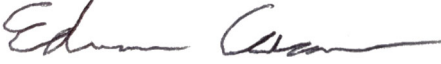
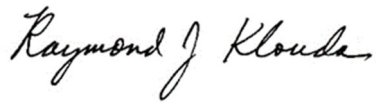




Engineering Test Report No. 2601378-02

Report Date	August 17, 2026	
Manufacturer Name	The Chamberlain Group LLC	
Manufacturer Address	300 Windsor Dr Oak Brook, IL 60523	
Equipment Under Test Model No.	myQ Learning Remote L993LT	
Date Received	August 10, 2026	
Test Dates	August 10, 2026 – August 13, 2026	
Specifications	FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.231(b) Innovation, Science, and Economic Development Canada, RSS-GEN Innovation, Science, and Economic Development Canada, RSS-210	
Test Facility	Elite Electronic Engineering, Inc. 1516 Centre Circle, Downers Grove, IL 60515	FCC Reg. Number: 269750 IC Reg. Number: 2987A CAB Identifier: US0107
Signature		
Tested by	Edwin Casas	
Signature		
Approved by	Raymond J. Klouda, Registered Professional Engineer of Illinois – 44894	
PO Number	4900108049	

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

Table of Contents

1.	Report Revision History	3
2.	Introduction	4
2.1.	Scope of Tests	4
2.2.	Purpose	4
2.3.	Identification of the EUT	4
3.	Power Input	4
4.	Grounding	4
5.	Support Equipment	4
6.	Interconnect Leads	5
7.	Modifications Made to the EUT	5
8.	Modes of Operation	5
8.1.	Tx	5
9.	Test Specifications	5
10.	Test Plan	5
11.	Deviation, Additions to, or Exclusions from Test Specifications	5
12.	Laboratory Conditions	6
13.	Summary	6
14.	Sample Calculations	6
15.	Statement of Conformity	6
16.	Certification	6
17.	Photographs of EUT	7
18.	Equipment List	9
19.	Block Diagram of Test Setup	10
20.	Periodic Operation Measurements	11
21.	Occupied Bandwidth Measurements	19
22.	Duty Cycle Factor Measurements	34
23.	Transmitter Radiated Emissions	58
24.	Scope of Accreditation	69

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1. Report Revision History

Revision	Date	Description
–	2 SEP 2026	Initial Release of Engineering Test Report No. 2601378-02

2. Introduction

2.1. Scope of Tests

This document presents the results of a series of RF emissions tests that were performed on three (3) The Chamberlain Group LLC myQ Learning 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, Part 15, Subpart C, Sections 15.231.

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 Industry Canada Radio Standards Specification RSS-210 for Transmitters.

Testing was performed in accordance with ANSI C63.10-2020+Cor. 1:2023+C63.10a:2024.

2.3. Identification of the EUT

The EUTs were identified as follows:

EUT Identification	
Equipment Under Test Description	myQ Learning Remote
Model No.	L993LT
Serial No.	E1 (Radiated Sample) E3 (Conducted Sample, application code) E4 (Conducted Sample)
Size of EUT	3.25" x 1.75" x 0.75
Software/Firmware Version	CLI Test Code v0.1.9 (E1, E4) Application Code v0.1.9_test (E3)
Device Type	Periodic Operation Transmission Device
Frequency(s) of Operation	315MHz, 390MHz
Antenna Type	Trace

The EUTs listed above were used throughout the test series.

3. Power Input

The EUTs obtain 3VDC from a coin cell battery.

4. Grounding

The EUTs were not connected to ground.

5. Support Equipment

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

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

6. Interconnect Leads

The following interconnect cables were submitted with the EUTs:

Item	Description
USB to UART Interface Cable	Connects laptop to EUT

7. Modifications Made to the EUT

No modifications were made to the EUTs during the testing.

8. Modes of Operation

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

8.1. Tx

Protocol	Frequency
D Code	315MHz
D Code	390MHz
E Code	315MHz
E Code	390MHz
DIP	315MHz
DIP	390MHz
SP2.0 EDIP	315MHz

9. Test Specifications

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

- Federal Communications Commission "Code of Federal Regulations", Title 47, Chapter I, Subchapter A, Part 15, Subpart C, Section 15.247
- 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 40GHz
- ANSI C63.10-2020+Cor. 1:2023+C63.10a:2024, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
- RSS-Gen Issue 5, February 2021, Amendment 2, Innovation, Science, and Economic Development Canada, "General Requirements for Compliance of Radio Apparatus"
- RSS-210 Issue 11, June 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 C63.10-2020+Cor. 1:2023+C63.10a:2024 specifications.

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

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

12. Laboratory Conditions

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

Ambient Parameters	Value
Temperature	23.1°C
Relative Humidity	44%
Atmospheric Pressure	1014mb.

13. Summary

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

Test Description	Requirements	Test Method	S/N	Results
Periodic Operation Measurements	FCC 15.231 ISED RSS-210	ANSI C63.10:2020 +Cor.1+C63.10a	E3	Conforms
Occupied Bandwidth	FCC 15.231 ISED RSS-210	ANSI C63.10:2020 +Cor.1+C63.10a	E4	Conforms
Duty Cycle Factor Measurements	FCC 15.231 ISED RSS-210	ANSI C63.10:2020 +Cor.1+C63.10a	E1	—
Transmitter Radiated Emissions	FCC 15.231 ISED RSS-210	ANSI C63.10:2020 +Cor.1+C63.10a	E1	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 μ V/m term to μ V/m, the dB μ V/m is first divided by 20. The Base 10 AntiLog is taken of this quotient. The result is the Field Strength value in μ 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 myQ Learning Remote, Model No. L993LT, 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.

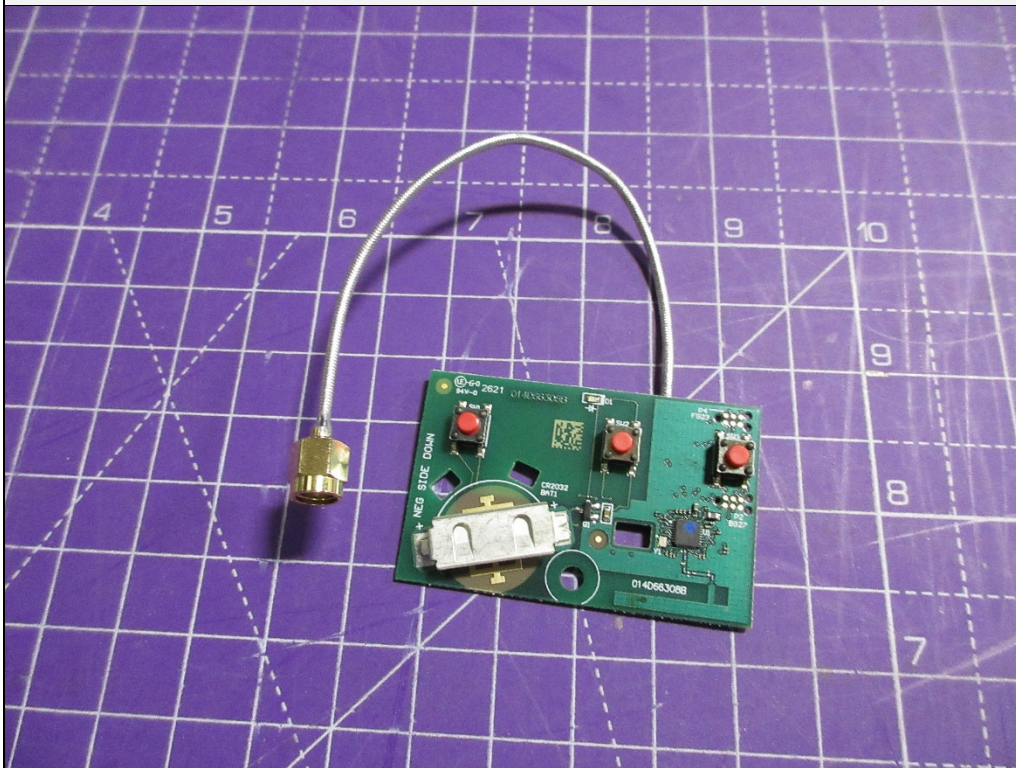
16. Certification

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 as received by the customer on the test date specified. Any electrical or mechanical modifications made to the EUTs subsequent to the specified test date will serve to invalidate the data and void this certification.

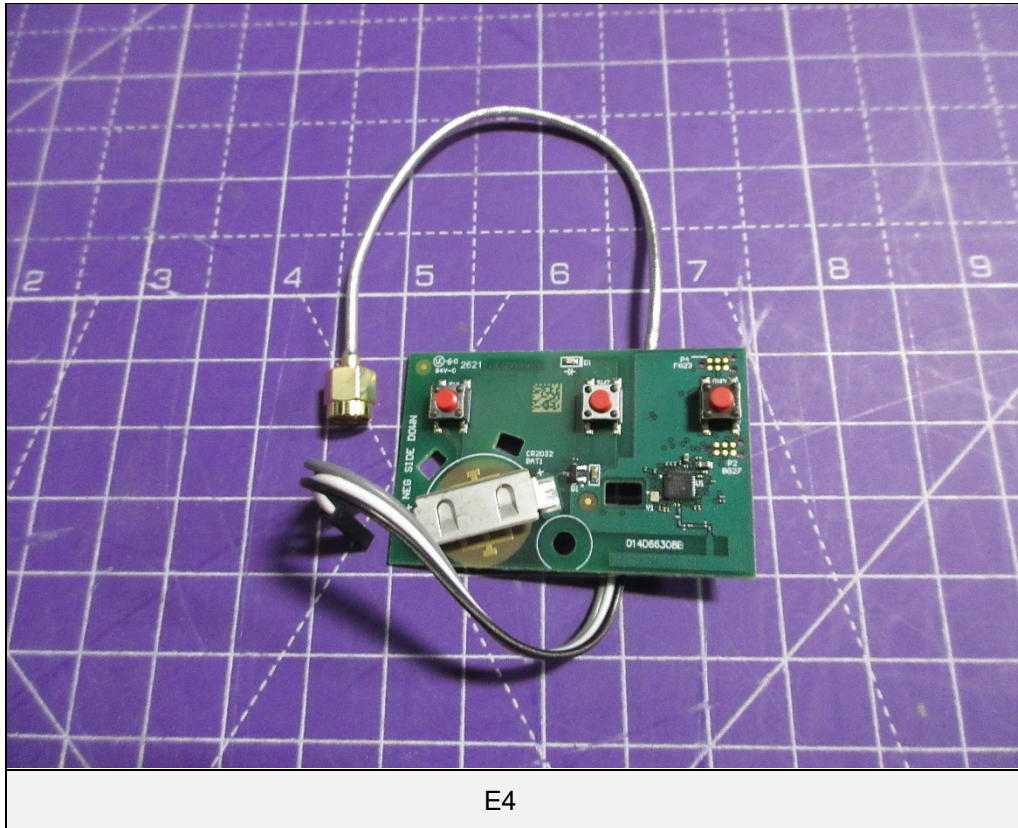
17. Photographs of EUT



E1



E3



18. Equipment List

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW3	Preamplifier	Planar	PE2-35-120-5R0-10-12	PL2924	1-18GHz	3/17/2026	3/17/2027
GSFB	OSP-B157W BASE UNIT	ROHDE & SCHWARZ	OSP-B157W	101071	---	9/2/2025	9/2/2027
GSFE	OSP120	ROHDE & SCHWARZ	OSP120	102278	.01-40GHZ	7/22/2025	7/22/2027
NSDS1	UNIVERSAL SPHERICAL DIPOLE SOURCE	AET	USDS-H	AET-1116		NOTE 1	
NTA3	BILOG ANTENNA	TESEQ	6112D	32853	25-2000MHz	10/3/2024	10/3/2026
NWQ2	Double Ridged Waveguide (3M)	ETS-Lindgren	3117	66659	1-18GHz	4/16/2026	4/16/2028
RBG3	EMI Analyzer	Rohde & Schwarz	ESW44	101592	2HZ-44GHZ	4/10/2026	4/10/2027
RBG4	EMI Analyzer	Rohde & Schwarz	ESW44	103007	2HZ-44GHZ	3/17/2026	3/17/2027
T2DS	Attenuator	WEINSCHL	46-20-34	BS0916	DC-18GHz, 20dB, 25W	12/17/2025	12/17/2027
T2S1	20DB 25W ATTENUATOR	WEINSCHL	46-20-34	BU8140	DC-18GHZ	2/4/2025	2/4/2027
XPQ7	HIGH PASS FILTER	K&L MICROWAVE	4IH30-1804/T10000-0	5	1.8-10GHZ	2/4/2025	2/4/2027

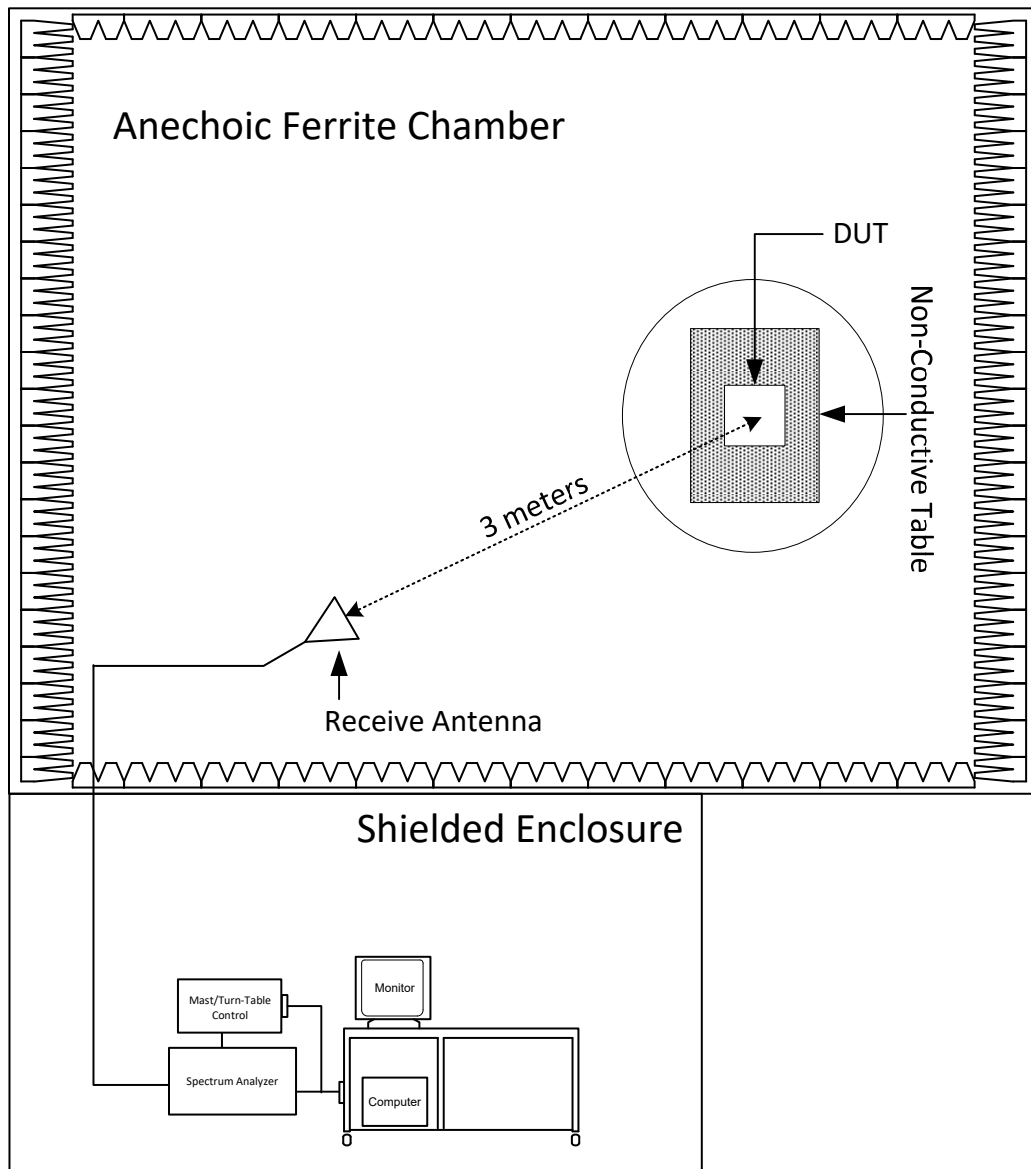
N/A: Not Applicable

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 Measurements

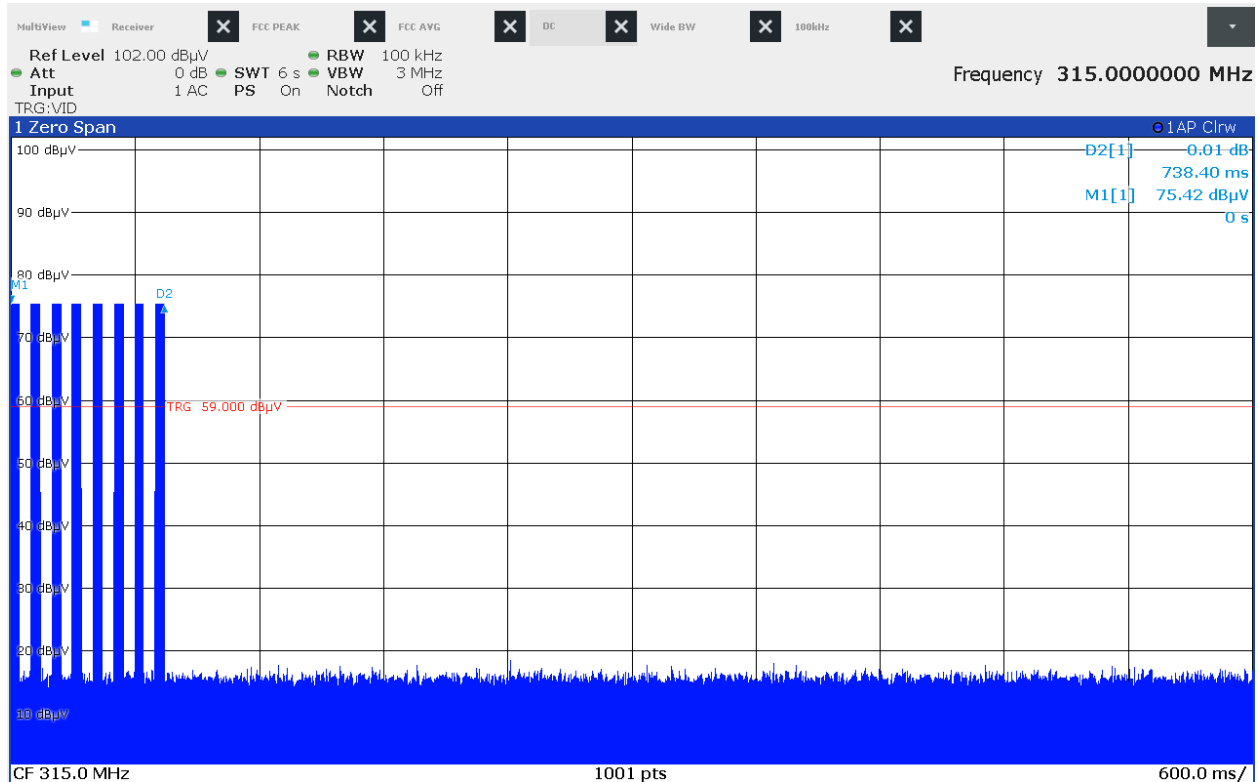
EUT Information	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E3
Mode	Tx

Test Setup Details	
Setup Format	Tabletop
Height of Support	NA
Measurement Method	Antenna Port Conducted
Type of Test Site	Elite Test Bench
Test Site Used	NA
Type of Antennas Used	NA
Notes	None

Requirements
<p>A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released. A transmitter activated automatically shall cease transmission within 5 seconds after activation. Transmission of set-up information for security systems may exceed said transmission duration limits, provided such transmissions are under the control of a professional installer and do not exceed ten seconds after a manually operated switch is released or a transmitter is activated automatically. Such set-up information may include data.</p> <p>Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour.</p> <p>Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition.</p>

Procedure
<p>The antenna port of the EUT was connected to a spectrum analyzer through 40dB of attenuation. The EUT was allowed to transmit normally.</p> <p>The spectrum analyzer was set up to display the time domain trace. The spectrum analyzer was used to record the amount of time that the EUT remained active following activation. The 'Max-Hold' function was engaged. The analyzer's display was then screenshot and saved.</p>

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E3
Mode	Tx
Frequency Tested	315MHz
Result	Operation Time After Activation = 738.4msec
Notes	D

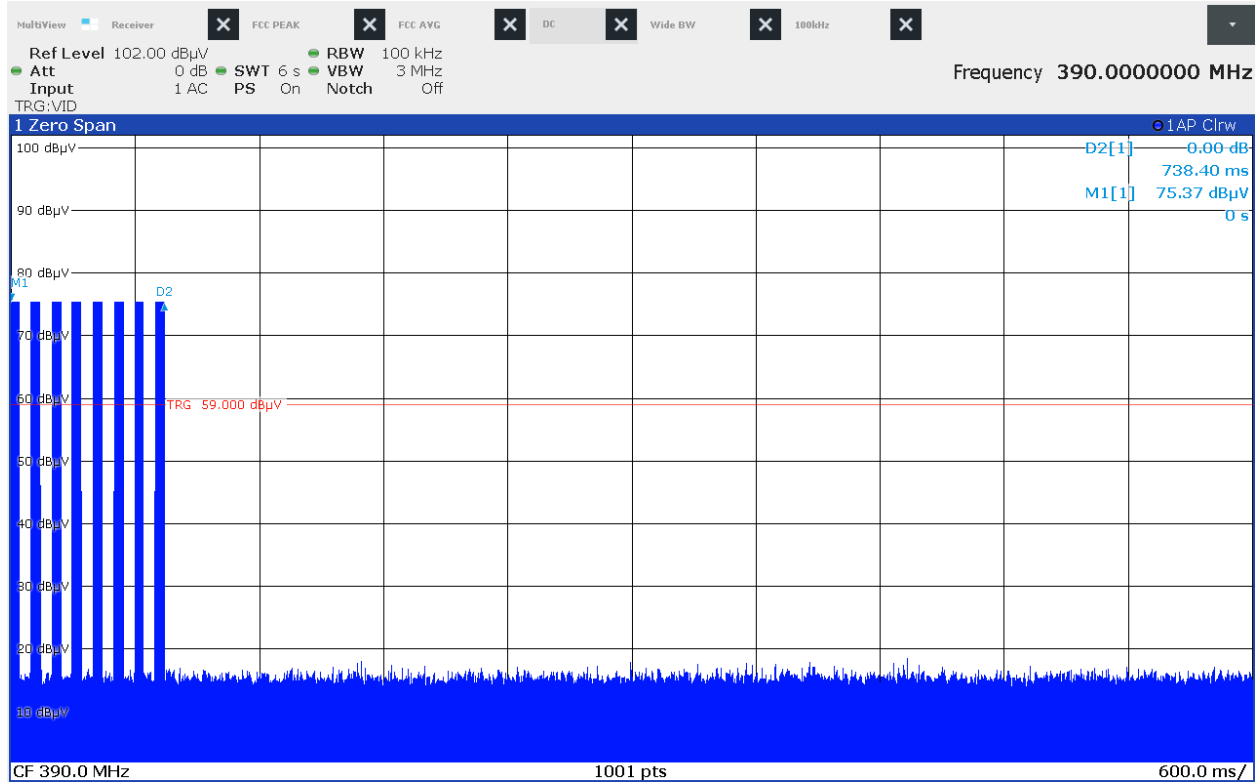


Periodic Operation Measurements

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E3
 Mode : D Code 315MHz
 Parameters : Operation Time After Activation
 Date : 8/13/2026 9:28:57 AM
 Notes :

TRACE1 : Normal Peak (dBμV) Trace

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E3
Mode	Tx
Frequency Tested	390MHz
Result	Operation Time After Activation = 738.4msec
Notes	D

