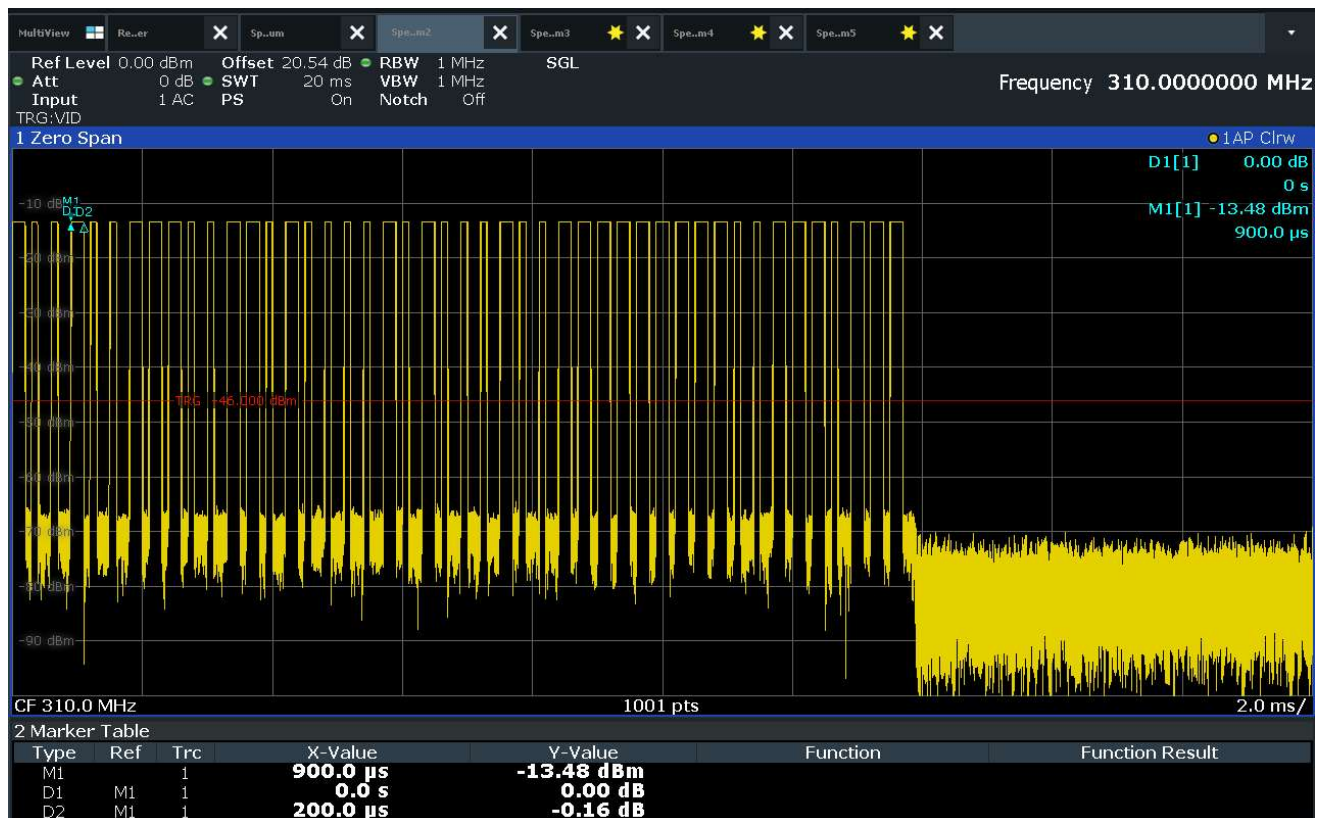
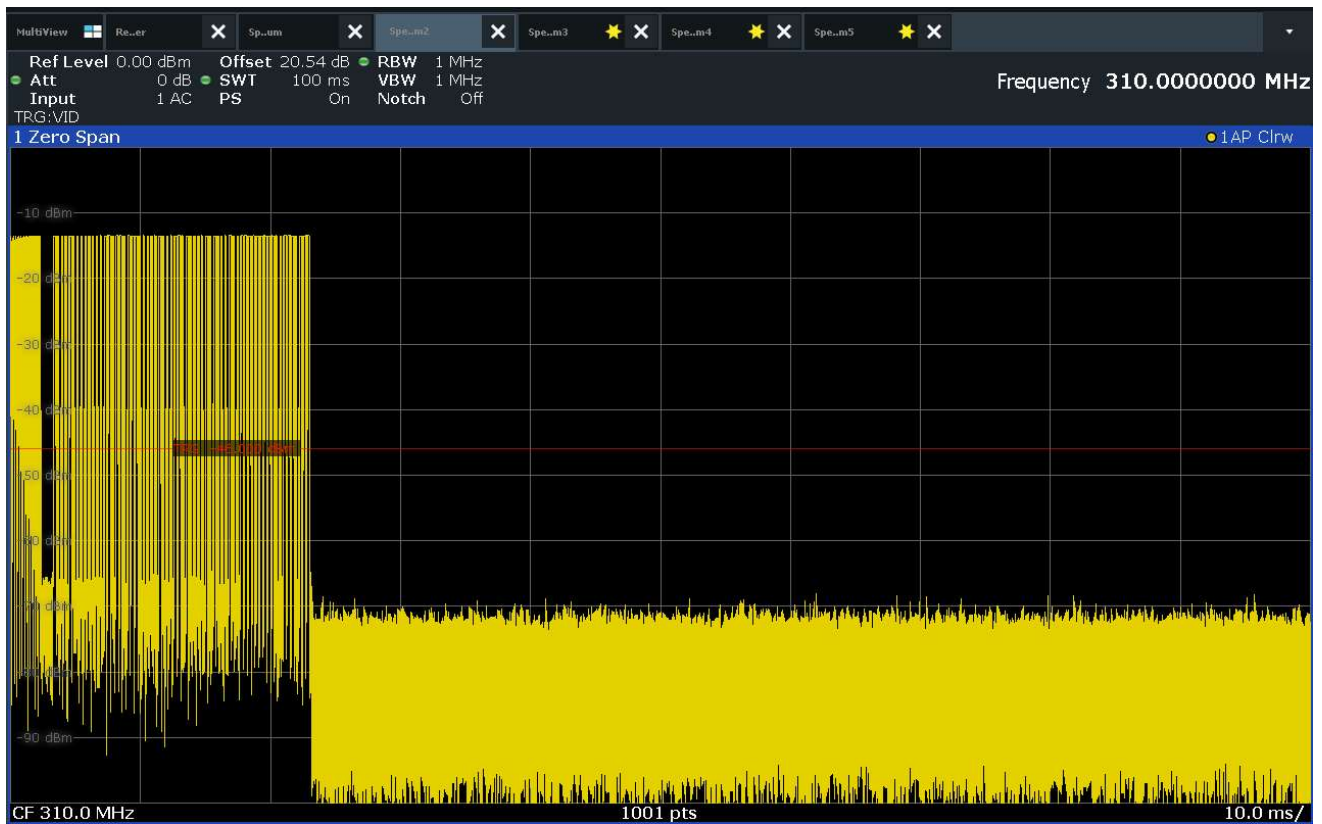


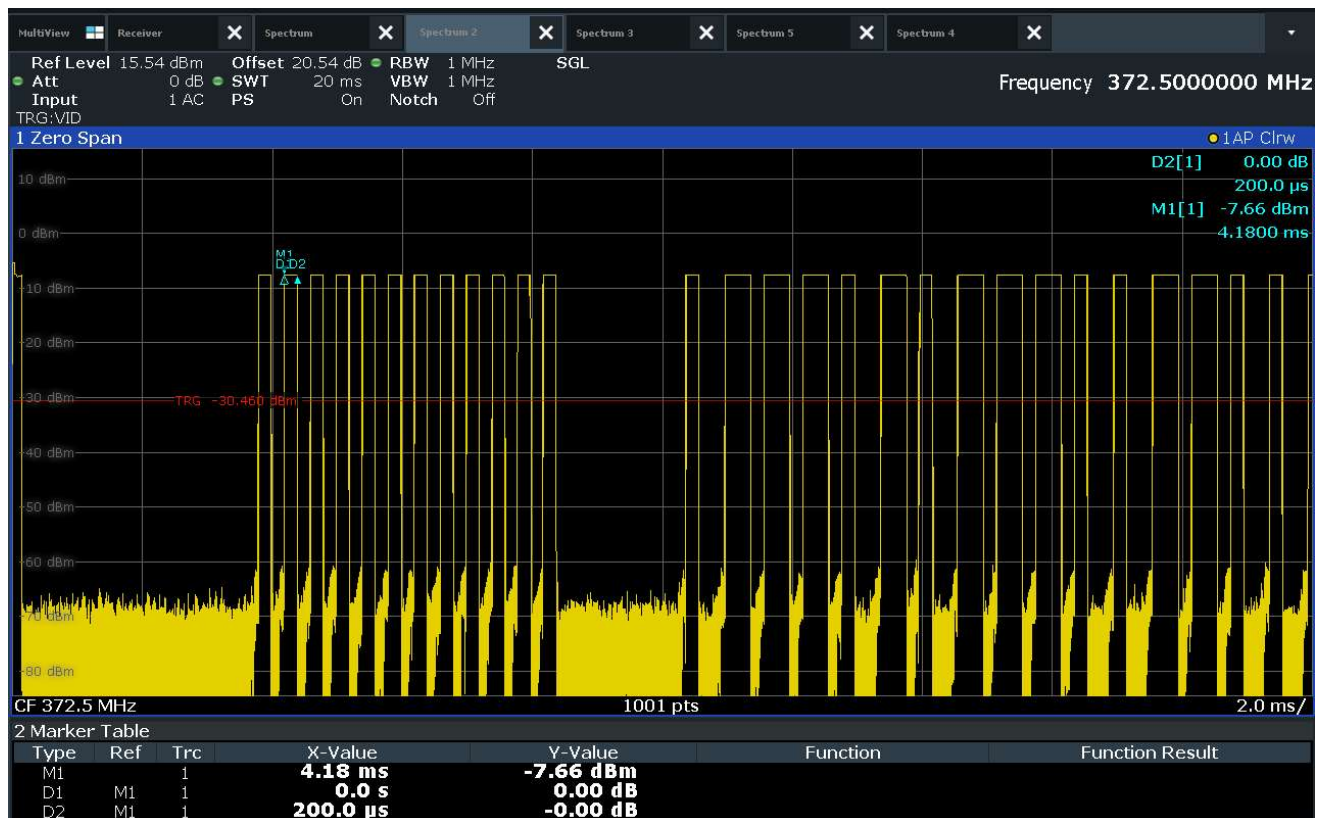
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 2
Mode	Sommer Code
Frequency Tested	310MHz
Result	Pulse 1 = 0.2ms
Notes	



