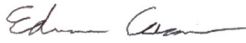




### Engineering Test Report No. 2402625-02

|                             |                                                                                                                                                                                                                    |                                                                                     |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Report Date                 | April 22, 2025                                                                                                                                                                                                     |                                                                                     |
| Manufacturer Name           | The Chamberlain Group LLC                                                                                                                                                                                          |                                                                                     |
| Manufacturer Address        | 300 Windsor Dr<br>Oak Brook, IL 60523                                                                                                                                                                              |                                                                                     |
| Test Item Name<br>Model No. | Keychain Remote<br>900-16328-1/014D16328 Rev C                                                                                                                                                                     |                                                                                     |
| Date Received               | March 17, 2025                                                                                                                                                                                                     |                                                                                     |
| Test Dates                  | March 17 – 28, 2025                                                                                                                                                                                                |                                                                                     |
| Specifications              | FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.231(b)<br>Innovation, Science, and Economic Development Canada, RSS-210<br>Innovation, Science, and Economic Development Canada, RSS-GEN |                                                                                     |
| Test Facility               | Elite Electronic Engineering, Inc.<br>1516 Centre Circle,<br>Downers Grove, IL 60515                                                                                                                               | FCC Reg. Number: 269750<br>IC Reg. Number: 2987A<br>CAB Identifier: US0107          |
| Signature                   |                                                                                                                                   |  |
| Tested by                   | Edwin Casas                                                                                                                                                                                                        | Tylar Jozefczyk                                                                     |
| Signature                   |                                                                                                                                  |                                                                                     |
| Approved by                 | Raymond J. Klouda,<br>Registered Professional Engineer of Illinois – 44894                                                                                                                                         |                                                                                     |
| PO Number                   | 4900099236                                                                                                                                                                                                         |                                                                                     |

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

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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 15.231 and Innovation, Science, and Economic Development Canada, RSS-210 and RSS-Gen test specifications. The data presented in this test report pertains to the EUT on the test dates specified. Any electrical or mechanical modifications made to the EUT subsequent to the specified test date will serve to invalidate the data and void this certification. This report must not be used to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the Federal Government.

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## 1. Report Revision History

| Revision | Date        | Description                                               |
|----------|-------------|-----------------------------------------------------------|
| –        | 22 APR 2025 | Initial Release of Engineering Test Report No. 2402625-02 |

## 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 LLC Keychain Remotes (hereinafter referred to as the Equipment Under Test (EUT)). The EUTs were manufactured and submitted for testing by The Chamberlain Group LLC located in Oak Brook, IL.

### 2.2. Purpose

The test series was performed to determine if the EUTs meet the RF emission requirements of the FCC "Code of Federal Regulations" Title 47, Chapter I, Subchapter A, §15.231(e).

The test series was also performed to determine if the EUTs meet the RF emission requirements of the Industry Canada Radio Standards Specification RSS-Gen and RSS-210 for Transmitters.

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

### 2.3. Identification of the EUT

The EUTs were identified as follows and used throughout the test series:

| EUT Identification                         |                                                                                                                             |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Product Description                        | Keychain Remote                                                                                                             |
| Model/Part No.                             | 900-16328-1/014D16328 Rev C                                                                                                 |
| Serial No.                                 | Sample K6, Sample K7 (Conducted Samples)<br>Sample K3, Sample K4 (Radiated Samples)                                         |
| Software/Firmware Ver.                     | 126A0646 (FW,DELOREAN,TX,MAX,USCAN,BG22,KC) Rev A.1<br>security3-transmitter_uscan_max_keychain_debug_test_cont_ook_v5.0.17 |
| Band of Operation                          | 260 – 470MHz                                                                                                                |
| Modulation Type                            | OOK                                                                                                                         |
| Antenna Type                               | Chip (Pigtail was added for Antenna Conducted tests)                                                                        |
| 20dB Bandwidth                             | D Code – 315MHz: 53.9kHz<br>D Code – 390MHz: 55.9kHz<br>E Code: 53.9kHz                                                     |
| Occupied Bandwidth<br>(99% CBW)            | D Code – 315MHz: 101.3kHz<br>D Code – 390MHz: 97.63kHz<br>E Code – 315MHz: 104.35kHz<br>E Code – 390MHz: 103.75kHz          |
| FCC ID Number<br>ISED Certification Number | FCC ID: HBW16328X1<br>IC: 2666A-16328X1                                                                                     |

## 3. Power Input

The EUTs were powered by 3VDC from a coin cell battery.

## 4. Grounding

The EUTs were not connected to ground.

## 5. Support Equipment

No support equipment was used during the tests.

## 6. Interconnect Leads

No interconnect leads were used during the tests.

## 7. Modifications Made to the EUT

No modifications were made to the EUTs during the testing.

## 8. Modes of Operation

The EUTs were energized and programmed to transmit in one of the following modes:

| Mode   | Description |
|--------|-------------|
| D Code | - 315MHz    |
| E Code | - 390MHz    |

## 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 15.231 and Innovation, Science, and Economic Development Canada, RSS-210 test specifications.

- Federal Communications Commission "Code of Federal Regulations", Title 47, Chapter I, Subchapter A, Part 15, Subpart C, Section 231 – "Periodic operation in the band 40.66–40.70 MHz and above 70 MHz"
- ANSI C63.10-2013 – "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices"
- Radio Standard Specification RSS-Gen Issue 5, Amendment 2 (February 2021) – "General Requirements for Compliance of Radio Apparatus"
- Radio Standard Specification RSS-210 Issue 11 (June 25, 2024) – "License-Exempt Radio Apparatus: Category I Equipment"

## 10. Test Plan

No test plan was provided. Instructions were provided by personnel from The Chamberlain Group LLC and used in conjunction with the FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.231, Innovation, Science, and Economic Development Canada, RSS-210, and ANSI C63.10-2013 specifications.

## 11. Deviations, Additions, or Exclusions from Test Specifications

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

## 12. Laboratory Conditions

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

| Ambient Parameters   | Value    |
|----------------------|----------|
| Temperature          | 22.6°C   |
| Relative Humidity    | 21.2%    |
| Atmospheric Pressure | 994.92mb |

### 13. Summary

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

| Test Description            | Requirements               | Test Method      | S/N                     | Result   |
|-----------------------------|----------------------------|------------------|-------------------------|----------|
| Periodic Operation          | FCC 15.231<br>ISED RSS-210 | ANSI C63.10:2013 | Sample K6,<br>Sample K7 | Conforms |
| Duty Cycle Factor           | FCC 15.231<br>ISED RSS-210 | ANSI C63.10:2013 |                         | Conforms |
| Occupied Bandwidth – 20dB   | FCC 15.231                 | ANSI C63.10:2013 |                         | Conforms |
| Occupied Bandwidth – 99%    | ISED RSS-210               | ANSI C63.10:2013 |                         | Conforms |
| Spurious Radiated Emissions | FCC 15.231<br>ISED RSS-210 | ANSI C63.10:2013 | Sample K3               | Conforms |

### 14. Sample Calculations

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.

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

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

$$\text{Formula 2: FS (}\mu\text{V/m)} = \text{AntiLog}[(\text{FS (dB}\mu\text{V/m)})/20]$$

### 15. Statement of Conformity

The Chamberlain Group LLC Keychain Remote (Model No. 900-16328-1/014D16328 Rev C) did fully conform to the selected requirements of FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.231 and Innovation, Science, and Economic Development Canada, RSS-210.

### 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 15.231 and Innovation, Science, and Economic Development Canada, RSS-210 test specifications. The data presented in this test report pertains to the EUTs on the test date specified. Any electrical or mechanical modifications made to the EUTs subsequent to the specified test date will serve to invalidate the data and void this certification.

## 17. Photographs of EUT



photo removed for short term confidentiality reasons

Orthogonal Position used for Spurious Emissions

## 18. Equipment List

| Eq ID | Equipment Description           | Manufacturer     | Model No.                | Serial No.   | Frequency Range | Cal Date   | Due Date   |
|-------|---------------------------------|------------------|--------------------------|--------------|-----------------|------------|------------|
| APW10 | Preamplifier                    | Planar           | PE2-35-120-5R0-10-12-SFF | PL11685/1241 | 1-18GHz         | 3/18/2025  | 3/18/2026  |
| APW3  | Preamplifier                    | Planar           | PE2-35-120-5R0-10-12     | PL2924       | 1-18GHz         | 3/24/2025  | 3/24/2026  |
| CDZ3  | LAB WORKSTATION                 | ELITE            | LWS-10                   |              | WINDOWS 10      | N/A        |            |
| CDZ4  | LAB WORKSTATION                 | ELITE            | LWS-10                   |              | WINDOWS 10      | N/A        |            |
| GSE2  | SIGNAL GENERATOR (40GHZ)        | ROHDE & SCHWARZ  | SMB100A                  | 183293       | 100KHZ-40GHZ    | 3/7/2025   | 3/7/2027   |
| NTA2  | BILOG ANTENNA                   | TESEQ            | 6112D                    | 28040        | 25-2000MHz      | 6/21/2024  | 6/21/2026  |
| NWQ0  | DOUBLE RIDGED WAVEGUIDE ANTENNA | ETS LINDGREN     | 3117                     | 66657        | 1GHZ-18GHZ      | 6/24/2024  | 6/24/2026  |
| NWQ1  | DOUBLE RIDGED WAVEGUIDE ANTENNA | ETS-LINDGREN     | 3117                     | 66655        | 1GHZ-18GHZ      | 7/26/2024  | 7/26/2026  |
| R21F  | 3M ANECHOIC CHAMBER NSA         | EMC TEST SYSTEMS | 3M ANECHOIC              |              | 30MHZ-18GHZ     | 3/1/2025   | 3/1/2026   |
| R29F  | 3M ANECHOIC CHAMBER NSA         | EMC TEST SYSTEMS | 3M ANECHOIC              |              | 30MHZ-18GHZ     | 6/12/2023  | 6/12/2025  |
| RBG2  | EMI ANALYZER                    | ROHDE & SCHWARZ  | ESW44                    | 101591       | 2HZ-44GHZ       | 6/16/2024  | 6/16/2025  |
| RBG4  | EMI ANALYZER                    | ROHDE & SCHWARZ  | ESW44                    | 103007       | 2HZ-44GHZ       | 4/5/2025   | 4/5/2026   |
| RBH6  | EMI ANALYZER                    | ROHDE & SCHWARZ  | ESW26                    | 103067       | 2HZ-26GHZ       | 3/9/2025   | 3/9/2026   |
| SES0  | 24VDC POWER SUPPLY              | P-TRANS          | FS-32024-1M              | 001          | 18-27VDC        | NOTE 1     |            |
| SHC2  | Power Supplies                  | HENGFU           | HF60W-SL-24              | A11372702    | 24V             | NOTE 1     |            |
| T1E33 | 10DB 20W ATTENUATOR             | MINI-CIRCUITS    | BW-N10W20+               | ---          | DC-18GHZ        | 12/19/2023 | 12/19/2025 |
| WKA1  | SOFTWARE, UNIVERSAL RCV EMI     | ELITE            | UNIV_RCV_EMI             | 1            | ---             | I/O        |            |
| XPQ3  | HIGH PASS FILTER                | K&L MICROWAVE    | 4IH30-1804/T10000-0      | 4            | 1.8GHZ-10GHZ    | 9/14/2023  | 9/14/2025  |
| XPQ7  | HIGH PASS FILTER                | K&L MICROWAVE    | 4IH30-1804/T10000-0      | 5            | 1.8-10GHZ       | 2/4/2025   | 2/4/2027   |

