Engineering Test Report No. 2104451-01		
Report Date	February 4, 2022	
Manufacturer Name	The Chamberlain Group, Inc.	
Manufacturer Address	300 Windsor Dr Oak Brook, IL 60523	
Product Name Brand/Model No.	MYQPP1	
Date Received	January 12, 2022	
Test Dates	January 12 – 14, 2022	
Specifications	FCC "Code of Federal Regulations" Title 47 Part 15, Subpart B Innovation, Science, and Economic Development Canada, ICES-003	
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	Tylar Jozefczyk	
Signature		
Approved by	Raymond J. Klouda, Registered Professional Engineer of Illinois – 44894	
PO Number	4900081247	

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

This report shall not be reproduced, except in full, without the written approval of Elite Electronic Engineering Inc.

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 and Innovation, Science, and Economic Development Canada, ICES-003 test specifications. The data presented in this test report pertains to the EUT on the test dates 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. This report must not be used to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the Federal Government.

Table of Contents

**This report shall not be reproduced, except in full,
without the written approval of Elite Electronic Engineering Inc.**

1. Report Revision History

Revision	Date	Description
–	8 FEB 2022	Initial Release of Engineering Test Report No. 2104451-01

2. Introduction

This document presents the results of a series of electromagnetic compatibility (EMC) tests that were performed on the myQ Pet Portals (hereinafter referred to as the Equipment Under Test (EUT)).

The EUTs were identified as follows:

EUT Identification	
EUT #1	
Description	myQ Pet Portal
Model/Part No.	MYQPP1
Serial No.	1
Software/Firmware Version	CGI version 3.0
Size of EUT	32.88” × 28.25” × 2.5”
Number of Interconnection Wires	N/A
Type of Interconnection Wires	N/A
Highest Internal Frequency of the EUT	5.7GHz
EUT #2	
Description	myQ Pet Portal
Model/Part No.	MYQPP1
Serial No.	2
Software/Firmware Version	CGI version 3.0
Size of EUT	32.88” × 28.25” × 2.5”
Number of Interconnection Wires	N/A
Type of Interconnection Wires	N/A
Highest Internal Frequency of the EUT	5.7GHz

Note: EUT #2 is functionally the same as EUT #1, with a modification to the firmware to have the MOTOR RUNNING the unit continuously running.

The EUTs are equipped with the following pre-certified radio modules:

- MyQ Camera, FCC ID HBWGDOCAM1, IC ID 2666A-GDOCAM1, operating in the 2.4GHz/5.7GHz band/frequency.
- Realtek LMA, FCC ID HBW9586, IC ID 2666A-9586, operating in the 2.4GHz band/frequency.

Additionally, this document presents the results of limited spurious emissions measurements performed on the EUT. The nature of these measurements is to ensure that the radio module and host remain in compliance with the emissions requirements of the FCC and Innovation, Science, and Economic Development Canada after the integration process.

The EUTs listed above were used throughout the test series.

3. Power Input

The EUTs obtained 120V 60Hz power via a 2-wire, 1-meter, wall wart type, power source. The EUTs could also obtain 120V 60Hz power via a 2-wire in-wall supply.

4. Grounding

The EUTs were not connected to ground.

5. Support Equipment

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

Equipment	Description
Laptop	Used to put the EUT into the required test modes.
Serial Cable	Used to put the EUT into the required test modes.

6. Interconnect Leads

No interconnect leads were used during the tests.

7. Modifications Made to the EUT

No modifications were made to the EUTs during the testing.

8. Modes of Operation

The EMC tests were performed with the EUTs operating in one or more of the test modes described below. See the specific test section for the applicable test modes.

Mode	Description
Motor Running	Power was applied to the EUT and the motor was set to run indefinitely.
Transmitter Standby	Power was applied to the EUT and all transmitters were set in a standby mode.
Tx	Power was applied to the EUT and the following frequencies were tested: - BLE – • 2402MHz • 2426MHz • 2480MHz - Wi-Fi – • 802.11n HT20 5765MHz

In addition to the above modes, for Multi-Transmitter testing, the following combinations were used:

Combination	Description
1	- Bluetooth: Channel 37 – 2402MHz - Wi-Fi: 802.11g Channel 6 – 2437MHz - Wi-Fi: 802.11g Channel 11 – 2462MHz
2	- Bluetooth: Channel 37 – 2402MHz - Wi-Fi: 802.11g Channel 6 – 2437MHz - Wi-Fi: 802.11g Channel 11 – 2462MHz

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)”

- RSS-Gen, Issue 5, February 2021, Amendment 2, “General Requirements for Compliance of Radio

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

10. Test Plan

No test plan was provided. Instructions were provided by personnel from The Chamberlain Group, Inc. and used in conjunction with the FCC "Code of Federal Regulations" Title 47 Part 15, Subpart B, Innovation, Science, and Economic Development Canada, ICES-003, and ANSI C63.4-2014 specifications.

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

The following deviations, additions to, or exclusions from the test specifications were implemented during this test series per The Chamberlain Group, Inc. personnel:

- The EUT transmitter was situated in a frame used for testing to accurately reflect antenna placement and general setup. As the transmitter was more than 150cm from the ground plane when in the frame, tests above 1GHz were performed with the non-conductive table at 80cm instead of 150cm.

12. Laboratory Conditions

The following were the laboratory conditions while the EMC tests were performed:

Ambient Parameters	Value
Temperature	21.4°C
Relative Humidity	11%
Atmospheric Pressure	991.19mb

13. Summary

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

Test Description	Test Requirements	Test Method	Equipment Class	EUT S/N	Results
RF Conducted Emissions (AC Mains)	FCC 15.107 ICES-003, Section 3.2.1	ANSI C63.4:2014	B	2	Conforms
RF Radiated Emissions	FCC 15.109 ICES-003, Section 3.2.2	ANSI C63.4:2014	B	1	Conforms
Module Integration – Emissions	KDB 996369 D04	ANSI C63.4:2014	-----	1	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]

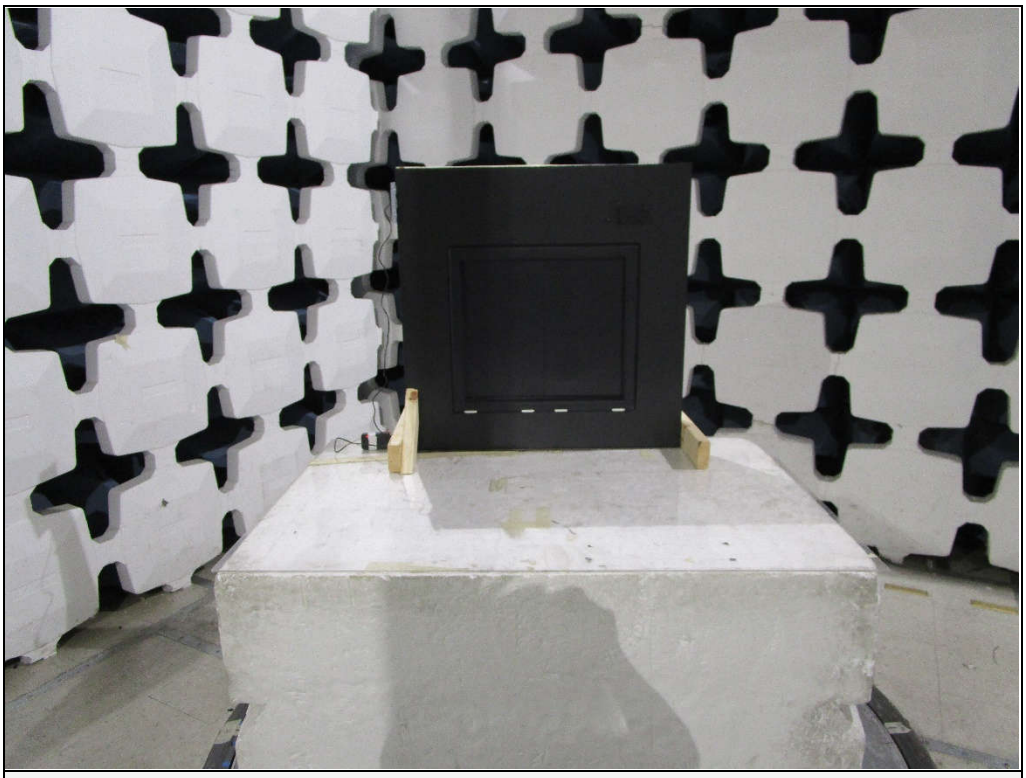
15. Statement of Conformity

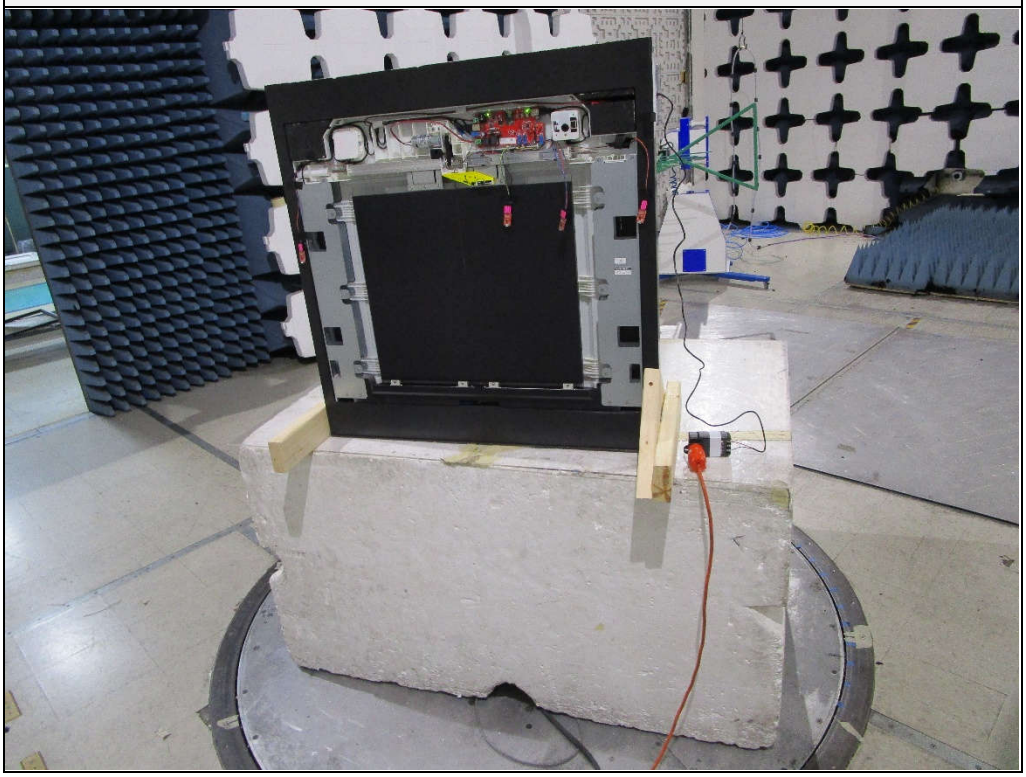
The Chamberlain Group, Inc. myQ Pet Portal (Model No. MYQPP1) did fully conform to the selected requirements of FCC "Code of Federal Regulations" Title 47 Part 15, Subpart B and Innovation, Science, and Economic Development Canada, ICES-003.

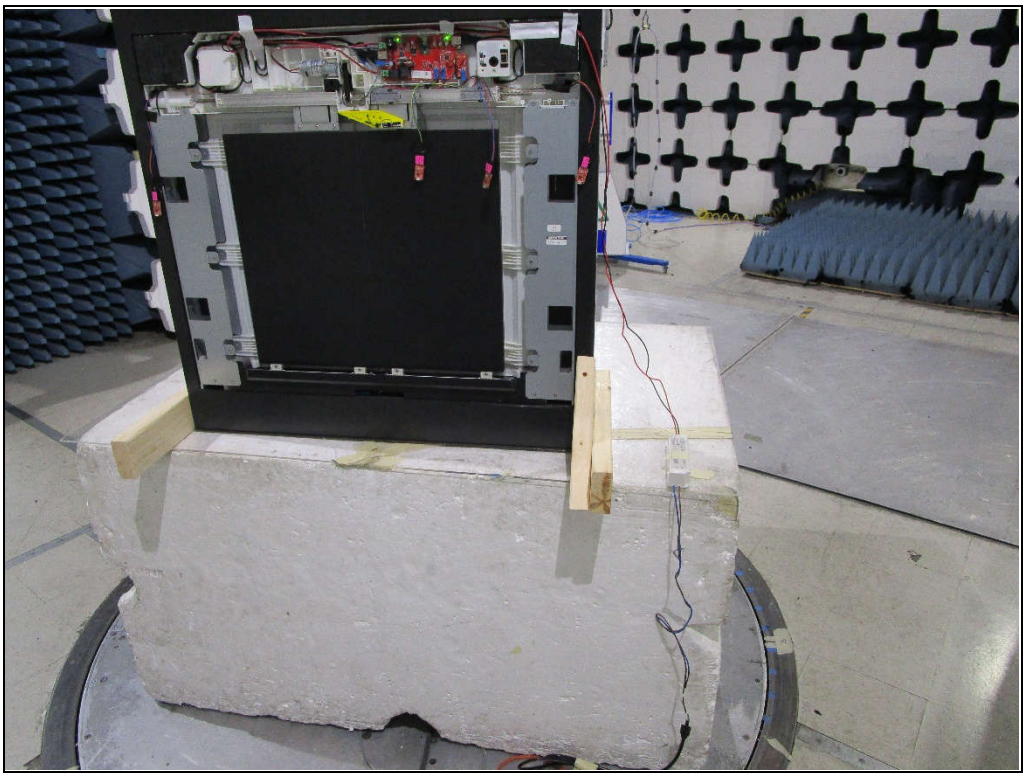
16. Certification

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 and Innovation, Science, and Economic Development Canada, ICES-003 test specifications. The data presented in this test report pertains to the EUTs 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 EUT





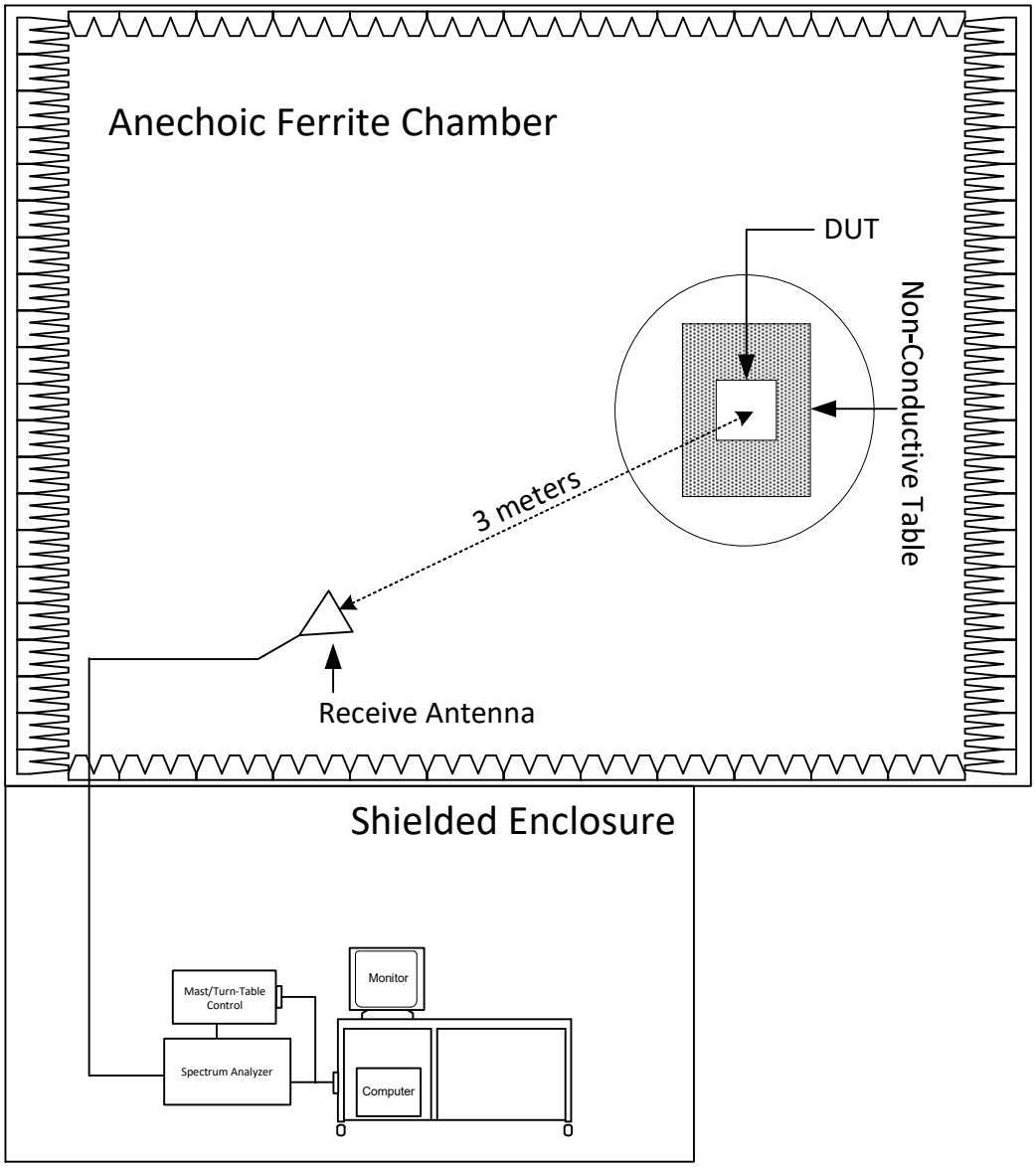


18. Equipment List

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW0	PREAMPLIFIER	PLANAR ELECTRONICS	PE2-30-20G20R6G	PL2926/0646	20GHZ-26.5GHZ	9/21/2021	9/21/2022
APW10	PREAMPLIFIER	PMI	PE2-35-120-5R0-10-12-SFF	PL11685/1241	1GHZ-20GHZ	3/11/2021	3/11/2022
CDX9	COMPUTER	ELITE	WORKSTATION			N/A	
GRB0	1MHZ, LISN SIGNAL CHECKER	ELITE	LISNCHKR1M	1	1MHZ	6/17/2021	6/17/2023
NHG0	STANDARD GAIN HORN ANTENNA	NARDA	638	---	18-26.5GHZ	NOTE 1	
NSDS1	UNIVERSAL SPHERICAL DIPOLE SOURCE	AET	USDS-H	AET-1116		NOTE 1	
NTA4	BILOG ANTENNA	TESEQ	6112D	46660	20-2000GHZ	10/5/2020	10/5/2022
NWQ1	DOUBLE RIDGED WAVEGUIDE ANTENNA	ETS-LINDGREN	3117	66655	1GHZ-18GHZ	4/28/2020	4/28/2022
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
RBG3	EMI ANALYZER	ROHDE & SCHWARZ	ESW44	101592	2HZ-44GHZ	7/12/2021	7/12/2022
SHC2	Power Supplies	HENGFU	HF60W-SL-24	A11372702	24V	NOTE 1	
T2D1	20DB, 25W ATTENUATOR	WEINSCHEL	46-20-43	AV5814	DC-18GHZ	1/18/2022	1/18/2024
VBR8	CISPR EN FCC CE VOLTAGE.exe					N/A	
VBV2	CISPR EN FCC ICES RE.EXE	ELITE	CISPR EN FCC ICES RE.EXE	---	---	N/A	
WKA1	SOFTWARE, UNIVERSAL RCV EMI	ELITE	UNIV_RCV_EMI	1	---	I/O	
XPQ6	FILTER	K&L MICROWAVE	11SH10-9000/U2000-O/O	2	5000-5800 MHZ	9/7/2021	9/7/2023
XPR0	HIGH PASS FILTER	K&L MICROWAVE	11SH10-4800/X20000	001	4.8-20GHZ	9/7/2021	9/7/2023

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. RF Conducted Emissions (AC Mains)

EUT Information	
Manufacturer	The Chamberlain Group, Inc.
Product	myQ Pet Portal
Model No.	MYQPP1
Serial No.	2
Mode	Motor Running

