



Engineering Test Report No. 2101887-01	
Report Date	August 11, 2021
Manufacturer Name	Chamberlain Group Inc
Manufacturer Address	60523 Oak Brook, IL 60523
Model No.	001D9525-1-IND
Date Received	August 4, 2021
Test Dates	August 4, 2021 to August 10, 2021
Specifications	FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247 FCC "Code of Federal Regulations" Title 47, Part15, Subpart 15B Innovation, Science, and Economic Development Canada, RSS-247 Innovation, Science, and Economic Development Canada, RSS-GEN
Test Facility	Elite Electronic Engineering, Inc. 1516 Centre Circle, Downers Grove, IL 60515 FCC Reg. Number: 269750 IC Reg. Number: 2987A CAB Identifier: US0107
Signature	
Tested by	Javier Cardenas
Signature	
Approved by	Raymond J. Klouda, Registered Professional Engineer of Illinois – 44894
PO Number	4900076318
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1. Report Revision History

Revision	Date	Description
-	24 AUG 2021	Initial Release of Engineering Test Report No. 2101887-01

2. Introduction

2.1. Scope of Tests

This document presents the results of a series of RF emissions tests that were performed on a Chamberlain Group Inc Main/Control PCB Transceiver (hereinafter referred to as the Equipment Under Test (EUT)). The EUT was manufactured and submitted for testing by Chamberlain Group Inc located in Oak Brook, IL.

2.2. Purpose

The test series was performed to determine if the EUT meets the RF emission requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart 15B, Section 15.107 and 15.109 for Receivers and Part 15, Subpart C, Sections 15.247 for a Frequency Hopping Spread Spectrum intentional radiator operating within the 902-928MHz band.

The test series was also performed to determine if the EUT meets 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 Frequency Hopping Spread Spectrum 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 EUT was identified as follows:

EUT Identification	
Product Description	Main/Control Transceiver used in an industrial operator, Model IHSL24UL.
Model/Part No.	001D9525-1-IND
S/N	NA
Device Type	Frequency Hopping Transmission Device and Receiver
Band of Operation	Tx: 902-928MHz ; Receiver: 310-390, 433.3-434.54; 902-928MHz
Conducted Output Power	11.24dBm
20dB Bandwidth	150.8kHz
Occupied Bandwidth (99%)	192.13kHz
Size of EUT	64cm Height × 61cm Width × 33.4cm Depth

The EUTs listed above were used throughout the test series.

3. Power Input

The EUT obtained 115V 60Hz power via a 3-wire, 1-meter, unshielded power cord.

4. Grounding

The EUT was connected to ground through the third wire of its input power cord.

5. Support Equipment

No support equipment was submitted for testing.

6. Interconnect Leads

No interconnect leads were used during the tests.

7. Modifications Made to the EUT

No modifications were made to the EUT during the testing.

8. Modes of Operation

The EUT and all peripheral equipment were energized. The unit was programmed to transmit in one of the following modes:

Mode	Description
Continuous Transmission	CW - 902.259MHz - 914.760MHz - 926.760MHz Modulated - 902.259MHz - 914.760MHz - 926.760MHz
Frequency Hopping	Transmitting and hopping to channel frequencies in a pseudo random order
Motor Running	Motor running continuously at 80% of maximum speed
Rx	Receiving in one of the following bands/frequencies: - 310-390MHz - 433.3-434.54MHz - 902-928MHz

9. Test Specifications

The tests were performed to selected portions of, and in accordance with the FCC “Code of Federal Regulations” Title 47, Part15, Subpart 15B, Section 15.107 and 15.109 for Receivers and Part 15, Subpart C, Sections 15.247 for a Frequency Hopping Spread Spectrum intentional radiator operating within the 902-928MHz band and 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 Frequency Hopping Spread Spectrum intentional radiator operating within the 902-928MHz band test specifications.

- Federal Communications Commission “Code of Federal Regulations”, Title 47, Part 15, Subpart C
- Federal Communications Commission “Code of Federal Regulations”, Title 47, Part 15, Subpart B
- 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 9kHz 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 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-247 Issue 2, February 2017, “Digital Transmission Systems (DTSS), Frequency Hopping Systems (FHSS) and License-Exempt Local Area Network (LE-LAN) Devices”
- RSS-Gen Issue 5, March 2019, Amendment 1, Innovation, Science, and Economic Development Canada, “Spectrum Management and Telecommunications, Radio Standards Specification, General

Requirements for Compliance of Radio Apparatus”

10. Test Plan

No test plan was provided. Instructions were provided by personnel from Chamberlain Group Inc and used in conjunction with the FCC “Code of Federal Regulations” Title 47, Part15, Subpart 15B, Section 15.107 and 15.109 for Receivers and Part 15, Subpart C, Sections 15.247 for a Frequency Hopping Spread Spectrum intentional radiator operating within the 902-928MHz band FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247and 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 Frequency Hopping Spread Spectrum intentional radiator operating within the 902-928MHz band, 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

Ambient Parameters	Value
Temperature	22°C
Relative Humidity	28%
Atmospheric Pressure	1014.7mb

13. Summary

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

Test Description	Requirements	Test Methods	Results
Conducted Emissions Test (Unintentional Radiators)	FCC 15B 15.107 ISED RSS-GEN	ANSI C63.4: 2014	Conforms
Radiated Emissions Test	FCC 15B 15.109 ISED RSS-GEN	ANSI C63.4: 2014	Conforms
Transmitter Conducted Emissions Test (AC Mains)	FCC 15B 15.207 ISED RSS-GEN	ANSI C63.10: 2013	Conforms
20dB Bandwidth	FCC 15C 15.247 ISED RSS-247	ANSI C63.10: 2013	Conforms
Occupied Bandwidth (99%)	FCC 15C 15.247 ISED RSS-247	ANSI C63.10: 2013	Conforms
Carrier Frequency Separation	FCC 15C 15.247 ISED RSS-247	ANSI C63.10: 2013	Conforms
Number of Carrier Channels	FCC 15C 15.247 ISED RSS-247	ANSI C63.10: 2013	Conforms
Average Time of Occupancy	FCC 15C 15.247 ISED RSS-247	ANSI C63.10: 2013	Conforms
Maximum Peak Conducted Output Power	FCC 15C 15.247 ISED RSS-247	ANSI C63.10: 2013	Conforms
Effective Isotropic Radiated Power (EIRP)	FCC 15C 15.247 ISED RSS-247	ANSI C63.10: 2013	Conforms
Duty Cycle Factor Measurements	FCC 15C 15.247 ISED RSS-247	ANSI C63.10: 2013	—
Spurious Radiated Emissions	FCC 15C 15.247 ISED RSS-247	ANSI C63.10: 2013	Conforms
Band-Edge Compliance	FCC 15C 15.247 ISED RSS-247	ANSI C63.10: 2013	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).

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

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.

$$\text{Formula 1: FS (dBuV/m) = MTR (dBuV) + AF (dB/m) + CF (dB) + (- PA (dB)) + DC (dB)}$$

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

$$\text{Formula 2: FS (uV/m) = AntiLog [(FS (dBuV/m))/20]}$$

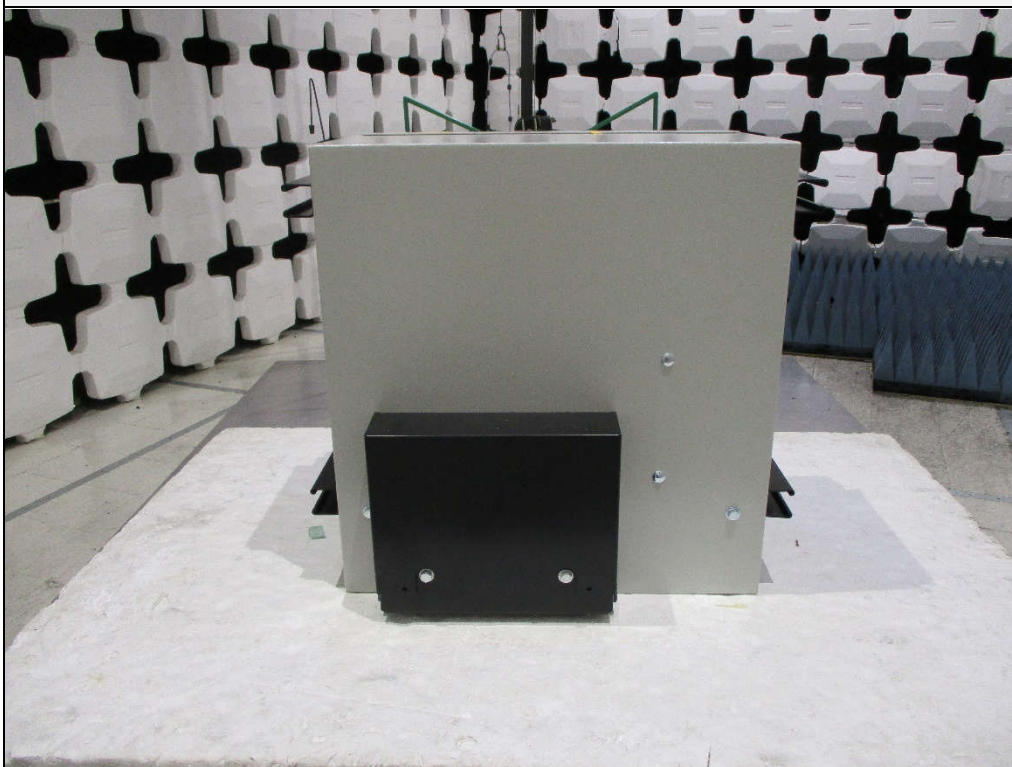
15. Statement of Conformity

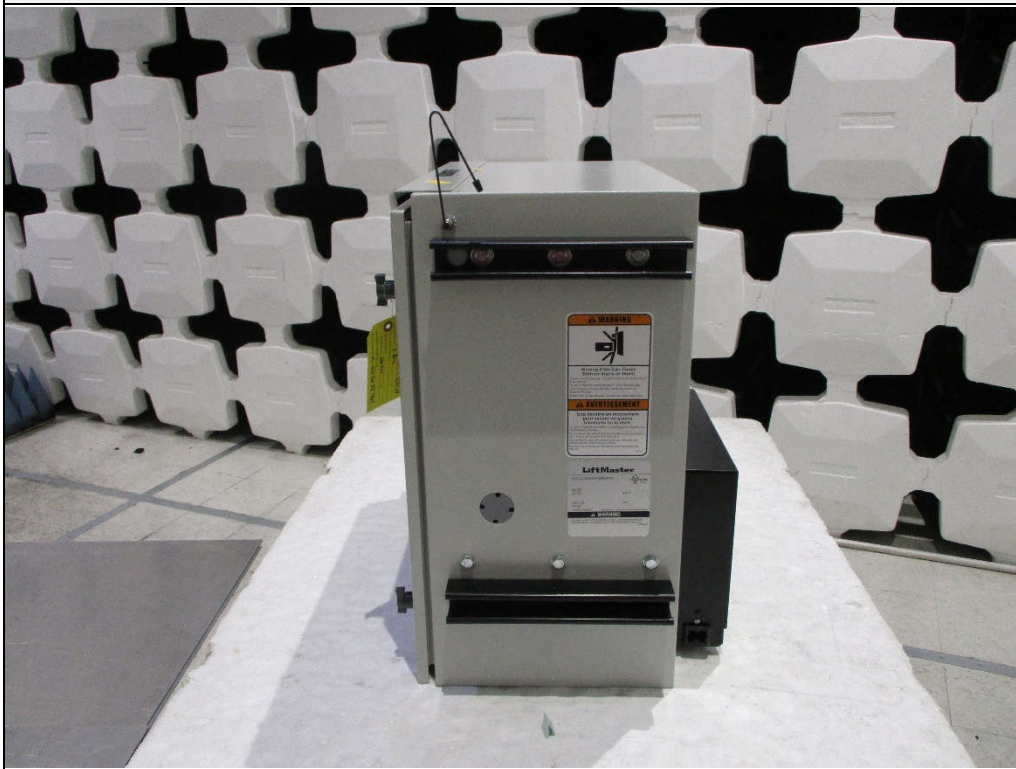
The Chamberlain Group Inc Main/Control PCB Transceiver, Model No. 001D9525-1-IND, did fully conform to the selected requirements of FCC "Code of Federal Regulations" Title 47, Part15, Subpart 15B, Section 15.107 and 15.109 for Receivers and Part 15, Subpart C, Sections 15.247 for a Frequency Hopping Spread Spectrum intentional radiator operating within the 902-928MHz band and 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 Frequency Hopping Spread Spectrum intentional radiator operating within the 902-928MHz band.

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, Part15, Subpart 15B, Section 15.107 and 15.109 for Receivers and Part 15, Subpart C, Sections 15.247 for a Frequency Hopping Spread Spectrum intentional radiator operating within the 902-928MHz band and 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 Frequency Hopping Spread Spectrum intentional radiator operating within the 902-928MHz band test specifications. The data presented in this test report pertains to the EUT on the test date specified. Any electrical or mechanical modifications made to the EUT subsequent to the specified test date will serve to invalidate the data and void this certification.

17. Photographs of EUT





18. Equipment List

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW14	PREAMPLIFIER	PLANAR	PE2-35-120-5R0-10-12-SFF	PL22671	1-20GHZ	9/24/2020	9/24/2021
CDW5	DESKTOP COMPUTER	ELITE	PENTIUM 4	006	3.8GHZ	N/A	
CDZ3	LAB WORKSTATION	ELITE	LWS-10		WINDOWS 10	CNR	
GRB0	1MHZ, LISN SIGNAL CHECKER	ELITE	LISNCHKR1M	1	1MHZ	6/17/2021	6/17/2023
NTA4	BILOG ANTENNA	TESEQ	6112D	46660	20-2000GHZ	10/5/2020	10/5/2021
NWQ2	DOUBLE RIDGED WAVEGUIDE ANTENNA	ETS LINDGREN	3117	66659	1GHZ-18GHZ	4/7/2020	4/7/2022
PLF1	CISPR16 50UH LISN	ELITE	CISPR16/70A	001	.15-30MHz	4/8/2021	4/8/2022
PLF3	CISPR16 50UH LISN	ELITE	CISPR16/70A	003	.15-30MHz	4/8/2021	4/8/2022
RBG0	EMI ANALYZER	ROHDE & SCHWARZ	ESW44	101533	10HZ-44GHZ	3/2/2021	3/2/2022
RBG2	EMI ANALYZER	ROHDE & SCHWARZ	ESW44	101591	2HZ-44GHZ	3/11/2021	3/11/2022
T1N7	10DB 20W ATTENUATOR	NARDA	766-10	---	DC-4GHZ	3/25/2020	3/25/2022
T2DS	20DB, 25W ATTENUATOR	WEINSCHTEL	46-20-34	BS0916	DC-18GHZ	4/2/2020	4/2/2022
T2S7	20DB 25W ATTENUATOR	WEINSCHTEL	46-20-34	BU8139	DC-18GHZ	3/10/2020	3/10/2022
XLT37	5W, 50 OHM TERMINATION	JFW INDUSTRIES	50T-199 N M	---	DC-18 GHZ	6/8/2021	6/8/2023
XPQ7	HIGH PASS FILTER	K&L MICROWAVE	4IH30-1804/T10000-0	5	1.8-10GHZ	2/3/2021	2/3/2023

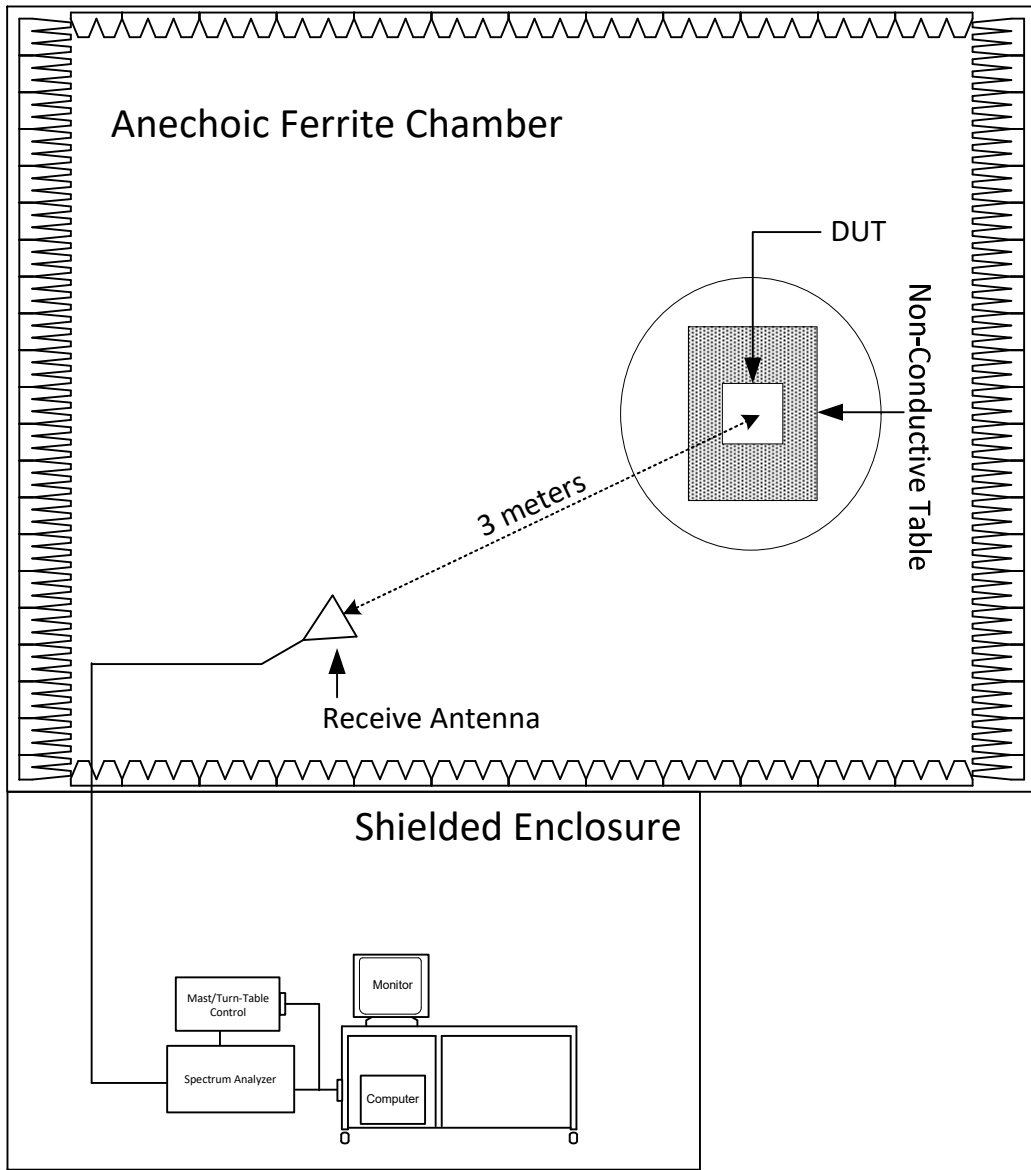
N/A: Not Applicable

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.

19. Block Diagram of Test Setup



Radiated Measurements Test Setup

20. Conducted Emissions Test (Unintentional Radiators)

Test Information	
Manufacturer	Chamberlain Group Inc
Product	Main/Control PCB Transceiver
Model	001D9525-1-IND
Serial No	NA
Mode	Motor Running and Rx

Test Setup Details	
Setup Format	Tabletop
Height of Support	NA
Type of Test Site	Shielded Enclosure
Test site used	R14ML
Note	None

Requirements		
All radio frequency voltages on the power lines for any frequency or frequencies of an unintentional radiator shall not exceed the limits in the following table:		
Frequency of Emission (MHz)	Conducted Limits (dB μ V)	
	Quasi-peak	Average
0.15-05	66 to 56*	56-46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency

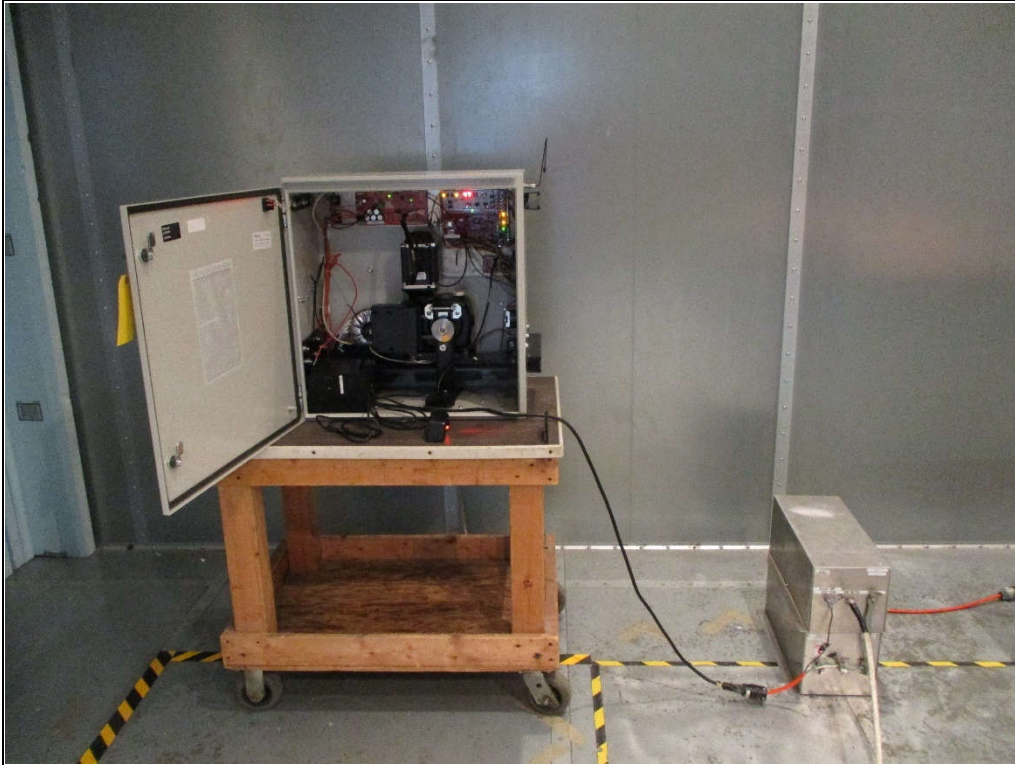
Procedures

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.

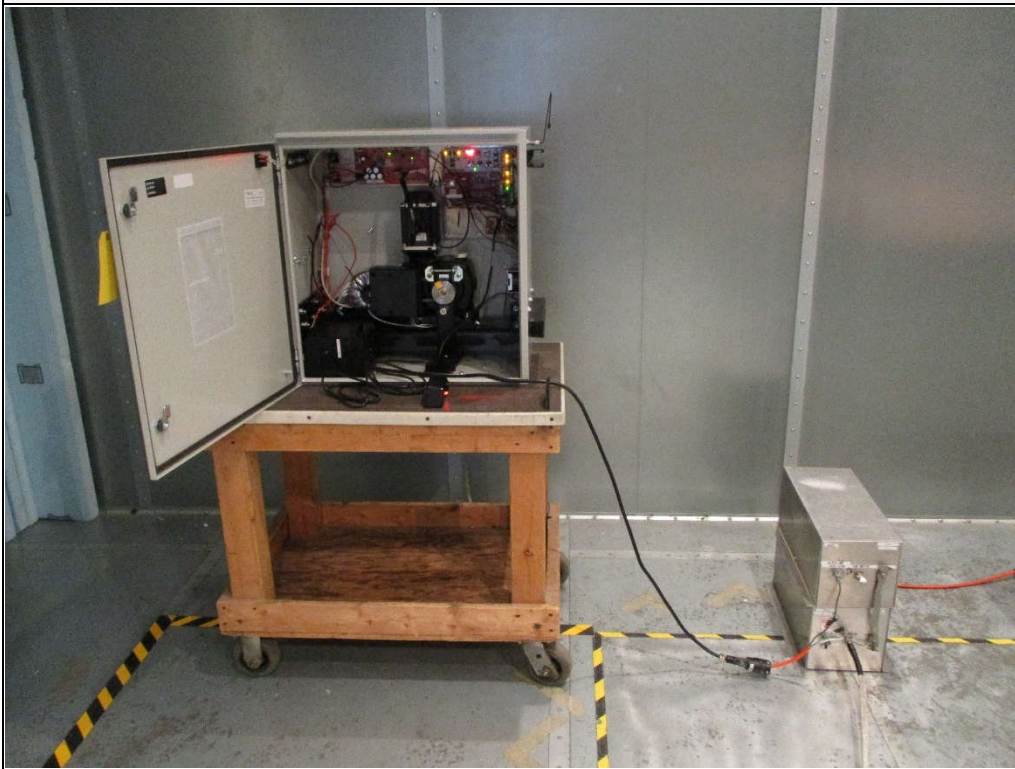
- 1) The EUT was operated in the Motor Running mode.
- 2) Measurements were first made on the 120V, 60Hz high line.
- 3) The frequency range from 150 kHz to 30 MHz was broken up into smaller frequency sub-bands.
- 4) Conducted emissions measurements were taken on the first frequency sub-band using a 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 120V, 60Hz neutral line.
- 8) Steps (2) through (7) were repeated with the EUT operated in the Rx mode.

Measurement Uncertainty

Measurement Type	Expanded Measurement Uncertainty
Conducted disturbance (mains port) (150 kHz – 30 MHz)	2.7



Test Setup for RF Conducted Emissions (AC Mains)



Test Setup for RF Conducted Emissions (AC Mains)

FCC Part 15 Subpart B Conducted Emissions Test Significant Emissions Data

VBR8 05/14/2020

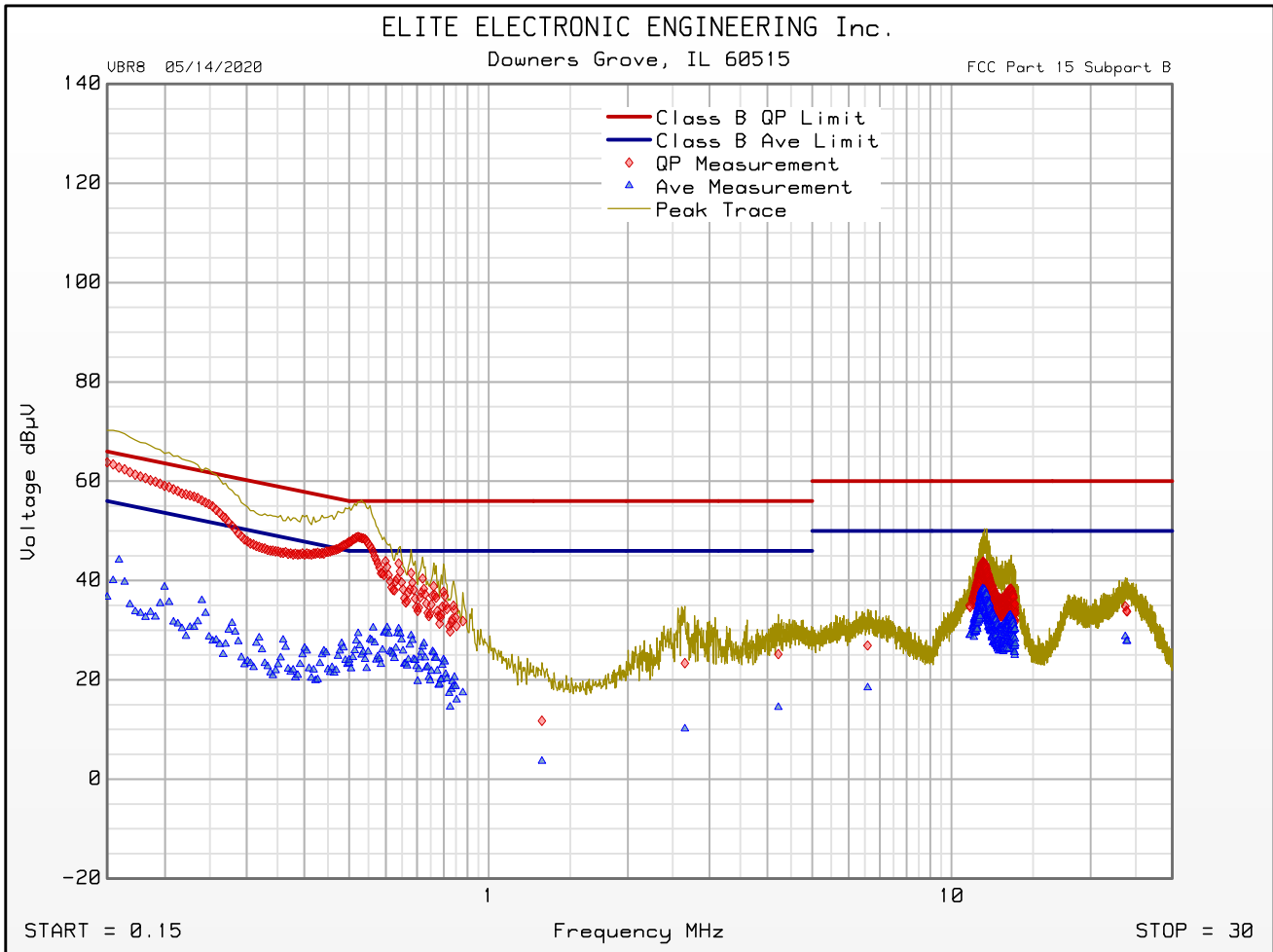
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Motor Running
 Line Tested : High
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : Motor running at 80%
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 10:41:02 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
0.150	63.8	66.0		36.7	56.0	
0.500	47.8	56.0		24.0	46.0	
0.523	48.8	56.0		29.3	46.0	
0.799	37.8	56.0		24.1	46.0	
1.304	11.7	56.0		3.6	46.0	
2.655	23.3	56.0		10.2	46.0	
4.225	25.2	56.0		14.5	46.0	
6.589	26.9	60.0		18.4	50.0	
11.709	43.8	60.0		38.2	50.0	
23.756	34.8	60.0		28.7	50.0	

FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 05/14/2020

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Motor Running
 Line Tested : High
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : Motor running at 80%
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 10:41:02 AM



Emissions Meet QP Limit
 Emissions Meet Ave Limit

FCC Part 15 Subpart B Conducted Emissions Test Significant Emissions Data

VBR8 05/14/2020

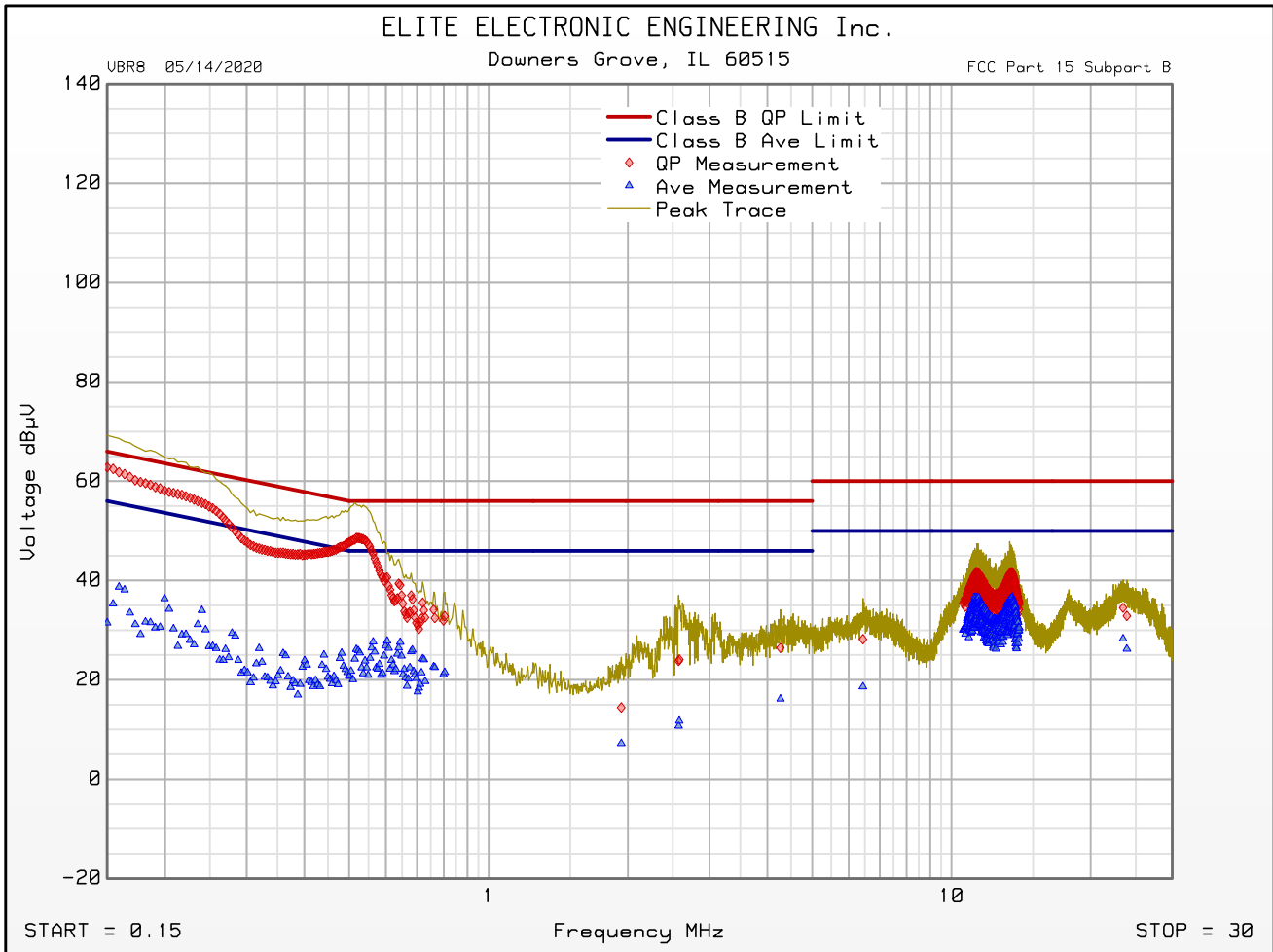
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Motor Running
 Line Tested : Neutral
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : Motor running at 80%
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 11:02:04 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
0.150	62.8	66.0		31.4	56.0	
0.209	57.7	63.3		30.3	53.3	
0.218	57.2	62.9		29.1	52.9	
0.500	47.7	56.0		20.8	46.0	
0.518	48.6	56.0		26.1	46.0	
0.804	32.8	56.0		21.5	46.0	
1.934	14.4	56.0		7.2	46.0	
2.583	24.1	56.0		11.7	46.0	
4.270	26.4	56.0		16.1	46.0	
6.436	28.2	60.0		18.6	50.0	
11.363	41.7	60.0		36.2	50.0	
23.486	34.5	60.0		28.3	50.0	

FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 05/14/2020

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Motor Running
 Line Tested : Neutral
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : Motor running at 80%
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 11:02:04 AM



Emissions Meet QP Limit
 Emissions Meet Ave Limit



FCC Part 15 Subpart B Conducted Emissions Test Significant Emissions Data

VBR8 05/14/2020

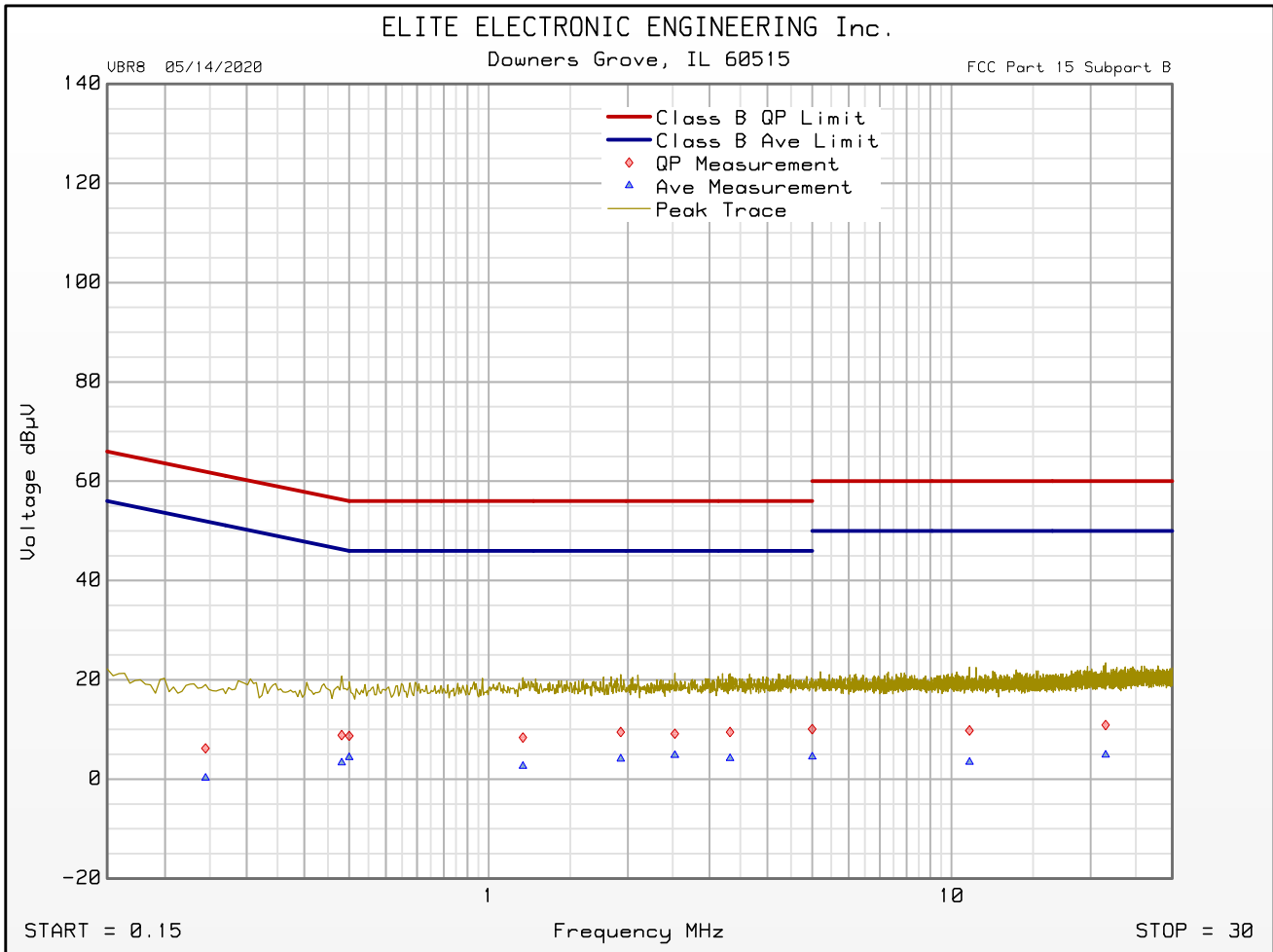
Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
DUT Revision : ---
Serial Number : NA
DUT Mode : Rx
Line Tested : High
Scan Step Time [ms] : 30
Meas. Threshold [dB] : -10
Notes : 310-390MHz
Test Engineer : J. Cardenas
Limit : Class B
Test Date : Aug 04, 2021 11:15:10 AM
Data Filter : Up to 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
0.245	6.2	61.9		0.2	51.9	
0.500	8.7	56.0		4.4	46.0	
1.186	8.4	56.0		2.6	46.0	
1.930	9.5	56.0		4.1	46.0	
2.525	9.2	56.0		4.8	46.0	
5.000	10.1	56.0		4.5	46.0	
10.935	9.8	60.0		3.4	50.0	
21.529	10.9	60.0		4.9	50.0	

FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 05/14/2020

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Rx
 Line Tested : High
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : 310-390MHz
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 11:15:10 AM



Emissions Meet QP Limit
 Emissions Meet Ave Limit

FCC Part 15 Subpart B Conducted Emissions Test Significant Emissions Data

VBR8 05/14/2020

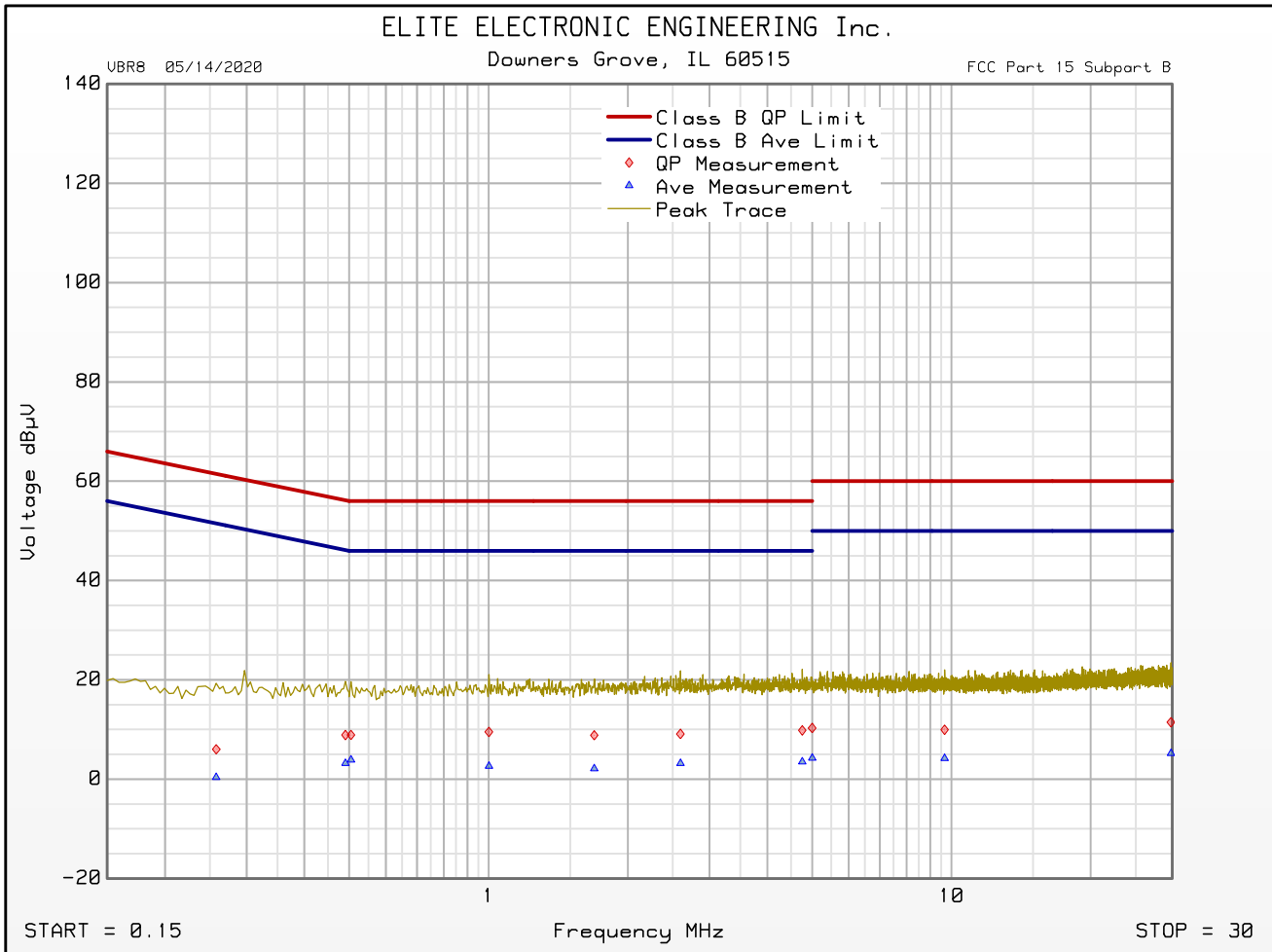
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Rx
 Line Tested : Neutral
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : 310-390MHz
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 11:10:06 AM
 Data 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
0.258	6.0	61.5		0.4	51.5	
0.491	8.9	56.2		3.2	46.2	
0.505	8.9	56.0		3.9	46.0	
1.002	9.5	56.0		2.6	46.0	
1.691	8.8	56.0		2.1	46.0	
2.597	9.1	56.0		3.2	46.0	
5.000	10.3	56.0		4.3	46.0	
9.666	9.9	60.0		4.2	50.0	
29.786	11.5	60.0		5.2	50.0	

FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 05/14/2020

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Rx
 Line Tested : Neutral
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : 310-390MHz
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 11:10:06 AM



Emissions Meet QP Limit
 Emissions Meet Ave Limit

FCC Part 15 Subpart B Conducted Emissions Test Significant Emissions Data

VBR8 05/14/2020

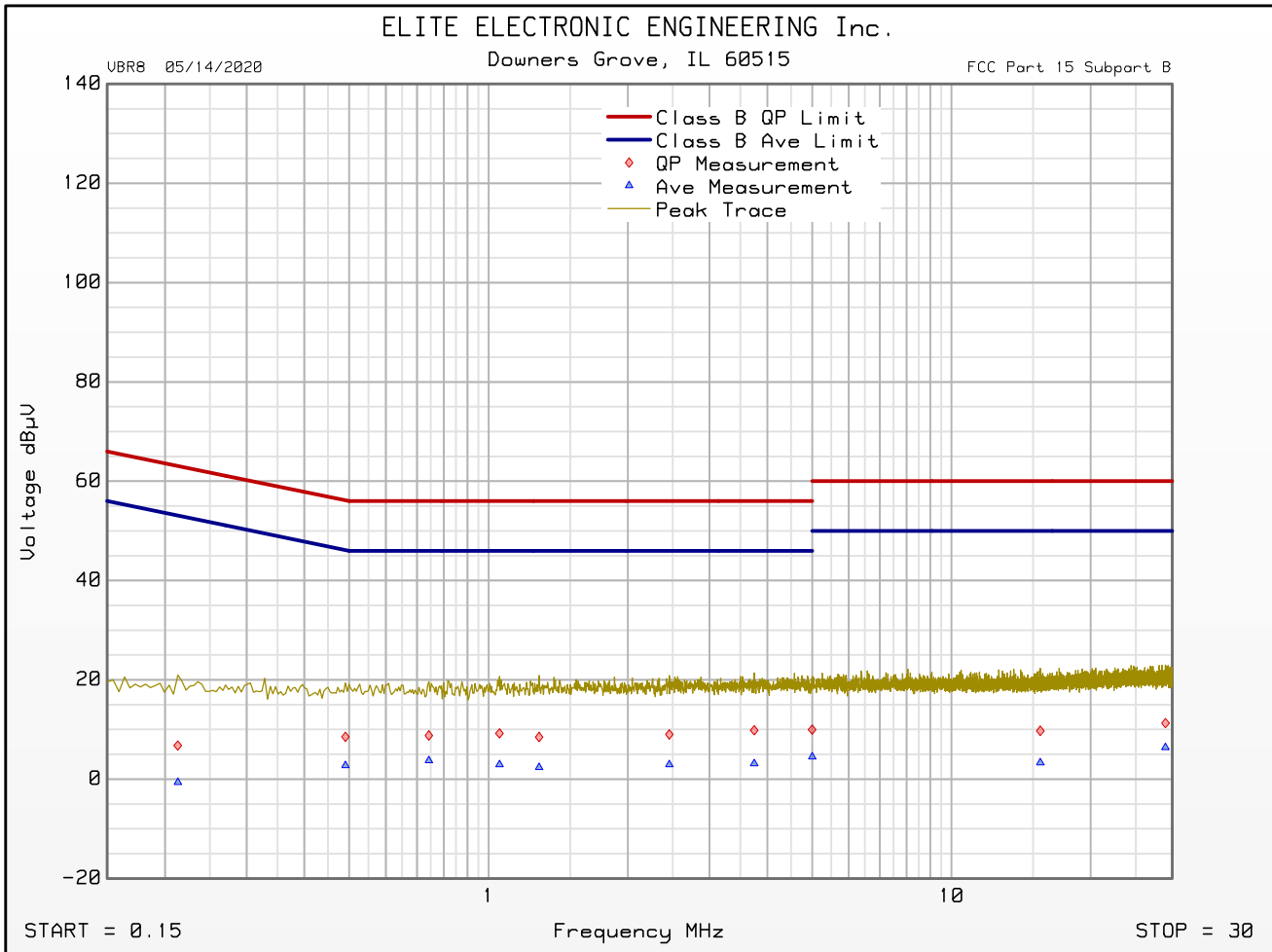
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Rx
 Line Tested : High
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : 433.3-434.54MHz
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 11:25:13 AM
 Data 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
0.213	6.8	63.1		-0.7	53.1	
0.491	8.5	56.2		2.7	46.2	
0.743	8.8	56.0		3.7	46.0	
1.056	9.2	56.0		2.9	46.0	
1.286	8.5	56.0		2.4	46.0	
2.457	9.0	56.0		3.0	46.0	
5.000	10.0	56.0		4.5	46.0	
15.561	9.7	60.0		3.3	50.0	
28.999	11.3	60.0		6.4	50.0	

FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 05/14/2020

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Rx
 Line Tested : High
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : 433.3-434.54MHz
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 11:25:13 AM



Emissions Meet QP Limit
 Emissions Meet Ave Limit

FCC Part 15 Subpart B Conducted Emissions Test Significant Emissions Data

VBR8 05/14/2020

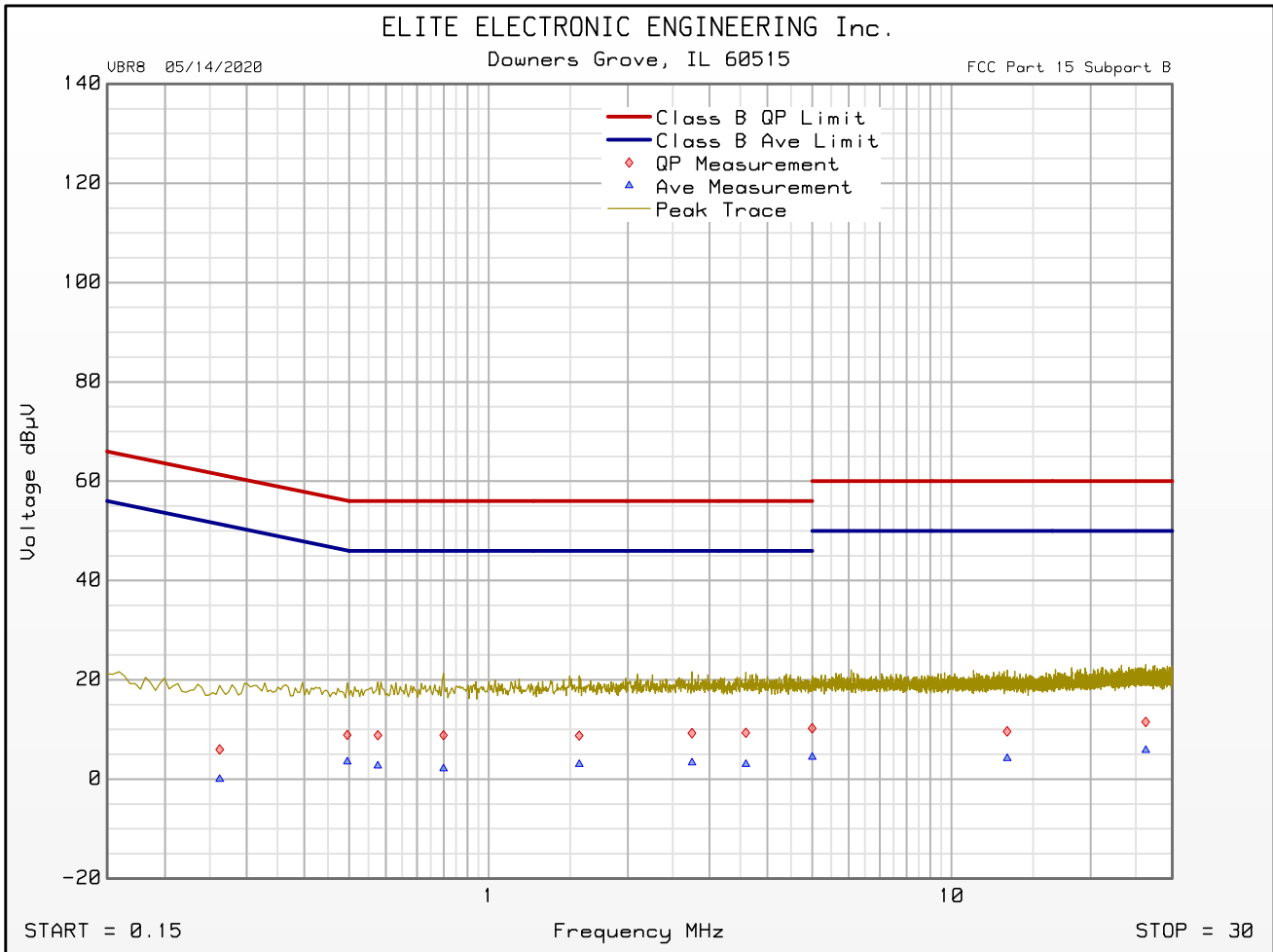
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Rx
 Line Tested : Neutral
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : 433.3-434.54MHz
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 11:32:10 AM
 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 dB μ V	Quasi-peak Limit dB μ V	Excessive Quasi-peak Emissions	Average Level dB μ V	Average Limit dB μ V	Excessive Average Emissions
0.263	6.0	61.4		0.0	51.4	
0.495	8.9	56.1		3.5	46.1	
0.577	8.8	56.0		2.7	46.0	
0.799	8.8	56.0		2.1	46.0	
1.570	8.8	56.0		3.0	46.0	
2.750	9.3	56.0		3.3	46.0	
5.000	10.2	56.0		4.4	46.0	
13.190	9.6	60.0		4.2	50.0	
26.276	11.5	60.0		5.8	50.0	

FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 05/14/2020

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Rx
 Line Tested : Neutral
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : 433.3-434.54MHz
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 11:32:10 AM



Emissions Meet QP Limit
 Emissions Meet Ave Limit

FCC Part 15 Subpart B Conducted Emissions Test Significant Emissions Data

VBR8 05/14/2020

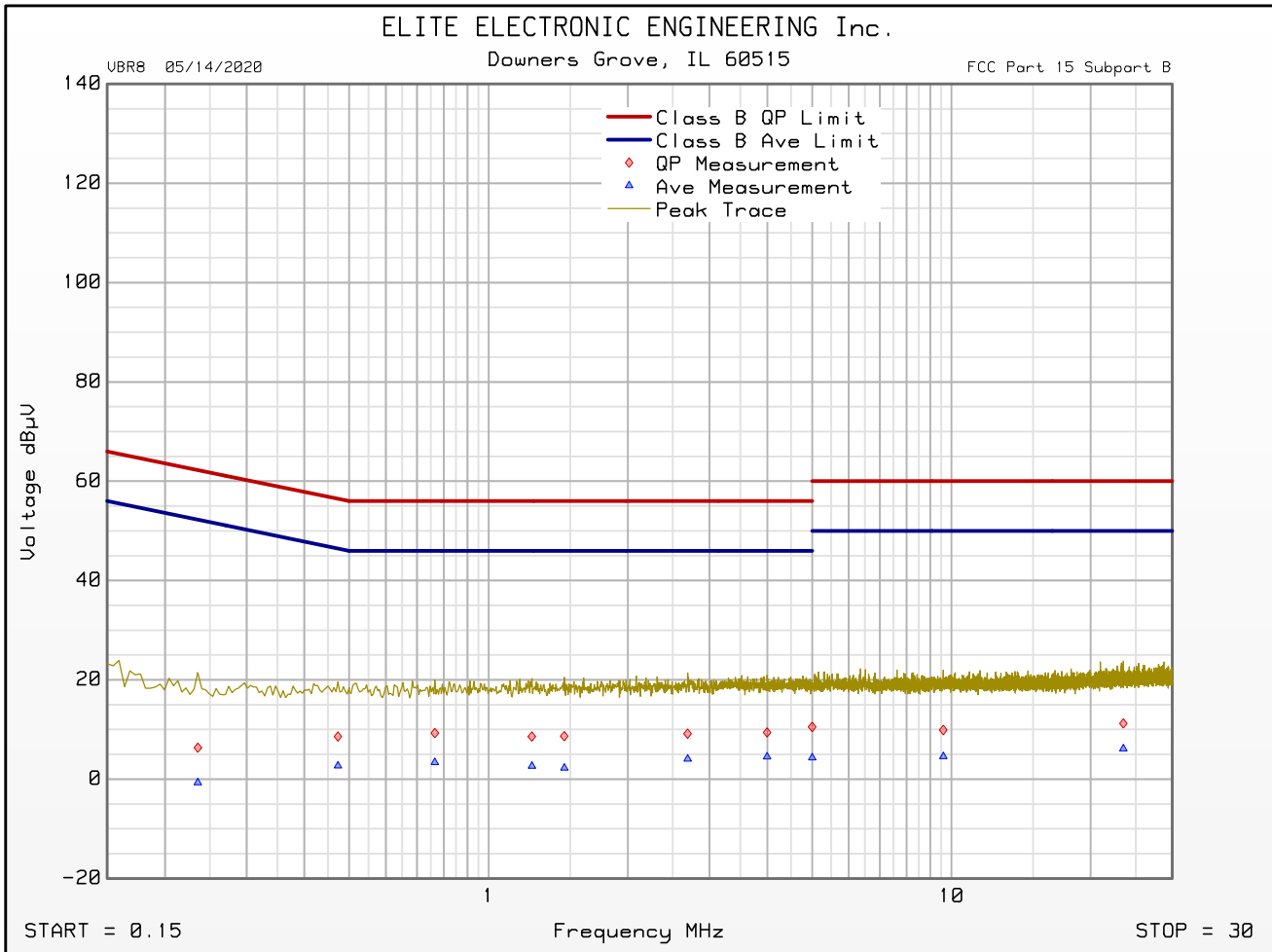
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Rx
 Line Tested : High
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : 902-928MHz
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 11:54:16 AM
 Data Filter : 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
0.236	6.3	62.3		-0.7	52.3	
0.473	8.6	56.5		2.7	46.5	
0.766	9.3	56.0		3.4	46.0	
1.240	8.6	56.0		2.6	46.0	
1.457	8.7	56.0		2.3	46.0	
2.691	9.1	56.0		4.1	46.0	
5.000	10.5	56.0		4.3	46.0	
9.599	9.9	60.0		4.6	50.0	
23.513	11.2	60.0		6.1	50.0	

FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 05/14/2020

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Rx
 Line Tested : High
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : 902-928MHz
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 11:54:16 AM



Emissions Meet QP Limit
 Emissions Meet Ave Limit



FCC Part 15 Subpart B Conducted Emissions Test Significant Emissions Data

VBR8 05/14/2020

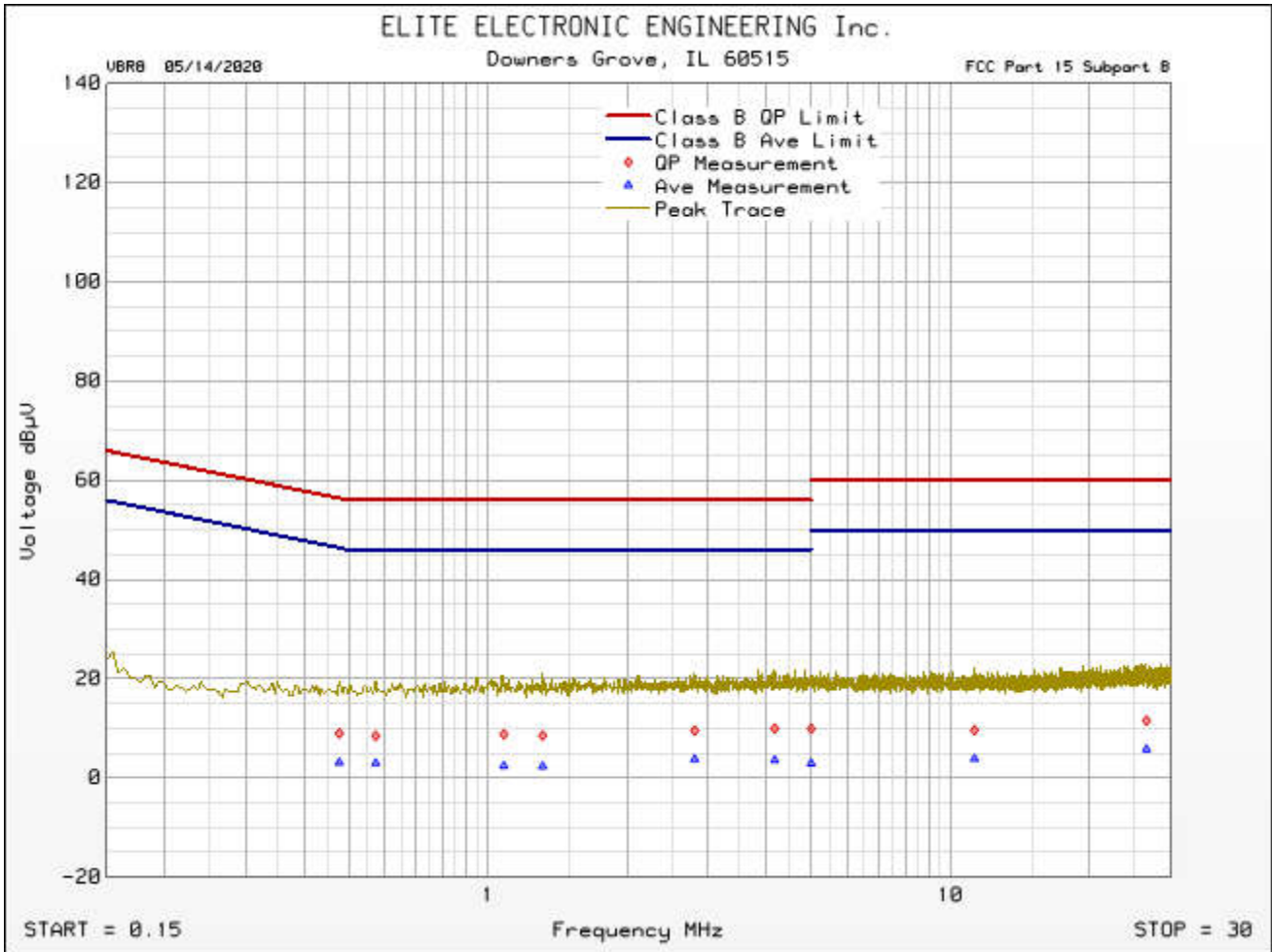
Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
DUT Revision : ---
Serial Number : NA
DUT Mode : Rx
Line Tested : Neutral
Scan Step Time [ms] : 30
Meas. Threshold [dB] : -10
Notes : 902-928MHz
Test Engineer : J. Cardenas
Limit : Class B
Test Date : Aug 04, 2021 11:38:57 AM
Data Filter : Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

Freq MHz	Quasi-peak Level dB μ V	Quasi-peak Limit dB μ V	Excessive Quasi-peak Emissions	Average Level dB μ V	Average Limit dB μ V	Excessive Average Emissions
0.477	9.1	56.4		3.2	46.4	
0.572	8.5	56.0		3.1	46.0	
1.083	8.9	56.0		2.5	46.0	
1.313	8.6	56.0		2.4	46.0	
2.799	9.6	56.0		3.9	46.0	
4.171	10.0	56.0		3.7	46.0	
5.000	10.0	56.0		3.0	46.0	
11.277	9.7	60.0		3.9	50.0	
26.555	11.6	60.0		5.8	50.0	

FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 05/14/2020

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Rx
 Line Tested : Neutral
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : 902-928MHz
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 11:38:57 AM



Emissions Meet QP Limit
 Emissions Meet Ave Limit

21. Radiated Emissions Test (Unintentional Radiators)

Test Information	
Manufacturer	Chamberlain Group Inc
Product	Main/Control PCB Transceiver
Model	001D9525-1-IND
Serial No	NA
Mode	Motor Running and Rx

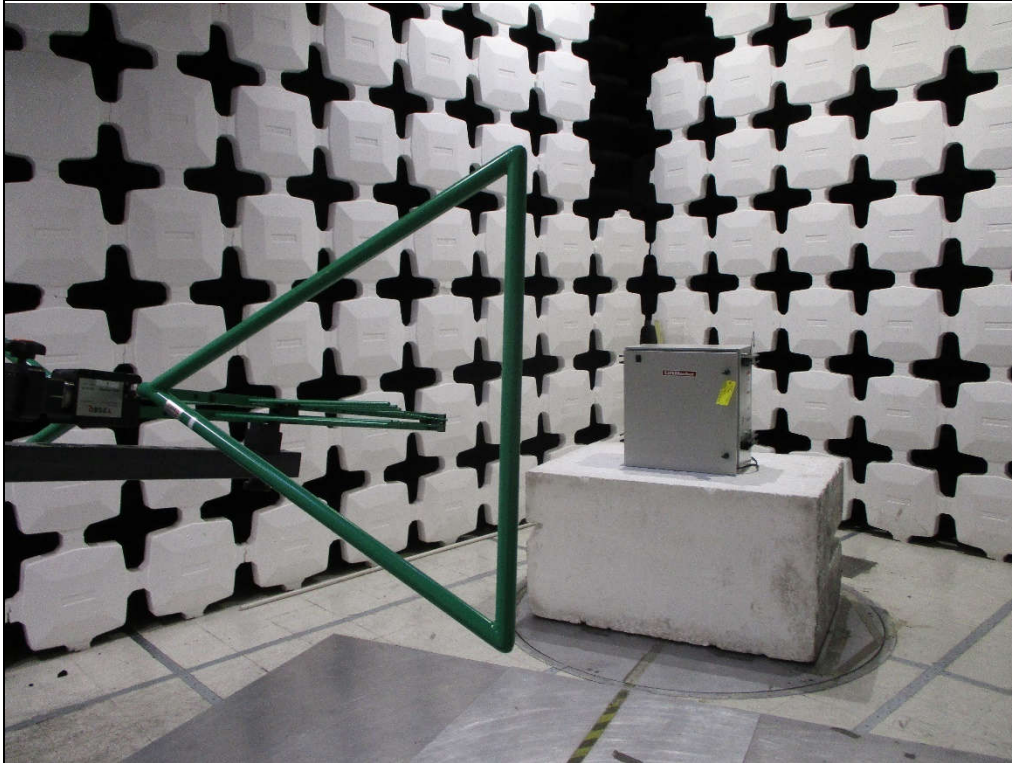
Test Setup Details	
Setup Format	Tabletop
Height of Support	NA
Type of Test Site	Semi-Anechoic Chamber
Test site used	Room 29
Type of Antennas Used	Below 1GHz: Bilog (or equivalent) Above 1GHz: Double-ridged waveguide (or equivalent)
Highest Internal Frequency of the EUT:	928MHz
Highest Measurement Frequency:	5GHz
Notes	The cables were manually maximized during the preliminary emissions sweeps. The cable arrangement which resulted in the worst-case emissions was utilized.