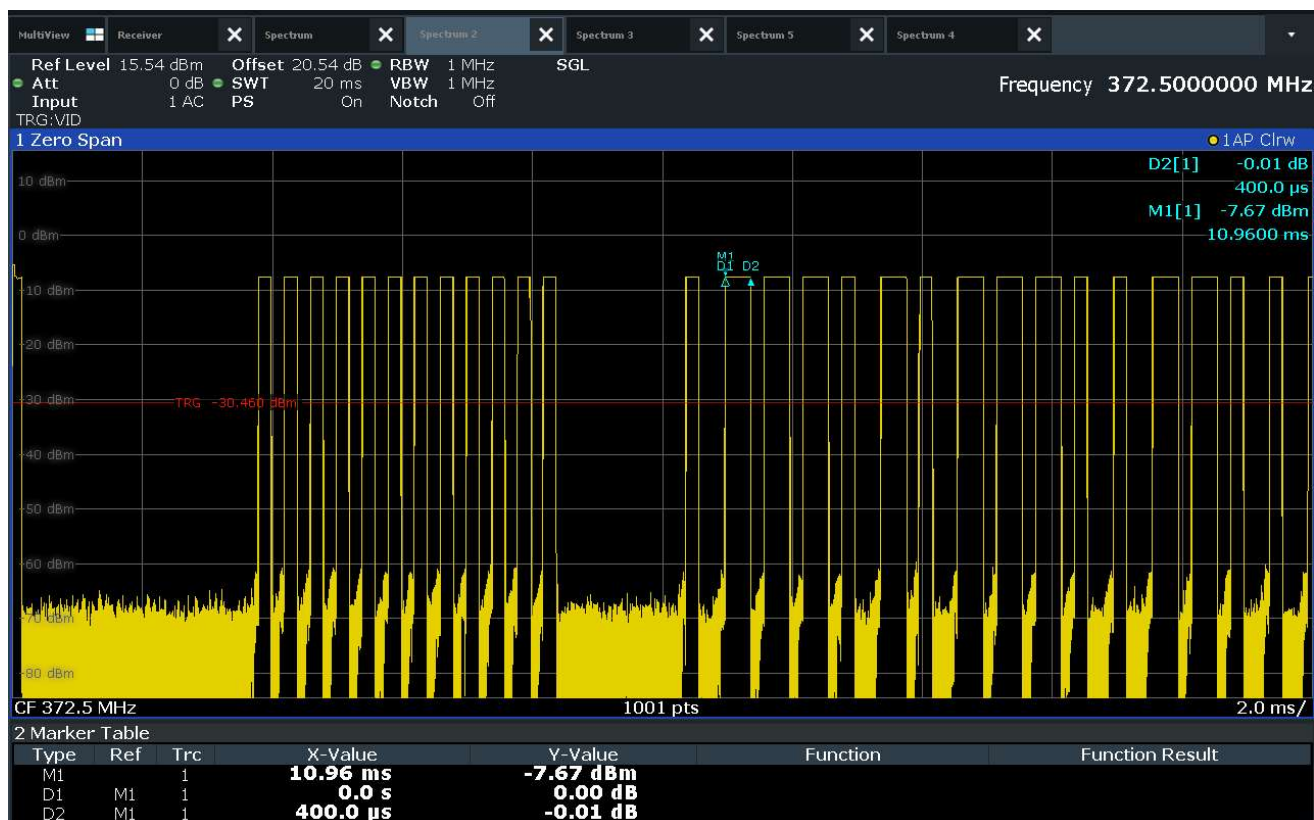
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 2
Mode	Sommer Code
Frequency Tested	310MHz
Result	Duty Cycle = -20.17dB
Notes	Duty Cycle Factor Calculation: $42 \times 0.1\text{ms} = 4.2\text{ms}$ $28 \times 0.2\text{ms} = 5.6\text{ms}$ $4.2\text{ms} + 5.6\text{ms} = 9.8\text{ms}$ Duty Cycle Factor = $20 \log \left(\frac{9.8\text{ms}}{100\text{ms}} \right) = -20.17\text{dB}$



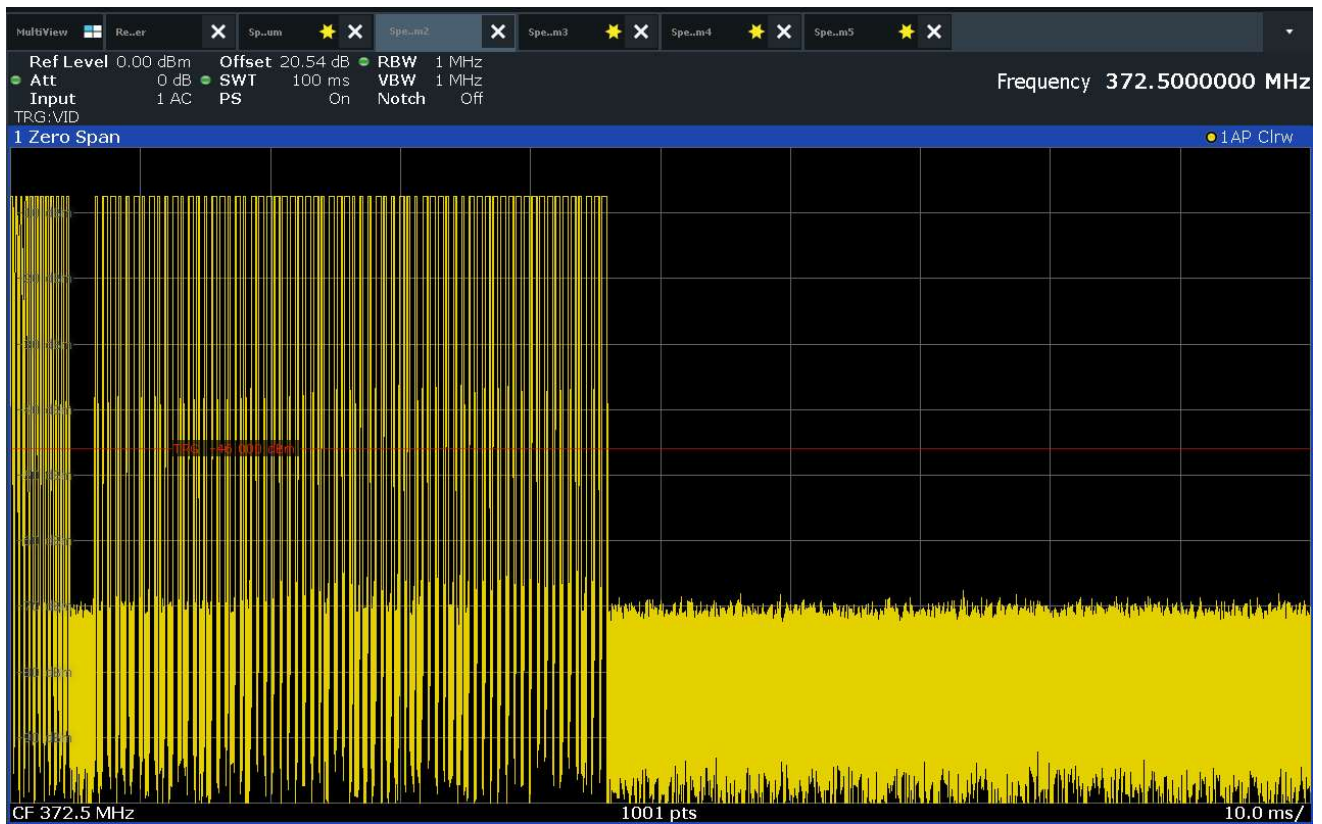
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 4
Mode	Wayne-Dalton Code
Frequency Tested	372.5MHz
Result	Pulse 1 = 0.2ms
Notes	



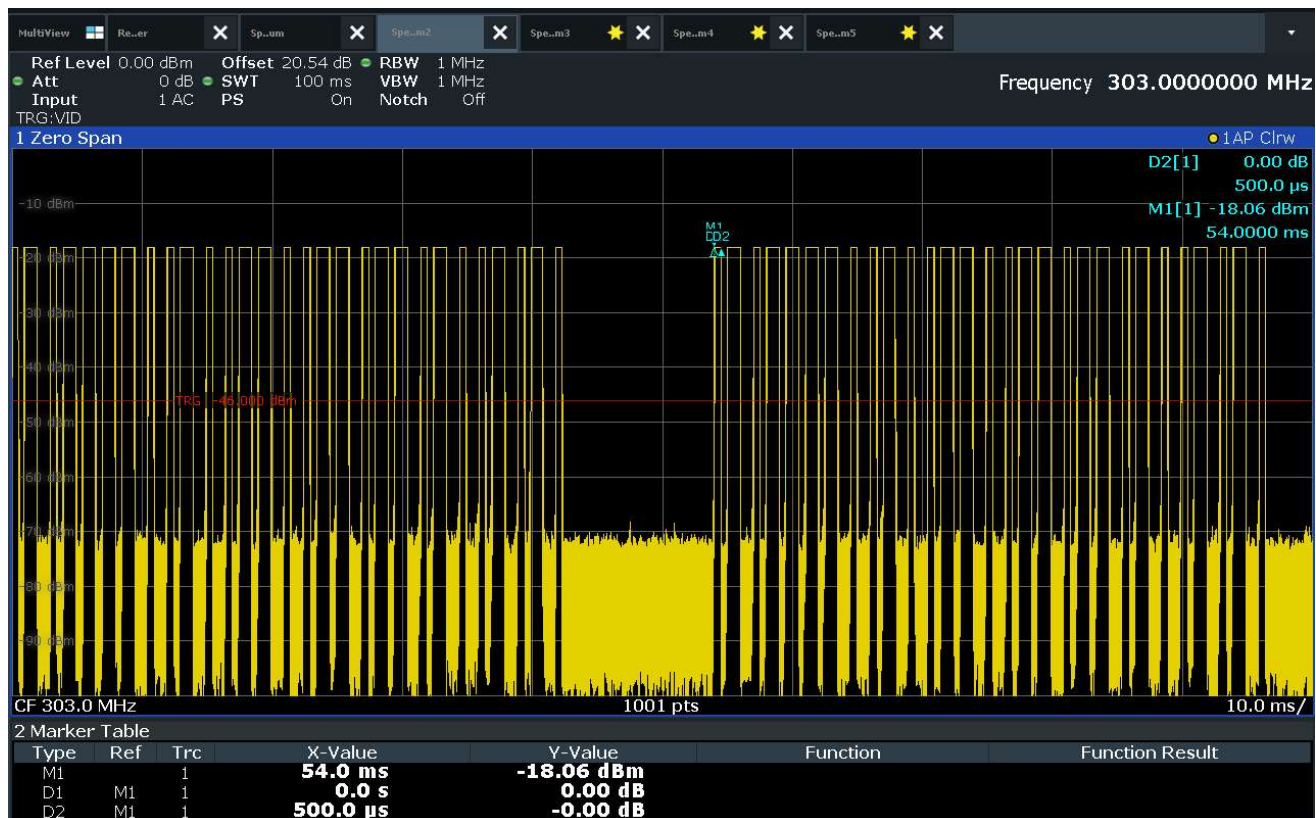
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 4
Mode	Wayne-Dalton Code
Frequency Tested	372.5MHz
Result	Pulse 2 = 0.4ms
Notes	



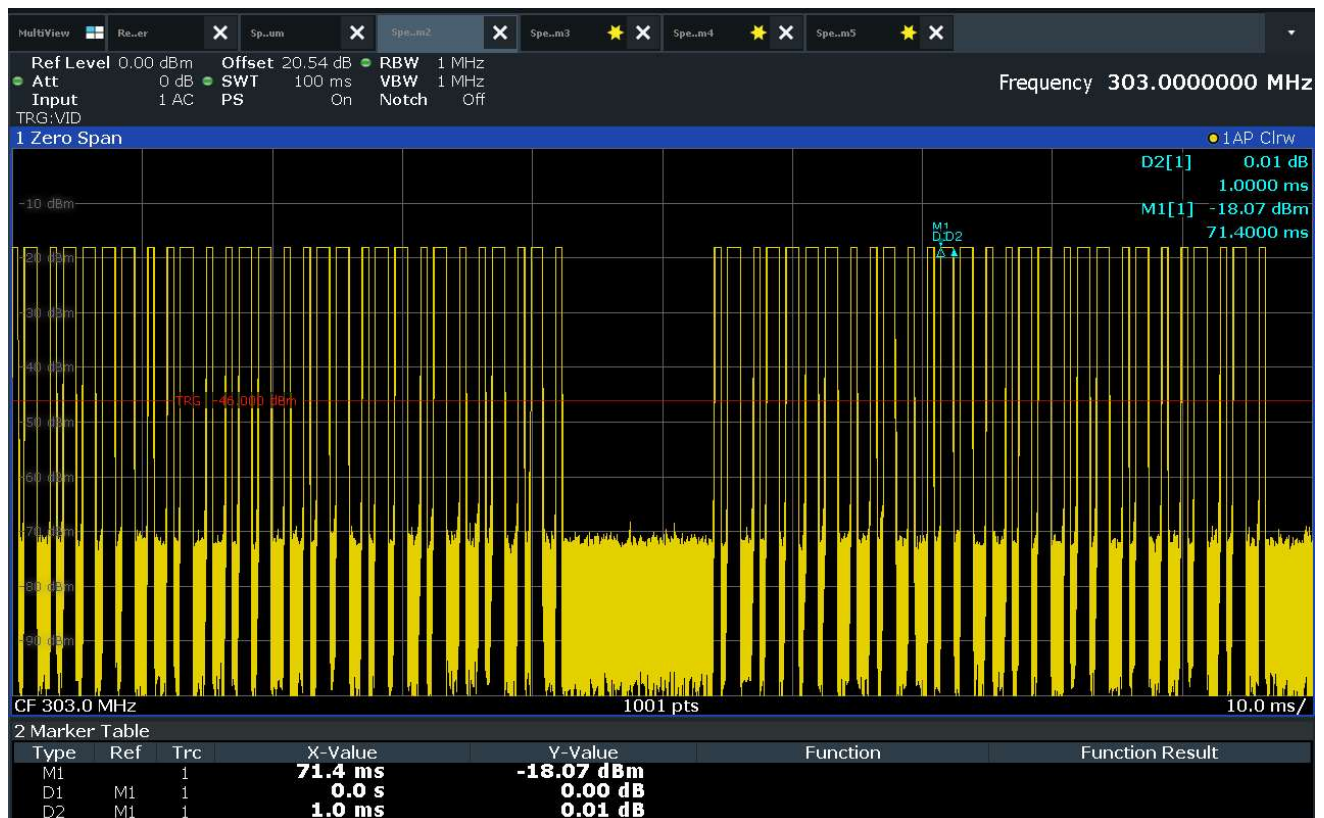
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 4
Mode	Wayne-Dalton Code
Frequency Tested	372.5MHz
Result	Duty Cycle = -12.61dB
Notes	Duty Cycle Factor Calculation: $39 \times 0.2\text{ms} = 7.8\text{ms}$ $39 \times 0.4\text{ms} = 15.6\text{ms}$ $10.5\text{ms} + 5.0\text{ms} = 23.4\text{ms}$ $\text{Duty Cycle Factor} = 20 \log \left(\frac{23.4\text{ms}}{100\text{ms}} \right) = -12.61\text{dB}$