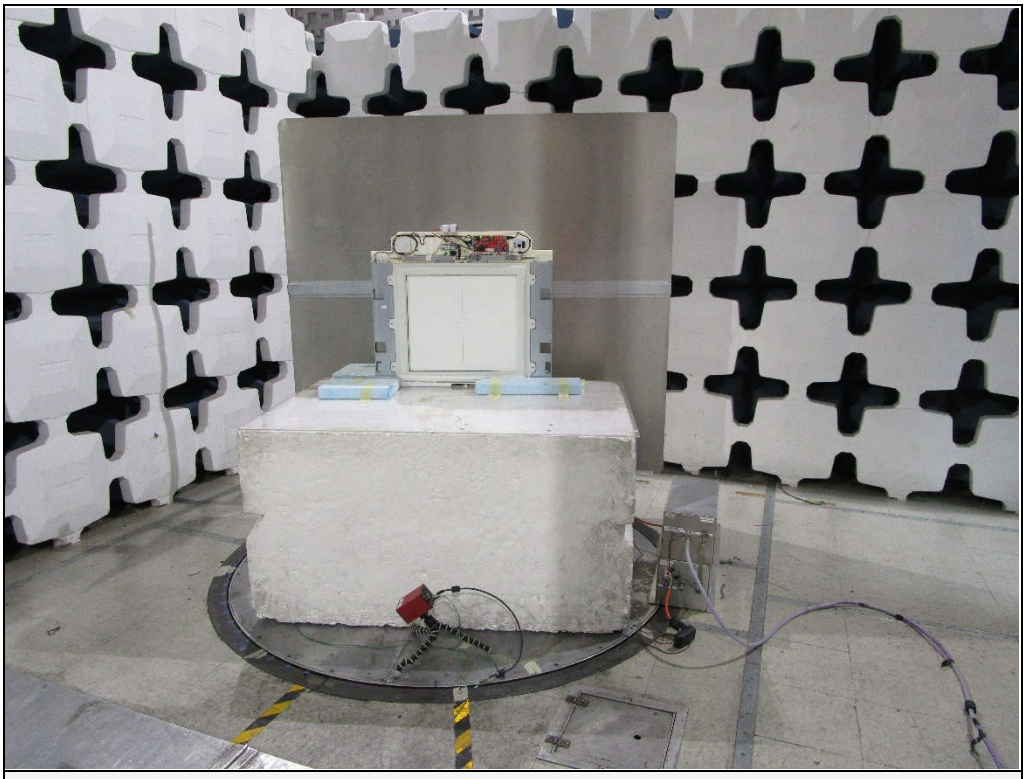
Test Site Information	
Setup Format	Tabletop
Height of Support	For Floor Standing only
Type of Test Site	Semi-Anechoic Chamber
Test Site Used	Room 21
Note	N/A

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

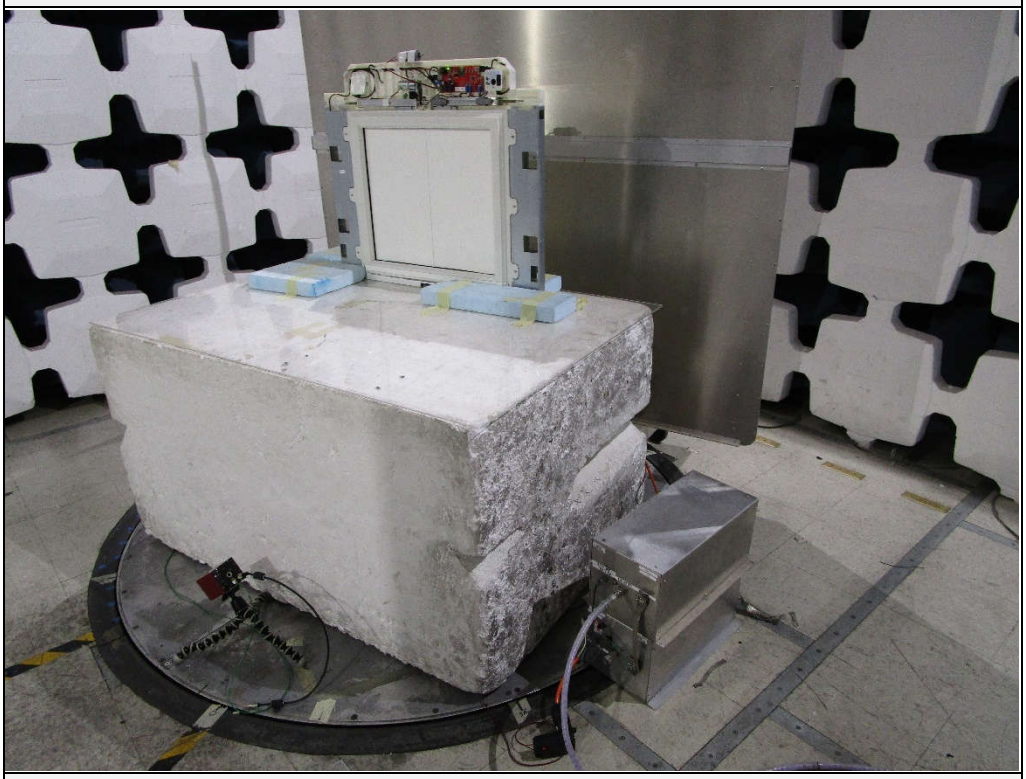
Requirements
For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150kHz to 30MHz shall not exceed the limits in the following table.

Conducted Emissions Class B Limits		
Frequency (MHz)	Conducted limit (dBµV)	
	Quasi-Peak	Average
0.15 – 0.5	66 decreasing with logarithm of frequency to 56	56 decreasing with logarithm of frequency to 46
0.5 – 5	56	46
5 – 30	60	50
Note 1: The lower limit shall apply at the transition frequencies. Note 2: If the levels measured using the QP detector meet both the QP and the Average limits, the EUT is considered to have met both requirements and measurements do not need to be performed using the Average detector.		

Procedure
The interference on each power lead of the EUT was measured by connecting the measuring equipment to the appropriate meter terminal of the Line Impedance Stabilization Network (LISN). The meter terminal of the LISN not under test was terminated with 50 ohms. 1) The EUT was operated in the Motor Running mode. 2) Measurements were first made on the 120VAC high line. 3) The frequency range from 150kHz to 30MHz was broken up into smaller frequency sub-bands. 4) Conducted emissions measurements were taken on the first frequency sub-band using a peak detector. 5) The data thus obtained was then searched by the computer for the highest levels. Any emissions levels that were within 10dB of the average limit were then measured again using both a quasi-peak detector and an average detector. (If no peak readings were within 10dB of the average limit, quasi-peak and average readings were taken on the highest emissions levels measured during the peak detector scan.) 6) Steps (4) and (5) were repeated for the remainder of the frequency sub-bands until the entire frequency range from 150kHz to 30MHz was investigated. The peak trace was automatically plotted. The plot also shows quasi-peak and average readings that were taken on discrete frequencies. A table showing the quasi-peak and average readings was also generated. This tabular data compares the quasi-peak and average conducted emissions to the applicable conducted emissions limits. The resultant voltage level (VL) is a summation in decibels (dB) of the receiver meter reading (MTR) and the cable loss factor (CF). Formula 1: VL (dBµV) = MTR (dBµV) + CF (dB) 7) Steps (3) through (6) were repeated on the 120VAC return line.



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
Model	:	PET PORTAL
DUT Revision	:	1.0
Serial Number	:	2
DUT Mode	:	MOTOR RUNNING
Line Tested	:	120VAC 60HZ HIGH LINE
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	WALLWORT
Test Engineer	:	T. Jozefczyk
Limit	:	Class B
Test Date	:	Jan 12, 2022 02:35:18 PM
Data Filter	:	Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

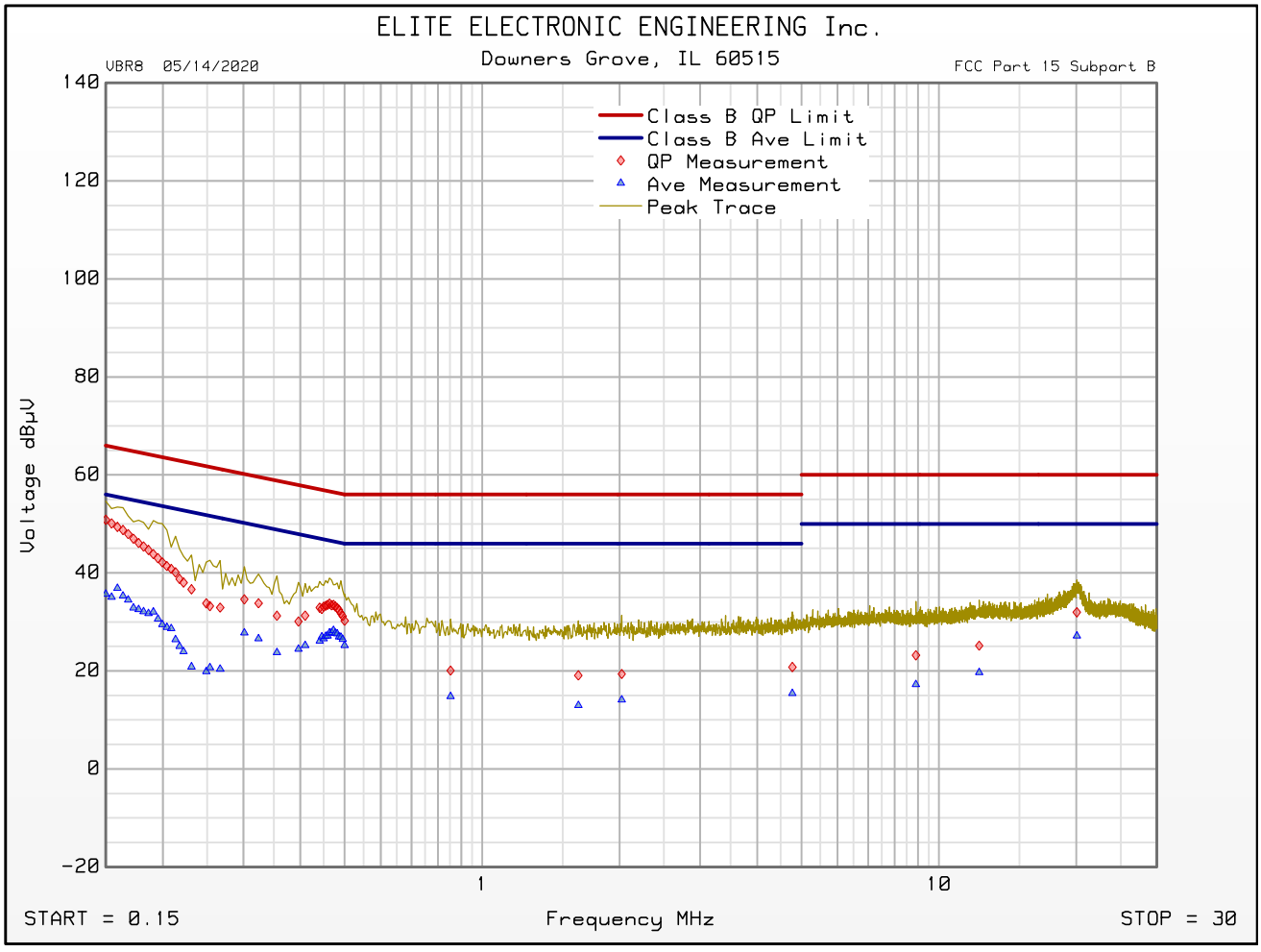
Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.150	50.8	66.0		35.7	56.0	
0.464	33.7	56.6		27.7	46.6	
0.500	30.2	56.0		25.2	46.0	
0.853	20.1	56.0		14.8	46.0	
1.624	19.1	56.0		13.0	46.0	
2.021	19.4	56.0		14.1	46.0	
4.778	20.8	56.0		15.4	46.0	
8.906	23.2	60.0		17.2	50.0	
12.249	25.1	60.0		19.7	50.0	
20.039	32.0	60.0		27.2	50.0	

FCC Part 15 Subpart B Conducted Emissions Test

Cumulative Data

VBR8 05/14/2020

Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
DUT Revision	:	1.0
Serial Number	:	2
DUT Mode	:	MOTOR RUNNING
Line Tested	:	120VAC 60HZ HIGH LINE
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	WALLWORT
Test Engineer	:	T. Jozefczyk
Limit	:	Class B
Test Date	:	Jan 12, 2022 02:35:18 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
Model	:	PET PORTAL
DUT Revision	:	1.0
Serial Number	:	2
DUT Mode	:	MOTOR RUNNING
Line Tested	:	120VAC 60HZ NEUTRAL LINE
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	WALLWORT
Test Engineer	:	T. Jozefczyk
Limit	:	Class B
Test Date	:	Jan 12, 2022 02:43:03 PM
Data Filter	:	Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

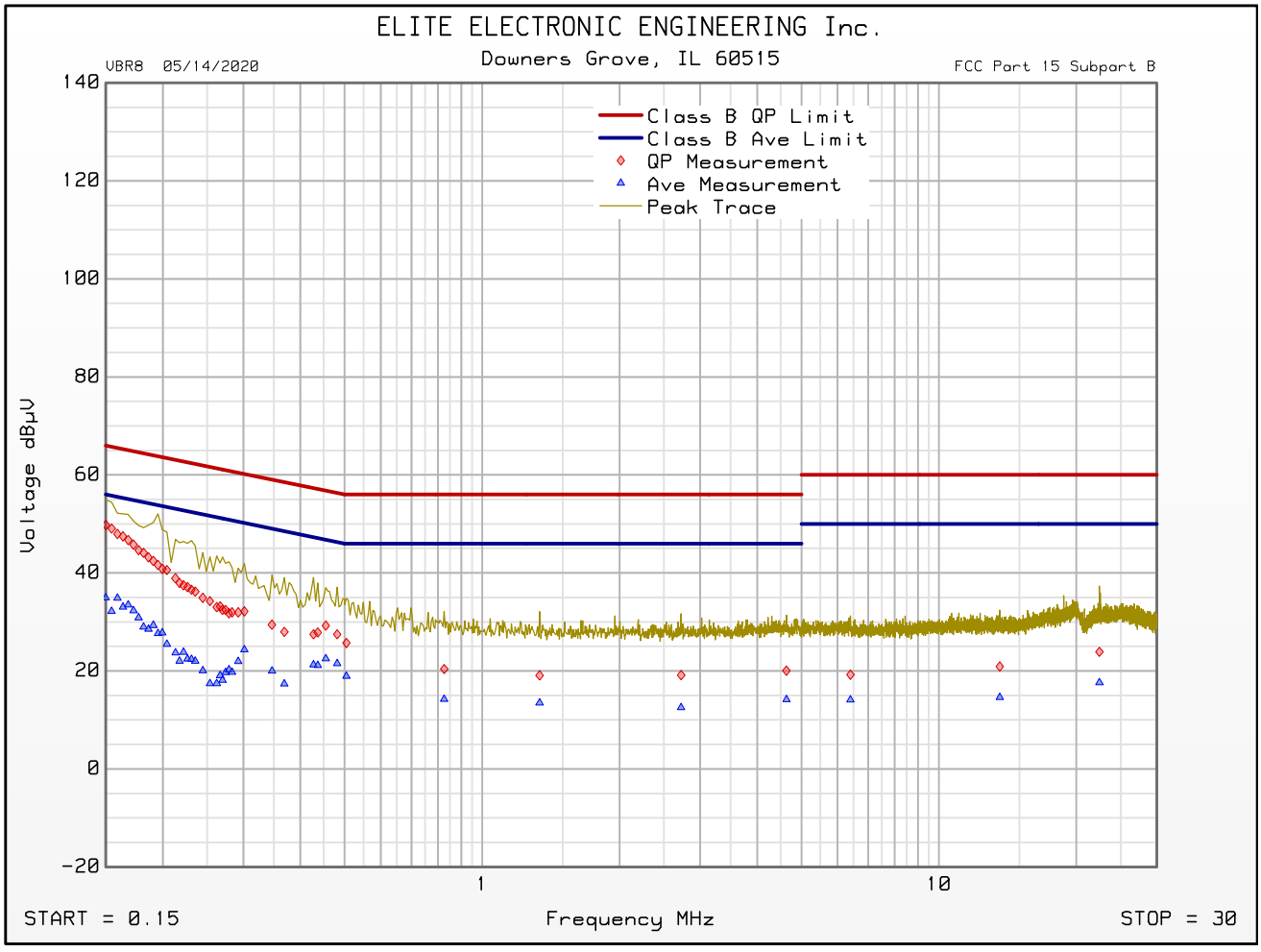
Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.150	49.8	66.0		34.9	56.0	
0.455	29.3	56.8		22.5	46.8	
0.505	25.7	56.0		18.9	46.0	
0.826	20.4	56.0		14.2	46.0	
1.336	19.1	56.0		13.5	46.0	
2.727	19.1	56.0		12.5	46.0	
4.634	20.0	56.0		14.1	46.0	
6.404	19.2	60.0		14.1	50.0	
13.586	20.9	60.0		14.6	50.0	
22.465	23.9	60.0		17.6	50.0	

FCC Part 15 Subpart B Conducted Emissions Test

Cumulative Data

VBR8 05/14/2020

Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
DUT Revision	:	1.0
Serial Number	:	2
DUT Mode	:	MOTOR RUNNING
Line Tested	:	120VAC 60HZ NEUTRAL LINE
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	WALLWORT
Test Engineer	:	T. Jozefczyk
Limit	:	Class B
Test Date	:	Jan 12, 2022 02:43:03 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
Model	:	PET PORTAL
DUT Revision	:	1.1
Serial Number	:	2
DUT Mode	:	MOTOR RUNNING
Line Tested	:	120VAC 60HZ HIGH LINE
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	IN WALL SUPPLY
Test Engineer	:	T. Jozefczyk
Limit	:	Class B
Test Date	:	Jan 12, 2022 03:32:55 PM
Data Filter	:	Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

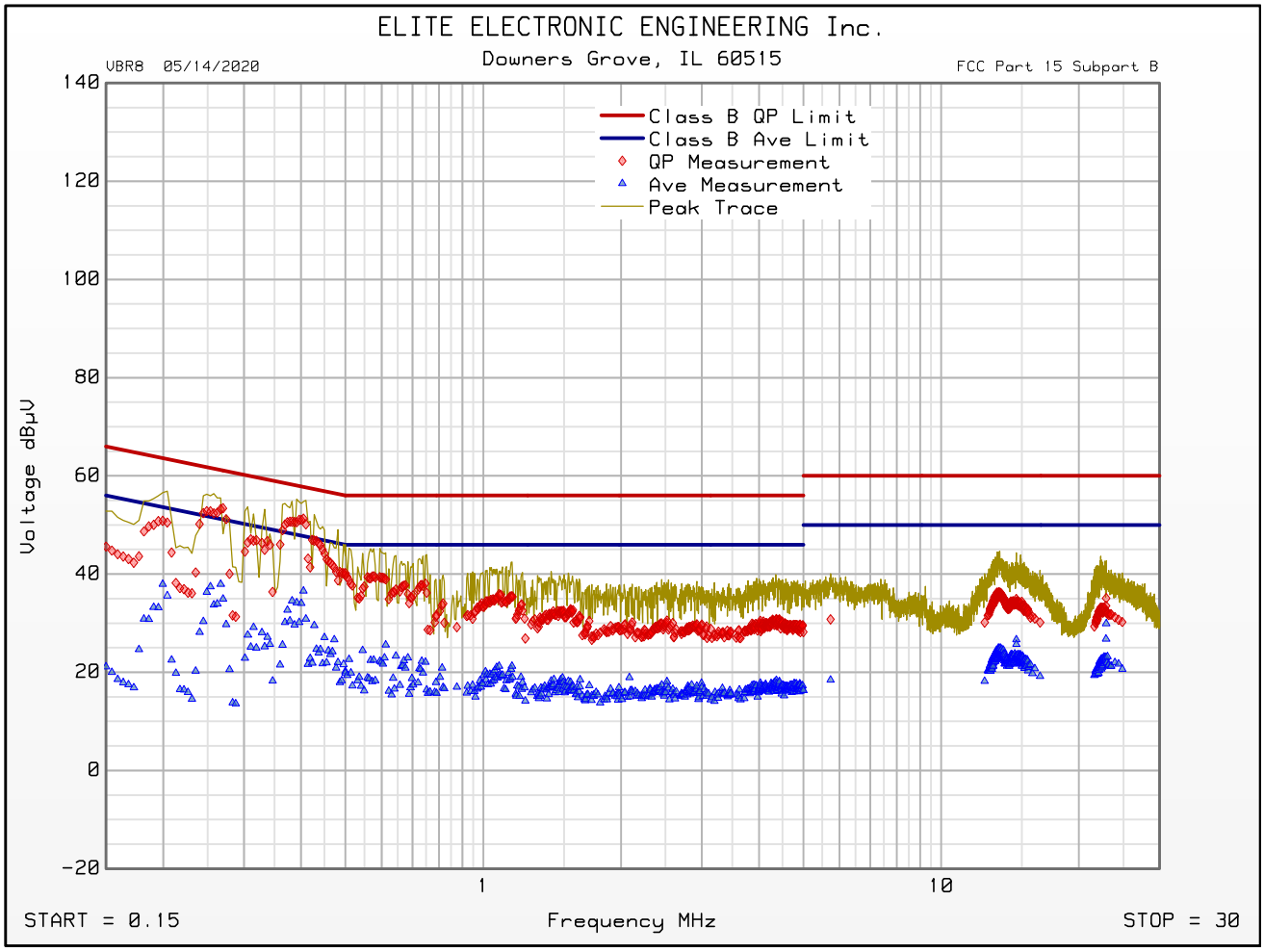
Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.254	52.8	61.6		37.4	51.6	
0.270	53.4	61.1		34.9	51.1	
0.405	51.3	57.8		36.5	47.8	
0.500	40.2	56.0		19.9	46.0	
1.083	35.9	56.0		21.3	46.0	
1.552	32.9	56.0		18.0	46.0	
2.520	30.5	56.0		18.1	46.0	
4.364	30.8	56.0		17.4	46.0	
5.000	28.2	56.0		16.3	46.0	
13.370	36.3	60.0		24.4	50.0	
22.928	35.1	60.0		29.9	50.0	

