



BEC INCORPORATED

CLASS II PERMISSIVE CHANGE TEST REPORT

TEST STANDARDS:

**FCC Part 15 Subpart C, IC RSS-Gen, IC RSS-247
DTS Intentional Radiator**

**Legrand Model WNRL24/WZ3RL24 radiant Wireless Smart Switch
Legrand Model WNRL34/WZ3RL34 radiant Wireless Home/Away Switch
Legrand Model WNRL44/WZ3RL44 radiant Wireless Daytime/Nighttime Switch
Legrand Model WNRL64/WZ3RL64 radiant Wireless Smart Dimmer**

**FCC ID: 2AU5D-WNZED
ISED ID: 25764- WNZED**

REPORT#: BEC-2272-13

TEST DATES: 08/31/2023 – 09/26/2023

CUSTOMER:

**Pass & Seymour/Legrand
50 Boyd Avenue
Syracuse, NY 13209**

PREPARED BY: _____


JR Fanella, Test Engineer

REVIEWED and APPROVED BY: _____


Steve Fanella, Quality Manager

The results described in this report relate only to the item(s) tested. This document shall not be reproduced except in full without prior written permission of BEC Incorporated





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Notice to Customer

This report and any recommendations it contain represent the result of BEC’s testing and assessment on behalf of your company. Testing has been conducted according to accepted engineering standards and practices. This report reflects testing and assessment of product samples provided by your company and may not reflect the characteristics of other samples, especially those produced at different times. This report and its findings and recommendations, if implemented, should not be construed as an assurance or implied warranty for the continuing electromagnetic compatibility (EMC) of the product. **BEC shall not be liable for incidental or consequential damages, even if advised of the possibility thereof.**

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The BEC Decision Rule: Measurement Uncertainty is not applied to any testing measurements or test results provided to the customer by BEC Incorporated at this time.

Revision History

Revision #	Description of Changes	Date of Changes	Date Released
0	Test Report Initial Release	N/A	10/19/2023
1	Added the 4 other Model Numbers on Page 5 which are just marketing differences. Added the statement on Page 68 that we scanned the models from 30 MHz to 1000 MHz for spurious emissions.	12/13/2023	12/13/2023



1.0 Administrative Information

1.1 Project General Information

Project Number	BEC-2272
Manufacturer	Pass & Seymour/Legrand
Models	WNRL24, WZ3RL24, WNRL34, WZ3RL34, WNRL44, WZ3RL44, WNRL64, and WZ3RL64
Equipment Description	Wireless Dimmers and Wireless Switches
Model Number	WNRL24
Sample Number	2272-20
Serial Number	No Serial Number
Equipment Description	Wireless Home/Away Switch-Radiated Emissions Sample
Model Number	WNRL34
Sample Number	2272-22
Serial Number	No Serial Number
Equipment Description	Wireless Daytime/Nighttime Switch-Radiated Emissions Sample
Model Number	WNRL44
Sample Number	2272-24
Serial Number	No Serial Number
Equipment Description	Wireless Dimmer-Radiated Emissions Sample
Model Number	WNRL64
Sample Number	2272-18
Serial Number	No Serial Number
Equipment Description	Wireless Dimmer-Radiated Emissions Sample
Model Number	WNRL64



Sample Number	2272-18
Serial Number	No Serial Number
Equipment Description	Wireless Dimmer-Antenna Conducted Sample
Model Number	WNRL64
Sample Number	2272-17
Serial Number	No Serial Number
FCC ID	2AU5D-WNZED
ISED ID	25764- WNZED
Zigbee Radio Chip Manufacturer	Atmel
Zigbee Radio Chip Model	SAMR21E
Radio Type	Zigbee
Frequency of Operation	2405 – 2480 MHz
Modulation Type	O-QPSK
Antenna Gain	+ 1.0 dBi
FCC Classification	Digital Transmission System (DTS)
Date Received	08/30/2023
Condition Received	Suitable for test
Sample Type	Production units
Firmware Version	TestRadio_WNRL23.bin
Applicable FCC Rules	FCC Rules Part 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz Direct Sequence System
Applicable ISED Rules	RSS-Gen: General Requirements for Compliance of Radio Apparatus & RSS-247: Digital Transmission Systems (DTSS), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices



1.2 Preface

This report documents product testing conducted to verify compliance of the specified EUT with applicable standards and requirements as identified herein. EUT, test instrument configurations, test procedures, and recorded data are generally described in this report. The reader is referred to the applicable test standards for detailed procedures. The following table summarizes the test results obtained during this evaluation.

1.3 Laboratory and Customer Information

Test Laboratory Location	BEC Incorporated 970 East High Street Pottstown, PA 19464
Test Personnel	Steve Fanella / JR Fanella
BEC Laboratory Number FCC Registration	US1118
BEC Laboratory Number ISED Registration	7342A-1
Test Performed For	Pass & Seymour/Legrand 50 Boyd Avenue Syracuse, NY 13209
Customer Technical Contacts	Fred Duffy
Technical Contact Email	fred.duffy@legrand.com
Customer Reference Number	PO # SP319415-802



1.4 Measurement Uncertainty

Measurement	Measurement Distance	Range	Measurement Limit	Expanded Uncertainty
Radiated Disturbance Open Area Test Site	3 Meter	30 MHz – 1 GHz	Class A or B	4.63
Conducted Disturbance AC Mains	N/A	150 kHz – 30 MHz	Class A or B	2.69
Radio Frequency	N/A	1 MHz – 26.5 GHz	N/A	±0.027 ppm
RF power, conducted	N/A	1 MHz – 26.5 GHz	N/A	±1.45 dB
Conducted spurious emission of transmitter, valid up to 6 GHz	N/A	150 kHz – 26.5 GHz	N/A	±0.9 dB
Occupied Bandwidth	N/A	1 MHz – 26.5 GHz	N/A	±2 %
Temperature	N/A	15 – 35° C	N/A	±0.5 °C
Humidity	N/A	20 – 95 %	N/A	±2.5%

No adjustments to measured data presented in this report are required because all values of uncertainty are less than the CISPR 16-4-2:2018 recommendations. These uncertainties have a coverage factor of $k = 2$, which yields approximately a 95% level of confidence for the near-normal distribution typical of most measurement results.



1.5 Test Result Summary Table

The Legrand Models WNRL24, WNRL34, WNRL44 and WNRL64 radiant wireless switches and dimmers with Zigbee radios were tested and found to be compliant to the sections of the FCC Part 15 Subpart C and RSS-Gen RSS-247 standards listed below. The testing reflects specific testing to show compliance for a Class II Permissive Change:

Report Section	FCC Part 15, Subpart C	RSS-Gen	RSS-247	Test Description	Result
	15.203(b)	Annex A 10(g)		Antenna Requirement	Previously Reported
	15.204	8.3		External RF power amplifiers and antenna modifications	Previously Reported
4.1	15.207	7.2		Conducted Limits (AC Power) 150 kHz – 30 MHz	PASS
4.2	15.205(a) 15.209	8.9, 8.10	3.3	Radiated Emissions in Non-Restricted and Restricted Frequency Bands 30 MHz – 1000 MHz and 1 GHz – 18 GHz	PASS
	15.247(a)(2)		5.2 (a)	6 dB Occupied Bandwidth	Previously Reported
		6.7		99% Occupied Bandwidth	Previously Reported
4.3	15.247(b)(3)		5.4 (d)	Maximum Conducted (Peak) Power Output and EIRP	PASS
	15.247(d)		5.5	Antenna Conducted Emissions in Restricted Frequency Bands 30 MHz – 25 GHz	Previously Reported
	15.247(e)		5.2 (b)	DTS maximum power spectral density level in the fundamental emission	Previously Reported
	15.247(d)		5.5	DTS band-edge emission measurements	Previously Reported

Previously Reported Results: The EUT was previously tested with results are documented in report BEC-2108-01.



1.6 Condition of Received Sample

An evaluation of the EUT was conducted in order to verify test subject identity and condition and to ensure suitability for testing. No evidence of physical damage was noted. The test item condition was deemed acceptable for the performance of the requested test services.

1.7 Climatic Environment

Unless noted elsewhere in this report, the following were the ambient conditions in the laboratory during testing:

Temperature: $22^{\circ} \pm 5^{\circ}$

Humidity: $50\% \pm 20\%$

Barometric Pressure: $1000\text{mb} \pm 20\%$

1.8 Test Equipment

All test equipment is checked to manufacturer's specifications and, when applicable, have current N.I.S.T. traceable, ISO 9002 conforming certificates of calibration. Test equipment used for the tests described herein is listed in Appendix A.



2.0 Equipment Under Test

Unless otherwise noted in the individual test results sections, testing was performed on the EUT as follows.

2.1 EUT Description

Legrand Model WNRLX4 Family Product Description-

The Legrand Model WNRLX4 is a family of wireless switches and dimmer with Netatmo. The Legrand Model WNRLX4 devices serve as an endpoint receiver for a nearby gateway device in an IOT network for smart lighting/electrical device control.

WNRL24/WZ3RL24- Radiant with Netatmo Wireless Switch with Zigbee Radio. Powered by 120V/60Hz AC. Broadcasts Zigbee RF signal, serves as an endpoint receiver for a nearby gateway device in an IOT network for smart lighting/electrical device control.

WNRL34/ WZ3RL34- Radiant with Netatmo Home/Away Wireless Switch with Zigbee Radio. Powered by 120V/60Hz AC. Broadcasts Zigbee RF signal, serves as an endpoint receiver for a nearby gateway device in an IOT network for smart lighting/electrical device control.

WNRL44/ WZ3RL44- Radiant with Netatmo Wake/Sleep Wireless Switch with Zigbee Radio. Powered by 120V/60Hz AC. Broadcasts Zigbee RF signal, serves as an endpoint receiver for a nearby gateway device in an IOT network for smart lighting/electrical device control.

WNRL64/ WZ3RL64- Radiant with Netatmo Wireless Tru-Universal Dimmer with Zigbee Radio. Powered by 120V/60Hz AC. Broadcasts Zigbee RF signal, serves as an endpoint receiver for a nearby gateway device in an IOT network for smart lighting/electrical device control.

The WZ3RLXX products are the exact same device, parts and firmware as the WNRLXX items. The only difference in the part numbers relate to specific marketing channels which can be handled by using different part numbers.

2.2 Product Category

FCC Part 15, Subpart C (Section 15.247), IC RSS-Gen, IC RSS-247

2.3 Product Classification

47 CFR Part 15, Subpart C, Section 15.247 “DTS Operation within the band of 900 – 928 MHz, 2400 – 2483.5 MHz, and 5725 – 5850 MHz.”



2.4 Test Configuration

Samples of the Legrand Models WNRL24, WNRL34, WNRL44 and WNRL64 radiant wireless switches and dimmers with Zigbee radios, were tested at the Low Channel 11 at 2405 MHz, Middle Channel 18 at 2440 MHz and High Channel 26 at 2480 MHz. The Legrand models with Zigbee radio samples contained control software that can utilize the O-QPSK modulation used in normal operation. The control software sets the EUT with the maximum output power when in Transmit Mode (With and Without Modulation). The control software also allowed the tester to select an un-modulated transmit signal for the radio of the unit under test or to place the radio in a receive mode. The highest amplitude was determined to be when the radio transmitted with modulation.

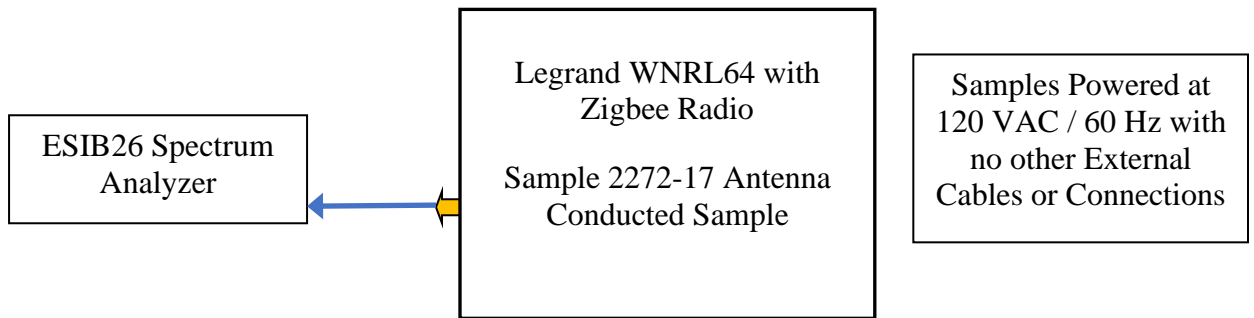
2.5 Test Configuration Rationale

Samples of the Legrand Models WNRL24, WNRL34, WNRL44 and WNRL64 radiant wireless switches and dimmers with Zigbee radios, were powered externally at 120 VAC / 60 Hz and were supplied with software which controlled the operation of the Zigbee radio in a manner consistent with normal use.

2.6 Test Configuration Diagrams – Zigbee Radio

Block diagrams of the EUT configuration showing interconnection cables are illustrated below. The drawing shows the physical hardware layout used for the tests along with I/O cables and AC power distribution. Diagrams show the Conducted Measurement configuration connection and Radiated Measurement configuration connection when testing the Zigbee Radio.

2.6.1 Zigbee Configuration – Conducted Measurement



← BEC-926, 1 Meter SMA Cable Connecting the SMA Connection from the Zigbee Radio Output to the Input of the Rohde and Schwarz ESIB26 Measurement Analyzer

↪ SMA Adapter Connected from the Zigbee Radio for connection to the SMA Cable



2.6.2 Zigbee Configuration – Radiated Measurement

Legrand WNRL24 Sample 2272-20
 Legrand WNRL34 Sample 2272-22
 Legrand WNRL44 Sample 2272-24
 Legrand WNRL64 Sample 2272-18
 Radiated Emissions EUTs

Samples Powered at 120
 VAC / 60 Hz with no
 other External Cables or
 Connections

2.7 EUT Information, Interconnection Cabling and Support Equipment

EUT Hardware

Description	Manufacturer	Model	Serial Number	Sample Number
radiant with Netatmo Wireless Switch with Zigbee	Legrand	WNRL24	None	2272-20
radiant with Netatmo Home/Away Wireless Switch with Zigbee	Legrand	WNRL34	None	2272-22
radiant with Netatmo Wake/Sleep Wireless Switch with Zigbee	Legrand	WNRL44	None	2272-24
radiant with Netatmo Wireless Tru-Universal Dimmer with Zigbee - Antenna Conducted Test Sample	Legrand	WNRL64	None	2272-17
radiant with Netatmo Wireless Tru-Universal Dimmer with Zigbee - Radiated Test Sample				2272-18

Interconnection Cable List (Conducted Measurement Test Setup)

Manufacturer	Model	Type	Shielding	Length	Description
Suhner	S04272B	High Frequency RF Cable 1 to 40 GHz	Double Braid	1 Meter	Measurement Cable from the Antenna SMA Connector to the R&S ESIB26 Receiver. Asset # BEC-962



2.8 Test Signals and Test Modulation

By design this product does not have an external modulation input connector, therefore, normal internally generated modulation was used. When evaluating the type of signal that would generate the highest output amplitude there was no difference between the un-modulated carrier and the modulated carrier. The testing was performed using modulated signals.

2.8.1 Zigbee Radio - Test Signals and Modulation

The EUT transmits to a discrete frequency on a specific channel. The Legrand Models WNRL24, WNRL34, WNRL44 and WNRL64 radiant wireless switches and dimmers with Zigbee radios have 16 Channels available. The 16 Channels and frequencies that can be transmitted by the EUT are as follows:

Zigbee Channel	Frequency (MHz)	Zigbee Channel	Frequency (MHz)
11	2405	19	2445
12	2410	20	2450
13	2415	21	2455
14	2420	22	2460
15	2425	23	2465
16	2430	24	2470
17	2435	25	2475
18	2440	26	2480

For the required testing, the EUT was configured to transmit at low Channel 11 (2405 MHz), middle Channel 18 (2440 MHz) and high Channel 26 (2480 MHz). The Zigbee radio utilizes one modulation, O-QPSK.

2.9 Grounding

There was no ground connection to the EUT during test. This presents the worst-case scenario of an ungrounded device; either by failing to attach ground at installation or breakage of ground wire.

2.10 EUT Modifications

With the exception for the attachment of an SMA connector directly to the antenna output on the main board of the Legrand Model WNRL64 Sample 2272-17, no modifications were made to the other test samples.



3.0 Applicable Requirements, Methods, and Procedures

3.1 Applicable Requirements

The results of the measurement of the radio disturbance characteristics of the EUT described herein may be applied and where appropriate, provide a presumption of compliance to one or more of the following requirements or to other requirements at the discretion of the customer, regulatory agencies, or other entities.

3.1.1 FCC Requirements

Code of Federal Regulations: Title 47 – Telecommunication

Chapter I - Federal Communications Commission

Sub-chapter A – General

Part 15 – Radio Frequency Devices

Subpart C - Intentional Radiators

3.1.2 Industry Canada Requirements

RSS-Gen Issue 5: General Requirements for Compliance of Radio Apparatus

RSS-247 Issue 2: Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.

3.1.3 Basic Test Methods and Test Procedures

558074 D01 DTS Meas Guidance v05r02, 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.

ANSI C63.10-2013, American National Standard for Compliance Testing of Unlicensed Wireless Devices.

3.2 Deviations or Exclusions from the Requirements

No deviations or exclusions were made.



4.0 Test Results

4.1 Conducted Emissions AC Power Port (47 CFR 15.207)(RSS-Gen 7.2)

The Legrand Models WNRL24, WNRL34, WNRL44 and WNRL64 radiant wireless switches and dimmers with Zigbee radios are powered externally at 120 VAC / 60 Hz and therefore requires the Conducted Emissions AC Power Port testing.

4.1.1 Conducted Emissions Test Procedure

AC Power Line

Conducted emissions at the power line input of the EUT were measured with an EMI receiver set to the appropriate detector and CISPR bandwidth, which was connected to the RF output of a 50 Ω , 50 μ H Line Impedance Stabilization Network (LISN) installed in each power line.

Measurements were made over the frequency range of 150 kHz to 30 MHz while the EUT was operating as described in the EUT section of this report. The significant amplitudes of emissions measured on the AC power lines of the EUT were recorded as follows:

Emission (dB μ V) = Meter Reading (dB μ v) + Cable Loss (dB) + LISN Factor (dB) + Limiter Loss (dB)

Note: An EMI receiver set to peak mode was used to measure and record the spectrum for expediency. To determine compliance, the peak detector sweep is graphed against the appropriate average limit. This type of measurement is valid because the peak reading will always be greater than or equal to the average or quasi-peak reading. Peak emissions that are greater than or equal to 1 dB below the average limit are remeasured using either a manually tuned receiver with the detector function set to quasi-peak and then to average, or a receiver under remote control with quasi-peak and average detector functions.



4.1.2 Conducted Emissions Test Information

The following information is related to the testing performed for AC Conducted Emissions in the frequency range of 150 kHz to 30 MHz.

Frequency Range	150 kHz to 30 MHz
Test Standards	FCC Part 15.207 and RSS-Gen 7.2
Class Limits	Class B Device
BEC Test Area	Screen Room 1
Manufacturer	Legrand
Model	WNRL24
Serial Number	No Serial Number
Sample Number	2272-20
Sample Type	Radiated Emissions Sample Type
Model	WNRL34
Serial Number	No Serial Number
Sample Number	2272-22
Sample Type	Radiated Emissions Sample Type
Model	WNRL44
Serial Number	No Serial Number
Sample Number	2272-24
Sample Type	Radiated Emissions Sample Type
Model	WNRL64
Serial Number	No Serial Number
Sample Number	2272-18
Sample Type	Radiated Emissions Sample Type
Test Configuration	During testing of the Transmitter, the EUT was tested at Maximum Output Power with typical modulation. The Transmitter Low Channel, Middle Channel and High Channel were tested along with the Transmitter in Rx Mode.
Port Tested	AC Mains Port of the EUT
EUT Power	120 VAC / 60 Hz
Test Date	09/05/2023
Temperature	24°C
Humidity	51 %
Test Date	09/07/2023
Temperature	24°C
Humidity	51 %
Test Date	09/18/2023
Temperature	24°C
Humidity	55 %
Test Date	09/19/2023
Temperature	23°C
Humidity	55 %



4.1.3 Conducted Emissions 150 kHz to 30 MHz FCC 15.207 and RSS-Gen 7.2 Limits Test Results WNRL24 Sample 2272-20

The following graphs and tables show the conducted emissions recorded on the AC Power Port of the EUT displayed against the FCC Part 15.207 and RSS-Gen 7.2 Limits. EUT was powered at 120 Vac / 60 Hz.

