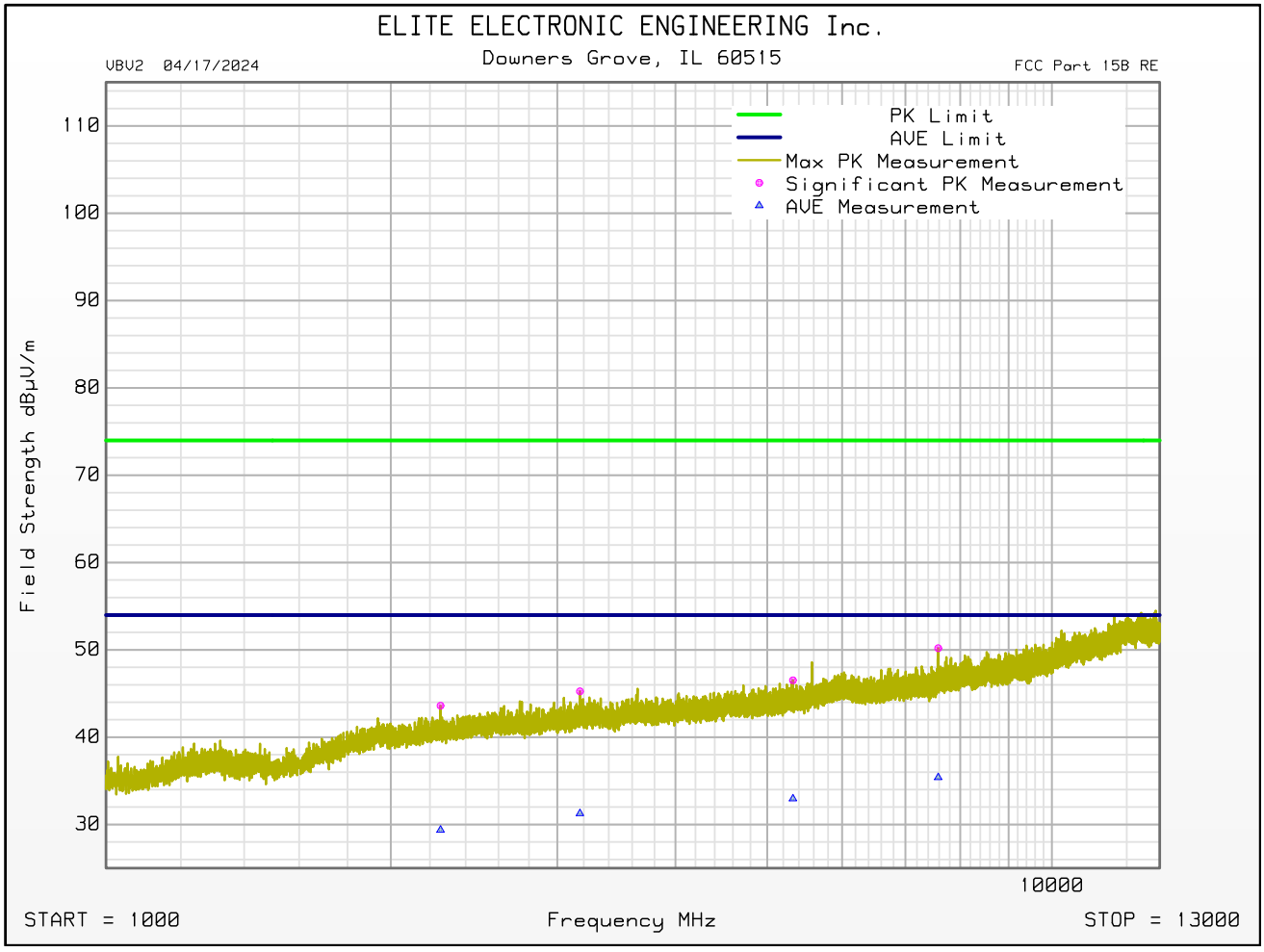
| | | |
|---|---|---|
| Manufacturer | : | Chamberlain |
| Model | : | 900-15607-11 |
| Serial Number | : | Radiated Sample |
| DUT Mode | : | Rx @ 902.25MHz |
| Turntable Step Angle (°) | : | 45 |
| Antenna Polarization | : | Horizontal |
| Scan Type | : | Stepped Scan |
| Test RBW | : | 1 MHz |
| Prelim Dwell Time (s) | : | 0.0001 |
| Notes | : | |
| Test Engineer | : | N. Bouchie |
| Test Date | : | Mar 21, 2025 08:23:04 AM |



# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

| | | |
|---|---|---|
| Manufacturer | : | Chamberlain |
| Model | : | 900-15607-11 |
| Serial Number | : | Radiated Sample |
| DUT Mode | : | Rx @ 902.25MHz |
| Turntable Step Angle (°) | : | 45 |
| Antenna Polarization | : | Vertical |
| Scan Type | : | Stepped Scan |
| Test RBW | : | 1 MHz |
| Prelim Dwell Time (s) | : | 0.0001 |
| Notes | : | |
| Test Engineer | : | N. Bouchie |
| Test Date | : | Mar 21, 2025 08:23:04 AM |



# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

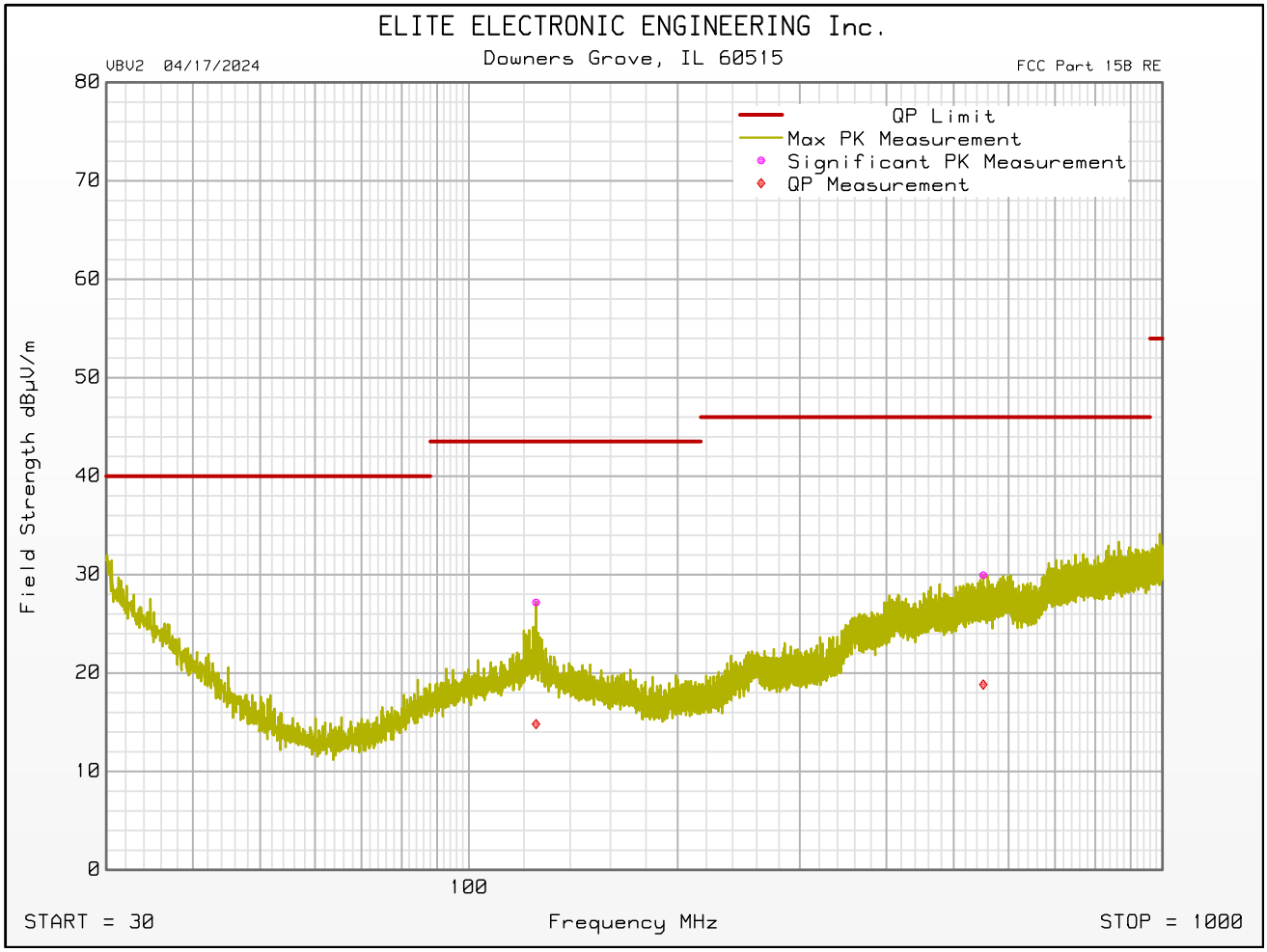
Manufacturer : Chamberlain
Model : 900-15607-11
Serial Number : Radiated Sample
DUT Mode : Rx @ 914.75MHz
Turntable Step Angle (°): 45
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes :
Test Engineer : N. Bouchie
Test Date : Mar 13, 2025 10:03:33 AM

| Freq MHz | Peak Mtr Rdg dBuV | QP Mtr Rdg dBuV | Ant Fac dB/m | Amp Fac dB | Cbl Fac dB | Dist Corr dB | Peak Total dBµV/m | QP Total dBµV/m | QP Limit dBµV/m | QP Lim Mrg dB | Ant Pol | Mast Ht cm | Azim ° | Excessive QP Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30.120 | 16.4 | 7.1 | 25.1 | 0.0 | 0.5 | 0.0 | 42.0 | 32.6 | 40.0 | -7.4 | Vertical | 120 | 225 | |
| 43.260 | 10.3 | -2.3 | 17.8 | 0.0 | 0.5 | 0.0 | 28.6 | 16.0 | 40.0 | -24.0 | Vertical | 120 | 45 | |
| 44.820 | 13.5 | 1.4 | 17.0 | 0.0 | 0.5 | 0.0 | 30.9 | 18.9 | 40.0 | -21.1 | Vertical | 120 | 225 | |
| 87.960 | 4.4 | -7.7 | 16.3 | 0.0 | 0.5 | 0.0 | 21.2 | 9.1 | 40.0 | -30.9 | Vertical | 120 | 0 | |
| 124.960 | 6.9 | -5.5 | 19.6 | 0.0 | 0.7 | 0.0 | 27.2 | 14.8 | 43.5 | -28.7 | Horizontal | 200 | 135 | |
| 262.560 | 2.8 | -7.3 | 19.4 | 0.0 | 1.0 | 0.0 | 23.2 | 13.1 | 46.0 | -32.9 | Vertical | 120 | 135 | |
| 551.580 | 3.8 | -7.3 | 24.6 | 0.0 | 1.5 | 0.0 | 29.9 | 18.8 | 46.0 | -27.2 | Horizontal | 200 | 225 | |
| 949.920 | 3.8 | -7.1 | 27.5 | 0.0 | 2.0 | 0.0 | 33.3 | 22.4 | 46.0 | -23.6 | Vertical | 340 | 315 | |

# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

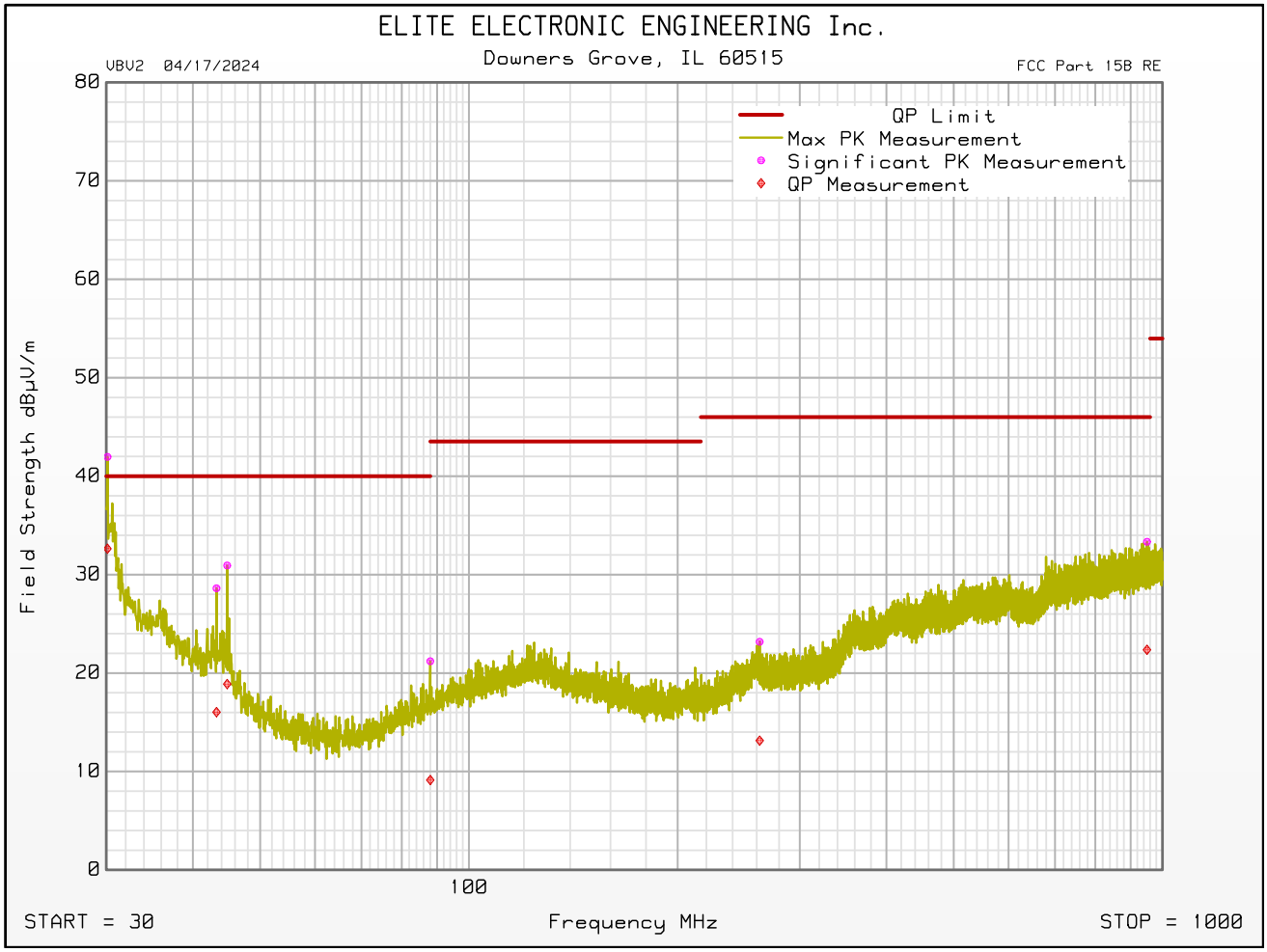
| | | |
|---|---|---|
| Manufacturer | : | Chamberlain |
| Model | : | 900-15607-11 |
| Serial Number | : | Radiated Sample |
| DUT Mode | : | Rx @ 914.75MHz |
| Turntable Step Angle (°) | : | 45 |
| Antenna Polarization | : | Horizontal |
| Scan Type | : | Stepped Scan |
| Test RBW | : | 120 kHz |
| Prelim Dwell Time (s) | : | 0.0001 |
| Notes | : | |
| Test Engineer | : | N. Bouchie |
| Test Date | : | Mar 13, 2025 10:03:33 AM |



# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

| | | |
|---|---|---|
| Manufacturer | : | Chamberlain |
| Model | : | 900-15607-11 |
| Serial Number | : | Radiated Sample |
| DUT Mode | : | Rx @ 914.75MHz |
| Turntable Step Angle (°) | : | 45 |
| Antenna Polarization | : | Vertical |
| Scan Type | : | Stepped Scan |
| Test RBW | : | 120 kHz |
| Prelim Dwell Time (s) | : | 0.0001 |
| Notes | : | |
| Test Engineer | : | N. Bouchie |
| Test Date | : | Mar 13, 2025 10:03:33 AM |



# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

Manufacturer : Chamberlain
Model : 900-15607-11
Serial Number : Radiated Sample
DUT Mode : Rx @ 914.75MHz
Turntable Step Angle (°): 45
Scan Type : Stepped Scan
Test RBW : 1 MHz
Prelim Dwell Time (s) : 0.0001
Notes :
Test Engineer : N. Bouchie
Test Date : Mar 21, 2025 09:02:34 AM

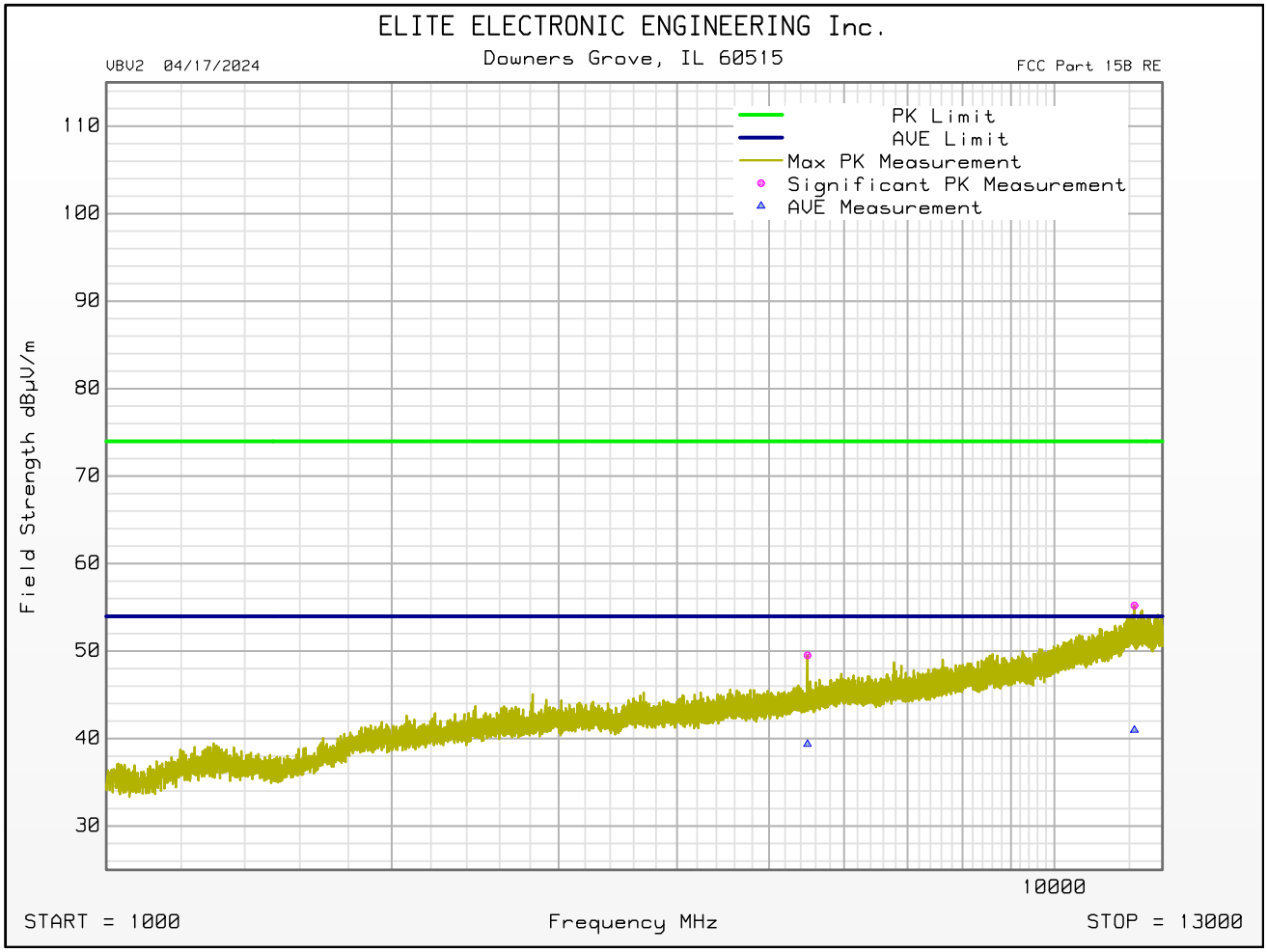
| Freq MHz | Peak Mtr Rdg dBuV | Ant Fac dB/m | Amp Fac dB | Cbl Fac dB | Dist Corr dB | Peak Total dBµV/m | Peak Limit dBµV/m | Peak Lim Mrg dB | Ant Pol | Mast Ht cm | Azim ° | Excessive Peak Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1322.500 | 50.3 | 29.0 | -41.8 | 2.4 | 0.0 | 39.9 | 74.0 | -34.1 | Vertical | 200 | 0 | |
| 2256.000 | 49.5 | 31.7 | -41.0 | 3.3 | 0.0 | 43.4 | 74.0 | -30.6 | Vertical | 120 | 270 | |
| 3571.500 | 48.1 | 33.4 | -40.7 | 4.3 | 0.0 | 45.1 | 74.0 | -28.9 | Vertical | 200 | 0 | |
| 5491.000 | 50.1 | 34.9 | -40.8 | 5.3 | 0.0 | 49.5 | 74.0 | -24.5 | Horizontal | 340 | 45 | |
| 8020.000 | 48.0 | 36.3 | -41.0 | 6.5 | 0.0 | 49.8 | 74.0 | -24.2 | Vertical | 340 | 45 | |
| 12145.000 | 49.0 | 38.9 | -40.7 | 8.0 | 0.0 | 55.2 | 74.0 | -18.8 | Horizontal | 200 | 225 | |