FCC Part 15 Subpart B Conducted Emissions Test

Cumulative Data

VBR8 05/14/2020

Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
DUT Revision	:	1.1
Serial Number	:	2
DUT Mode	:	MOTOR RUNNING
Line Tested	:	120VAC 60HZ HIGH LINE
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	IN WALL SUPPLY
Test Engineer	:	T. Jozefczyk
Limit	:	Class B
Test Date	:	Jan 12, 2022 03:32:55 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
Model	:	PET PORTAL
DUT Revision	:	1.1
Serial Number	:	2
DUT Mode	:	MOTOR RUNNING
Line Tested	:	120VAC 60HZ NEUTRAL LINE
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	IN WALL SUPPLY
Test Engineer	:	T. Jozefczyk
Limit	:	Class B
Test Date	:	Jan 12, 2022 03:07:39 PM
Data Filter	:	Up to 80 maximum levels detected with 6 dB level excursion threshold over 10 dB margin below limit

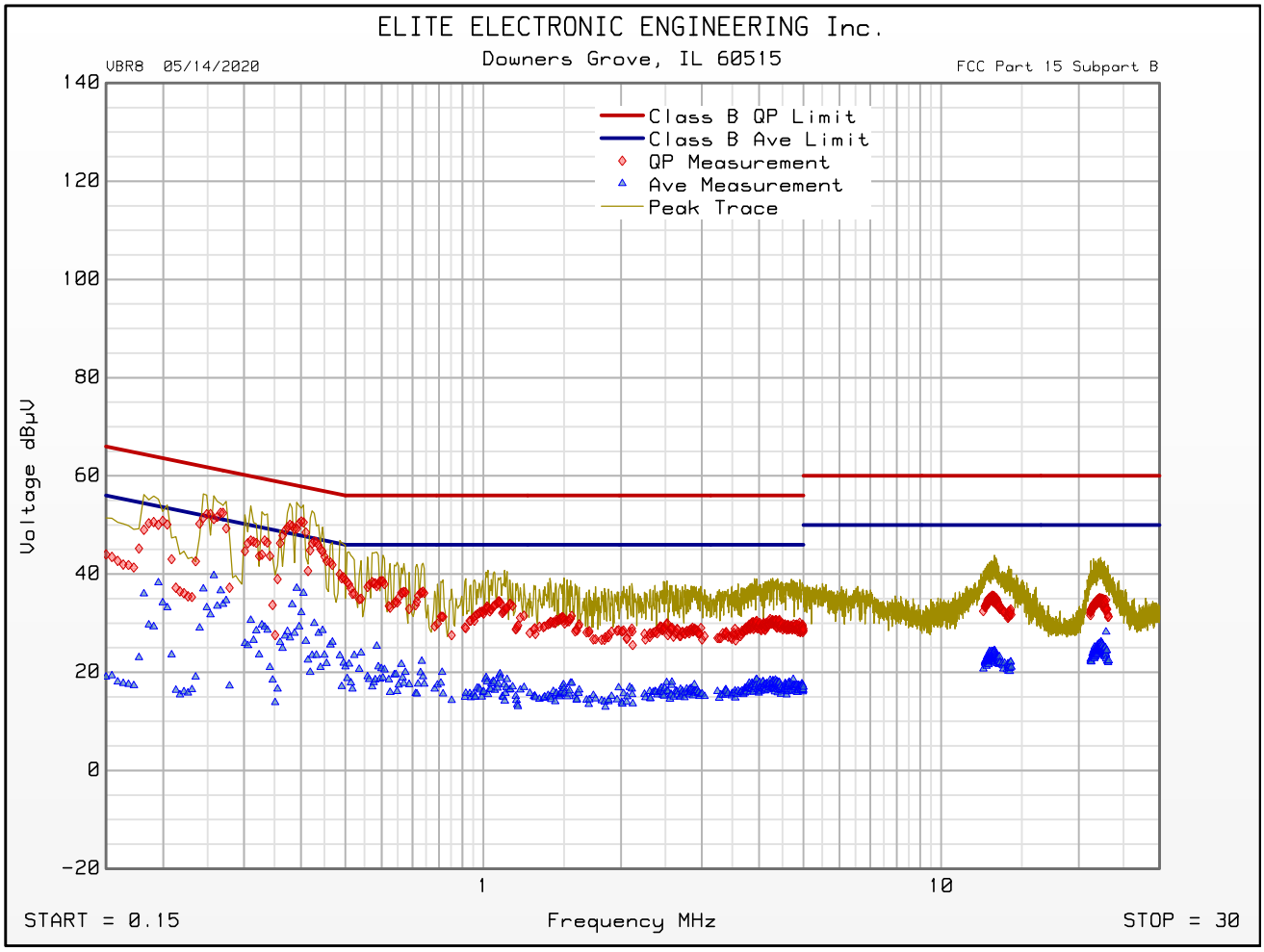
Freq MHz	Quasi-peak Level dBµV	Quasi-peak Limit dBµV	Excessive Quasi-peak Emissions	Average Level dBµV	Average Limit dBµV	Excessive Average Emissions
0.254	52.2	61.6		31.7	51.6	
0.270	52.4	61.1		33.9	51.1	
0.378	50.0	58.3		27.0	48.3	
0.401	50.7	57.8		32.2	47.8	
0.599	38.6	56.0		20.8	46.0	
1.083	34.5	56.0		19.3	46.0	
1.561	31.5	56.0		17.8	46.0	
2.520	29.9	56.0		16.2	46.0	
4.229	30.8	56.0		18.4	46.0	
5.000	28.9	56.0		17.0	46.0	
12.938	35.6	60.0		23.7	50.0	
22.208	35.1	60.0		25.6	50.0	

FCC Part 15 Subpart B Conducted Emissions Test

Cumulative Data

VBR8 05/14/2020

Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
DUT Revision	:	1.1
Serial Number	:	2
DUT Mode	:	MOTOR RUNNING
Line Tested	:	120VAC 60HZ NEUTRAL LINE
Scan Step Time [ms]	:	30
Meas. Threshold [dB]	:	-10
Notes	:	IN WALL SUPPLY
Test Engineer	:	T. Jozefczyk
Limit	:	Class B
Test Date	:	Jan 12, 2022 03:07:39 PM



Emissions Meet QP Limit
Emissions Meet Ave Limit

21. RF Radiated Emissions

EUT Information	
Manufacturer	The Chamberlain Group, Inc.
Product	myQ Pet Portal
Model No.	MYQPP1
Serial No.	1
Mode	Transmitter Standby

Test Site Information	
Setup Format	Tabletop
Height of Support	N/A
Type of Test Site	Semi-Anechoic Chamber
Test Site Used	Room 21
Type of Antennas Used	Below 1GHz: Bilog (or equivalent) 1 – 18GHz: Double-ridged waveguide (or equivalent) Above 18GHz: Standard gain horn (or equivalent)
Highest Internal Frequency	5GHz
Highest Measurement Frequency	26.5GHz
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

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

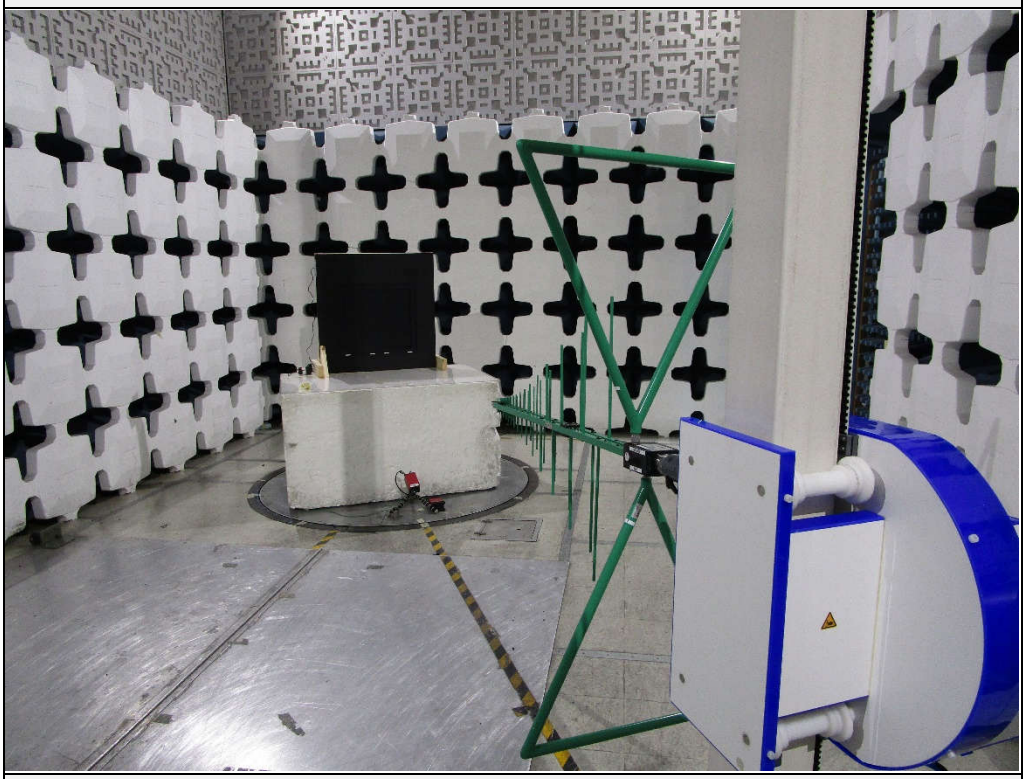
Since a quasi-peak detector and an average detector requires long integration times, it is not practical to automatically sweep through the quasi-peak and average levels. Therefore, radiated emissions from the EUT were first scanned using a peak detector and automatically plotted. The frequencies where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

The 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 26.5GHz 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.

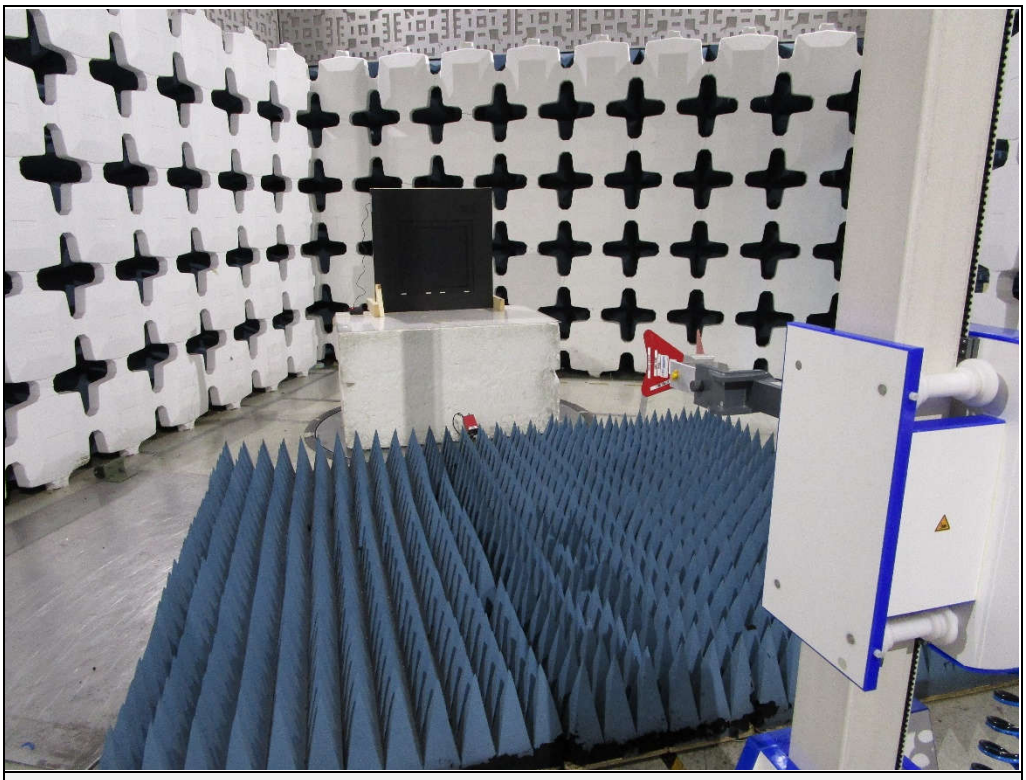
Final radiated emissions were performed on all significant broadband and narrowband emissions found in the exploratory sweeps using the following methods:

1) Measurements from 30MHz to 1GHz were made using a quasi-peak detector and a broadband bilog antenna. Measurements above 1GHz were made using an average detector and a broadband double ridged waveguide antenna.
2) To ensure that maximum or worst case, emission levels were measured, the following steps were taken:
    a) The EUT was rotated so that all 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.

