



**Engineering Test Report No. 2302675-02**

Report Date	November 16, 2023	
Manufacturer Name	The Chamberlain Group LLC	
Manufacturer Address	300 Windsor Dr Oak Brook, IL 60523	
Test Item Name Model No.	Yeti Phase 2 Commercial Door Operators JHDC22X1BMC, JHDC22X4BMC, TDC22X1BMC, TDC22X4BMC	
Date Received	November 6, 2023	
Test Dates	November 6, 2023 through November 9, 2023	
Specifications	FCC "Code of Federal Regulations" Title 47, Part 15, Subpart B FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247 Innovation, Science, and Economic Development Canada, RSS-GEN Innovation, Science, and Economic Development Canada, RSS-247	
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	Javier Cardenas	
Signature		
Approved by	Raymond J. Klouda, Registered Professional Engineer of Illinois – 44894	
PO Number	4900093280	

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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 15.247 and Innovation, Science, and Economic Development Canada, RSS-247 test specifications. The data presented in this test report pertains to the EUT on the test dates specified. Any electrical or mechanical modifications made to the EUT subsequent to the specified test date will serve to invalidate the data and void this certification. This report must not be used to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the Federal Government.

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## 1. Report Revision History

Revision	Date	Description
–	20 NOV 2023	Initial Release of Engineering Test Report No. 2302675-02

## 2. Introduction

### 2.1. Scope of Tests

This document presents the results of a series of RF emissions tests that were performed on The Chamberlain Group LLC Yeti Phase 2 Commercial Door Operators (hereinafter referred to as the Equipment Under Test (EUT)). The EUT was 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 The Chamberlain Group LLC Yeti Phase 2 Commercial Door Operators, FCC ID: HBW0635, meets the Class II Permissive Change requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, §15.247. The following modifications have been made to the original equipment:

- A change of DC Motor
- A change of 900VA toroid transformer

The test series was also performed to determine if the The Chamberlain Group LLC Yeti Phase 2 Commercial Door Operators, IC 2666A-0635 meets the Class II Permissive Change requirements of the Innovation, Science, and Economic Development Canada Radio Standards Specification RSS-Gen and Innovation, Science, and Economic Development Canada Radio Standards Specification RSS-247 for Transmitters. The following modifications have been made to the original equipment:

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

### 2.3. Identification of the EUT

The EUT was identified as follows:

EUT Identification	
Product Description	Yeti Phase 2 Commercial Door Operators
Model/Part No. <sup>1</sup>	JHDC22X1BMC, JHDC22X4BMC, TDC22X1BMC, TDC22X4BMC
Serial No.	NA
Size of EUT	10" x 22" x 12"
Software/Firmware Version	
Device Type	2.4GHz Digitally Modulated and 900MHz Frequency Hopping Transmission Device
Band of Operation	902 – 928MHz and 2400 – 2483.5MHz
Antenna Type	2.4GHz Internal: Inverted F PCB 2.4GHz External: Terminal Mount Dipole 900MHz External: Monopole
Conducted Output Power	900MHz FHSS: 12.3dBm (16.98mW) BLE: 0.6dBm (1.15mW) 802.11b: 18.6dBm (72.44mW) 802.11g: 21.9dBm (154.88mW) 802.11n 20.3dBm (107.15mW)
FCC ID	FCC ID: HBW0635
ISED Certification Number	IC: 2666A-0635
1 – This report also covers Model No. TDC22X1BMC and Model No. TDC22X4BMC by similarity	

The EUT listed above was used throughout the test series.

### 3. Power Input

The EUT obtained 115V 60Hz power via a 3 wire, 2-meter, unshielded power cord.

### 4. Grounding

The EUT was connected to ground through the third wire of its input power cord.

### 5. Support Equipment

The EUT was submitted for testing along with the following support equipment:

Description	Model #	S/N
Photoelectric Safety Sensors	CPS-U	---
Floor Level Wall Controller	DCWALLCTL	---
Laptop	---	---
UART to USB adaptor	---	---

### 6. Interconnect Leads

No interconnect leads were used during the tests.

The following interconnect cables were submitted with the test item:

Item	Description
USB to UART	Connects laptop to EUT
Twisted Pairs (Qty 2)	Twisted pair for safety sensor
4 Wires	Harness for Wall Mounted Control

### 7. Modifications Made to the EUT

No modifications were made to the EUT during the testing.

### 8. Modes of Operation

The EUT and all peripheral equipment were energized. The unit was programmed to transmit in the following mode:

#### 8.1. Tx

Mode	Description
802.11b CCK11M	- 2412MHz, Power Setting = 18dBm - 2437MHz, Power Setting = 18dBm - 2462MHz, Power Setting = 18dBm
802.11g OFDM54M	- 2412MHz, Power Setting = 18dBm - 2437MHz, Power Setting = 18dBm - 2462MHz, Power Setting = 18dBm
802.11n MCS7	- 2412MHz, Power Setting = 18dBm - 2437MHz, Power Setting = 18dBm - 2462MHz, Power Setting = 18dBm
900MHz FHSS	- 902.25MHz, CW - 914.75MHz, CW - 926.75MHz, CW - Hopping

## 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 B
- Federal Communications Commission "Code of Federal Regulations", Title 47, Chapter I, Subchapter A, 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 40GHz"
- ANSI C63.10-2013, "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices"
- Federal Communications Commission Office of Engineering and Technology Laboratory Division, Guidance For Compliance Measurements On Digital Transmission Systems, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under Section 15.247 April 2, 2019 KDB 558074 D01v05r02
- RSS-Gen Issue 5, February 2020, Amendment 2, Innovation, Science, and Economic Development Canada, "General Requirements for Compliance of Radio Apparatus"
- RSS-247 Issue 2, February 2017, "Digital Transmission Systems (DTSS), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices"

## 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 15.247, Innovation, Science, and Economic Development Canada, RSS-247, 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

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

Ambient Parameters	Value
Temperature	22°C
Relative Humidity	25%
Atmospheric Pressure	1025.3mb

### 13. Summary

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

Test Description	Requirements	Test Method	S/N	Results
Maximum Peak Conducted Output Power	FCC 15.247 ISED RSS-247	ANSI C63.10:2013	NA	Conforms
Effective Isotropic Radiated Power (EIRP)	FCC 15.247 ISED RSS-247	ANSI C63.10:2013	NA	Conforms
Duty Cycle Factor Measurements	FCC 15.247 ISED RSS-247	ANSI C63.10:2013	NA	—
Case Spurious Radiated Emissions	FCC 15.247 ISED RSS-247	ANSI C63.10:2013	NA	Conforms
Power Spectral Density	FCC 15.247 ISED RSS-247	ANSI C63.10:2013	NA	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).

$$\text{Formula 1: } VL \text{ (dB}\mu\text{V)} = \text{MTR (dB}\mu\text{V)} + \text{CF (dB)}.$$

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.

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

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

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

### 15. Statement of Conformity

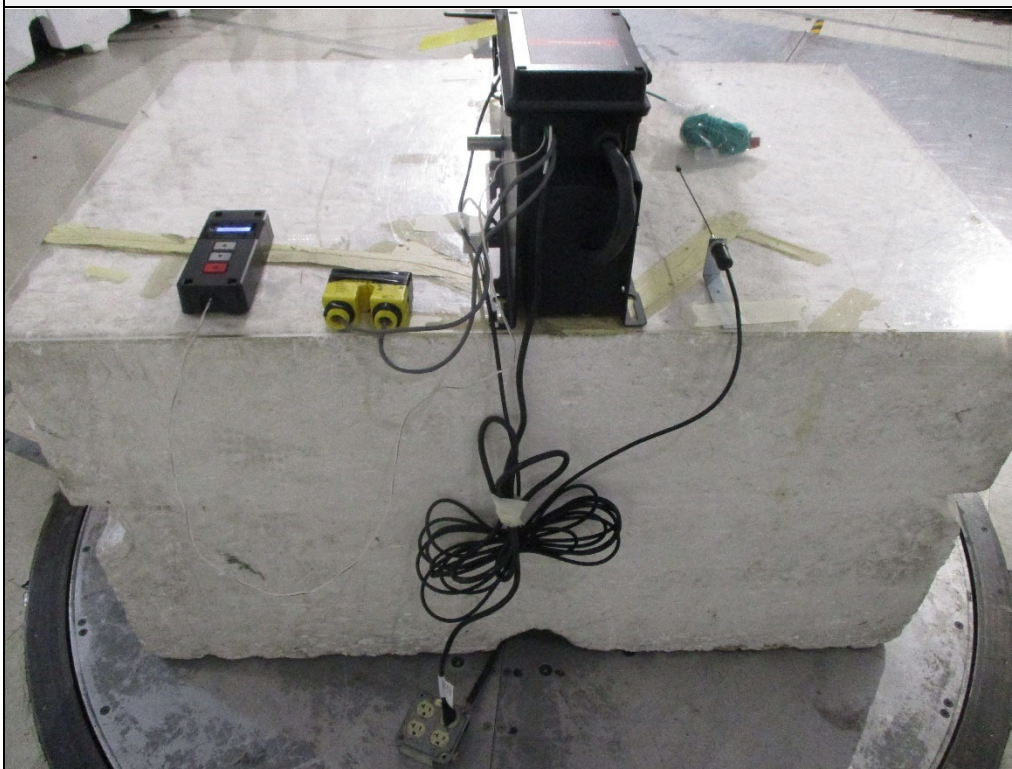
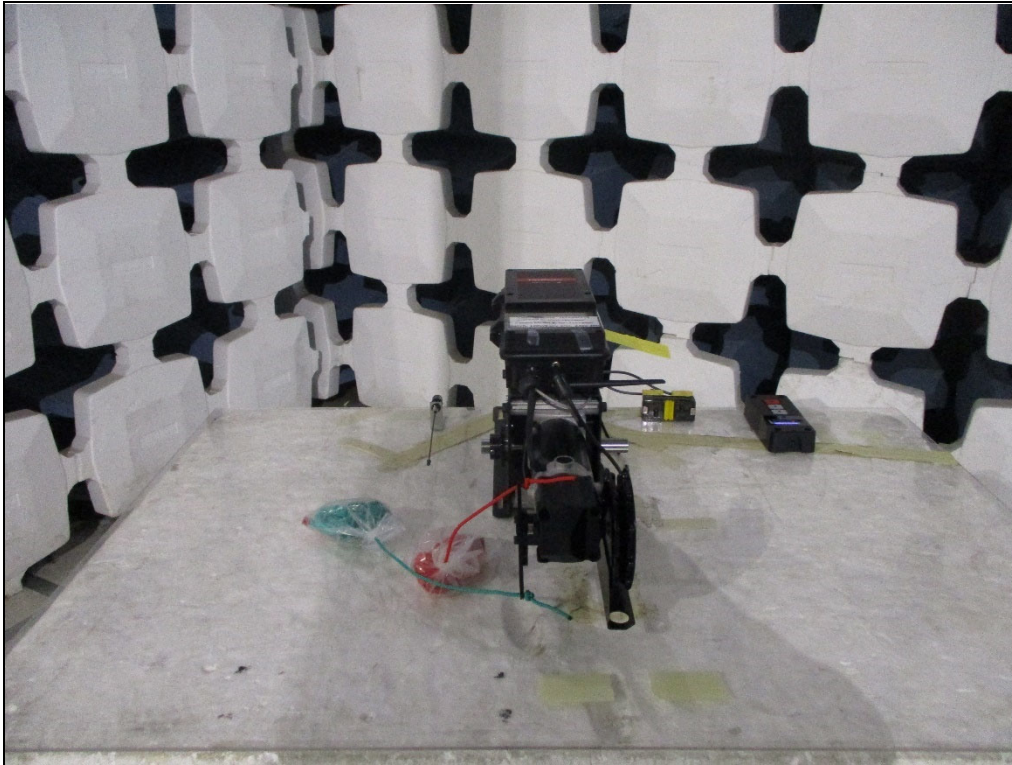
The The Chamberlain Group LLC Yeti Phase 2 Commercial Door Operators, Model No. JHDC22X1BMC, JHDC22X4BMC, TDC22X1BMC and TDC22X4BMC, did fully conform to the selected requirements of FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247 and Innovation, Science, and Economic Development Canada, RSS-247.

### 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 15.247 and Innovation, Science, and Economic Development Canada, RSS-247 test specifications. The data presented in this test report pertains to the EUT as received by the customer on the test date 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.



17. Photographs of EUT





## 18. Equipment List

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW3	PREAMPLIFIER	PLANAR ELECTRONICS	PE2-35-120-5R0-10-12	PL2924	1GHZ-20GHZ	3/10/2023	3/10/2024
CDZ4	LAB WORKSTATION	ELITE	LWS-10		WINDOWS 10	CNR	
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
NTA4	BILOG ANTENNA	TESEQ	6112D	46660	20-2000GHZ	10/26/2022	10/26/2024
NWQ0	DOUBLE RIDGED WAVEGUIDE ANTENNA	ETS LINDGREN	3117	66657	1GHZ-18GHZ	6/13/2022	6/13/2024
RBG3	EMI ANALYZER	ROHDE & SCHWARZ	ESW44	101592	2HZ-44GHZ	11/11/2022	12/11/2023
RBG4	EMI ANALYZER	ROHDE & SCHWARZ	ESW44	103007	2HZ-44GHZ	12/8/2022	12/8/2023
T2SA	20DB 25W ATTENUATOR	WEINSCHTEL	46-20-34	CD5015	DC-18GHZ	1/21/2022	1/21/2024
WKA1	SOFTWARE, UNIVERSAL RCV EMI	ELITE	UNIV_RCV_EMI	1	---	I/O	
XPQ3	HIGH PASS FILTER	K&L MICROWAVE	4IH30-1804/T10000-0	4	1.8GHZ-10GHZ	9/14/2023	9/14/2025
XPR0	HIGH PASS FILTER	K&L MICROWAVE	11SH10-4800/X20000	001	4.8-20GHZ	9/14/2023	9/14/2025

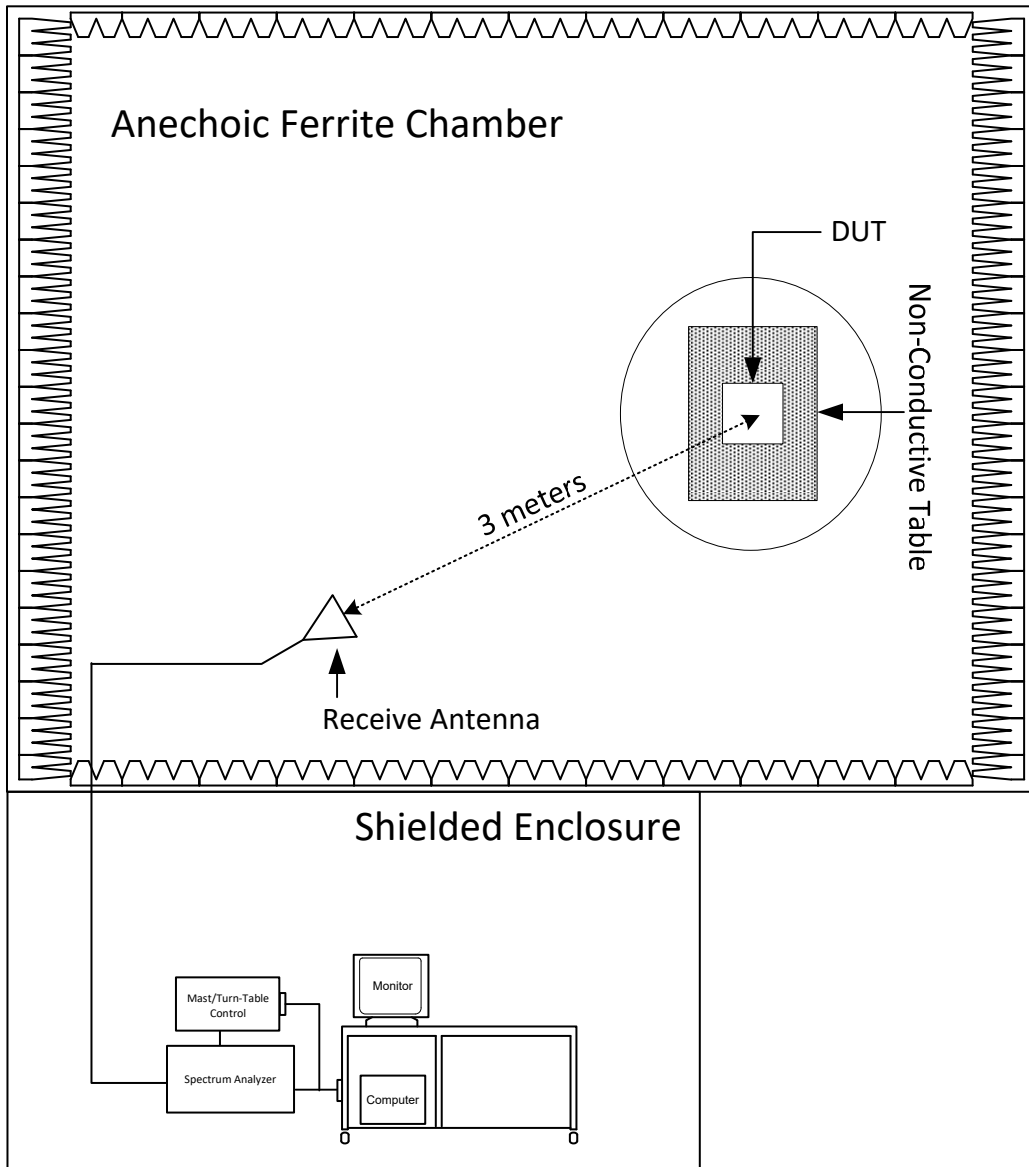
N/A: Not Applicable

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.