Requirements	
The field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:	
Frequency of Emission (MHz)	Field Strength ($\mu\text{V/m}$)
30-88	100
88-216	150
216-960	200
Above 960	500

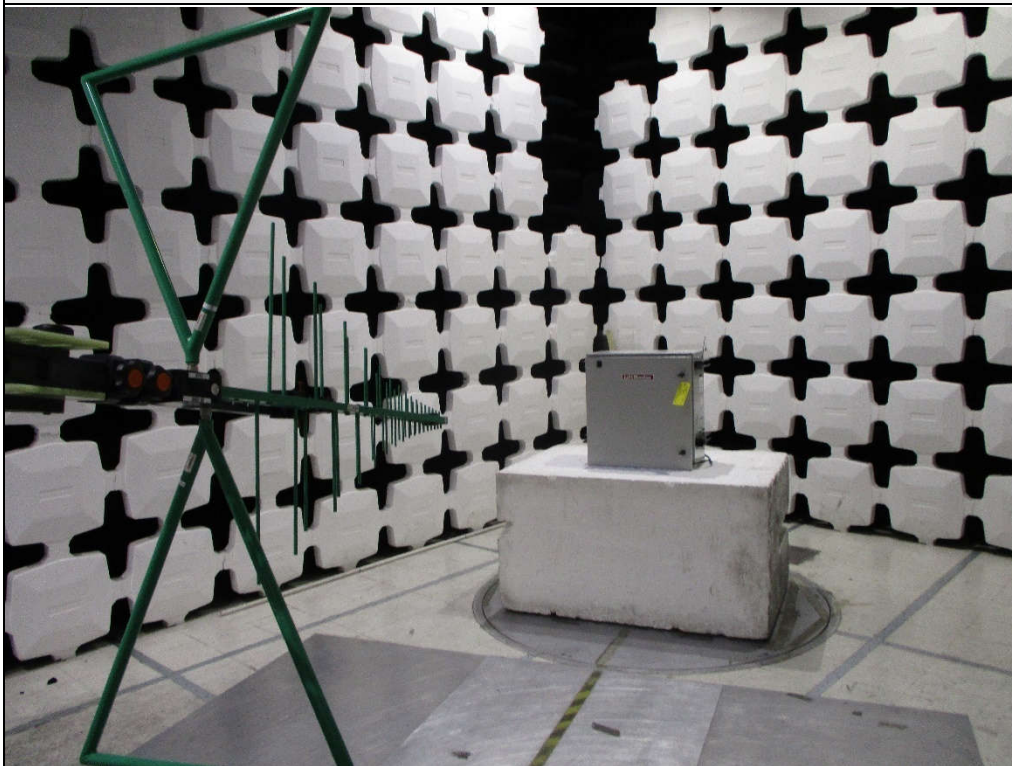
Procedures
<p>Since a quasi-peak detector and an average detector requires a long integration times, it is not practical to automatically sweep through the quasi-peak and average levels. Therefore, radiated emissions from the EUT were first scanned using a peak detector and automatically plotted. The frequencies where significant emission levels were noted were then remeasured using the quasi-peak detector or average detector.</p> <p>The EUT was placed on a 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 Max Frequency Tested 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.</p> <p>Final radiated emissions were performed on all significant broadband and narrowband emissions found in the exploratory sweeps using the following methods:</p>

Procedures
<p>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.</p> <p>2) To ensure that maximum or worst case, emission levels were measured, the following steps were taken:</p> <ul style="list-style-type: none"> a) The EUT was rotated so that all sides were exposed to the receiving antenna. b) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured. c) The measuring antenna was raised and lowered from 1 to 4 meters for each antenna polarization to maximize the readings. d) 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.

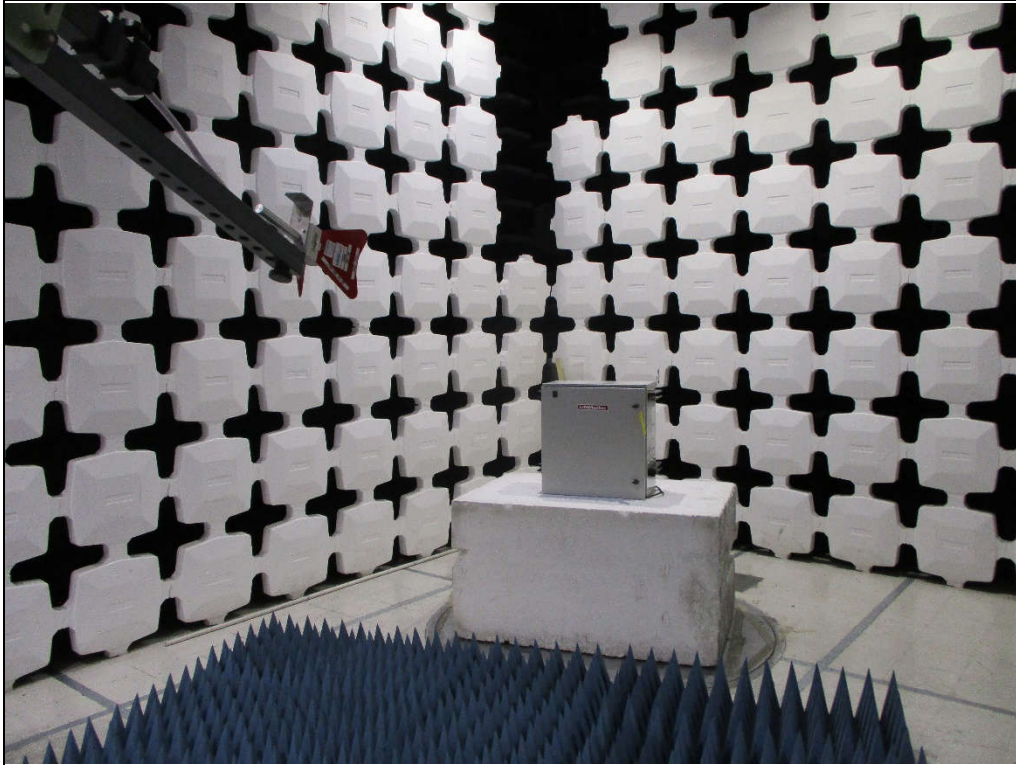
Measurement Uncertainty	
Measurement Type	Expanded Measurement Uncertainty
Radiated disturbance (electric field strength on an open area test site or alternative test site) (30 MHz – 1000 MHz)	4.3
Radiated disturbance (electric field strength on an open area test site or alternative test site) (1 GHz – 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



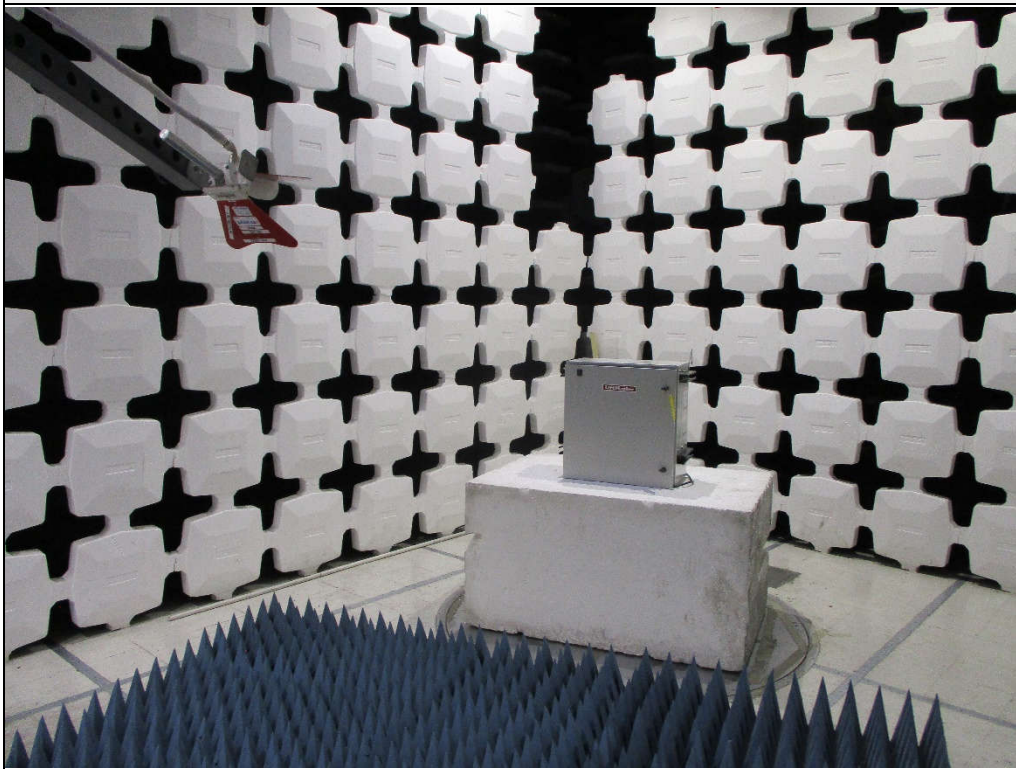
Test Setup for Radiated Emissions: 30MHz to 1GHz, Horizontal Polarization



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



Test Setup for Radiated Emissions: 1GHz to 5GHz, Horizontal Polarization



Test Setup for Radiated Emissions: 1GHz to 5GHz, Vertical Polarization



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

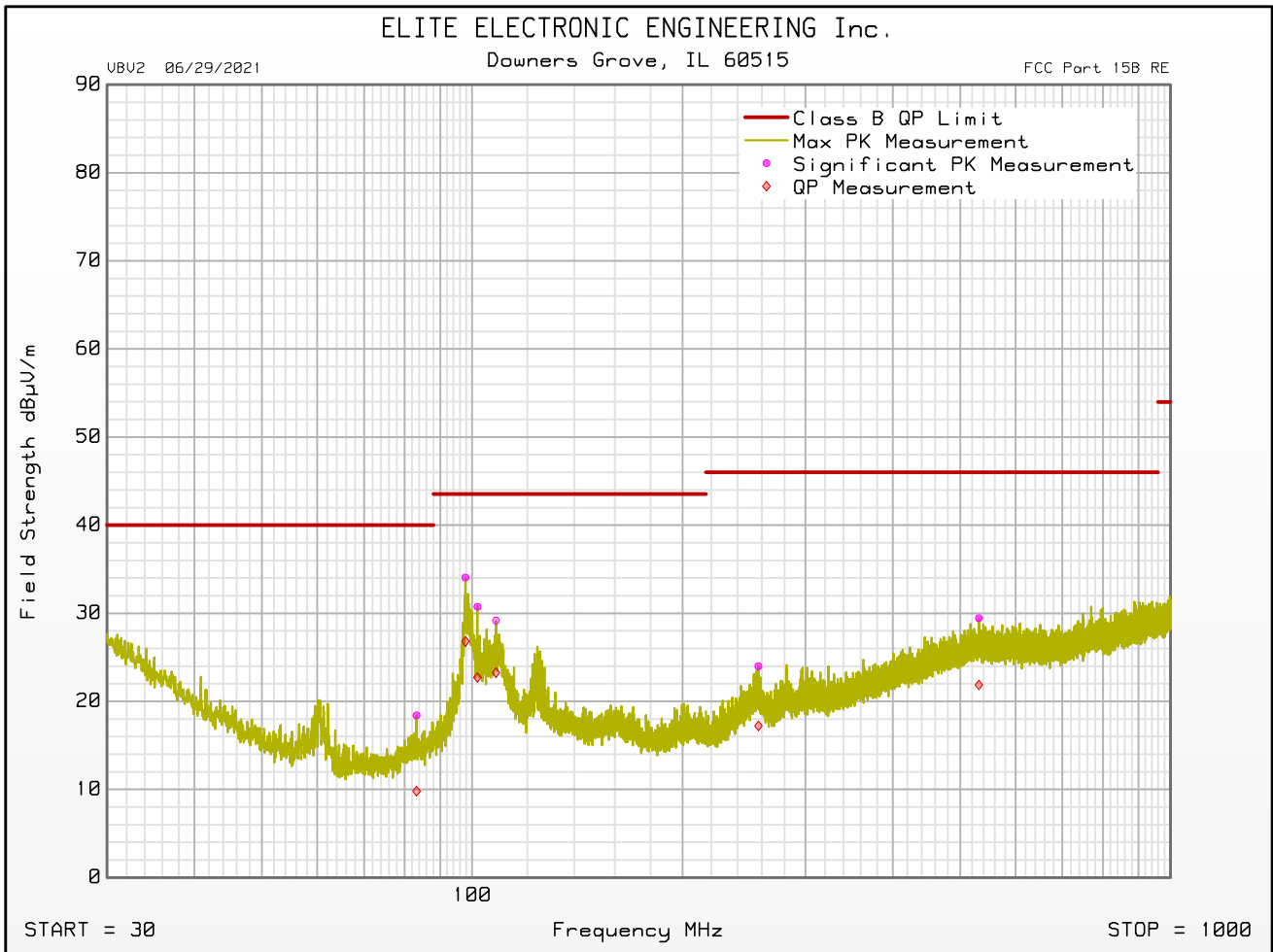
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Motor Running
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : Motor running at 80%
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 12:46:35 PM

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
30.180	4.9	-2.4	24.9	0.0	0.4	0.0	30.1	22.8	40.0	-17.2	Vertical	120	270	
44.040	14.3	8.0	17.5	0.0	0.4	0.0	32.1	25.9	40.0	-14.1	Vertical	120	315	
47.880	15.1	8.0	15.8	0.0	0.4	0.0	31.3	24.2	40.0	-15.8	Vertical	120	315	
60.540	15.5	9.4	12.4	0.0	0.4	0.0	28.3	22.2	40.0	-17.8	Vertical	200	315	
63.540	11.4	4.8	12.3	0.0	0.4	0.0	24.0	17.5	40.0	-22.5	Vertical	120	90	
83.220	4.3	-4.3	13.7	0.0	0.4	0.0	18.4	9.8	40.0	-30.2	Horizontal	200	315	
97.780	17.2	9.9	16.5	0.0	0.4	0.0	34.1	26.8	43.5	-16.7	Horizontal	340	270	
101.740	13.3	5.3	17.0	0.0	0.4	0.0	30.7	22.7	43.5	-20.8	Horizontal	200	225	
108.160	11.2	5.3	17.5	0.0	0.4	0.0	29.2	23.3	43.5	-20.3	Horizontal	200	270	
200.380	6.8	0.4	15.4	0.0	0.8	0.0	23.0	16.6	43.5	-26.9	Vertical	200	0	
256.920	4.4	-2.4	18.9	0.0	0.8	0.0	24.0	17.2	46.0	-28.8	Horizontal	120	135	
531.600	3.5	-4.1	24.8	0.0	1.1	0.0	29.4	21.9	46.0	-24.1	Horizontal	200	90	
938.580	2.9	-4.3	26.9	0.0	1.5	0.0	31.4	24.2	46.0	-21.8	Vertical	340	45	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

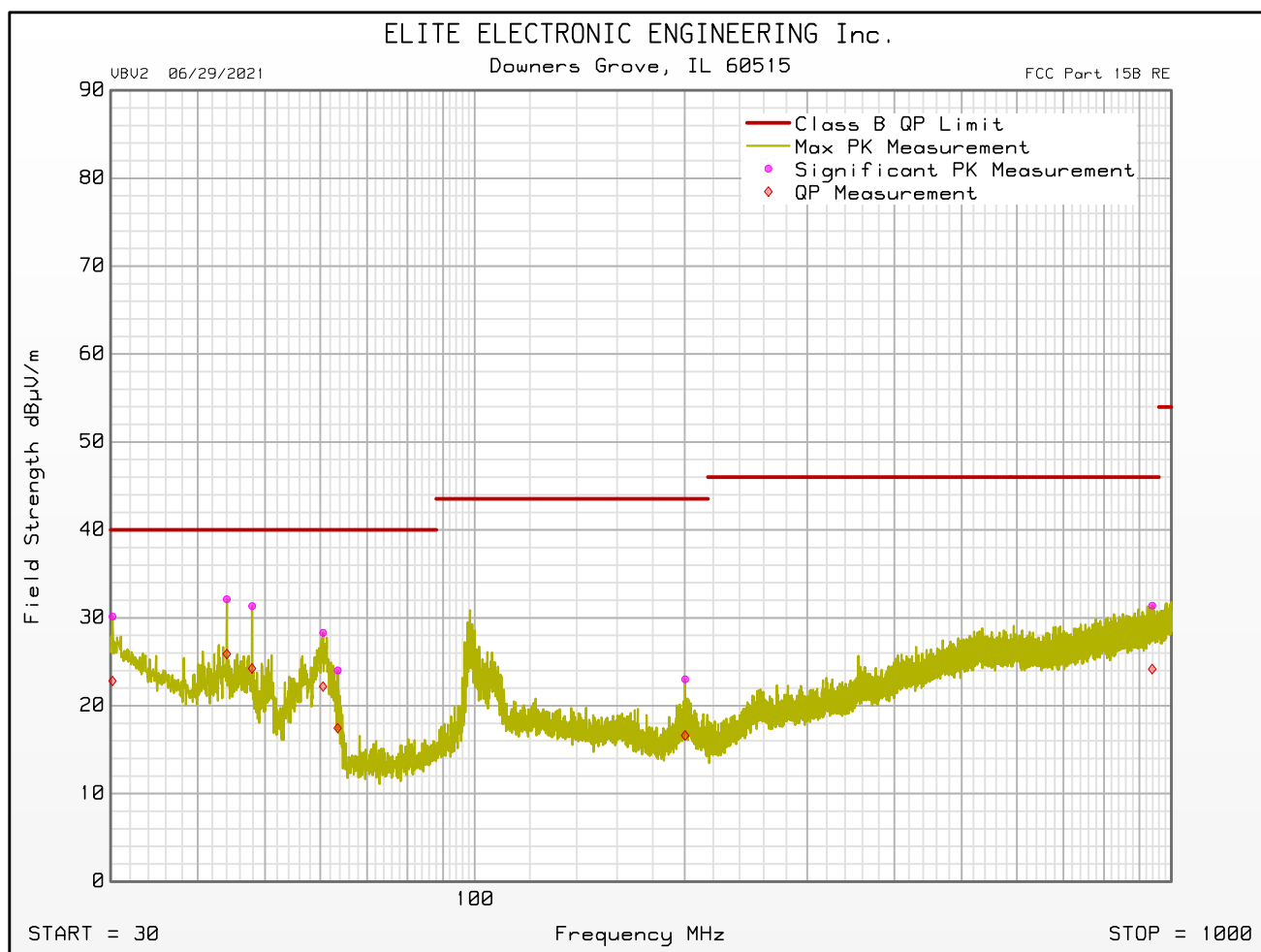
Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Motor Running
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Horizontal
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes : Motor running at 80%
Test Engineer : J. Cardenas
Test Date : Aug 09, 2021 12:46:35 PM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Motor Running
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Vertical
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes : Motor running at 80%
Test Engineer : J. Cardenas
Test Date : Aug 09, 2021 12:46:35 PM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Motor Running
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : Motor running at 80%
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 12:23:09 PM

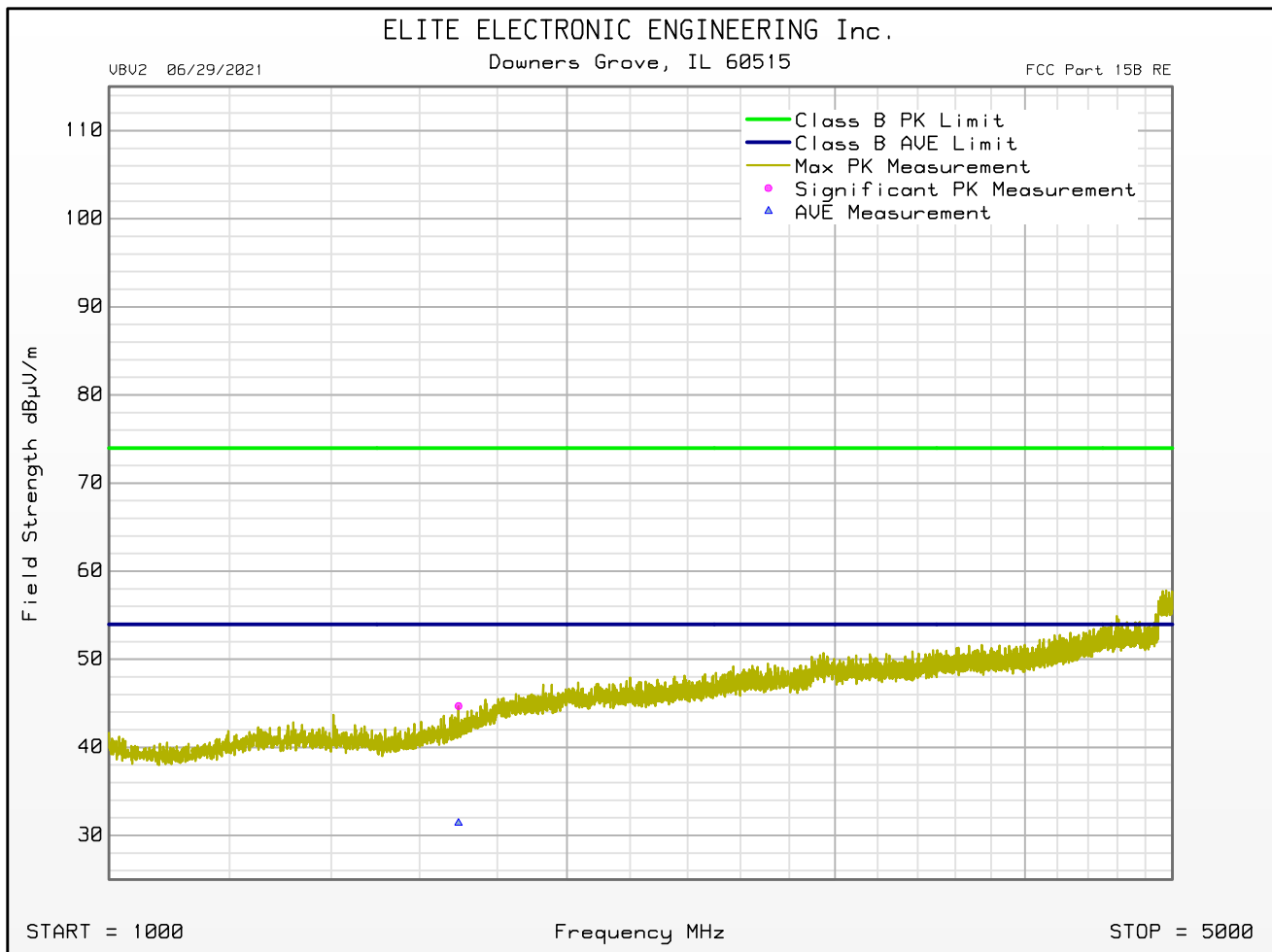
Freq MHz	Peak Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBuV/m	Peak Limit dBuV/m	Peak Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Peak Level
1237.000	12.5	29.0	0.0	1.8	0.0	43.3	74.0	-30.7	Vertical	200	180	
1697.000	12.9	29.7	0.0	2.1	0.0	44.7	74.0	-29.3	Horizontal	340	180	
1983.500	14.7	31.8	0.0	2.3	0.0	48.8	74.0	-25.2	Vertical	200	45	
2723.000	15.3	32.5	0.0	2.8	0.0	50.5	74.0	-23.5	Vertical	200	225	
3595.000	16.2	33.1	0.0	3.3	0.0	52.5	74.0	-21.4	Vertical	120	135	
4898.500	20.7	34.2	0.0	3.8	0.0	58.7	74.0	-15.3	Vertical	120	90	

Freq MHz	Average Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Average Total dBuV/m	Average Limit dBuV/m	Average Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Average Level
1237.000	-0.8	29.0	0.0	1.8	0.0	30.0	54.0	-24.0	Vertical	200	180	
1697.000	-0.4	29.7	0.0	2.1	0.0	31.4	54.0	-22.6	Horizontal	340	180	
1983.500	0.5	31.8	0.0	2.3	0.0	34.7	54.0	-19.3	Vertical	200	45	
2723.000	1.4	32.5	0.0	2.8	0.0	36.6	54.0	-17.3	Vertical	200	225	
3595.000	2.1	33.1	0.0	3.3	0.0	38.5	54.0	-15.5	Vertical	120	135	
4898.500	7.3	34.2	0.0	3.8	0.0	45.2	54.0	-8.7	Vertical	120	90	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

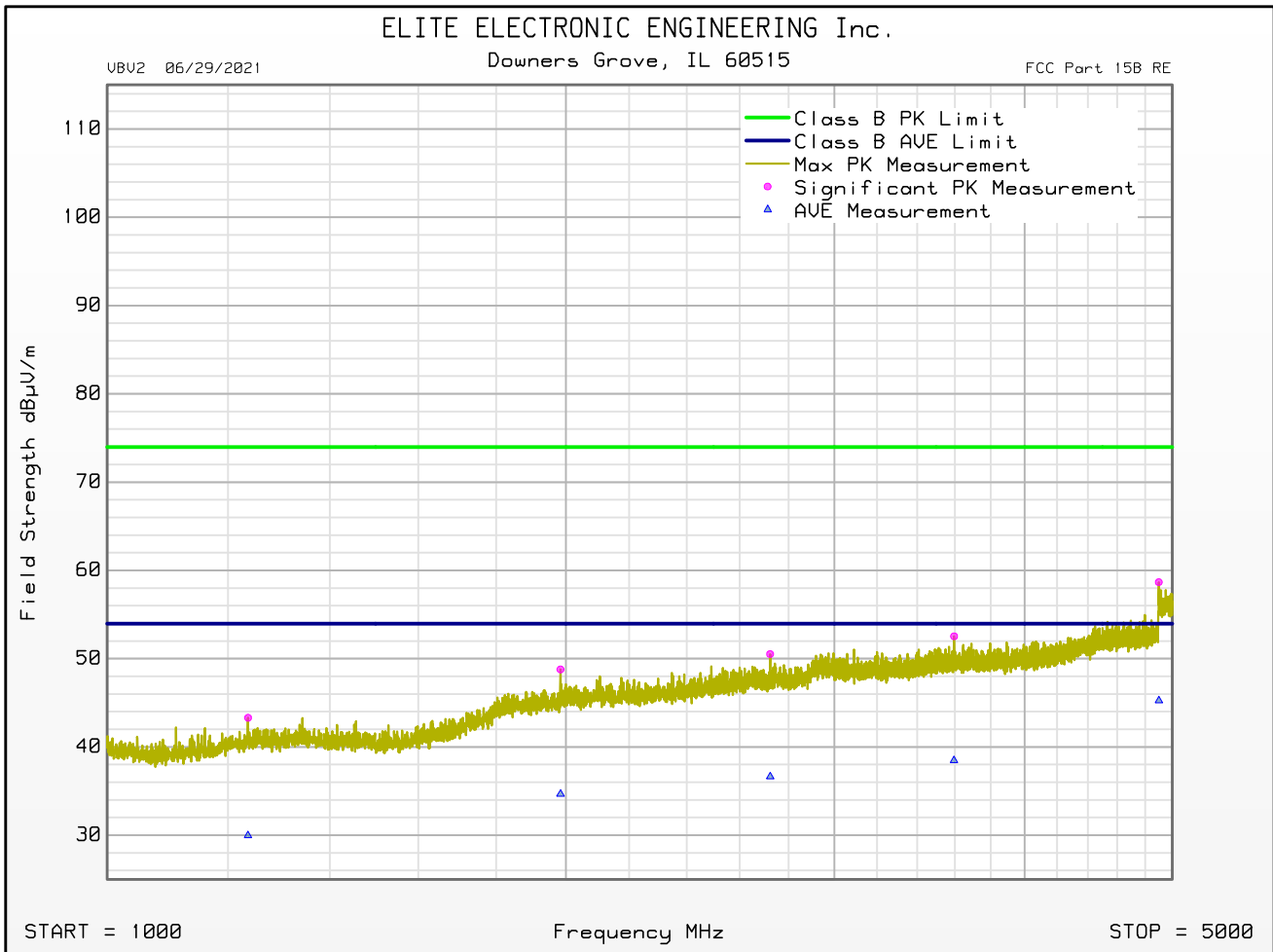
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Motor Running
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Horizontal
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : Motor running at 80%
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 12:23:09 PM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Motor Running
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Vertical
Scan Type : Stepped Scan
Test RBW : 1 MHz
Prelim Dwell Time (s) : 0.0001
Notes : Motor running at 80%
Test Engineer : J. Cardenas
Test Date : Aug 10, 2021 12:23:09 PM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

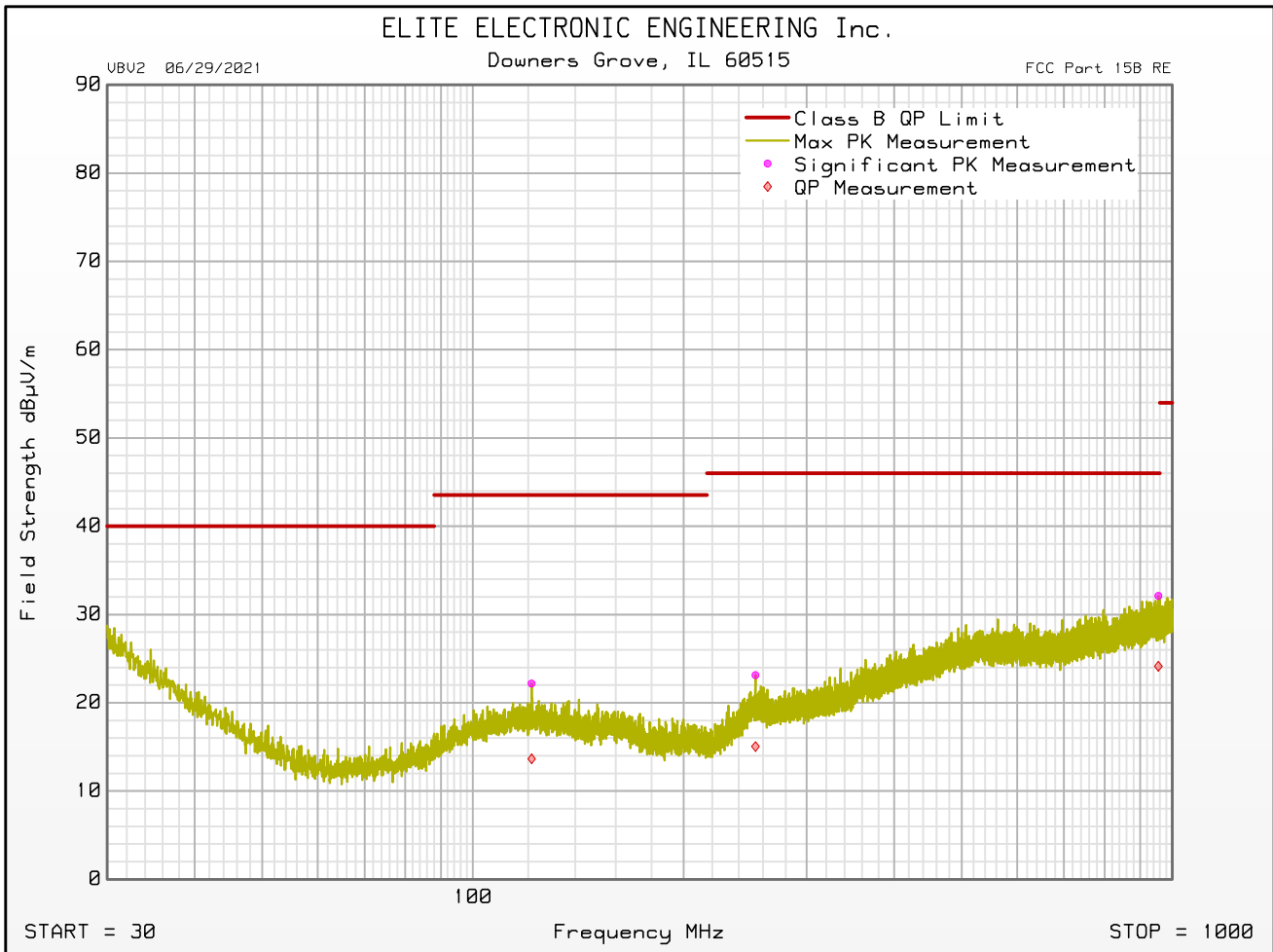
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 902.259MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 09:01:54 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 dBuV/m	QP Total dBuV/m	QP Limit dBuV/m	QP Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive QP Level
30.660	4.6	-2.7	24.6	0.0	0.4	0.0	29.6	22.3	40.0	-17.7	Vertical	340	135	
93.940	4.4	-4.4	15.9	0.0	0.4	0.0	20.6	11.9	43.5	-31.7	Vertical	120	45	
121.300	3.4	-5.1	18.2	0.0	0.5	0.0	22.2	13.7	43.5	-29.9	Horizontal	120	225	
253.500	3.6	-4.5	18.8	0.0	0.8	0.0	23.1	15.0	46.0	-31.0	Horizontal	120	270	
519.180	4.2	-4.2	24.4	0.0	1.1	0.0	29.7	21.3	46.0	-24.7	Vertical	200	225	
955.080	3.5	-4.5	27.1	0.0	1.5	0.0	32.1	24.1	46.0	-21.9	Horizontal	200	135	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

