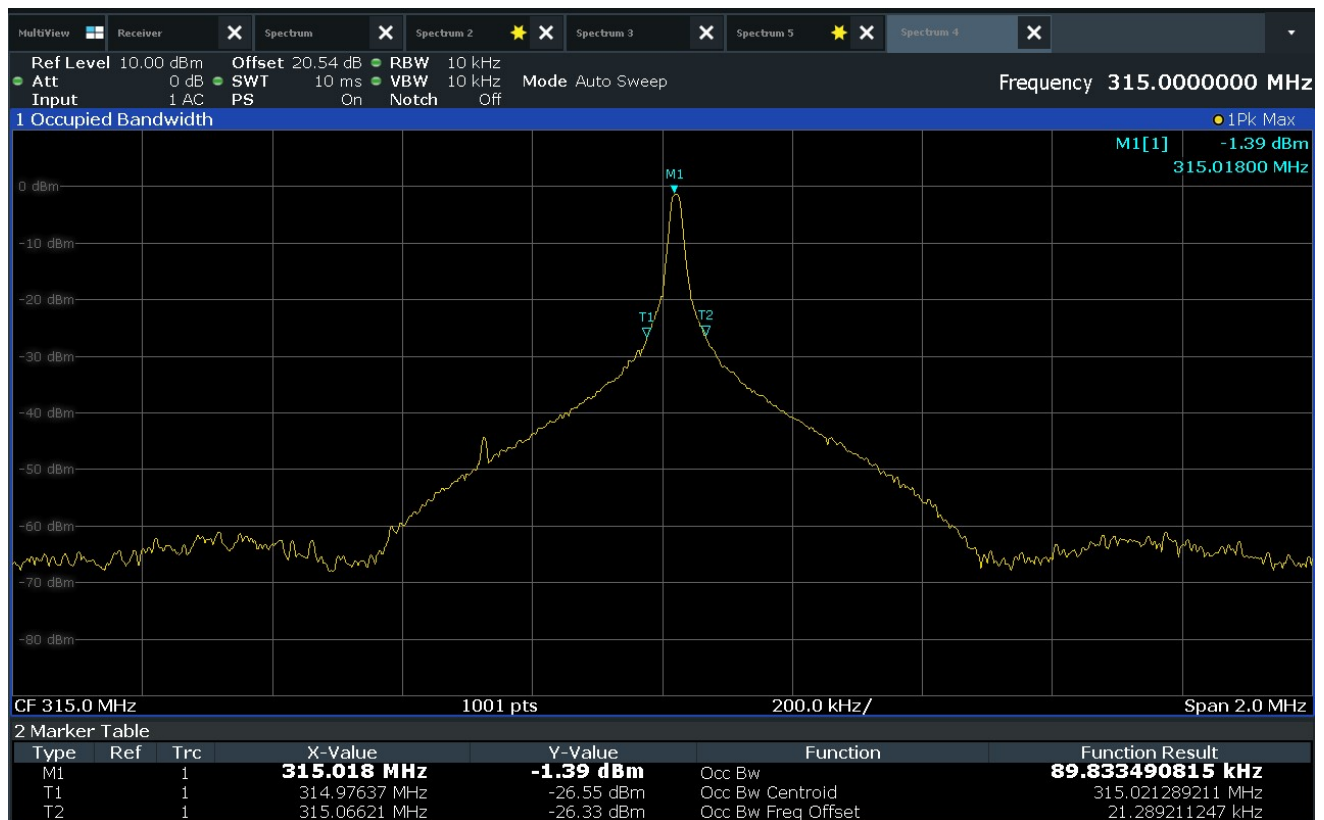
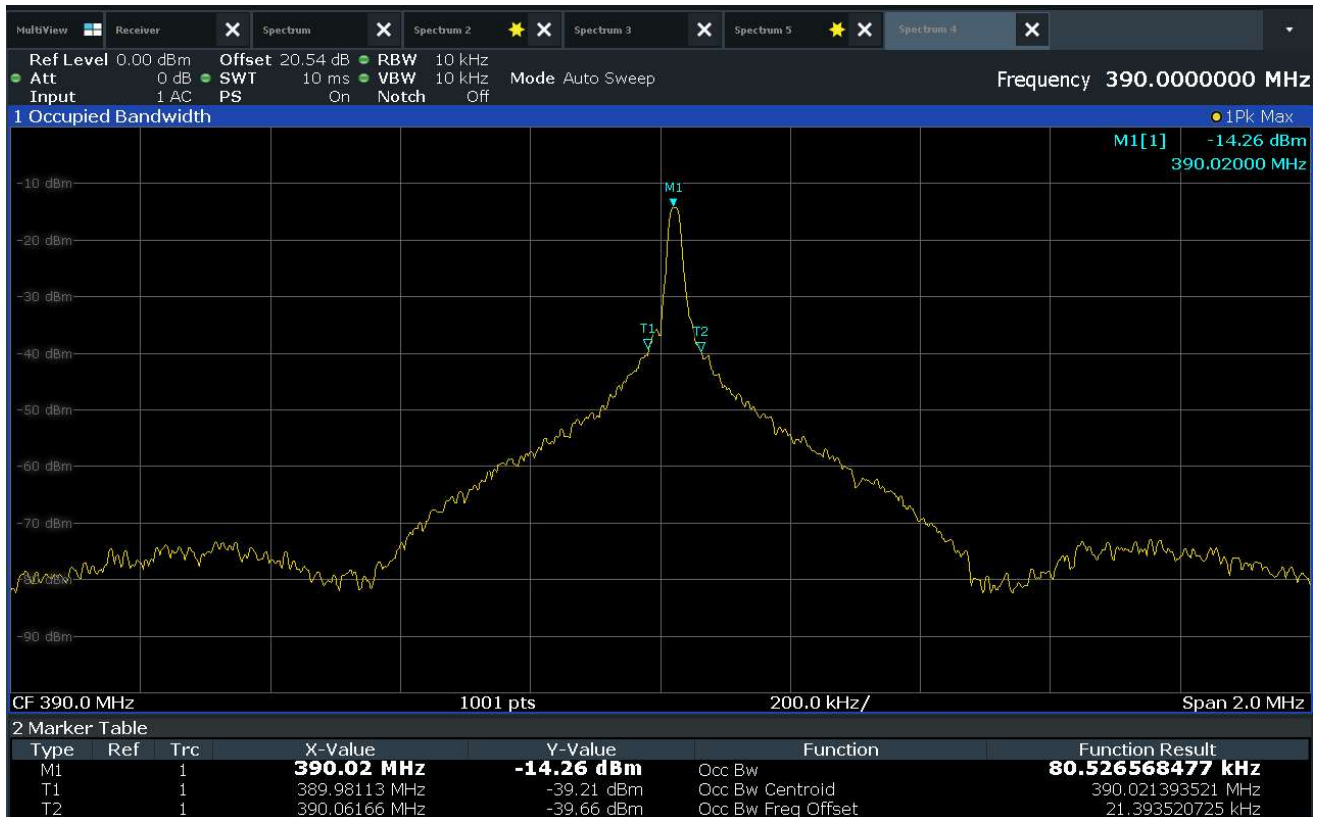


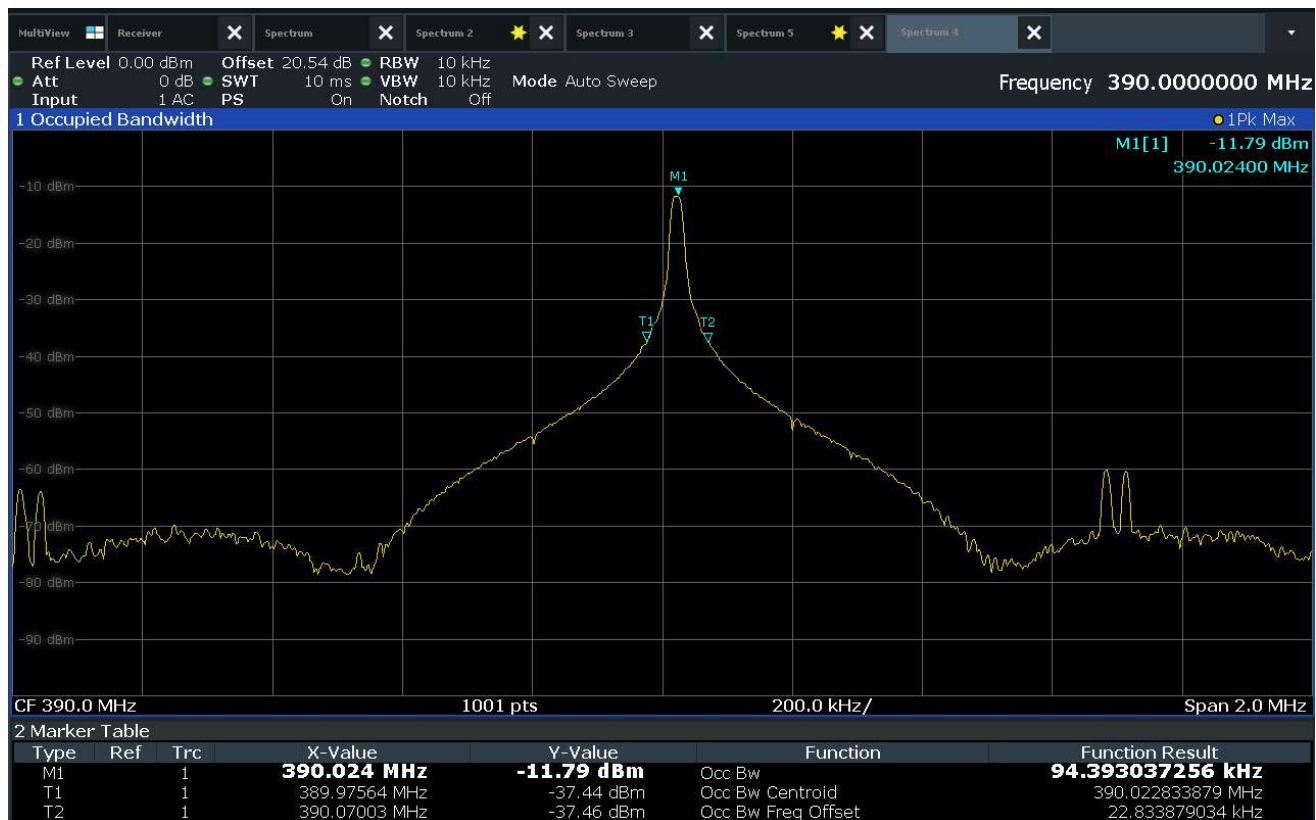
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U9
Mode	D Code
Frequency Tested	315MHz
Result	99% OBW = 89.83kHz
Notes	



