



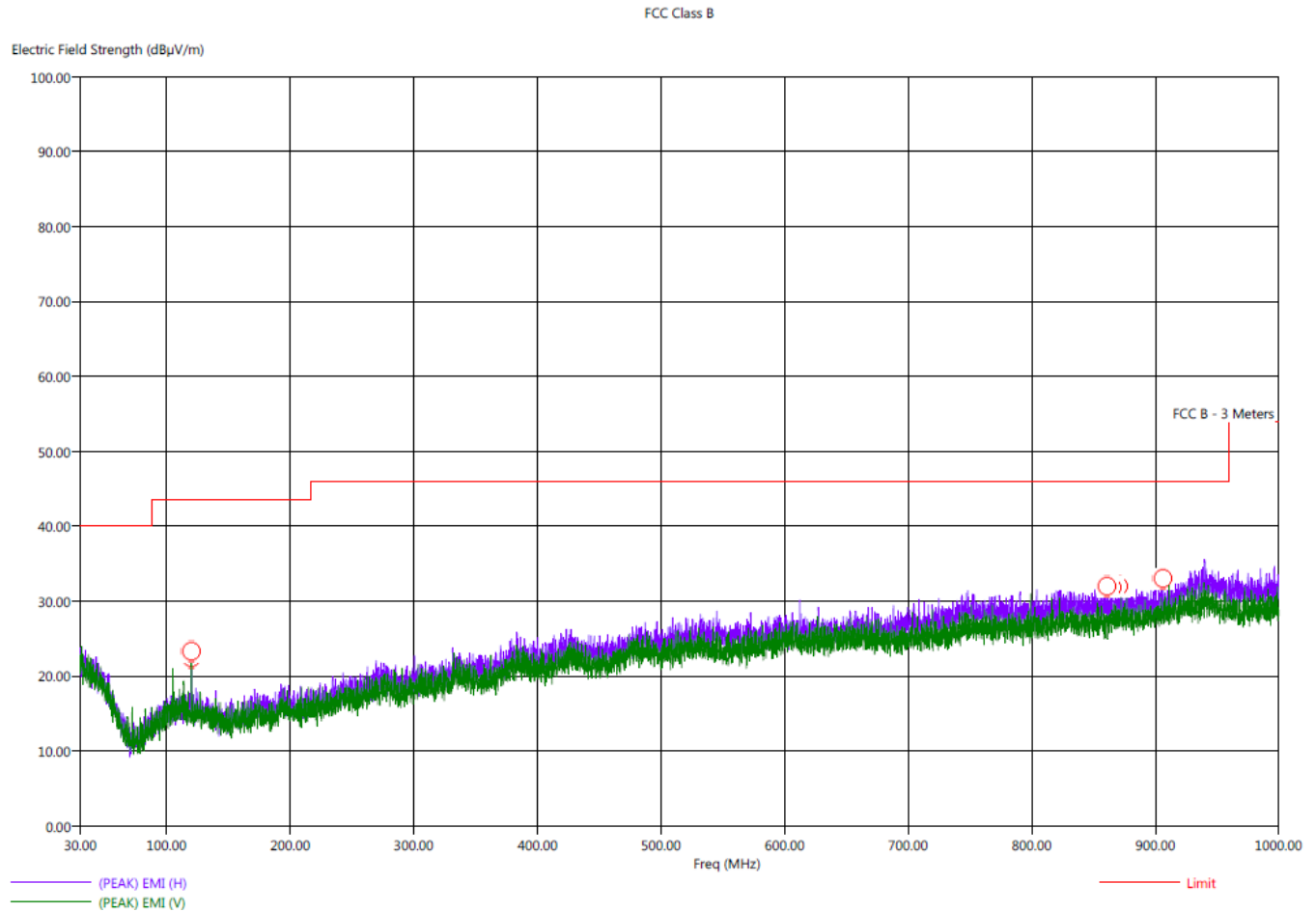
APPENDIX E

DATA SHEETS

***RADIATED EMISSIONS
DATA SHEETS***

Title: Pre-Scan - FCC Class B
File: 1 - LF - Pre-Scan - FCC Class B - Redpine - 802.11b with Nordic Thread.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting 802.11b (RedPine)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/13/2024 8:41:38 AM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 1 - LF - Final Scan - FCC Class B - Redpine - 802.11b with Nordic Thread.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting 802.11b (RedPine)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/13/2024 8:55:32 AM
Sequence: Final Measurements