EUT Transmitting at 2.405 GHz Low Channel Tables

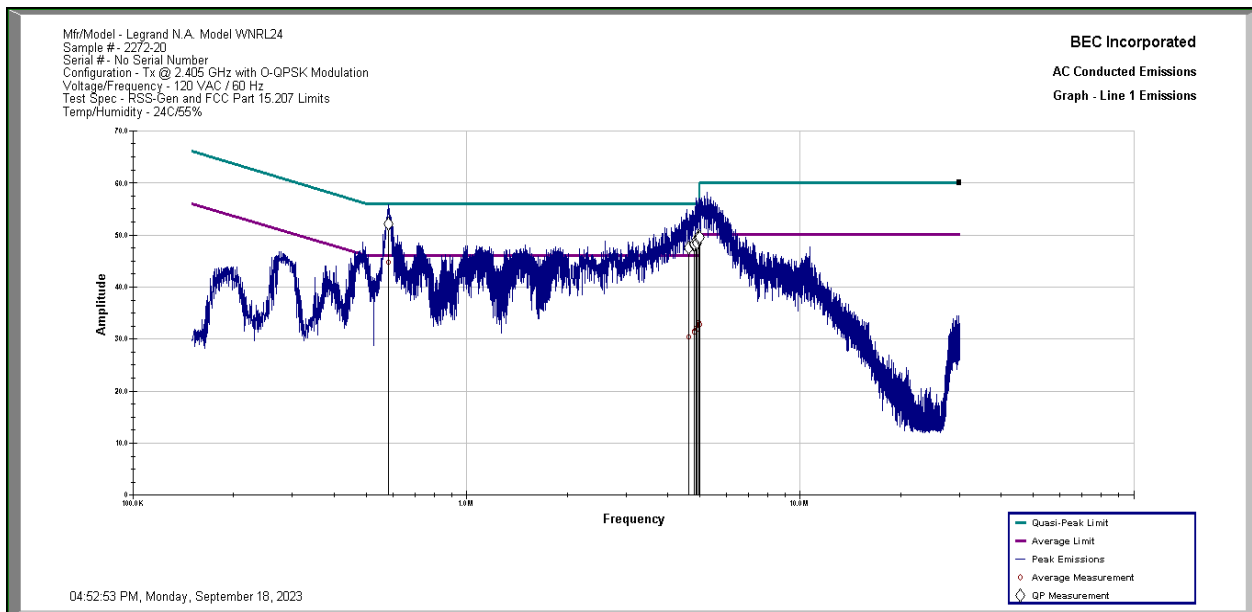
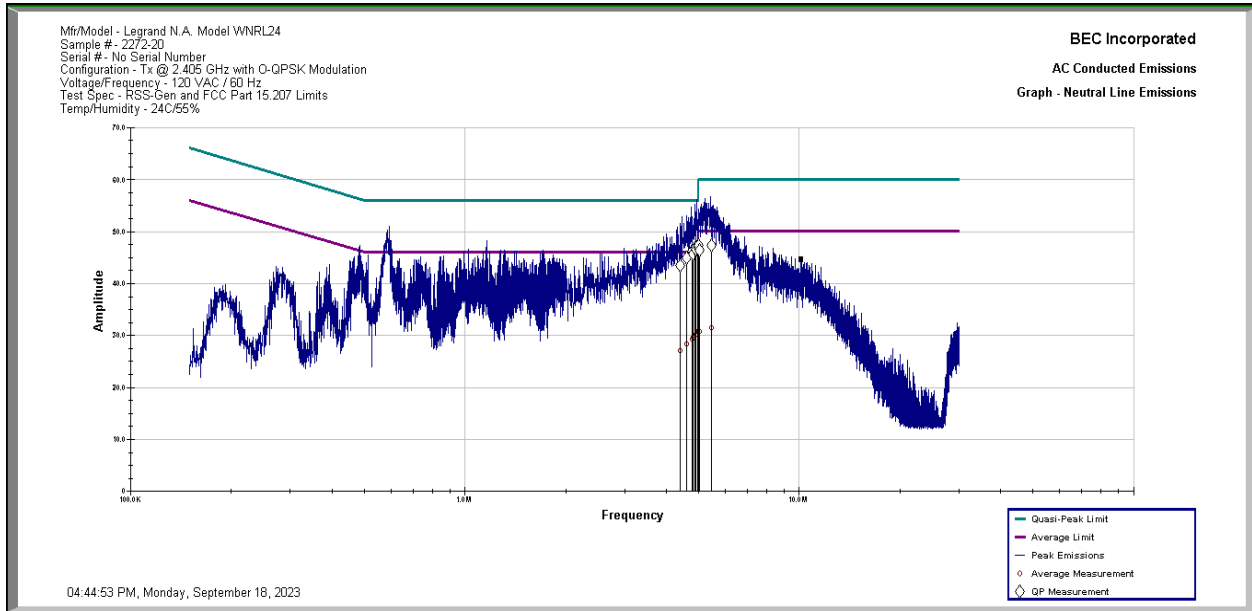
BEC Incorporated							
Neutral Line Conducted Emissions							
04:40:53 PM, Monday, September 18, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
4.408 MHz	27.10	46.00	-18.90	43.41	56.00	-12.59	10.27
4.611 MHz	28.30	46.00	-17.70	44.92	56.00	-11.08	10.27
4.787 MHz	29.36	46.00	-16.64	46.21	56.00	-9.79	10.28
4.812 MHz	29.59	46.00	-16.41	45.67	56.00	-10.33	10.28
4.871 MHz	29.94	46.00	-16.06	46.81	56.00	-9.19	10.28
4.906 MHz	30.30	46.00	-15.70	46.65	56.00	-9.35	10.28
4.970 MHz	30.83	46.00	-15.17	47.08	56.00	-8.92	10.28
4.978 MHz	30.79	46.00	-15.21	47.38	56.00	-8.62	10.28
5.024 MHz	30.72	50.00	-19.28	46.33	60.00	-13.67	10.28
5.449 MHz	31.43	50.00	-18.57	47.39	60.00	-12.61	10.31
Mfr/Model - Legrand N.A. Model WNRL24							
Sample # - 2272-20							
Serial # - No Serial Number							
Configuration - Tx @ 2.405 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 24C/55%							



BEC Incorporated							
Line 1 Conducted Emissions							
04:48:51 PM, Monday, September 18, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
581.842 KHz	44.81	46.00	-1.19	52.09	56.00	-3.91	10.15
4.614 MHz	30.34	46.00	-15.66	47.46	56.00	-8.54	10.29
4.794 MHz	31.47	46.00	-14.53	48.00	56.00	-8.00	10.30
4.814 MHz	31.27	46.00	-14.73	48.25	56.00	-7.75	10.30
4.861 MHz	32.09	46.00	-13.91	48.87	56.00	-7.13	10.30
4.861 MHz	32.04	46.00	-13.96	48.85	56.00	-7.15	10.30
4.888 MHz	31.79	46.00	-14.21	48.49	56.00	-7.51	10.30
4.955 MHz	33.07	46.00	-12.93	49.75	56.00	-6.25	10.30
4.969 MHz	32.72	46.00	-13.28	49.29	56.00	-6.71	10.30
4.981 MHz	32.69	46.00	-13.31	49.52	56.00	-6.48	10.30
Mfr/Model - Legrand N.A. Model WNRL24							
Sample # - 2272-20							
Serial # - No Serial Number							
Configuration - Tx @ 2.405 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 24C/55%							



EUT Transmitting at 2.405 GHz Low Channel Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL24 Sample 2272-20 in Tx Mode Low Channel at 2.405 GHz are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 1.19 dB.



EUT Transmitting at 2.440 GHz Middle Channel Tables

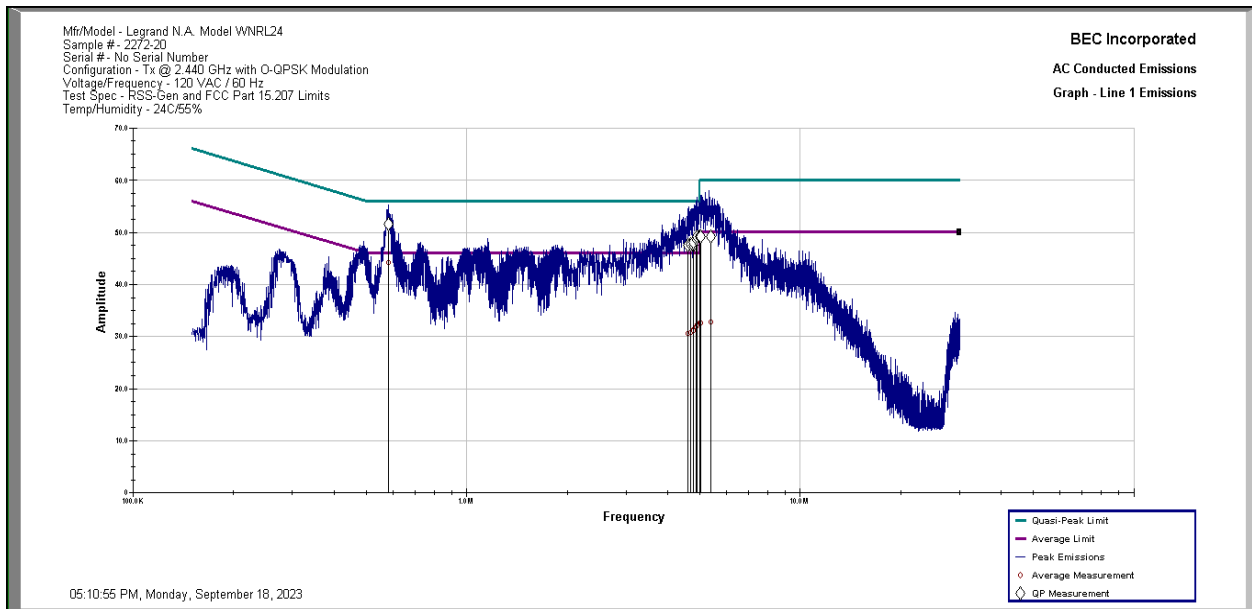
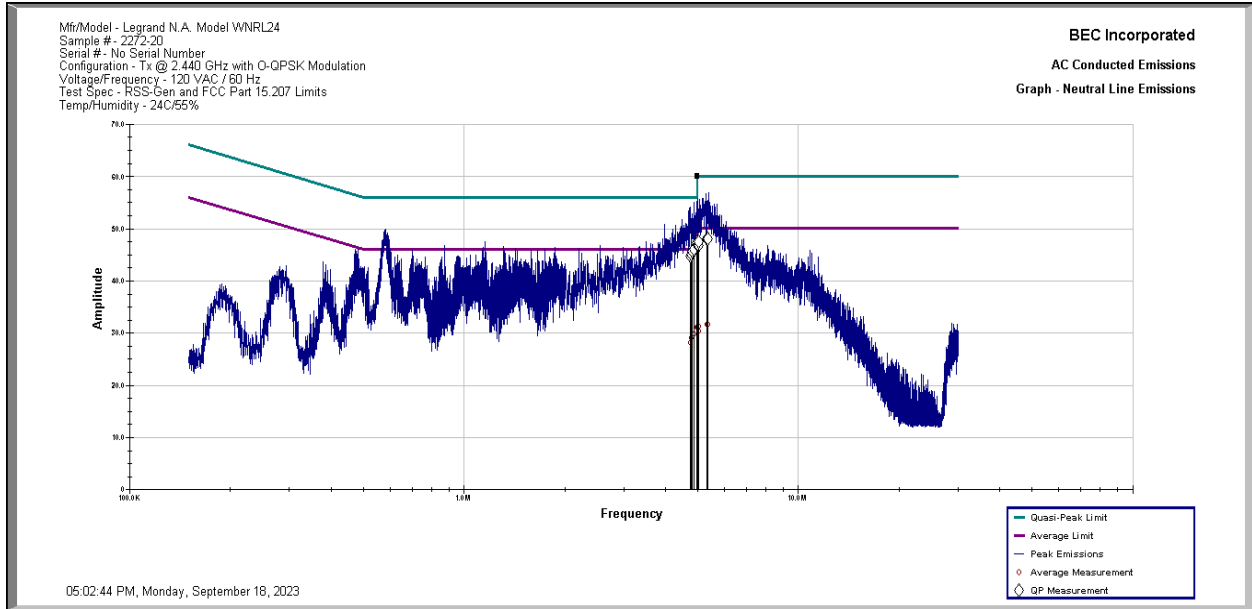
BEC Incorporated Neutral Line Conducted Emissions 04:58:44 PM, Monday, September 18, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
4.737 MHz	28.23	46.00	-17.77	44.80	56.00	-11.20	10.27
4.773 MHz	29.08	46.00	-16.92	45.21	56.00	-10.79	10.28
4.816 MHz	29.40	46.00	-16.60	45.59	56.00	-10.41	10.28
4.880 MHz	29.83	46.00	-16.17	46.13	56.00	-9.87	10.28
4.966 MHz	31.06	46.00	-14.94	47.27	56.00	-8.73	10.28
4.988 MHz	31.20	46.00	-14.80	46.81	56.00	-9.19	10.28
5.021 MHz	30.39	50.00	-19.61	46.74	60.00	-13.26	10.28
5.040 MHz	31.31	50.00	-18.69	47.44	60.00	-12.56	10.28
5.328 MHz	31.65	50.00	-18.35	48.10	60.00	-11.90	10.30
5.344 MHz	31.66	50.00	-18.34	48.14	60.00	-11.86	10.30
Mfr/Model - Legrand N.A. Model WNRL24							
Sample # - 2272-20							
Serial # - No Serial Number							
Configuration - Tx @ 2.440 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 24C/55%							



BEC Incorporated							
Line 1 Conducted Emissions							
05:06:54 PM, Monday, September 18, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
581.717 KHz	44.24	46.00	-1.76	51.63	56.00	-4.37	10.15
4.604 MHz	30.57	46.00	-15.43	47.50	56.00	-8.50	10.29
4.700 MHz	30.83	46.00	-15.17	47.66	56.00	-8.34	10.29
4.786 MHz	31.25	46.00	-14.75	47.48	56.00	-8.52	10.30
4.790 MHz	31.17	46.00	-14.83	48.13	56.00	-7.87	10.30
4.870 MHz	31.85	46.00	-14.15	48.78	56.00	-7.22	10.30
4.907 MHz	32.23	46.00	-13.77	49.13	56.00	-6.87	10.30
5.003 MHz	32.64	50.00	-17.36	49.17	60.00	-10.83	10.30
5.008 MHz	32.57	50.00	-17.43	49.13	60.00	-10.87	10.30
5.383 MHz	32.75	50.00	-17.25	49.21	60.00	-10.79	10.31
Mfr/Model - Legrand N.A. Model WNRL24							
Sample # - 2272-20							
Serial # - No Serial Number							
Configuration - Tx @ 2.440 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 24C/55%							



EUT Transmitting at 2.440 GHz Middle Channel Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL24 Sample 2272-20 in Tx Mode Middle Channel at 2.440 GHz are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 1.76 dB.



EUT Transmitting at 2.480 GHz High Channel Tables

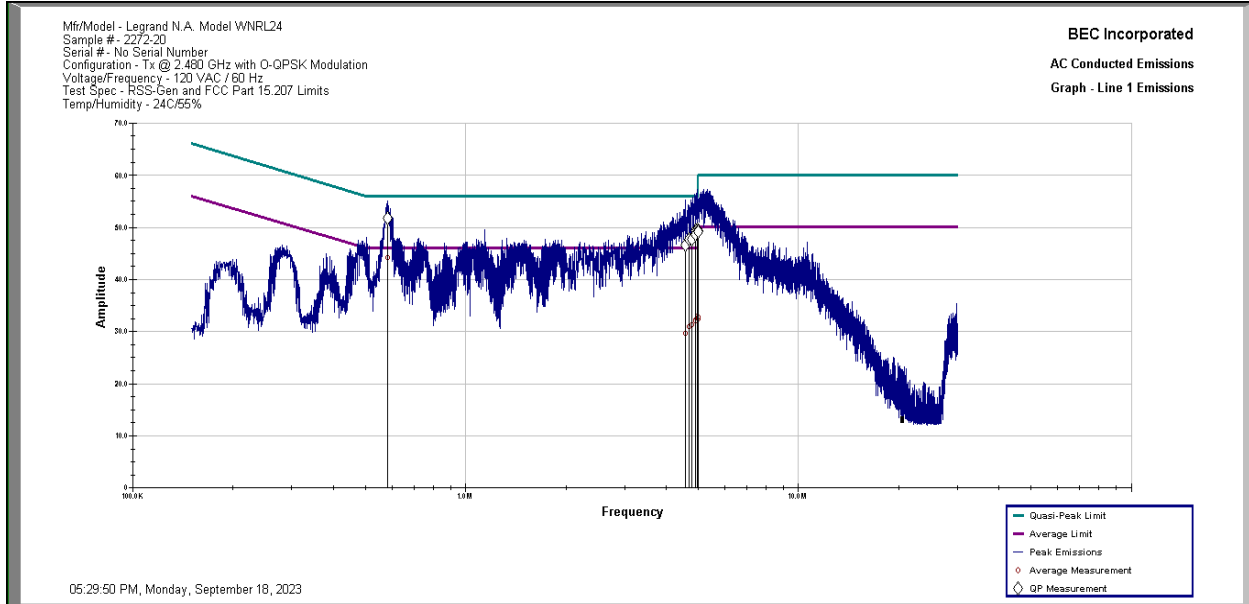
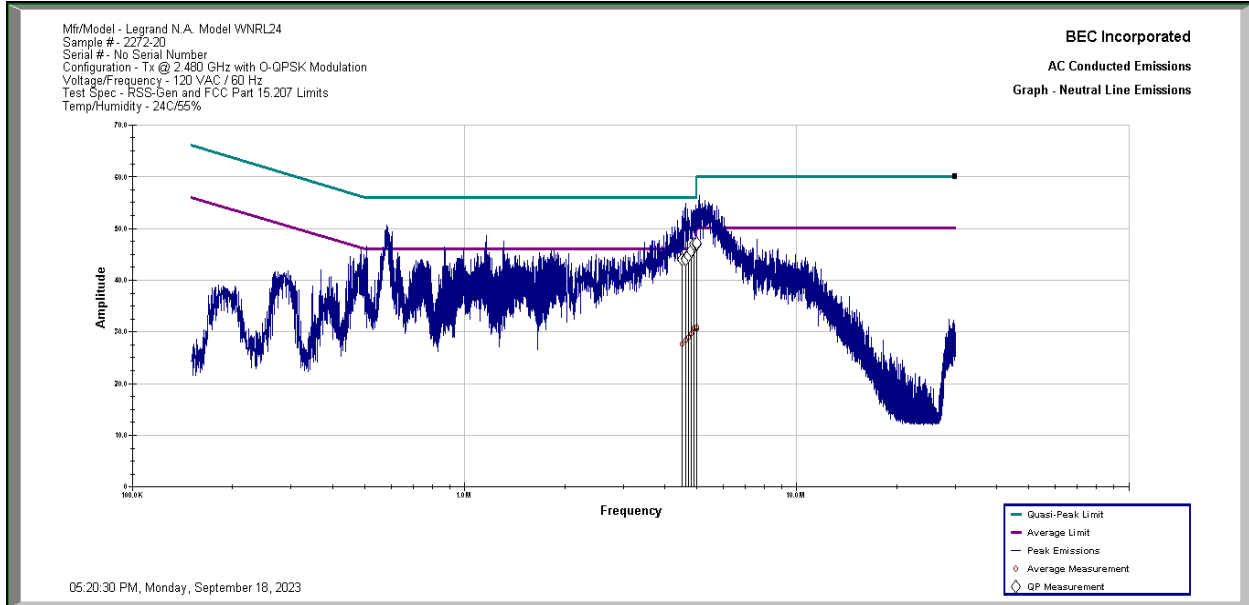
BEC Incorporated Neutral Line Conducted Emissions 05:16:30 PM, Monday, September 18, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
4.519 MHz	27.66	46.00	-18.34	43.94	56.00	-12.06	10.27
4.623 MHz	28.44	46.00	-17.56	44.22	56.00	-11.78	10.27
4.628 MHz	28.30	46.00	-17.70	44.04	56.00	-11.96	10.27
4.721 MHz	28.85	46.00	-17.15	44.76	56.00	-11.24	10.27
4.814 MHz	29.63	46.00	-16.37	45.64	56.00	-10.36	10.28
4.897 MHz	30.50	46.00	-15.50	46.85	56.00	-9.15	10.28
4.898 MHz	30.70	46.00	-15.30	46.88	56.00	-9.12	10.28
4.986 MHz	30.55	46.00	-15.45	46.87	56.00	-9.13	10.28
4.994 MHz	30.83	46.00	-15.17	47.17	56.00	-8.83	10.28
4.997 MHz	31.00	46.00	-15.00	47.21	56.00	-8.79	10.28
Mfr/Model - Legrand N.A. Model WNRL24							
Sample # - 2272-20							
Serial # - No Serial Number							
Configuration - Tx @ 2.480 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 24C/55%							



BEC Incorporated							
Line 1 Conducted Emissions							
05:25:48 PM, Monday, September 18, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
581.883 KHz	44.09	46.00	-1.91	51.72	56.00	-4.28	10.15
4.557 MHz	29.59	46.00	-16.41	46.61	56.00	-9.39	10.29
4.699 MHz	31.01	46.00	-14.99	47.63	56.00	-8.37	10.29
4.778 MHz	31.30	46.00	-14.70	47.70	56.00	-8.30	10.30
4.897 MHz	32.27	46.00	-13.73	49.29	56.00	-6.71	10.30
4.914 MHz	32.09	46.00	-13.91	48.60	56.00	-7.40	10.30
4.954 MHz	32.87	46.00	-13.13	49.50	56.00	-6.50	10.30
4.961 MHz	33.00	46.00	-13.00	49.53	56.00	-6.47	10.30
4.984 MHz	32.46	46.00	-13.54	49.25	56.00	-6.75	10.30
4.989 MHz	32.80	46.00	-13.20	49.24	56.00	-6.76	10.30
Mfr/Model - Legrand N.A. Model WNRL24							
Sample # - 2272-20							
Serial # - No Serial Number							
Configuration - Tx @ 2.480 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 24C/55%							



EUT Transmitting at 2.480 GHz High Channel Graphs



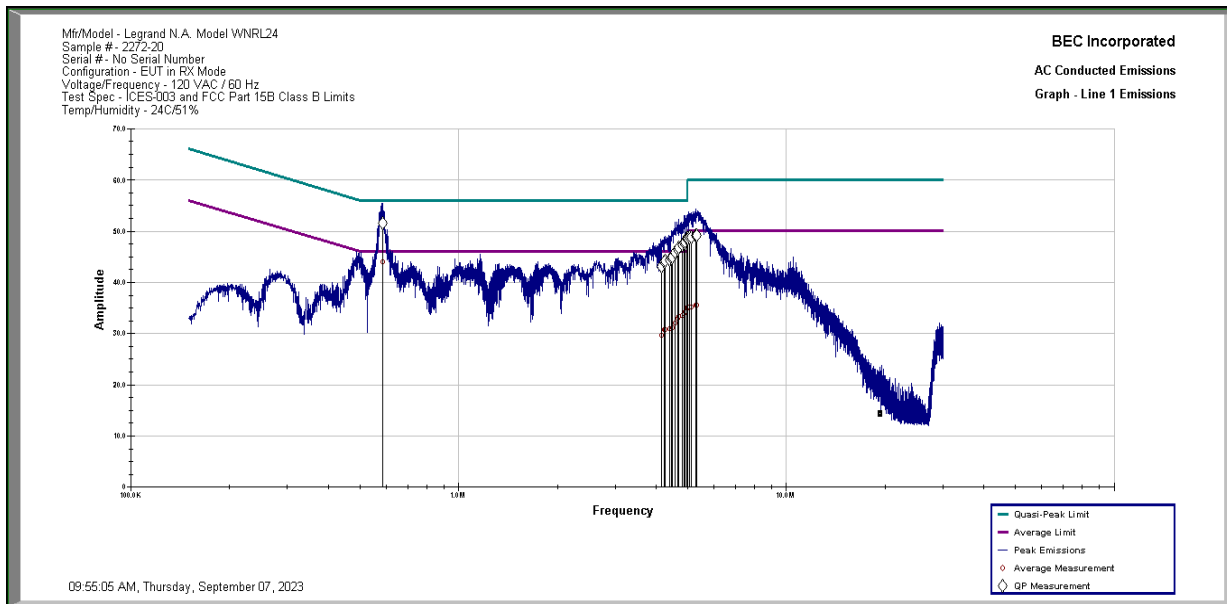
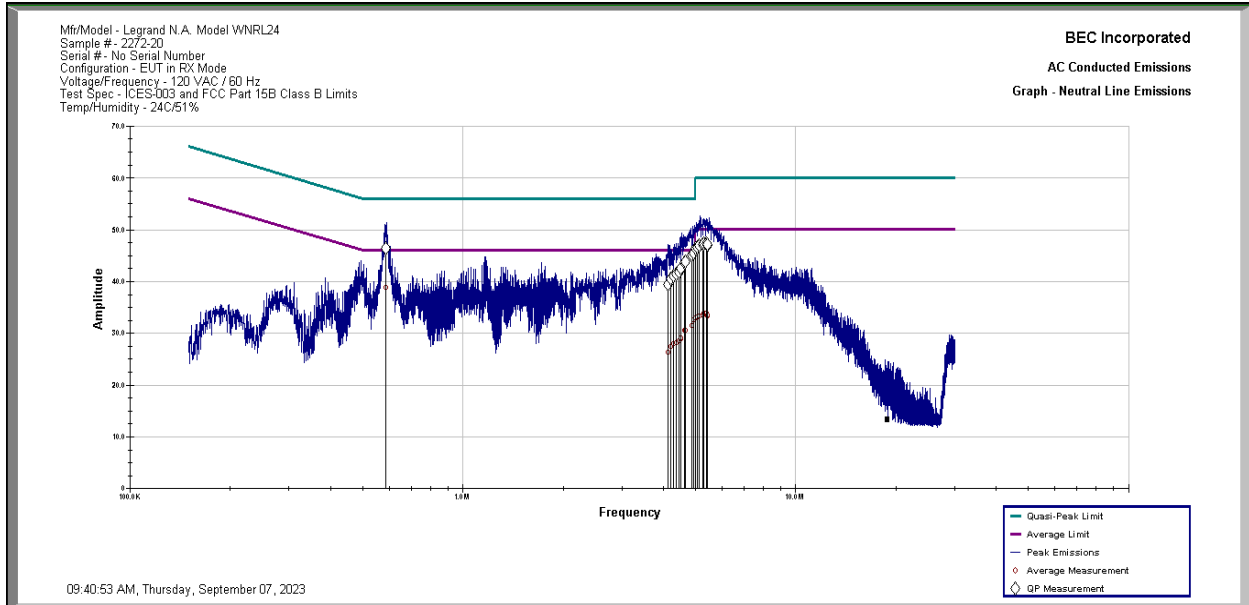
Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL24 Sample 2272-20 in Tx Mode High Channel at 2.480 GHz are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 1.91 dB.