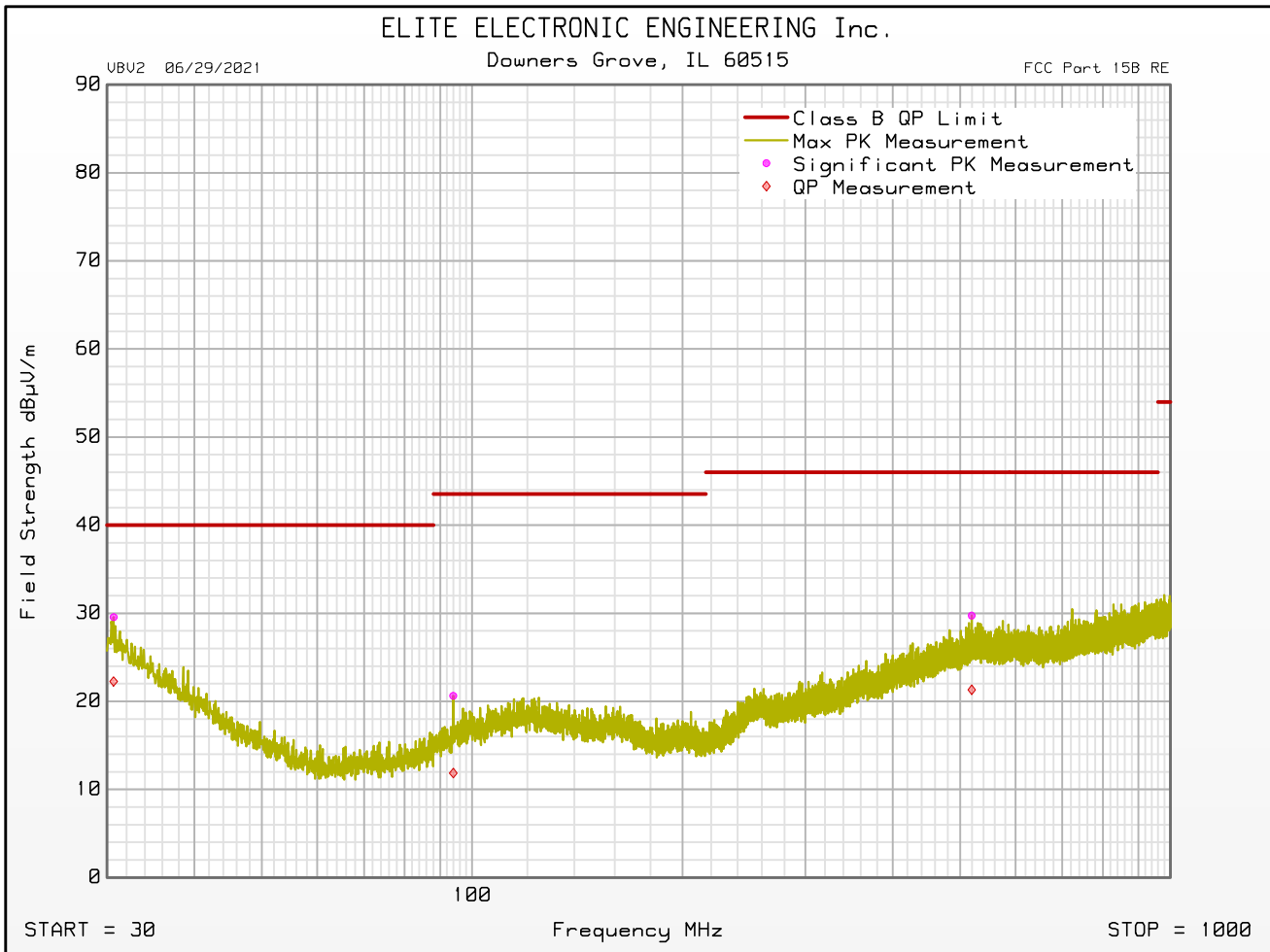
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Horizontal
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 902.259MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 09:01:54 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Vertical
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 902.259MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 09:01:54 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 902.259MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 09:01:08 AM

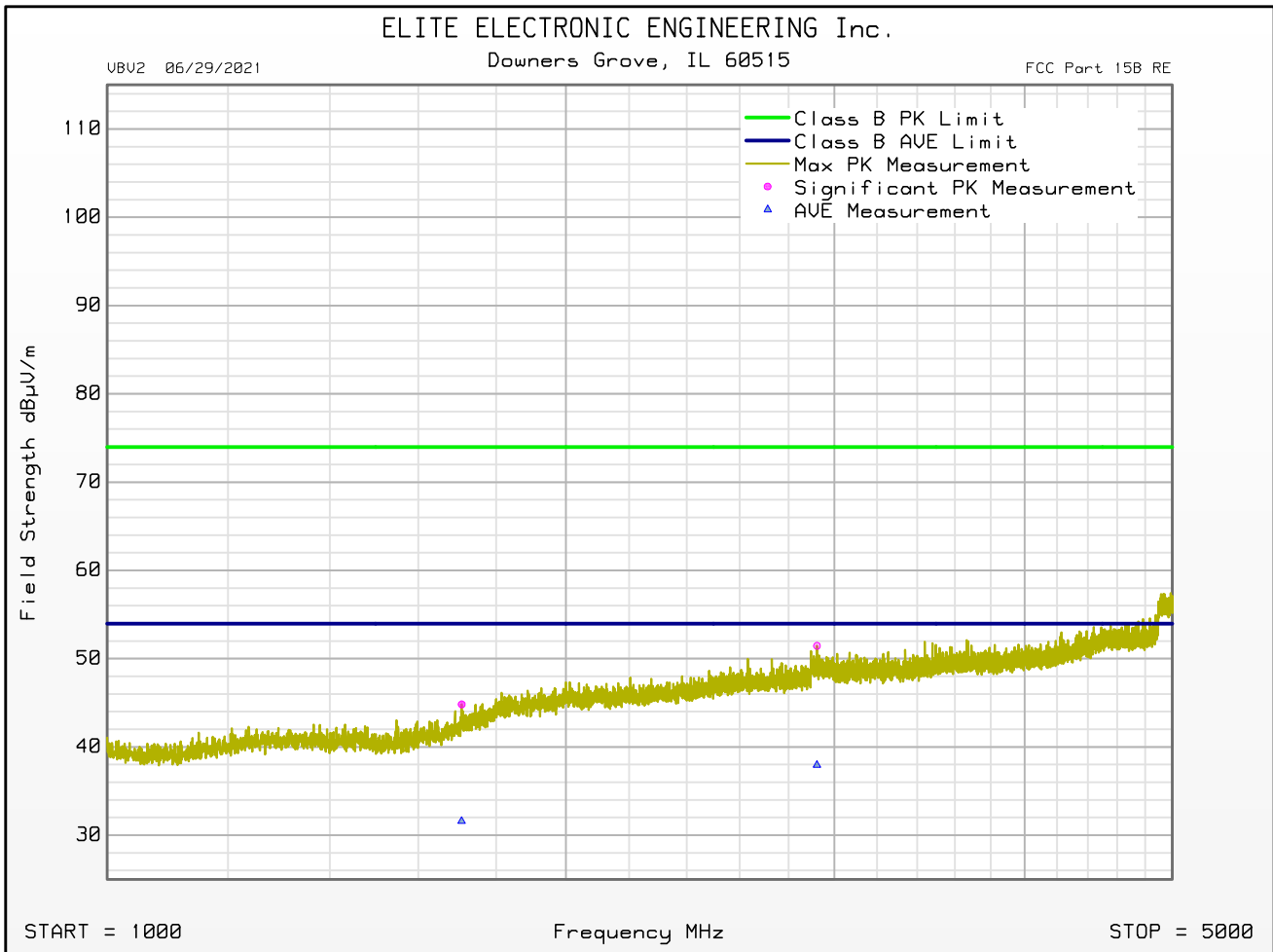
Freq MHz	Peak Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBuV/m	Peak Limit dBuV/m	Peak Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Peak Level
1284.500	11.9	29.0	0.0	1.8	0.0	42.8	74.0	-31.2	Vertical	200	45	
1708.500	12.9	29.8	0.0	2.1	0.0	44.8	74.0	-29.2	Horizontal	340	315	
2140.500	14.3	31.8	0.0	2.4	0.0	48.5	74.0	-25.5	Vertical	340	315	
2922.500	15.9	32.6	0.0	2.9	0.0	51.4	74.0	-22.5	Horizontal	200	315	
3675.000	16.4	33.2	0.0	3.3	0.0	52.9	74.0	-21.1	Vertical	340	0	
4898.500	20.4	34.2	0.0	3.8	0.0	58.4	74.0	-15.6	Vertical	340	225	

Freq MHz	Average Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Average Total dBuV/m	Average Limit dBuV/m	Average Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Average Level
1284.500	-0.8	29.0	0.0	1.8	0.0	30.0	54.0	-24.0	Vertical	200	45	
1708.500	-0.3	29.8	0.0	2.1	0.0	31.6	54.0	-22.4	Horizontal	340	315	
2140.500	0.5	31.8	0.0	2.4	0.0	34.7	54.0	-19.2	Vertical	340	315	
2922.500	2.4	32.6	0.0	2.9	0.0	37.9	54.0	-16.0	Horizontal	200	315	
3675.000	2.1	33.2	0.0	3.3	0.0	38.6	54.0	-15.4	Vertical	340	0	
4898.500	7.2	34.2	0.0	3.8	0.0	45.1	54.0	-8.9	Vertical	340	225	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

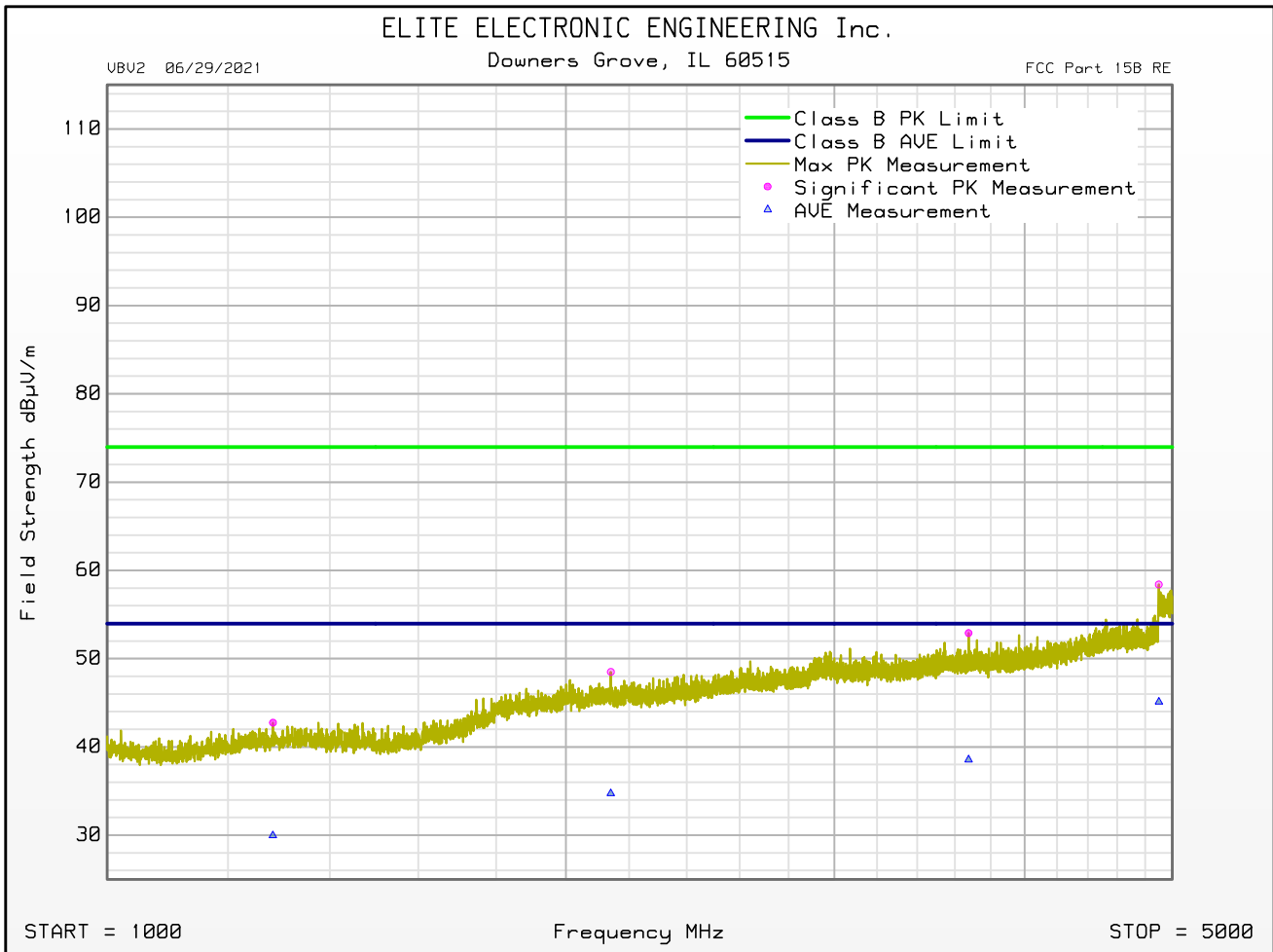
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Horizontal
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 902.259MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 09:01:08 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Vertical
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 902.259MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 09:01:08 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

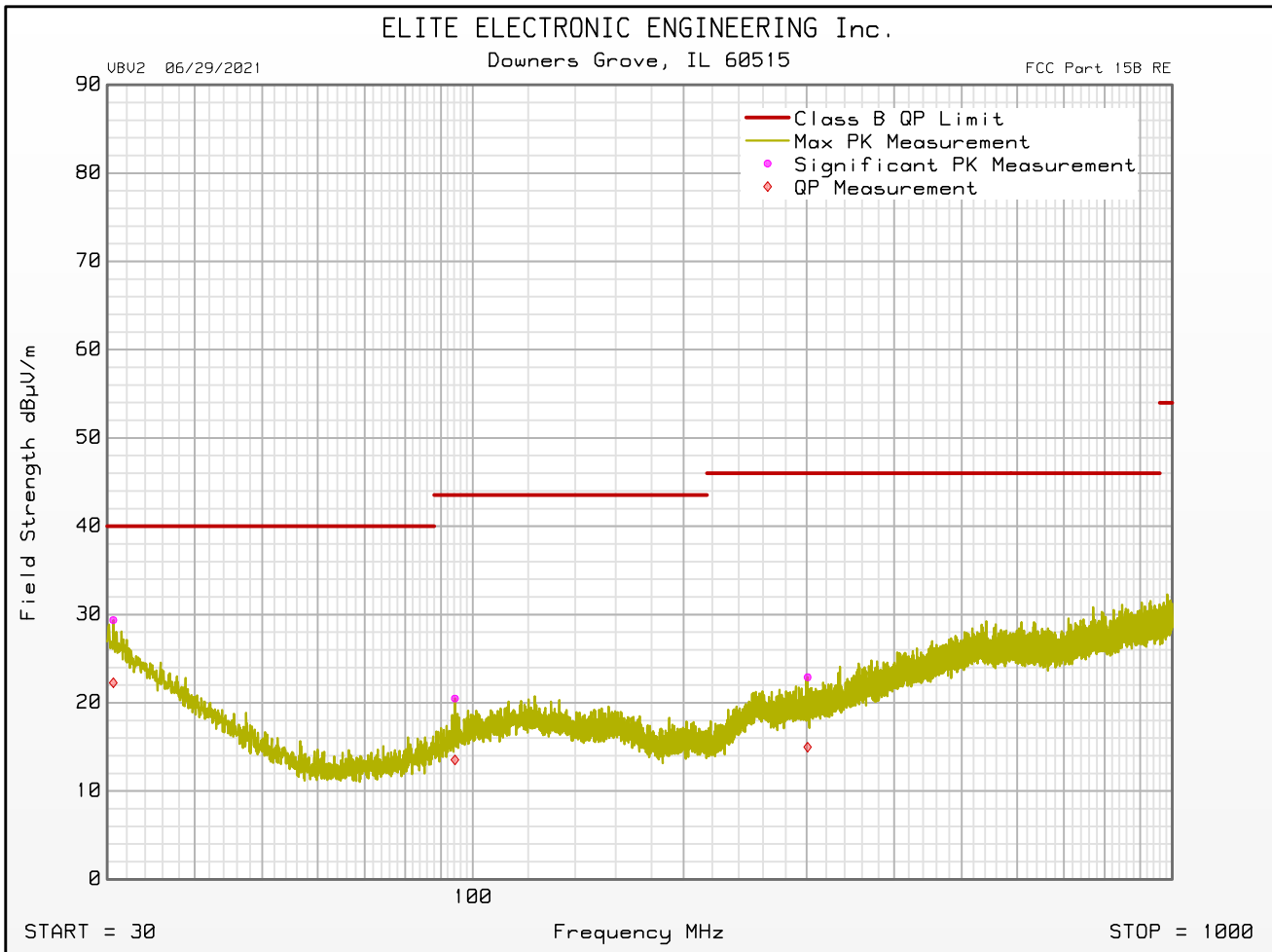
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 914.760MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 09:19:03 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
30.600	4.4	-2.7	24.6	0.0	0.4	0.0	29.4	22.3	40.0	-17.7	Horizontal	120	135	
94.240	4.2	-2.8	15.9	0.0	0.4	0.0	20.5	13.5	43.5	-30.0	Horizontal	340	225	
120.760	2.9	-5.1	18.2	0.0	0.5	0.0	21.6	13.6	43.5	-29.9	Vertical	120	90	
300.960	3.0	-4.9	19.2	0.0	0.8	0.0	22.9	15.0	46.0	-31.0	Horizontal	120	90	
526.380	3.4	-4.2	24.7	0.0	1.1	0.0	29.3	21.6	46.0	-24.4	Vertical	120	0	
888.240	3.7	-4.7	26.6	0.0	1.5	0.0	31.8	23.4	46.0	-22.6	Vertical	340	315	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

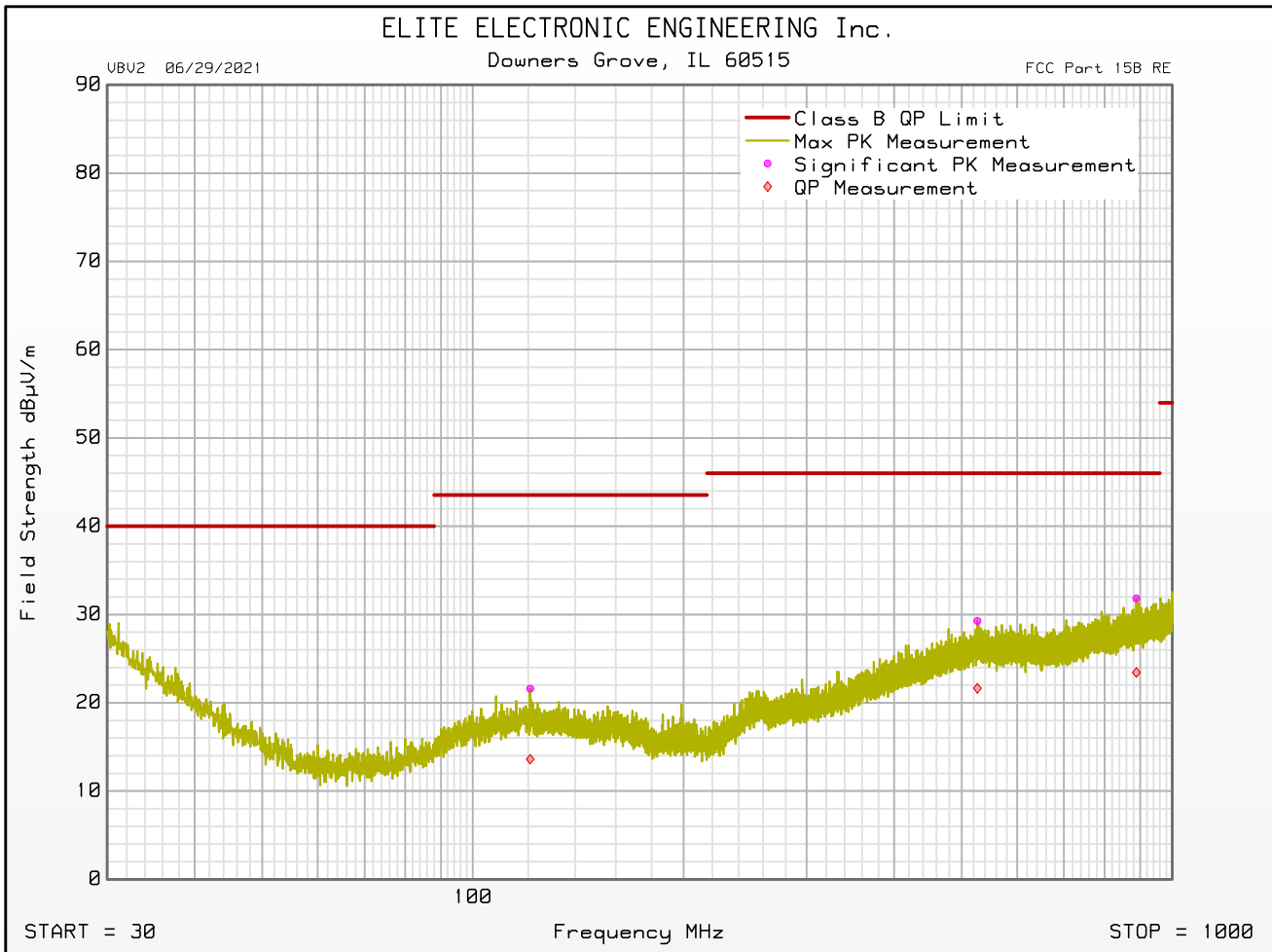
Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Horizontal
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes : 914.760MHz
Test Engineer : J. Cardenas
Test Date : Aug 09, 2021 09:19:03 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Vertical
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes : 914.760MHz
Test Engineer : J. Cardenas
Test Date : Aug 09, 2021 09:19:03 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 914.760MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 09:17:10 AM

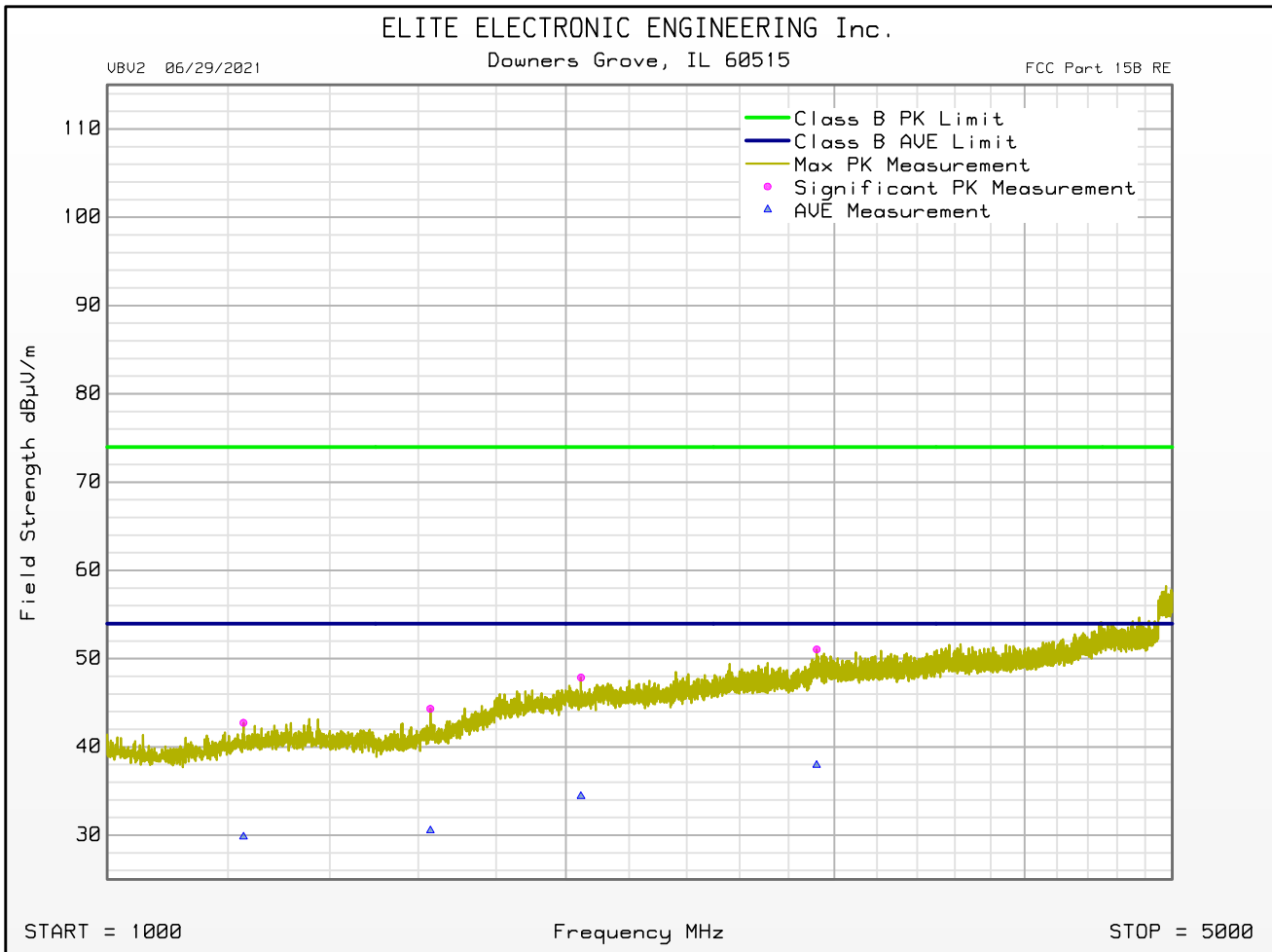
Freq MHz	Peak Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBuV/m	Peak Limit dBuV/m	Peak Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Peak Level
1228.500	12.1	28.9	0.0	1.7	0.0	42.7	74.0	-31.2	Horizontal	340	0	
1629.500	13.4	28.9	0.0	2.1	0.0	44.3	74.0	-29.7	Horizontal	200	180	
2046.000	13.8	31.8	0.0	2.3	0.0	47.9	74.0	-26.1	Horizontal	200	315	
2921.500	15.5	32.6	0.0	2.9	0.0	51.0	74.0	-22.9	Horizontal	340	0	
3393.500	15.7	32.9	0.0	3.2	0.0	51.8	74.0	-22.2	Vertical	340	45	
4965.000	20.9	34.2	0.0	3.8	0.0	58.8	74.0	-15.2	Vertical	120	45	

Freq MHz	Average Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Average Total dBuV/m	Average Limit dBuV/m	Average Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Average Level
1228.500	-0.8	28.9	0.0	1.7	0.0	29.8	54.0	-24.1	Horizontal	340	0	
1629.500	-0.4	28.9	0.0	2.1	0.0	30.5	54.0	-23.4	Horizontal	200	180	
2046.000	0.3	31.8	0.0	2.3	0.0	34.4	54.0	-19.6	Horizontal	200	315	
2921.500	2.4	32.6	0.0	2.9	0.0	37.9	54.0	-16.0	Horizontal	340	0	
3393.500	1.9	32.9	0.0	3.2	0.0	38.0	54.0	-16.0	Vertical	340	45	
4965.000	7.1	34.2	0.0	3.8	0.0	45.1	54.0	-8.9	Vertical	120	45	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

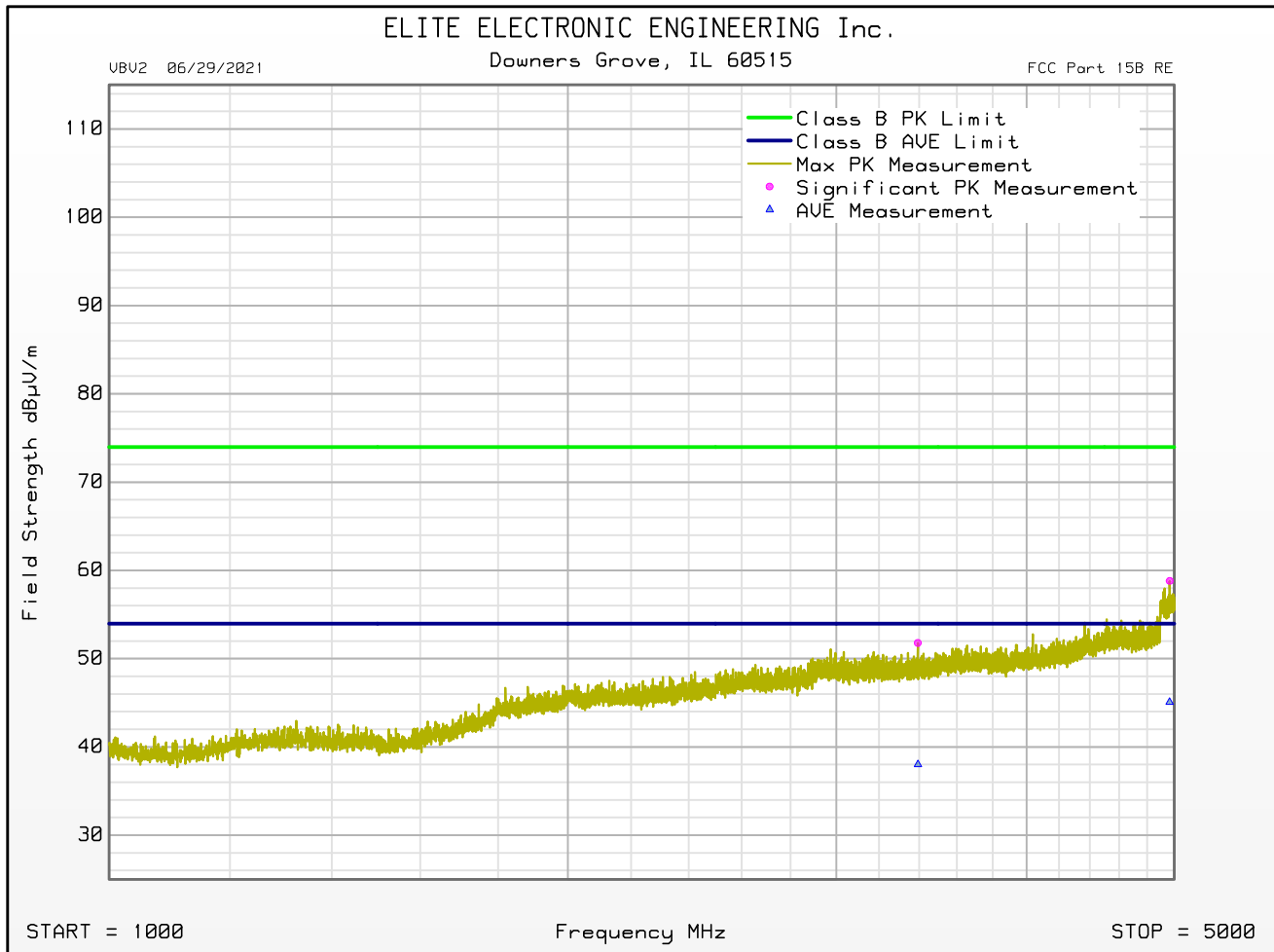
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Horizontal
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 914.760MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 09:17:10 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Vertical
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 914.760MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 09:17:10 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

