



| <b>Engineering Test Report No. 2004754-03</b>   |  |
|---|--|
| Report Date   | December 28, 2020  |
| Manufacturer Name   | Chamberlain Group, Inc.  |
| Manufacturer Address  | 300 Windsor Dr<br>Oak Brook, IL 60523  |
| Model No.   | 001D9586   |
| Date Received   | December 17, 2020  |
| Test Dates  | December 17, 2020 to December 23, 2020   |
| Specifications  | FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247<br>FCC "Code of Federal Regulations" Title 47, Part15, Subpart 15B                   |
| Test Facility   | Elite Electronic Engineering, Inc.<br>1516 Centre Circle,<br>Downers Grove, IL 60515<br>FCC Reg. Number: 269750<br>IC Reg. Number: 2987A<br>CAB Identifier: US0107 |
| Signature   |  |
| Tested by   | Javier Cardenas  |
| Signature   |  |
| Approved by   | Raymond J. Klouda,<br>Registered Professional Engineer of Illinois – 44894   |
| PO Number   | 4900072649   |
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## 1. Report Revision History

| Revision | Date        | Description   |
|----------|-------------|---|
| -        | 13 JAN 2021 | Initial Release of Engineering Test Report No. 2004754-03 |
|          |             |   |

## 2. Introduction

### 2.1. Scope of Tests

This document presents the results of a series of RF emissions tests that were performed on the Chamberlain Group, Inc. Phoenix Transceiver (hereinafter referred to as the Equipment Under Test (EUT)). The EUT is a single modular transmitter granted a limited modular approval. 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 Chamberlain Group, Inc. Phoenix Transceiver, FCC ID: HBW-9586, meets the Class II Permissive Change requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Sections 15.247. The following modifications have been made to the original equipment:

The modular transmitter was integrated into a new host; a Chamberlain Group, Inc. Astro Pet Door, MYQPP1.

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            | Pet Door                                |
| Model/Part No.                 | 001D9586                                |
| S/N                            | Elite3                                  |
| Device Type                    | Digitally Modulated Transmission Device |
| Band of Operation              | 2400-2483.5MHz                          |
| Modulation Type                | 802.11g<br>Bluetooth - GFSK             |
| Software/Firmware Version      | Version 6.2                             |
| Product FCC ID & IC UPN Number | FCC ID: HBW-9586                        |

The EUT listed above was used throughout the test series.

## 3. Power Input

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

The EUT was submitted for testing along with the following support equipment:

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

## 6. Interconnect Leads

The following interconnect cables were submitted with the EUT:

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

## 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  |
|-----------------|--|
| 802.11g, 54Mbps | - 2412MHz, Power Setting = 96, 17dBm<br>- 2437MHz, Power Setting = 94, 17dBm<br>- 2462MHz, Power Setting = 93, 17dBm |
| Bluetooth       | - 2402MHz, 2440MHz, 2480MHz  |

## 9. Test Specifications

The tests were performed to selected portions of, and in accordance with the FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247 test specification(s).

- 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

## 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 Part 15, Subpart C, Section 15.247 and ANSI C63.4-2014 test specification(s).

## 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          | 21°C     |
| Relative Humidity    | 18%      |
| Atmospheric Pressure | 1011.4mb |

### 13. Summary

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

| Test Description                          | Requirements   | Test Methods      | S/N    | Results  |
|---|----------------|-------------------|--------|----------|
| Effective Isotropic Radiated Power (EIRP) | FCC 15C 15.247 | ANSI C63.10: 2013 | Elite3 | Conforms |
| Duty Cycle Factor Measurements            | FCC 15C 15.247 | ANSI C63.10: 2013 | Elite3 | —        |
| Case Spurious Radiated Emissions          | FCC 15C 15.247 | ANSI C63.10: 2013 | Elite3 | Conforms |
| Band-Edge Compliance                      | FCC 15C 15.247 | ANSI C63.10: 2013 | Elite3 | 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).

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

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.

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

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.

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

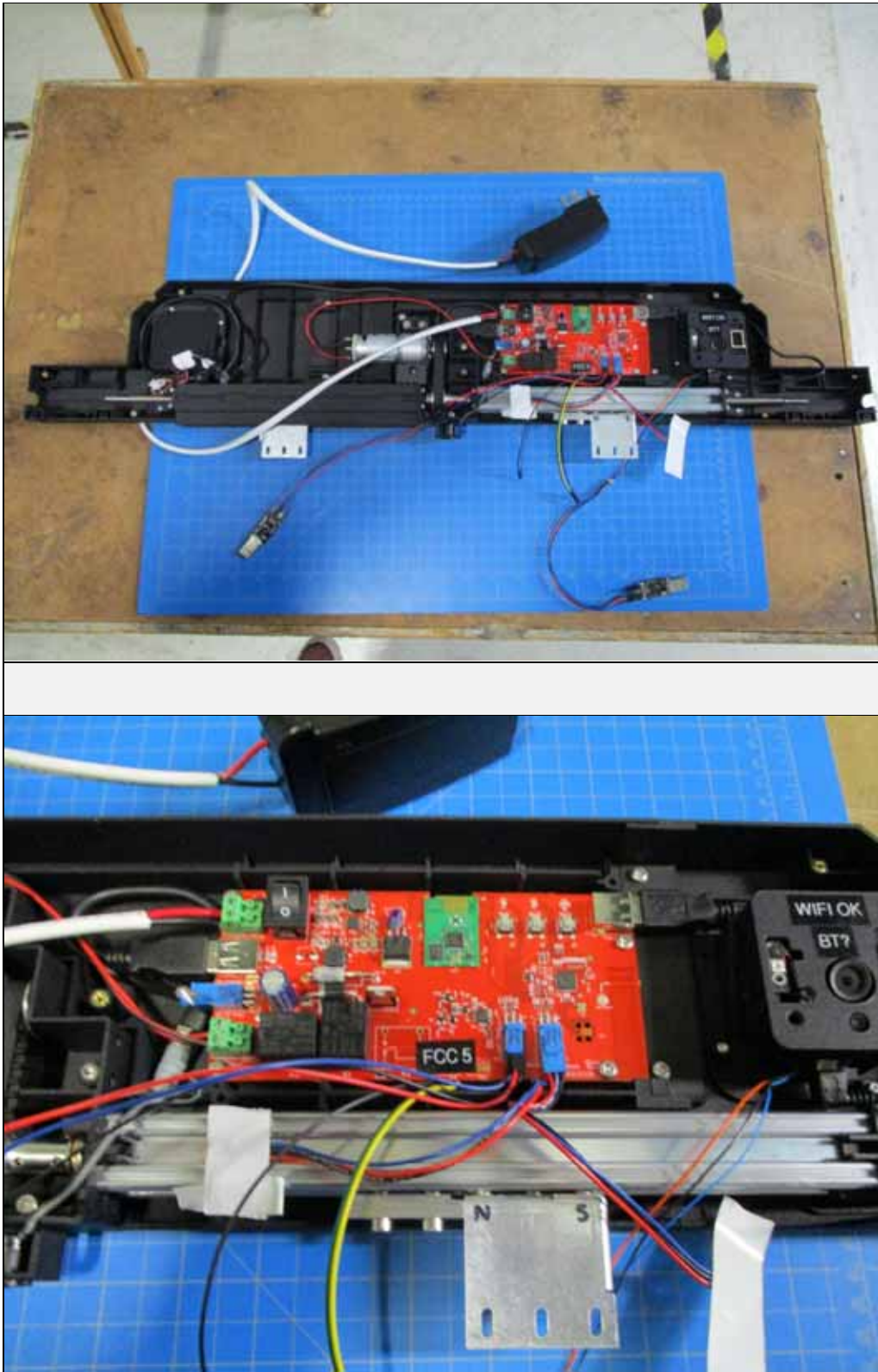
### 15. Statement of Conformity

The Chamberlain Group, Inc. Phoenix Transceiver, Model No. 001D9586, Serial No. Elite3, did fully conform to the selected requirements of FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247 and Innovation, Science, and Economic Development Canada, RSS-247.

### 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 C, Section 15.247 and Innovation, Science, and Economic Development Canada, RSS-247 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  |
|-------|---------------------------------|--------------------|-----------------------|-------------|-----------------|-----------|-----------|
| APW0  | PREAMPLIFIER                    | PLANAR ELECTRONICS | PE2-30-20G20R6G       | PL2926/0646 | 20GHZ-26.5GHZ   | 9/24/2020 | 9/24/2021 |
| APW3  | PREAMPLIFIER                    | PLANAR ELECTRONICS | PE2-35-120-5R0-10-12  | PL2924      | 1GHZ-20GHZ      | 3/23/2020 | 3/23/2021 |
| CDW6  | DESKTOP COMPUTER                | ELITE              | PENTIUM 4             | 007         | 3.8 GHZ         | N/A       |           |
| CDZ3  | LAB WORKSTATION                 | ELITE              | LWS-10                |             | WINDOWS 10      | CNR       |           |
| NHG1  | STANDARD GAIN HORN ANTENNA      | NARDA              | 638                   | ---         | 18-26.5GHZ      | NOTE 1    |           |
| NTA4  | BILOG ANTENNA                   | TESEQ              | 6112D                 | 46660       | 20-2000GHZ      | 10/5/2020 | 10/5/2021 |
| NWQ0  | DOUBLE RIDGED WAVEGUIDE ANTENNA | ETS LINDGREN       | 3117                  | 66657       | 1GHZ-18GHZ      | 5/13/2020 | 5/13/2022 |
| RBG3  | EMI ANALYZER                    | ROHDE & SCHWARZ    | ESW44                 | 101592      | 2HZ-44GHZ       | 4/24/2020 | 4/24/2021 |
| SES0  | 24VDC POWER SUPPLY              | P-TRANS            | FS-32024-1M           | 001         | 18-27VDC        | NOTE 1    |           |
| T2DN  | 20DB, 25W ATTENUATOR            | WEINSCHL           | 46-20-34              | BS2147      | DC-18GHZ        | 1/10/2020 | 1/10/2022 |
| T2S7  | 20DB 25W ATTENUATOR             | WEINSCHL           | 46-20-34              | BU8139      | DC-18GHZ        | 3/10/2020 | 3/10/2022 |
| WKA1  | SOFTWARE, UNIVERSAL RCV EMI     | ELITE              | UNIV_RCV_EMI          | 1           | ---             | I/O       |           |
| XPQ5  | FILTER                          | K&L MICROWAVE      | 11SH10-9000/U2000-O/O | 1           | 5000-5800 MHZ   | 9/6/2019  | 9/6/2021  |
| XPR0  | HIGH PASS FILTER                | K&L MICROWAVE      | 11SH10-4800/X20000    | 001         | 4.8-20GHZ       | 9/6/2019  | 9/6/2021  |

N/A: Not Applicable

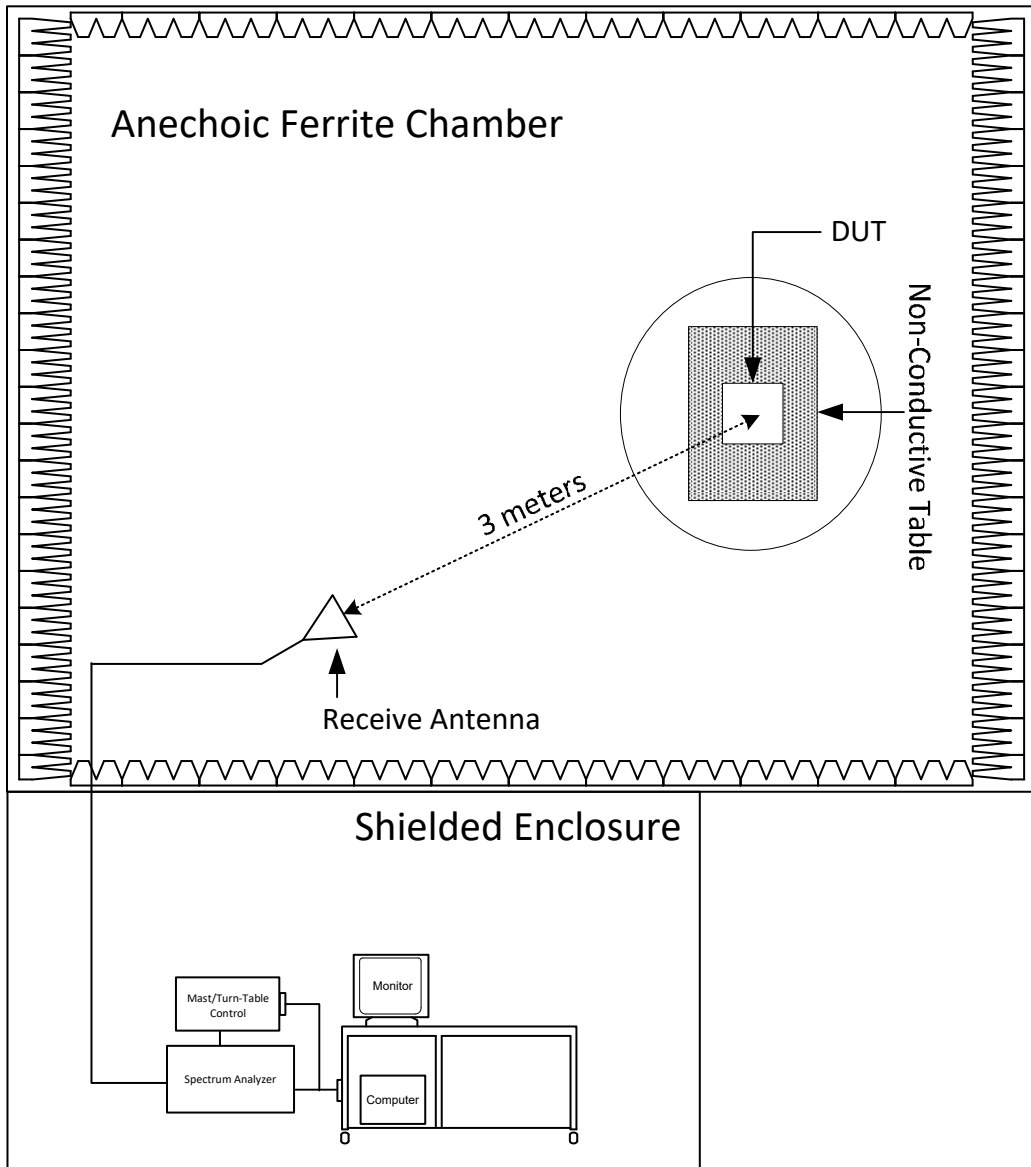
I/O: Initial Only

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. Effective Isotropic Radiated Power (EIRP)