BEC Incorporated Line 1 Conducted Emissions 09:55:05 AM, Thursday, September 07, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
584.563 KHz	43.96	46.00	-2.04	51.61	56.00	-4.39	10.15
4.164 MHz	29.61	46.00	-16.39	43.05	56.00	-12.95	10.28
4.236 MHz	30.71	46.00	-15.29	43.99	56.00	-12.01	10.28
4.256 MHz	30.79	46.00	-15.21	44.10	56.00	-11.90	10.29
4.397 MHz	30.92	46.00	-15.08	44.39	56.00	-11.61	10.29
4.450 MHz	30.91	46.00	-15.09	44.66	56.00	-11.34	10.29
4.483 MHz	31.08	46.00	-14.92	44.84	56.00	-11.16	10.29
4.571 MHz	32.07	46.00	-13.93	45.78	56.00	-10.22	10.29
4.663 MHz	32.91	46.00	-13.09	46.48	56.00	-9.52	10.29
4.694 MHz	33.37	46.00	-12.63	46.71	56.00	-9.29	10.29
4.807 MHz	33.57	46.00	-12.43	47.29	56.00	-8.71	10.30
4.875 MHz	33.95	46.00	-12.05	47.59	56.00	-8.41	10.30
4.892 MHz	34.20	46.00	-11.80	47.92	56.00	-8.08	10.30
4.969 MHz	34.95	46.00	-11.05	48.63	56.00	-7.37	10.30
4.991 MHz	35.06	46.00	-10.94	48.52	56.00	-7.48	10.30
5.060 MHz	35.21	50.00	-14.79	48.81	60.00	-11.19	10.30
5.119 MHz	35.13	50.00	-14.87	48.85	60.00	-11.15	10.30
5.126 MHz	35.13	50.00	-14.87	48.74	60.00	-11.26	10.30
5.275 MHz	35.52	50.00	-14.48	49.19	60.00	-10.81	10.31
5.313 MHz	35.49	50.00	-14.51	49.20	60.00	-10.80	10.31
Mfr/Model - Legrand N.A. Model WNRL24							
Sample # - 2272-20							
Serial # - No Serial Number							
Configuration - EUT in RX Mode							
Voltage/Frequency - 120 VAC / 60 Hz							



EUT Configured in Rx Mode Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL24 Sample 2272-20 in Rx Mode are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 2.04 dB.



4.1.4 Conducted Emissions 150 kHz to 30 MHz FCC 15.207 and RSS-Gen 7.2 Limits Test Results WNRL34 Sample 2272-22

The following graphs and tables show the conducted emissions recorded on the AC Power Port of the EUT displayed against the FCC Part 15.207 and RSS-Gen 7.2 Limits. EUT was powered at 120 Vac / 60 Hz.

EUT Transmitting at 2.405 GHz Low Channel Tables

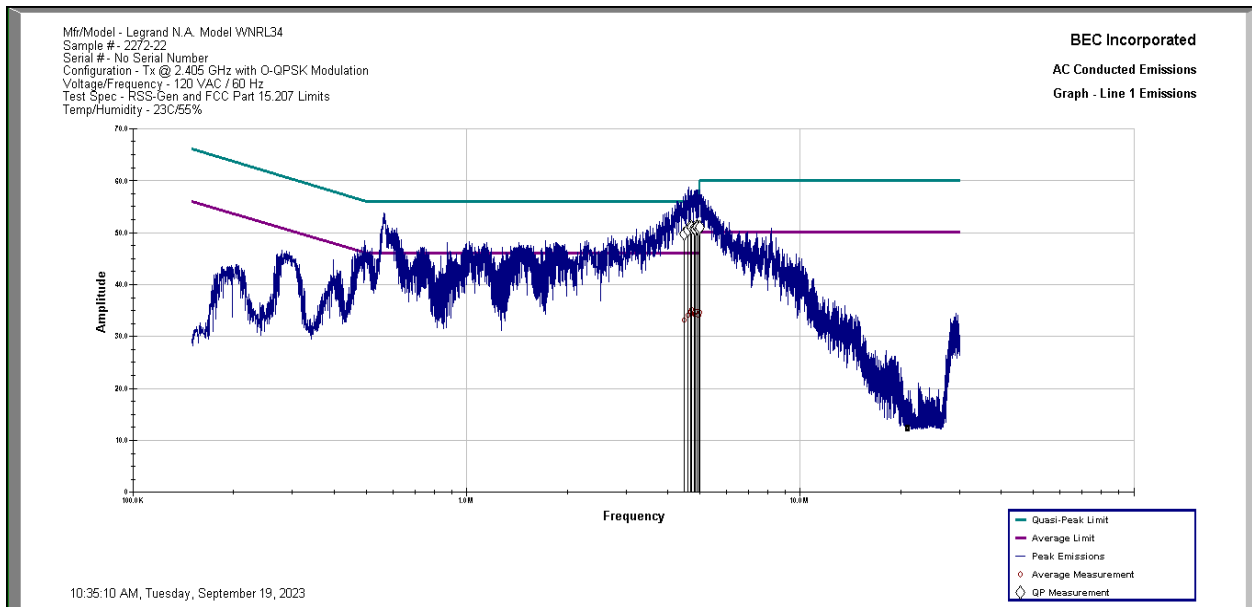
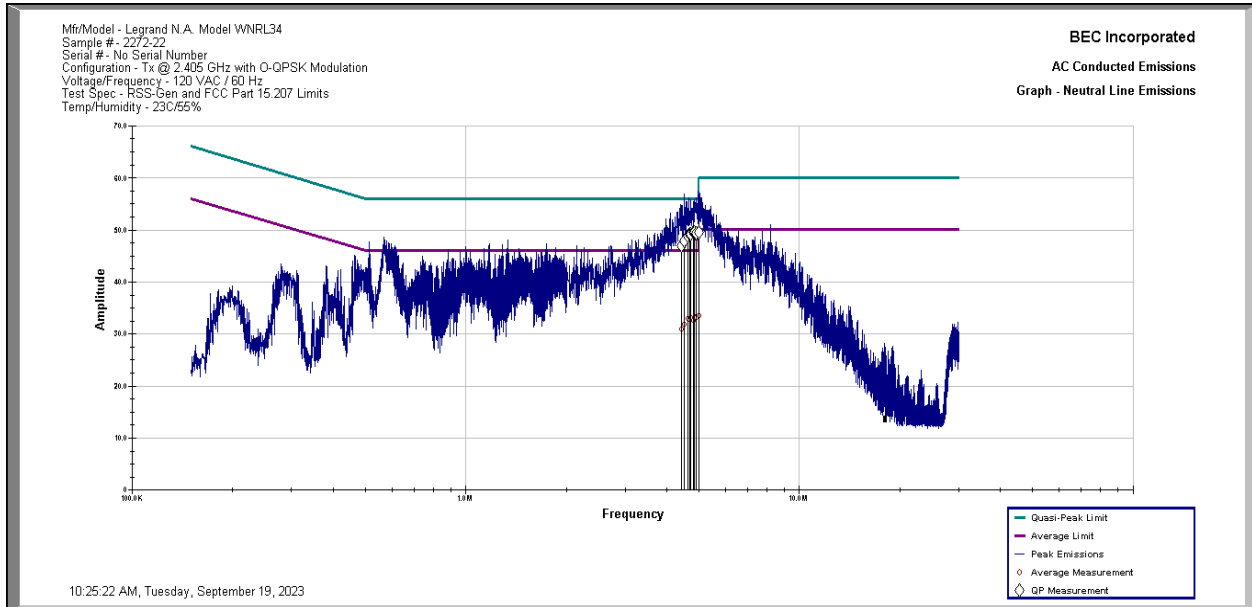
BEC Incorporated							
Neutral Line Conducted Emissions							
10:21:23 AM, Tuesday, September 19, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
4.424 MHz	31.00	46.00	-15.00	46.96	56.00	-9.04	10.27
4.522 MHz	31.80	46.00	-14.20	47.94	56.00	-8.06	10.27
4.630 MHz	33.00	46.00	-13.00	48.78	56.00	-7.22	10.27
4.696 MHz	32.79	46.00	-13.21	49.15	56.00	-6.85	10.27
4.724 MHz	33.14	46.00	-12.86	49.16	56.00	-6.84	10.27
4.815 MHz	32.63	46.00	-13.37	49.44	56.00	-6.56	10.28
4.831 MHz	33.17	46.00	-12.83	49.57	56.00	-6.43	10.28
4.894 MHz	33.30	46.00	-12.70	49.17	56.00	-6.83	10.28
4.910 MHz	33.07	46.00	-12.93	49.27	56.00	-6.73	10.28
5.006 MHz	33.43	50.00	-16.57	49.52	60.00	-10.48	10.28
Mfr/Model - Legrand N.A. Model WNRL34							
Sample # - 2272-22							
Serial # - No Serial Number							
Configuration - Tx @ 2.405 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 23C/55%							



BEC Incorporated							
Line 1 Conducted Emissions							
10:31:13 AM, Tuesday, September 19, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
4.486 MHz	33.24	46.00	-12.76	49.77	56.00	-6.23	10.29
4.592 MHz	34.02	46.00	-11.98	50.35	56.00	-5.65	10.29
4.674 MHz	34.85	46.00	-11.15	51.12	56.00	-4.88	10.29
4.731 MHz	35.14	46.00	-10.86	51.02	56.00	-4.98	10.29
4.817 MHz	34.25	46.00	-11.75	50.88	56.00	-5.12	10.30
4.836 MHz	34.28	46.00	-11.72	50.70	56.00	-5.30	10.30
4.897 MHz	34.59	46.00	-11.41	51.24	56.00	-4.76	10.30
4.912 MHz	34.78	46.00	-11.22	51.02	56.00	-4.98	10.30
4.947 MHz	33.98	46.00	-12.02	50.57	56.00	-5.43	10.30
4.999 MHz	34.63	46.00	-11.37	51.03	56.00	-4.97	10.30
Mfr/Model - Legrand N.A. Model WNRL34							
Sample # - 2272-22							
Serial # - No Serial Number							
Configuration - Tx @ 2.405 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 23C/55%							



EUT Transmitting at 2.405 GHz Low Channel Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL34 Sample 2272-22 in Tx Mode Low Channel at 2.405 GHz are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 4.76 dB.



EUT Transmitting at 2.440 GHz Middle Channel Tables

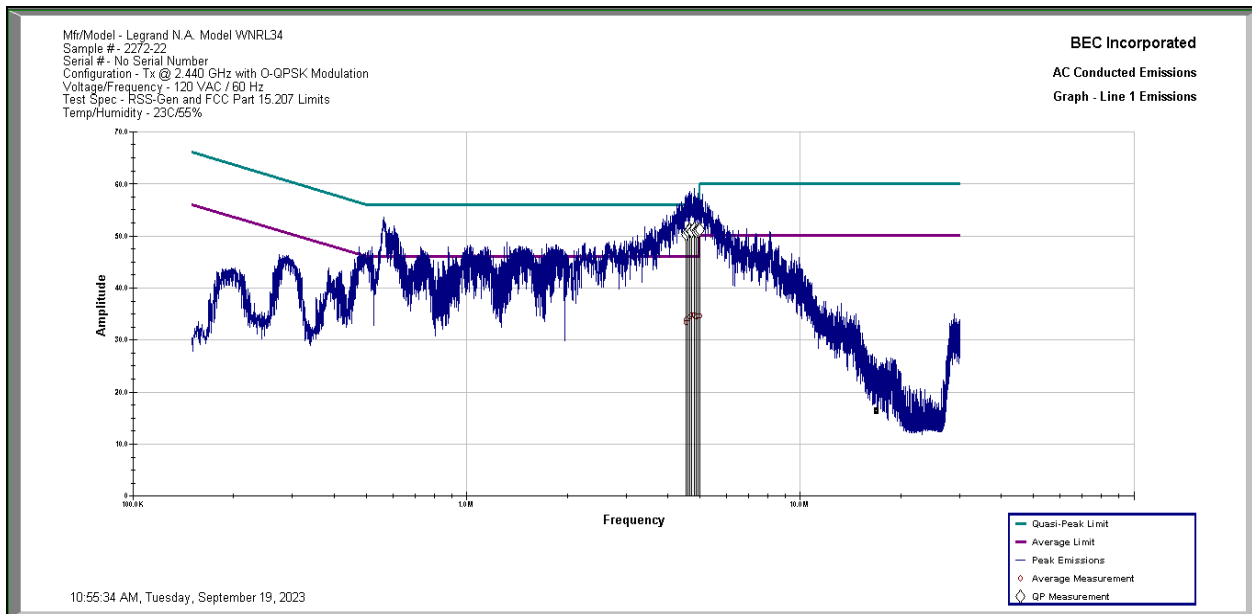
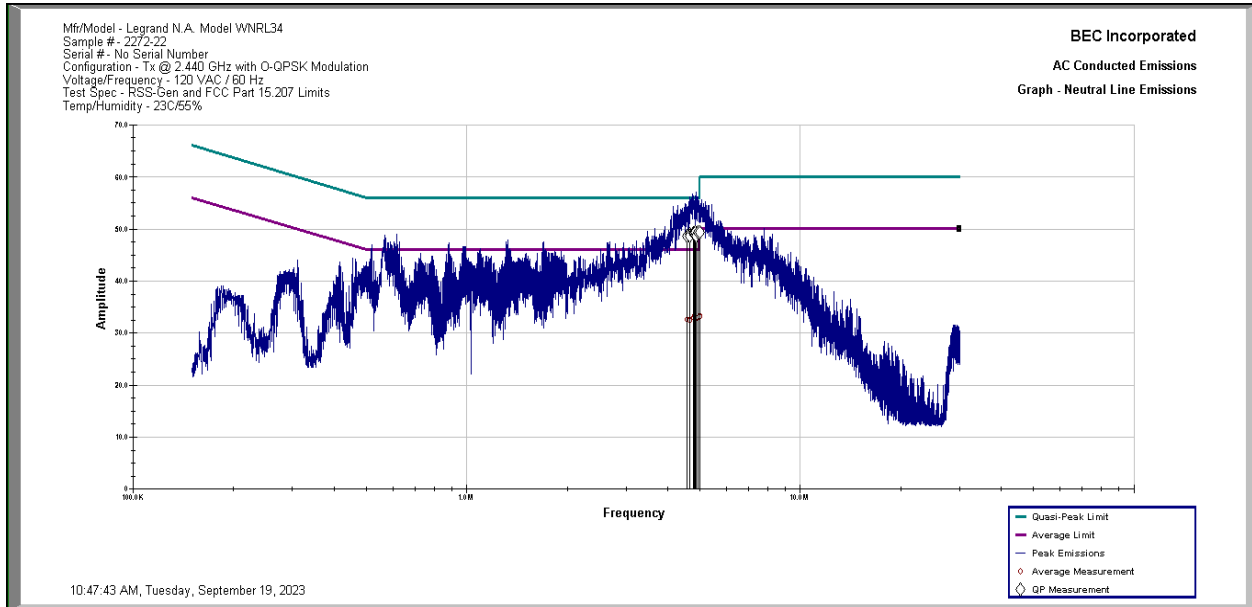
BEC Incorporated Neutral Line Conducted Emissions 10:43:45 AM, Tuesday, September 19, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
4.583 MHz	32.61	46.00	-13.39	48.51	56.00	-7.49	10.27
4.648 MHz	32.52	46.00	-13.48	48.92	56.00	-7.08	10.27
4.659 MHz	32.49	46.00	-13.51	48.65	56.00	-7.35	10.27
4.791 MHz	33.04	46.00	-12.96	49.11	56.00	-6.89	10.28
4.802 MHz	33.25	46.00	-12.75	49.24	56.00	-6.76	10.28
4.834 MHz	33.16	46.00	-12.84	49.33	56.00	-6.67	10.28
4.872 MHz	32.70	46.00	-13.30	48.69	56.00	-7.31	10.28
4.920 MHz	33.02	46.00	-12.98	49.28	56.00	-6.72	10.28
4.989 MHz	33.34	46.00	-12.66	49.25	56.00	-6.75	10.28
4.993 MHz	33.21	46.00	-12.79	49.34	56.00	-6.66	10.28
Mfr/Model - Legrand N.A. Model WNRL34							
Sample # - 2272-22							
Serial # - No Serial Number							
Configuration - Tx @ 2.440 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 23C/55%							



BEC Incorporated Line 1 Conducted Emissions 10:51:35 AM, Tuesday, September 19, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
4.540 MHz	33.82	46.00	-12.18	50.31	56.00	-5.69	10.29
4.549 MHz	33.39	46.00	-12.61	50.28	56.00	-5.72	10.29
4.598 MHz	34.05	46.00	-11.95	50.78	56.00	-5.22	10.29
4.648 MHz	34.41	46.00	-11.59	51.19	56.00	-4.81	10.29
4.702 MHz	34.88	46.00	-11.12	50.90	56.00	-5.10	10.29
4.800 MHz	34.54	46.00	-11.46	51.32	56.00	-4.68	10.30
4.800 MHz	34.77	46.00	-11.23	51.39	56.00	-4.61	10.30
4.876 MHz	34.45	46.00	-11.55	50.80	56.00	-5.20	10.30
4.932 MHz	34.63	46.00	-11.37	50.98	56.00	-5.02	10.30
5.002 MHz	34.59	50.00	-15.41	51.10	60.00	-8.90	10.30
Mfr/Model - Legrand N.A. Model WNRL34							
Sample # - 2272-22							
Serial # - No Serial Number							
Configuration - Tx @ 2.440 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 23C/55%							



EUT Transmitting at 2.440 GHz Middle Channel Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL34 Sample 2272-22 in Tx Mode Middle Channel at 2.440 GHz are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 4.61 dB.



EUT Transmitting at 2.480 GHz High Channel Tables

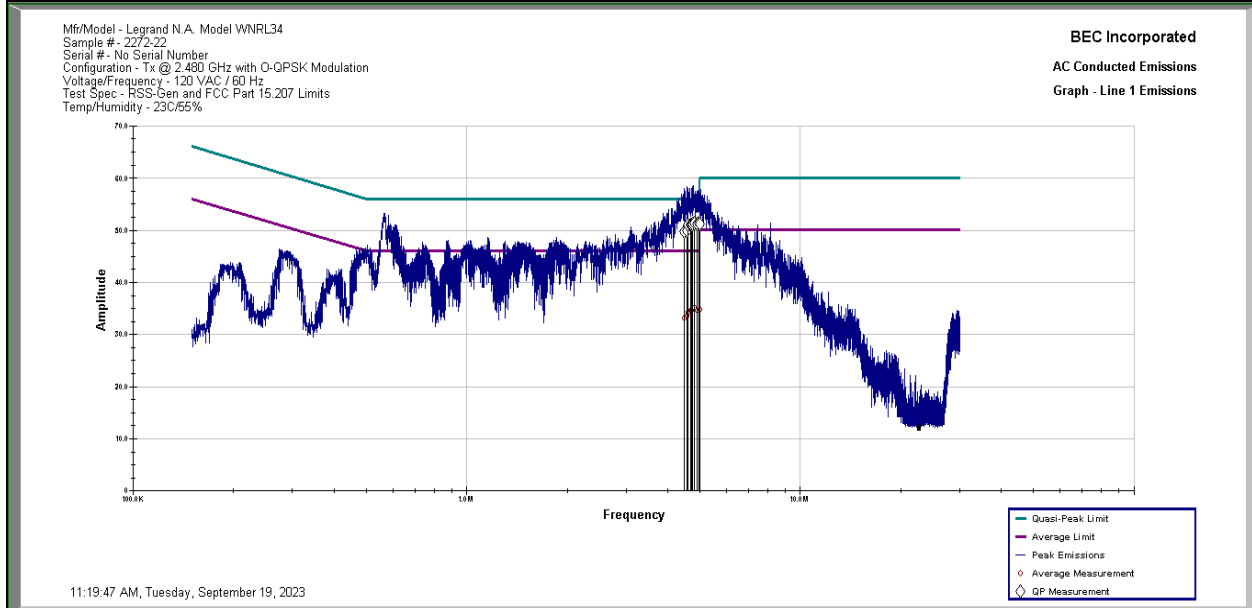
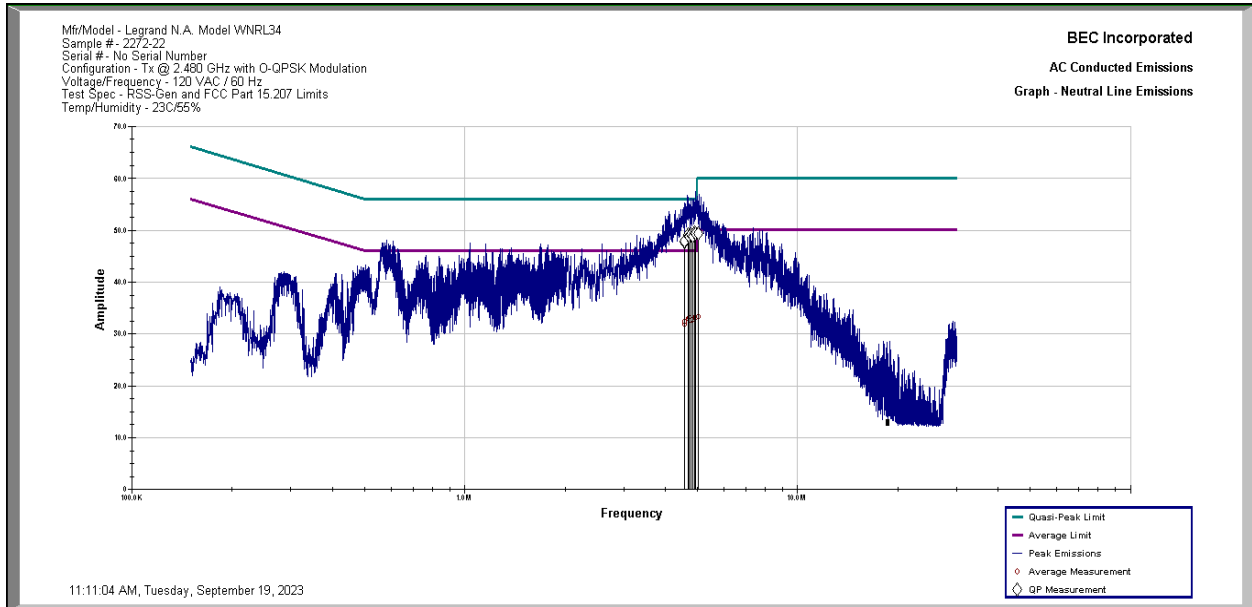
BEC Incorporated Neutral Line Conducted Emissions 11:07:07 AM, Tuesday, September 19, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
4.561 MHz	31.84	46.00	-14.16	47.63	56.00	-8.37	10.27
4.571 MHz	32.34	46.00	-13.66	47.83	56.00	-8.17	10.27
4.677 MHz	32.94	46.00	-13.06	48.92	56.00	-7.08	10.27
4.688 MHz	32.94	46.00	-13.06	49.08	56.00	-6.92	10.27
4.707 MHz	33.16	46.00	-12.84	48.84	56.00	-7.16	10.27
4.770 MHz	32.64	46.00	-13.36	49.18	56.00	-6.82	10.28
4.838 MHz	32.84	46.00	-13.16	48.79	56.00	-7.21	10.28
4.910 MHz	33.17	46.00	-12.83	49.55	56.00	-6.45	10.28
4.920 MHz	33.09	46.00	-12.91	49.28	56.00	-6.72	10.28
5.018 MHz	33.27	50.00	-16.73	49.39	60.00	-10.61	10.28
Mfr/Model - Legrand N.A. Model WNRL34							
Sample # - 2272-22							
Serial # - No Serial Number							
Configuration - Tx @ 2.480 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 23C/55%							



BEC Incorporated Line 1 Conducted Emissions 11:15:48 AM, Tuesday, September 19, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
4.473 MHz	33.18	46.00	-12.82	49.75	56.00	-6.25	10.29
4.566 MHz	33.49	46.00	-12.51	49.92	56.00	-6.08	10.29
4.588 MHz	34.20	46.00	-11.80	51.06	56.00	-4.94	10.29
4.680 MHz	34.55	46.00	-11.45	51.07	56.00	-4.93	10.29
4.714 MHz	34.58	46.00	-11.42	51.00	56.00	-5.00	10.29
4.735 MHz	35.14	46.00	-10.86	51.09	56.00	-4.91	10.29
4.801 MHz	35.13	46.00	-10.87	51.42	56.00	-4.58	10.30
4.912 MHz	34.57	46.00	-11.43	51.11	56.00	-4.89	10.30
4.954 MHz	34.56	46.00	-11.44	51.36	56.00	-4.64	10.30
5.000 MHz	34.85	50.00	-15.15	51.17	60.00	-8.83	10.30
Mfr/Model - Legrand N.A. Model WNRL34							
Sample # - 2272-22							
Serial # - No Serial Number							
Configuration - Tx @ 2.480 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 23C/55%							



EUT Transmitting at 2.480 GHz High Channel Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL34 Sample 2272-22 in Tx Mode High Channel at 2.480 GHz are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 4.58 dB.