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

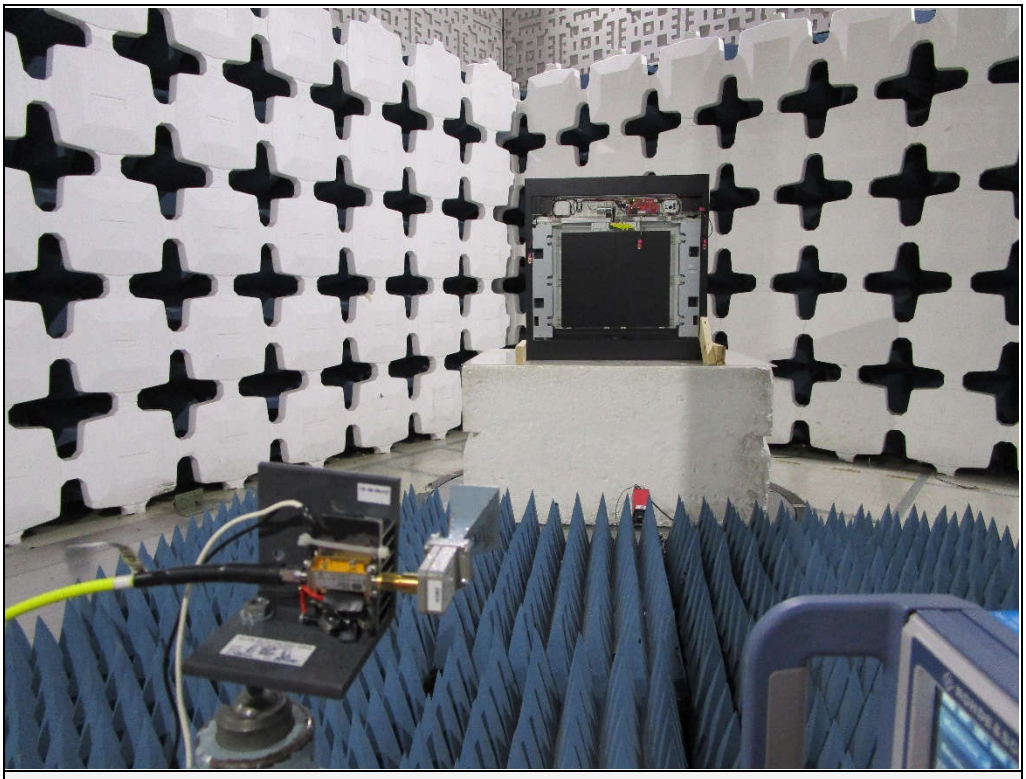


Test Setup for Radiated Emissions: 30MHz to 1GHz, Vertical Polarization

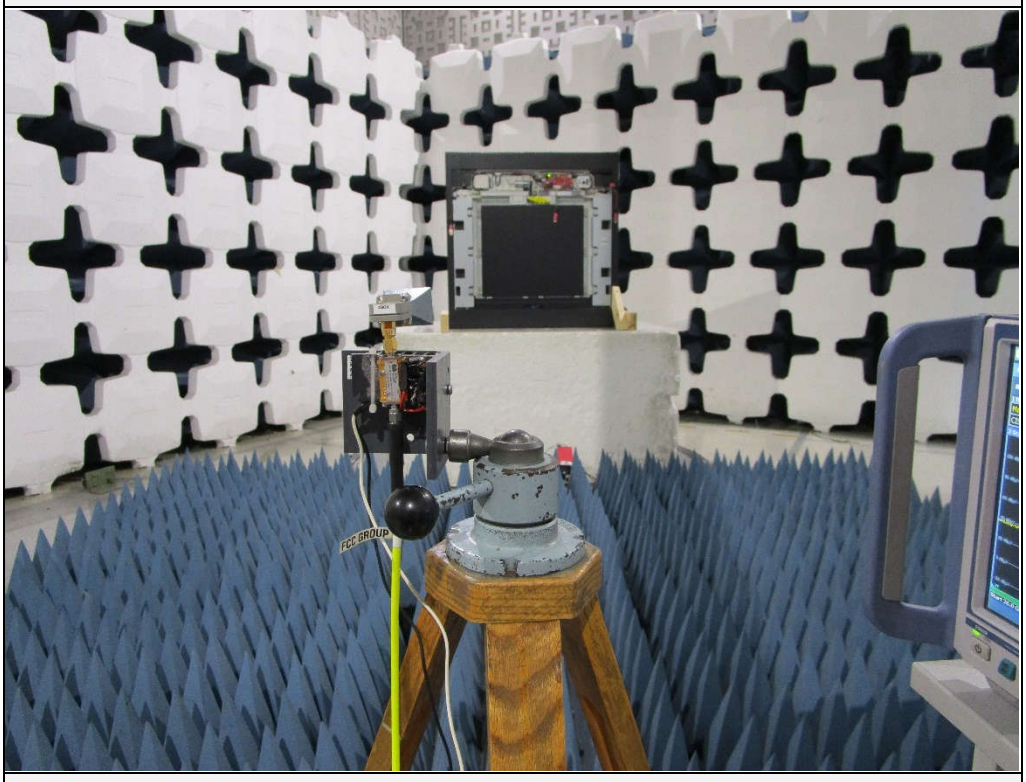


Test Setup for Radiated Emissions: 1 – 18GHz, Horizontal Polarization

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



Test Setup for Radiated Emissions: 18 – 26.5GHz, Horizontal Polarization



Test Setup for Radiated Emissions: 18 – 26.5GHz, Vertical Polarization

FCC Part 15B Class B
Radiated RF Emissions Test

SW ID/Rev: VBV2 11/20/2021

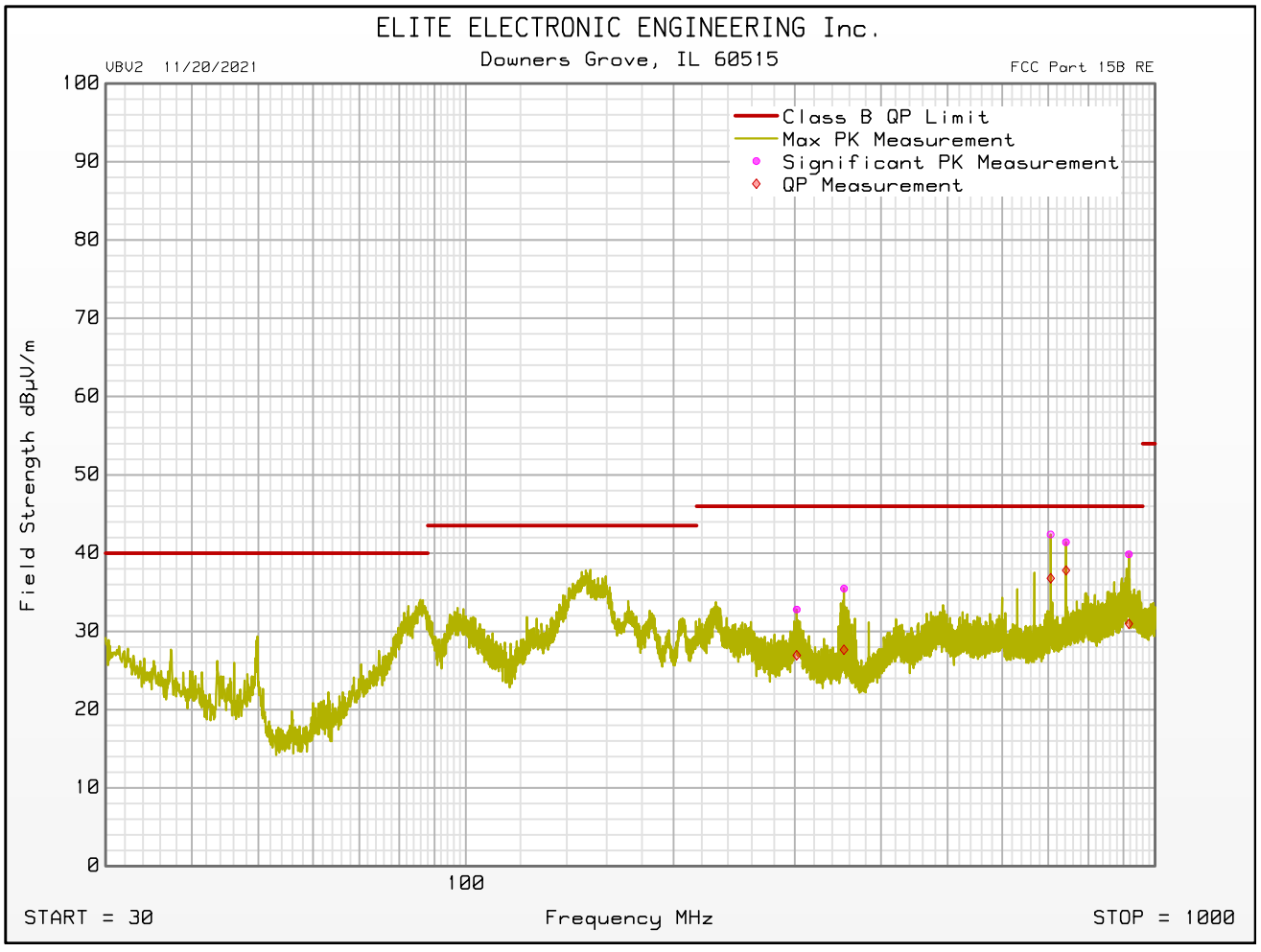
Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
Serial Number	:	1
DUT Mode	:	TX STANDBY
Turntable Step Angle (°)	:	45
Mast Positions (cm)	:	120, 200, 340
Scan Type	:	Stepped Scan
Test RBW	:	120 kHz
Prelim Dwell Time (s)	:	0.0001
Notes	:	WALL WART POWER SUPPLY
Test Engineer	:	T. Jozefczyk
Test Date	:	Jan 13, 2022 09:58:28 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
35.280	11.1	4.9	21.9	0.0	0.5	0.0	33.5	27.3	40.0	-12.7	Vertical	120	225	
41.220	17.1	10.8	18.8	0.0	0.6	0.0	36.4	30.1	40.0	-9.9	Vertical	120	225	
49.800	24.0	19.0	15.1	0.0	0.6	0.0	39.7	34.7	40.0	-5.3	Vertical	120	225	
57.300	18.4	12.5	12.8	0.0	0.7	0.0	31.9	26.0	40.0	-14.0	Vertical	120	225	
70.500	23.5	18.7	12.6	0.0	0.7	0.0	36.8	32.1	40.0	-7.9	Vertical	200	90	
86.220	23.2	19.2	14.2	0.0	0.8	0.0	38.1	34.1	40.0	-5.9	Vertical	120	180	
119.560	14.1	7.6	18.2	0.0	0.9	0.0	33.2	26.7	43.5	-16.8	Vertical	120	135	
181.960	23.4	21.5	15.3	0.0	1.1	0.0	39.8	37.9	43.5	-5.6	Vertical	340	180	
301.980	12.1	6.3	19.2	0.0	1.5	0.0	32.8	26.9	46.0	-19.1	Horizontal	120	45	
353.640	13.4	5.6	20.5	0.0	1.6	0.0	35.5	27.6	46.0	-18.4	Horizontal	200	315	
353.880	14.1	5.6	20.5	0.0	1.6	0.0	36.2	27.7	46.0	-18.3	Vertical	120	180	
485.400	8.7	0.5	23.9	0.0	2.0	0.0	34.6	26.4	46.0	-19.6	Vertical	340	90	
705.420	14.9	9.3	25.2	0.0	2.3	0.0	42.4	36.8	46.0	-9.2	Horizontal	120	315	
742.500	13.2	9.6	25.9	0.0	2.3	0.0	41.4	37.8	46.0	-8.2	Horizontal	200	135	
916.200	10.9	2.0	26.4	0.0	2.5	0.0	39.8	31.0	46.0	-15.0	Horizontal	120	135	

FCC Part 15B Class B
Radiated RF Emissions Test

SW ID/Rev: VBV2 11/20/2021

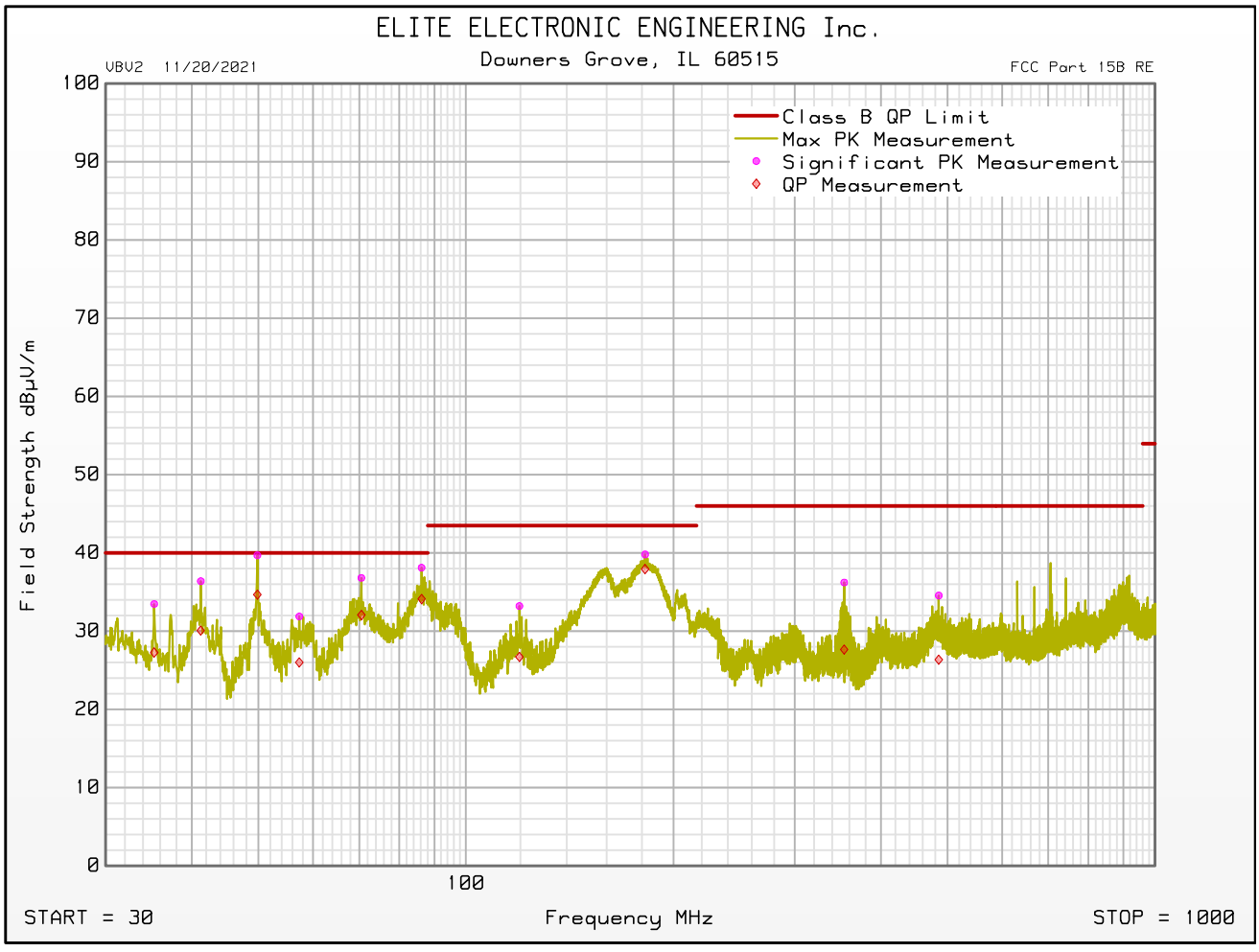
Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
Serial Number	:	1
DUT Mode	:	TX STANDBY
Turntable Step Angle (°)	:	45
Mast Positions (cm)	:	120, 200, 340
Antenna Polarization	:	Horizontal
Scan Type	:	Stepped Scan
Test RBW	:	120 kHz
Prelim Dwell Time (s)	:	0.0001
Notes	:	WALL WART POWER SUPPLY
Test Engineer	:	T. Jozefczyk
Test Date	:	Jan 13, 2022 09:58:28 AM



FCC Part 15B Class B
Radiated RF Emissions Test

SW ID/Rev: VBV2 11/20/2021

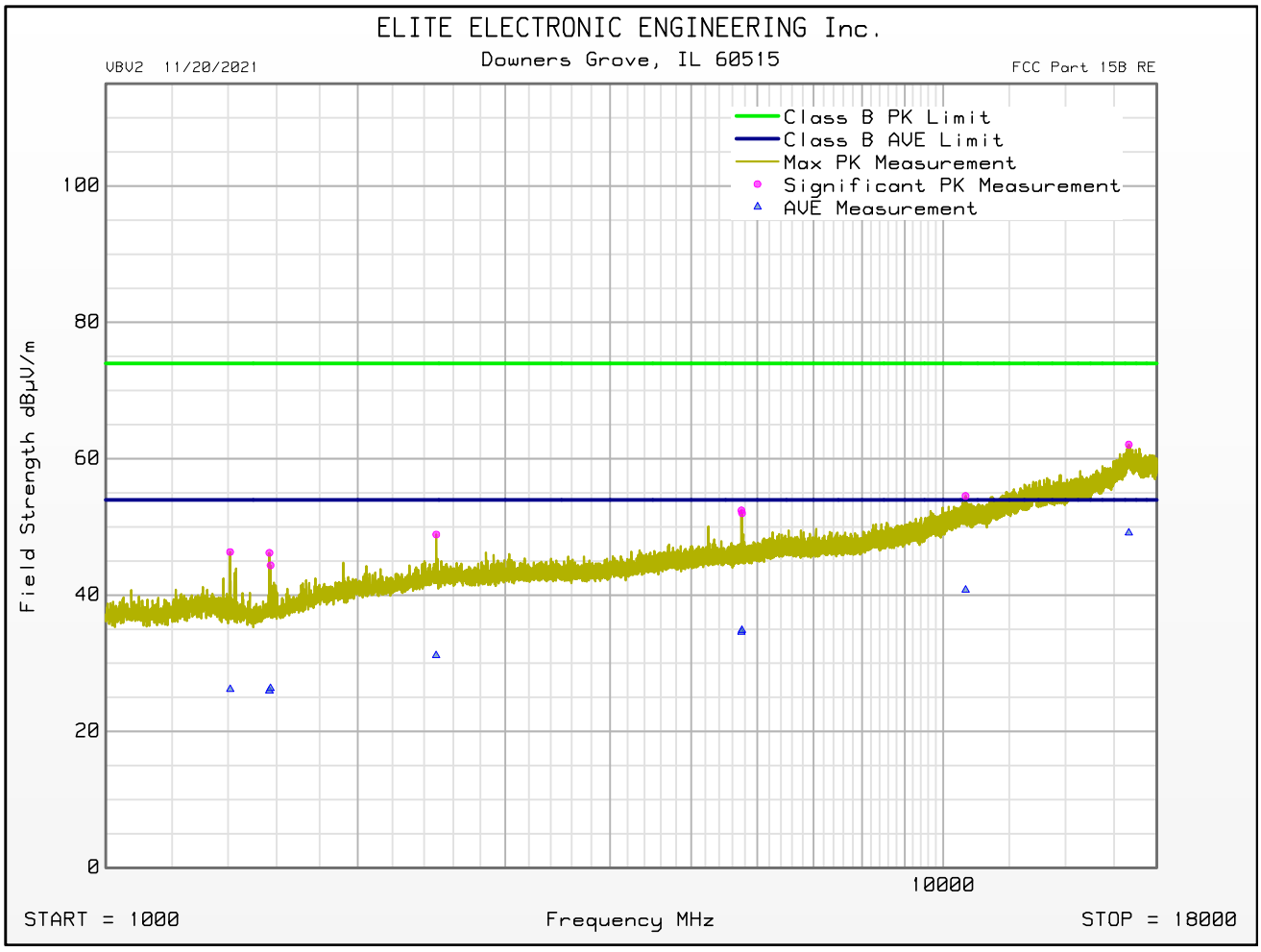
Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
Serial Number	:	1
DUT Mode	:	TX STANDBY
Turntable Step Angle (°)	:	45
Mast Positions (cm)	:	120, 200, 340
Antenna Polarization	:	Vertical
Scan Type	:	Stepped Scan
Test RBW	:	120 kHz
Prelim Dwell Time (s)	:	0.0001
Notes	:	WALL WART POWER SUPPLY
Test Engineer	:	T. Jozefczyk
Test Date	:	Jan 13, 2022 09:58:28 AM



FCC Part 15B Class B
Radiated RF Emissions Test

SW ID/Rev: VBV2 11/20/2021

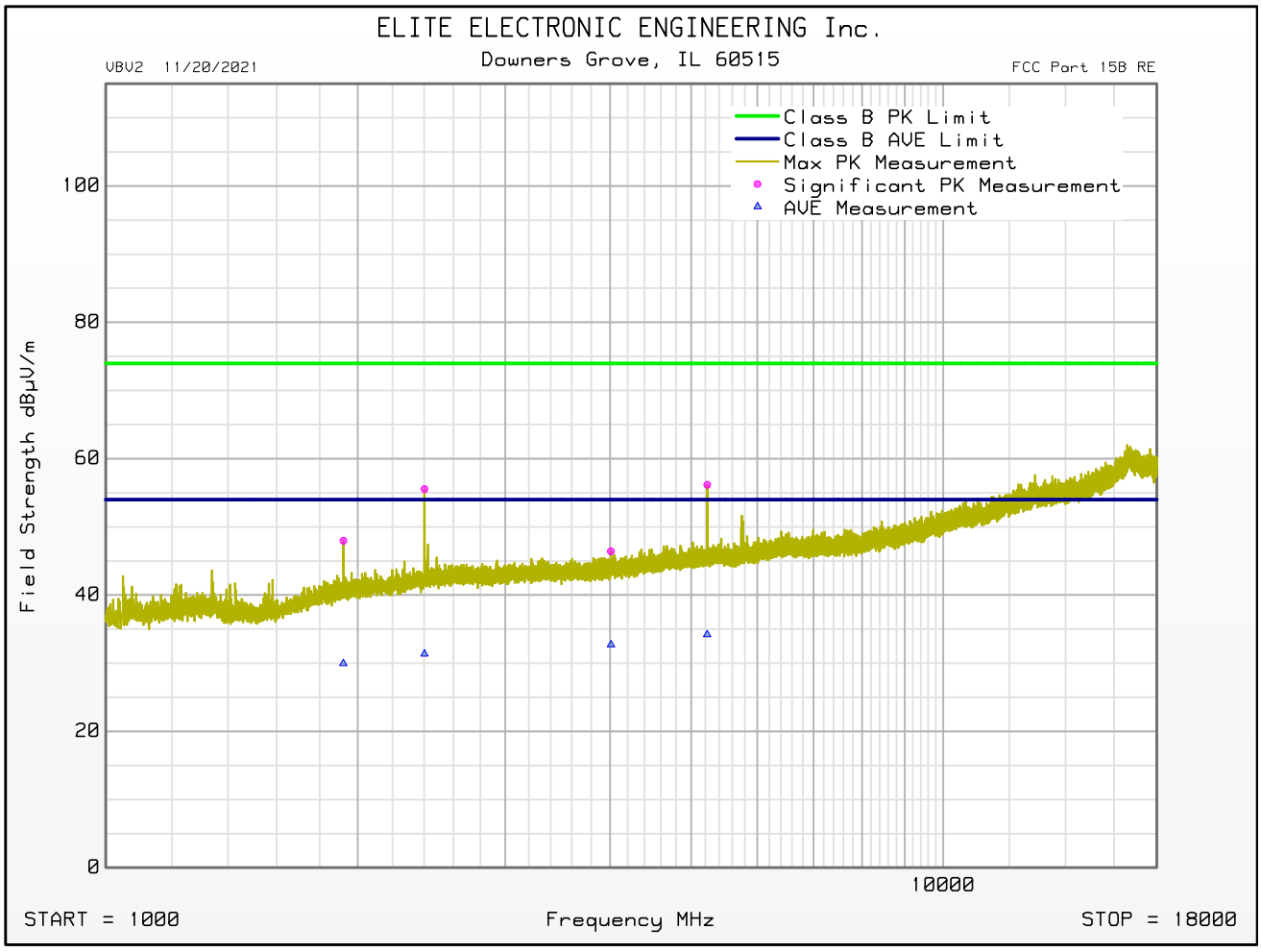
Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
Serial Number	:	1
DUT Mode	:	TX STANDBY
Turntable Step Angle (°)	:	45
Mast Positions (cm)	:	120, 200, 340
Antenna Polarization	:	Horizontal
Scan Type	:	Stepped Scan
Test RBW	:	1 MHz
Prelim Dwell Time (s)	:	0.0001
Notes	:	WALL WART POWER SUPPLY
Test Engineer	:	T. Jozefczyk
Test Date	:	Jan 13, 2022 01:25:18 PM



FCC Part 15B Class B
Radiated RF Emissions Test

SW ID/Rev: VBV2 11/20/2021

Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
Serial Number	:	1
DUT Mode	:	TX STANDBY
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	:	WALL WART POWER SUPPLY
Test Engineer	:	T. Jozefczyk
Test Date	:	Jan 13, 2022 01:25:18 PM



FCC Part 15B Class B
Radiated RF Emissions Test

SW ID/Rev: VBV2 11/20/2021

Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
Serial Number	:	1
DUT Mode	:	TX STANDBY
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	:	WALL WART POWER SUPPLY
Test Engineer	:	T. Jozefczyk
Test Date	:	Jan 13, 2022 01:25:18 PM