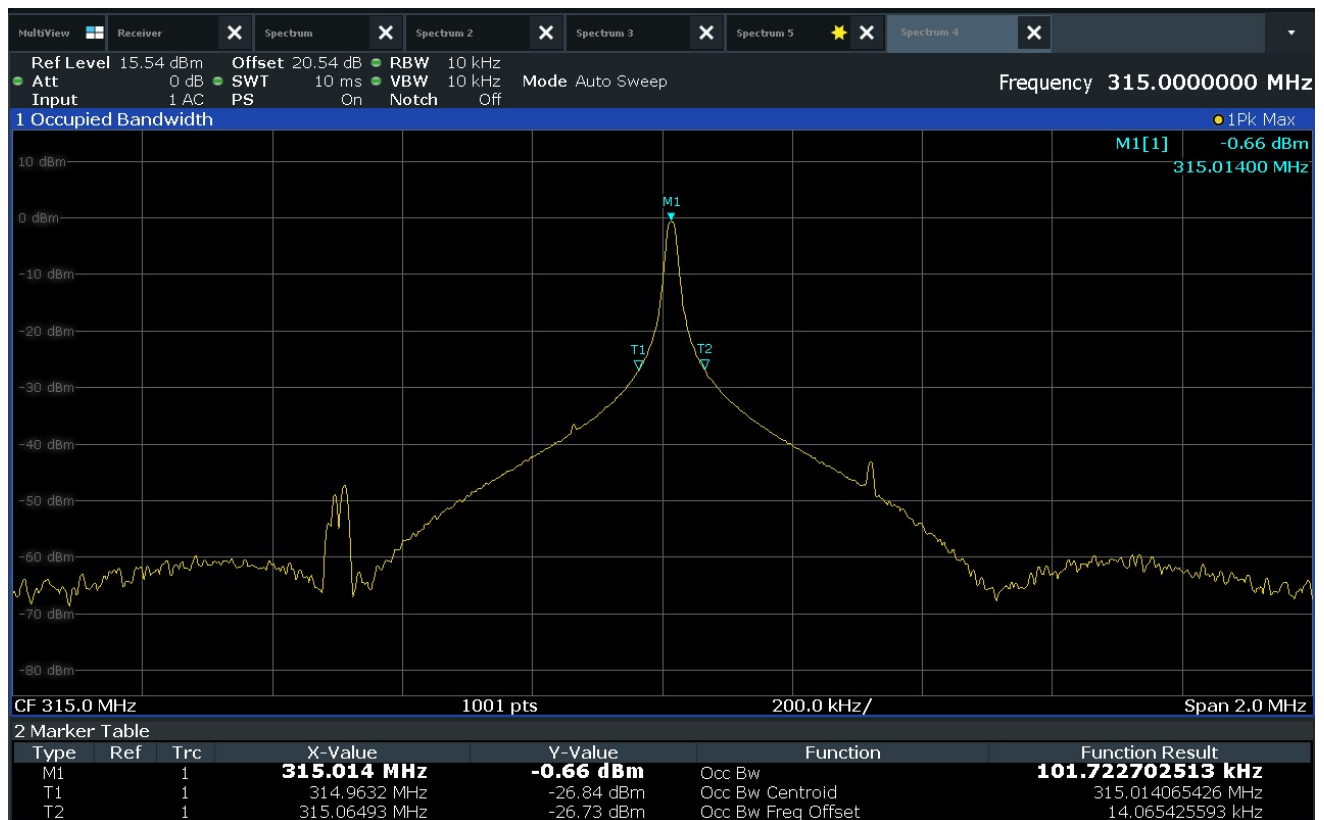
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U9
Mode	D Code
Frequency Tested	390MHz
Result	99% OBW = 80.52kHz
Notes	



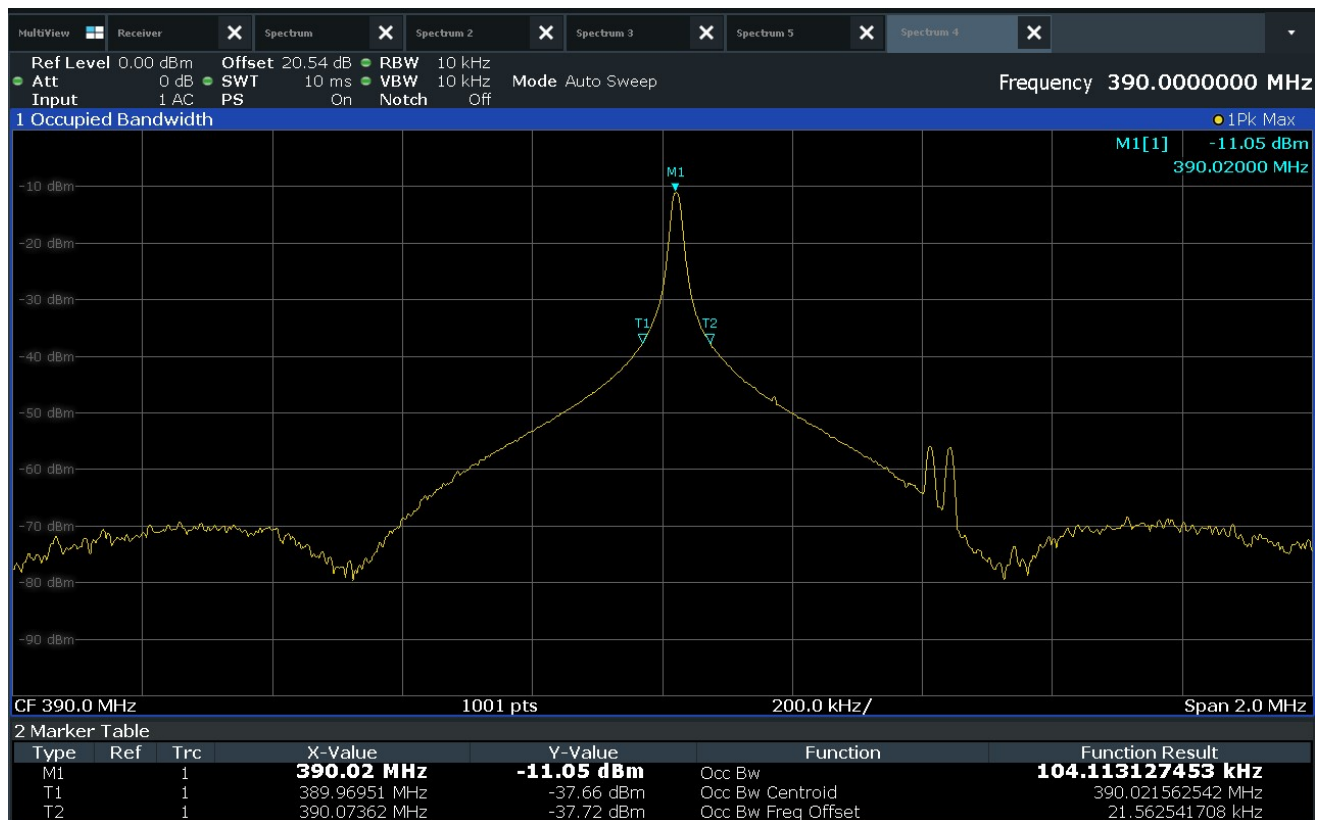
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U10
Mode	A Code
Frequency Tested	390MHz
Result	99% OBW = 94.39kHz
Notes	



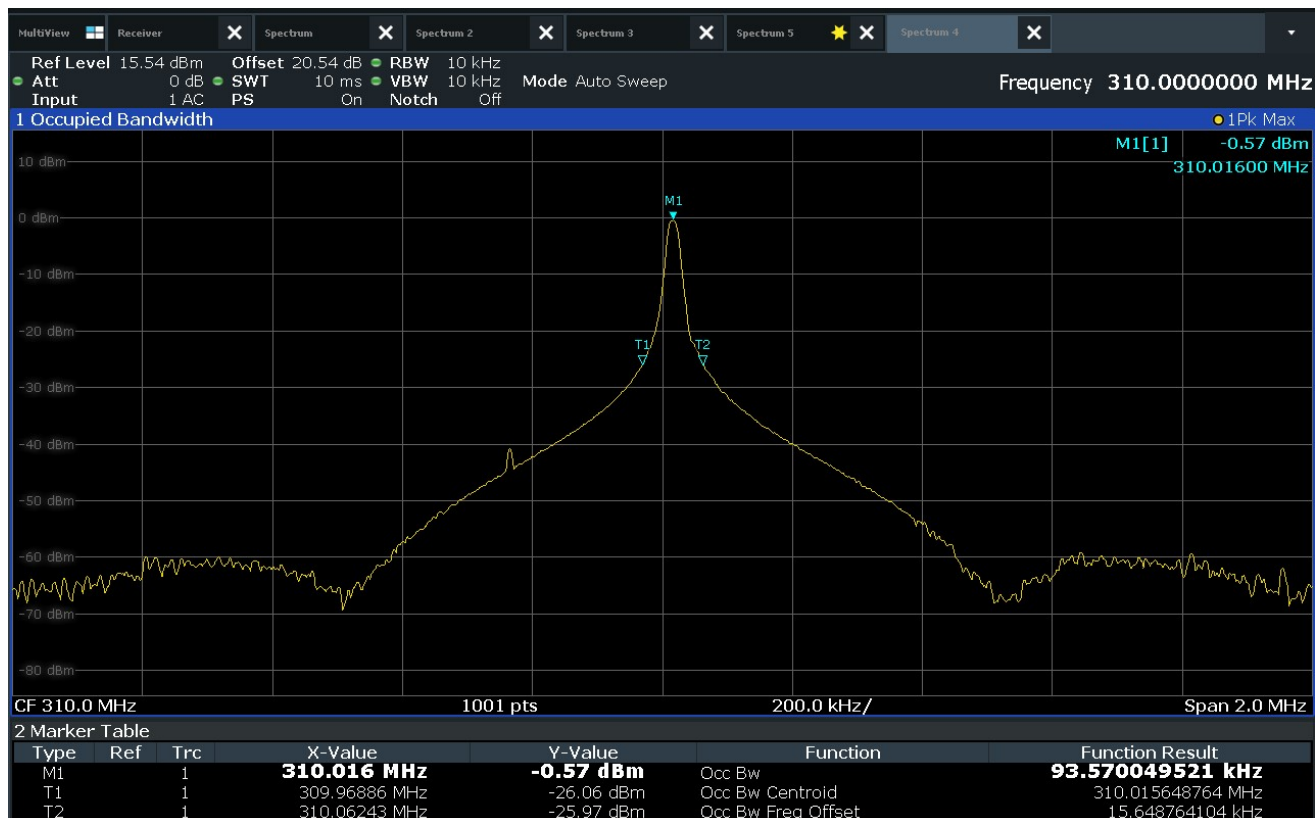
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U11
Mode	E Code
Frequency Tested	315MHz
Result	99% OBW = 101.72kHz
Notes	