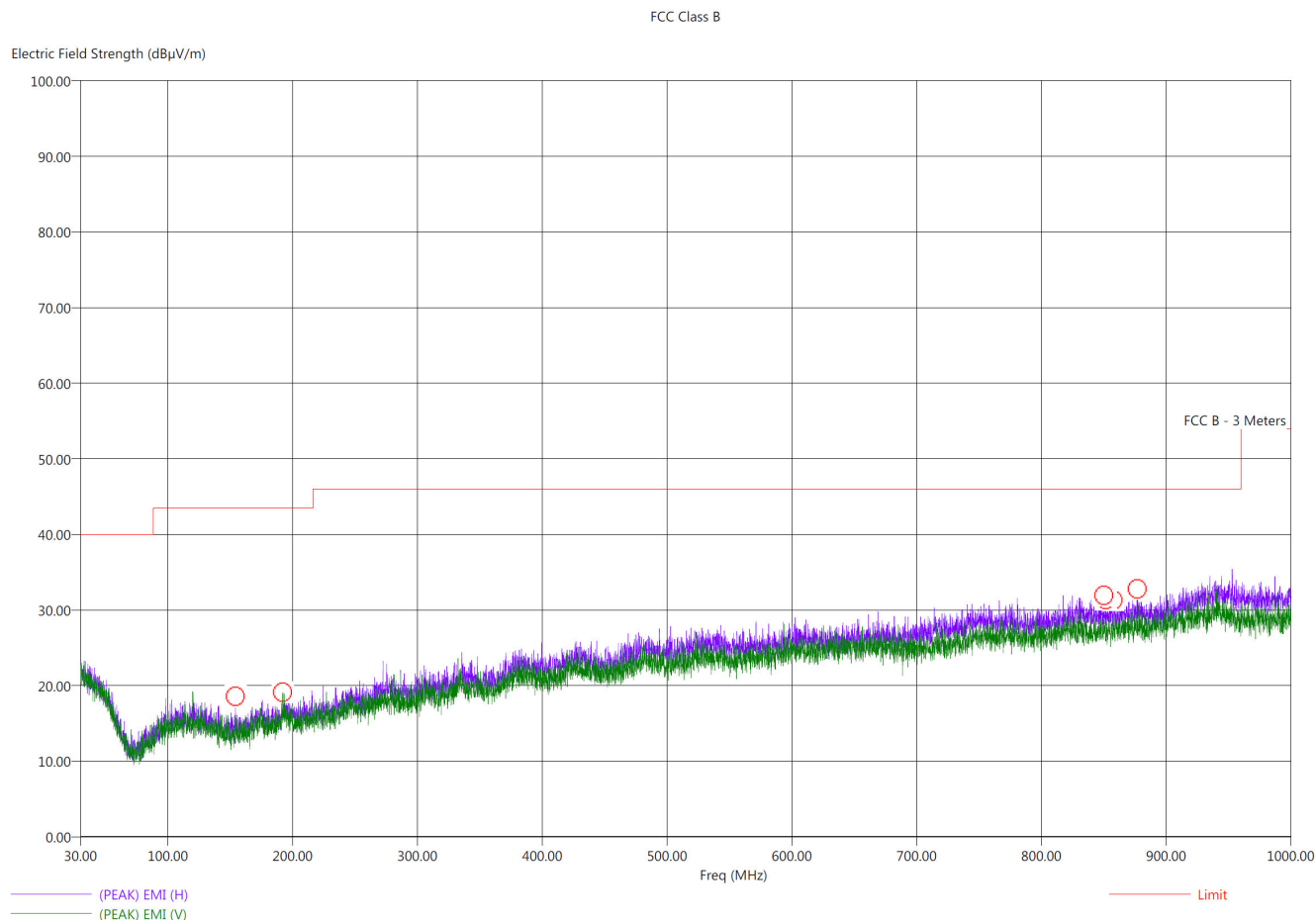
FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Ttbl Aql (deq)	Twr Ht (cm)
120.00	H	22.24	17.09	-21.26	-26.41	43.50	15.90	0.70	290.25	239.00
120.10	V	24.81	21.56	-18.69	-21.94	43.50	15.90	0.70	169.50	127.59
861.40	H	31.88	27.14	-14.12	-18.86	46.00	27.30	2.05	88.25	159.23
865.40	H	32.82	27.16	-13.18	-18.84	46.00	27.40	1.99	110.25	111.47
870.60	H	32.47	27.18	-13.53	-18.82	46.00	27.50	1.92	21.25	175.17
906.20	H	32.73	27.76	-13.27	-18.24	46.00	28.30	1.70	232.25	159.17