| Test Information |                         |
|------------------|-------------------------|
| Manufacturer     | Chamberlain Group, Inc. |
| Product          | Phoenix Transceiver     |
| Model            | 001D9586                |
| Serial No        | Elite3                  |
| Mode             | 802.11g & Bluetooth     |

| Test Setup Details    |  |
|-----------------------|--|
| Setup Format          | Tabletop   |
| Height of Support     | NA   |
| Measurement Method    | Radiated   |
| Type of Test Site     | Semi-Anechoic Chamber  |
| Type of Antennas Used | Below 1GHz: Bilog (or equivalent)<br>Above 1GHz: Double-ridged waveguide (or equivalent) |
| Notes                 | None   |

| Requirements                                  |
|---|
| The output power shall not exceed 4W (36dBm). |

| Procedures  |
|---|
| <p>The EUT was placed on the non-conductive stand and set to transmit. A double ridged waveguide antenna was placed at a test distance of 3 meters from the EUT. The resolution bandwidth (RBW) of the spectrum analyzer was set to greater than the 6dB bandwidth. The EUT was maximized for worst case emissions (or maximum output power) at the measuring antenna. The maximum meter reading was recorded. The peak power output was measured for the low, middle and high channels.</p> <p>The equivalent power was determined from the field intensity levels measured at 3 meters using the substitution method. To determine the emission power, a double ridged waveguide antenna was then set in place of the EUT and connected to a calibrated signal generator. The output of the signal generator was adjusted to match the received level at the spectrum analyzer. The signal level was recorded. The reading was then corrected to compensate for cable loss (and antenna gain for all measurements above 1GHz), as required. The peak power output was calculated for low, middle, and high hopping frequencies.</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             | 001D9586                |
| S/N               | Elite3                  |
| Mode              | 802.11g                 |
| Carrier Frequency | 2412MHz                 |
| Parameters        | EIRP = 33.1mW (15.2dBm) |
| Notes             | None                    |

| Freq. (MHz) | Ant Pol | Wide BW Meter Reading (dBuV) | Matched Sig. Gen. Reading (dBm) | Equivalent Antenna Gain (dB) | Cable Loss (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-------------|---------|------------------------------|---------------------------------|------------------------------|-----------------|------------|-------------|-------------|
| 2412.00     | H       | 72.2                         | 9.6                             | 5.0                          | 3.4             | 11.2       | 36.0        | -24.8       |
| 2412.00     | V       | 75.8                         | 13.6                            | 5.0                          | 3.4             | 15.2       | 36.0        | -20.8       |



| Test Details      |                         |
|-------------------|-------------------------|
| Manufacturer      | Chamberlain Group, Inc. |
| Model             | 001D9586                |
| S/N               | Elite3                  |
| Mode              | 802.11g                 |
| Carrier Frequency | 2437MHz                 |
| Parameters        | EIRP = 41.7mW (16.2dBm) |
| Notes             | None                    |

| Freq. (MHz) | Ant Pol | Wide BW Meter Reading (dBuV) | Matched Sig. Gen. Reading (dBm) | Equivalent Antenna Gain (dB) | Cable Loss (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-------------|---------|------------------------------|---------------------------------|------------------------------|-----------------|------------|-------------|-------------|
| 2437.00     | H       | 74.1                         | 11.4                            | 5.0                          | 3.5             | 12.9       | 36.0        | -23.1       |
| 2437.00     | V       | 76.9                         | 14.7                            | 5.0                          | 3.5             | 16.2       | 36.0        | -19.8       |



| Test Details      |                         |
|-------------------|-------------------------|
| Manufacturer      | Chamberlain Group, Inc. |
| Model             | 001D9586                |
| S/N               | Elite3                  |
| Mode              | 802.11g                 |
| Carrier Frequency | 2462MHz                 |
| Parameters        | EIRP = 41.7mW (16.2dBm) |
| Notes             | None                    |

| Freq. (MHz) | Ant Pol | Wide BW Meter Reading (dBuV) | Matched Sig. Gen. Reading (dBm) | Equivalent Antenna Gain (dB) | Cable Loss (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-------------|---------|------------------------------|---------------------------------|------------------------------|-----------------|------------|-------------|-------------|
| 2462.00     | H       | 73.9                         | 10.8                            | 4.9                          | 3.5             | 12.2       | 36.0        | -23.8       |
| 2462.00     | V       | 75.9                         | 14.8                            | 4.9                          | 3.5             | 16.2       | 36.0        | -19.8       |

| Test Details      |                         |
|-------------------|-------------------------|
| Manufacturer      | Chamberlain Group, Inc. |
| Model             | 001D9586                |
| S/N               | Elite3                  |
| Mode              | Bluetooth               |
| Carrier Frequency | 2402MHz                 |
| Parameters        | EIRP = 6.8mW (8.6dBm)   |
| Notes             | None                    |

| Freq. (MHz) | Ant Pol | Wide BW Meter Reading (dBuV) | Matched Sig. Gen. Reading (dBm) | Equivalent Antenna Gain (dB) | Cable Loss (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-------------|---------|------------------------------|---------------------------------|------------------------------|-----------------|------------|-------------|-------------|
| 2402.00     | H       | 67.0                         | 6.0                             | 5.0                          | 3.4             | 7.6        | 36.0        | -28.4       |
| 2402.00     | V       | 69.4                         | 8.6                             | 5.0                          | 3.4             | 10.2       | 36.0        | -25.8       |



| Test Details      |                         |
|-------------------|-------------------------|
| Manufacturer      | Chamberlain Group, Inc. |
| Model             | 001D9586                |
| S/N               | Elite3                  |
| Mode              | Bluetooth               |
| Carrier Frequency | 2440MHz                 |
| Parameters        | EIRP = 13.8mW (11.4dBm) |
| Notes             | None                    |

| Freq. (MHz) | Ant Pol | Wide BW Meter Reading (dBuV) | Matched Sig. Gen. Reading (dBm) | Equivalent Antenna Gain (dB) | Cable Loss (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-------------|---------|------------------------------|---------------------------------|------------------------------|-----------------|------------|-------------|-------------|
| 2440.00     | H       | 68.4                         | 6.2                             | 5.0                          | 3.5             | 7.7        | 36.0        | -28.3       |
| 2440.00     | V       | 71.7                         | 9.9                             | 5.0                          | 3.5             | 11.4       | 36.0        | -24.6       |



| Test Details      |                         |
|-------------------|-------------------------|
| Manufacturer      | Chamberlain Group, Inc. |
| Model             | 001D9586                |
| S/N               | Elite3                  |
| Mode              | Bluetooth               |
| Carrier Frequency | 2480MHz                 |
| Parameters        | EIRP = 12.9mW (11.1dBm) |
| Notes             | None                    |

| Freq. (MHz) | Ant Pol | Wide BW Meter Reading (dBuV) | Matched Sig. Gen. Reading (dBm) | Equivalent Antenna Gain (dB) | Cable Loss (dB) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-------------|---------|------------------------------|---------------------------------|------------------------------|-----------------|------------|-------------|-------------|
| 2480.00     | H       | 71.1                         | 9.7                             | 4.9                          | 3.5             | 11.1       | 36.0        | -24.9       |
| 2480.00     | V       | 68.0                         | 6.8                             | 4.9                          | 3.5             | 8.2        | 36.0        | -27.8       |



## 21. Duty Cycle Factor Measurements

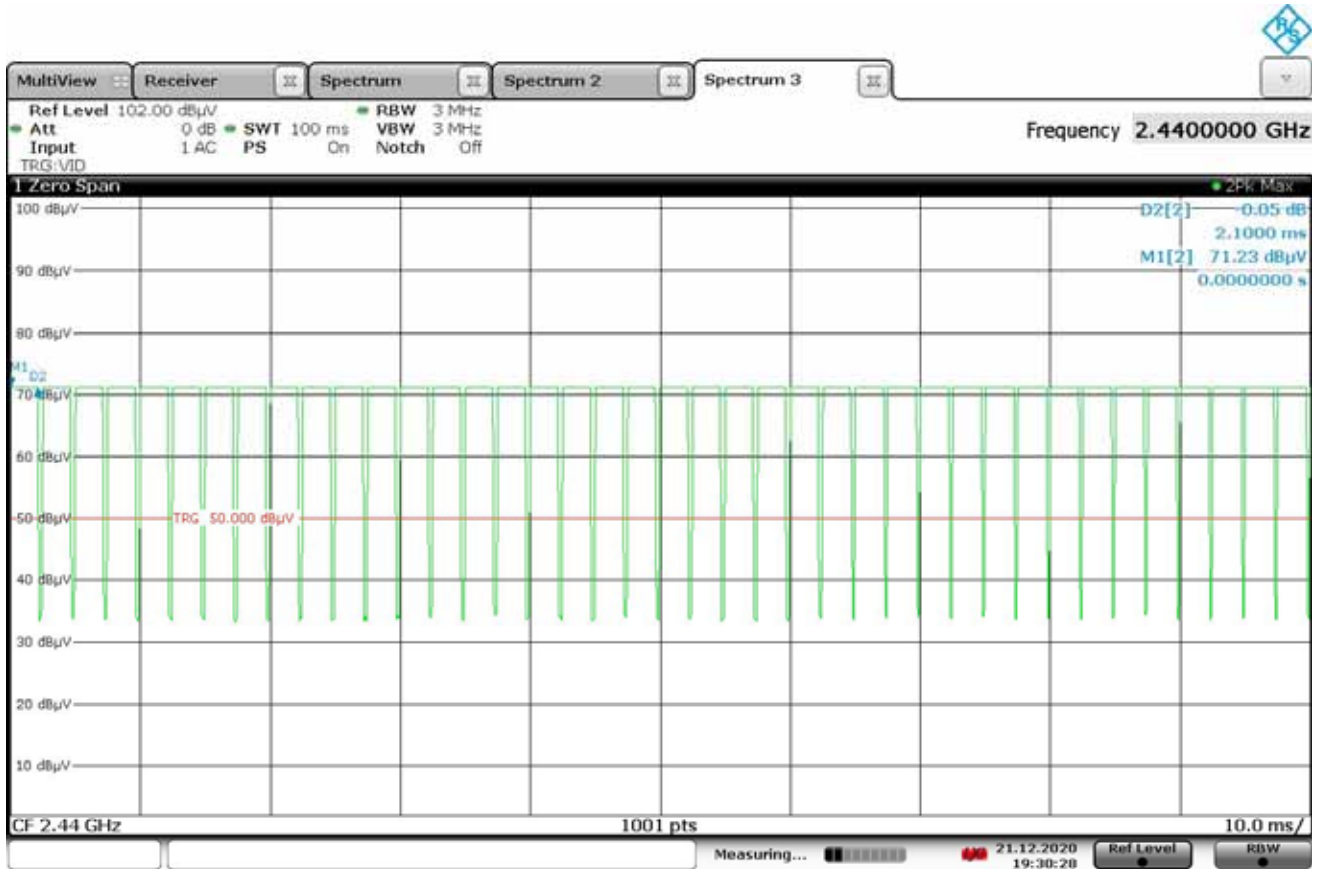
| Test Information |                         |
|------------------|-------------------------|
| Manufacturer     | Chamberlain Group, Inc. |
| Product          | Phoenix Transceiver     |
| Model            | 001D9586                |
| Serial No        | Elite3                  |
| Mode             | Bluetooth               |

| Test Setup Details |                       |
|--------------------|-----------------------|
| Setup Format       | Tabletop              |
| Height of Support  | NA                    |
| Measurement Method | Radiated              |
| Type of Test Site  | Semi-Anechoic Chamber |
| Notes              | None                  |

| Procedures  |
|---|
| <p>The duty cycle factor is used to convert peak detected readings to average readings when pulsed modulation is employed. This factor is computed from the time domain trace of the pulse modulation signal.</p> <p>With the transmitter set up to transmit for maximum pulse density, the time domain trace is displayed on the spectrum analyzer. This trace is obtained by tuning center frequency to the transmitter frequency and then setting a zero span width with 10msec/div. The amplitude settings are adjusted so that the on/off transitions clear the 4th division from the bottom of the display. The markers are set at the beginning and end of the “on-time”. The trace is recorded.</p> <p>Next the spectrum analyzer center frequency is set to the transmitter frequency with a zero span width and 10msec/div. This shows if the word is longer than 100msec or shorter than 100msec. If the word period is less than 100msec, the display is set to show at least one word. The on-time and off-time are then measured. The on-time is total time signal level exceeds the 4th division. Off-time is time under for the word period. The duty cycle is then computed as the <math>(\text{On-time} / \text{word period})</math> where the word period = <math>(\text{On-time} + \text{Off-time})</math>.</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             | 001D9586                |
| S/N               | Elite3                  |
| Mode              | 802.11g                 |
| Carrier Frequency | 2440MHz                 |
| Parameters        | On time = 84msec        |
| Notes             | None                    |



