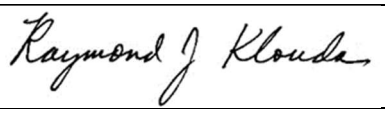
Engineering Test Report No. 2401840-02		
Report Date	December 3, 2024	
Manufacturer Name	The Chamberlain Group LLC	
Manufacturer Address	300 Windsor Dr Oak Brook, IL 60523	
Model No.	DeLorean Visor Remote – Q363LA	
Date Received	November 11, 2024	
Test Dates	November 11, 2024 – November 13, 2024	
Specifications	FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.231(b) Innovation, Science, and Economic Development Canada, RSS-210 Innovation, Science, and Economic Development Canada, RSS-GEN	
Test Facility	Elite Electronic Engineering, Inc. 1516 Centre Circle, Downers Grove, IL 60515	FCC Reg. Number: 269750 IC Reg. Number: 2987A CAB Identifier: US0107
Signature		
Tested by	Nathaniel Bouchie	
Signature		
Approved by	Raymond J. Klouda, Registered Professional Engineer of Illinois – 44894	
PO Number	4900097975	

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

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

Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the FCC "Code of Federal Regulations" Title 47 Part 15, Subpart 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.

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 5
6. Interconnect Leads 5
7. Modifications Made to the EUT 5
8. Modes of Operation 5
9. Test Specifications 5
10. Test Plan 5
11. Deviation, Additions to, or Exclusions from Test Specifications 6
12. Laboratory Conditions 6
13. Summary 6
14. Sample Calculations 6
15. Statement of Conformity 6
16. Certification 7
17. Photographs of EUT 8
18. Block Diagram of Test Setup 10
19. Equipment List 11
20. Periodic Operation Measurements 12
21. Duty Cycle Factor Measurements 19
22. Spurious Radiated Emissions 47
23. Occupied Bandwidth Measurements 56
24. Scope of Accreditation 67

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

1. Report Revision History

Revision	Date	Description
–	10 DEC 2024	Initial Release of Engineering Test Report No. 2401840-02

2. Introduction

2.1. Scope of Tests

This document presents the results of a series of RF emissions tests that were performed on three DeLorean Visor 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(b).

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 C63.10-2013.

2.3. Identification of the EUT

The EUTs were identified as follows:

EUT Identification	
Product Description	DeLorean Visor Remote
Model/Part No.	Q363LA
S/N	Sample 1 – Radiated Sample Sample E2 – E-code Conducted Sample Sample E4 – D-code Conducted Sample
Band of Operation	315MHz, 390MHz, 433.92MHz
Modulation Type	OOK
Software/Firmware Version	Sample 1: Hardware: 900-15630-7/014D15630 rev C Firmware: “security3-transmitter_latam_max_test_cont_ook_v4.0.14” Sample E2: Hardware: 900-15630-7/014D15630 rev C Firmware: 126A0630 (FW,DELOREAN,TRANSMITTER,MAX,LATAM) rev A.1 Sample E4: Hardware: 900-15630-7/014D15630 rev C Firmware: 126A0630 (FW,DELOREAN,TRANSMITTER,MAX,LATAM) rev A.1
Conducted Output Power	-3.1dBm
Antenna Type	Trace
20dB Bandwidth	53.9kHz
99% Bandwidth	113.6kHz
Size of EUT	3.25 in x 1.75 in x 0.75 in

The EUTs listed above were used throughout the test series.

3. Power Input

The EUTs were powered by 3.2VDC from internal batteries.

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
Support Laptop	---	---

6. Interconnect Leads

The following interconnect cables were submitted with the test items:

Item	Description
UART	Connects laptop to EUT

7. Modifications Made to the EUT

No modifications were made to the EUTs during the testing.

8. Modes of Operation

Mode	Button Presses	Description
D-Code Tx @ 315MHz	7	Buttons on the EUTs were pressed until the correct frequency was emitted. In the case of radiated samples, the number is shown in the previous column. For conducted samples, a specific button was set up for enabling each mode.
D-Code Tx @ 390MHz	9	
E-Code Tx @ 315MHz	1	
E-Code Tx @ 390MHz	3	
E-Code Tx @ 433.92MHz	5	

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, Part 15, Subpart C
- ANSI C63.4-2014, “American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40 GHz”
- ANSI C63.10-2013, “American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices”
- RSS-210 Issue 10, December 2019, “Licence-Exempt Radio Apparatus: Category I Equipment”
- RSS-Gen Issue 5, March 2019, Amendment 1, Innovation, Science, and Economic Development Canada, “Spectrum Management and Telecommunications, Radio Standards Specification, General Requirements for Compliance of Radio Apparatus”

10. Test Plan

No test plan was provided. Instructions were provided by personnel from The Chamberlain Group LLC and used in conjunction 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, and ANSI C63.4-2014 specifications.

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

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

12. Laboratory Conditions

Ambient Parameters	Value
Temperature	23.2°C
Relative Humidity	42%
Atmospheric Pressure	1014mb

13. Summary

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

Test Description	Requirements	Test Methods	S/N	Results
Periodic Operation Measurements	FCC 15C ISED RSS-210	ANSI C63.10: 2013	Sample E2 Sample E4	Conforms
Duty Cycle Factor Measurements	FCC 15C ISED RSS-210	ANSI C63.10: 2013	Sample E2 Sample E4	Conforms
Spurious Radiated Emissions	FCC 15C ISED RSS-210	ANSI C63.10: 2013	Sample 1	Conforms
Occupied Bandwidth Measurements	FCC 15C ISED RSS-210	ANSI C63.10: 2013	Sample E2 Sample E4	Conforms

14. Sample Calculations

For Powerline Conducted Emissions:

The resultant voltage level (VL) is a summation in decibels (dB) of the receiver meter reading (MTR) and the cable loss factor (CF).

Formula 1: VL (dBuV) = MTR (dBuV) + CF (dB).

For Radiated Emissions:

The resultant field strength (FS) is a summation in decibels (dB) of the receiver meter reading (MTR), the antenna correction factor (AF), and the cable loss factor (CF). If an external preamplifier is used, the total is reduced by its gain (-PA). If a distance correction (DC) is required, it is added to the total.

Formula 1: FS (dBuV/m) = MTR (dBuV) + AF (dB/m) + CF (dB) + (- PA (dB)) + DC (dB)

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

Formula 2: FS (uV/m) = AntiLog [(FS (dBuV/m))/20]

15. Statement of Conformity

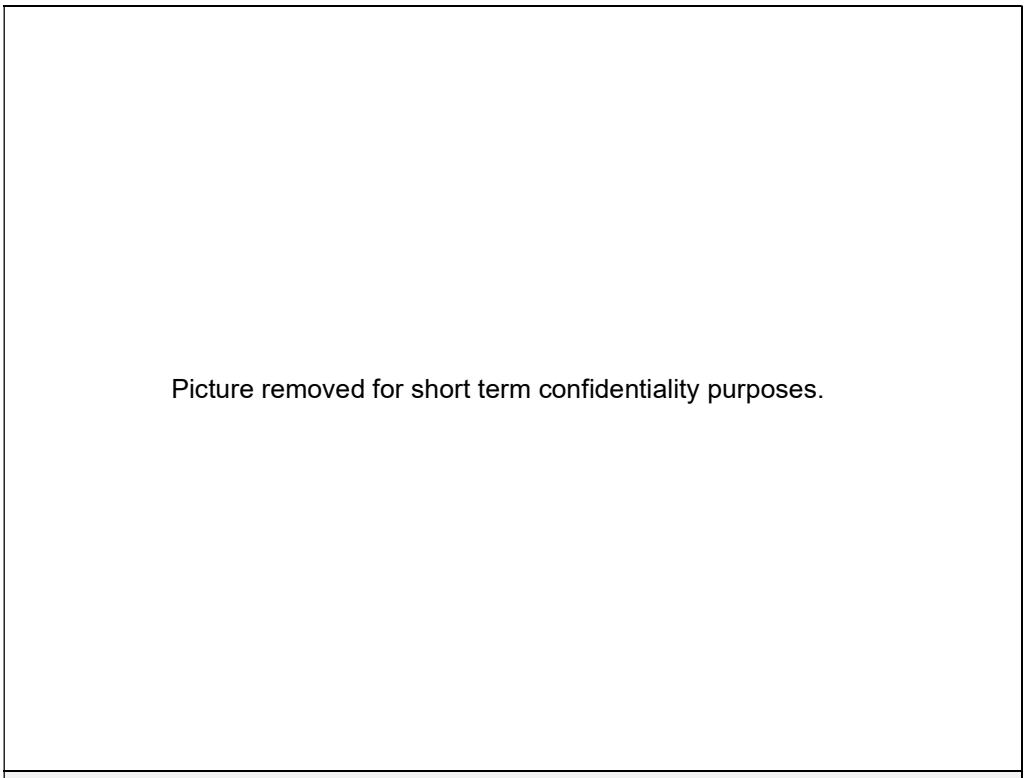
The following The Chamberlain Group LLC EUTs did fully conform to the selected requirements of FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.231 and Innovation, Science, and Economic Development Canada, RSS-210:

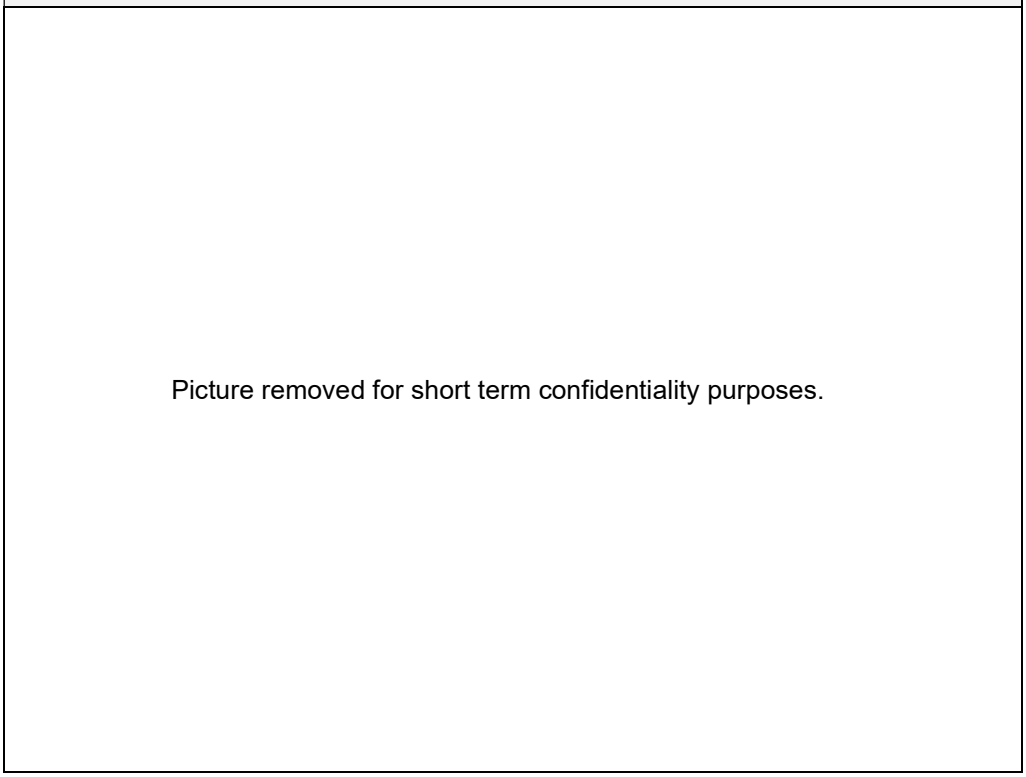
EUT	Model No.	Serial No.
DeLorean Visor Remote	Q363LA	Sample 1
DeLorean Visor Remote	Q363LA	Sample E2
DeLorean Visor Remote	Q363LA	Sample E4