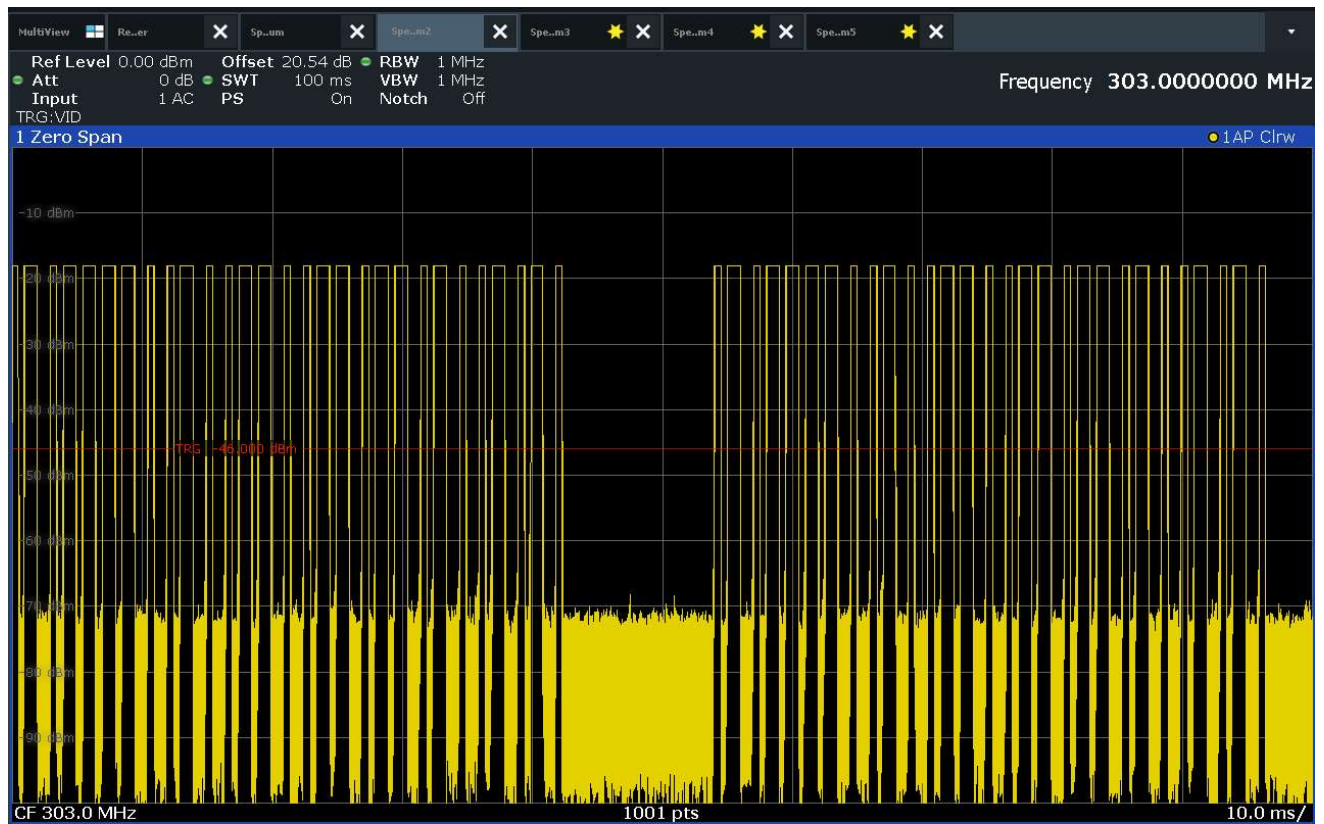
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 5
Mode	Guardian Code
Frequency Tested	303MHz
Result	Pulse 1 = 0.5ms
Notes	



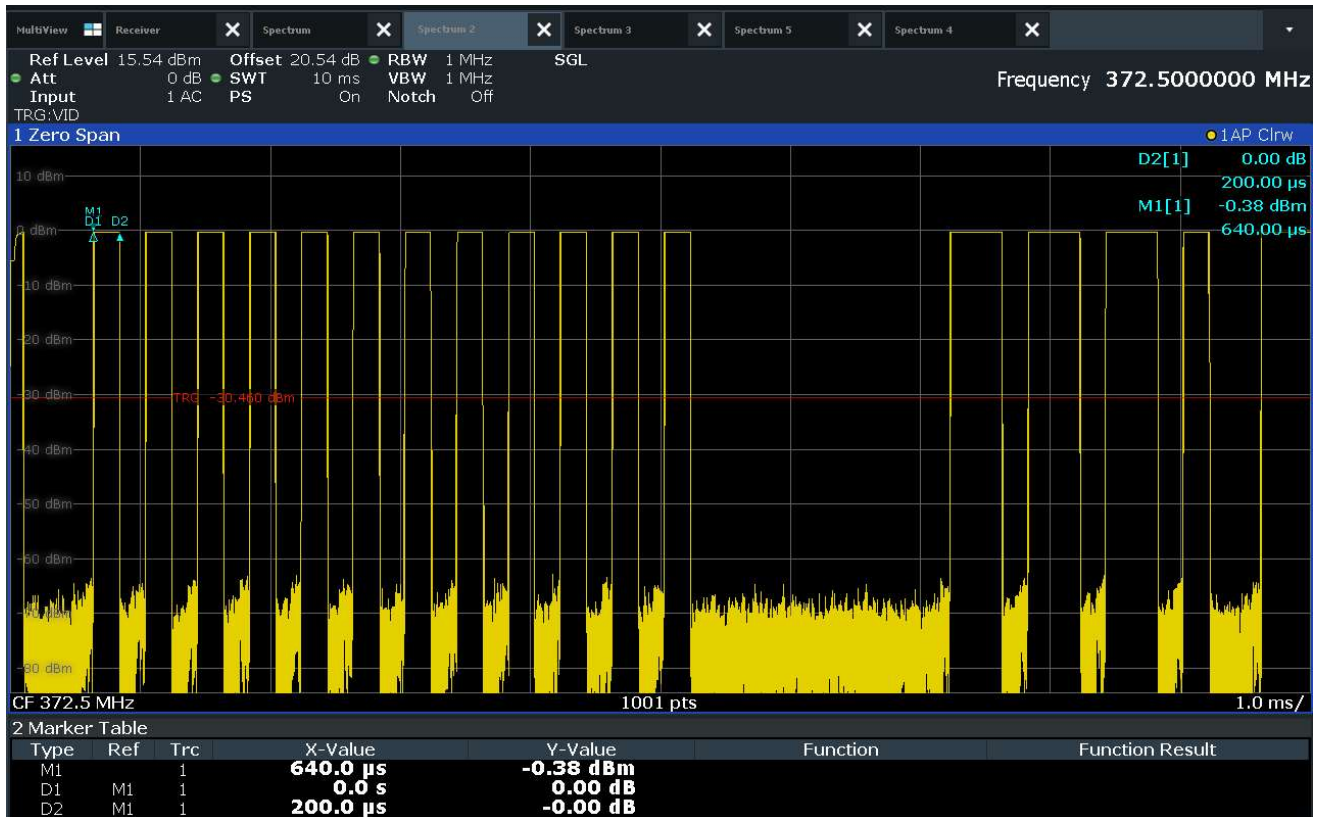
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 5
Mode	Guardian Code
Frequency Tested	303MHz
Result	Pulse 2 = 1.0ms
Notes	



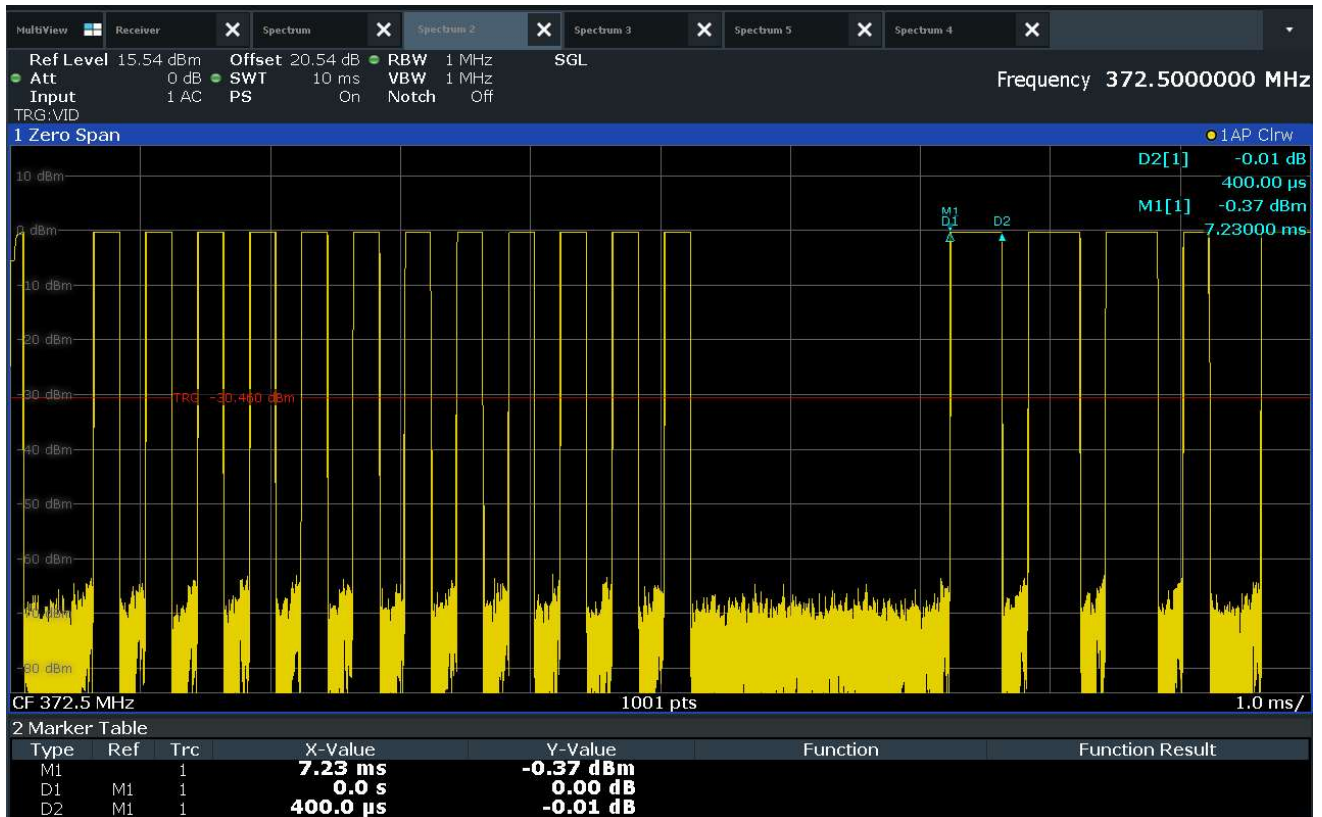
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 5
Mode	Guardian Code
Frequency Tested	303MHz
Result	Duty Cycle = -7.13dB
Notes	Duty Cycle Factor Calculation: $28 \times 0.5\text{ms} = 14\text{ms}$ $30 \times 1.0\text{ms} = 30.0\text{ms}$ $14.0\text{ms} + 30.0\text{ms} = 44.0\text{ms}$ Duty Cycle Factor = $20 \log \left(\frac{44.0\text{ms}}{100\text{ms}} \right) = -7.13\text{dB}$