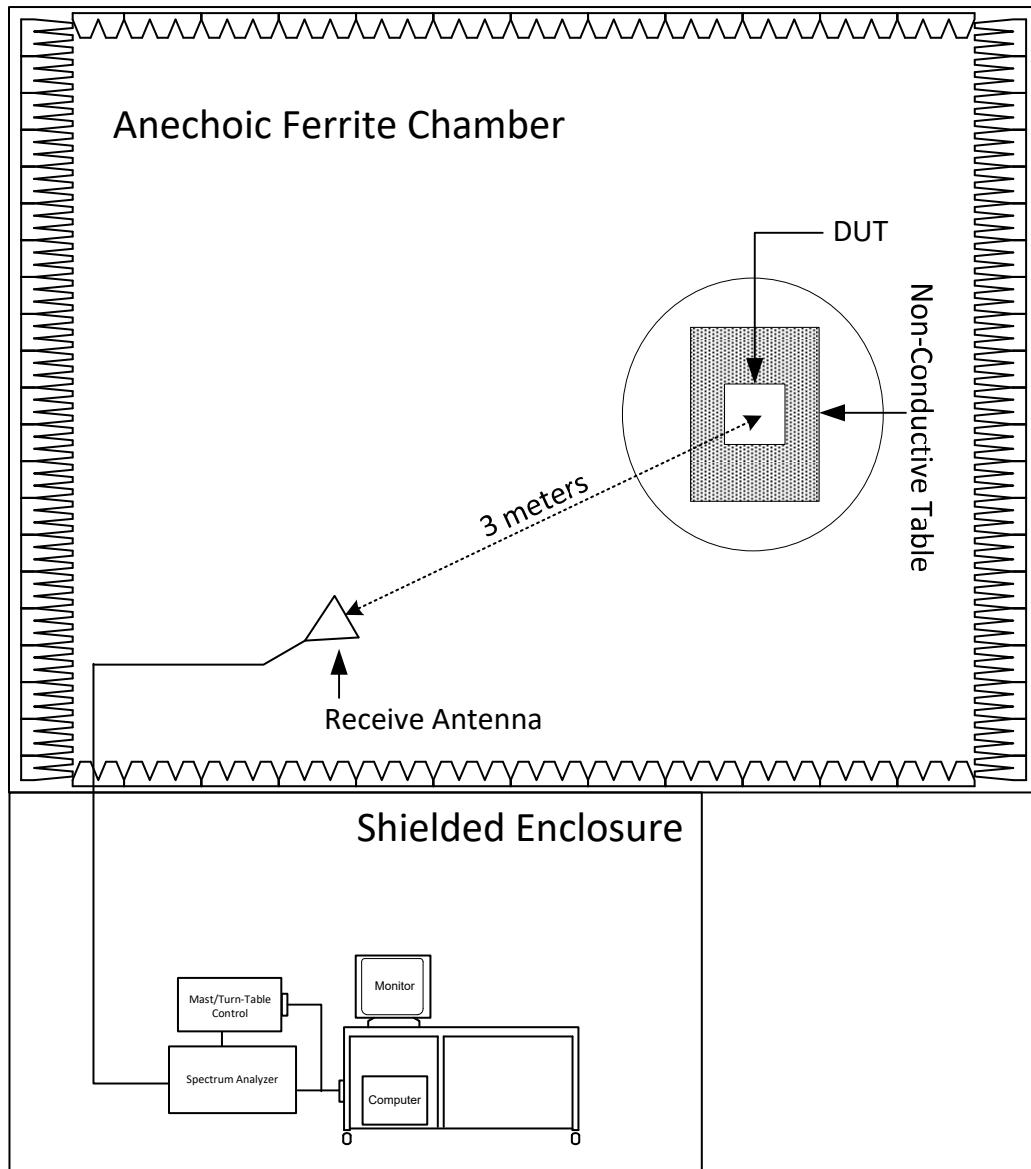
N/A: Not Applicable

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. Periodic Operation

| EUT Information |                             |
|-----------------|-----------------------------|
| Manufacturer    | The Chamberlain Group LLC   |
| Product         | Keychain Remote             |
| Model No.       | 900-16328-1/014D16328 Rev C |
| Serial No.      | Sample K6, Sample K7        |
| Mode            | D Code, E Code              |

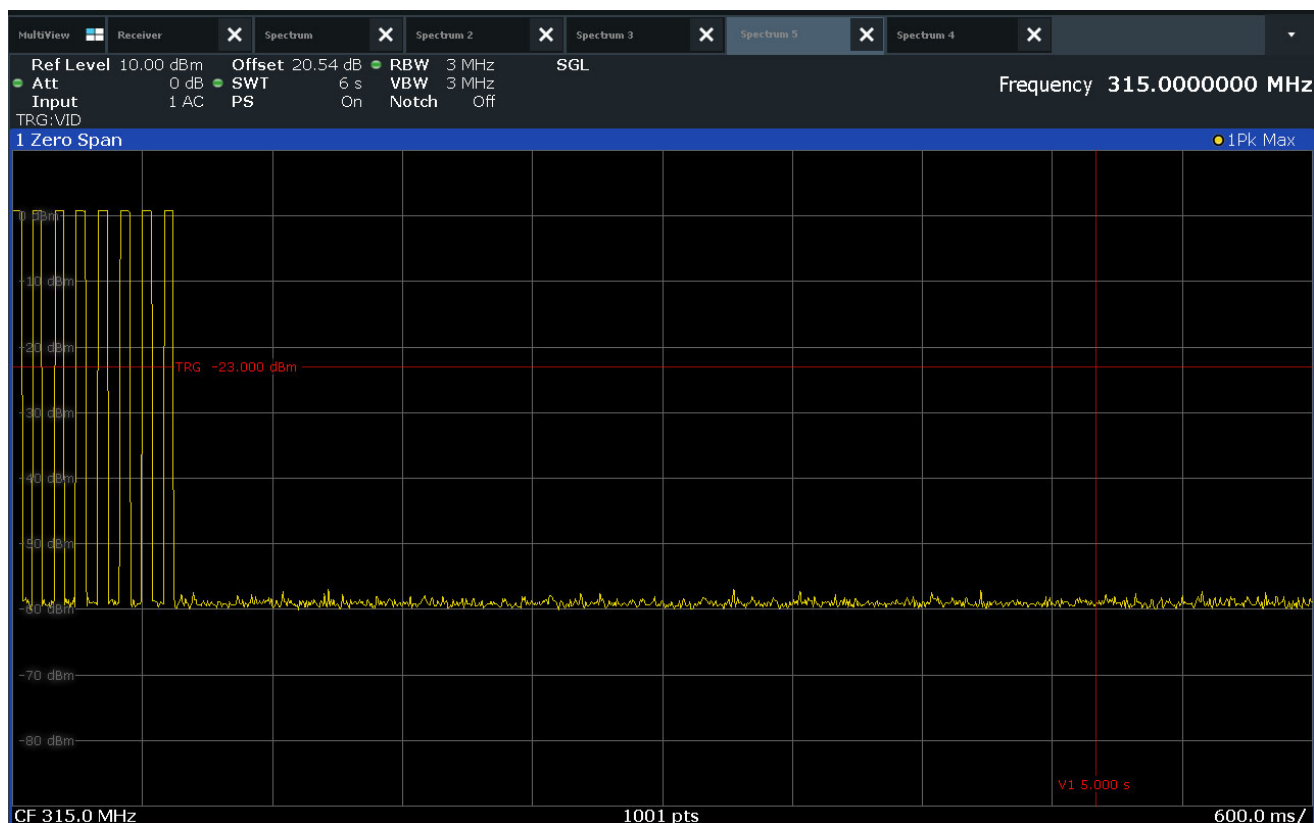
| Test Site Information |                  |
|-----------------------|------------------|
| Setup Format          | Tabletop         |
| Type of Test Site     | Elite Test Bench |
| Test Site Used        | N/A              |
| Note                  | N/A              |

| 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                              |

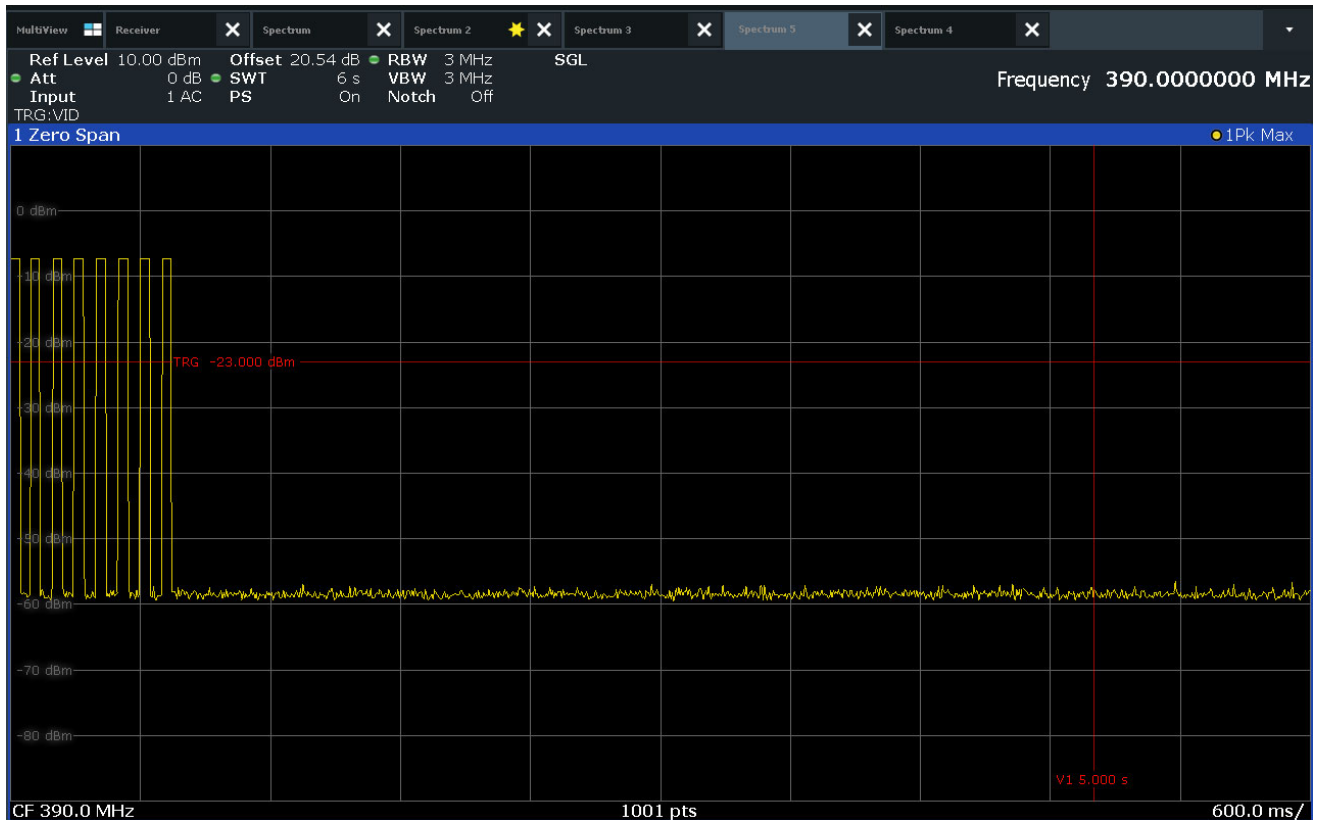
| Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Per §15.231(e), the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Per RSS-210 Annex A.1.1, a manually operated transmitter shall be equipped with a push-to-operate switch and be under manual control at all times during transmission. When released, the transmitter shall cease transmission within no more than 5 seconds of being released.                                                                                                                                                                                                                                                                                                                                                                                                   |
| A transmitter that has been activated automatically shall cease transmission within 5 seconds of activation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Periodic transmissions at regular, predetermined intervals are not permitted, except as specified in the section below. However, polling or supervision transmissions that determine system integrity of transmitters used in security or safety applications are permitted, provided the total duration of transmission does not exceed 2 seconds per hour for each transmitter.                                                                                                                                                                                                                                                                                                 |
| Intentional radiators used for radio control during emergencies involving fire, security of goods (e.g., burglar alarms) and safety-of-life, when activated to signal an alarm, may operate during the interval of the alarm condition.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Per RSS-210 Annex A.1.4, devices operating under the provisions of this section shall be capable of automatically limiting their operation so that the duration of each transmission is not greater than 1 second and the silent period between transmissions is at least 30 times the duration of the transmission, but not less than 10 seconds under any circumstances. However, devices that are designed for limited use for the purpose of initial programming, reprogramming, or installing, and not for regular operations, may operate for up to 5 seconds, provided such devices are used only occasionally in connection with each unit being programmed or installed. |

| Procedure                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The spectrum analyzer was set up to display the time domain trace. The EUT was set to transmit normally. The spectrum analyzer was then used to record the amount of time that the EUT remained active following activation. |