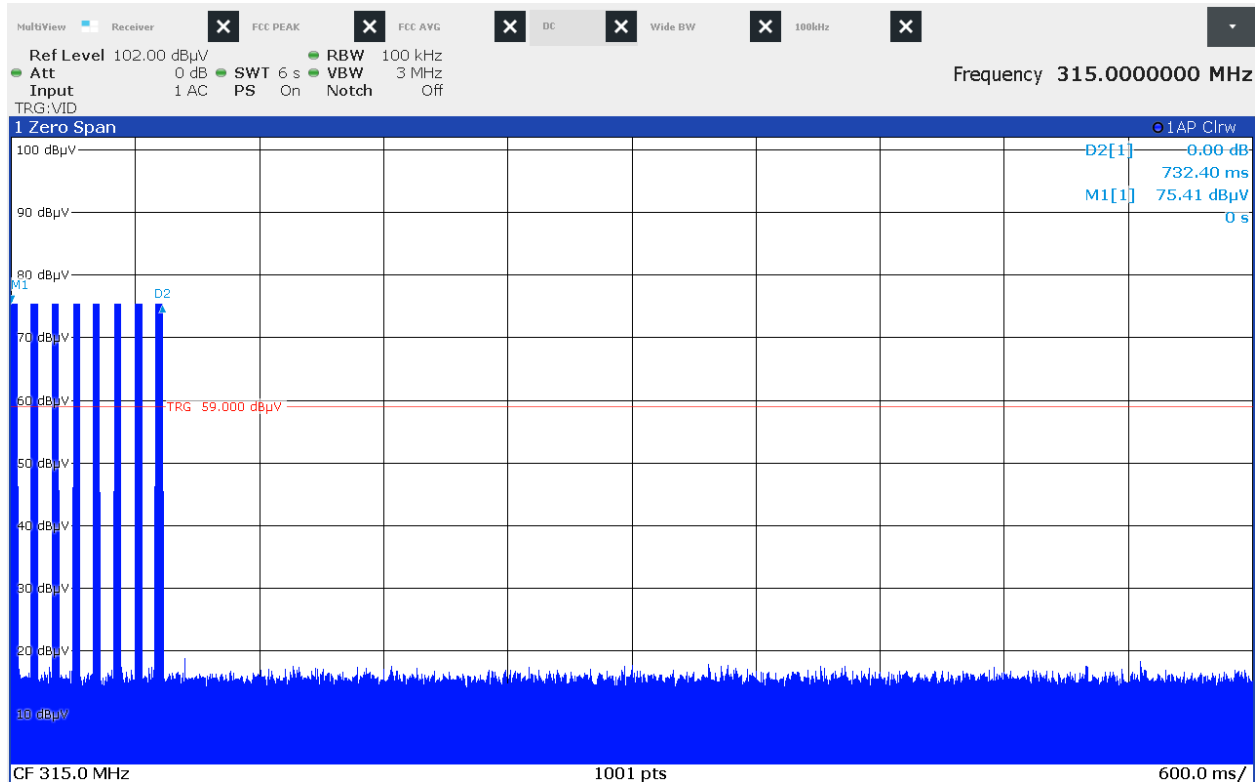


Periodic Operation Measurements

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E3
 Mode : D Code 390MHz
 Parameters : Operation Time After Activation
 Date : 8/13/2026 9:30:01 AM
 Notes :

TRACE1 : Normal Peak (dBμV) Trace

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E3
Mode	Tx
Frequency Tested	315MHz
Result	Operation Time After Activation = 732.4msec
Notes	E

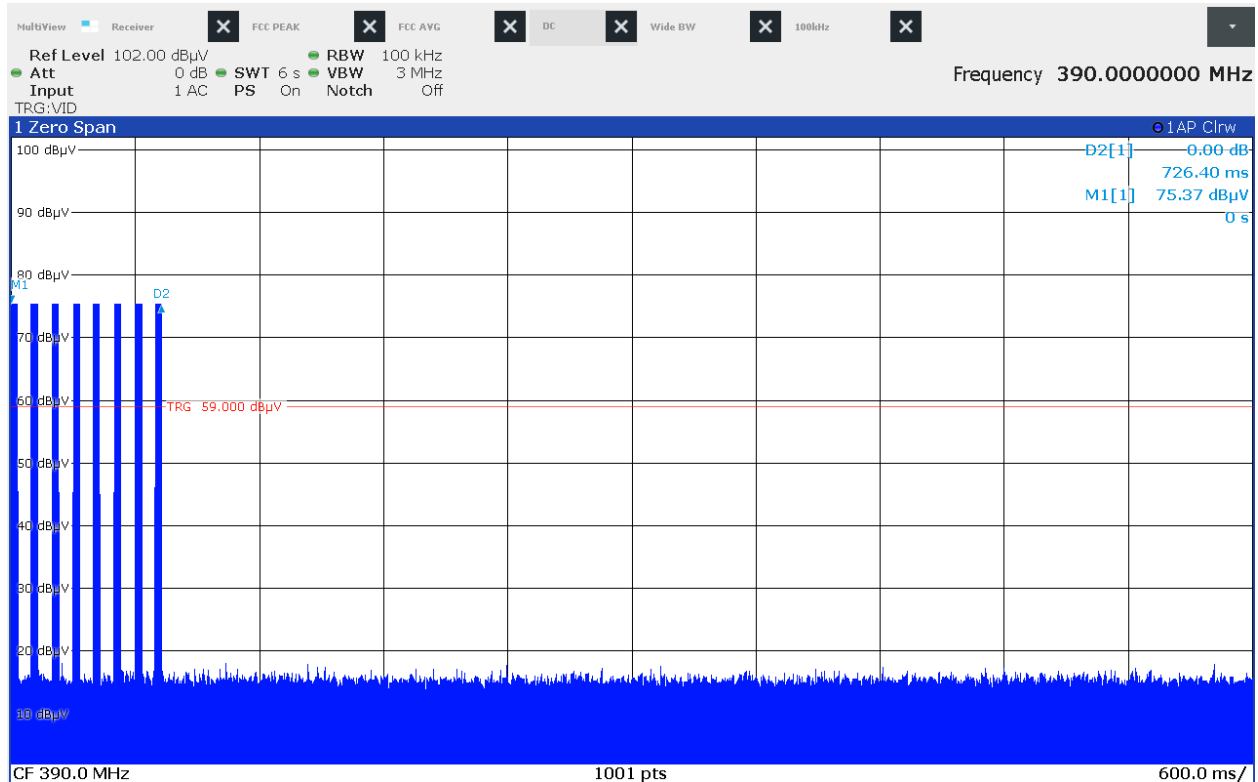


Periodic Operation Measurements

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E3
Mode : E Code 315MHz
Parameters : Operation Time After Activation
Date : 8/13/2026 9:24:24 AM
Notes :

TRACE1 : Normal Peak (dBμV) Trace

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E3
Mode	Tx
Frequency Tested	390MHz
Result	Operation Time After Activation = 726.4msec
Notes	E

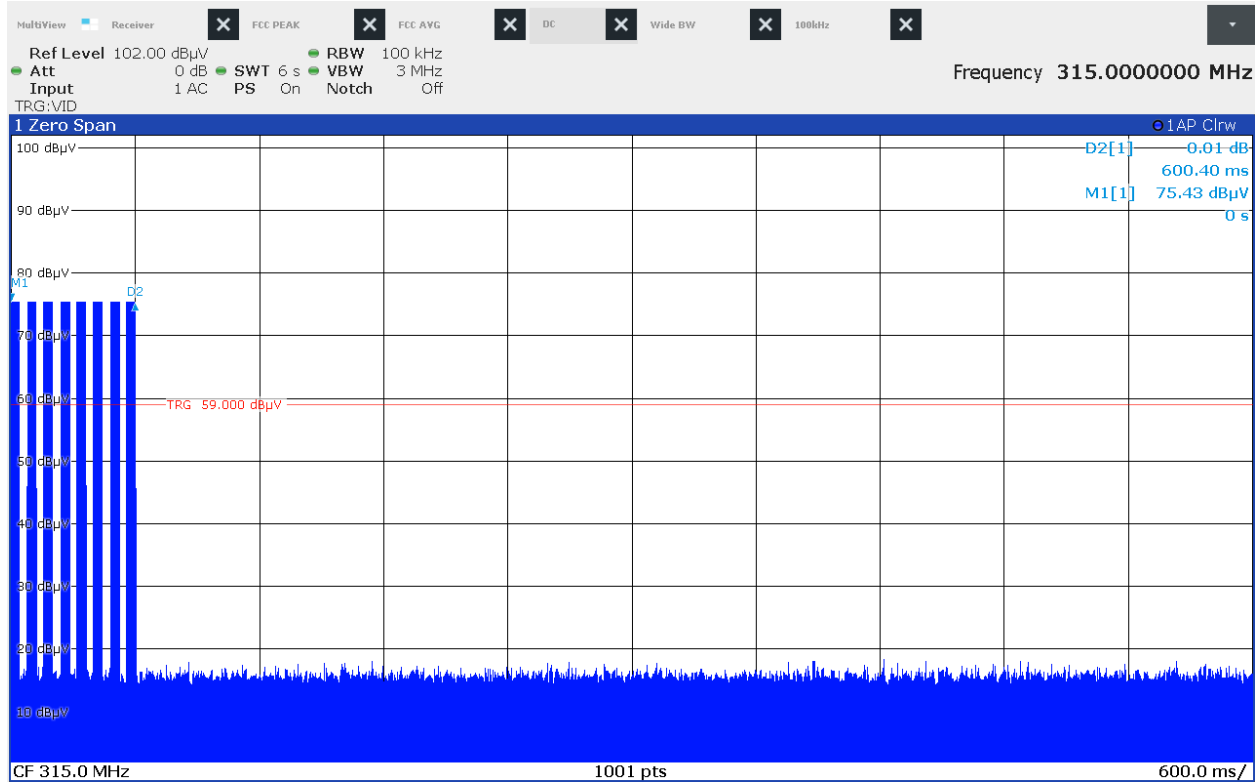


Periodic Operation Measurements

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E3
Mode : E Code 390MHz
Parameters : Operation Time After Activation
Date : 8/13/2026 9:31:27 AM
Notes :

TRACE1 : Normal Peak (dBμV) Trace

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E3
Mode	Tx
Frequency Tested	315MHz
Result	Operation Time After Activation = 600.4msec
Notes	DIP

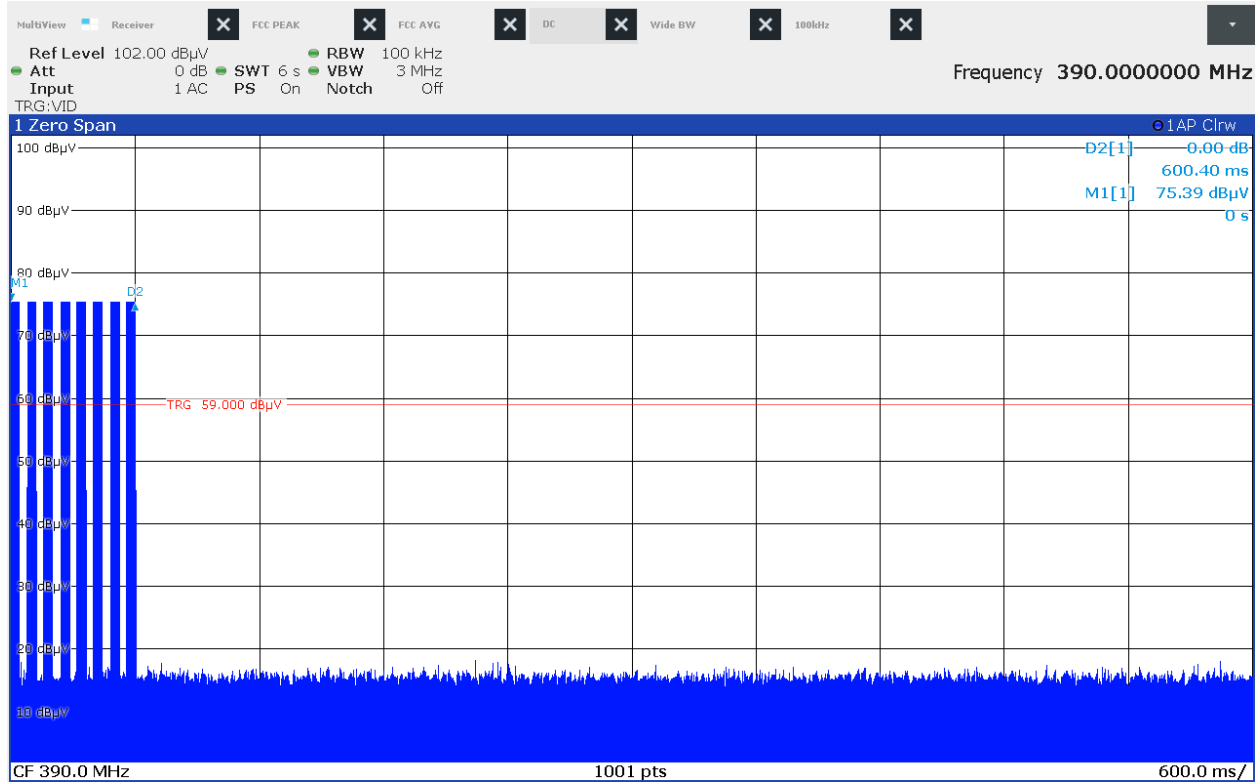


Periodic Operation Measurements

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E3
 Mode : DIP 315MHz
 Parameters : Operation Time After Activation
 Date : 8/13/2026 9:35:02 AM
 Notes :

TRACE1 : Normal Peak (dBμV) Trace

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E3
Mode	Tx
Frequency Tested	390MHz
Result	Operation Time After Activation = 600.4msec
Notes	DIP

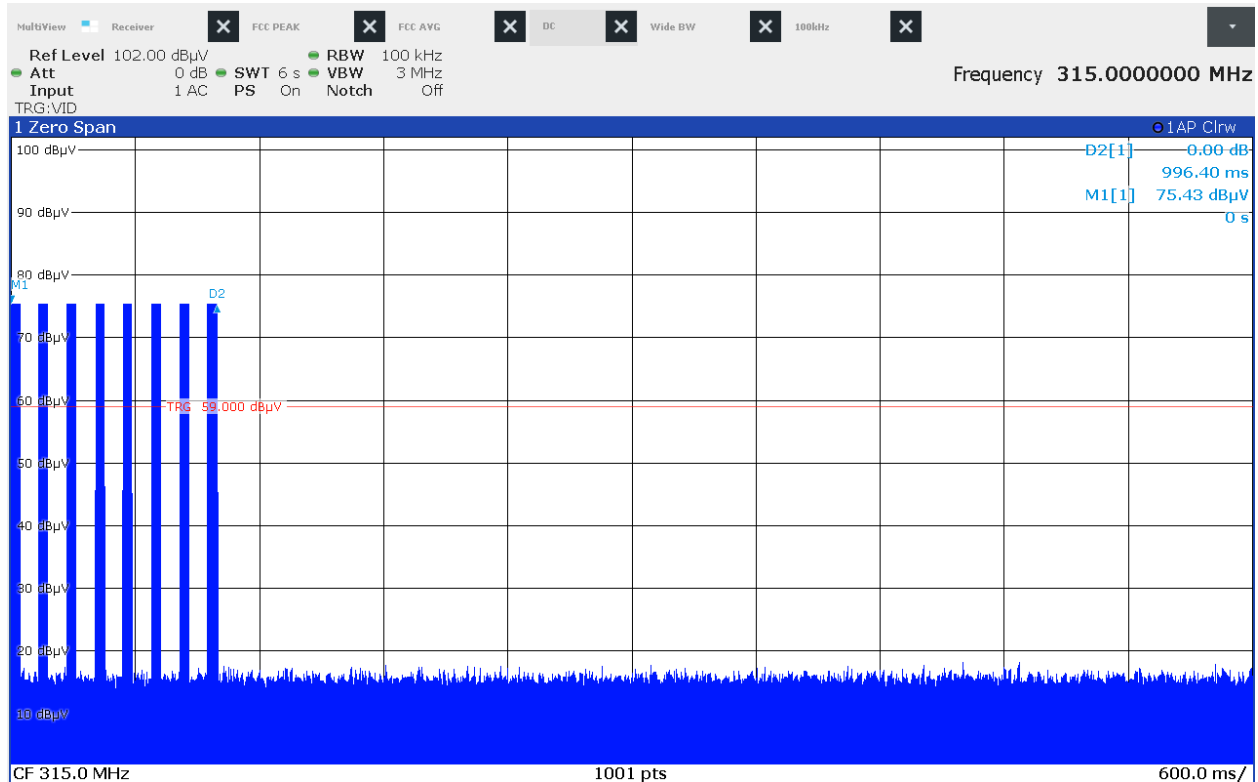


Periodic Operation Measurements

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E3
Mode : DIP 390MHz
Parameters : Operation Time After Activation
Date : 8/13/2026 9:36:48 AM
Notes :

TRACE1 : Normal Peak (dBμV) Trace

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E3
Mode	Tx
Frequency Tested	315MHz
Result	Operation Time After Activation = 996.4msec
Notes	EDIP



Periodic Operation Measurements

Manufacturer : Chamberlain

Model Number : L993LT

Serial Number : E3

Mode : EDIP 315MHz

Parameters : Operation Time After Activation

Date : 8/13/2026 9:33:38 AM

Notes :

TRACE1 : Normal Peak (dBμV) Trace

21. Occupied Bandwidth Measurements

EUT Information	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx

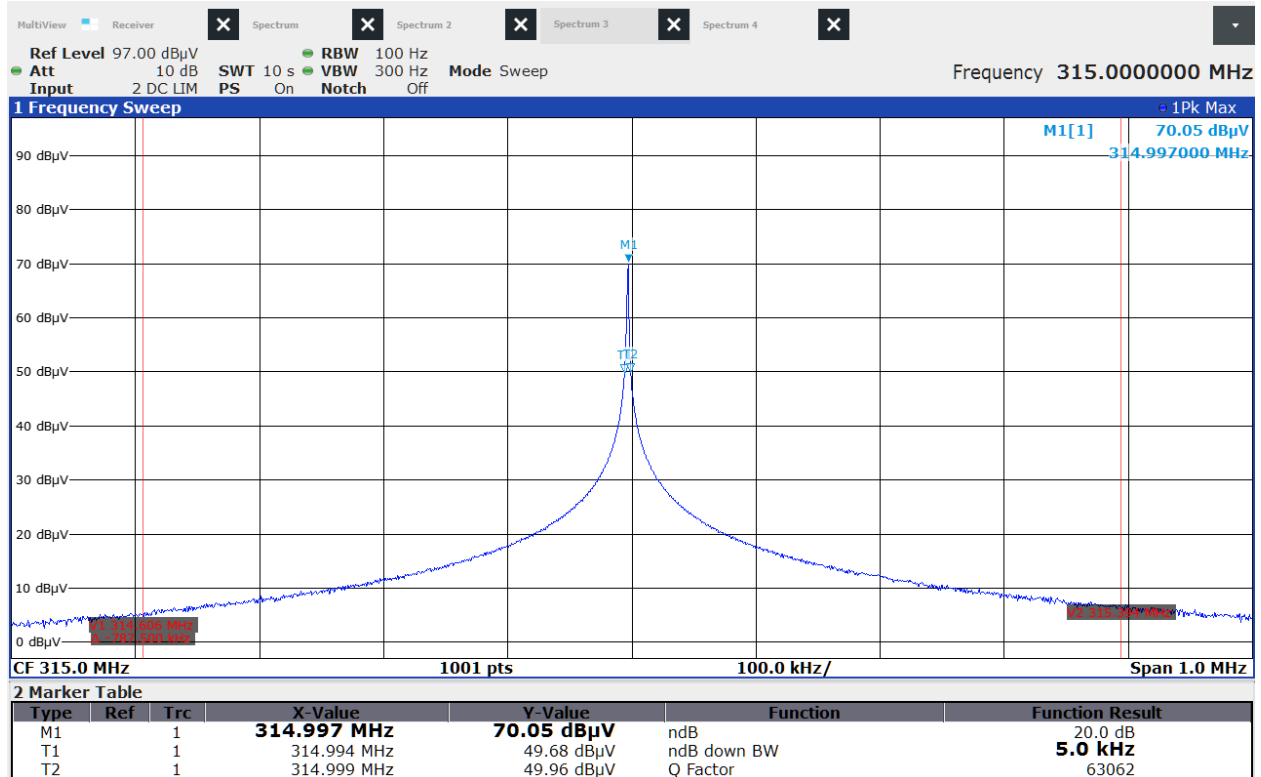
Test Setup Details	
Setup Format	Tabletop
Height of Support	NA
Measurement Method	Antenna Port Conducted
Type of Test Site	Elite Test Bench
Test Site Used	None
Type of Antennas Used	NA
Notes	None

Measurement Uncertainty	
Measurement Type	Expanded Measurement Uncertainty
Radiated disturbance (electric field strength on an open area test site or alternative test site) (30 MHz – 1000 MHz)	4.3
Radiated disturbance (electric field strength on an open area test site or alternative test site) (1 GHz – 6 GHz)	3.1

Requirements
<p>FCC 15.231(c): The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.</p> <p>RSS-210, Annex A, Section A.1.4: The occupied bandwidth (99% Bandwidth) of momentarily operated devices shall be less than or equal to 0.25% of the center frequency for devices operating between 70 MHz and 900 MHz. For devices operating above 900 MHz, the occupied bandwidth shall be less than or equal to 0.5% of the center frequency.</p>

Procedure
<p>The antenna port of the EUT was connected to a spectrum analyzer through 40dB of attenuation. The EUT was allowed to transmit continuously.</p> <p>The resolution bandwidth (RBW) was set to $\geq 1\%$ and $\leq 5\%$ of the emission occupied bandwidth. The video bandwidth (VBW) was set to at least three (3) times the RBW. The span was set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency.</p> <p>The 'Max-Hold' function was engaged. The analyzer was allowed to scan until the envelope of the transmitter bandwidth was defined. The analyzer's ndB function was utilized to determine the 20dB emission bandwidth. Additionally, the analyzer's OBW function was utilized to determine the 99% emission bandwidth. The analyzer's display was then screenshot and saved.</p>

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	315MHz
Result	20dB BW = 5.0kHz
Notes	D Code

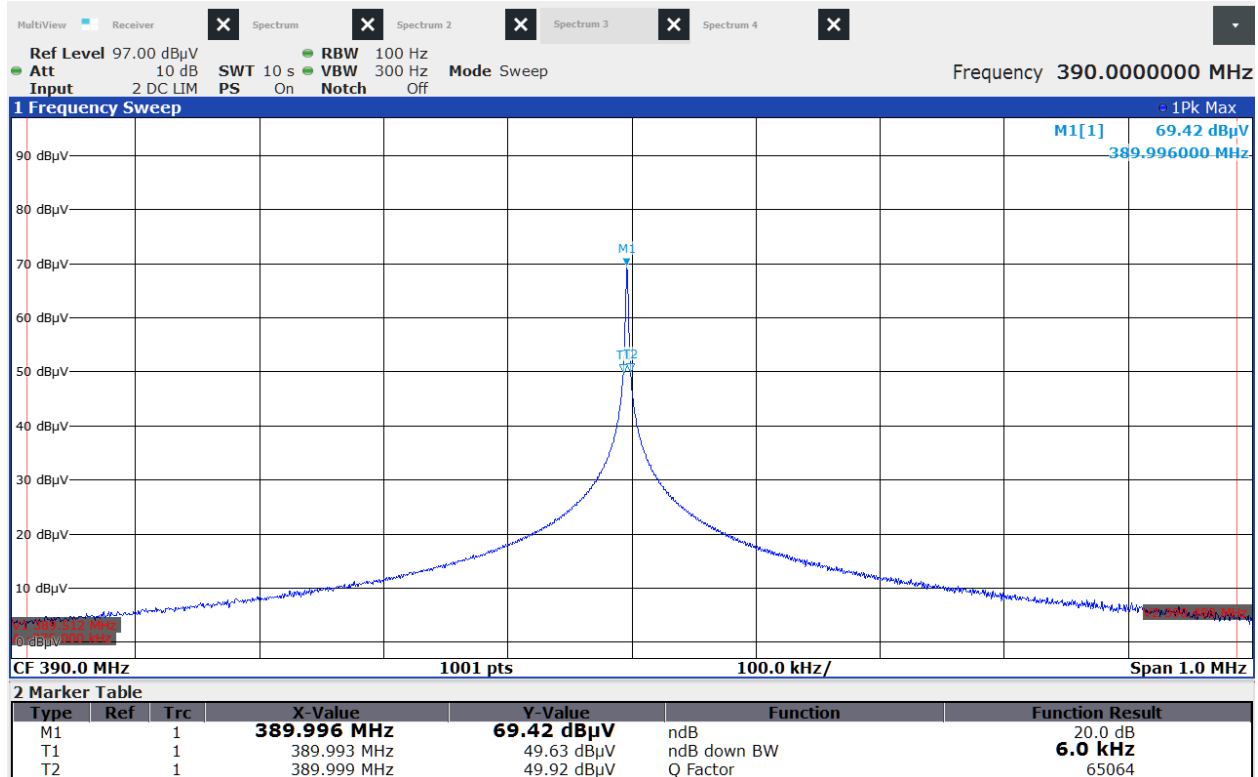


20dB Bandwidth

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E4
 Mode : D Code 315MHz
 Parameters :
 Date : 8/13/2026 11:06:42 AM
 Notes :

TRACE1 : Function plot of Max Hold Peak

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	390MHz
Result	20dB BW = 6.0kHz
Notes	D Code