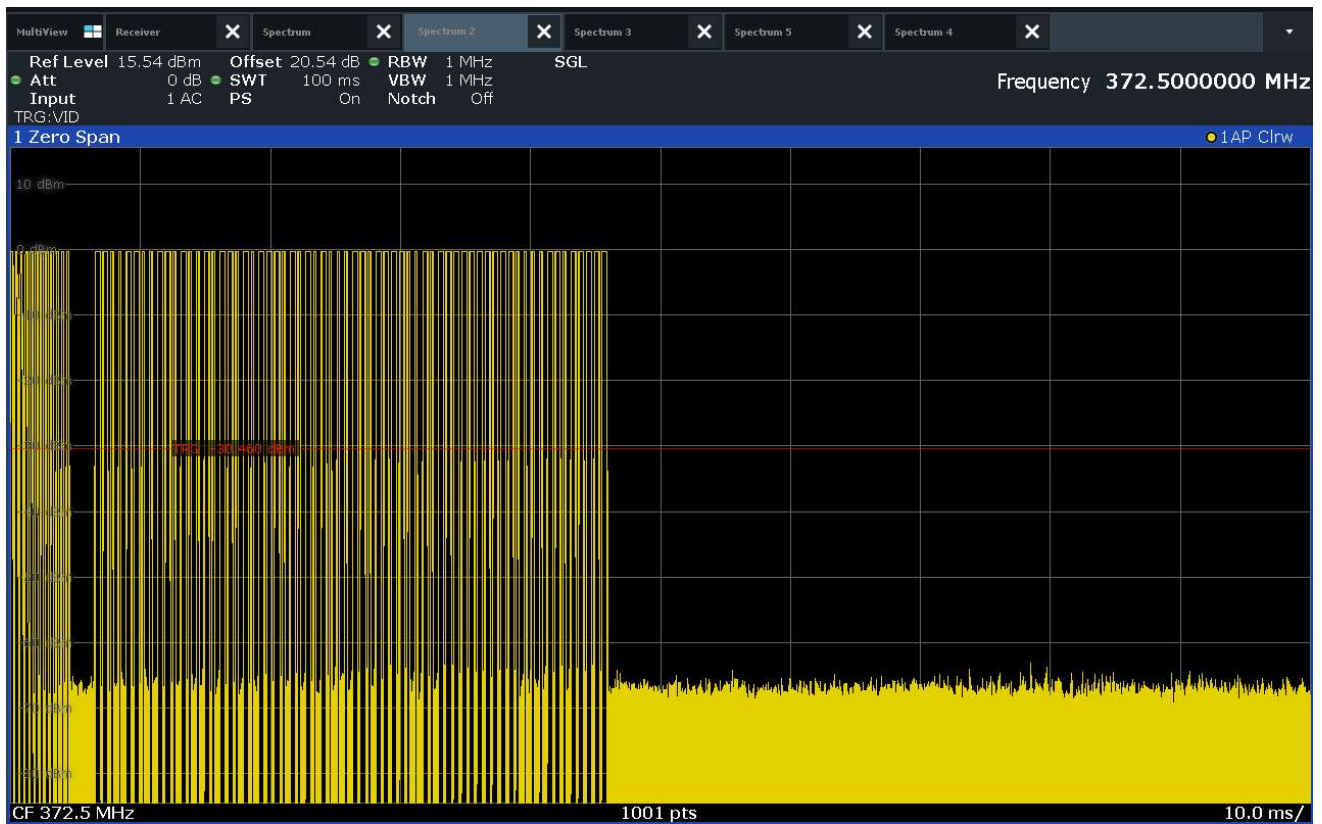
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 6
Mode	Ryobi Code
Frequency Tested	372.5MHz
Result	Pulse 1 = 0.2ms
Notes	



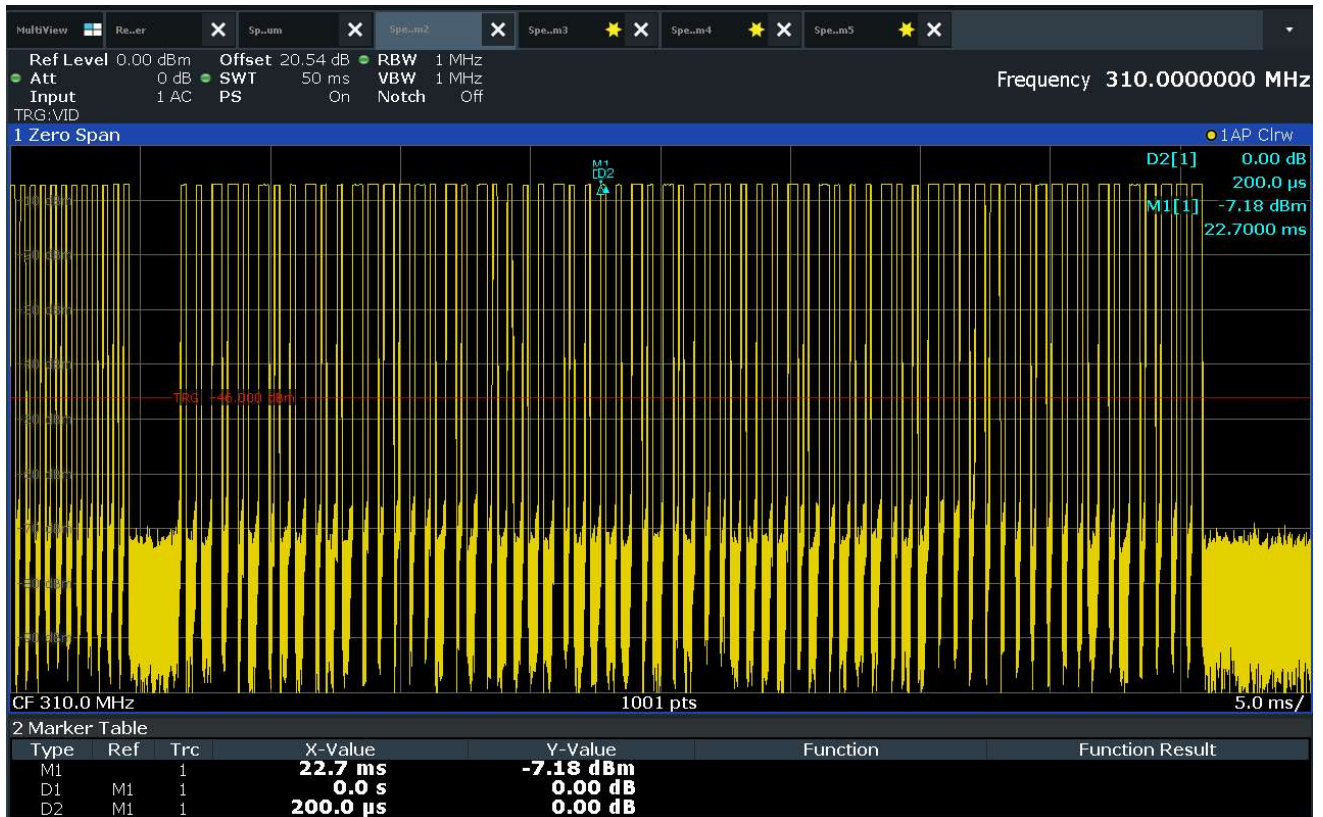
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 6
Mode	Ryobi Code
Frequency Tested	372.5MHz
Result	Pulse 2 = 0.4ms
Notes	



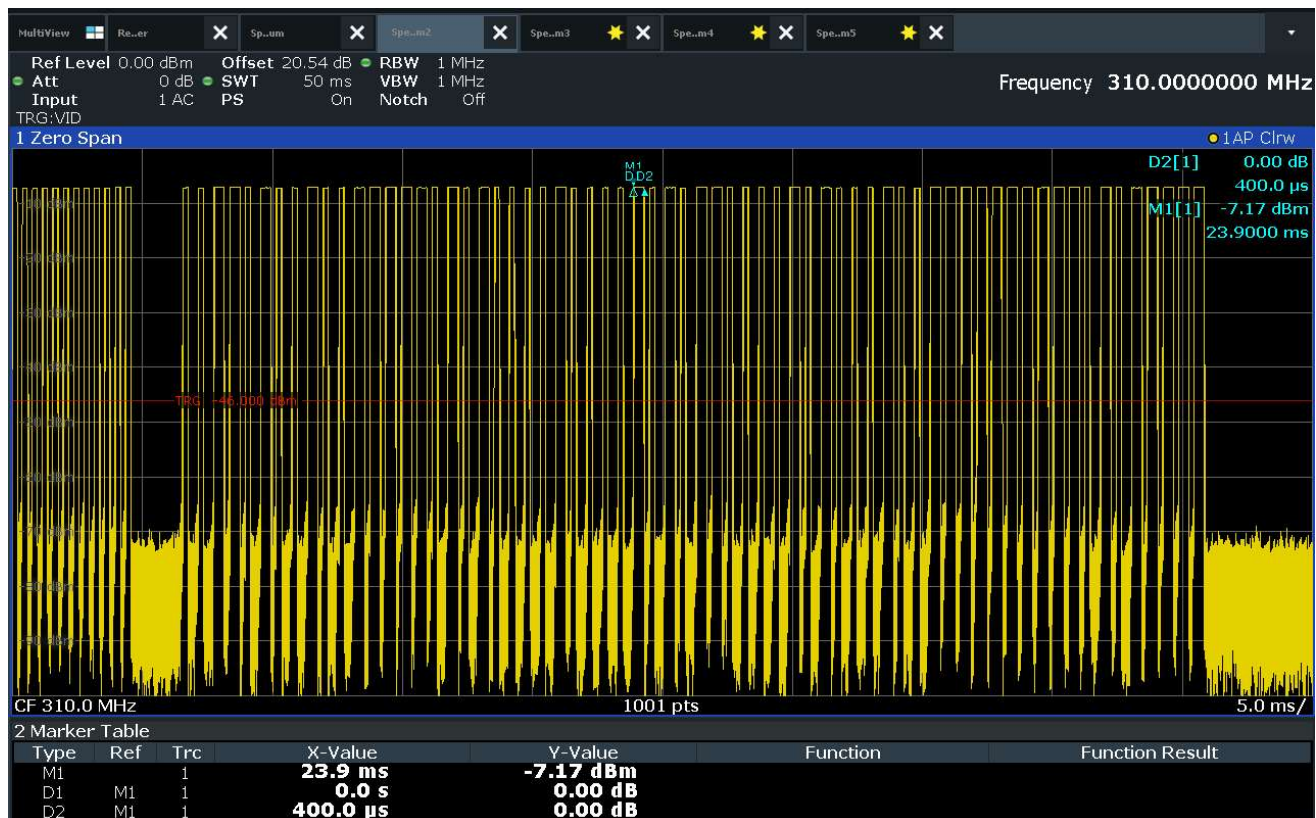
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 6
Mode	Ryobi Code
Frequency Tested	372.5MHz
Result	Duty Cycle = -12.54dB
Notes	Duty Cycle Factor Calculation: $34 \times 0.2\text{ms} = 6.8\text{ms}$ $42 \times 0.4\text{ms} = 16.8\text{ms}$ $6.8\text{ms} + 16.8\text{ms} = 23.6\text{ms}$ Duty Cycle Factor = $20 \log \left(\frac{23.6\text{ms}}{100\text{ms}} \right) = -12.54\text{dB}$