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U11
Mode	E Code
Frequency Tested	315MHz
Result	99% OBW = 104.11kHz
Notes	



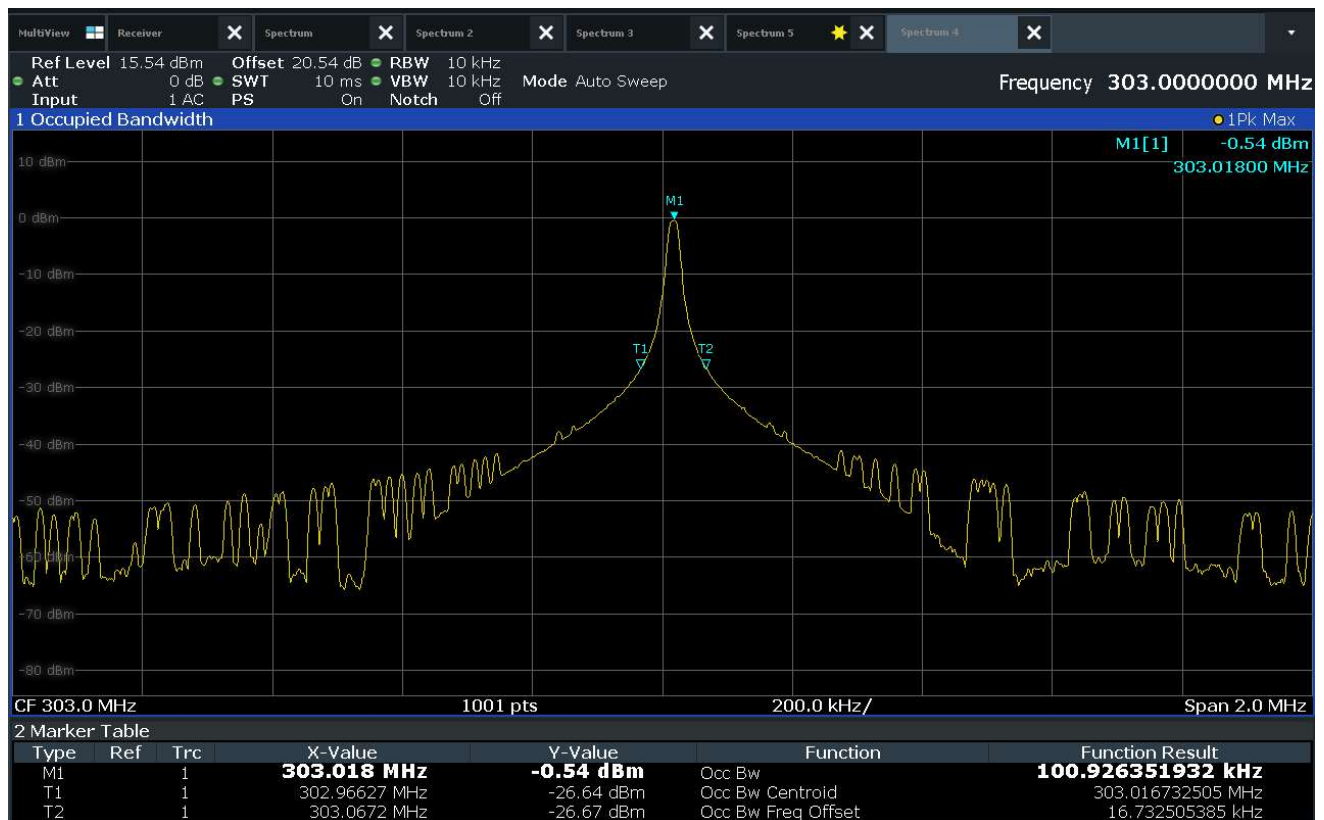
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U13
Mode	Sommer Code
Frequency Tested	310MHz
Result	99% OBW = 93.57kHz
Notes	



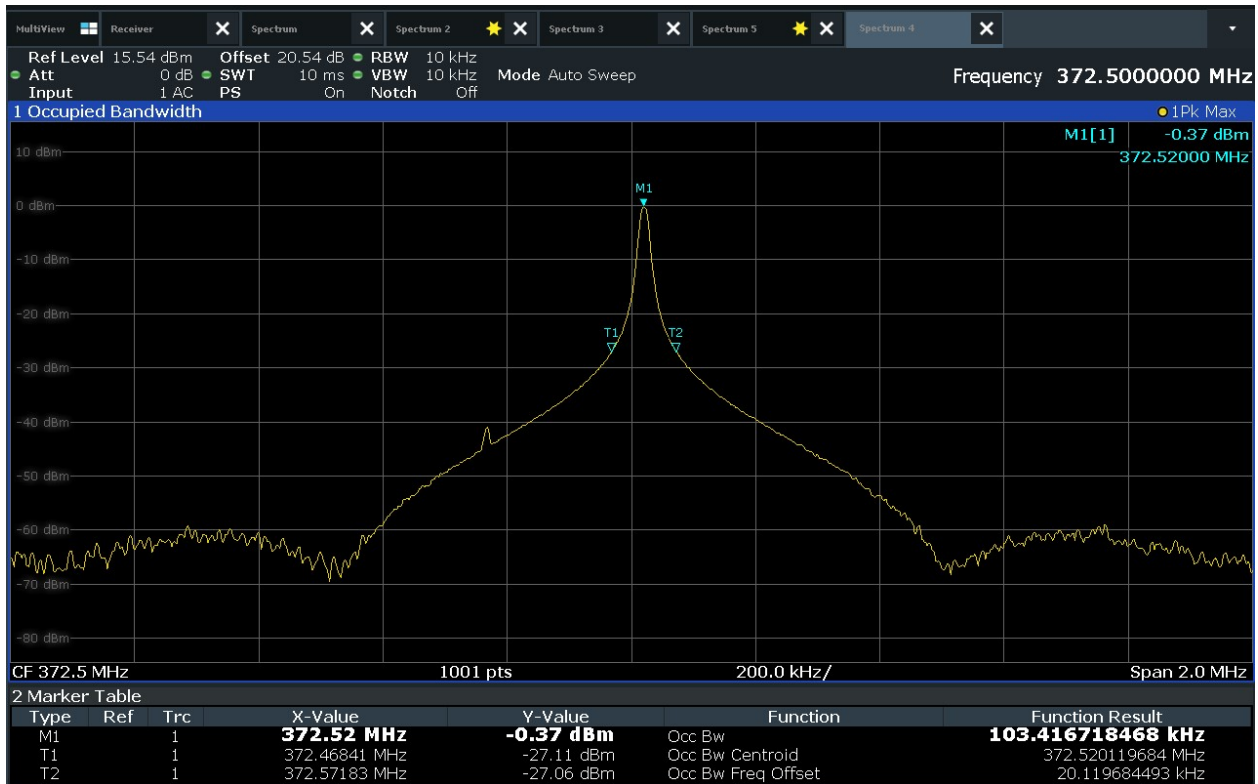
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U13
Mode	Wayne-Dalton Code
Frequency Tested	372.5MHz
Result	99% OBW = 98.4kHz
Notes	



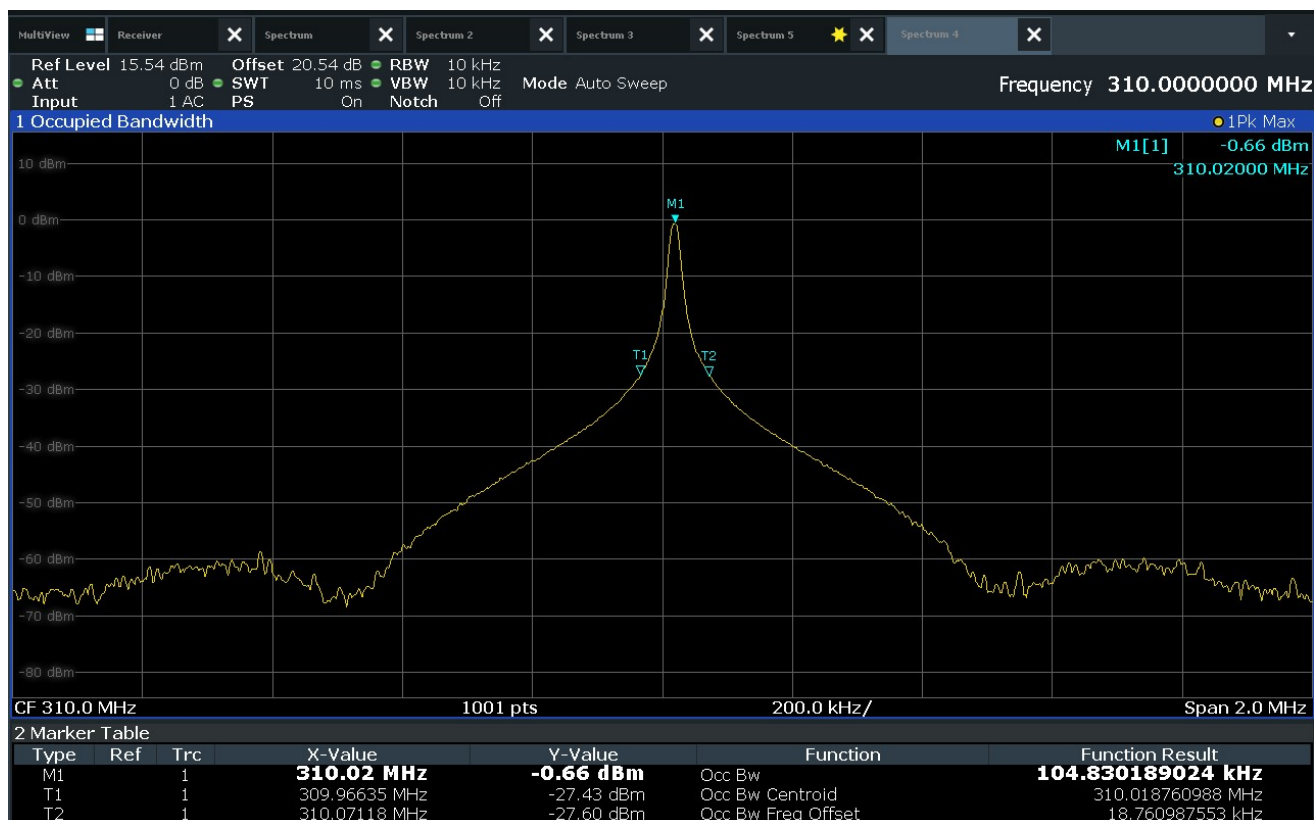
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U12
Mode	Guardian XG Code
Frequency Tested	303MHz
Result	99% OBW = 100.9kHz
Notes	