19:30:29 21.12.2020

$$\text{Duty Cycle Factor} = 20 \log \left( \frac{100\text{msec}}{84\text{msec}} \right) = 1.51\text{dB}$$

22. Case Spurious Radiated Emissions

| Test Information |                         |
|------------------|-------------------------|
| Manufacturer     | Chamberlain Group, Inc. |
| Product          | Phoenix Transceiver     |
| Model            | 001D9586                |
| Serial No        | Elite3                  |
| Mode             | 802.11g & Bluetooth     |

| Test Setup Details    |  |
|-----------------------|--|
| Setup Format          | Tabletop   |
| Height of Support     | NA   |
| Measurement Method    | Radiated   |
| Type of Test Site     | Semi-Anechoic Chamber  |
| Type of Antennas Used | Below 1GHz: Bilog (or equivalent)<br>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                              |
| 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                              |

| Procedures   |
|--|
| <p>Radiated measurements were performed in a 32ft. x 20ft. x 14ft. high shielded enclosure. The shielded enclosure prevents emissions from other sources, such as radio and TV stations from interfering with the measurements. All powerlines and signal lines entering the enclosure pass through filters on the enclosure wall. The powerline filters prevent extraneous signals from entering the enclosure on these leads.</p> <p>Preliminary radiated emissions tests were performed to determine the emission characteristics of the EUT. For the preliminary test, a broadband measuring antenna was positioned at a 3 meter distance from the EUT. The entire frequency range from 30MHz to 25GHz was investigated using a peak detector function.</p> <p>The final open field emission tests were then manually performed over the frequency range of 30MHz to 25GHz.</p> <p>1) For all harmonics not in the restricted bands, the following procedure was used:</p> <ol style="list-style-type: none"> <li>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</li> </ol> |

non-conductive stand. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer.

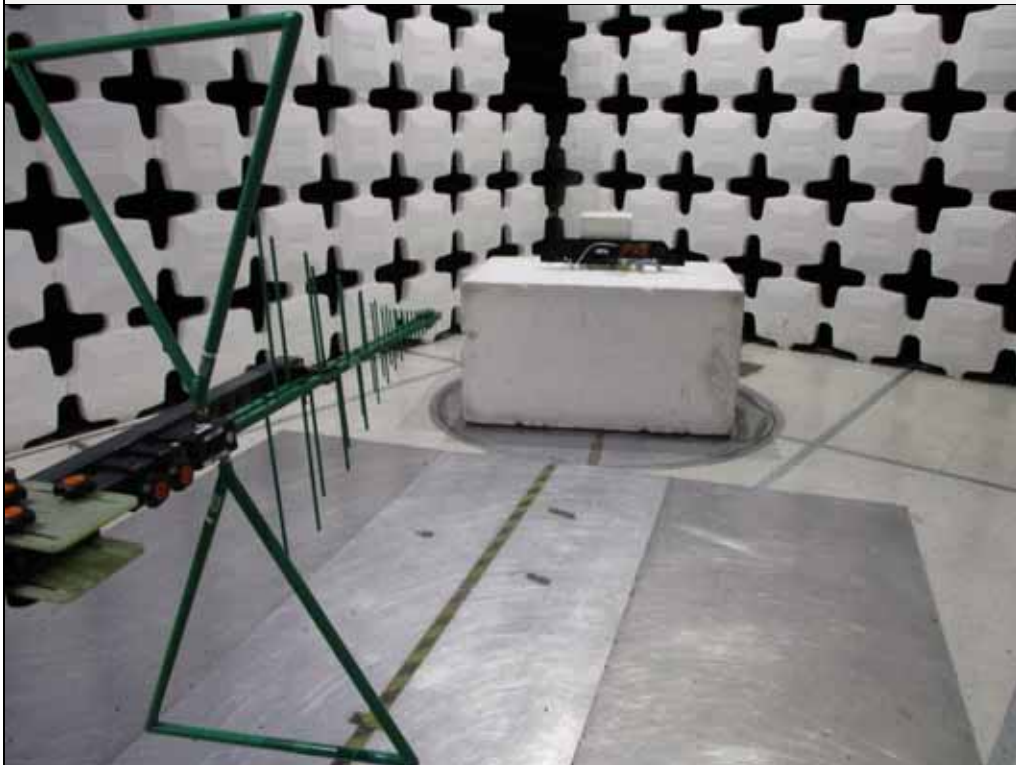
- b) The field strengths of all of the harmonics not in the restricted band were then measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the EUT. The EUT was placed on a non-conductive stand. A peak detector with a resolution bandwidth of 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.
    - iv) In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer. The measuring antenna was not raised or lowered to ensure maximized readings, instead the EUT was rotated through all axis to ensure the maximum readings were recorded for the EUT.
  - d) All harmonics not in the restricted bands must be at least 20 dB (30dB for DTS systems where average power was used) below levels measured at the fundamental. However, attenuation below the general limits specified in §15.209(a) is not required.
- 2) For all emissions in the restricted bands, the following procedure was used:
- a) The field strengths of all emissions below 1 GHz were measured using a bi-log antenna. The bi-log antenna was positioned at a 3 meter distance from the EUT. The EUT was placed on a non-conductive stand. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer.
  - b) The field strengths of all emissions above 1 GHz were measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the EUT. The EUT was placed on a non-conductive stand. A peak detector with a resolution bandwidth of 1 MHz was used on the spectrum analyzer.
  - c) To ensure that maximum or worst case emission levels were measured, the following steps were taken when taking all measurements:
    - i) The EUT was rotated so that all of its sides were exposed to the receiving antenna.
    - ii) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
    - iii) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.
    - iv) In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer. The measuring antenna was not raised or lowered to ensure maximized readings, instead the EUT was rotated through all axis to ensure the maximum readings were recorded for the EUT.
  - d) For all radiated emissions measurements below 1 GHz, if the peak reading is below the limits listed in 15.209(a), no further measurements are required. If however, the peak readings exceed the limits listed in 15.209(a), then the emissions are remeasured using a quasi-peak detector.
  - e) For all radiated emissions measurements above 1 GHz, the peak readings must comply with the 15.35(b) limits. 15.35(b) states that when average radiated emissions measurements are specified, there also is a limit on the peak level of the radiated emissions. The limit on the peak radio frequency

emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. Therefore, all peak readings above 1 GHz must be no greater than 20 dB above the limits specified in 15.209(a).

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



Test Setup for Spurious Radiated Emissions, 30-1000MHz – Antenna Polarization Horizontal



Test Setup for Spurious Radiated Emissions, 30-1000MHz – Antenna Polarization Vertical





Test Setup for Spurious Radiated Emissions, Above 1GHz – Antenna Polarization Horizontal



Test Setup for Spurious Radiated Emissions, Above 1GHz – Antenna Polarization Vertical

| Test Details      |   |
|-------------------|---|
| Manufacturer      | Chamberlain Group, Inc.                   |
| Model             | 001D9586                                  |
| S/N               | Elite3                                    |
| Mode              | 802.11g                                   |
| Carrier Frequency | 2412MHz                                   |
| Parameters        | Peak Measurements in the Restricted Bands |
| Notes             | None                                      |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Peak<br>Total<br>dBuV/m<br>at 3m | Peak<br>Total<br>uV/m<br>at 3 m | Peak<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|----------------------------------|---------------------------------|---------------------------------|----------------|
| 4824.00      | H          | 50.3                       | *       | 3.7                | 36.6                 | -40.2              | 50.3                             | 328.1                           | 5000.0                          | -23.7          |
| 4824.00      | V          | 50.5                       | *       | 3.7                | 36.6                 | -40.2              | 50.5                             | 336.9                           | 5000.0                          | -23.4          |
| 12060.00     | H          | 49.7                       | *       | 6.1                | 41.5                 | -39.7              | 57.6                             | 757.4                           | 5000.0                          | -16.4          |
| 12060.00     | V          | 49.8                       | *       | 6.1                | 41.5                 | -39.7              | 57.7                             | 771.5                           | 5000.0                          | -16.2          |
| 14472.00     | H          | 49.1                       | *       | 6.6                | 42.1                 | -40.0              | 57.7                             | 768.8                           | 5000.0                          | -16.3          |
| 14472.00     | V          | 49.4                       | *       | 6.6                | 42.1                 | -40.0              | 58.1                             | 800.4                           | 5000.0                          | -15.9          |
| 19296.00     | H          | 32.4                       | *       | 2.2                | 40.4                 | -27.9              | 47.2                             | 228.0                           | 5000.0                          | -26.8          |
| 19296.00     | V          | 30.9                       | *       | 2.2                | 40.4                 | -27.9              | 45.6                             | 191.2                           | 5000.0                          | -28.4          |



| Test Details      |  |
|-------------------|--|
| Manufacturer      | Chamberlain Group, Inc.                      |
| Model             | 001D9586                                     |
| S/N               | Elite3                                       |
| Mode              | 802.11g                                      |
| Carrier Frequency | 2412MHz                                      |
| Parameters        | Average Measurements in the Restricted Bands |
| Notes             | None   |

| Freq. MHz | Ant Pol | Meter Reading (dBuV) | Ambient | CBL Fac (dB) | Ant Fac (dB/m) | Pre Amp (dB) | Duty Cycle (dB) | Average Total dBuV/m at 3m | Average Total uV/m at 3 m | Average Limit uV/m at 3 m | Margin (dB) |
|-----------|---------|----------------------|---------|--------------|----------------|--------------|-----------------|----------------------------|---------------------------|---------------------------|-------------|
| 4824.00   | H       | 35.0                 | *       | 3.7          | 36.6           | -40.2        | 0.0             | 35.0                       | 56.4                      | 500.0                     | -19.0       |
| 4824.00   | V       | 34.9                 | *       | 3.7          | 36.6           | -40.2        | 0.0             | 34.9                       | 55.8                      | 500.0                     | -19.0       |
| 12060.00  | H       | 35.5                 | *       | 6.1          | 41.5           | -39.7        | 0.0             | 43.4                       | 148.2                     | 500.0                     | -10.6       |
| 12060.00  | V       | 35.5                 | *       | 6.1          | 41.5           | -39.7        | 0.0             | 43.4                       | 147.5                     | 500.0                     | -10.6       |
| 14472.00  | H       | 34.7                 | *       | 6.6          | 42.1           | -40.0        | 0.0             | 43.4                       | 147.9                     | 500.0                     | -10.6       |
| 14472.00  | V       | 34.8                 | *       | 6.6          | 42.1           | -40.0        | 0.0             | 43.4                       | 148.7                     | 500.0                     | -10.5       |
| 19296.00  | H       | 16.3                 | *       | 2.2          | 40.4           | -27.9        | 0.0             | 31.0                       | 35.5                      | 500.0                     | -23.0       |
| 19296.00  | V       | 16.5                 | *       | 2.2          | 40.4           | -27.9        | 0.0             | 31.2                       | 36.3                      | 500.0                     | -22.8       |