### 19. Block Diagram of Test Setup



Radiated Measurements Test Setup

20. Maximum Peak Conducted Output Power

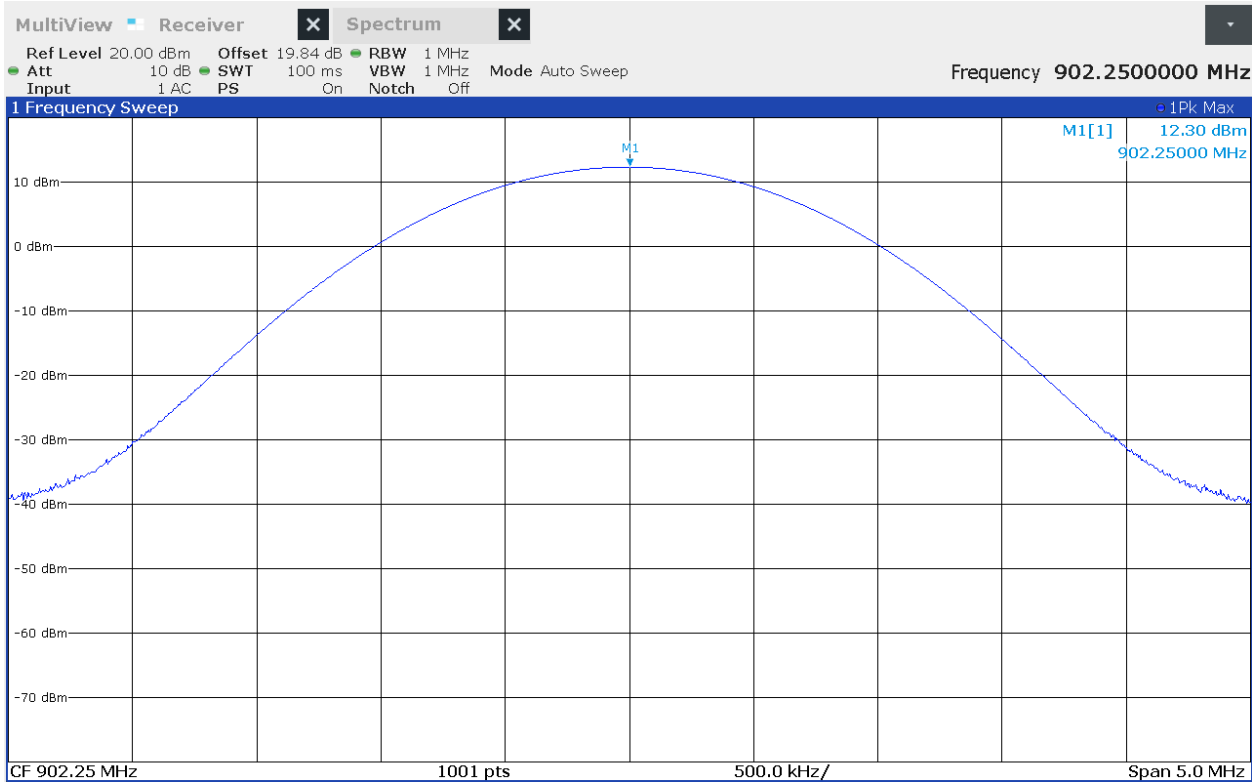
EUT Information	
Manufacturer	The Chamberlain Group LLC
Product	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx

Test Setup Details	
Setup Format	Tabletop
Height of Support	N/A
Measurement Method	Antenna Conducted
Type of Test Site	Workbench
Test Site Used	N/A
Notes	None

Requirements
<p><u>FOR FREQUENCY HOPPING SYSTEMS IN THE 902-928 MHz, CHANNELS <math>\geq 50</math></u></p> <p>The output power shall not exceed 1W (30dBm).</p> <p><u>FOR DTS</u></p> <p>The output power shall not exceed 1W (30dBm).</p>

Procedure
<p><u>FOR FREQUENCY HOPPING SYSTEMS</u></p> <p>The antenna port of the EUT was connected to the spectrum analyzer through 20dB of attenuation. With the hopping function disabled, the EUT was allowed to transmit continuously. The frequency hopping channel was set separately to low, middle, and high hopping channels. The resolution bandwidth (RBW) was set to greater than the 20dB bandwidth. The span was set to approximately 5 times the 20dB bandwidth. The 'Max-Hold' function was engaged. The maximum meter reading was recorded. The peak power output was calculated for the low, middle, and high hopping frequencies.</p> <p><u>FOR DTS SYSTEMS</u></p> <p>The antenna port of the EUT was connected to the spectrum analyzer through 20dB of attenuation. The EUT was set to transmit separately at the low, middle, and high channels. The resolution bandwidth (RBW) was set to greater than the 6dB bandwidth. The span was set to greater than 3 times the RBW. The 'Max-Hold' function was engaged. The maximum meter reading was recorded. The peak power output was calculated for the low, middle, and high channels.</p>

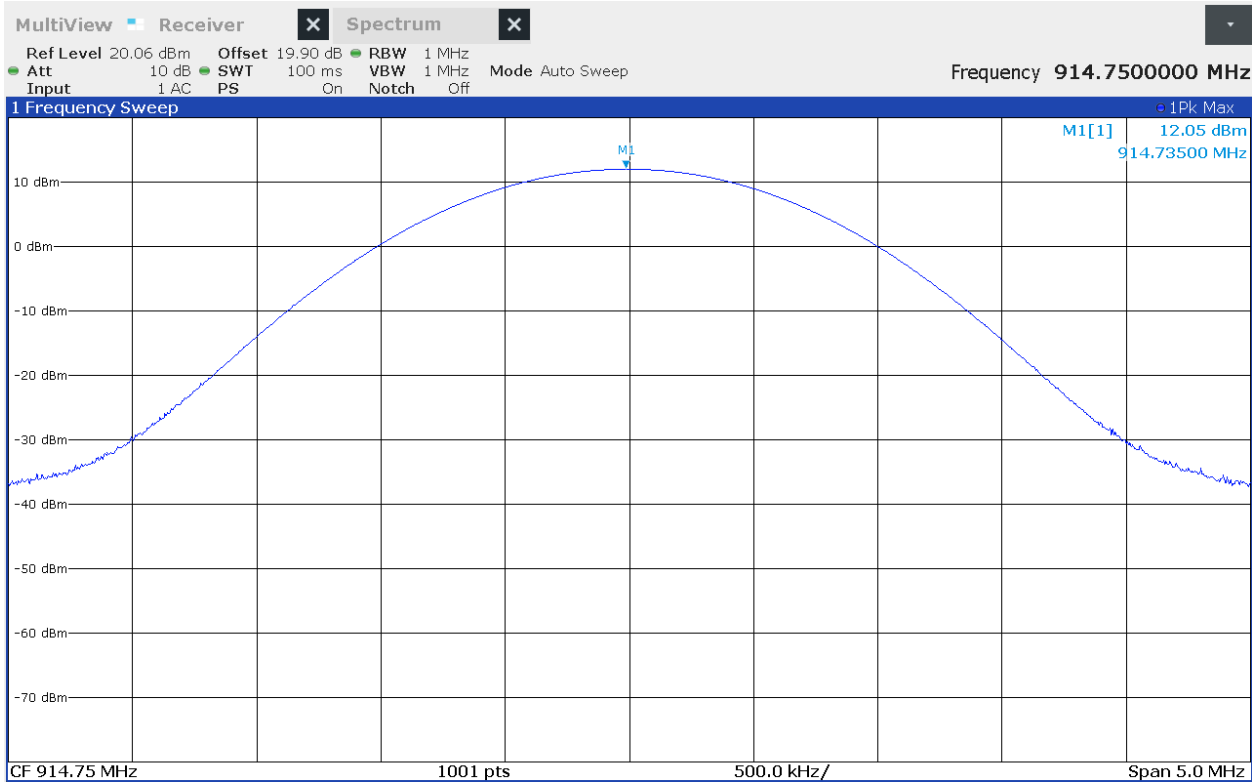
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – FHSS
Frequency Tested	902.25MHz
Result	Output Power = 16.98mW (12.30dBm)
Notes	None



**Peak Conducted Output Power**

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/9/2023 1:33:04 PM  
 Notes : None

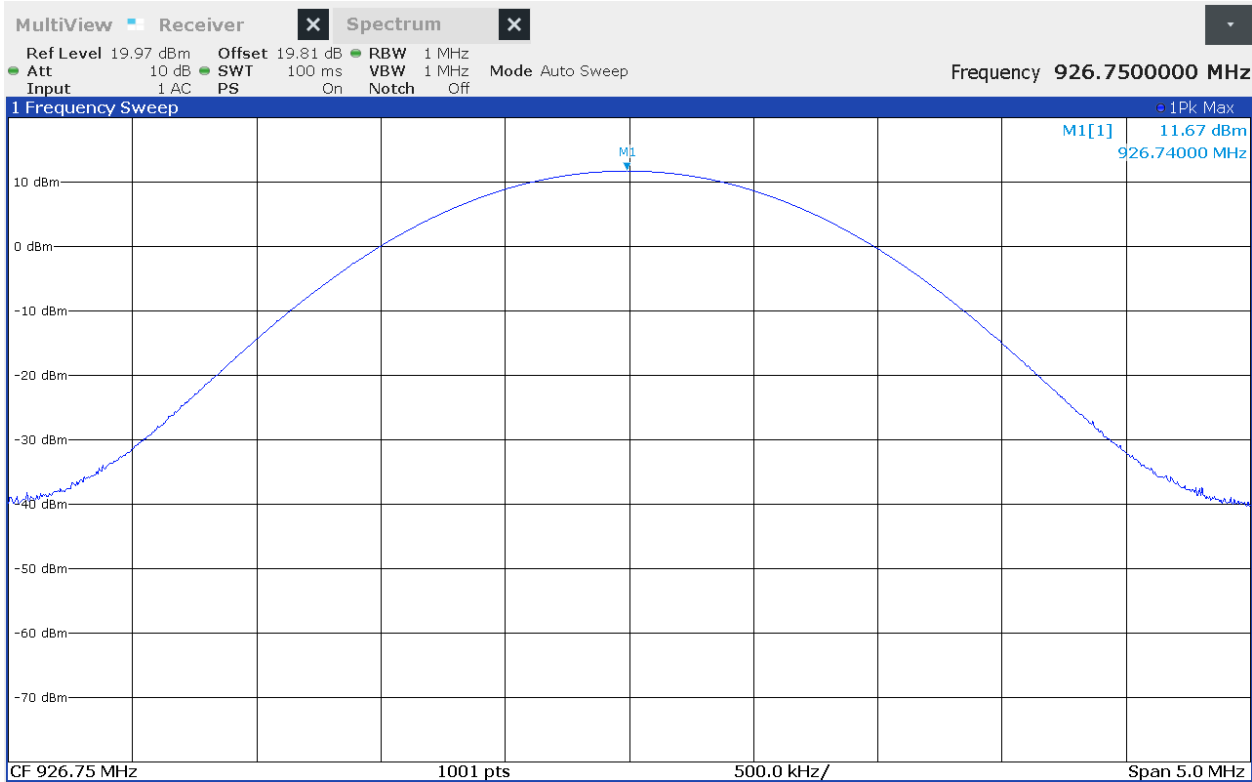
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – FHSS
Frequency Tested	914.75MHz
Result	Output Power = 16.03mW (12.05dBm)
Notes	None



**Peak Conducted Output Power**

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/9/2023 1:33:44 PM  
 Notes : None

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – FHSS
Frequency Tested	926.75MHz
Result	Output Power = 14.68mW (11.67dBm)
Notes	None



**Peak Conducted Output Power**

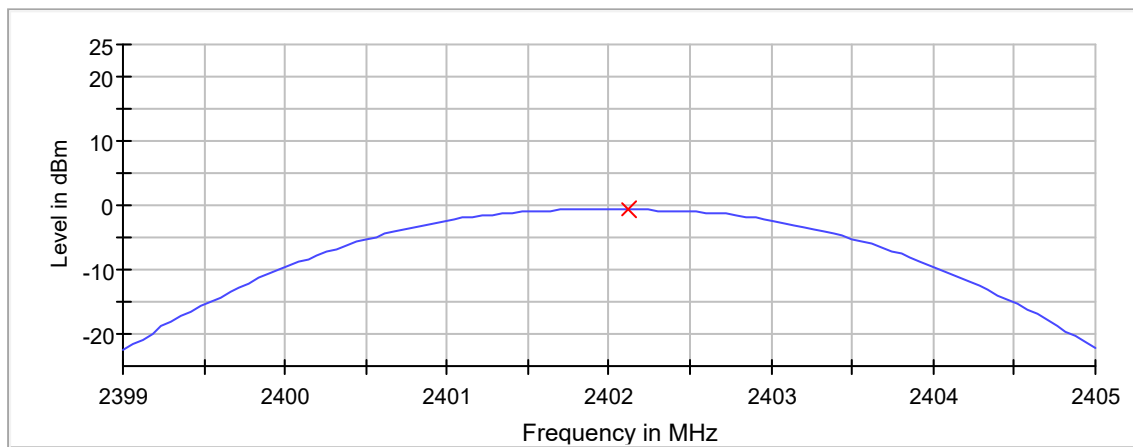
Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/9/2023 1:35:11 PM  
 Notes : None



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – BLE
Frequency Tested	2402MHz
Result	Output Power = 0.85mW (-0.7dBm)
Notes	None

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2402.000000	-0.7	30.0	PASS

Peak Power



— Connector 1      × Peak Connector 1

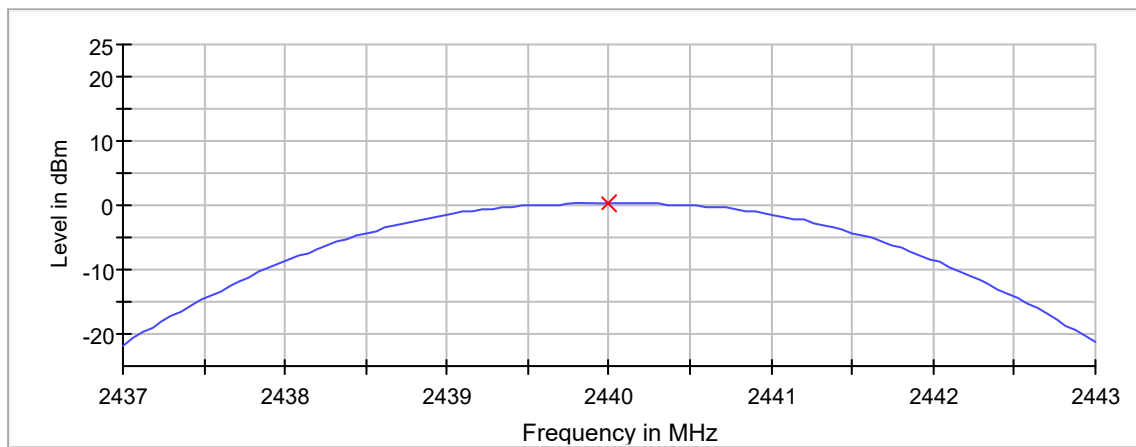
**Peak Conducted Output Power**

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/6/2023 1:47:45 PM  
 Notes : None

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – BLE
Frequency Tested	2440MHz
Result	Output Power = 1.05mW (0.2dBm)
Notes	None