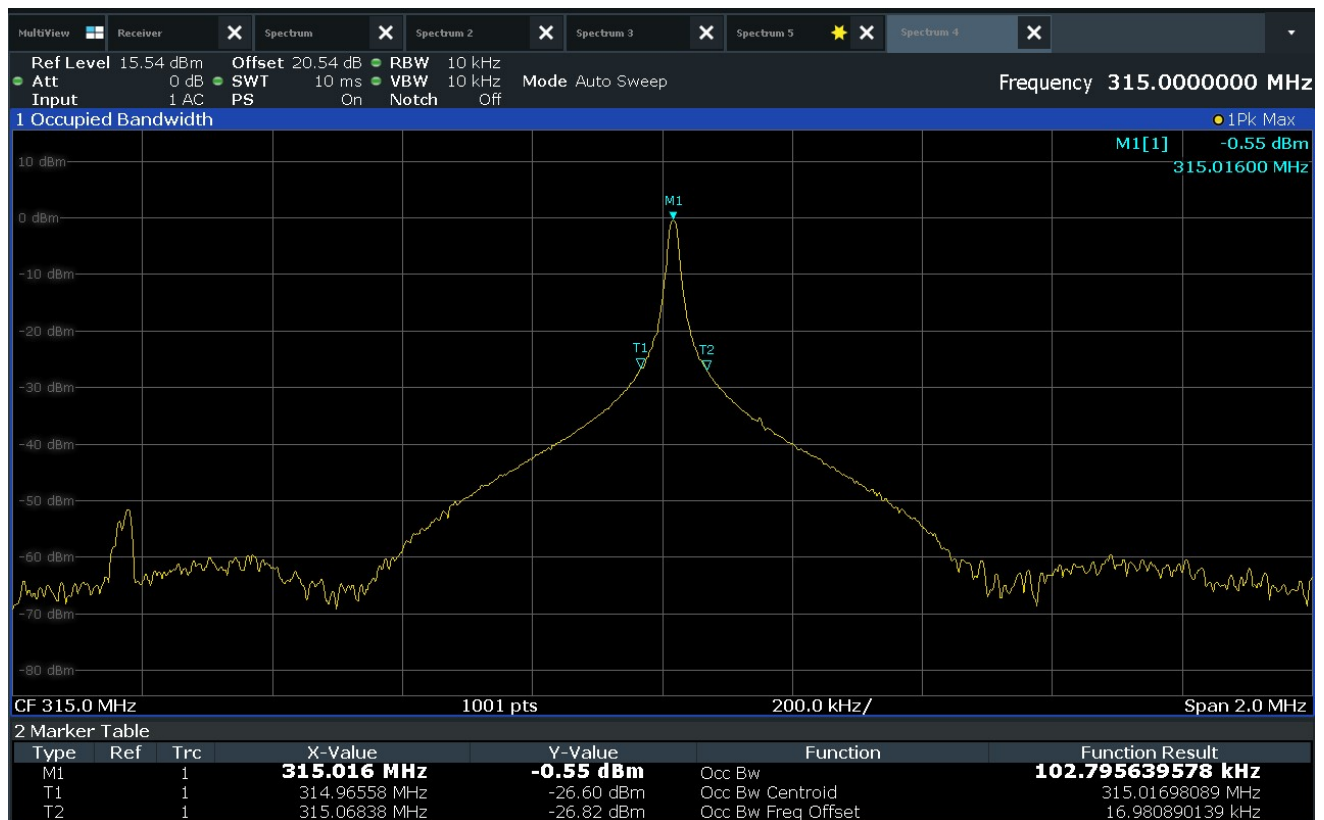
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U14
Mode	Ryobi Code
Frequency Tested	372.5MHz
Result	99% OBW = 103.41kHz
Notes	



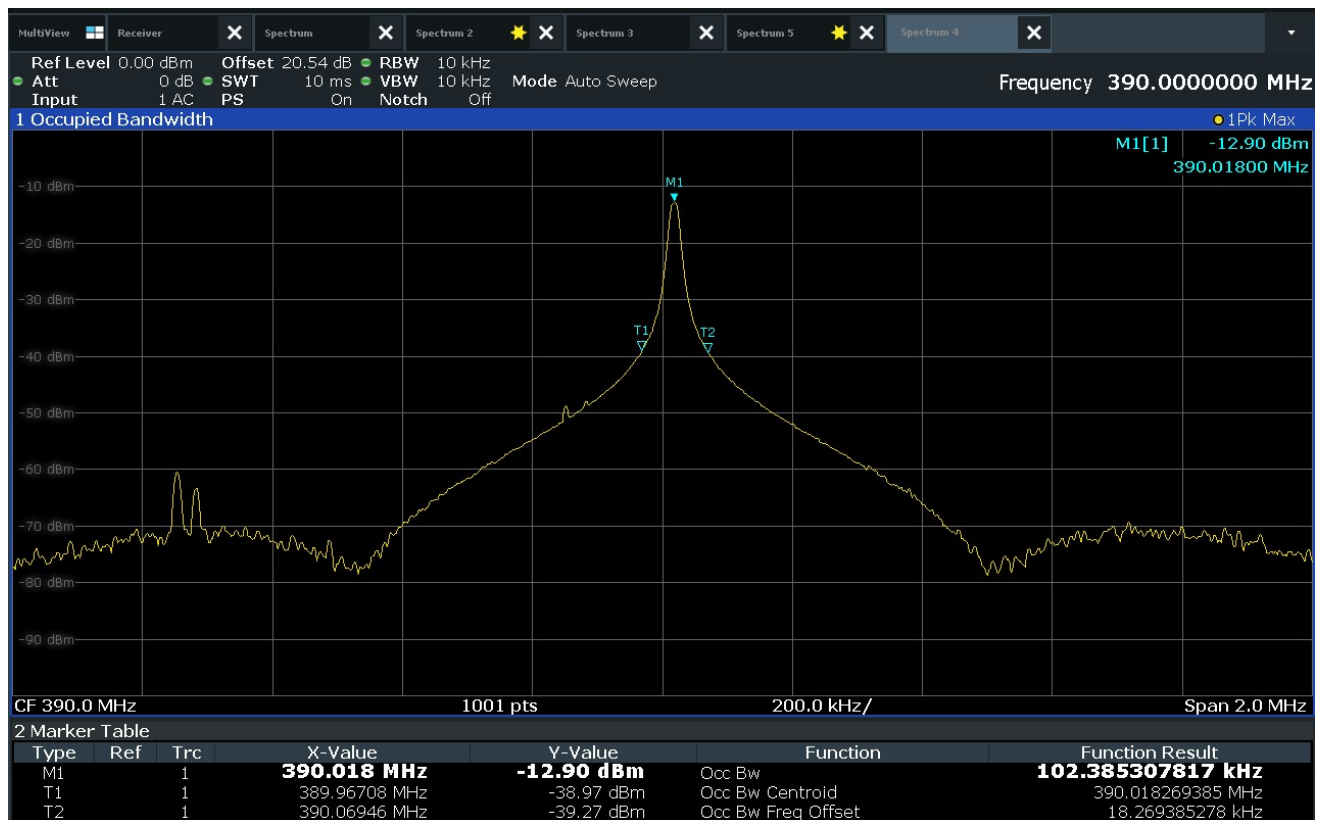
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U14
Mode	Stanley Secure Code
Frequency Tested	310MHz
Result	99% OBW = 104.83kHz
Notes	



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U8
Mode	Genie Code
Frequency Tested	315MHz
Result	99% OBW = 102.79kHz
Notes	



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U8
Mode	Genie Code
Frequency Tested	390MHz
Result	99% OBW = 102.38kHz
Notes	



24. Spurious Radiated Emissions

EUT Information	
Manufacturer	The Chamberlain Group LLC
Product	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3, Sample U4
Mode	A Code, D Code, E Code, Linear Mega Code, Genie Code, Stanley Secure Code, Wayne-Dalton Code, Guardian XG Code, Sommer Code, Ryobi Code

Test Setup Details	
Setup Format	Tabletop
Type of Test Site	Semi-Anechoic Chamber
Test Site Used	R29F
Antenna Types Used	Below 1GHz: Bilog (or equivalent) Above 1GHz: Double-Ridged Waveguide (or equivalent)
Notes	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
Radiated disturbance (electric field strength on an open area test site or alternative test site) (1 GHz – 6 GHz)	3.1

Requirement
The EUT must comply with the requirements of §15.231(b) and FCC §15.205.
The EUT must also comply with the requirements of RSS-210 Annex A.1 and RSS-Gen Section 8.10.