| Test Details      |   |
|-------------------|---|
| Manufacturer      | Chamberlain Group, Inc.                       |
| Model             | 001D9586                                      |
| S/N               | Elite3  |
| Mode              | 802.11g                                       |
| Carrier Frequency | 2412MHz                                       |
| Parameters        | Peak Measurements not in the Restricted Bands |
| Notes             | None  |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Peak<br>Total<br>dBuV/m<br>at 3m | Peak<br>Total<br>uV/m<br>at 3 m | Peak<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|----------------------------------|---------------------------------|---------------------------------|----------------|
| 2412.00      | H          | 57.8                       |         | 2.6                | 32.8                 | 0.0                | 93.3                             | 46170.6                         |                                 |                |
| 2412.00      | V          | 60.8                       |         | 2.6                | 32.8                 | 0.0                | 96.3                             | 65292.9                         |                                 |                |
| 7236.00      | H          | 39.0                       | *       | 4.7                | 37.7                 | -40.1              | 41.4                             | 116.9                           | 5000.0                          | -32.6          |
| 7236.00      | V          | 39.7                       | *       | 4.7                | 37.7                 | -40.1              | 42.1                             | 126.7                           | 5000.0                          | -31.9          |
| 9648.00      | H          | 41.8                       |         | 5.2                | 39.4                 | -39.6              | 46.8                             | 218.1                           | 5000.0                          | -27.2          |
| 9648.00      | V          | 40.8                       |         | 5.2                | 39.4                 | -39.6              | 45.8                             | 194.2                           | 5000.0                          | -28.2          |
| 16884.00     | H          | 39.2                       | *       | 7.2                | 44.8                 | -38.8              | 52.4                             | 415.0                           | 5000.0                          | -21.6          |
| 16884.00     | V          | 38.8                       | *       | 7.2                | 44.8                 | -38.8              | 52.0                             | 398.7                           | 5000.0                          | -22.0          |
| 21708.00     | H          | 23.4                       | *       | 2.2                | 40.6                 | -28.7              | 37.5                             | 74.7                            | 5000.0                          | -36.5          |
| 21708.00     | V          | 22.2                       | *       | 2.2                | 40.6                 | -28.7              | 36.3                             | 65.3                            | 5000.0                          | -37.7          |
| 24120.00     | H          | 21.9                       | *       | 2.2                | 40.6                 | -29.4              | 35.3                             | 58.5                            | 5000.0                          | -38.6          |
| 24120.00     | V          | 21.3                       | *       | 2.2                | 40.6                 | -29.4              | 34.8                             | 55.1                            | 5000.0                          | -39.2          |

| Test Details      |   |
|-------------------|---|
| Manufacturer      | Chamberlain Group, Inc.                   |
| Model             | 001D9586                                  |
| S/N               | Elite3                                    |
| Mode              | 802.11g                                   |
| Carrier Frequency | 2437MHz                                   |
| Parameters        | Peak Measurements in the Restricted Bands |
| Notes             | None                                      |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Peak<br>Total<br>dBuV/m<br>at 3m | Peak<br>Total<br>uV/m<br>at 3 m | Peak<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|----------------------------------|---------------------------------|---------------------------------|----------------|
| 4874.00      | H          | 49.8                       | *       | 3.7                | 36.4                 | -40.3              | 49.7                             | 306.8                           | 5000.0                          | -24.2          |
| 4874.00      | V          | 49.9                       | *       | 3.7                | 36.4                 | -40.3              | 49.8                             | 309.6                           | 5000.0                          | -24.2          |
| 7311.00      | H          | 49.4                       | *       | 4.7                | 37.8                 | -40.1              | 51.8                             | 390.0                           | 5000.0                          | -22.2          |
| 7311.00      | V          | 52.5                       | *       | 4.7                | 37.8                 | -40.1              | 55.0                             | 561.8                           | 5000.0                          | -19.0          |
| 12185.00     | H          | 49.6                       | *       | 6.1                | 41.6                 | -39.6              | 57.7                             | 765.7                           | 5000.0                          | -16.3          |
| 12185.00     | V          | 49.4                       | *       | 6.1                | 41.6                 | -39.6              | 57.5                             | 750.9                           | 5000.0                          | -16.5          |
| 19496.00     | H          | 32.1                       | *       | 2.2                | 40.4                 | -27.7              | 47.0                             | 222.6                           | 5000.0                          | -27.0          |
| 19496.00     | V          | 32.2                       | *       | 2.2                | 40.4                 | -27.7              | 47.1                             | 226.3                           | 5000.0                          | -26.9          |

| Test Details      |  |
|-------------------|--|
| Manufacturer      | Chamberlain Group, Inc.                      |
| Model             | 001D9586                                     |
| S/N               | Elite3                                       |
| Mode              | 802.11g                                      |
| Carrier Frequency | 2437MHz                                      |
| Parameters        | Average Measurements in the Restricted Bands |
| Notes             | None   |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Duty<br>Cycle<br>(dB) | Average<br>Total<br>dBuV/m<br>at 3m | Average<br>Total<br>uV/m<br>at 3 m | Average<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|-----------------------|-------------------------------------|------------------------------------|------------------------------------|----------------|
| 4874.00      | H          | 35.1                       | *       | 3.7                | 36.4                 | -40.3              | 0.0                   | 35.0                                | 56.1                               | 500.0                              | -19.0          |
| 4874.00      | V          | 35.2                       | *       | 3.7                | 36.4                 | -40.3              | 0.0                   | 35.0                                | 56.5                               | 500.0                              | -18.9          |
| 7311.00      | H          | 35.64                      | *       | 4.7                | 37.8                 | -40.1              | 0.0                   | 38.1                                | 80.4                               | 500.0                              | -15.9          |
| 7311.00      | V          | 36.3                       | *       | 4.7                | 37.8                 | -40.1              | 0.0                   | 38.8                                | 86.7                               | 500.0                              | -15.2          |
| 12185.00     | H          | 34.8                       | *       | 6.1                | 41.6                 | -39.6              | 0.0                   | 42.9                                | 140.0                              | 500.0                              | -11.1          |
| 12185.00     | V          | 35.0                       | *       | 6.1                | 41.6                 | -39.6              | 0.0                   | 43.1                                | 142.9                              | 500.0                              | -10.9          |
| 19496.00     | H          | 15.6                       | *       | 2.2                | 40.4                 | -27.7              | 0.0                   | 30.5                                | 33.5                               | 500.0                              | -23.5          |
| 19496.00     | V          | 16.2                       | *       | 2.2                | 40.4                 | -27.7              | 0.0                   | 31.1                                | 35.9                               | 500.0                              | -22.9          |



| Test Details      |   |
|-------------------|---|
| Manufacturer      | Chamberlain Group, Inc.                       |
| Model             | 001D9586                                      |
| S/N               | Elite3  |
| Mode              | 802.11g                                       |
| Carrier Frequency | 2437MHz                                       |
| Parameters        | Peak Measurements not in the Restricted Bands |
| Notes             | None  |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Peak<br>Total<br>dBuV/m<br>at 3m | Peak<br>Total<br>uV/m<br>at 3 m | Peak<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|----------------------------------|---------------------------------|---------------------------------|----------------|
| 2437.00      | H          | 59.2                       |         | 2.6                | 33.0                 | 0.0                | 94.7                             | 54562.3                         |                                 |                |
| 2437.00      | V          | 60.3                       |         | 2.6                | 33.0                 | 0.0                | 95.9                             | 62214.6                         |                                 |                |
| 9748.00      | H          | 42.2                       |         | 5.2                | 39.4                 | -39.6              | 47.2                             | 229.8                           | 5000.0                          | -26.8          |
| 9748.00      | V          | 41.2                       |         | 5.2                | 39.4                 | -39.6              | 46.2                             | 205.3                           | 5000.0                          | -27.7          |
| 14622.00     | H          | 38.5                       | *       | 6.7                | 42.4                 | -40.2              | 47.4                             | 233.9                           | 5000.0                          | -26.6          |
| 14622.00     | V          | 37.9                       | *       | 6.7                | 42.4                 | -40.2              | 46.8                             | 218.5                           | 5000.0                          | -27.2          |
| 17059.00     | H          | 39.0                       | *       | 7.2                | 44.8                 | -38.8              | 52.3                             | 411.4                           | 5000.0                          | -21.7          |
| 17059.00     | V          | 39.1                       | *       | 7.2                | 44.8                 | -38.8              | 52.4                             | 415.7                           | 5000.0                          | -21.6          |
| 21933.00     | H          | 23.9                       | *       | 2.2                | 40.6                 | -28.9              | 37.7                             | 77.1                            | 5000.0                          | -36.2          |
| 21933.00     | V          | 24.7                       | *       | 2.2                | 40.6                 | -28.9              | 38.5                             | 84.6                            | 5000.0                          | -35.4          |
| 24370.00     | H          | 21.9                       | *       | 2.2                | 40.6                 | -29.4              | 35.4                             | 58.6                            | 5000.0                          | -38.6          |
| 24370.00     | V          | 22.4                       | *       | 2.2                | 40.6                 | -29.4              | 35.9                             | 62.5                            | 5000.0                          | -38.1          |

| Test Details      |   |
|-------------------|---|
| Manufacturer      | Chamberlain Group, Inc.                   |
| Model             | 001D9586                                  |
| S/N               | Elite3                                    |
| Mode              | 802.11g                                   |
| Carrier Frequency | 2462MHz                                   |
| Parameters        | Peak Measurements in the Restricted Bands |
| Notes             | None                                      |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Peak<br>Total<br>dBuV/m<br>at 3m | Peak<br>Total<br>uV/m<br>at 3 m | Peak<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|----------------------------------|---------------------------------|---------------------------------|----------------|
| 4924.00      | H          | 50.6                       | *       | 3.7                | 36.3                 | -40.3              | 50.3                             | 328.8                           | 5000.0                          | -23.6          |
| 4924.00      | V          | 50.0                       | *       | 3.7                | 36.3                 | -40.3              | 49.8                             | 309.0                           | 5000.0                          | -24.2          |
| 7386.00      | H          | 49.4                       | *       | 4.7                | 37.9                 | -40.1              | 51.9                             | 394.2                           | 5000.0                          | -22.1          |
| 7386.00      | V          | 53.1                       | *       | 4.7                | 37.9                 | -40.1              | 55.6                             | 602.2                           | 5000.0                          | -18.4          |
| 12310.00     | H          | 48.9                       | *       | 6.1                | 41.8                 | -39.6              | 57.1                             | 717.3                           | 5000.0                          | -16.9          |
| 12310.00     | V          | 48.8                       | *       | 6.1                | 41.8                 | -39.6              | 57.1                             | 714.9                           | 5000.0                          | -16.9          |
| 19696.00     | H          | 33.5                       | *       | 2.2                | 40.4                 | -28.0              | 48.1                             | 254.2                           | 5000.0                          | -25.9          |
| 19696.00     | V          | 33.3                       | *       | 2.2                | 40.4                 | -28.0              | 47.8                             | 246.7                           | 5000.0                          | -26.1          |
| 22158.00     | H          | 37.4                       | *       | 2.2                | 40.6                 | -28.7              | 51.4                             | 372.6                           | 5000.0                          | -22.6          |
| 22158.00     | V          | 37.9                       | *       | 2.2                | 40.6                 | -28.7              | 51.9                             | 394.2                           | 5000.0                          | -22.1          |

| Test Details      |  |
|-------------------|--|
| Manufacturer      | Chamberlain Group, Inc.                      |
| Model             | 001D9586                                     |
| S/N               | Elite3                                       |
| Mode              | 802.11g                                      |
| Carrier Frequency | 2462MHz                                      |
| Parameters        | Average Measurements in the Restricted Bands |
| Notes             | None   |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Duty<br>Cycle<br>(dB) | Total<br>dBuV/m<br>at 3m | Total<br>uV/m<br>at 3 m | Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|-----------------------|--------------------------|-------------------------|-------------------------|----------------|
| 4924.00      | H          | 34.9                       | *       | 3.7                | 36.3                 | -40.3              | 0.0                   | 34.7                     | 54.3                    | 500.0                   | -19.3          |
| 4924.00      | V          | 35.0                       | *       | 3.7                | 36.3                 | -40.3              | 0.0                   | 34.7                     | 54.6                    | 500.0                   | -19.2          |
| 7386.00      | H          | 34.31                      | *       | 4.7                | 37.9                 | -40.1              | 0.0                   | 36.8                     | 69.4                    | 500.0                   | -17.2          |
| 7386.00      | V          | 36.1                       | *       | 4.7                | 37.9                 | -40.1              | 0.0                   | 38.6                     | 85.3                    | 500.0                   | -15.4          |
| 12310.00     | H          | 34.8                       | *       | 6.1                | 41.8                 | -39.6              | 0.0                   | 43.0                     | 141.5                   | 500.0                   | -11.0          |
| 12310.00     | V          | 34.7                       | *       | 6.1                | 41.8                 | -39.6              | 0.0                   | 43.0                     | 141.0                   | 500.0                   | -11.0          |
| 19696.00     | H          | 17.2                       | *       | 2.2                | 40.4                 | -28.0              | 0.0                   | 31.7                     | 38.6                    | 500.0                   | -22.2          |
| 19696.00     | V          | 17.1                       | *       | 2.2                | 40.4                 | -28.0              | 0.0                   | 31.7                     | 38.4                    | 500.0                   | -22.3          |
| 22158.00     | H          | 22.7                       | *       | 2.2                | 40.6                 | -28.7              | 0.0                   | 36.8                     | 69.0                    | 500.0                   | -17.2          |
| 22158.00     | V          | 22.9                       | *       | 2.2                | 40.6                 | -28.7              | 0.0                   | 36.9                     | 70.2                    | 500.0                   | -17.1          |