Title: Pre-Scan - FCC Class B
File: 2 - LF - Pre-Scan - FCC Class B - Redpine - 802.11g with Nordic Thread.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting 802.11g (RedPine)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/13/2024 9:29:24 AM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 2 - LF - Final Scan - FCC Class B - Redpine - 802.11g with Nordic Thread.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting 802.11g (RedPine)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/13/2024 9:48:12 AM
Sequence: Final Measurements

FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	TtBl Aql (deg)	Twr Ht (cm)
154.10	H	18.03	12.24	-25.47	-31.26	43.50	14.80	0.72	9.25	190.88
191.90	H	19.92	14.46	-23.58	-29.04	43.50	16.58	0.87	230.00	208.67
850.20	H	31.74	27.12	-14.26	-18.88	46.00	27.24	2.19	56.00	250.16
851.60	H	32.60	27.07	-13.40	-18.93	46.00	27.22	2.18	192.25	175.11
857.60	H	32.41	27.08	-13.59	-18.92	46.00	27.25	2.10	222.50	111.29
877.00	H	33.01	27.17	-12.99	-18.83	46.00	27.50	1.84	252.25	207.11

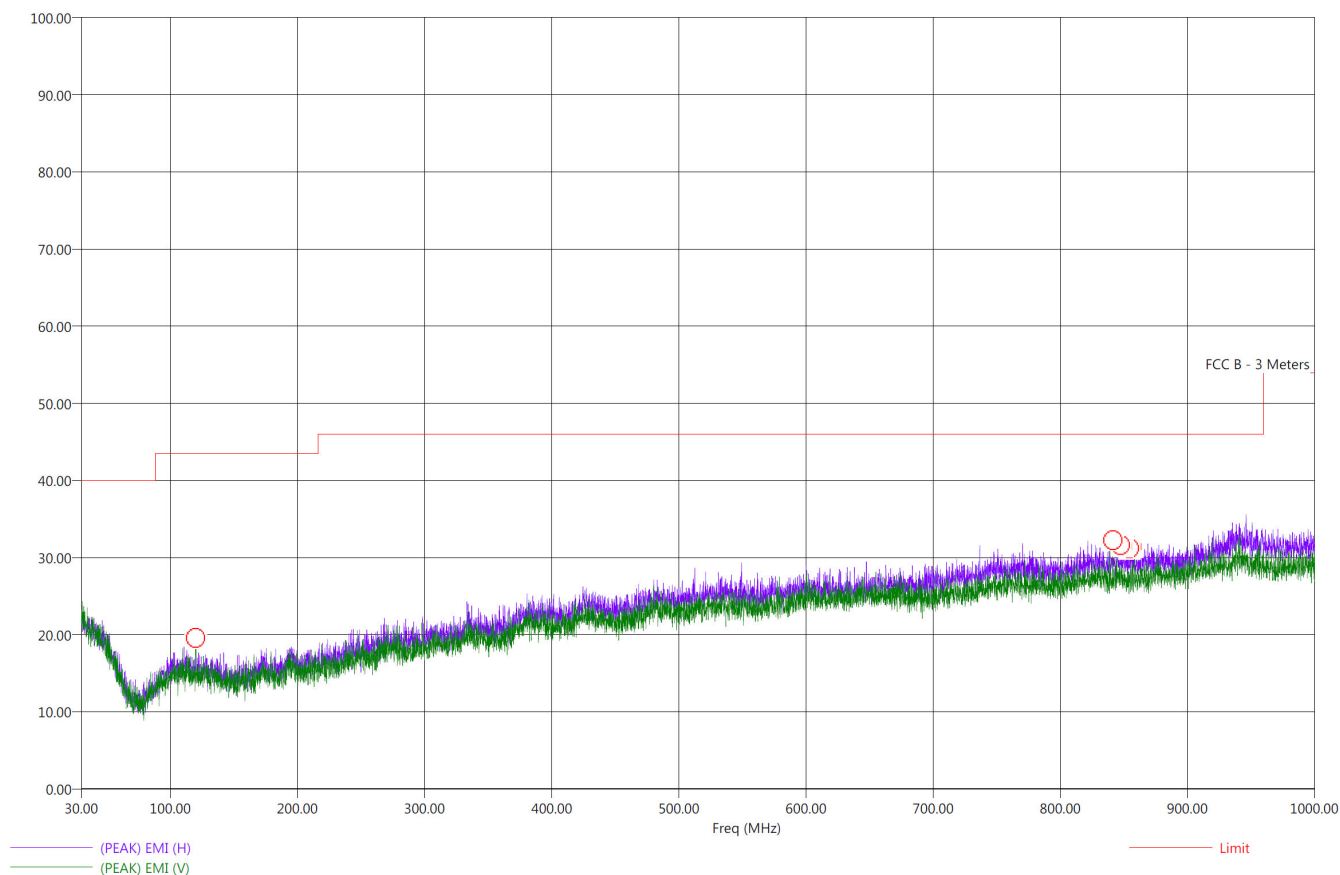


Title: Pre-Scan - FCC Class B
File: 3 - LF - Pre-Scan - FCC Class B - Redpine - 802.11n - HT 20 - with Nordic Thread.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting 802.11n (HT 20) (RedPine)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/13/2024 10:21:59 AM
Sequence: Preliminary Scan

FCC Class B

Electric Field Strength (dB μ V/m)



Title: Radiated Final - FCC Class B
File: 3 - LF - Final Scan - FCC Class B - Redpine - 802.11n - HT 20 - with Nordic Thread.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting 802.11n (HT20) (RedPine)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/13/2024 11:45:32 AM
Sequence: Final Measurements