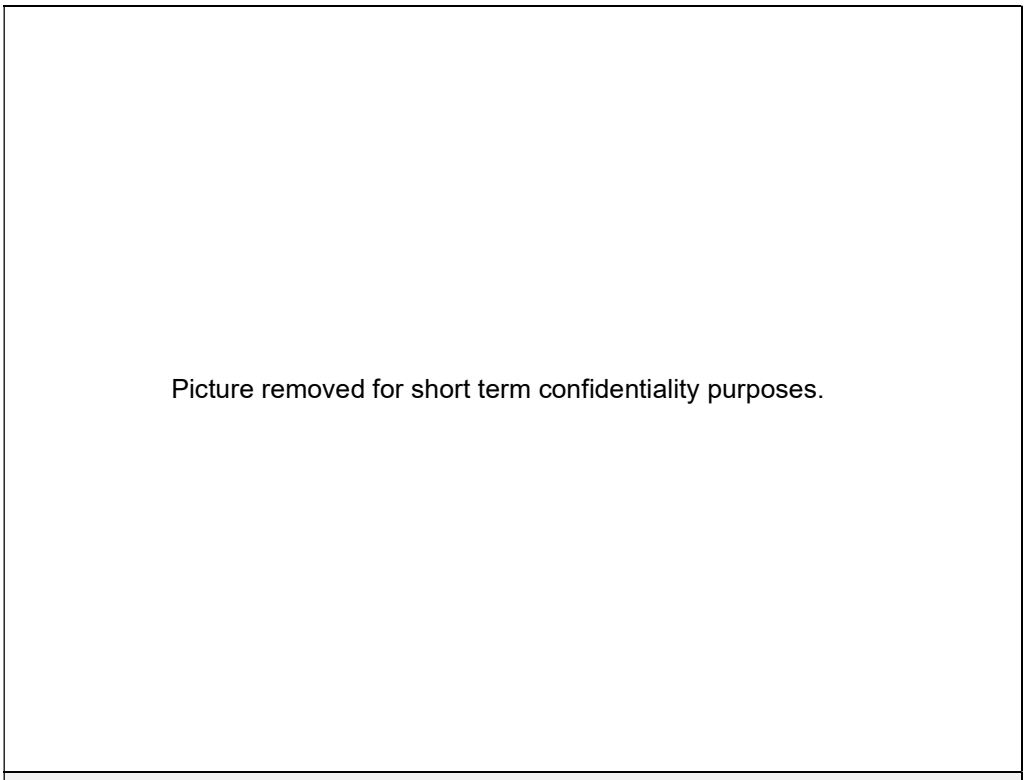
16. Certification

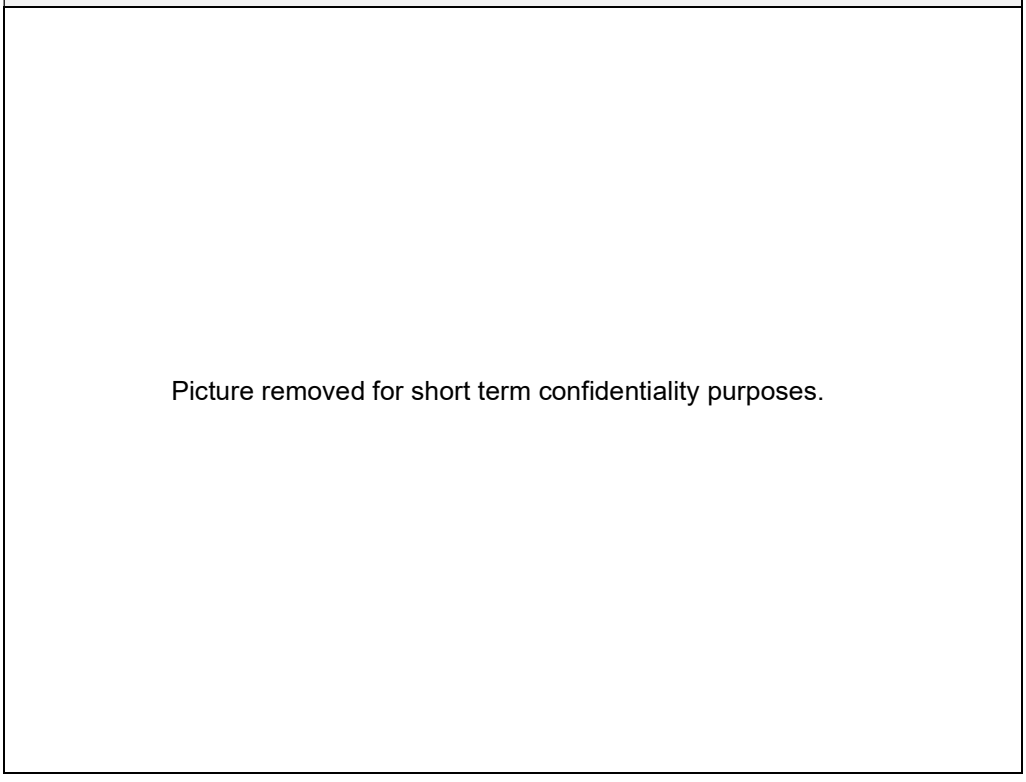
Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.231 and Innovation, Science, and Economic Development Canada, RSS-210 test specifications. The data presented in this test report pertains to the EUTs as provided 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 EUTs

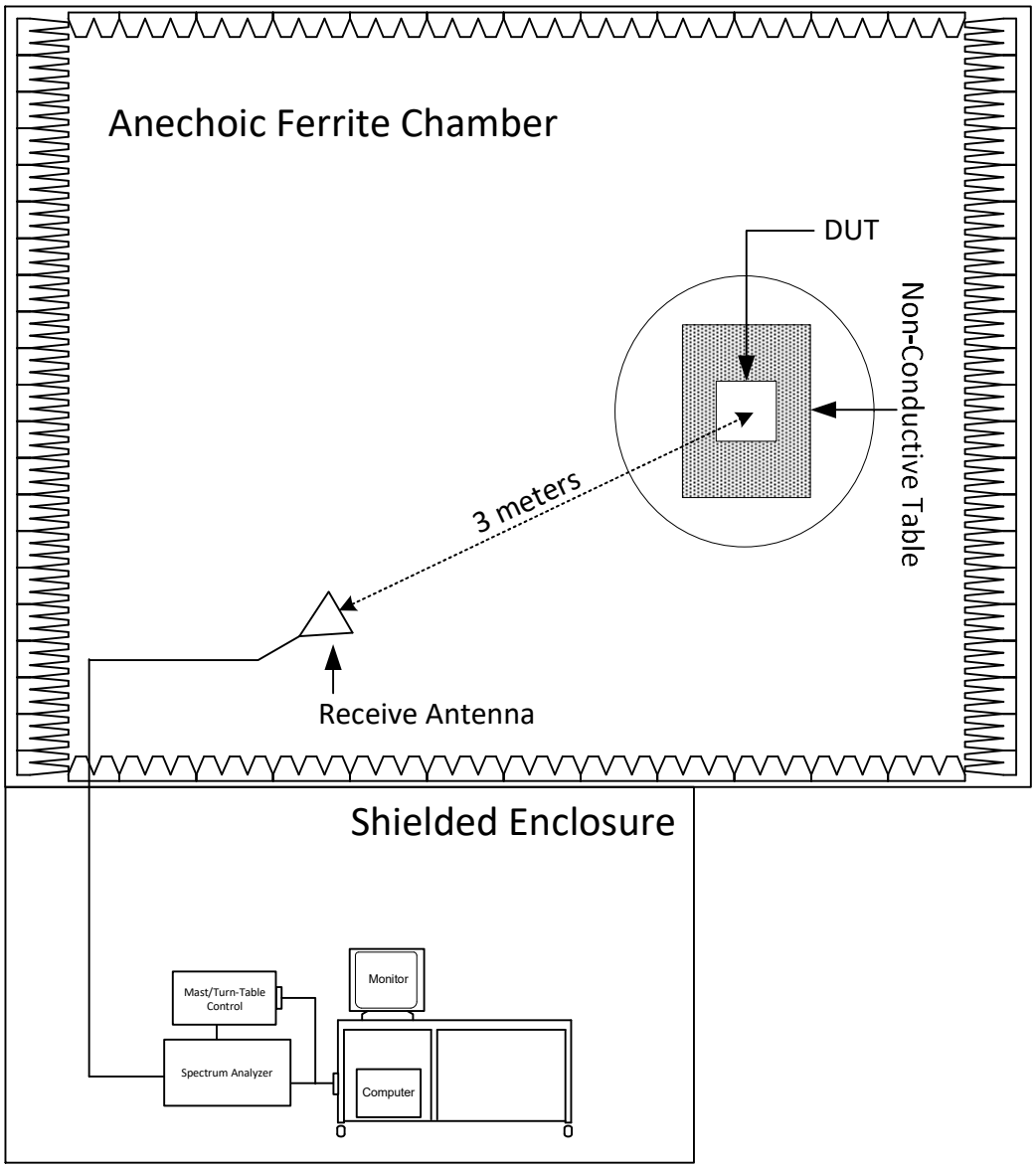





Picture removed for short term confidentiality purposes.


Picture removed for short term confidentiality purposes.

18. Block Diagram of Test Setup



Radiated Measurements Test Setup

19. Equipment List

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW18	PREAMPLIFER	PLANAR ELECTRONICS	PE2-30-20G20R6G-3R0-10-12-SFF	PL34312/2148	18-26.5GHZ	2/23/2024	2/23/2025
APW3	PREAMPLIFIER	PLANAR ELECTRONICS	PE2-35-120-5R0-10-12	PL2924	1GHZ-20GHZ	3/20/2024	3/20/2025
CDZ4	LAB WORKSTATION	ELITE	LWS-10		WINDOWS 10	CNR	
GSE1	SIGNAL GENERATOR (40GHZ)	ROHDE & SCHWARZ	SMB100A	183099	100KHZ-40GHZ	1/25/2023	1/25/2025
GSE3	SIGNAL GENERATOR (40GHZ)	ROHDE & SCHWARZ	SMB100A	183294	100KHZ-40GHZ	1/30/2023	1/30/2025
GSFB	OSP120 BASE UNIT	ROHDE & SCHWARZ	OSP120	101071	---	3/30/2023	3/30/2025
GSFE	OSP120	ROHDE & SCHWARZ	OSP120	101288	.01-40GHZ	4/4/2023	4/4/2025
NHG1	STANDARD GAIN HORN ANTENNA	NARDA	638	---	18-26.5GHZ	NOTE 1	
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
NWN0	DOUBLE RIDGED GUIDE ANTENNA	ETS-LINDGREN	3116	00026778	18 - 40 GHZ	12/16/2022	12/16/2024
NWQ2	DOUBLE RIDGED WAVEGUIDE ANTENNA	ETS LINDGREN	3117	66659	1GHZ-18GHZ	4/26/2024	4/26/2026
R21F	3M ANECHOIC CHAMBER NSA	EMC TEST SYSTEMS	3M ANECHOIC		30MHZ-18GHZ	3/1/2024	3/1/2025
RBG3	EMI ANALYZER	ROHDE & SCHWARZ	ESW44	101592	2HZ-44GHZ	3/7/2024	3/7/2025
RBG4	EMI ANALYZER	ROHDE & SCHWARZ	ESW44	103007	2HZ-44GHZ	3/16/2024	3/16/2025
SHC2	Power Supplies	HENGFU	HF60W-SL-24	A11372702	24V	NOTE 1	
T2S12	20DB 25W ATTENUATOR	WEINSCHEL	46-20-43	CM5724	DC-18GHZ	12/20/2023	12/20/2025
XPR0	HIGH PASS FILTER	K&L MICROWAVE	11SH10-4800/X20000	001	4.8-20GHZ	9/14/2023	9/14/2025

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.

20. Periodic Operation Measurements

Test Information	
Manufacturer	The Chamberlain Group LLC
Product	DeLorean Visor Remote
Model	Q363LA
Serial No	Sample E2 Sample E4
Mode	D-Code Tx @ 315MHz D-Code Tx @ 390MHz E-Code Tx @ 315MHz E-Code Tx @ 390MHz E-Code Tx @ 433.92MHz
Test Date	November 18, 2024

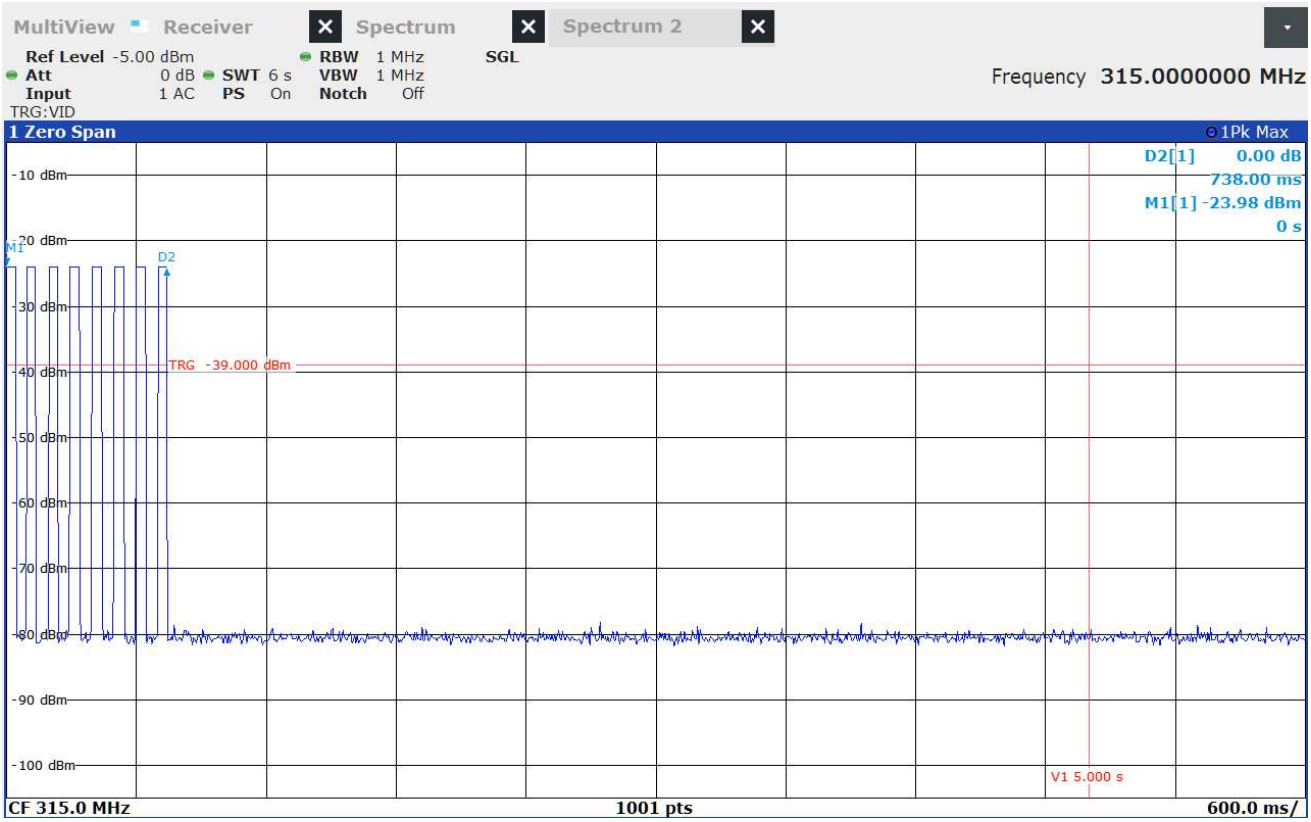
Test Setup Details	
Setup Format	Tabletop
Type of Test Site	Test Bench
Note	None