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2440.000000	0.2	30.0	PASS

Peak Power



— Connector 1      × Peak Connector 1

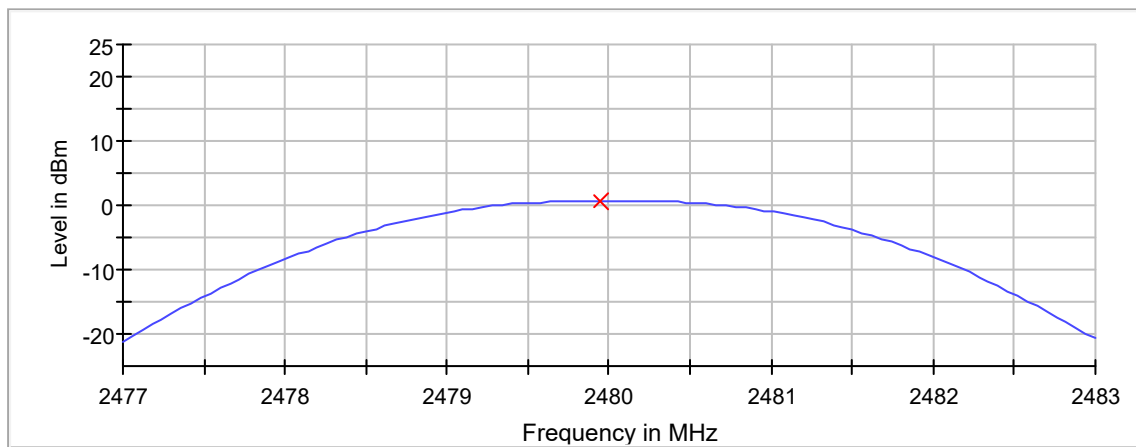
**Peak Conducted Output Power**

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/6/2023 1:49:21 PM  
 Notes : None

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – BLE
Frequency Tested	2480MHz
Result	Output Power = 1.15mW (0.6dBm)
Notes	None

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2480.000000	0.6	30.0	PASS

Peak Power



— Connector 1      × Peak Connector 1

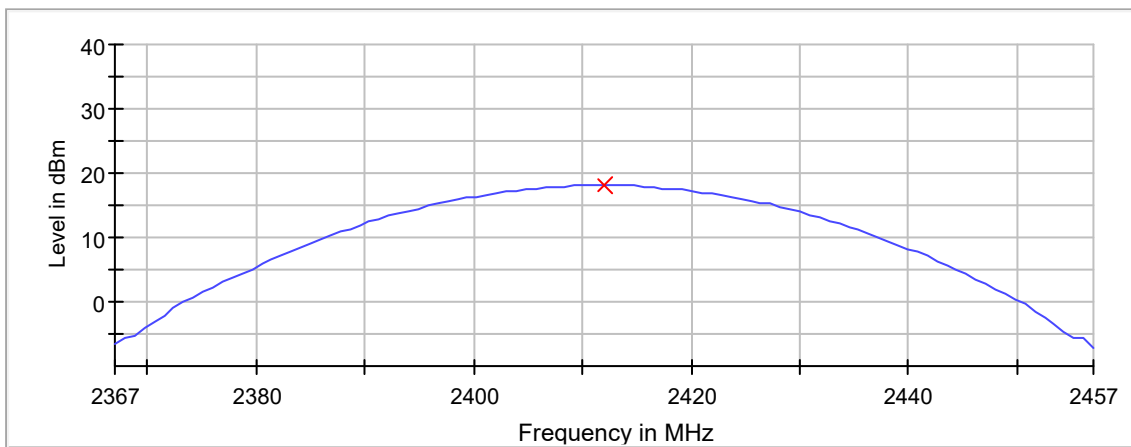
**Peak Conducted Output Power**

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/6/2023 1:49:53 PM  
 Notes : None

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2412MHz
Result	Output Power = 64.57mW (18.1dBm)
Notes	None

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2412.000000	18.1	30.0	PASS

Peak Power



— Connector 1      × Peak Connector 1

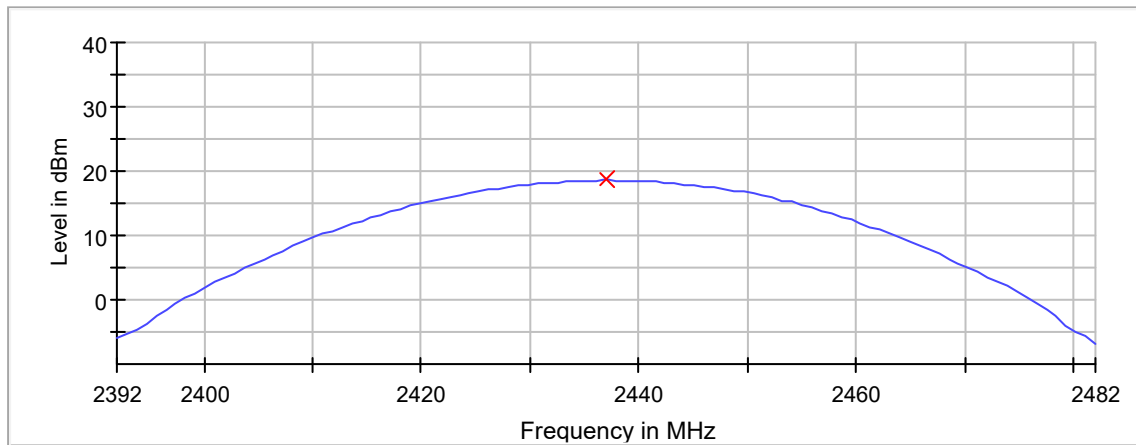
**Peak Conducted Output Power**

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/6/2023 12:25:53 PM  
 Notes : None

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2437MHz
Result	Output Power = 65.6mW (18.6dBm)
Notes	None

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2437.000000	18.6	30.0	PASS

Peak Power



— Connector 1      × Peak Connector 1

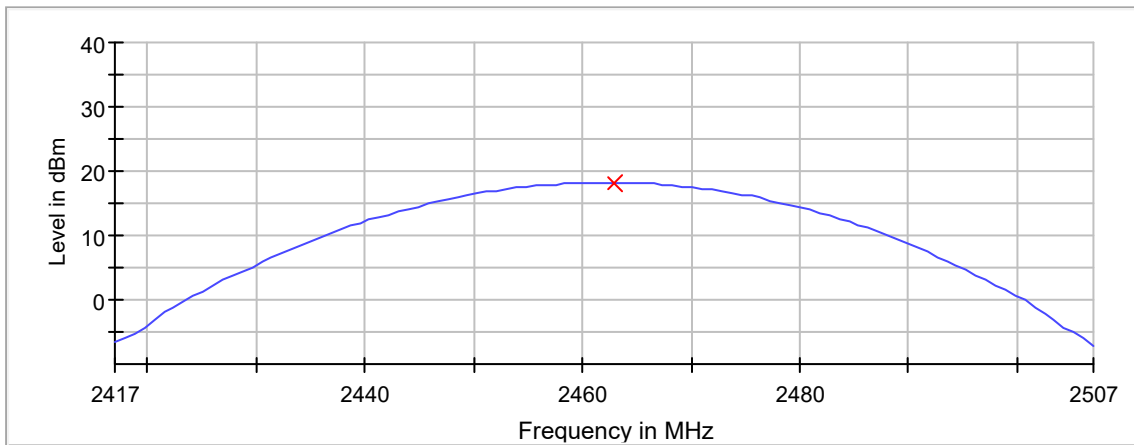
**Peak Conducted Output Power**

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/6/2023 12:28:30 PM  
 Notes : None

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2462MHz
Result	Output Power = 67.61mW (18.3dBm)
Notes	None

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2462.000000	18.3	30.0	PASS

Peak Power



— Connector 1      × Peak Connector 1

**Peak Conducted Output Power**

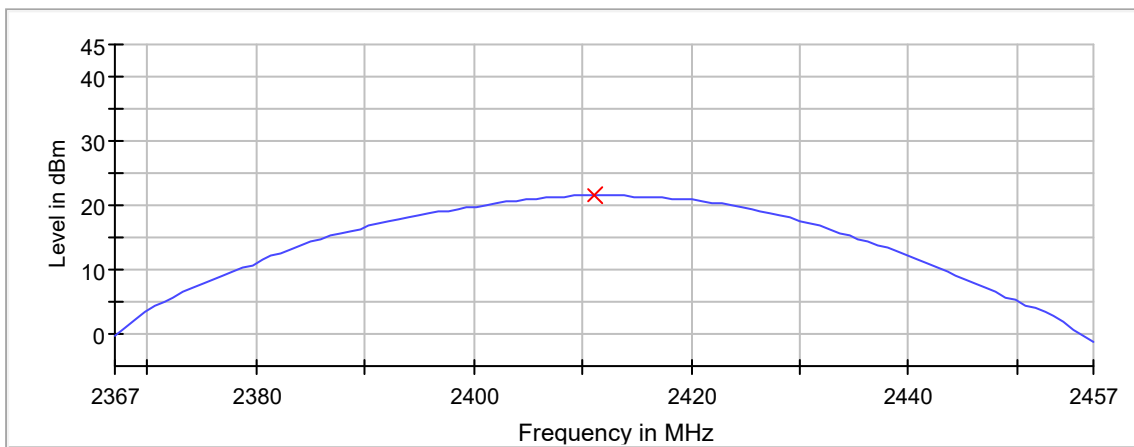
Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/6/2023 12:29:24 PM  
 Notes : None



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2412MHz
Result	Output Power = 141.25mW (21.5dBm)
Notes	None

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2412.000000	21.5	30.0	PASS

Peak Power



— Connector 1      × Peak Connector 1

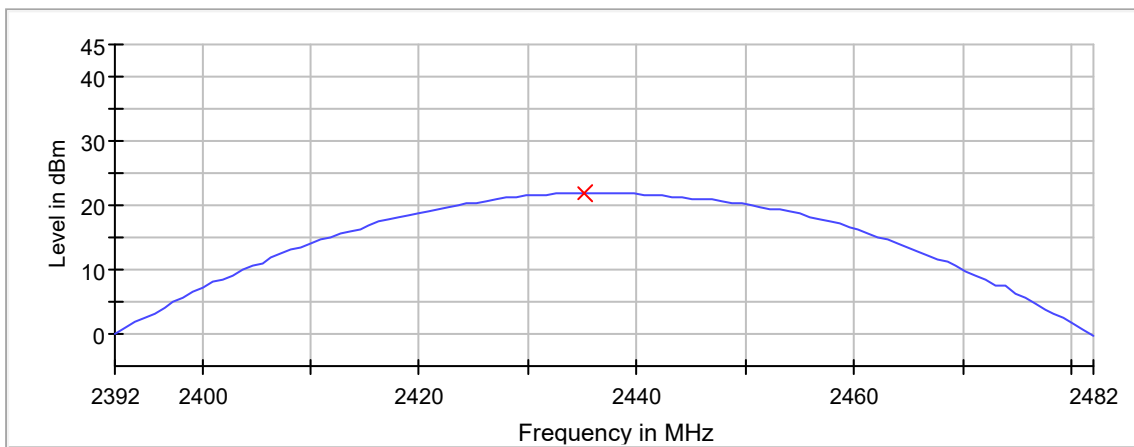
**Peak Conducted Output Power**

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/6/2023 12:46:37 PM  
 Notes : None

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2437MHz
Result	Output Power = 154.88mW (21.9dBm)
Notes	None

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2437.000000	21.9	30.0	PASS

Peak Power



— Connector 1      × Peak Connector 1

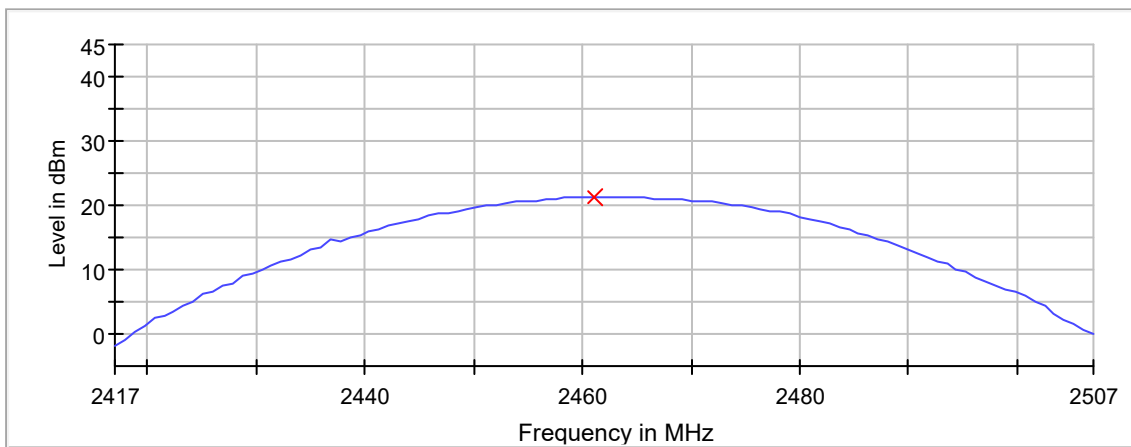
**Peak Conducted Output Power**

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/6/2023 12:48:38 PM  
 Notes : None

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2462MHz
Result	Output Power = 131.83mW (21.2dBm)
Notes	None

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2462.000000	21.2	30.0	PASS

Peak Power



— Connector 1      × Peak Connector 1

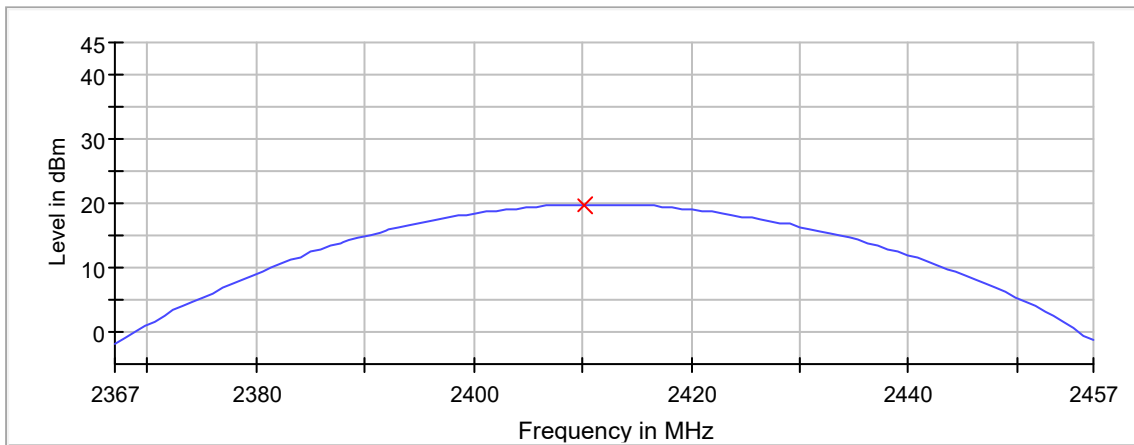
**Peak Conducted Output Power**

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/6/2023 12:49:06 PM  
 Notes : None

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2412MHz
Result	Output Power = 95.5mW (19.8dBm)
Notes	None

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2412.000000	19.8	30.0	PASS

Peak Power



— Connector 1      × Peak Connector 1

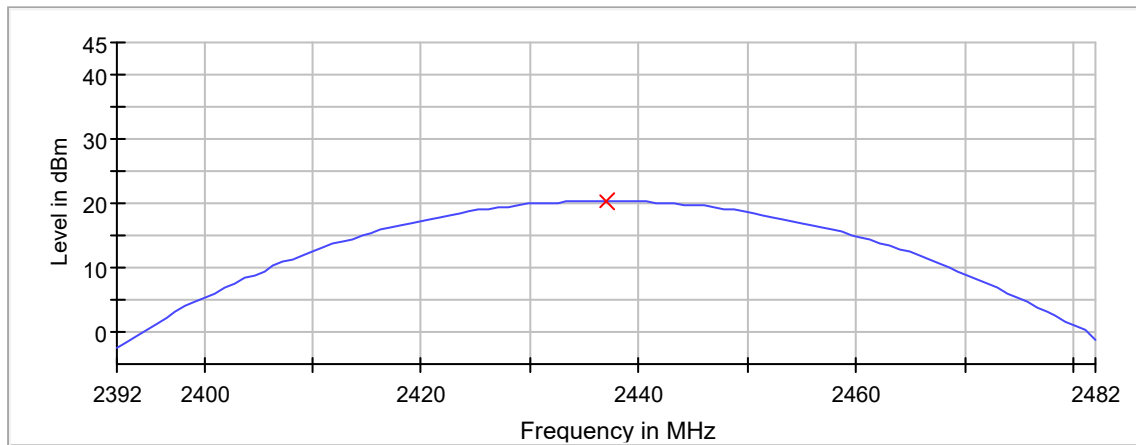
**Peak Conducted Output Power**

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/6/2023 12:53:39 PM  
 Notes : None