FCC §15.231(b) Field Strength Emissions		
Fundamental Frequency (MHZ)	Field Strength of Fundamental (µV/m)	Field Strength of Spurious Emissions (µV/m)
40.66 – 40.70	2250	225
70 – 130	1250	125
130 – 174	1250 to 3750 ¹	125 to 375 ¹
174 – 260	3750	375
260 – 470	3750 to 12500 ¹	375 to 1250 ¹
Above 470	12500	1250
Note 1: Linear interpolations		

RSS-210 Field Strength Emissions		
Fundamental Frequency (MHZ)	Field Strength of Fundamental ($\mu\text{V/m}$ at 3m)	Field Strength of Spurious Emissions ($\mu\text{V/m}$ at 3m)
70 – 130	1250	125
130 – 174	1250 to 3750 ¹	125 to 375 ¹
174 – 260 ²	3750	375
260 – 470 ²	3750 to 12500 ¹	375 to 1250 ¹
Above 470	12500	1250

¹ Linear interpolation with frequency (f) in MHZ:

- For 130 – 174MHz: Field Strength ($\mu\text{V/m}$) = $(56.82 \times f) - 6136$
- For 260 – 470MHz: Field Strength ($\mu\text{V/m}$) = $(41.67 \times f) - 7083$

² Frequency bands 225 – 328.6MHz and 335.4 – 399.9MHz are designated for the exclusive use of the Government of Canada. Manufacturers should be aware of possible harmful interference and degradation of their license-exempt radio equipment in these frequency bands.

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 powerlines and signal lines entering the enclosure pass through filters on the enclosure wall. The powerline filters prevent extraneous signals from entering the enclosure on these leads. 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 4GHz was investigated using a peak detector function. The final emission tests were then manually performed over the frequency range of 30MHz to 4GHz. 1) Between 30MHz and 1GHz, a bi-log antenna was used as the pick-up device. The EUT was placed on an 80cm high non-conductive stand. 2) A peak detector with a resolution bandwidth of 100kHz was used on the spectrum analyzer. 3) Above 1GHz, a broadband double ridged waveguide antenna was used as the pick-up device. The EUT was placed on a 1.5m high non-conductive stand. 4) A peak detector with a resolution bandwidth of 1MHz was used on the spectrum analyzer. 5) The peak detected levels were converted to average levels using a duty cycle factor which was computed from the pulse train 6) To ensure that maximum or worst case, emission levels were measured, the following steps were taken: i) The EUT was rotated so that all of its sides were exposed to the receiving antenna. ii) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured. iii) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.

Removed for short term confidentiality

Test Setup for Spurious Radiated Emissions, 30MHz – 1GHz – Antenna
Polarization Horizontal

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Test Setup for Spurious Radiated Emissions, 30MHz – 1GHz – Antenna
Polarization Vertical

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

Removed for short term confidentiality

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

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3
Mode	Linear Mega Code
Frequency Tested	318MHz
Notes	Field Strength of the Fundamental Limit = 6166.7 μ V/m

Freq. (MHz)	Ant Pol	Meter Reading (dB μ V)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dB μ V/m)	Total (μ V/m)	Limit (μ V/m)	Margin (dB)
318.000	H	61.4		0.9	19.7	0.0	-15.4	66.7	2151.4	6166.7	-9.1
318.000	V	36.6		0.9	19.7	0.0	-15.4	41.9	123.9	6166.7	-33.9
636.000	H	32.9		1.3	25.3	0.0	-15.4	44.1	160.2	616.7	-11.7
636.000	V	26.5		1.3	25.3	0.0	-15.4	37.7	76.4	616.7	-18.1
954.000	H	27.2		1.6	27.0	0.0	-15.4	40.4	104.5	616.7	-15.4
954.000	V	17.6	*	1.6	27.0	0.0	-15.4	30.8	34.5	616.7	-25.0
1272.000	H	38.3		1.9	29.7	0.0	-15.4	54.4	526.7	616.7	-1.4
1272.000	V	35.8		1.9	29.7	0.0	-15.4	52.0	396.8	616.7	-3.8
1590.000	H	26.1	*	2.1	27.9	0.0	-15.4	40.7	108.0	500.0	-13.3
1590.000	V	26.9	*	2.1	27.9	0.0	-15.4	41.5	118.9	500.0	-12.5
1908.000	H	30.2		2.3	30.1	0.0	-15.4	47.2	228.9	616.7	-8.6
1908.000	V	26.4		2.3	30.1	0.0	-15.4	43.4	148.3	616.7	-12.4
2226.000	H	62.6		2.5	31.6	-39.9	-15.4	41.3	116.5	500.0	-12.7
2226.000	V	55.9		2.5	31.6	-39.9	-15.4	34.6	53.9	500.0	-19.3
2544.000	H	51.4		2.7	33.1	-39.9	-15.4	31.9	39.4	616.7	-23.9
2544.000	V	49.9	*	2.7	33.1	-39.9	-15.4	30.4	33.3	616.7	-25.4
2862.000	H	53.8		2.9	32.8	-39.7	-15.4	34.4	52.5	500.0	-19.6
2862.000	V	52.7		2.9	32.8	-39.7	-15.4	33.3	46.4	500.0	-20.7
3180.000	H	52.0	*	3.0	33.1	-39.5	-15.4	33.3	46.0	616.7	-22.5
3180.000	V	50.7	*	3.0	33.1	-39.5	-15.4	32.0	39.7	616.7	-23.8

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3
Mode	D Code
Frequency Tested	390MHz
Notes	Field Strength of the Fundamental Limit = 9166.7 μ V/m

Freq. (MHz)	Ant Pol	Meter Reading (dB μ V)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dB μ V/m)	Total (μ V/m)	Limit (μ V/m)	Margin (dB)
390.000	H	52.2		1.0	21.4	0.0	-13.0	61.6	1204.4	9166.7	-17.6
390.000	V	34.3		1.0	21.4	0.0	-13.0	43.7	153.6	9166.7	-35.5
780.000	H	28.6		1.4	25.9	0.0	-13.0	43.0	141.3	916.7	-16.2
780.000	V	28.4		1.4	25.9	0.0	-13.0	42.8	137.4	916.7	-16.5
1170.000	H	27.3	*	1.8	29.2	0.0	-13.0	45.3	184.7	500.0	-8.7
1170.000	V	28.1	*	1.8	29.2	0.0	-13.0	46.1	203.0	500.0	-7.8
1560.000	H	35.9		2.1	27.9	0.0	-13.0	53.0	446.4	500.0	-1.0
1560.000	V	32.8		2.1	27.9	0.0	-13.0	49.8	309.5	500.0	-4.2
1950.000	H	29.1		2.3	30.3	0.0	-13.0	48.8	275.9	916.7	-10.4
1950.000	V	27.5		2.3	30.3	0.0	-13.0	47.1	227.6	916.7	-12.1
2340.000	H	52.6		2.6	32.2	-39.9	-13.0	34.5	53.3	500.0	-19.4
2340.000	V	50.6	*	2.6	32.2	-39.9	-13.0	32.5	42.3	500.0	-21.4
2730.000	H	52.1		2.8	33.0	-39.8	-13.0	35.2	57.7	500.0	-18.8
2730.000	V	50.7	*	2.8	33.0	-39.8	-13.0	33.9	49.3	500.0	-20.1
3120.000	H	50.2	*	3.0	33.0	-39.5	-13.0	33.8	48.9	916.7	-25.5
3120.000	V	50.8	*	3.0	33.0	-39.5	-13.0	34.3	52.1	916.7	-24.9
3510.000	H	50.5	*	3.2	33.2	-39.2	-13.0	34.7	54.5	916.7	-24.5
3510.000	V	49.9	*	3.2	33.2	-39.2	-13.0	34.1	50.7	916.7	-25.1
3900.000	H	56.7		3.4	33.5	-39.2	-13.0	41.3	116.1	500.0	-12.7
3900.000	V	53.3		3.4	33.5	-39.2	-13.0	37.9	78.4	500.0	-16.1

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3
Mode	D Code
Frequency Tested	315MHz
Notes	Field Strength of the Fundamental Limit = 6041.7 μ V/m

Freq. (MHz)	Ant Pol	Meter Reading (dB μ V)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dB μ V/m)	Total (μ V/m)	Limit (μ V/m)	Margin (dB)
315.000	H	61.6		0.9	19.7	0.0	-13.2	69.0	2824.9	6041.7	-6.6
315.000	V	36.8		0.9	19.7	0.0	-13.2	44.3	163.7	6041.7	-31.3
630.000	H	32.6		1.3	25.3	0.0	-13.2	46.0	200.6	604.2	-9.6
630.000	V	26.4		1.3	25.3	0.0	-13.2	39.8	98.3	604.2	-15.8
945.000	H	26.9		1.6	26.9	0.0	-13.2	42.3	130.0	604.2	-13.3
945.000	V	17.0		1.6	26.9	0.0	-13.2	32.4	41.6	604.2	-23.2
1260.000	H	37.1		1.9	29.7	0.0	-13.2	55.5	596.5	604.2	-0.1
1260.000	V	33.7		1.9	29.7	0.0	-13.2	52.1	402.4	604.2	-3.5
1575.000	H	26.4	*	2.1	27.9	0.0	-13.2	43.3	145.6	500.0	-10.7
1575.000	V	26.9	*	2.1	27.9	0.0	-13.2	43.7	152.8	500.0	-10.3
1890.000	H	29.5		2.3	30.0	0.0	-13.2	48.6	269.6	604.2	-7.0
1890.000	V	26.4	*	2.3	30.0	0.0	-13.2	45.5	188.0	604.2	-10.1
2205.000	H	61.4		2.5	31.4	-39.9	-13.2	42.3	130.5	500.0	-11.7
2205.000	V	56.6		2.5	31.4	-39.9	-13.2	37.5	74.8	500.0	-16.5
2520.000	H	48.9	*	2.7	33.1	-39.9	-13.2	31.6	38.2	604.2	-24.0
2520.000	V	50.5	*	2.7	33.1	-39.9	-13.2	33.3	46.0	604.2	-22.4
2835.000	H	53.2		2.9	32.8	-39.7	-13.2	36.0	63.4	500.0	-17.9
2835.000	V	50.1	*	2.9	32.8	-39.7	-13.2	32.9	44.4	500.0	-21.0
3150.000	H	51.6	*	3.0	33.0	-39.5	-13.2	35.0	56.4	604.2	-20.6
3150.000	V	50.7	*	3.0	33.0	-39.5	-13.2	34.1	50.9	604.2	-21.5