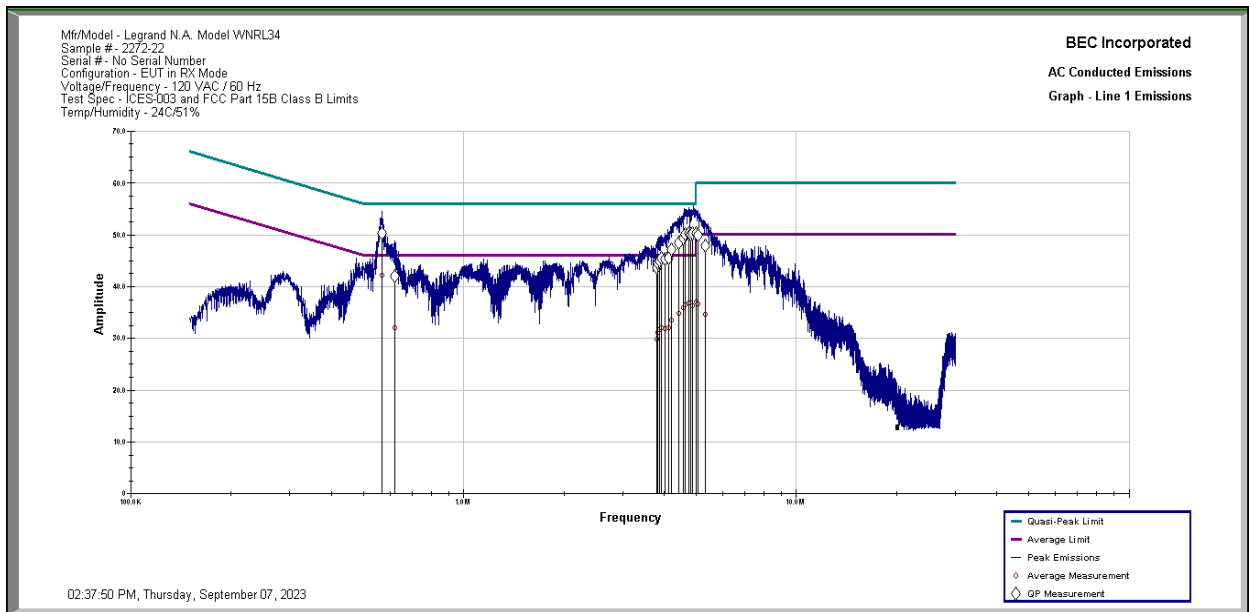
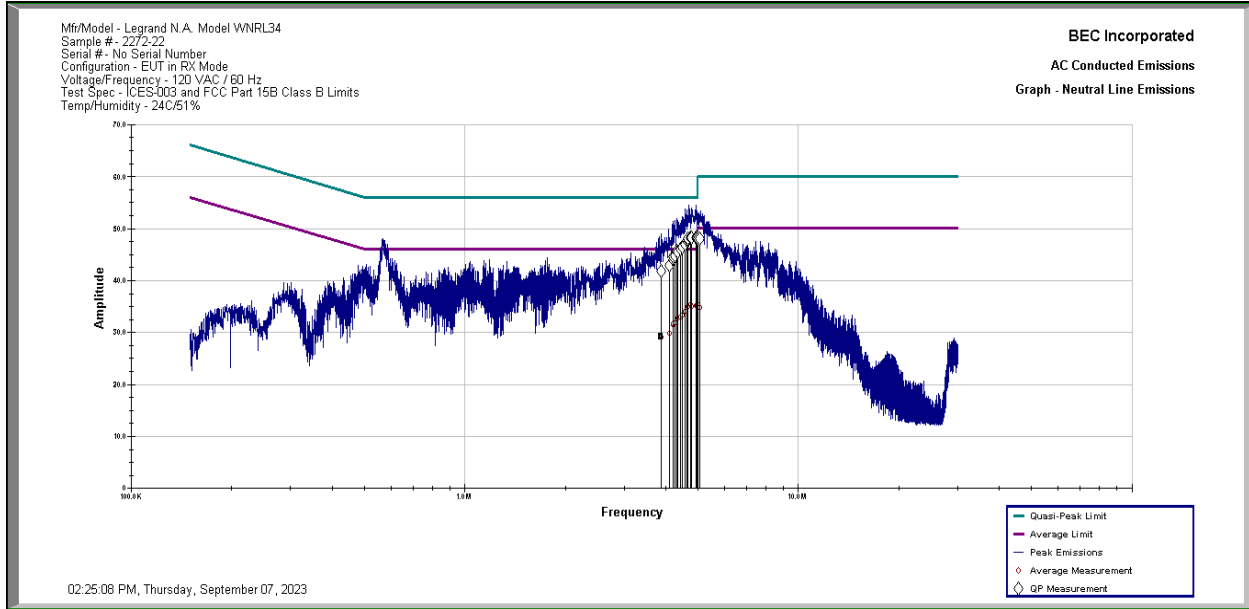


EUT Configured in Rx Mode Tables

BEC Incorporated Neutral Line Conducted Emissions 02:17:13 PM, Thursday, September 07, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
3.873 MHz	29.15	46.00	-16.85	41.83	56.00	-14.17	10.25
4.104 MHz	29.88	46.00	-16.12	42.98	56.00	-13.02	10.26
4.206 MHz	31.45	46.00	-14.55	44.01	56.00	-11.99	10.26
4.219 MHz	31.70	46.00	-14.30	44.52	56.00	-11.48	10.26
4.247 MHz	31.84	46.00	-14.16	44.73	56.00	-11.27	10.26
4.329 MHz	32.67	46.00	-13.33	45.62	56.00	-10.38	10.27
4.350 MHz	32.75	46.00	-13.25	45.49	56.00	-10.51	10.27
4.433 MHz	32.98	46.00	-13.02	45.98	56.00	-10.02	10.27
4.491 MHz	33.27	46.00	-12.73	46.33	56.00	-9.67	10.27
4.574 MHz	34.09	46.00	-11.91	46.91	56.00	-9.09	10.27
4.619 MHz	34.85	46.00	-11.15	47.62	56.00	-8.38	10.27
4.653 MHz	35.04	46.00	-10.96	47.83	56.00	-8.17	10.27
4.671 MHz	35.04	46.00	-10.96	47.99	56.00	-8.01	10.27
4.742 MHz	35.32	46.00	-10.68	48.15	56.00	-7.85	10.27
4.780 MHz	34.99	46.00	-11.01	48.30	56.00	-7.70	10.28
4.932 MHz	35.17	46.00	-10.83	48.15	56.00	-7.85	10.28
4.970 MHz	35.10	46.00	-10.90	48.30	56.00	-7.70	10.28
4.979 MHz	35.25	46.00	-10.75	48.10	56.00	-7.90	10.28
4.988 MHz	35.33	46.00	-10.67	48.07	56.00	-7.93	10.28
5.072 MHz	34.76	50.00	-15.24	48.01	60.00	-11.99	10.28
Mfr/Model - Legrand N.A. Model WNRL34							
Sample # - 2272-22							
Serial # - No Serial Number							
Configuration - EUT in RX Mode							
Voltage/Frequency - 120 VAC / 60 Hz							



EUT Configured in Rx Mode Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL34 Sample 2272-22 in Rx Mode are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 3.83 dB.



4.1.5 Conducted Emissions 150 kHz to 30 MHz FCC 15.207 and RSS-Gen 7.2 Limits Test Results WNRL44 Sample 2272-24

The following graphs and tables show the conducted emissions recorded on the AC Power Port of the EUT displayed against the FCC Part 15.207 and RSS-Gen 7.2 Limits. EUT was powered at 120 Vac / 60 Hz.

EUT Transmitting at 2.405 GHz Low Channel Tables

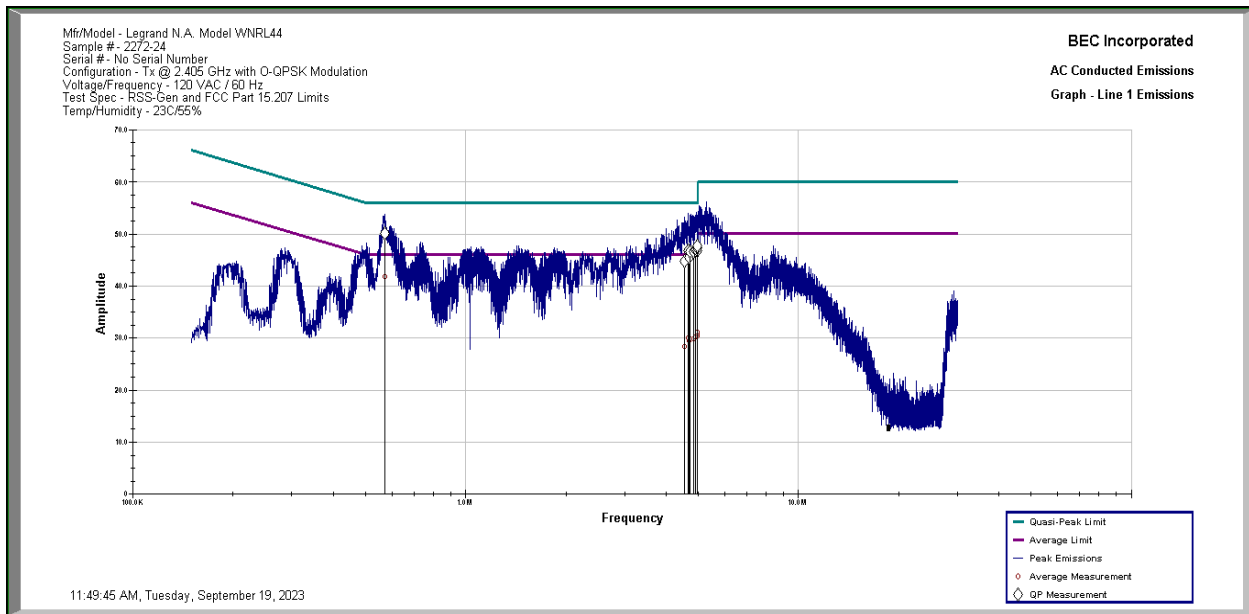
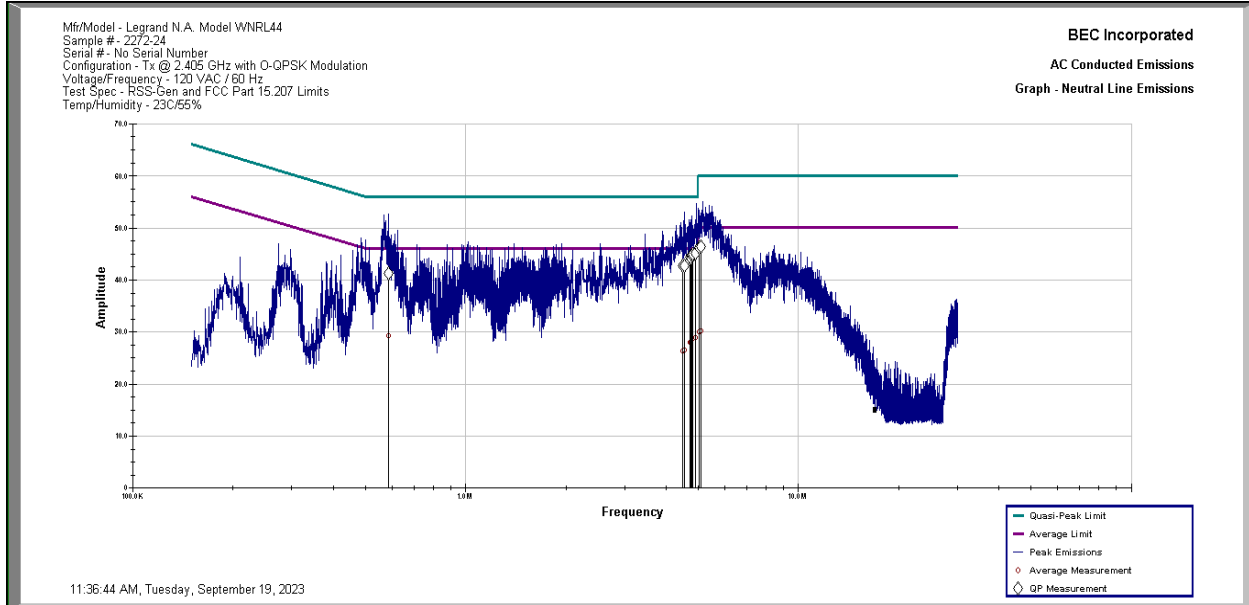
BEC Incorporated							
Neutral Line Conducted Emissions							
11:32:43 AM, Tuesday, September 19, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
586.649 KHz	29.26	46.00	-16.74	41.20	56.00	-14.80	10.13
4.471 MHz	26.25	46.00	-19.75	42.79	56.00	-13.21	10.27
4.551 MHz	26.43	46.00	-19.57	42.76	56.00	-13.24	10.27
4.729 MHz	28.07	46.00	-17.93	44.34	56.00	-11.66	10.27
4.750 MHz	28.03	46.00	-17.97	44.16	56.00	-11.84	10.28
4.768 MHz	28.68	46.00	-17.32	44.78	56.00	-11.22	10.28
4.813 MHz	28.73	46.00	-17.27	45.00	56.00	-11.00	10.28
4.902 MHz	28.90	46.00	-17.10	45.18	56.00	-10.82	10.28
5.020 MHz	29.99	50.00	-20.01	46.28	60.00	-13.72	10.28
5.091 MHz	30.13	50.00	-19.87	46.42	60.00	-13.58	10.29
Mfr/Model - Legrand N.A. Model WNRL44							
Sample # - 2272-24							
Serial # - No Serial Number							
Configuration - Tx @ 2.405 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 23C/55%							



BEC Incorporated							
Line 1 Conducted Emissions							
11:45:44 AM, Tuesday, September 19, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
570.456 KHz	41.76	46.00	-4.24	50.13	56.00	-5.87	10.15
4.551 MHz	28.27	46.00	-17.73	44.79	56.00	-11.21	10.29
4.666 MHz	29.96	46.00	-16.04	46.74	56.00	-9.26	10.29
4.698 MHz	29.40	46.00	-16.60	45.53	56.00	-10.47	10.29
4.711 MHz	29.86	46.00	-16.14	46.55	56.00	-9.45	10.29
4.850 MHz	29.86	46.00	-16.14	46.55	56.00	-9.45	10.30
4.903 MHz	30.29	46.00	-15.71	47.05	56.00	-8.95	10.30
4.946 MHz	30.31	46.00	-15.69	46.79	56.00	-9.21	10.30
4.952 MHz	30.73	46.00	-15.27	47.25	56.00	-8.75	10.30
4.965 MHz	31.13	46.00	-14.87	47.68	56.00	-8.32	10.30
Mfr/Model - Legrand N.A. Model WNRL44							
Sample # - 2272-24							
Serial # - No Serial Number							
Configuration - Tx @ 2.405 GHz with 0-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 23C/55%							



EUT Transmitting at 2.405 GHz Low Channel Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL44 Sample 2272-24 in Tx Mode Low Channel at 2.405 GHz are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 4.24 dB.



EUT Transmitting at 2.440 GHz Middle Channel Tables

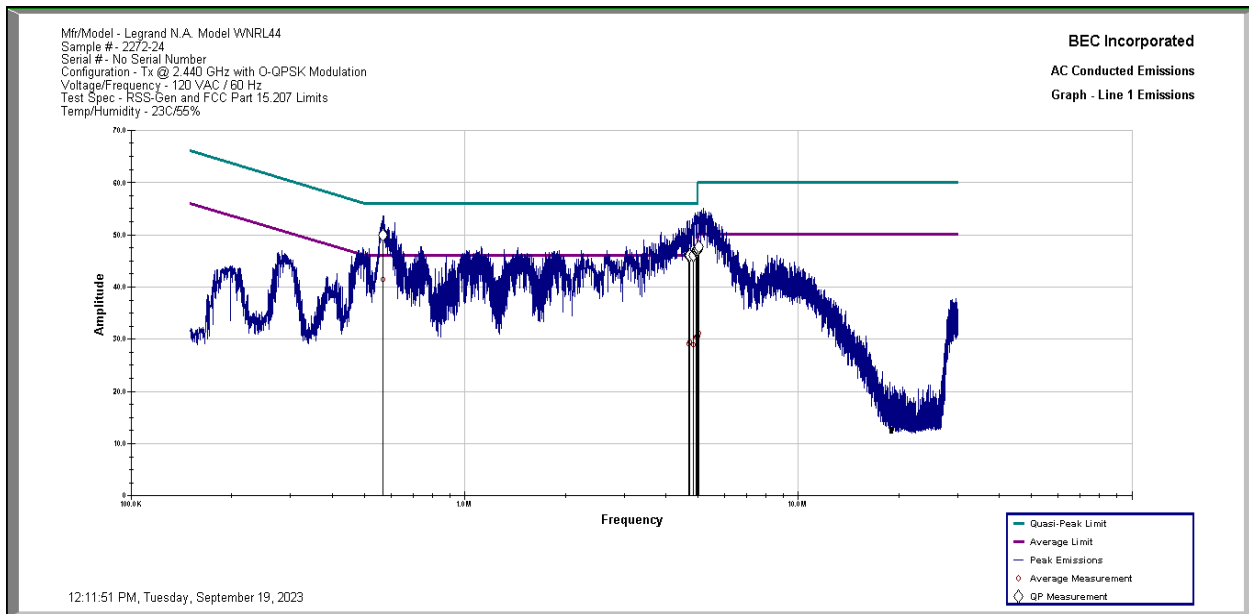
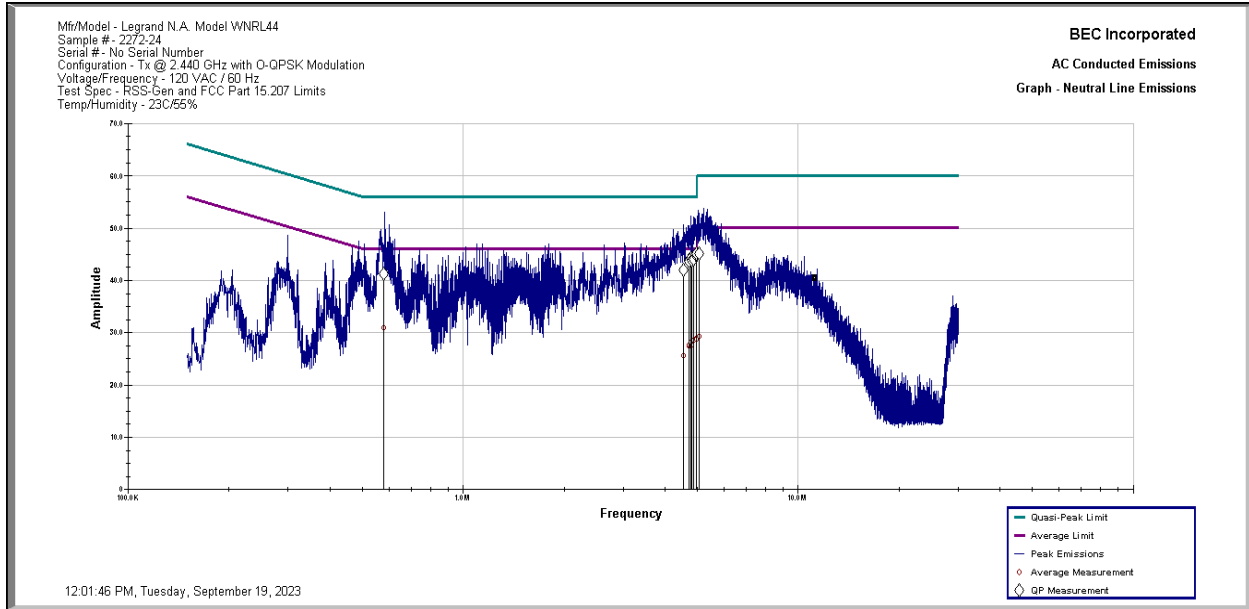
BEC Incorporated Neutral Line Conducted Emissions 11:57:45 AM, Tuesday, September 19, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
578.057 KHz	30.98	46.00	-15.02	41.22	56.00	-14.78	10.13
4.549 MHz	25.56	46.00	-20.44	41.98	56.00	-14.02	10.27
4.705 MHz	27.51	46.00	-18.49	43.74	56.00	-12.26	10.27
4.707 MHz	27.56	46.00	-18.44	43.66	56.00	-12.34	10.27
4.765 MHz	28.09	46.00	-17.91	44.10	56.00	-11.90	10.28
4.799 MHz	27.57	46.00	-18.43	43.87	56.00	-12.13	10.28
4.869 MHz	28.57	46.00	-17.43	44.06	56.00	-11.94	10.28
4.965 MHz	28.99	46.00	-17.01	44.73	56.00	-11.27	10.28
4.967 MHz	28.81	46.00	-17.19	45.18	56.00	-10.82	10.28
5.047 MHz	29.24	50.00	-20.76	45.09	60.00	-14.91	10.28
Mfr/Model - Legrand N.A. Model WNRL44							
Sample # - 2272-24							
Serial # - No Serial Number							
Configuration - Tx @ 2.440 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 23C/55%							



BEC Incorporated							
Line 1 Conducted Emissions							
12:07:48 PM, Tuesday, September 19, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
569.238 KHz	41.50	46.00	-4.50	49.86	56.00	-6.14	10.15
4.675 MHz	29.16	46.00	-16.84	45.96	56.00	-10.04	10.29
4.711 MHz	29.38	46.00	-16.62	46.06	56.00	-9.94	10.29
4.843 MHz	28.96	46.00	-17.04	45.93	56.00	-10.07	10.30
4.922 MHz	30.44	46.00	-15.56	46.95	56.00	-9.05	10.30
4.927 MHz	30.32	46.00	-15.68	47.05	56.00	-8.95	10.30
4.959 MHz	30.58	46.00	-15.42	46.98	56.00	-9.02	10.30
4.998 MHz	30.68	46.00	-15.32	47.19	56.00	-8.81	10.30
4.998 MHz	30.65	46.00	-15.35	47.39	56.00	-8.61	10.30
5.015 MHz	31.19	50.00	-18.81	47.71	60.00	-12.29	10.30
Mfr/Model - Legrand N.A. Model WNRL44							
Sample # - 2272-24							
Serial # - No Serial Number							
Configuration - Tx @ 2.440 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 23C/55%							



EUT Transmitting at 2.440 GHz Middle Channel Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL44 Sample 2272-24 in Tx Mode Middle Channel at 2.440 GHz are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 4.50 dB.