| Freq MHz | Average Mtr Rdg dBuV | Ant Fac dB/m | Amp Fac dB | Cbl Fac dB | Dist Corr dB | Average Total dBµV/m | Average Limit dBµV/m | Average Lim Mrg dB | Ant Pol | Mast Ht cm | Azim ° | Excessive Average Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1322.500 | 37.3 | 29.0 | -41.8 | 2.4 | 0.0 | 26.9 | 54.0 | -27.1 | Vertical | 200 | 0 | |
| 2256.000 | 35.5 | 31.7 | -41.0 | 3.3 | 0.0 | 29.4 | 54.0 | -24.6 | Vertical | 120 | 270 | |
| 3571.500 | 34.5 | 33.4 | -40.7 | 4.3 | 0.0 | 31.6 | 54.0 | -22.4 | Vertical | 200 | 0 | |
| 5491.000 | 40.0 | 34.9 | -40.8 | 5.3 | 0.0 | 39.4 | 54.0 | -14.6 | Horizontal | 340 | 45 | |
| 8020.000 | 34.4 | 36.3 | -41.0 | 6.5 | 0.0 | 36.1 | 54.0 | -17.8 | Vertical | 340 | 45 | |
| 12145.000 | 34.8 | 38.9 | -40.7 | 8.0 | 0.0 | 41.0 | 54.0 | -13.0 | Horizontal | 200 | 225 | |

# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

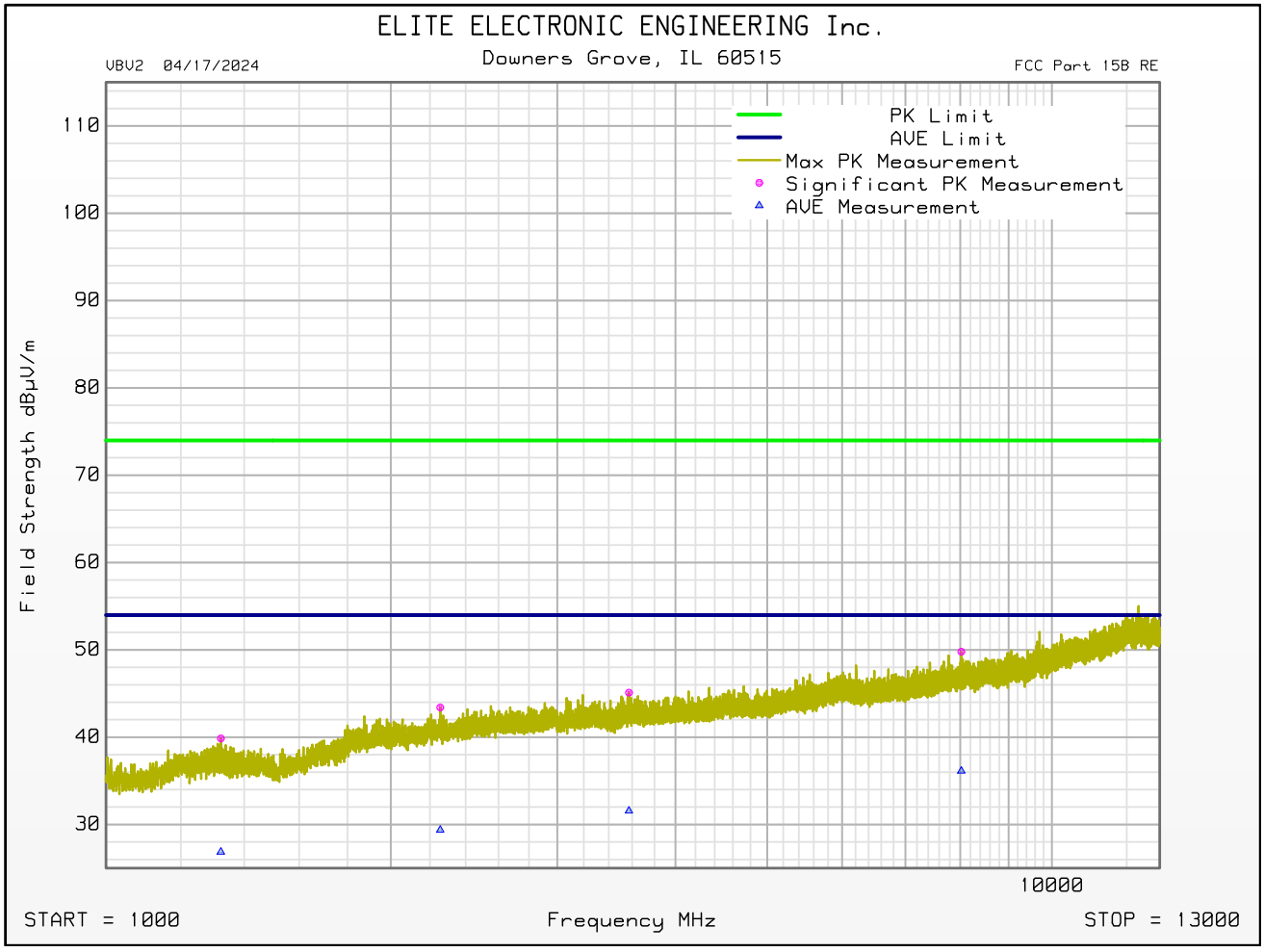
| | | |
|---|---|---|
| Manufacturer | : | Chamberlain |
| Model | : | 900-15607-11 |
| Serial Number | : | Radiated Sample |
| DUT Mode | : | Rx @ 914.75MHz |
| Turntable Step Angle (°) | : | 45 |
| Antenna Polarization | : | Horizontal |
| Scan Type | : | Stepped Scan |
| Test RBW | : | 1 MHz |
| Prelim Dwell Time (s) | : | 0.0001 |
| Notes | : | |
| Test Engineer | : | N. Bouchie |
| Test Date | : | Mar 21, 2025 09:02:34 AM |



# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

| | | |
|---|---|---|
| Manufacturer | : | Chamberlain |
| Model | : | 900-15607-11 |
| Serial Number | : | Radiated Sample |
| DUT Mode | : | Rx @ 914.75MHz |
| Turntable Step Angle (°) | : | 45 |
| Antenna Polarization | : | Vertical |
| Scan Type | : | Stepped Scan |
| Test RBW | : | 1 MHz |
| Prelim Dwell Time (s) | : | 0.0001 |
| Notes | : | |
| Test Engineer | : | N. Bouchie |
| Test Date | : | Mar 21, 2025 09:02:34 AM |



# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

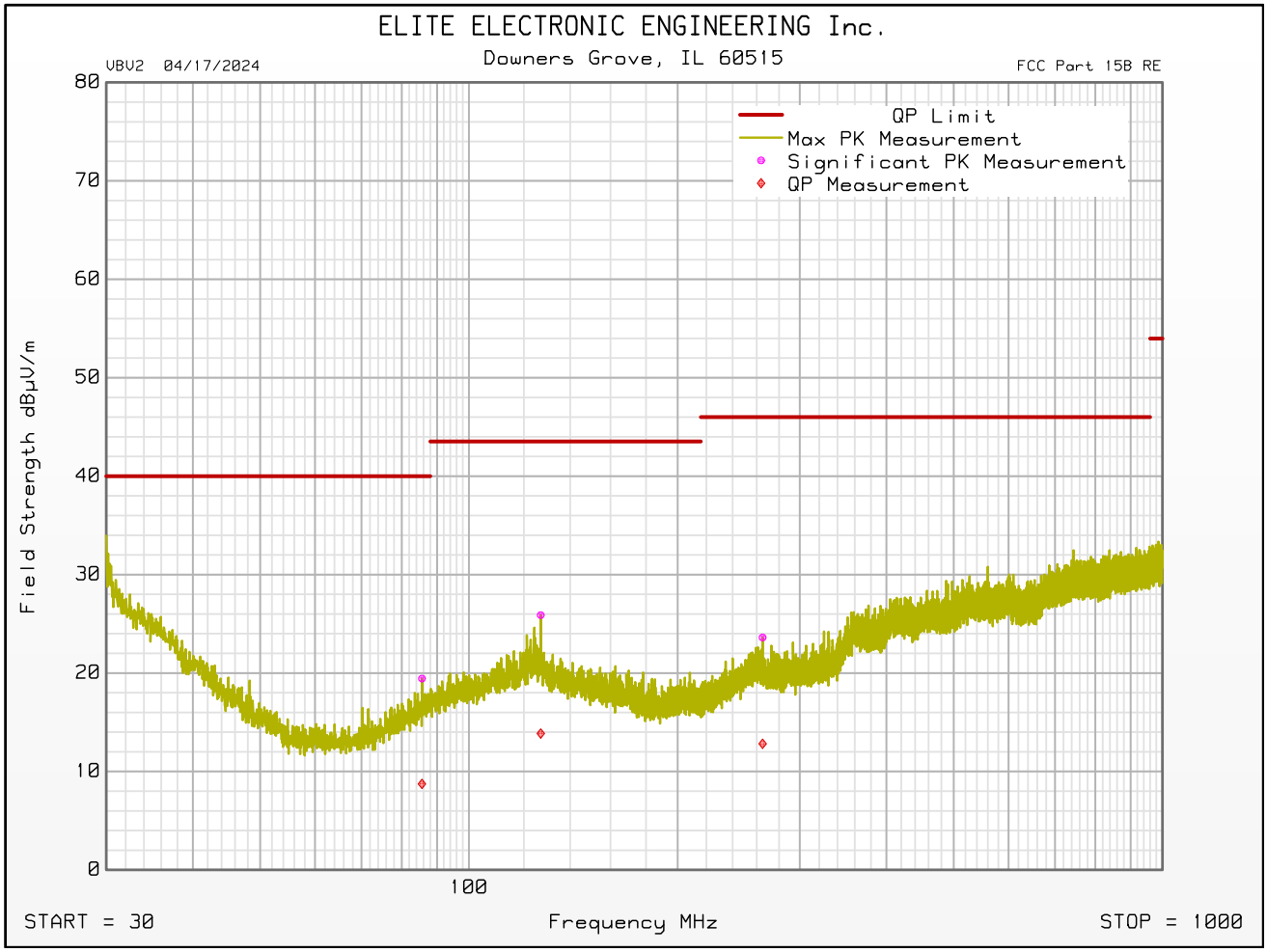
Manufacturer : Chamberlain
Model : 900-15607-11
Serial Number : Radiated Sample
DUT Mode : Rx @ 926.275MHz
Turntable Step Angle (°): 45
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes :
Test Engineer : N. Bouchie
Test Date : Mar 13, 2025 10:29:03 AM