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3
Mode	A Code
Frequency Tested	390MHz
Notes	Field Strength of the Fundamental Limit = 9166.7 μ V/m

Freq. (MHz)	Ant Pol	Meter Reading (dB μ V)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dB μ V/m)	Total (μ V/m)	Limit (μ V/m)	Margin (dB)
390.000	H	52.2		1.0	21.4	0.0	-13.6	61.0	1126.1	9166.7	-18.2
390.000	V	31.1		1.0	21.4	0.0	-13.6	40.0	99.6	9166.7	-39.3
780.000	H	28.5		1.4	25.9	0.0	-13.6	42.3	130.7	916.7	-16.9
780.000	V	23.9		1.4	25.9	0.0	-13.6	37.7	77.0	916.7	-21.5
1170.000	H	26.8	*	1.8	29.2	0.0	-13.6	44.2	162.1	500.0	-9.8
1170.000	V	27.0	*	1.8	29.2	0.0	-13.6	44.4	165.9	500.0	-9.6
1560.000	H	35.7		2.1	27.9	0.0	-13.6	52.2	407.4	500.0	-1.8
1560.000	V	31.7		2.1	27.9	0.0	-13.6	48.2	257.1	500.0	-5.8
1950.000	H	28.6		2.3	30.3	0.0	-13.6	47.7	243.5	916.7	-11.5
1950.000	V	26.5	*	2.3	30.3	0.0	-13.6	45.6	189.7	916.7	-13.7
2340.000	H	51.1	*	2.6	32.2	-39.9	-13.6	32.4	41.9	500.0	-21.5
2340.000	V	51.2	*	2.6	32.2	-39.9	-13.6	32.5	42.2	500.0	-21.5
2730.000	H	52.9		2.8	33.0	-39.8	-13.6	35.4	59.1	500.0	-18.5
2730.000	V	52.1		2.8	33.0	-39.8	-13.6	34.7	54.1	500.0	-19.3
3120.000	H	50.6	*	3.0	33.0	-39.5	-13.6	33.6	47.8	916.7	-25.6
3120.000	V	50.1	*	3.0	33.0	-39.5	-13.6	33.1	45.2	916.7	-26.1
3510.000	H	50.4	*	3.2	33.2	-39.2	-13.6	34.0	49.9	916.7	-25.3
3510.000	V	50.4	*	3.2	33.2	-39.2	-13.6	34.0	50.4	916.7	-25.2
3900.000	H	57.8		3.4	33.5	-39.2	-13.6	41.8	123.3	500.0	-12.2
3900.000	V	55.8		3.4	33.5	-39.2	-13.6	39.9	98.7	500.0	-14.1

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3
Mode	E Code
Frequency Tested	315MHz
Notes	Field Strength of the Fundamental Limit = 6041.7 μ V/m

Freq. (MHz)	Ant Pol	Meter Reading (dB μ V)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dB μ V/m)	Total (μ V/m)	Limit (μ V/m)	Margin (dB)
315.000	H	61.5		0.9	19.7	0.0	-16.2	65.9	1970.2	6041.7	-9.7
315.000	V	36.6		0.9	19.7	0.0	-16.2	41.0	112.7	6041.7	-34.6
630.000	H	32.4		1.3	25.3	0.0	-16.2	42.8	137.8	604.2	-12.8
630.000	V	26.7		1.3	25.3	0.0	-16.2	37.1	71.9	604.2	-18.5
945.000	H	26.8		1.6	26.9	0.0	-16.2	39.1	90.2	604.2	-16.5
945.000	V	17.0	*	1.6	26.9	0.0	-16.2	29.3	29.2	604.2	-26.3
1260.000	H	39.2		1.9	29.7	0.0	-16.2	54.6	535.4	604.2	-1.1
1260.000	V	35.3		1.9	29.7	0.0	-16.2	50.6	338.6	604.2	-5.0
1575.000	H	26.7	*	2.1	27.9	0.0	-16.2	40.5	105.6	500.0	-13.5
1575.000	V	25.9	*	2.1	27.9	0.0	-16.2	39.7	96.9	500.0	-14.2
1890.000	H	29.2		2.3	30.0	0.0	-16.2	45.3	184.2	604.2	-10.3
1890.000	V	26.1	*	2.3	30.0	0.0	-16.2	42.1	128.0	604.2	-13.5
2205.000	H	59.5		2.5	31.4	-39.9	-16.2	37.4	73.9	500.0	-16.6
2205.000	V	53.1		2.5	31.4	-39.9	-16.2	30.9	35.1	500.0	-23.1
2520.000	H	50.5	*	2.7	33.1	-39.9	-16.2	30.1	32.1	604.2	-25.5
2520.000	V	49.9	*	2.7	33.1	-39.9	-16.2	29.5	30.0	604.2	-26.1
2835.000	H	54.3		2.9	32.8	-39.7	-16.2	34.1	50.8	500.0	-19.9
2835.000	V	49.8	*	2.9	32.8	-39.7	-16.2	29.6	30.2	500.0	-24.4
3150.000	H	51.8	*	3.0	33.0	-39.5	-16.2	32.2	40.8	604.2	-23.4
3150.000	V	51.1	*	3.0	33.0	-39.5	-16.2	31.5	37.6	604.2	-24.1

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3
Mode	E Code
Frequency Tested	390MHz
Notes	Field Strength of the Fundamental Limit = 9166.7 μ V/m

Freq. (MHz)	Ant Pol	Meter Reading (dB μ V)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dB μ V/m)	Total (μ V/m)	Limit (μ V/m)	Margin (dB)
390.000	H	58.5		1.0	21.4	0.0	-16.2	64.8	1730.1	9166.7	-14.5
390.000	V	38.3		1.0	21.4	0.0	-16.2	44.5	168.3	9166.7	-34.7
780.000	H	42.9		1.4	25.9	0.0	-16.2	54.0	502.8	916.7	-5.2
780.000	V	36.1		1.4	25.9	0.0	-16.2	47.2	230.1	916.7	-12.0
1170.000	H	30.3		1.8	29.2	0.0	-16.2	45.1	180.8	500.0	-8.8
1170.000	V	26.7	*	1.8	29.2	0.0	-16.2	41.5	119.0	500.0	-12.5
1560.000	H	38.4		2.1	27.9	0.0	-16.2	52.2	408.8	500.0	-1.7
1560.000	V	34.6		2.1	27.9	0.0	-16.2	48.4	264.3	500.0	-5.5
1950.000	H	31.6		2.3	30.3	0.0	-16.2	48.1	253.8	916.7	-11.2
1950.000	V	27.8		2.3	30.3	0.0	-16.2	44.2	162.9	916.7	-15.0
2340.000	H	56.8		2.6	32.2	-39.9	-16.2	35.5	59.9	500.0	-18.4
2340.000	V	57.6		2.6	32.2	-39.9	-16.2	36.3	65.1	500.0	-17.7
2730.000	H	60.5		2.8	33.0	-39.8	-16.2	40.4	104.3	500.0	-13.6
2730.000	V	54.7		2.8	33.0	-39.8	-16.2	34.6	53.9	500.0	-19.4
3120.000	H	55.0		3.0	33.0	-39.5	-16.2	35.4	58.8	916.7	-23.9
3120.000	V	51.3	*	3.0	33.0	-39.5	-16.2	31.6	38.0	916.7	-27.6
3510.000	H	60.3		3.2	33.2	-39.2	-16.2	41.3	115.7	916.7	-18.0
3510.000	V	60.5		3.2	33.2	-39.2	-16.2	41.5	118.9	916.7	-17.7
3900.000	H	61.3		3.4	33.5	-39.2	-16.2	42.7	136.5	500.0	-11.3
3900.000	V	57.3		3.4	33.5	-39.2	-16.2	38.7	85.7	500.0	-15.3

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3
Mode	Sommer Code
Frequency Tested	310MHz
Notes	Field Strength of the Fundamental Limit = 5833.3 μ V/m

Freq. (MHz)	Ant Pol	Meter Reading (dB μ V)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dB μ V/m)	Total (μ V/m)	Limit (μ V/m)	Margin (dB)
310.000	H	61.6		0.9	19.6	0.0	-18.6	63.5	1503.6	5833.3	-11.8
310.000	V	37.7		0.9	19.6	0.0	-18.6	39.6	96.0	5833.3	-35.7
620.000	H	31.3		1.3	25.2	0.0	-18.6	39.3	91.8	583.3	-16.1
620.000	V	26.0		1.3	25.2	0.0	-18.6	33.9	49.5	583.3	-21.4
930.000	H	26.1		1.6	26.9	0.0	-18.6	36.0	63.1	583.3	-19.3
930.000	V	17.7	*	1.6	26.9	0.0	-18.6	27.6	24.1	583.3	-27.7
1240.000	H	40.2		1.8	29.6	0.0	-18.6	53.1	449.7	500.0	-0.9
1240.000	V	33.0		1.8	29.6	0.0	-18.6	45.9	198.1	500.0	-8.0
1550.000	H	26.3	*	2.1	28.0	0.0	-18.6	37.8	77.7	500.0	-16.2
1550.000	V	26.7	*	2.1	28.0	0.0	-18.6	38.1	80.5	500.0	-15.9
1860.000	H	27.9		2.3	29.8	0.0	-18.6	41.4	117.3	583.3	-13.9
1860.000	V	26.6	*	2.3	29.8	0.0	-18.6	40.0	100.2	583.3	-15.3
2170.000	H	57.6		2.5	31.3	-39.9	-18.6	32.9	44.4	583.3	-22.4
2170.000	V	54.0		2.5	31.3	-39.9	-18.6	29.3	29.2	583.3	-26.0
2480.000	H	49.2	*	2.7	32.9	-39.9	-18.6	26.3	20.7	583.3	-29.0
2480.000	V	48.4	*	2.7	32.9	-39.9	-18.6	25.5	18.8	583.3	-29.8
2790.000	H	52.2	*	2.8	32.9	-39.7	-18.6	29.7	30.4	500.0	-24.3
2790.000	V	50.9	*	2.8	32.9	-39.7	-18.6	28.4	26.3	500.0	-25.6
3100.000	H	51.8	*	3.0	33.0	-39.5	-18.6	29.7	30.7	583.3	-25.6
3100.000	V	51.0	*	3.0	33.0	-39.5	-18.6	28.9	27.9	583.3	-26.4