| Test Details      |   |
|-------------------|---|
| Manufacturer      | Chamberlain Group, Inc.                       |
| Model             | 001D9586                                      |
| S/N               | Elite3  |
| Mode              | 802.11g                                       |
| Carrier Frequency | 2462MHz                                       |
| Parameters        | Peak Measurements not in the Restricted Bands |
| Notes             | None  |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Peak<br>Total<br>dBuV/m<br>at 3m | Peak<br>Total<br>uV/m<br>at 3 m | Peak<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|----------------------------------|---------------------------------|---------------------------------|----------------|
| 2462.00      | H          | 56.7                       |         | 2.6                | 33.1                 | 0.0                | 92.5                             | 42154.3                         |                                 |                |
| 2462.00      | V          | 60.1                       |         | 2.6                | 33.1                 | 0.0                | 95.8                             | 61779.1                         |                                 |                |
| 9848.00      | H          | 42.8                       |         | 5.3                | 39.5                 | -39.5              | 48.1                             | 254.1                           | 5000.0                          | -25.9          |
| 9848.00      | V          | 41.0                       |         | 5.3                | 39.5                 | -39.5              | 46.3                             | 206.6                           | 5000.0                          | -27.7          |
| 14772.00     | H          | 39.5                       | *       | 6.8                | 42.6                 | -40.3              | 48.5                             | 265.9                           | 5000.0                          | -25.5          |
| 14772.00     | V          | 38.6                       | *       | 6.8                | 42.6                 | -40.3              | 47.6                             | 241.1                           | 5000.0                          | -26.3          |
| 17234.00     | H          | 39.1                       | *       | 7.3                | 44.5                 | -39.0              | 51.9                             | 395.3                           | 5000.0                          | -22.0          |
| 17234.00     | V          | 39.1                       | *       | 7.3                | 44.5                 | -39.0              | 51.9                             | 391.6                           | 5000.0                          | -22.1          |
| 24620.00     | H          | 22.5                       | *       | 2.2                | 40.6                 | -29.0              | 36.4                             | 65.9                            | 5000.0                          | -37.6          |
| 24620.00     | V          | 23.1                       | *       | 2.2                | 40.6                 | -29.0              | 36.9                             | 70.1                            | 5000.0                          | -37.1          |



| Test Details      |   |
|-------------------|---|
| Manufacturer      | Chamberlain Group, Inc.                   |
| Model             | 001D9586                                  |
| S/N               | Elite3                                    |
| Mode              | Bluetooth                                 |
| Carrier Frequency | 2402MHz                                   |
| Parameters        | Peak Measurements in the Restricted Bands |
| Notes             | None                                      |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Peak<br>Total<br>dBuV/m<br>at 3m | Peak<br>Total<br>uV/m<br>at 3 m | Peak<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|----------------------------------|---------------------------------|---------------------------------|----------------|
| 4804.00      | H          | 50.7                       | *       | 3.7                | 36.6                 | -40.2              | 50.7                             | 344.6                           | 5000.0                          | -23.2          |
| 4804.00      | V          | 50.2                       | *       | 3.7                | 36.6                 | -40.2              | 50.3                             | 328.0                           | 5000.0                          | -23.7          |
| 12010.00     | H          | 49.8                       | *       | 6.1                | 41.5                 | -39.7              | 57.6                             | 758.7                           | 5000.0                          | -16.4          |
| 12010.00     | V          | 50.2                       | *       | 6.1                | 41.5                 | -39.7              | 58.0                             | 798.2                           | 5000.0                          | -15.9          |
| 19216.00     | H          | 30.4                       | *       | 2.2                | 40.4                 | -28.2              | 44.8                             | 173.1                           | 5000.0                          | -29.2          |
| 19216.00     | V          | 30.5                       | *       | 2.2                | 40.4                 | -28.2              | 44.8                             | 174.5                           | 5000.0                          | -29.1          |

| Test Details      |  |
|-------------------|--|
| Manufacturer      | Chamberlain Group, Inc.                      |
| Model             | 001D9586                                     |
| S/N               | Elite3                                       |
| Mode              | Bluetooth                                    |
| Carrier Frequency | 2402MHz                                      |
| Parameters        | Average Measurements in the Restricted Bands |
| Notes             | None   |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Duty<br>Cycle<br>(dB) | Average<br>Total<br>dBuV/m<br>at 3m | Average<br>Total<br>uV/m<br>at 3 m | Average<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|-----------------------|-------------------------------------|------------------------------------|------------------------------------|----------------|
| 4804.00      | H          | 34.9                       | *       | 3.7                | 36.6                 | -40.2              | 1.5                   | 36.5                                | 66.6                               | 500.0                              | -17.5          |
| 4804.00      | V          | 35.1                       | *       | 3.7                | 36.6                 | -40.2              | 1.5                   | 36.7                                | 68.5                               | 500.0                              | -17.3          |
| 12010.00     | H          | 35.8                       | *       | 6.1                | 41.5                 | -39.7              | 1.5                   | 45.1                                | 180.5                              | 500.0                              | -8.8           |
| 12010.00     | V          | 35.6                       | *       | 6.1                | 41.5                 | -39.7              | 1.5                   | 44.9                                | 176.6                              | 500.0                              | -9.0           |
| 19216.00     | H          | 16.1                       | *       | 2.2                | 40.4                 | -28.2              | 1.5                   | 31.9                                | 39.5                               | 500.0                              | -22.1          |
| 19216.00     | V          | 17.0                       | *       | 2.2                | 40.4                 | -28.2              | 1.5                   | 32.9                                | 44.1                               | 500.0                              | -21.1          |

| Test Details      |   |
|-------------------|---|
| Manufacturer      | Chamberlain Group, Inc.                       |
| Model             | 001D9586                                      |
| S/N               | Elite3  |
| Mode              | Bluetooth                                     |
| Carrier Frequency | 2402MHz                                       |
| Parameters        | Peak Measurements not in the Restricted Bands |
| Notes             | None  |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Peak<br>Total<br>dBuV/m<br>at 3m | Peak<br>Total<br>uV/m<br>at 3 m | Peak<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|----------------------------------|---------------------------------|---------------------------------|----------------|
| 2402.00      | H          | 66.4                       |         | 2.6                | 32.8                 | 0.0                | 101.8                            | 122528.2                        |                                 |                |
| 2402.00      | V          | 69.2                       |         | 2.6                | 32.8                 | 0.0                | 104.6                            | 169916.7                        |                                 |                |
| 7206.00      | H          | 39.1                       |         | 4.6                | 37.7                 | -40.1              | 41.4                             | 117.8                           | 16991.7                         | -43.2          |
| 7206.00      | V          | 40.4                       |         | 4.6                | 37.7                 | -40.1              | 42.7                             | 136.4                           | 16991.7                         | -41.9          |
| 9608.00      | H          | 41.3                       |         | 5.2                | 39.3                 | -39.6              | 46.3                             | 205.5                           | 16991.7                         | -38.3          |
| 9608.00      | V          | 40.5                       |         | 5.2                | 39.3                 | -39.6              | 45.4                             | 186.2                           | 16991.7                         | -39.2          |
| 14412.00     | H          | 40.0                       | *       | 6.6                | 41.9                 | -40.0              | 48.5                             | 266.8                           | 16991.7                         | -36.1          |
| 14412.00     | V          | 39.4                       | *       | 6.6                | 41.9                 | -40.0              | 47.9                             | 249.3                           | 16991.7                         | -36.7          |
| 16814.00     | H          | 39.7                       | *       | 7.2                | 44.8                 | -38.9              | 52.7                             | 433.0                           | 16991.7                         | -31.9          |
| 16814.00     | V          | 39.2                       | *       | 7.2                | 44.8                 | -38.9              | 52.3                             | 411.6                           | 16991.7                         | -32.3          |
| 21618.00     | H          | 23.0                       | *       | 2.2                | 40.6                 | -28.5              | 37.3                             | 73.3                            | 16991.7                         | -47.3          |
| 21618.00     | V          | 23.6                       | *       | 2.2                | 40.6                 | -28.5              | 37.9                             | 78.9                            | 16991.7                         | -46.7          |
| 24020.00     | H          | 20.6                       | *       | 2.2                | 40.6                 | -29.3              | 34.1                             | 51.0                            | 16991.7                         | -50.5          |
| 24020.00     | V          | 20.7                       | *       | 2.2                | 40.6                 | -29.3              | 34.2                             | 51.5                            | 16991.7                         | -50.4          |

| Test Details      |   |
|-------------------|---|
| Manufacturer      | Chamberlain Group, Inc.                   |
| Model             | 001D9586                                  |
| S/N               | Elite3                                    |
| Mode              | Bluetooth                                 |
| Carrier Frequency | 2440MHz                                   |
| Parameters        | Peak Measurements in the Restricted Bands |
| Notes             | None                                      |

| Freq. MHz | Ant Pol | Meter Reading (dBuV) | Ambient | CBL Fac (dB) | Ant Fac (dB/m) | Pre Amp (dB) | Peak Total dBuV/m at 3m | Peak Total uV/m at 3 m | Peak Limit uV/m at 3 m | Margin (dB) |
|-----------|---------|----------------------|---------|--------------|----------------|--------------|-------------------------|------------------------|------------------------|-------------|
| 4880.00   | H       | 50.6                 | *       | 3.7          | 36.4           | -40.3        | 50.5                    | 335.2                  | 5000.0                 | -23.5       |
| 4880.00   | V       | 50.1                 | *       | 3.7          | 36.4           | -40.3        | 50.0                    | 315.8                  | 5000.0                 | -24.0       |
| 7320.00   | H       | 49.7                 |         | 4.7          | 37.8           | -40.1        | 52.2                    | 407.1                  | 5000.0                 | -21.8       |
| 7320.00   | V       | 49.8                 |         | 4.7          | 37.8           | -40.1        | 52.3                    | 410.0                  | 5000.0                 | -21.7       |
| 12200.00  | H       | 49.9                 | *       | 6.1          | 41.7           | -39.6        | 58.0                    | 798.5                  | 5000.0                 | -15.9       |
| 12200.00  | V       | 50.0                 | *       | 6.1          | 41.7           | -39.6        | 58.1                    | 806.8                  | 5000.0                 | -15.8       |
| 19520.00  | H       | 29.6                 | *       | 2.2          | 40.4           | -27.8        | 44.4                    | 166.8                  | 5000.0                 | -29.5       |
| 19520.00  | V       | 30.5                 | *       | 2.2          | 40.4           | -27.8        | 45.3                    | 184.1                  | 5000.0                 | -28.7       |

| Test Details      |  |
|-------------------|--|
| Manufacturer      | Chamberlain Group, Inc.                      |
| Model             | 001D9586                                     |
| S/N               | Elite3                                       |
| Mode              | Bluetooth                                    |
| Carrier Frequency | 2440MHz                                      |
| Parameters        | Average Measurements in the Restricted Bands |
| Notes             | None   |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Duty<br>Cycle<br>(dB) | Average<br>Total<br>dBuV/m<br>at 3m | Average<br>Total<br>uV/m<br>at 3 m | Average<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|-----------------------|-------------------------------------|------------------------------------|------------------------------------|----------------|
| 4880.00      | H          | 35.2                       | *       | 3.7                | 36.4                 | -40.3              | 1.5                   | 36.5                                | 67.1                               | 500.0                              | -17.4          |
| 4880.00      | V          | 35.3                       | *       | 3.7                | 36.4                 | -40.3              | 1.5                   | 36.6                                | 67.8                               | 500.0                              | -17.4          |
| 7320.00      | H          | 34.45                      |         | 4.7                | 37.8                 | -40.1              | 1.5                   | 38.4                                | 83.4                               | 500.0                              | -15.6          |
| 7320.00      | V          | 35.3                       |         | 4.7                | 37.8                 | -40.1              | 1.5                   | 39.2                                | 91.5                               | 500.0                              | -14.8          |
| 12200.00     | H          | 35.1                       | *       | 6.1                | 41.7                 | -39.6              | 1.5                   | 44.7                                | 171.5                              | 500.0                              | -9.3           |
| 12200.00     | V          | 35.1                       | *       | 6.1                | 41.7                 | -39.6              | 1.5                   | 44.7                                | 172.5                              | 500.0                              | -9.2           |
| 19520.00     | H          | 15.2                       | *       | 2.2                | 40.4                 | -27.8              | 1.5                   | 31.6                                | 38.0                               | 500.0                              | -22.4          |
| 19520.00     | V          | 15.4                       | *       | 2.2                | 40.4                 | -27.8              | 1.5                   | 31.7                                | 38.6                               | 500.0                              | -22.2          |