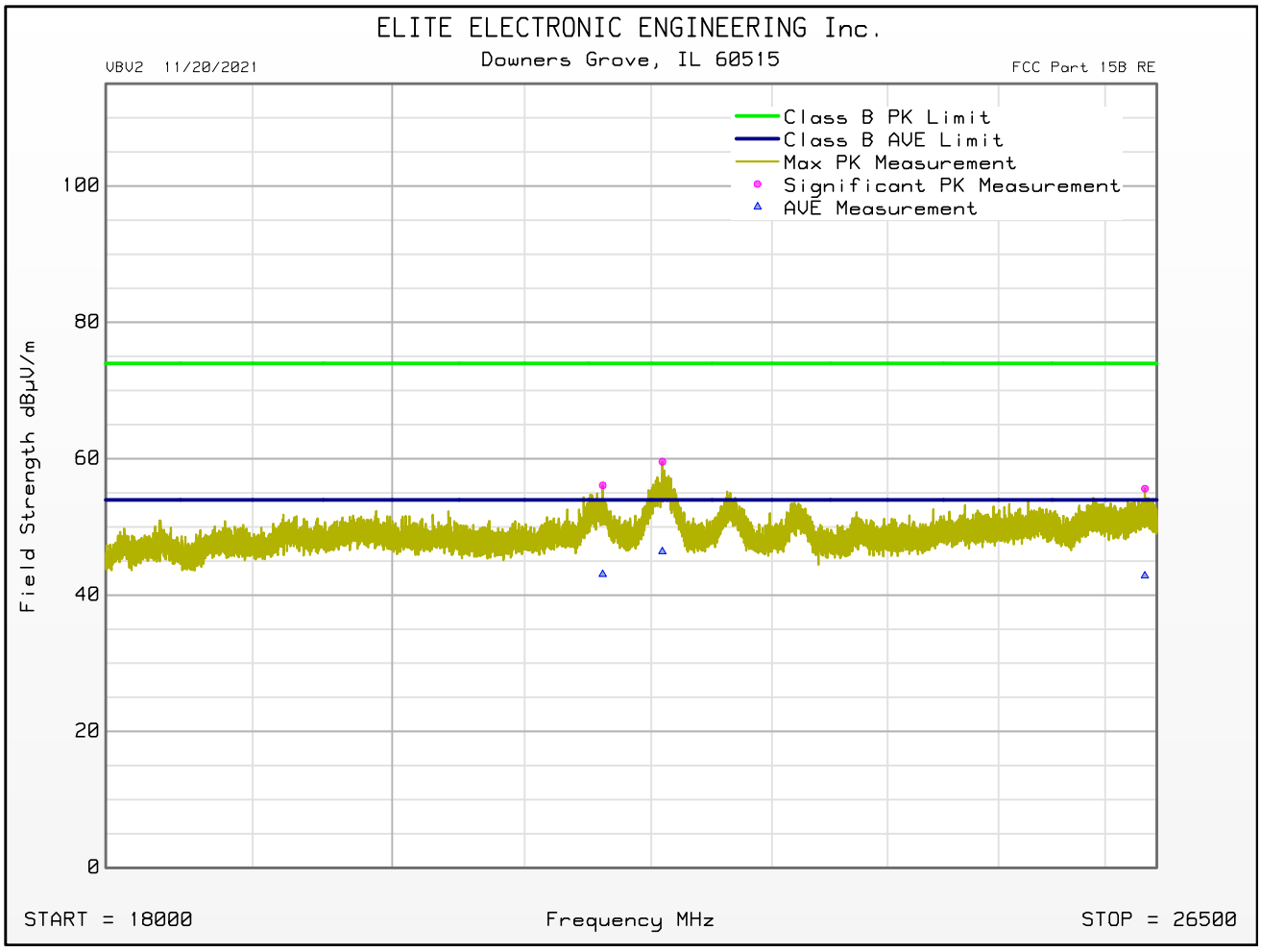
Freq MHz	Peak Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBµV/m	Peak Limit dBµV/m	Peak Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Peak Level
1407.500	56.0	28.3	-41.0	3.1	0.0	46.3	74.0	-27.7	Horizontal	120	180	
1568.000	56.0	28.0	-41.1	3.2	0.0	46.2	74.0	-27.8	Horizontal	340	45	
1573.000	54.2	28.0	-41.1	3.2	0.0	44.4	74.0	-29.6	Horizontal	200	0	
1922.000	54.1	31.2	-41.0	3.6	0.0	48.0	74.0	-26.0	Vertical	200	45	
2402.000	59.7	32.2	-40.5	4.1	0.0	55.5	74.0	-18.4	Vertical	120	270	
2480.500	52.7	32.5	-40.5	4.2	0.0	48.9	74.0	-25.1	Horizontal	120	315	
4011.000	48.0	33.4	-40.3	5.3	0.0	46.4	74.0	-27.6	Vertical	120	90	
5227.000	55.8	34.6	-40.3	6.2	0.0	56.2	74.0	-17.8	Vertical	200	135	
5742.500	51.6	34.7	-40.4	6.5	0.0	52.4	74.0	-21.6	Horizontal	120	45	
5751.000	51.2	34.7	-40.4	6.5	0.0	52.0	74.0	-22.0	Horizontal	200	45	
10636.000	48.2	37.4	-39.9	8.9	0.0	54.5	74.0	-19.4	Horizontal	340	180	
16663.500	46.9	42.0	-38.2	11.3	0.0	62.1	74.0	-11.9	Horizontal	200	270	

Freq MHz	Ave Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Ave Total dBµV/m	Ave Limit dBµV/m	Ave Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Average Level
1407.500	35.8	28.3	-41.0	3.1	0.0	26.2	54.0	-27.8	Horizontal	120	180	
1568.000	35.8	28.0	-41.1	3.2	0.0	26.0	54.0	-28.0	Horizontal	340	45	
1573.000	36.1	28.0	-41.1	3.2	0.0	26.3	54.0	-27.7	Horizontal	200	0	
1922.000	36.1	31.2	-41.0	3.6	0.0	30.0	54.0	-24.0	Vertical	200	45	
2402.000	35.5	32.2	-40.5	4.1	0.0	31.4	54.0	-22.6	Vertical	120	270	
2480.500	34.9	32.5	-40.5	4.2	0.0	31.1	54.0	-22.9	Horizontal	120	315	
4011.000	34.3	33.4	-40.3	5.3	0.0	32.7	54.0	-21.3	Vertical	120	90	
5227.000	33.8	34.6	-40.3	6.2	0.0	34.2	54.0	-19.8	Vertical	200	135	
5742.500	33.8	34.7	-40.4	6.5	0.0	34.6	54.0	-19.4	Horizontal	120	45	
5751.000	34.0	34.7	-40.4	6.5	0.0	34.8	54.0	-19.1	Horizontal	200	45	
10636.000	34.4	37.4	-39.9	8.9	0.0	40.8	54.0	-13.2	Horizontal	340	180	
16663.500	34.0	42.0	-38.2	11.3	0.0	49.1	54.0	-4.9	Horizontal	200	270	

FCC Part 15B Class B
Radiated RF Emissions Test

SW ID/Rev: VBV2 11/20/2021

Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
Serial Number	:	1
DUT Mode	:	TX STANDBY
Turntable Step Angle (°)	:	360
Mast Positions (cm)	:	120
Antenna Polarization	:	Horizontal
Scan Type	:	Stepped Scan
Test RBW	:	1 MHz
Prelim Dwell Time (s)	:	0.0001
Notes	:	NO MOTOR
Test Engineer	:	T. Jozefczyk
Test Date	:	Jan 12, 2022 08:58:00 AM



FCC Part 15B Class B
Radiated RF Emissions Test

SW ID/Rev: VBV2 11/20/2021

Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
Serial Number	:	1
DUT Mode	:	TX STANDBY
Turntable Step Angle (°)	:	360
Mast Positions (cm)	:	120
Antenna Polarization	:	Horizontal
Scan Type	:	Stepped Scan
Test RBW	:	1 MHz
Prelim Dwell Time (s)	:	0.0001
Notes	:	NO MOTOR
Test Engineer	:	T. Jozefczyk
Test Date	:	Jan 12, 2022 08:58:00 AM

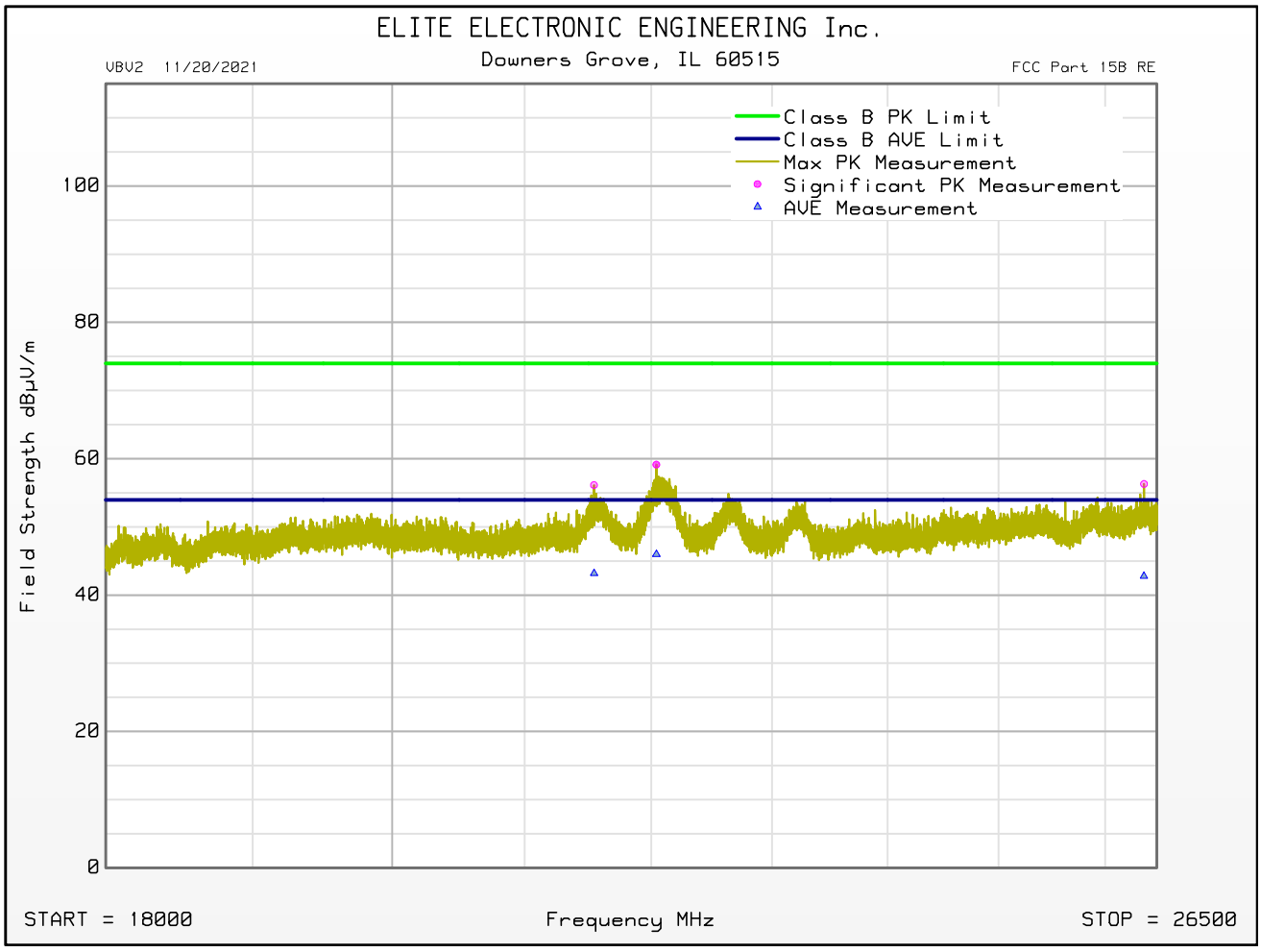
Freq MHz	Peak Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBµV/m	Peak Limit dBµV/m	Peak Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Peak Level
21611.500	41.8	40.6	-28.5	2.2	0.0	56.1	74.0	-17.9	Horizontal	120	0	
22091.000	45.6	40.6	-28.8	2.2	0.0	59.6	74.0	-14.4	Horizontal	120	0	
26383.500	41.8	40.7	-29.1	2.3	0.0	55.6	74.0	-18.4	Horizontal	120	0	

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
21611.500	28.7	40.6	-28.5	2.2	0.0	43.0	54.0	-10.9	Horizontal	120	0	
22091.000	32.4	40.6	-28.8	2.2	0.0	46.4	54.0	-7.6	Horizontal	120	0	
26383.500	29.0	40.7	-29.1	2.3	0.0	42.8	54.0	-11.2	Horizontal	120	0	

FCC Part 15B Class B
Radiated RF Emissions Test

SW ID/Rev: VBV2 11/20/2021

Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
Serial Number	:	1
DUT Mode	:	TX STANDBY
Turntable Step Angle (°)	:	360
Mast Positions (cm)	:	120
Antenna Polarization	:	Vertical
Scan Type	:	Stepped Scan
Test RBW	:	1 MHz
Prelim Dwell Time (s)	:	0.0001
Notes	:	NO MOTOR
Test Engineer	:	T. Jozefczyk
Test Date	:	Jan 12, 2022 09:00:07 AM



FCC Part 15B Class B
Radiated RF Emissions Test

SW ID/Rev: VBV2 11/20/2021

Manufacturer	:	CHAMBERLAIN
Model	:	PET PORTAL
Serial Number	:	1
DUT Mode	:	TX STANDBY
Turntable Step Angle (°)	:	360
Mast Positions (cm)	:	120
Antenna Polarization	:	Vertical
Scan Type	:	Stepped Scan
Test RBW	:	1 MHz
Prelim Dwell Time (s)	:	0.0001
Notes	:	NO MOTOR
Test Engineer	:	T. Jozefczyk
Test Date	:	Jan 12, 2022 09:00:07 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
21542.000	41.6	40.6	-28.3	2.3	0.0	56.1	74.0	-17.8	Vertical	120	0	
22042.000	45.2	40.6	-28.8	2.2	0.0	59.1	74.0	-14.8	Vertical	120	0	
26375.000	42.5	40.7	-29.2	2.3	0.0	56.3	74.0	-17.7	Vertical	120	0	

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
21542.000	28.7	40.6	-28.3	2.3	0.0	43.2	54.0	-10.8	Vertical	120	0	
22042.000	32.0	40.6	-28.8	2.2	0.0	46.0	54.0	-8.0	Vertical	120	0	
26375.000	29.0	40.7	-29.2	2.3	0.0	42.8	54.0	-11.2	Vertical	120	0	

22. Module Integration – Emissions Test

EUT Information	
Manufacturer	The Chamberlain Group, Inc.
Product	myQ Pet Portal
Model No.	MYQPP1
Serial No.	1
Mode	Tx

Test Site Information	
Setup Format	Tabletop
Height of Support	N/A
Type of Test Site	Semi-Anechoic Chamber
Test Site Used	Room 21
Type of Antennas Used	Below 1GHz: Bilog (or equivalent) Above 1GHz: Double-ridged waveguide (or equivalent)
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

Requirements
Per 996369 D04 Module Integration Guide v01: Testing of the host product with all the transmitters installed is recommended, to verify that the host product meets all the applicable FCC rules. The radio spectrum is to be investigated with all the transmitters in the final host product functioning to determine that no emissions exceed the highest limit permitted for any one individual transmitter as required by Section 2.947(f). The testing shall also check for emissions that may occur due to the intermixing of emissions with the other transmitters, digital circuitry, or due to physical properties of the host product (enclosure). This investigation is especially important when integrating multiple modular transmitters where the certification is based on testing each of them in a stand-alone configuration. No emissions exceed the highest limit permitted for any one individual transmitter as required by Section 2.947(f). FCC 15.247 In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30dB instead of 20dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Procedures
Radiated measurements were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. The walls and ceiling of the shielded chamber are lined with ferrite tiles and anechoic absorber material is installed over the ferrite tiles. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4-2014 for site attenuation. The shielded enclosure prevents emissions from other sources, such as radio and TV stations from interfering with the measurements. All powerlines and signal lines entering the enclosure pass through filters on the enclosure wall. The powerline filters prevent extraneous signals from entering the enclosure on these leads.
FCC Part 15 Subpart C A preliminary radiated emissions test was performed to determine the emission characteristics of the EUT. For the preliminary test, a broadband measuring antenna was positioned at a 3 meter distance from the EUT. The entire frequency range from 30MHz to 18GHz was investigated using a peak detector function. The data was then processed by the computer to calculate equivalent field intensity. The final emission tests were then manually performed over the frequency range of 30MHz to 18GHz. Between 30MHz and 1GHz, a bilog antenna was used as the pick-up device. A broadband double ridged waveguide antenna was used as the pick-up device for all frequencies above 1GHz. All significant broadband and narrowband signals were measured and recorded. The peak detected levels were converted to average levels using a duty cycle factor which was computed from the pulse train. To ensure that maximum or worst case, emission levels were measured, the following steps were taken: 1) The EUT was rotated so that all of its sides were exposed to the receiving antenna. 2) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured. 3) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.
FCC 15.247 Preliminary radiated emissions tests were performed to determine the emission characteristics of the EUT. For the preliminary test, a broadband measuring antenna was positioned at a 3 meter distance from the EUT. The entire frequency range from 30MHz to 18GHz was investigated using a peak detector function. The final open field emission tests were then manually performed over the frequency range of 30MHz to 18GHz. 1) For all harmonics not in the restricted bands, the following procedure was used: a) The field strength of the fundamental was measured using a double ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the EUT. The EUT was placed on a 1.5 meter high non-conductive stand. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer. b) The field strengths of all of the harmonics not in the restricted band were then measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the EUT. The EUT was placed on a non-conductive stand. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer. c) To ensure that maximum or worst case emission levels at the fundamental and harmonics were measured, the following steps were taken when measuring the fundamental emissions and the spurious emissions: i. The EUT was rotated so that all of its sides were exposed to the receiving antenna.

ii. Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.

iii. The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.

d) All harmonics not in the restricted bands must be at least 20dB below levels measured at the fundamental. However, attenuation below the general limits specified in §15.209(a) is not required.

2) For all emissions in the restricted bands, the following procedure was used:

a) The field strengths of all emissions below 1GHz were measured using a bi-log antenna. The bilog antenna was positioned at a 3 meter distance from the EUT. The EUT was placed on an 80cm high non-conductive stand. A peak detector with a resolution bandwidth of 100kHz was used on the spectrum analyzer.

b) The field strengths of all emissions above 1GHz were measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the EUT. The EUT was placed on a 1.5 meter high non-conductive stand. A peak detector with a resolution bandwidth of 1MHz was used on the spectrum analyzer.

c) To ensure that maximum (or worst case) emission levels were measured, the following steps were taken when taking all measurements:

i. The EUT was rotated so that all of its sides were exposed to the receiving antenna.

ii. Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.

iii. The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.

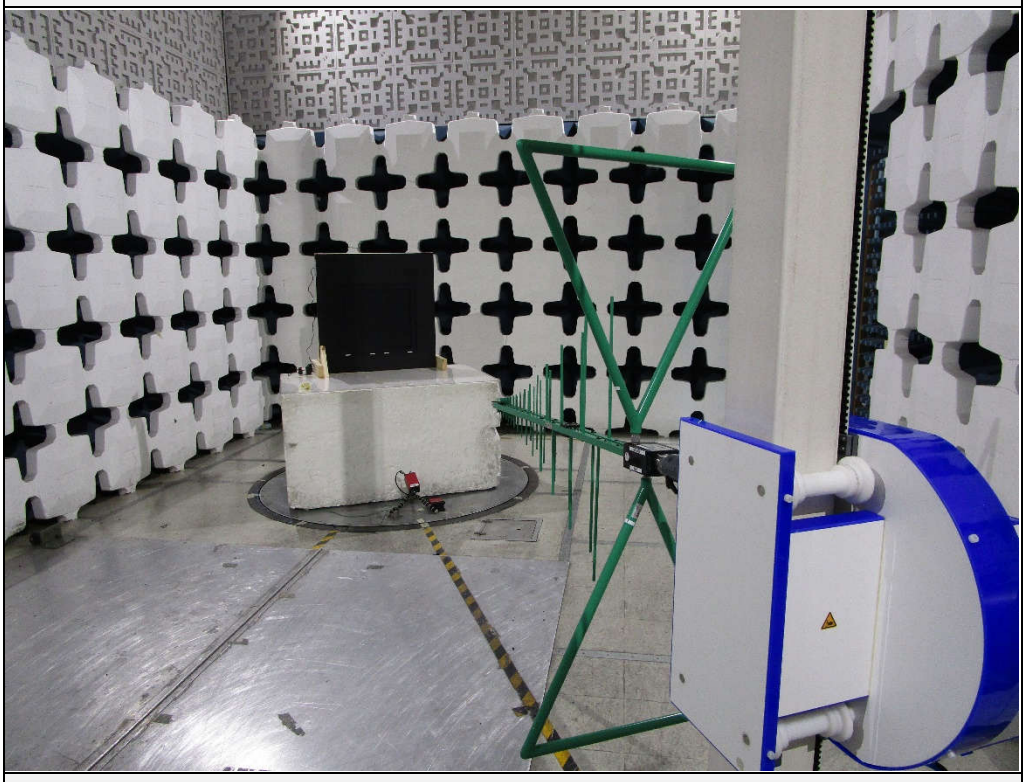
d) For all radiated emissions measurements below 1GHz, if the peak reading is below the limits listed in §15.209(a), no further measurements are required. If, however, the peak readings exceed the limits listed in 15.209(a), then the emissions are remeasured using a quasi-peak detector.

e) For all radiated emissions measurements above 1GHz, the peak readings must comply with the §15.35(b) limits. §15.35(b) states that when average radiated emissions measurements are specified, there also is a limit on the peak level of the radiated emissions. The limit on the peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. Therefore, all peak readings above 1GHz must be no greater than 20dB above the limits specified in §15.209(a).