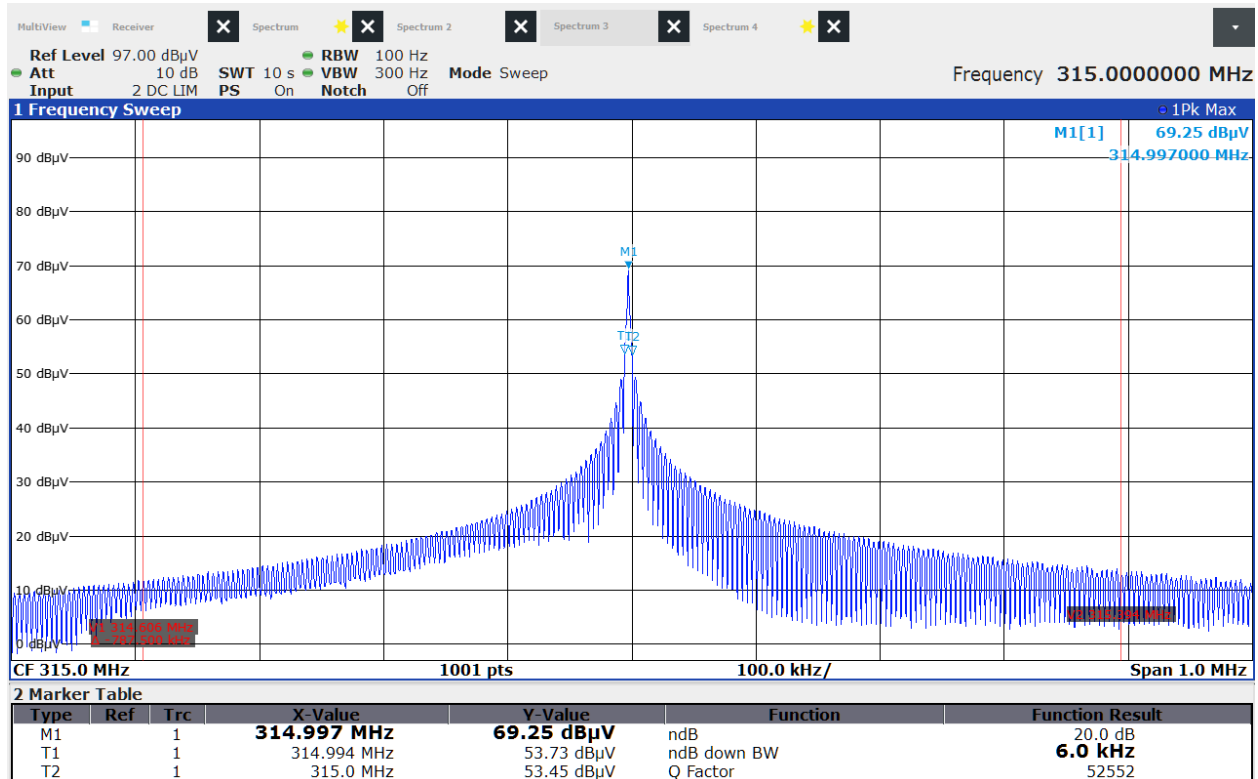


20dB Bandwidth

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E4
 Mode : D Code 390MHz
 Parameters :
 Date : 8/13/2026 11:24:40 AM
 Notes :

TRACE1 : Function plot of Max Hold Peak

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	315MHz
Result	20dB BW = 6.0kHz
Notes	E Code

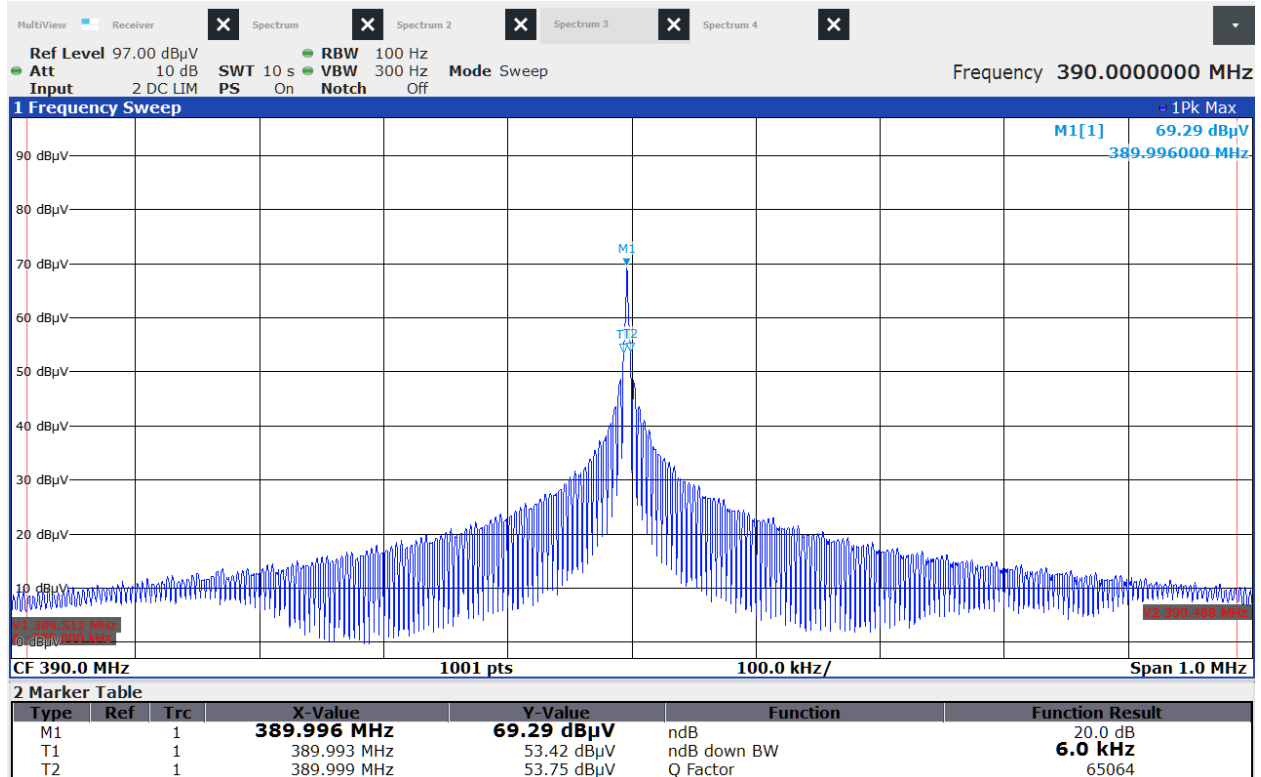


20dB Bandwidth

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E4
 Mode : E Code 315MHz
 Parameters :
 Date : 8/13/2026 11:39:55 AM
 Notes :

TRACE1 : Function plot of Max Hold Peak

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	390MHz
Result	20dB BW = 6.0kHz
Notes	E Code

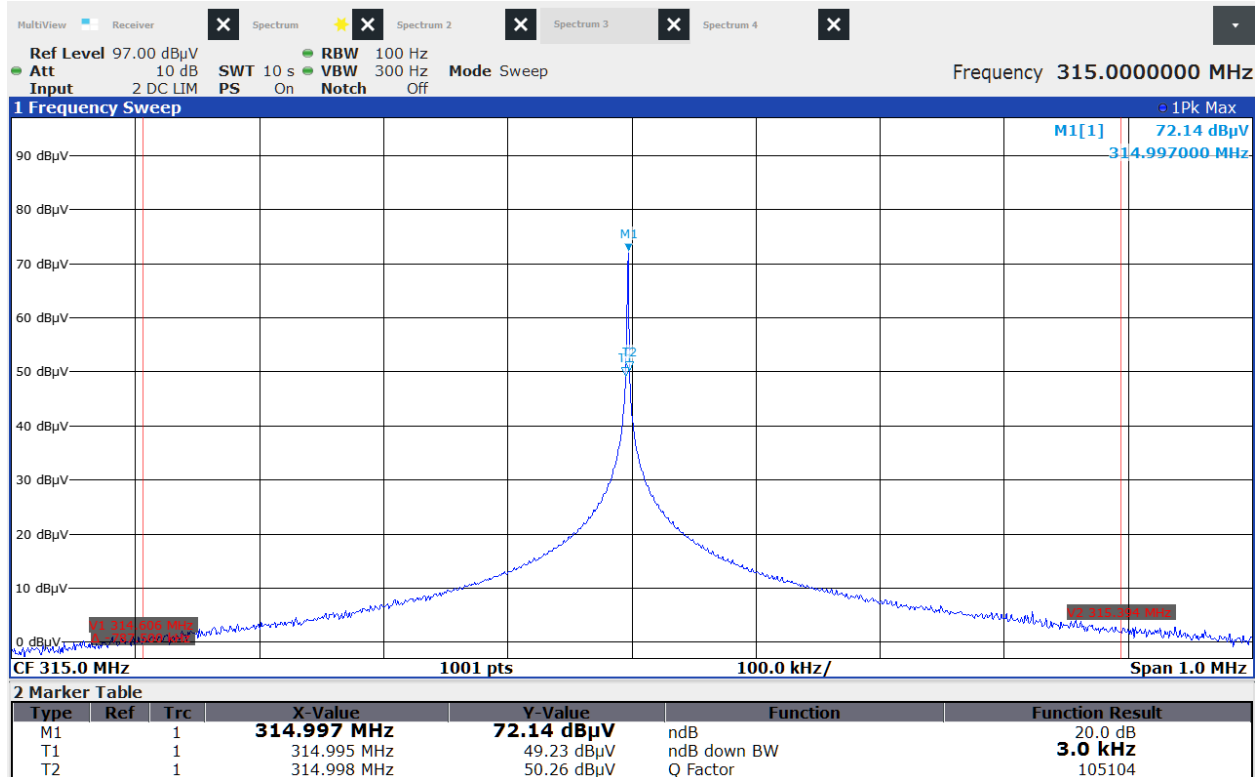


20dB Bandwidth

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E4
 Mode : E Code 390MHz
 Parameters :
 Date : 8/13/2026 11:32:25 AM
 Notes :

TRACE1 : Function plot of Max Hold Peak

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	315MHz
Result	20dB BW = 3.0kHz
Notes	DIP

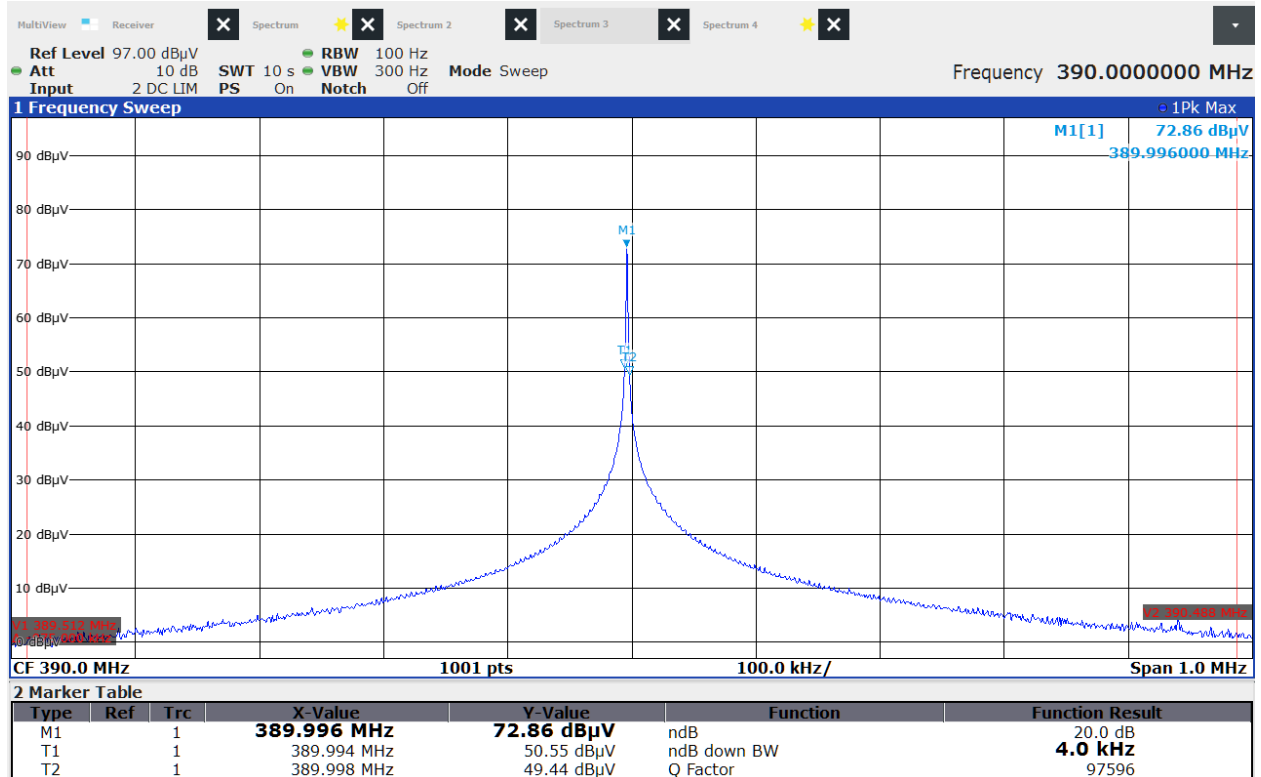


20dB Bandwidth

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E4
Mode : DIP 315MHz
Parameters :
Date : 8/13/2026 11:53:52 AM
Notes :

TRACE1 : Function plot of Max Hold Peak

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	390MHz
Result	20dB BW = 4.0kHz
Notes	DIP

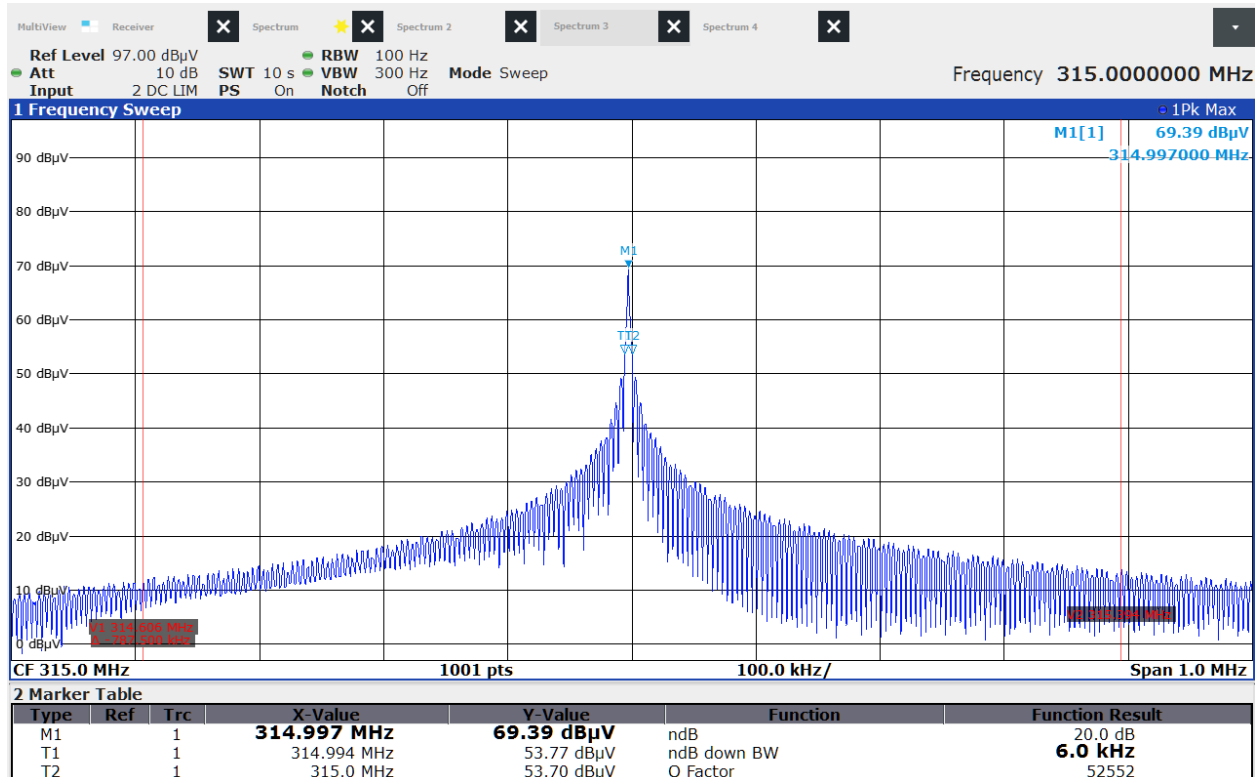


20dB Bandwidth

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E4
Mode : DIP 390MHz
Parameters :
Date : 8/13/2026 12:54:38 PM
Notes :

TRACE1 : Function plot of Max Hold Peak

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	315MHz
Result	20dB BW = 6.0kHz
Notes	EDIP

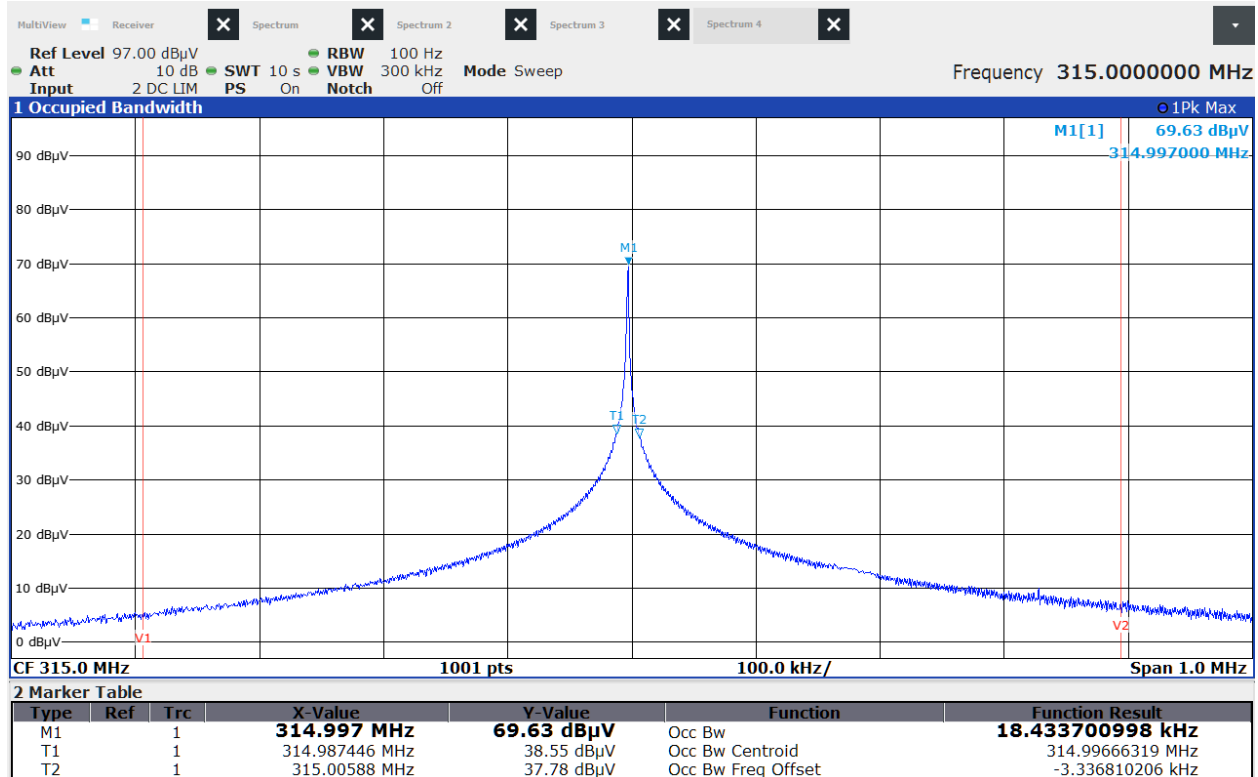


20dB Bandwidth

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E4
Mode : EDIP 315MHz
Parameters :
Date : 8/13/2026 12:50:54 PM
Notes :

TRACE1 : Function plot of Max Hold Peak

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	315MHz
Result	99% BW = 18.43kHz
Notes	D Code

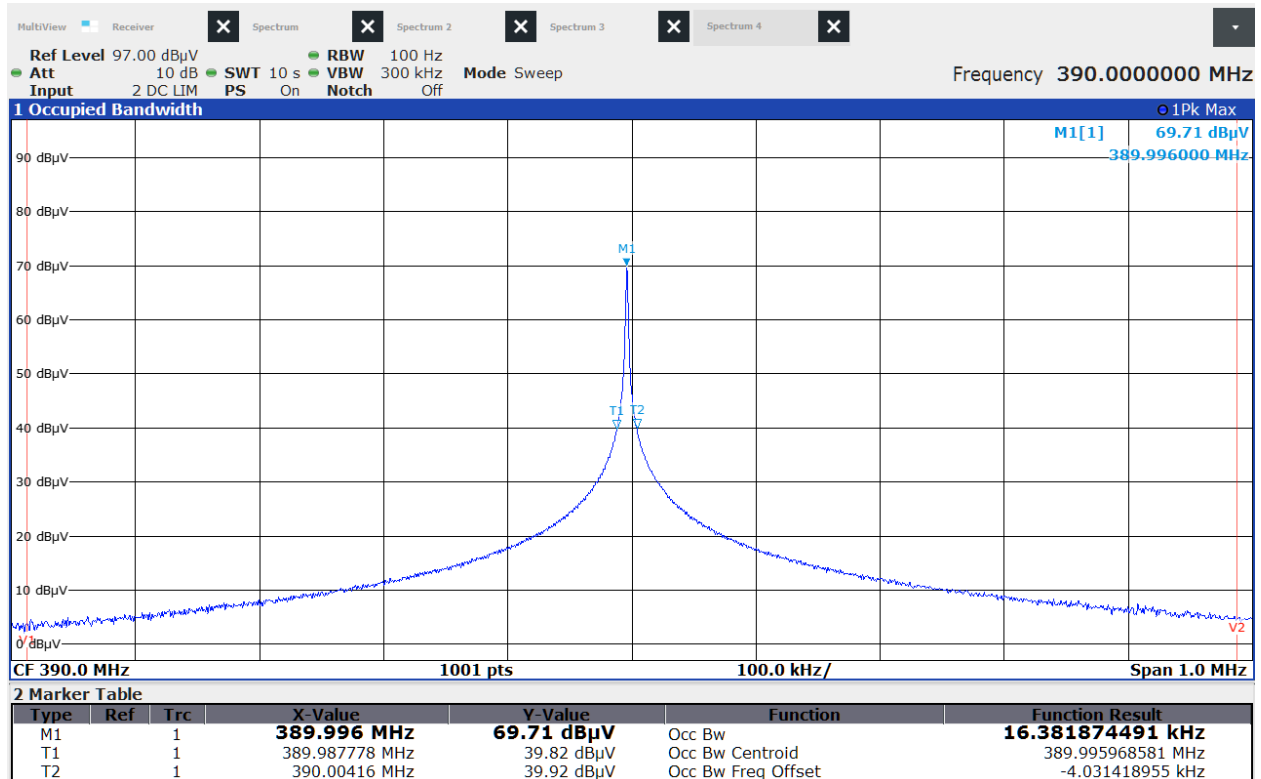


99% Bandwidth

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E4
 Mode : D Code 315MHz
 Parameters :
 Date : 8/13/2026 11:16:13 AM
 Notes :

TRACE1 : Function plot of Max Hold Peak

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	390MHz
Result	99% BW = 16.38kHz
Notes	D Code

