



Engineering Test Report No. 2601373-05 Rev A		
Report Date	July 29, 2026	
Manufacturer Name	The Chamberlain Group LLC	
Manufacturer Address	300 Windsor Dr Oak Brook, IL 60523	
Product Name Model No.	Jackshaft with Release, 700lb, 120/240V RJDC7S1BER	
Date Received	July 15, 2026	
Test Dates	July 15, 2026 – July 28, 2026	
Specifications	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	Edwin Casas	
Signature		
Approved by	Raymond J. Klouda, Registered Professional Engineer of Illinois – 44894	
PO Number	4900107853	
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1. Report Revision History

Revision	Date	Description
–	11 AUG 2026	Initial Release of Engineering Test Report No. 2601373-05
A	18 AUG 2026 By Edwin Casas	- Cover Page: Added "Rev A" to the test report number. - Throughout Report: Added "Rev A" to the test report number in the header. - Section 2.3: Added representative model note to the EUT identification table. - Section 22: Added Informative Annex.

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 Jackshaft with Release, 700lb, 120/240V Model No. RJDC7S1BER (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 EUT meets the RF emission requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, §15.247 for a Digital Modulation intentional radiator operating within the 2400 – 2483.5MHz and 902-928MHz band during a simultaneous transmission.

The test series was also performed to determine if the EUT meets the RF emission 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 a Digital Modulation intentional radiator operating within the 2400 – 2483.5MHz and 902-928MHz band during a simultaneous transmission.

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

2.3. Identification of the EUT

The EUT was identified as follows:

EUT Identification	
Product Description	Jackshaft with Release, 700lb, 120/240V
Model/Part No.	RJDC7S1BER
Serial No.	262264610020
Size of EUT	21.8" x 11.1" x 12.1"
Software/Firmware Version	LPC54k 0.22 (Main) LPC5536 1.1-run-forever (Motor) PG22 1.0.0 (Wall Control) FG12 1.2.0 (Sub-gig radio) RTL8720CM 126A0582phoenix_rtl_mp_litepoint_image_v7.1 (Wi-Fi/BLE radio)
Device Type	Digitally Modulated Transmission Device
Band of Operation	2400 – 2483.5MHz
Modulation Type	BLE
Antenna Type	Inverted F (PCB)
NOTE: This report covers testing only on the representative model number listed above. For a list of all associated model numbers represented by this test data, see the Informative Annex at the end of this report.	

3. Power Input

The EUT was powered by 120V 60Hz from a 1 meter unshielded power cord.

4. Grounding

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

5. Support Equipment

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

Description	Model #	S/N
Laptop	Dell Precision 3551	---

6. Interconnect Leads

The following interconnect cables were submitted with the test item:

Item	Description
USB UART Bridge	Connects laptop to EUT for programming

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 was energized. The unit was programmed to transmit in one of the following modes:

Mode	Description
Multi-Tx	Simultaneous Transmission of the following combinations: - 914.75MHz & 2402MHz BLE - 914.75MHz & 2437MHz 802.11g WiFi

9. Test Specifications

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

- Federal Communications Commission "Code of Federal Regulations", Title 47, Chapter I, Subchapter A, Part 15, Subpart C – "Intentional Radiators"
- KDB 558074 D01v05r02 (April 2, 2019) – "Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices operating under Section 15.247 of the FCC Rules"
- Radio Standard Specification RSS-Gen Issue 5, Amendment 2 (February 2021) – "General Requirements for Compliance of Radio Apparatus"
- Radio Standard Specification RSS-247 Issue 4 (July 24, 2025) – "Digital Transmission Systems, Frequency Hopping Systems and License-Exempt Local Area Network Devices in 902-928 MHz, 2400-2483.5 MHz, 5150-5350 MHz, and 5470-5895 MHz bands"
- ANSI C63.10-2020+Cor. 1:2023+C63.10a:2024 – "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless 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 C63.10-2020+Cor. 1:2023+C63.10a:2024 specifications.

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

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

12. Laboratory Conditions

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

Ambient Parameters	Value
Temperature	23.5°C
Relative Humidity	23%
Atmospheric Pressure	1016mb

13. Summary

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

Test Description	Requirements	Test Method	S/N	Results
Radiated Emissions	FCC 15.247 ISED RSS-247	ANSI C63.10:2020 +Cor.1+C63.10a	262264610020	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).

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

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.

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

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

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

15. Statement of Conformity

The Chamberlain Group LLC Jackshaft with Release, 700lb, 120/240V (Model No. RJDC7S1BER) 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 EUTs as received by the customer on the test date specified. Any electrical or mechanical modifications made to the EUTs subsequent to the specified test date will serve to invalidate the data and void this certification.

17. Photographs of EUT



262264610020



18. Equipment List

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW10	Preamplifier	Planar	PE2-35-120-5R0-10-12-SFF	PL11685/1241	1-18GHz	3/18/2026	3/18/2027
APW18	Preamplifier	Planar	PE2-30-20G20R6G-3R0-10-12-SFF	PL34312/2148	18-26.5GHz	3/31/2026	3/31/2027
GSE2	SIGNAL GENERATOR (40GHZ)	ROHDE & SCHWARZ	SMB100A	183293	100KHZ-40GHZ	3/7/2025	3/7/2027
NHG1	STANDARD GAIN HORN ANTENNA	NARDA	638	---	18-26.5GHZ	NOTE 1	
NSDS1	UNIVERSAL SPHERICAL DIPOLE SOURCE	AET	USDS-H	AET-1116		NOTE 1	
NWN1	DOUBLE RIDGED GUIDE ANTENNA	ETS LINDGREN	3116C	227802	10GHz-40GHz	9/16/2024	9/16/2026
NWQ0	Double Ridged Waveguide (3M)	ETS-Lindgren	3117	66657	1-18GHz	6/23/2026	6/23/2028
RBG2	EMI Analyzer	Rohde & Schwarz	ESW44	101591	2HZ-44GHZ	12/12/2025	12/12/2026
XPR0	HIGH PASS FILTER	K&L MICROWAVE	11SH10-4800/X20000	001	4.8-20GHZ	9/16/2025	9/16/2027

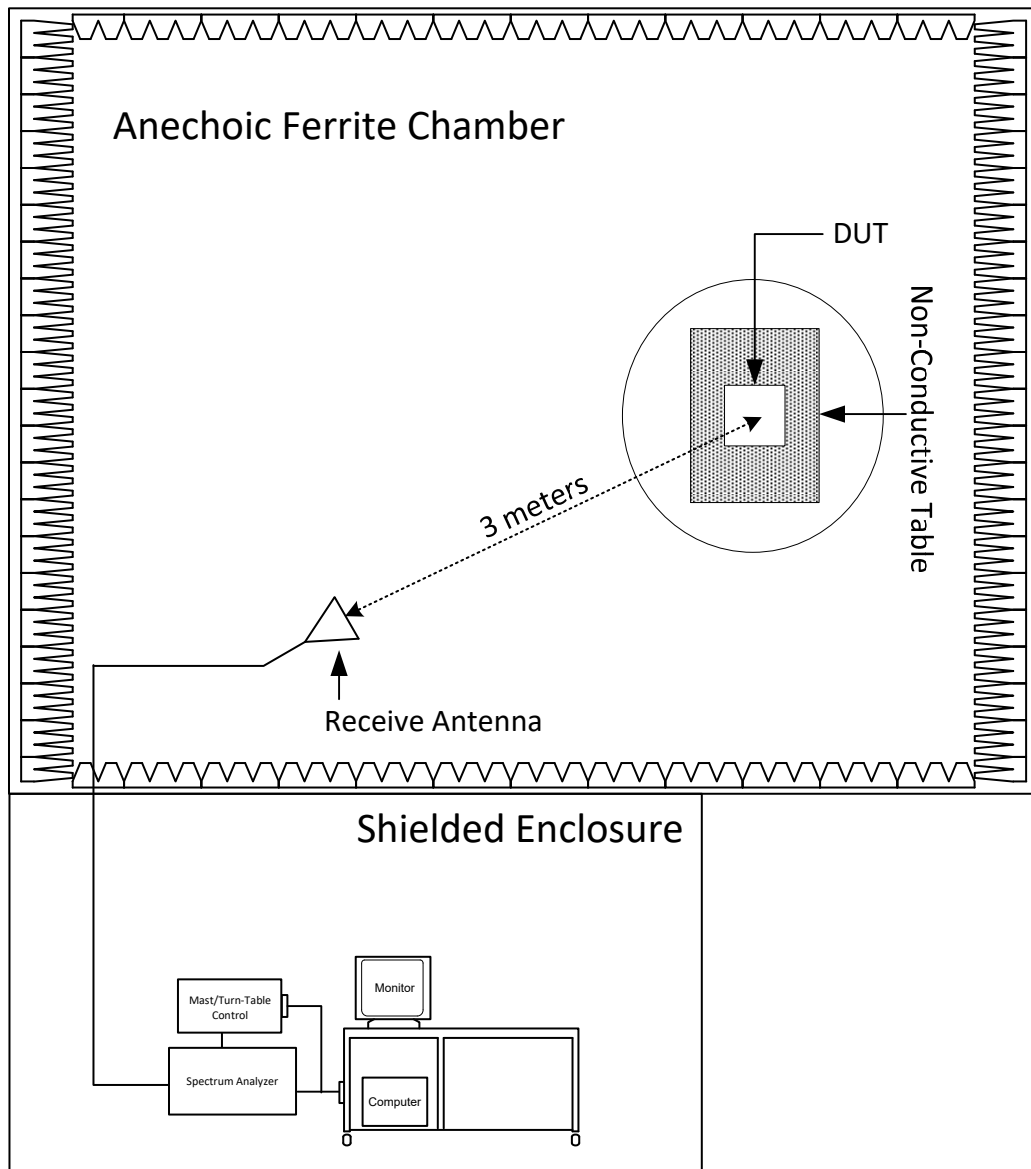
N/A: Not Applicable

I/O: Initial Only

CNR: Calibration Not Required

NOTE 1: For the purpose of this test, the equipment was calibrated over the specified frequency range, pulse rate, or modulation prior to the test or monitored by a calibrated instrument.

19. Block Diagram of Test Setup



Radiated Measurements Test Setup

20. Radiated Emissions Tests

EUT Information	
Manufacturer	The Chamberlain Group LLC
Product	Jackshaft with Release, 700lb, 120/240V
Model No.	RJDC7S1BER
Serial No.	262264610020
Mode	Multi-Tx

Test Setup Details	
Setup Format	Tabletop
Height of Support (For Floor Standing only)	N/A
Type of Test Site	Semi-Anechoic Chamber
Test Site Used	Room #21 & Room #29
Type of Antennas Used	1 – 18GHz: Double-Ridged Waveguide (or equivalent) Above 18GHz: Horn (or equivalent)
Notes	N/A

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

RequirementsRadiated Emissions in Non-Restricted Bands:

Per FCC 15.247, Section (d), and ISSED RSS-247, Section 5.5, in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated emissions measurement. Attenuation below the general limits specified in §15.209(a) is not required.

Radiated Emissions in Restricted Bands:

Per 15.247, Section (d), radiated emissions which fall in the restricted bands, as defined in FCC 15.205, Section (a), must comply with the radiated emission limits specified in FCC 15.209, Section (a).

Per ISSED RSS-247, Section 3.3, radiated emissions which fall in the restricted bands, as defined in ISSED RSS-Gen, Section 8.10, must comply with the radiated emission limits specified in RSS-Gen, Section 8.9.

ProceduresRadiated Emissions in Non-Restricted Bands:

C63.10-2020 Section 11.11

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 power lines and signal lines entering the enclosure pass through filters on the enclosure wall. The powerline filters prevent extraneous signals from entering the enclosure on these leads.

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 25GHz was investigated using a peak detector function.

The final radiated emission tests were then manually performed over the frequency range of 30MHz to 25GHz.