| Freq MHz | Peak Mtr Rdg dBuV | QP Mtr Rdg dBuV | Ant Fac dB/m | Amp Fac dB | Cbl Fac dB | Dist Corr dB | Peak Total dBµV/m | QP Total dBµV/m | QP Limit dBµV/m | QP Lim Mrg dB | Ant Pol | Mast Ht cm | Azim ° | Excessive QP Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30.120 | 16.0 | 6.8 | 25.1 | 0.0 | 0.5 | 0.0 | 41.6 | 32.4 | 40.0 | -7.6 | Vertical | 120 | 270 | |
| 43.320 | 11.7 | -0.8 | 17.8 | 0.0 | 0.5 | 0.0 | 30.0 | 17.5 | 40.0 | -22.5 | Vertical | 120 | 225 | |
| 44.520 | 12.8 | 0.0 | 17.1 | 0.0 | 0.5 | 0.0 | 30.4 | 17.7 | 40.0 | -22.3 | Vertical | 200 | 270 | |
| 85.560 | 3.1 | -7.6 | 15.9 | 0.0 | 0.5 | 0.0 | 19.4 | 8.7 | 40.0 | -31.3 | Horizontal | 340 | 225 | |
| 126.940 | 5.7 | -6.4 | 19.6 | 0.0 | 0.7 | 0.0 | 25.9 | 13.9 | 43.5 | -29.7 | Horizontal | 340 | 0 | |
| 167.980 | 5.9 | -7.3 | 16.8 | 0.0 | 0.9 | 0.0 | 23.6 | 10.4 | 43.5 | -33.1 | Vertical | 340 | 45 | |
| 265.140 | 3.5 | -7.3 | 19.1 | 0.0 | 1.0 | 0.0 | 23.6 | 12.8 | 46.0 | -33.2 | Horizontal | 120 | 90 | |
| 513.900 | 5.4 | -6.7 | 24.0 | 0.0 | 1.5 | 0.0 | 30.9 | 18.8 | 46.0 | -27.2 | Vertical | 340 | 135 | |
| 926.100 | 4.2 | -6.5 | 27.2 | 0.0 | 2.0 | 0.0 | 33.3 | 22.7 | 46.0 | -23.3 | Vertical | 120 | 225 | |

# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

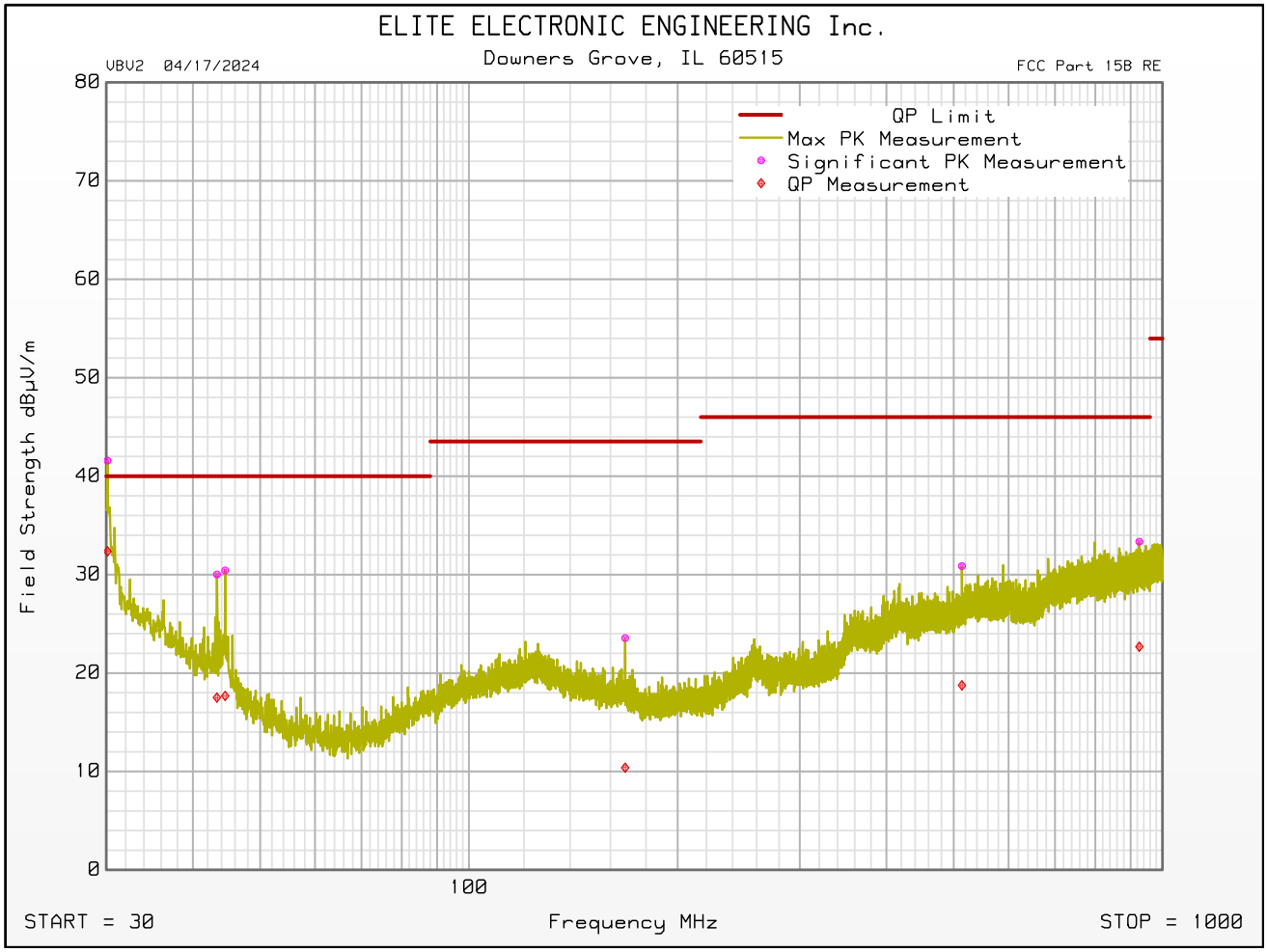
| | | |
|---|---|---|
| Manufacturer | : | Chamberlain |
| Model | : | 900-15607-11 |
| Serial Number | : | Radiated Sample |
| DUT Mode | : | Rx @ 926.275MHz |
| Turntable Step Angle (°) | : | 45 |
| Antenna Polarization | : | Horizontal |
| Scan Type | : | Stepped Scan |
| Test RBW | : | 120 kHz |
| Prelim Dwell Time (s) | : | 0.0001 |
| Notes | : | |
| Test Engineer | : | N. Bouchie |
| Test Date | : | Mar 13, 2025 10:29:03 AM |



# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

| | | |
|---|---|---|
| Manufacturer | : | Chamberlain |
| Model | : | 900-15607-11 |
| Serial Number | : | Radiated Sample |
| DUT Mode | : | Rx @ 926.275MHz |
| Turntable Step Angle (°) | : | 45 |
| Antenna Polarization | : | Vertical |
| Scan Type | : | Stepped Scan |
| Test RBW | : | 120 kHz |
| Prelim Dwell Time (s) | : | 0.0001 |
| Notes | : | |
| Test Engineer | : | N. Bouchie |
| Test Date | : | Mar 13, 2025 10:29:03 AM |



# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

Manufacturer : Chamberlain
Model : 900-15607-11
Serial Number : Radiated Sample
DUT Mode : Rx @ 926.275MHz
Turntable Step Angle (°): 45
Scan Type : Stepped Scan
Test RBW : 1 MHz
Prelim Dwell Time (s) : 0.0001
Notes :
Test Engineer : N. Bouchie
Test Date : Mar 21, 2025 09:45:52 AM