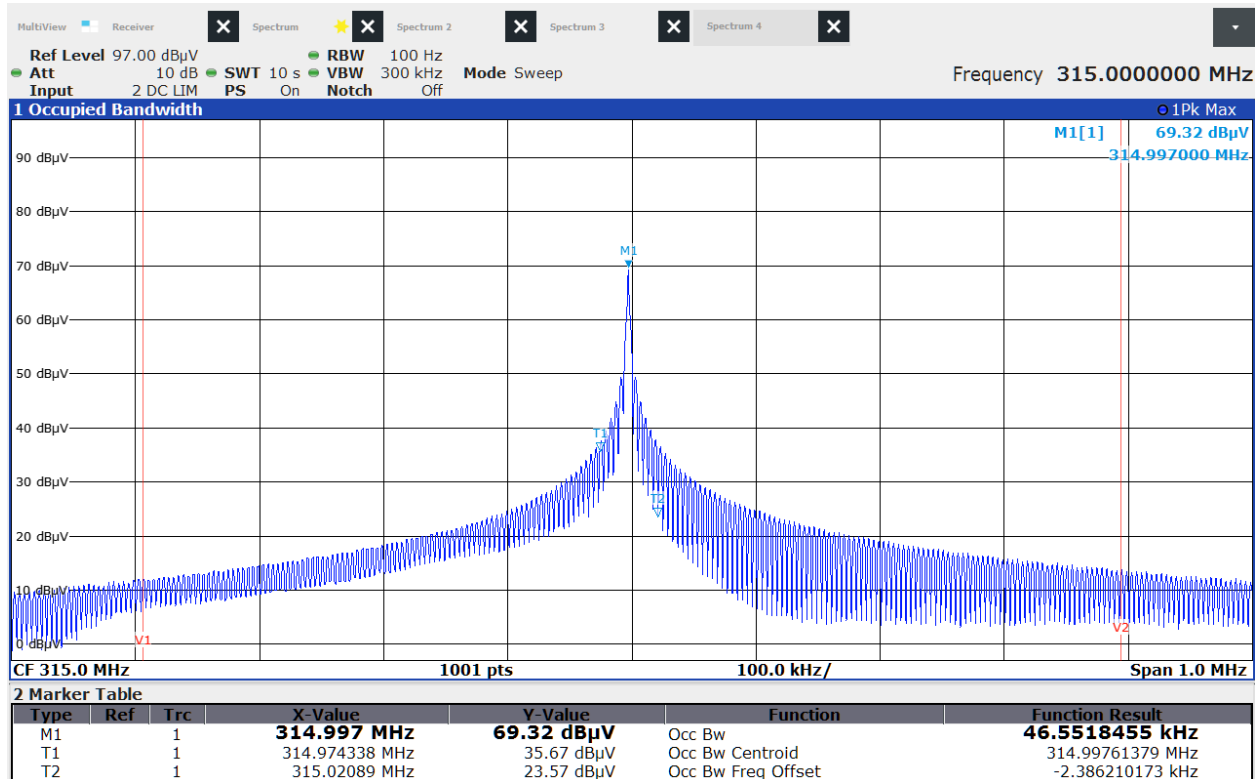


99% Bandwidth

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E4
Mode : D Code 390MHz
Parameters :
Date : 8/13/2026 11:26:19 AM
Notes :

TRACE1 : Function plot of Max Hold Peak

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	315MHz
Result	99% BW = 46.55kHz
Notes	E Code

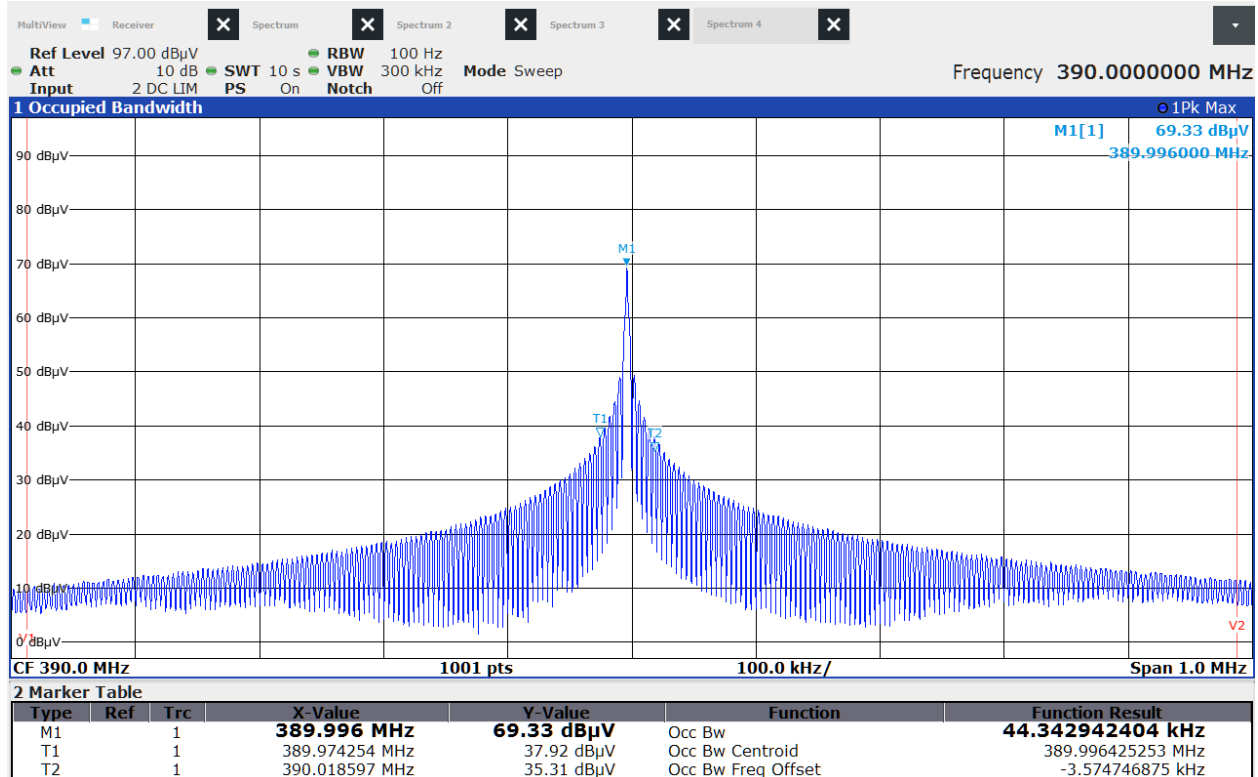


99% Bandwidth

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E4
 Mode : E Code 315MHz
 Parameters :
 Date : 8/13/2026 11:43:22 AM
 Notes :

TRACE1 : Function plot of Max Hold Peak

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	390MHz
Result	99% BW = 44.34kHz
Notes	E Code

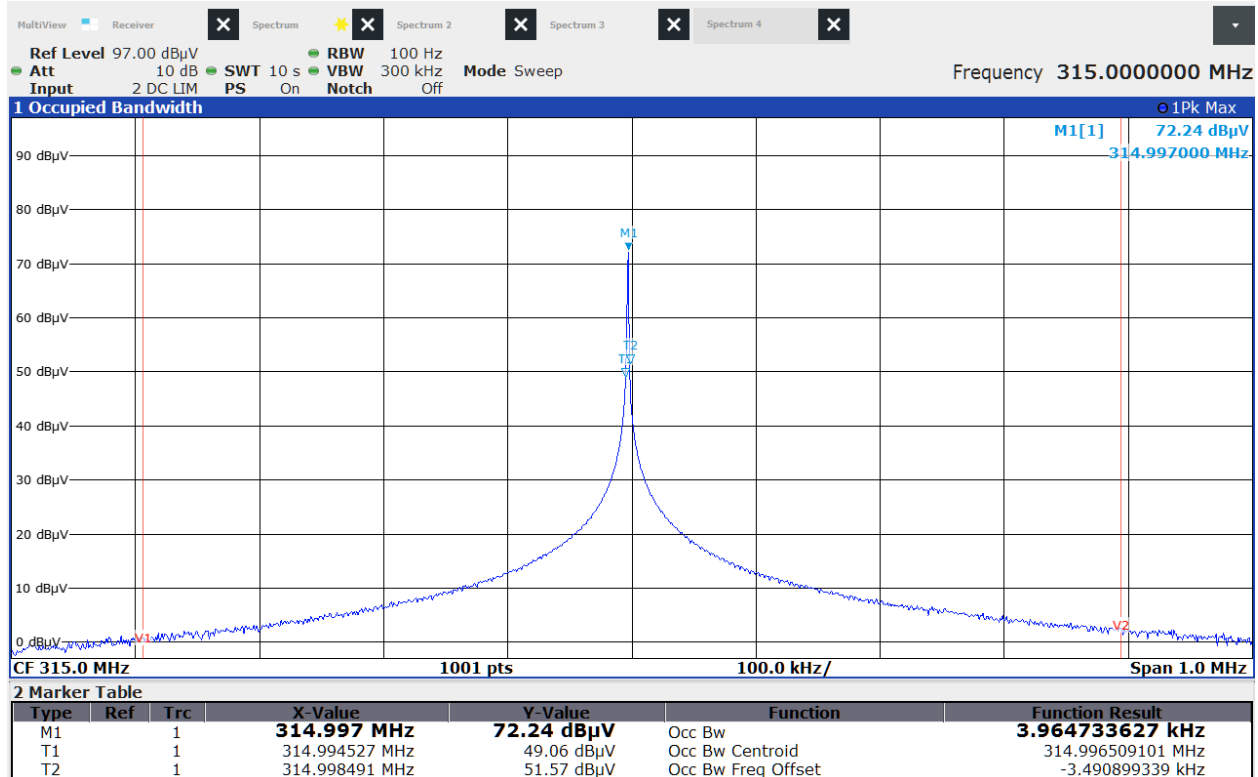


99% Bandwidth

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E4
 Mode : E Code 390MHz
 Parameters :
 Date : 8/13/2026 11:36:51 AM
 Notes :

TRACE1 : Function plot of Max Hold Peak

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	315MHz
Result	99% BW = 3.96kHz
Notes	DIP

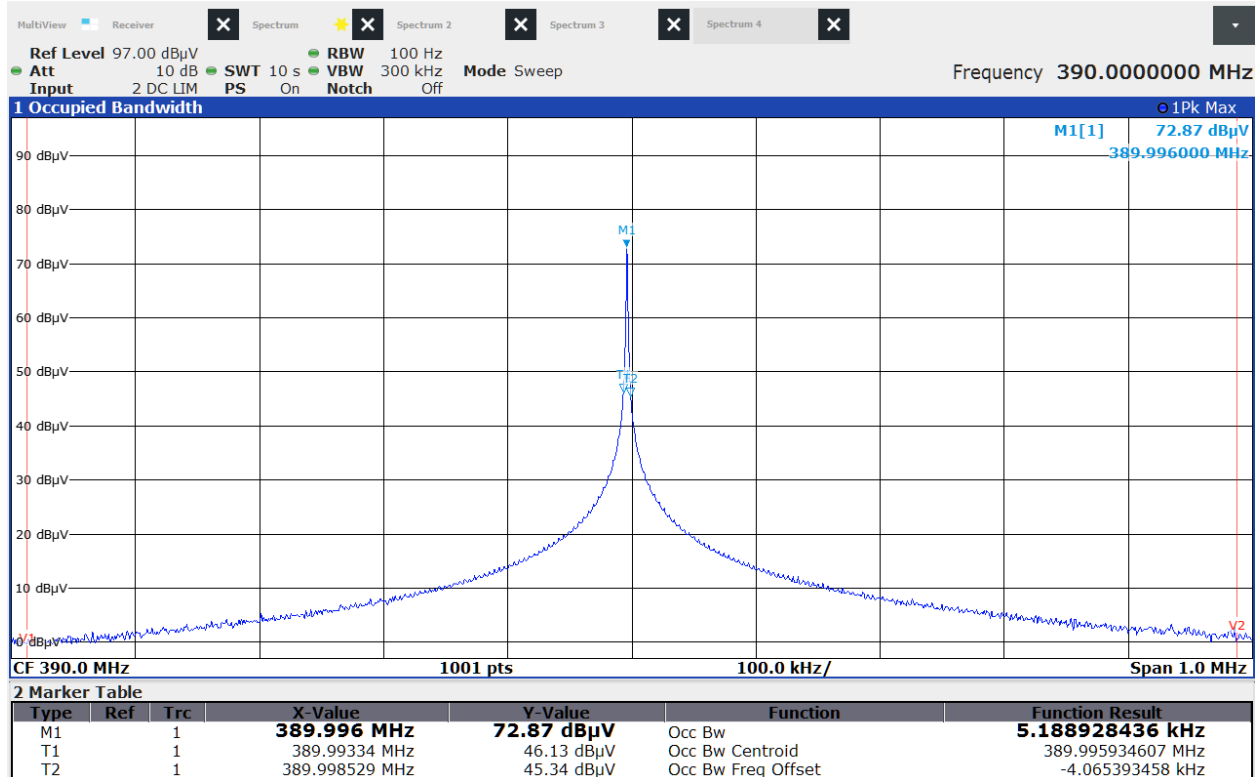


99% Bandwidth

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E4
Mode : DIP 315MHz
Parameters :
Date : 8/13/2026 11:55:31 AM
Notes :

TRACE1 : Function plot of Max Hold Peak

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	390MHz
Result	99% BW = 5.19kHz
Notes	DIP

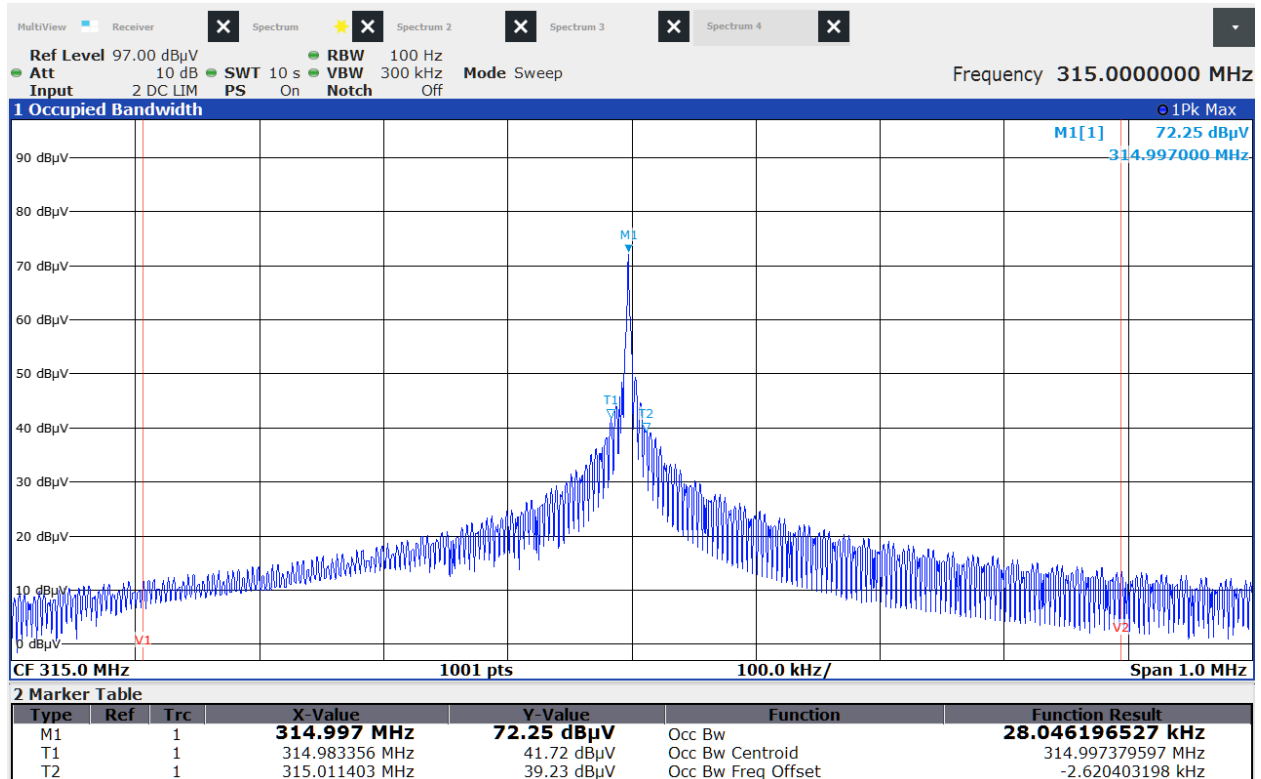


99% Bandwidth

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E4
 Mode : DIP 390MHz
 Parameters :
 Date : 8/13/2026 12:56:22 PM
 Notes :

TRACE1 : Function plot of Max Hold Peak

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E4
Mode	Tx
Frequency Tested	315MHz
Result	99% BW = 28.05kHz
Notes	EDIP



99% Bandwidth

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E4
Mode : EDIP 315MHz
Parameters :
Date : 8/13/2026 12:47:42 PM
Notes :

TRACE1 : Function plot of Max Hold Peak

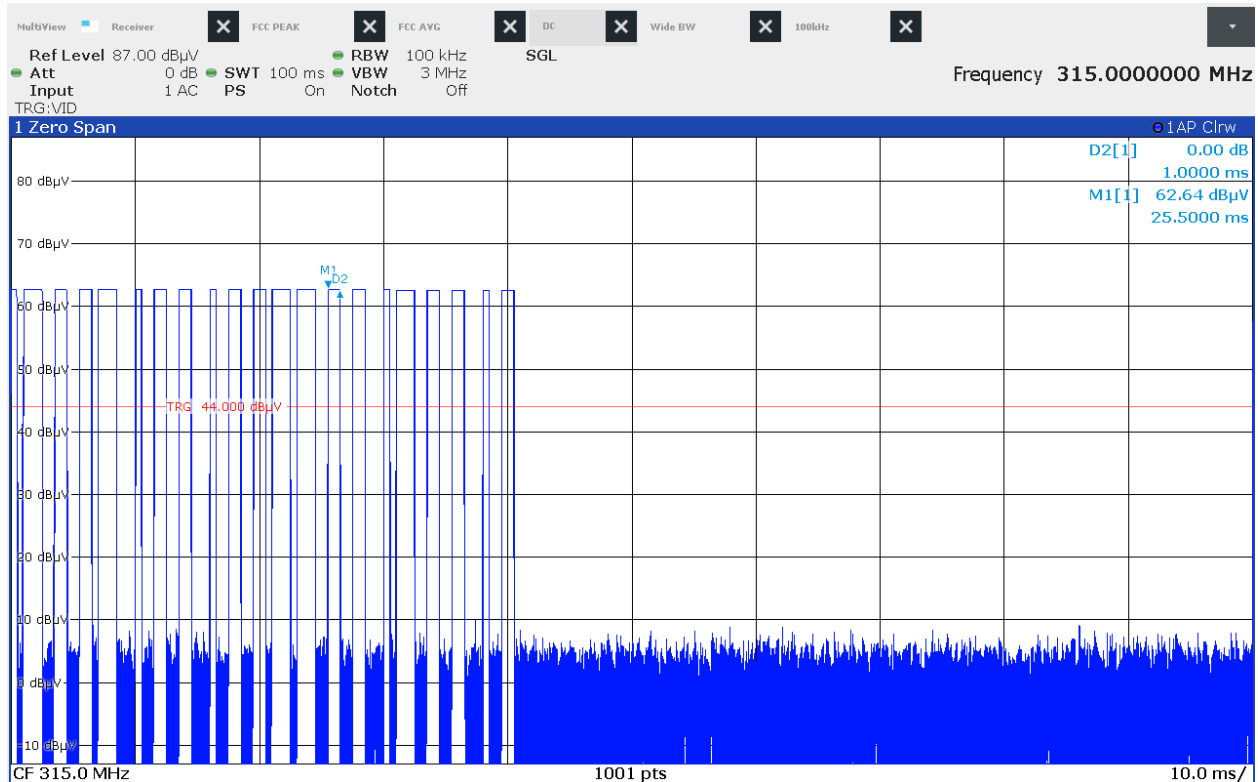
22. Duty Cycle Factor Measurements

EUT Information	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx

Test Setup Details	
Setup Format	Tabletop
Height of Support	NA
Measurement Method	Radiated
Type of Test Site	Semi-Anechoic Chamber
Test Site Used	R21
Type of Antennas Used	Bilog
Notes	None

Procedure
<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 pulsed signal.</p> <p>With the transmitter set up to transmit for maximum operating power level, 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. The resolution bandwidth (RBW) is set $\geq$ OBW. The video bandwidth (VBW) was set $\geq$ OBW and $\geq$ RBW. 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 transmission duration (T). 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 or transmission duration 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.</p> <p>The duty cycle is then computed as $\left(\frac{\text{On Time}}{\text{Word Period}} \right)$, where $\text{Word Period} = (\text{On Time} + \text{Off Time})$.</p>

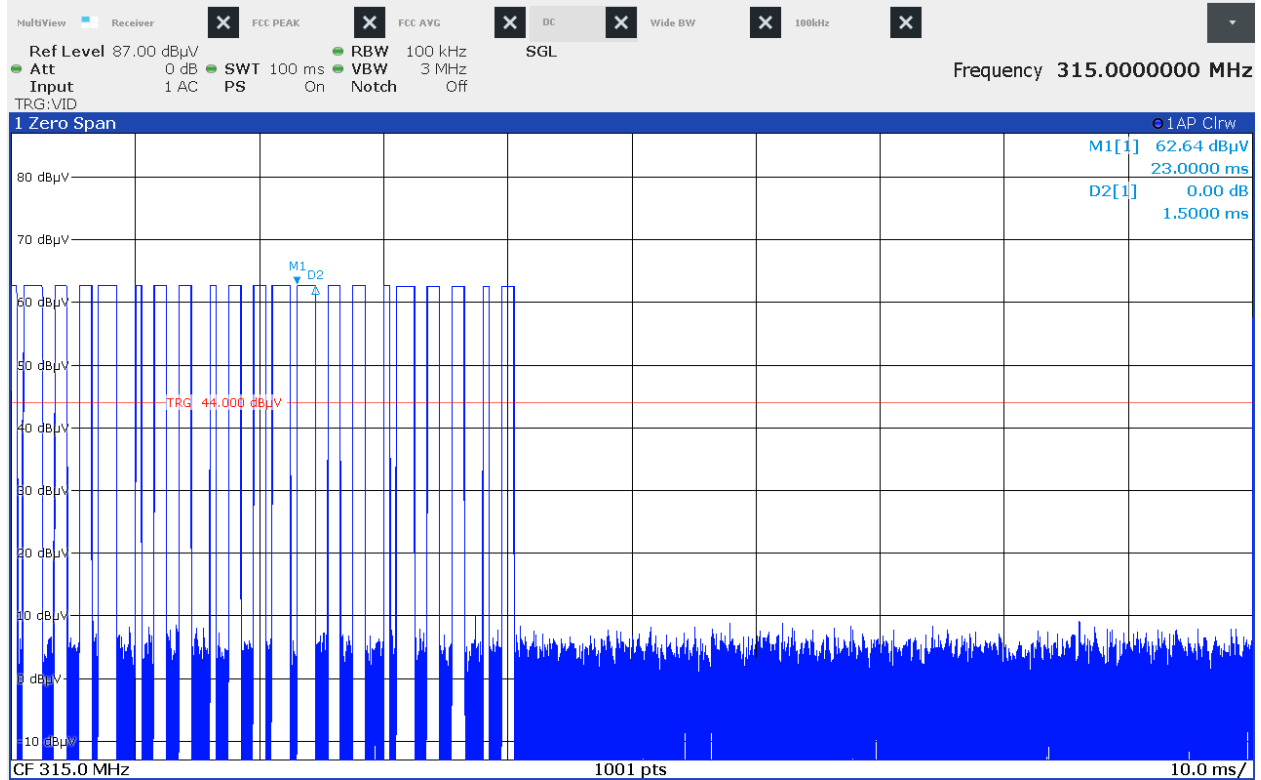
Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	315MHz
Result	Duty Cycle Factor = -13.56dB
Notes	D



Duty Cycle

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E1
 Mode : 315MHz D Code
 Parameters :
 Date : 8/10/2026 10:06:47 AM
 Notes : Pulse 1

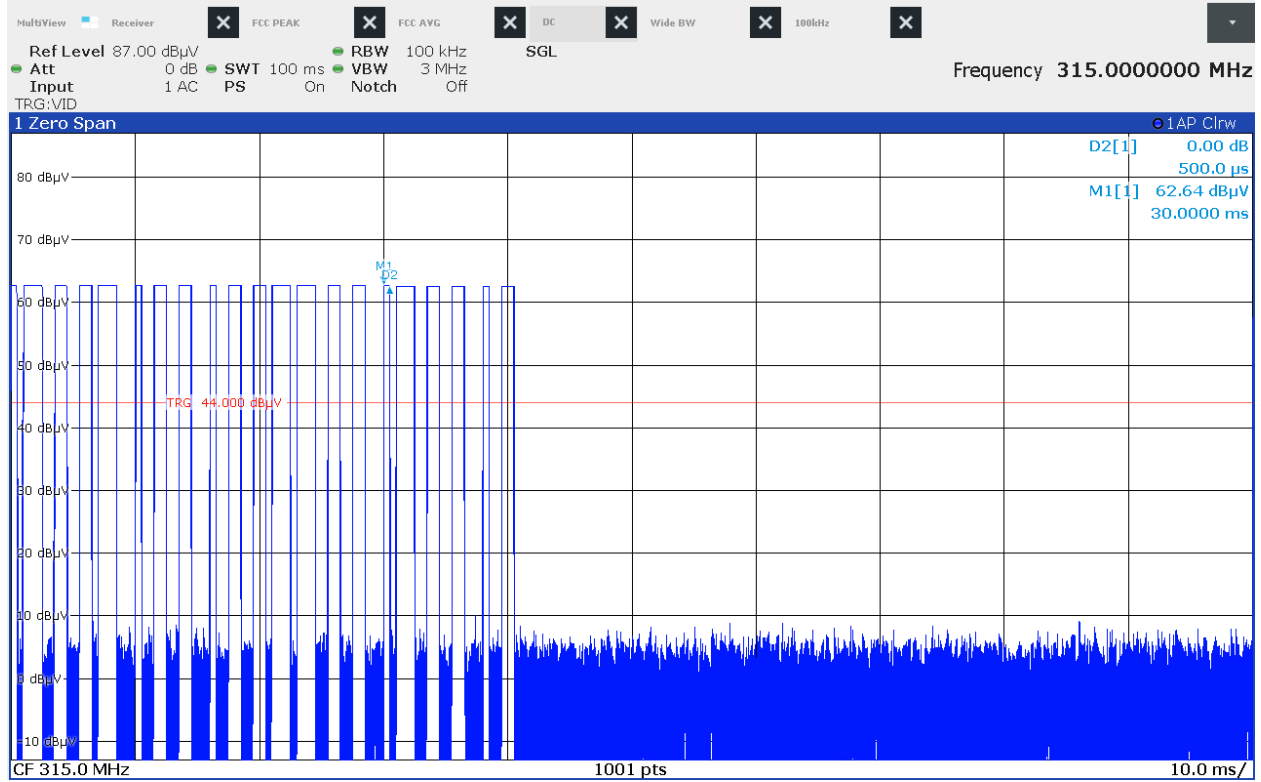
TRACE1 : Normal Peak (dBμV) Trace



Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 315MHz D Code
Parameters :
Date : 8/10/2026 10:07:32 AM
Notes : Pulse 2