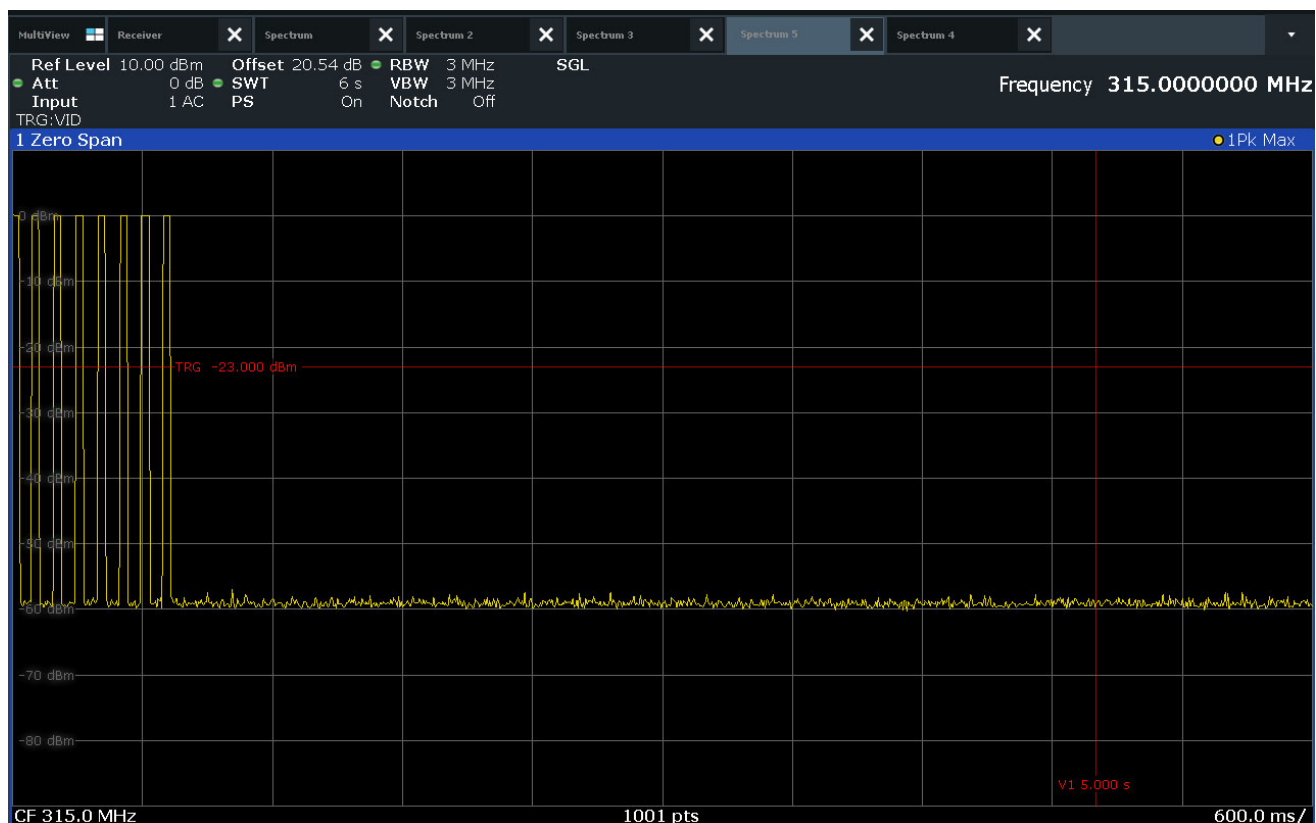
| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | D Code                      |
| Frequency Tested | 315MHz                      |
| Notes            |                             |



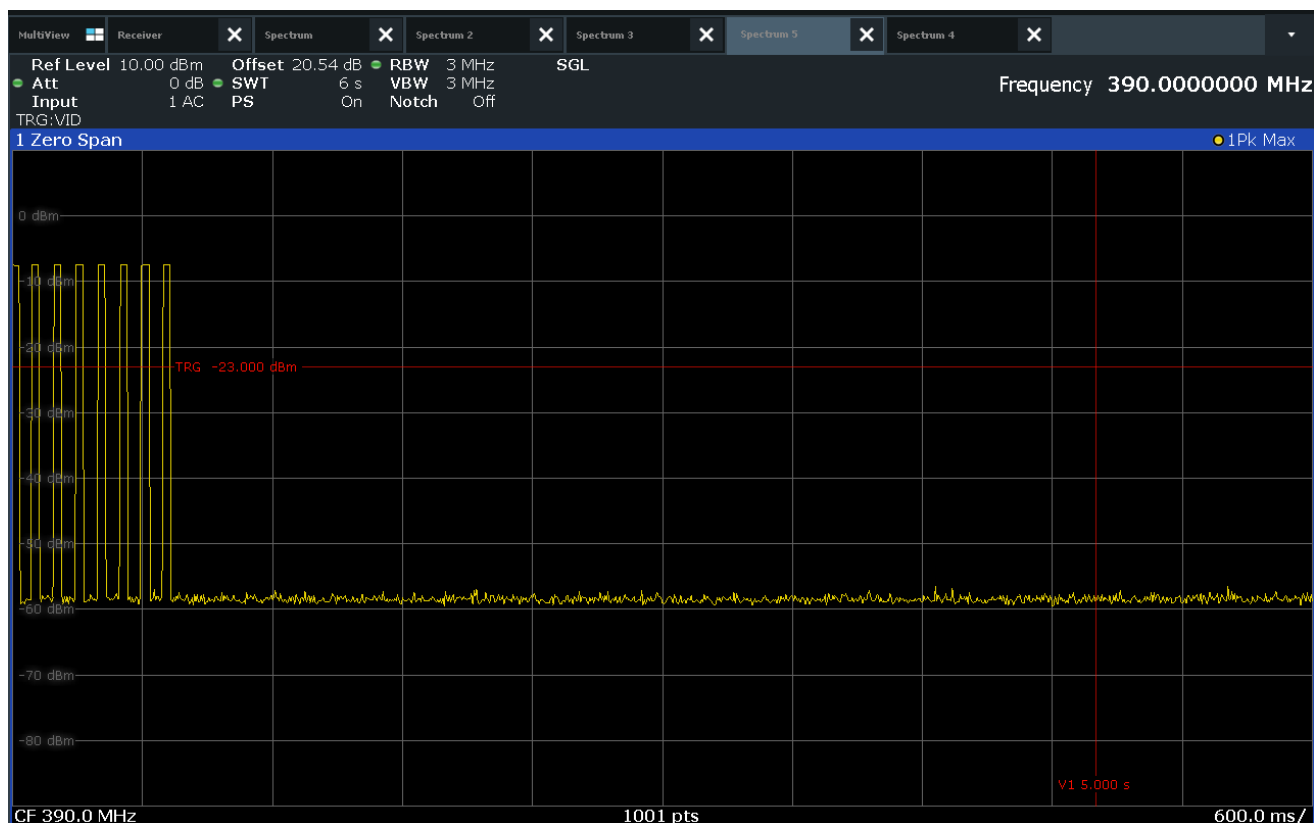
| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | D Code                      |
| Frequency Tested | 390MHz                      |
| Notes            |                             |



| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | E Code                      |
| Frequency Tested | 315MHz                      |
| Notes            |                             |



| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | E Code                      |
| Frequency Tested | 390MHz                      |
| Notes            |                             |



## 21. Duty Cycle Factor

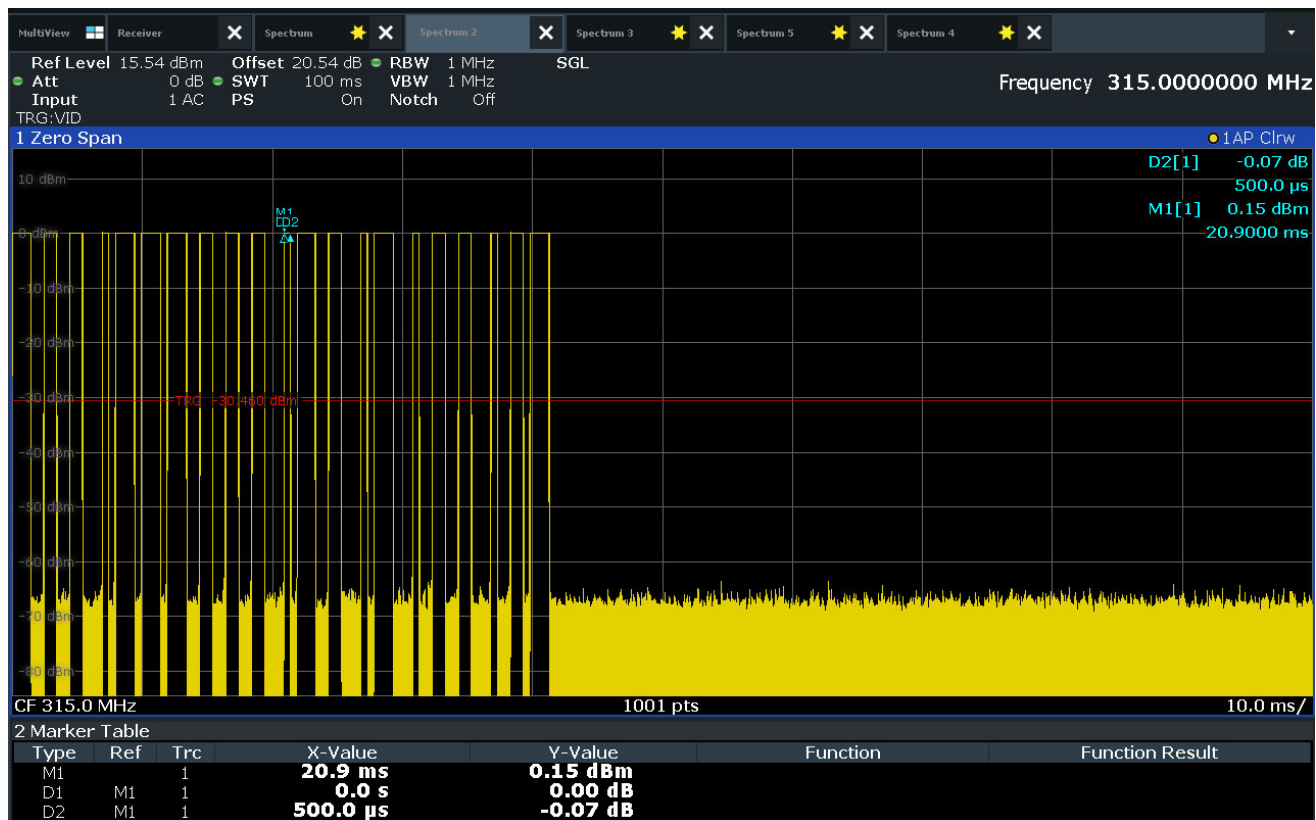
| EUT Information |                             |
|-----------------|-----------------------------|
| Manufacturer    | The Chamberlain Group LLC   |
| Product         | Keychain Remote             |
| Model No.       | 900-16328-1/014D16328 Rev C |
| Serial No.      | Sample K6, Sample K7        |
| Mode            | D Code, E Code              |

| Test Setup Details |                   |
|--------------------|-------------------|
| Setup Format       | Tabletop          |
| Measurement Method | Antenna Conducted |
| Type of Test Site  | Elite Test Bench  |
| Notes              | None              |