EUT Transmitting at 2.480 GHz High Channel Tables

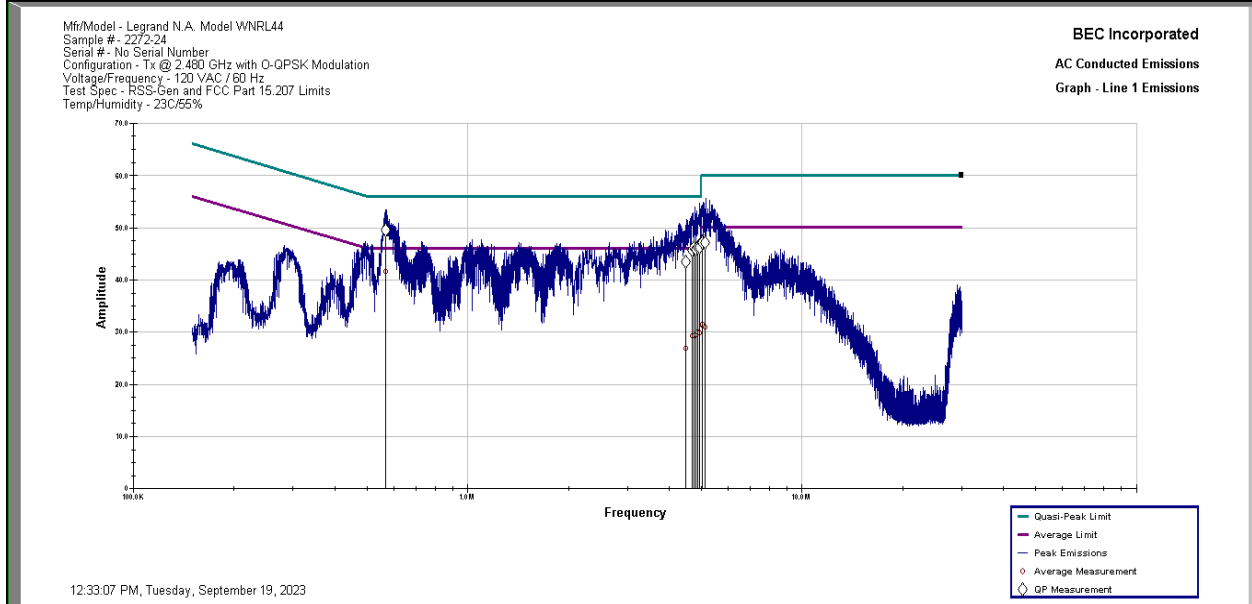
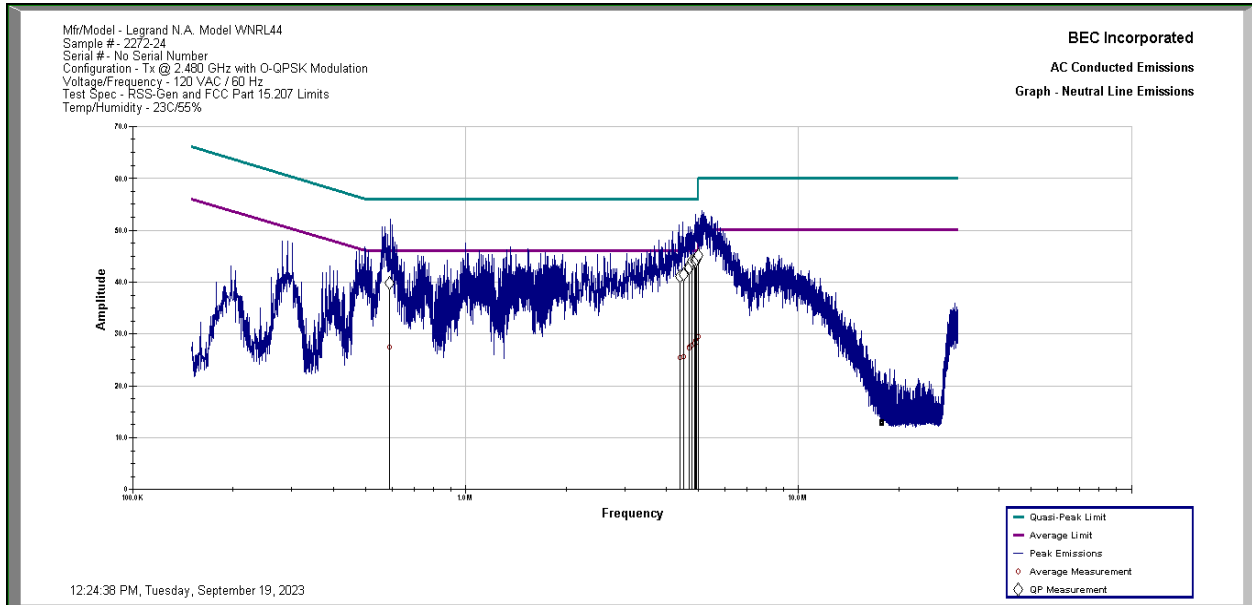
BEC Incorporated Neutral Line Conducted Emissions 12:20:38 PM, Tuesday, September 19, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
590.784 KHz	27.48	46.00	-18.52	39.87	56.00	-16.13	10.13
4.401 MHz	25.38	46.00	-20.62	41.12	56.00	-14.88	10.27
4.506 MHz	25.60	46.00	-20.40	41.49	56.00	-14.51	10.27
4.677 MHz	27.45	46.00	-18.55	43.15	56.00	-12.85	10.27
4.699 MHz	27.29	46.00	-18.71	42.74	56.00	-13.26	10.27
4.769 MHz	27.87	46.00	-18.13	44.03	56.00	-11.97	10.28
4.867 MHz	28.24	46.00	-17.76	44.16	56.00	-11.84	10.28
4.893 MHz	28.67	46.00	-17.33	44.06	56.00	-11.94	10.28
4.928 MHz	28.42	46.00	-17.58	44.46	56.00	-11.54	10.28
4.985 MHz	29.55	46.00	-16.45	45.06	56.00	-10.94	10.28
Mfr/Model - Legrand N.A. Model WNRL44							
Sample # - 2272-24							
Serial # - No Serial Number							
Configuration - Tx @ 2.480 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 23C/55%							



BEC Incorporated							
Line 1 Conducted Emissions							
12:29:06 PM, Tuesday, September 19, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
568.760 KHz	41.59	46.00	-4.41	49.63	56.00	-6.37	10.15
4.492 MHz	26.96	46.00	-19.04	43.35	56.00	-12.65	10.29
4.674 MHz	29.23	46.00	-16.77	45.73	56.00	-10.27	10.29
4.756 MHz	29.27	46.00	-16.73	46.15	56.00	-9.85	10.30
4.799 MHz	29.54	46.00	-16.46	45.77	56.00	-10.23	10.30
4.863 MHz	30.03	46.00	-15.97	46.15	56.00	-9.85	10.30
4.938 MHz	29.85	46.00	-16.15	46.26	56.00	-9.74	10.30
5.010 MHz	31.34	50.00	-18.66	47.37	60.00	-12.63	10.30
5.012 MHz	31.42	50.00	-18.58	47.17	60.00	-12.83	10.30
5.123 MHz	30.84	50.00	-19.16	47.05	60.00	-12.95	10.30
Mfr/Model - Legrand N.A. Model WNRL44							
Sample # - 2272-24							
Serial # - No Serial Number							
Configuration - Tx @ 2.480 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 23C/55%							



EUT Transmitting at 2.480 GHz High Channel Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL44 Sample 2272-24 in Tx Mode High Channel at 2.480 GHz are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 4.41 dB.



EUT Configured in Rx Mode Tables

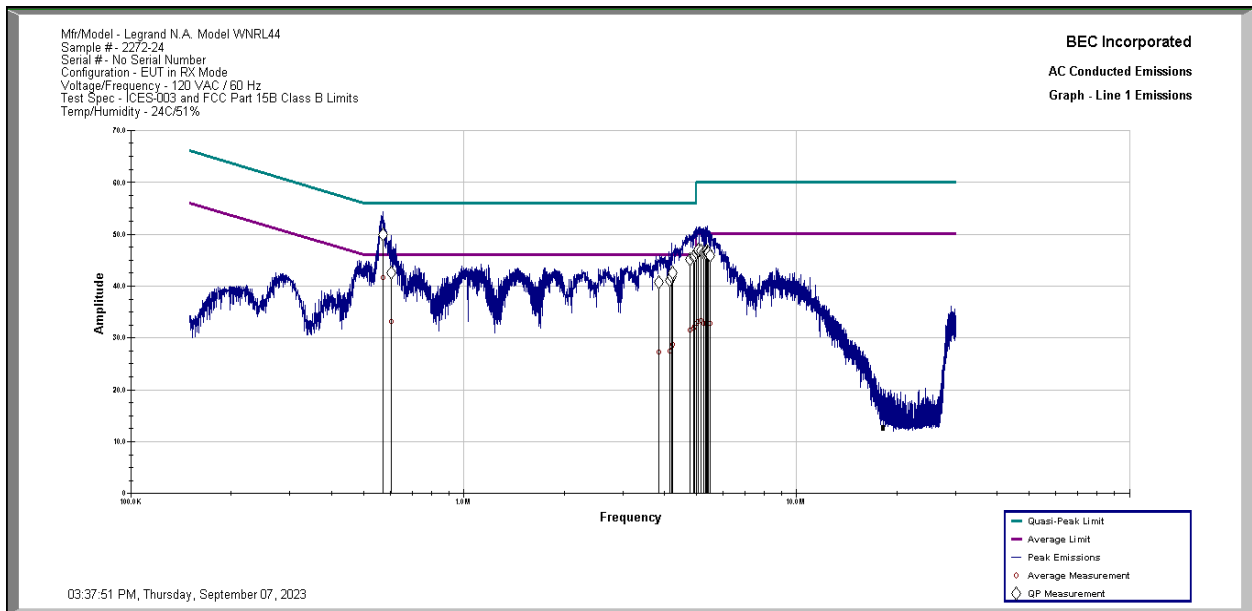
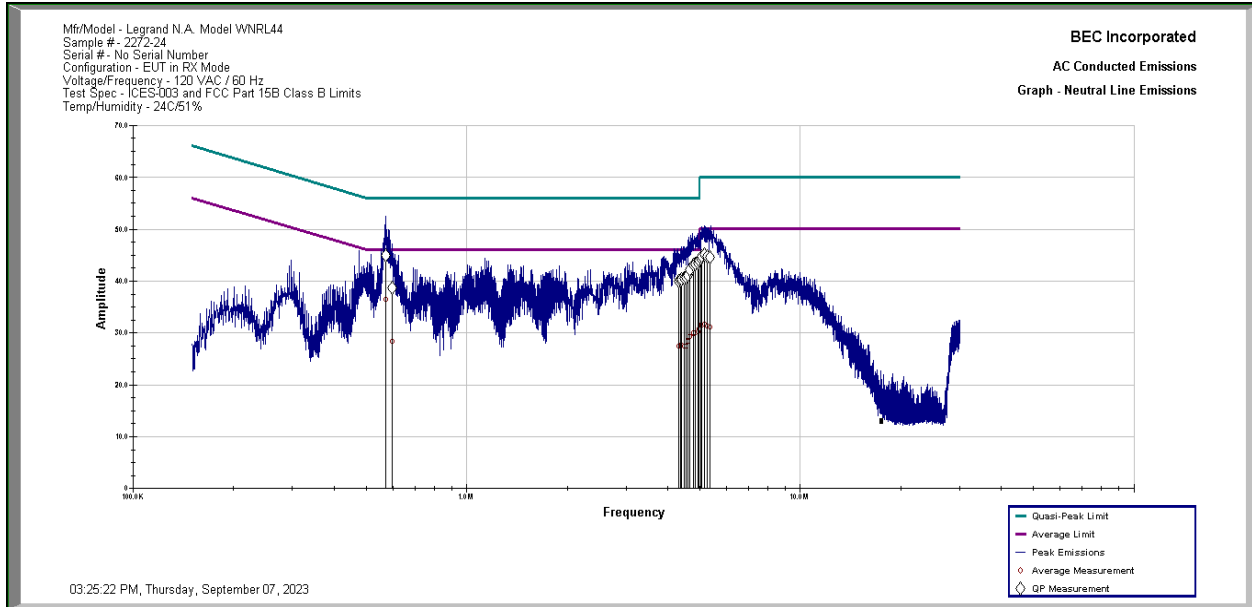
BEC Incorporated Neutral Line Conducted Emissions 03:17:23 PM, Thursday, September 07, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
572.894 KHz	36.51	46.00	-9.49	44.92	56.00	-11.08	10.13
595.348 KHz	28.44	46.00	-17.56	38.66	56.00	-17.34	10.13
4.326 MHz	27.35	46.00	-18.65	40.04	56.00	-15.96	10.27
4.361 MHz	27.69	46.00	-18.31	40.20	56.00	-15.80	10.27
4.385 MHz	27.59	46.00	-18.41	40.38	56.00	-15.62	10.27
4.480 MHz	27.45	46.00	-18.55	40.49	56.00	-15.51	10.27
4.540 MHz	27.52	46.00	-18.48	40.61	56.00	-15.39	10.27
4.601 MHz	28.53	46.00	-17.47	41.19	56.00	-14.81	10.27
4.603 MHz	28.43	46.00	-17.57	41.14	56.00	-14.86	10.27
4.673 MHz	29.36	46.00	-16.64	42.07	56.00	-13.93	10.27
4.762 MHz	29.83	46.00	-16.17	43.03	56.00	-12.97	10.28
4.774 MHz	30.06	46.00	-15.94	43.05	56.00	-12.95	10.28
4.851 MHz	30.01	46.00	-15.99	43.25	56.00	-12.75	10.28
4.935 MHz	30.28	46.00	-15.72	43.40	56.00	-12.60	10.28
4.971 MHz	30.81	46.00	-15.19	43.93	56.00	-12.07	10.28
5.031 MHz	31.42	50.00	-18.58	44.43	60.00	-15.57	10.28
5.070 MHz	31.58	50.00	-18.42	44.69	60.00	-15.31	10.28
5.153 MHz	31.64	50.00	-18.36	45.02	60.00	-14.98	10.29
5.243 MHz	31.24	50.00	-18.76	44.74	60.00	-15.26	10.29
5.340 MHz	31.19	50.00	-18.81	44.52	60.00	-15.48	10.30
Mfr/Model - Legrand N.A. Model WNRL44							
Sample # - 2272-24							
Serial # - No Serial Number							
Configuration - EUT in RX Mode							
Voltage/Frequency - 120 VAC / 60 Hz							



BEC Incorporated							
Line 1 Conducted Emissions							
03:29:48 PM, Thursday, September 07, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
570.956 KHz	41.65	46.00	-4.35	49.98	56.00	-6.02	10.15
604.416 KHz	33.10	46.00	-12.90	42.61	56.00	-13.39	10.15
3.860 MHz	27.17	46.00	-18.83	40.74	56.00	-15.26	10.27
4.168 MHz	27.37	46.00	-18.63	41.09	56.00	-14.91	10.28
4.212 MHz	28.44	46.00	-17.56	41.77	56.00	-14.23	10.28
4.245 MHz	28.81	46.00	-17.19	42.50	56.00	-13.50	10.28
4.781 MHz	31.57	46.00	-14.43	45.13	56.00	-10.87	10.30
4.900 MHz	31.76	46.00	-14.24	45.63	56.00	-10.37	10.30
4.935 MHz	32.16	46.00	-13.84	45.89	56.00	-10.11	10.30
4.999 MHz	32.78	46.00	-13.22	46.46	56.00	-9.54	10.30
5.048 MHz	33.12	50.00	-16.88	46.70	60.00	-13.30	10.30
5.061 MHz	33.11	50.00	-16.89	46.87	60.00	-13.13	10.30
5.150 MHz	33.24	50.00	-16.76	46.77	60.00	-13.23	10.31
5.237 MHz	32.69	50.00	-17.31	46.37	60.00	-13.63	10.31
5.328 MHz	32.76	50.00	-17.24	46.42	60.00	-13.58	10.31
5.364 MHz	32.82	50.00	-17.18	46.68	60.00	-13.32	10.31
5.374 MHz	32.87	50.00	-17.13	46.47	60.00	-13.53	10.31
5.411 MHz	32.80	50.00	-17.20	46.33	60.00	-13.67	10.31
5.421 MHz	32.79	50.00	-17.21	46.37	60.00	-13.63	10.32
5.474 MHz	32.75	50.00	-17.25	45.86	60.00	-14.14	10.32
Mfr/Model - Legrand N.A. Model WNRL44							
Sample # - 2272-24							
Serial # - No Serial Number							
Configuration - EUT in RX Mode							
Voltage/Frequency - 120 VAC / 60 Hz							



EUT Configured in Rx Mode Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL44 Sample 2272-24 in Rx Mode are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 4.35 dB.



4.1.6 Conducted Emissions 150 kHz to 30 MHz FCC 15.207 and RSS-Gen 7.2 Limits Test Results WNRL64 Sample 2272-18

The following graphs and tables show the conducted emissions recorded on the AC Power Port of the EUT displayed against the FCC Part 15.207 and RSS-Gen 7.2 Limits. EUT was powered at 120 Vac / 60 Hz.

EUT Transmitting at 2.405 GHz Low Channel Tables

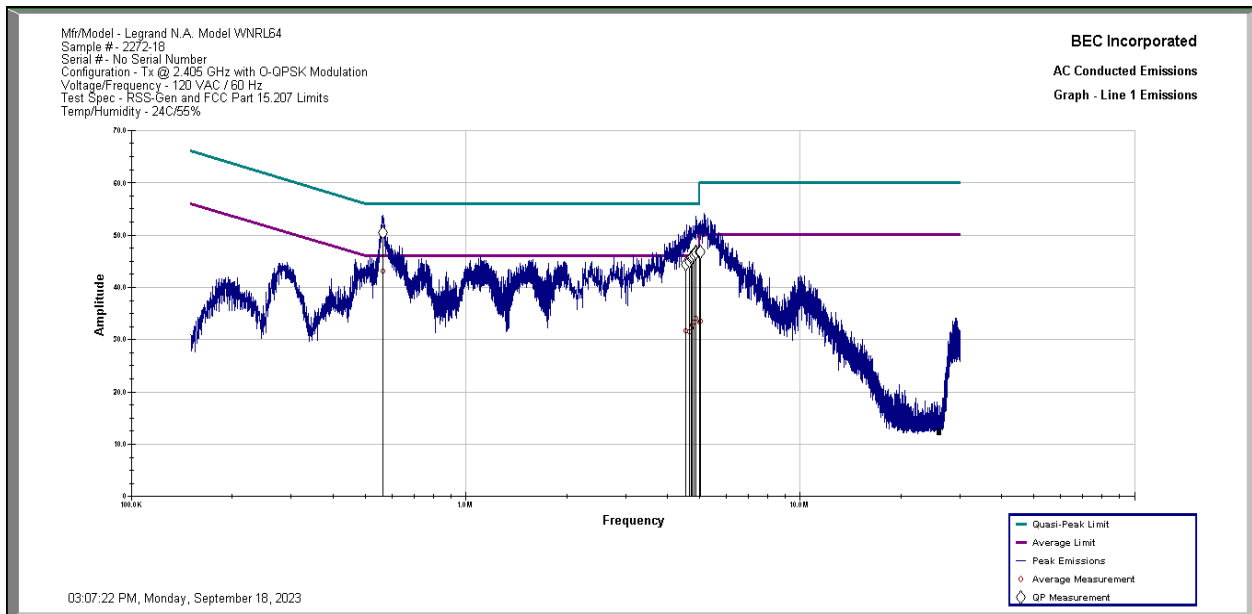
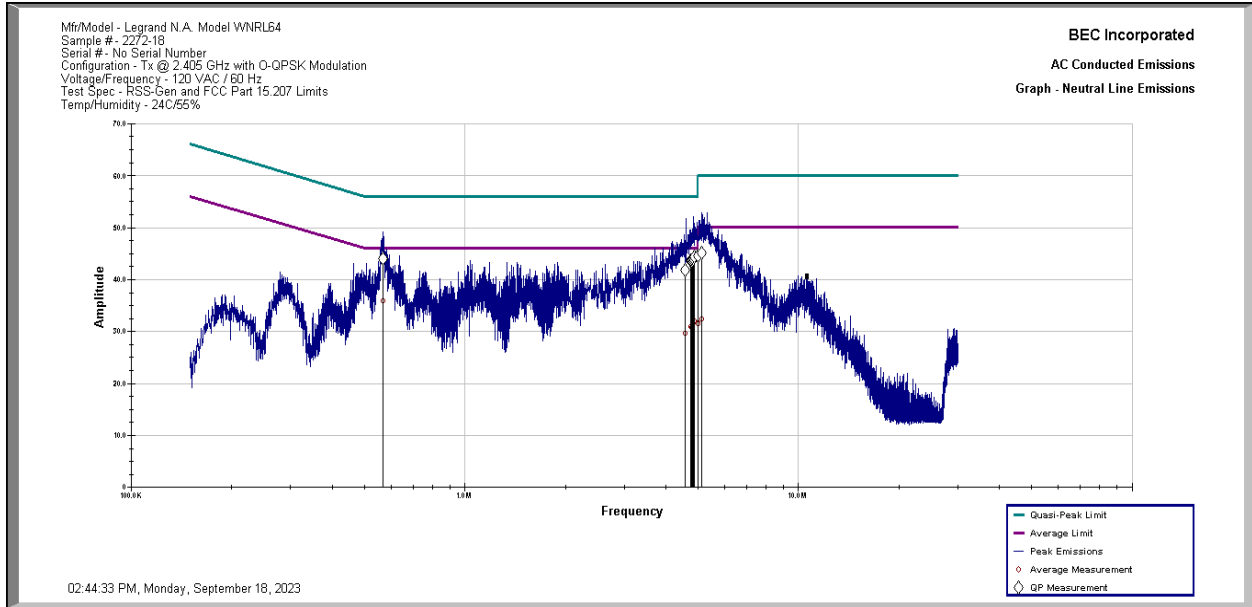
BEC Incorporated							
Neutral Line Conducted Emissions							
02:40:32 PM, Monday, September 18, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
567.408 KHz	35.97	46.00	-10.03	44.00	56.00	-12.00	10.13
4.574 MHz	29.60	46.00	-16.40	41.84	56.00	-14.16	10.27
4.749 MHz	30.84	46.00	-15.16	43.62	56.00	-12.38	10.27
4.762 MHz	30.77	46.00	-15.23	43.61	56.00	-12.39	10.28
4.821 MHz	31.69	46.00	-14.31	43.89	56.00	-12.11	10.28
4.845 MHz	31.63	46.00	-14.37	44.09	56.00	-11.91	10.28
4.873 MHz	32.02	46.00	-13.98	44.34	56.00	-11.66	10.28
4.985 MHz	31.73	46.00	-14.27	44.65	56.00	-11.35	10.28
4.994 MHz	31.49	46.00	-14.51	44.49	56.00	-11.51	10.28
5.128 MHz	32.50	50.00	-17.50	45.16	60.00	-14.84	10.29
Mfr/Model - Legrand N.A. Model WNRL64							
Sample # - 2272-18							
Serial # - No Serial Number							
Configuration - Tx @ 2.405 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 24C/55%							



BEC Incorporated							
Line 1 Conducted Emissions							
03:03:21 PM, Monday, September 18, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
563.007 KHz	43.12	46.00	-2.88	50.55	56.00	-5.45	10.15
4.538 MHz	31.67	46.00	-14.33	44.42	56.00	-11.58	10.29
4.653 MHz	31.57	46.00	-14.43	44.95	56.00	-11.05	10.29
4.715 MHz	32.30	46.00	-13.70	45.57	56.00	-10.43	10.29
4.744 MHz	32.83	46.00	-13.17	45.84	56.00	-10.16	10.29
4.821 MHz	33.28	46.00	-12.72	46.25	56.00	-9.75	10.30
4.878 MHz	34.05	46.00	-11.95	46.75	56.00	-9.25	10.30
4.882 MHz	34.02	46.00	-11.98	46.64	56.00	-9.36	10.30
4.992 MHz	33.36	46.00	-12.64	46.82	56.00	-9.18	10.30
5.022 MHz	33.46	50.00	-16.54	46.79	60.00	-13.21	10.30
Mfr/Model - Legrand N.A. Model WNRL64							
Sample # - 2272-18							
Serial # - No Serial Number							
Configuration - Tx @ 2.405 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 24C/55%							



EUT Transmitting at 2.405 GHz Low Channel Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL64 Sample 2272-18 in Tx Mode Low Channel at 2.405 GHz are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 2.88 dB.