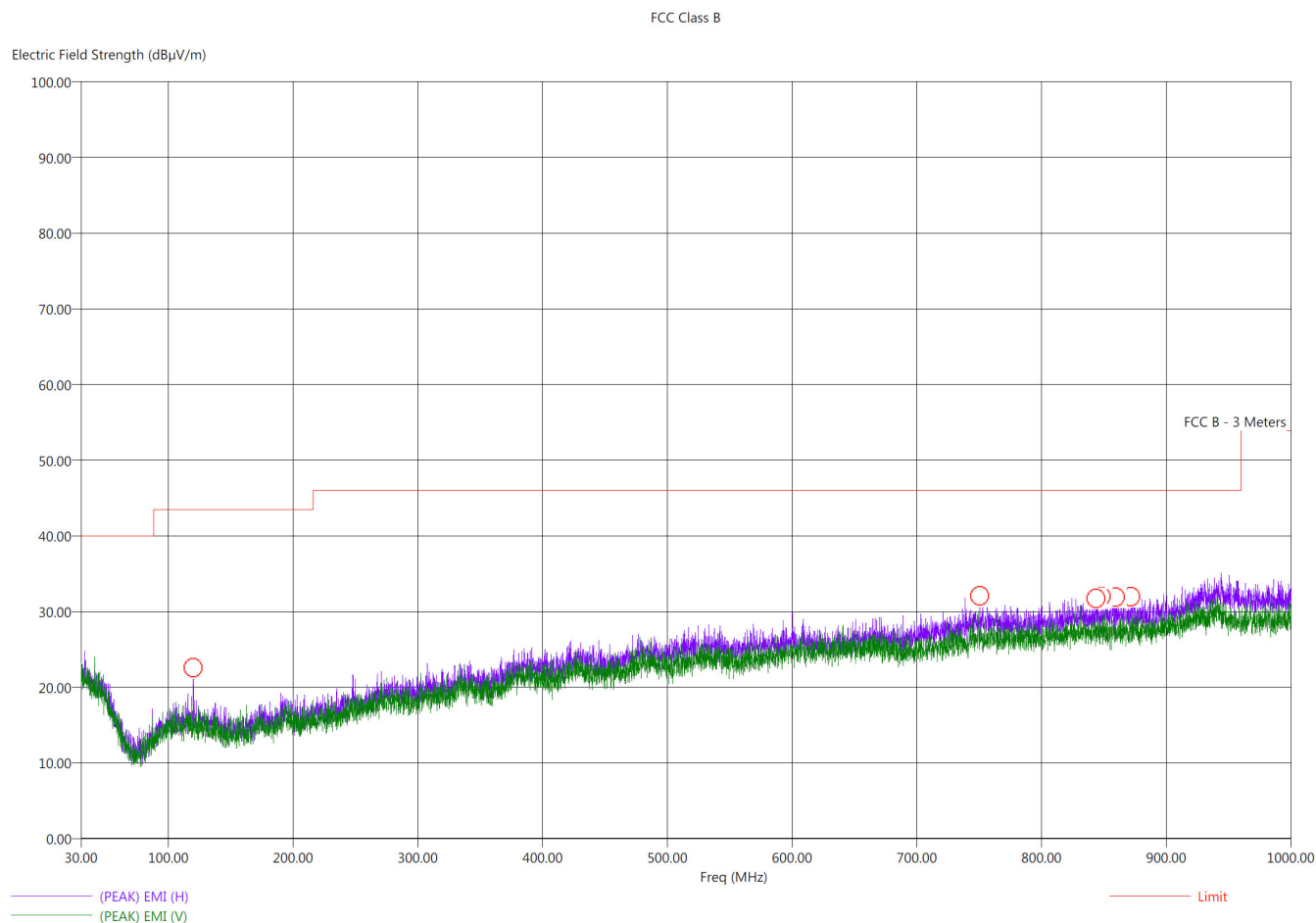
FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Ttbl Aql (deq)	Twr Ht (cm)
120.00	H	22.01	17.84	-21.49	-25.66	43.50	15.90	0.70	123.50	126.58
120.00	V	22.77	19.70	-20.73	-23.80	43.50	15.90	0.70	135.25	127.17
841.50	H	32.92	27.03	-13.08	-18.97	46.00	27.10	2.11	304.50	143.05
847.50	H	32.64	27.15	-13.36	-18.85	46.00	27.20	2.17	117.75	111.29
848.90	H	32.52	27.16	-13.48	-18.84	46.00	27.20	2.19	225.00	174.94
854.60	H	32.90	27.14	-13.10	-18.86	46.00	27.20	2.14	79.50	206.64
856.50	H	32.61	27.17	-13.39	-18.83	46.00	27.20	2.11	357.50	175.17



Title: Pre-Scan - FCC Class B
File: 5 - LF - Pre-Scan - FCC Class B - Redpine - BLE.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting BLE (RedPine) at 1 MBit
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/14/2024 9:22:58 AM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 5 - LF - Final Scan - FCC Class B - Redpine - BLE.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting BLE (RedPine) at 1 MBit
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/14/2024 9:37:54 AM
Sequence: Final Measurements