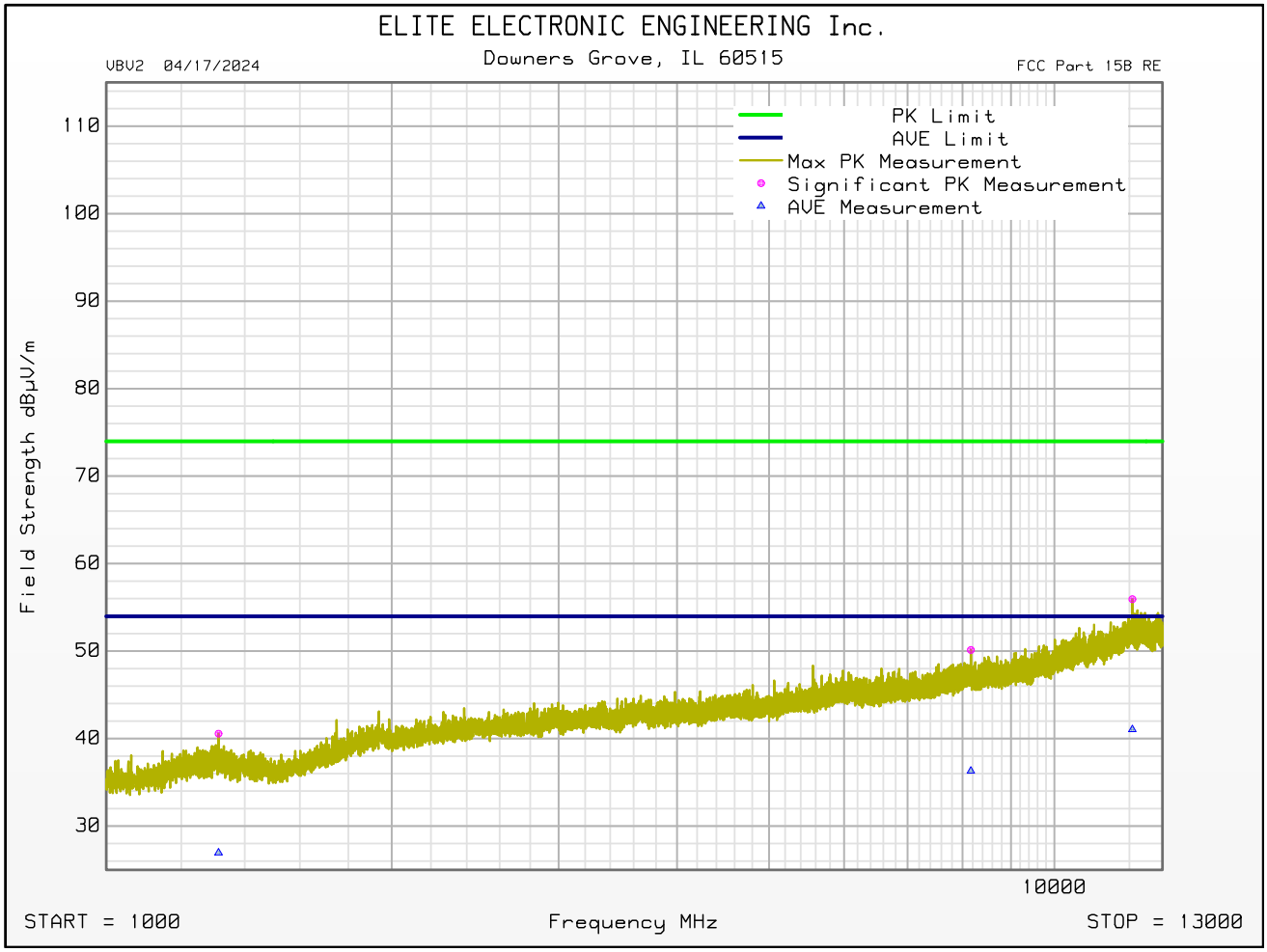
| Freq MHz | Peak Mtr Rdg dBuV | Ant Fac dB/m | Amp Fac dB | Cbl Fac dB | Dist Corr dB | Peak Total dBµV/m | Peak Limit dBµV/m | Peak Lim Mrg dB | Ant Pol | Mast Ht cm | Azim ° | Excessive Peak Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1313.500 | 51.0 | 29.0 | -41.8 | 2.4 | 0.0 | 40.6 | 74.0 | -33.4 | Horizontal | 340 | 180 | |
| 2336.500 | 49.3 | 31.9 | -41.2 | 3.3 | 0.0 | 43.3 | 74.0 | -30.7 | Vertical | 340 | 225 | |
| 3037.500 | 49.2 | 32.9 | -41.3 | 3.9 | 0.0 | 44.8 | 74.0 | -29.2 | Vertical | 340 | 225 | |
| 5027.000 | 48.3 | 34.2 | -40.8 | 5.0 | 0.0 | 46.7 | 74.0 | -27.3 | Vertical | 200 | 45 | |
| 8164.000 | 48.4 | 36.3 | -41.0 | 6.5 | 0.0 | 50.1 | 74.0 | -23.9 | Horizontal | 120 | 0 | |
| 12083.500 | 49.8 | 38.9 | -40.7 | 8.0 | 0.0 | 55.9 | 74.0 | -18.0 | Horizontal | 340 | 315 | |

| Freq MHz | Average Mtr Rdg dBuV | Ant Fac dB/m | Amp Fac dB | Cbl Fac dB | Dist Corr dB | Average Total dBµV/m | Average Limit dBµV/m | Average Lim Mrg dB | Ant Pol | Mast Ht cm | Azim ° | Excessive Average Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1313.500 | 37.4 | 29.0 | -41.8 | 2.4 | 0.0 | 26.9 | 54.0 | -27.0 | Horizontal | 340 | 180 | |
| 2336.500 | 35.6 | 31.9 | -41.2 | 3.3 | 0.0 | 29.6 | 54.0 | -24.3 | Vertical | 340 | 225 | |
| 3037.500 | 35.5 | 32.9 | -41.3 | 3.9 | 0.0 | 31.0 | 54.0 | -23.0 | Vertical | 340 | 225 | |
| 5027.000 | 34.3 | 34.2 | -40.8 | 5.0 | 0.0 | 32.7 | 54.0 | -21.3 | Vertical | 200 | 45 | |
| 8164.000 | 34.5 | 36.3 | -41.0 | 6.5 | 0.0 | 36.3 | 54.0 | -17.7 | Horizontal | 120 | 0 | |
| 12083.500 | 34.9 | 38.9 | -40.7 | 8.0 | 0.0 | 41.0 | 54.0 | -12.9 | Horizontal | 340 | 315 | |

# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

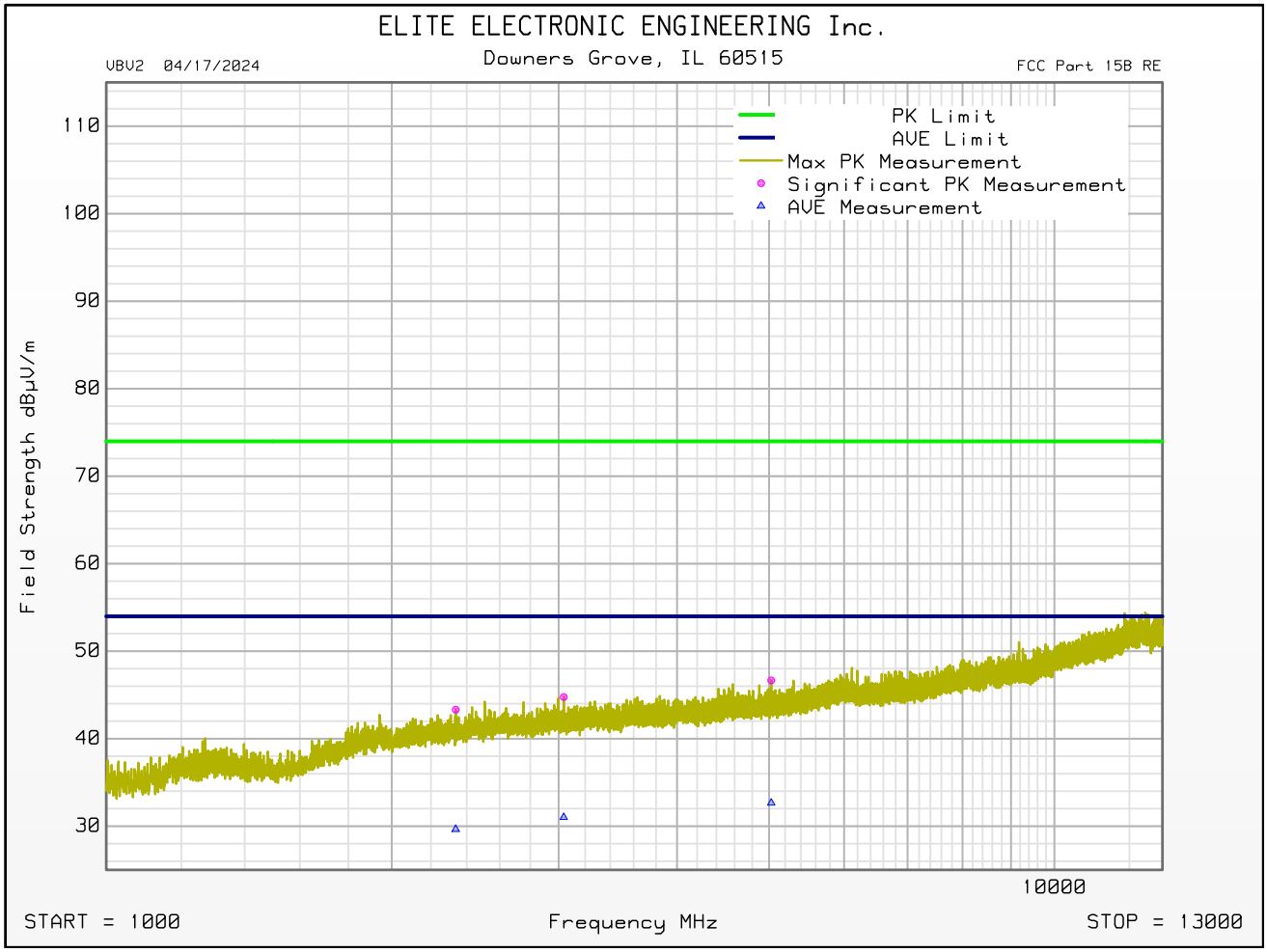
| | | |
|---|---|---|
| Manufacturer | : | Chamberlain |
| Model | : | 900-15607-11 |
| Serial Number | : | Radiated Sample |
| DUT Mode | : | Rx @ 926.275MHz |
| Turntable Step Angle (°) | : | 45 |
| Antenna Polarization | : | Horizontal |
| Scan Type | : | Stepped Scan |
| Test RBW | : | 1 MHz |
| Prelim Dwell Time (s) | : | 0.0001 |
| Notes | : | |
| Test Engineer | : | N. Bouchie |
| Test Date | : | Mar 21, 2025 09:45:52 AM |



# FCC Part 15B Section 15.109
# Radiated RF Emissions Test

SW ID/Rev: VBV2 04/17/2024

| | | |
|---|---|---|
| Manufacturer | : | Chamberlain |
| Model | : | 900-15607-11 |
| Serial Number | : | Radiated Sample |
| DUT Mode | : | Rx @ 926.275MHz |
| Turntable Step Angle (°) | : | 45 |
| Antenna Polarization | : | Vertical |
| Scan Type | : | Stepped Scan |
| Test RBW | : | 1 MHz |
| Prelim Dwell Time (s) | : | 0.0001 |
| Notes | : | |
| Test Engineer | : | N. Bouchie |
| Test Date | : | Mar 21, 2025 09:45:52 AM |