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2437MHz
Result	Output Power = 107.15W (20.3dBm)
Notes	None

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2437.000000	20.3	30.0	PASS

Peak Power



— Connector 1      × Peak Connector 1

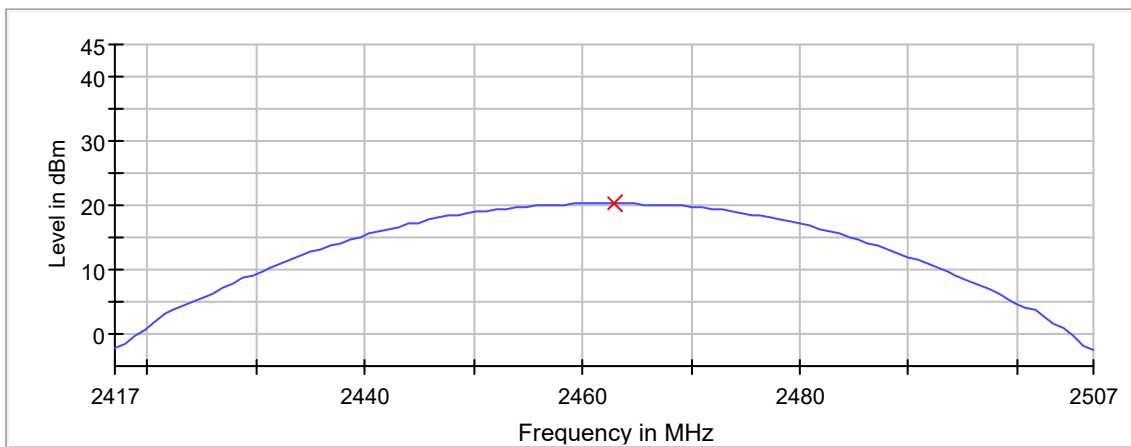
**Peak Conducted Output Power**

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/6/2023 12:56:00 PM  
 Notes : None

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2462MHz
Result	Output Power = 104.71mW (20.2dBm)
Notes	None

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2462.000000	20.2	30.0	PASS

Peak Power



— Connector 1      × Peak Connector 1

**Peak Conducted Output Power**

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X4BMC  
 Serial Number : NA  
 Mode : Tx  
 Parameters : Conducted Output Power  
 Date : 11/6/2023 12:56:53 PM  
 Notes : None



21. Effective Isotropic Radiated Power (EIRP)

EUT Information	
Manufacturer	The Chamberlain Group LLC
Product	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx

Test Setup Details	
Setup Format	Tabletop
Height of Support	N/A
Measurement Method	Radiated
Type of Test Site	Semi-Anechoic Chamber
Test Site Used	R21F
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

Requirements
The output power shall not exceed 4W (36dBm).

Procedure
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FOR FREQUENCY HOPPING SYSTEMS

The EUT was placed on the non-conductive stand and set to transmit. A bilog antenna was placed at a test distance of 3 meters from the EUT. The resolution bandwidth (RBW) of the spectrum analyzer was set to greater than the 20dB bandwidth. The span was set to approximately 5 times the 20 dB bandwidth. The EUT was maximized for worst case emissions (or maximum output power) at the measuring antenna. The maximum meter reading was recorded. The peak power output was measured for the low, middle, and high hopping frequencies.

The equivalent power was determined from the field intensity levels measured at 3 meters using the substitution method. To determine the emission power, a dipole antenna (double ridged waveguide antenna for all measurements above 1GHz) was then set in place of the EUT and connected to a calibrated signal generator. The output of the signal generator was adjusted to match the received level at the spectrum analyzer. The signal level was recorded. The reading was then corrected to compensate for cable loss (and antenna gain for all measurements above 1GHz), as required. The peak power output was calculated for low, middle, and high hopping frequencies.

FOR DTS SYSTEMS

The EUT was placed on the non-conductive stand and set to transmit. A double ridged waveguide antenna was placed at a test distance of 3 meters from the EUT. The resolution bandwidth (RBW) of the spectrum analyzer was set to greater than the 6dB bandwidth. The EUT was maximized for worst case emissions (or maximum output power) at the measuring antenna. The maximum meter reading was recorded. The peak power output was measured for the low, middle, and high channels.

The equivalent power was determined from the field intensity levels measured at 3 meters using the substitution method. To determine the emission power, a dipole antenna (double ridged waveguide antenna for all measurements above 1GHz) was then set in place of the EUT and connected to a calibrated signal generator. The output of the signal generator was adjusted to match the received level at the spectrum analyzer. The signal level was recorded. The reading was then corrected to compensate for cable loss (and antenna gain for all measurements above 1GHz), as required. The peak power output was calculated for low, middle, and high hopping frequencies.

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 900MHz FHSS
Result	Max EIRP = 22.7mW (13.56dBm)
Notes	None

Freq (MHz)	Ant Pol	Wide BW Meter Reading (dBµV)	Matched Sig Gen Reading (dBm)	Equivalent Antenna Gain (dB)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
902.25	H	83.81	11.82	2.15	1.63	12.34	36.00	-23.66
	V	80.57	9.64	2.15	1.63	10.16	36.00	-25.84
914.75	H	82.80	10.62	2.15	1.64	11.13	36.00	-24.87
	V	75.16	9.85	2.15	1.64	10.36	36.00	-25.64
926.75	H	79.99	13.06	2.15	1.65	13.56	36.00	-22.44
	V	76.84	8.65	2.15	1.65	9.15	36.00	-26.85

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – BLE
Result	Max EIRP = 4.83mW (6.84dBm)
Notes	None

Freq (MHz)	Ant Pol	Wide BW Meter Reading (dBμV)	Matched Sig Gen Reading (dBm)	Equivalent Antenna Gain (dB)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2402.00	H	66.81	4.10	5.25	2.75	6.60	36.00	-29.40
	V	60.51	-1.70	5.25	2.75	0.80	36.00	-35.20
2440.00	H	66.42	4.40	5.21	2.77	6.84	36.00	-29.16
	V	59.27	-3.70	5.21	2.77	-1.26	36.00	-37.26
2480.00	H	65.09	3.20	5.39	2.80	5.79	36.00	-30.21
	V	59.94	-2.00	5.39	2.80	0.59	36.00	-35.41

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Result	Max EIRP = 225.9mW (23.54dBm)
Notes	None

Freq (MHz)	Ant Pol	Wide BW Meter Reading (dBμV)	Matched Sig Gen Reading (dBm)	Equivalent Antenna Gain (dB)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2412.00	H	83.68	20.90	5.24	3.44	22.70	36.00	-13.30
	V	75.23	13.10	5.24	3.44	14.90	36.00	-21.10
2437.00	H	83.10	21.10	5.21	2.77	23.54	36.00	-12.46
	V	75.00	12.10	5.21	2.77	14.54	36.00	-21.46
2462.00	H	82.73	20.80	5.19	2.79	23.20	36.00	-12.80
	V	76.37	14.60	5.19	2.79	17.00	36.00	-19.00

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Result	Max EIRP = 457mW (26.6dBm)
Notes	None

Freq (MHz)	Ant Pol	Wide BW Meter Reading (dBμV)	Matched Sig Gen Reading (dBm)	Equivalent Antenna Gain (dB)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2412.00	H	82.95	20.20	5.24	2.76	22.69	36.00	-13.31
	V	78.98	16.90	5.24	2.76	19.39	36.00	-16.61
2437.00	H	83.82	21.80	5.21	2.77	24.24	36.00	-11.76
	V	81.93	19.00	5.21	2.77	21.44	36.00	-14.56
2462.00	H	86.14	24.20	5.19	2.79	26.60	36.00	-9.40
	V	79.46	17.60	5.19	2.79	20.00	36.00	-16.00



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Result	Max EIRP = 500mW (26.99dBm)
Notes	None

Freq (MHz)	Ant Pol	Wide BW Meter Reading (dBμV)	Matched Sig Gen Reading (dBm)	Equivalent Antenna Gain (dB)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2412.00	H	87.29	24.50	5.24	2.76	26.99	36.00	-9.01
	V	79.80	17.70	5.24	2.76	20.19	36.00	-15.81
2437.00	H	85.10	23.10	5.21	2.77	25.54	36.00	-10.46
	V	79.33	16.40	5.21	2.77	18.84	36.00	-17.16
2462.00	H	85.30	23.40	5.19	2.79	25.80	36.00	-10.20
	V	78.67	16.90	5.19	2.79	19.30	36.00	-16.70

## 22. Duty Cycle Factor Measurements

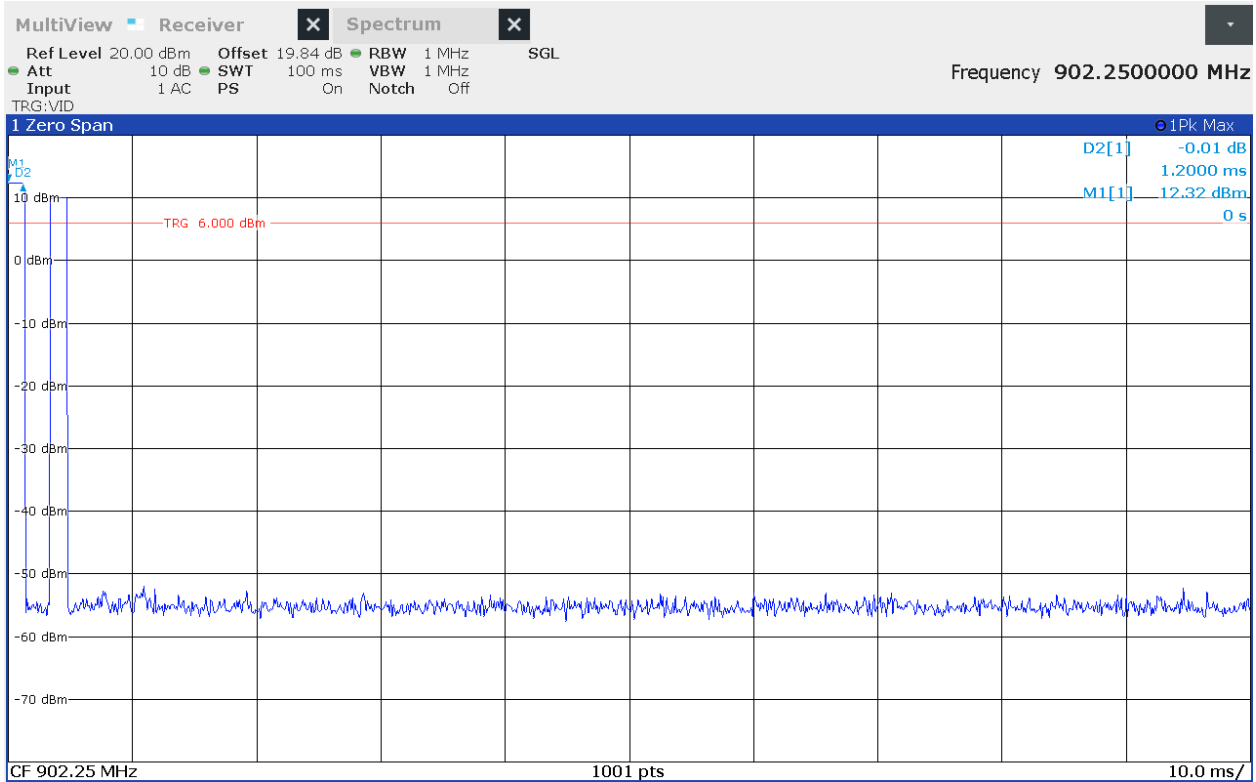
EUT Information	
Manufacturer	The Chamberlain Group LLC
Product	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx

Test Setup Details	
Setup Format	Tabletop
Height of Support	N/A
Measurement Method	Antenna Conducted
Type of Test Site	Elite Test Bench
Type of Antennas Used	N/A
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

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 pulse modulation signal.</p> <p>With the transmitter set up to transmit for maximum pulse density, 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 with 10msec/div. The amplitude settings are adjusted so that the on/off transitions clear the fourth division from the bottom of the display. The markers are set at the beginning and end of the “on-time”. 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 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 <math>\left(\frac{On\ Time}{Word\ Period}\right)</math>, where <math>Word\ Period = (On\ Time + Off\ Time)</math>.</p>

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 900MHz Hopping
Frequency Tested	902.25MHz
Result	On Time = 2.4msec
Notes	None

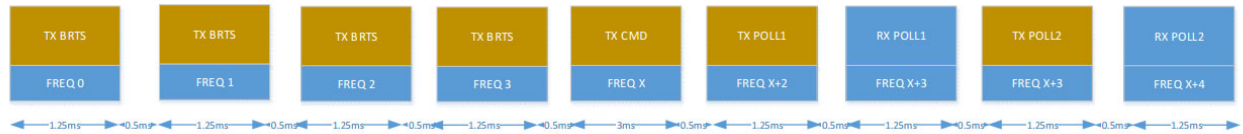


### Duty Cycle Measurements

Manufacturer : The Chamberlain Group LLC  
 Model Number : JHDC22X1BMC  
 Serial Number : NA  
 Mode : Duty Cycle  
 Parameters : Conducted Output Power  
 Date : 11/9/2023 1:40:01 PM  
 Notes : None

$$\text{Duty Cycle Factor} = 20 \log \left( \frac{2.4\text{ms}}{100\text{ms}} \right) = -32.4\text{dB}$$

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 900MHz Hopping
Notes	Worst Case as Provided by The Chamberlain Group LLC



Per the schedule above, each frequency on the network packet repeats after a duration of 87.5ms. The command packet frequency is picked at random.

Maximum transmit time on any frequency in a 100ms period = 2 network packets + 1 command packet  
 = 1.25ms\*2 + 3ms  
 = 5.5ms

**Modulation Correction Factor = 20 log (5.5/100) = -25.2 dB (This is the systems worst case condition)**

**MAXIMUM TRANSMIT TIME IN 20 seconds:**

Failed broadcast transmissions that result in point-point retries to all slaves is the worst case total transmit time. Total transmit time on 1 frequency in 20 seconds = 118.7826ms

### 23. Case Spurious Radiated Emissions

EUT Information	
Manufacturer	The Chamberlain Group LLC
Product	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx

Test Setup Details	
Setup Format	Tabletop
Height of Support	N/A
Type of Test Site	Semi-Anechoic Chamber
Test Site Used	R21F
Type of Antennas Used	Below 1GHz: Bilog (or equivalent) Above 1GHz
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**

Radiated measurements were performed in a 32ft. x 20ft. x 14ft. high shielded enclosure. 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.

Preliminary radiated emissions tests were 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 18.0GHz was investigated using a peak detector function.

The final open field emission tests were then manually performed over the frequency range of 30MHz to 18.0GHz.

1) For all harmonics not in the restricted bands, the following procedure was used:

- a) The field strength of the fundamental was measured using a double ridged waveguide antenna. The waveguide antenna was positioned at a 3-meter distance from the EUT. The EUT was placed on a 1.5-meter-high non-conductive stand. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer.
- b) The field strengths of all of the harmonics not in the restricted band were then measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3-meter distance from the EUT. The EUT was placed on a 1.5-meter-high non-conductive stand. A peak detector with a resolution bandwidth of 100kHz was used on the spectrum analyzer.
- c) To ensure that maximum or worst-case emission levels at the fundamental and harmonics were measured, the following steps were taken when measuring the fundamental emissions and the spurious emissions:
  - 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.
  - iv) In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer, the measuring antenna was not raised or lowered to ensure maximized readings. Instead, the EUT was rotated through all axis to ensure the maximum readings were recorded for the EUT.
- d) All harmonics not in the restricted bands must be at least 20dB below levels measured at the fundamental. However, attenuation below the general limits specified in §15.209(a) is not required.