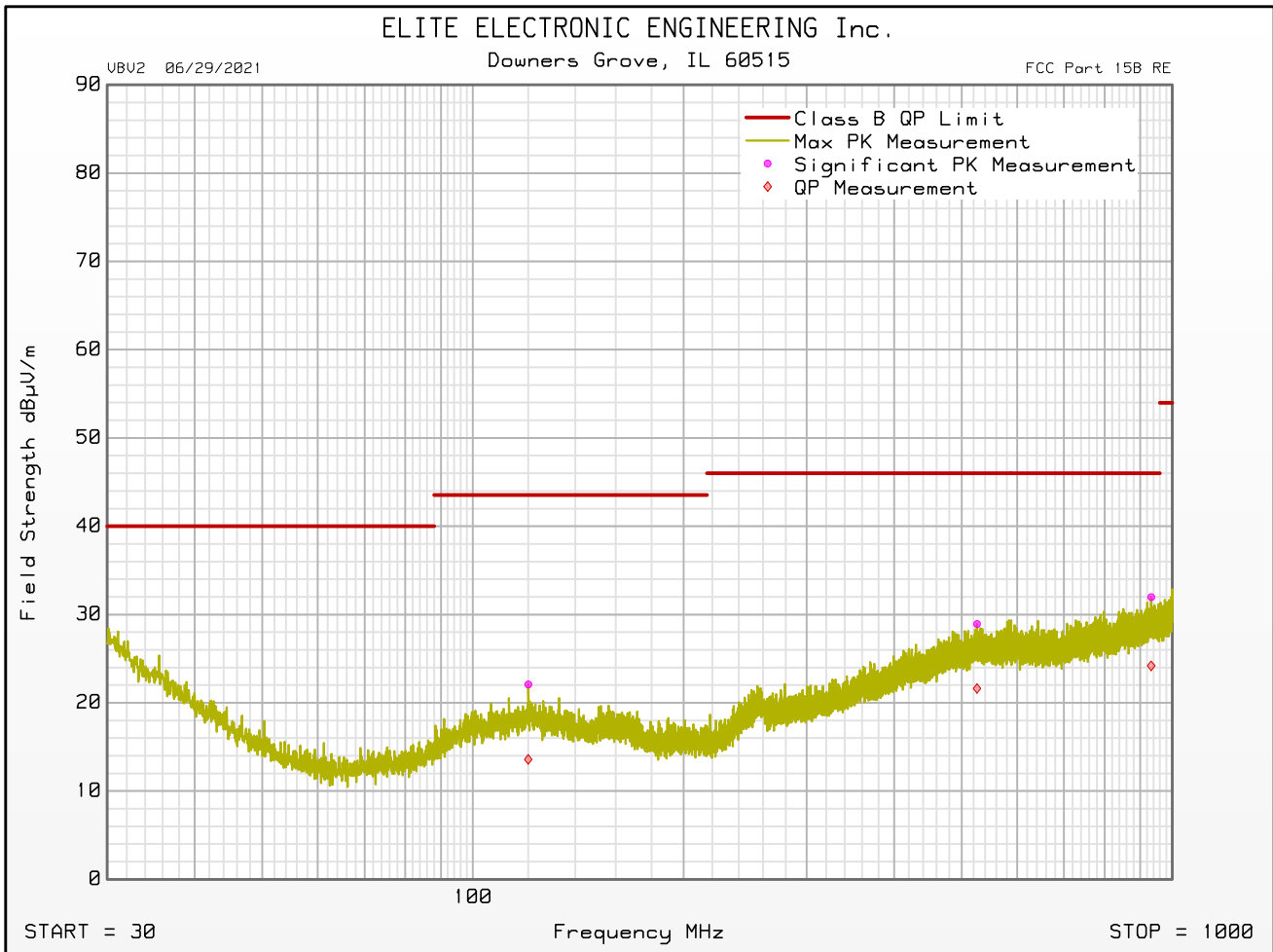
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 926.760MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 09:35:16 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 dBuV/m	QP Total dBuV/m	QP Limit dBuV/m	QP Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive QP Level
30.240	4.4	-2.7	24.8	0.0	0.4	0.0	29.6	22.5	40.0	-17.5	Vertical	200	180	
54.300	3.6	-4.2	13.5	0.0	0.4	0.0	17.5	9.7	40.0	-30.3	Vertical	200	180	
119.980	3.4	-5.1	18.2	0.0	0.5	0.0	22.1	13.6	43.5	-29.9	Horizontal	120	135	
304.200	2.8	-5.0	19.2	0.0	0.8	0.0	22.8	15.0	46.0	-31.0	Vertical	120	270	
525.720	3.1	-4.2	24.7	0.0	1.1	0.0	28.9	21.6	46.0	-24.4	Horizontal	120	315	
932.880	3.6	-4.2	26.9	0.0	1.5	0.0	32.0	24.2	46.0	-21.8	Horizontal	120	315	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

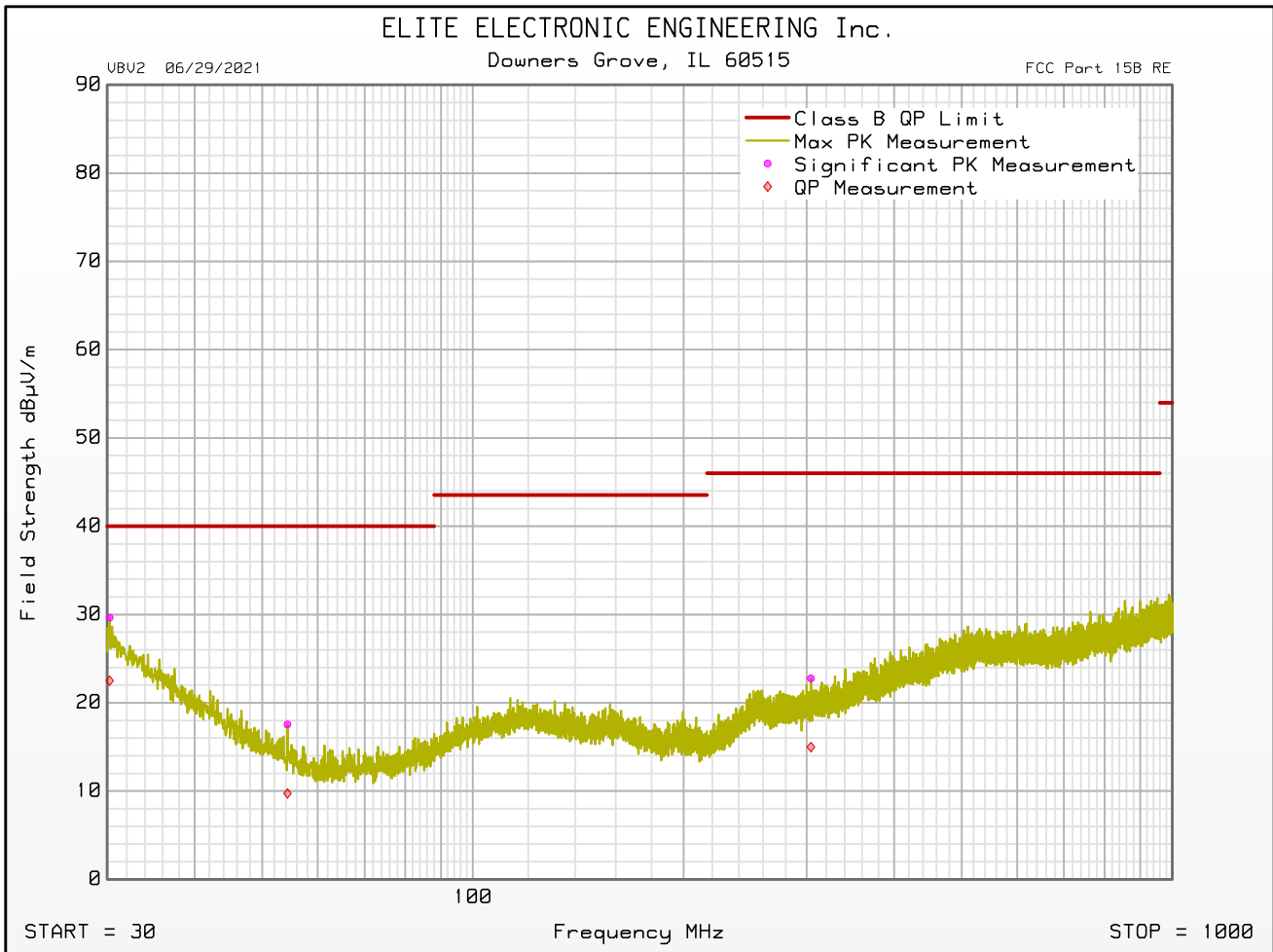
Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Horizontal
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes : 926.760MHz
Test Engineer : J. Cardenas
Test Date : Aug 09, 2021 09:35:16 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Vertical
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 926.760MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 09:35:16 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 926.760MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 09:31:07 AM

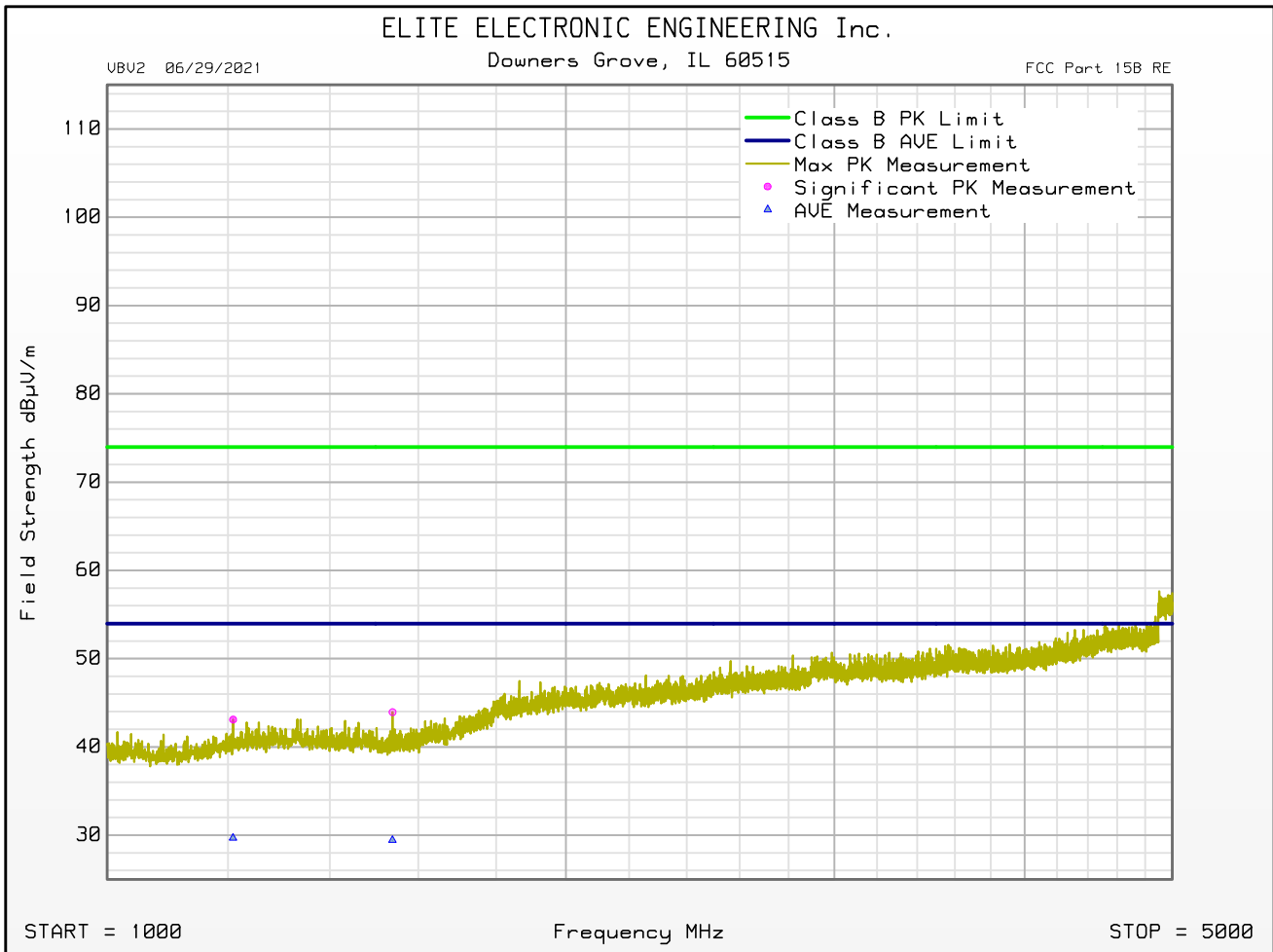
Freq MHz	Peak Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBuV/m	Peak Limit dBuV/m	Peak Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Peak Level
1209.500	12.7	28.7	0.0	1.7	0.0	43.1	74.0	-30.9	Horizontal	340	90	
1539.000	13.8	28.2	0.0	2.0	0.0	43.9	74.0	-30.0	Horizontal	120	270	
2008.500	13.7	32.0	0.0	2.3	0.0	48.0	74.0	-26.0	Vertical	120	225	
2841.000	15.8	32.6	0.0	2.9	0.0	51.2	74.0	-22.8	Vertical	200	180	
3566.000	16.0	33.1	0.0	3.2	0.0	52.3	74.0	-21.7	Vertical	120	0	
4943.500	20.7	34.2	0.0	3.8	0.0	58.6	74.0	-15.4	Vertical	120	180	

Freq MHz	Average Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Average Total dBuV/m	Average Limit dBuV/m	Average Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Average Level
1209.500	-0.7	28.7	0.0	1.7	0.0	29.7	54.0	-24.3	Horizontal	340	90	
1539.000	-0.7	28.2	0.0	2.0	0.0	29.4	54.0	-24.5	Horizontal	120	270	
2008.500	0.6	32.0	0.0	2.3	0.0	34.8	54.0	-19.2	Vertical	120	225	
2841.000	1.4	32.6	0.0	2.9	0.0	36.8	54.0	-17.2	Vertical	200	180	
3566.000	2.0	33.1	0.0	3.2	0.0	38.4	54.0	-15.6	Vertical	120	0	
4943.500	7.1	34.2	0.0	3.8	0.0	45.1	54.0	-8.9	Vertical	120	180	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Horizontal
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 926.760MHz
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 09:31:07 AM

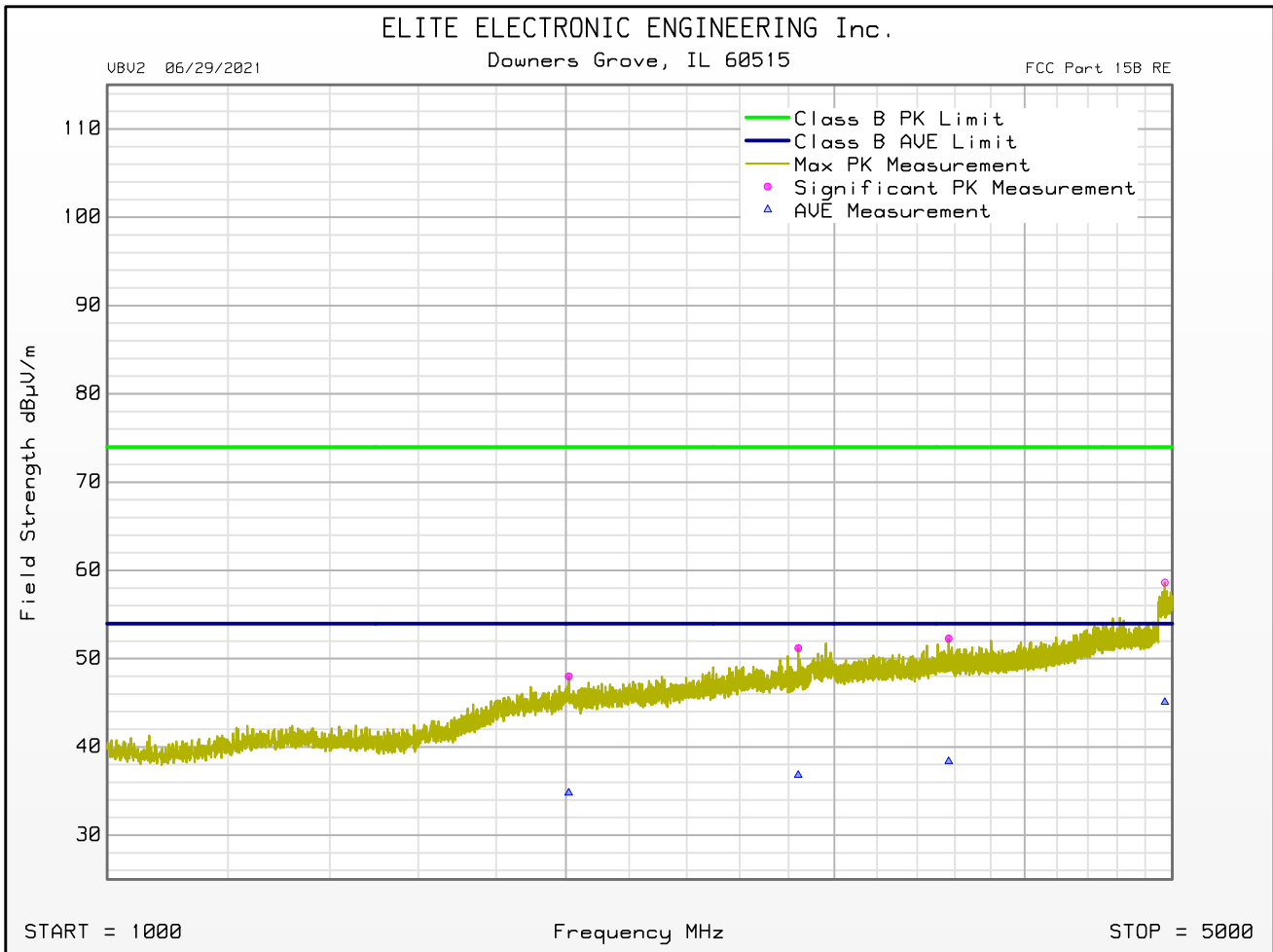




FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Vertical
Scan Type : Stepped Scan
Test RBW : 1 MHz
Prelim Dwell Time (s) : 0.0001
Notes : 926.760MHz
Test Engineer : J. Cardenas
Test Date : Aug 10, 2021 09:31:07 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

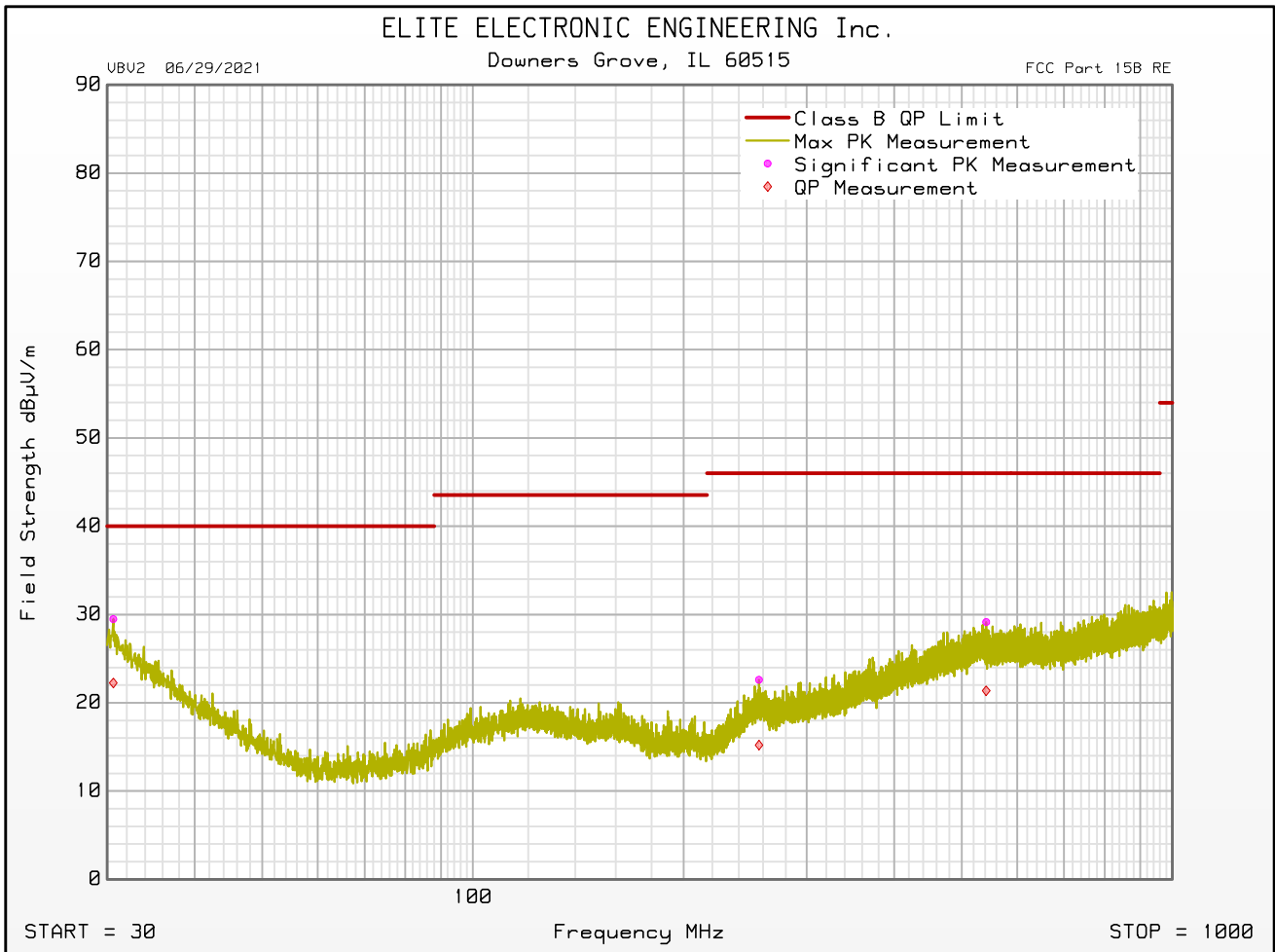
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 433.3-434.54MHz Low Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 09:59:03 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
30.600	4.5	-2.7	24.6	0.0	0.4	0.0	29.5	22.2	40.0	-17.8	Horizontal	340	45	
53.880	3.3	-4.1	13.7	0.0	0.4	0.0	17.3	10.0	40.0	-30.0	Vertical	120	0	
118.060	3.6	-5.1	18.2	0.0	0.5	0.0	22.2	13.5	43.5	-30.0	Vertical	200	225	
256.440	3.0	-4.4	18.9	0.0	0.8	0.0	22.6	15.2	46.0	-30.8	Horizontal	340	270	
541.740	3.3	-4.5	24.7	0.0	1.1	0.0	29.1	21.4	46.0	-24.6	Horizontal	340	45	
944.460	3.6	-4.4	27.0	0.0	1.5	0.0	32.2	24.1	46.0	-21.9	Vertical	200	225	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

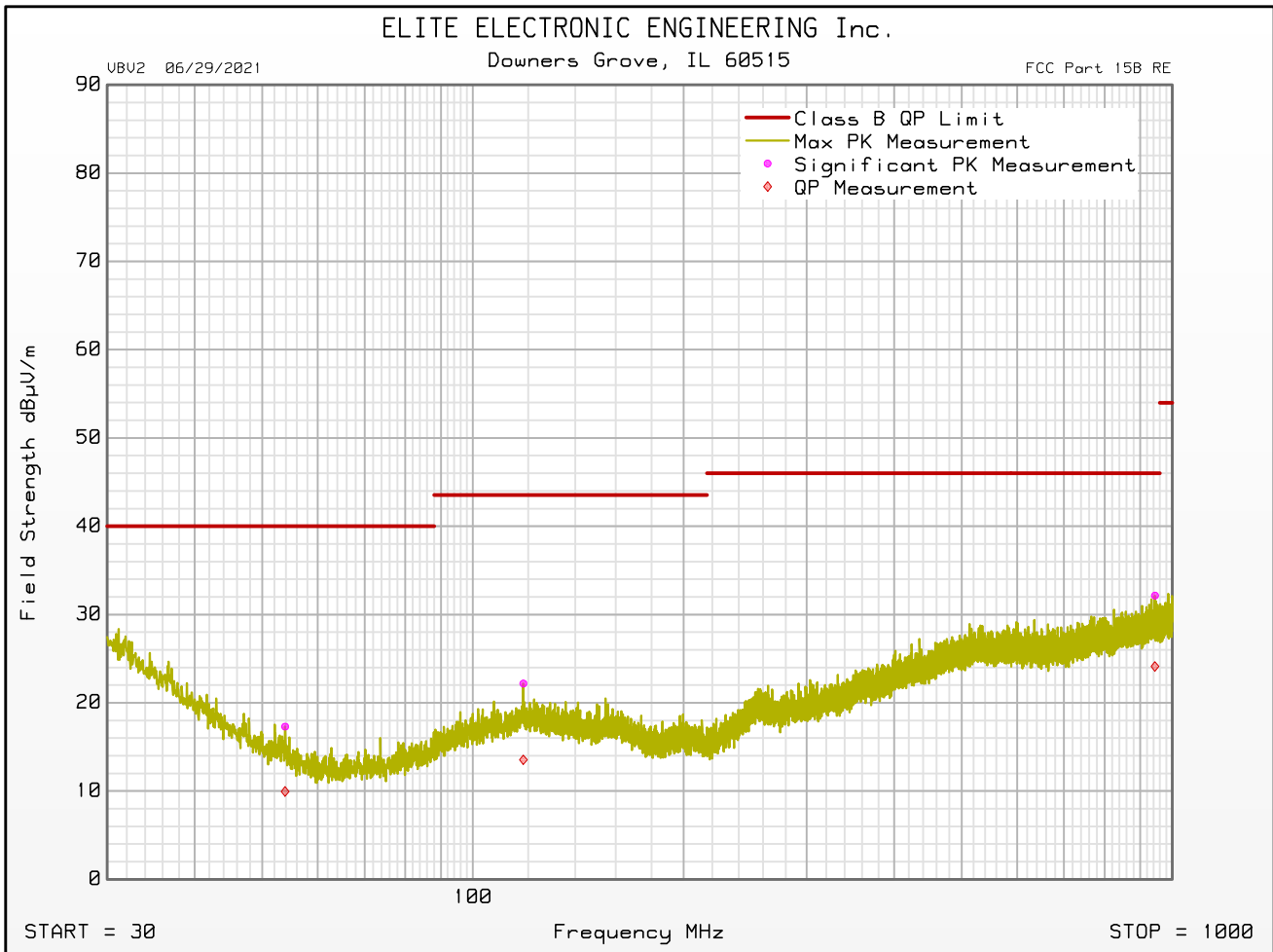
Manufacturer	: Chamberlain Group Inc
Model	: 001D9525-1-IND
Serial Number	: NA
DUT Mode	: Rx
Turntable Step Angle (°)	: 45
Mast Positions (cm)	: 120, 200, 340
Antenna Polarization	: Horizontal
Scan Type	: Stepped Scan
Test RBW	: 120 kHz
Prelim Dwell Time (s)	: 0.0001
Notes	: 433.3-434.54MHz Low Ch
Test Engineer	: J. Cardenas
Test Date	: Aug 09, 2021 09:59:03 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Vertical
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes : 433.3-434.54MHz Low Ch
Test Engineer : J. Cardenas
Test Date : Aug 09, 2021 09:59:03 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 433.3-434.54MHz Low Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 10:05:59 AM

Freq MHz	Peak Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBuV/m	Peak Limit dBuV/m	Peak Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Peak Level
1238.500	12.1	29.0	0.0	1.8	0.0	42.9	74.0	-31.1	Horizontal	340	0	
1693.000	12.6	29.6	0.0	2.1	0.0	44.3	74.0	-29.6	Vertical	120	0	
2087.000	14.2	32.0	0.0	2.4	0.0	48.5	74.0	-25.4	Horizontal	340	225	
2902.500	15.2	32.6	0.0	2.9	0.0	50.6	74.0	-23.3	Vertical	200	90	
3684.000	16.1	33.2	0.0	3.3	0.0	52.6	74.0	-21.4	Horizontal	200	0	
4999.000	20.5	34.1	0.0	3.8	0.0	58.4	74.0	-15.5	Horizontal	200	90	

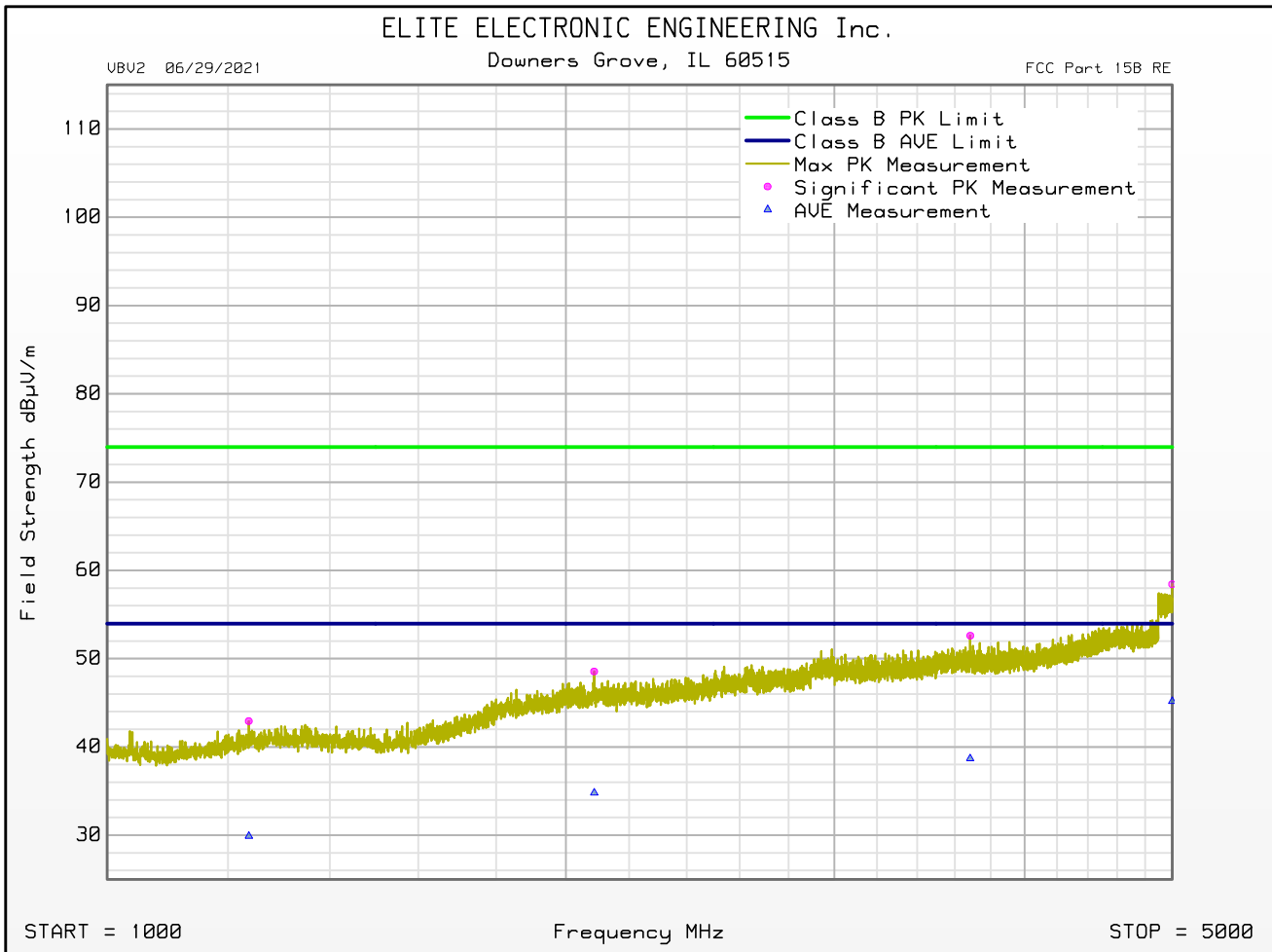
Freq MHz	Average Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Average Total dBuV/m	Average Limit dBuV/m	Average Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Average Level
1238.500	-0.9	29.0	0.0	1.8	0.0	29.9	54.0	-24.1	Horizontal	340	0	
1693.000	-0.5	29.6	0.0	2.1	0.0	31.2	54.0	-22.7	Vertical	120	0	
2087.000	0.5	32.0	0.0	2.4	0.0	34.8	54.0	-19.2	Horizontal	340	225	
2902.500	2.4	32.6	0.0	2.9	0.0	37.9	54.0	-16.1	Vertical	200	90	
3684.000	2.2	33.2	0.0	3.3	0.0	38.7	54.0	-15.3	Horizontal	200	0	
4999.000	7.2	34.1	0.0	3.8	0.0	45.2	54.0	-8.8	Horizontal	200	90	