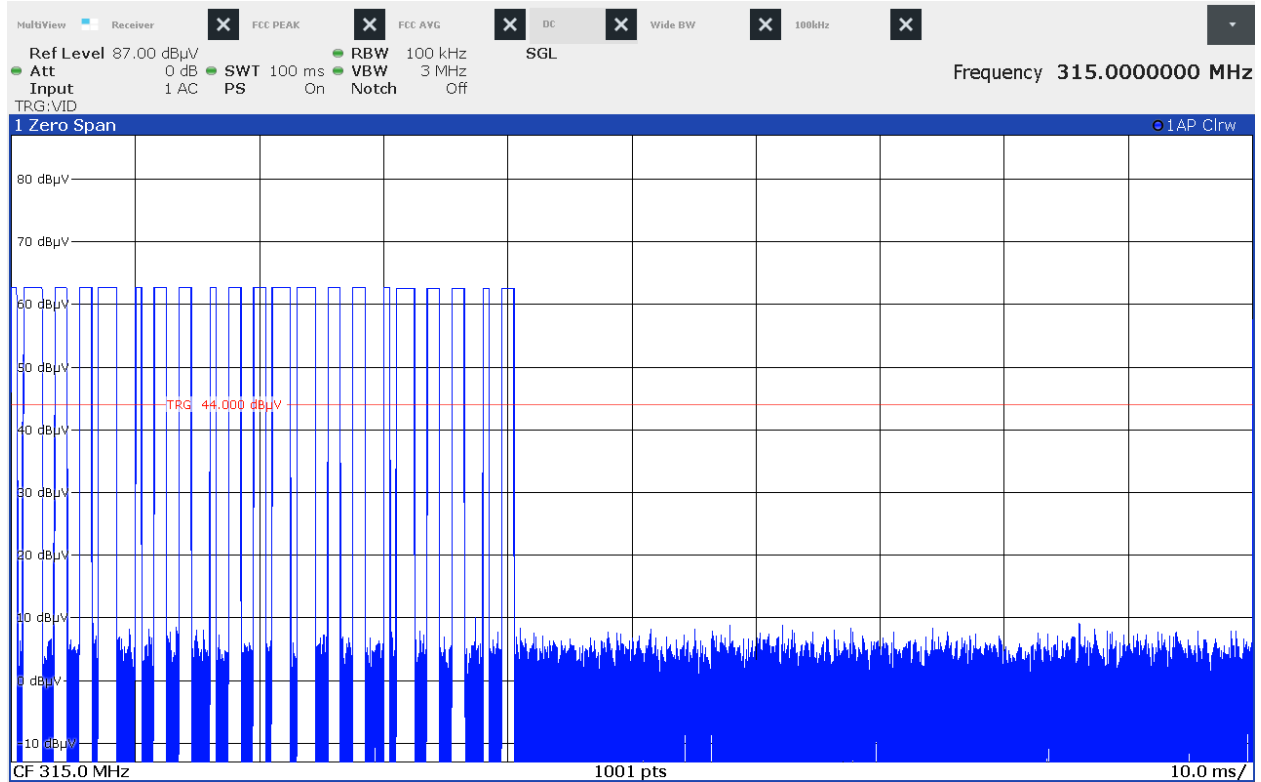
TRACE1 : Normal Peak (dBμV) Trace



Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 315MHz D Code
Parameters :
Date : 8/10/2026 10:08:14 AM
Notes : Pulse 3

TRACE1 : Normal Peak (dBμV) Trace



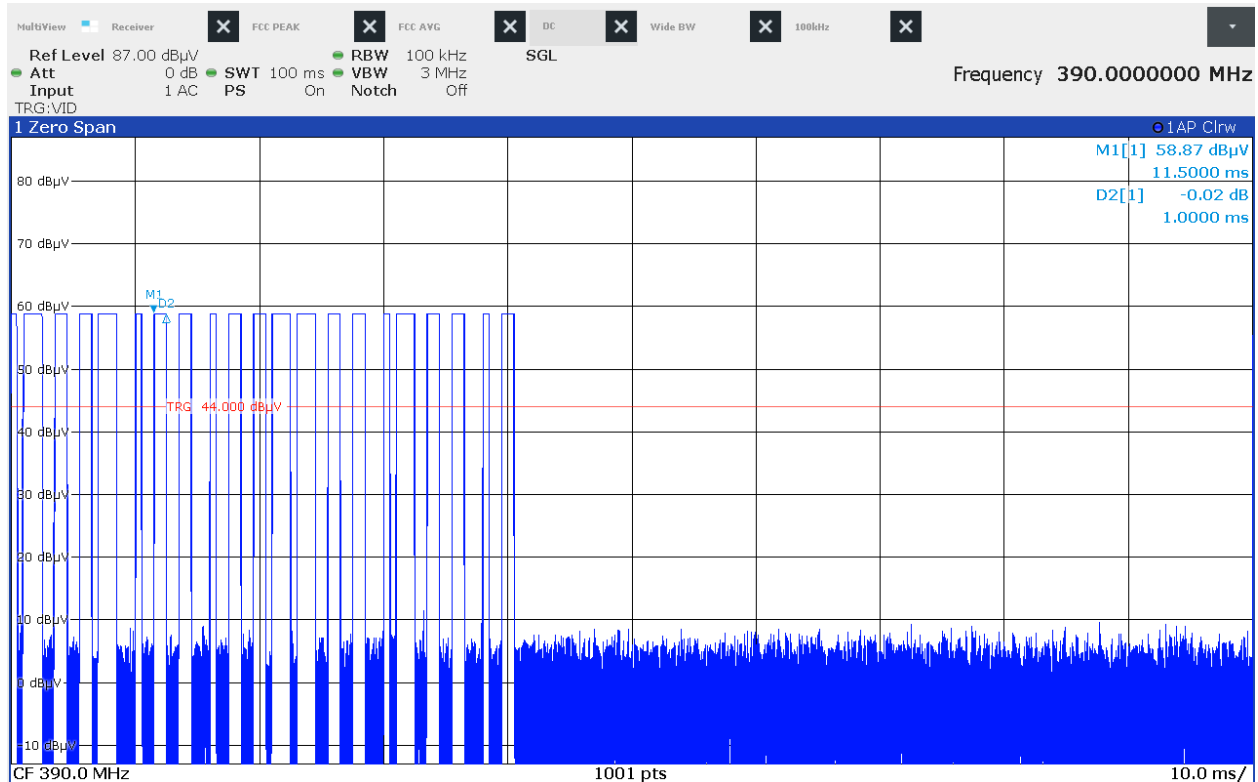
Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 315MHz D Code
Parameters :
Date : 8/10/2026 10:08:45 AM
Notes : 100ms, 21ms, -13.56dB

TRACE1 : Normal Peak (dBμV) Trace

$$\text{Duty Cycle Factor}(dB) = 20 \times \log_{10} \frac{(5 \times 1.5msec) + (5 \times 0.50msec) + (11 \times 1.00msec)}{100msec} = -13.56dB$$

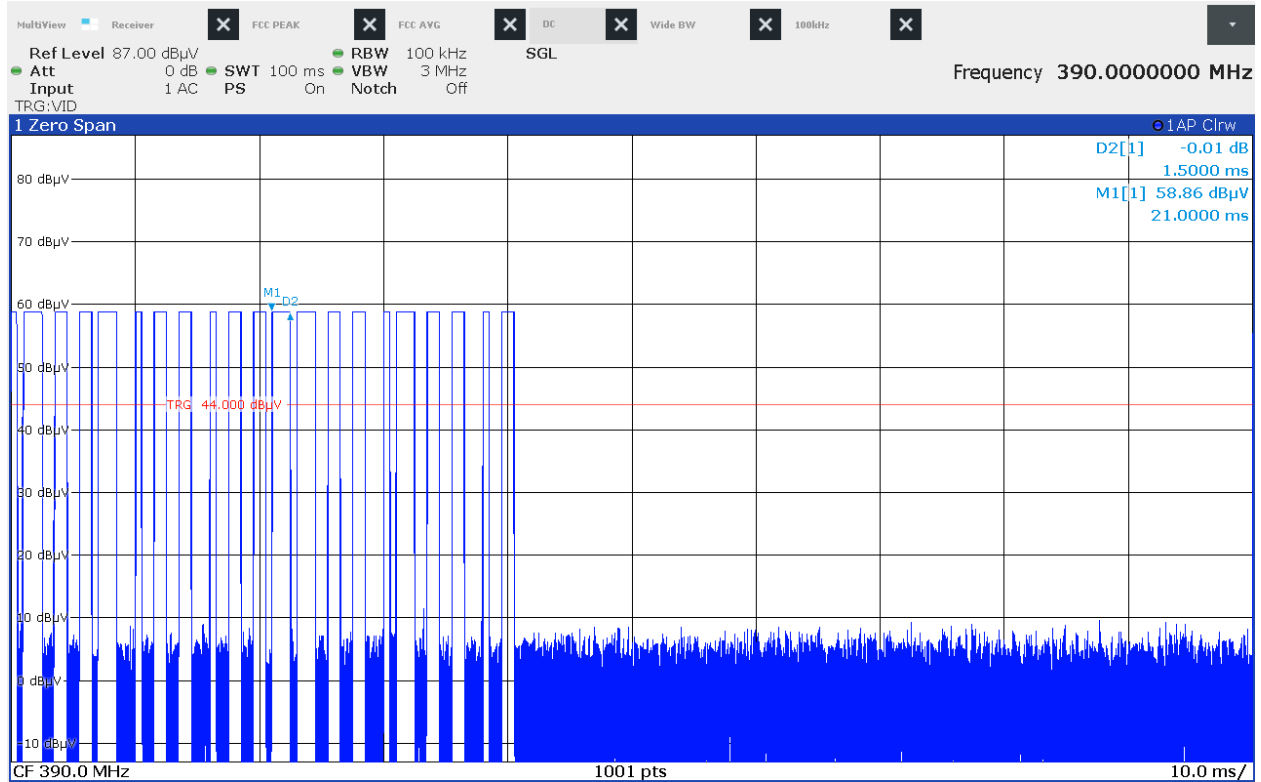
Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	390MHz
Result	Duty Cycle Factor = -13.56dB
Notes	D



Duty Cycle

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E1
 Mode : 390MHz D Code
 Parameters :
 Date : 8/10/2026 11:08:44 AM
 Notes : Pulse 1

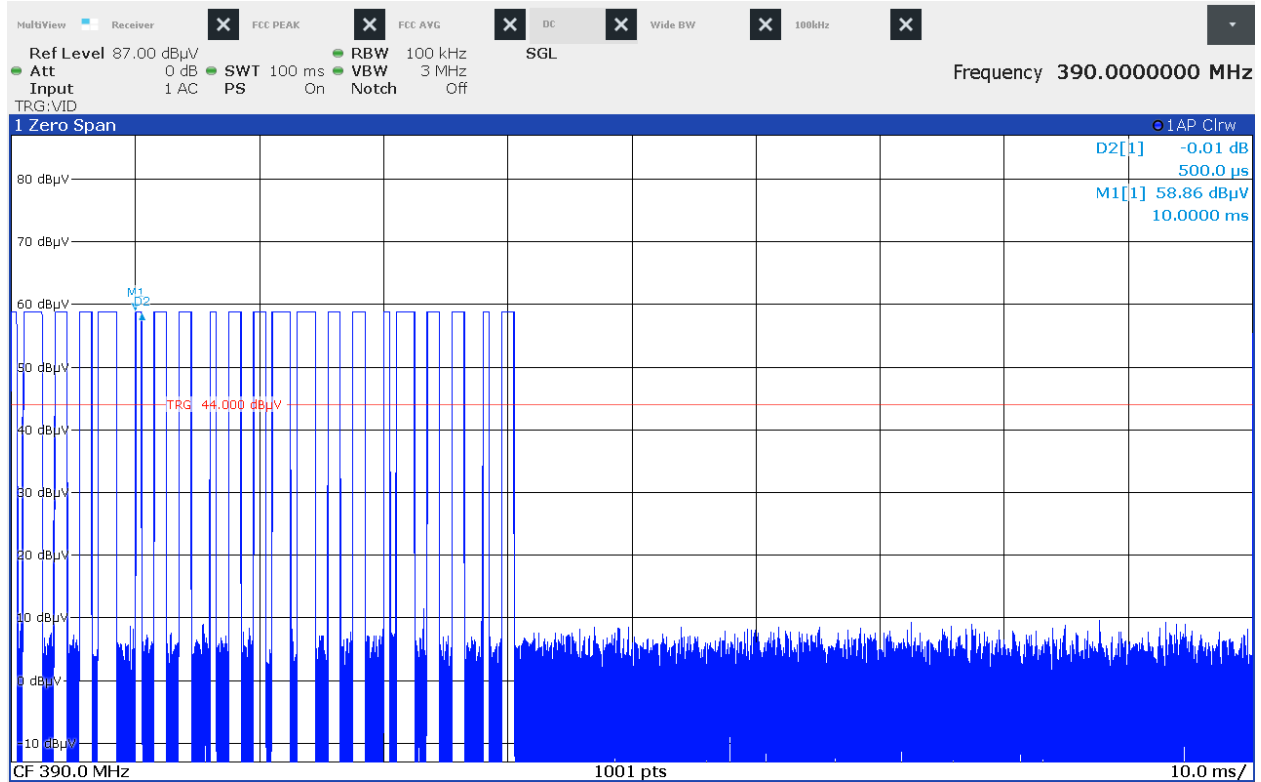
TRACE1 : Normal Peak (dBμV) Trace



Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 390MHz D Code
Parameters :
Date : 8/10/2026 11:09:27 AM
Notes : Pulse 2

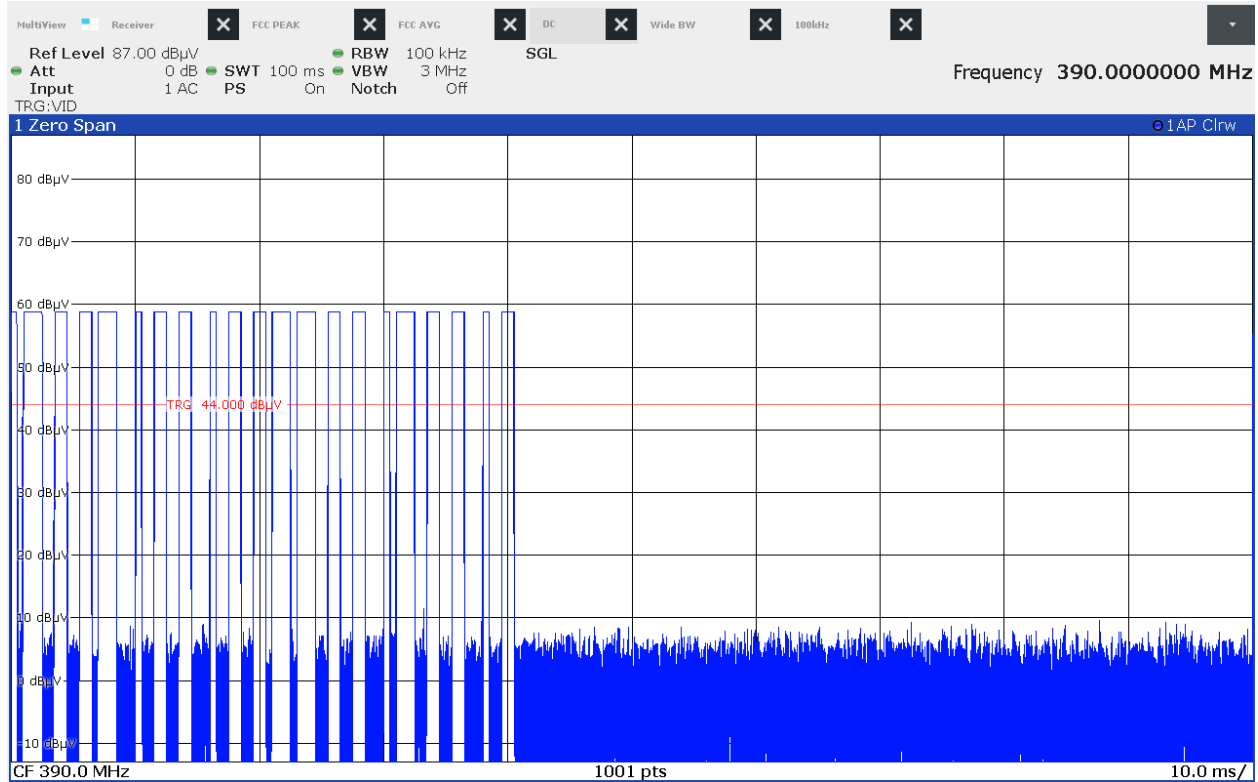
TRACE1 : Normal Peak (dBμV) Trace



Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 390MHz D Code
Parameters :
Date : 8/10/2026 11:08:14 AM
Notes : Pulse 3

TRACE1 : Normal Peak (dBμV) Trace



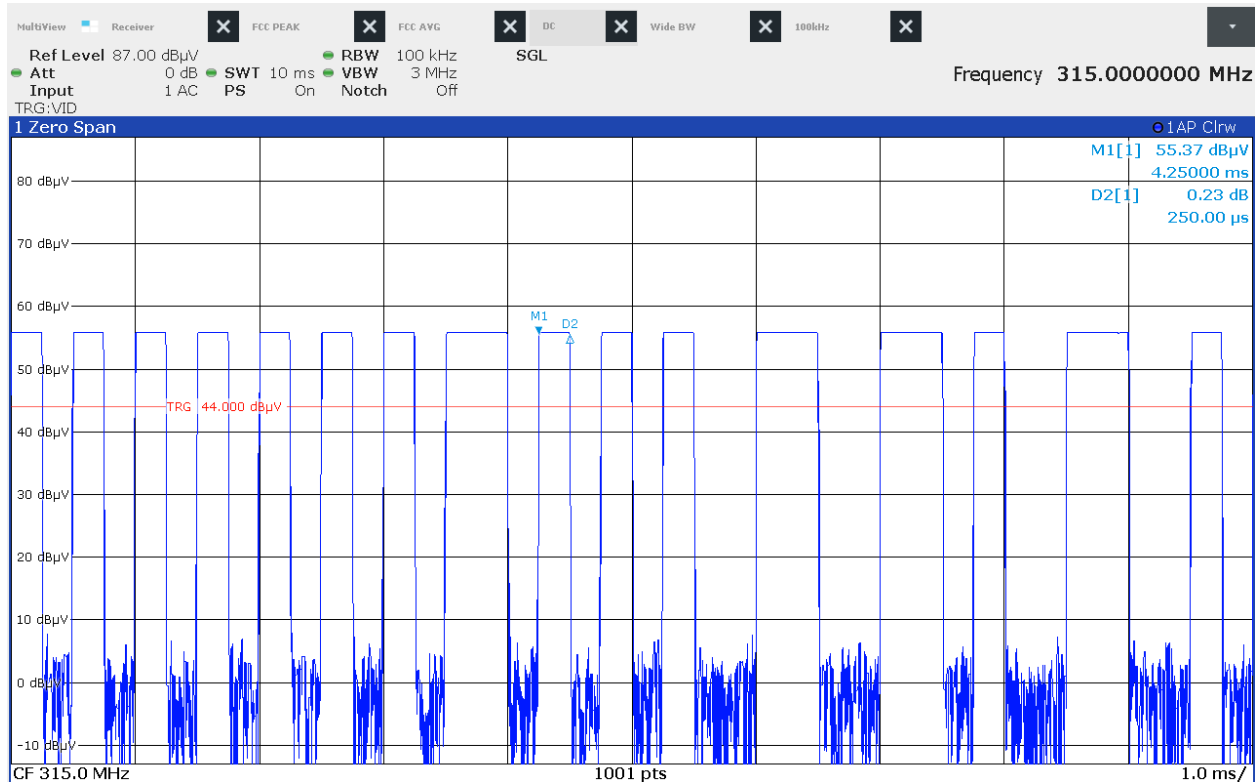
Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 390MHz D Code
Parameters :
Date : 8/10/2026 11:09:44 AM
Notes : 100ms

TRACE1 : Normal Peak (dBμV) Trace

$$\text{Duty Cycle Factor}(dB) = 20 \times \log_{10} \frac{(5 \times 1.5msec) + (5 \times 0.50msec) + (11 \times 1.00msec)}{100msec} = -13.56dB$$

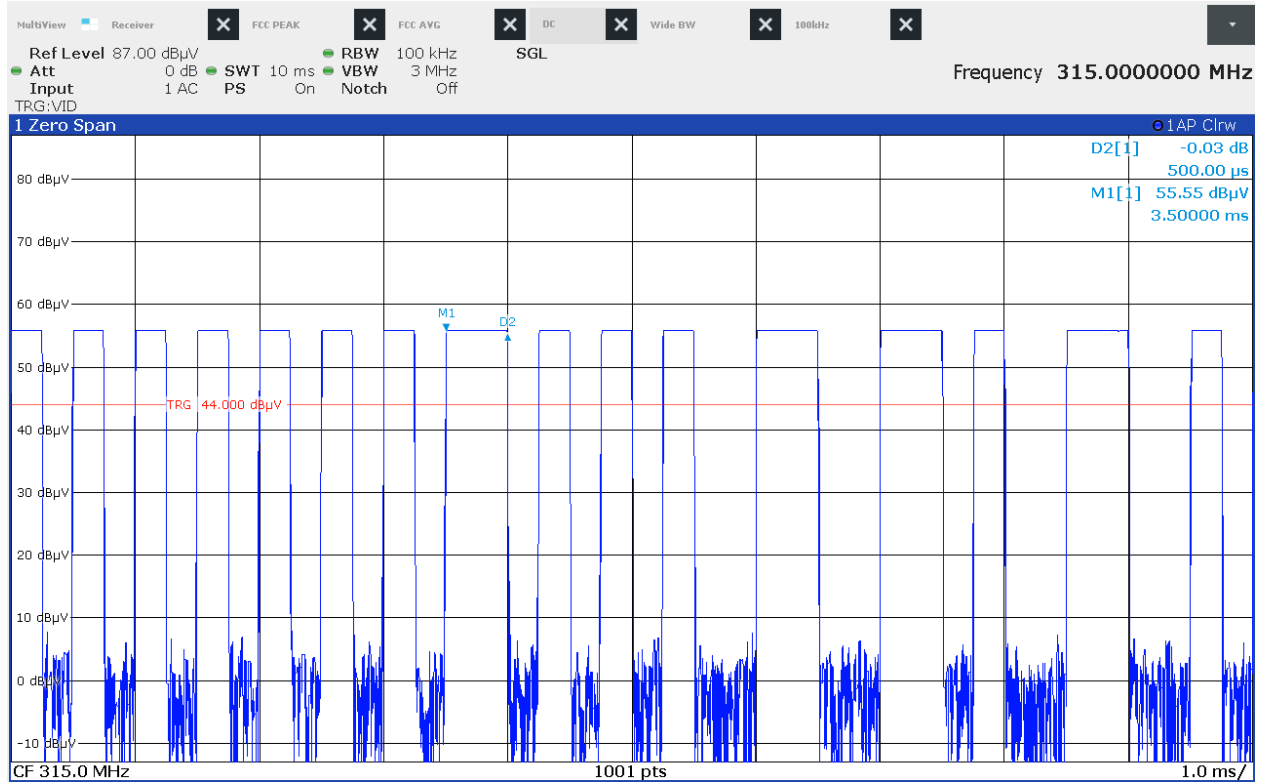
Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	315MHz
Result	Duty Cycle Factor = -16.19dB
Notes	E



Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 315MHz E Code
Parameters :
Date : 8/10/2026 1:00:17 PM
Notes : Pulse 1