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

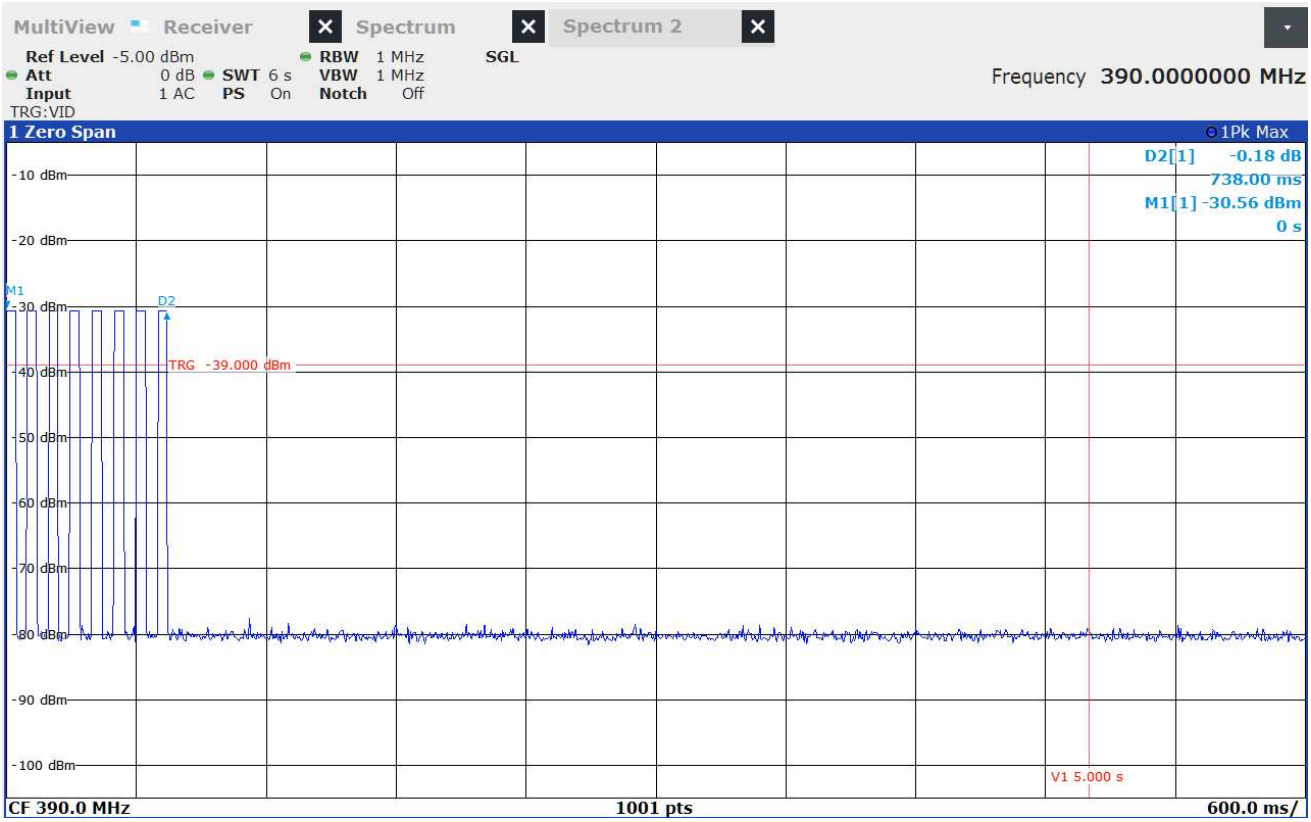
Requirements
A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released. A transmitter activated automatically shall cease transmission within 5 seconds after activation. Transmission of set-up information 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. 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. 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.

Procedures
The spectrum analyzer was setup to display the time domain trace. The EUT was set to transmit normally. The spectrum analyzer was used to record the amount of time that the EUT remained active following activation.

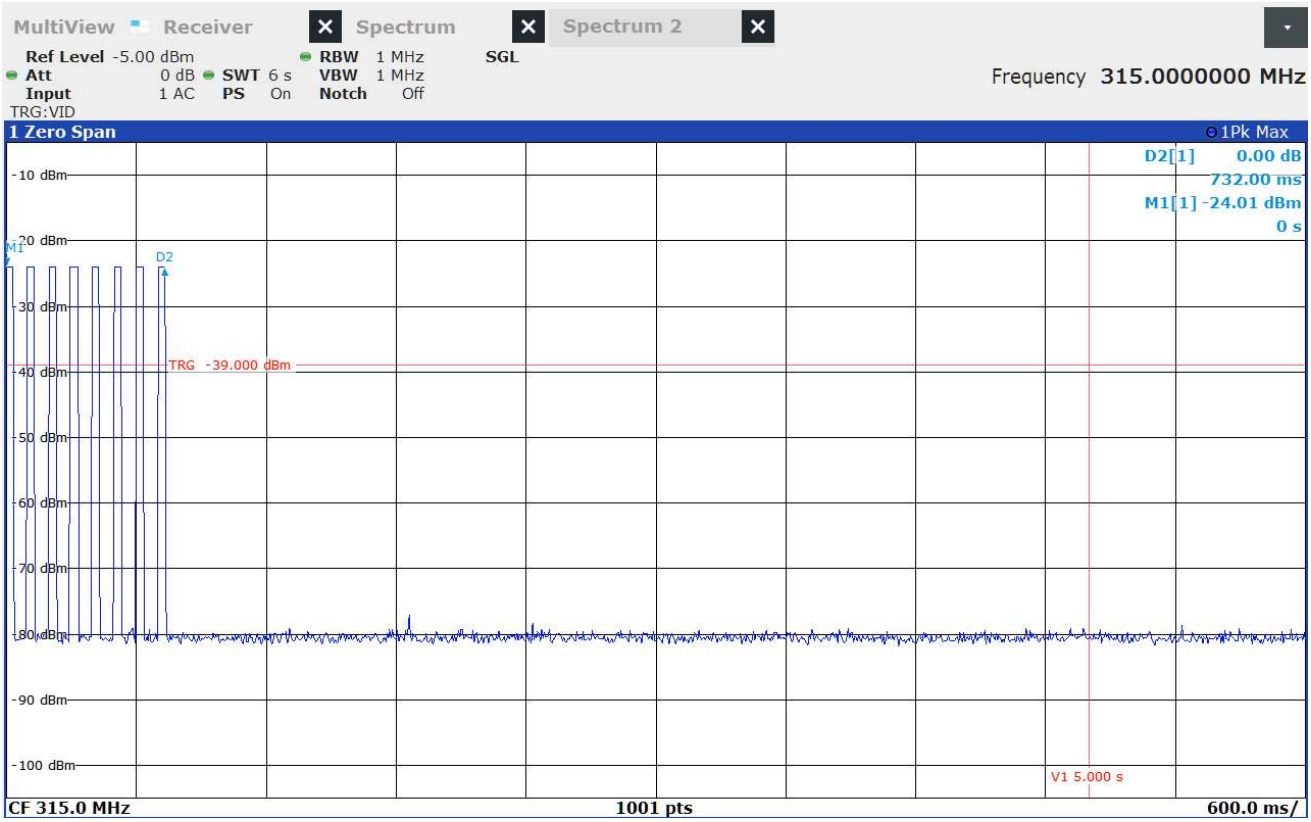
Test Details	
Manufacturer	The Chamberlain Group LLC
Model	Q363LA
S/N	Sample E4
Mode	D-Code Tx @ 315MHz
Carrier Frequency	315MHz
Parameters	Operation Time = 738ms
Notes	None



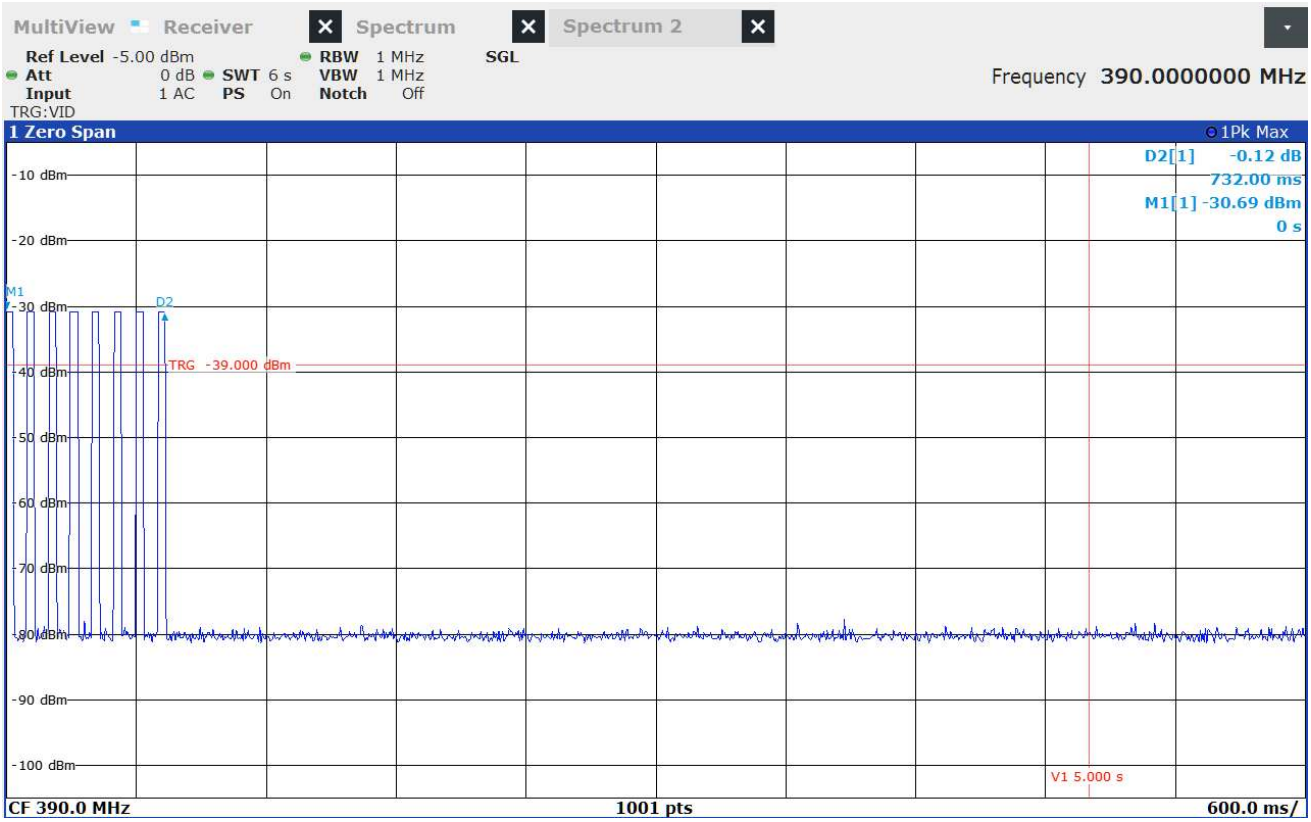
Test Details	
Manufacturer	The Chamberlain Group LLC
Model	Q363LA
S/N	Sample E4
Mode	D-Code Tx @ 390MHz
Carrier Frequency	390MHz
Parameters	Operation Time = 738ms
Notes	None



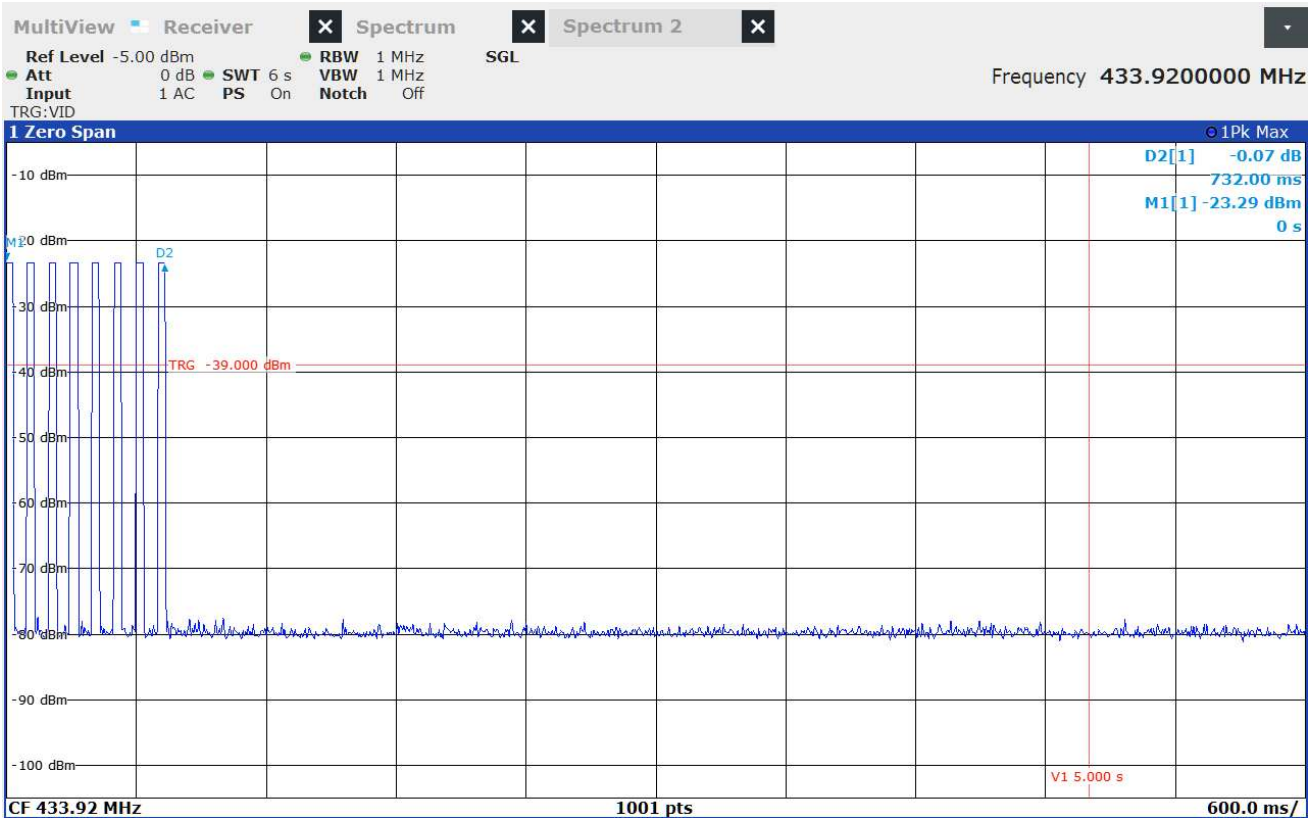
Test Details	
Manufacturer	The Chamberlain Group LLC
Model	Q363LA
S/N	Sample E2
Mode	E-Code Tx @ 315MHz
Carrier Frequency	315MHz
Parameters	Operation Time = 732ms
Notes	None



Test Details	
Manufacturer	The Chamberlain Group LLC
Model	Q363LA
S/N	Sample E2
Mode	E-Code Tx @ 390MHz
Carrier Frequency	390MHz
Parameters	Operation Time = 732ms
Notes	None



Test Details	
Manufacturer	The Chamberlain Group LLC
Model	Q363LA
S/N	Sample E2
Mode	E-Code Tx @ 433.92MHz
Carrier Frequency	433.92MHz
Parameters	Operation Time = 732ms
Notes	None