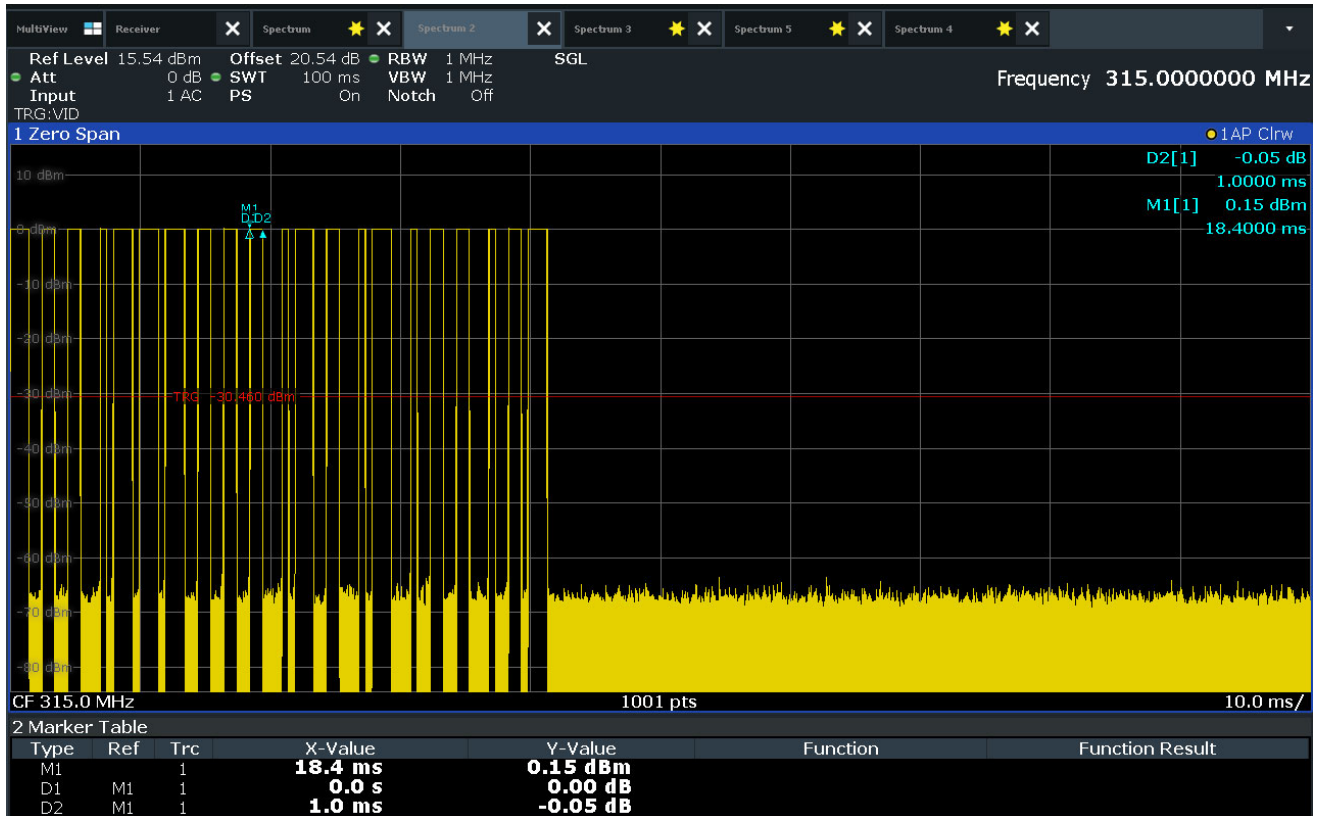
| Measurement Uncertainty                                                                                               |                                  |
|-----------------------------------------------------------------------------------------------------------------------|----------------------------------|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

| Procedure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The duty cycle factor is used to convert peak detected readings to average readings. This factor is computed from the time domain trace of the pulse modulation signal.</p> <ol style="list-style-type: none"> <li>1) The EUT was set up to transmit for maximum pulse density, with the time domain trace displayed on the spectrum analyzer.</li> <li>2) The pulse width was measured and a plot of this measurement was recorded.</li> <li>3) Next, the number of pulses in the word period was measured and a plot was recorded.</li> <li>4) Finally, the length of the word period was measured and a third plot was recorded. If the word period exceeded 100msec, the word period was limited to 100msec.</li> <li>5) The duty cycle is then computed as <math>\left(\frac{On\ Time}{Word\ Period}\right)</math>, where <math>Word\ Period = (On\ Time + Off\ Time)</math>.</li> </ol> |

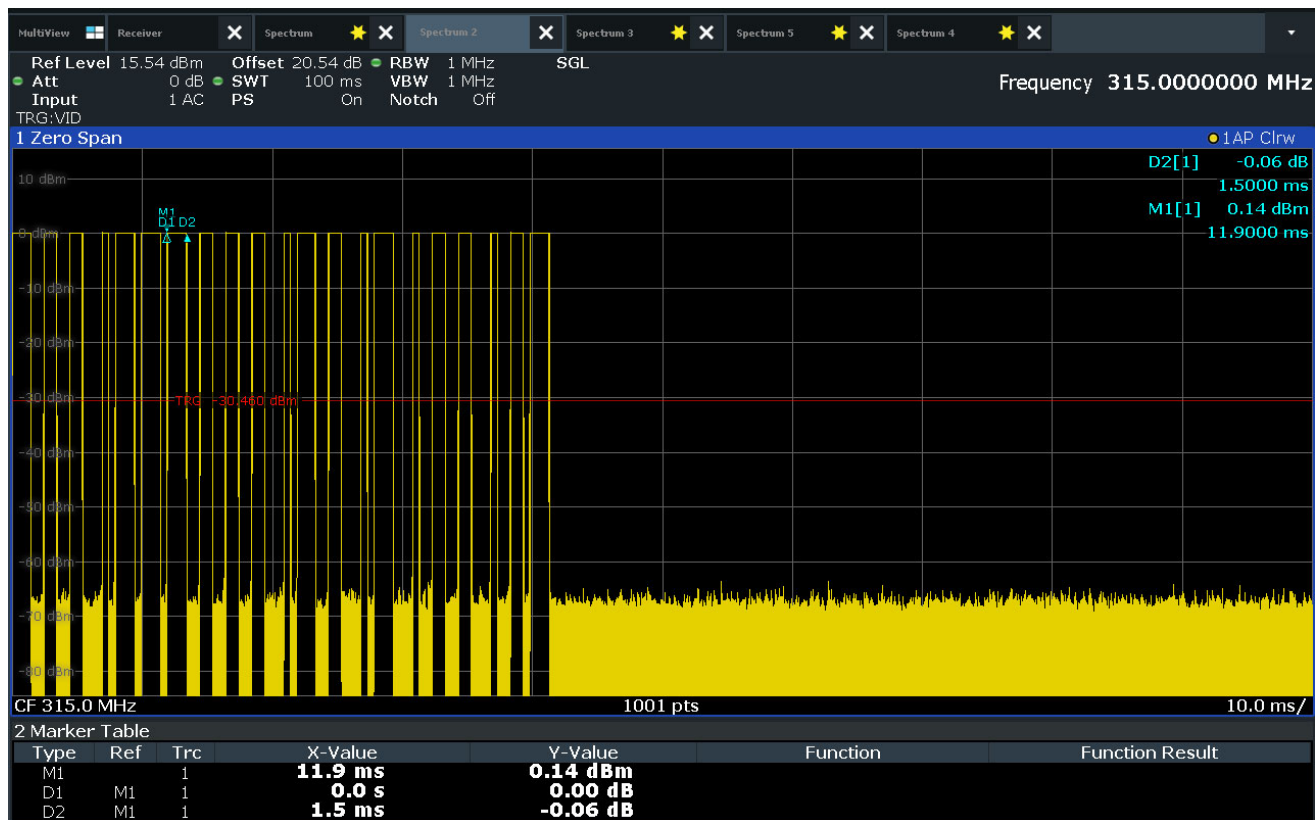
| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | D Code                      |
| Frequency Tested | 315MHz                      |
| Result           | Pulse 1 = 0.5ms             |
| Notes            |                             |



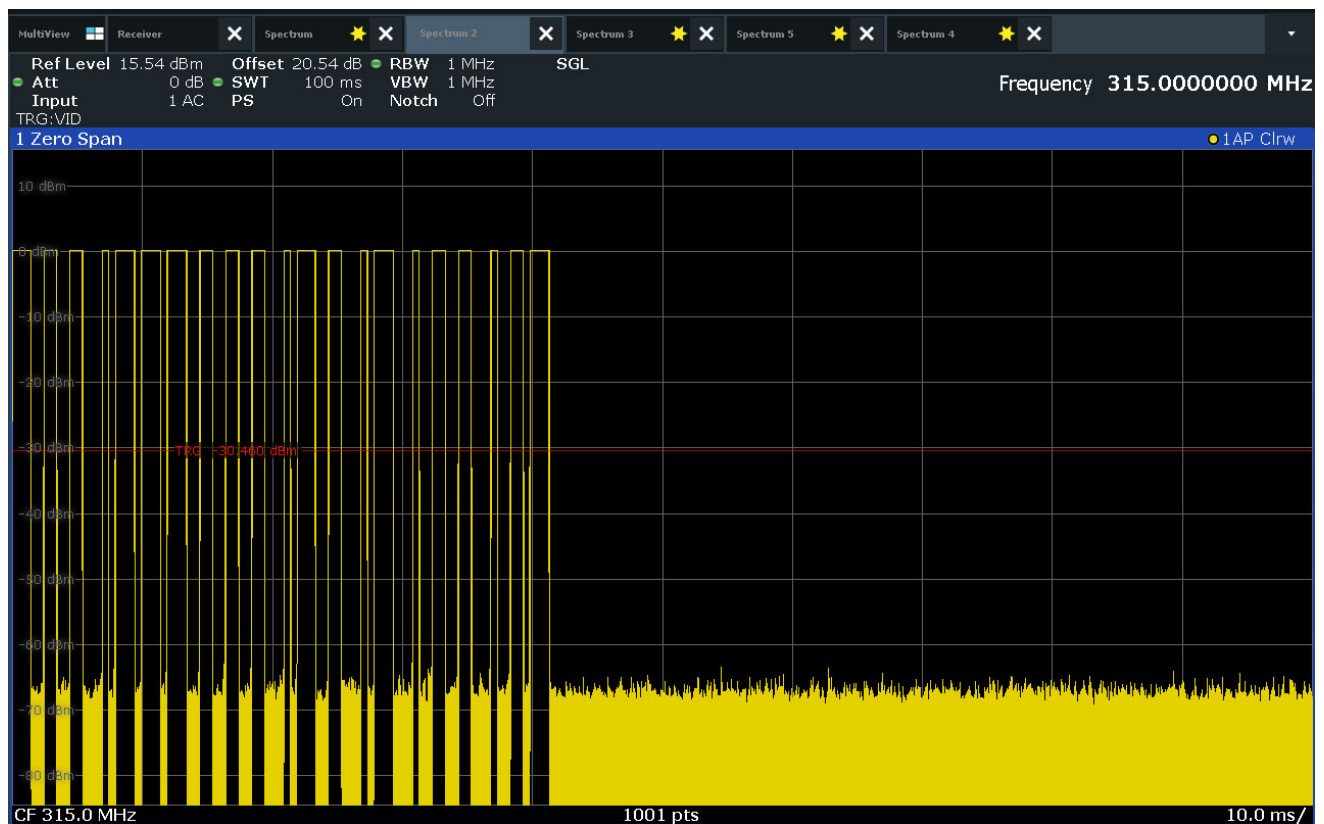
| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | D Code                      |
| Frequency Tested | 315MHz                      |
| Result           | Pulse 2 = 1.0ms             |
| Notes            |                             |