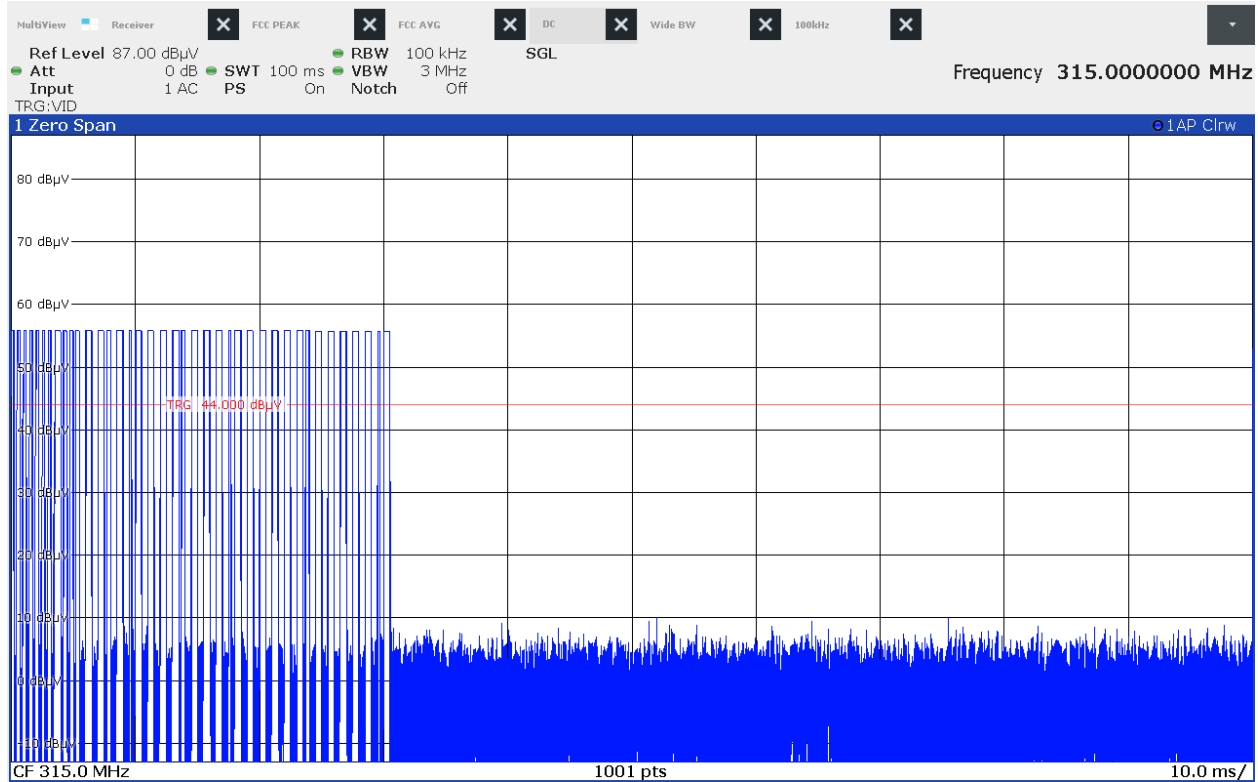
TRACE1 : Normal Peak (dBμV) Trace



Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 315MHz E Code
Parameters :
Date : 8/10/2026 1:00:40 PM
Notes : Pulse 2

TRACE1 : Normal Peak (dBμV) Trace



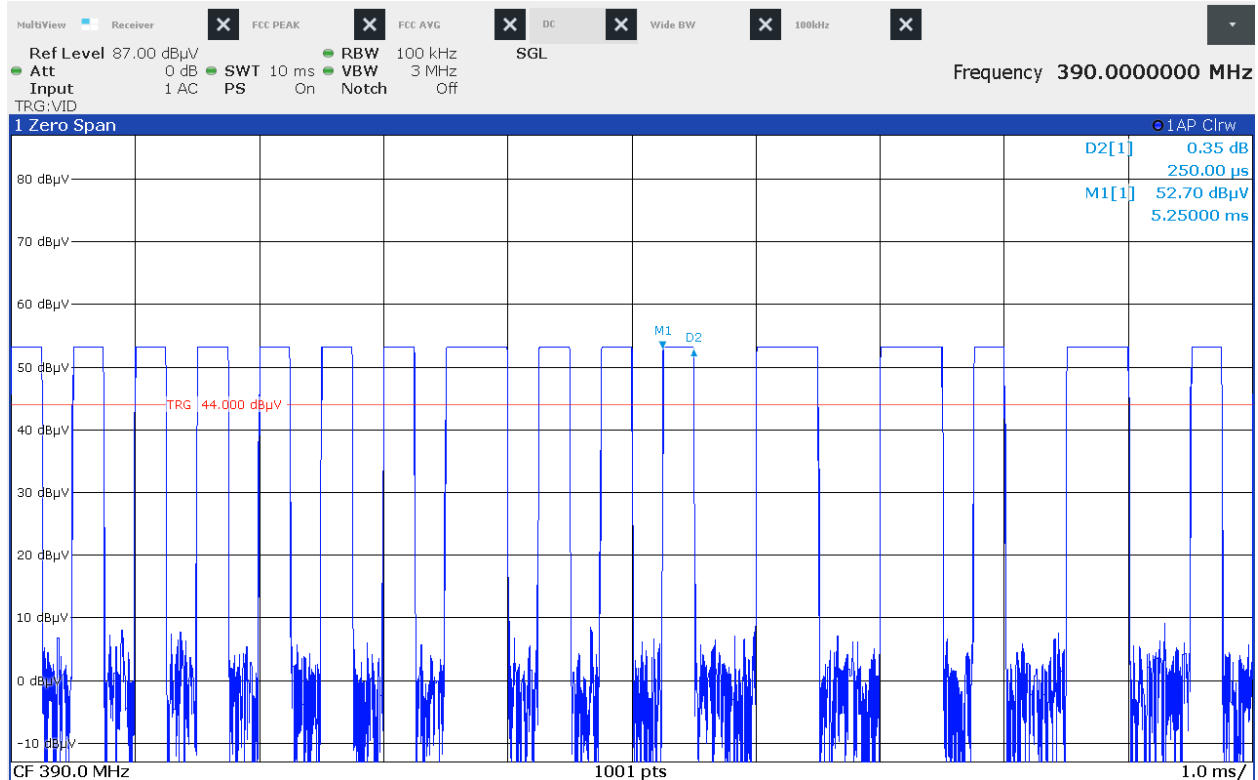
Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 315MHz E Code
Parameters :
Date : 8/10/2026 1:06:16 PM
Notes : 100ms, 11.5ms, -16.19dB

TRACE1 : Normal Peak (dBμV) Trace

$$Duty\ Cycle\ Factor(dB) = 20 \times \log_{10} \frac{(16 \times 0.25msec) + (23 \times 0.5msec)}{100msec} = -16.19dB$$

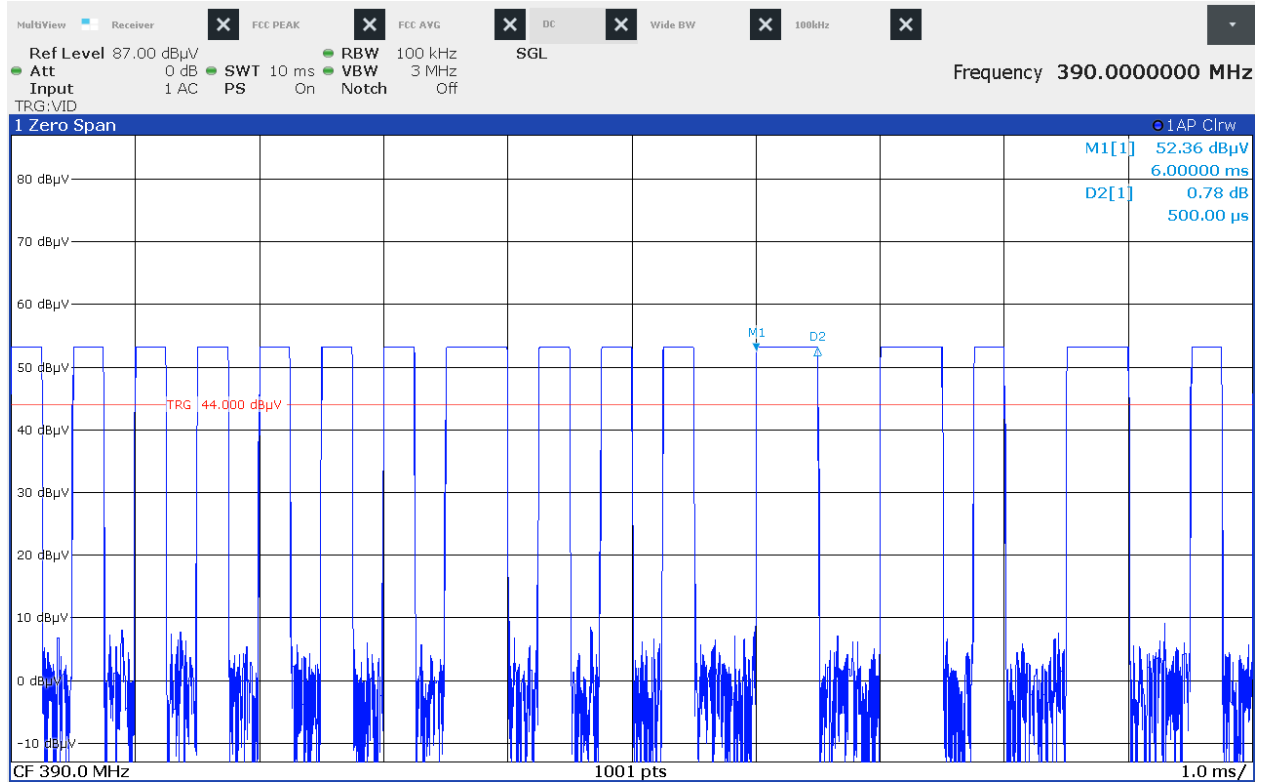
Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	390MHz
Result	Duty Cycle Factor = -16.19dB
Notes	E



Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 390MHz E Code
Parameters :
Date : 8/10/2026 1:24:09 PM
Notes : Pulse 1

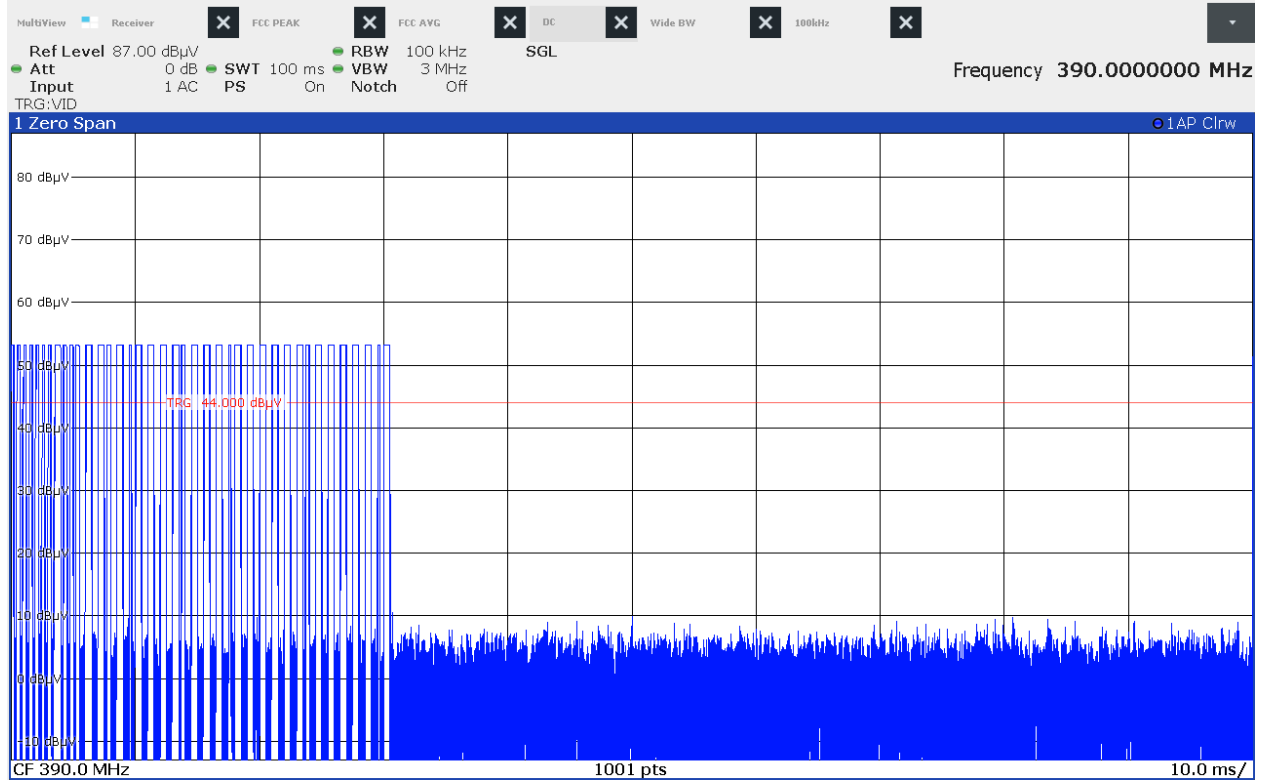
TRACE1 : Normal Peak (dBμV) Trace



Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 390MHz E Code
Parameters :
Date : 8/10/2026 1:24:40 PM
Notes : Pulse 2

TRACE1 : Normal Peak (dBμV) Trace



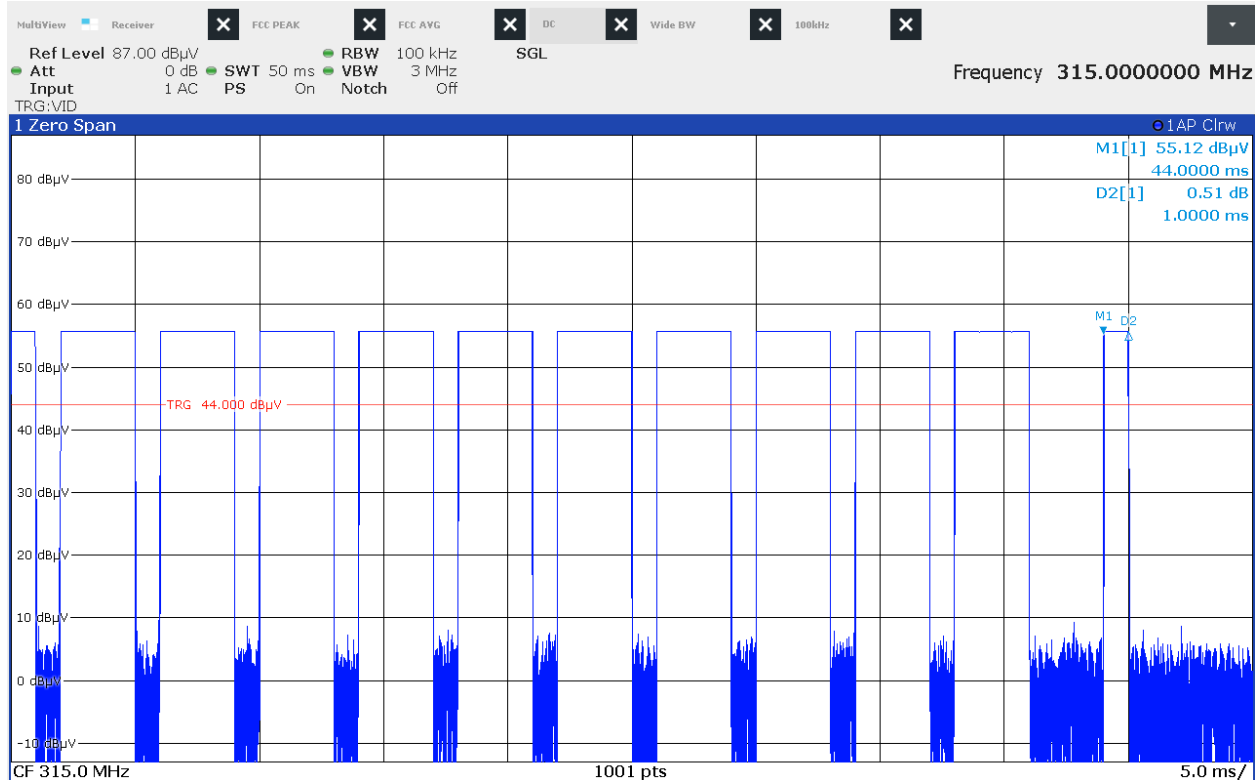
Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 390MHz E Code
Parameters :
Date : 8/10/2026 1:26:41 PM
Notes : 100ms

TRACE1 : Normal Peak (dBμV) Trace

$$\text{Duty Cycle Factor}(dB) = 20 \times \log_{10} \frac{(16 \times 0.25msec) + (23 \times 0.5msec)}{100msec} = -16.19dB$$

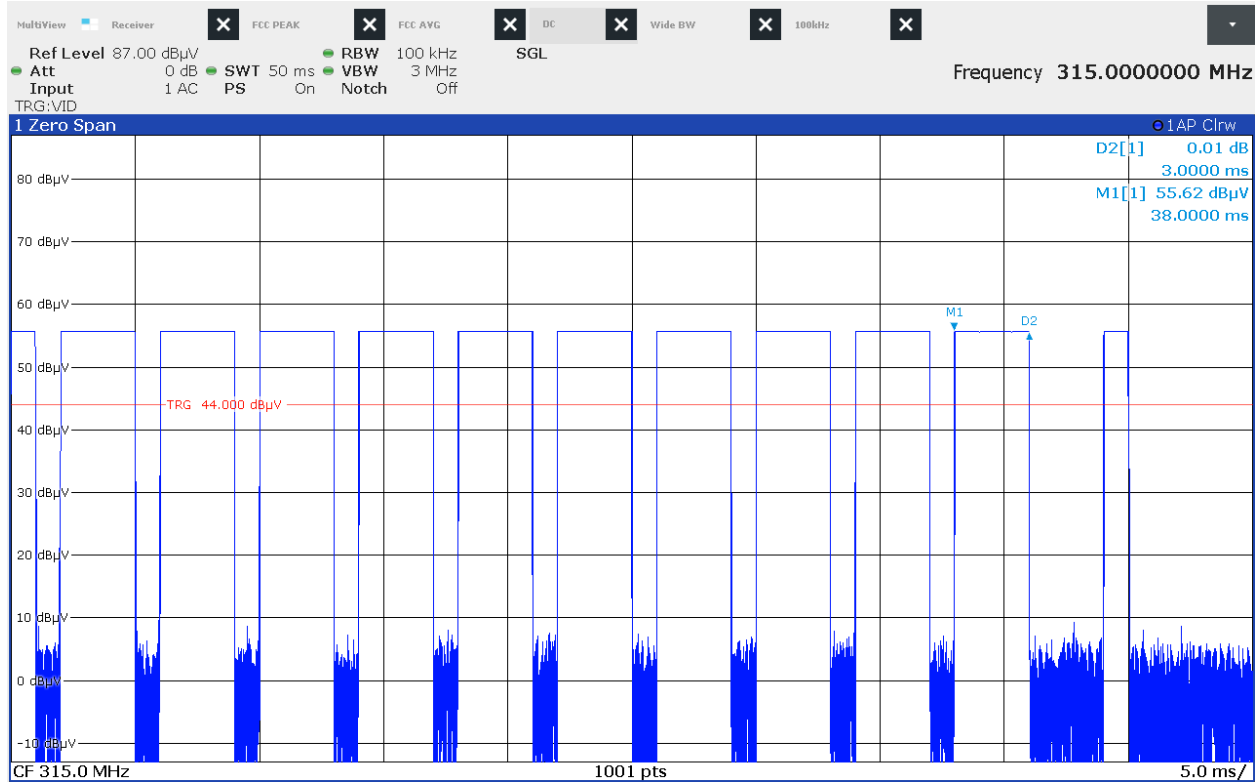
Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	315MHz
Result	Duty Cycle Factor = -7.96dB
Notes	DIP



Duty Cycle

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E1
 Mode : 315MHz DIP
 Parameters :
 Date : 8/10/2026 1:34:32 PM
 Notes : Pulse 1

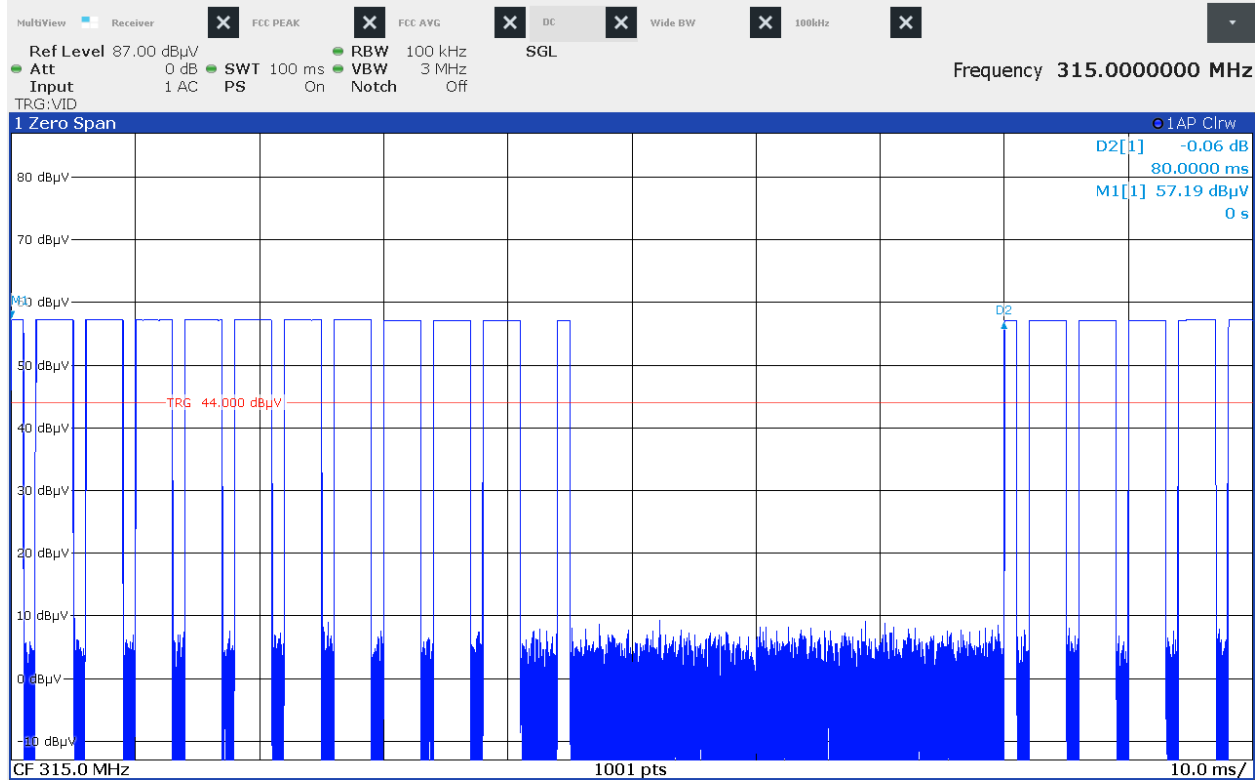
TRACE1 : Normal Peak (dBμV) Trace



Duty Cycle

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E1
 Mode : 315MHz DIP
 Parameters :
 Date : 8/10/2026 1:34:57 PM
 Notes : Pulse 2

TRACE1 : Normal Peak (dBμV) Trace



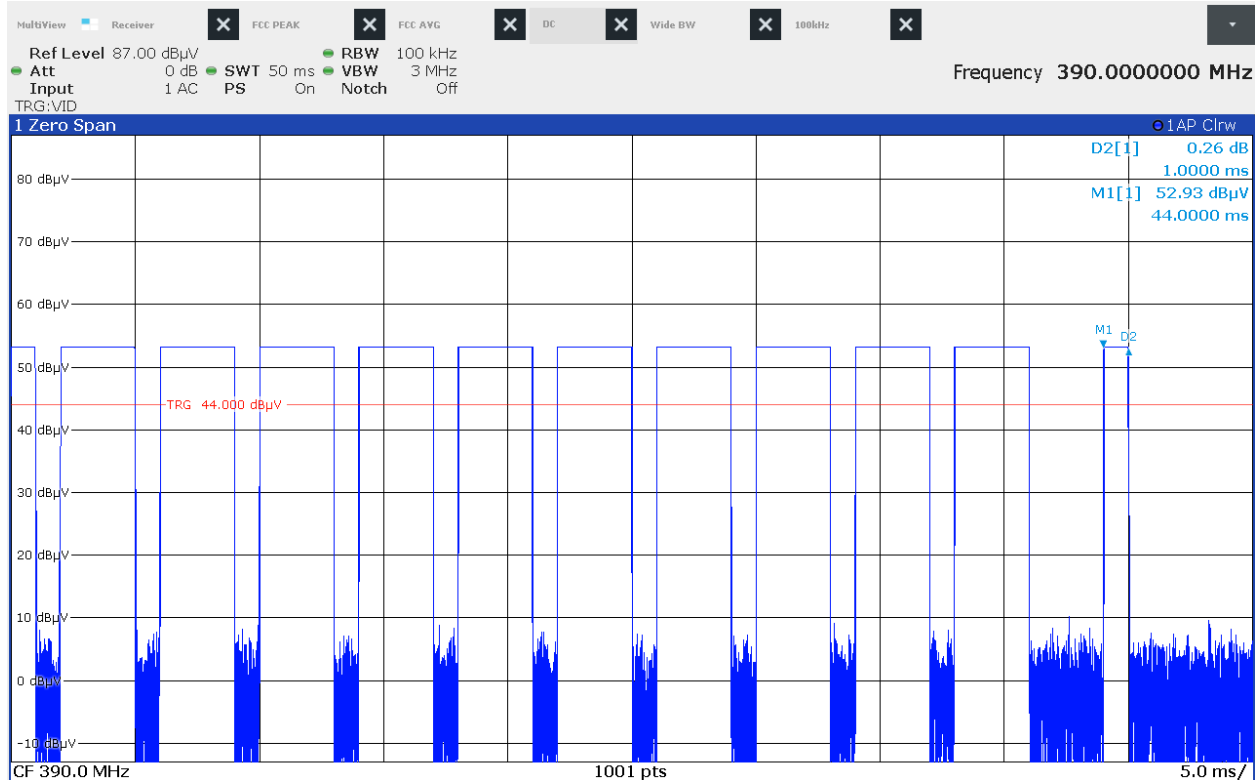
Duty Cycle

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E1
 Mode : 315MHz DIP
 Parameters :
 Date : 8/10/2026 1:59:11 PM
 Notes : Full period, 80ms