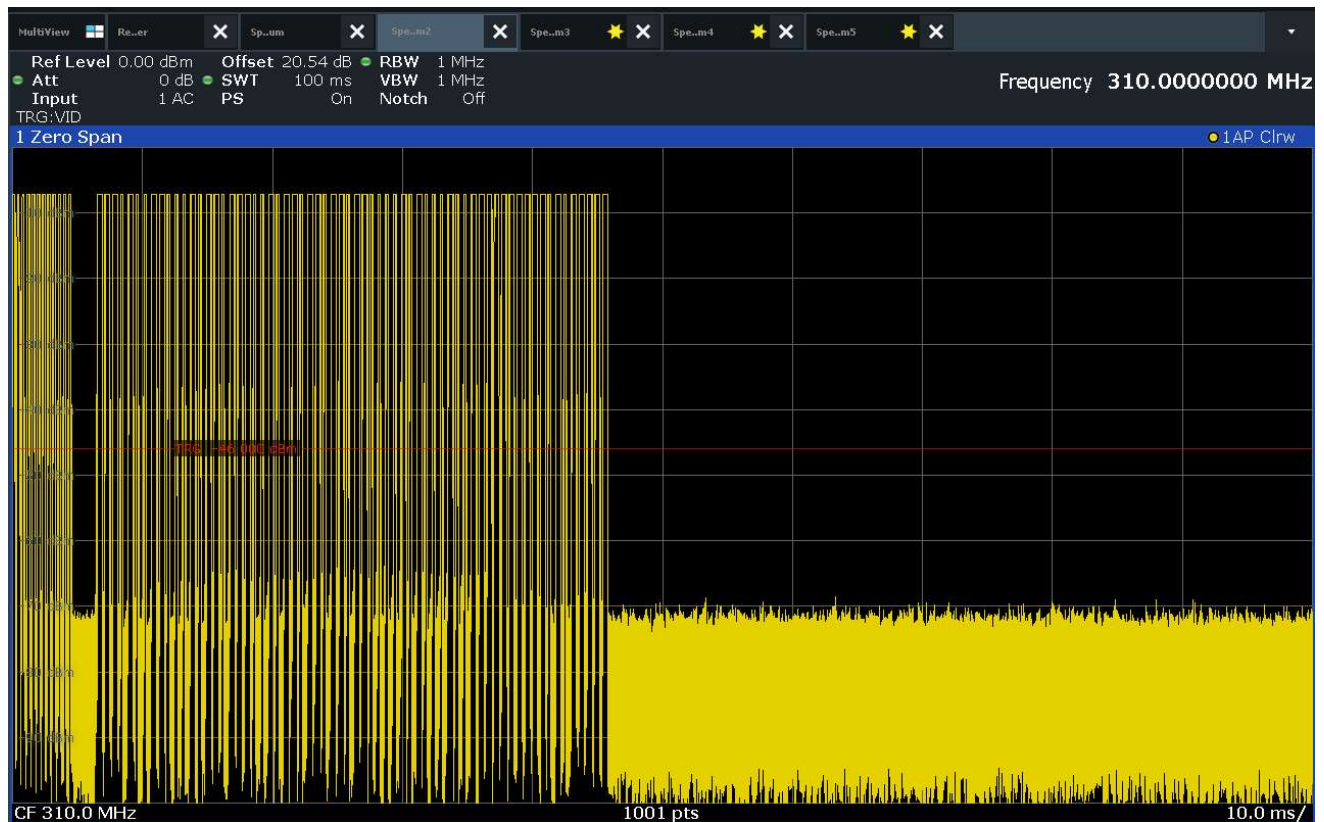
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 7
Mode	Stanley Code
Frequency Tested	310MHz
Result	Pulse 1 = 0.2ms
Notes	



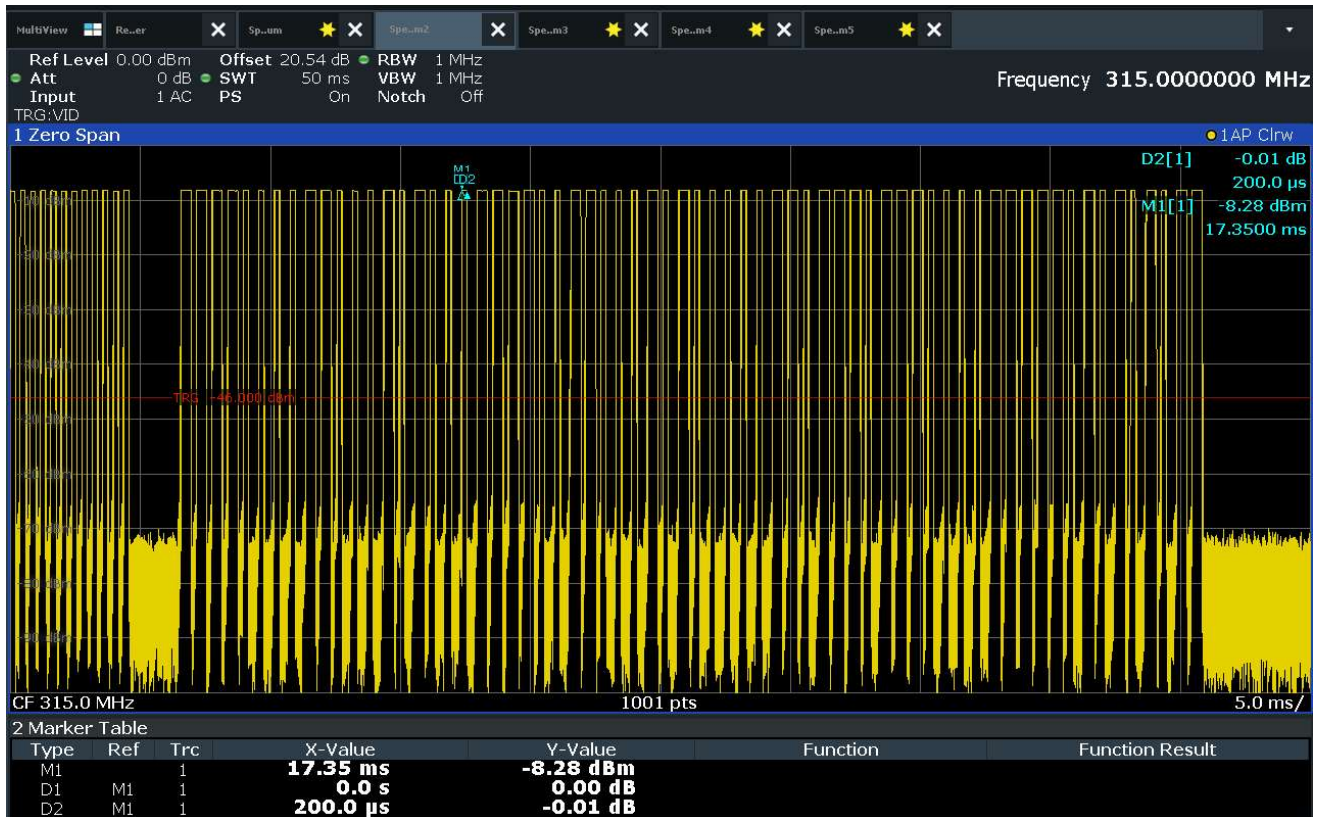
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 7
Mode	Stanley Code
Frequency Tested	310MHz
Result	Pulse 2 = 0.4ms
Notes	



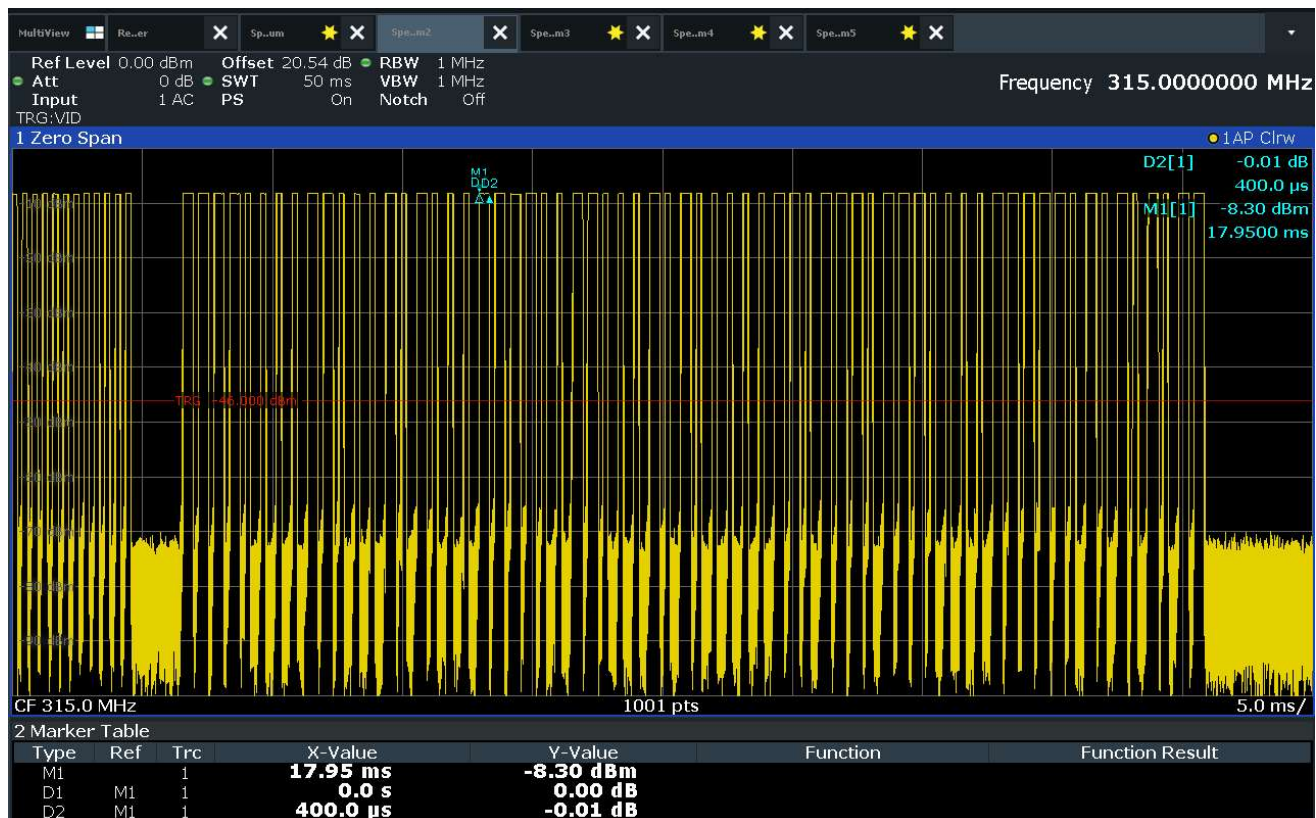
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 7
Mode	Stanley Code
Frequency Tested	310MHz
Result	Duty Cycle = -12.69dB
Notes	Duty Cycle Factor Calculation: $38 \times 0.2\text{ms} = 7.6\text{ms}$ $39 \times 0.4\text{ms} = 15.6\text{ms}$ $7.6\text{ms} + 15.6\text{ms} = 23.2\text{ms}$ Duty Cycle Factor = $20 \log \left(\frac{23.2\text{ms}}{100\text{ms}} \right) = -12.69\text{dB}$



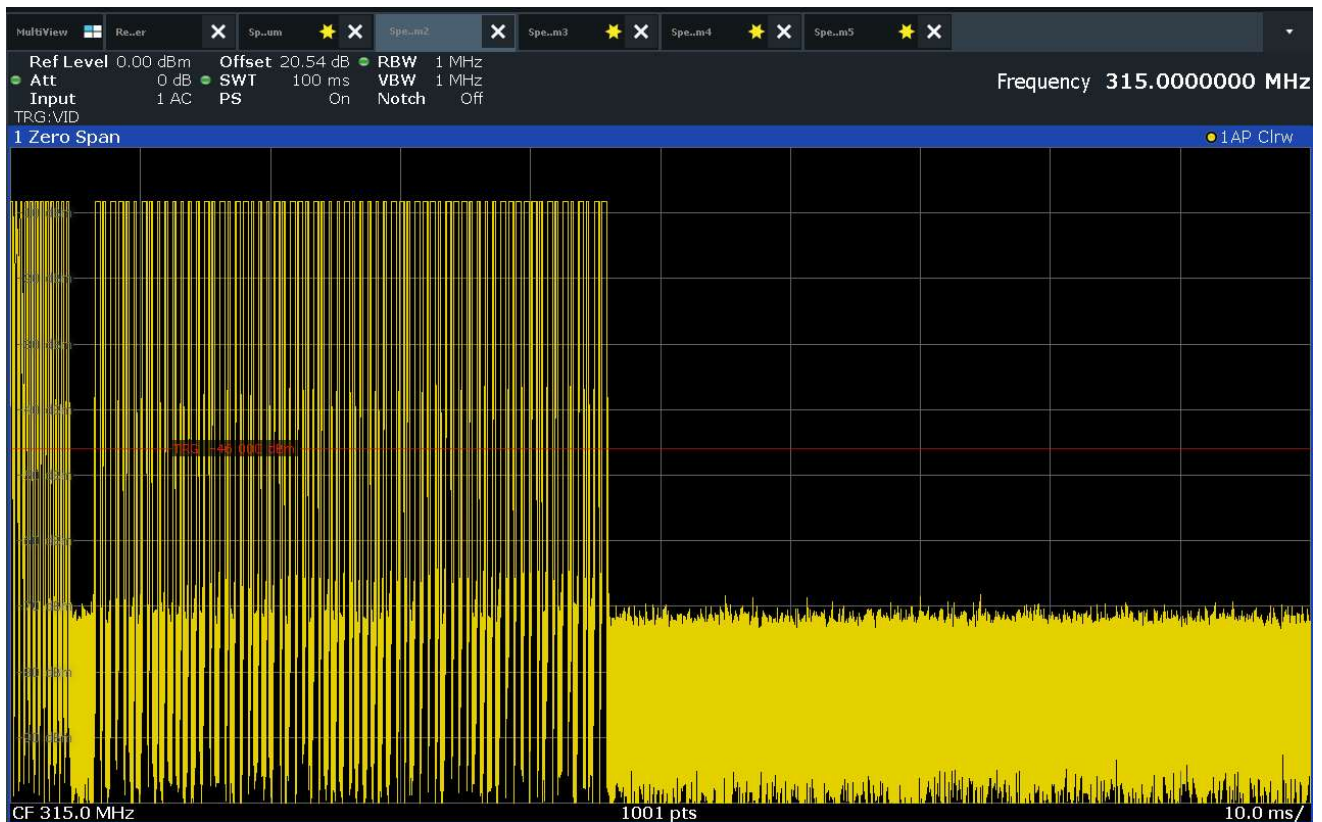
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 8
Mode	Genie Code
Frequency Tested	315MHz
Result	Pulse 1 = 0.2ms
Notes	