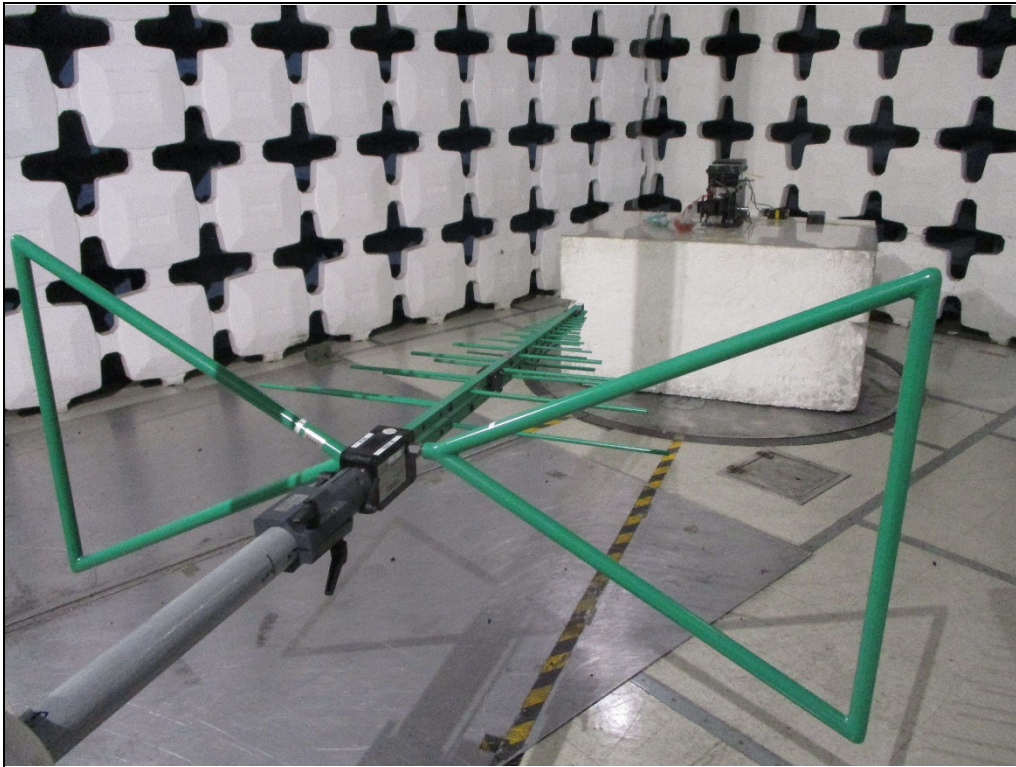
2) For all emissions in the restricted bands, the following procedure was used:

- a) The field strengths of all emissions below 1GHz were measured using a bi-log antenna. The bi-log antenna was positioned at a 3-meter distance from the EUT. 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.
- b) The field strengths of all emissions above 1GHz were measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3-meter distance from the EUT. The EUT was placed on a 1.5-meter-high non-conductive stand. A peak detector with a resolution bandwidth of 1MHz was used on the spectrum analyzer.
- c) To ensure that maximum or worst-case emission levels were measured, the following steps were taken when taking all measurements:
  - 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

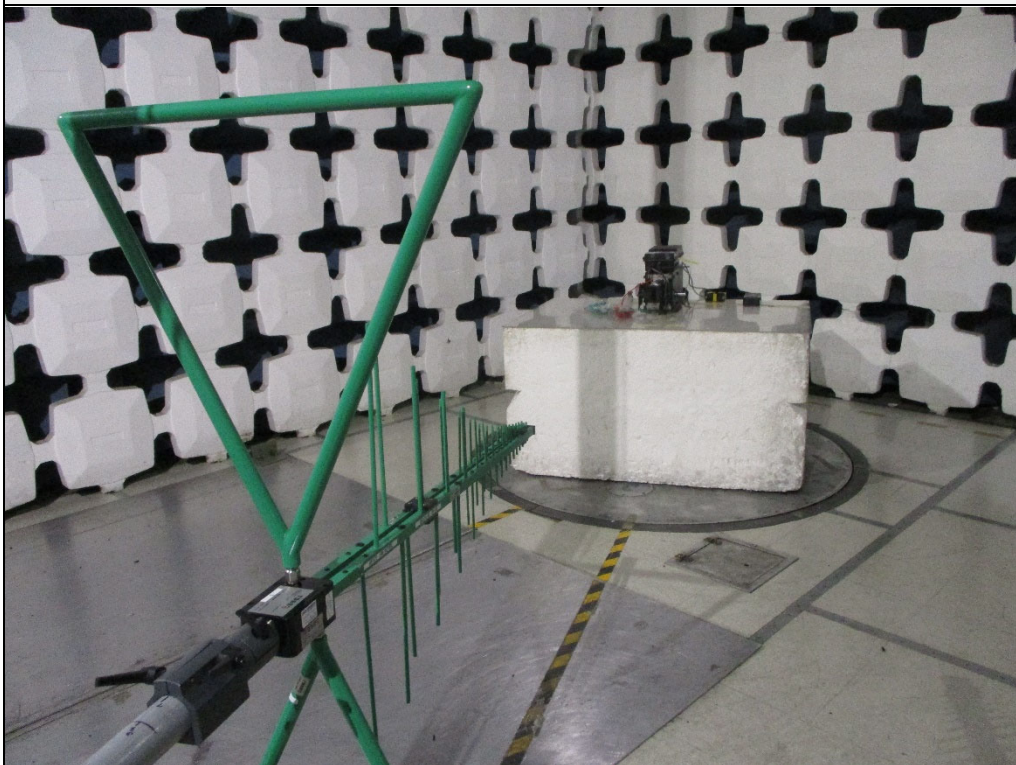
were measured.

- iii) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.
- iv) In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer, the measuring antenna was not raised or lowered to ensure maximized readings. Instead, the EUT was rotated through all axis to ensure the maximum readings were recorded for the EUT.
- d) For all radiated emissions measurements below 1GHz, if the peak reading is below the limits listed in §15.209(a), no further measurements are required. If, however, the peak readings exceed the limits listed in §15.209(a), then the emissions are remeasured using a quasi-peak detector.
- e) For all radiated emissions measurements above 1GHz, the peak readings must comply with the §15.35(b) limits. §15.35(b) states that when average radiated emissions measurements are specified, there also is a limit on the peak level of the radiated emissions. The limit on the peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. Therefore, all peak readings above 1GHz must be no greater than 20dB above the limits specified in §15.209(a).
- f) Next, for all radiated emissions measurements above 1GHz, the resolution bandwidth was set to 1MHz. The analyzer was set to linear mode with a 10Hz video bandwidth in order to simulate an average detector. An average reading was taken.





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



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





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



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

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx
Frequency Tested	902.25MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2706.75	H	68.63		4.57	33.56	-39.51	67.25	2304.13	5000.00	-6.73
	V	68.74		4.57	33.56	-39.51	67.36	2333.50	5000.00	-6.62
3609.00	H	65.29		5.42	34.40	-38.85	66.25	2054.21	5000.00	-7.73
	V	66.44		5.42	34.40	-38.85	67.40	2345.02	5000.00	-6.58
4511.25	H	51.56		5.63	35.64	-38.89	53.94	497.46	5000.00	-20.04
	V	51.30		5.63	35.64	-38.89	53.68	482.79	5000.00	-20.30
5413.50	H	56.76		5.93	36.63	-39.03	60.29	1033.64	5000.00	-13.69
	V	56.64		5.93	36.63	-39.03	60.17	1019.46	5000.00	-13.81
8120.25	H	50.68	Ambient	7.10	38.28	-38.99	57.08	714.44	5000.00	-16.90
	V	51.53	Ambient	7.10	38.28	-38.99	57.93	787.89	5000.00	-16.05
9022.50	H	0.00	Ambient	7.91	39.01	-38.88	8.04	2.52	5000.00	-65.94
	V	0.00		7.91	39.01	-38.88	8.04	2.52	5000.00	-65.94

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx
Frequency Tested	902.25MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
2706.75	H	68.63		4.57	33.56	-39.51	-25.90	41.35	116.87	500.00	-12.63
	V	68.74		4.57	33.56	-39.51	-25.90	41.46	118.36	500.00	-12.52
3609.00	H	65.29		5.42	34.40	-38.85	-25.90	40.36	104.19	500.00	-13.62
	V	66.44		5.42	34.40	-38.85	-25.90	41.51	118.94	500.00	-12.47
4511.25	H	51.56		5.63	35.64	-38.89	-25.90	28.04	25.23	500.00	-25.94
	V	51.30		5.63	35.64	-38.89	-25.90	27.78	24.49	500.00	-26.20
5413.50	H	56.76		5.93	36.63	-39.03	-25.90	34.39	52.43	500.00	-19.59
	V	56.64		5.93	36.63	-39.03	-25.90	34.27	51.71	500.00	-19.71
8120.25	H	50.68	Ambient	7.10	38.28	-38.99	-25.90	31.18	36.24	500.00	-22.80
	V	51.53	Ambient	7.10	38.28	-38.99	-25.90	32.03	39.96	500.00	-21.95
9022.50	H	0.00	Ambient	7.91	39.01	-38.88	-25.90	-17.86	0.13	500.00	-71.84
	V	0.00		7.91	39.01	-38.88	-25.90	-17.86	0.13	500.00	-71.84

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx
Frequency Tested	902.25MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
902.25	H	83.65		2.90	26.44	0.00	112.99	446328.96	NA	NA
	V	80.30		2.90	26.44	0.00	109.64	303497.46	NA	NA
1804.50	H	50.95		3.84	31.03	-39.77	46.06	200.90	44632.90	-46.93
	V	48.92		3.84	31.03	-39.77	44.03	159.03	44632.90	-48.96
6315.75	H	41.16		6.32	37.95	-39.02	46.41	209.19	44632.90	-46.58
	V	41.29		6.32	37.95	-39.02	46.54	212.35	44632.90	-46.45
7218.00	H	48.71		6.86	37.74	-39.01	54.31	519.19	44632.90	-38.69
	V	46.17		6.86	37.74	-39.01	51.77	387.55	44632.90	-41.23

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx
Frequency Tested	914.75MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2744.25	H	67.19		3.74	32.60	-40.17	63.35	1470.93	5000.00	-10.63
	V	67.22		3.74	32.60	-40.17	63.38	1476.02	5000.00	-10.60
3659.00	H	63.08		4.77	33.62	-39.55	61.92	1246.88	5000.00	-12.06
	V	65.78		4.77	33.62	-39.55	64.62	1701.47	5000.00	-9.36
4573.75	H	51.25		4.80	34.31	-39.72	50.64	340.50	5000.00	-23.34
	V	51.27		4.80	34.31	-39.72	50.66	341.29	5000.00	-23.32
7318.00	H	51.86		5.84	36.27	-39.63	54.35	521.53	5000.00	-19.63
	V	52.42		5.84	36.27	-39.63	54.91	556.26	5000.00	-19.07
8232.75	H	50.20		6.22	36.83	-39.52	53.74	486.22	5000.00	-20.24
	V	50.87		6.22	36.83	-39.52	54.41	525.21	5000.00	-19.57
9147.50	H	49.56	Ambient	6.31	36.68	-39.39	53.16	455.17	5000.00	-20.82
	V	52.45		6.31	36.68	-39.39	56.05	634.85	5000.00	-17.93

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx
Frequency Tested	914.75MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
2744.25	H	67.19		3.74	32.60	-40.17	-25.90	37.46	74.61	500.00	-16.52
	V	67.22		3.74	32.60	-40.17	-25.90	37.49	74.87	500.00	-16.49
3659.00	H	63.08		4.77	33.62	-39.55	-25.90	36.02	63.24	500.00	-17.96
	V	65.78		4.77	33.62	-39.55	-25.90	38.72	86.30	500.00	-15.26
4573.75	H	51.25		4.80	34.31	-39.72	-25.90	24.75	17.27	500.00	-29.23
	V	51.27		4.80	34.31	-39.72	-25.90	24.77	17.31	500.00	-29.21
7318.00	H	51.86		5.84	36.27	-39.63	-25.90	28.45	26.45	500.00	-25.53
	V	52.42		5.84	36.27	-39.63	-25.90	29.01	28.21	500.00	-24.97
8232.75	H	50.2		6.22	36.83	-39.52	-25.90	-22.36	0.08	500.00	-76.34
	V	50.87		6.22	36.83	-39.52	-25.90	28.51	26.64	500.00	-25.47
9147.50	H	49.56	Ambient	6.31	36.68	-39.39	-25.90	27.27	23.09	500.00	-26.71
	V	52.45		6.31	36.68	-39.39	-25.90	30.16	32.20	500.00	-23.82

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx
Frequency Tested	914.75MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
914.75	H	82.66		2.89	26.31	0.00	111.86	391883.32	NA	NA
	V	75.05		2.89	26.31	0.00	104.25	163176.19	NA	NA
1829.50	H	54.66		3.25	30.53	-40.11	48.33	261.01	39188.33	-43.53
	V	51.79		3.25	30.53	-40.11	45.46	187.57	39188.33	-46.40
5488.50	H	50.46		5.08	34.80	-39.44	50.90	350.74	39188.33	-40.96
	V	54.28		5.08	34.80	-39.44	54.72	544.48	39188.33	-37.14
6403.25	H	39.10		5.56	35.69	-39.54	40.82	109.87	39188.33	-51.05
	V	39.06		5.56	35.69	-39.54	40.78	109.37	39188.33	-51.09



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx
Frequency Tested	926.75MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2780.25	H	66.69		4.66	33.28	-39.46	65.16	1812.30	5000.00	-8.81
	V	67.27		4.66	33.28	-39.46	65.74	1937.45	5000.00	-8.23
3707.00	H	62.09		5.44	34.40	-38.86	63.07	1423.40	5000.00	-10.91
	V	65.19		5.44	34.40	-38.86	66.17	2033.89	5000.00	-7.81
4633.75	H	51.06		5.65	36.12	-38.93	53.90	495.54	5000.00	-20.08
	V	51.35		5.65	36.12	-38.93	54.19	512.37	5000.00	-19.79
7414.00	H	51.51		6.90	37.65	-39.01	57.06	712.71	5000.00	-16.92
	V	52.05		6.90	37.65	-39.01	57.60	758.42	5000.00	-16.38
8340.75	H	50.04		7.22	38.37	-38.96	56.67	681.49	5000.00	-17.31
	V	51.09		7.22	38.37	-38.96	57.72	769.06	5000.00	-16.26



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx
Frequency Tested	926.75MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
2780.25	H	66.69		4.66	33.28	-39.46	-25.90	39.26	91.88	500.00	-14.71
	V	67.27		4.66	33.28	-39.46	-25.90	39.84	98.23	500.00	-14.13
3707.00	H	62.09		5.44	34.40	-38.86	-25.90	37.17	72.17	500.00	-16.81
	V	65.19		5.44	34.40	-38.86	-25.90	40.27	103.12	500.00	-13.71
4633.75	H	51.06		5.65	36.12	-38.93	-25.90	28.00	25.12	500.00	-25.98
	V	51.35		5.65	36.12	-38.93	-25.90	28.29	25.98	500.00	-25.69
7414.00	H	51.51		6.90	37.65	-39.01	-25.90	31.16	36.13	500.00	-22.82
	V	52.05		6.90	37.65	-39.01	-25.90	31.70	38.45	500.00	-22.28
8340.75	H	50.04		7.22	38.37	-38.96	-25.90	30.77	34.55	500.00	-23.21
	V	51.09		7.22	38.37	-38.96	-25.90	31.82	38.99	500.00	-22.16

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx
Frequency Tested	926.75MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
926.75	H	79.53		2.94	26.59	0.00	109.05	283606.18	NA	NA
	V	76.49		2.94	26.59	0.00	106.01	199855.31	NA	NA
1853.50	H	54.78		3.88	31.49	-39.72	50.43	332.19	28360.62	-38.63
	V	54.20		3.88	31.49	-39.72	49.85	310.73	28360.62	-39.21
5560.50	H	52.27		5.99	37.16	-39.03	56.38	659.41	28360.62	-32.67
	V	54.11		5.99	37.16	-39.03	58.22	815.00	28360.62	-30.83
6487.25	H	39.36		6.35	37.67	-39.02	44.37	165.33	28360.62	-44.69
	V	38.81		6.35	37.67	-39.02	43.82	155.19	28360.62	-45.24
9267.50	H	43.76		8.07	39.03	-38.85	52.01	398.75	28360.62	-37.04
	V	47.25		8.07	39.03	-38.85	55.50	595.93	28360.62	-33.55

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx - BLE
Frequency Tested	2402MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dB $\mu$ V)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dB $\mu$ V/m)	Peak Total at 3m ( $\mu$ V/m)	Peak Limit at 3m ( $\mu$ V/m)	Margin (dBm)
4804.00	H	49.69	Ambient	5.69	35.92	-38.98	52.31	412.73	5000.00	-21.67
	V	49.51		5.69	35.92	-38.98	52.13	404.26	5000.00	-21.85
12010.00	H	50.68	Ambient	8.62	41.08	-38.58	61.81	1231.77	5000.00	-12.17
	V	49.63	Ambient	8.62	41.08	-38.58	60.76	1091.52	5000.00	-13.22