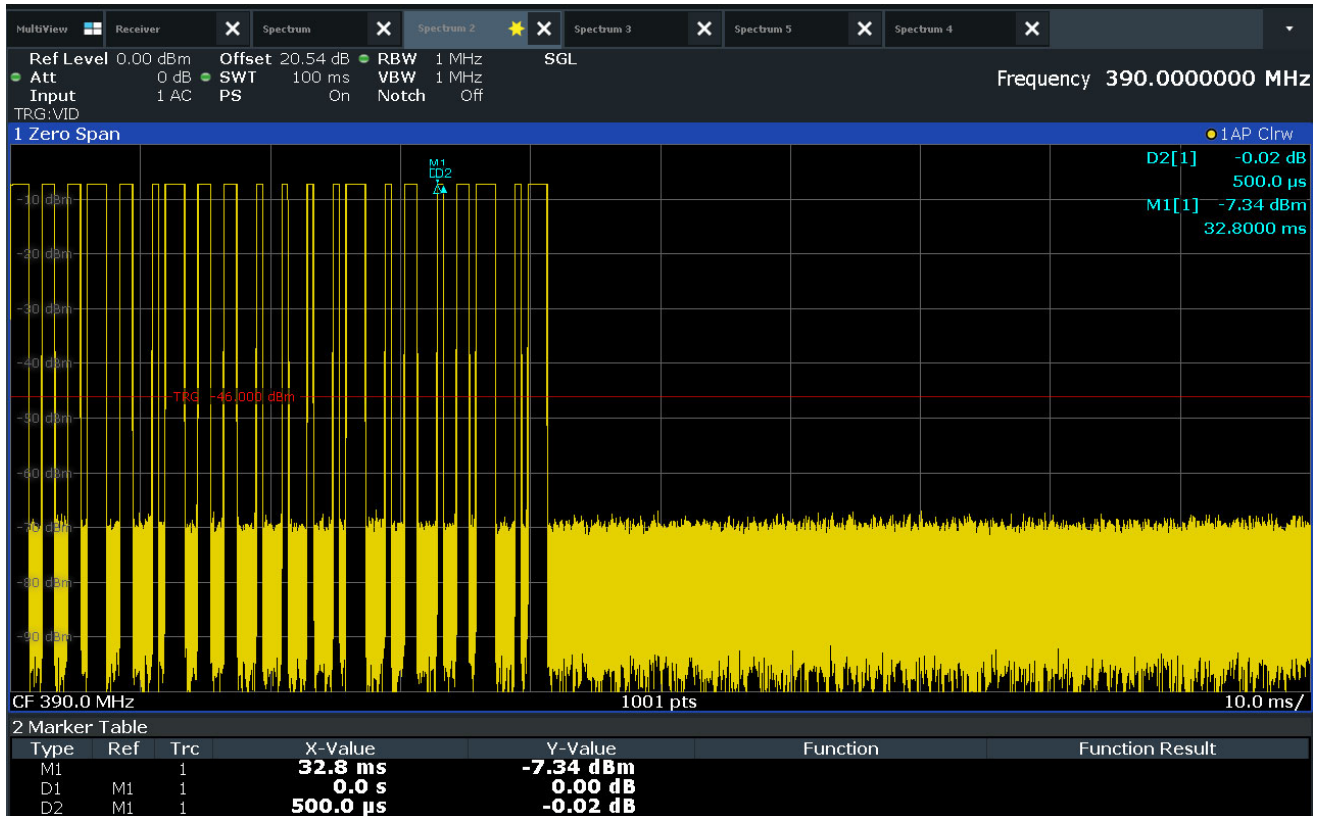
| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | D Code                      |
| Frequency Tested | 315MHz                      |
| Result           | Pulse 3 = 1.5ms             |
| Notes            |                             |



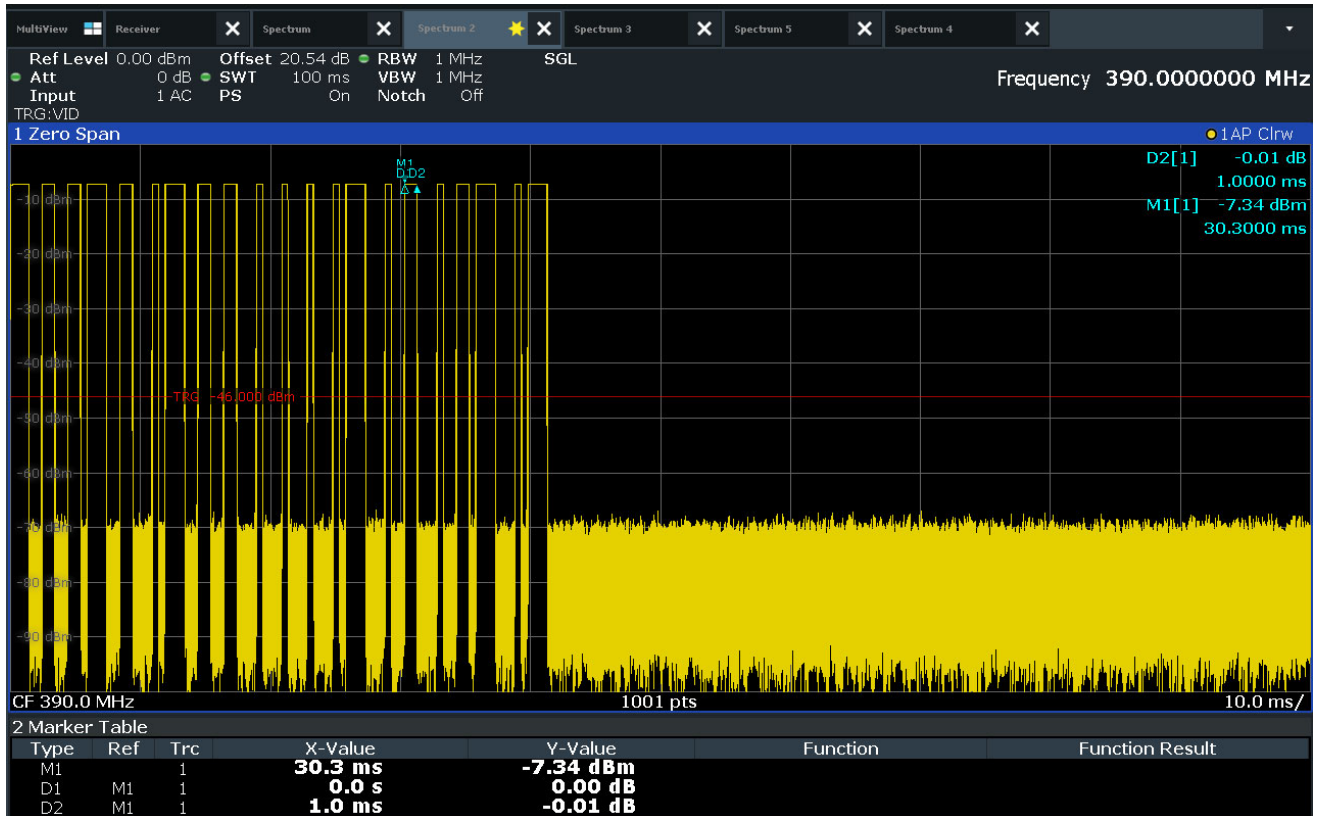
| Test Details     |                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer     | The Chamberlain Group LLC                                                                                                                                                                                                                                                                                                                                                                         |
| EUT              | Keychain Remote                                                                                                                                                                                                                                                                                                                                                                                   |
| Model No.        | 900-16328-1/014D16328 Rev C                                                                                                                                                                                                                                                                                                                                                                       |
| Serial No.       | Sample K3                                                                                                                                                                                                                                                                                                                                                                                         |
| Mode             | D Code                                                                                                                                                                                                                                                                                                                                                                                            |
| Frequency Tested | 315MHz                                                                                                                                                                                                                                                                                                                                                                                            |
| Result           | Duty Cycle = -13.19dB                                                                                                                                                                                                                                                                                                                                                                             |
| Notes            | Duty Cycle Factor Calculation:<br>$5 \times 0.5\text{ms} = 5.0\text{ms}$<br>$9 \times 1.0\text{ms} = 9.0\text{ms}$<br>$6 \times 1.5\text{ms} = 9.0\text{ms}$<br>$1 \times 1.4\text{ms} = 1.4\text{ms}$<br>$5.0\text{ms} + 9.0\text{ms} + 9.0\text{ms} + 1.4\text{ms} = 21.9\text{ms}$<br>$\text{Duty Cycle Factor} = 20 \log \left( \frac{21.9\text{ms}}{100\text{ms}} \right) = -13.19\text{dB}$ |



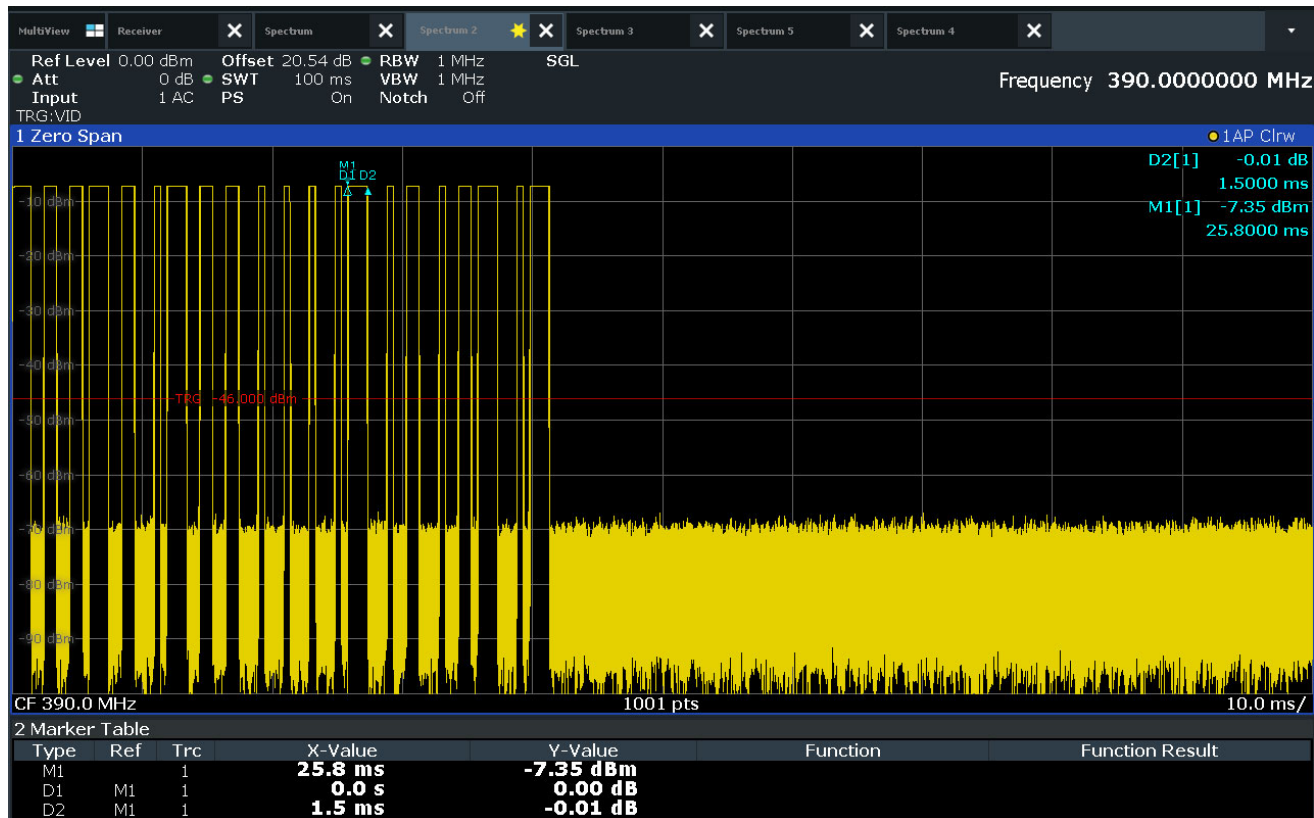
| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | D Code                      |
| Frequency Tested | 390MHz                      |
| Result           | Pulse 1 = 0.5ms             |
| Notes            |                             |