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 8
Mode	Genie Code
Frequency Tested	315MHz
Result	Pulse 2 = 0.4ms
Notes	



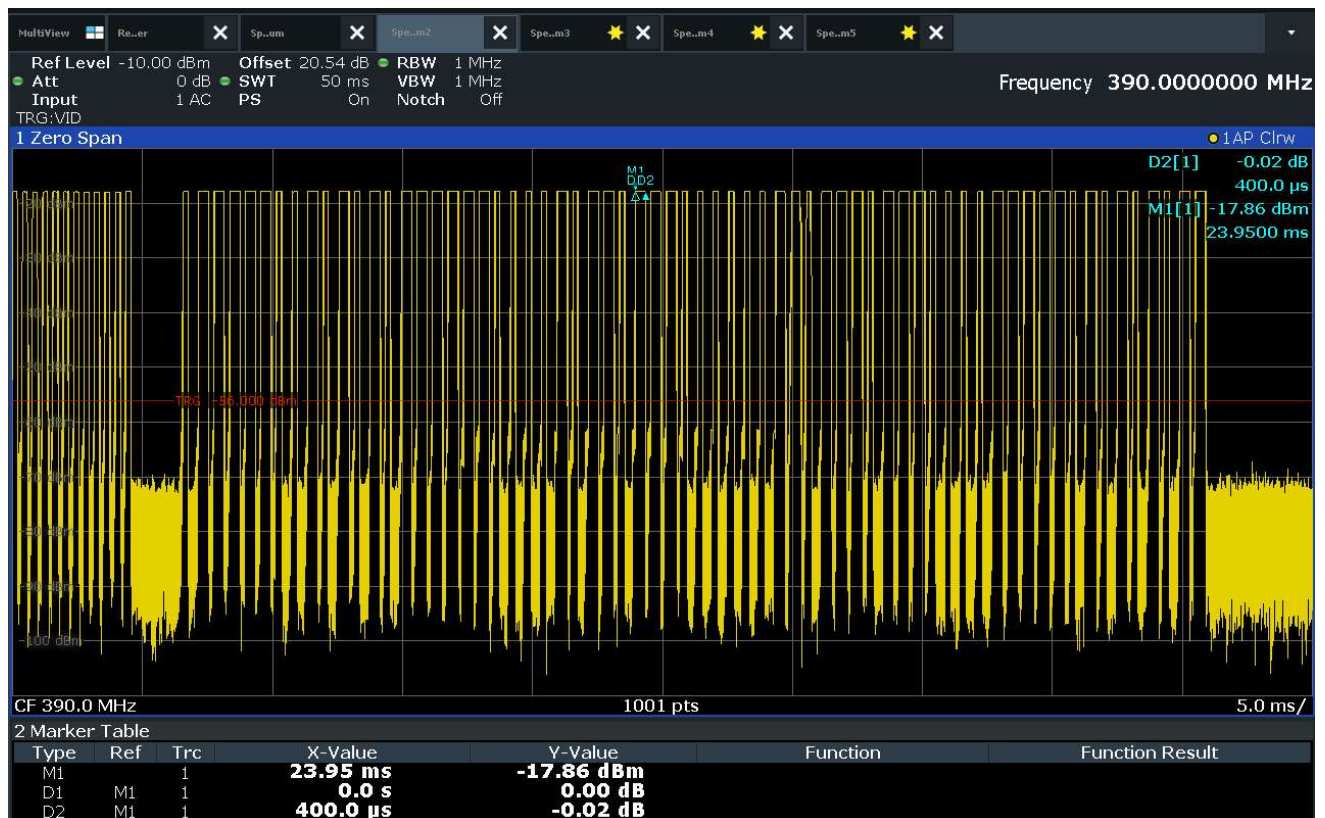
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 8
Mode	Genie Code
Frequency Tested	315MHz
Result	Duty Cycle = -13.39dB
Notes	Duty Cycle Factor Calculation: $47 \times 0.2\text{ms} = 9.4\text{ms}$ $30 \times 0.4\text{ms} = 12.0\text{ms}$ $9.4\text{ms} + 12.0\text{ms} = 21.4\text{ms}$ Duty Cycle Factor = $20 \log \left(\frac{21.4\text{ms}}{100\text{ms}} \right) = -13.39\text{dB}$



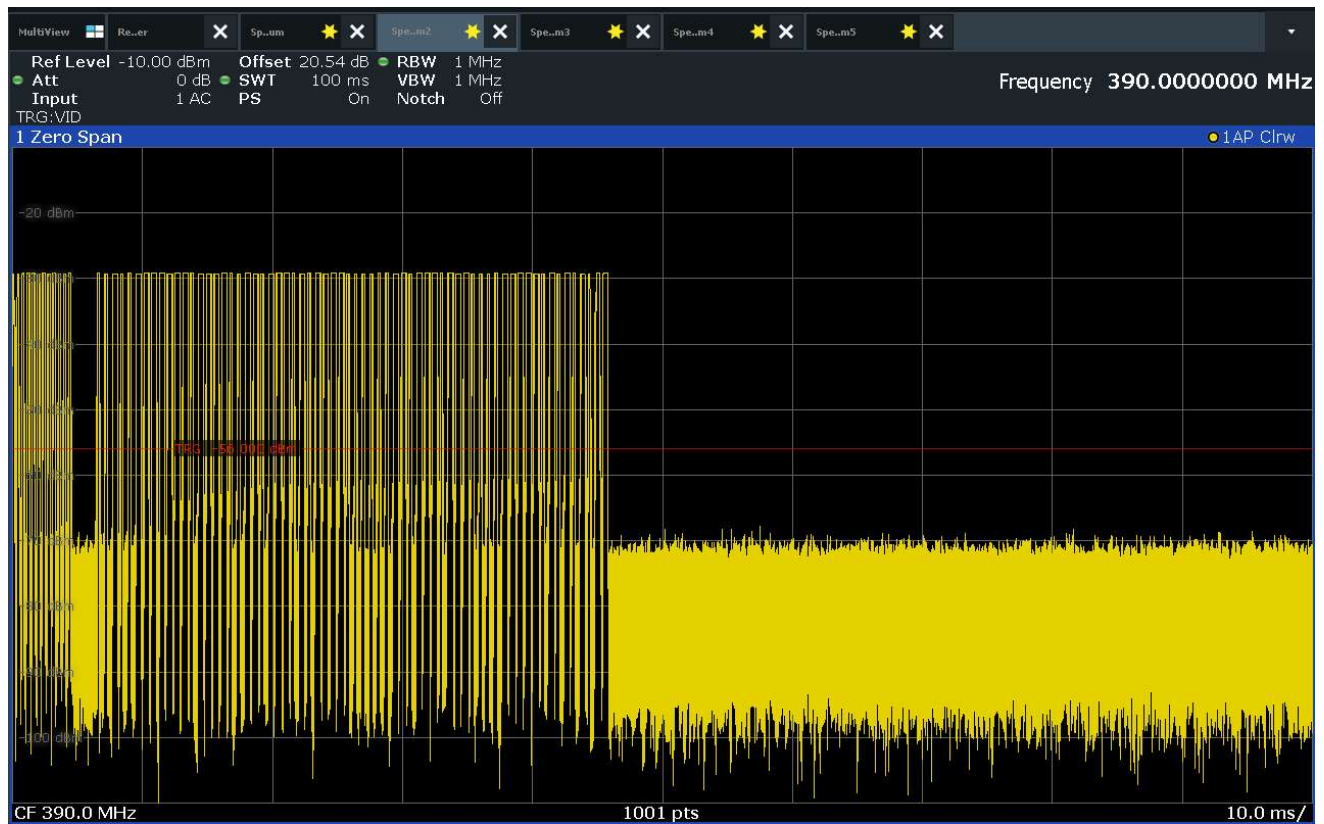
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 9
Mode	Genie Code
Frequency Tested	390MHz
Result	Pulse 1 = 0.2ms
Notes	



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 9
Mode	Genie Code
Frequency Tested	390MHz
Result	Pulse 2 = 0.4ms
Notes	



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 9
Mode	Genie Code
Frequency Tested	390MHz
Result	Duty Cycle = -12.54dB
Notes	Duty Cycle Factor Calculation: $40 \times 0.2\text{ms} = 8.0\text{ms}$ $39 \times 0.4\text{ms} = 15.6\text{ms}$ $8.0\text{ms} + 15.6\text{ms} = 23.6\text{ms}$ $\text{Duty Cycle Factor} = 20 \log \left(\frac{23.6\text{ms}}{100\text{ms}} \right) = -12.54\text{dB}$



22. Occupied Bandwidth – 20dB

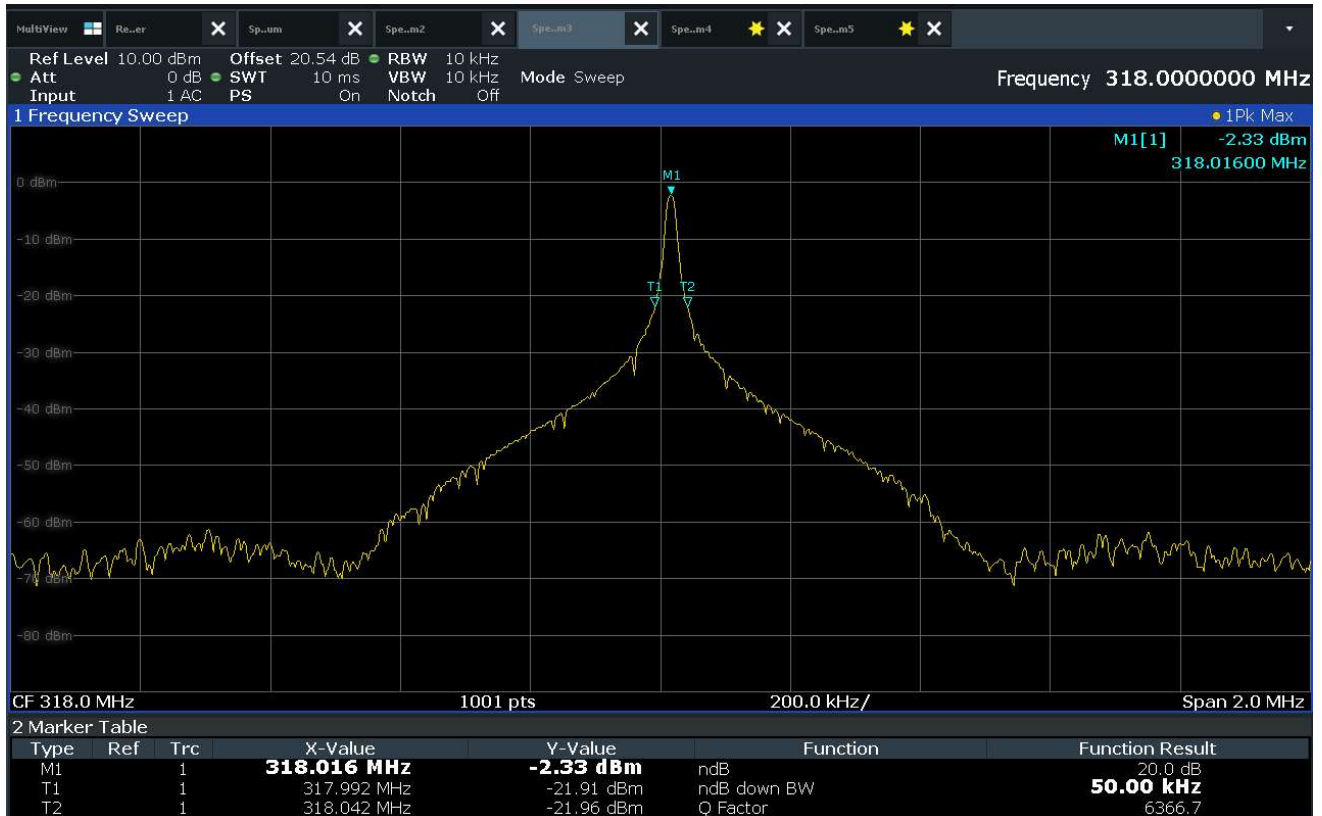
EUT Information	
Manufacturer	The Chamberlain Group LLC
Product	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 1, OOK 2, OOK 3, OOK 4, OOK 5, OOK 6, OOK 7, OOK 8, OOK 9
Mode	Billion A Code, D Code, E Code, Linear Mega Code, Genie Code, Stanley Code, Wayne-Dalton Code, Ryobi Code, Guardian Code, Sommer Code