EUT Transmitting at 2.440 GHz Middle Channel Tables

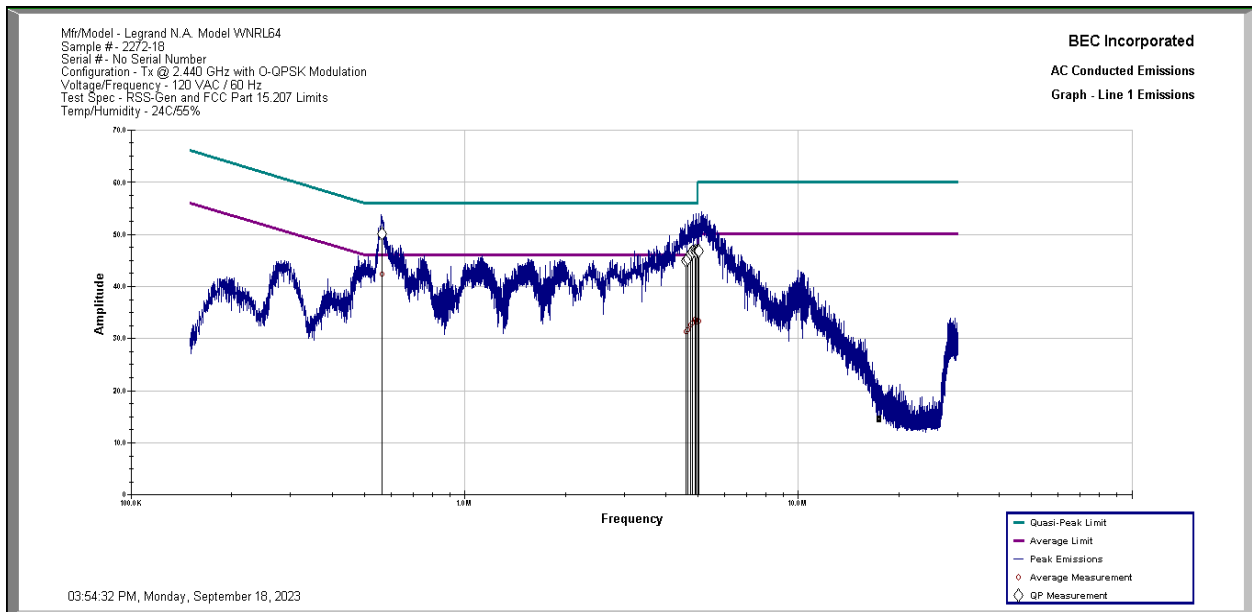
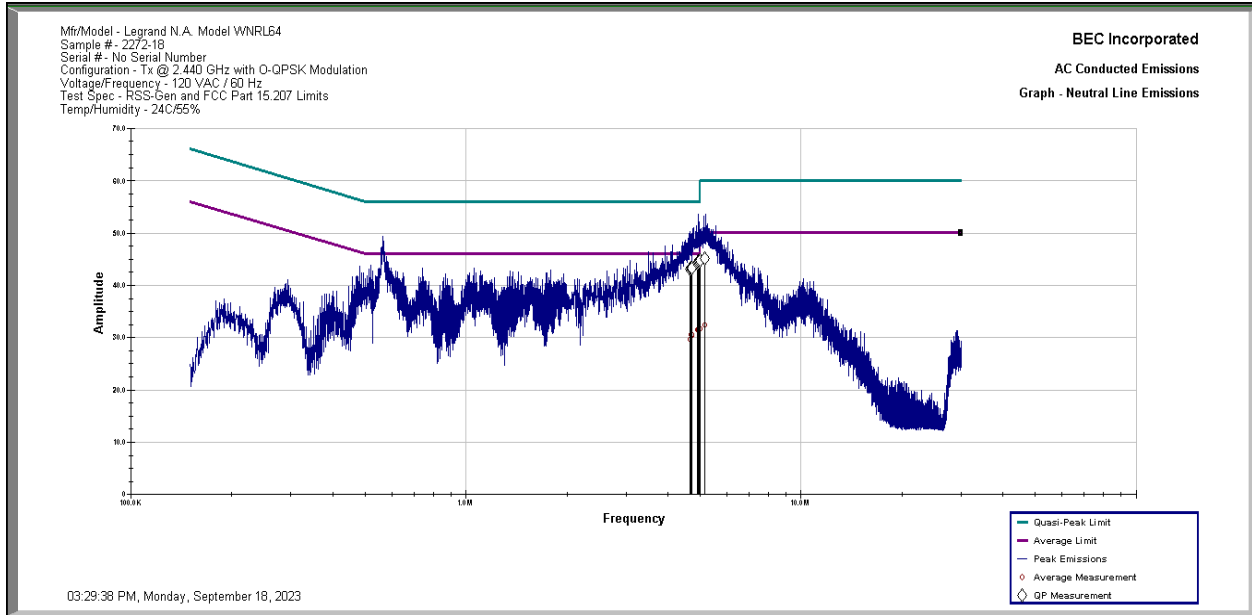
BEC Incorporated Neutral Line Conducted Emissions 03:25:38 PM, Monday, September 18, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
4.663 MHz	29.64	46.00	-16.36	42.99	56.00	-13.01	10.27
4.695 MHz	30.58	46.00	-15.42	43.32	56.00	-12.68	10.27
4.703 MHz	30.35	46.00	-15.65	43.30	56.00	-12.70	10.27
4.718 MHz	30.48	46.00	-15.52	43.26	56.00	-12.74	10.27
4.912 MHz	31.41	46.00	-14.59	44.29	56.00	-11.71	10.28
4.926 MHz	31.43	46.00	-14.57	44.48	56.00	-11.52	10.28
4.931 MHz	31.61	46.00	-14.39	44.33	56.00	-11.67	10.28
4.957 MHz	31.74	46.00	-14.26	44.65	56.00	-11.35	10.28
4.997 MHz	31.62	46.00	-14.38	44.79	56.00	-11.21	10.28
5.156 MHz	32.37	50.00	-17.63	45.11	60.00	-14.89	10.29
Mfr/Model - Legrand N.A. Model WNRL64							
Sample # - 2272-18							
Serial # - No Serial Number							
Configuration - Tx @ 2.440 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 24C/55%							



BEC Incorporated							
Line 1 Conducted Emissions							
03:50:30 PM, Monday, September 18, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
565.602 KHz	42.37	46.00	-3.63	50.00	56.00	-6.00	10.15
4.604 MHz	31.38	46.00	-14.62	44.99	56.00	-11.01	10.29
4.658 MHz	31.64	46.00	-14.36	45.32	56.00	-10.68	10.29
4.750 MHz	32.63	46.00	-13.37	46.25	56.00	-9.75	10.30
4.803 MHz	33.04	46.00	-12.96	46.57	56.00	-9.43	10.30
4.887 MHz	33.59	46.00	-12.41	46.77	56.00	-9.23	10.30
4.889 MHz	33.68	46.00	-12.32	46.83	56.00	-9.17	10.30
4.916 MHz	33.41	46.00	-12.59	46.61	56.00	-9.39	10.30
5.002 MHz	33.18	50.00	-16.82	46.82	60.00	-13.18	10.30
5.014 MHz	33.32	50.00	-16.68	46.77	60.00	-13.23	10.30
Mfr/Model - Legrand N.A. Model WNRL64							
Sample # - 2272-18							
Serial # - No Serial Number							
Configuration - Tx @ 2.440 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 24C/55%							



EUT Transmitting at 2.440 GHz Middle Channel Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL64 Sample 2272-18 in Tx Mode Middle Channel at 2.440 GHz are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 3.63 dB.



EUT Transmitting at 2.480 GHz High Channel Tables

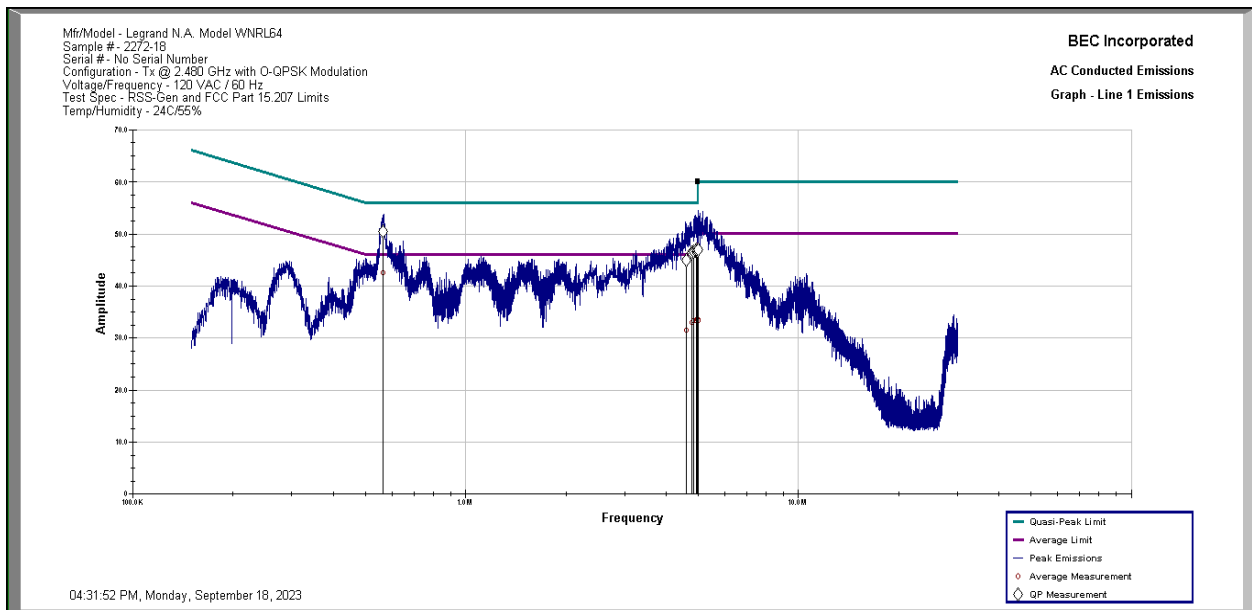
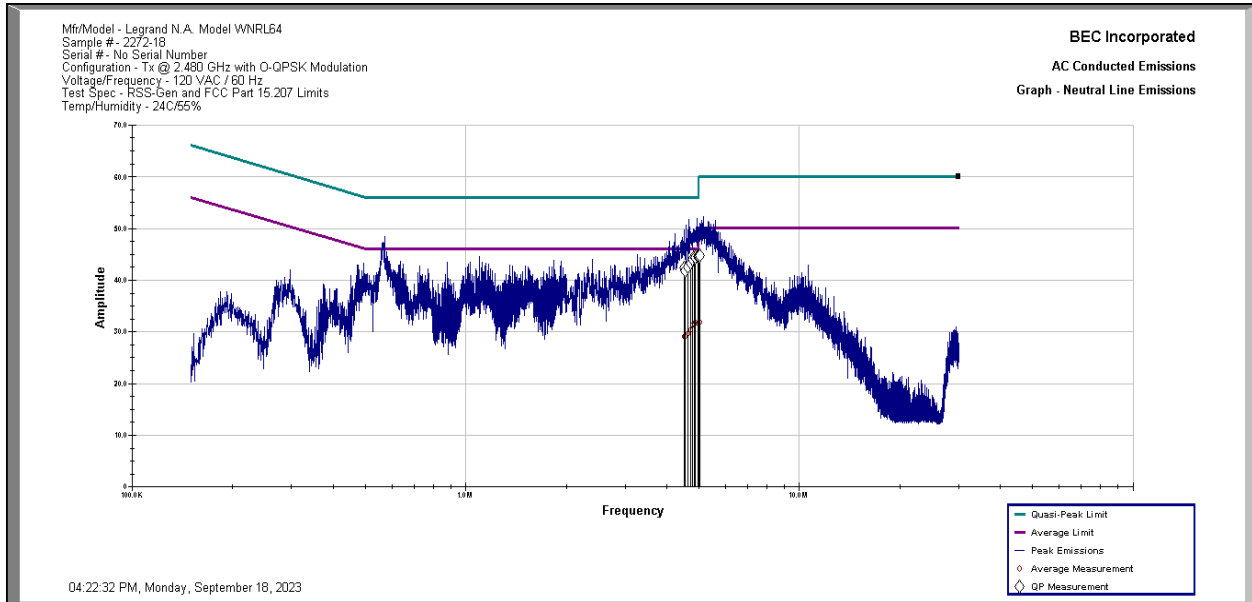
BEC Incorporated Neutral Line Conducted Emissions 04:18:30 PM, Monday, September 18, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
4.506 MHz	29.14	46.00	-16.86	42.27	56.00	-13.73	10.27
4.551 MHz	29.04	46.00	-16.96	41.81	56.00	-14.19	10.27
4.639 MHz	29.62	46.00	-16.38	42.56	56.00	-13.44	10.27
4.702 MHz	30.46	46.00	-15.54	43.28	56.00	-12.72	10.27
4.776 MHz	31.35	46.00	-14.65	43.99	56.00	-12.01	10.28
4.848 MHz	31.54	46.00	-14.46	44.62	56.00	-11.38	10.28
4.880 MHz	31.78	46.00	-14.22	44.46	56.00	-11.54	10.28
4.959 MHz	31.63	46.00	-14.37	44.61	56.00	-11.39	10.28
4.980 MHz	31.86	46.00	-14.14	44.61	56.00	-11.39	10.28
5.036 MHz	31.82	50.00	-18.18	44.67	60.00	-15.33	10.28
Mfr/Model - Legrand N.A. Model WNRL64							
Sample # - 2272-18							
Serial # - No Serial Number							
Configuration - Tx @ 2.480 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 24C/55%							



BEC Incorporated							
Line 1 Conducted Emissions							
04:27:49 PM, Monday, September 18, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
565.333 KHz	42.45	46.00	-3.55	50.36	56.00	-5.64	10.15
4.592 MHz	31.54	46.00	-14.46	44.85	56.00	-11.15	10.29
4.770 MHz	32.90	46.00	-13.10	46.40	56.00	-9.60	10.30
4.835 MHz	33.37	46.00	-12.63	46.51	56.00	-9.49	10.30
4.922 MHz	33.37	46.00	-12.63	46.50	56.00	-9.50	10.30
4.929 MHz	33.48	46.00	-12.52	46.66	56.00	-9.34	10.30
4.933 MHz	33.33	46.00	-12.67	46.85	56.00	-9.15	10.30
4.950 MHz	33.59	46.00	-12.41	46.78	56.00	-9.22	10.30
4.979 MHz	33.55	46.00	-12.45	46.96	56.00	-9.04	10.30
5.004 MHz	33.27	50.00	-16.73	46.86	60.00	-13.14	10.30
Mfr/Model - Legrand N.A. Model WNRL64							
Sample # - 2272-18							
Serial # - No Serial Number							
Configuration - Tx @ 2.480 GHz with O-QPSK Modulation							
Voltage/Frequency - 120 VAC / 60 Hz							
Test Spec - RSS-Gen and FCC Part 15.207 Limits							
Temp/Humidity - 24C/55%							



EUT Transmitting at 2.480 GHz High Channel Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL64 Sample 2272-18 in Tx Mode High Channel at 2.480 GHz are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 3.55 dB.



EUT Configured in Rx Mode Tables

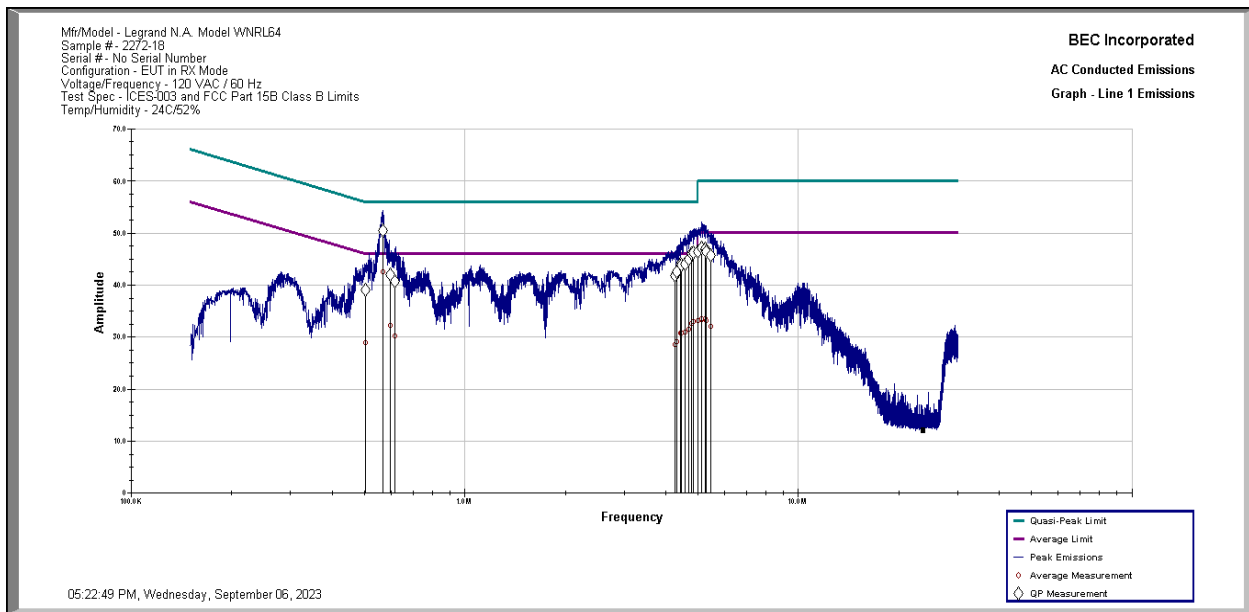
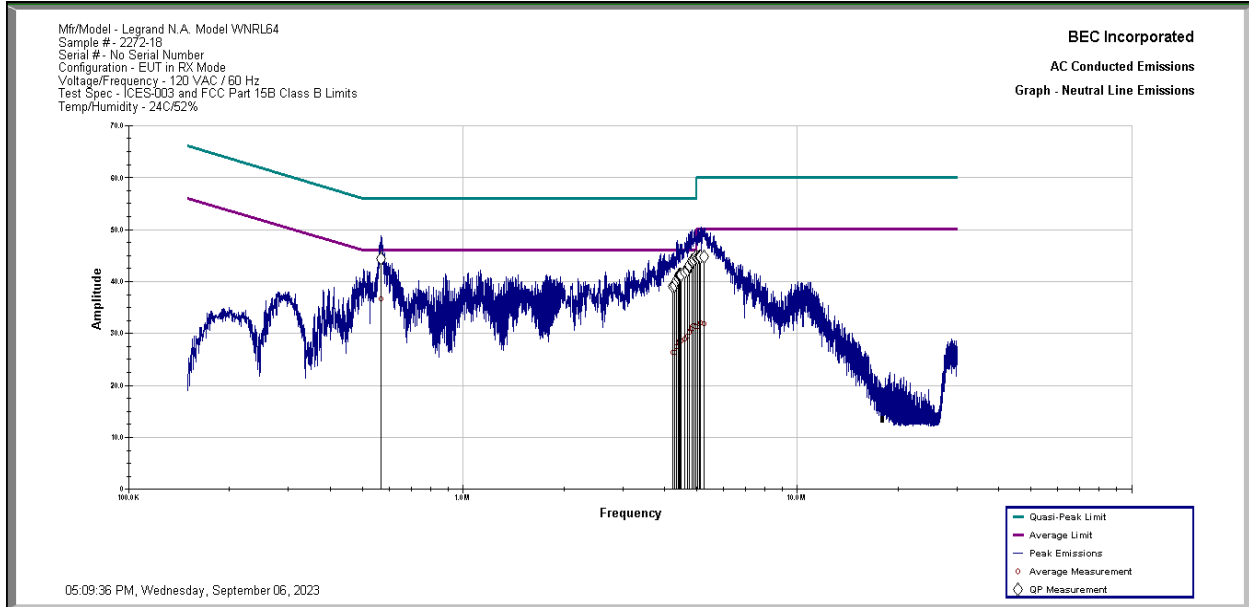
BEC Incorporated Neutral Line Conducted Emissions 05:09:36 PM, Wednesday, September 06, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
566.540 KHz	36.63	46.00	-9.37	44.32	56.00	-11.68	10.13
4.232 MHz	26.26	46.00	-19.74	39.02	56.00	-16.98	10.26
4.286 MHz	26.41	46.00	-19.59	39.19	56.00	-16.81	10.27
4.333 MHz	27.50	46.00	-18.50	40.10	56.00	-15.90	10.27
4.413 MHz	28.31	46.00	-17.69	40.73	56.00	-15.27	10.27
4.440 MHz	28.57	46.00	-17.43	41.20	56.00	-14.80	10.27
4.449 MHz	28.79	46.00	-17.21	41.20	56.00	-14.80	10.27
4.481 MHz	28.48	46.00	-17.52	41.31	56.00	-14.69	10.27
4.595 MHz	28.96	46.00	-17.04	41.79	56.00	-14.21	10.27
4.688 MHz	29.51	46.00	-16.49	42.24	56.00	-13.76	10.27
4.740 MHz	30.46	46.00	-15.54	42.92	56.00	-13.08	10.27
4.742 MHz	30.25	46.00	-15.75	43.05	56.00	-12.95	10.27
4.837 MHz	31.22	46.00	-14.78	43.91	56.00	-12.09	10.28
4.844 MHz	31.02	46.00	-14.98	43.94	56.00	-12.06	10.28
4.903 MHz	31.44	46.00	-14.56	44.29	56.00	-11.71	10.28
4.978 MHz	31.31	46.00	-14.69	44.68	56.00	-11.32	10.28
5.016 MHz	31.31	50.00	-18.69	44.57	60.00	-15.43	10.28
5.103 MHz	31.85	50.00	-18.15	44.80	60.00	-15.20	10.29
5.138 MHz	32.04	50.00	-17.96	44.82	60.00	-15.18	10.29
5.248 MHz	31.88	50.00	-18.12	44.73	60.00	-15.27	10.29
Mfr/Model - Legrand N.A. Model WNRL64							
Sample # - 2272-18							
Serial # - No Serial Number							
Configuration - EUT in RX Mode							
Voltage/Frequency - 120 VAC / 60 Hz							



BEC Incorporated							
Line 1 Conducted Emissions							
05:22:49 PM, Wednesday, September 06, 2023							
	1	2	3	4	5	6	7
Frequency	AVG	AVG	AVG	QP	QP	QP	Corr
MHz	dBuV	Limit	Margin	dBuV	Limit	Margin	Factor
502.507 KHz	28.97	46.00	-17.03	39.06	56.00	-16.94	10.13
566.531 KHz	42.55	46.00	-3.45	50.49	56.00	-5.51	10.15
596.348 KHz	32.32	46.00	-13.68	41.90	56.00	-14.10	10.15
617.628 KHz	30.29	46.00	-15.71	40.70	56.00	-15.30	10.15
4.260 MHz	28.53	46.00	-17.47	41.81	56.00	-14.19	10.29
4.318 MHz	29.00	46.00	-17.00	42.52	56.00	-13.48	10.29
4.320 MHz	29.00	46.00	-17.00	42.52	56.00	-13.48	10.29
4.439 MHz	30.70	46.00	-15.30	44.07	56.00	-11.93	10.29
4.446 MHz	30.68	46.00	-15.32	43.82	56.00	-12.18	10.29
4.555 MHz	30.85	46.00	-15.15	44.04	56.00	-11.96	10.29
4.695 MHz	31.57	46.00	-14.43	44.96	56.00	-11.04	10.29
4.789 MHz	32.58	46.00	-13.42	46.00	56.00	-10.00	10.30
4.834 MHz	32.99	46.00	-13.01	46.27	56.00	-9.73	10.30
4.978 MHz	33.08	46.00	-12.92	46.46	56.00	-9.54	10.30
5.108 MHz	33.37	50.00	-16.63	47.11	60.00	-12.89	10.30
5.110 MHz	33.52	50.00	-16.48	47.08	60.00	-12.92	10.30
5.237 MHz	33.54	50.00	-16.46	46.78	60.00	-13.22	10.31
5.242 MHz	33.46	50.00	-16.54	46.95	60.00	-13.05	10.31
5.292 MHz	33.23	50.00	-16.77	46.39	60.00	-13.61	10.31
5.444 MHz	32.07	50.00	-17.93	45.65	60.00	-14.35	10.32
Mfr/Model - Legrand N.A. Model WNRL64							
Sample # - 2272-18							
Serial # - No Serial Number							
Configuration - EUT in RX Mode							
Voltage/Frequency - 120 VAC / 60 Hz							



EUT Configured in Rx Mode Graphs



Results: All conducted emissions measured on the AC Power Port of the Legrand Model WNRL64 Sample 2272-18 in Rx Mode are below the limit specified by FCC Part 15.207 and RSS-Gen 7.2 Limits by a margin of 3.45 dB.