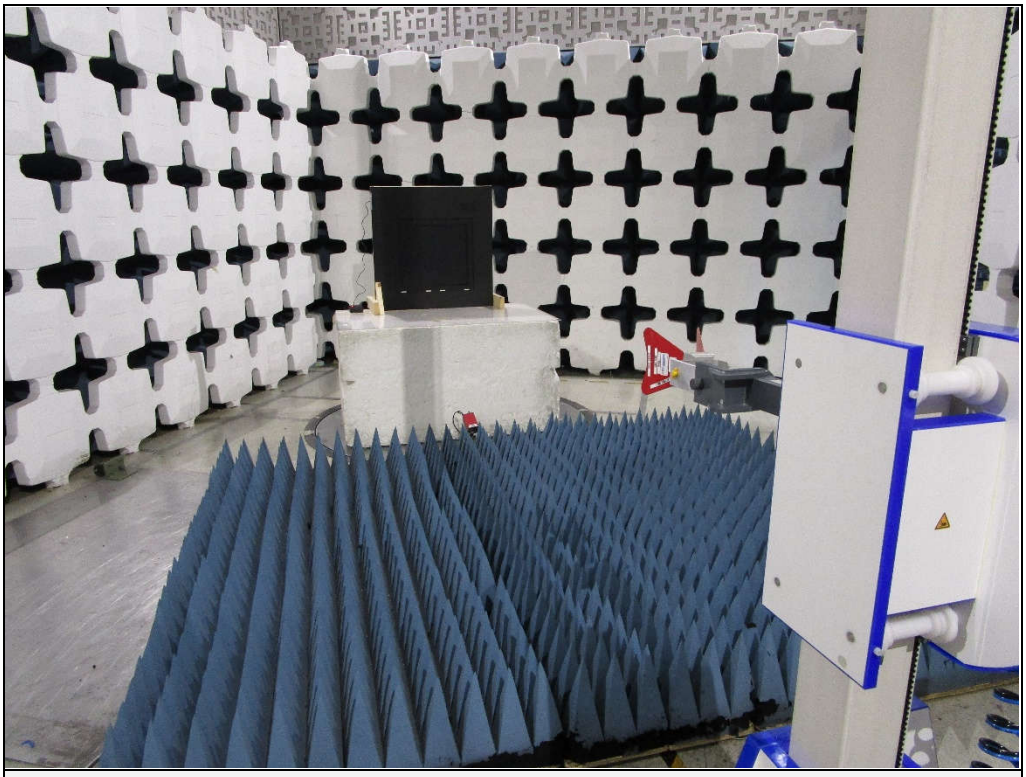
f) Next, for all radiated emissions measurements above 1GHz, the resolution bandwidth was set to 1MHz. The analyzer was set to linear mode with a 10Hz video bandwidth in order to simulate an average detector and an average reading was taken.

,

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

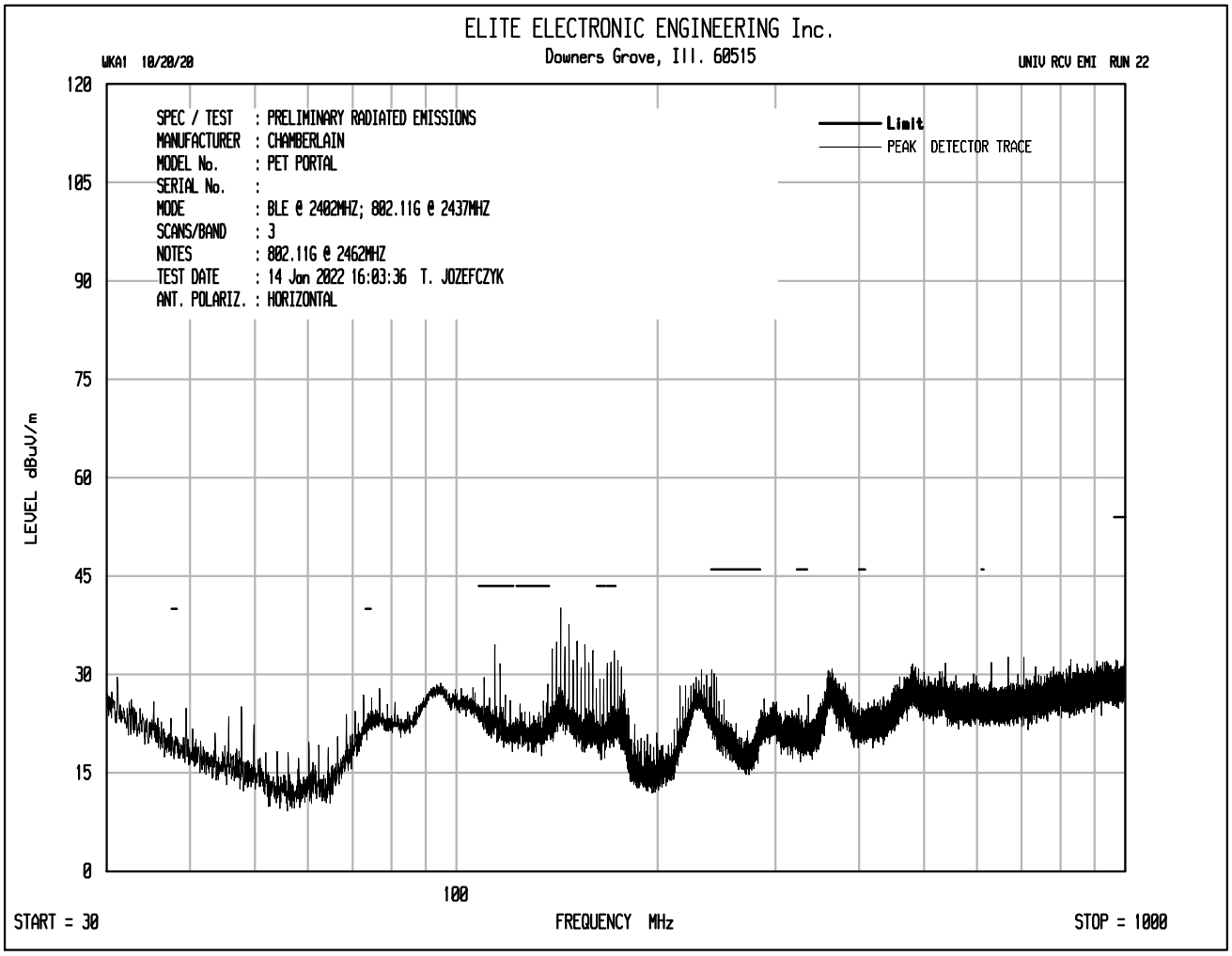


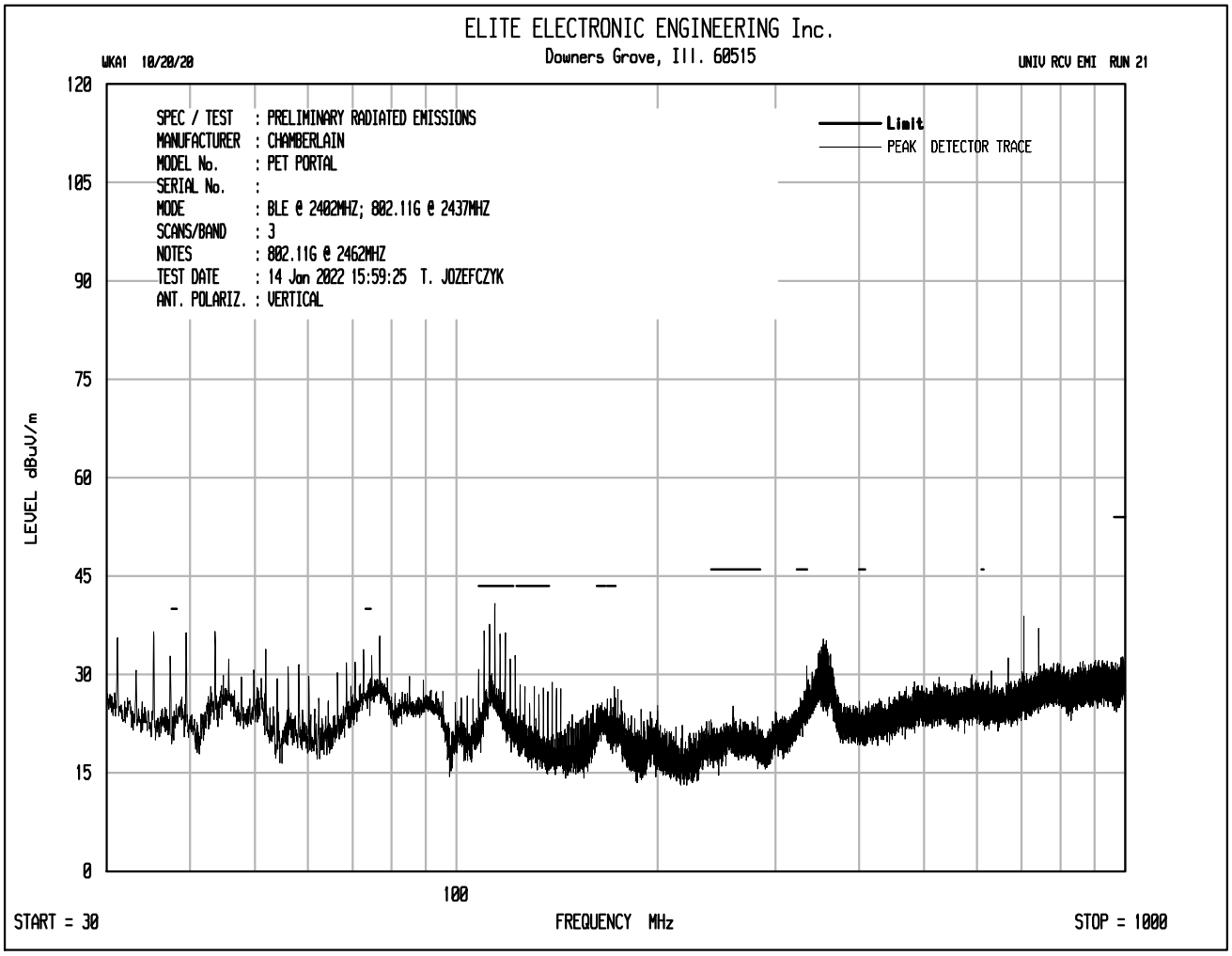
Test Setup for Spurious Emissions: 30MHz to 1GHz, Vertical Polarization

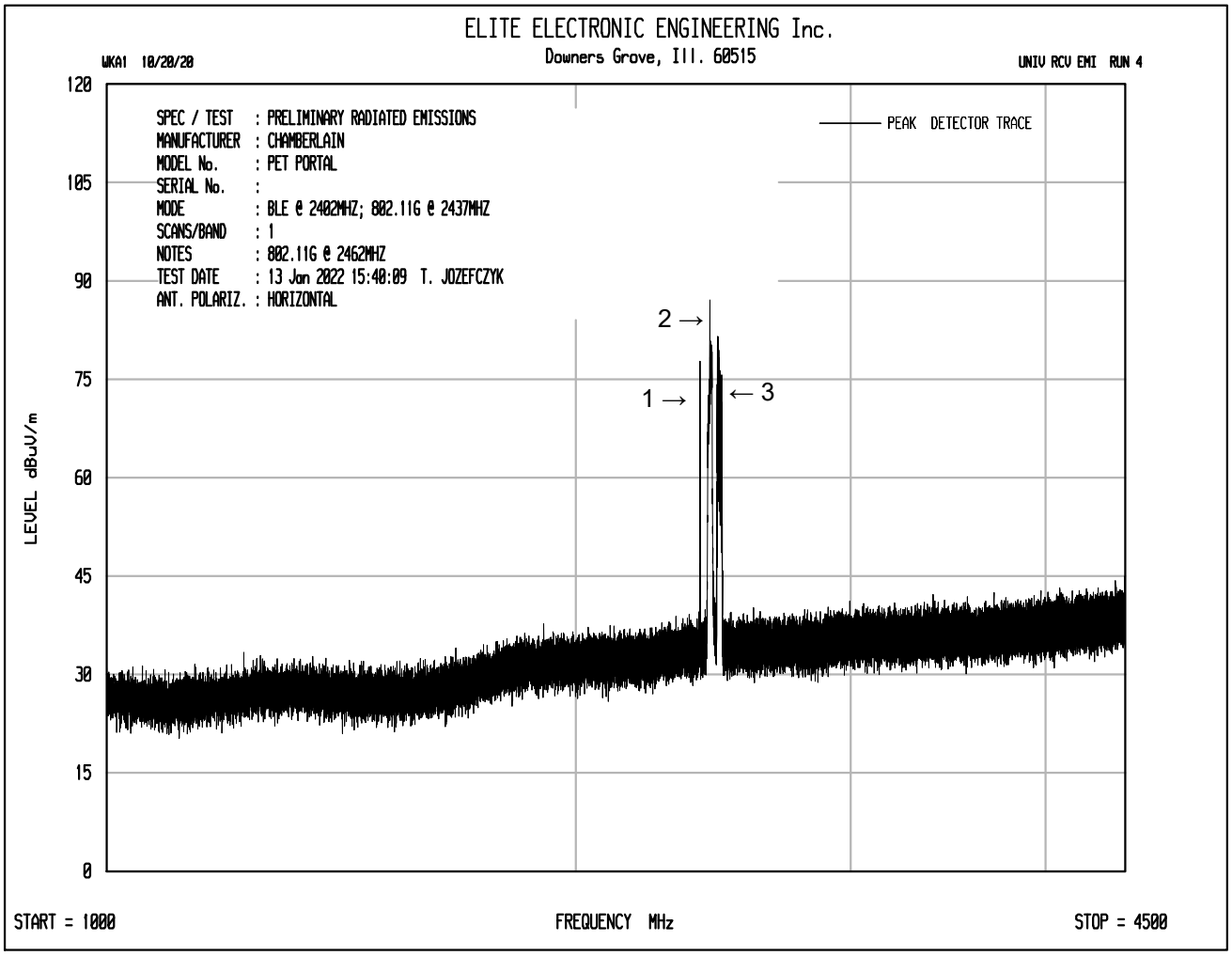


Test Setup for Spurious Emissions: Above 1GHz, Horizontal Polarization

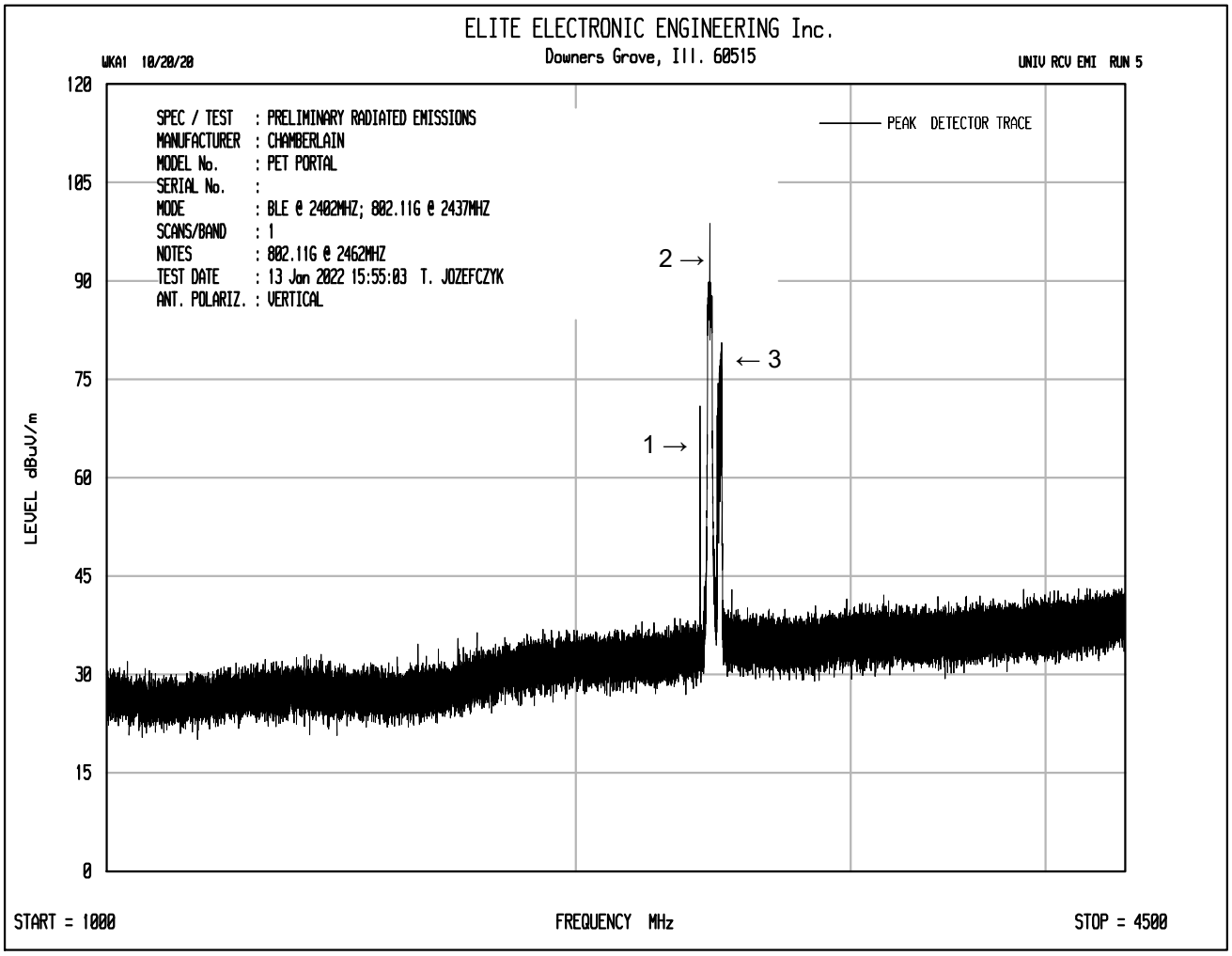
Test Setup for Spurious Emissions: Above 1GHz, Vertical Polarization


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 10/20/20
UNIV RCV EMI RUN 22
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : CHAMBERLAIN
MODEL No. : PET PORTAL
SERIAL No. :
MODE : BLE @ 2402MHZ; 802.11G @ 2437MHZ
SCANS/BAND : 3
NOTES : 802.11G @ 2462MHZ
TEST DATE : 14 Jan 2022 16:03:36 T. JOZEFCZYK
ANT. POLARIZ. : HORIZONTAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
100
START = 30
FREQUENCY MHz
STOP = 1000