| Test Details      |   |
|-------------------|---|
| Manufacturer      | Chamberlain Group, Inc.                       |
| Model             | 001D9586                                      |
| S/N               | Elite3  |
| Mode              | Bluetooth                                     |
| Carrier Frequency | 2440MHz                                       |
| Parameters        | Peak Measurements not in the Restricted Bands |
| Notes             | None  |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Peak<br>Total<br>dBuV/m<br>at 3m | Peak<br>Total<br>uV/m<br>at 3 m | Peak<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|----------------------------------|---------------------------------|---------------------------------|----------------|
| 2440.00      | H          | 68.0                       |         | 2.6                | 33.0                 | 0.0                | 103.6                            | 150546.7                        |                                 |                |
| 2440.00      | V          | 70.9                       |         | 2.6                | 33.0                 | 0.0                | 106.5                            | 211432.3                        |                                 |                |
| 9760.00      | H          | 43.9                       |         | 5.2                | 39.4                 | -39.6              | 49.0                             | 281.1                           | 21143.2                         | -37.5          |
| 9760.00      | V          | 41.5                       |         | 5.2                | 39.4                 | -39.6              | 46.6                             | 213.3                           | 21143.2                         | -39.9          |
| 14640.00     | H          | 38.9                       | *       | 6.7                | 42.4                 | -40.2              | 47.8                             | 246.7                           | 21143.2                         | -38.7          |
| 14640.00     | V          | 39.5                       | *       | 6.7                | 42.4                 | -40.2              | 48.4                             | 263.4                           | 21143.2                         | -38.1          |
| 17080.00     | H          | 40.0                       | *       | 7.3                | 44.8                 | -38.8              | 53.2                             | 459.1                           | 21143.2                         | -33.3          |
| 17080.00     | V          | 39.5                       | *       | 7.3                | 44.8                 | -38.8              | 52.7                             | 431.9                           | 21143.2                         | -33.8          |
| 21960.00     | H          | 23.7                       | *       | 2.2                | 40.6                 | -28.9              | 37.6                             | 75.5                            | 21143.2                         | -48.9          |
| 21960.00     | V          | 24.9                       | *       | 2.2                | 40.6                 | -28.9              | 38.8                             | 86.7                            | 21143.2                         | -47.7          |
| 24400.00     | H          | 22.4                       | *       | 2.2                | 40.6                 | -29.3              | 36.0                             | 62.8                            | 21143.2                         | -50.5          |
| 24400.00     | V          | 21.5                       | *       | 2.2                | 40.6                 | -29.3              | 35.0                             | 56.3                            | 21143.2                         | -51.5          |

| Test Details      |   |
|-------------------|---|
| Manufacturer      | Chamberlain Group, Inc.                   |
| Model             | 001D9586                                  |
| S/N               | Elite3                                    |
| Mode              | Bluetooth                                 |
| Carrier Frequency | 2480MHz                                   |
| Parameters        | Peak Measurements in the Restricted Bands |
| Notes             | None                                      |

| Freq. MHz | Ant Pol | Meter Reading (dBuV) | Ambient | CBL Fac (dB) | Ant Fac (dB/m) | Pre Amp (dB) | Peak Total dBuV/m at 3m | Peak Total uV/m at 3 m | Peak Limit uV/m at 3 m | Margin (dB) |
|-----------|---------|----------------------|---------|--------------|----------------|--------------|-------------------------|------------------------|------------------------|-------------|
| 4960.00   | H       | 50.2                 | *       | 3.7          | 36.4           | -40.3        | 50.0                    | 316.9                  | 5000.0                 | -24.0       |
| 4960.00   | V       | 50.6                 | *       | 3.7          | 36.4           | -40.3        | 50.4                    | 331.9                  | 5000.0                 | -23.6       |
| 7440.00   | H       | 49.7                 |         | 4.7          | 37.8           | -40.0        | 52.3                    | 410.2                  | 5000.0                 | -21.7       |
| 7440.00   | V       | 50.0                 |         | 4.7          | 37.8           | -40.0        | 52.5                    | 421.7                  | 5000.0                 | -21.5       |
| 12400.00  | H       | 48.0                 | *       | 6.1          | 41.8           | -39.5        | 56.3                    | 656.3                  | 5000.0                 | -17.6       |
| 12400.00  | V       | 47.5                 | *       | 6.1          | 41.8           | -39.5        | 55.9                    | 623.2                  | 5000.0                 | -18.1       |
| 19840.00  | H       | 31.5                 | *       | 2.2          | 40.4           | -28.0        | 46.1                    | 202.4                  | 5000.0                 | -27.9       |
| 19840.00  | V       | 31.9                 | *       | 2.2          | 40.4           | -28.0        | 46.5                    | 212.0                  | 5000.0                 | -27.5       |
| 22320.00  | H       | 30.6                 | *       | 2.2          | 40.6           | -28.8        | 44.6                    | 169.7                  | 5000.0                 | -29.4       |
| 22320.00  | V       | 30.4                 | *       | 2.2          | 40.6           | -28.8        | 44.4                    | 166.0                  | 5000.0                 | -29.6       |

| Test Details      |  |
|-------------------|--|
| Manufacturer      | Chamberlain Group, Inc.                      |
| Model             | 001D9586                                     |
| S/N               | Elite3                                       |
| Mode              | Bluetooth                                    |
| Carrier Frequency | 2480MHz                                      |
| Parameters        | Average Measurements in the Restricted Bands |
| Notes             | None   |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Duty<br>Cycle<br>(dB) | Average<br>Total<br>dBuV/m<br>at 3m | Average<br>Total<br>uV/m<br>at 3 m | Average<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|-----------------------|-------------------------------------|------------------------------------|------------------------------------|----------------|
| 4960.00      | H          | 35.3                       | *       | 3.7                | 36.4                 | -40.3              | 1.5                   | 36.6                                | 67.8                               | 500.0                              | -17.4          |
| 4960.00      | V          | 35.2                       | *       | 3.7                | 36.4                 | -40.3              | 1.5                   | 36.6                                | 67.3                               | 500.0                              | -17.4          |
| 7440.00      | H          | 34.26                      |         | 4.7                | 37.8                 | -40.0              | 1.5                   | 38.3                                | 82.2                               | 500.0                              | -15.7          |
| 7440.00      | V          | 34.8                       |         | 4.7                | 37.8                 | -40.0              | 1.5                   | 38.8                                | 87.1                               | 500.0                              | -15.2          |
| 12400.00     | H          | 34.2                       | *       | 6.1                | 41.8                 | -39.5              | 1.5                   | 44.1                                | 159.4                              | 500.0                              | -9.9           |
| 12400.00     | V          | 34.2                       | *       | 6.1                | 41.8                 | -39.5              | 1.5                   | 44.0                                | 158.7                              | 500.0                              | -10.0          |
| 19840.00     | H          | 17.0                       | *       | 2.2                | 40.4                 | -28.0              | 1.5                   | 33.1                                | 45.4                               | 500.0                              | -20.8          |
| 19840.00     | V          | 17.1                       | *       | 2.2                | 40.4                 | -28.0              | 1.5                   | 33.2                                | 45.5                               | 500.0                              | -20.8          |
| 22320.00     | H          | 16.2                       | *       | 2.2                | 40.6                 | -28.8              | 1.5                   | 31.7                                | 38.4                               | 500.0                              | -22.3          |
| 22320.00     | V          | 16.1                       | *       | 2.2                | 40.6                 | -28.8              | 1.5                   | 31.6                                | 38.1                               | 500.0                              | -22.4          |



| Test Details      |   |
|-------------------|---|
| Manufacturer      | Chamberlain Group, Inc.                       |
| Model             | 001D9586                                      |
| S/N               | Elite3  |
| Mode              | Bluetooth                                     |
| Carrier Frequency | 2480MHz                                       |
| Parameters        | Peak Measurements not in the Restricted Bands |
| Notes             | None  |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Peak<br>Total<br>dBuV/m<br>at 3m | Peak<br>Total<br>uV/m<br>at 3 m | Peak<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|----------------------------------|---------------------------------|---------------------------------|----------------|
| 2480.00      | H          | 70.4                       |         | 2.7                | 33.2                 | 0.0                | 106.3                            | 207213.1                        |                                 |                |
| 2480.00      | V          | 67.0                       |         | 2.7                | 33.2                 | 0.0                | 102.9                            | 140093.2                        |                                 |                |
| 9920.00      | H          | 43.6                       |         | 5.3                | 39.6                 | -39.5              | 48.9                             | 279.8                           | 20721.3                         | -37.4          |
| 9920.00      | V          | 41.2                       |         | 5.3                | 39.6                 | -39.5              | 46.5                             | 211.0                           | 20721.3                         | -39.8          |
| 14880.00     | H          | 39.5                       | *       | 6.8                | 42.6                 | -40.4              | 48.5                             | 267.2                           | 20721.3                         | -37.8          |
| 14880.00     | V          | 39.2                       | *       | 6.8                | 42.6                 | -40.4              | 48.2                             | 256.9                           | 20721.3                         | -38.1          |
| 17360.00     | H          | 39.1                       | *       | 7.4                | 44.1                 | -39.1              | 51.5                             | 376.9                           | 20721.3                         | -34.8          |
| 17360.00     | V          | 39.3                       | *       | 7.4                | 44.1                 | -39.1              | 51.7                             | 383.5                           | 20721.3                         | -34.7          |
| 24800.00     | H          | 22.0                       | *       | 2.2                | 40.6                 | -29.3              | 35.5                             | 59.7                            | 20721.3                         | -50.8          |
| 24800.00     | V          | 22.5                       | *       | 2.2                | 40.6                 | -29.3              | 36.1                             | 63.5                            | 20721.3                         | -50.3          |

### 23. Band-Edge Compliance

| Test Information |                         |
|------------------|-------------------------|
| Manufacturer     | Chamberlain Group, Inc. |
| Product          | Phoenix Transceiver     |
| Model            | 001D9586                |
| Serial No        | Elite3                  |
| Mode             | 802.11g & Bluetooth     |

| Test Setup Details |                       |
|--------------------|-----------------------|
| Setup Format       | Tabletop              |
| Height of Support  | NA                    |
| Measurement Method | Radiated              |
| Type of Test Site  | Semi-Anechoic Chamber |
| Notes              | None                  |

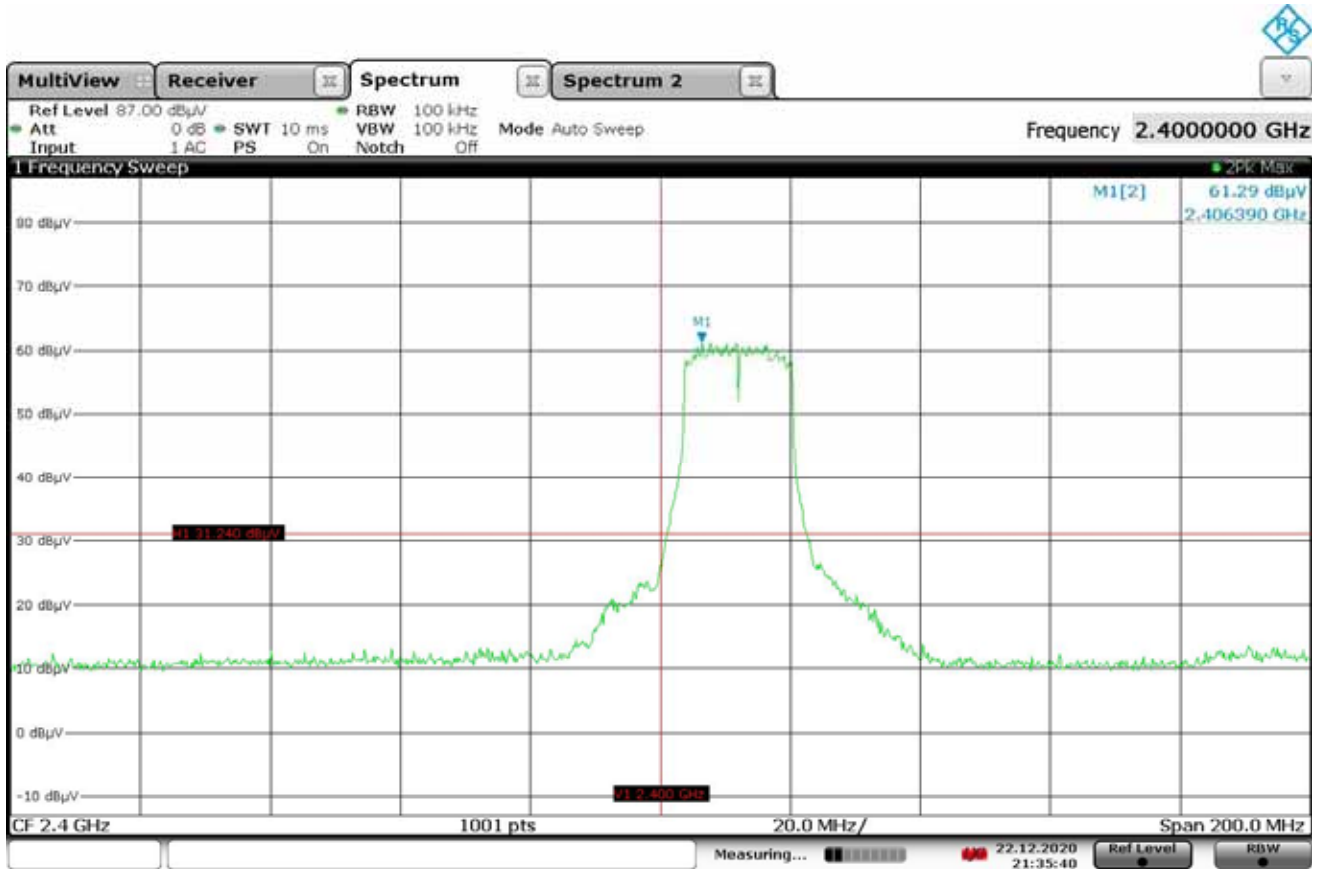
| Procedures  |  |
|---|--|
| <p>Low Band Edge</p> <ol style="list-style-type: none"> <li>1) The EUT was setup inside the test chamber on a non-conductive stand.</li> <li>2) A broadband measuring antenna was placed at a test distance of 3 meters from the EUT.</li> <li>3) The EUT was set to transmit continuously at the channel closest to the low band-edge.</li> <li>4) The EUT was maximized for worst case emissions at the measuring antenna. The maximum meter reading was recorded.</li> <li>5) To determine the band edge compliance, the following spectrum analyzer settings were used:               <ol style="list-style-type: none"> <li>a. Center frequency = low band-edge frequency.</li> <li>b. Span = Wide enough to capture the peak level of the emission operating on the channel closest to the band-edge, as well as any modulation products which fall outside of the authorized band of operation.</li> <li>c. Resolution bandwidth (RBW) <math>\geq</math> 1% of the span.</li> <li>d. The 'Max-Hold' function was engaged. The analyzer was allowed to scan until the envelope of the transmitter bandwidth was defined.</li> <li>e. The marker was set on the peak of the in-band emissions. A display line was placed 20dB (30dB for DTS systems where average power was used) down from the peak of the in-band emissions. All emissions which fall outside of the authorized band of operation must be below the 20dB (30dB for DTS systems where average power was used) down display line. (All emissions to the left of the center frequency (band-edge) must be below the display line.)</li> <li>f. The analyzer's display was plotted using a 'screen dump' utility.</li> </ol> </li> </ol> <p>High Band Edge</p> <ol style="list-style-type: none"> <li>1) The EUT was set to transmit continuously at the channel closest to the high band-edge.</li> <li>2) A double ridged waveguide was placed 3 meters away from the EUT. The antenna was connected to the input of a spectrum analyzer.</li> <li>3) The center frequency of the analyzer was set to the high band edge (2483.5MHz)</li> <li>4) The resolution bandwidth was set to 1MHz.</li> <li>5) To ensure that the maximum or worst case emission level was measured, the following steps were taken:               <ol style="list-style-type: none"> <li>a. The EUT was rotated so that all of its sides were exposed to the receiving antenna.</li> <li>b. Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.</li> <li>c. The measuring antenna was raised and lowered from 1 to 4 meters for each antenna</li> </ol> </li> </ol> |  |