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3, Sample U4
Mode	Wayne-Dalton Code
Frequency Tested	372.5MHz
Notes	Field Strength of the Fundamental Limit = 8437.5µV/m

Freq. (MHz)	Ant Pol	Meter Reading (dBµV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dBµV/m)	Total (µV/m)	Limit (µV/m)	Margin (dB)
372.500	H	52.3		1.0	21.0	0.0	-12.5	61.7	1221.8	8437.5	-16.8
372.500	V	33.9		1.0	21.0	0.0	-12.5	43.3	147.1	8437.5	-35.2
745.000	H	22.8		1.4	25.8	0.0	-12.5	37.5	74.7	843.7	-21.1
745.000	V	19.4		1.4	25.8	0.0	-12.5	34.1	50.6	843.7	-24.4
1117.500	H	22.3	*	3.2	27.5	0.0	-12.5	40.4	104.1	500.0	-13.6
1117.500	V	22.0	*	3.2	27.5	0.0	-12.5	40.1	101.1	500.0	-13.9
1490.000	H	25.6		3.5	28.5	0.0	-12.5	45.1	179.0	500.0	-8.9
1490.000	V	23.7		3.5	28.5	0.0	-12.5	43.2	144.0	500.0	-10.8
1862.500	H	23.0		3.9	30.7	0.0	-12.5	45.0	178.6	843.7	-13.5
1862.500	V	22.3		3.9	30.7	0.0	-12.5	44.3	164.6	843.7	-14.2
2235.000	H	51.3	*	4.2	32.2	-39.6	-12.5	35.5	59.5	500.0	-18.5
2235.000	V	50.8	*	4.2	32.2	-39.6	-12.5	35.0	56.1	500.0	-19.0
2607.500	H	52.0		4.4	32.7	-39.6	-12.5	37.0	70.6	843.7	-21.5
2607.500	V	51.4	*	4.4	32.7	-39.6	-12.5	36.4	66.2	843.7	-22.1
2980.000	H	51.4	*	4.9	32.9	-39.3	-12.5	37.4	73.8	843.7	-21.2
2980.000	V	51.4	*	4.9	32.9	-39.3	-12.5	37.3	73.4	843.7	-21.2
3352.500	H	50.6	*	5.3	33.1	-39.0	-12.5	37.5	75.1	500.0	-16.5
3352.500	V	50.3	*	5.3	33.1	-39.0	-12.5	37.2	72.4	500.0	-16.8
3725.000	H	50.6		5.4	33.4	-38.9	-12.5	38.1	80.0	500.0	-15.9
3725.000	V	49.5	*	5.4	33.4	-38.9	-12.5	36.9	70.4	500.0	-17.0

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3
Mode	Guardian XG Code
Frequency Tested	303MHz
Notes	Field Strength of the Fundamental Limit = 5541.7µV/m

Freq. (MHz)	Ant Pol	Meter Reading (dBµV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dBµV/m)	Total (µV/m)	Limit (µV/m)	Margin (dB)
303.000	H	51.6		0.9	19.4	0.0	-6.8	65.0	1778.8	5541.7	-9.9
303.000	V	30.5		0.9	19.4	0.0	-6.8	43.9	157.1	5541.7	-31.0
606.000	H	16.1	*	1.3	24.9	0.0	-6.8	35.4	59.0	554.2	-19.4
606.000	V	15.5	*	1.3	24.9	0.0	-6.8	34.9	55.4	554.2	-20.0
909.000	H	16.1	*	1.6	26.7	0.0	-6.8	37.5	75.0	554.2	-17.4
909.000	V	16.9	*	1.6	26.7	0.0	-6.8	38.3	82.7	554.2	-16.5
1212.000	H	27.8		1.8	29.6	0.0	-6.8	52.4	415.2	500.0	-1.6
1212.000	V	26.8	*	1.8	29.6	0.0	-6.8	51.3	368.8	500.0	-2.6
1515.000	H	26.2	*	2.0	28.1	0.0	-6.8	49.5	297.3	500.0	-4.5
1515.000	V	26.8	*	2.0	28.1	0.0	-6.8	50.0	317.1	500.0	-4.0
1818.000	H	26.0	*	2.2	29.4	0.0	-6.8	50.9	349.1	554.2	-4.0
1818.000	V	26.7	*	2.2	29.4	0.0	-6.8	51.5	376.3	554.2	-3.4
2121.000	H	51.3	*	2.4	31.1	-39.9	-6.8	38.0	79.8	554.2	-16.8
2121.000	V	51.2	*	2.4	31.1	-39.9	-6.8	38.0	79.3	554.2	-16.9
2424.000	H	51.0	*	2.6	32.7	-39.9	-6.8	39.5	94.8	554.2	-15.3
2424.000	V	50.0	*	2.6	32.7	-39.9	-6.8	38.6	85.2	554.2	-16.3
2727.000	H	49.9	*	2.8	33.0	-39.8	-6.8	39.2	91.0	500.0	-14.8
2727.000	V	50.6	*	2.8	33.0	-39.8	-6.8	39.8	98.0	500.0	-14.2
3030.000	H	50.4	*	3.0	32.9	-39.6	-6.8	39.9	98.4	554.2	-15.0
3030.000	V	50.4	*	3.0	32.9	-39.6	-6.8	39.8	98.1	554.2	-15.0

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3, Sample U4
Mode	Ryobi Code
Frequency Tested	372.5MHz
Notes	Field Strength of the Fundamental Limit = 8437.5µV/m

Freq. (MHz)	Ant Pol	Meter Reading (dBµV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dBµV/m)	Total (µV/m)	Limit (µV/m)	Margin (dB)
372.500	H	52.8		1.0	21.0	0.0	-12.6	62.1	1275.0	8437.5	-16.4
372.500	V	34.0		1.0	21.0	0.0	-12.6	43.4	147.4	8437.5	-35.2
745.000	H	25.7		1.4	25.8	0.0	-12.6	40.3	103.1	843.7	-18.3
745.000	V	20.5		1.4	25.8	0.0	-12.6	35.1	57.1	843.7	-23.4
1117.500	H	22.2	*	3.2	27.5	0.0	-12.6	40.2	102.1	500.0	-13.8
1117.500	V	22.0	*	3.2	27.5	0.0	-12.6	40.0	100.1	500.0	-14.0
1490.000	H	29.3		3.5	28.5	0.0	-12.6	48.7	271.9	500.0	-5.3
1490.000	V	24.7		3.5	28.5	0.0	-12.6	44.1	160.5	500.0	-9.9
1862.500	H	22.8	*	3.9	30.7	0.0	-12.6	44.7	172.4	843.7	-13.8
1862.500	V	22.4	*	3.9	30.7	0.0	-12.6	44.3	165.0	843.7	-14.2
2235.000	H	51.0	*	4.2	32.2	-39.6	-12.6	35.2	57.3	500.0	-18.8
2235.000	V	51.7	*	4.2	32.2	-39.6	-12.6	35.8	61.8	500.0	-18.2
2607.500	H	52.9		4.4	32.7	-39.6	-12.6	37.8	77.5	843.7	-20.7
2607.500	V	51.8	*	4.4	32.7	-39.6	-12.6	36.7	68.4	843.7	-21.8
2980.000	H	51.7	*	4.9	32.9	-39.3	-12.6	37.5	75.2	843.7	-21.0
2980.000	V	51.1	*	4.9	32.9	-39.3	-12.6	36.9	70.3	843.7	-21.6
3352.500	H	50.6	*	5.3	33.1	-39.0	-12.6	37.4	74.1	500.0	-16.6
3352.500	V	50.5	*	5.3	33.1	-39.0	-12.6	37.3	73.3	500.0	-16.7
3725.000	H	51.0		5.4	33.4	-38.9	-12.6	38.4	83.1	500.0	-15.6
3725.000	V	50.3	*	5.4	33.4	-38.9	-12.6	37.7	77.0	500.0	-16.3

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3
Mode	Stanley Secure Code
Frequency Tested	310MHz
Notes	Field Strength of the Fundamental Limit = 5833.3 μ V/m

Freq. (MHz)	Ant Pol	Meter Reading (dB μ V)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dB μ V/m)	Total (μ V/m)	Limit (μ V/m)	Margin (dB)
310.000	H	61.6		0.9	19.6	0.0	-12.6	69.5	2972.5	5833.3	-5.9
310.000	V	37.8		0.9	19.6	0.0	-12.6	45.7	193.0	5833.3	-29.6
620.000	H	31.3		1.3	25.2	0.0	-12.6	45.2	181.1	583.3	-10.2
620.000	V	25.9		1.3	25.2	0.0	-12.6	39.8	97.9	583.3	-15.5
930.000	H	27.0		1.6	26.9	0.0	-12.6	42.9	138.9	583.3	-12.5
930.000	V	17.1	*	1.6	26.9	0.0	-12.6	33.0	44.5	583.3	-22.3
1240.000	H	30.8		1.8	29.6	0.0	-12.6	49.7	304.7	500.0	-4.3
1240.000	V	28.7		1.8	29.6	0.0	-12.6	47.5	237.6	500.0	-6.5
1550.000	H	27.1	*	2.1	28.0	0.0	-12.6	44.5	168.3	500.0	-9.5
1550.000	V	26.5	*	2.1	28.0	0.0	-12.6	43.9	157.2	500.0	-10.0
1860.000	H	25.9	*	2.3	29.8	0.0	-12.6	45.3	184.6	583.3	-10.0
1860.000	V	26.3	*	2.3	29.8	0.0	-12.6	45.7	193.1	583.3	-9.6
2170.000	H	52.6		2.5	31.3	-39.9	-12.6	33.8	49.0	583.3	-21.5
2170.000	V	52.5		2.5	31.3	-39.9	-12.6	33.8	48.9	583.3	-21.5
2480.000	H	50.6		2.7	32.9	-39.9	-12.6	33.7	48.6	583.3	-21.6
2480.000	V	50.2	*	2.7	32.9	-39.9	-12.6	33.3	46.2	583.3	-22.0
2790.000	H	51.0	*	2.8	32.9	-39.7	-12.6	34.4	52.6	500.0	-19.6
2790.000	V	51.0	*	2.8	32.9	-39.7	-12.6	34.5	52.8	500.0	-19.5
3100.000	H	50.5	*	3.0	33.0	-39.5	-12.6	34.4	52.3	583.3	-20.9
3100.000	V	49.8	*	3.0	33.0	-39.5	-12.6	33.7	48.4	583.3	-21.6