21. Duty Cycle Factor Measurements

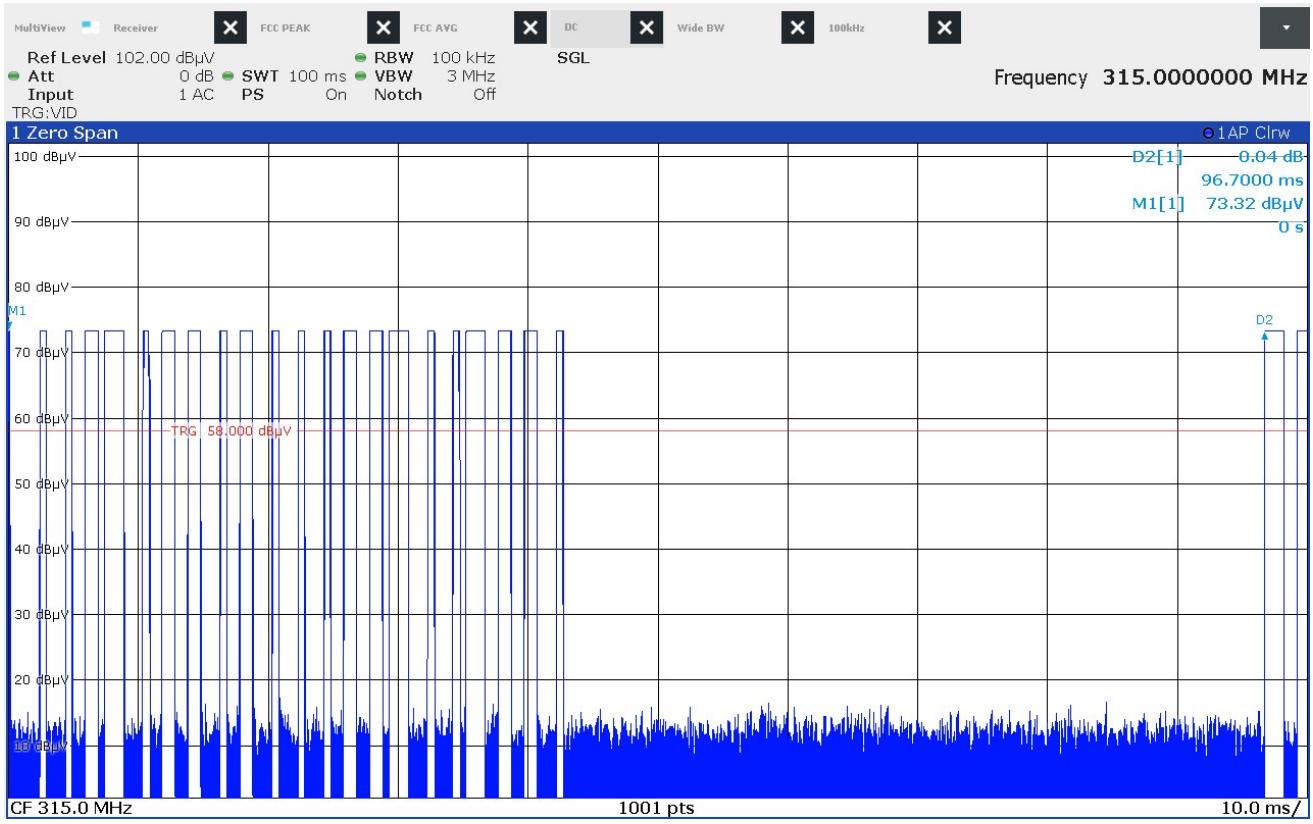
Test Information	
Manufacturer	The Chamberlain Group LLC
Product	DeLorean Visor Remote
Model	Q363LA
Serial No	Sample E2 Sample E4
Mode	D-Code Tx @ 315MHz D-Code Tx @ 390MHz E-Code Tx @ 315MHz E-Code Tx @ 390MHz E-Code Tx @ 433.92MHz

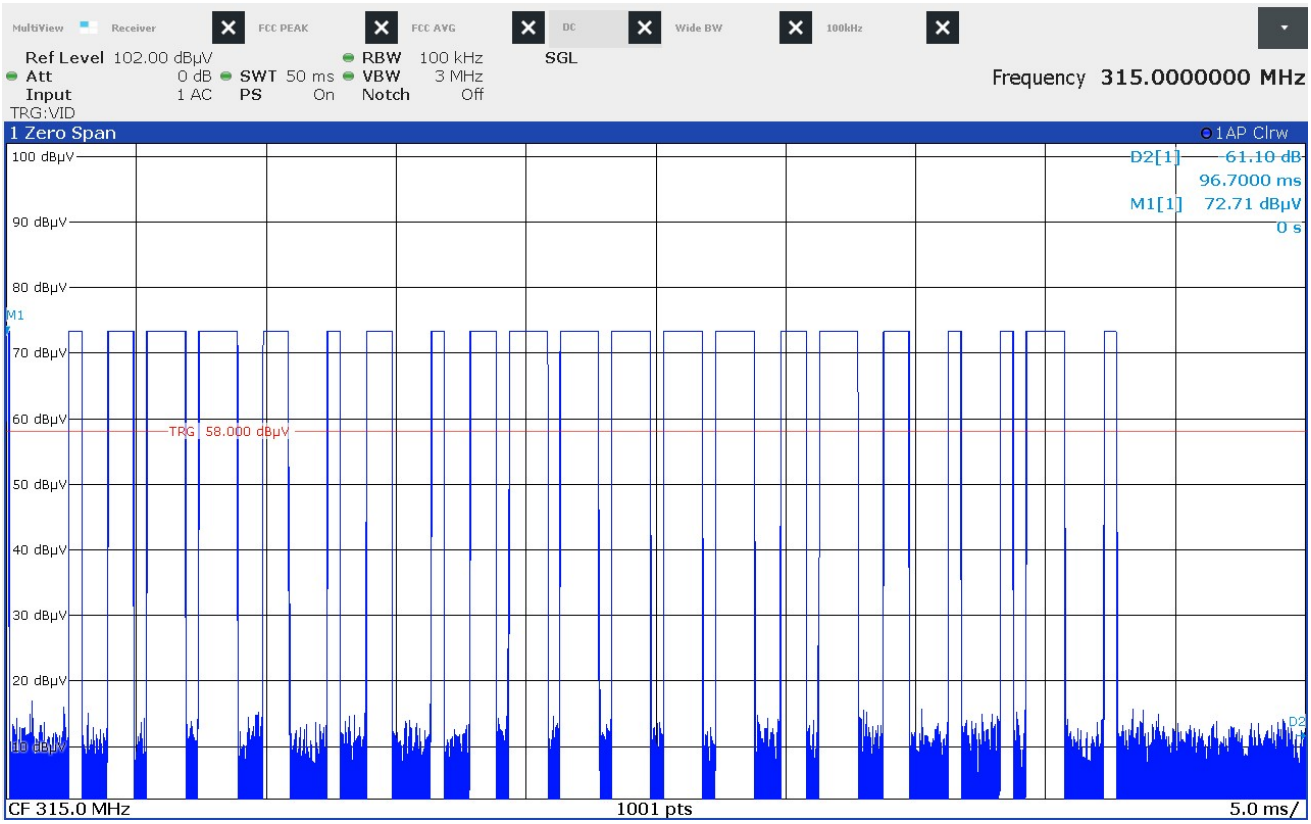
Test Setup Details	
Setup Format	Tabletop
Height of Support	NA
Type of Test Site	Semi-Anechoic Chamber
Test site used	R29F
Notes	None

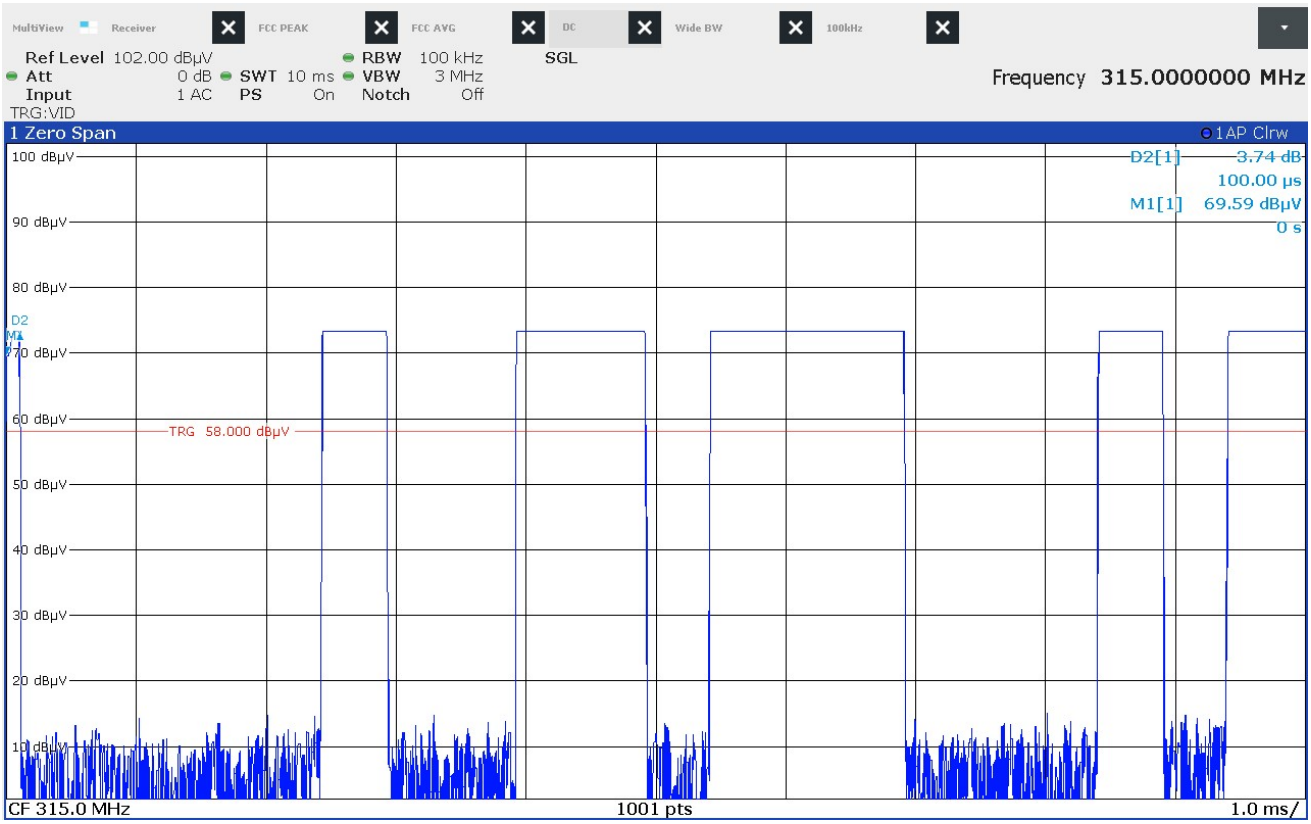
Measurement Uncertainty	
Measurement Type	Expanded Measurement Uncertainty
Radiated disturbance (electric field strength on an open area test site or alternative test site) (30 MHz – 1000 MHz)	4.3
Radiated disturbance (electric field strength on an open area test site or alternative test site) (1 GHz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

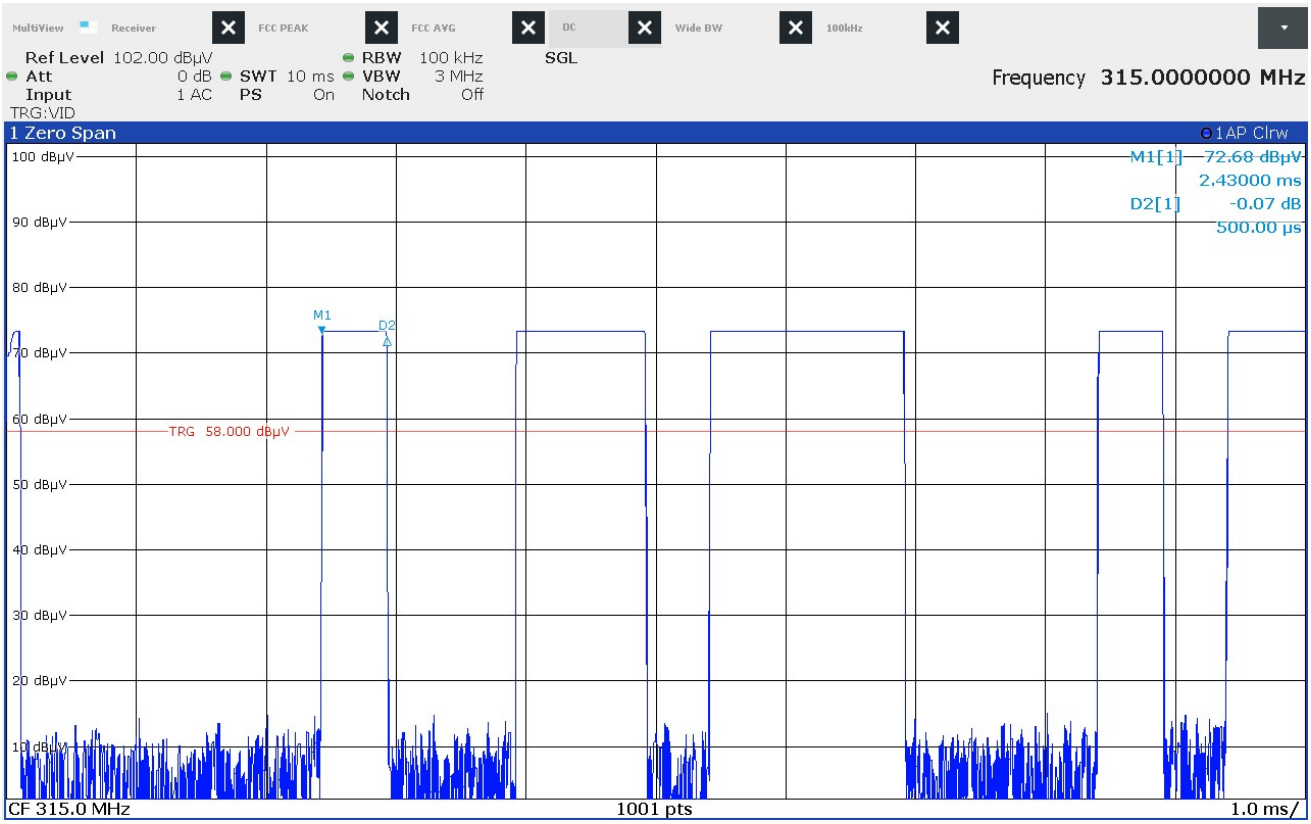
Procedures
The duty cycle factor is used to convert peak detected readings to average readings. This factor is computed from the time domain trace of the pulse modulation signal. The following procedure was used to measure a representative sample: 1) With the transmitter set up to transmit for maximum pulse density, the time domain trace is displayed on the spectrum analyzer. 2) The pulse width is measured and a plot of this measurement is recorded. 3) Next the number of pulses in the word period is measured and a plot is recorded. 4) Finally the length of the word period is measured and a third plot is recorded. If the word period exceeds 100msec, the word period is limited to 100msec. 5) The pulse width and number of pulses for the word period are used to compute the on-time. The duty cycle is then computed as the (on-time/ word period). 6) The duty cycle factor is computed from the duty cycle.