polarization to maximize the readings.

- 6) The highest measured peak reading was recorded.
- 7) The highest measured average reading was recorded.

| 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             | 001D9586                |
| S/N               | Elite3                  |
| Mode              | 802.11g                 |
| Carrier Frequency | 2412MHz                 |
| Parameters        | Low Band-Edge           |
| Notes             | None                    |



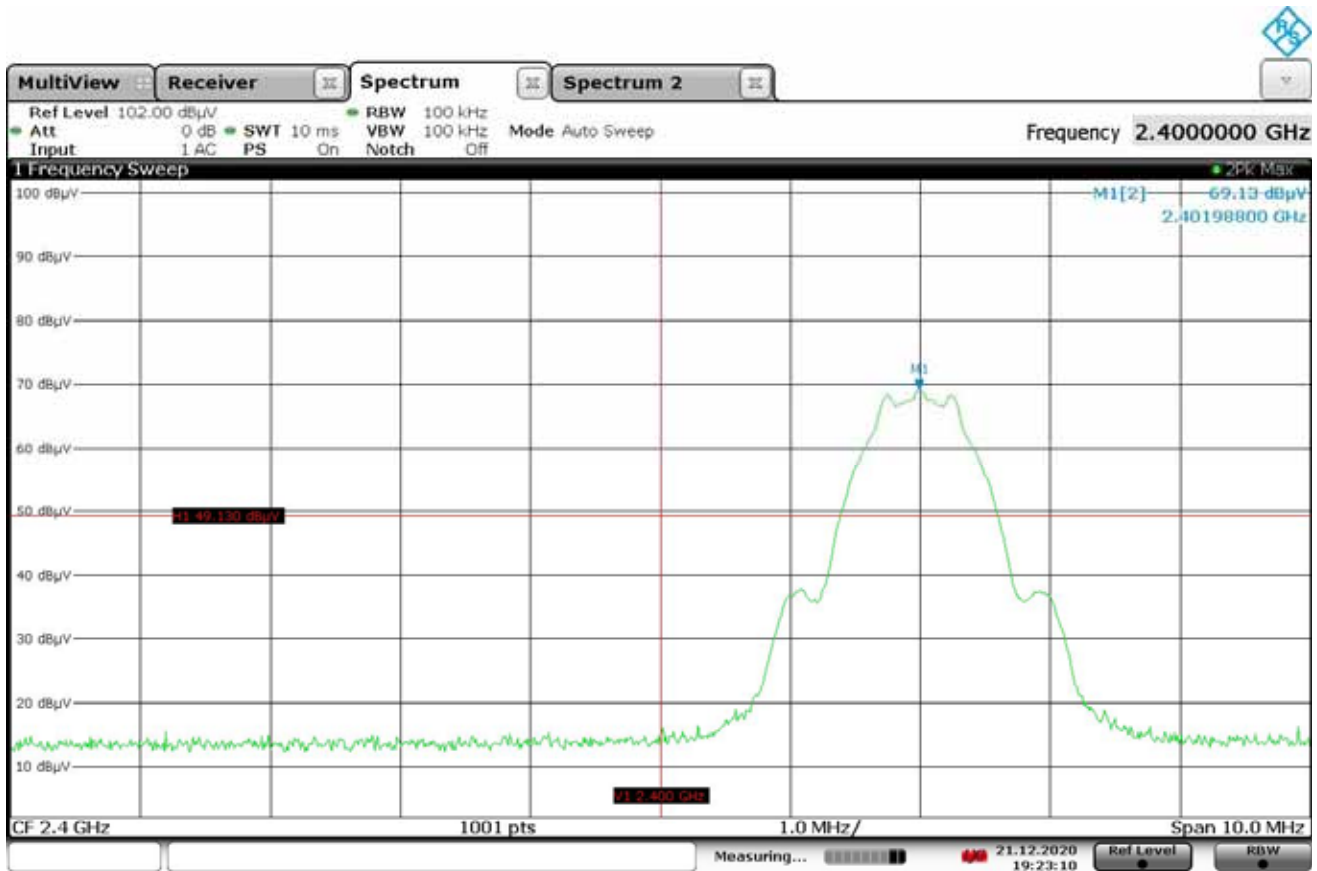
21:35:41 22.12.2020

| Test Details      |                         |
|-------------------|-------------------------|
| Manufacturer      | Chamberlain Group, Inc. |
| Model             | 001D9586                |
| S/N               | Elite3                  |
| Mode              | 802.11g                 |
| Carrier Frequency | 2462MHz                 |
| Parameters        | High Band-Edge          |
| Notes             | None                    |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Peak<br>Total<br>dBuV/m<br>at 3m | Peak<br>Total<br>uV/m<br>at 3 m | Peak<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|----------------------------------|---------------------------------|---------------------------------|----------------|
| 2483.50      | H          | 27.0                       | *       | 2.7                | 33.3                 | 0.0                | 62.9                             | 1394.4                          | 5000.0                          | -11.1          |
| 2483.50      | V          | 27.2                       | *       | 2.7                | 33.3                 | 0.0                | 63.1                             | 1426.9                          | 5000.0                          | -10.9          |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Duty<br>Cycle<br>(dB) | Average<br>Total<br>dBuV/m<br>at 3m | Average<br>Total<br>uV/m<br>at 3 m | Average<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|-----------------------|-------------------------------------|------------------------------------|------------------------------------|----------------|
| 2483.50      | H          | 8.9                        | *       | 2.7                | 33.3                 | 0.0                | 0.0                   | 44.8                                | 173.9                              | 500.0                              | -9.2           |
| 2483.50      | V          | 10.4                       | *       | 2.7                | 33.3                 | 0.0                | 0.0                   | 46.4                                | 208.2                              | 500.0                              | -7.6           |

| Test Details      |                         |
|-------------------|-------------------------|
| Manufacturer      | Chamberlain Group, Inc. |
| Model             | 001D9586                |
| S/N               | Elite3                  |
| Mode              | Bluetooth               |
| Carrier Frequency | 2402MHz                 |
| Parameters        | Low Band-Edge           |
| Notes             | None                    |



19:23:10 21.12.2020

| Test Details      |                         |
|-------------------|-------------------------|
| Manufacturer      | Chamberlain Group, Inc. |
| Model             | 001D9586                |
| S/N               | Elite3                  |
| Mode              | 802.11g                 |
| Carrier Frequency | 2462MHz                 |
| Parameters        | High Band-Edge          |
| Notes             | None                    |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Peak<br>Total<br>dBuV/m<br>at 3m | Peak<br>Total<br>uV/m<br>at 3 m | Peak<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|----------------------------------|---------------------------------|---------------------------------|----------------|
| 2483.50      | H          | 25.2                       | *       | 2.7                | 33.3                 | 0.0                | 61.1                             | 1139.9                          | 5000.0                          | -12.8          |
| 2483.50      | V          | 27.2                       | *       | 2.7                | 33.3                 | 0.0                | 63.2                             | 1438.4                          | 5000.0                          | -10.8          |

| Freq.<br>MHz | Ant<br>Pol | Meter<br>Reading<br>(dBuV) | Ambient | CBL<br>Fac<br>(dB) | Ant<br>Fac<br>(dB/m) | Pre<br>Amp<br>(dB) | Duty<br>Cycle<br>(dB) | Average<br>Total<br>dBuV/m<br>at 3m | Average<br>Total<br>uV/m<br>at 3 m | Average<br>Limit<br>uV/m<br>at 3 m | Margin<br>(dB) |
|--------------|------------|----------------------------|---------|--------------------|----------------------|--------------------|-----------------------|-------------------------------------|------------------------------------|------------------------------------|----------------|
| 2483.50      | H          | 8.1                        | *       | 2.7                | 33.3                 | 0.0                | 1.5                   | 45.5                                | 189.2                              | 500.0                              | -8.4           |
| 2483.50      | V          | 9.2                        | *       | 2.7                | 33.3                 | 0.0                | 1.5                   | 46.7                                | 215.7                              | 500.0                              | -7.3           |

## 24. Scope of Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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Website: [www.elitetest.com](http://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) <sup>1</sup>:***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

*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)

*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)

*Vehicle Radiated Emissions*

CISPR 12; ICES-002

(A2LA Cert. No. 1786.01) Revised 01/10/2020



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5202 Presidents Court, Suite 220 | Frederick, MD 21703-8515 | Phone: 301 644 3248 | Fax: 240 454 9449 | [www.A2LA.org](http://www.A2LA.org)



| <b><u>Test Technology:</u></b>                                | <b><u>Test Method(s) <sup>1</sup>:</u></b>   |
|---|--|
| <i>Bulk Current Injection (BCI)</i>                           | ISO 11452-4;<br>CS-11979, Section 6.1; CS.00054, Section 5.8.1;<br>GMW 3097, Section 3.4.1;<br>SAE J1113-4;<br>EMC-CS-2009.1 (RI112); FMC1278 (RI112)            |
| <i>Bulk Current Injections (BCI)<br/>(Closed Loop Method)</i> | ISO 11452-4; SAE J1113-4   |
| <i>Radiated Immunity Anechoic<br/>(Including Radar Pulse)</i> | ISO 11452-2; ISO 11452-5;<br>CS-11979, Section 6.2; CS.00054, Section 5.8.2;<br>GMW 3097, Section 3.4.2;<br>EMC-CS-2009.1 (RI114); FMC1278 (RI114); SAE J1113-21 |
| <i>Radiated Immunity Magnetic Field</i>                       | ISO 11452-8  |
| <i>Radiated Immunity Reverb</i>                               | ISO/IEC 61000-4-21;<br>GMW 3097, Section 3.4.3;<br>EMC-CS-2009.1 (RI114); FMC1278 (RI114);<br>ISO 11452-11   |
| <i>Radiated Immunity<br/>(Portable Transmitters)</i>          | ISO 11452-9;<br>EMC-CS-2009.1 (RI115); FMC1278 (RI115)   |
| <i>Vehicle Radiated Immunity (ALSE)</i>                       | ISO 11451-2  |
| <i>Electrical Loads</i>                                       | ISO 16750-2, Sections 4.2, 4.3, 4.4, 4.5, 4.6, 4.7,<br>4.8, 4.9, 4.11, and 4.12  |
| <i>Dielectric Withstand Voltage</i>                           | MIL-STD-202, Method 301;<br>EIA-364-20D  |
| <i>Insulation Resistance</i>                                  | MIL-STD-202, Method 302;<br>SAE/USCAR-2, Revision 6, Section 5.5.1;<br>EIA-364-21D   |
| <i>Contact Resistance</i>                                     | MIL-STD-202, Method 307;<br>SAE/USCAR-2, Revision 6, Section 5.3.1;<br>EIA/ECA-364-23C;<br>USCAR21-3 Section 4.5.3   |
| <i>DC Resistance</i>  | MIL-STD-202, Method 303  |
| <i>Contact Chatter</i>  | MIL-STD-202, Method 310;<br>SAE/USCAR-2, Revision 6, Section 5.1.9   |
| <i>Voltage Drop</i>   | SAE/USCAR-2, Revision 6, Section 5.3.2;<br>USCAR21-3 Section 4.5.6   |