TRACE1 : Normal Peak (dBμV) Trace

$$\text{Duty Cycle Factor}(dB) = 20 \times \log_{10} \frac{(2 \times 1msec) + (10 \times 3msec)}{80msec} = -7.96dB$$

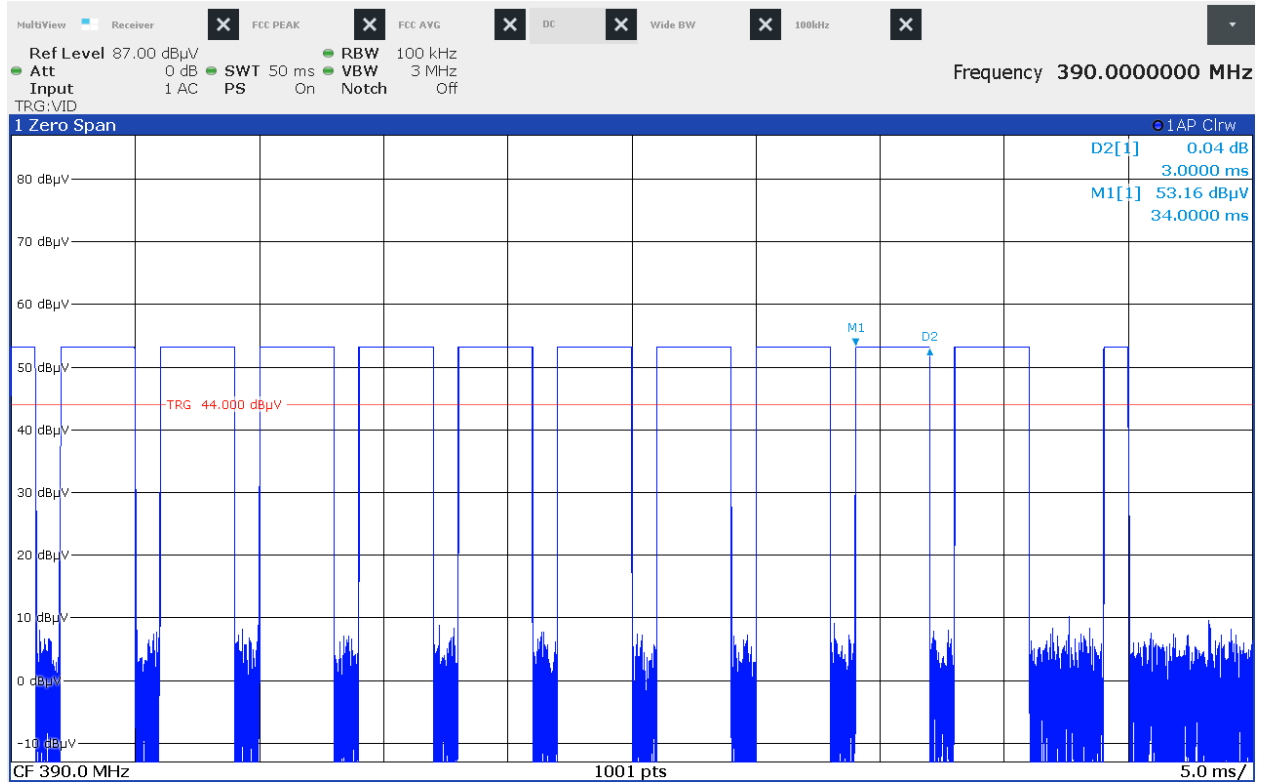
Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	390MHz
Result	Duty Cycle Factor = -7.96dB
Notes	DIP



Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 390MHz DIP
Parameters :
Date : 8/10/2026 3:35:37 PM
Notes : Pulse 1, 1ms

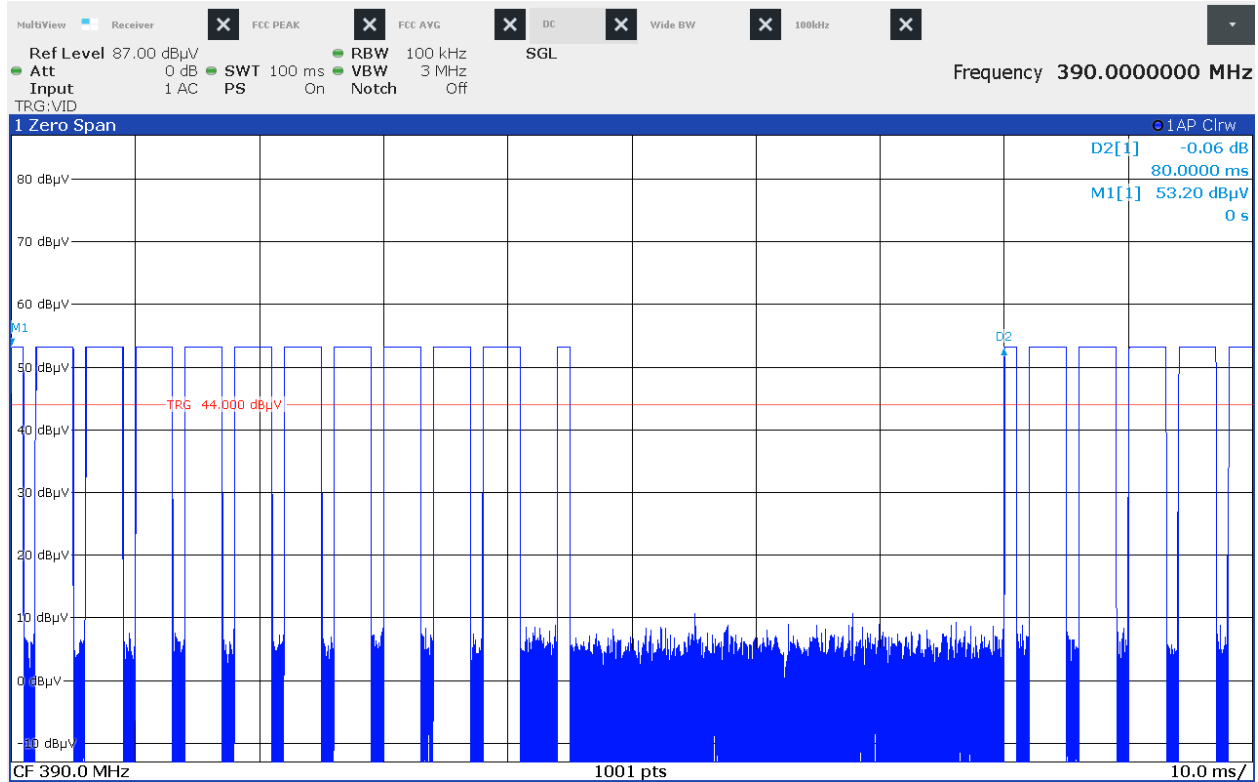
TRACE1 : Normal Peak (dBμV) Trace



Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 390MHz DIP
Parameters :
Date : 8/10/2026 3:36:12 PM
Notes : Pulse 2, 3ms

TRACE1 : Normal Peak (dBμV) Trace



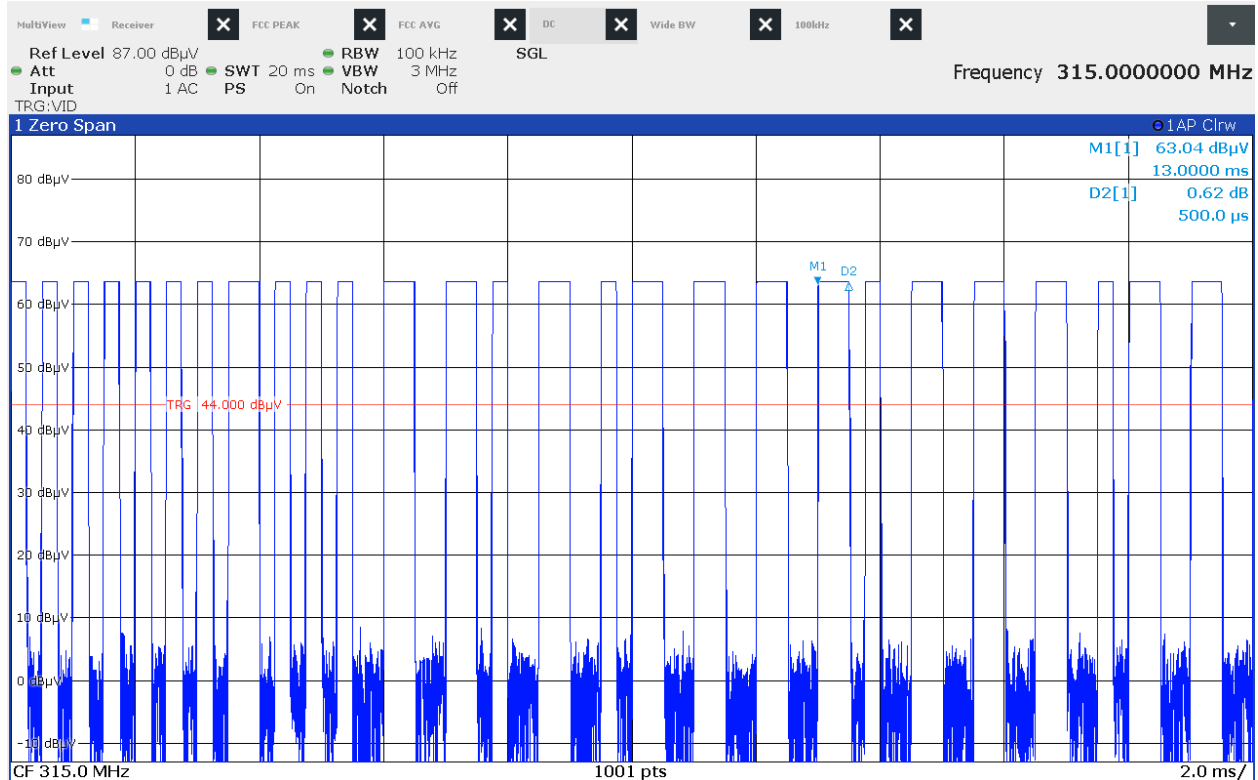
Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 390MHz DIP
Parameters :
Date : 8/10/2026 3:34:11 PM
Notes : 100ms

TRACE1 : Normal Peak (dBμV) Trace

$$\text{Duty Cycle Factor}(dB) = 20 \times \log_{10} \frac{(2 \times 1\text{msec}) + (10 \times 3\text{msec})}{80\text{msec}} = -7.96\text{dB}$$

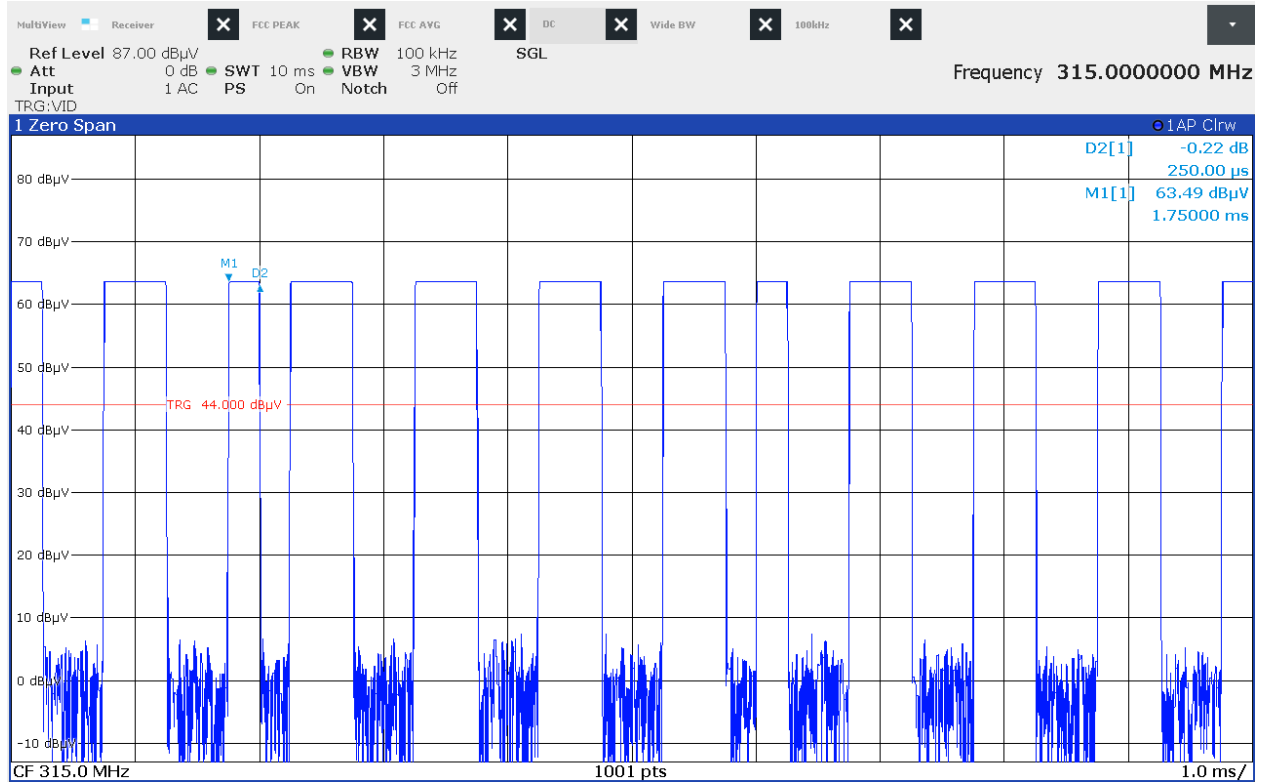
Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	315MHz
Result	Duty Cycle Factor = -13.35dB
Notes	EDIP



Duty Cycle

Manufacturer : Chamberlain
 Model Number : L993LT
 Serial Number : E1
 Mode : 315MHz EDIP
 Parameters :
 Date : 8/10/2026 2:25:23 PM
 Notes : Pulse 1, 0.5ms

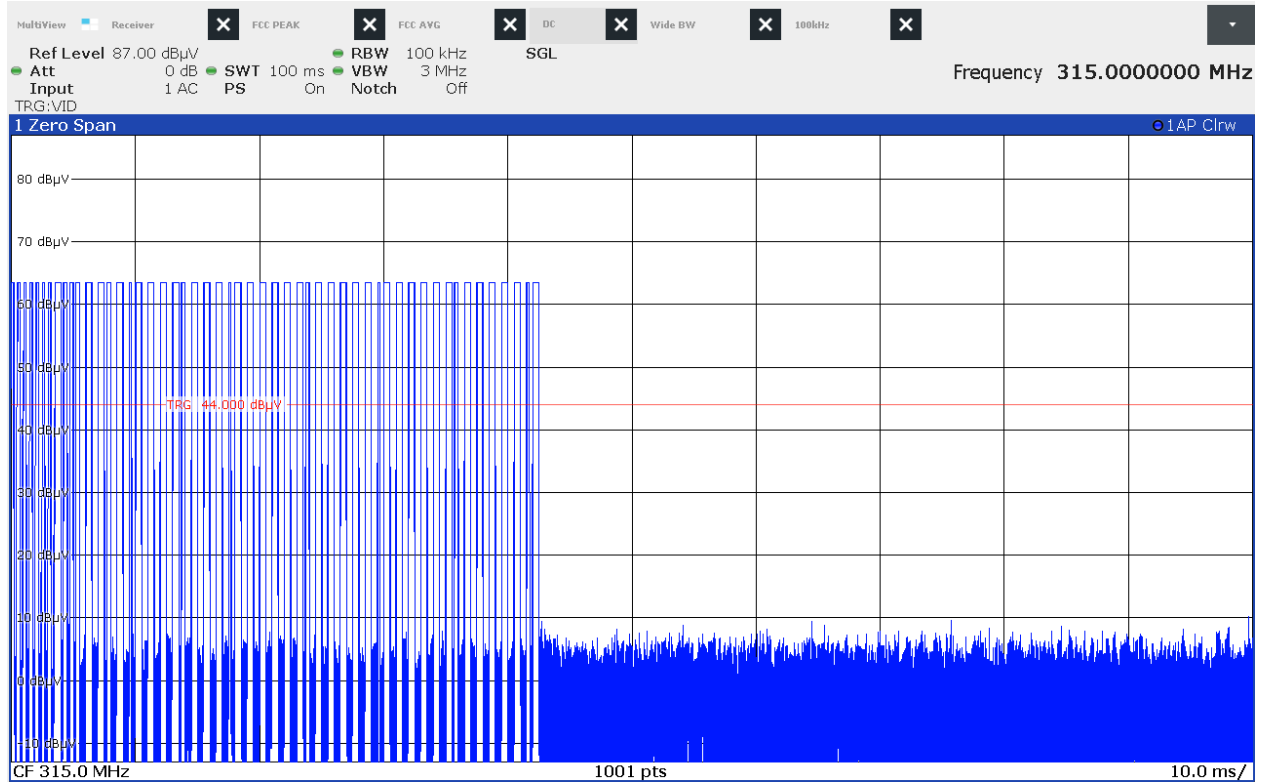
TRACE1 : Normal Peak (dBμV) Trace



Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 315MHz EDIP
Parameters :
Date : 8/10/2026 2:26:36 PM
Notes : Pulse 2, 0.25ms

TRACE1 : Normal Peak (dBμV) Trace



Duty Cycle

Manufacturer : Chamberlain
Model Number : L993LT
Serial Number : E1
Mode : 315MHz EDIP
Parameters :
Date : 8/10/2026 2:27:07 PM
Notes : 100ms

TRACE1 : Normal Peak (dBμV) Trace

$$Duty\ Cycle\ Factor(dB) = 20 \times \log_{10} \frac{(34 \times 0.5msec) + (18 \times 0.25msec)}{100msec} = -13.35dB$$

23. Transmitter Radiated Emissions

EUT Information	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx

Test Setup Details	
Setup Format	Tabletop
Height of Support	NA
Measurement Method	Radiated
Type of Test Site	Semi-Anechoic Chamber
Test Site Used	R21
Type of Antennas Used	Below 1GHz: Bilog (or equivalent) Above 1GHz: Double-ridged waveguide (or equivalent)
Notes	None

Measurement Uncertainty	
Measurement Type	Expanded Measurement Uncertainty
Radiated disturbance (electric field strength on an open area test site or alternative test site) (30 MHz – 1000 MHz)	4.3
Radiated disturbance (electric field strength on an open area test site or alternative test site) (1 GHz – 6 GHz)	3.1
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

Procedure

All tests were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. The walls and ceiling of the shielded chamber are lined with ferrite tiles. Anechoic absorber material is installed over the ferrite tile. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4-2014 for site attenuation.

The shielded enclosure prevents emissions from other sources, such as radio and TV stations, from interfering with the measurements. All power lines 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.

A preliminary radiated emissions test was performed to determine the emission characteristics of the EUT. For the preliminary test, a broadband measuring antenna was positioned at a 3 meter distance from the EUT. The entire frequency range from 30MHz to 4.5GHz was investigated using a peak detector function. The data was then processed by the computer to calculate equivalent field intensity.

The final emission tests were then manually performed over the frequency range of 30MHz to 4.5GHz. Between 30MHz and 1000MHz, a bilog antenna was used as the pick-up device. The EUT was placed on an 80cm high non-conductive stand. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer.

Above 1GHz, a broadband double ridged waveguide antenna was used as the pick-up device. The EUT was placed on an 150cm high non-conductive stand. A peak detector with a resolution bandwidth of 1 MHz was used on the spectrum analyzer.

The peak detected levels were converted to average levels using a duty cycle factor which was computed from the pulse train.

To ensure that maximum or worst case, emission levels were measured, the following steps were taken:

- 1) The EUT was rotated so that all of its sides were exposed to the receiving antenna.
- 2) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
- 3) The measuring antenna was raised and lowered from 1 to 4 meters for each antenna polarization to maximize the readings.
- 4) For hand-held or body-worn devices, the EUT was rotated through three orthogonal axes to determine which orientation produces the highest emission relative to the limit.

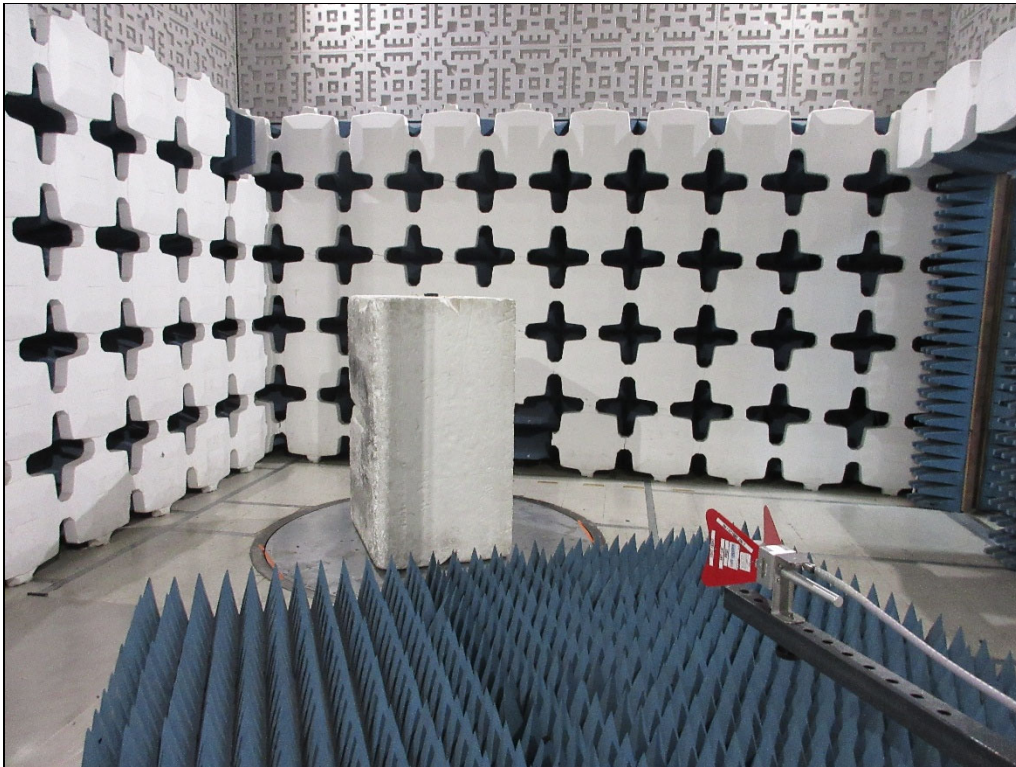
In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer and the antenna cannot be raised to 4 meters. The measuring antenna is raised or lowered as much as the cable will allow and the EUT is rotated through all axis to ensure the maximum readings are recorded.