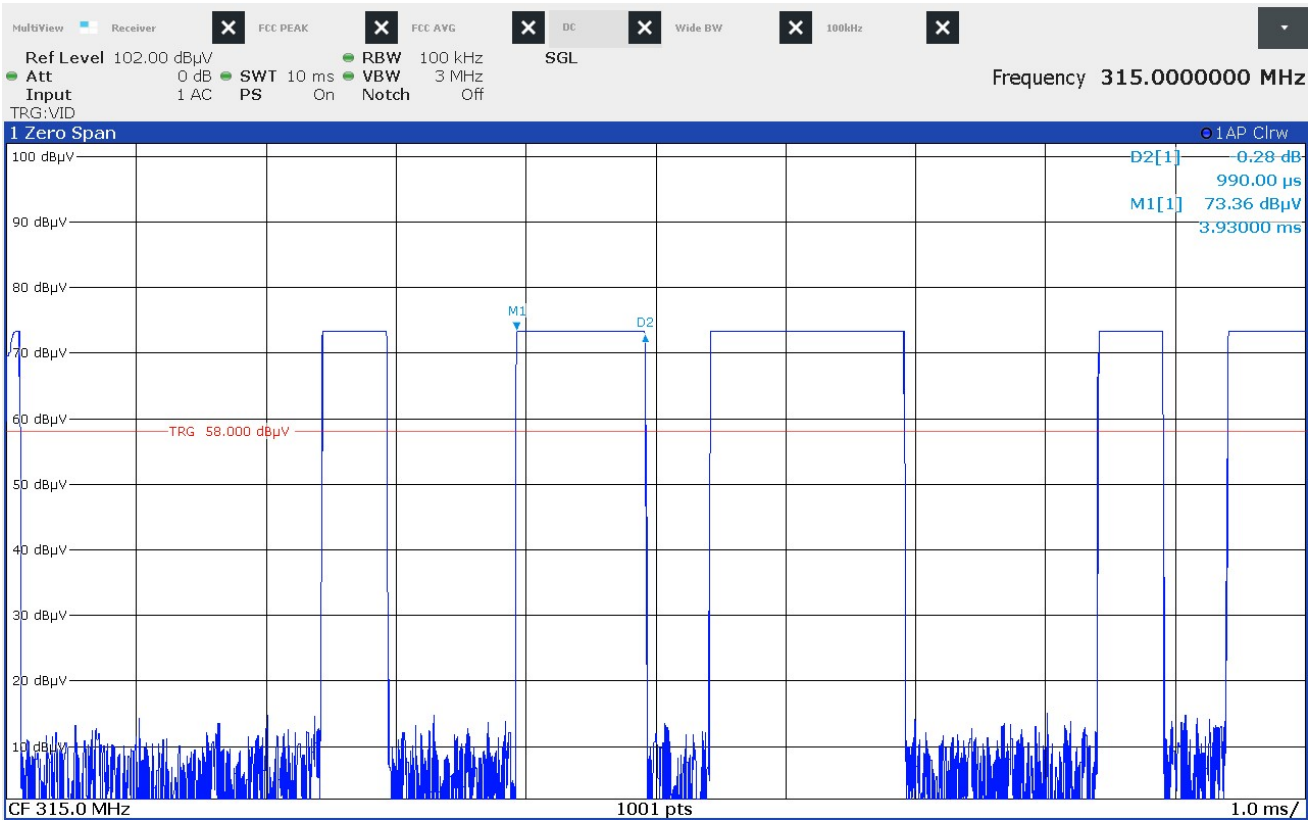
Test Details	
Manufacturer	The Chamberlain Group LLC
Model	Q363LA
S/N	Sample E4
Mode	D-Code Tx @ 315MHz
Carrier Frequency	315MHz
Parameters	On time = 22.45msec Word Length = 96.7msec
Duty Cycle Correction Factor	-12.684dB
Notes	D Code

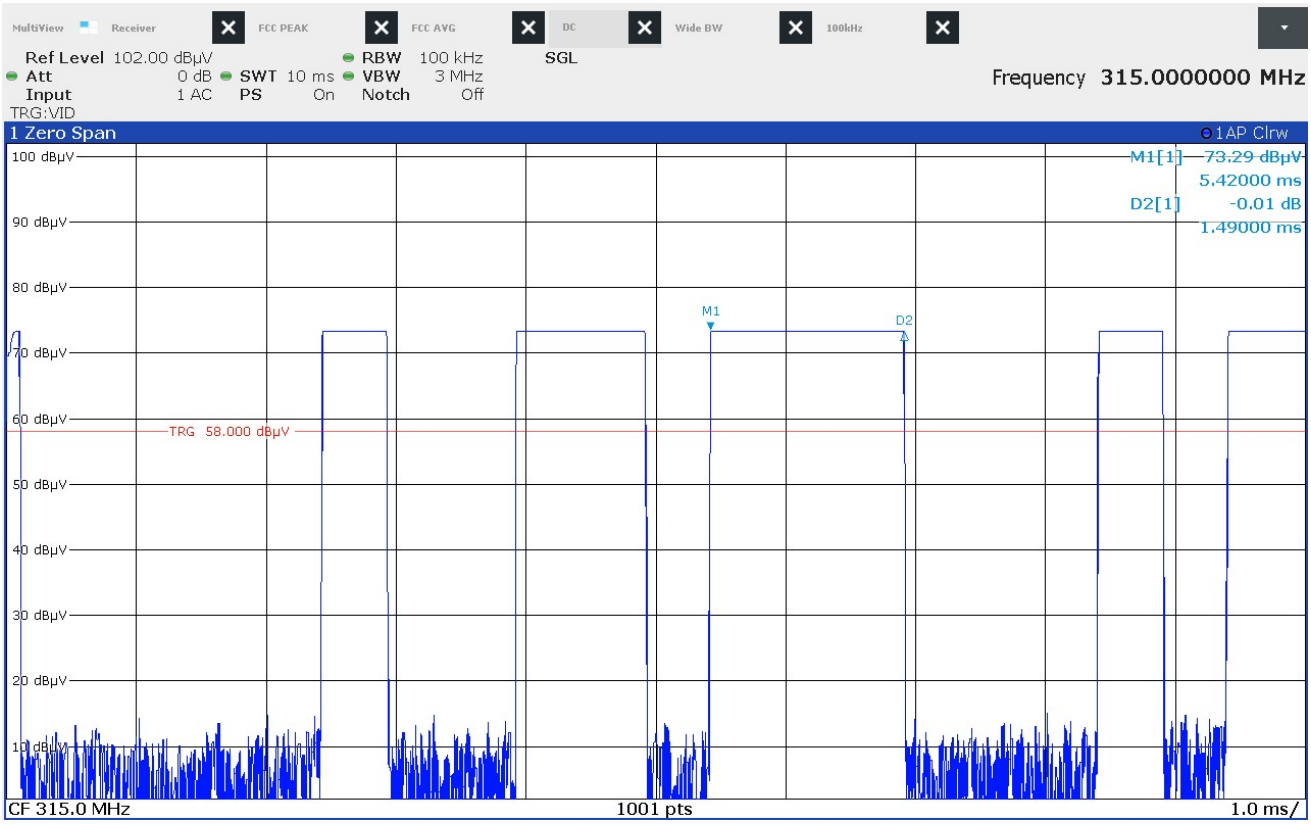



MultiView
Receiver
FCC PEAK
FCC AVG
DC
Wide BW
100kHz
Ref Level 102.00 dBµV
Att 0 dB
Input 1 AC
SWT 50 ms
PS On
RBW 100 kHz
VBW 3 MHz
Notch Off
SGL
Frequency 315.0000000 MHz
TRG:VID
1 Zero Span
1AP Clrw
D2[1] 61.10 dB
96.7000 ms
M1[1] 72.71 dBµV
0 s
100 dBµV
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
M1
TRG 58.000 dBµV
CF 315.0 MHz
1001 pts
5.0 ms/


MultiView
Receiver
FCC PEAK
FCC AVG
DC
Wide BW
100kHz
Ref Level 102.00 dBµV
Att 0 dB
Input 1 AC
TRG:VID
RBW 100 kHz
VBW 3 MHz
SWT 10 ms
PS On
Notch Off
SGL
Frequency 315.0000000 MHz
1 Zero Span
1AP Clrw
D2[1] -3.74 dB
100.00 µs
M1[1] 69.59 dBµV
0 s
100 dBµV
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
D2
M1
TRG 58.000 dBµV
CF 315.0 MHz
1001 pts
1.0 ms/

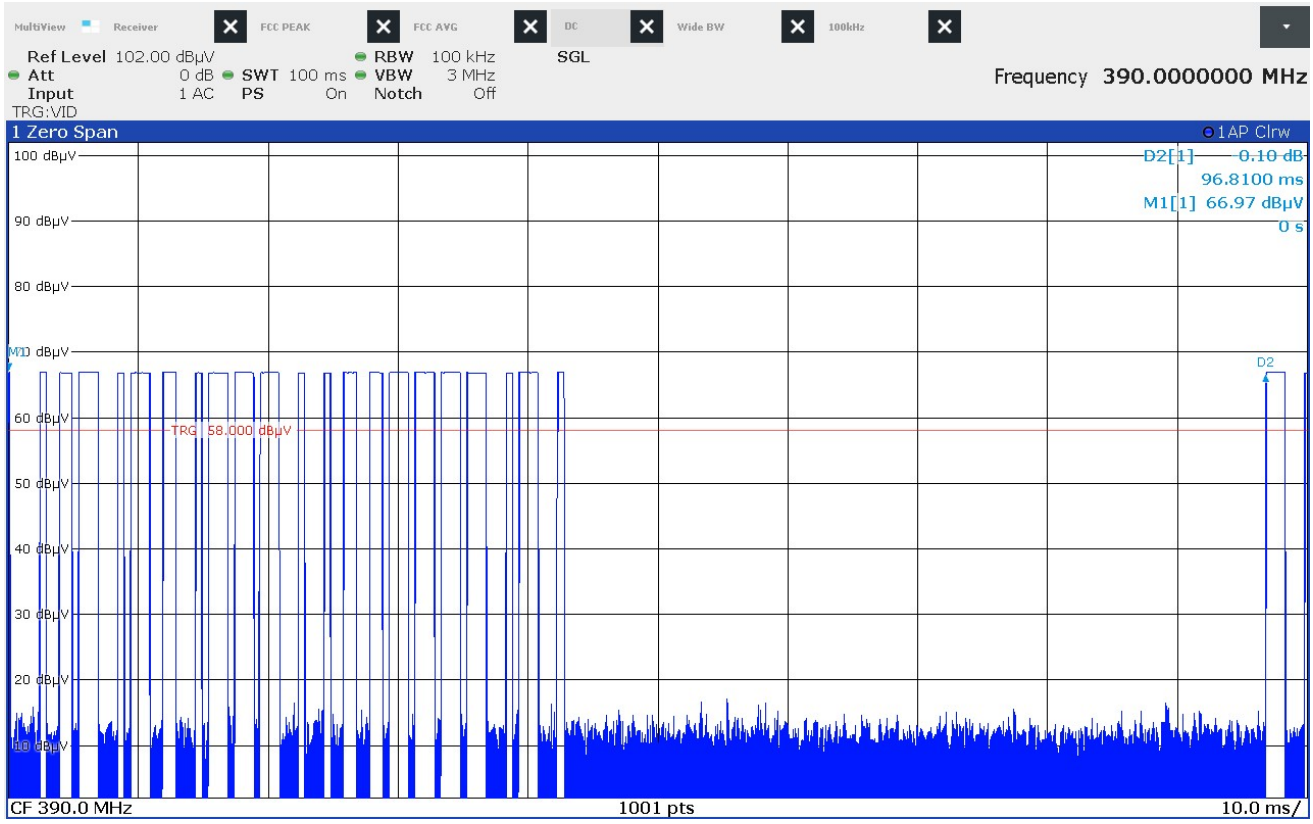

MultiView
Receiver
FCC PEAK
FCC AVG
DC
Wide BW
100kHz
Ref Level 102.00 dBµV
Att 0 dB
Input 1 AC
TRG:VID
SWT 10 ms
PS On
RBW 100 kHz
VBW 3 MHz
Notch Off
SGL
Frequency 315.0000000 MHz
1 Zero Span
1AP Clrw
M1[1] 72.68 dBµV
2.43000 ms
D2[1] -0.07 dB
500.00 µs
100 dBµV
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
M1
D2
TRG 58.000 dBµV
CF 315.0 MHz
1001 pts
1.0 ms/