Test Setup Details	
Setup Format	Tabletop
Measurement Method	Antenna Conducted
Type of Test Site	Tabletop
Notes	

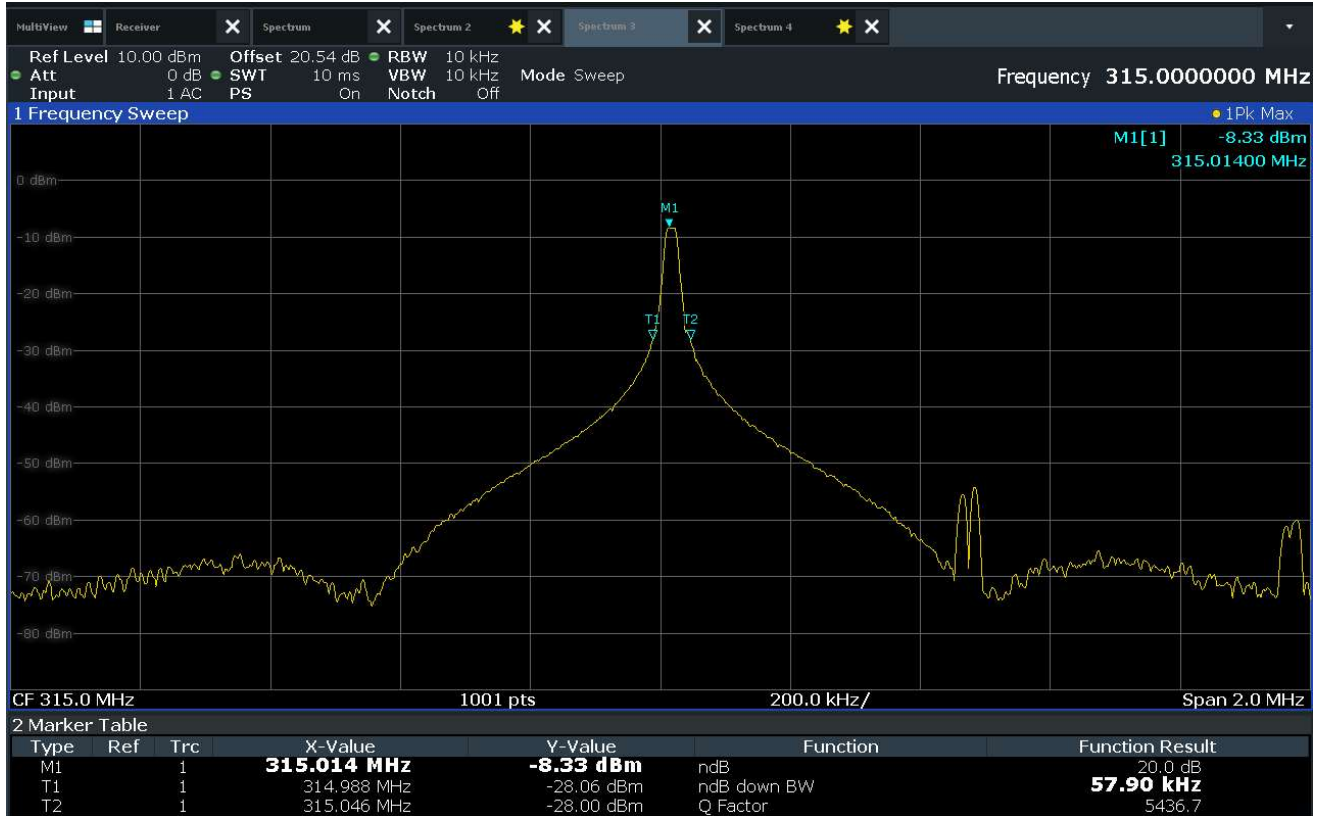
Requirement
The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70MHz and below 900MHz. For devices operating above 900MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20dB down from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

Procedure
1) The EUT was set to transmit continuously. 2) With an antenna positioned nearby, occupied bandwidth emissions were displayed on the receiver. 3) The resolution bandwidth was set to 10kHz, and span was set to 2MHz. 4) A screen capture was taken of the frequency spectrum near the carrier using a screen dump function on the receiver.

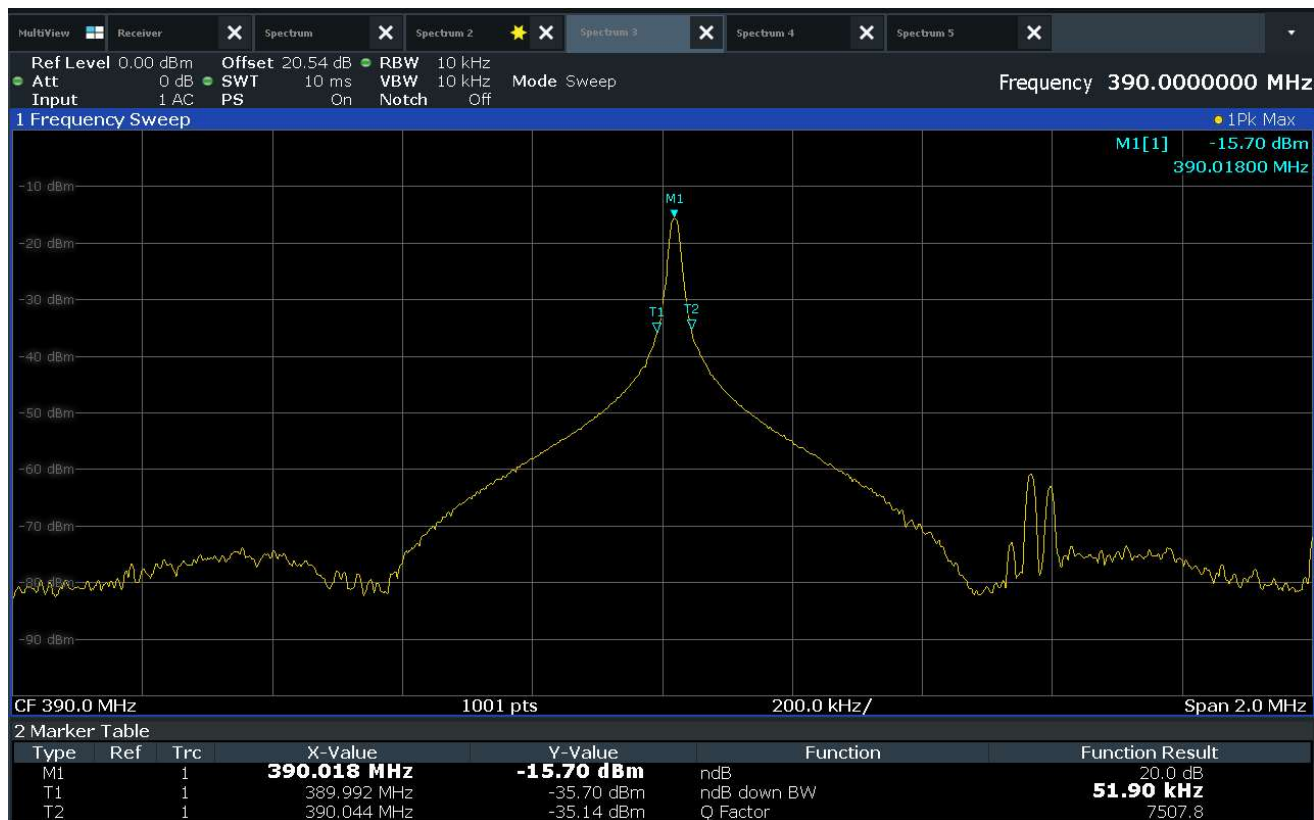
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 3
Mode	Linear Mega Code
Frequency Tested	318MHz
Result	20dB BW = 50kHz
Notes	



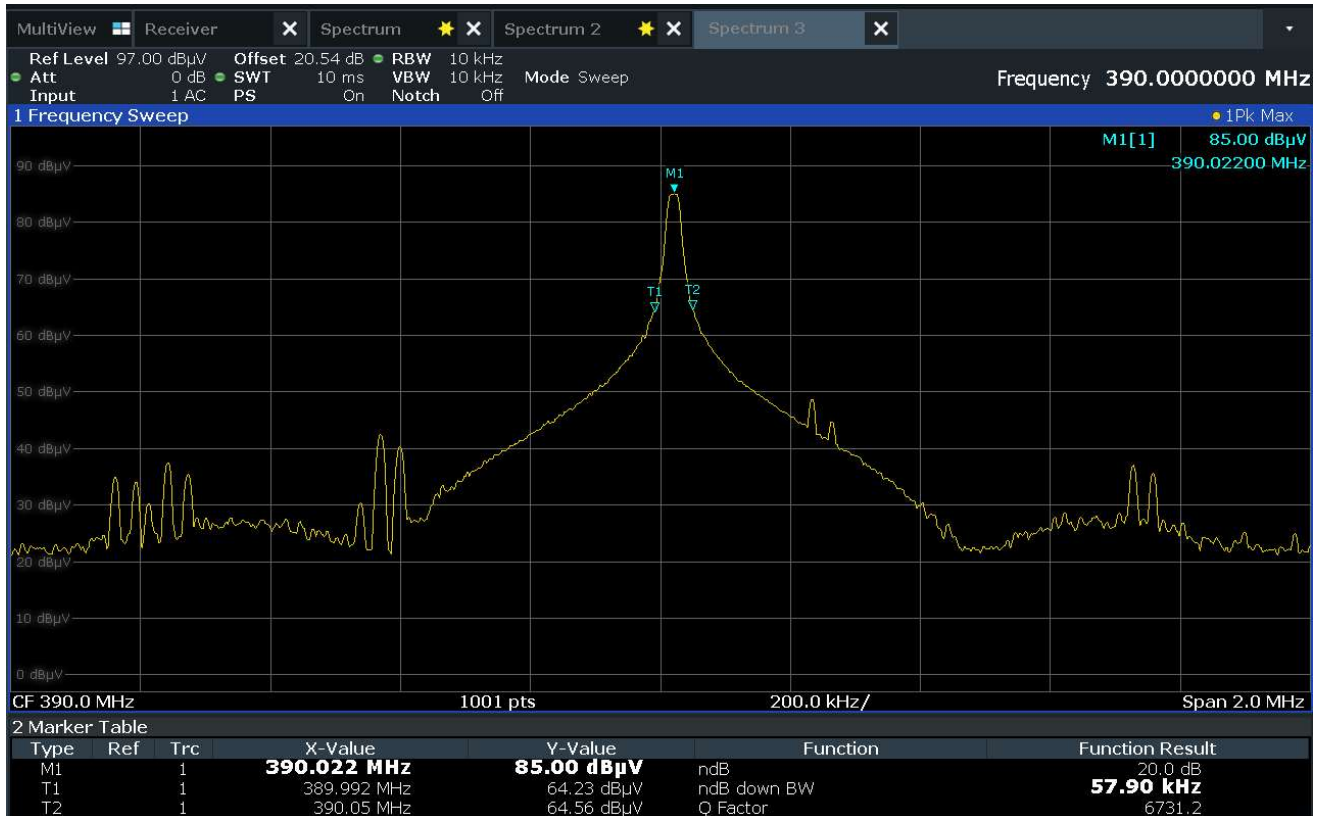
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 1
Mode	D Code
Frequency Tested	315MHz
Result	20dB BW = 57.9kHz
Notes	