- 1) 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 and set to transmit. A peak detector with a resolution bandwidth of 100kHz was used on the spectrum analyzer.
- 2) 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 and set to transmit. A peak detector with a resolution bandwidth of 100kHz was used on the spectrum analyzer.
- 3) 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:
 - a) The EUT was rotated so that all of its sides were exposed to the receiving antenna.
 - b) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
 - c) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.

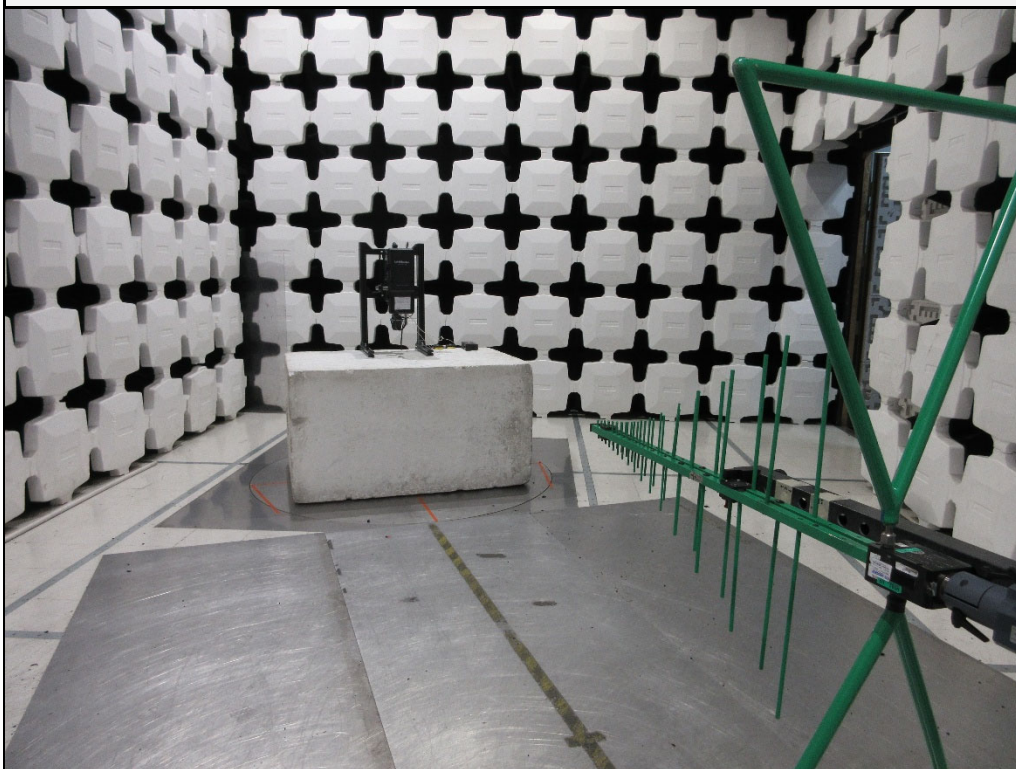
- d) In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer, the measuring antenna was not raised or lowered to ensure maximized reading. Instead, the EUT was rotated through all axis to ensure the maximum readings were recorded for the EUT.
- 4) 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.

Radiated Emissions in Restricted Bands (C63.10-2020 Section 11.12):

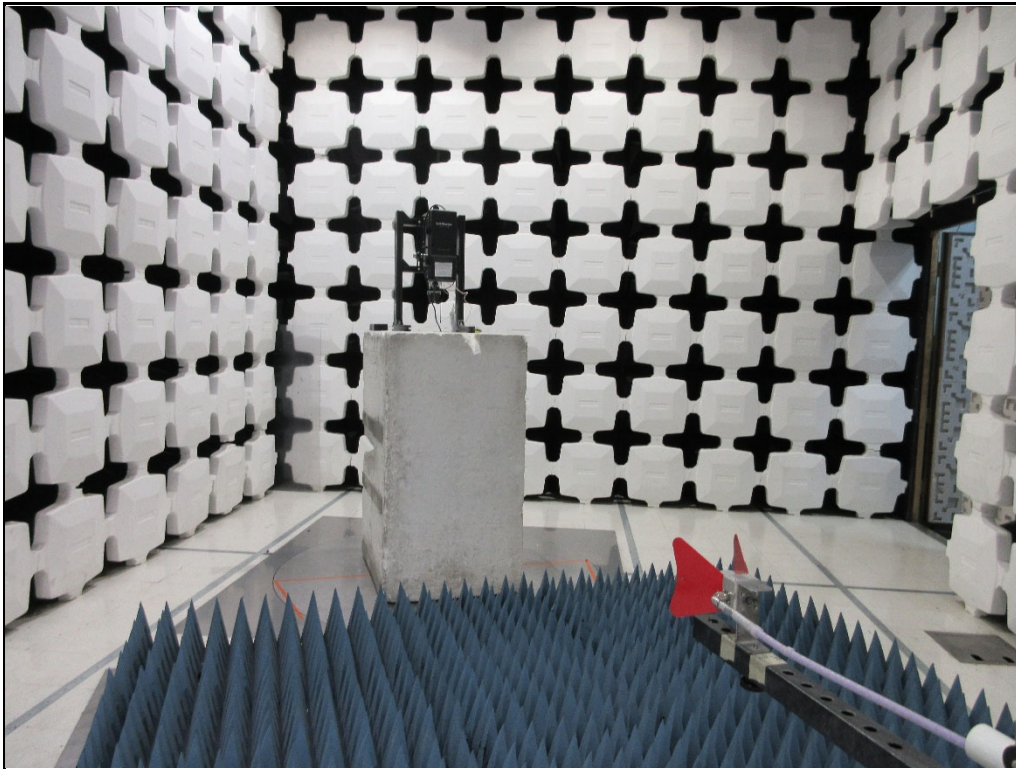
- 1) The field strengths of all emissions above 1 GHz were measured using a double-ridged waveguide antenna positioned at a 3 meter distance from the EUT. The EUT was placed on a 1.5 meter high non-conductive stand and set to transmit. A peak detector with a resolution bandwidth of 1MHz was used on the spectrum analyzer.
- 2) To ensure that maximum or worst case emission levels were measured, the following steps were taken when taking all measurements:
 - a) The EUT was rotated so that all of its sides were exposed to the receiving antenna.
 - b) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
 - c) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.
 - d) 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 reading. Instead, the EUT was rotated through all axis to ensure the maximum readings were recorded for the EUT.
- 3) 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).
- 4) 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. The duty cycle correction $[(DCCF) = 20 \log (1/D)]$ factor was added to the measurement results.



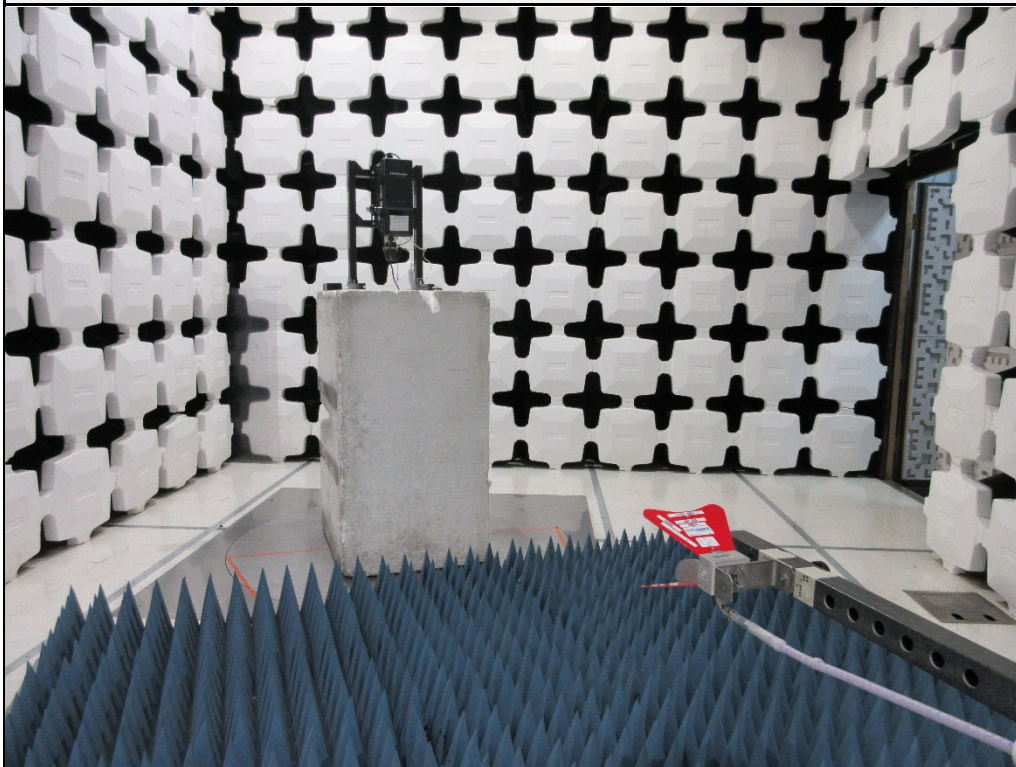
Test Setup for Radiated Emissions: 30MHz to 1GHz, Horizontal Polarization



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



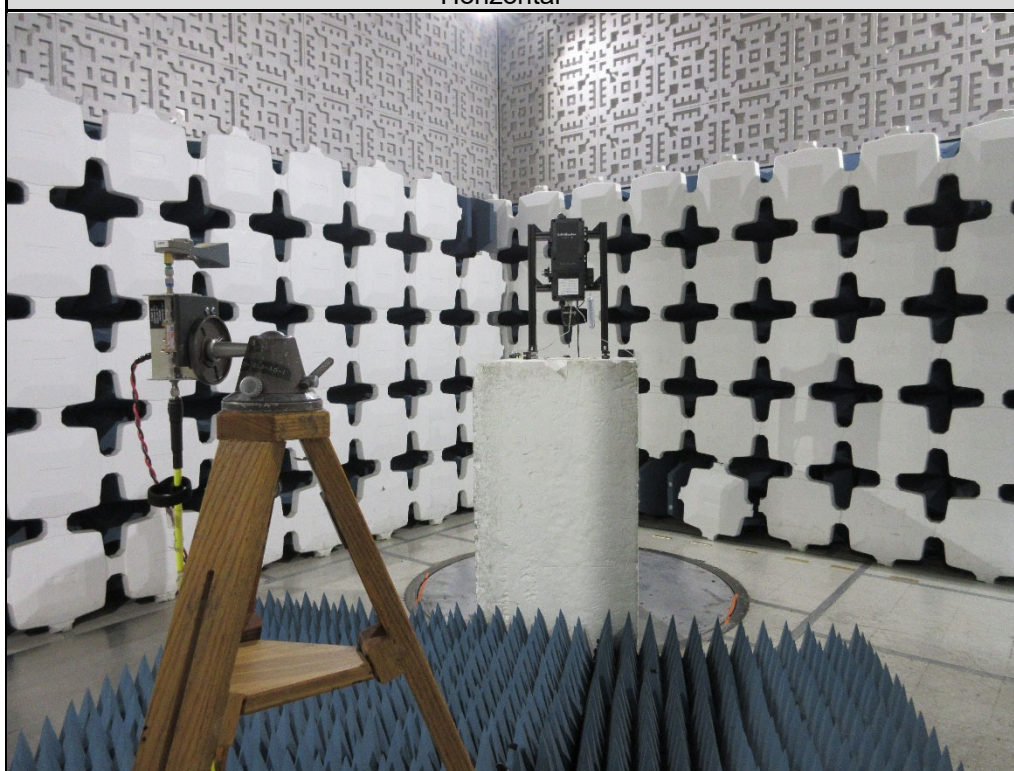
Test Setup for Spurious Radiated Emissions, 1 – 18GHz – Antenna Polarization
Horizontal



Test Setup for Spurious Radiated Emissions, 1 – 18GHz – Antenna Polarization
Vertical