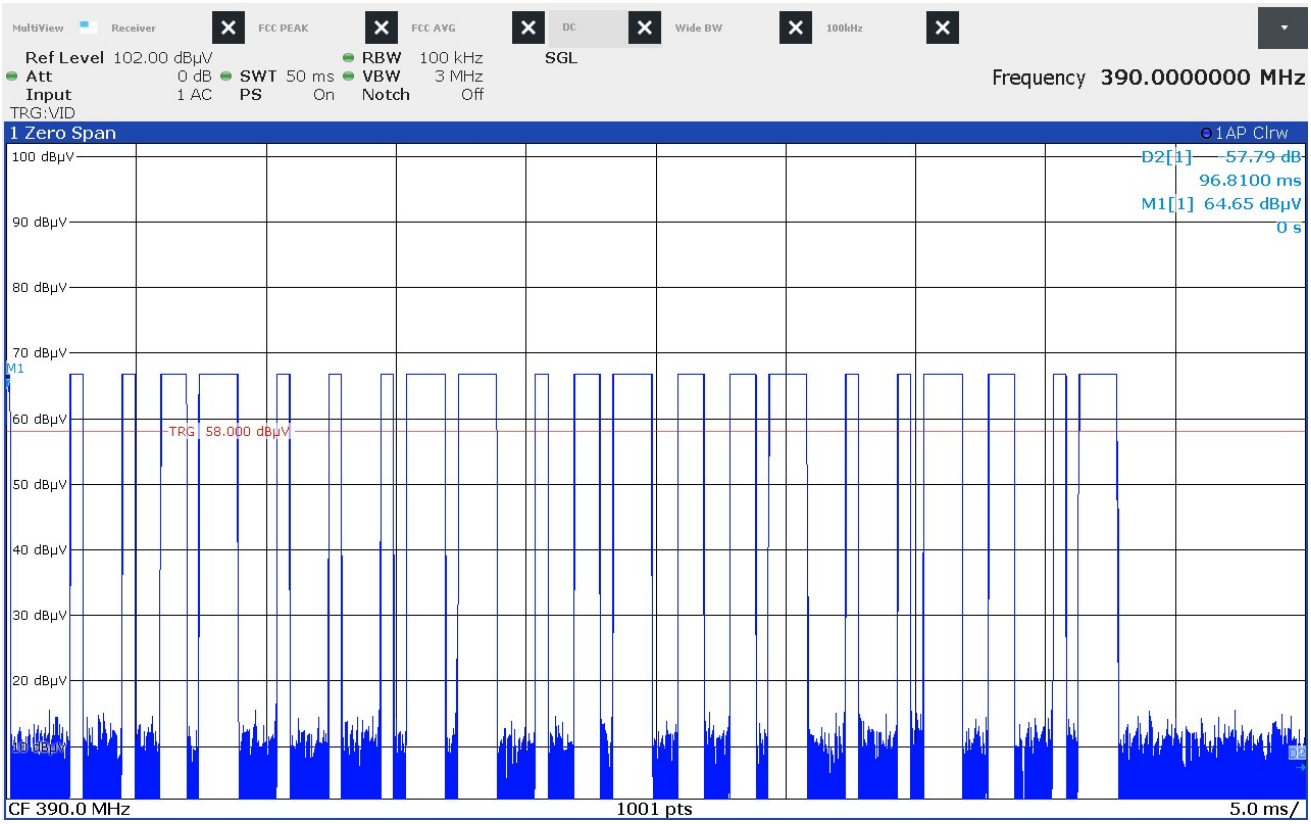

MultiView
Receiver
FCC PEAK
FCC AVG
DC
Wide BW
100kHz
Ref Level 102.00 dBµV
Att 0 dB
Input 1 AC
TRG:VID
SWT 10 ms
PS On
RBW 100 kHz
VBW 3 MHz
Notch Off
SGL
Frequency 315.0000000 MHz
1 Zero Span
1AP Clrw
D2[1] 0.28 dB
990.00 µs
M1[1] 73.36 dBµV
3.93000 ms
100 dBµV
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
TRG 58.000 dBµV
M1
D2
CF 315.0 MHz
1001 pts
1.0 ms/

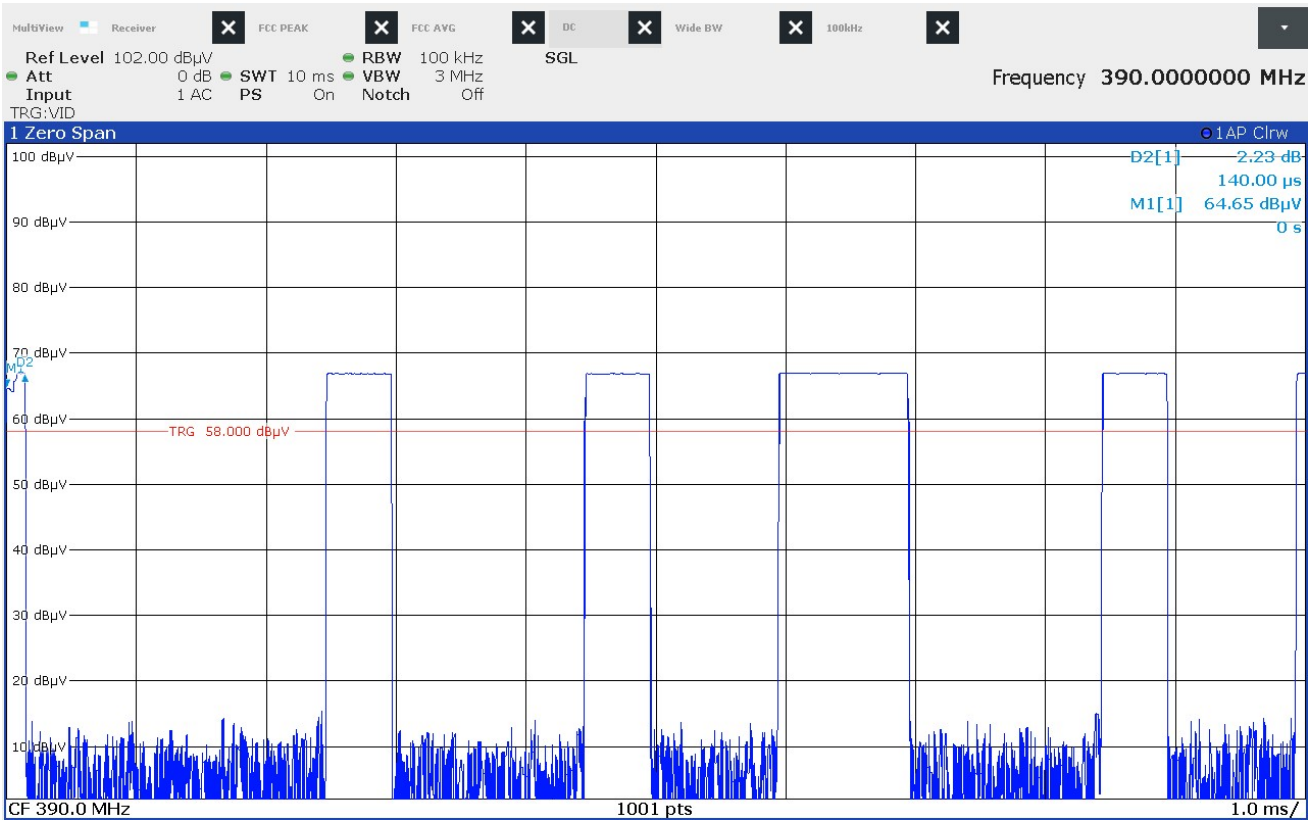


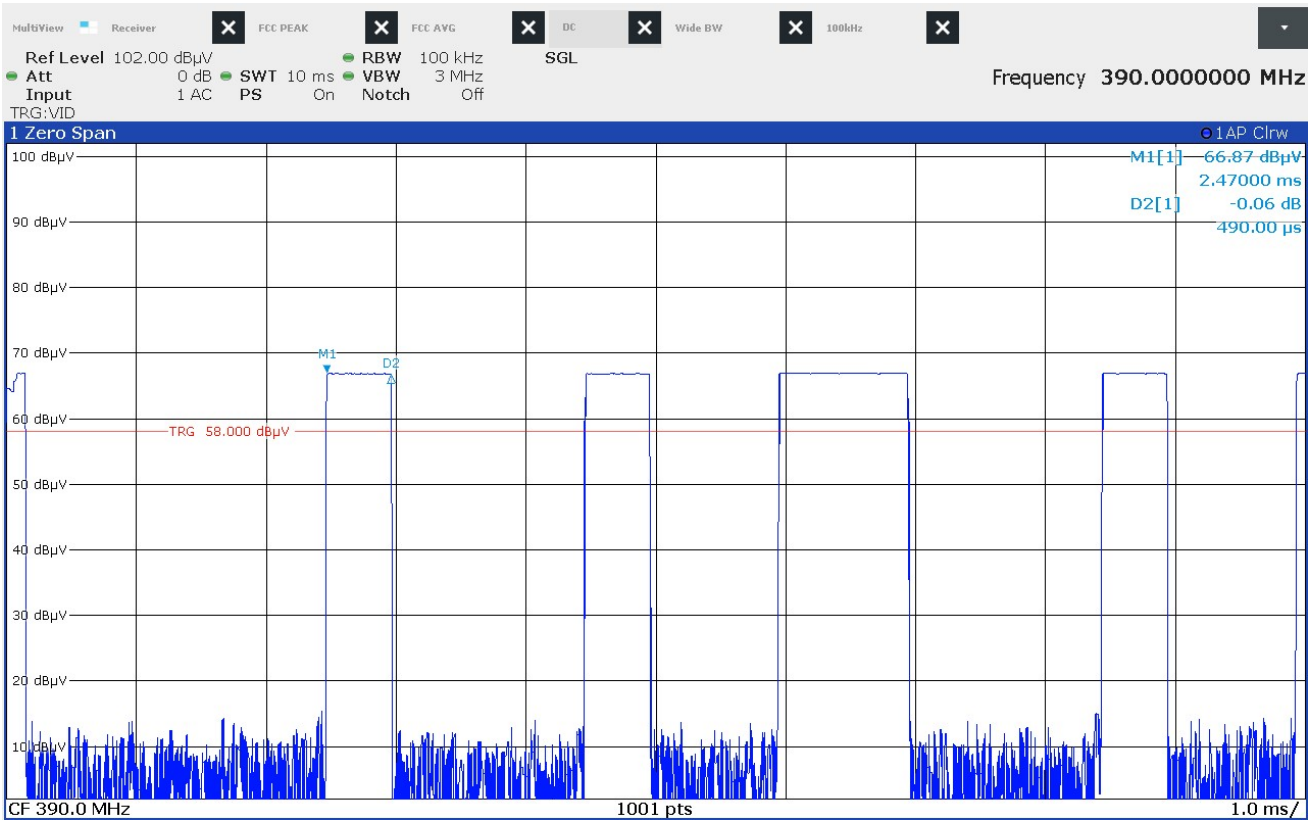
$$\text{Duty Cycle Factor} = 20\log\left(\frac{(0.1*1+0.5*6+0.99*6+1.49*9)msec}{96.7\text{msec}}\right) = -12.684\ dB$$

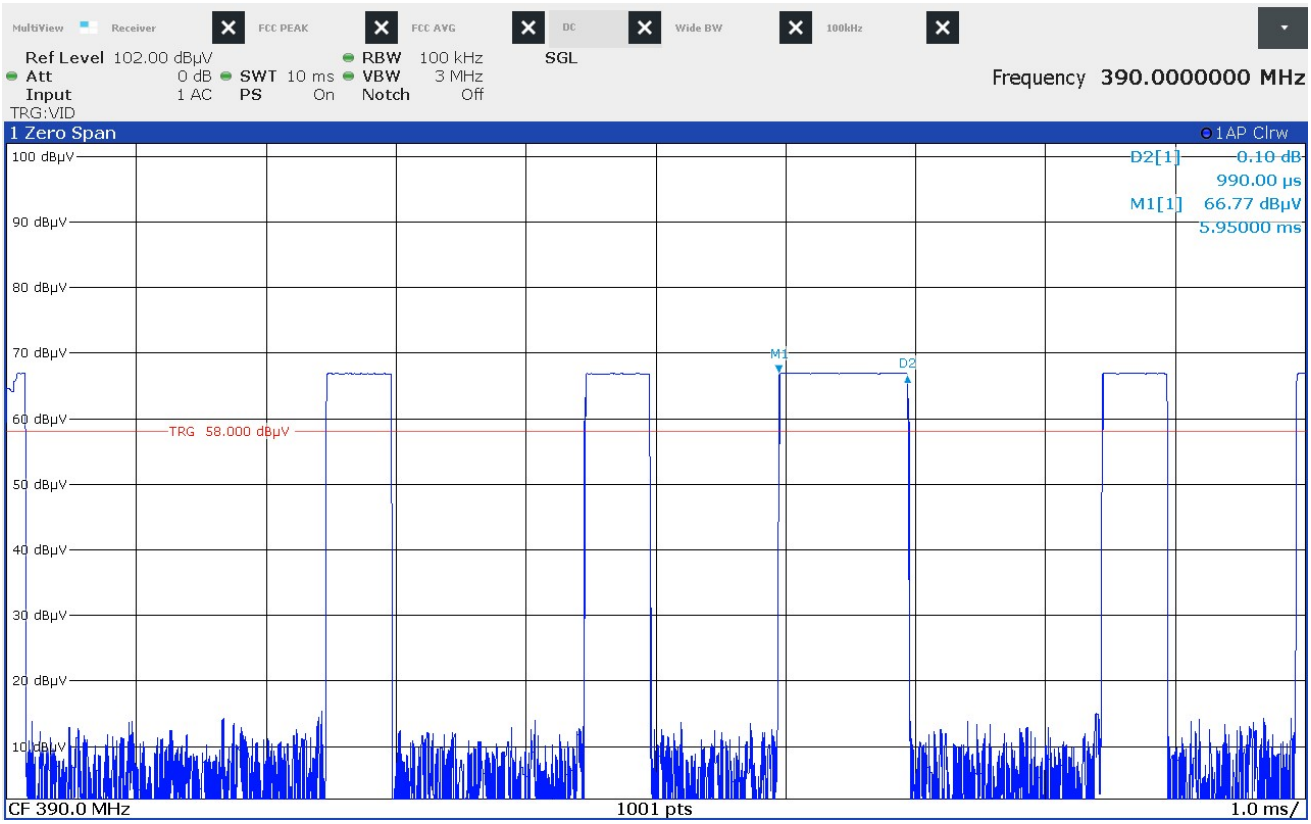
Test Details	
Manufacturer	The Chamberlain Group LLC
Model	Q363LA
S/N	Sample E4
Mode	D-Code Tx @ 390MHz
Carrier Frequency	390MHz
Parameters	On time = 19.93msec Word Length = 96.81msec
Duty Cycle Correction Factor	-13.728dB
Notes	None