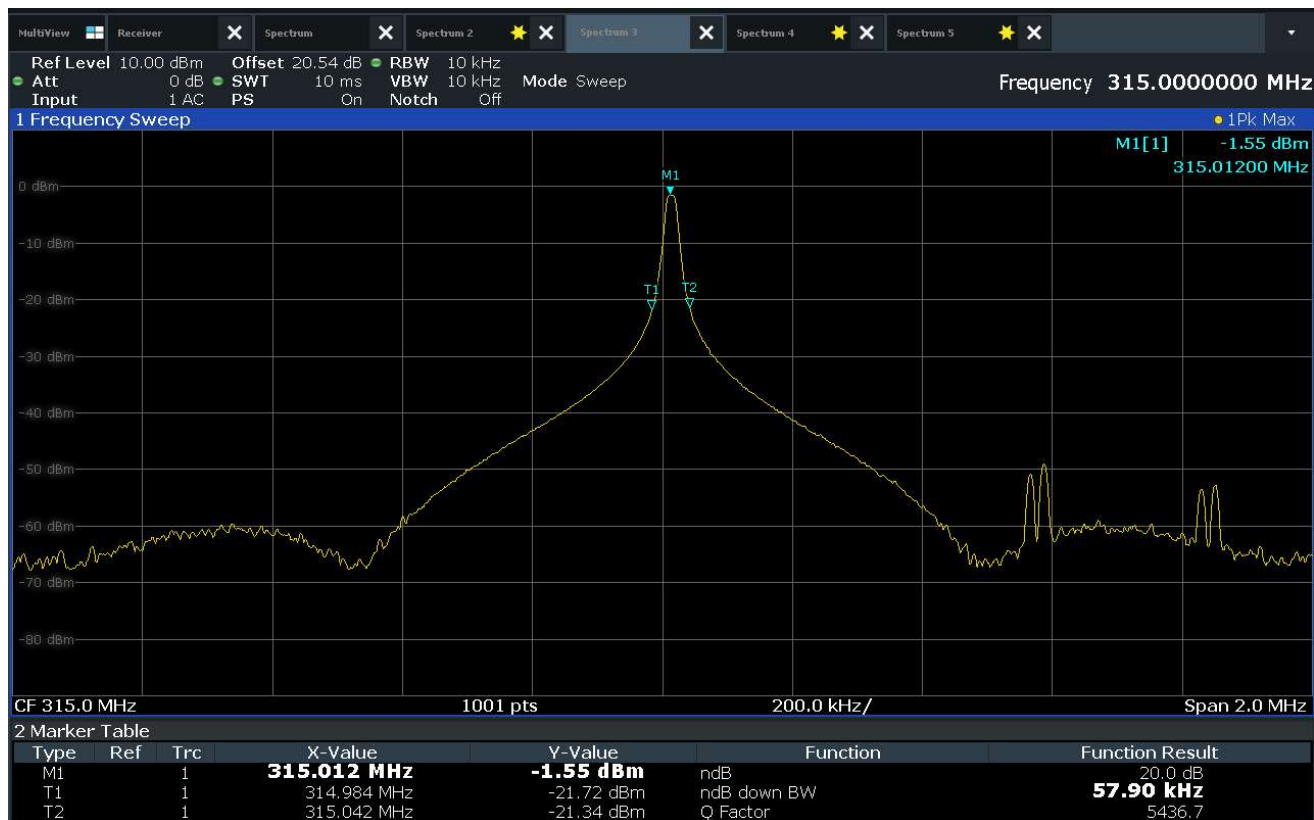
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 1
Mode	D Code
Frequency Tested	390MHz
Result	20dB BW = 51.9kHz
Notes	



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 1
Mode	Billion A Code
Frequency Tested	390MHz
Result	20dB BW = 57.9kHz
Notes	



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 1
Mode	E Code
Frequency Tested	315MHz
Result	20dB BW = 57.9kHz
Notes	



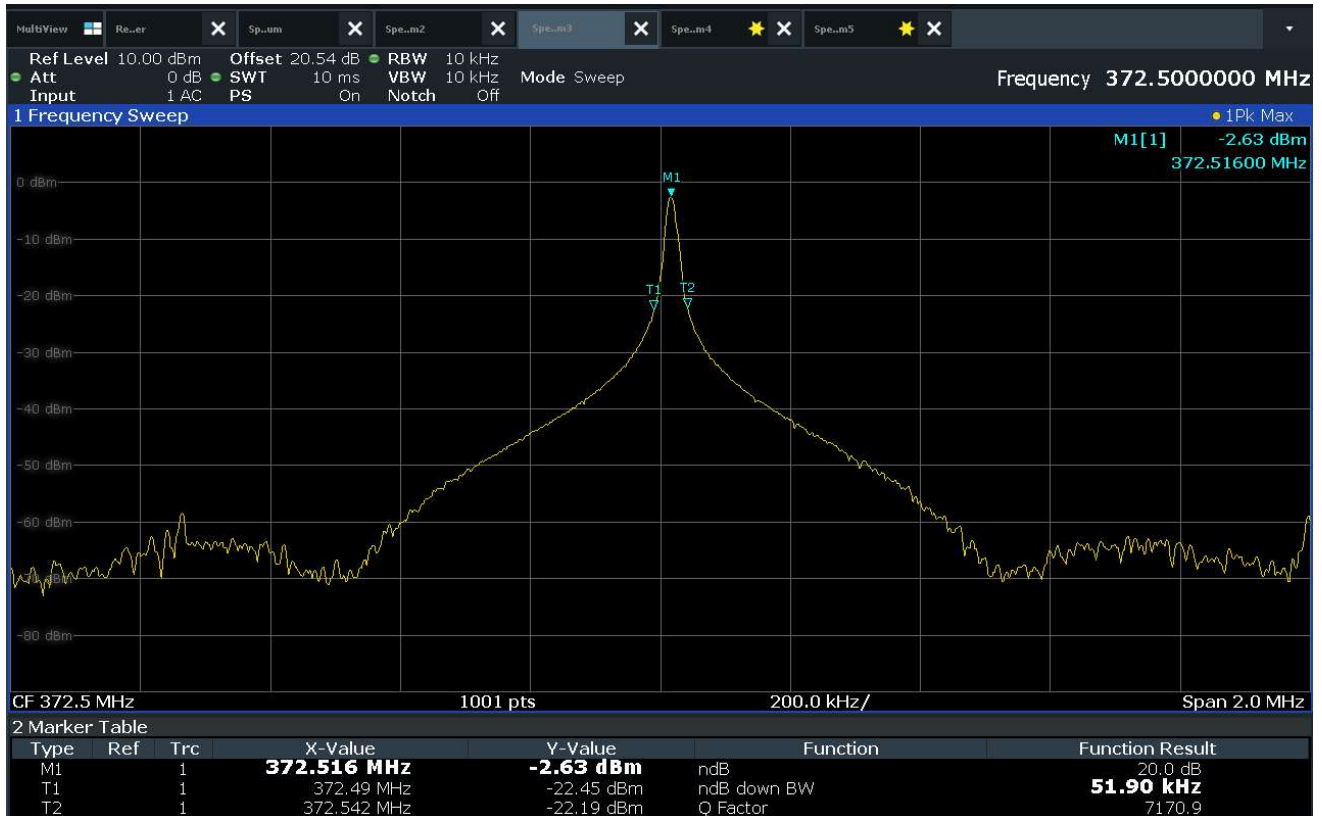
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 1
Mode	E Code
Frequency Tested	390MHz
Result	20dB BW = 53.90kHz
Notes	



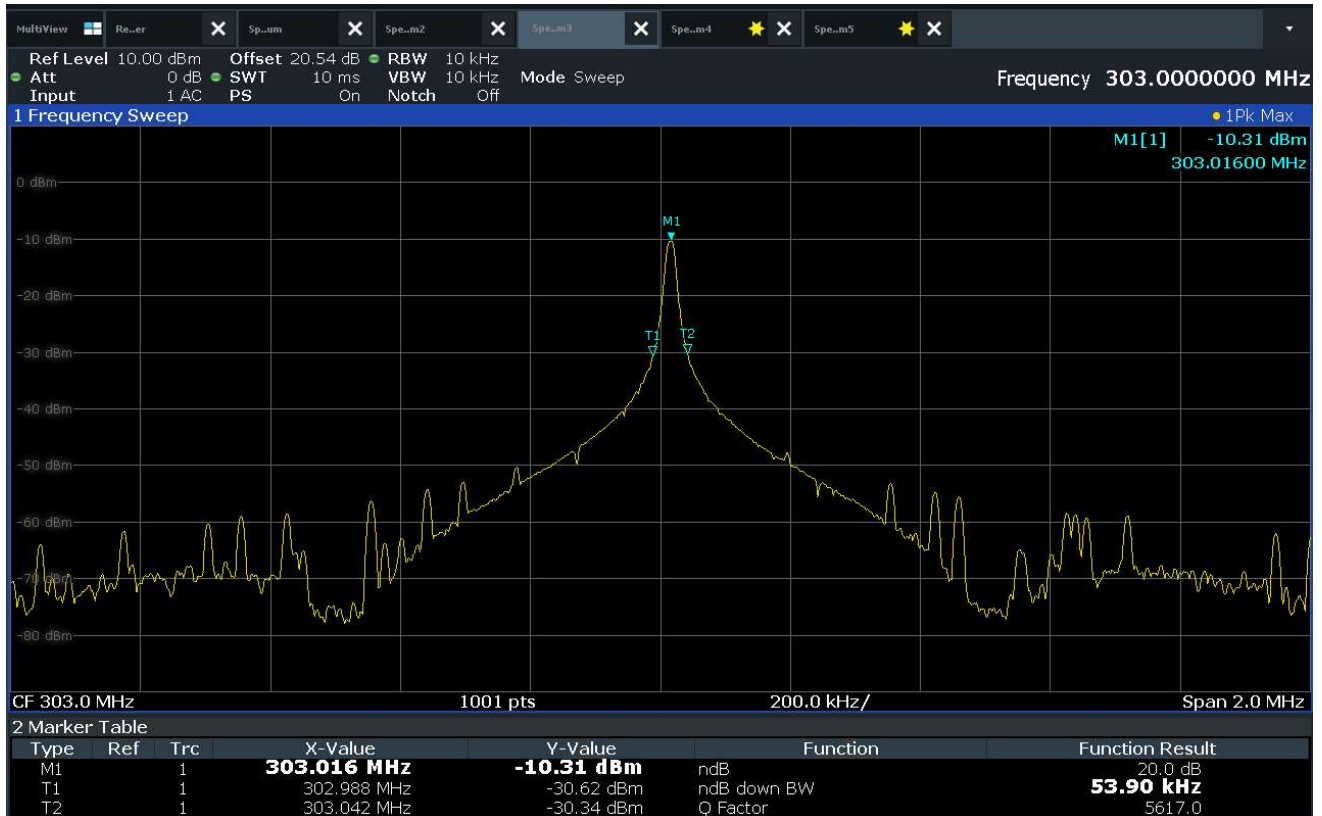
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 2
Mode	Sommer Code
Frequency Tested	310MHz
Result	20dB BW = 53.9kHz
Notes	



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 4
Mode	Wayne-Dalton Code
Frequency Tested	372.5MHz
Result	20dB BW = 51.9kHz
Notes	



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 5
Mode	Guardian Code
Frequency Tested	303MHz
Result	20dB BW = 53.9kHz
Notes	



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 6
Mode	Ryobi Code
Frequency Tested	372.5MHz
Result	20dB BW = 53.9kHz
Notes	



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Universal Keypad
Model No.	900-15649-1/014D15649 Rev C
Serial No.	OOK 7
Mode	Stanley Code
Frequency Tested	310MHz
Result	20dB BW = 53.9kHz
Notes	