4.2 Emissions in Non-Restricted and Restricted Frequency Bands 1 GHz - 25 GHz (47 CFR 15.205, 15.209)(RSS-GEN 8.9, 8.10)

The emissions from the Legrand Models WNRL24, WNRL34, WNRL44 and WNRL64 radiant wireless switches and dimmers with Zigbee radios which fall in the restricted bands of operation, detailed in this section, comply with the limits of 15.209. All models were tested at three frequencies: Low (2.405 GHz), Middle (2.440 GHz) and High (2.480 GHz). The modulation was O-QPSK. The EUT was also tested in Rx Mode.

Frequency Range	1 GHz to 18 GHz
Test Standards	FCC Part 15.205 and 15.209 and RSS-Gen 8.9 and 8.10
Limits	FCC Part 15.205 and 15.209 and RSS-Gen 8.9 and 8.10 Limits
Manufacturer	Legrand
Model	WNRL24
Serial Number	No Serial Number
Sample Number	2272-20
Manufacturer	Legrand
Model	WNRL34
Serial Number	No Serial Number
Sample Number	2272-22
Manufacturer	Legrand
Model	WNRL44
Serial Number	No Serial Number
Sample Number	2272-24
Manufacturer	Legrand
Model	WNRL64
Serial Number	No Serial Number
Sample Number	2272-18
Sample Types	Radiated Emissions Sample Types
Test Configuration	The EUTs were tested at Maximum Output Power with O-QPSK modulation
Port Tested	Enclosure Port of the EUT
EUT Power	120 VAC / 60 Hz
Test Date	09/26/2023
Temperature	21°C
Humidity	61 %
Test Date	09/27/2023
Temperature	21°C
Humidity	58 %
Test Date	09/28/2023
Temperature	21°C
Humidity	56 %
Test Date	09/29/2023
Temperature	21°C
Humidity	59 %



4.2.1 Radiated Spurious Emissions Test Facility

OATS

The Open Area Test Site (OATS) is an all-weather facility with a wooden enclosure that contains a ground level 4-foot diameter turntable capable of rotating equipment 360 degrees. The enclosure is free of reflective metallic objects and extraneous electromagnetic signals. This non-metallic enclosure and the 3 and 10 meter test range existing outside the enclosure rest upon a protective insulating material, which in turn covers a flat, metal, continuous ground plane.

Instrumentation for remote control of the antenna mast, turntable, and other equipment are controlled by personnel indoors. The EUT and support peripherals required for EUT operation were placed on a table 80 cm high for tabletop equipment or directly on the turntable surface for floor standing equipment.

The test site complies with the attenuation measurements specified in ANSI C63.4.

Measurement of the signals was performed with the EUT on a turntable and a variable height antenna mast at 3 meters distance. The signals residing in restricted bands of operation are designated in the tables in the results section.

SR#1

The Semi-Anechoic Shielded Room (SR#1) is a ferrite and absorber lined chamber which houses a 5-foot diameter turntable capable of rotating equipment 360 degrees and antenna mast for Horizontal and Vertical polarity measurements. The enclosure is free of reflective metallic objects and extraneous electromagnetic signals. This 3-meter shielded enclosure has a raised computer floor with metal tile bottoms providing a continuous ground plane.

Instrumentation for remote control of the antenna mast, turntable, and other equipment are controlled by personnel outside the chamber. The EUT and support peripherals required for EUT operation were placed on a table 80 cm high for tabletop equipment or directly on the turntable surface for floor standing equipment.

Measurement of the signals was performed with the EUT on a turntable and a variable height antenna mast at 3 meters distance. The signals residing in restricted bands of operation are designated in the tables in the results section.



4.2.2 Emissions in Non-Restricted and Restricted Frequency Bands Test Procedure

Radiated Emissions 30 MHz – 40 GHz

The EMI receiver was set to quasi-peak mode for frequencies from 30 MHz to 1 GHz and the appropriate CISPR bandwidths were employed. The receiver was set to average mode for frequencies above 1 GHz with the appropriate CISPR bandwidths were employed.

Three orthogonal positions of the EUTs were evaluated for maximum emissions. The position of the EUTs placed in an upright position with buttons facing the measurement antenna on the horizontal surface of the 80-cm table was determined to be the axis that produced the highest emissions for the Legrand Models WNRL24, WNRL34, WNRL44 and WNRL64 radiant wireless switches and dimmers with Zigbee radios.

Significant emissions found during the preliminary scans were maximized by rotating the turntable and varying the antenna height. Both horizontal and vertical antenna polarities were also investigated for suspect emissions. The signals are maximized and measured using the in house generated RADE or off the shelf TILE software. The support equipment and test item(s) were powered off in turn to determine the source of the emissions where appropriate.

Field strengths were calculated as follows:

Field Strength (dB μ V/m) = Meter Reading (dB μ V) + Antenna Factor (dB/m) + Cable Loss (dB) – Amplifier Gain (dB)

The Legrand Models WNRL24, WNRL34, WNRL44 and WNRL64 radiant wireless switches and dimmers with Zigbee radios were tested in the 30 MHz to 1000 MHz frequency range and 1 to 18 GHz frequency range with the radio transmitting at low, middle and high frequencies and while in receive mode (non-transmission). The Zigbee radio was tested with O-QPSK modulated transmission signals at maximum output.

The following tables are the highest emissions recorded and summarized. The use of the 15.209 limit table for restricted band emissions is not required but ensures compliance to 15.205 and 15.209. The signals in the tables that fall into the restricted bands, described in 15.205, are marked with an asterisk.

Spectrum Analyzer Settings

RBW	1 MHz
VBW	3 MHz
Sweep	Auto
Reference Level	80 dB μ V
Attenuation	10 dB
Detectors	Peak and Average
Frequency Range	1 GHz to 18 GHz



4.2.3 Emissions in Frequency Bands 1 - 18 GHz WNRL24 Sample 2272-20 with Zigbee Radio Test Results (09/27/2023)

Radiated emissions scans, 1 – 18 GHz, were made for the EUT configured for the low, middle and high transmission frequencies and in Rx mode. The Transmit Frequencies were measured with O-QPSK Modulation at maximum output. Peak and Average levels shown in the table are corrected values.

Legrand Model WNRL24 with Zigbee Radio, Low Channel 11, 2.405 GHz, Modulated

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
* 4.80926	44.56	36.72	H	339	242	1.67	53.98	-17.26	73.98	-29.42	PASS
* 4.84522	37.53	27.69	V	144	208	1.81	53.98	-26.29	73.98	-36.45	PASS
7.2164	43.20	33.26	H	164	201	4.21	53.98	-20.72	73.98	-30.78	PASS
7.2460	42.09	33.16	V	326	200	4.38	53.98	-20.82	73.98	-31.89	PASS
* 8.19563	45.45	35.96	V	136	156	5.44	53.98	-18.02	73.98	-28.53	PASS
9.6190	45.06	35.38	H	276	151	6.30	53.98	-18.60	73.98	-28.93	PASS
9.6526	45.64	35.59	V	185	226	6.24	53.98	-18.39	73.98	-28.34	PASS
10.2905	46.40	36.09	V	295	153	6.08	53.98	-17.89	73.98	-27.58	PASS
10.3021	46.06	36.00	H	348	124	6.04	53.98	-17.98	73.98	-27.92	PASS
* 12.0211	48.56	38.12	V	085	224	7.74	53.98	-15.86	73.98	-25.42	PASS
* 12.0242	47.90	37.85	H	064	110	7.74	53.98	-16.13	73.98	-26.08	PASS
*Restricted Band Signal											

Legrand Model WNRL24 with Zigbee Radio, Middle Channel 18, 2.440 GHz, Modulated

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
* 4.87911	44.81	38.41	H	023	230	1.88	53.98	-15.57	73.98	-29.17	PASS
* 4.88114	37.69	27.44	V	261	209	1.89	53.98	-26.54	73.98	-36.29	PASS
* 7.31577	43.73	33.40	V	187	102	4.73	53.98	-20.58	73.98	-30.25	PASS
* 7.31922	44.10	33.80	H	359	209	4.74	53.98	-20.18	73.98	-29.88	PASS
7.8727	45.06	34.61	V	014	183	5.00	53.98	-19.37	73.98	-28.92	PASS
* 8.11965	46.58	36.04	H	241	192	5.32	53.98	-17.94	73.98	-27.40	PASS
9.7657	47.10	35.75	V	205	156	6.15	53.98	-18.23	73.98	-26.88	PASS
* 11.7074	49.34	38.27	H	221	129	7.67	53.98	-15.71	73.98	-24.64	PASS
* 12.2066	49.03	38.43	V	360	150	7.82	53.98	-15.55	73.98	-24.95	PASS
* 12.214	48.23	38.38	H	165	226	7.81	53.98	-15.61	73.98	-25.75	PASS
*Restricted Band Signal											



Legrand Model WNRL24 with Zigbee Radio, High Channel 26, 2.480 GHz, Modulated

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
* 4.95382	36.66	26.27	H	223	114	1.83	53.98	-27.71	73.98	-37.32	PASS
* 4.95655	36.66	26.53	V	329	177	1.83	53.98	-27.45	73.98	-37.32	PASS
* 7.43665	43.81	33.51	V	335	104	4.75	53.98	-20.47	73.98	-30.17	PASS
* 7.47745	43.60	33.45	H	282	109	4.73	53.98	-20.53	73.98	-30.38	PASS
9.9124	46.13	36.17	V	016	186	6.31	53.98	-17.81	73.98	-27.85	PASS
9.9149	46.59	36.22	H	043	225	6.31	53.98	-17.76	73.98	-27.39	PASS
10.0712	47.60	35.89	H	001	104	6.32	53.98	-18.09	73.98	-26.38	PASS
* 10.6172	46.67	35.93	V	050	126	6.09	53.98	-18.05	73.98	-27.31	PASS
* 12.41	48.31	38.24	H	136	217	7.67	53.98	-15.74	73.98	-25.67	PASS
* 12.4257	47.66	38.31	V	001	207	7.73	53.98	-15.67	73.98	-26.32	PASS
*Restricted Band Signal											

Legrand Model WNRL24 with Zigbee Radio, Rx Mode

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
6.5655	41.58	31.64	V	360	115	3.05	53.98	-22.34	73.98	-32.40	PASS
6.7636	41.37	32.67	H	267	140	3.61	53.98	-21.31	73.98	-32.61	PASS
* 8.03574	46.79	35.71	V	187	133	5.23	53.98	-18.27	73.98	-27.19	PASS
* 8.17921	44.99	36.00	H	019	146	5.40	53.98	-17.98	73.98	-28.99	PASS
* 9.45936	45.77	36.33	H	001	161	6.70	53.98	-17.65	73.98	-28.21	PASS
* 9.51201	46.52	36.14	V	213	145	6.50	53.98	-17.84	73.98	-27.46	PASS
* 11.1518	47.14	37.50	V	326	114	6.45	53.98	-16.48	73.98	-26.84	PASS
* 11.4288	47.63	37.83	H	099	101	6.72	53.98	-16.15	73.98	-26.35	PASS
13.4702	53.38	43.02	V	271	114	10.60	53.98	-10.96	73.98	-20.60	PASS
*Restricted Band Signal											

Test Results: The Legrand Model WNRL24 with Zigbee Radio Sample 2272-20 complies with the requirements of 47 CFR Part 15.205, 15.209 and RSS-Gen Section 8.10 for non-restricted and restricted bands of operation between 1 – 18 GHz with an Average Margin of 10.96 dB.



4.2.4 Emissions in Frequency Bands 1 - 18 GHz WNRL34 Sample 2272-22 with Zigbee Radio Test Results (09/28/2023)

Radiated emissions scans, 1 – 18 GHz, were made for the EUT configured for the low, middle and high transmission frequencies and in Rx mode. The Transmit Frequencies were measured with O-QPSK Modulation at maximum output. Peak and Average levels shown in the table are corrected values.

Legrand Model WNRL34 with Zigbee Radio, Low Channel 11, 2.405 GHz, Modulated

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
* 4.80687	35.78	26.63	V	213	100	1.66	53.98	-27.35	73.98	-38.20	PASS
* 4.83762	35.80	27.15	H	344	102	1.78	53.98	-26.83	73.98	-38.18	PASS
7.2238	42.77	32.48	V	075	184	4.25	53.98	-21.50	73.98	-31.21	PASS
7.2239	43.56	32.89	H	343	135	4.25	53.98	-21.09	73.98	-30.42	PASS
* 8.29247	45.80	35.54	V	225	105	5.48	53.98	-18.44	73.98	-28.18	PASS
* 9.34604	45.59	36.49	H	063	239	6.61	53.98	-17.49	73.98	-28.39	PASS
9.6140	46.11	35.85	V	028	173	6.30	53.98	-18.13	73.98	-27.87	PASS
9.6345	46.11	35.91	H	123	130	6.27	53.98	-18.08	73.98	-27.88	PASS
9.9626	45.49	36.18	V	151	244	6.33	53.98	-17.80	73.98	-28.49	PASS
* 12.0149	46.79	37.99	H	274	157	7.74	53.98	-15.99	73.98	-27.19	PASS
* 12.0333	47.37	37.79	V	275	208	7.73	53.98	-16.19	73.98	-26.61	PASS
13.2291	52.54	42.09	V	348	224	9.84	53.98	-11.89	73.98	-21.44	PASS
*Restricted Band Signal											

Legrand Model WNRL34 with Zigbee Radio, Middle Channel 18, 2.440 GHz, Modulated

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
* 4.87576	36.42	27.69	V	069	125	1.88	53.98	-26.29	73.98	-37.56	PASS
* 4.87926	46.01	38.53	H	015	227	1.88	53.98	-15.45	73.98	-27.97	PASS
* 7.34037	42.94	33.06	H	235	198	4.79	53.98	-20.92	73.98	-31.04	PASS
7.8436	44.61	34.96	V	146	228	4.92	53.98	-19.02	73.98	-29.37	PASS
* 8.11479	47.64	35.82	H	083	104	5.32	53.98	-18.16	73.98	-26.34	PASS
* 8.18186	45.29	36.18	V	000	177	5.41	53.98	-17.80	73.98	-28.69	PASS
9.7597	45.52	35.78	H	210	234	6.17	53.98	-18.20	73.98	-28.46	PASS
9.7794	45.79	35.68	V	087	115	6.11	53.98	-18.30	73.98	-28.19	PASS
* 12.2848	48.20	38.24	H	270	170	7.75	53.98	-15.74	73.98	-25.78	PASS
12.9015	50.89	41.48	V	264	233	8.51	53.98	-12.50	73.98	-23.09	PASS
*Restricted Band Signal											



Legrand Model WNRL34 with Zigbee Radio, High Channel 26, 2.480 GHz, Modulated

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
* 4.92103	37.17	26.89	V	101	174	1.88	53.98	-27.09	73.98	-36.81	PASS
* 4.97983	35.67	26.42	H	292	135	1.85	53.98	-27.57	73.98	-38.32	PASS
6.5826	42.87	31.67	V	262	105	3.12	53.98	-22.31	73.98	-31.11	PASS
* 7.4414	43.57	33.44	H	360	156	4.75	53.98	-20.54	73.98	-30.41	PASS
* 7.46331	44.26	32.92	V	109	163	4.74	53.98	-21.06	73.98	-29.72	PASS
7.7908	44.87	34.48	H	308	184	4.72	53.98	-19.50	73.98	-29.11	PASS
9.9267	45.73	36.36	H	281	241	6.31	53.98	-17.62	73.98	-28.25	PASS
9.9432	45.92	36.35	V	256	102	6.32	53.98	-17.63	73.98	-28.06	PASS
* 11.387	47.83	37.42	V	268	189	6.63	53.98	-16.56	73.98	-26.15	PASS
* 11.637	47.55	38.09	H	200	232	7.45	53.98	-15.89	73.98	-26.43	PASS
* 12.3863	47.03	38.29	V	185	197	7.65	53.98	-15.69	73.98	-26.95	PASS
* 12.4085	48.51	38.04	H	158	219	7.67	53.98	-15.94	73.98	-25.47	PASS
*Restricted Band Signal											

Legrand Model WNRL34 with Zigbee Radio, Rx Mode

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
* 7.70236	44.76	34.50	H	152	230	4.62	53.98	-19.48	73.98	-29.22	PASS
7.7746	44.57	34.37	H	001	217	4.68	53.98	-19.61	73.98	-29.41	PASS
* 8.19036	46.26	36.11	V	360	106	5.43	53.98	-17.87	73.98	-27.72	PASS
* 9.39276	45.95	36.50	V	180	185	6.77	53.98	-17.48	73.98	-28.03	PASS
* 10.6792	45.82	36.46	H	239	179	6.14	53.98	-17.52	73.98	-28.17	PASS
* 11.1894	46.60	37.25	V	164	228	6.48	53.98	-16.73	73.98	-27.38	PASS
* 11.7384	47.35	38.45	V	224	177	7.71	53.98	-15.53	73.98	-26.63	PASS
* 12.0076	47.97	38.16	H	039	204	7.75	53.98	-15.82	73.98	-26.01	PASS
*Restricted Band Signal											

Test Results: The Legrand Model WNRL34 with Zigbee Radio Sample 2272-22 complies with the requirements of 47 CFR Part 15.205, 15.209 and RSS-Gen Section 8.10 for non-restricted and restricted bands of operation between 1 – 18 GHz with an Average Margin of 11.89 dB.



4.2.5 Emissions in Frequency Bands 1 - 18 GHz WNRL44 Sample 2272-24 with Zigbee Radio Test Results (09/29/2023)

Radiated emissions scans, 1 – 18 GHz, were made for the EUT configured for the low, middle and high transmission frequencies and in Rx mode. The Transmit Frequencies were measured with O-QPSK Modulation at maximum output. Peak and Average levels shown in the table are corrected values.

Legrand Model WNRL44 with Zigbee Radio, Low Channel 11, 2.405 GHz, Modulated

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
* 4.81497	37.25	27.00	V	152	136	1.70	53.98	-26.98	73.98	-36.74	PASS
* 4.82667	35.89	26.90	H	117	131	1.74	53.98	-27.08	73.98	-38.09	PASS
6.7457	41.32	32.44	V	186	234	3.63	53.98	-21.55	73.98	-32.67	PASS
6.8273	41.80	32.15	H	029	184	3.60	53.98	-21.83	73.98	-32.18	PASS
7.2097	41.18	32.82	V	150	208	4.17	53.98	-21.17	73.98	-32.80	PASS
7.2152	42.53	32.86	H	212	100	4.20	53.98	-21.12	73.98	-31.45	PASS
* 8.2383	44.86	35.45	H	154	153	5.46	53.98	-18.53	73.98	-29.12	PASS
* 9.1461	47.28	36.34	V	203	131	6.62	53.98	-17.64	73.98	-26.70	PASS
9.6277	44.95	35.71	V	009	222	6.28	53.98	-18.27	73.98	-29.03	PASS
9.6325	44.98	35.77	H	194	194	6.27	53.98	-18.21	73.98	-29.00	PASS
* 11.1254	46.74	37.55	V	227	162	6.43	53.98	-16.43	73.98	-27.24	PASS
* 12.0169	47.22	38.17	V	172	226	7.74	53.98	-15.81	73.98	-26.76	PASS
* 12.0315	48.60	37.79	H	113	228	7.73	53.98	-16.19	73.98	-25.38	PASS
*Restricted Band Signal											

Legrand Model WNRL44 with Zigbee Radio, Middle Channel 18, 2.440 GHz, Modulated

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
* 4.87859	37.06	28.02	V	120	155	1.88	53.98	-25.96	73.98	-36.92	PASS
* 4.87905	44.92	36.01	H	019	198	1.88	53.98	-17.97	73.98	-29.06	PASS
6.5077	37.45	28.16	H	074	156	2.89	53.98	-25.82	73.98	-36.53	PASS
* 7.32882	43.07	33.20	H	042	139	4.76	53.98	-20.78	73.98	-30.91	PASS
* 7.33632	44.29	32.98	V	004	130	4.78	53.98	-21.01	73.98	-29.69	PASS
* 8.36387	45.81	35.57	V	167	140	5.63	53.98	-18.41	73.98	-28.17	PASS
9.7344	46.77	35.41	H	128	134	6.21	53.98	-18.57	73.98	-27.21	PASS
9.7352	46.17	35.80	V	305	172	6.21	53.98	-18.18	73.98	-27.81	PASS
* 12.228	47.95	38.52	H	329	120	7.81	53.98	-15.46	73.98	-26.03	PASS
* 12.2335	47.94	38.31	V	208	222	7.81	53.98	-15.67	73.98	-26.05	PASS
*Restricted Band Signal											



Legrand Model WNRL44 with Zigbee Radio, High Channel 26, 2.480 GHz, Modulated

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
* 4.95891	37.91	26.47	V	029	102	1.83	53.98	-27.51	73.98	-36.07	PASS
* 4.95904	46.69	39.20	H	024	198	1.83	53.98	-14.78	73.98	-27.29	PASS
* 7.4447	43.39	33.29	V	119	105	4.75	53.98	-20.69	73.98	-30.59	PASS
* 7.46902	44.07	33.37	H	060	135	4.74	53.98	-20.61	73.98	-29.91	PASS
* 8.08312	46.45	36.02	V	160	239	5.30	53.98	-17.96	73.98	-27.53	PASS
* 8.22352	45.16	35.86	H	336	176	5.46	53.98	-18.13	73.98	-28.82	PASS
9.9176	45.65	36.24	H	164	110	6.31	53.98	-17.74	73.98	-28.33	PASS
9.9861	45.40	36.33	V	186	229	6.32	53.98	-17.65	73.98	-28.58	PASS
10.2163	46.10	36.11	H	129	156	6.27	53.98	-17.87	73.98	-27.88	PASS
* 11.5908	46.98	37.98	V	013	176	7.28	53.98	-16.00	73.98	-27.00	PASS
* 12.425	48.28	38.06	V	084	204	7.73	53.98	-15.92	73.98	-25.70	PASS
* 12.504	47.80	38.51	H	185	227	8.00	53.98	-15.47	73.98	-26.18	PASS
*Restricted Band Signal											

Legrand Model WNRL44 with Zigbee Radio, Rx Mode

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
6.7875	42.75	32.47	V	300	100	3.59	53.98	-21.51	73.98	-31.23	PASS
7.9575	45.08	35.07	V	308	102	5.09	53.98	-18.91	73.98	-28.90	PASS
7.9613	45.42	35.39	H	102	101	5.10	53.98	-18.59	73.98	-28.56	PASS
* 8.11978	46.04	35.90	H	001	132	5.32	53.98	-18.08	73.98	-27.94	PASS
* 9.42261	46.51	36.48	V	296	101	6.77	53.98	-17.50	73.98	-27.47	PASS
10.2758	47.08	36.16	H	186	157	6.13	53.98	-17.82	73.98	-26.90	PASS
* 11.0863	47.02	37.43	V	304	136	6.40	53.98	-16.55	73.98	-26.96	PASS
* 11.806	47.80	38.30	H	119	177	7.81	53.98	-15.68	73.98	-26.18	PASS
*Restricted Band Signal											

Test Results: The Legrand Model WNRL44 with Zigbee Radio Sample 2272-24 complies with the requirements of 47 CFR Part 15.205, 15.209 and RSS-Gen Section 8.10 for non-restricted and restricted bands of operation between 1 – 18 GHz with an Average Margin of 15.46 dB.



4.2.6 Emissions in Frequency Bands 1 - 18 GHz WNRL64 Sample 2272-18 with Zigbee Radio Test Results (09/26/2023 and 09/27/2023)

Radiated emissions scans, 1 – 18 GHz, were made for the EUT configured for the low, middle and high transmission frequencies and in Rx mode. The Transmit Frequencies were measured with O-QPSK Modulation at maximum output. Peak and Average levels shown in the table are corrected values.