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx - BLE
Frequency Tested	2402MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4804.00	H	37.75	Ambient	5.69	35.92	-38.98	0.00	40.37	104.39	500.00	-13.61
	V	37.92		5.69	35.92	-38.98	0.00	40.54	106.45	500.00	-13.44
12010.00	H	38.48	Ambient	8.62	41.08	-38.58	0.00	49.61	302.36	500.00	-4.37
	V	37.76	Ambient	8.62	41.08	-38.58	0.00	48.89	278.31	500.00	-5.09

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx - BLE
Frequency Tested	2402MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2402.00	H	65.53		4.28	32.49	0.00	102.30	130386.75	NA	NA
	V	60.10		4.28	32.49	0.00	96.87	69780.40	NA	NA
7206.00	H	37.40	Ambient	6.86	37.74	-39.01	42.99	141.17	13038.67	-39.31
	V	37.45	Ambient	6.86	37.74	-39.01	43.04	141.98	13038.67	-39.26
9608.00	H	40.22		8.20	39.18	-38.82	48.79	274.99	13038.67	-33.52
	V	41.30		8.20	39.18	-38.82	49.87	311.40	13038.67	-32.44

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx - BLE
Frequency Tested	2440MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4880.00	H	49.89	Ambient	5.74	35.79	-39.01	52.41	417.56	5000.00	-21.56
	V	50.24		5.74	35.79	-39.01	52.76	434.73	5000.00	-21.21
7320.00	H	48.31	Ambient	6.88	37.70	-39.01	53.88	494.21	5000.00	-20.10
	V	48.75	Ambient	6.88	37.70	-39.01	54.32	519.89	5000.00	-19.66
12200.00	H	48.95	Ambient	8.94	41.10	-38.53	60.46	1054.40	5000.00	-13.52
	V	49.54	Ambient	8.94	41.10	-38.53	61.05	1128.51	5000.00	-12.93

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx - BLE
Frequency Tested	2440MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4880.00	H	37.91	Ambient	5.74	35.79	-39.01	0.00	40.43	105.13	500.00	-13.54
	V	37.61		5.74	35.79	-39.01	0.00	40.13	101.56	500.00	-13.84
7320.00	H	36.83	Ambient	6.88	37.70	-39.01	0.00	42.40	131.80	500.00	-11.58
	V	36.28	Ambient	6.88	37.70	-39.01	0.00	41.85	123.71	500.00	-12.13
12200.00	H	37.36	Ambient	8.94	41.10	-38.53	0.00	48.87	277.65	500.00	-5.11
	V	37.66	Ambient	8.94	41.10	-38.53	0.00	49.17	287.41	500.00	-4.81

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx - BLE
Frequency Tested	2440MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2440.00	H	65.50		4.31	32.74	0.00	102.55	134091.31	NA	NA
	V	56.30		4.31	32.74	0.00	93.35	46494.40	NA	NA
9760.00	H	40.70		8.24	39.27	-38.80	49.41	295.55	13409.13	-33.14
	V	40.31		8.24	39.27	-38.80	49.02	282.57	13409.13	-33.53



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx - BLE
Frequency Tested	2480MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4960.00	H	49.41	Ambient	5.79	36.12	-39.65	51.67	383.25	5000.00	-22.31
	V	50.69	Ambient	5.79	36.12	-39.65	52.95	444.11	5000.00	-21.03
7440.00	H	48.32	Ambient	6.91	37.66	-39.56	53.34	464.27	5000.00	-20.64
	V	48.60	Ambient	6.91	37.66	-39.56	53.62	479.48	5000.00	-20.36
12400.00	H	48.65	Ambient	9.40	41.18	-38.76	60.46	1054.76	5000.00	-13.52
	V	48.69	Ambient	9.40	41.18	-38.76	60.50	1059.63	5000.00	-13.48

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx - BLE
Frequency Tested	2480MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4960.00	H	37.72	Ambient	5.79	36.12	-39.65	0.00	39.98	99.77	500.00	-14.00
	V	37.75	Ambient	5.79	36.12	-39.65	0.00	40.01	100.11	500.00	-13.97
7440.00	H	36.88	Ambient	6.91	37.66	-39.56	0.00	41.90	124.38	500.00	-12.08
	V	37.11	Ambient	6.91	37.66	-39.56	0.00	42.13	127.72	500.00	-11.85
12400.00	H	36.76	Ambient	9.40	41.18	-38.76	0.00	48.57	268.32	500.00	-5.41
	V	35.46	Ambient	9.40	41.18	-38.76	0.00	47.27	231.02	500.00	-6.71

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx - BLE
Frequency Tested	2480MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2480.00	H	64.30		4.33	32.95	0.00	101.58	119955.23	NA	NA
	V	58.94		4.33	32.95	0.00	96.22	64717.12	NA	NA
9920.00	H	41.24		8.29	39.43	-39.23	49.73	306.42	11995.52	-31.85
	V	39.75		8.29	39.43	-39.23	48.24	258.12	11995.52	-33.34

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2412MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4824.00	H	56.36		4.85	35.83	-38.99	58.05	799.20	5000.00	-15.93
	V	57.52		4.85	35.83	-38.99	59.21	913.39	5000.00	-14.77
12060.00	H	49.52	Ambient	8.00	41.14	-38.56	60.09	1010.69	5000.00	-13.89
	V	49.71	Ambient	8.00	41.14	-38.56	60.28	1033.04	5000.00	-13.70

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2412MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4824.00	H	50.46		4.85	35.83	-38.99	0.00	52.15	405.19	500.00	-1.83
	V	52.01		4.85	35.83	-38.99	0.00	53.70	484.34	500.00	-0.28
12060.00	H	27.82	Ambient	8.00	41.14	-38.56	0.00	38.39	83.10	500.00	-15.59
	V	27.90	Ambient	8.00	41.14	-38.56	0.00	38.47	83.87	500.00	-15.51

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2412MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2412.00	H	71.03		3.44	32.56	0.00	107.03	224712.66	NA	NA
	V	62.77		3.44	32.56	0.00	98.77	86821.55	NA	NA
7236.00	H	38.97	Ambient	6.12	37.74	-39.01	43.83	155.39	22471.27	-43.20
	V	38.38	Ambient	6.12	37.74	-39.01	43.24	145.18	22471.27	-43.79
9648.00	H	38.52		6.83	39.14	-38.82	45.68	192.29	22471.27	-41.35
	V	39.42		6.83	39.14	-38.82	46.58	213.28	22471.27	-40.45

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2437MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dB $\mu$ V)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dB $\mu$ V/m)	Peak Total at 3m ( $\mu$ V/m)	Peak Limit at 3m ( $\mu$ V/m)	Margin (dBm)
4874.00	H	56.20		6.57	35.78	-39.00	59.55	949.16	5000.00	-14.43
	V	53.43		6.57	35.78	-39.00	56.78	689.98	5000.00	-17.20
7311.00	H	51.29		7.68	37.71	-39.01	57.67	765.08	5000.00	-16.31
	V	50.52		7.68	37.71	-39.01	56.90	700.17	5000.00	-17.08
12185.00	H	49.49	Ambient	9.38	41.11	-38.53	61.45	1182.15	5000.00	-12.53
	V	47.94	Ambient	9.38	41.11	-38.53	59.90	988.95	5000.00	-14.08

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2437MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4874.00	H	50.17		6.57	35.78	-39.00	0.00	53.52	474.06	500.00	-0.46
	V	44.42		6.57	35.78	-39.00	0.00	47.77	244.53	500.00	-6.21
7311.00	H	39.78		7.68	37.71	-39.01	0.00	46.16	203.33	500.00	-7.82
	V	39.40		7.68	37.71	-39.01	0.00	45.78	194.63	500.00	-8.20
12185.00	H	36.57	Ambient	9.38	41.11	-38.53	0.00	48.53	267.10	500.00	-5.45
	V	36.49	Ambient	9.38	41.11	-38.53	0.00	48.45	264.65	500.00	-5.53



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2437MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2437.00	H	70.60		4.30	32.72	0.00	107.63	240618.72	NA	NA
	V	62.18		4.30	32.72	0.00	99.21	91270.29	NA	NA
9748.00	H	40.60	0.00	8.37	39.26	-38.81	49.42	295.70	24061.87	-38.21
	V	40.59		8.37	39.26	-38.81	49.41	295.36	24061.87	-38.22

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2462MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dB $\mu$ V)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dB $\mu$ V/m)	Peak Total at 3m ( $\mu$ V/m)	Peak Limit at 3m ( $\mu$ V/m)	Margin (dBm)
4924.00	H	55.08		5.77	35.95	-39.02	57.77	773.86	5000.00	-16.21
	V	53.49		5.77	35.95	-39.02	56.18	644.41	5000.00	-17.80
7386.00	H	48.63	Ambient	6.89	37.65	-39.01	54.17	511.00	5000.00	-19.81
	V	51.26		6.89	37.65	-39.01	56.80	691.70	5000.00	-17.18
12310.00	H	49.25	Ambient	9.30	41.19	-38.50	61.24	1153.71	5000.00	-12.74
	V	49.65	Ambient	9.30	41.19	-38.50	61.64	1208.08	5000.00	-12.34

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2462MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4924.00	H	48.39		5.77	35.95	-39.02	0.00	51.08	358.23	500.00	-2.90
	V	46.46		5.77	35.95	-39.02	0.00	49.15	286.85	500.00	-4.83
7386.00	H	34.18	Ambient	6.89	37.65	-39.01	0.00	39.72	96.81	500.00	-14.26
	V	37.18		6.89	37.65	-39.01	0.00	42.72	136.75	500.00	-11.26
12310.00	H	34.72	Ambient	9.30	41.19	-38.50	0.00	46.71	216.57	500.00	-7.27
	V	34.75	Ambient	9.30	41.19	-38.50	0.00	46.74	217.32	500.00	-7.24

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2462MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2462.00	H	70.29		4.32	32.86	0.00	107.47	236426.73	NA	NA
	V	63.83		4.32	32.86	0.00	101.01	112381.96	NA	NA
9848.00	H	40.65		8.27	39.31	-38.80	49.44	296.34	23642.67	-38.04
	V	40.20		8.27	39.31	-38.80	48.99	281.38	23642.67	-38.49

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2412MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4824.00	H	54.51		5.70	35.83	-38.99	57.06	712.48	5000.00	-16.92
	V	52.23		5.70	35.83	-38.99	54.78	547.99	5000.00	-19.20
12060.00	H	49.61	Ambient	8.61	41.14	-38.56	60.79	1095.45	5000.00	-13.19
	V	49.51	Ambient	8.61	41.14	-38.56	60.69	1082.91	5000.00	-13.29

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2412MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4824.00	H	39.64		5.70	35.83	-38.99	0.00	42.19	128.61	500.00	-11.79
	V	35.01		5.70	35.83	-38.99	0.00	37.56	75.47	500.00	-16.42
12060.00	H	35.03	Ambient	8.61	41.14	-38.56	0.00	46.21	204.45	500.00	-7.77
	V	34.99	Ambient	8.61	41.14	-38.56	0.00	46.17	203.51	500.00	-7.81

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2412MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2412.00	H	60.59		4.29	32.56	0.00	97.44	74447.64	NA	NA
	V	56.64		4.29	32.56	0.00	93.49	47244.46	NA	NA
7236.00	H	37.53	Ambient	6.86	37.74	-39.01	43.13	143.37	7444.76	-34.31
	V	38.28	Ambient	6.86	37.74	-39.01	43.88	156.30	7444.76	-33.56
9648.00	H	40.03		8.21	39.14	-38.82	48.57	268.33	7444.76	-28.86
	V	38.73		8.21	39.14	-38.82	47.27	231.03	7444.76	-30.16

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2437MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dB $\mu$ V)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dB $\mu$ V/m)	Peak Total at 3m ( $\mu$ V/m)	Peak Limit at 3m ( $\mu$ V/m)	Margin (dBm)
4874.00	H	53.71		5.73	35.78	-39.00	56.22	647.04	5000.00	-17.76
	V	53.09		5.73	35.78	-39.00	55.60	602.46	5000.00	-18.38
7311.00	H	61.51		6.88	37.71	-39.01	67.09	2261.46	5000.00	-6.89
	V	58.95		6.88	37.71	-39.01	64.53	1684.18	5000.00	-9.45
12185.00	H	50.04	Ambient	8.93	41.11	-38.53	61.55	1195.64	5000.00	-12.43
	V	49.37	Ambient	8.93	41.11	-38.53	60.88	1106.88	5000.00	-13.10



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2437MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4874.00	H	38.00		5.73	35.78	-39.00	0.00	40.51	106.03	500.00	-13.47
	V	35.15		5.73	35.78	-39.00	0.00	37.66	76.37	500.00	-16.32
7311.00	H	39.51		6.88	37.71	-39.01	0.00	45.09	179.63	500.00	-8.89
	V	38.56		6.88	37.71	-39.01	0.00	44.14	161.02	500.00	-9.84
12185.00	H	37.64	Ambient	8.93	41.11	-38.53	0.00	49.15	286.81	500.00	-4.83
	V	37.63	Ambient	8.93	41.11	-38.53	0.00	49.14	286.48	500.00	-4.84

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2437MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBµV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBµV/m)	Peak Total at 3m (µV/m)	Peak Limit at 3m (µV/m)	Margin (dBm)
2437.00	H	61.91		4.30	32.72	0.00	98.94	88476.80	NA	NA
	V	59.81		4.30	32.72	0.00	96.84	69475.14	NA	NA
9748.00	H	39.81		8.24	39.26	-38.81	48.50	266.17	8847.68	-30.43
	V	39.88		8.24	39.26	-38.81	48.57	268.33	8847.68	-30.36

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2462MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dB $\mu$ V)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dB $\mu$ V/m)	Peak Total at 3m ( $\mu$ V/m)	Peak Limit at 3m ( $\mu$ V/m)	Margin (dBm)
4924.00	H	51.15		5.77	35.95	-39.02	53.84	492.22	5000.00	-20.14
	V	50.33		5.77	35.95	-39.02	53.02	447.88	5000.00	-20.96
7386.00	H	58.77		6.89	37.65	-39.01	64.31	1642.18	5000.00	-9.67
	V	56.46		6.89	37.65	-39.01	62.00	1258.69	5000.00	-11.98
12310.00	H	48.98	Ambient	9.30	41.19	-38.50	60.97	1118.40	5000.00	-13.01
	V	49.74	Ambient	9.30	41.19	-38.50	61.73	1220.66	5000.00	-12.25

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2462MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBµV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBµV/m)	Average Total at 3m (µV/m)	Average Limit at 3m (µV/m)	Margin (dB)
4924.00	H	34.74		5.77	35.95	-39.02	0.00	37.43	74.42	500.00	-16.55
	V	35.10		5.77	35.95	-39.02	0.00	37.79	77.56	500.00	-16.19
7386.00	H	37.75		6.89	37.65	-39.01	0.00	43.29	146.02	500.00	-10.69
	V	36.56		6.89	37.65	-39.01	0.00	42.10	127.33	500.00	-11.88
12310.00	H	35.65	Ambient	9.30	41.19	-38.50	0.00	47.64	241.04	500.00	-6.34
	V	36.29	Ambient	9.30	41.19	-38.50	0.00	48.28	259.47	500.00	-5.70

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2462MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2462.00	H	64.23		4.32	32.86	0.00	101.41	117678.35	NA	NA
	V	57.65		4.32	32.86	0.00	94.83	55169.19	NA	NA
9848.00	H	39.07		8.27	39.31	-38.80	47.86	247.05	11767.84	-33.56
	V	38.30		8.27	39.31	-38.80	47.09	226.09	11767.84	-34.33

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2412MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dB $\mu$ V)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dB $\mu$ V/m)	Peak Total at 3m ( $\mu$ V/m)	Peak Limit at 3m ( $\mu$ V/m)	Margin (dBm)
4824.00	H	54.57		5.70	35.83	-38.99	57.12	717.42	5000.00	-16.86
	V	55.16		5.70	35.83	-38.99	57.71	767.84	5000.00	-16.27
12060.00	H	49.75	Ambient	8.61	41.14	-38.56	60.93	1113.25	5000.00	-13.05
	V	50.25	Ambient	8.61	41.14	-38.56	61.43	1179.22	5000.00	-12.55