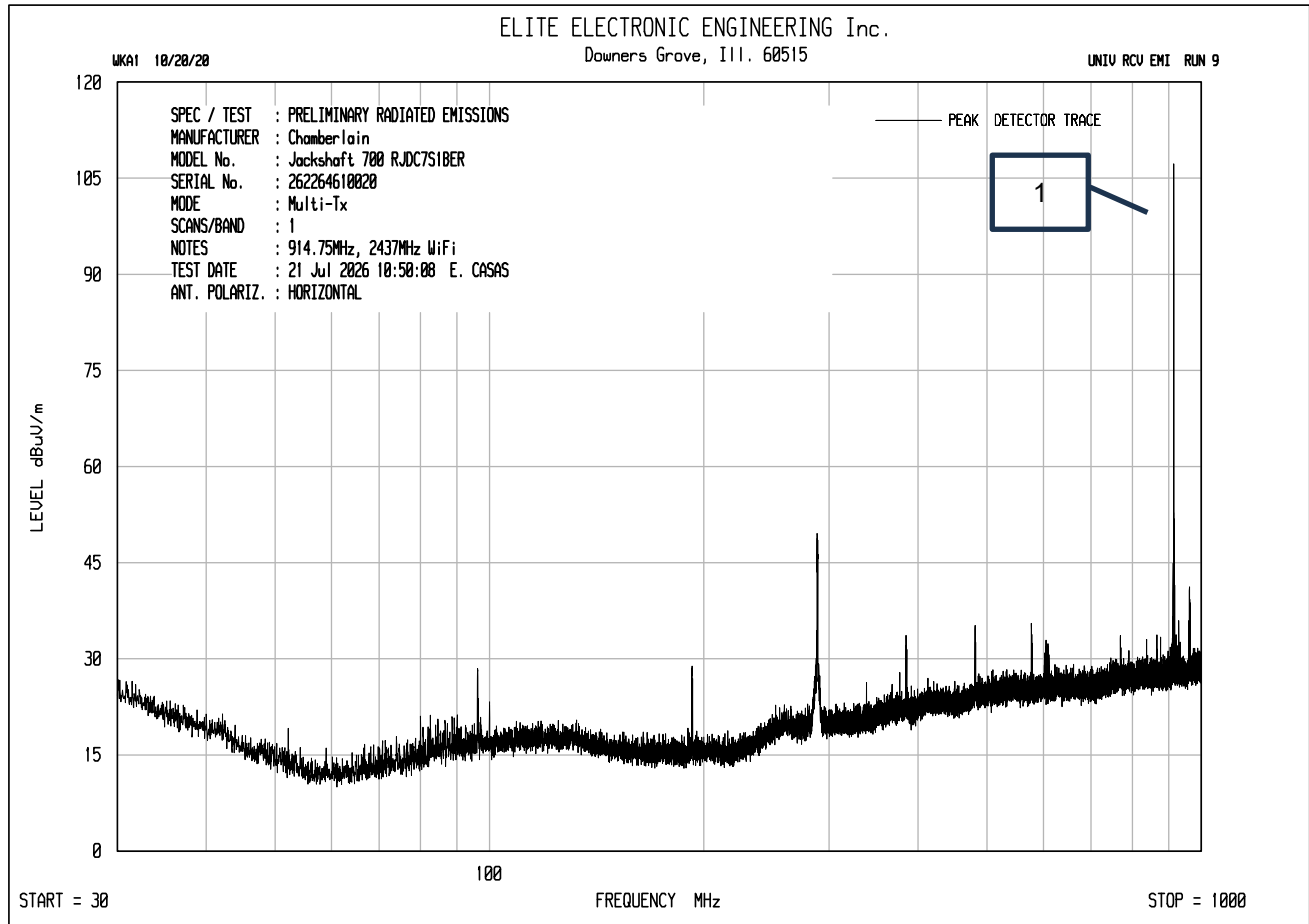


Test Setup for Spurious Radiated Emissions, Above 18GHz – Antenna Polarization
Horizontal

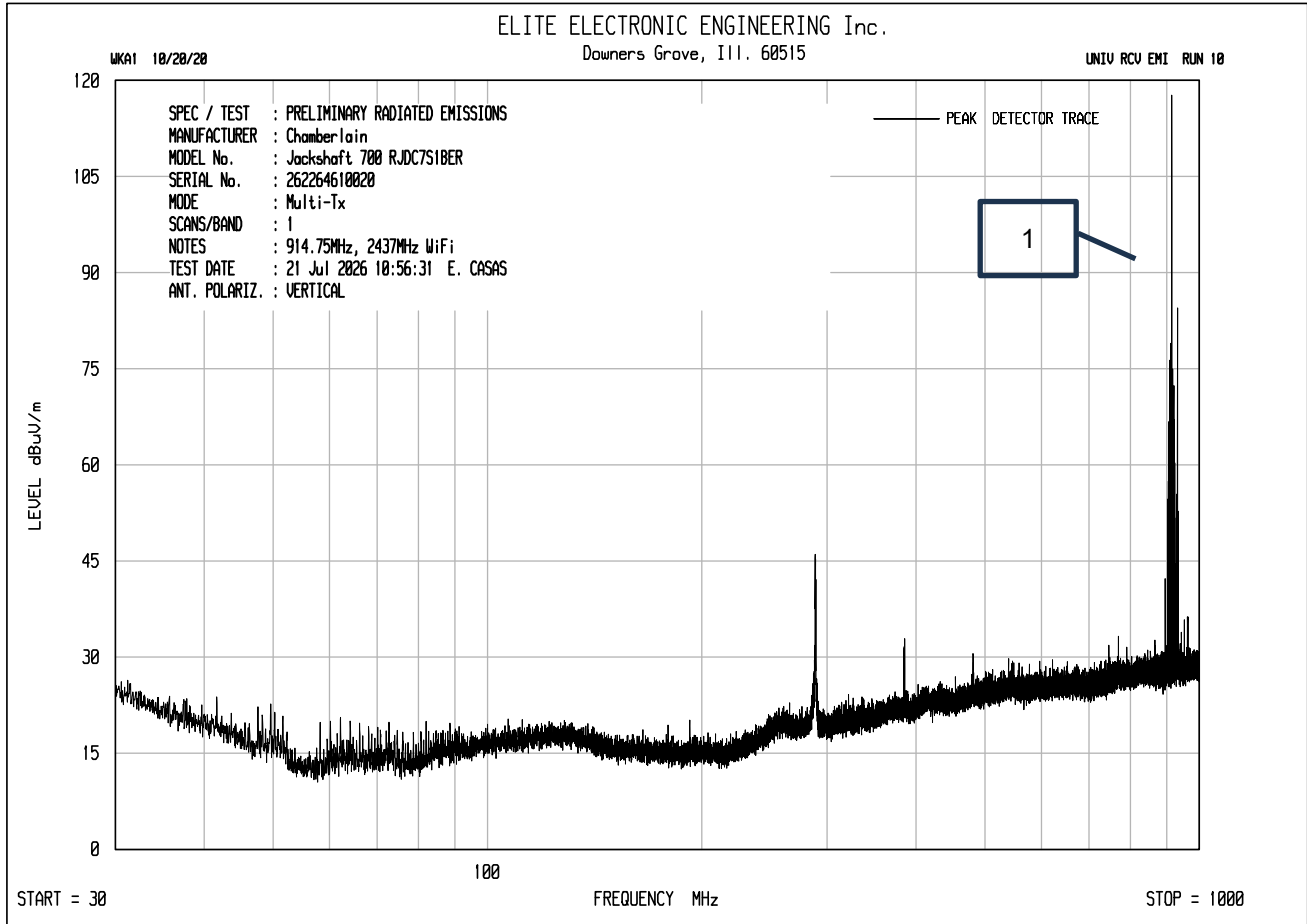


Test Setup for Spurious Radiated Emissions, Above 18GHz – Antenna Polarization
Vertical

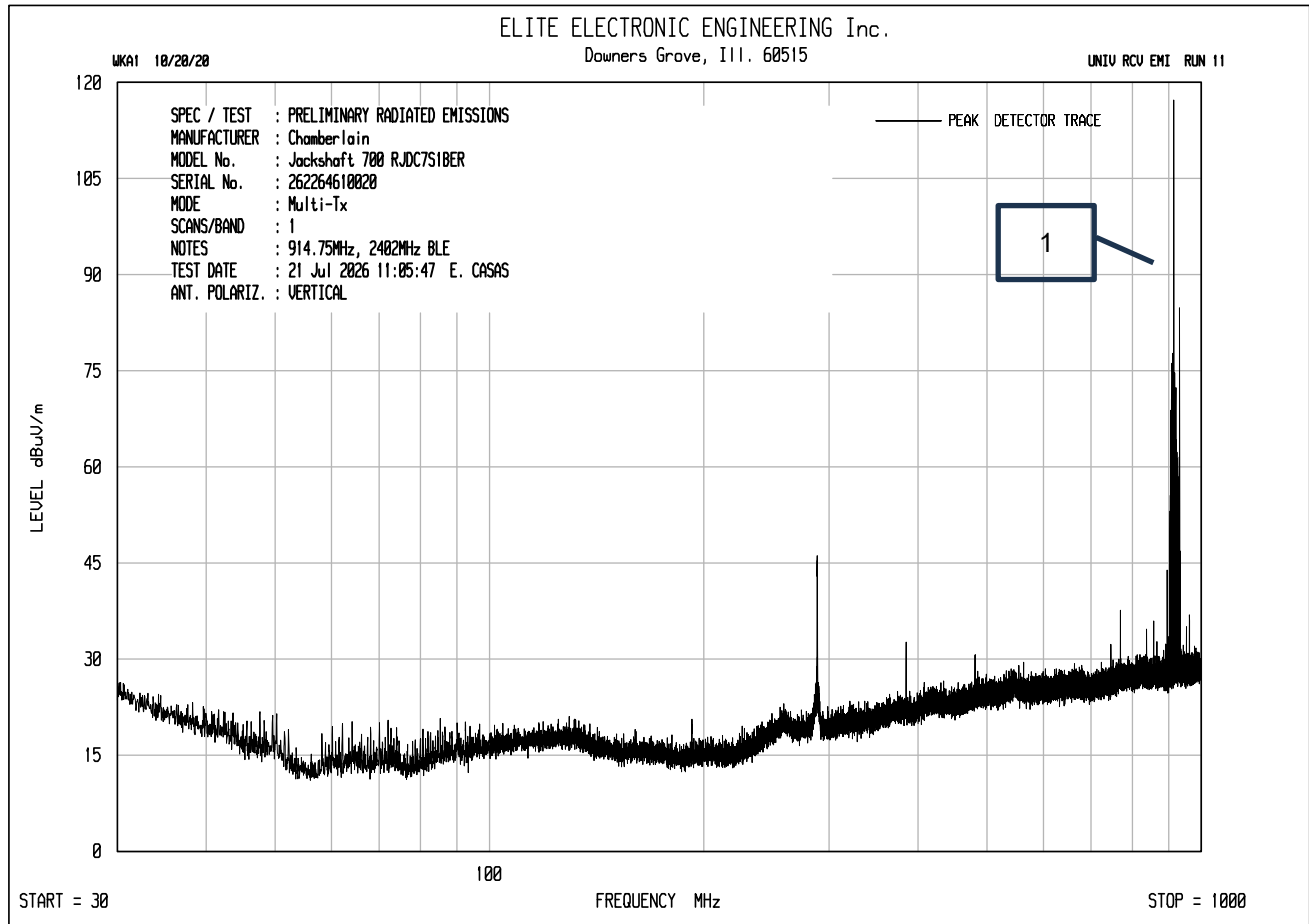
Test Details	
Manufacturer	The Chamberlain Group LLC
EUT	Jackshaft with Release, 700lb, 120/240V
Model No.	RJDC7S1BER
Serial No.	262264610020
Mode	Multi-Tx
Test	Radiated Emissions
Notes	None