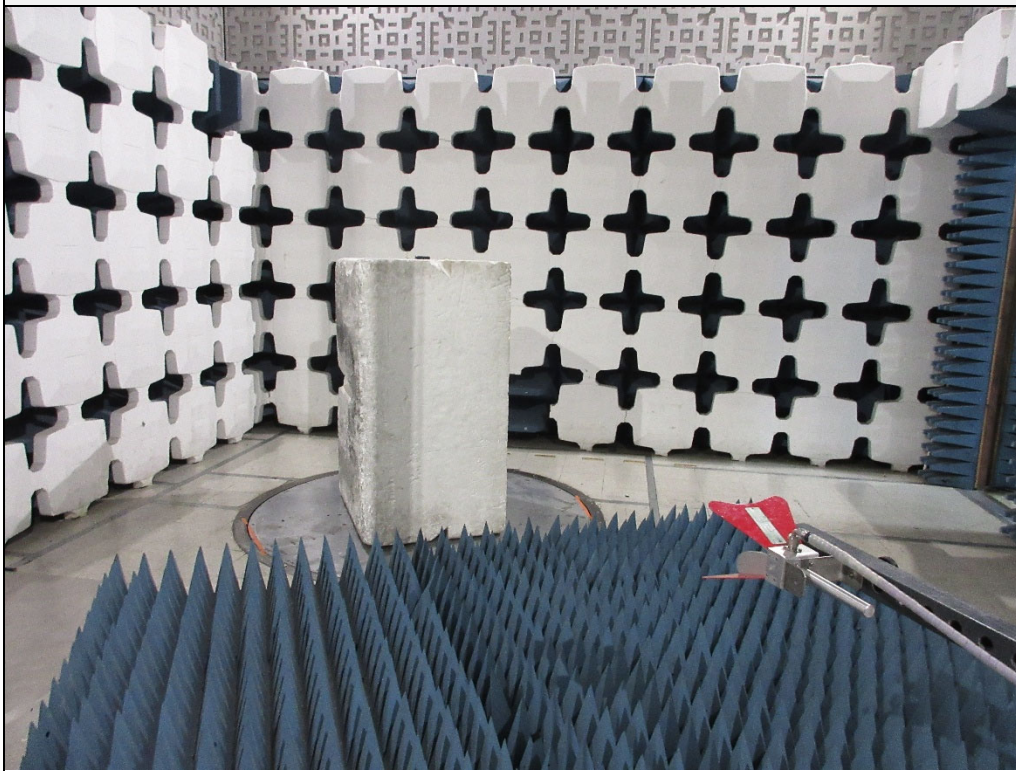
Test Setup for Radiated Spurious Emissions: 30MHz to 1GHz, Horizontal Polarization



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



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



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

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	315MHz
Notes	D Code

Freq. (MHz)	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dBuV/m)	Total (uV/m)	Limit (uV/m)	Margin (dB)
315.000	H	62.8		1.2	19.3	0.0	-13.6	69.8	3091.3	6041.7	-5.8
315.000	V	52.0		1.2	19.3	0.0	-13.6	59.0	888.5	6041.7	-16.7
630.000	H	17.5	*	1.7	25.0	0.0	-13.6	30.7	34.4	604.2	-24.9
630.000	V	16.9	*	1.7	25.0	0.0	-13.6	30.1	32.1	604.2	-25.5
945.000	H	18.2	*	2.1	27.0	0.0	-13.6	33.7	48.5	604.2	-21.9
945.000	V	17.5	*	2.1	27.0	0.0	-13.6	33.0	44.4	604.2	-22.7
1260.000	H	22.7	*	2.5	28.9	0.0	-13.6	40.5	105.7	604.2	-15.1
1260.000	V	23.5	*	2.5	28.9	0.0	-13.6	41.2	115.1	604.2	-14.4
1575.000	H	22.5	*	2.7	28.3	0.0	-13.6	40.0	100.3	500.0	-14.0
1575.000	V	22.8	*	2.7	28.3	0.0	-13.6	40.3	103.6	500.0	-13.7
1890.000	H	23.3	*	3.0	31.2	0.0	-13.6	44.0	158.4	604.2	-11.6
1890.000	V	23.3	*	3.0	31.2	0.0	-13.6	44.0	158.6	604.2	-11.6
2205.000	H	52.1	*	3.3	31.8	-40.7	-13.6	32.9	44.1	500.0	-21.1
2205.000	V	52.1	*	3.3	31.8	-40.7	-13.6	32.8	43.8	500.0	-21.1
2520.000	H	51.0	*	3.5	32.3	-41.3	-13.6	32.0	39.9	604.2	-23.6
2520.000	V	50.0	*	3.5	32.3	-41.3	-13.6	31.0	35.3	604.2	-24.7
2835.000	H	51.6	*	3.8	32.5	-41.3	-13.6	33.0	44.8	500.0	-21.0
2835.000	V	50.8	*	3.8	32.5	-41.3	-13.6	32.3	41.1	500.0	-21.7
3150.000	H	51.8	*	4.0	33.0	-41.0	-13.6	34.3	51.6	604.2	-21.4
3150.000	V	52.3	*	4.0	33.0	-41.0	-13.6	34.7	54.4	604.2	-20.9

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	390MHz
Notes	D Code

Freq. (MHz)	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dBuV/m)	Total (uV/m)	Limit (uV/m)	Margin (dB)
390.000	H	59.0		1.3	21.5	0.0	-13.6	68.3	2608.5	9166.7	-10.9
390.000	V	54.7		1.3	21.5	0.0	-13.6	64.0	1586.3	9166.7	-15.2
780.000	H	17.6	*	1.9	25.9	0.0	-13.6	31.8	38.8	916.7	-27.5
780.000	V	17.1	*	1.9	25.9	0.0	-13.6	31.3	36.8	916.7	-27.9
1170.000	H	23.3	*	2.4	28.3	0.0	-13.6	40.4	104.7	500.0	-13.6
1170.000	V	23.6	*	2.4	28.3	0.0	-13.6	40.7	108.2	500.0	-13.3
1560.000	H	23.8	*	2.7	28.3	0.0	-13.6	41.2	115.2	500.0	-12.8
1560.000	V	23.2	*	2.7	28.3	0.0	-13.6	40.6	107.4	500.0	-13.4
1950.000	H	24.0	*	3.0	31.8	0.0	-13.6	45.3	183.0	916.7	-14.0
1950.000	V	23.6	*	3.0	31.8	0.0	-13.6	44.8	173.6	916.7	-14.5
2340.000	H	50.3	*	3.4	32.0	-41.0	-13.6	31.0	35.7	500.0	-22.9
2340.000	V	50.4	*	3.4	32.0	-41.0	-13.6	31.2	36.3	500.0	-22.8
2730.000	H	50.8	*	3.7	32.4	-41.3	-13.6	32.1	40.1	500.0	-21.9
2730.000	V	51.7	*	3.7	32.4	-41.3	-13.6	33.0	44.6	500.0	-21.0
3120.000	H	50.9	*	4.0	33.0	-41.0	-13.6	33.3	46.3	916.7	-25.9
3120.000	V	50.9	*	4.0	33.0	-41.0	-13.6	33.2	45.9	916.7	-26.0
3510.000	H	50.0	*	4.2	33.2	-40.5	-13.6	33.3	46.2	916.7	-25.9
3510.000	V	49.5	*	4.2	33.2	-40.5	-13.6	32.9	44.0	916.7	-26.4
3900.000	H	49.8	*	4.4	33.5	-40.3	-13.6	33.9	49.3	500.0	-20.1
3900.000	V	50.2	*	4.4	33.5	-40.3	-13.6	34.2	51.2	500.0	-19.8

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	315MHz
Notes	E Code

Freq. (MHz)	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dBuV/m)	Total (uV/m)	Limit (uV/m)	Margin (dB)
315.000	H	63.3		1.2	19.3	0.0	-16.2	67.6	2399.6	6041.7	-8.0
315.000	V	52.2		1.2	19.3	0.0	-16.2	56.5	671.7	6041.7	-19.1
630.000	H	17.1	*	1.7	25.0	0.0	-16.2	27.7	24.2	604.2	-28.0
630.000	V	17.1	*	1.7	25.0	0.0	-16.2	27.6	24.0	604.2	-28.0
945.000	H	17.2	*	2.1	27.0	0.0	-16.2	30.1	31.8	604.2	-25.6
945.000	V	17.4	*	2.1	27.0	0.0	-16.2	30.3	32.8	604.2	-25.3
1260.000	H	23.7	*	2.5	28.9	0.0	-16.2	38.9	87.6	604.2	-16.8
1260.000	V	23.5	*	2.5	28.9	0.0	-16.2	38.6	85.2	604.2	-17.0
1575.000	H	23.1	*	2.7	28.3	0.0	-16.2	38.0	79.2	500.0	-16.0
1575.000	V	22.7	*	2.7	28.3	0.0	-16.2	37.6	75.6	500.0	-16.4
1890.000	H	22.9	*	3.0	31.2	0.0	-16.2	41.0	111.7	604.2	-14.7
1890.000	V	23.6	*	3.0	31.2	0.0	-16.2	41.7	121.3	604.2	-13.9
2205.000	H	51.7	*	3.3	31.8	-40.7	-16.2	29.9	31.1	500.0	-24.1
2205.000	V	51.7	*	3.3	31.8	-40.7	-16.2	29.8	30.8	500.0	-24.2
2520.000	H	51.1	*	3.5	32.3	-41.3	-16.2	29.4	29.6	604.2	-26.2
2520.000	V	50.5	*	3.5	32.3	-41.3	-16.2	28.8	27.7	604.2	-26.8
2835.000	H	50.7	*	3.8	32.5	-41.3	-16.2	29.6	30.1	500.0	-24.4
2835.000	V	51.0	*	3.8	32.5	-41.3	-16.2	29.9	31.2	500.0	-24.1
3150.000	H	51.5	*	4.0	33.0	-41.0	-16.2	31.3	36.8	604.2	-24.3
3150.000	V	51.6	*	4.0	33.0	-41.0	-16.2	31.4	37.1	604.2	-24.2

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	390MHz
Notes	E Code

Freq. (MHz)	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dBuV/m)	Total (uV/m)	Limit (uV/m)	Margin (dB)
390.000	H	59.2		1.3	21.5	0.0	-16.2	65.9	1969.7	9166.7	-13.4
390.000	V	53.4		1.3	21.5	0.0	-16.2	60.1	1016.0	9166.7	-19.1
780.000	H	16.8	*	1.9	25.9	0.0	-16.2	28.4	26.3	916.7	-30.8
780.000	V	17.7	*	1.9	25.9	0.0	-16.2	29.3	29.1	916.7	-30.0
1170.000	H	23.5	*	2.4	28.3	0.0	-16.2	38.0	79.5	500.0	-16.0
1170.000	V	23.8	*	2.4	28.3	0.0	-16.2	38.3	82.0	500.0	-15.7
1560.000	H	23.7	*	2.7	28.3	0.0	-16.2	38.5	84.4	500.0	-15.5
1560.000	V	22.8	*	2.7	28.3	0.0	-16.2	37.6	76.2	500.0	-16.3
1950.000	H	23.4	*	3.0	31.8	0.0	-16.2	42.0	125.9	916.7	-17.2
1950.000	V	23.9	*	3.0	31.8	0.0	-16.2	42.5	132.9	916.7	-16.8
2340.000	H	51.0	*	3.4	32.0	-41.0	-16.2	29.2	28.9	500.0	-24.8
2340.000	V	50.6	*	3.4	32.0	-41.0	-16.2	28.7	27.4	500.0	-25.2
2730.000	H	51.3	*	3.7	32.4	-41.3	-16.2	29.9	31.3	500.0	-24.1
2730.000	V	51.0	*	3.7	32.4	-41.3	-16.2	29.6	30.3	500.0	-24.4
3120.000	H	51.6	*	4.0	33.0	-41.0	-16.2	31.4	37.1	916.7	-27.9
3120.000	V	51.4	*	4.0	33.0	-41.0	-16.2	31.1	36.1	916.7	-28.1
3510.000	H	49.8	*	4.2	33.2	-40.5	-16.2	30.6	33.7	916.7	-28.7
3510.000	V	49.7	*	4.2	33.2	-40.5	-16.2	30.4	33.0	916.7	-28.9
3900.000	H	49.9	*	4.4	33.5	-40.3	-16.2	31.3	36.6	500.0	-22.7
3900.000	V	49.7	*	4.4	33.5	-40.3	-16.2	31.1	35.7	500.0	-22.9

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	315MHz
Notes	DIP

Freq. (MHz)	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dBuV/m)	Total (uV/m)	Limit (uV/m)	Margin (dB)
315.000	H	62.1		1.2	19.3	0.0	-8.0	74.7	5434.3	6041.7	-0.9
315.000	V	51.1		1.2	19.3	0.0	-8.0	63.7	1524.6	6041.7	-12.0
630.000	H	17.4	*	1.7	25.0	0.0	-8.0	36.2	64.4	604.2	-19.5
630.000	V	17.0	*	1.7	25.0	0.0	-8.0	35.8	61.7	604.2	-19.8
945.000	H	17.5	*	2.1	27.0	0.0	-8.0	38.6	85.2	604.2	-17.0
945.000	V	17.2	*	2.1	27.0	0.0	-8.0	38.3	82.4	604.2	-17.3
1260.000	H	23.8	*	2.5	28.9	0.0	-8.0	47.1	227.3	604.2	-8.5
1260.000	V	23.7	*	2.5	28.9	0.0	-8.0	47.1	225.5	604.2	-8.6
1575.000	H	22.8	*	2.7	28.3	0.0	-8.0	45.9	197.8	500.0	-8.1
1575.000	V	23.6	*	2.7	28.3	0.0	-8.0	46.8	217.6	500.0	-7.2
1890.000	H	24.0	*	3.0	31.2	0.0	-8.0	50.3	327.5	604.2	-5.3
1890.000	V	23.4	*	3.0	31.2	0.0	-8.0	49.7	304.9	604.2	-5.9
2205.000	H	51.9	*	3.3	31.8	-40.7	-8.0	38.2	81.4	500.0	-15.8
2205.000	V	52.0	*	3.3	31.8	-40.7	-8.0	38.3	82.6	500.0	-15.6
2520.000	H	50.9	*	3.5	32.3	-41.3	-8.0	37.5	74.7	604.2	-18.2
2520.000	V	51.3	*	3.5	32.3	-41.3	-8.0	37.9	78.4	604.2	-17.7
2835.000	H	51.1	*	3.8	32.5	-41.3	-8.0	38.2	81.1	500.0	-15.8
2835.000	V	51.2	*	3.8	32.5	-41.3	-8.0	38.3	81.9	500.0	-15.7
3150.000	H	51.6	*	4.0	33.0	-41.0	-8.0	39.7	96.2	604.2	-16.0
3150.000	V	51.8	*	4.0	33.0	-41.0	-8.0	39.8	98.1	604.2	-15.8

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	390MHz
Notes	DIP

Freq. (MHz)	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dBuV/m)	Total (uV/m)	Limit (uV/m)	Margin (dB)
390.000	H	59.8		1.3	21.5	0.0	-8.0	74.7	5431.2	9166.7	-4.5
390.000	V	53.9		1.3	21.5	0.0	-8.0	68.9	2772.7	9166.7	-10.4
780.000	H	17.1	*	1.9	25.9	0.0	-8.0	36.9	69.9	916.7	-22.4
780.000	V	17.3	*	1.9	25.9	0.0	-8.0	37.1	72.0	916.7	-22.1
1170.000	H	23.7	*	2.4	28.3	0.0	-8.0	46.4	207.9	500.0	-7.6
1170.000	V	23.3	*	2.4	28.3	0.0	-8.0	46.0	200.4	500.0	-7.9
1560.000	H	23.4	*	2.7	28.3	0.0	-8.0	46.4	209.6	500.0	-7.6
1560.000	V	22.8	*	2.7	28.3	0.0	-8.0	45.9	196.3	500.0	-8.1
1950.000	H	24.1	*	3.0	31.8	0.0	-8.0	50.9	352.4	916.7	-8.3
1950.000	V	23.6	*	3.0	31.8	0.0	-8.0	50.5	334.2	916.7	-8.8
2340.000	H	51.2	*	3.4	32.0	-41.0	-8.0	37.6	75.8	500.0	-16.4
2340.000	V	51.1	*	3.4	32.0	-41.0	-8.0	37.5	75.1	500.0	-16.5
2730.000	H	51.4	*	3.7	32.4	-41.3	-8.0	38.3	81.9	500.0	-15.7
2730.000	V	51.6	*	3.7	32.4	-41.3	-8.0	38.5	84.0	500.0	-15.5
3120.000	H	51.8	*	4.0	33.0	-41.0	-8.0	39.8	97.2	916.7	-19.5
3120.000	V	51.5	*	4.0	33.0	-41.0	-8.0	39.5	94.1	916.7	-19.8
3510.000	H	49.9	*	4.2	33.2	-40.5	-8.0	38.8	87.2	916.7	-20.4
3510.000	V	49.7	*	4.2	33.2	-40.5	-8.0	38.7	85.6	916.7	-20.6
3900.000	H	50.5	*	4.4	33.5	-40.3	-8.0	40.2	102.0	500.0	-13.8
3900.000	V	50.2	*	4.4	33.5	-40.3	-8.0	39.9	98.3	500.0	-14.1

Test Details	
Manufacturer	The Chamberlain Group LLC
Equipment Under Test	myQ Learning Remote
Model No.	L993LT
Serial No.	E1
Mode	Tx
Frequency Tested	315MHz
Notes	EDIP

Freq. (MHz)	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dBuV/m)	Total (uV/m)	Limit (uV/m)	Margin (dB)
315.000	H	63.9		1.2	19.3	0.0	-13.4	71.1	3569.8	6041.7	-4.6
315.000	V	52.8		1.2	19.3	0.0	-13.4	60.0	999.2	6041.7	-15.6
630.000	H	17.0	*	1.7	25.0	0.0	-13.4	30.4	33.2	604.2	-25.2
630.000	V	16.9	*	1.7	25.0	0.0	-13.4	30.3	32.6	604.2	-25.4
945.000	H	17.5	*	2.1	27.0	0.0	-13.4	33.2	45.6	604.2	-22.4
945.000	V	17.5	*	2.1	27.0	0.0	-13.4	33.2	45.7	604.2	-22.4
1260.000	H	24.3	*	2.5	28.9	0.0	-13.4	42.3	129.9	604.2	-13.4
1260.000	V	23.8	*	2.5	28.9	0.0	-13.4	41.8	123.1	604.2	-13.8
1575.000	H	22.5	*	2.7	28.3	0.0	-13.4	40.3	103.2	500.0	-13.7
1575.000	V	23.3	*	2.7	28.3	0.0	-13.4	41.0	112.3	500.0	-13.0
1890.000	H	23.3	*	3.0	31.2	0.0	-13.4	44.1	161.0	604.2	-11.5
1890.000	V	24.1	*	3.0	31.2	0.0	-13.4	45.0	178.1	604.2	-10.6
2205.000	H	51.7	*	3.3	31.8	-40.7	-13.4	32.7	43.2	500.0	-21.3
2205.000	V	52.4	*	3.3	31.8	-40.7	-13.4	33.4	46.5	500.0	-20.6
2520.000	H	50.9	*	3.5	32.3	-41.3	-13.4	32.1	40.1	604.2	-23.6
2520.000	V	50.7	*	3.5	32.3	-41.3	-13.4	32.0	39.6	604.2	-23.7
2835.000	H	51.4	*	3.8	32.5	-41.3	-13.4	33.1	45.3	500.0	-20.9
2835.000	V	51.1	*	3.8	32.5	-41.3	-13.4	32.8	43.8	500.0	-21.2
3150.000	H	52.0	*	4.0	33.0	-41.0	-13.4	34.6	53.8	604.2	-21.0
3150.000	V	51.9	*	4.0	33.0	-41.0	-13.4	34.5	53.0	604.2	-21.1

24. Scope of Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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ELECTRICAL

Valid To: June 30, 2027

Certificate Number: 1786.01

In recognition of the successful completion of the A2LA Accreditation Program evaluation process, accreditation is granted to this laboratory at the location listed above, as well as the satellite location listed below, to perform the following automotive electromagnetic compatibility and other electrical tests:

Test Technology:**Test Method(s)¹:**

Transient Immunity
(Max Voltage 1500 V/Max current 1000 A)

ISO 7637-2 (including emissions); ISO 7637-3; ISO 7637-4;
ISO 16750-2, Sections 4.6.3 and 4.6.4;
ISO 21498-1; ISO 21498-2;
CS.00054, Section 5.9; CS.00244 Section 5.2.15 through 5.2.21; CS.00245; CS.00246 Section 5.2.4;
EMC-CS-2009.1 (CI220); FMC1278 (CI220, CI221, CI222);
GMW 3097, Section 3.5; SAE J1113-11; SAE J1113-12;
ECE Regulation 10.06 Annex 10

Electrostatic Discharge (ESD)
(Up to +/-25 kV)

ISO 10605 (2001, 2008); ISO 10605;
CS.00054, Section 5.10; CS.00244 Section 5.5;
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; CISPR 25;
CS.00054, Sections 5.6.1 and 5.6.2;
CS.00244 Sections 5.4.2 and 5.4.3; GMW 3097, Section 3.3.2;
EMC-CS-2009.1 (CE 420); FMC1278 (CE420, CE421, CE 430, CE440)

(A2LA Cert. No. 1786.01) 08/14/2025



Page 1 of 10

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Test Technology:
Test Method(s)¹:

Radiated Emissions Anechoic
(Up to 6 GHz)

CISPR 25 (2002, 2008), Section 6.4;
CISPR 25 (2016), Section 6.5; CISPR 25;
CS.00054, Section 5.6.3; CS.00244 Section 5.4.4;
GMW 3097, Section 3.3.1;
EMC-CS-2009.1 (RE 310); FMC1278 (RE310, RE320)

Vehicle Radiated Emissions

CISPR 12; CISPR 36; ICES-002;
ECE Regulation 10.06 Annex 4;
ECE Regulation 10.06 Annex 5

Bulk Current Injection (BCI)
(1 to 400MHz 500mA)

ISO 11452-4; CS.00054, Section 5.8.1;
CS.00244 Section 5.3.2;
GMW 3097, Section 3.4.1; SAE J1113-4;
EMC-CS-2009.1 (RI112); FMC1278 (RI112);
ECE Regulation 10.06 Annex 9

Radiated Immunity Anechoic
(Up to 6GHz and 200V/m)
(Including Radar Pulse 600V/m)

ISO 11452-2;
CS.00054, Section 5.8.2; CS.00244 Section 5.3.3;
GMW 3097, Section 3.4.2;
EMC-CS-2009.1 (RI114); FMC1278 (RI114); SAE J1113-21;
ECE Regulation 10.06 Annex 9

Radiated Immunity Magnetic Field

ISO 11452-8; FMC 1278 (RI140); CS.00244 Section 5.3.4

Radiated Immunity Reverb
(360MHz to 6GHz and 100V/m)

ISO/IEC 61000-4-21; GMW 3097, Section 3.4.3;
EMC-CS-2009.1 (RI114); FMC1278 (RI114);
ISO 11452-11

Radiated Immunity
(Portable Transmitters)
(Up to 6GHz and 20W)

ISO 11452-9;
CS.00244 Section 5.3.5;
EMC-CS-2009.1 (RI115); FMC1278 (RI115);
GMW 3097, Sec 3.4.4

Vehicle Radiated Immunity (ALSE)

ISO 11451-2; ECE Regulation 10.06 Annex 6

Vehicle Product Specific EMC Standards

EN 14982; EN ISO 13309; ISO 13766; EN 50498;
EC Regulation No. 2015/208; EN 55012

Electrical Loads

ISO 16750-2

Stripline

ISO 11452-5

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; KS C 9811; CNS 13803 (1997, 2003);
CISPR 14-1; EN 55014-1; AS/NZS CISPR 14.1;

Test Technology:

Radiated and Conducted (cont'd)
(3m Semi-anechoic chamber,
up to 40 GHz)

Test Method(s)¹:

CISPR 16-2-1 (2008); CISPR 16-2-1; KS C 9814-1; 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; KS C 9832; KN 32;
ECE Regulation 10.06 Annex 7 (Broadband);
ECE Regulation 10.06 Annex 8 (Narrowband);
ECE Regulation 10.06 Annex 13 (Conducted);
ECE Regulation 10.06 Annex 14 (Conducted)

Cellular Radiated Spurious Emissions

ETSI TS 151 010-1 GSM; 3GPP TS 51.010-1, Sec 12;
ETSI TS 134 124 UMTS; 3GPP TS 34.124;
ETSI TS 136 124 LTE; E-UTRA; 3GPP TS 36.124

Current Harmonics

IEC 61000-3-2; IEC 61000-3-12;
EN 61000-3-2; KN 61000-3-2;
KS C 9610-3-2; ECE Regulation 10.06 Annex 11

Flicker and Fluctuations

IEC 61000-3-3; IEC 61000-3-11;
EN 61000-3-3; KN 61000-3-3;
KS C 9610-3-3; ECE Regulation 10.06 Annex 12

Immunity

Electrostatic Discharge

IEC 61000-4-2, Ed. 1.2 (2001);
IEC 61000-4-2 (1995) + A1(1998) + A2(2000);
EN 61000-4-2 (1995); EN 61000-4-2 (2009-05);
KN 61000-4-2 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-2; EN 61000-4-2; KN 61000-4-2;
KS C 9610-4-2; 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;
KS C 9610-4-3; 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;
KS C 9610-4-4; ECE Regulation 10.06 Annex 15