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2412MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4824.00	H	38.18		5.70	35.83	-38.99	0.00	40.73	108.71	500.00	-13.25
	V	40.90		5.70	35.83	-38.99	0.00	43.45	148.69	500.00	-10.53
12060.00	H	35.09	Ambient	8.61	41.14	-38.56	0.00	46.27	205.87	500.00	-7.71
	V	35.02	Ambient	8.61	41.14	-38.56	0.00	46.20	204.22	500.00	-7.78

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2412MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2412.00	H	65.94		4.29	32.56	0.00	102.79	137832.28	NA	NA
	V	57.79		4.29	32.56	0.00	94.64	53932.55	NA	NA
7236.00	H	39.37	Ambient	6.86	37.74	-39.01	44.97	177.20	13783.23	-37.82
	V	39.69	Ambient	6.86	37.74	-39.01	45.29	183.85	13783.23	-37.50
9648.00	H	38.51		8.21	39.14	-38.82	47.05	225.25	13783.23	-35.73
	V	39.59		8.21	39.14	-38.82	48.13	255.07	13783.23	-34.65



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2437MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4874.00	H	50.63		5.73	35.78	-39.00	53.14	453.87	5000.00	-20.84
	V	50.26		5.73	35.78	-39.00	52.77	434.94	5000.00	-21.21
7311.00	H	49.14	Ambient	6.88	37.71	-39.01	54.72	544.36	5000.00	-19.26
	V	49.40	Ambient	6.88	37.71	-39.01	54.98	560.90	5000.00	-19.00
12185.00	H	49.83	Ambient	8.93	41.11	-38.53	11.51	3.76	5000.00	-62.47
	V	49.28	Ambient	8.93	41.11	-38.53	60.79	1095.47	5000.00	-13.19

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2437MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBµV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBµV/m)	Average Total at 3m (µV/m)	Average Limit at 3m (µV/m)	Margin (dB)
4874.00	H	34.79		5.73	35.78	-39.00	0.00	37.30	73.27	500.00	-16.68
	V	35.10		5.73	35.78	-39.00	0.00	37.61	75.93	500.00	-16.37
7311.00	H	34.14	Ambient	6.88	37.71	-39.01	0.00	39.72	96.80	500.00	-14.26
	V	34.11	Ambient	6.88	37.71	-39.01	0.00	39.69	96.47	500.00	-14.29
12185.00	H	34.74	Ambient	8.93	41.11	-38.53	0.00	46.25	205.40	500.00	-7.73
	V	35.11	Ambient	8.93	41.11	-38.53	0.00	46.62	214.34	500.00	-7.36

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2437MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2437.00	H	62.58		4.30	32.72	0.00	99.61	95571.72	NA	NA
	V	56.50		4.30	32.72	0.00	93.53	47460.18	NA	NA
9748.00	H	39.65		8.24	39.26	-38.81	48.34	261.32	9557.17	-31.26
	V	39.35		8.24	39.26	-38.81	48.04	252.44	9557.17	-31.56

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2462MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4924.00	H	51.35		5.77	35.95	-39.02	54.04	503.69	5000.00	-19.94
	V	50.65		5.77	35.95	-39.02	53.34	464.69	5000.00	-20.64
7386.00	H	49.18	Ambient	6.89	37.65	-39.01	54.72	544.40	5000.00	-19.26
	V	49.37	Ambient	6.89	37.65	-39.01	54.91	556.44	5000.00	-19.07
12310.00	H	49.14	Ambient	9.30	41.19	-38.50	61.13	1139.19	5000.00	-12.85
	V	49.33	Ambient	9.30	41.19	-38.50	61.32	1164.38	5000.00	-12.66

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2462MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4924.00	H	34.88		5.77	35.95	-39.02	0.00	37.57	75.62	500.00	-16.41
	V	35.10		5.77	35.95	-39.02	0.00	37.79	77.56	500.00	-16.19
7386.00	H	34.47	Ambient	6.89	37.65	-39.01	0.00	40.01	100.10	500.00	-13.97
	V	34.42	Ambient	6.89	37.65	-39.01	0.00	39.96	99.52	500.00	-14.02
12310.00	H	34.87	Ambient	9.30	41.19	-38.50	0.00	46.86	220.34	500.00	-7.12
	V	34.83	Ambient	9.30	41.19	-38.50	0.00	46.82	219.33	500.00	-7.16

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2462MHz
Test Dates	11/7/2023 through 11/9/2023
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2462.00	H	62.82		4.32	32.86	0.00	100.00	100045.28	NA	NA
	V	56.71		4.32	32.86	0.00	93.89	49510.42	NA	NA
9848.00	H	38.17		8.27	39.31	-38.80	46.96	222.74	10004.53	-33.05
	V	38.94		8.27	39.31	-38.80	47.73	243.38	10004.53	-32.28

## 24. Power Spectral Density

EUT Information	
Manufacturer	The Chamberlain Group LLC
Product	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx

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

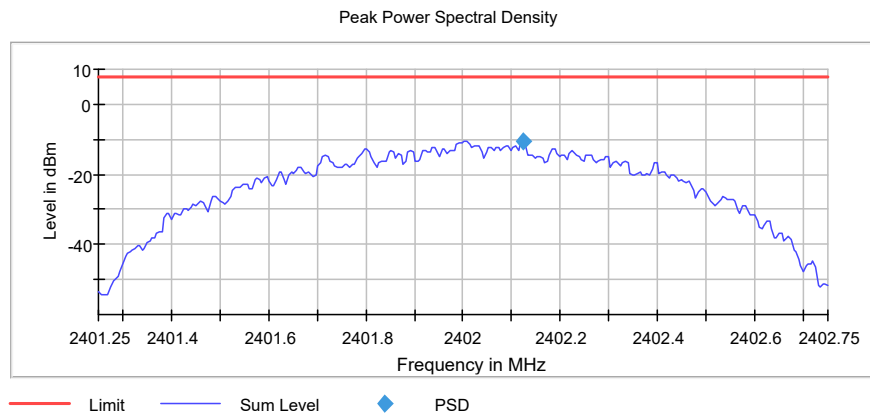
Measurement Uncertainty	
Measurement Type	Expanded Measurement Uncertainty
Radiated disturbance (electric field strength on an open area test site or alternative test site) (30 MHz – 1000 MHz)	4.3
Radiated disturbance (electric field strength on an open area test site or alternative test site) (1 GHz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

Requirement
The power spectral density from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

Procedure
<ol style="list-style-type: none"> <li>1) The antenna port of the EUT was connected to the spectrum analyzer through a 20dB pad.</li> <li>2) To determine the power spectral density, the following spectrum analyzer settings were used:               <ol style="list-style-type: none"> <li>a) Center Frequency = Transmit Frequency</li> <li>b) Span = 1.5× the DTS (6dB) bandwidth</li> <li>c) Resolution Bandwidth (RBW) = 3kHz ≤ RBW ≤ 100kHz</li> <li>d) Sweep time = Auto</li> <li>e) Detector = Peak</li> <li>f) Trace Function = Max-Hold</li> </ol> </li> <li>3) A display line was then placed on the corresponding +8dBm level.</li> <li>4) The analyzers display was then screenshot and saved.</li> </ol>

Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – BLE
Frequency Tested	2402MHz
Result	PSD = -10.482dBm
Notes	None

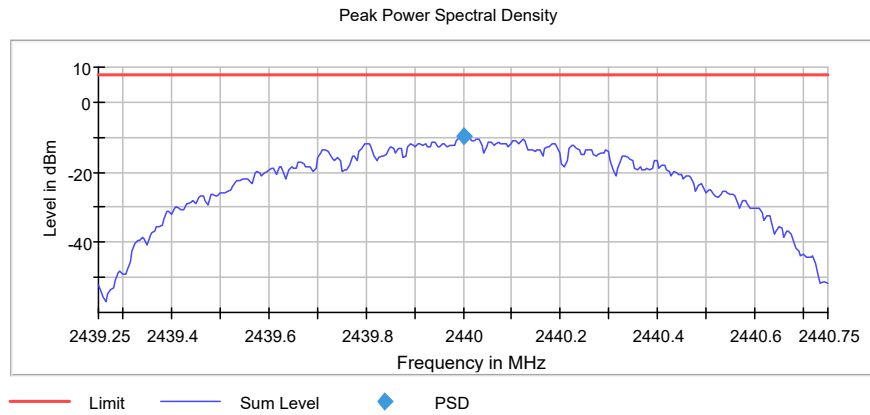
DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2402.000000	2402.122910	-10.482	8.0	PASS





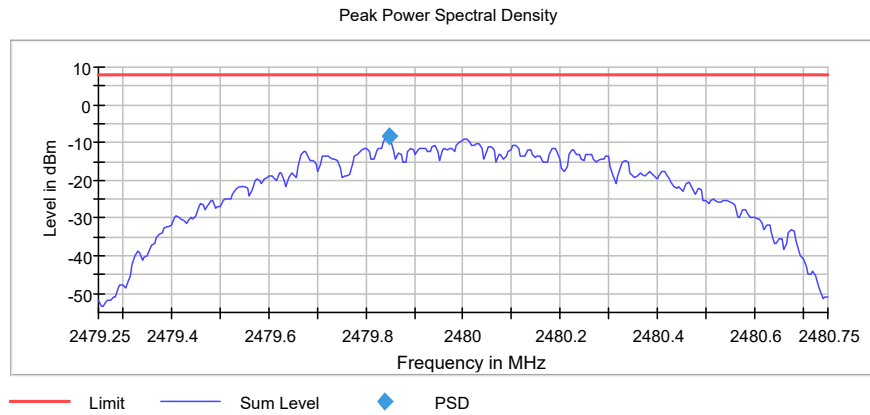
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – BLE
Frequency Tested	2440MHz
Result	PSD = -9.553dBm
Notes	None

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2440.000000	2440.002508	-9.553	8.0	PASS



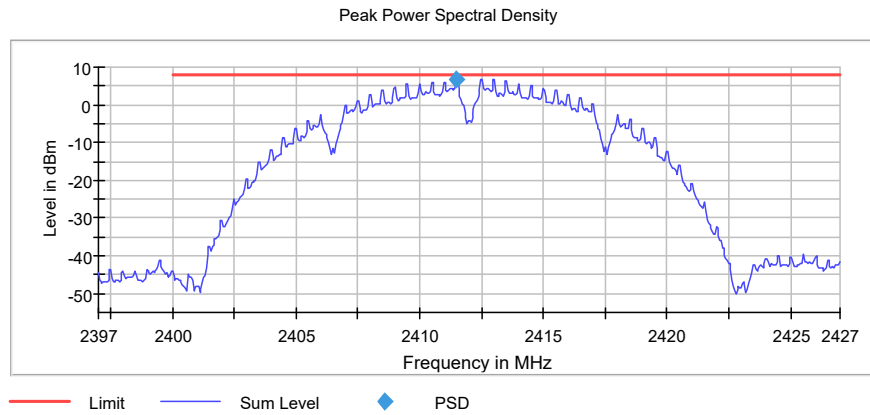
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – BLE
Frequency Tested	2480MHz
Result	PSD = -8.273dBm
Notes	None

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2480.000000	2479.846990	-8.273	8.0	PASS



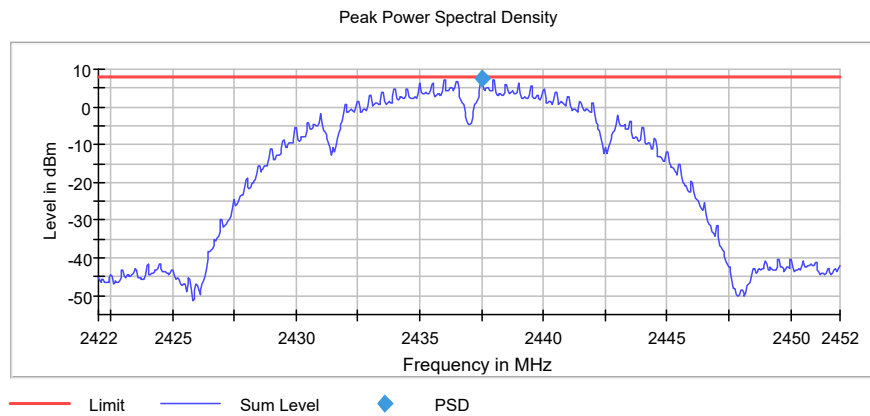
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2412MHz
Result	PSD = 6.94dBm
Notes	None

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2412.000000	2411.474124	6.940	8.0	PASS



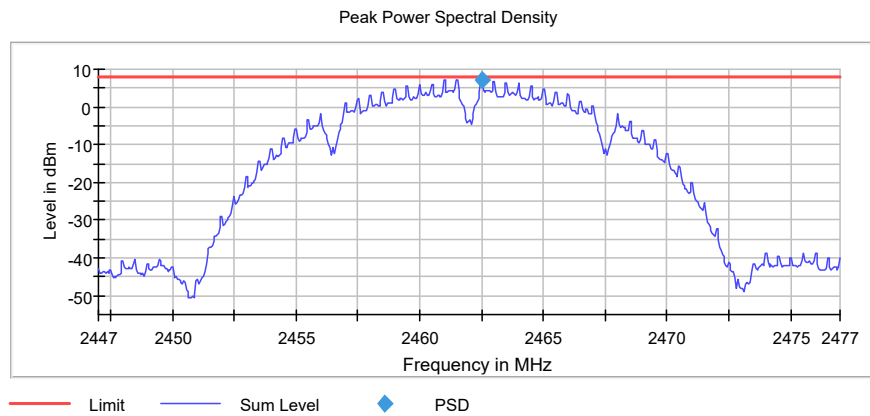
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2437MHz
Result	PSD = 7.484dBm
Notes	None

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2437.000000	2437.525876	7.484	8.0	PASS



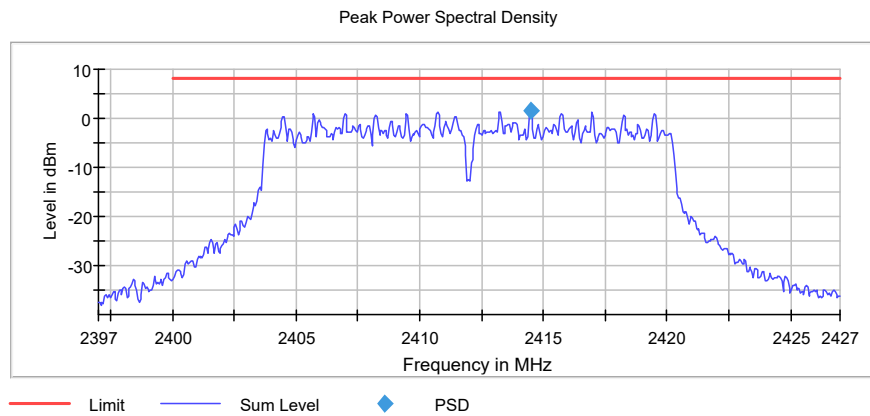
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11b
Frequency Tested	2462MHz
Result	PSD = 7.092dBm
Notes	None

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2462.000000	2462.525876	7.092	8.0	PASS



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2412MHz
Result	PSD = 1.488dBm
Notes	None

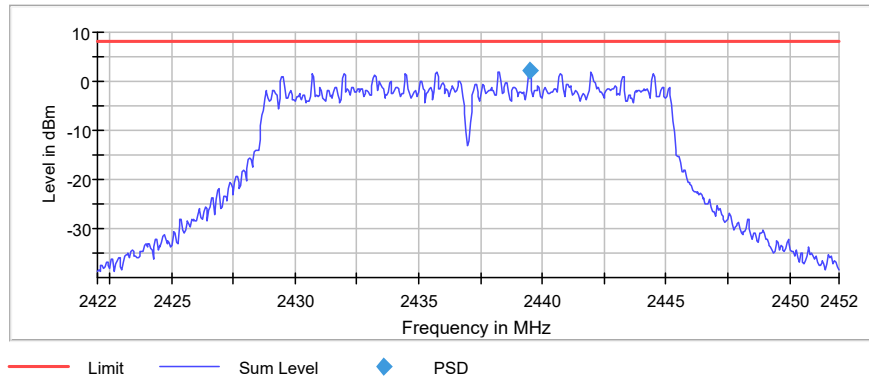
DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2412.000000	2414.479132	1.488	8.0	PASS



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2437MHz
Result	PSD = 2.137dBm
Notes	None