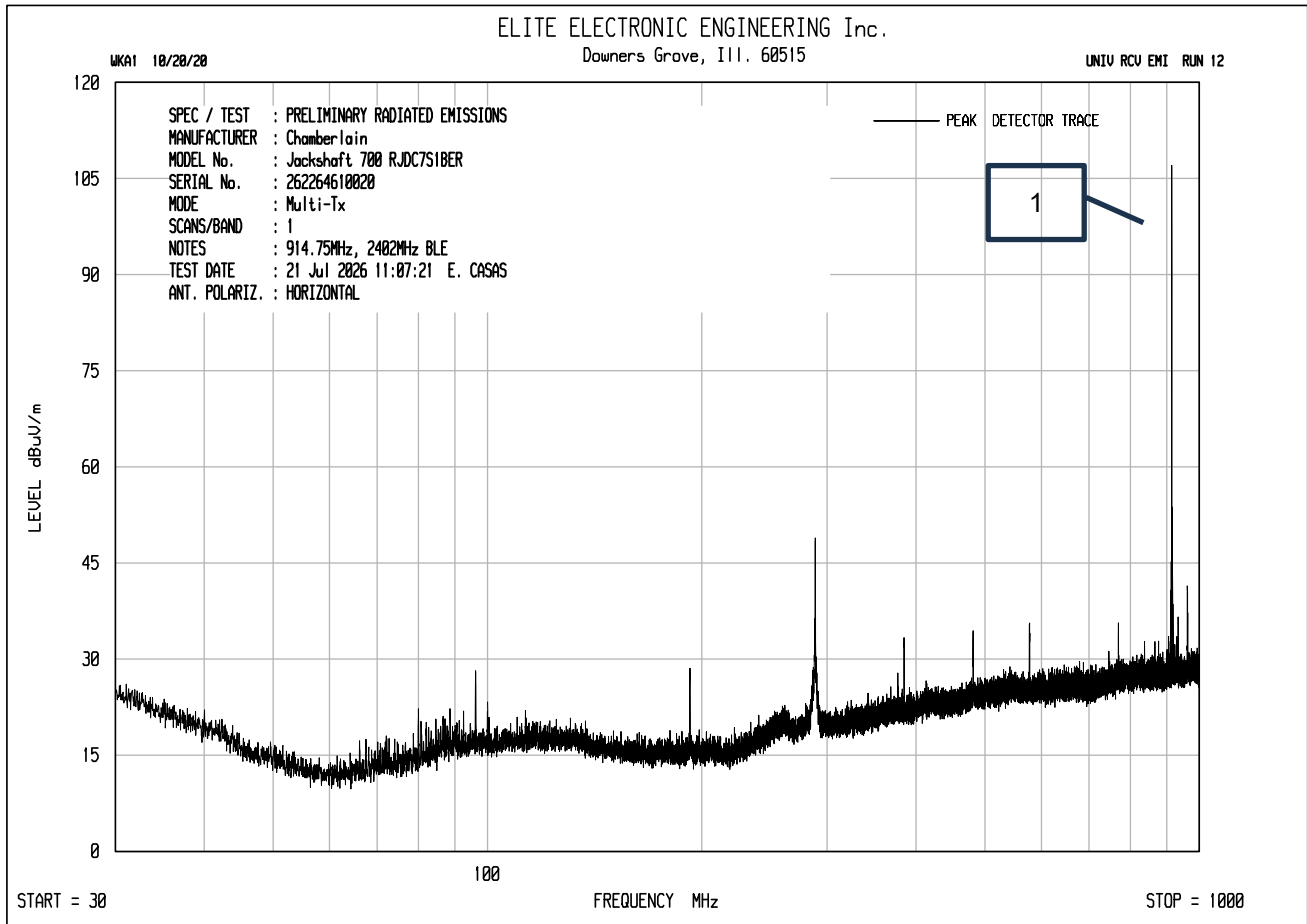
1: 914.75MHz Tx



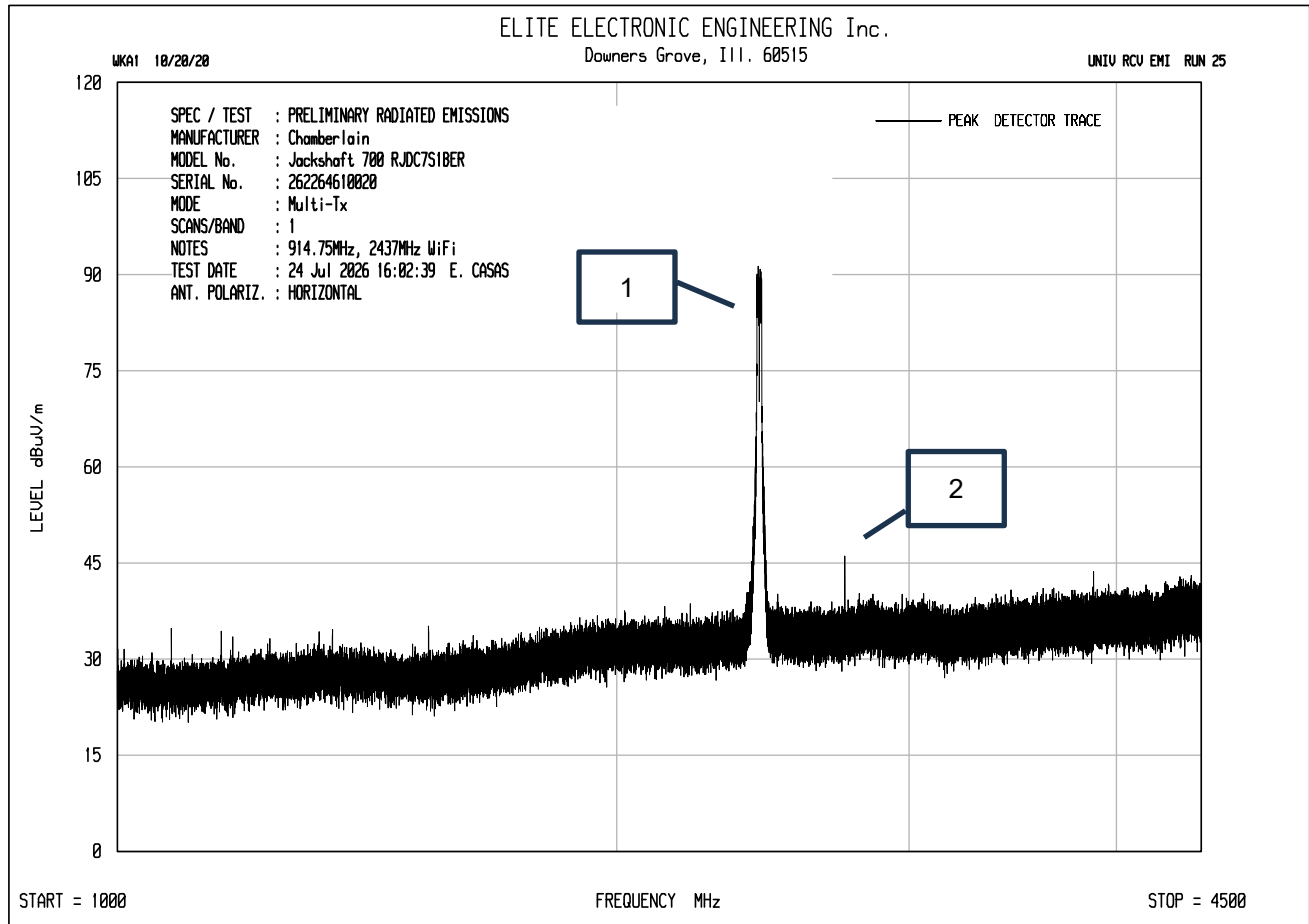
1: 914.75MHz Tx



1: 914.75MHz Tx

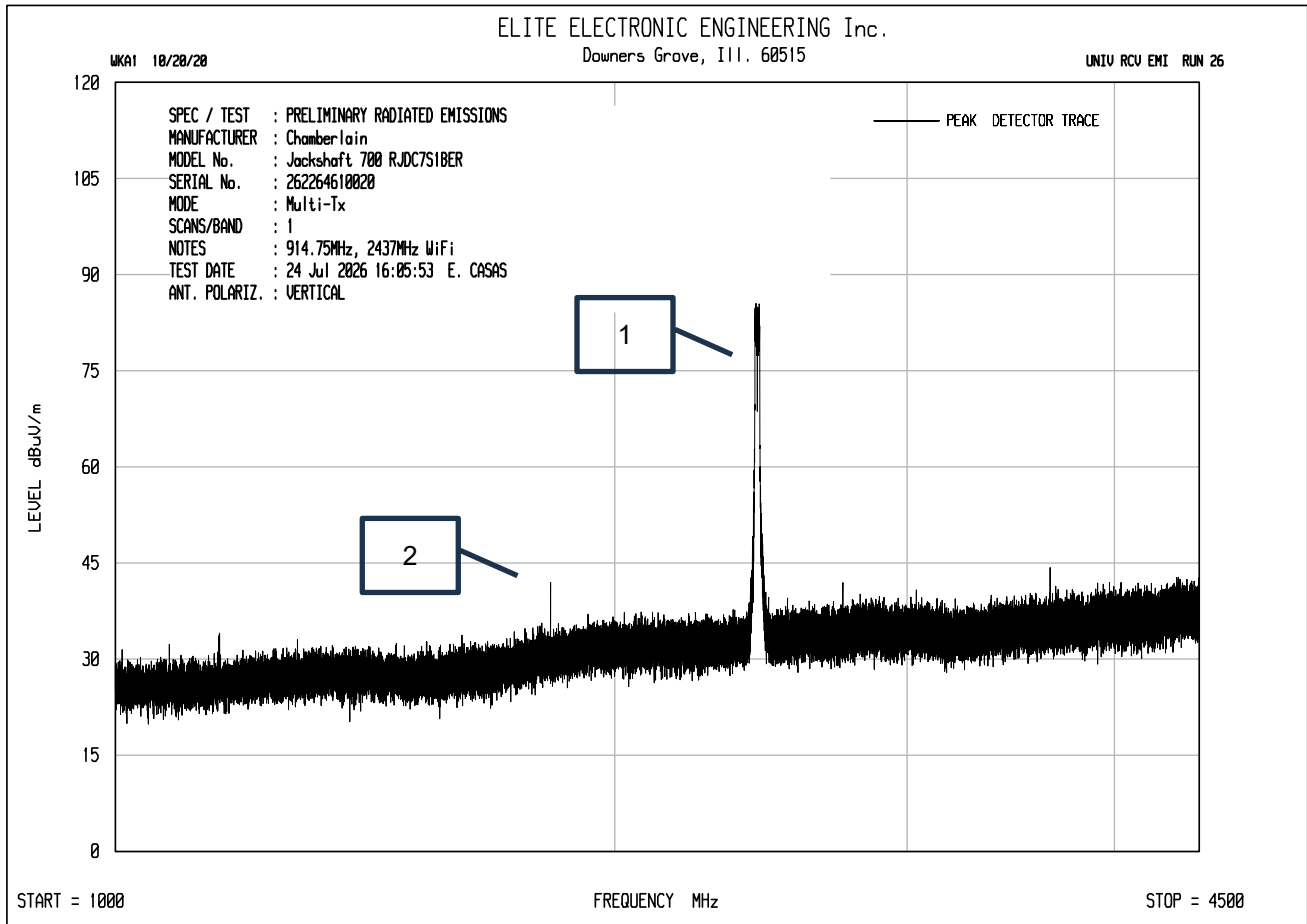


1: 914.75MHz Tx