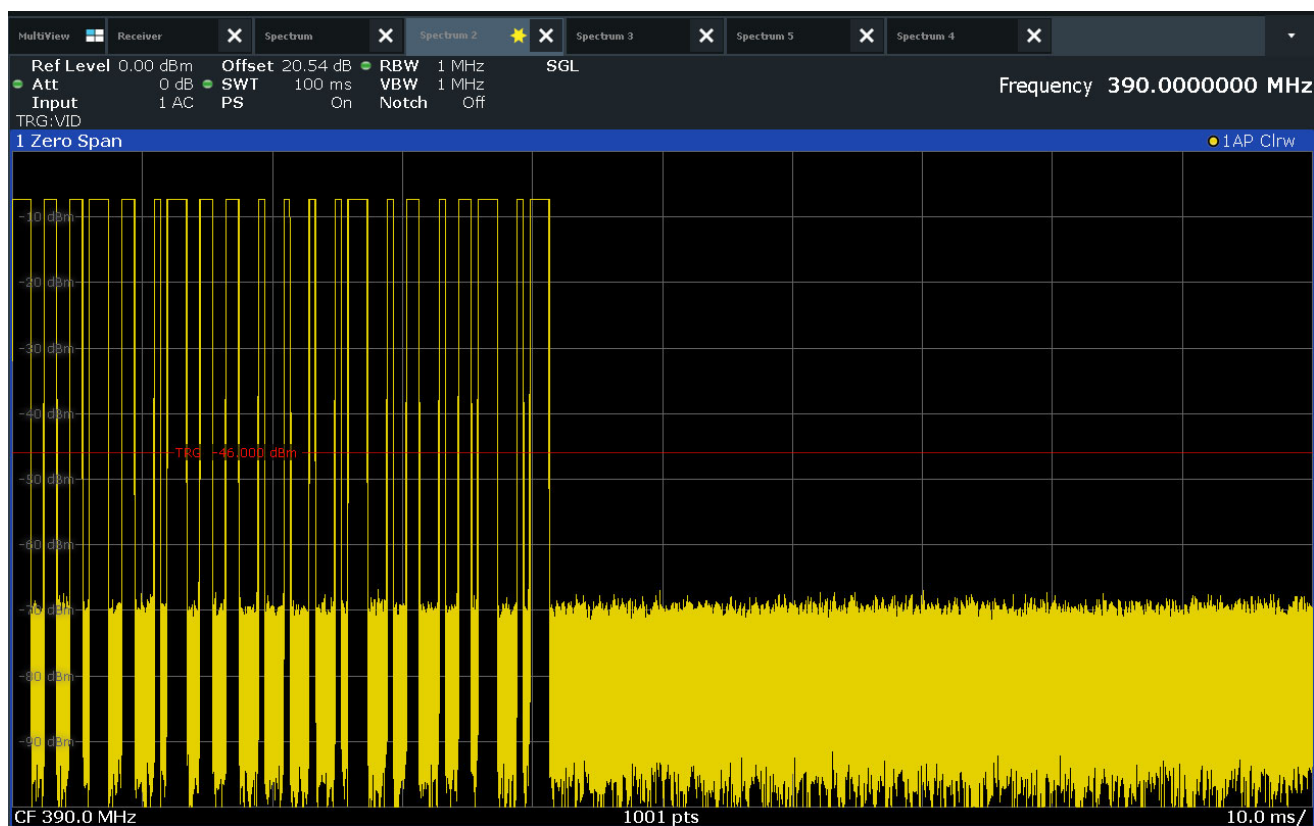
| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | D Code                      |
| Frequency Tested | 390MHz                      |
| Result           | Pulse 2 = 1.0ms             |
| Notes            |                             |



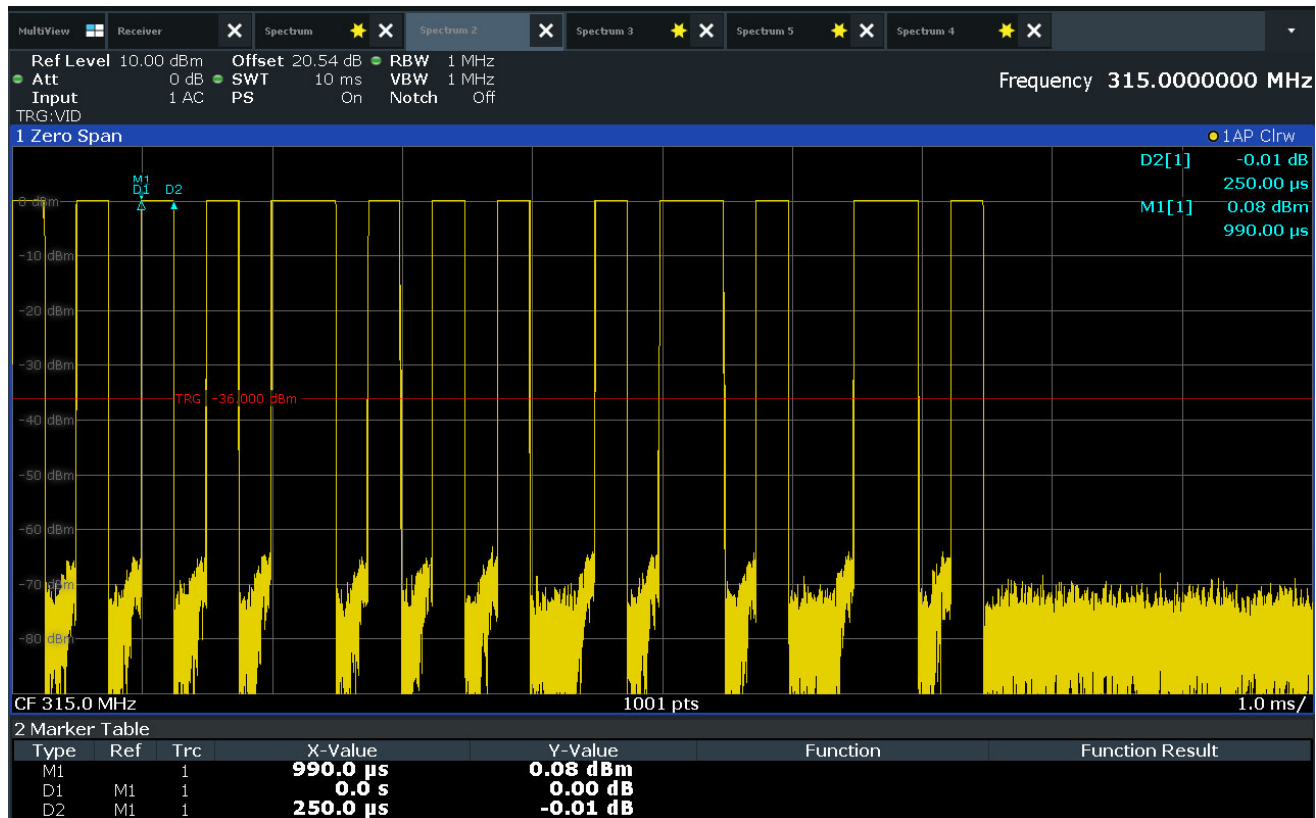
| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | D Code                      |
| Frequency Tested | 390MHz                      |
| Result           | Pulse 3 = 1.5ms             |
| Notes            |                             |



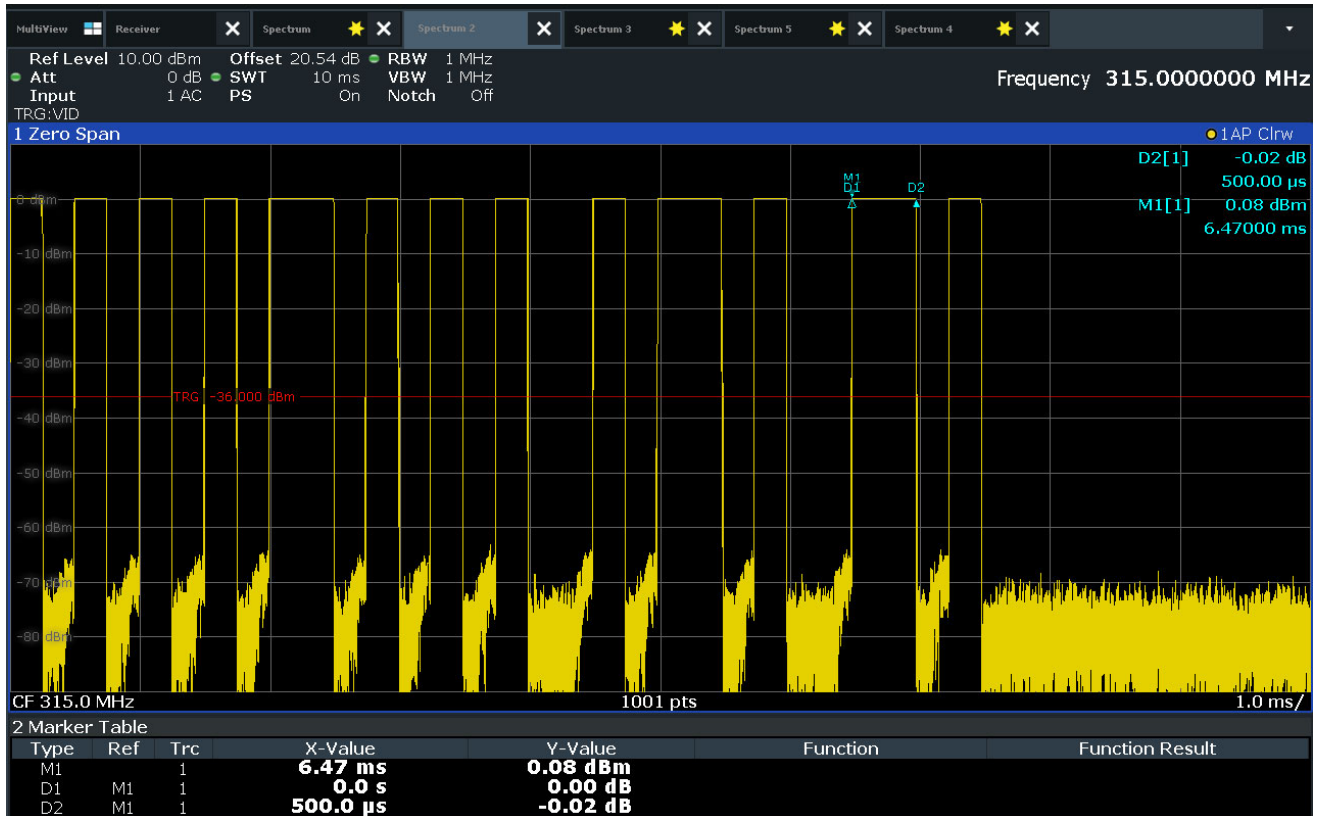
| Test Details     |                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer     | The Chamberlain Group LLC                                                                                                                                                                                                                                                                                                                                                                         |
| EUT              | Keychain Remote                                                                                                                                                                                                                                                                                                                                                                                   |
| Model No.        | 900-16328-1/014D16328 Rev C                                                                                                                                                                                                                                                                                                                                                                       |
| Serial No.       | Sample K3                                                                                                                                                                                                                                                                                                                                                                                         |
| Mode             | D Code                                                                                                                                                                                                                                                                                                                                                                                            |
| Frequency Tested | 390MHz                                                                                                                                                                                                                                                                                                                                                                                            |
| Result           | Duty Cycle = -14.02dB                                                                                                                                                                                                                                                                                                                                                                             |
| Notes            | Duty Cycle Factor Calculation:<br>$8 \times 0.5\text{ms} = 4.0\text{ms}$<br>$7 \times 1.0\text{ms} = 7.0\text{ms}$<br>$5 \times 1.5\text{ms} = 7.5\text{ms}$<br>$1 \times 1.4\text{ms} = 1.4\text{ms}$<br>$4.0\text{ms} + 7.0\text{ms} + 7.5\text{ms} + 1.4\text{ms} = 19.9\text{ms}$<br>$\text{Duty Cycle Factor} = 20 \log \left( \frac{19.9\text{ms}}{100\text{ms}} \right) = -14.02\text{dB}$ |