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

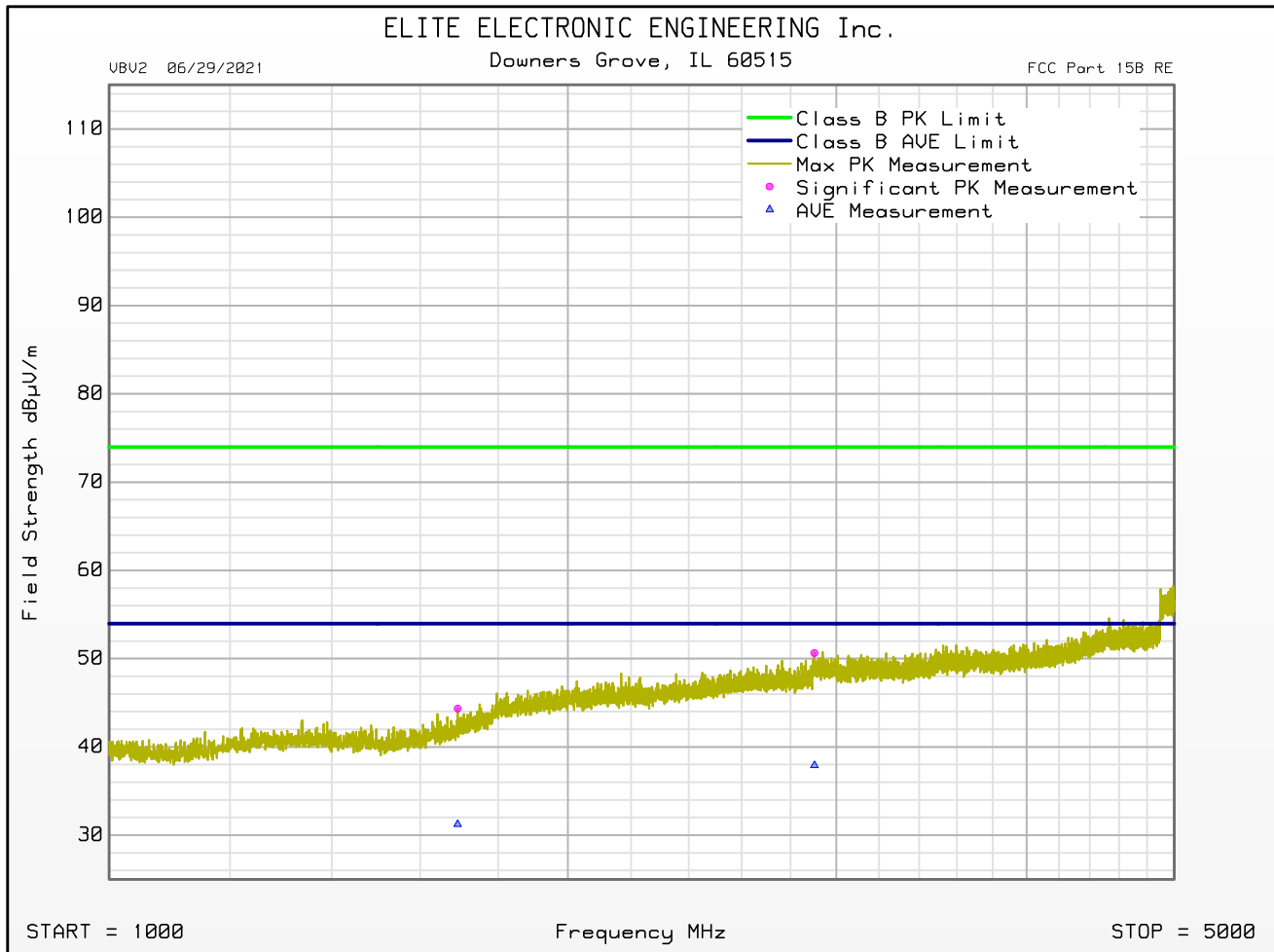
Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Horizontal
Scan Type : Stepped Scan
Test RBW : 1 MHz
Prelim Dwell Time (s) : 0.0001
Notes : 433.3-434.54MHz Low Ch
Test Engineer : J. Cardenas
Test Date : Aug 10, 2021 10:05:59 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Vertical
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 433.3-434.54MHz Low Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 10:05:59 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 433.3-434.54MHz High Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 10:17:31 AM

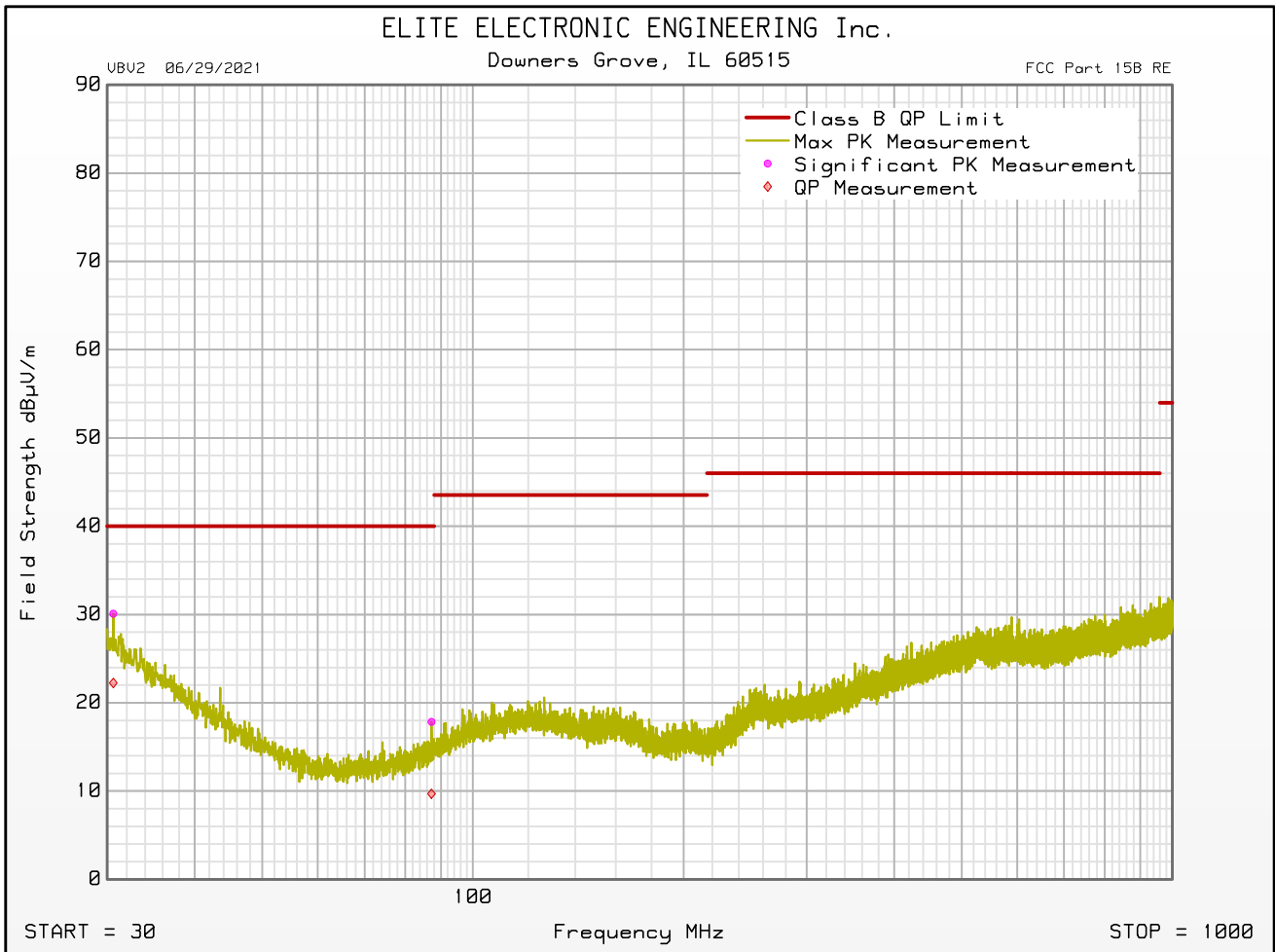
Freq MHz	Peak Mtr Rdg dBuV	QP Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBuV/m	QP Total dBuV/m	QP Limit dBuV/m	QP Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive QP Level
30.600	5.1	-2.7	24.6	0.0	0.4	0.0	30.1	22.2	40.0	-17.8	Horizontal	200	225	
87.240	3.0	-5.1	14.4	0.0	0.4	0.0	17.8	9.7	40.0	-30.3	Horizontal	200	45	
120.700	2.4	-5.1	18.2	0.0	0.5	0.0	21.1	13.6	43.5	-29.9	Vertical	200	315	
299.340	2.6	-4.9	19.1	0.0	0.8	0.0	22.5	15.0	46.0	-31.0	Vertical	340	315	
535.680	3.1	-4.5	24.8	0.0	1.1	0.0	29.0	21.5	46.0	-24.5	Vertical	200	225	
958.020	3.7	-4.6	27.1	0.0	1.5	0.0	32.3	24.1	46.0	-21.9	Vertical	340	45	



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Horizontal
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes : 433.3-434.54MHz High Ch
Test Engineer : J. Cardenas
Test Date : Aug 09, 2021 10:17:31 AM

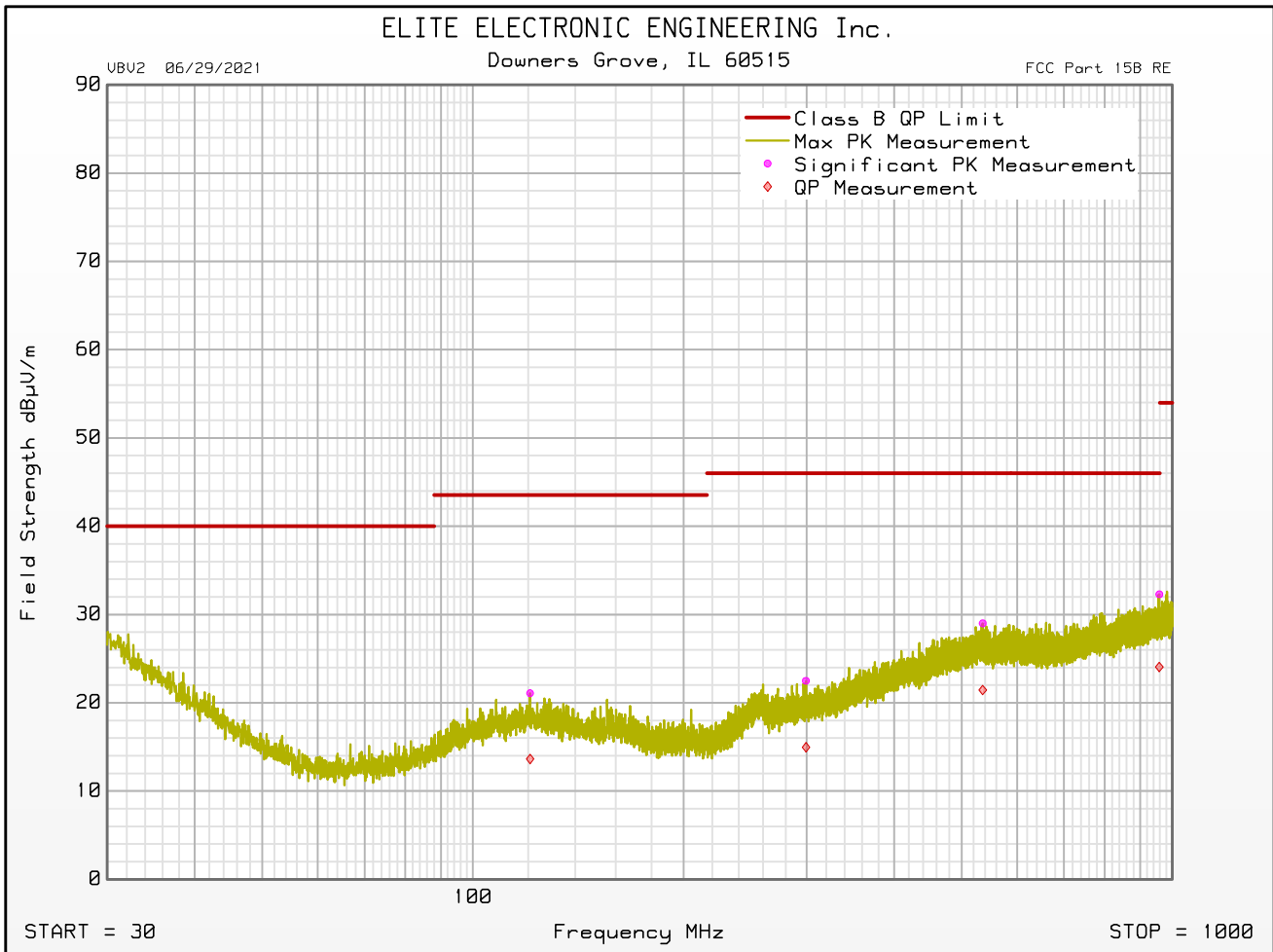




FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Vertical
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes : 433.3-434.54MHz High Ch
Test Engineer : J. Cardenas
Test Date : Aug 09, 2021 10:17:31 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 433.3-434.54MHz High Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 10:34:18 AM

Freq MHz	Peak Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBuV/m	Peak Limit dBuV/m	Peak Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Peak Level
1267.000	12.3	29.1	0.0	1.8	0.0	43.2	74.0	-30.8	Horizontal	120	90	
1691.500	12.7	29.6	0.0	2.1	0.0	44.4	74.0	-29.6	Vertical	200	315	
2009.000	13.7	32.0	0.0	2.3	0.0	47.9	74.0	-26.1	Vertical	120	315	
2794.500	15.3	32.4	0.0	2.8	0.0	50.6	74.0	-23.4	Horizontal	120	180	
3737.000	15.2	33.2	0.0	3.3	0.0	51.7	74.0	-22.2	Horizontal	200	90	
4974.000	20.1	34.2	0.0	3.8	0.0	58.0	74.0	-16.0	Horizontal	120	90	

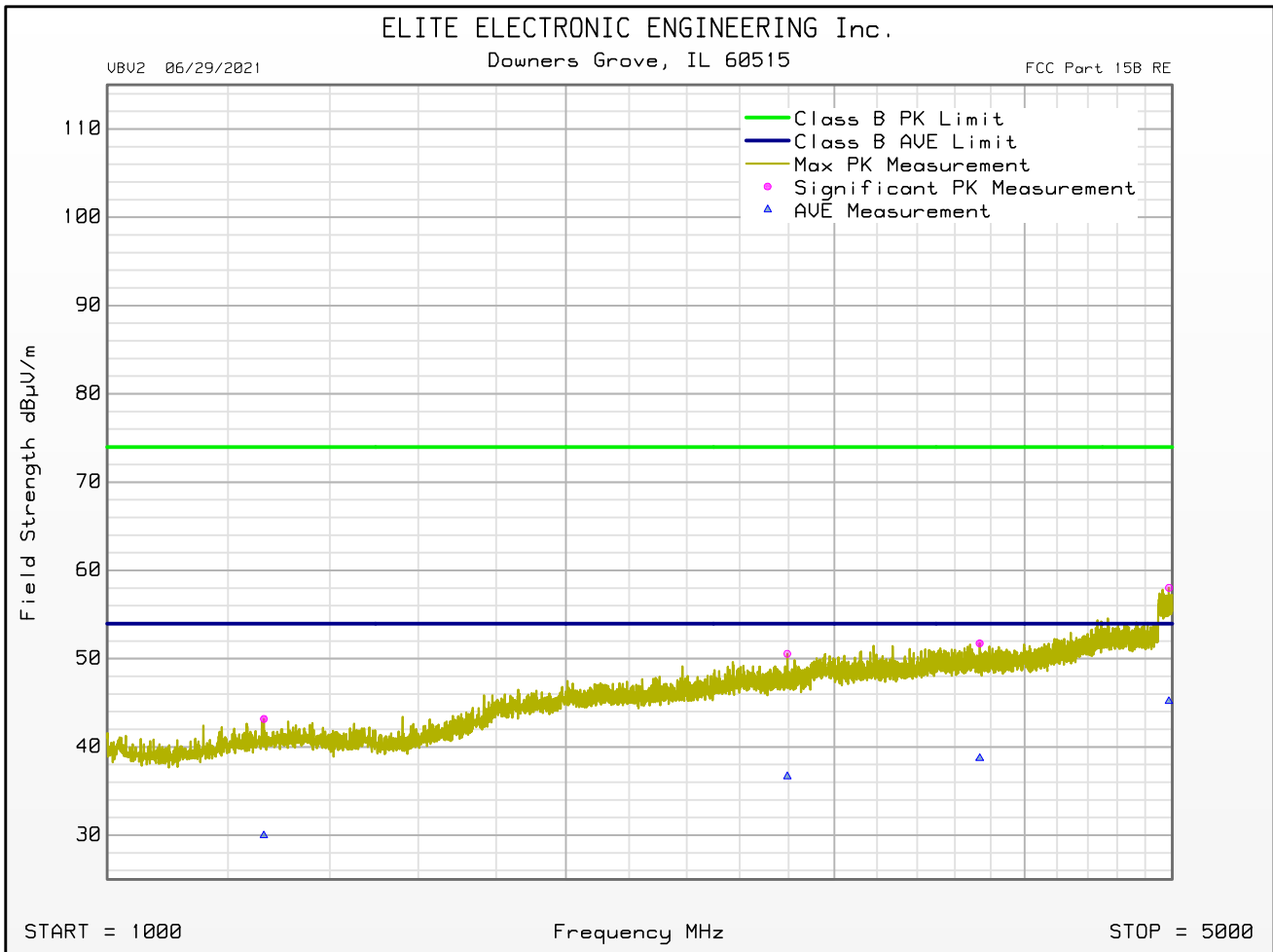
Freq MHz	Average Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Average Total dBuV/m	Average Limit dBuV/m	Average Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Average Level
1267.000	-0.9	29.1	0.0	1.8	0.0	30.0	54.0	-24.0	Horizontal	120	90	
1691.500	-0.5	29.6	0.0	2.1	0.0	31.3	54.0	-22.7	Vertical	200	315	
2009.000	0.6	32.0	0.0	2.3	0.0	34.8	54.0	-19.1	Vertical	120	315	
2794.500	1.4	32.4	0.0	2.8	0.0	36.7	54.0	-17.3	Horizontal	120	180	
3737.000	2.1	33.2	0.0	3.3	0.0	38.7	54.0	-15.3	Horizontal	200	90	
4974.000	7.2	34.2	0.0	3.8	0.0	45.2	54.0	-8.8	Horizontal	120	90	



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

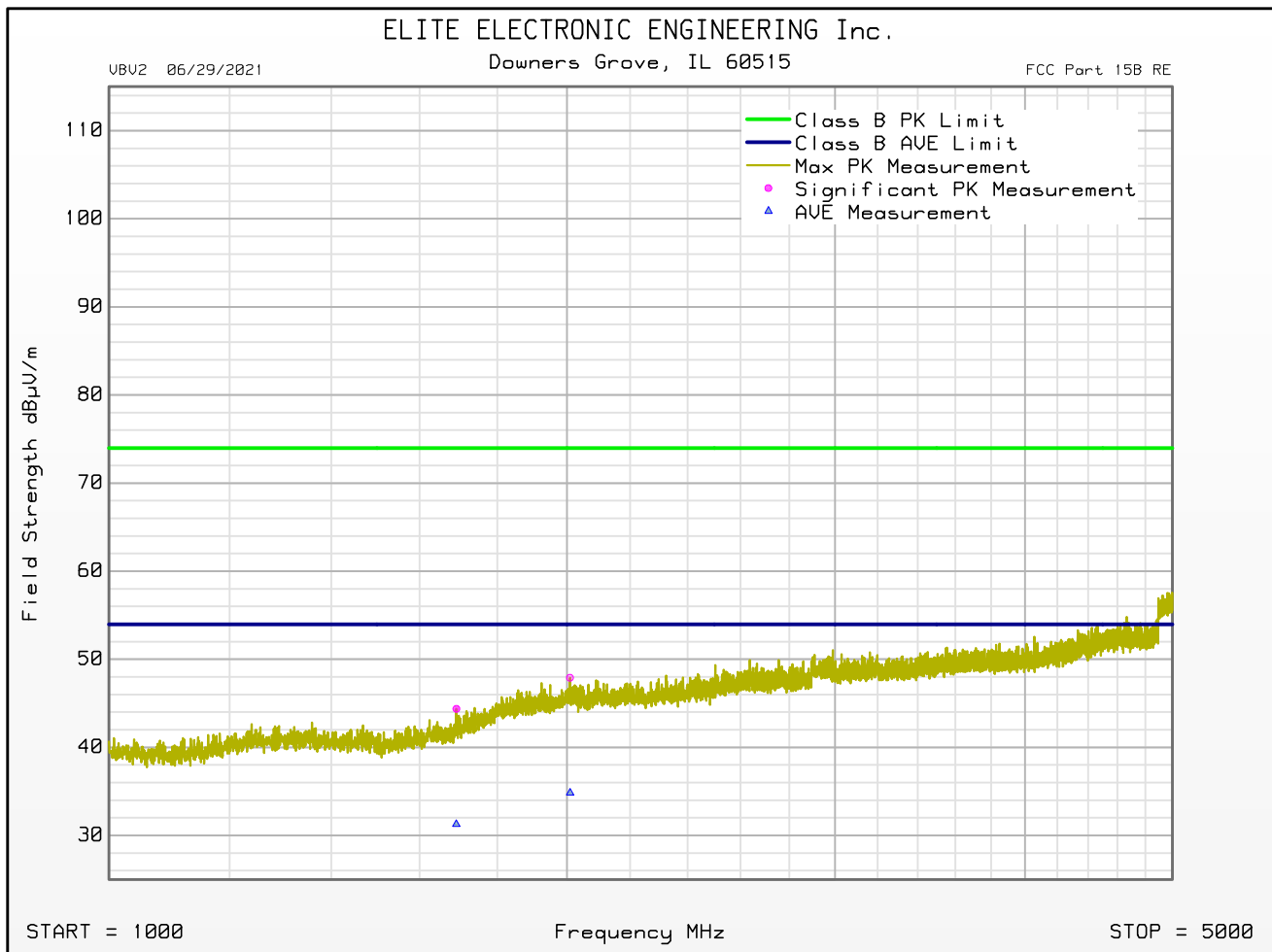
Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Horizontal
Scan Type : Stepped Scan
Test RBW : 1 MHz
Prelim Dwell Time (s) : 0.0001
Notes : 433.3-434.54MHz High Ch
Test Engineer : J. Cardenas
Test Date : Aug 10, 2021 10:34:18 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Vertical
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 433.3-434.54MHz High Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 10:34:18 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

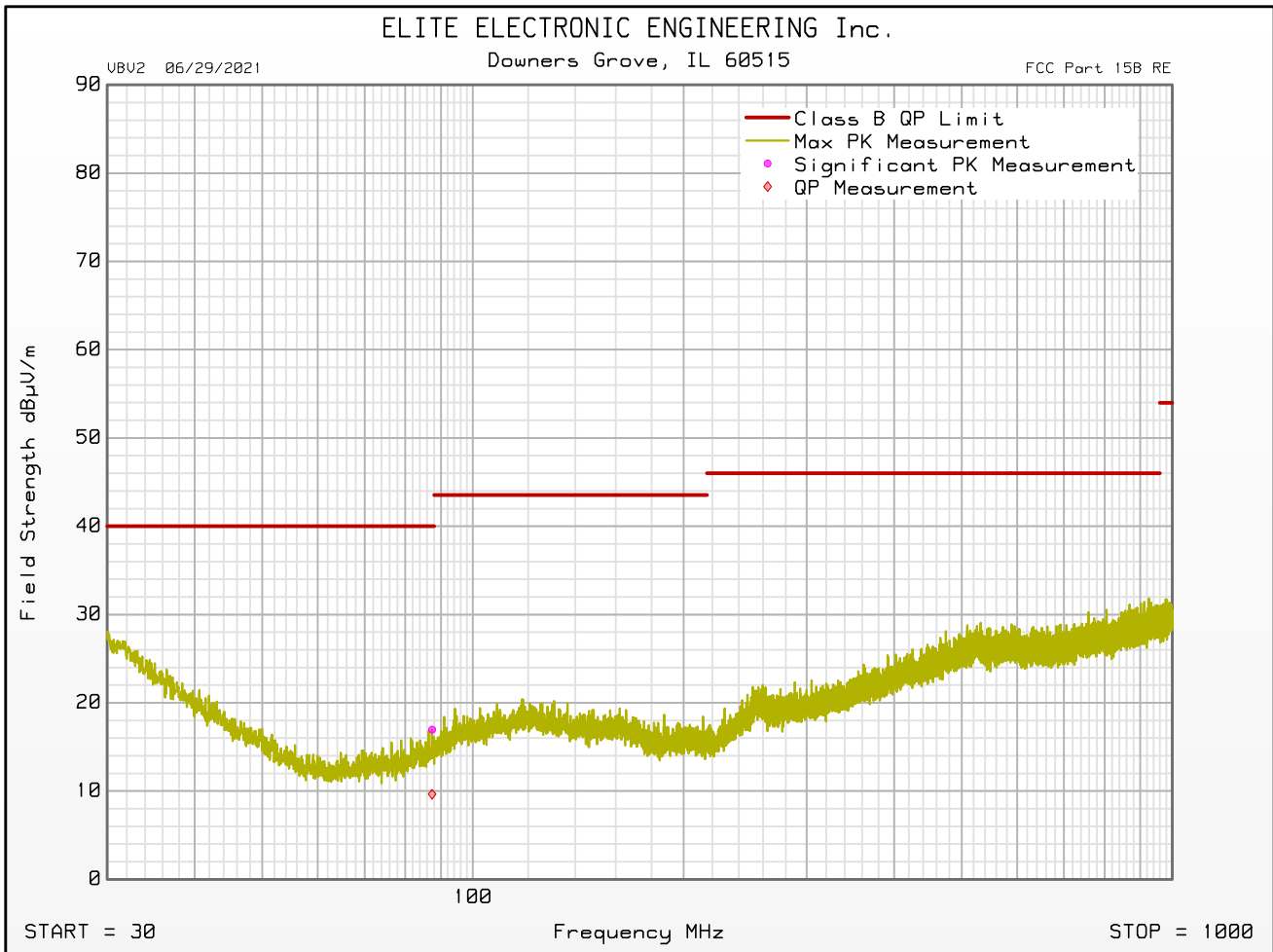
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 310-390MHz Low Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 10:36:26 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 dBuV/m	QP Total dBuV/m	QP Limit dBuV/m	QP Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive QP Level
30.060	6.0	-2.7	25.0	0.0	0.4	0.0	31.4	22.7	40.0	-17.3	Vertical	120	225	
87.420	2.1	-5.2	14.5	0.0	0.4	0.0	17.0	9.7	40.0	-30.3	Horizontal	120	135	
118.240	2.1	-5.1	18.2	0.0	0.5	0.0	20.7	13.5	43.5	-30.0	Vertical	120	180	
310.620	3.0	-4.9	19.3	0.0	0.8	0.0	23.2	15.2	46.0	-30.8	Vertical	340	315	
527.040	3.2	-4.2	24.7	0.0	1.1	0.0	29.1	21.7	46.0	-24.3	Vertical	200	0	
957.300	3.3	-4.5	27.1	0.0	1.5	0.0	31.9	24.1	46.0	-21.9	Vertical	340	135	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

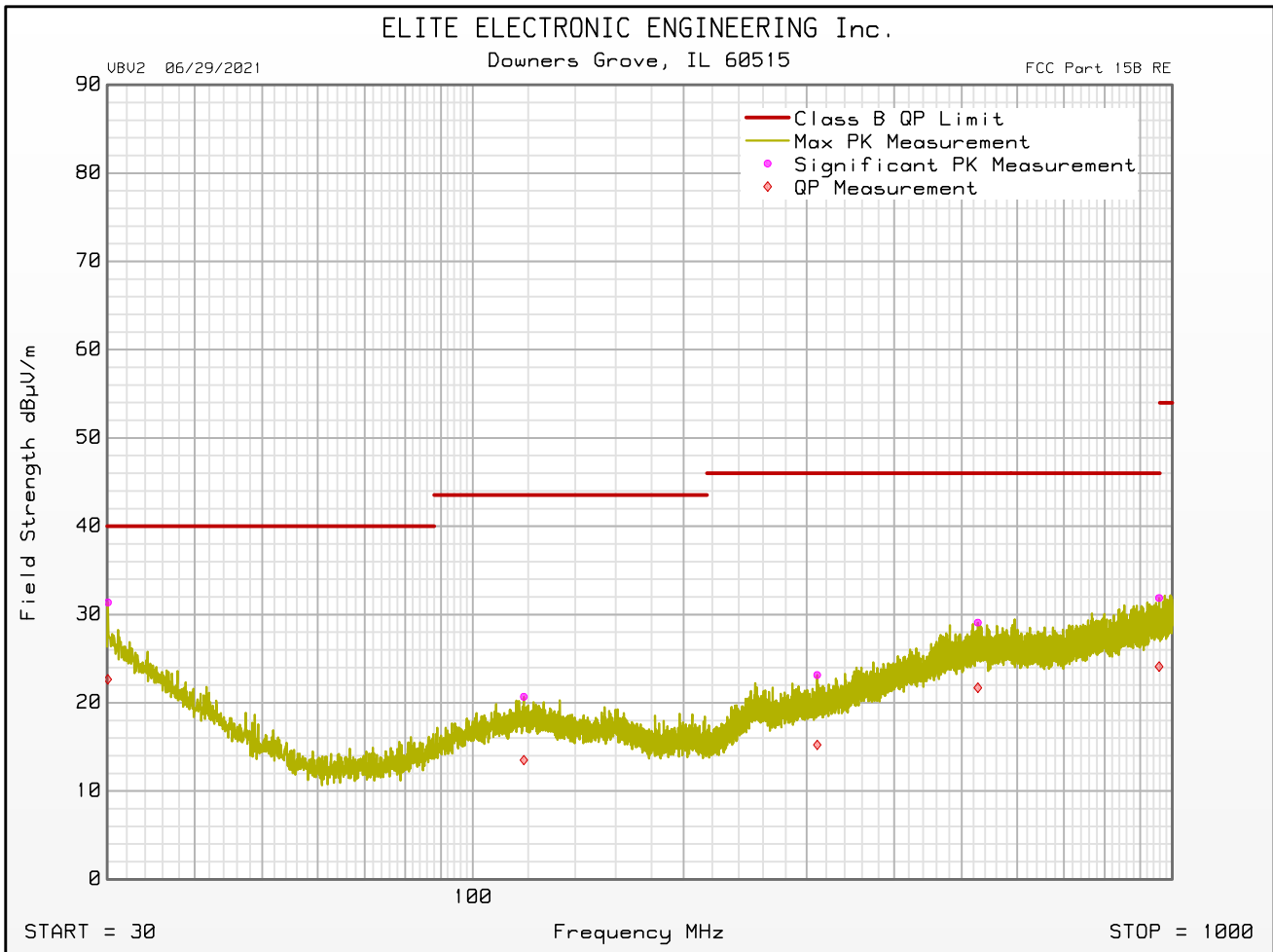
Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Horizontal
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes : 310-390MHz Low Ch
Test Engineer : J. Cardenas
Test Date : Aug 09, 2021 10:36:26 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Vertical
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 310-390MHz Low Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 10:36:26 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 310-390MHz Low Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 10:47:51 AM