Legrand Model WNRL64 with Zigbee Radio, Low Channel 11, 2.405 GHz, Modulated

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
* 4.80901	41.33	33.26	V	026	100	1.67	53.98	-20.73	73.98	-32.65	PASS
* 4.80918	44.70	37.84	H	344	208	1.67	53.98	-16.14	73.98	-29.28	PASS
7.2160	44.35	33.97	V	011	176	4.21	53.98	-20.01	73.98	-29.63	PASS
7.2168	42.40	32.88	H	168	208	4.21	53.98	-21.10	73.98	-31.58	PASS
* 8.22265	45.17	35.86	H	011	193	5.46	53.98	-18.13	73.98	-28.81	PASS
* 8.29194	45.83	35.88	V	088	119	5.48	53.98	-18.10	73.98	-28.15	PASS
9.6027	46.03	36.10	V	126	248	6.33	53.98	-17.88	73.98	-27.95	PASS
9.6066	45.88	35.81	H	299	221	6.32	53.98	-18.17	73.98	-28.10	PASS
* 11.1044	47.36	37.28	H	188	233	6.40	53.98	-16.70	73.98	-26.62	PASS
* 11.5392	48.82	38.05	V	269	207	7.04	53.98	-15.93	73.98	-25.16	PASS
13.0144	51.70	42.05	V	015	187	9.06	53.98	-11.93	73.98	-22.28	PASS
13.0861	52.91	42.20	H	031	132	9.32	53.98	-11.78	73.98	-21.07	PASS
*Restricted Band Signal											

Legrand Model WNRL64 with Zigbee Radio, Middle Channel 18, 2.440 GHz, Modulated

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
* 4.86324	38.13	27.95	H	091	245	1.85	53.98	-26.03	73.98	-35.85	PASS
* 4.88112	40.93	31.72	V	041	101	1.89	53.98	-22.26	73.98	-33.05	PASS
* 7.31549	43.19	33.67	V	084	214	4.73	53.98	-20.31	73.98	-30.79	PASS
* 7.32004	44.02	33.65	H	310	186	4.74	53.98	-20.33	73.98	-29.96	PASS
* 8.16543	45.16	35.80	V	113	192	5.37	53.98	-18.18	73.98	-28.82	PASS
8.9943	45.45	36.27	H	217	170	6.61	53.98	-17.71	73.98	-28.53	PASS
9.7674	45.33	35.51	V	036	183	6.15	53.98	-18.47	73.98	-28.65	PASS
9.7750	46.02	35.35	H	294	116	6.13	53.98	-18.63	73.98	-27.96	PASS
* 11.4447	48.60	37.74	H	193	121	6.75	53.98	-16.24	73.98	-25.38	PASS
* 11.8993	47.24	38.30	V	089	197	7.84	53.98	-15.68	73.98	-26.74	PASS
* 12.2108	50.73	38.44	V	151	151	7.81	53.98	-15.54	73.98	-23.25	PASS
* 12.2348	48.18	38.35	H	267	182	7.80	53.98	-15.63	73.98	-25.80	PASS
*Restricted Band Signal											



Legrand Model WNRL64 with Zigbee Radio, High Channel 26, 2.480 GHz, Modulated

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
* 4.95914	43.88	36.87	H	343	202	1.83	53.98	-17.11	73.98	-30.10	PASS
* 4.9592	41.36	32.72	V	042	102	1.83	53.98	-21.26	73.98	-32.62	PASS
* 7.44755	44.04	33.64	V	154	234	4.76	53.98	-20.34	73.98	-29.95	PASS
* 7.4553	42.48	33.39	H	001	234	4.75	53.98	-20.59	73.98	-31.50	PASS
9.9208	45.35	36.43	V	297	139	6.31	53.98	-17.55	73.98	-28.63	PASS
9.9334	45.98	36.26	H	319	110	6.32	53.98	-17.72	73.98	-28.00	PASS
* 12.4468	47.52	38.35	H	153	194	7.80	53.98	-15.63	73.98	-26.46	PASS
* 12.4788	49.06	38.67	V	067	197	7.92	53.98	-15.31	73.98	-24.92	PASS
*Restricted Band Signal											

Legrand Model WNRL64 with Zigbee Radio, Rx Mode

Frequency	Peak Measured	Average Measured	Antenna Polarity	Turntable Angle	Antenna Height	Correction Factors	FCC 15.205/209: RSS-GEN/RSS-247 Average Limit	FCC 15.205/209: RSS-GEN/RSS-247 Average Margin	FCC 15.205/209: RSS-GEN/RSS-247 Peak Limit	FCC 15.205/209: RSS-GEN/RSS-247 Peak Margin	Result
GHz	dBuV/m	dBuV/m	H/V	degrees	cm	dB	dBuV/m	dB	dBuV/m	dB	
6.7060	43.20	32.48	H	360	136	3.58	53.98	-21.50	73.98	-30.78	PASS
* 7.69542	43.94	34.37	V	234	243	4.62	53.98	-19.61	73.98	-30.04	PASS
7.9893	44.62	35.61	V	235	193	5.12	53.98	-18.37	73.98	-29.36	PASS
* 8.14274	45.43	35.76	H	186	207	5.33	53.98	-18.22	73.98	-28.56	PASS
9.2199	46.69	36.71	V	003	248	6.55	53.98	-17.27	73.98	-27.29	PASS
9.2578	46.05	36.25	H	339	160	6.52	53.98	-17.73	73.98	-27.93	PASS
* 10.8806	46.13	36.50	H	163	234	6.12	53.98	-17.48	73.98	-27.85	PASS
* 11.314	46.46	37.78	V	001	104	6.52	53.98	-16.20	73.98	-27.52	PASS
*Restricted Band Signal											

Test Results: The Legrand Model WNRL64 with Zigbee Radio Sample 2272-18 complies with the requirements of 47 CFR Part 15.205, 15.209 and RSS-Gen Section 8.10 for non-restricted and restricted bands of operation between 1 – 18 GHz with an Average Margin of 11.78 dB.



4.3 Maximum Conducted (Average) Output Power and EIRP (FCC Part 15.247(b)(3), RSS-247 Section 5.4(d))

4.3.1 Maximum Conducted (Average) Output Power Test Procedure

A conducted power measurement of the output frequency of the Zigbee radio was measured according to the guidance of KDB 550874 D01, Section 8.3.1.2. The modulated, transmitter output signal is wide-band and noise-like. Further guidance from the KDB document identified ANSI C63.10, Section 11.9.2.2.2., (Method AVGSA-1), as the measurement procedure. The 99% Occupied Bandwidth is used to determine Spectrum Analyzer settings. The SA parameters are listed for the Zigbee radio maximum conducted (average) output power. Maximum Conducted Output Power measurements were made for the EUT configured for the low, middle and high transmission frequencies. The Transmit Frequencies were measured with O-QPSK Modulation at maximum output. The un-modulated carrier at maximum output was also measured for comparison.

Spectrum Analyzer Settings for Zigbee Radio Measurements for Maximum Output Power and EIRP.

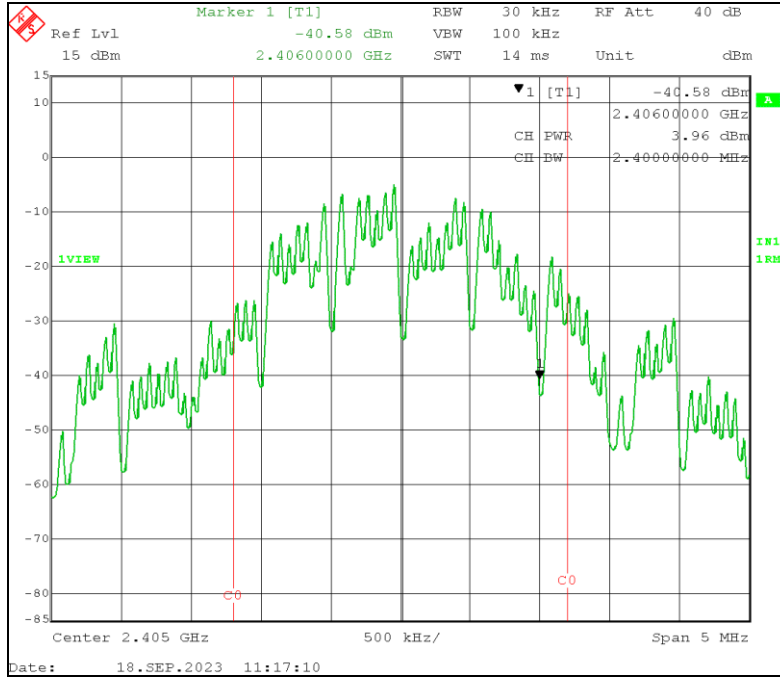
Spectrum Analyzer Settings			ANSI C63.10, 11.9.2.2 requirement
Span	2 MHz CW Signal and 5 MHz Modulated Signal	MHz	$\geq 1.5 \times \text{OBW}$
RBW	30	kHz	1% - 5% of the OBW (not to exceed 1 MHz)
VBW	100	kHz	$\geq 3 \times \text{RBW}$
Sweep Time	14	ms	Auto

The spectrum analyzer utilized RMS Detection, averaged 100 traces, for measurement.

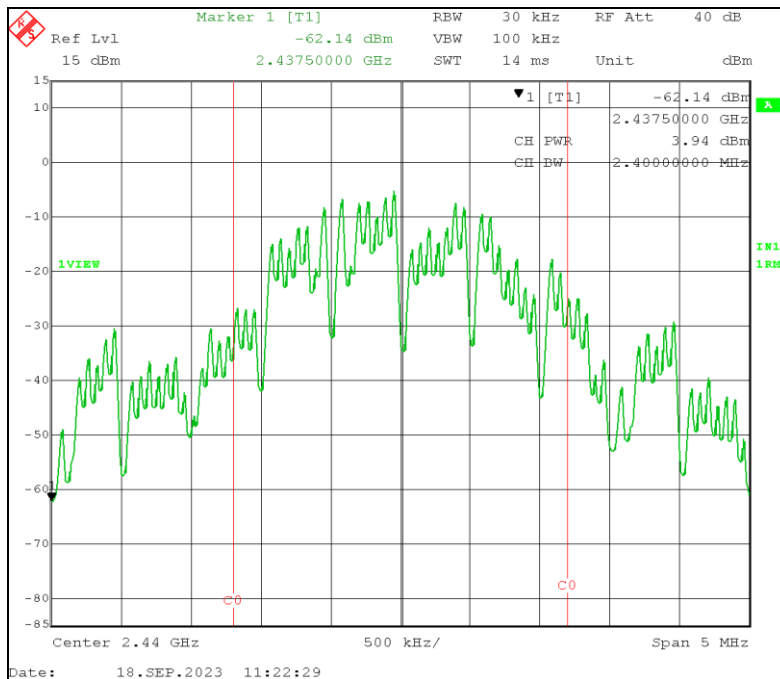


4.3.1.1 Maximum Conducted (Average) Output Power Legrand WNRL64 with Zigbee Radio O-QPSK Modulation Test Results (09/18/2023)

Legrand Model WNRL64 with Zigbee Radio Low Channel 11, 2.405 GHz, O-QPSK Modulation

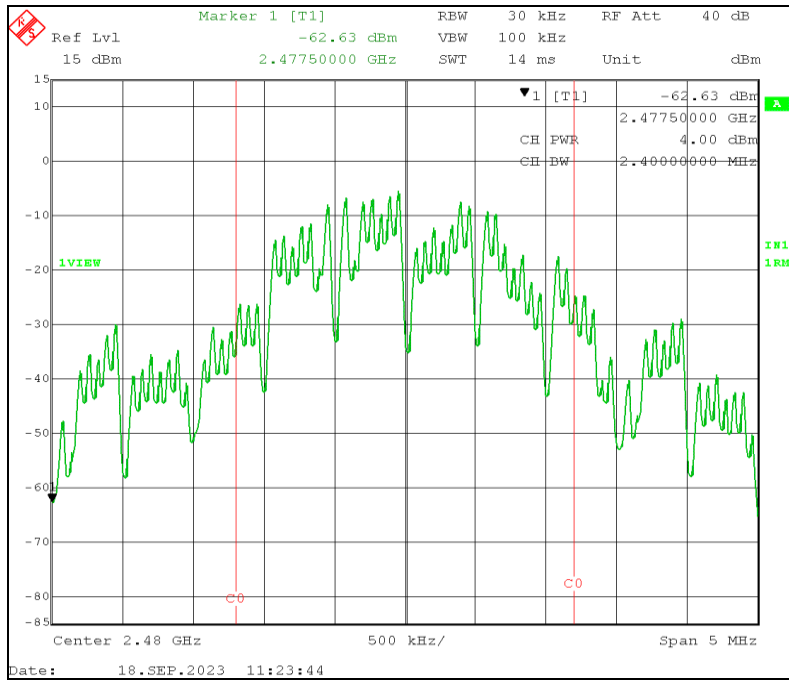


Legrand Model WNRL64 with Zigbee Radio Middle Channel 18, 2.440 GHz, O-QPSK Modulation

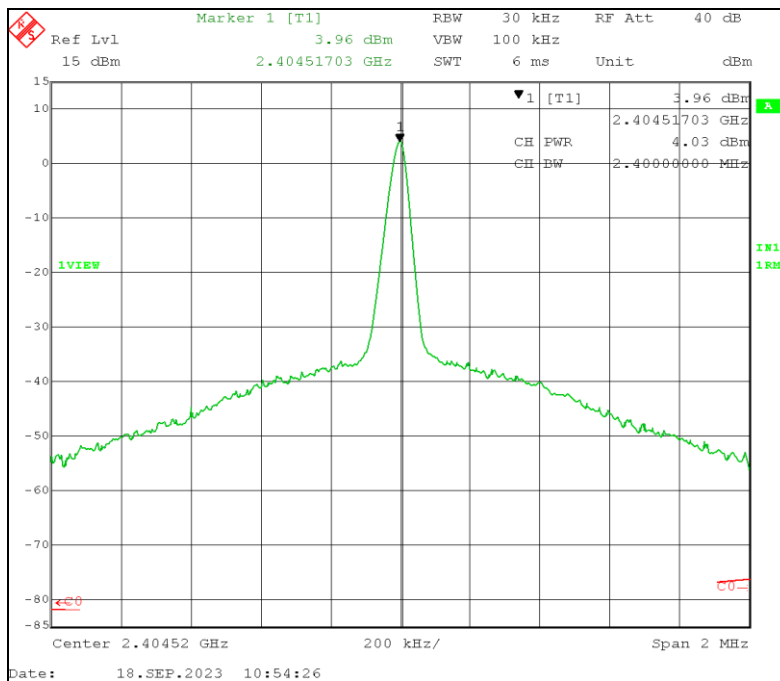




Legrand Model WNRL64 with Zigbee Radio High Channel 26, 2.480 GHz, O-QPSK Modulation

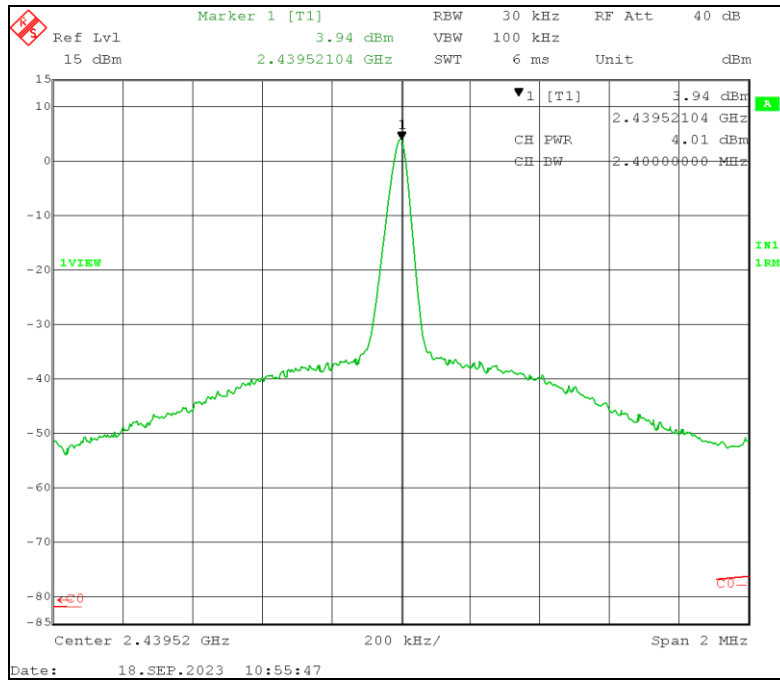


Legrand Model WNRL64 with Zigbee Radio Low Channel 11, 2.405 GHz, No modulation

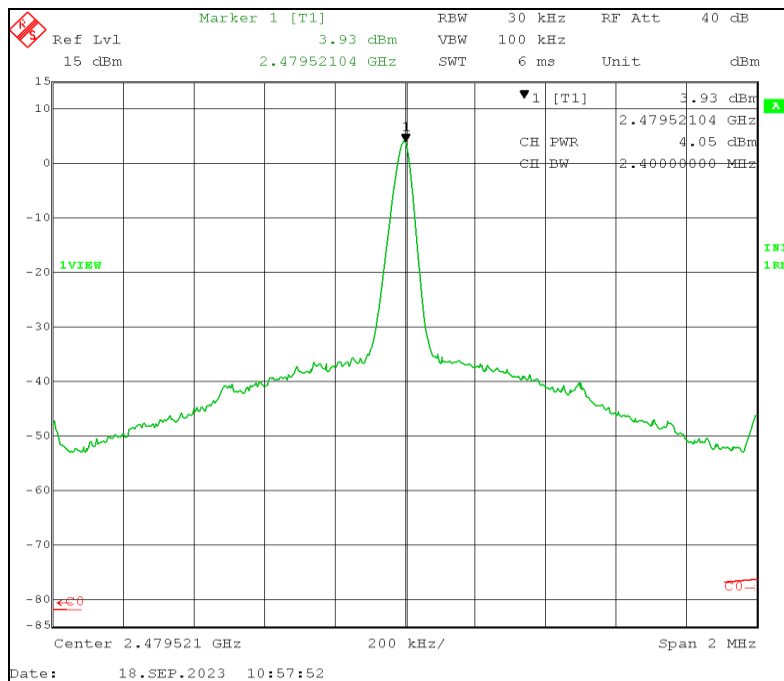




Legrand Model WNRL64 with Zigbee Radio Middle Channel 18, 2.440 GHz, No modulation



Legrand Model WNRL64 with Zigbee Radio High Channel 26, 2.480 GHz, No modulation





Maximum Conducted Output Power Measurement Summary Tables

EUT Tested	Legrand WNRL64 Adorne Zigbee Radio EUT-Conducted EUT										
Sample #	2272-17										
Test Configuration	EUT Tested With O-QPSK Modulation and Without Modulation (CW)										
Channel	Modulation	Frequency (GHz)	Measured Level (dBm)	Cable # 962	Total		Limit		Margin		Result
					dBm	Watts	dBm	Watts	dBm	Watts	
11	O-QPSK	2405.0	3.96	0.47	4.43	0.0028	30.00	1.000	-25.57	-0.997	Pass
18		2440.0	3.94	0.47	4.41	0.0028	30.00	1.000	-25.59	-0.997	Pass
26		2480.0	4.00	0.47	4.47	0.0028	30.00	1.000	-25.53	-0.997	Pass
Channel	Modulation	Frequency (GHz)	Measured Level (dBm)	Cable # 962	Total		Limit		Margin		Result
					dBm	Watts	dBm	Watts	dBm	Watts	
11	None	2405.0	4.03	0.47	4.50	0.0028	30.00	1.000	-25.50	-0.997	Pass
18		2440.0	4.01	0.47	4.48	0.0028	30.00	1.000	-25.52	-0.997	Pass
26		2480.0	4.05	0.47	4.52	0.0028	30.00	1.000	-25.48	-0.997	Pass

Test Results: The Maximum Conducted (Average) Power Output measurements for the Legrand Model WNRL64 with Zigbee Radio, modulated with O-QPSK and un-modulated, are compliant to the requirements of 47 CFR Part 15.247(b)(3) and ISSED, RSS-247 Section 5.4(d).



4.3.2 EIRP Level WNRL64 with Zigbee Radio Test Results (09/18/2023)

The Innovation, Science and Economic Development Canada (ISED), RSS-247 requires the calculation of the Effective Isotropic Radiated Power (EIRP) for the Legrand Model WNRL64 with Zigbee Radio. Below is the tabular data, using measured power levels from the previous section in which measurements were made for the EUT configured for the low, middle and high transmission frequencies. The Transmit Frequencies were measured with O-QPSK Modulation at maximum output. The un-modulated carrier at maximum output was also measured for comparison.

4.3.2.1 EIRP Level WNRL with Zigbee Radio Test Results

Antenna Gain of Legrand WNRL64 is +1.00 dBi.													
Channel	Modulation	Frequency (GHz)	Transmitter Output Total		Antenna Gain		RSS-247, Section 5.4 (d) EIRP						Result
							Total		Limit		Margin		
			dBm	Watts	Isotropic	Numeric	dBm	Watts	dBm	Watts	dBm	Watts	
11	O-QPSK	2405.0	4.43	0.0028	1.00	1.259	5.43	0.0035	36.00	4.00	-30.57	-3.9965	Pass
18		2440.0	4.41	0.0028	1.00	1.259	5.41	0.0035	36.00	4.00	-30.59	-3.9965	Pass
26		2480.0	4.47	0.0028	1.00	1.259	5.47	0.0035	36.00	4.00	-30.53	-3.9965	Pass
Channel	Modulation	Frequency (GHz)	Transmitter Output Total		Antenna Gain		RSS-247, Section 5.4 (d) EIRP						Result
							Total		Limit		Margin		
dBm	Watts	Isotropic	Numeric	dBm	Watts	dBm	Watts	dBm	Watts	dBm	Watts		
11	None	2405.0	4.50	0.0028	1.00	1.259	5.50	0.0035	36.00	4.00	-30.50	-3.9965	Pass
18		2440.0	4.48	0.0028	1.00	1.259	5.48	0.0035	36.00	4.00	-30.52	-3.9965	Pass
26		2480.0	4.52	0.0028	1.00	1.259	5.52	0.0036	36.00	4.00	-30.48	-3.9964	Pass

Test Results: The Effective Isotropic Radiated Power measurements for the Legrand Model WNRL64 with Zigbee Radio, modulated with O-QPSK and un-modulated, are compliant to the requirements of ISED, RSS-247 Section 5.4(d).



Appendix A – Test Equipment

Equipment	Manufacturer	Model #	Serial #	BEC #	Calibration Date	Calibration Cycle	Calibration Due Date
EMI Receiver (20 Hz – 26.5 GHz)	Rohde & Schwarz	ESIB 26	836119/006	1010	12/09/22	3 Years	12/09/25
Antenna (30 MHz - 6 GHz)	Sunol Sciences	JB6	A022108	712	06/21/21	3 Years	06/21/24
OATS Site (30 MHz – 1 GHz)	BEC	N/A	N/A	705	10/07/22	1 Year	10/07/23
EMC Analyzer (9 kHz - 3 GHz)	Agilent	E7402A	US39440162	883	06/21/21	3 Years	06/21/24
Antenna (30 MHz - 6 GHz)	Sunol Sciences	JB6	A020714	882	05/24/21	3 Years	05/24/24
Amplifier (.09 – 1300 MHz)	Hewlett Packard	8447F	3313A06658	807	01/13/21	3 Years	01/13/24
EMC Analyzer (9 kHz - 1.8 GHz)	Hewlett Packard	8593EM	3710A00214	1026	03/23/20	5 Years	03/23/25
Amplifier System (0.5 – 50 GHz)	Hewlett Packard	83015A 83017A	3123A00360 & 3332A00219	1027	06/16/21	3 Years	06/16/24
Double Ridged Horn Antenna (1 - 18 GHz)	EMCO	3115	9705-5225	1028	11/24/21	3 Years	11/21/24
Intentional Radiator Testing High Frequency RF Test Cable	Suhner	S04272B	N/A	962	07/16/23	3 Years	07/16/26
Temp/Humidity Meter	Control Company	4096	221672460	780	07/21/22	3 Years	07/21/25
Software (Tile Instrument Control System)	Quantum Change/EMC Systems	Version 3	N/A	N/A	No Cal. Required	No Cal. Required	No Cal. Required
Radiated Emissions Test Software	BEC	RADE	2.2	N/A	No Cal. Required	No Cal. Required	No Cal. Required