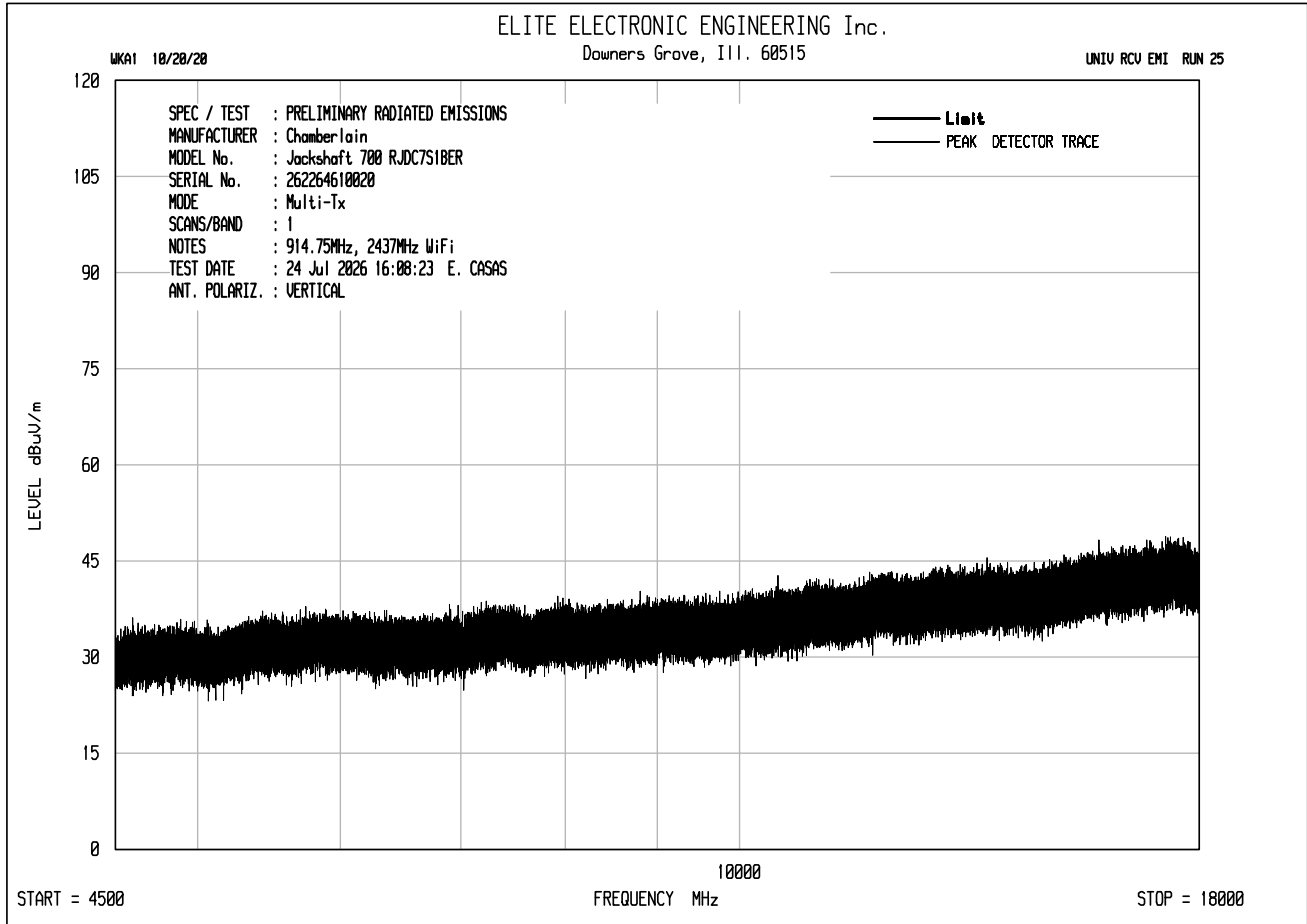
1: 2437MHz WiFi

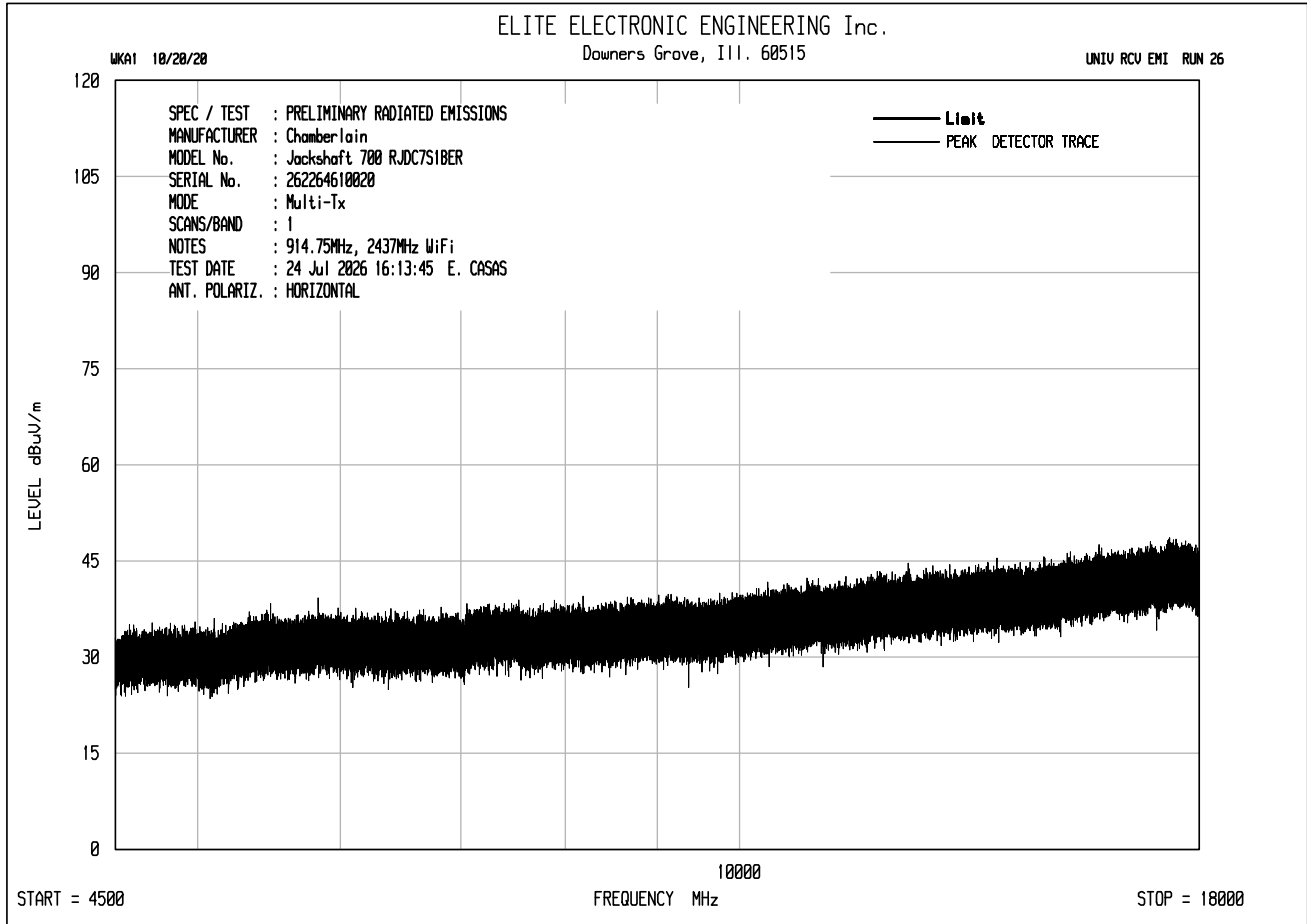
2: 914.75MHz * 3 = 2744.25MHz

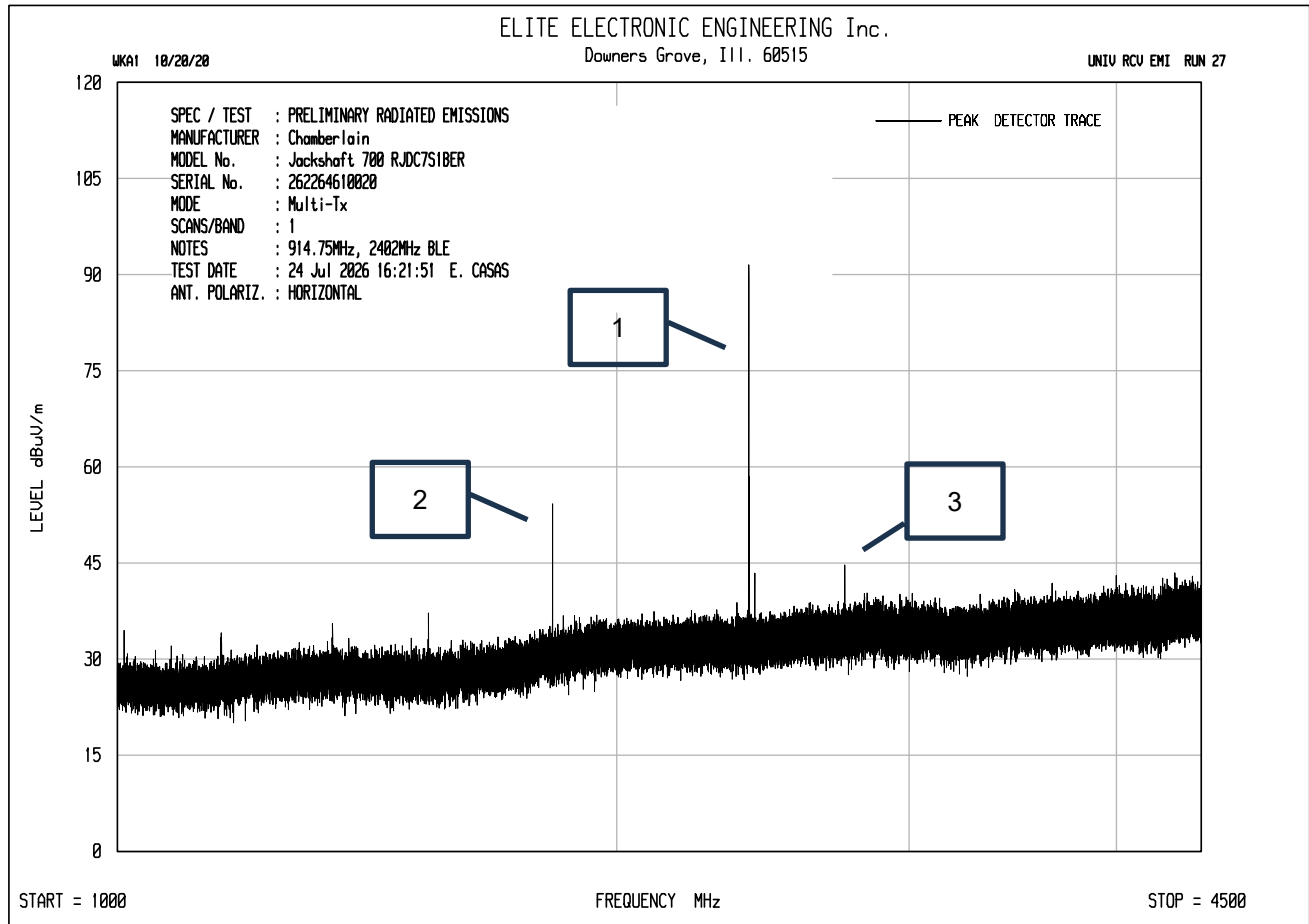


1: 2437MHz WiFi