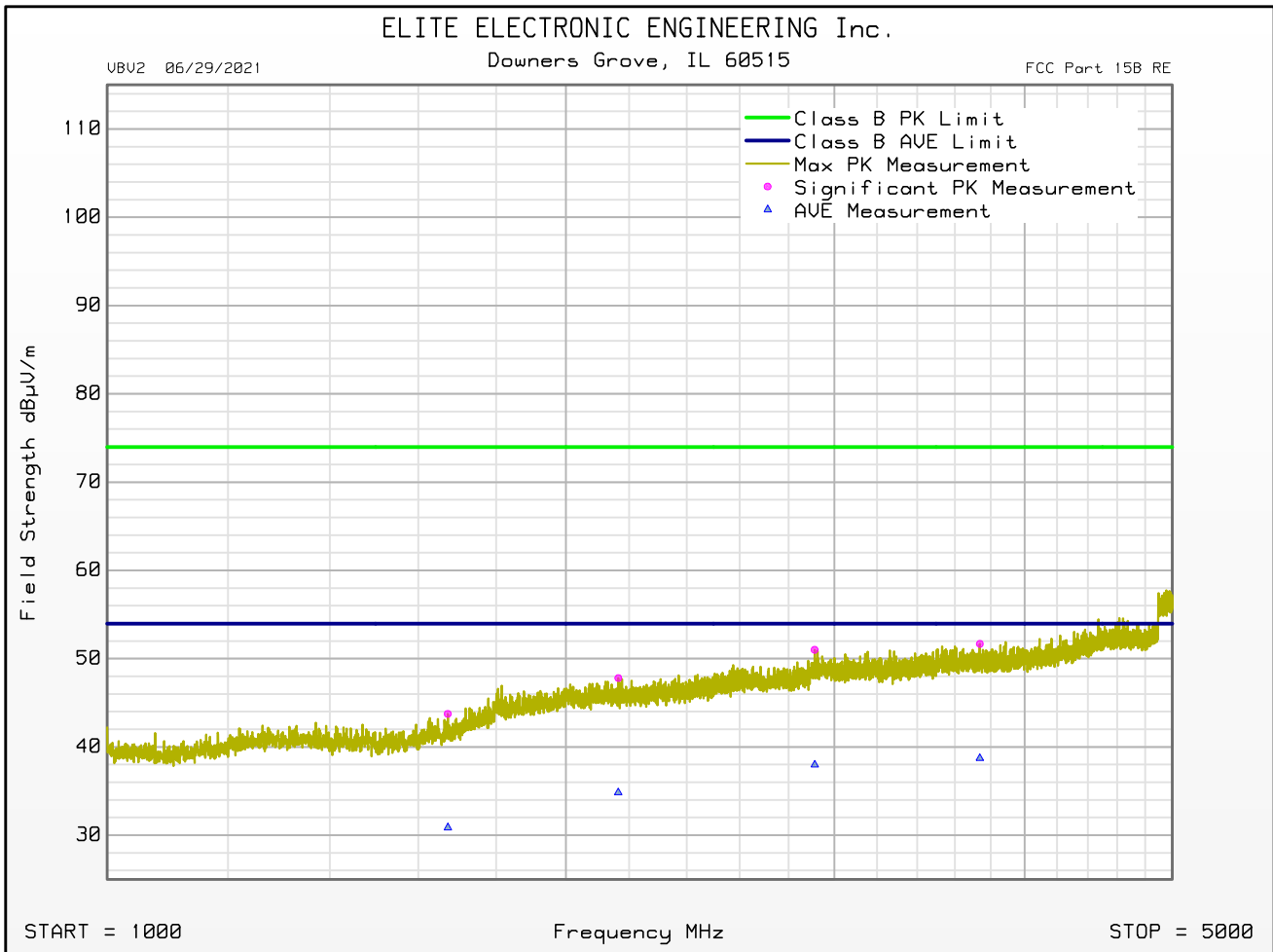
Freq MHz	Peak Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBuV/m	Peak Limit dBuV/m	Peak Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Peak Level
1289.500	11.9	29.0	0.0	1.8	0.0	42.7	74.0	-31.3	Vertical	200	225	
1673.000	12.3	29.4	0.0	2.1	0.0	43.7	74.0	-30.2	Horizontal	340	135	
2164.500	13.6	31.8	0.0	2.4	0.0	47.8	74.0	-26.2	Horizontal	200	45	
2912.500	15.5	32.6	0.0	2.9	0.0	51.0	74.0	-23.0	Horizontal	120	135	
3738.000	15.1	33.2	0.0	3.3	0.0	51.7	74.0	-22.3	Horizontal	120	225	
4980.000	20.6	34.2	0.0	3.8	0.0	58.6	74.0	-15.4	Vertical	200	225	

Freq MHz	Average Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Average Total dBuV/m	Average Limit dBuV/m	Average Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Average Level
1289.500	-0.9	29.0	0.0	1.8	0.0	29.9	54.0	-24.1	Vertical	200	225	
1673.000	-0.6	29.4	0.0	2.1	0.0	30.9	54.0	-23.1	Horizontal	340	135	
2164.500	0.6	31.8	0.0	2.4	0.0	34.8	54.0	-19.1	Horizontal	200	45	
2912.500	2.5	32.6	0.0	2.9	0.0	38.0	54.0	-16.0	Horizontal	120	135	
3738.000	2.2	33.2	0.0	3.3	0.0	38.7	54.0	-15.3	Horizontal	120	225	
4980.000	7.2	34.2	0.0	3.8	0.0	45.2	54.0	-8.8	Vertical	200	225	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

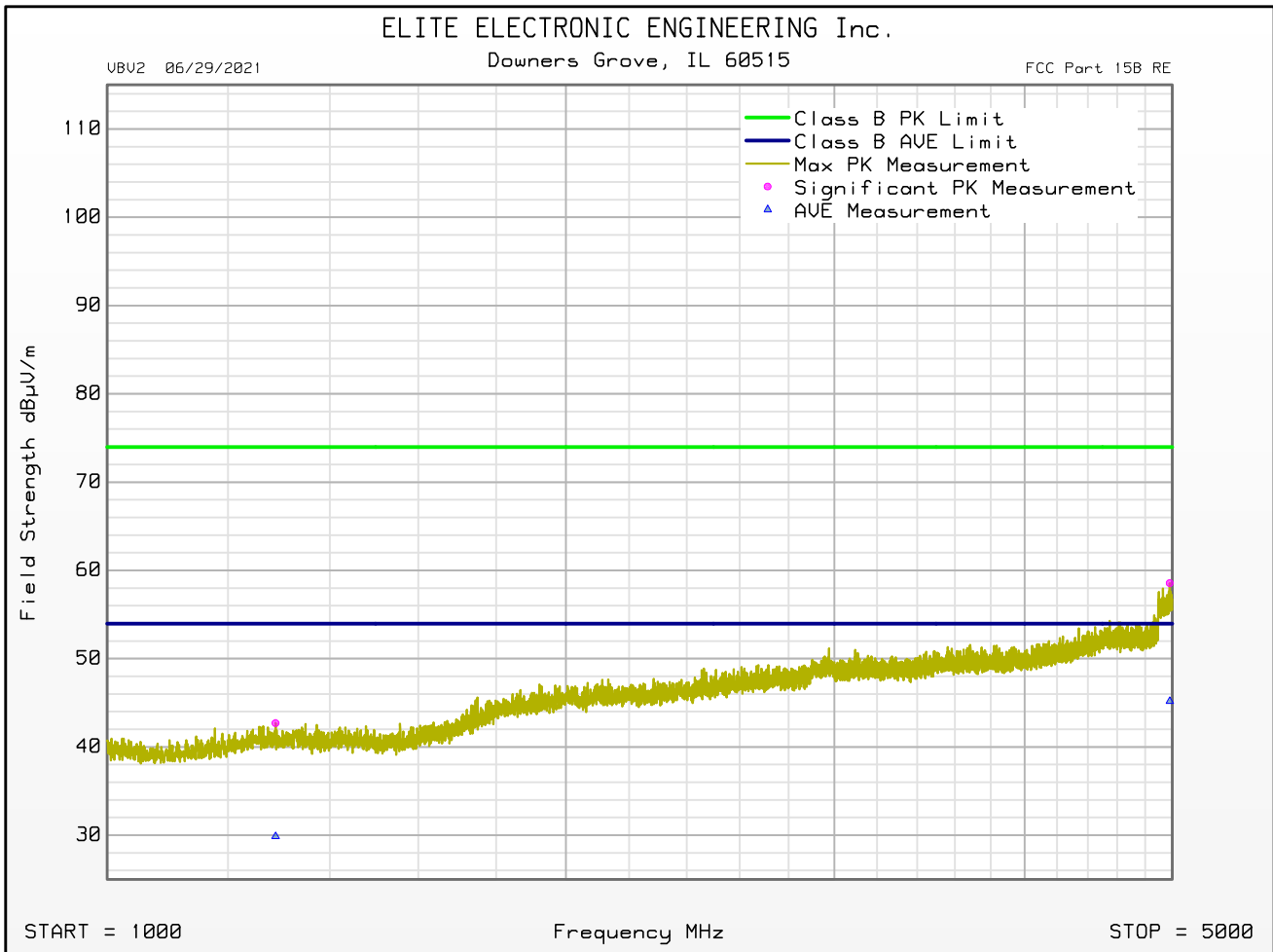
Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Horizontal
Scan Type : Stepped Scan
Test RBW : 1 MHz
Prelim Dwell Time (s) : 0.0001
Notes : 310-390MHz Low Ch
Test Engineer : J. Cardenas
Test Date : Aug 10, 2021 10:47:51 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Vertical
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 310-390MHz Low Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 10:47:51 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

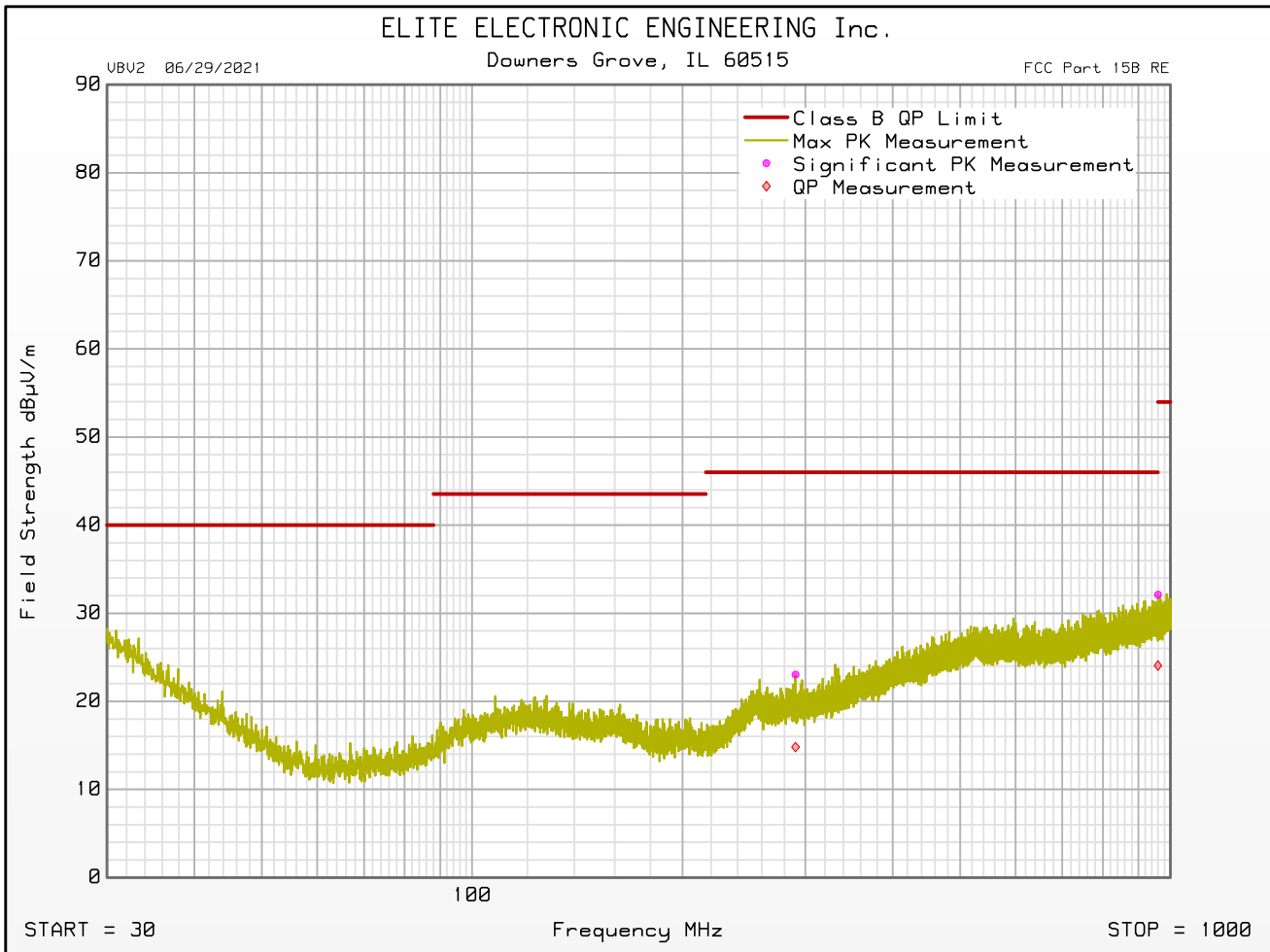
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 310-390MHz Mid Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 11:01:45 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
30.000	4.4	-2.6	25.0	0.0	0.4	0.0	29.8	22.7	40.0	-17.3	Vertical	340	180	
86.520	2.7	-4.8	14.3	0.0	0.4	0.0	17.3	9.8	40.0	-30.2	Vertical	340	135	
107.860	4.0	-2.2	17.5	0.0	0.4	0.0	21.9	15.7	43.5	-27.8	Vertical	120	45	
290.460	3.4	-4.9	18.9	0.0	0.8	0.0	23.0	14.8	46.0	-31.2	Horizontal	200	90	
530.280	4.3	-4.2	24.9	0.0	1.1	0.0	30.3	21.8	46.0	-24.2	Vertical	200	45	
959.700	3.5	-4.6	27.1	0.0	1.5	0.0	32.1	24.1	46.0	-21.9	Horizontal	120	225	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

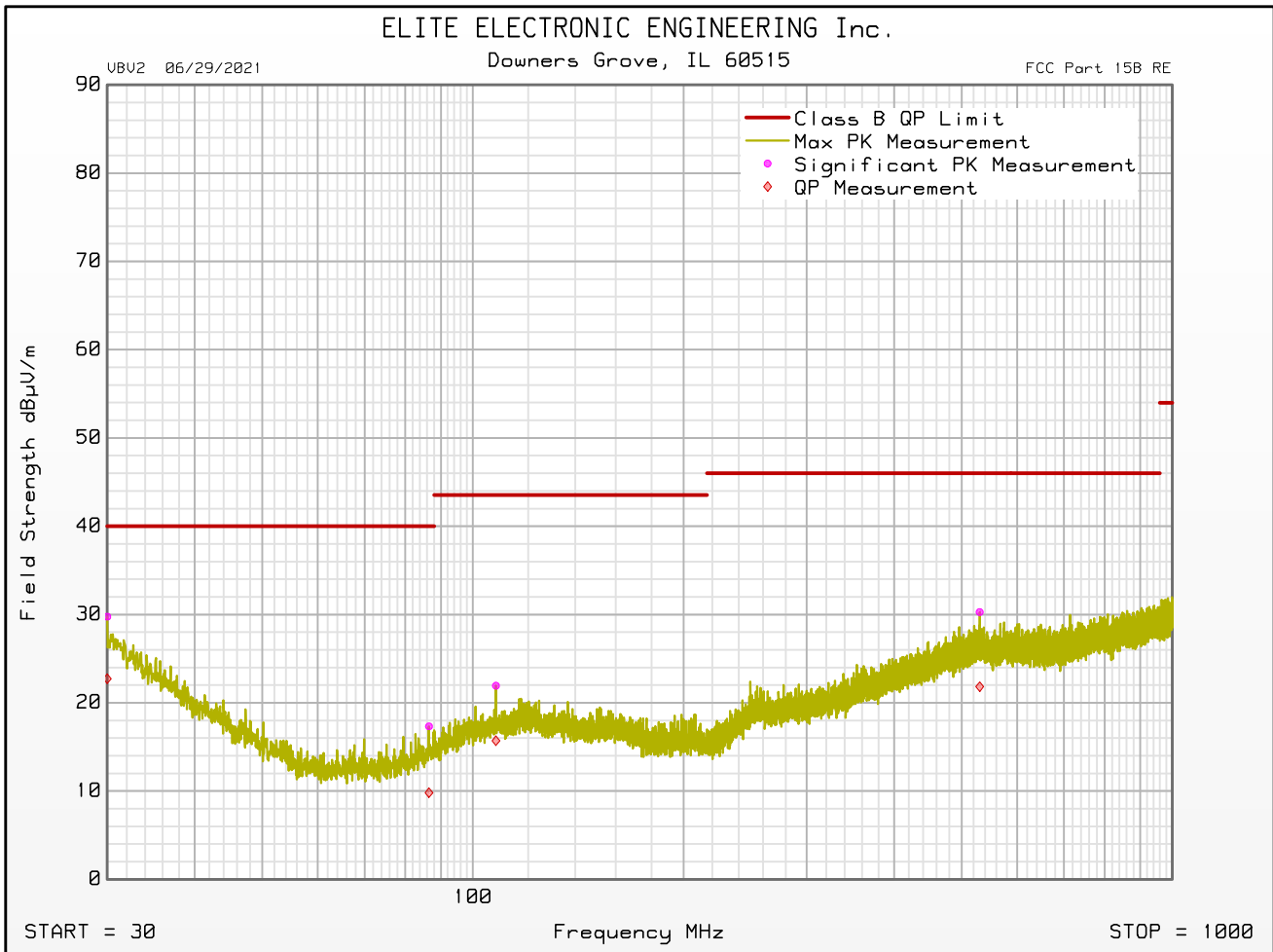
Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Horizontal
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes : 310-390MHz Mid Ch
Test Engineer : J. Cardenas
Test Date : Aug 09, 2021 11:01:45 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Vertical
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes : 310-390MHz Mid Ch
Test Engineer : J. Cardenas
Test Date : Aug 09, 2021 11:01:45 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 310-390MHz Mid Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 11:21:27 AM

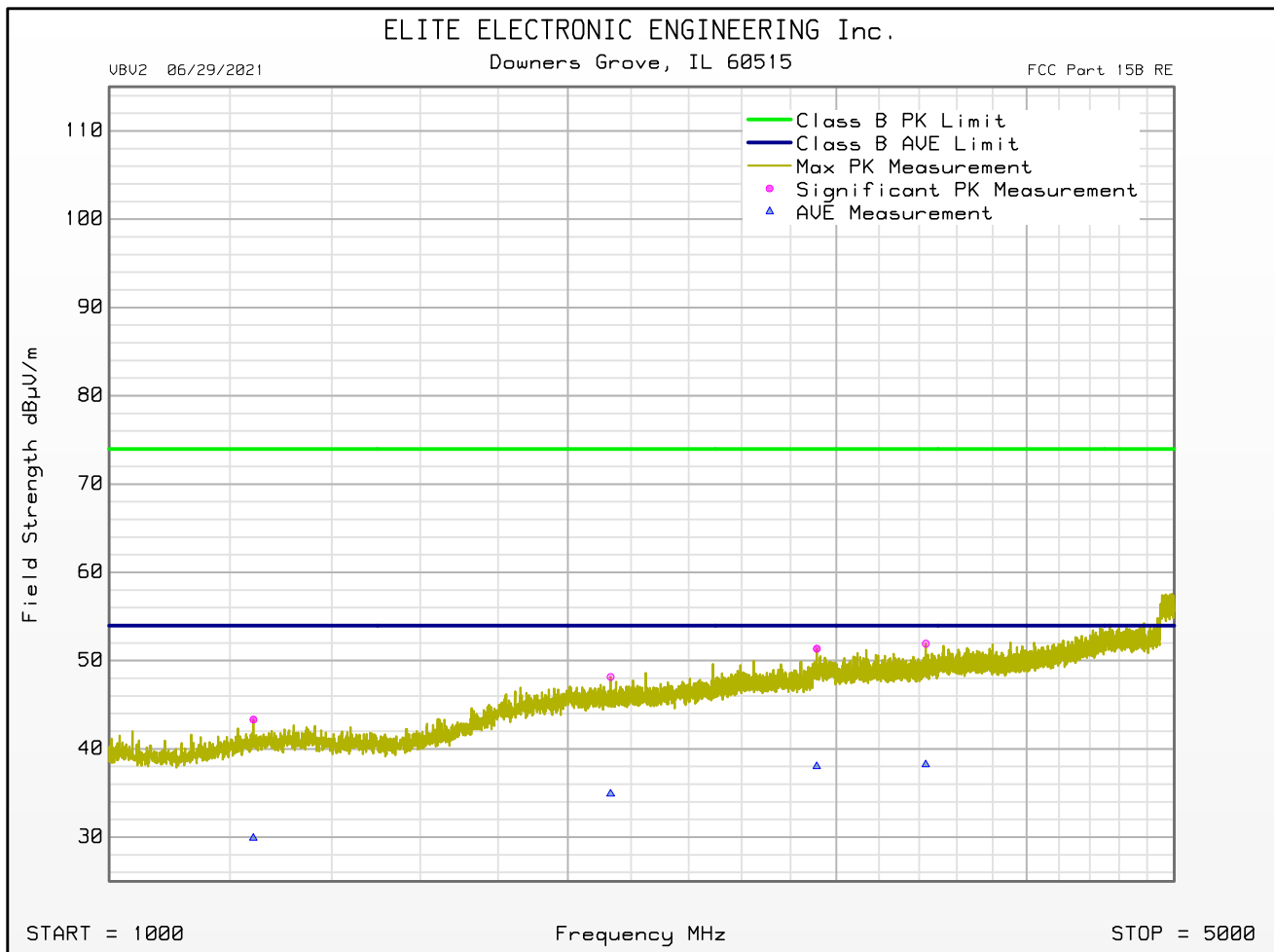
Freq MHz	Peak Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBuV/m	Peak Limit dBuV/m	Peak Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Peak Level
1243.500	12.4	29.1	0.0	1.8	0.0	43.3	74.0	-30.7	Horizontal	200	45	
1699.500	13.1	29.7	0.0	2.1	0.0	44.9	74.0	-29.1	Vertical	200	135	
2133.500	13.9	31.9	0.0	2.4	0.0	48.2	74.0	-25.8	Horizontal	340	180	
2913.000	15.8	32.6	0.0	2.9	0.0	51.3	74.0	-22.6	Horizontal	120	0	
3434.500	15.8	32.9	0.0	3.2	0.0	51.9	74.0	-22.1	Horizontal	200	45	
4978.500	20.8	34.2	0.0	3.8	0.0	58.7	74.0	-15.2	Vertical	120	0	

Freq MHz	Average Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Average Total dBuV/m	Average Limit dBuV/m	Average Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Average Level
1243.500	-1.0	29.1	0.0	1.8	0.0	29.9	54.0	-24.1	Horizontal	200	45	
1699.500	-0.3	29.7	0.0	2.1	0.0	31.5	54.0	-22.5	Vertical	200	135	
2133.500	0.6	31.9	0.0	2.4	0.0	34.9	54.0	-19.1	Horizontal	340	180	
2913.000	2.5	32.6	0.0	2.9	0.0	38.0	54.0	-16.0	Horizontal	120	0	
3434.500	2.1	32.9	0.0	3.2	0.0	38.2	54.0	-15.8	Horizontal	200	45	
4978.500	7.3	34.2	0.0	3.8	0.0	45.2	54.0	-8.8	Vertical	120	0	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

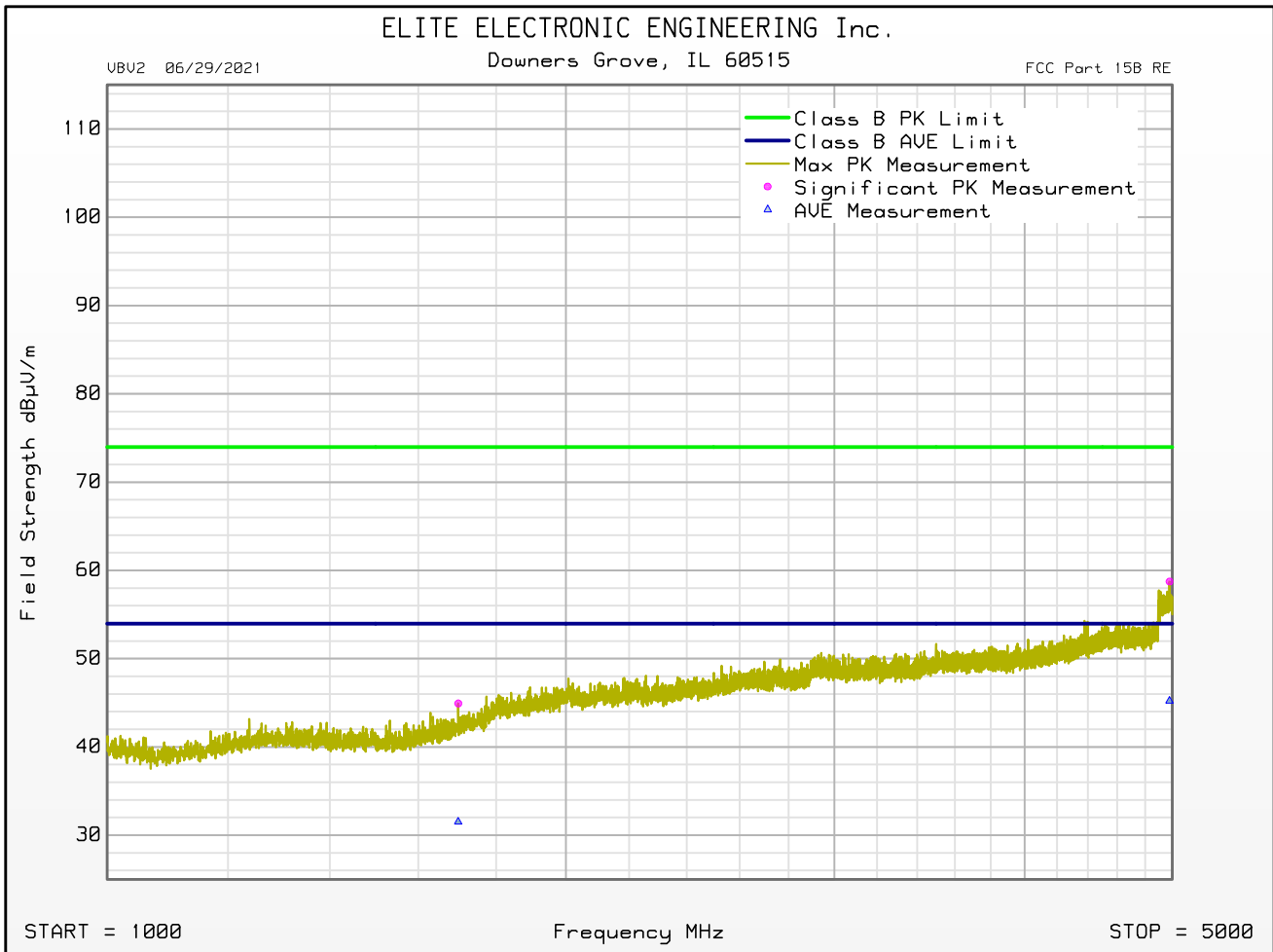
Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Horizontal
Scan Type : Stepped Scan
Test RBW : 1 MHz
Prelim Dwell Time (s) : 0.0001
Notes : 310-390MHz Mid Ch
Test Engineer : J. Cardenas
Test Date : Aug 10, 2021 11:21:27 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Vertical
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 310-390MHz Mid Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 11:21:27 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

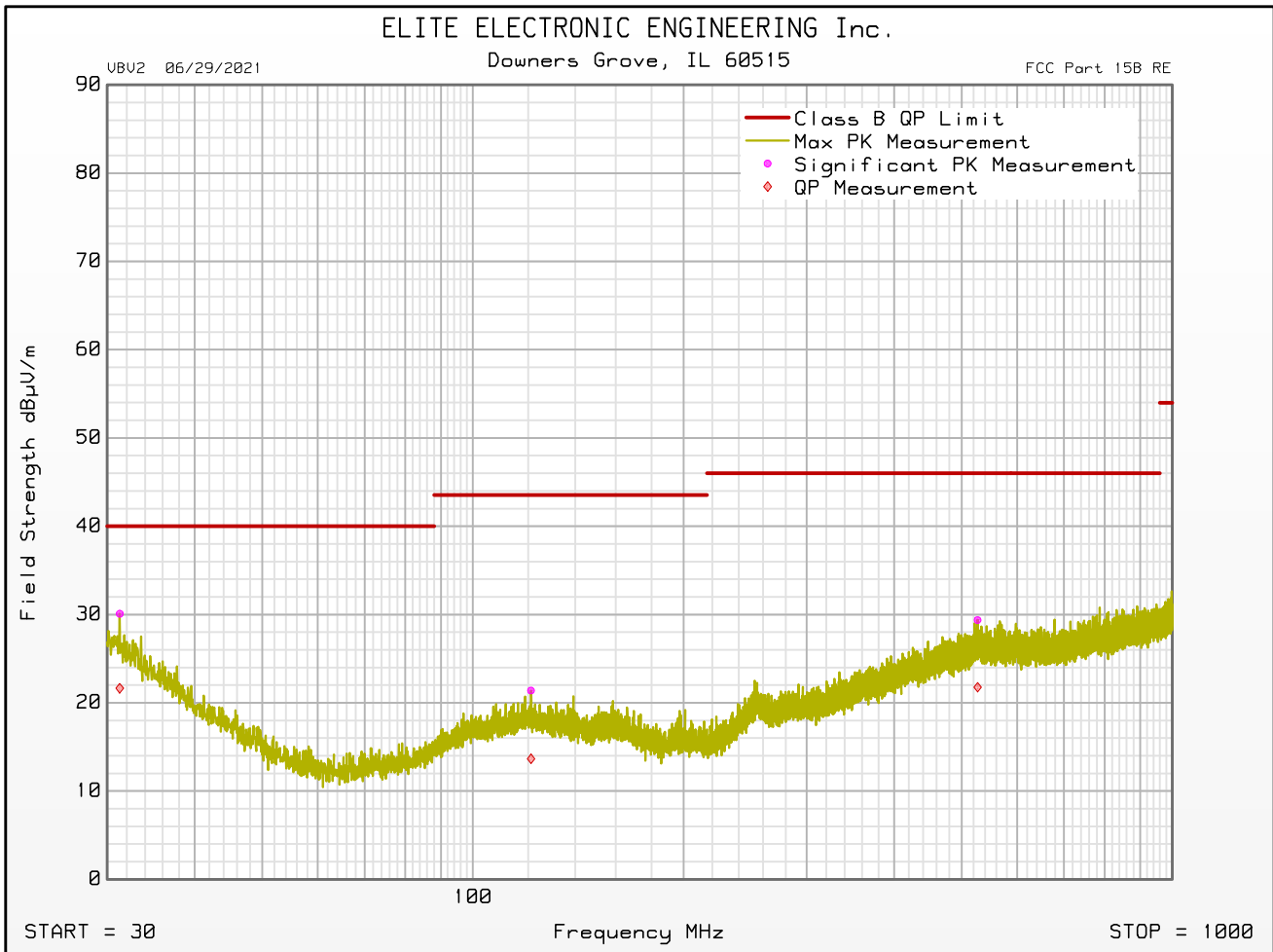
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 310-390MHz High Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 12:26:38 PM

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
31.260	5.5	-2.9	24.2	0.0	0.4	0.0	30.1	21.7	40.0	-18.3	Horizontal	340	135	
87.780	2.6	-5.0	14.6	0.0	0.4	0.0	17.5	9.9	40.0	-30.1	Vertical	340	225	
121.060	2.7	-5.1	18.2	0.0	0.5	0.0	21.4	13.7	43.5	-29.9	Horizontal	200	180	
307.740	2.5	-5.0	19.3	0.0	0.8	0.0	22.6	15.1	46.0	-30.9	Vertical	120	225	
526.680	3.5	-4.1	24.7	0.0	1.1	0.0	29.4	21.8	46.0	-24.2	Horizontal	200	180	
919.320	3.5	-4.2	26.5	0.0	1.5	0.0	31.5	23.8	46.0	-22.2	Vertical	120	0	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
Serial Number : NA
DUT Mode : Rx
Turntable Step Angle (°): 45
Mast Positions (cm) : 120, 200, 340
Antenna Polarization : Horizontal
Scan Type : Stepped Scan
Test RBW : 120 kHz
Prelim Dwell Time (s) : 0.0001
Notes : 310-390MHz High Ch
Test Engineer : J. Cardenas
Test Date : Aug 09, 2021 12:26:38 PM