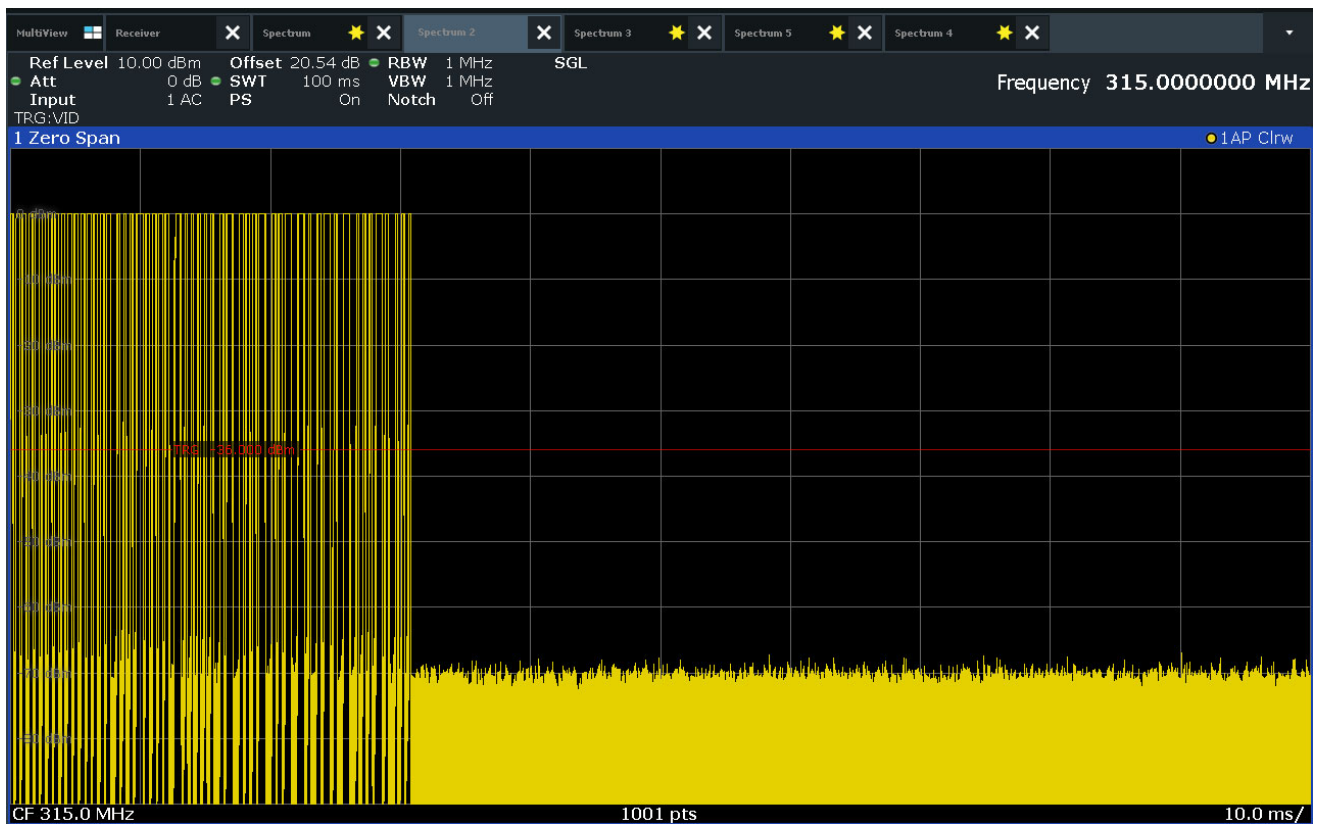
| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | E Code                      |
| Frequency Tested | 315MHz                      |
| Result           | Pulse 1 = 0.25ms            |
| Notes            |                             |



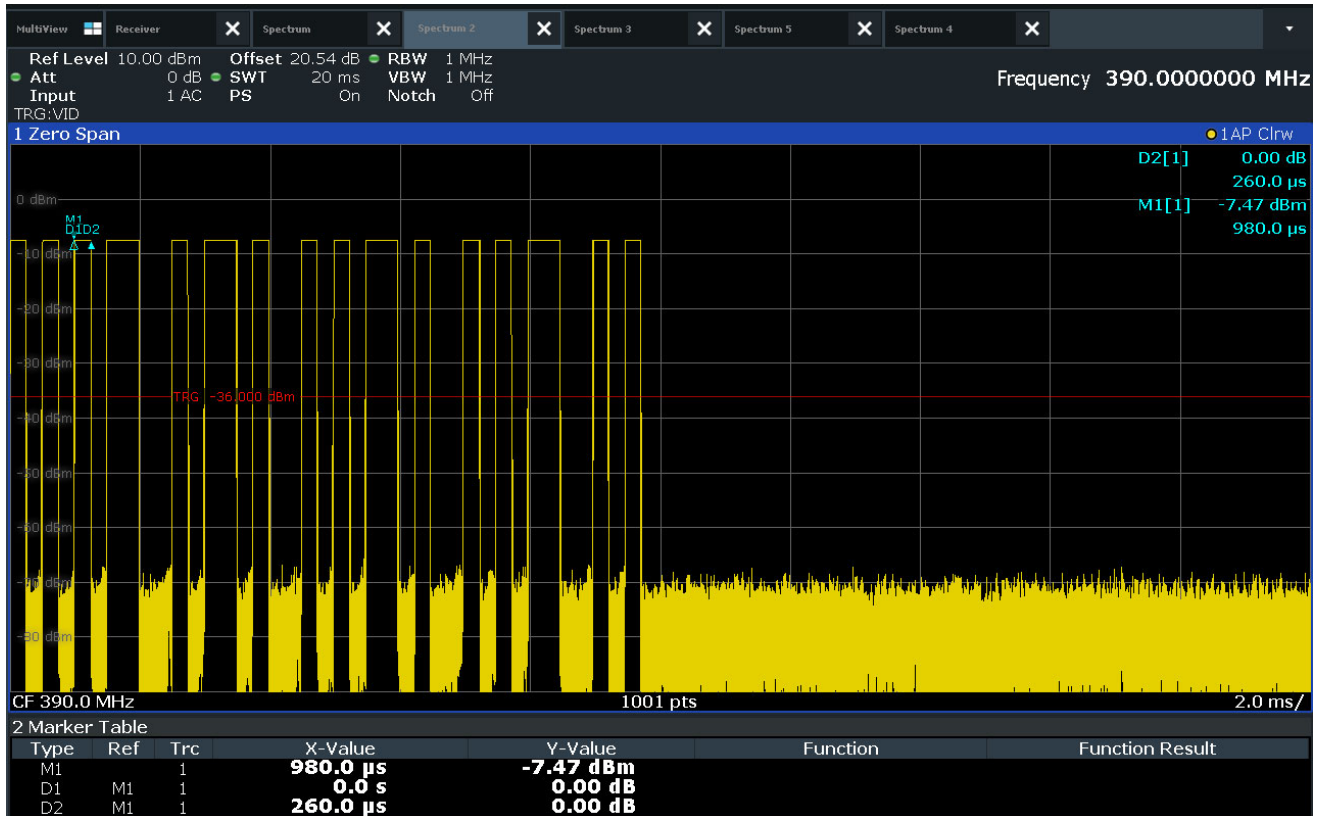
| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | E Code                      |
| Frequency Tested | 315MHz                      |
| Result           | Pulse 2 = 0.5ms             |
| Notes            |                             |



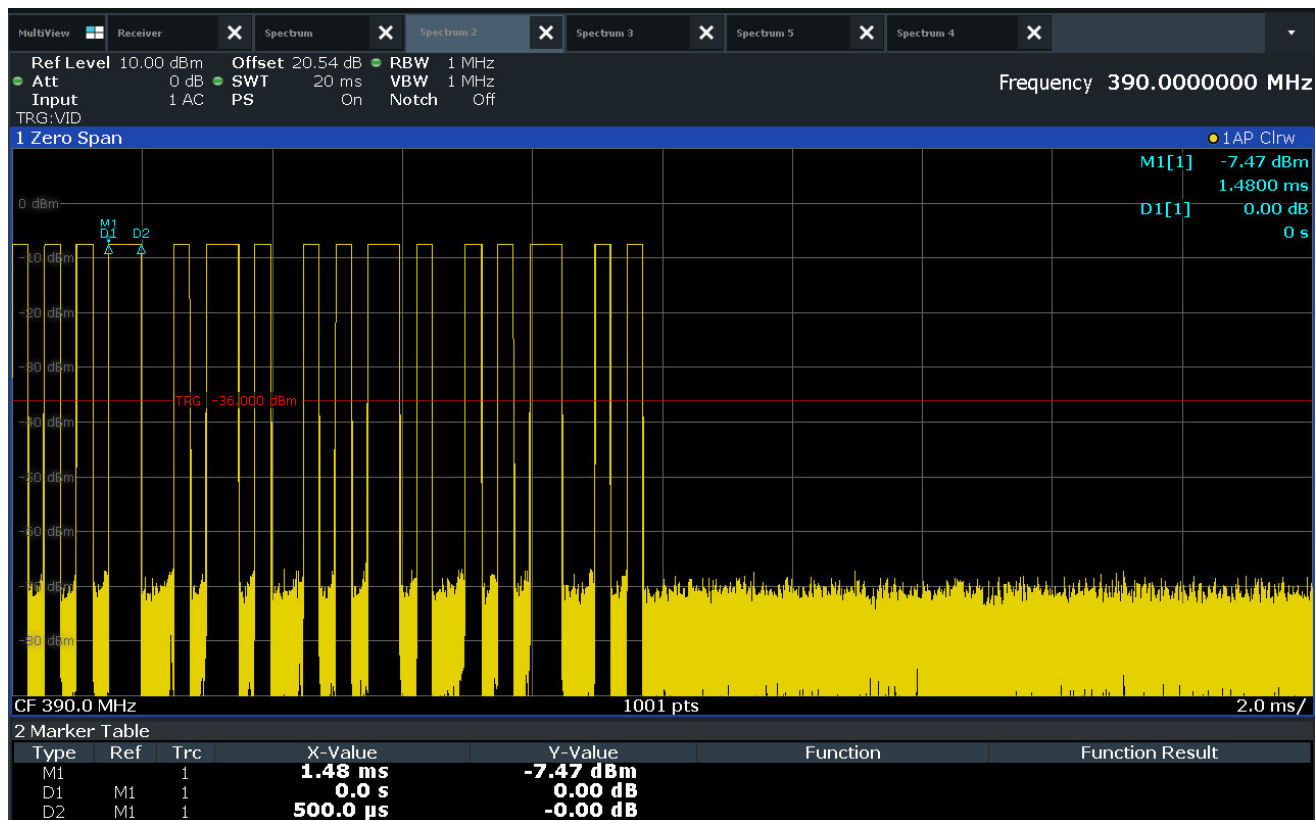
| Test Details     |                                                                                                                                                                                                                                                                             |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer     | The Chamberlain Group LLC                                                                                                                                                                                                                                                   |
| EUT              | Keychain Remote                                                                                                                                                                                                                                                             |
| Model No.        | 900-16328-1/014D16328 Rev C                                                                                                                                                                                                                                                 |
| Serial No.       | Sample K3                                                                                                                                                                                                                                                                   |
| Mode             | E Code                                                                                                                                                                                                                                                                      |
| Frequency Tested | 315MHz                                                                                                                                                                                                                                                                      |
| Result           | Duty Cycle = -16.19dB                                                                                                                                                                                                                                                       |
| Notes            | Duty Cycle Factor Calculation:<br>$38 \times 0.25\text{ms} = 9.5\text{ms}$<br>$12 \times 0.5\text{ms} = 6.0\text{ms}$<br>$9.5\text{ms} + 6.0\text{ms} = 15.5\text{ms}$<br>Duty Cycle Factor = $20 \log \left( \frac{15.5\text{ms}}{100\text{ms}} \right) = -16.19\text{dB}$ |