# 21. 20dB Bandwidth

| EUT Information | |
|---|---|
| Manufacturer | The Chamberlain Group LLC |
| Product | Vulcan – 900-15607 Rev F |
| Model No. | 900-15607-11 |
| Serial No. | Conducted Sample |
| Mode | Tx @ 902.25MHz<br>Tx @ 914.75MHz<br>Tx @ 926.75MHz |

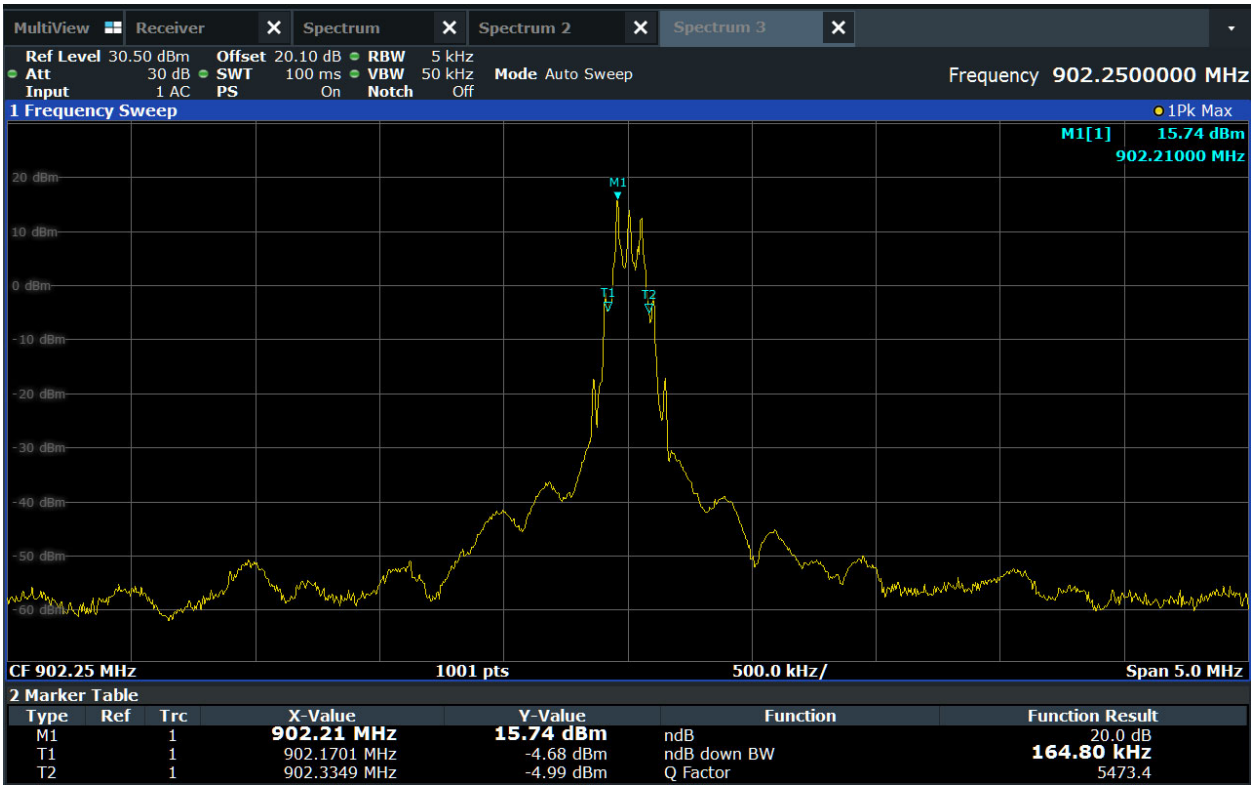
| Test Setup Details | |
|---|---|
| Setup Format | Tabletop |
| Height of Support | N/A |
| Measurement Method | Antenna Conducted |
| Type of Test Site | Tabletop |
| Test Site Used | Elite Workbench |
| Type of Antennas Used | N/a |
| Notes | None |

| Measurement Uncertainty | |
|---|---|
| Measurement Type | Expanded Measurement Uncertainty |
| 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 |

| Requirements |
|---|
| Systems using frequency hopping techniques shall have a maximum 20dB bandwidth of 500kHz |

| Procedure |
|---|
| The antenna port of the EUT was connected to the spectrum analyzer through a 20dB attenuator. The EUT was allowed to transmit continuously.<br><br>The transmit channel was set separately to low, middle, and high channels. The resolution bandwidth (RBW) was set to 1% to 5% of the OBW, the video bandwidth (VBW) was set to the same as or 3 times greater than the RBW, and the span was set to 2 to 5 times the OBW.<br><br>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 then screenshot and saved. |

| Test Details | |
|---|---|
| Manufacturer | The Chamberlain Group LLC |
| EUT | Vulcan – 900-15607 Rev F |
| Model No. | 900-15607-11 |
| Serial No. | Conducted Sample |
| Mode | Tx @ 902.25MHz |
| Frequency Tested | 902.25MHz |
| Result | 20dB BW = 164.8kHz |
| Notes | None |

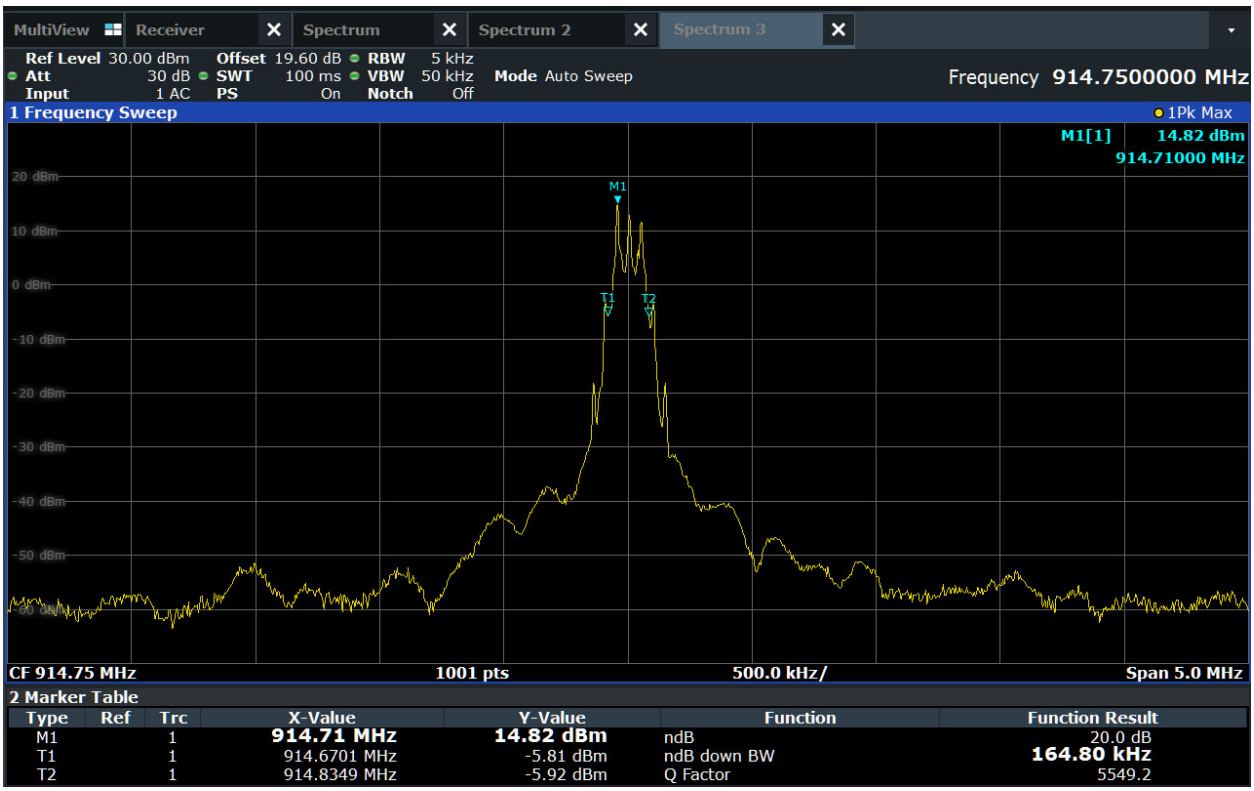



**Occupied Bandwidth - 20dB BW**

Manufacturer : The Chamberlain Group LLC
Model Number : 900-15607-11
Serial Number : Radiated Sample
Mode : Tx @ 902.25MHz
Line Tested : Antenna Port
Parameters : 20dB BW
Date : 3/21/2025 12:01:50 PM
Notes : None

TRACE1 : Function plot of Max Hold Peak

| Test Details | |
|---|---|
| Manufacturer | The Chamberlain Group LLC |
| EUT | Vulcan – 900-15607 Rev F |
| Model No. | 900-15607-11 |
| Serial No. | Conducted Sample |
| Mode | Tx @ 914.75MHz |
| Frequency Tested | 914.75MHz |
| Result | 20dB BW = 164.8kHz |
| Notes | None |