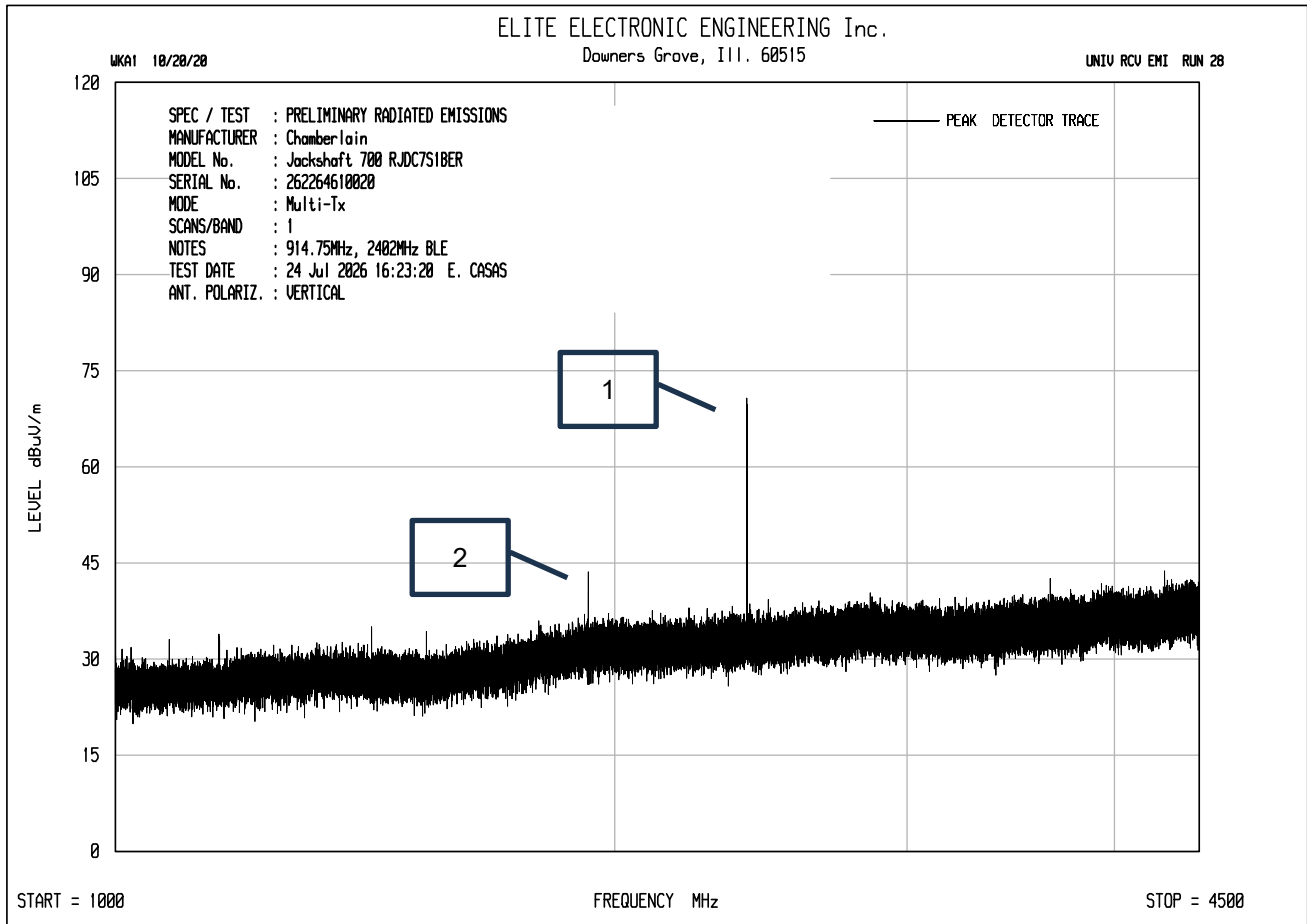
2: 914.75 * 2 = 1829.5MHz



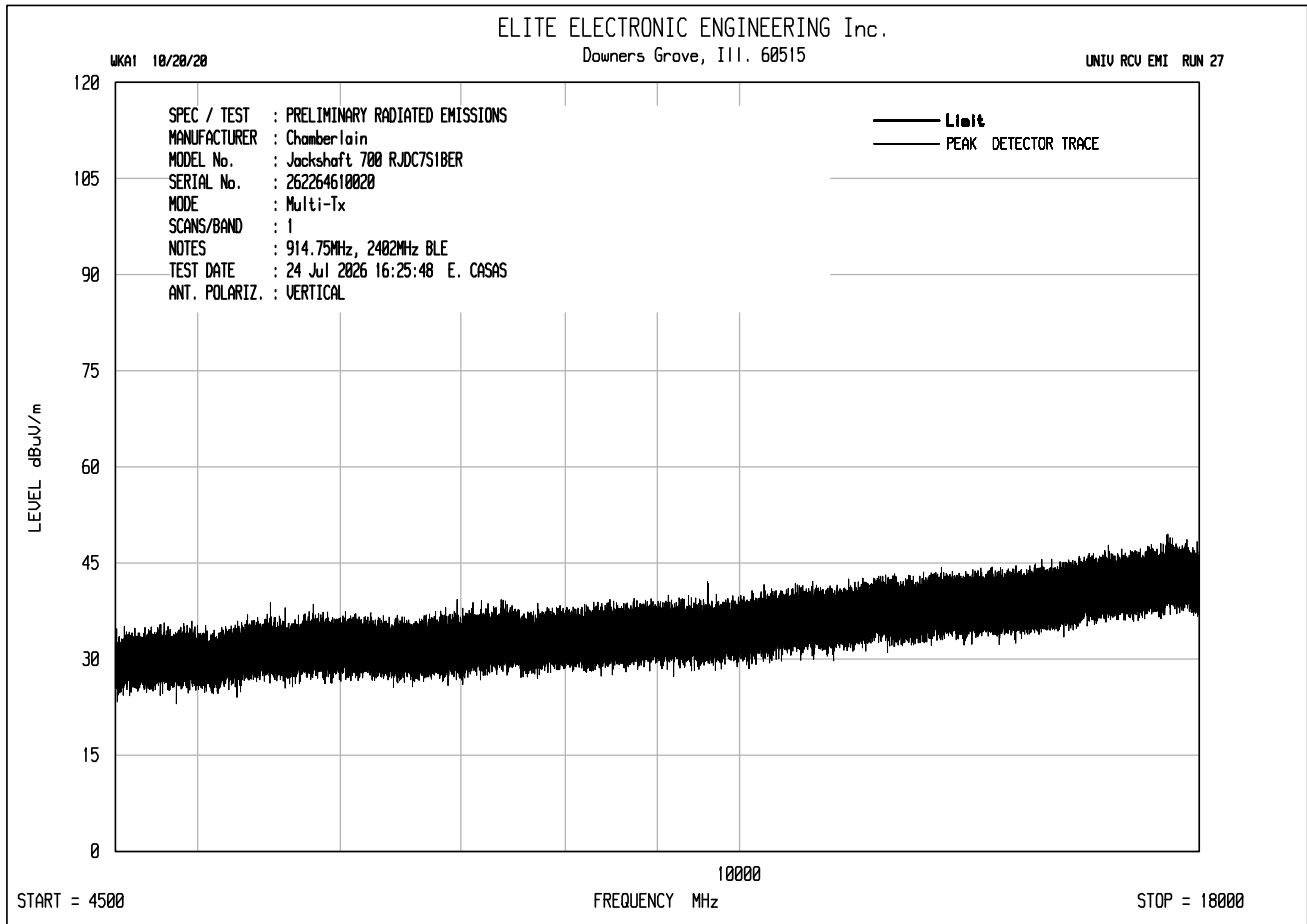


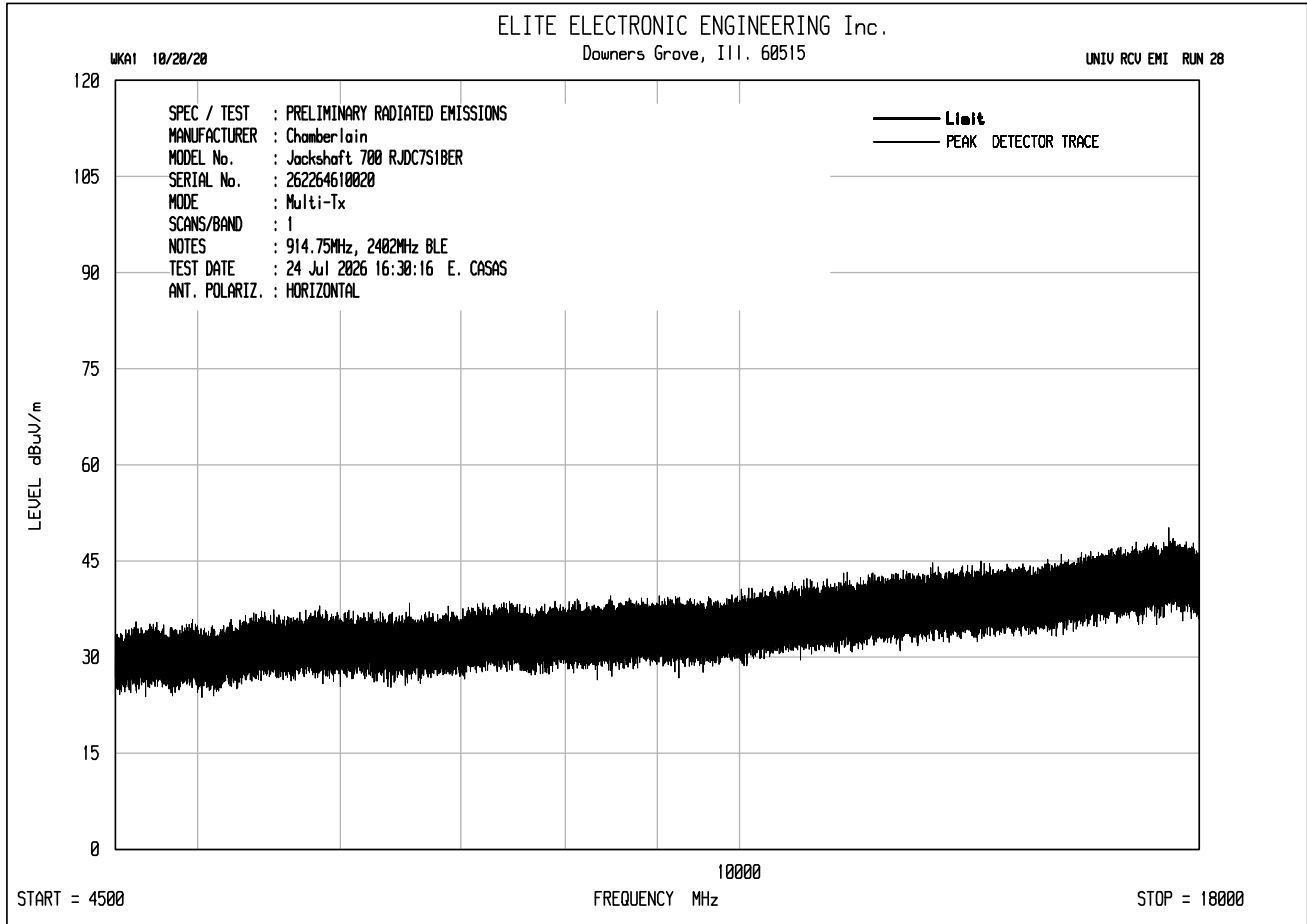


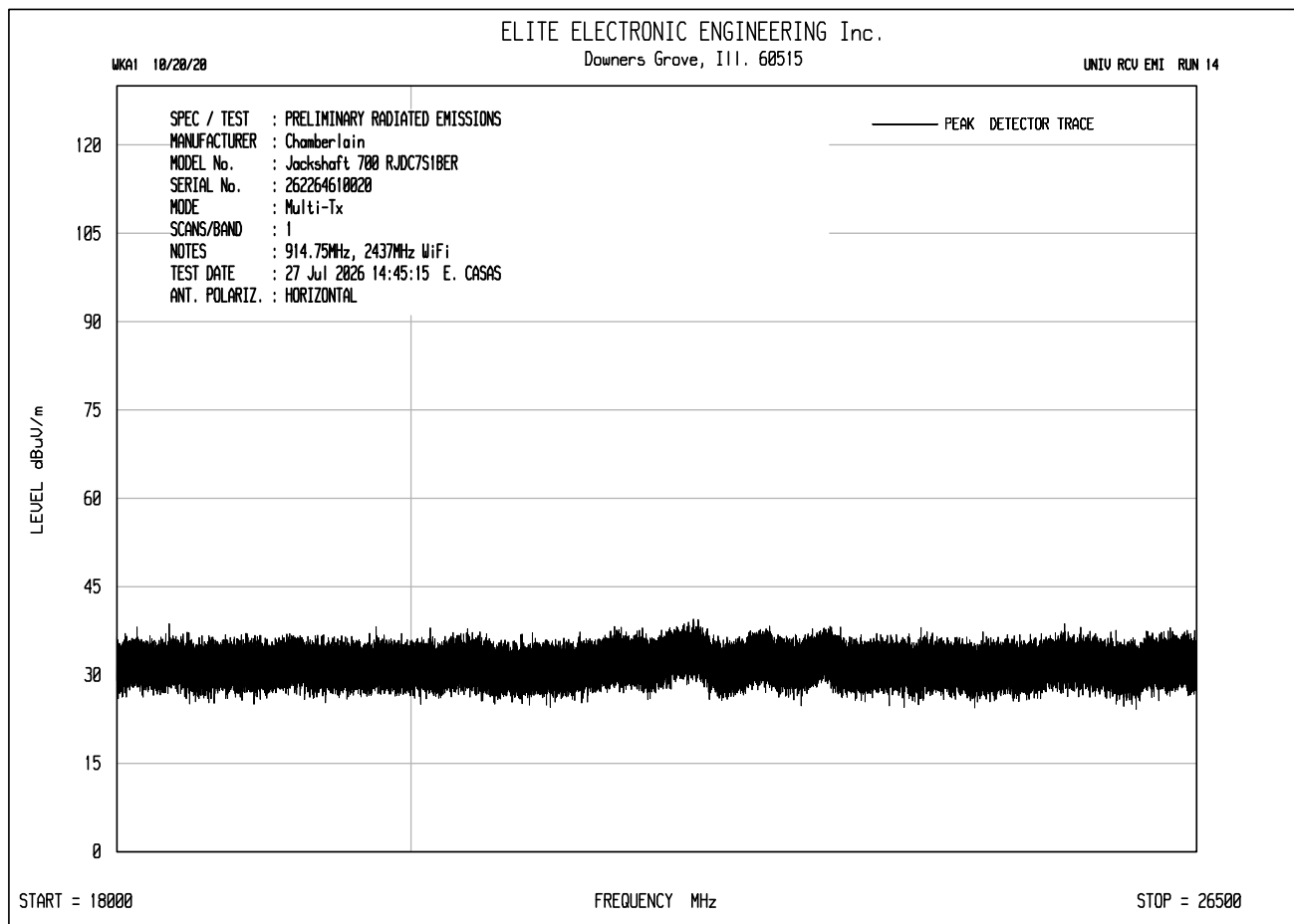
- 1: 2402MHz BLE