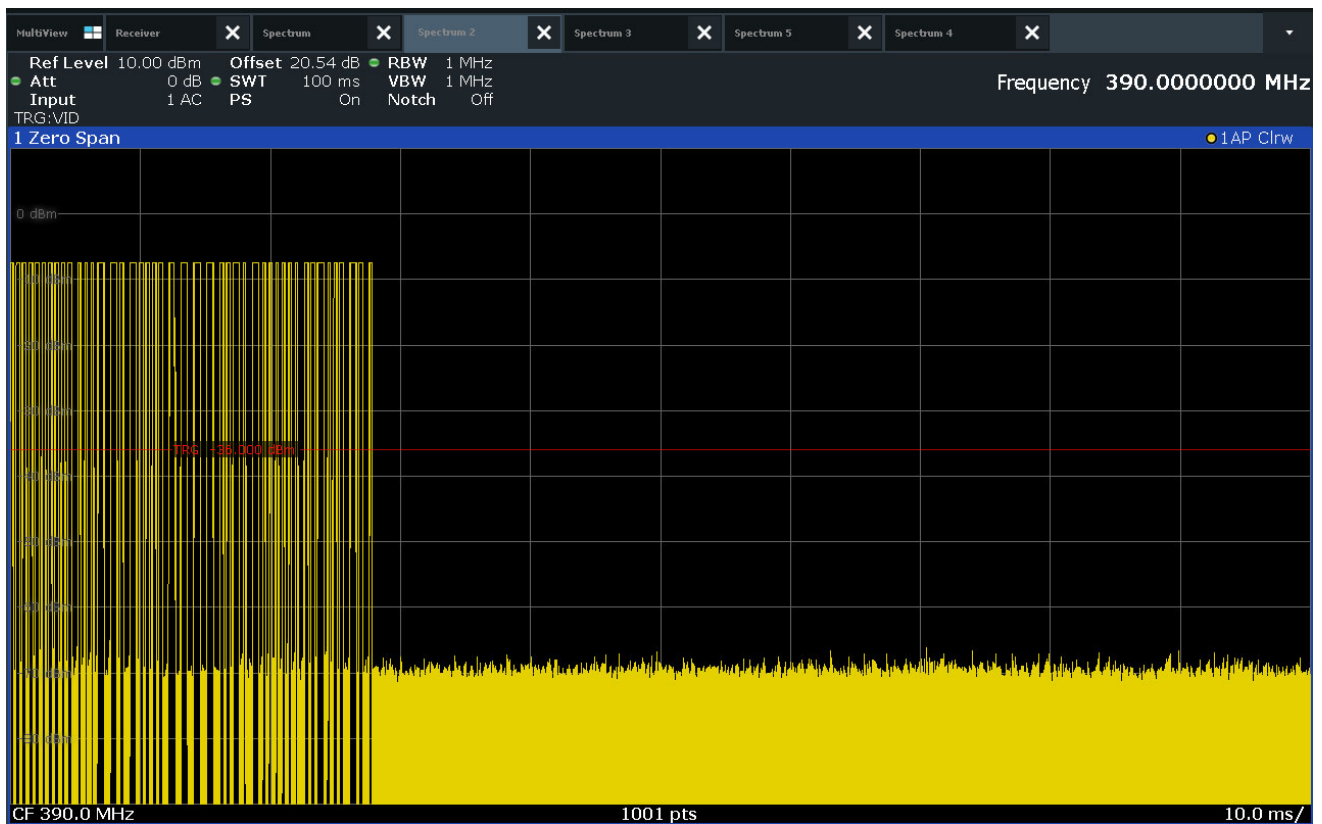
| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | E Code                      |
| Frequency Tested | 390MHz                      |
| Result           | Pulse 1 = 0.26ms            |
| Notes            |                             |



| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | E Code                      |
| Frequency Tested | 390MHz                      |
| Result           | Pulse 2 = 0.5ms             |
| Notes            |                             |



| Test Details     |                                                                                                                                                                                                                                                                                 |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer     | The Chamberlain Group LLC                                                                                                                                                                                                                                                       |
| EUT              | Keychain Remote                                                                                                                                                                                                                                                                 |
| Model No.        | 900-16328-1/014D16328 Rev C                                                                                                                                                                                                                                                     |
| Serial No.       | Sample K3                                                                                                                                                                                                                                                                       |
| Mode             | E Code                                                                                                                                                                                                                                                                          |
| Frequency Tested | 390MHz                                                                                                                                                                                                                                                                          |
| Result           | Duty Cycle = -15.98dB                                                                                                                                                                                                                                                           |
| Notes            | Duty Cycle Factor Calculation:<br>$38 \times 0.26\text{ms} = 9.88\text{ms}$<br>$12 \times 0.5\text{ms} = 6.0\text{ms}$<br>$9.88\text{ms} + 6.0\text{ms} = 15.88\text{ms}$<br>Duty Cycle Factor = $20 \log \left( \frac{15.88\text{ms}}{100\text{ms}} \right) = -15.98\text{dB}$ |



## 22. Occupied Bandwidth – 20dB

| EUT Information |                             |
|-----------------|-----------------------------|
| Manufacturer    | The Chamberlain Group LLC   |
| Product         | Keychain Remote             |
| Model No.       | 900-16328-1/014D16328 Rev C |
| Serial No.      | Sample K6, Sample K7        |
| Mode            | D Code, E Code              |

| Test Setup Details |                   |
|--------------------|-------------------|
| Setup Format       | Tabletop          |
| Measurement Method | Antenna Conducted |
| Type of Test Site  | Tabletop          |
| Test Site Used     | N/A               |
| Notes              |                   |

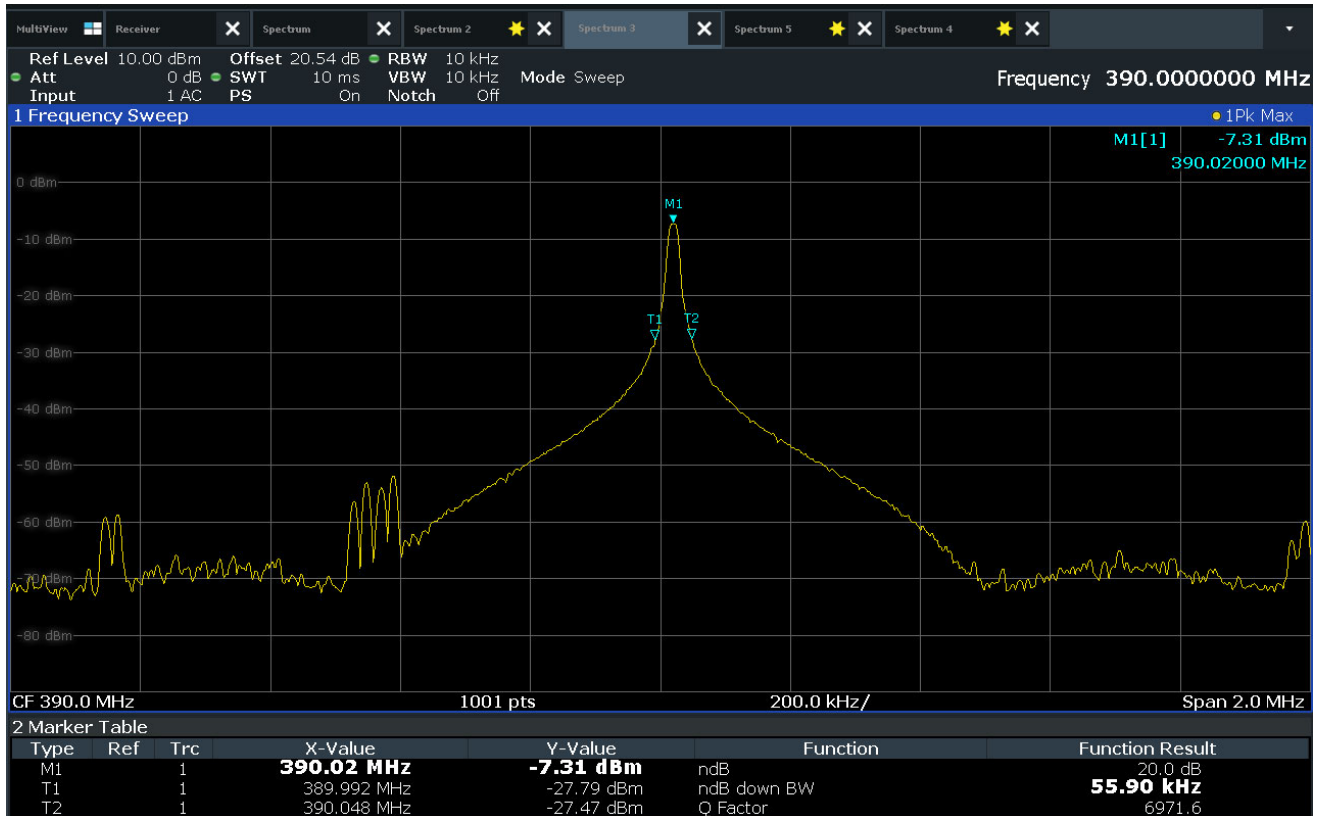
| Requirement                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Per FCC 15.231(c), the bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70MHz and below 900MHz. For devices operating above 900MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20dB down from the modulated carrier. |

| Procedure                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"><li>1) The EUT was set to transmit continuously.</li><li>2) With an antenna positioned nearby, occupied bandwidth emissions were displayed on the receiver.</li><li>3) The resolution bandwidth was set to 10kHz and span was set to 2MHz.</li><li>4) A screen capture was taken of the frequency spectrum near the carrier using a screen dump function on the receiver.</li></ol> |

| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | D Code                      |
| Frequency Tested | 315MHz                      |
| Result           | 20dB BW = 53.9kHz           |
| Notes            |                             |



| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | D Code                      |
| Frequency Tested | 390MHz                      |
| Result           | 20dB BW = 55.9kHz           |
| Notes            |                             |



| Test Details     |                             |
|------------------|-----------------------------|
| Manufacturer     | The Chamberlain Group LLC   |
| EUT              | Keychain Remote             |
| Model No.        | 900-16328-1/014D16328 Rev C |
| Serial No.       | Sample K3                   |
| Mode             | E Code                      |
| Frequency Tested | 315MHz                      |
| Result           | 20dB BW = 53.9kHz           |
| Notes            |                             |