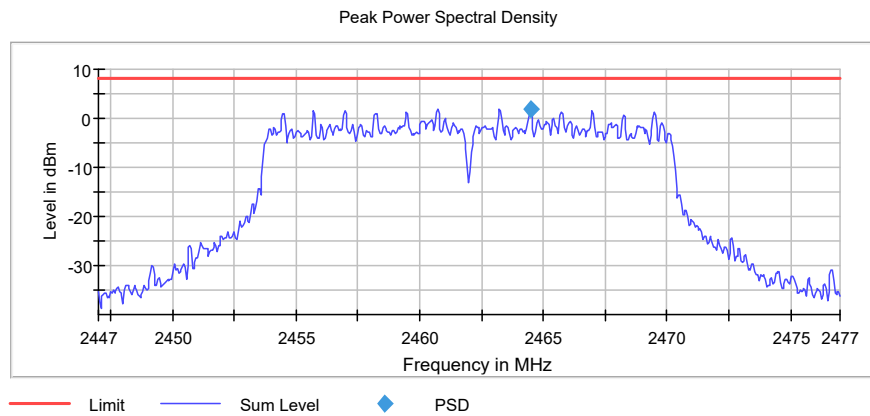
DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2437.000000	2439.479132	2.137	8.0	PASS

Peak Power Spectral Density



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11g
Frequency Tested	2462MHz
Result	PSD = 1.832dBm
Notes	None

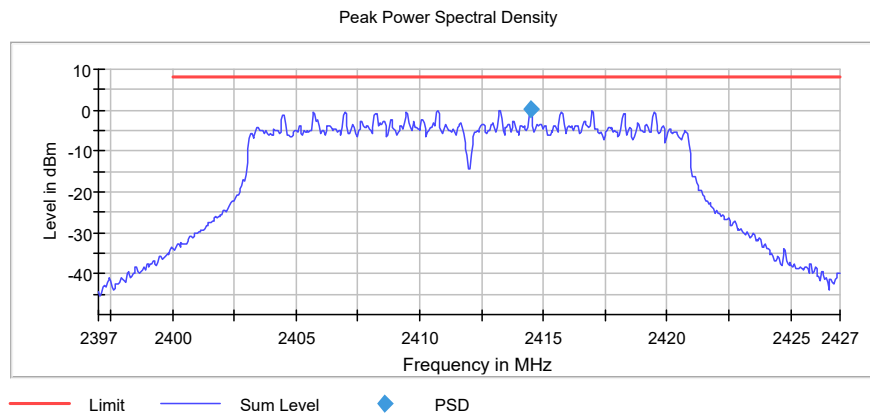
DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2462.000000	2464.479132	1.832	8.0	PASS





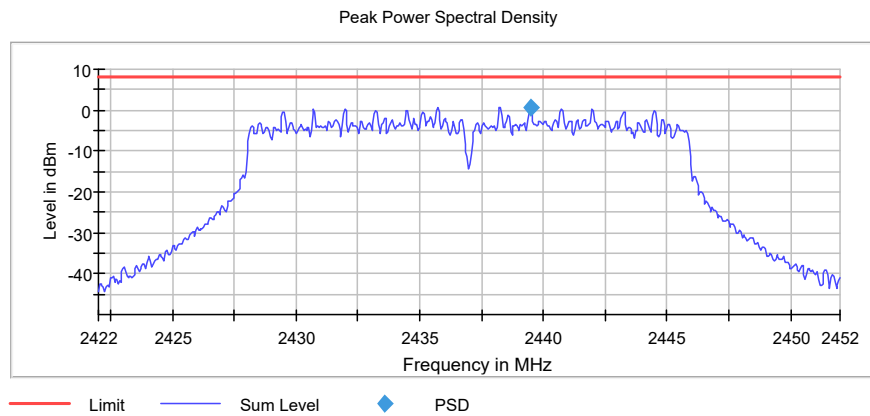
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2412MHz
Result	PSD = 0.067dBm
Notes	None

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2412.000000	2414.479132	0.067	8.0	PASS



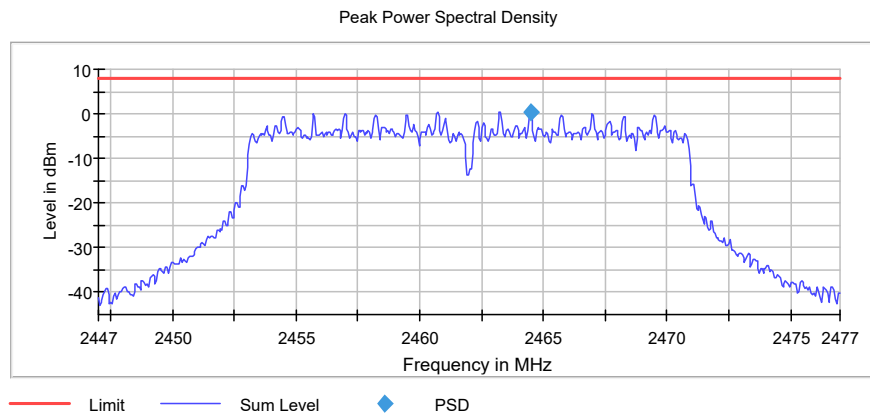
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2437MHz
Result	PSD = 0.718dBm
Notes	None

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2437.000000	2439.479132	0.718	8.0	PASS



Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Yeti Phase 2 Commercial Door Operators
Model No.	JHDC22X1BMC
Serial No.	NA
Mode	Tx – 802.11n
Frequency Tested	2462MHz
Result	PSD = 0.425dBm
Notes	None

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2462.000000	2464.479132	0.425	8.0	PASS



## 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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Craig Fanning (EMC Lab Manager) Phone: 630 495 9770 ext. 112  
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Brandon Lugo (Automotive Team Leader) Phone: 630 495 9770 ext. 163  
Email: [blugo@elitetest.com](mailto:blugo@elitetest.com)  
Richard King (FCC/Commercial Team Leader) Phone: 630 495 9770 ext. 123  
Email: [reking@elitetest.com](mailto:reking@elitetest.com)  
Website: [www.elitetest.com](http://www.elitetest.com)

## 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):**

*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) 08/15/2023



Page 1 of 9

5202 Presidents Court, Suite 220 | Frederick, MD 21703-8515 | Phone: 301 644 3248 | Fax: 240 454 9449 | [www.A2LA.org](http://www.A2LA.org)

**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 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 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





**Test Technology:**

**Test Method(s):**

Generic and Product Specific EMC Standards

IEC/EN 61000-6-1; AS/NZS 61000-6-1; KN 61000-6-1; KS C 9610-6-1; IEC/EN 61000-6-2; AS/NZS 61000-6-2; KN 61000-6-2; KS C 9610-6-2; IEC/EN 61000-6-3; AS/NZS 61000-6-3; KN 61000-6-3; KS C 9610-6-3; IEC/EN 61000-6-4; AS/NZS 61000-6-4; KN 61000-6-4; KS C 9610-6-4; EN 50130-4; EN 61326-1; EN 50121-3-2; EN 12895; EN 50270; EN 50491-1; EN 50491-2; EN 50491-3; EN 55015; EN 60730-1; EN 60945; IEC 60533; EN 61326-2-6; EN 61800-3; IEC/CISPR 14-2; EN 55014-2; AS/NZS CISPR 14.2; KN 14-2; KS C 9814-2; IEC/CISPR 24; AS/NZS CISPR 24; EN 55024; KN 24; IEC/CISPR 35; AS/NZS CISPR 35; EN 55035; KN 35; KS C 9835; IEC 60601-1-2; JIS T0601-1-2

*TxRx EMC Requirements*

EN 301 489-1; EN 301 489-3; EN 301 489-9; EN 301 489-17; EN 301 489-19; EN 301 489-20

*European Radio Test Standards*

ETSI EN 300 086-1; ETSI EN 300 086-2; ETSI EN 300 113-1; ETSI EN 300 113-2; ETSI EN 300 220-1; ETSI EN 300 220-2; ETSI EN 300 220-3-1; ETSI EN 300 220-3-2; ETSI EN 300 330-1; ETSI EN 300 330-2; ETSI EN 300 440-1; ETSI EN 300 440-2; ETSI EN 300 422-1; ETSI EN 300 422-2; ETSI EN 300 328; ETSI EN 301 893; ETSI EN 301 511; ETSI EN 301 908-1; ETSI EN 908-2; ETSI EN 908-13; ETSI EN 303 413; ETSI EN 302 502; EN 303 340; EN 303 345-2; EN 303 345-3; EN 303 345-4

*Canadian Radio Tests*

RSS-102 measurement (RF Exposure Evaluation); RSS-102 measurement (Nerve Stimulation); SPR-002; RSS-111; RSS-112; RSS-117; RSS-119; RSS-123; RSS-125; RSS-127; RSS-130; RSS-131; RSS-132; RSS-133; RSS-134; RSS-135; RSS-137; RSS-139; RSS-140; RSS-141; RSS-142; RSS-170; RSS-181; RSS-182; RSS-191; RSS-192; RSS-194; RSS-195; RSS-196; RSS-197; RSS-199; RSS-210; RSS-211; RSS-213; RSS-215; RSS-216; RSS-220; RSS-222; RSS-236; RSS-238; RSS-243; RSS-244; RSS-247; RSS-248; RSS-251; RSS-252; RSS-287; RSS-288; RSS-310; RSS-GEN

*Mexico Radio Tests*

IFT-008-2015; NOM-208-SCFI-2016

*Japan Radio Tests*

Radio Law No. 131, Ordinance of MPT No. 37, 1981, MIC Notification No. 88:2004, Table No. 22-11; ARIB STD-T66, Regulation 18

*Taiwan Radio Tests*

LP-0002 (July 15, 2020)





<u>Test Technology:</u>	<u>Test Method(s):</u>
<i>Australia/New Zealand Radio Tests</i>	AS/NZS 4268; Radiocommunications (Short Range Devices) Standard (2014)
<i>Hong Kong Radio Tests</i>	HKCA 1039 Issue 6; HKCA 1042; HKCA 1033 Issue 7; HKCA 1061; HKCA 1008; HKCA 1043; HKCA 1057; HKCA 1073
<i>Korean Radio Test Standards</i>	KN 301 489-1; KN 301 489-3; KN 301 489-9; KN 301 489-17; KN 301 489-52; KS X 3124; KS X 3125; KS X 3130; KS X 3126; KS X 3129
<i>Vietnam Radio Test Standards</i>	QCVN 47:2015/BTTTT; QCVN 54:2020/BTTTT; QCVN 55:2011/BTTTT; QCVN 65:2013/BTTTT; QCVN 73:2013/BTTTT; QCVN 74:2020/BTTTT; QCVN 112:2017/BTTTT; QCVN 117:2020/BTTTT
<i>Vietnam EMC Test Standards</i>	QCVN 18:2014/BTTTT; QCVN 86:2019/BTTTT; QCVN 96:2015/BTTTT; QCVN 118:2018/BTTTT
<i>Unlicensed Radio Frequency Devices (3 Meter Semi-Anechoic Room)</i>	47 CFR FCC Part 15C, 15D, 15E, 15F, 15G, 15H (using ANSI C63.10:2013, ANSI C63.17:2013 and FCC KDB 905462 D02 (v02))
<i>Licensed Radio Service Equipment</i>	47 CFR FCC Parts 20, 22, 24, 25, 27, 30, 73, 74, 80, 87, 90, 95, 96, 97, 101 (using ANSI/TIA-603-E, TIA-102.CAAA-E, ANSI C63.26:2015)
<i>OIA (Over the Air) Performance</i> GSM, GPRS, EGPRS UMTS (W-CDMA) LTE including CAT M1 A-GPS for UMTS/GSM LTS A-GPS, A-GLONASS, SIB8/SIB16 Large Device/Laptop/Tablet Testing Integrated Device Testing WiFi 802.11 a/b/g/n/a	CTIA Test Plan for Wireless Device Over-the-Air Performance (Method for Measurement for Radiated Power and Receiver Performance) V3.8.2; CTIA Test Plan for RF Performance Evaluation of WiFi Mobile Converged Devices V2.1.0

**Test Technology:**

**Test Method(s)<sup>1</sup>:**

***Electrical Measurements and Simulation***

**AC Voltage / Current**

(1mV to 5kV) 60 Hz  
(0.1V to 250V) up to 500 MHz  
(1µA to 150A) 60 Hz

FAA AC 150/5345-10H;  
FAA AC 150/5345-43J;  
FAA AC 150/5345-44K;  
FAA AC 150/5345-46E;  
FAA AC 150/5345-47C;  
FAA EB 67D

**DC Voltage / Current**

(1mV to 15 kV) / (1µA to 10A)

**Power Factor / Efficiency / Crest Factor**

(Power to 30kW)

**Resistance**

(1mΩ to 4000MΩ)

**Surge**

(Up to 10 kV / 5 kA) (Combination Wave and Ring Wave)

**On the following products and materials:**

Telecommunications Terminal Equipment (TTE), Radio Equipment, Network Equipment, Information Technology Equipment (ITE), Automotive Electronic Equipment, Automotive Hybrid Electronic Devices, Maritime Navigation and Radio Communication Equipment and Systems, Vehicles, Boats and Internal Combustion Engine Driven Devices, Automotive, Aviation, and General Lighting Products, Medical Electrical Equipment, Motors, Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment, Household Appliances, Electric Tools, Low-voltage Switchgear and Control gear, Programmable Controllers, Electrical Equipment for Measurement, Control and Laboratory Use, Base Materials, Power and Data Transmission Cables and Connectors

<sup>1</sup> When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per part C., Section 1 of A2LA R101 - General Requirements - Accreditation of ISO-IEC 17025 Laboratories.

Testing Activities Performed in Support of FCC Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.1<sup>2</sup>

<b>Rule Subpart/Technology</b>	<b>Test Method</b>	<b>Maximum Frequency (MHz)</b>
<b><u>Unintentional Radiators</u></b> Part 15B	ANSI C63.4:2014	40000
<b><u>Industrial, Scientific, and Medical Equipment</u></b> Part 18	FCC MP-5 (February 1986)	40000
<b><u>Intentional Radiators</u></b> Part 15C	ANSI C63.10:2013	40000



Testing Activities Performed in Support of FCC Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.1<sup>2</sup>

<b>Rule Subpart/Technology</b>	<b>Test Method</b>	<b>Maximum Frequency (MHz)</b>
<u>Unlicensed Personal Communication Systems Devices</u> Part 15D	ANSI C63.17:2013	40000
<u>U-NII without DFS Intentional Radiators</u> Part 15E	ANSI C63.10:2013	40000
<u>U-NII with DFS Intentional Radiators</u> Part 15E	FCC KDB 905462 D02 (v02)	40000
<u>UWB Intentional Radiators</u> Part 15F	ANSI C63.10:2013	40000
<u>BPL Intentional Radiators</u> Part 15G	ANSI C63.10:2013	40000
<u>White Space Device Intentional Radiators</u> Part 15H	ANSI C63.10:2013	40000
<u>Commercial Mobile Services (FCC Licensed Radio Service Equipment)</u> Parts 22 (cellular), 24, 25 (below 3 GHz), and 27	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000
<u>General Mobile Radio Services (FCC Licensed Radio Service Equipment)</u> Parts 22 (non-cellular), 90 (below 3 GHz), 95, 97, and 101 (below 3 GHz)	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000
<u>Citizens Broadband Radio Services (FCC Licensed Radio Service Equipment)</u> Part 96	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000
<u>Maritime and Aviation Radio Services</u> Parts 80 and 87	ANSI/TIA-603-E; ANSI C63.26:2015	40000
<u>Microwave and Millimeter Bands Radio Services</u> Parts 25, 30, 74, 90 (above 3 GHz), 97 (above 3 GHz), and 101	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000

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Testing Activities Performed in Support of FCC Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.1<sup>2</sup>

<b>Rule Subpart/Technology</b>	<b>Test Method</b>	<b>Maximum Frequency (MHz)</b>
<u>Broadcast Radio Services</u> Parts 73 and 74 (below 3 GHz)	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000
<u>Signal Boosters</u> Part 20 (Wideband Consumer Signal Boosters, Provider-specific signal boosters, and Industrial Signal Boosters) Section 90.219	ANSI C63.26:2015	40000

<sup>2</sup> Accreditation does not imply acceptance to the FCC equipment authorization program. Please see the FCC website (<https://apps.fcc.gov/oetcf/eas/>) for a listing of FCC approved laboratories.





## Accredited Laboratory

A2LA has accredited

### ELITE ELECTRONIC ENGINEERING INC.

Downers Grove, IL

for technical competence in the field of

### Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 15<sup>th</sup> day of August 2023.



Mr. Trace McInturf, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 1786.01  
Valid to June 30, 2025

*For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.*