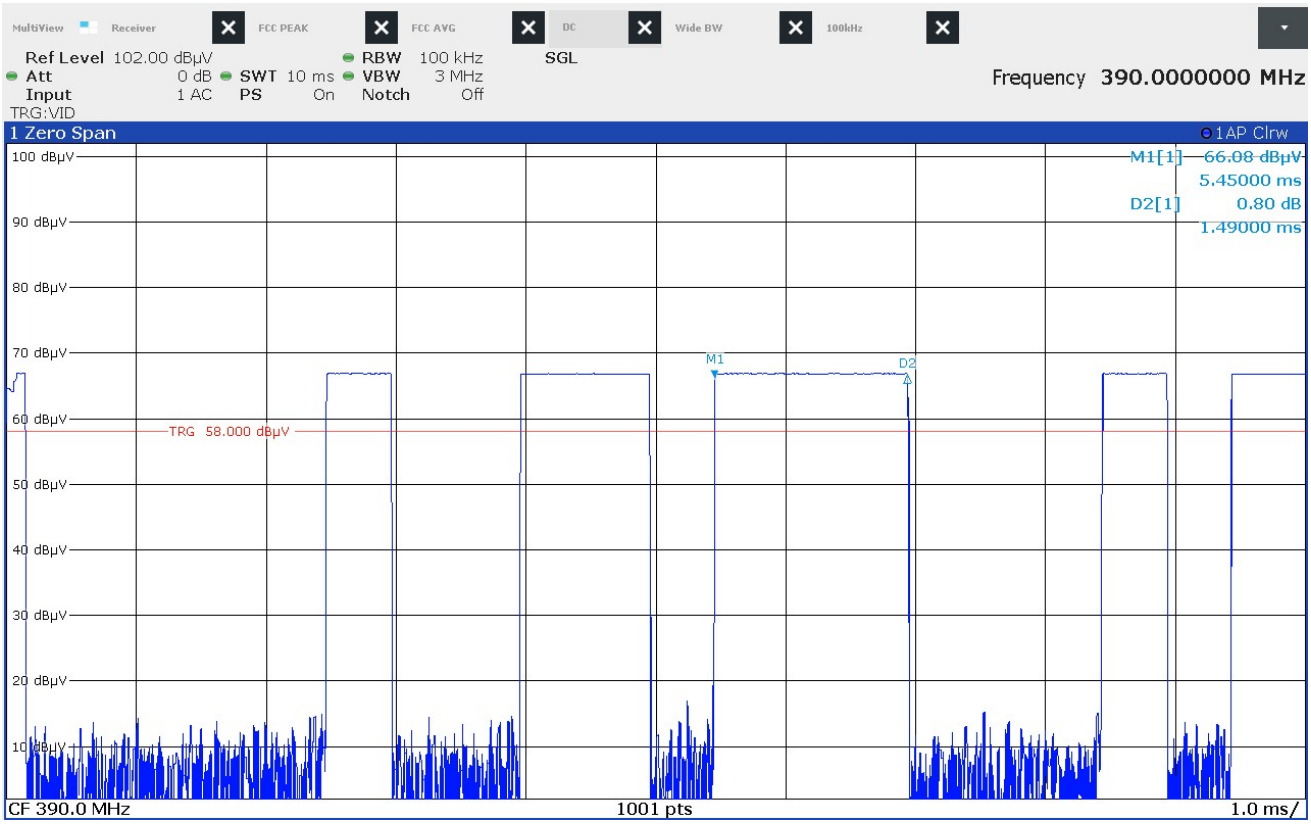



MultiView
Receiver
FCC PEAK
FCC AVG
DC
Wide BW
100kHz
Ref Level 102.00 dBµV
Att 0 dB
Input 1 AC
TRG:VID
SWT 50 ms
PS On
RBW 100 kHz
VBW 3 MHz
Notch Off
SGL
Frequency 390.0000000 MHz
1 Zero Span
1AP Clrw
D2[1] -57.79 dB
96.8100 ms
M1[1] 64.65 dBµV
0 s
100 dBµV
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
M1
TRG 58.000 dBµV
CF 390.0 MHz
1001 pts
5.0 ms/


MultiView
Receiver
FCC PEAK
FCC AVG
DC
Wide BW
100kHz
Ref Level 102.00 dBµV
Att 0 dB
Input 1 AC
TRG:VID
SWT 10 ms
PS On
RBW 100 kHz
VBW 3 MHz
Notch Off
SGL
Frequency 390.0000000 MHz
1 Zero Span
1AP Clrw
D2[1] 2.23 dB
140.00 µs
M1[1] 64.65 dBµV
0 s
100 dBµV
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
TRG 58.000 dBµV
CF 390.0 MHz
1001 pts
1.0 ms/

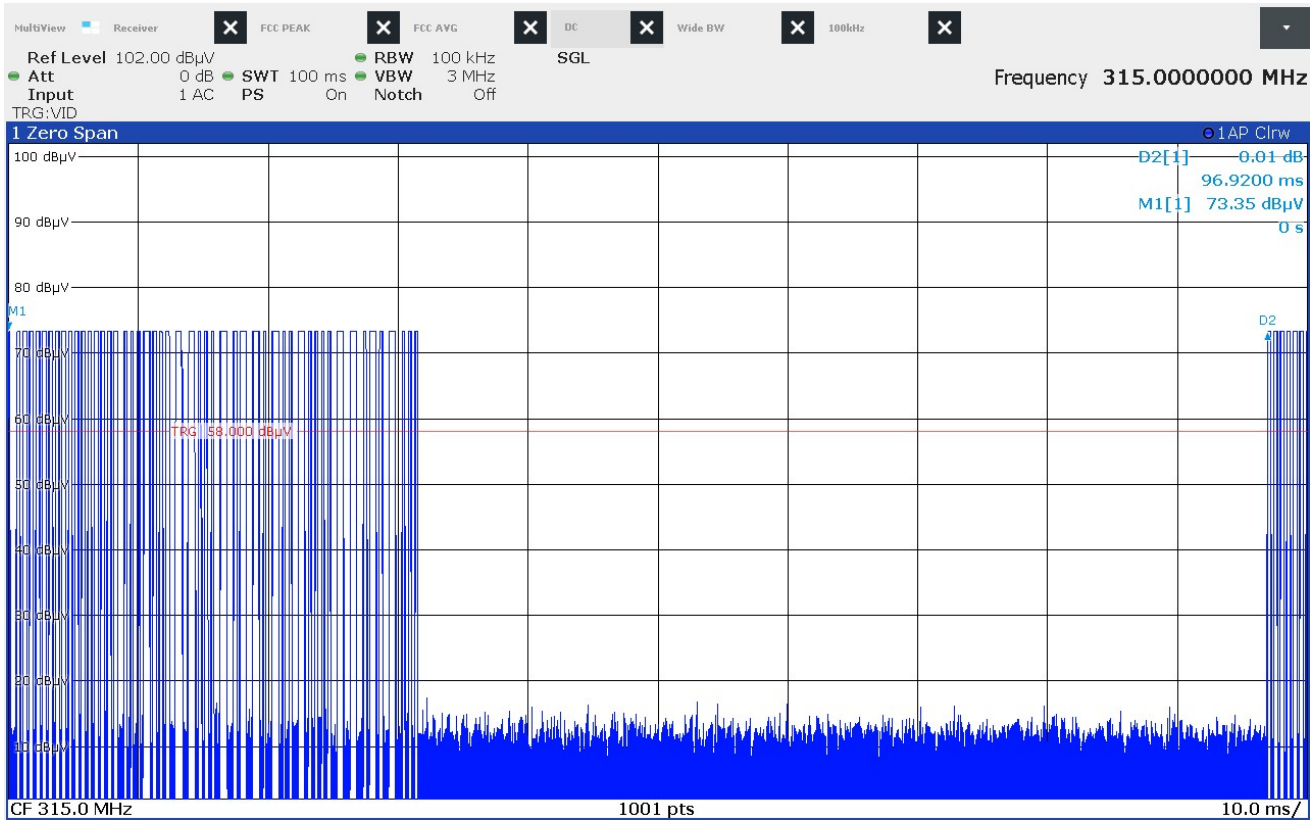

MultiView
Receiver
FCC PEAK
FCC AVG
DC
Wide BW
100kHz
Ref Level 102.00 dBµV
Att 0 dB
Input 1 AC
TRG:VID
SWT 10 ms
PS On
RBW 100 kHz
VBW 3 MHz
Notch Off
SGL
Frequency 390.0000000 MHz
1 Zero Span
1AP Clrw
M1[1] 66.87 dBµV
2.47000 ms
D2[1] -0.06 dB
490.00 µs
100 dBµV
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
M1
D2
TRG 58.000 dBµV
CF 390.0 MHz
1001 pts
1.0 ms/

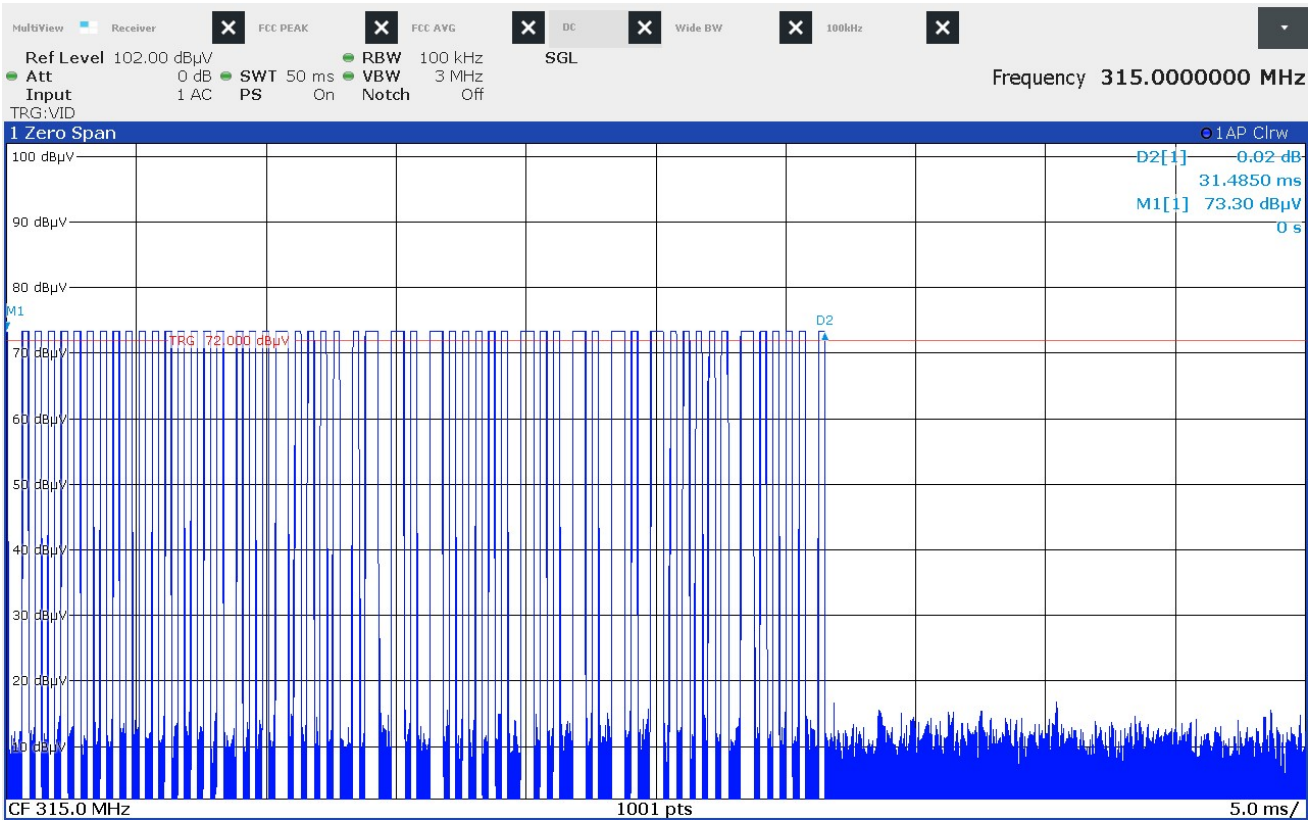

MultiView
Receiver
FCC PEAK
FCC AVG
DC
Wide BW
100kHz
Ref Level 102.00 dBµV
Att 0 dB
Input 1 AC
TRG:VID
RBW 100 kHz
SWT 10 ms
PS On
VBW 3 MHz
Notch Off
SGL
Frequency 390.0000000 MHz
1 Zero Span
1AP Clrw
D2[1] 0.10 dB
990.00 µs
M1[1] 66.77 dBµV
5.95000 ms
100 dBµV
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
TRG 58.000 dBµV
M1
D2
CF 390.0 MHz
1001 pts
1.0 ms/