- 2: 914.75MHz * 2 = 1829.5MHz
- 3: 914.75MHz * 3 = 2744.25MHz

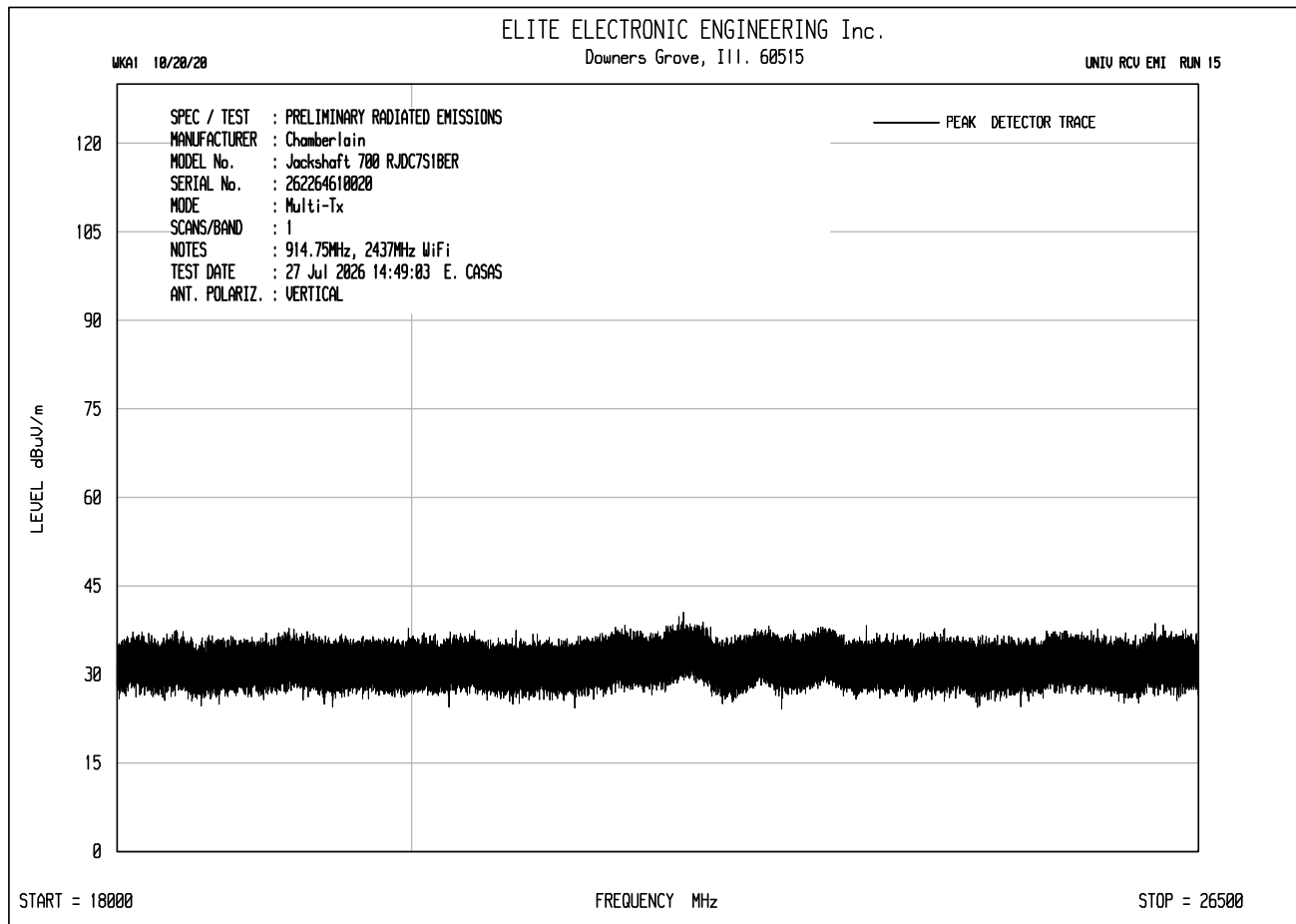


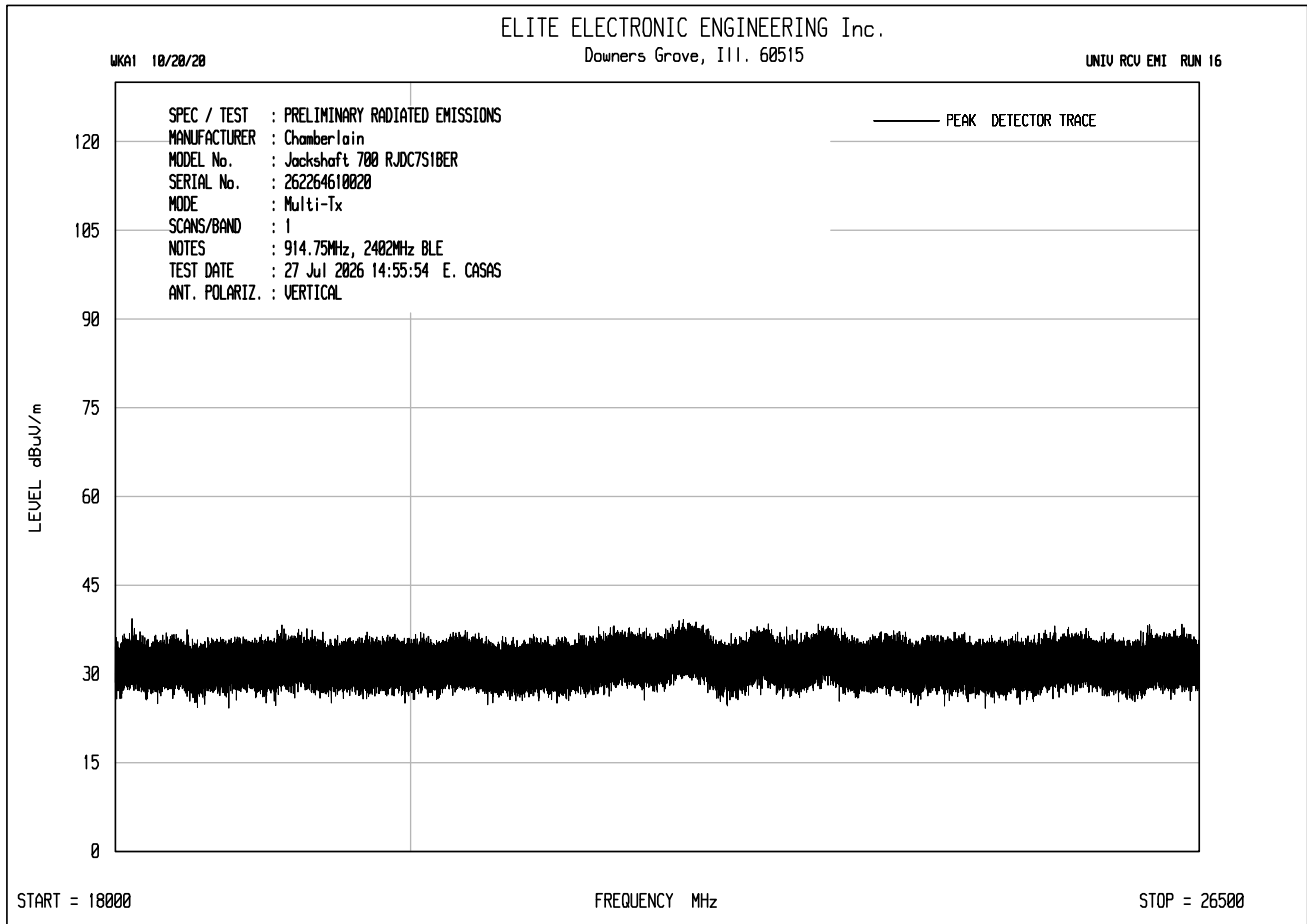
1: 2402MHz BLE
 2: 914.75MHz * 2 = 1829.5MHz