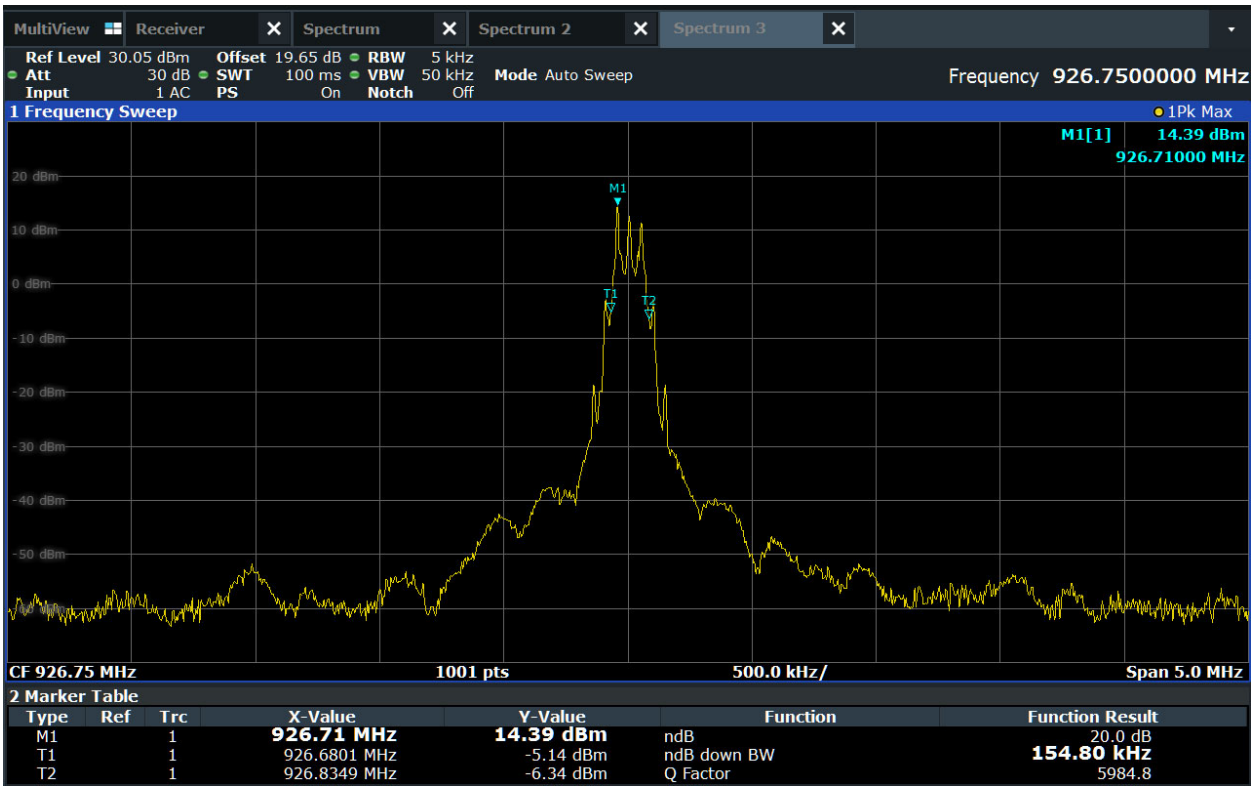



**Occupied Bandwidth - 20dB BW**

Manufacturer : The Chamberlain Group LLC
Model Number : 900-15607-11
Serial Number : Radiated Sample
Mode : Tx @ 914.75MHz
Line Tested : Antenna Port
Parameters : 20dB BW
Date : 3/21/2025 11:59:58 AM
Notes : None

TRACE1 : Function plot of Max Hold Peak

| Test Details | |
|---|---|
| Manufacturer | The Chamberlain Group LLC |
| EUT | Vulcan – 900-15607 Rev F |
| Model No. | 900-15607-11 |
| Serial No. | Conducted Sample |
| Mode | Tx @ 926.75MHz |
| Frequency Tested | 926.75MHz |
| Result | 20dB BW = 154.8kHz |
| Notes | None |




**Occupied Bandwidth - 20dB BW**

Manufacturer : The Chamberlain Group LLC
Model Number : 900-15607-11
Serial Number : Radiated Sample
Mode : Tx @ 914.75MHz
Line Tested : Antenna Port
Parameters : 20dB BW
Date : 3/21/2025 12:02:29 PM
Notes : None

TRACE1 : Function plot of Max Hold Peak

## 22. Occupied Bandwidth (99%)

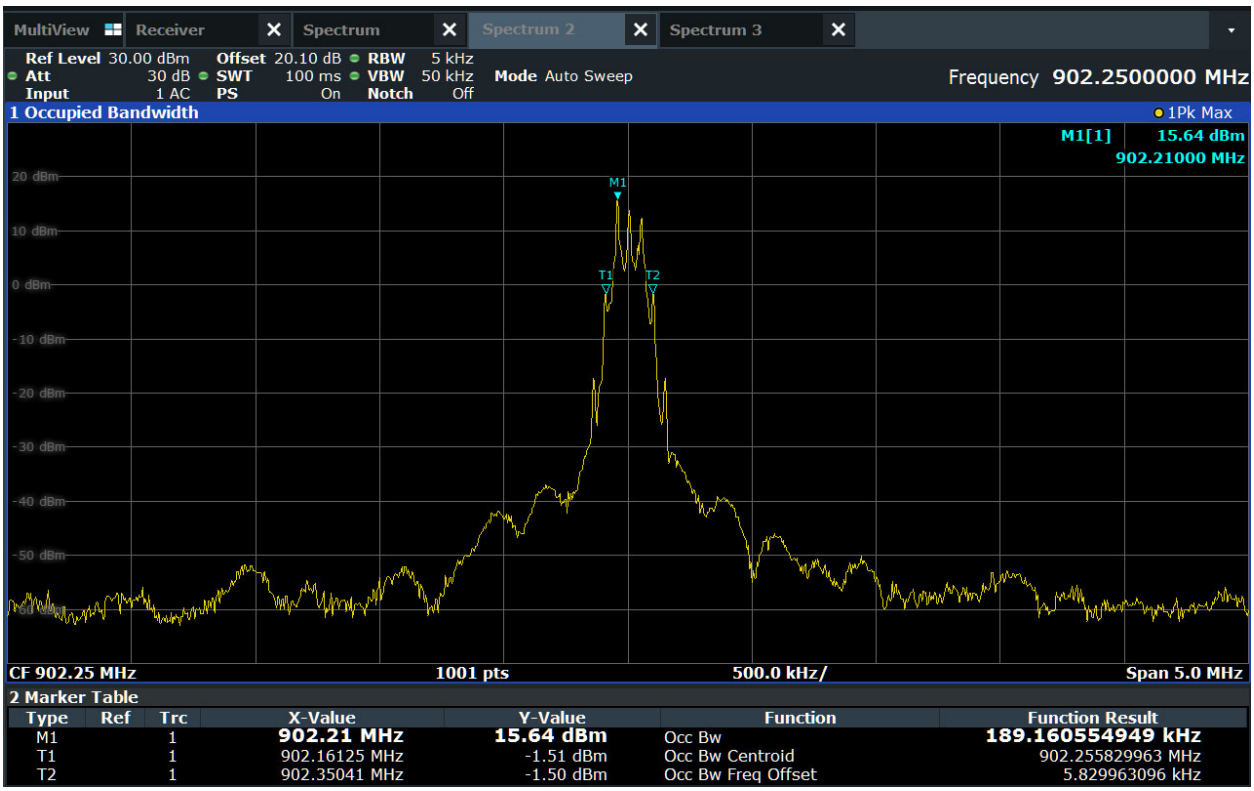
| EUT Information | |
|---|---|
| Manufacturer | The Chamberlain Group LLC |
| Product | Vulcan – 900-15607 Rev F |
| Model No. | 900-15607-11 |
| Serial No. | Conducted Sample |
| Mode | Tx @ 902.25MHz<br>Tx @ 914.75MHz<br>Tx @ 926.75MHz |

| Test Setup Details | |
|---|---|
| Setup Format | Tabletop |
| Height of Support | N/A |
| Measurement Method | Antenna Conducted |
| Type of Test Site | Tabletop |
| Test Site Used | Elite Workbench |
| Type of Antennas Used | N/a |
| Notes | None |

| Measurement Uncertainty | |
|---|---|
| Measurement Type | Expanded Measurement Uncertainty |
| 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 |

| Procedure |
|---|
| The antenna port of the EUT was connected to the spectrum analyzer through a 20db attenuator. The EUT was allowed to transmit continuously.<br><br>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 1% to 5% of the actual occupied / x dB bandwidth, the video bandwidth (VBW) was set 3 times greater than the RBW, and the span was set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency.<br><br>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. |

| Test Details | |
|---|---|
| Manufacturer | The Chamberlain Group LLC |
| EUT | Vulcan – 900-15607 Rev F |
| Model No. | 900-15607-11 |
| Serial No. | Conducted Sample |
| Mode | Tx @ 902.25MHz |
| Frequency Tested | 902.25MHz |
| Result | OBW = 188.2kHz |
| Notes | None |

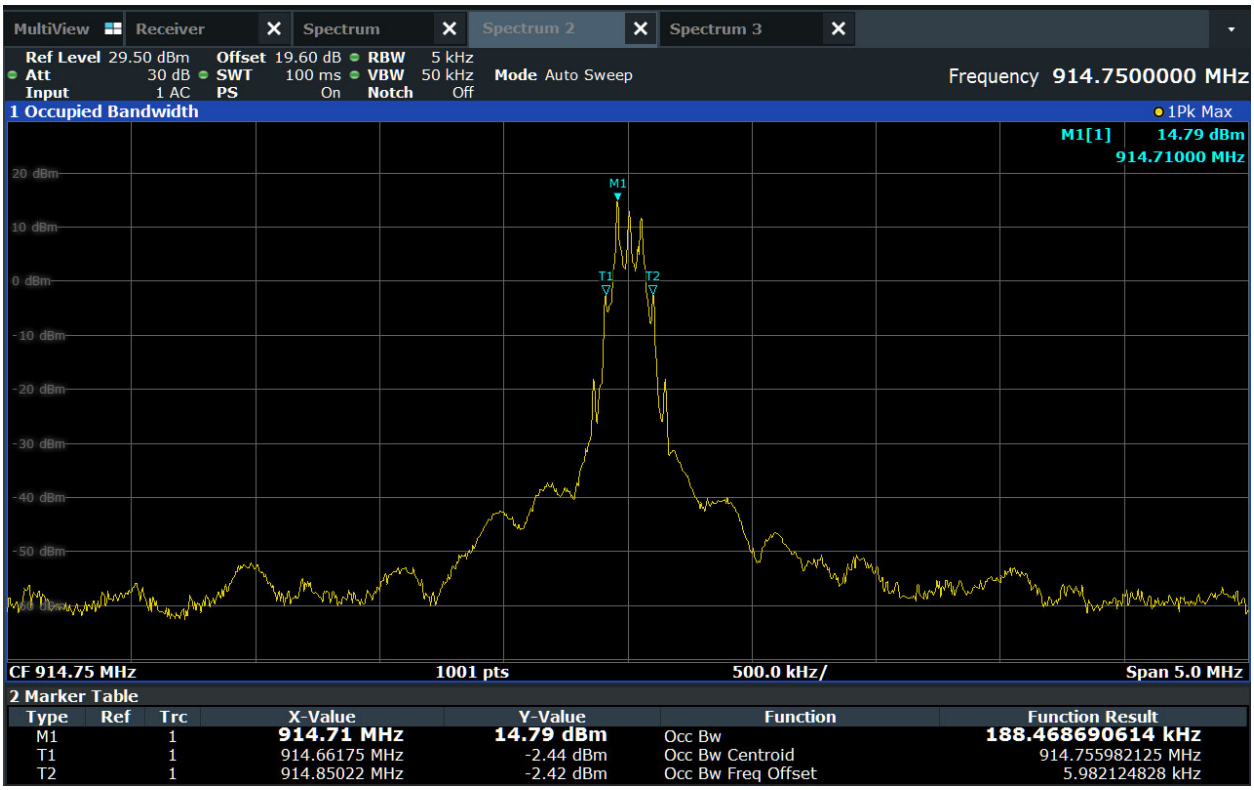



**Occupied Bandwidth - 99% OBW**

Manufacturer : The Chamberlain Group LLC
Model Number : 900-15607-11
Serial Number : Radiated Sample
Mode : Tx @ 902.25MHz
Line Tested : Antenna Port
Parameters : 99% OBW
Date : 3/21/2025 11:56:43 AM
Notes : None