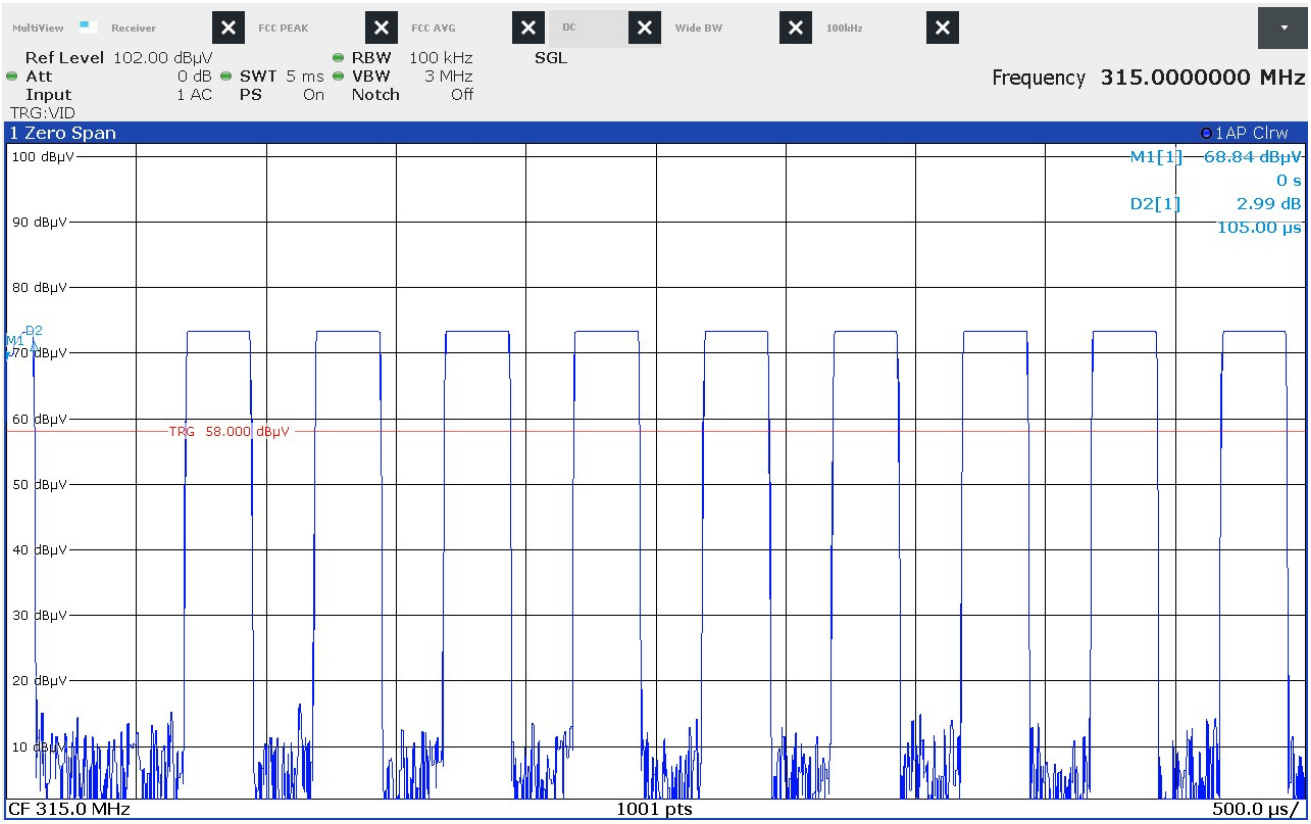


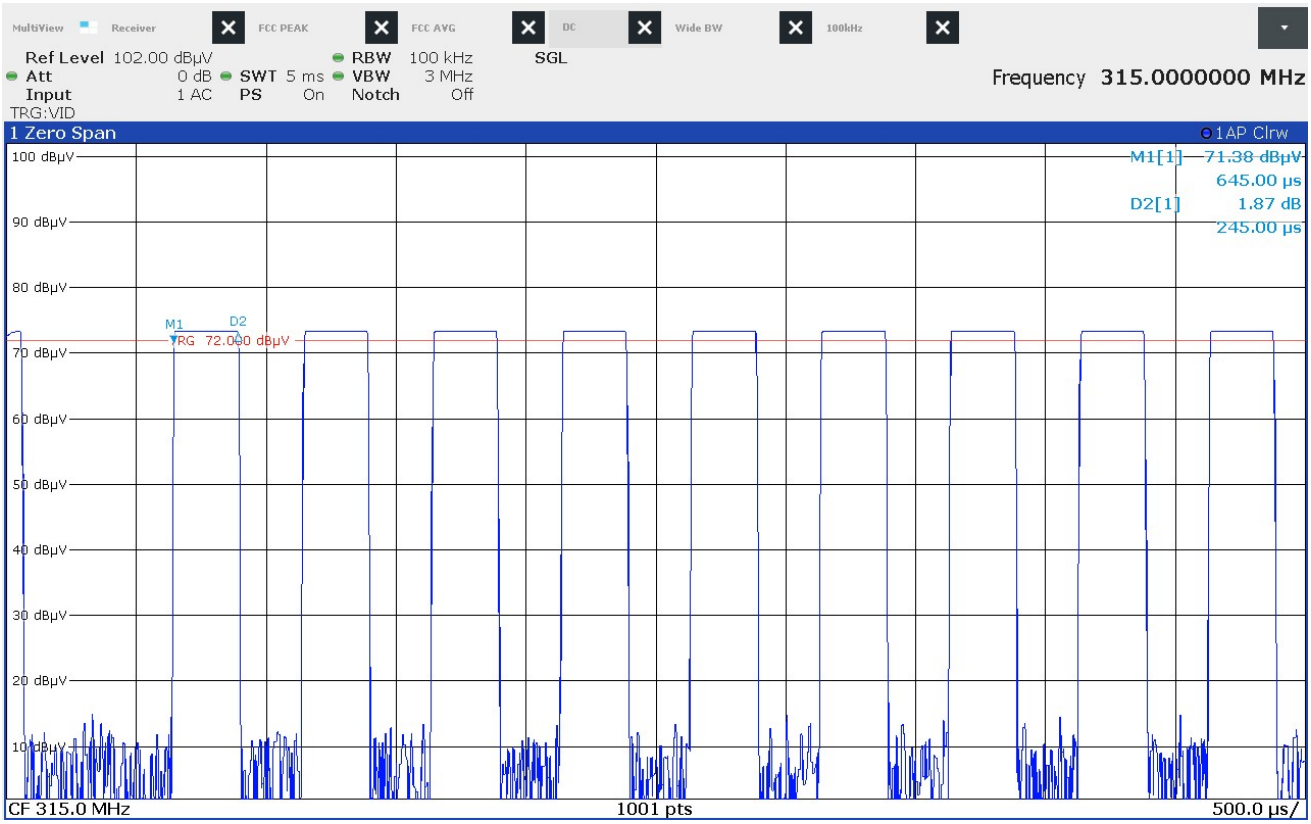
$$\text{Duty Cycle Factor} = 20\log\left(\frac{(0.14*1+0.49*9+0.99*5+1.49*7)msec}{96.81\text{msec}}\right) = -13.728dB$$

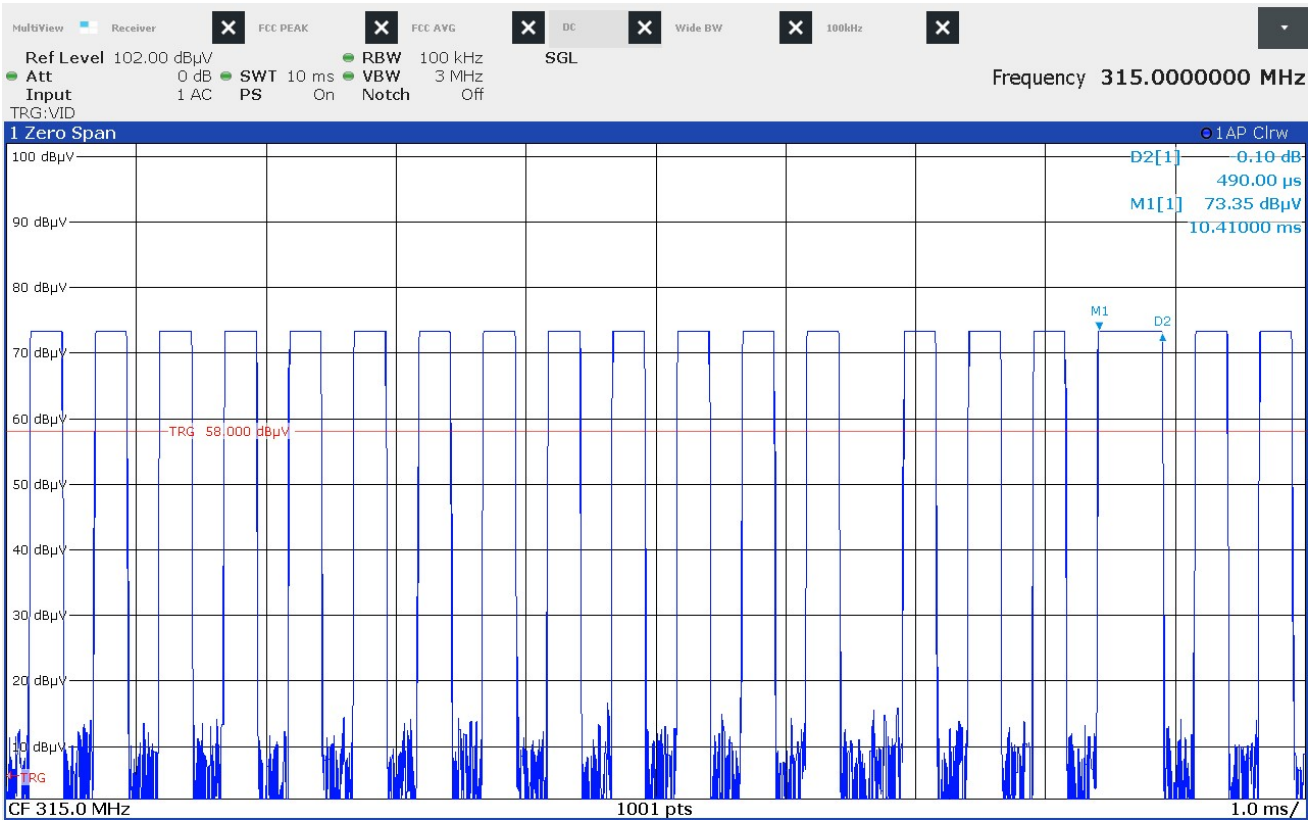
Test Details	
Manufacturer	The Chamberlain Group LLC
Model	Q363LA
S/N	Sample E2
Mode	E-Code Tx @ 315MHz
Carrier Frequency	315MHz
Parameters	On time = 14.315msec Word Length = 96.92msec
Duty Cycle Correction Factor	-16.612dB
Notes	None

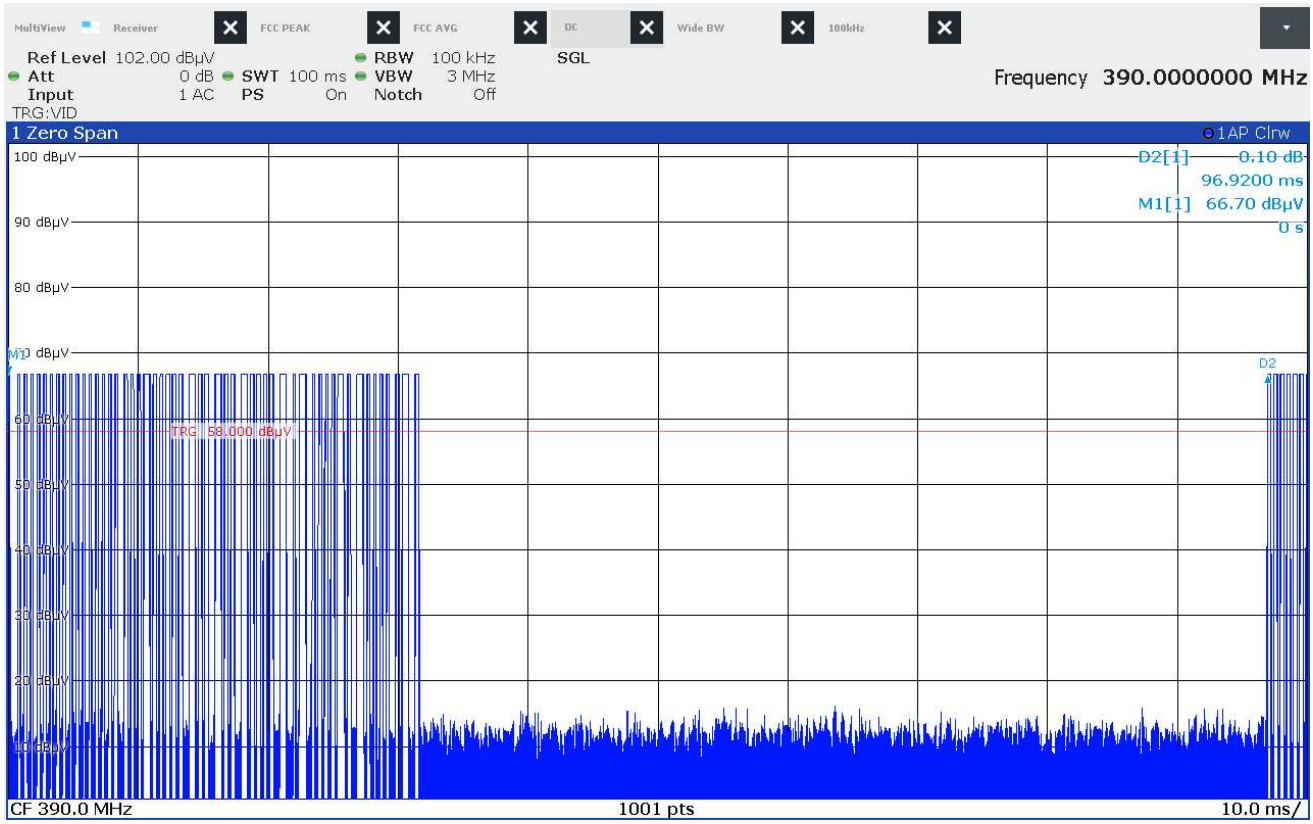



MultiView
Receiver
FCC PEAK
FCC AVG
DC
Wide BW
100kHz
Ref Level 102.00 dBµV
Att 0 dB
Input 1 AC
TRG:VID
SWT 50 ms
PS On
RBW 100 kHz
VBW 3 MHz
Notch Off
SGL
Frequency 315.0000000 MHz
1 Zero Span
1AP Clrw
D2[1] 0.02 dB
31.4850 ms
M1[1] 73.30 dBµV
0 s
100 dBµV
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
M1
TRG 72.000 dBµV
D2
CF 315.0 MHz
1001 pts
5.0 ms/


MultiView
Receiver
FCC PEAK
FCC AVG
DC
Wide BW
100kHz
Ref Level 102.00 dBµV
Att 0 dB
Input 1 AC
SWT 5 ms
PS On
RBW 100 kHz
VBW 3 MHz
Notch Off
SGL
Frequency 315.0000000 MHz
TRG:VID
1 Zero Span
1AP Clrw
M1[1] 68.84 dBµV
0 s
D2[1] 2.99 dB
105.00 µs
100 dBµV
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
D2
M1
TRG 58.000 dBµV
CF 315.0 MHz
1001 pts
500.0 µs/


MultiView
Receiver
FCC PEAK
FCC AVG
DC
Wide BW
100kHz
Ref Level 102.00 dBµV
Att 0 dB
Input 1 AC
SWT 5 ms
PS On
RBW 100 kHz
VBW 3 MHz
Notch Off
SGL
Frequency 315.0000000 MHz
TRG:VID
1 Zero Span
1AP Clrw
M1[1] 71.38 dBµV
645.00 µs
D2[1] 1.87 dB
245.00 µs
100 dBµV
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
M1
D2
RG 72.00 dBµV
CF 315.0 MHz
1001 pts
500.0 µs/



$$\text{Duty Cycle Factor} = 20\log\left(\frac{(0.105*1+0.245*40+0.49*9)msec}{96.92\text{msec}}\right) = -16.612dB$$

Test Details	
Manufacturer	The Chamberlain Group LLC
Model	Q363LA
S/N	Sample E2
Mode	E-Code Tx @ 390MHz
Carrier Frequency	390MHz
Parameters	On time = 15.33msec Word Length = 96.92msec
Duty Cycle Correction Factor	-16.017dB
Notes	None