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3
Mode	Genie Code
Frequency Tested	390MHz
Notes	Field Strength of the Fundamental Limit = 9166.7 μ V/m

Freq. (MHz)	Ant Pol	Meter Reading (dB μ V)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dB μ V/m)	Total (μ V/m)	Limit (μ V/m)	Margin (dB)
390.000	H	52.1		1.0	21.4	0.0	-13.1	61.5	1186.0	9166.7	-17.8
390.000	V	33.6		1.0	21.4	0.0	-13.1	43.0	141.1	9166.7	-36.3
780.000	H	27.9		1.4	25.9	0.0	-13.1	42.2	128.2	916.7	-17.1
780.000	V	23.5		1.4	25.9	0.0	-13.1	37.8	77.7	916.7	-21.4
1170.000	H	27.2	*	1.8	29.2	0.0	-13.1	45.1	180.4	500.0	-8.9
1170.000	V	27.5	*	1.8	29.2	0.0	-13.1	45.4	186.9	500.0	-8.5
1560.000	H	35.4		2.1	27.9	0.0	-13.1	52.3	413.1	500.0	-1.7
1560.000	V	30.8		2.1	27.9	0.0	-13.1	47.8	244.1	500.0	-6.2
1950.000	H	28.5		2.3	30.3	0.0	-13.1	48.1	254.4	916.7	-11.1
1950.000	V	26.4	*	2.3	30.3	0.0	-13.1	46.0	198.4	916.7	-13.3
2340.000	H	51.2	*	2.6	32.2	-39.9	-13.1	33.1	45.0	500.0	-20.9
2340.000	V	51.2	*	2.6	32.2	-39.9	-13.1	33.0	44.7	500.0	-21.0
2730.000	H	53.5		2.8	33.0	-39.8	-13.1	36.5	66.7	500.0	-17.5
2730.000	V	51.8		2.8	33.0	-39.8	-13.1	34.9	55.3	500.0	-19.1
3120.000	H	50.5	*	3.0	33.0	-39.5	-13.1	34.0	50.0	916.7	-25.3
3120.000	V	50.3	*	3.0	33.0	-39.5	-13.1	33.7	48.6	916.7	-25.5
3510.000	H	50.5	*	3.2	33.2	-39.2	-13.1	34.6	53.6	916.7	-24.7
3510.000	V	50.7	*	3.2	33.2	-39.2	-13.1	34.8	54.7	916.7	-24.5
3900.000	H	56.7		3.4	33.5	-39.2	-13.1	41.3	115.5	500.0	-12.7
3900.000	V	55.5		3.4	33.5	-39.2	-13.1	40.1	100.6	500.0	-13.9

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Remote
Model No.	900-16329-1/014D16329 Rev C
Serial No.	Sample U3
Mode	Genie Code
Frequency Tested	315MHz
Notes	Field Strength of the Fundamental Limit = 6041.7 μ V/m

Freq. (MHz)	Ant Pol	Meter Reading (dB μ V)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle (dB)	Total (dB μ V/m)	Total (μ V/m)	Limit (μ V/m)	Margin (dB)
315.000	H	58.1		0.9	19.7	0.0	-12.6	66.1	2024.2	6041.7	-9.5
315.000	V	35.0		0.9	19.7	0.0	-12.6	43.0	141.7	6041.7	-32.6
630.000	H	24.1		1.3	25.3	0.0	-12.6	38.1	80.3	604.2	-17.5
630.000	V	20.4		1.3	25.3	0.0	-12.6	34.4	52.5	604.2	-21.2
945.000	H	19.4		1.6	26.9	0.0	-12.6	35.3	57.9	604.2	-20.4
945.000	V	16.3	*	1.6	26.9	0.0	-12.6	32.2	40.7	604.2	-23.4
1260.000	H	34.8		1.9	29.7	0.0	-12.6	53.7	484.1	604.2	-1.9
1260.000	V	31.6		1.9	29.7	0.0	-12.6	50.5	335.7	604.2	-5.1
1575.000	H	25.9	*	2.1	27.9	0.0	-12.6	43.3	146.3	500.0	-10.7
1575.000	V	26.7	*	2.1	27.9	0.0	-12.6	44.0	158.8	500.0	-10.0
1890.000	H	26.6	*	2.3	30.0	0.0	-12.6	46.2	204.4	604.2	-9.4
1890.000	V	25.9	*	2.3	30.0	0.0	-12.6	45.6	190.3	604.2	-10.0
2205.000	H	51.8		2.5	31.4	-39.9	-12.6	33.2	46.0	500.0	-20.7
2205.000	V	50.4	*	2.5	31.4	-39.9	-12.6	31.8	38.8	500.0	-22.2
2520.000	H	49.7	*	2.7	33.1	-39.9	-12.6	33.0	44.6	604.2	-22.6
2520.000	V	50.4	*	2.7	33.1	-39.9	-12.6	33.7	48.4	604.2	-21.9
2835.000	H	52.0		2.9	32.8	-39.7	-12.6	35.4	58.6	500.0	-18.6
2835.000	V	50.9	*	2.9	32.8	-39.7	-12.6	34.3	51.7	500.0	-19.7
3150.000	H	50.7	*	3.0	33.0	-39.5	-12.6	34.6	53.9	604.2	-21.0
3150.000	V	49.7	*	3.0	33.0	-39.5	-12.6	33.7	48.3	604.2	-21.9

25. Scope of Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELITE ELECTRONIC ENGINEERING, INC.
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Downers Grove, IL 60515
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ELECTRICAL

Valid To: June 30, 2025

Certificate Number: 1786.01

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

Test Technology:**Test Method(s)¹:**

Transient Immunity
(Max Voltage 60V/Max current 100A)

ISO 7637-2 (including emissions); ISO 7637-3;
ISO 16750-2:2012, Sections 4.6.3 and 4.6.4;
CS-11979, Section 6.4; CS.00054, Section 5.9;
EMC-CS-2009.1 (CI220); FMC1278 (CI220, CI221, CI222);
GMW 3097, Section 3.5; SAE J1113-11; SAE J1113-12;
ECE Regulation 10.06 Annex 10

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

ISO 10605 (2001, 2008);
CS-11979 Section 7.0; CS.00054, Section 5.10;
EMC-CS-2009.1 (CI 280); FMC1278 (CI280); SAE J1113-13;
GMW 3097 Section 3.6

Conducted Emissions

CISPR 25 (2002, 2008), Sections 6.2 and 6.3;
CISPR 25 (2016), Sections 6.3 and 6.4;
CS-11979, Section 5.1; CS.00054, Sections 5.6.1 and 5.6.2;
GMW 3097, Section 3.3.2;
EMC-CS-2009.1 (CE 420); FMC1278 (CE420, CE421,
CE 430, CE440)

(A2LA Cert. No. 1786.01) Revised 11/07/2023



Page 1 of 9

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Test Technology:
Test Method(s)¹:

Radiated Emissions Anechoic
(Up to 6GHz)

CISPR 25 (2002, 2008), Section 6.4;
CISPR 25 (2016), Section 6.5;
CS-11979, Section 5.3; CS.00054, Section 5.6.3;
GMW 3097, Section 3.3.1;
EMC-CS-2009.1 (RE 310); FMC1278 (RE310, 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-11979, Section 6.1; CS.00054, Section 5.8.1;
GMW 3097, Section 3.4.1; SAE J1113-4;
EMC-CS-2009.1 (RI112); FMC1278 (RI112);
ECE Regulation 10.06 Annex 9

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

ISO 11452-2;
CS-11979, Section 6.2; CS.00054, Section 5.8.2;
GMW 3097, Section 3.4.2;
EMC-CS-2009.1 (RI114); FMC1278 (RI114); SAE J1113-21;
ECE Regulation 10.06 Annex 9

Radiated Immunity Magnetic Field

ISO 11452-8; FMC 1278 (RI140)

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;
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

Transverse Electromagnetic (TEM) Cell

ISO 11452-3

Test Technology:
Test Method(s)¹:
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;
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

Test Technology:
Test Method(s)¹:
Immunity (cont'd)

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

Surge

IEC 61000-4-5 (1995) + A1(2000);
IEC 61000-4-5, Ed 1.1 (2005-11);
EN 61000-4-5 (1995) + A1(2001);
KN 61000-4-5 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-5; EN 61000-4-5; KN 61000-4-5;
KS C 9610-4-5;
IEEE C37.90.1 2012; IEEE STD C62.41.2 2002;
ECE Regulation 10.06 Annex 16

Conducted Immunity

IEC 61000-4-6 (1996) + A1(2000);
IEC 61000-4-6, Ed 2.0 (2006-05);
IEC 61000-4-6 Ed. 3.0 (2008);
KN 61000-4-6 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
EN 61000-4-6 (1996) + A1(2001); IEC 61000-4-6;
EN 61000-4-6; KN 61000-4-6; KS C 9610-4-6

Power Frequency Magnetic Field
Immunity (*Down to 3 A/m*)

IEC 61000-4-8 (1993) + A1(2000); IEC 61000-4-8 (2009);
EN 61000-4-8 (1994) + A1(2000);
KN 61000-4-8 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-8; EN 61000-4-8; KN 61000-4-8; KS C 9610-4-8

Voltage Dips, Short Interrupts, and Line
Voltage Variations

IEC 61000-4-11, Ed. 2 (2004-03);
KN 61000-4-11 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-11; EN 61000-4-11; KN 61000-4-11;
KS C 9610-4-11

Ring Wave

IEC 61000-4-12, Ed. 2 (2006-09);
EN 61000-4-12:2006;
IEC 61000-4-12; EN 61000-4-12; KN 61000-4-12;
IEEE STD C62.41.2 2002