**Test Technology:**

**Test Method(s) <sup>1</sup>:**

**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

Current Harmonics

IEC 61000-3-2; EN 61000-3-2; KN 61000-3-2

Flicker and Fluctuations

IEC 61000-3-3; EN 61000-3-3; KN 61000-3-3

**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

Surge

IEC 61000-4-5 (1995) + A1(2000);  
IEC 61000-4-5, Ed 1.1 (2005-11);  
EN 61000-4-5 (1995) + A1(2001);  
KN 61000-4-5 (2008-5); RRL Notice No. 2008-4 (May 20, 2008);  
IEC 61000-4-5; EN 61000-4-5; KN 61000-4-5;  
IEEE C37.90.1 2012

| <b><u>Test Technology:</u></b>                              | <b><u>Test Method(s) <sup>1</sup>:</u></b>  |
|---|---|
| <b>Immunity (cont'd)</b><br>Conducted Immunity              | IEC 61000-4-6 (1996) + A1(2000);<br>IEC 61000-4-6, Ed 2.0 (2006-05);<br>IEC 61000-4-6 Ed. 3.0 (2008);<br>KN 61000-4-6 (2008-5); RRL Notice No. 2008-4 (May 20, 2008);<br>EN 61000-4-6 (1996) + A1(2001); IEC 61000-4-6; EN 61000-4-6;<br>KN 61000-4-6   |
| Power Frequency Magnetic Field Immunity                     | IEC 61000-4-8 (1993) + A1(2000); IEC 61000-4-8 (2009);<br>EN 61000-4-8 (1994) + A1(2000);<br>KN 61000-4-8 (2008-5); RRL Notice No. 2008-4 (May 20, 2008);<br>IEC 61000-4-8; EN 61000-4-8; KN 61000-4-8  |
| Voltage Dips, Short Interrupts, and Line Voltage Variations | IEC 61000-4-11, Ed. 2 (2004-03);<br>KN 61000-4-11 (2008-5);<br>RRL Notice No. 2008-4 (May 20, 2008);<br>IEC 61000-4-11; EN 61000-4-11; KN 61000-4-11  |
| Ring Wave   | IEC 61000-4-12, Ed. 2 (2006-09);<br>EN 61000-4-12:2006;<br>IEC 61000-4-12; EN 61000-4-12; KN 61000-4-12   |
| Generic and Product Specific EMC Standards                  | IEC/EN 61000-6-1; AS/NZS 61000-6-1; KN 61000-6-1;<br>IEC/EN 61000-6-2; AS/NZS 61000-6-2; KN 61000-6-2;<br>IEC/EN 61000-6-3; AS/NZS 61000-6-3; KN 61000-6-3;<br>IEC/EN 61000-6-4; AS/NZS 61000-6-4; KN 61000-6-4;<br>EN 50130-4; IEC 61326-1;<br>IEC/CISPR 14-2; EN 55014-2; AS/NZS CISPR 14.2; KN 14-2;<br>IEC/CISPR 24; AS/NZS CISPR 24; EN 55024; KN 24;<br>IEC 60601-1-2; JIS T0601-1-2              |
| <i>TxRx EMC Requirements</i>                                | EN 301 489-1; EN 301 489-3; EN 301 489-9; EN 301 489-17;<br>EN 301 489-19; EN 301 489-52;   |
| <i>European Radio Test Standards</i>                        | ETSI EN 300 086-1; ETSI EN 300 086-2;<br>ETSI EN 300 113-1; ETSI EN 300 113-2;<br>ETSI EN 300 220-1; ETSI EN 300 220-2;<br>ETSI EN 300 330-1; ETSI EN 300 330-2;<br>ETSI EN 300 440-1; ETSI EN 300 440-2;<br>ETSI EN 300 422-1; ETSI EN 300 422-2;<br>ETSI EN 300 328; ETSI EN 301 893;<br>ETSI EN 301 511; ETSI EN 301 908-1;<br>ETSI EN 908-2; ETSI EN 908-13;<br>ETSI EN 301 413;<br>ETSI EN 302 502 |

**Test Technology:**

**Test Method(s) <sup>1</sup>:**

*Canadian Radio Tests*

RSS-102 (RF Exposure Evaluation only); RSS-111; RSS-112; RSS-117; RSS-119; RSS-123; RSS-125; RSS-127; RSS-130; RSS-131; RSS-132; RSS-133; RSS-134; RSS-135; RSS-137; RSS-139; RSS-140; RSS-141; RSS-142; RSS-170; RSS-181; RSS-182; RSS-191; RSS-192; RSS-194; RSS-195; RSS-196; RSS-197; RSS-199; RSS-210; RSS-211; RSS-213; RSS-215; RSS-216; RSS-220; RSS-222; RSS-236; RSS-238; RSS-243; RSS-244; RSS-246; RSS-247; RSS-251; RSS-252; RSS-287; RSS-288; RSS-310; RSS-GEN

*Mexico Radio Tests*

IFT-008; NOM-208-SCFI

*Japan Radio Tests*

Radio Law No. 131, Ordinance of MPT No. 37, 1981, MIC Notification No. 88:2004, Table No. 22-11; ARIB STD-T66, Regulation 18

*Taiwan Radio Tests*

LP-0002

*Australia/New Zealand Radio Tests*

AS/NZS 4268; Radiocommunications (Short Range Devices) Standard (2014)

*Hong Kong Radio Tests*

HKCA 1039 Issue 6; HKCA 1042; HKCA 1033 Issue 7; HKCA 1061; HKCA 1008; HKCA 1043; HKCA 1057; HKCA 1073

*Korean Radio Test Standards*

KN 301 489-1; KN 301 489-3; KN 301 489-9; KN 301 489-17; KN 301 489-52

*Unlicensed Radio Frequency Devices  
(3 Meter Semi-Anechoic Room)*

47 CFR FCC Part 15C, 15D, 15E, 15F, 15G, 15H (using ANSI C63.10:2013, ANSI C63.17:2013 and FCC KDB 905462 D02 (v02))

*Licensed Radio Service Equipment*

47 CFR FCC Parts 20, 22, 24, 25, 27, 30, 73, 74, 80, 87, 90, 95, 96, 97, 101; ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015;

*OTA (Over the Air) Performance*

GSM, GPRS, EGPRS  
UMTS (W-CDMA)  
LTE including CAT M1  
A-GPS for UMTS/GSM  
LTS A-GPS, A-GLONASS,  
SIB8/SIB16  
Large Device/Laptop/Tablet Testing  
Integrated Device Testing  
WiFi 802.11 a/b/g/n/ac

CTIA Test Plan for Wireless Device Over-the-Air Performance (Method for Measurement for Radiated Power and Receiver Performance) V3.8.2;  
CTIA Test Plan for RF Performance Evaluation of WiFi Mobile Converged Devices V2.1.0

**Test Technology:**

**Test Method(s)<sup>1</sup>:**

***Electrical Measurements and Simulation***

**AC Voltage / Current**

(1mV to 5kV) 60 Hz  
(0.1V to 250V) up to 500 MHz  
(1µA to 150A) 60 Hz

FAA AC 150/5345-10H  
FAA AC 150/5345-43J  
FAA AC 150/5345-44K  
FAA AC 150/5345-46E

**DC Voltage / Current**

(1mV to 15-kV) / (1µA to 10A)

FAA AC 150/5345-47C  
FAA EB 67D

**Power Factor / Efficiency / Crest Factor**

(Power to 30kW)

**Resistance**

(1mΩ to 4000MΩ)

**Surge**

(Up to 10 kV / 5 kA) (Combination Wave and Ring Wave)

**On the following products and materials:**

Telecommunications Terminal Equipment (TTE), Radio Equipment, Network Equipment, Information Technology Equipment (ITE), Automotive Electronic Equipment, Automotive Hybrid Electronic Devices, Maritime Navigation and Radio Communication Equipment and Systems, Vehicles, Boats and Internal Combustion Engine Driven Devices, Automotive, Aviation, and General Lighting Products, Medical Electrical Equipment, Motors, Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment, Household Appliances, Electric Tools, Low-voltage Switchgear and Control gear, Programmable Controllers, Electrical Equipment for Measurement, Control and Laboratory Use, Base Materials, Power and Data Transmission Cables and Connectors

<sup>1</sup> When the date, revision or edition of a test method standard is not identified on the scope of accreditation, the laboratory is expected to be using the current version within one year of the date of publication, per part C., Section 1 of A2LA R101 - *General Requirements - Accreditation of ISO-IEC 17025 Laboratories.*

Testing Activities Performed in Support of FCC Declaration of Conformity and Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.1<sup>2</sup>

| <b>Rule Subpart/Technology</b>                                       | <b>Test Method</b>       | <b>Maximum Frequency (MHz)</b> |
|--|--------------------------|--------------------------------|
| <u>Unintentional Radiators</u><br>Part 15B                           | ANSI C63.4:2014          | 40000                          |
| <u>Industrial, Scientific, and Medical Equipment</u><br>Part 18      | FCC MP-5 (February 1986) | 40000                          |
| <u>Intentional Radiators</u><br>Part 15C                             | ANSI C63.10:2013         | 40000                          |
| <u>Unlicensed Personal Communication Systems Devices</u><br>Part 15D | ANSI C63.17:2013         | 40000                          |





Testing Activities Performed in Support of FCC Declaration of Conformity and Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.1<sup>2</sup>

| <b>Rule Subpart/Technology</b>  | <b>Test Method</b>                                  | <b>Maximum Frequency (MHz)</b> |
|---|---|--------------------------------|
| <u>U-NII without DFS Intentional Radiators</u><br>Part 15E  | ANSI C63.10:2013                                    | 40000                          |
| <u>U-NII with DFS Intentional Radiators</u><br>Part 15E   | FCC KDB 905462 D02 (v02)                            | 40000                          |
| <u>UWB Intentional Radiators</u><br>Part 15F  | ANSI C63.10:2013                                    | 40000                          |
| <u>BPL Intentional Radiators</u><br>Part 15G  | ANSI C63.10:2013                                    | 40000                          |
| <u>White Space Device Intentional Radiators</u><br>Part 15H   | ANSI C63.10:2013                                    | 40000                          |
| <u>Commercial Mobile Services (FCC Licensed Radio Service Equipment)</u><br>Parts 22 (cellular), 24, 25 (below 3 GHz), and 27                           | ANSI/TIA-603-E; TIA-102.CAAA-E;<br>ANSI C63.26:2015 | 40000                          |
| <u>General Mobile Radio Services (FCC Licensed Radio Service Equipment)</u><br>Parts 22 (non-cellular), 90 (below 3 GHz), 95, 97, and 101 (below 3 GHz) | ANSI/TIA-603-E; TIA-102.CAAA-E;<br>ANSI C63.26:2015 | 40000                          |
| <u>Citizens Broadband Radio Services (FCC Licensed Radio Service Equipment)</u><br>Part 96  | ANSI/TIA-603-E; TIA-102.CAAA-E;<br>ANSI C63.26:2015 | 40000                          |
| <u>Maritime and Aviation Radio Services</u><br>Parts 80 and 87  | ANSI/TIA-603-E; ANSI C63.26:2015                    | 40000                          |
| <u>Microwave and Millimeter Bands Radio Services</u><br>Parts 25, 30, 74, 90 (above 3 GHz), 97 (above 3 GHz), and 101                                   | ANSI/TIA-603-E; TIA-102.CAAA-E;<br>ANSI C63.26:2015 | 40000                          |
| <u>Broadcast Radio Services</u><br>Parts 73 and 74 (below 3 GHz)  | ANSI/TIA-603-E; TIA-102.CAAA-E;<br>ANSI C63.26:2015 | 40000                          |



Testing Activities Performed in Support of FCC Declaration of Conformity and Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.1<sup>2</sup>

| <b>Rule Subpart/Technology</b>   | <b>Test Method</b> | <b>Maximum Frequency (MHz)</b> |
|--|--------------------|--------------------------------|
| <u>Signal Boosters</u><br>Part 20 (Wideband Consumer Signal Boosters, Provider-specific signal boosters, and Industrial Signal Boosters)<br>Section 90.219 | ANSI C63.26:2015   | 40000                          |

<sup>2</sup>Accreditation does not imply acceptance to the FCC equipment authorization program. Please see the FCC website (<https://apps.fcc.gov/oetcf/eas/>) for a listing of FCC approved laboratories.





## Accredited Laboratory

A2LA has accredited

### ELITE ELECTRONIC ENGINEERING INC.

Downers Grove, IL

for technical competence in the field of

### Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 8<sup>th</sup> day of August 2019.



Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 1786.01  
Valid to June 30, 2021

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.