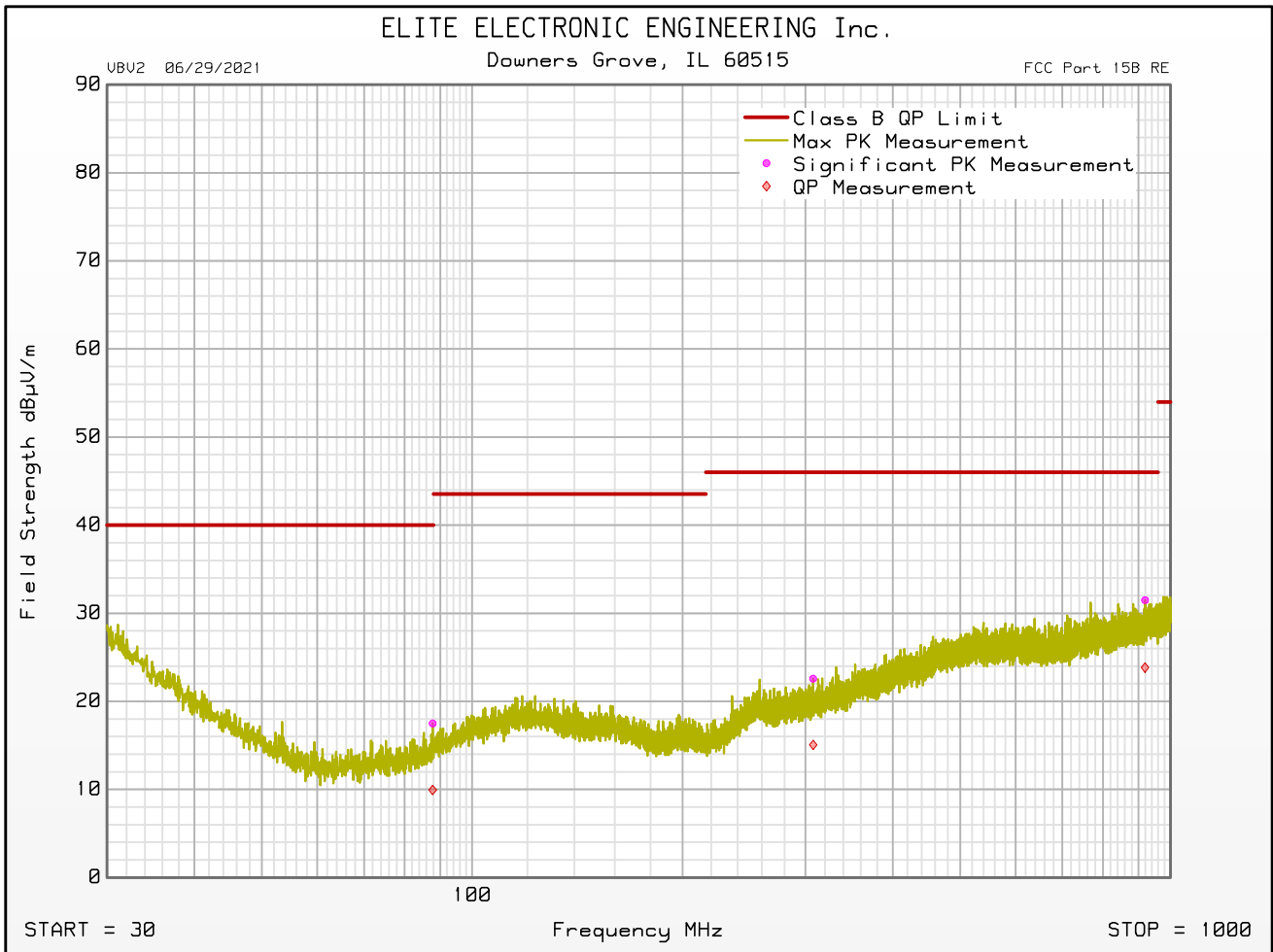




FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Vertical
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 310-390MHz High Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 09, 2021 12:26:38 PM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 310-390MHz High Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 11:51:33 AM

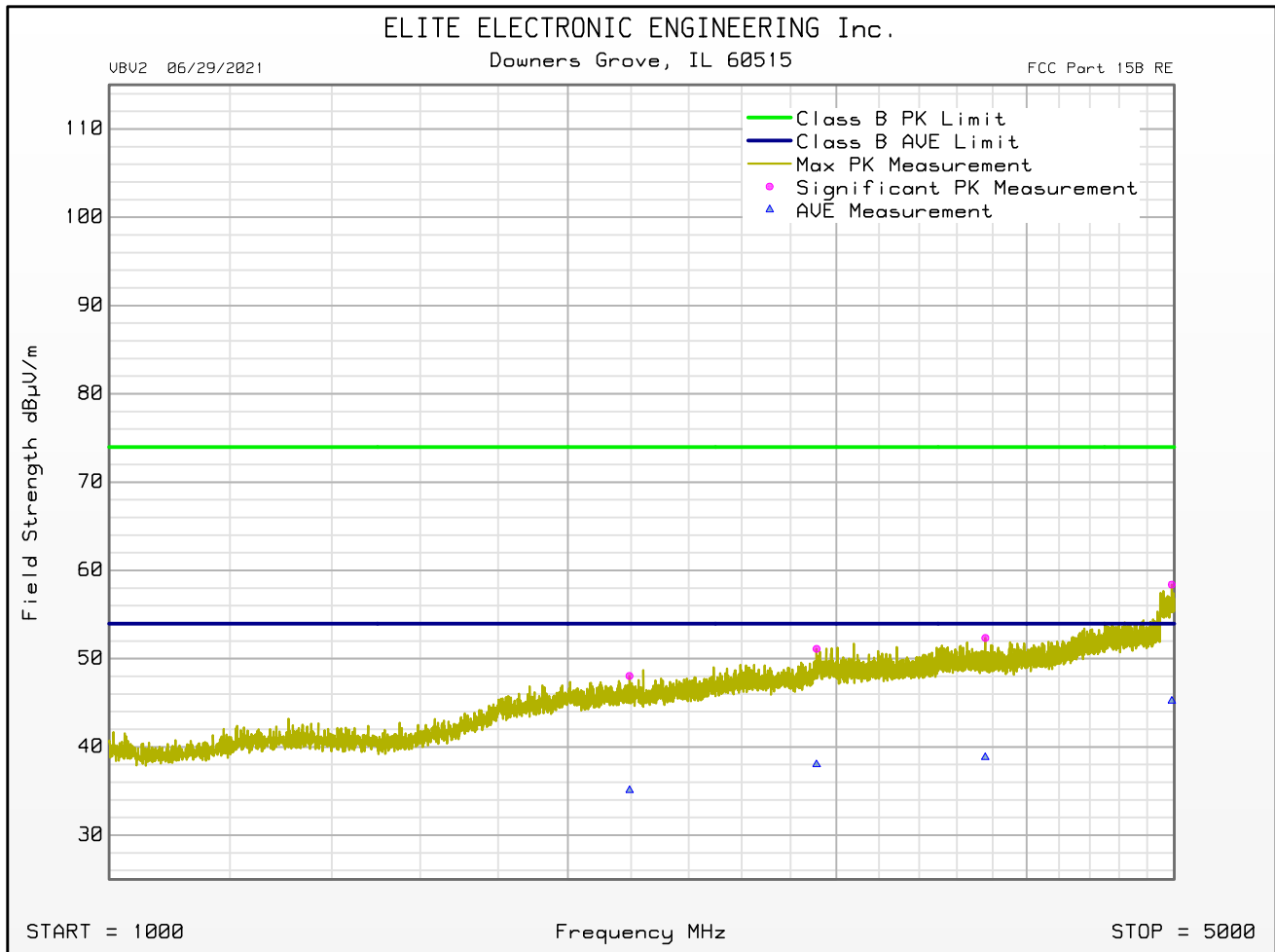
Freq MHz	Peak Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBuV/m	Peak Limit dBuV/m	Peak Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Peak Level
1302.000	12.3	28.9	0.0	1.8	0.0	43.1	74.0	-30.9	Vertical	200	315	
1678.000	12.5	29.5	0.0	2.1	0.0	44.1	74.0	-29.9	Vertical	120	225	
2195.000	13.6	32.0	0.0	2.4	0.0	48.0	74.0	-25.9	Horizontal	340	45	
2912.000	15.6	32.6	0.0	2.9	0.0	51.1	74.0	-22.9	Horizontal	120	45	
3757.500	15.8	33.3	0.0	3.3	0.0	52.3	74.0	-21.6	Horizontal	340	270	
4980.500	20.4	34.2	0.0	3.8	0.0	58.4	74.0	-15.6	Horizontal	340	0	

Freq MHz	Average Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Average Total dBuV/m	Average Limit dBuV/m	Average Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Average Level
1302.000	-0.8	28.9	0.0	1.8	0.0	29.9	54.0	-24.0	Vertical	200	315	
1678.000	-0.6	29.5	0.0	2.1	0.0	31.0	54.0	-23.0	Vertical	120	225	
2195.000	0.7	32.0	0.0	2.4	0.0	35.1	54.0	-18.9	Horizontal	340	45	
2912.000	2.5	32.6	0.0	2.9	0.0	38.0	54.0	-16.0	Horizontal	120	45	
3757.500	2.2	33.3	0.0	3.3	0.0	38.8	54.0	-15.2	Horizontal	340	270	
4980.500	7.3	34.2	0.0	3.8	0.0	45.2	54.0	-8.8	Horizontal	340	0	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

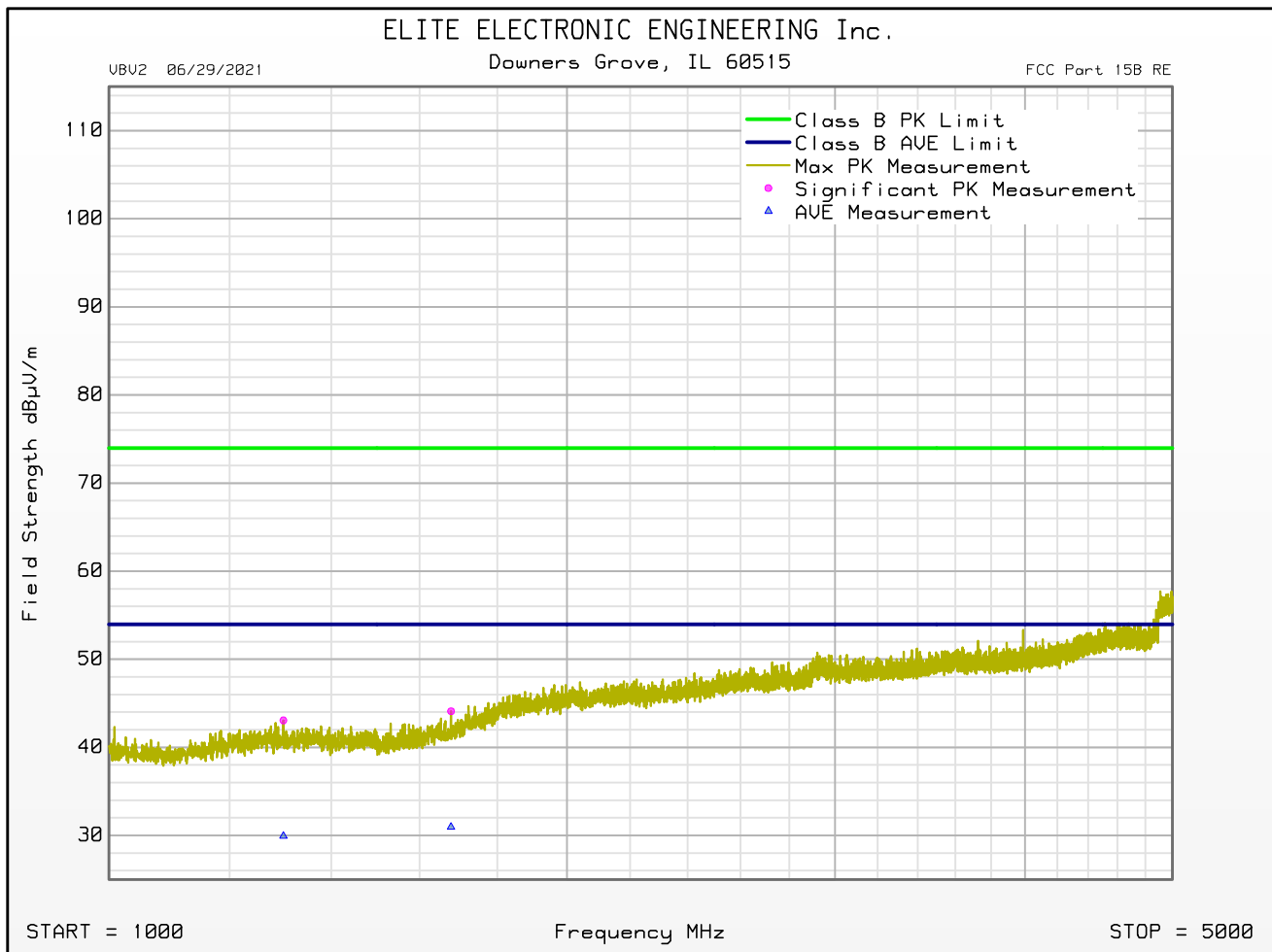
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Horizontal
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 310-390MHz High Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 11:51:33 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 06/29/2021

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 Serial Number : NA
 DUT Mode : Rx
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Vertical
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : 310-390MHz High Ch
 Test Engineer : J. Cardenas
 Test Date : Aug 10, 2021 11:51:33 AM



22. Transmitter Conducted Emissions Test (AC Mains)

Test Information	
Manufacturer	Chamberlain Group Inc
Product	Main/Control PCB Transceiver
Model	001D9525-1-IND
Serial No	NA
Mode	Frequency Hopping

Test Setup Details	
Setup Format	Tabletop
Height of Support	NA
Type of Test Site	Shielded Enclosure
Test site used	R14ML
Note	None

Requirements		
All radio frequency voltages on the power lines for any frequency or frequencies of an intentional radiator shall not exceed the limits in the following table:		
Frequency of Emission (MHz)	Conducted Limits (dB μ V)	
	Quasi-peak	Average
0.15-05	66 to 56*	56-46*
0.5-5	56	46
5-30	60	50

Procedures
<p>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.</p> <ol style="list-style-type: none"> 1) The EUT was operated in the Frequency Hopping mode. 2) Measurements were first made on the 120V, 60Hz 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 120V, 60Hz neutral line.

Measurement Uncertainty	
Measurement Type	Expanded Measurement Uncertainty
Conducted disturbance (mains port) (150 kHz – 30 MHz)	2.7

FCC Part 15 Subpart B Conducted Emissions Test Significant Emissions Data

VBR8 05/14/2020

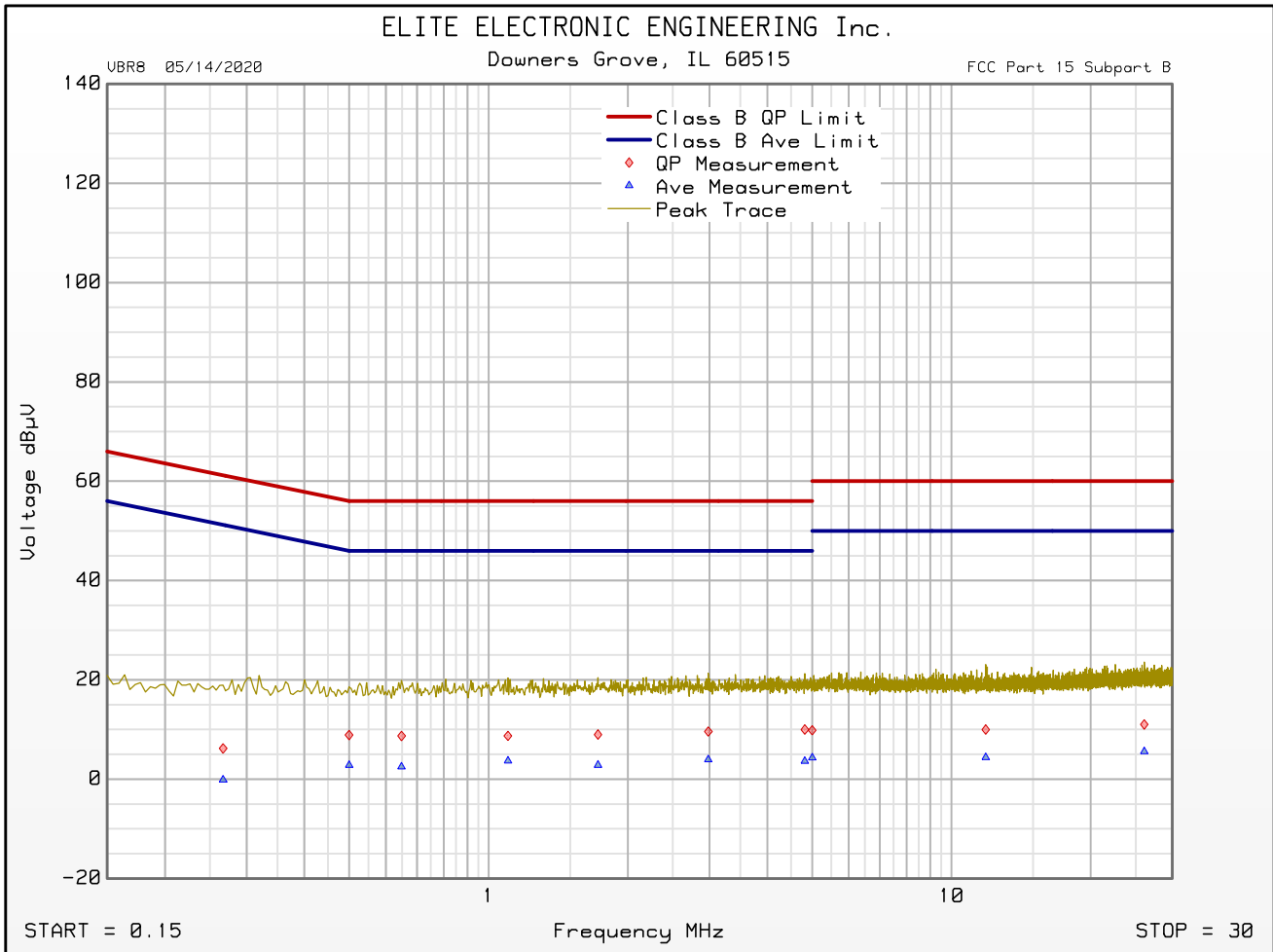
Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Frequency Hopping
 Line Tested : High
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : None
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 12:31:04 PM
 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
0.267	6.2	61.2		-0.1	51.2	
0.500	8.9	56.0		2.8	46.0	
0.649	8.7	56.0		2.5	46.0	
1.101	8.7	56.0		3.7	46.0	
1.723	9.0	56.0		2.8	46.0	
2.984	9.6	56.0		3.9	46.0	
4.823	10.0	56.0		3.6	46.0	
5.000	9.9	56.0		4.3	46.0	
11.858	10.0	60.0		4.4	50.0	
26.092	11.0	60.0		5.6	50.0	

FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 05/14/2020

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Frequency Hopping
 Line Tested : High
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : None
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 12:31:04 PM



Emissions Meet QP Limit
 Emissions Meet Ave Limit



FCC Part 15 Subpart B Conducted Emissions Test Significant Emissions Data

VBR8 05/14/2020

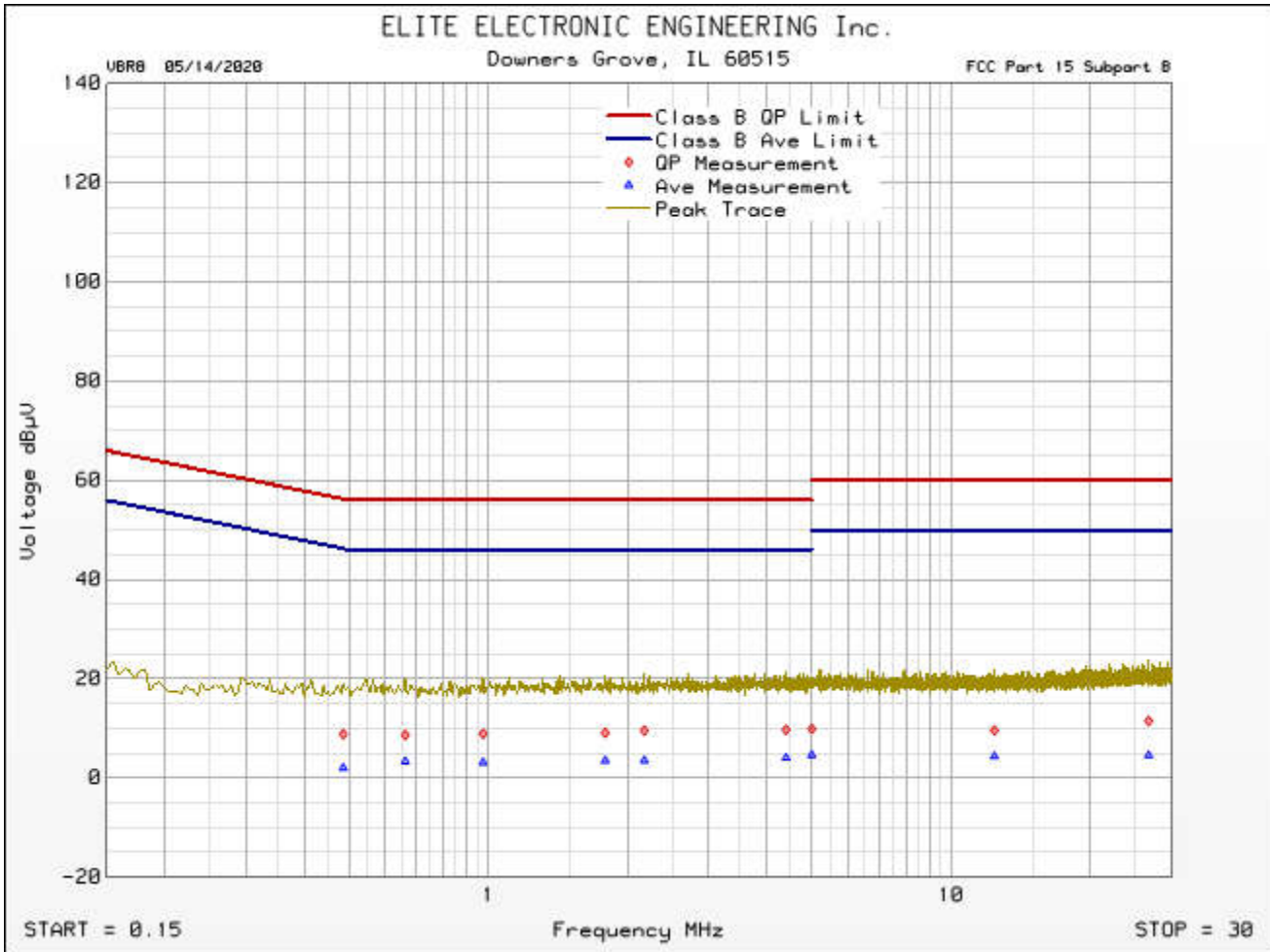
Manufacturer : Chamberlain Group Inc
Model : 001D9525-1-IND
DUT Revision : ---
Serial Number : NA
DUT Mode : Frequency Hopping
Line Tested : Neutral
Scan Step Time [ms] : 30
Meas. Threshold [dB] : -10
Notes : None
Test Engineer : J. Cardenas
Limit : Class B
Test Date : Aug 04, 2021 12:37:08 PM
Data Filter : Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

Freq MHz	Quasi-peak Level dB μ V	Quasi-peak Limit dB μ V	Excessive Quasi-peak Emissions	Average Level dB μ V	Average Limit dB μ V	Excessive Average Emissions
0.486	8.9	56.2		2.1	46.2	
0.662	8.7	56.0		3.4	46.0	
0.975	9.0	56.0		3.2	46.0	
1.790	9.1	56.0		3.5	46.0	
2.174	9.6	56.0		3.6	46.0	
5.000	10.0	56.0		4.7	46.0	
12.407	9.7	60.0		4.4	50.0	
26.731	11.6	60.0		4.6	50.0	

FCC Part 15 Subpart B Conducted Emissions Test Cumulative Data

VBR8 05/14/2020

Manufacturer : Chamberlain Group Inc
 Model : 001D9525-1-IND
 DUT Revision : ---
 Serial Number : NA
 DUT Mode : Frequency Hopping
 Line Tested : Neutral
 Scan Step Time [ms] : 30
 Meas. Threshold [dB] : -10
 Notes : None
 Test Engineer : J. Cardenas
 Limit : Class B
 Test Date : Aug 04, 2021 12:37:08 PM



Emissions Meet QP Limit
 Emissions Meet Ave Limit

23. 20dB Bandwidth

Test Information	
Manufacturer	Chamberlain Group Inc
Product	Main/Control PCB Transceiver
Model	001D9525-1-IND
Serial No	NA
Mode	Continuous Transmission

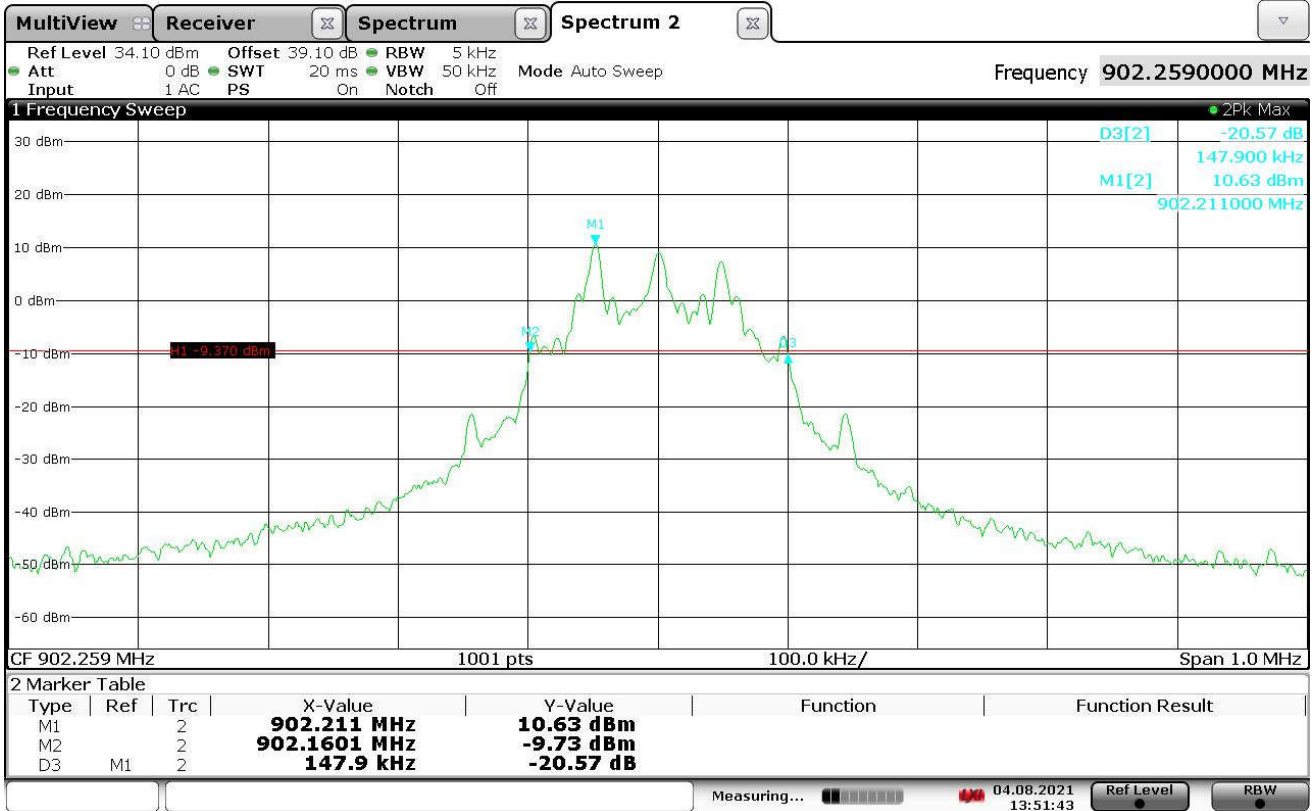
Test Setup Details	
Setup Format	Tabletop
Height of Support	NA
Measurement Method	Antenna Conducted
Type of Test Site	EMC Workbench
Test site used	NA
Type of Antennas Used	NA
Notes	None

Requirements
Systems using frequency hopping techniques, operating in the 902-928MHz band, are allowed a maximum 20dB bandwidth of 500kHz.

Procedures
<p>The antenna port of the EUT was connected to the spectrum analyzer through 40dB of attenuation.</p> <p>With the hopping function disabled, the EUT was allowed to transmit continuously. The frequency hopping channel was set separately to low, middle, and high hopping channels. The resolution bandwidth (RBW) was set to 1% to 5% of the 20 dB BW. The span was set to approximately 2 to 5 times the 20 dB bandwidth.</p> <p>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.</p>

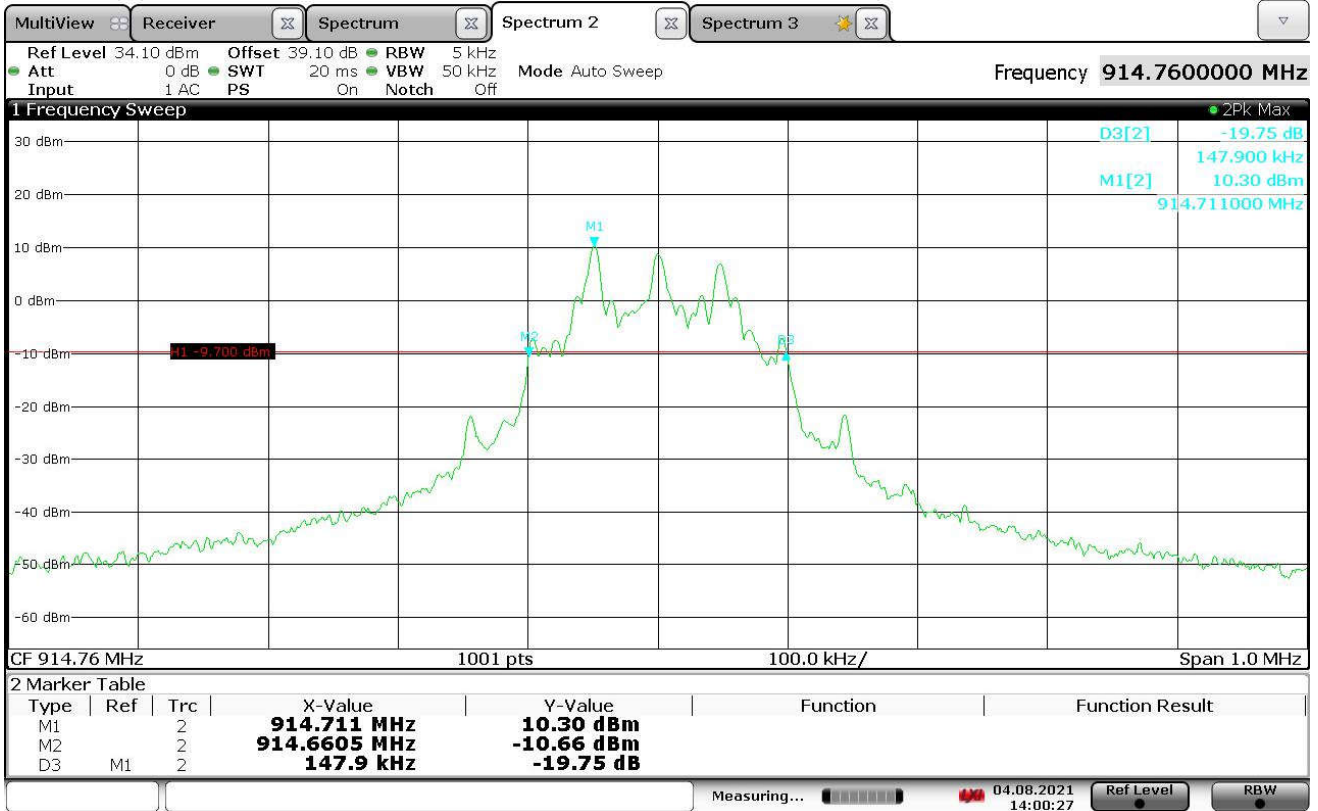
Measurement Uncertainty	
Measurement Type	Expanded Measurement Uncertainty
Radiated disturbance (electric field strength on an open area test site or alternative test site) (30 MHz – 1000 MHz)	4.3
Radiated disturbance (electric field strength on an open area test site or alternative test site) (1 GHz – 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

Test Details	
Manufacturer	Chamberlain Group Inc
Model	001D9525-1-IND
S/N	NA
Mode	Continuous Transmission
Carrier Frequency	902.259MHz
Parameters	20dB BW = 147.9kHz
Notes	None



13:51:44 04.08.2021

Test Details	
Manufacturer	Chamberlain Group Inc
Model	001D9525-1-IND
S/N	NA
Mode	Continuous Transmission
Carrier Frequency	914.760MHz
Parameters	20dB BW = 147.9kHz
Notes	None



14:00:28 04.08.2021