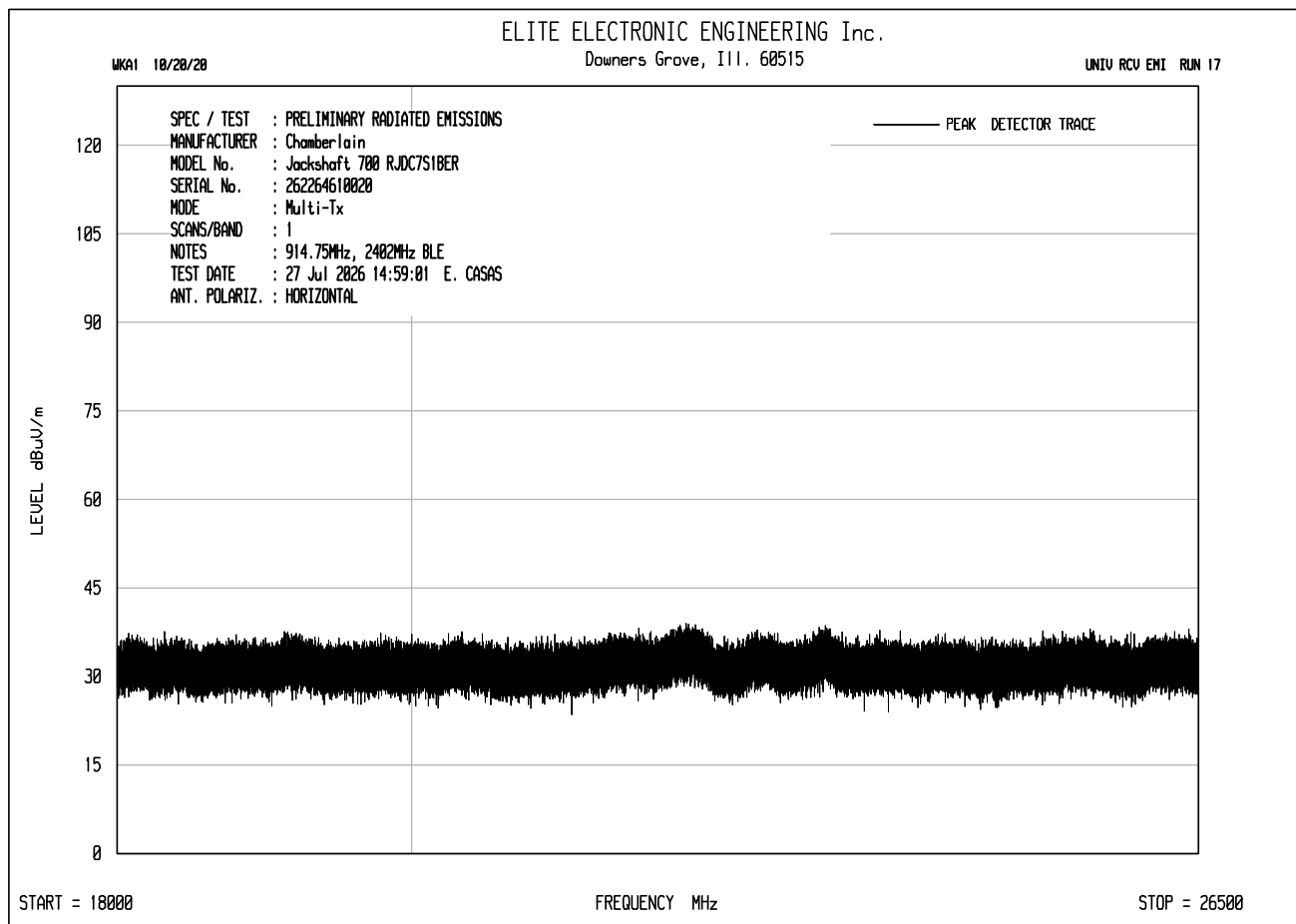












No Intermodulation Products Observed

21. Scope of Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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Downers Grove, IL 60515
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Richard King (FCC/Commercial Team Leader) Phone: 630 495 9770 ext. 123
Email: reking@elitetest.com
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ELECTRICAL

Valid To: June 30, 2027

Certificate Number: 1786.01

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

Test Technology:**Test Method(s)¹:**

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

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

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

ISO 10605 (2001, 2008); ISO 10605;
CS.00054, Section 5.10; CS.00244 Section 5.5;
EMC-CS-2009.1 (CI 280); FMC1278 (CI280); SAE J1113-13;
GMW 3097 Section 3.6

Conducted Emissions

CISPR 25 (2002, 2008), Sections 6.2 and 6.3;
CISPR 25 (2016), Sections 6.3 and 6.4; CISPR 25;
CS.00054, Sections 5.6.1 and 5.6.2;
CS.00244 Sections 5.4.2 and 5.4.3; GMW 3097, Section 3.3.2;
EMC-CS-2009.1 (CE 420); FMC1278 (CE420, CE421, CE 430, CE440)

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



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5202 Presidents Court, Suite 220 | Frederick, MD 21703-8398 | Phone: 301 644 3248 | Fax: 240 454 9449 | www.A2LA.org

Test Technology:
Test Method(s)¹:

Radiated Emissions Anechoic
(Up to 6 GHz)

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

Vehicle Radiated Emissions

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

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

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

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

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

Radiated Immunity Magnetic Field

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

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

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

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

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

Vehicle Radiated Immunity (ALSE)

ISO 11451-2; ECE Regulation 10.06 Annex 6

Vehicle Product Specific EMC Standards

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

Electrical Loads

ISO 16750-2

Stripline

ISO 11452-5

Emissions

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

47 CFR, FCC Part 15 B (using ANSI C63.4:2014);
47 CFR, FCC Part 18 (using FCC MP-5:1986);
ICES-001; ICES-003; ICES-005;
IEC/CISPR 11, Ed. 4.1 (2004-06); AS/NZS CISPR 11 (2004);
IEC/CISPR 11 Ed 5 (2009-05) + A1 (2010);
KN 11 (2008-5) with RRL Notice No. 2008-3 (May 20, 2008);
CISPR 11; EN 55011; KS C 9811; CNS 13803 (1997, 2003);
CISPR 14-1; EN 55014-1; AS/NZS CISPR 14.1;

Test Technology:

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

Test Method(s)¹:

CISPR 16-2-1 (2008); CISPR 16-2-1; KS C 9814-1; KN 14-1;
IEC/CISPR 22 (1997);
EN 55022 (1998) + A1(2000);
EN 55022 (1998) + A1(2000) + A2(2003); EN 55022 (2006);
IEC/CISPR 22 (2008-09); AS/NZS CISPR 22 (2004);
AS/NZS CISPR 22, 3rd Edition (2006); KN 22 (up to 6 GHz);
CNS 13438 (up to 6 GHz); VCCI V-3 (up to 6 GHz);
CISPR 32; EN 55032; KS C 9832; KN 32;
ECE Regulation 10.06 Annex 7 (Broadband);
ECE Regulation 10.06 Annex 8 (Narrowband);
ECE Regulation 10.06 Annex 13 (Conducted);
ECE Regulation 10.06 Annex 14 (Conducted)

Cellular Radiated Spurious Emissions

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

Current Harmonics

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

Flicker and Fluctuations

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

Immunity

Electrostatic Discharge

IEC 61000-4-2, Ed. 1.2 (2001);
IEC 61000-4-2 (1995) + A1(1998) + A2(2000);
EN 61000-4-2 (1995); EN 61000-4-2 (2009-05);
KN 61000-4-2 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-2; EN 61000-4-2; KN 61000-4-2;
KS C 9610-4-2; IEEE C37.90.3 2001

Radiated Immunity

IEC 61000-4-3 (1995) + A1(1998) + A2(2000);
IEC 61000-4-3, Ed. 3.0 (2006-02);
IEC 61000-4-3, Ed. 3.2 (2010);
KN 61000-4-3 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-3; EN 61000-4-3; KN 61000-4-3;
KS C 9610-4-3; IEEE C37.90.2 2004

Electrical Fast Transient/Burst

IEC 61000-4-4, Ed. 2.0 (2004-07);
IEC 61000-4-4, Ed. 2.1 (2011);
IEC 61000-4-4 (1995) + A1(2000) + A2(2001);
KN 61000-4-4 (2008-5);
RRL Notice No. 2008-5 (May 20, 2008);
IEC 61000-4-4; EN 61000-4-4; KN 61000-4-4;
KS C 9610-4-4; ECE Regulation 10.06 Annex 15

Test Technology:**Test Method(s)¹:**

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

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; ANSI C63.27

Test Technology:
Test Method(s)¹:
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; RSS-102.NS.MEAS;
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-192; RSS-194;
RSS-195; RSS-196; RSS-197; RSS-198; RSS-199;
RSS-210 (up to 40 GHz); RSS-211 (up to 40 GHz);
RSS-213; RSS-215; RSS-216 (up to 40 GHz);
RSS-220 (up to 40 GHz); RSS-222; RSS-236; RSS-238;
RSS-243; RSS-244; RSS-247; RSS-248; 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 (February 6, 2024)

Australia/New Zealand Radio Tests

AS/NZS 4268; Radiocommunications (Short Range Devices)
Standard (2014)

Hong Kong Radio Tests

HKCA 1039 Issue 6; HKCA 1042; HKCA 1033 Issue 7;
HKCA 1061; HKCA 1008; HKCA 1043; HKCA 1057;
HKCA 1073

Korean Radio Test Standards

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

Vietnam Radio Test Standards

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

Test Technology:
Test Method(s)¹:
Vietnam EMC Test Standards

QCVN 18:2014/BTTTT; QCVN 86:2019/BTTTT;
QCVN 96:2015/BTTTT; QCVN 118:2018/BTTTT

Unlicensed Radio Frequency Devices
(3 Meter Semi-Anechoic Room)

47 CFR FCC Part 15C, 15D, 15E, 15F, 15G, 15H
(using ANSI C63.10:2020, ANSI C63.17:2013 and
FCC KDB 905462 D02 (v02))

Licensed Radio Service Equipment

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); ANSI/TIA-603-F

OTA (Over the Air) Performance

GSM, GPRS, EGPRS
UMTS (W-CDMA)
LTE Cat 0+, M1, NB1
A-GNSS for UMTS/GSM, LTE
Large Device/Laptop/Tablet Testing
Integrated Device Testing
WiFi 802.11 a/b/g/n/ac

CTIA Test Plan for Wireless Device Over-the-Air
Performance (Method for Measurement for Radiated Power
and Receiver Performance) V6.0²;
CTIA Test Plan for RF Performance Evaluation of WiFi
Mobile Converged Devices V4.0²
***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 150/5345-10;
FAA AC 150/5345-43;
FAA AC 150/5345-44;
FAA AC 150/5345-46;
FAA AC 150/5345-47;
FAA EB 67

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)

West Annex
1524 Centre Circle
Downers Grove, IL 60515

Test Technology:

Test Method(s)²:

Transient Immunity

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

***Transverse Electromagnetic (TEM)
Cell***

ISO 11452-3

Emissions

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

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;

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Test Technology:
Test Method(s)²:

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

EN 61000-4-6; KN 61000-4-6; KS C 9610-4-6
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

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 150/5345-10;
FAA AC 150/5345-43;
FAA AC 150/5345-44;
FAA AC 150/5345-46;
FAA AC 150/5345-47;
FAA EB 67

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

¹ 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 Conformity Assessment Bodies.

² Accreditation to the requirements of the CTIA Certification Test Plan does not imply authorization by the CTIA Certification program. Please see the CTIA website <https://ctiacertification.org/test-labs/> for a listing of Authorized Test Labs (ATLs).

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

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

General Mobile Radio Services (FCC Licensed Radio Service Equipment)

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



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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

Rule Subpart/Technology	Test Method	Maximum Frequency (MHz)
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
<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

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 14th day of August 2025.



Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1786.01
Valid to June 30, 2027

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

22. Informative Annex

The testing performed on the representative model in this test report covers the following list of associated product numbers provided by The Chamberlain Group LLC:

LIST OF PRODUCT MODELS		
LiftMaster		Raynor
JDC7S1BMC		2125023
JDC7S4BMC		2125024
JHDC7S1BMC		2125025
JHDC7S4BMC		2125026
TDC7S1BMC		2125027
TDC7S4BMC		2125028
JHDC12S1BMC		2125029
JHDC12S4BMC		2125030
JHDC12X1BMC		2125031
JHDC12X4BMC		2125032
TDC12S1BMC		2125033
TDC12S4BMC		2125034
TDC12X1BMC		2125035
TDC12X4BMC		2125036
JHDC22X1BMC		2125037
JHDC22X4BMC		2125038
TDC22X1BMC		2125039
TDC22X4BMC		2125040
JHDC12X4N4XMC		2125041
JHDC12X4N4XMC		2125042
JHDC22X1N4XMC		2125043
JHDC22X4N4XMC		2125044
TDC12X1N4XMC		2125045
TDC12X4N4XMC		2125046
TDC22X1N4XMC		2125047
TDC22X4N4XMC		2125048
RJDC7S1BEL		2125053
RJDC7S4BEL		2125054
RJDC7S1BER		2125055
RJDC7S4BER		2125056

JDC7S1BE		2125057
JDC7S4BE		2125058
JHDC7S1BE		2125059
JHDC7S4BE		2125060
JHDC12S1BE		2125061
JHDC12S4BE		2125062
JHDC12X1BE		2125063
JHDC12X4BE		2125064
RJDC7S1N4XR		2125065
RJDC7S4N4XR		2125066
RJDC7S1N4XL		2125067
RJDC7S4N4XL		2125068
JHDC7S1N4X		2125069
JHDC7S4N4X		2125070
TDC7S1N4X		2125071
TDC7S4N4X		2125072