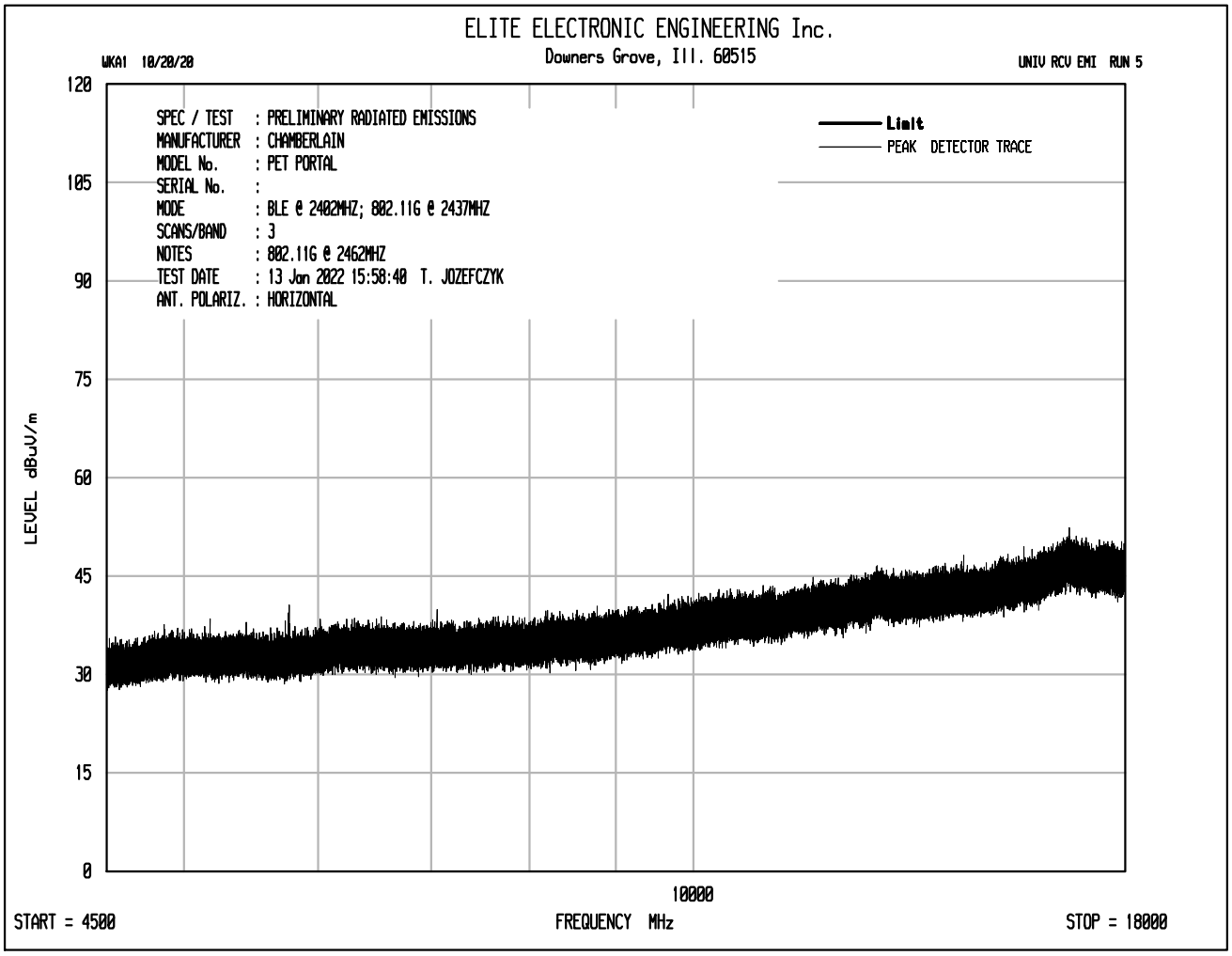

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 10/20/20
UNIV RCV EMI RUN 21
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : CHAMBERLAIN
MODEL No. : PET PORTAL
SERIAL No. :
MODE : BLE @ 2402MHZ; 802.11G @ 2437MHZ
SCANS/BAND : 3
NOTES : 802.11G @ 2462MHZ
TEST DATE : 14 Jan 2022 15:59:25 T. JOZEFCZYK
ANT. POLARIZ. : VERTICAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
100
START = 30
FREQUENCY MHz
STOP = 1000

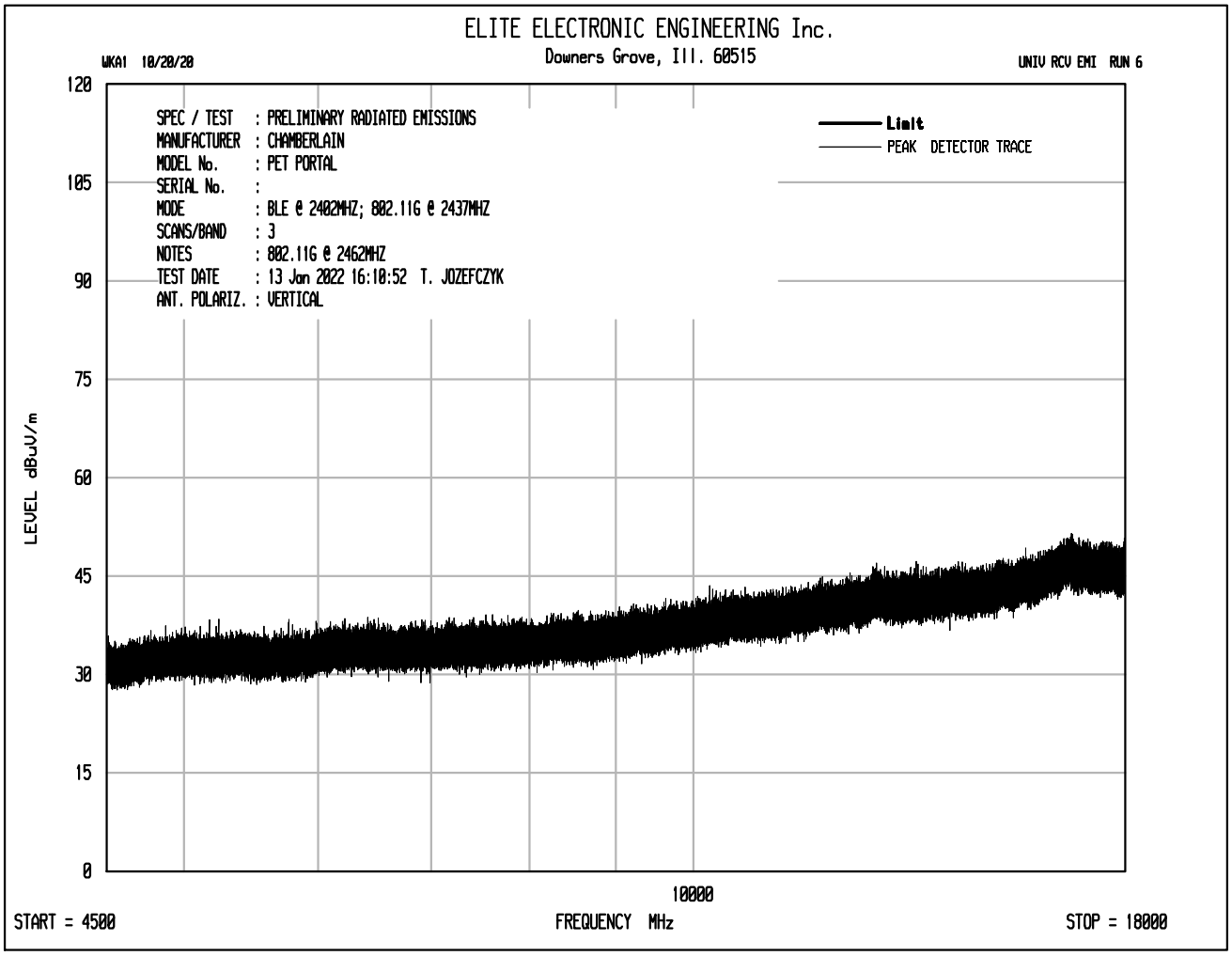


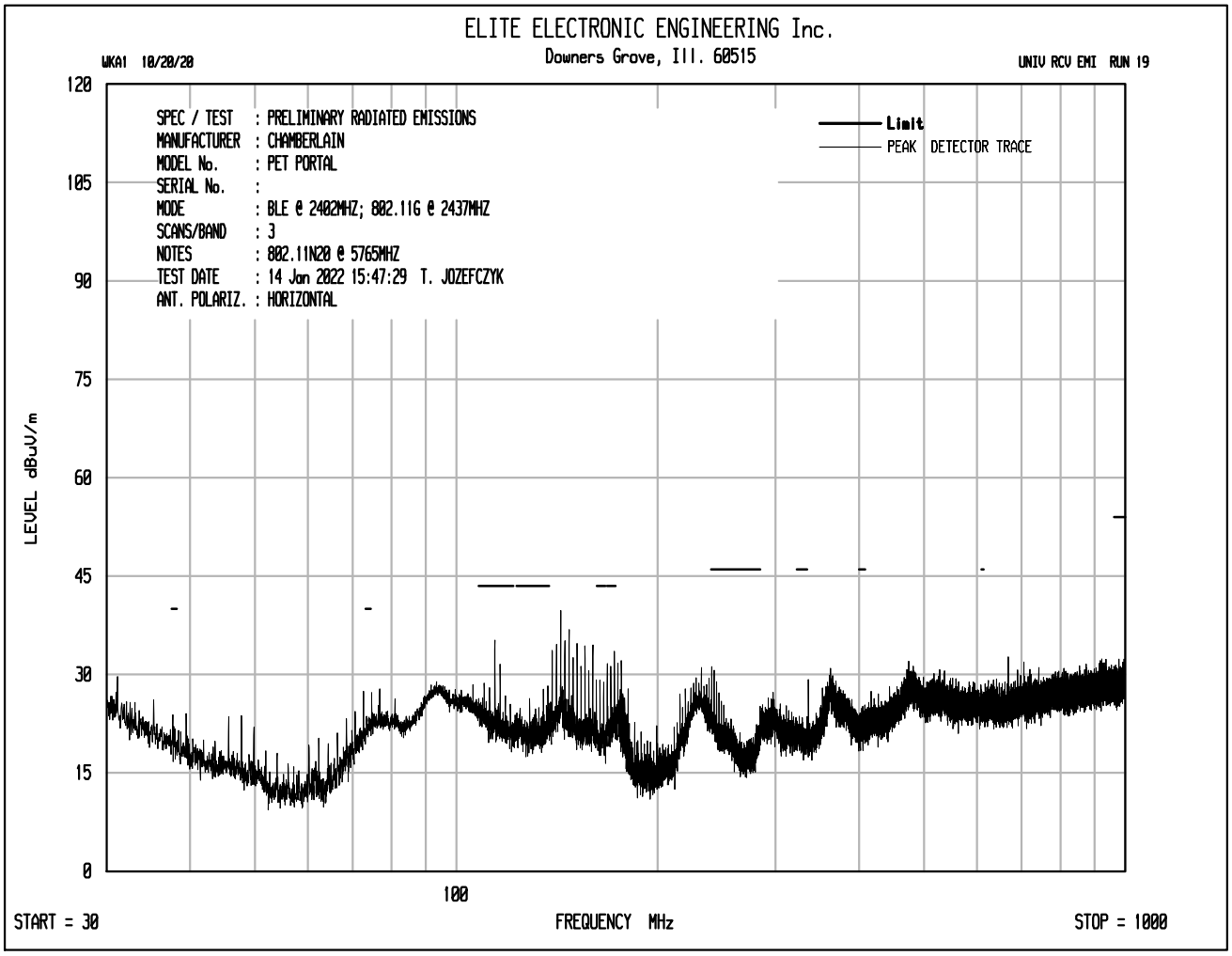
Note	Description
1	Plot shows emissions at BLE frequency 2402MHz.
2	Plot shows emissions at Wi-Fi frequency 2437MHz.
3	Plot shows emissions at BLE frequency 2462MHz.

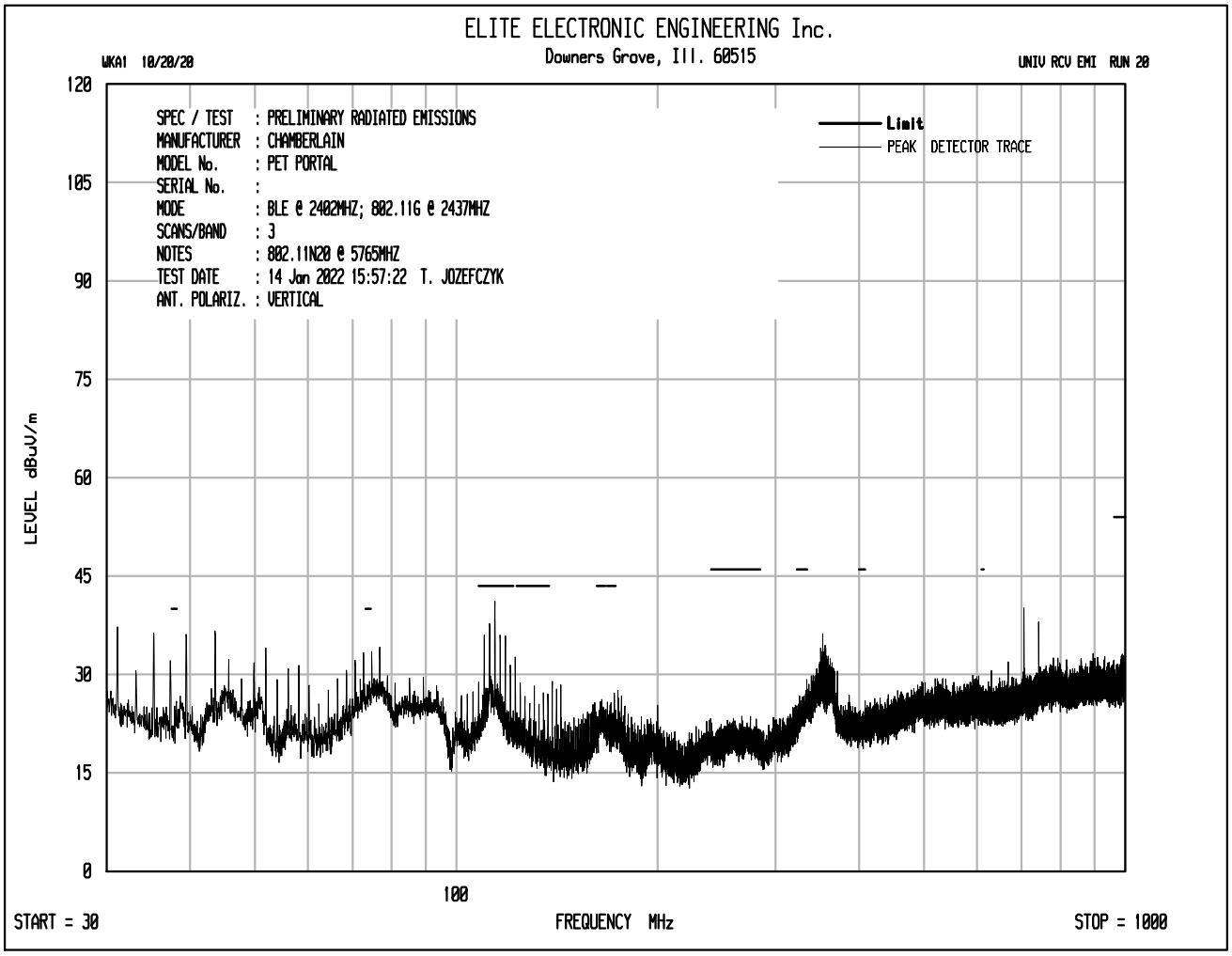


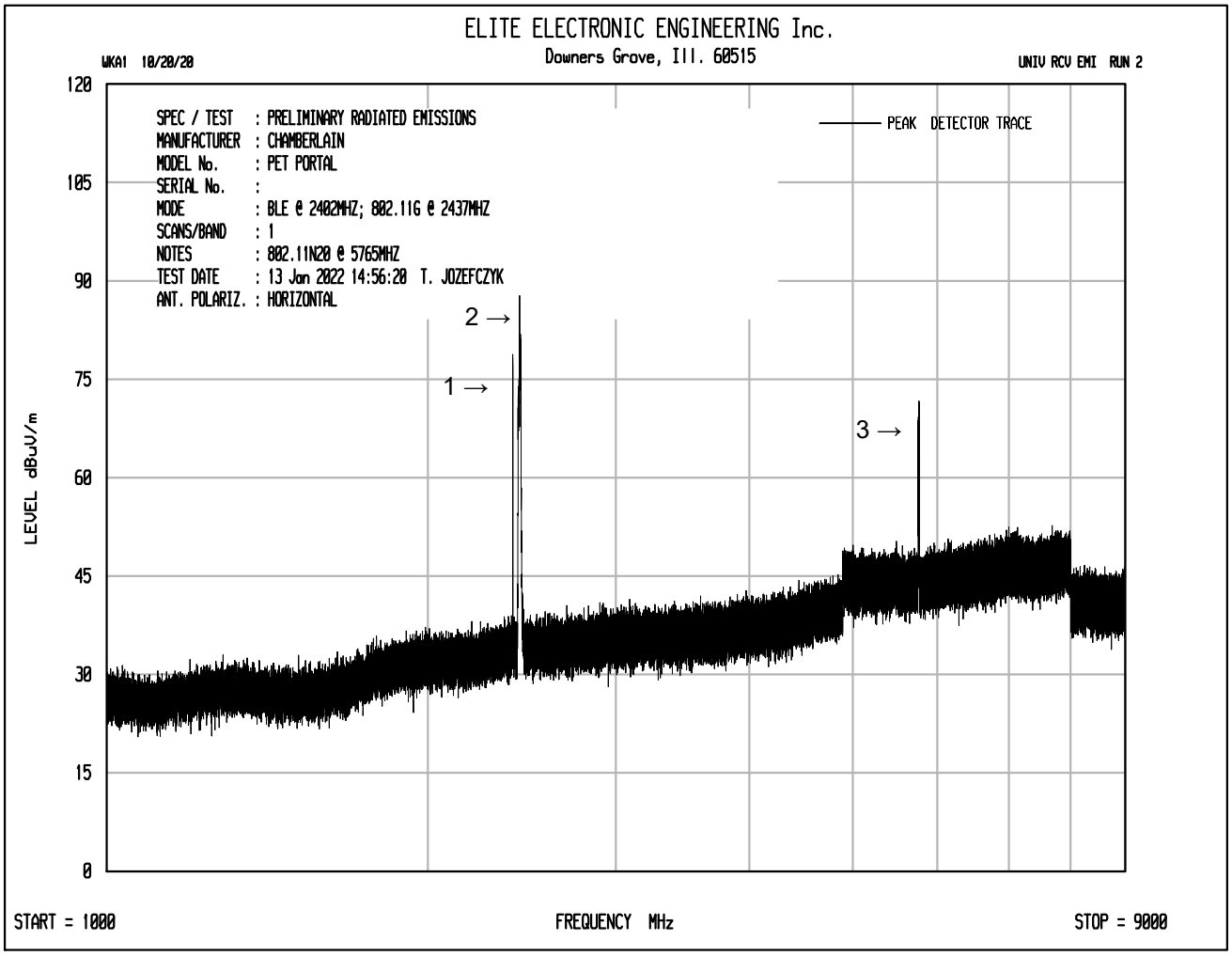
Note	Description
1	Plot shows emissions at BLE frequency 2402MHz.
2	Plot shows emissions at Wi-Fi frequency 2437MHz.
3	Plot shows emissions at BLE frequency 2462MHz.