TRACE1 : Function plot of Max Hold Peak

| Test Details | |
|---|---|
| Manufacturer | The Chamberlain Group LLC |
| EUT | Vulcan – 900-15607 Rev F |
| Model No. | 900-15607-11 |
| Serial No. | Conducted Sample |
| Mode | Tx @ 914.75MHz |
| Frequency Tested | 914.75MHz |
| Result | OBW = 188.5kHz |
| Notes | None |

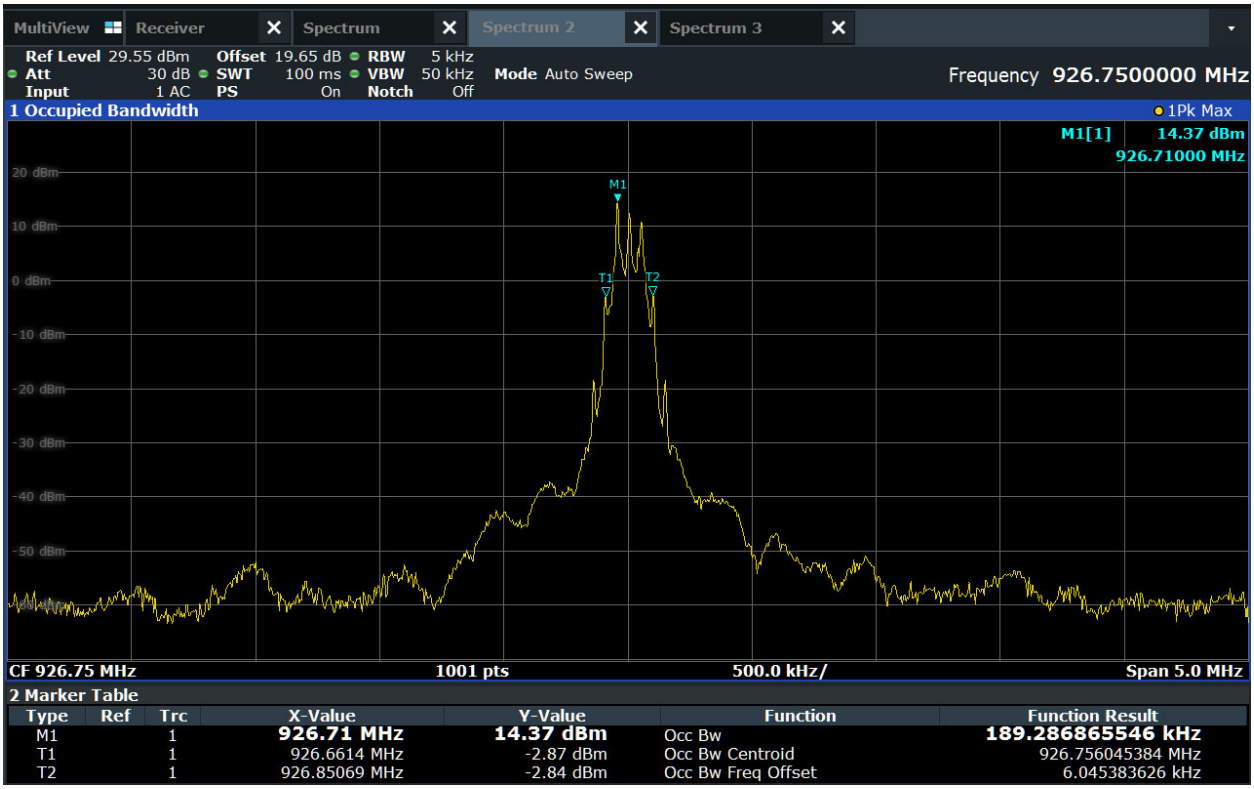



**Occupied Bandwidth - 99% OBW**

Manufacturer : The Chamberlain Group LLC
Model Number : 900-15607-11
Serial Number : Radiated Sample
Mode : Tx @ 914.75MHz
Line Tested : Antenna Port
Parameters : 99% OBW
Date : 3/21/2025 11:57:47 AM
Notes : None

TRACE1 : Function plot of Max Hold Peak

| Test Details | |
|---|---|
| Manufacturer | The Chamberlain Group LLC |
| EUT | Vulcan – 900-15607 Rev F |
| Model No. | 900-15607-11 |
| Serial No. | Conducted Sample |
| Mode | Tx @ 926.75MHz |
| Frequency Tested | 926.75MHz |
| Result | OBW = 189.3kHz |
| Notes | None |




**Occupied Bandwidth - 99% OBW**

Manufacturer : The Chamberlain Group LLC
Model Number : 900-15607-11
Serial Number : Radiated Sample
Mode : Tx @ 926.75MHz
Line Tested : Antenna Port
Parameters : 99% OBW
Date : 3/21/2025 11:56:04 AM
Notes : None

TRACE1 : Function plot of Max Hold Peak

# 23. Maximum Peak Conducted Output Power

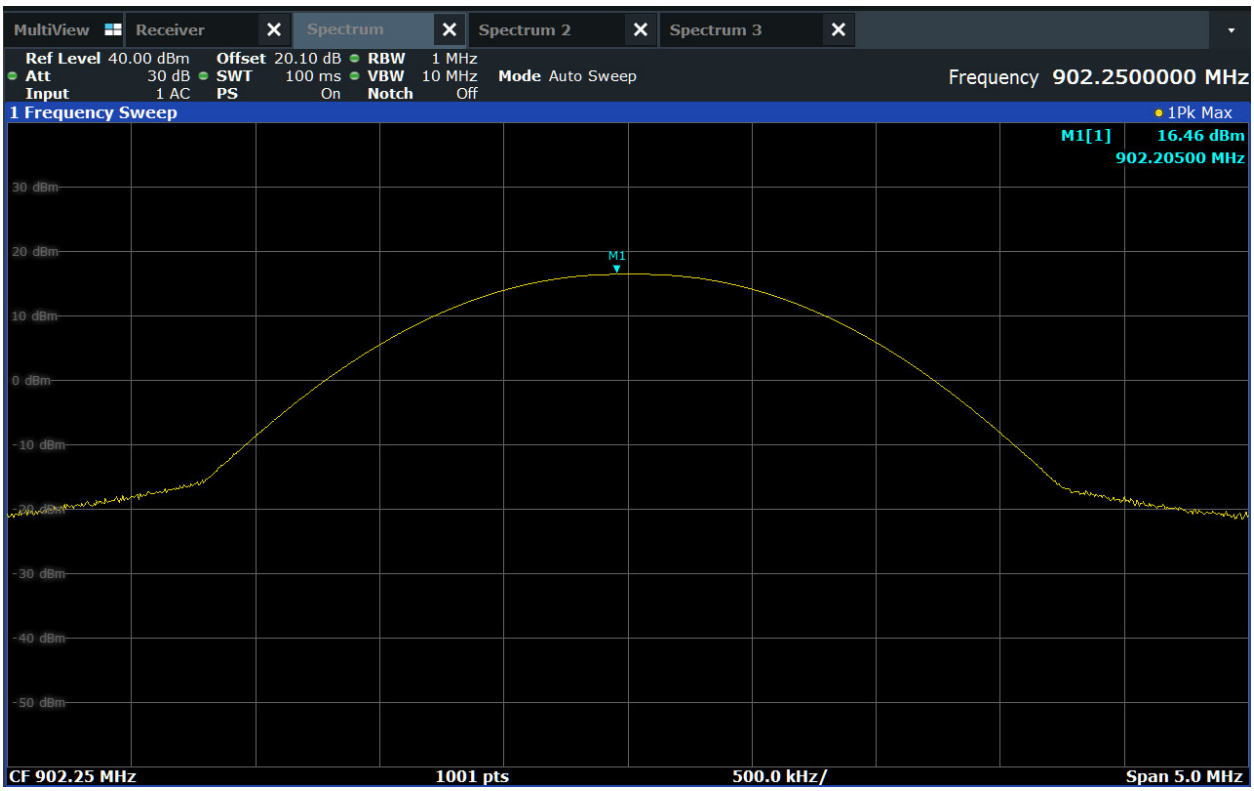
| EUT Information | |
|---|---|
| Manufacturer | The Chamberlain Group LLC |
| Product | Vulcan – 900-15607 Rev F |
| Model No. | 900-15607-11 |
| Serial No. | Conducted Sample |
| Mode | Tx @ 902.25MHz<br>Tx @ 914.75MHz<br>Tx @ 926.75MHz |

| Test Setup Details | |
|---|---|
| Setup Format | Tabletop |
| Height of Support | N/A |
| Measurement Method | Antenna Conducted |
| Test Site Used | Elite Workbench |
| Type of Antennas Used | N/A |
| Notes | None |

| Requirements |
|---|
| The output power shall not exceed 1W (30dBm). |

| Procedure |
|---|
| The antenna port of the EUT was connected to the spectrum analyzer through a 20db attenuator. The EUT was allowed to transmit continuously. 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 span was set to greater than 3 times the RBW. 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. |

| Test Details | |
|---|---|
| Manufacturer | The Chamberlain Group LLC |
| EUT | Vulcan – 900-15607 Rev F |
| Model No. | 900-15607-11 |
| Serial No. | Conducted Sample |
| Mode | Tx @ 902.25MHz |
| Frequency Tested | 902.25MHz |
| Result | Output Power = 44.3mW (16.46dBm) |
| Notes | None |




**Maximum Peak Output Power**

Manufacturer : The Chamberlain Group LLC
Model Number : 900-15607-11
Serial Number : Radiated Sample
Mode : Tx @ 902.25MHz
Line Tested : Antenna Port
Parameters : Conducted Output Power
Date : 3/21/2025 11:24:19 AM
Notes : None

TRACE1 : Function plot of Max Hold Peak