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 10/20/20
UNIV RCV EMI RUN 5
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : CHAMBERLAIN
MODEL No. : PET PORTAL
SERIAL No. :
MODE : BLE @ 2402MHZ; 802.11G @ 2437MHZ
SCANS/BAND : 3
NOTES : 802.11G @ 2462MHZ
TEST DATE : 13 Jan 2022 15:58:40 T. JOZEFCZYK
ANT. POLARIZ. : HORIZONTAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 4500
FREQUENCY MHz
STOP = 18000

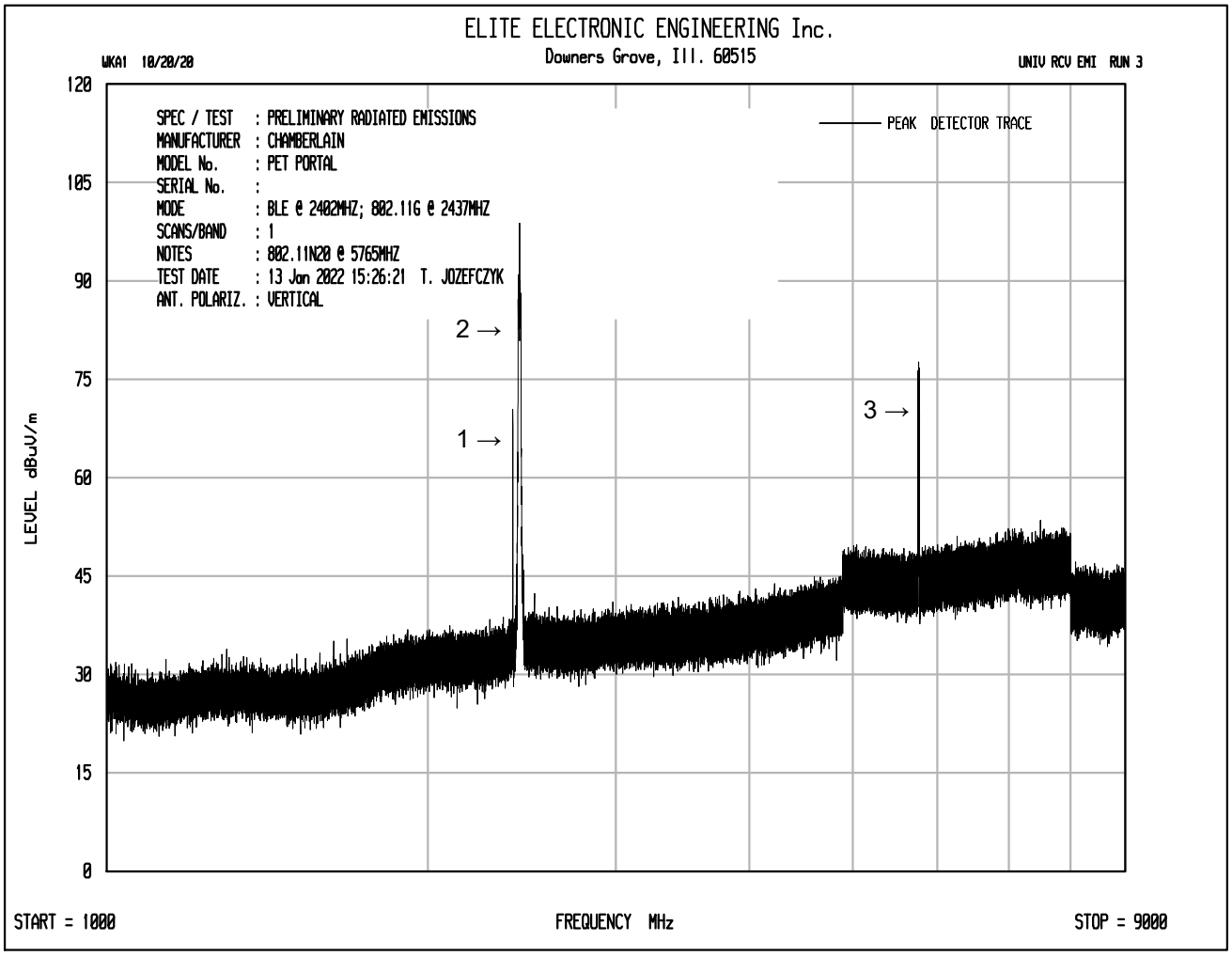

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 10/20/20
UNIV RCV EMI RUN 6
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : CHAMBERLAIN
MODEL No. : PET PORTAL
SERIAL No. :
MODE : BLE @ 2402MHZ; 802.11G @ 2437MHZ
SCANS/BAND : 3
NOTES : 802.11G @ 2462MHZ
TEST DATE : 13 Jan 2022 16:10:52 T. JOZEFCZYK
ANT. POLARIZ. : VERTICAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
10000
START = 4500
FREQUENCY MHz
STOP = 18000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 10/20/20
UNIV RCV EMI RUN 19
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : CHAMBERLAIN
MODEL No. : PET PORTAL
SERIAL No. :
MODE : BLE @ 2402MHZ; 802.11G @ 2437MHZ
SCANS/BAND : 3
NOTES : 802.11N20 @ 5765MHZ
TEST DATE : 14 Jan 2022 15:47:29 T. JOZEFCZYK
ANT. POLARIZ. : HORIZONTAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
100
START = 30
FREQUENCY MHz
STOP = 1000

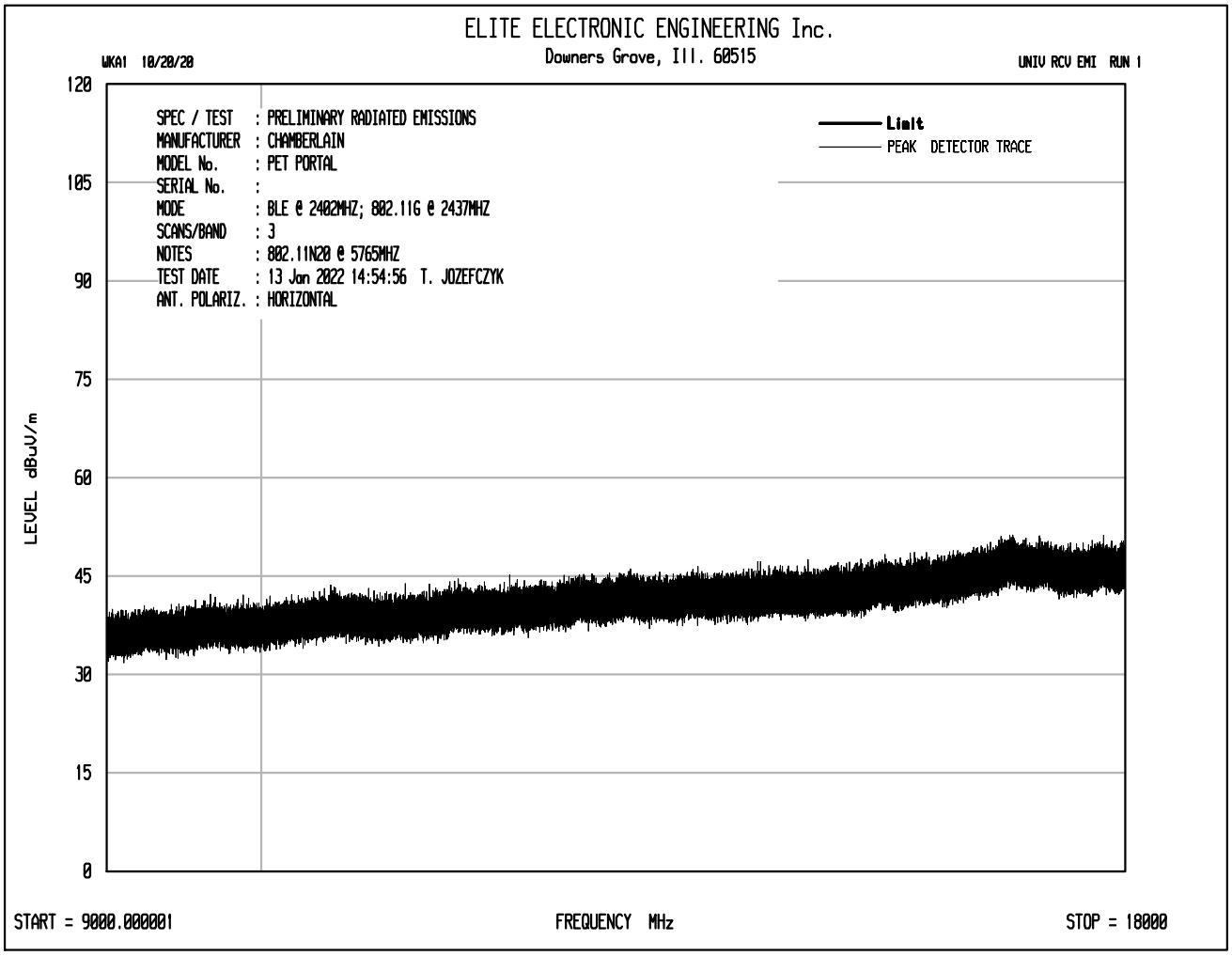

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 10/20/20
UNIV RCV EMI RUN 20
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : CHAMBERLAIN
MODEL No. : PET PORTAL
SERIAL No. :
MODE : BLE @ 2402MHZ; 802.11G @ 2437MHZ
SCANS/BAND : 3
NOTES : 802.11N20 @ 5765MHZ
TEST DATE : 14 Jan 2022 15:57:22 T. JOZEFCZYK
ANT. POLARIZ. : VERTICAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
100
START = 30
FREQUENCY MHz
STOP = 1000

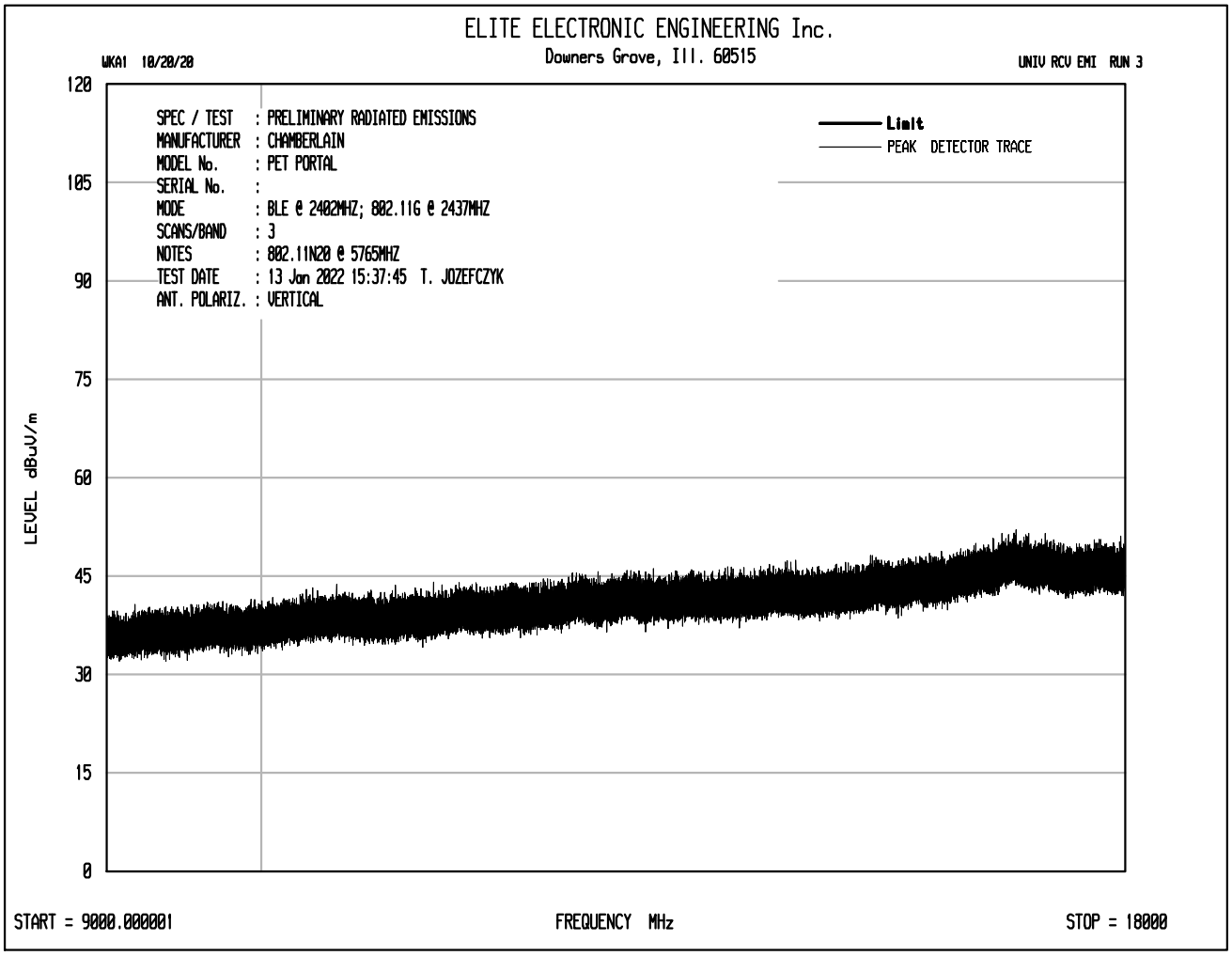


Note	Description
1	Plot shows emissions at BLE frequency 2402MHz.
2	Plot shows emissions at Wi-Fi frequency 2437MHz.
3	Plot shows emissions at BLE frequency 5765MHz.



Note	Description
1	Plot shows emissions at BLE frequency 2402MHz.
2	Plot shows emissions at Wi-Fi frequency 2437MHz.
3	Plot shows emissions at BLE frequency 5765MHz.


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 10/20/20
UNIV RCV EMI RUN 1
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : CHAMBERLAIN
MODEL No. : PET PORTAL
SERIAL No. :
MODE : BLE @ 2402MHZ; 802.11G @ 2437MHZ
SCANS/BAND : 3
NOTES : 802.11N20 @ 5765MHZ
TEST DATE : 13 Jan 2022 14:54:56 T. JOZEFCZYK
ANT. POLARIZ. : HORIZONTAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 9000.000001
FREQUENCY MHz
STOP = 18000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA1 10/20/20
UNIV RCV EMI RUN 3
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : CHAMBERLAIN
MODEL No. : PET PORTAL
SERIAL No. :
MODE : BLE @ 2402MHZ; 802.11G @ 2437MHZ
SCANS/BAND : 3
NOTES : 802.11N20 @ 5765MHZ
TEST DATE : 13 Jan 2022 15:37:45 T. JOZEFCZYK
ANT. POLARIZ. : VERTICAL
Limit
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 9000.000001
FREQUENCY MHz
STOP = 18000

23. Scope of Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELITE ELECTRONIC ENGINEERING, INC.
1516 Centre Circle
Downers Grove, IL 60515
Robert Bugielski (QA Manager) Phone: 630 495 9770 ext. 168
Email: rbugielski@elitetest.com
Craig Fanning (EMC Lab Manager) Phone: 630 495 9770 ext. 112
Email: cfanning@elitetest.com
Brandon Lugo (Automotive Team Leader) Phone: 630 495 9770 ext. 163
Email: blugo@elitetest.com
Richard King (FCC/Commercial Team Leader) Phone: 630 495 9770 ext. 123
Email: reking@elitetest.com
Website: www.elitetest.com

ELECTRICAL

Valid to: June 30, 2021 Certificate Number: 1786.01

In recognition of the successful completion of the A2LA Accreditation Program evaluation process, accreditation is granted to this laboratory to perform the following automotive electromagnetic compatibility and other electrical tests:

Test Technology:	Test Method(s) [1]:
Transient Immunity	ISO 7637-2 (including emissions); ISO 7637-3; ISO 16750-2:2012, Sections 4.6.3 and 4.6.4; CS-11979, Section 6.4; CS.00054, Section 5.9; EMC-CS-2009.1 (CI220); FMC1278 (CI220, CI221, CI222); GMW 3097, Section 3.5; SAE J1113-11; SAE J1113-12; ECE Regulation 10.06 Annex 10
Electrostatic Discharge (ESD)	ISO 10605 (2001, 2008); CS-11979 Section 7.0; CS.00054, Section 5.10; EMC-CS-2009.1 (CI 280); FMC1278 (CI280); SAE J1113-13; GMW 3097 Section 3.6
Conducted Emissions	CISPR 25 (2002, 2008), Sections 6.2 and 6.3; CISPR 25 (2016), Sections 6.3 and 6.4; CS-11979, Section 5.1; CS.00054, Sections 5.6.1 and 5.6.2; GMW 3097, Section 3.3.2; EMC-CS-2009.1 (CE 420); FMC1278 (CE420, CE421)

Test Technology:	Test Method(s) [1]:
Radiated Emissions Anechoic	CISPR 25 (2002, 2008), Section 6.4; CISPR 25 (2016), Section 6.5; CS-11979, Section 5.3; CS.00054, Section 5.6.3; GMW 3097, Section 3.3.1; EMC-CS-2009.1 (RE 310); FMC1278 (RE310); ECE Regulation 10.06 Annex 7 (Broadband) ECE Regulation 10.06 Annex 8 (Narrowband)
Vehicle Radiated Emissions	CISPR 12; ICES-002; ECE Regulation 10.06 Annex 5
Bulk Current Injection (BCI)	ISO 11452-4; CS-11979, Section 6.1; CS.00054, Section 5.8.1; GMW 3097, Section 3.4.1; SAE J1113-4; EMC-CS-2009.1 (RI112); FMC1278 (RI112); ECE Regulation 10.06 Annex 9
Bulk Current Injections (BCI) *(Closed Loop Method)*	ISO 11452-4; SAE J1113-4
Radiated Immunity Anechoic *(Including Radar Pulse)*	ISO 11452-2; ISO 11452-5; CS-11979, Section 6.2; CS.00054, Section 5.8.2; GMW 3097, Section 3.4.2; EMC-CS-2009.1 (RI114); FMC1278 (RI114); SAE J1113-21; ECE Regulation 10.06 Annex 9
Radiated Immunity Magnetic Field	ISO 11452-8
Radiated Immunity Reverb	ISO/IEC 61000-4-21; GMW 3097, Section 3.4.3; EMC-CS-2009.1 (RI114); FMC1278 (RI114); ISO 11452-11
Radiated Immunity *(Portable Transmitters)*	ISO 11452-9; EMC-CS-2009.1 (RI115); FMC1278 (RI115)
Vehicle Radiated Immunity (ALSE)	ISO 11451-2; ECE Regulation 10.06 Annex 6
Electrical Loads	ISO 16750-2, Sections 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.11, and 4.12
Dielectric Withstand Voltage	MIL-STD-202, Method 301; EIA-364-20D
Insulation Resistance	MIL-STD-202, Method 302; SAE/USCAR-2, Revision 6, Section 5.5.1; EIA-364-21D
Contact Resistance	MIL-STD-202, Method 307; SAE/USCAR-2, Revision 6, Section 5.3.1; EIA-364-23C; USCAR21-3 Section 4.5.3

Test Technology:	Test Method(s) [1]:
DC Resistance	MIL-STD-202, Method 303
Contact Chatter	MIL-STD-202, Method 310; SAE/USCAR-2, Revision 6, Section 5.1.9
Voltage Drop	SAE/USCAR-2, Revision 6, Section 5.3.2; USCAR21-3 Section 4.5.6
Emissions	
Radiated and Conducted (3m Semi-anechoic chamber, up to 40 GHz)	47 CFR, FCC Part 15 B (using ANSI C63.4:2014); 47 CFR, FCC Part 18 (using FCC MP-5:1986); ICES-001; ICES-003; ICES-005; IEC/CISPR 11, Ed. 4.1 (2004-06); AS/NZS CISPR 11 (2004); IEC/CISPR 11 Ed 5 (2009-05) + A1 (2010); KN 11 (2008-5) with RRL Notice No. 2008-3 (May 20, 2008); CISPR 11; EN 55011; KN 11; CNS 13803 (1997, 2003); CISPR 14-1; EN 55014-1; AS/NZS CISPR 14.1; KN 14-1; IEC/CISPR 22 (1997); EN 55022 (1998) + A1(2000); EN 55022 (1998) + A1(2000) + A2(2003); EN 55022 (2006); IEC/CISPR 22 (2008-09); AS/NZS CISPR 22 (2004); AS/NZS CISPR 22, 3rd Edition (2006); KN 22 (up to 6 GHz); CNS 13438 (up to 6 GHz); VCCI V-3 (up to 6 GHz); CISPR 32; EN 55032; KN 32; ECE Regulation 10.06 Annex 14
Current Harmonics	IEC 61000-3-2; EN 61000-3-2; KN 61000-3-2; ECE Regulation 10.06 Annex 11
Flicker and Fluctuations	IEC 61000-3-3; EN 61000-3-3; KN 61000-3-3; ECE Regulation 10.06 Annex 12
Immunity	
Electrostatic Discharge	IEC 61000-4-2, Ed. 1.2 (2001); IEC 61000-4-2 (1995) + A1(1998) + A2(2000); EN 61000-4-2 (1995); EN 61000-4-2 (2009-05); KN 61000-4-2 (2008-5); RRL Notice No. 2008-4 (May 20, 2008); IEC 61000-4-2; EN 61000-4-2; KN 61000-4-2; IEEE C37.90.3 2001
Radiated Immunity	IEC 61000-4-3 (1995) + A1(1998) + A2(2000); IEC 61000-4-3, Ed. 3.0 (2006-02); IEC 61000-4-3, Ed. 3.2 (2010); KN 61000-4-3 (2008-5); RRL Notice No. 2008-4 (May 20, 2008); IEC 61000-4-3; EN 61000-4-3; KN 61000-4-3; IEEE C37.90.2 2004
Electrical Fast Transient/Burst	IEC 61000-4-4, Ed. 2.0 (2004-07); IEC 61000-4-4, Ed. 2.1 (2011); IEC 61000-4-4 (1995) + A1(2000) + A2(2001); KN 61000-4-4 (2008-5); RRL Notice No. 2008-5 (May 20, 2008); IEC 61000-4-4; EN 61000-4-4; KN 61000-4-4; ECE Regulation 10.06 Annex 15