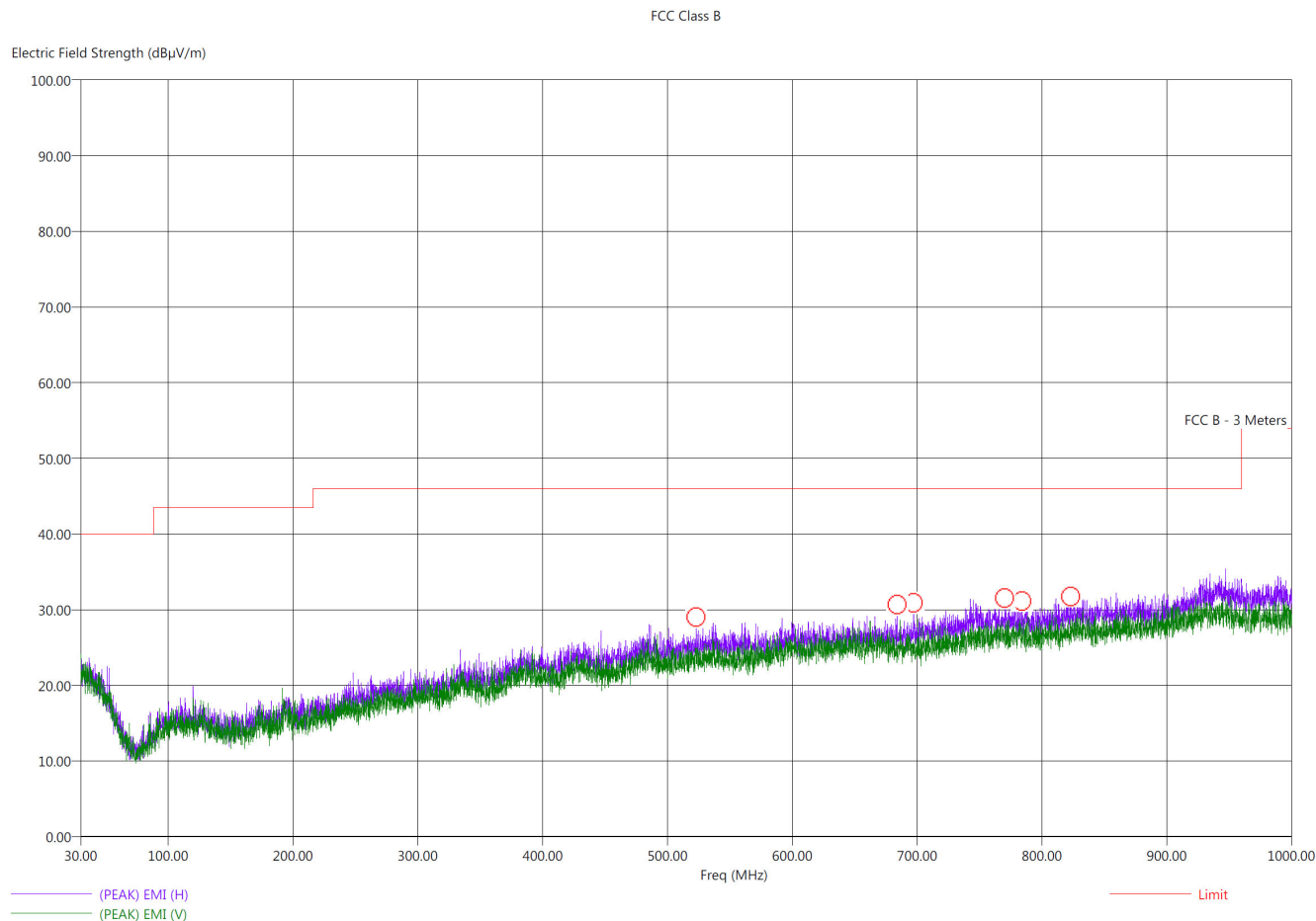
FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	TtBl Aql (deg)	Twr Ht (cm)
120.00	H	21.45	18.39	-22.05	-25.11	43.50	15.90	0.70	51.50	223.23
750.60	H	31.49	26.54	-14.51	-19.46	46.00	26.70	2.14	260.75	223.23
843.70	H	31.90	27.07	-14.10	-18.93	46.00	27.12	2.13	253.75	142.94
848.10	H	31.93	27.22	-14.07	-18.78	46.00	27.20	2.18	252.00	127.29
859.40	H	32.74	27.08	-13.26	-18.92	46.00	27.25	2.07	120.00	206.94
871.70	H	32.64	27.23	-13.36	-18.77	46.00	27.50	1.90	156.25	191.17



Title: Pre-Scan - FCC Class B
File: 10 - LF - Pre-Scan - FCC Class B - Nordic - BLE.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting BLE (Nordic)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/28/2024 9:26:45 PM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 10 - LF - Final Scan - FCC Class B - Nordic - BLE.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting BLE (Nordic)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/28/2024 9:34:29 PM
Sequence: Final Measurements

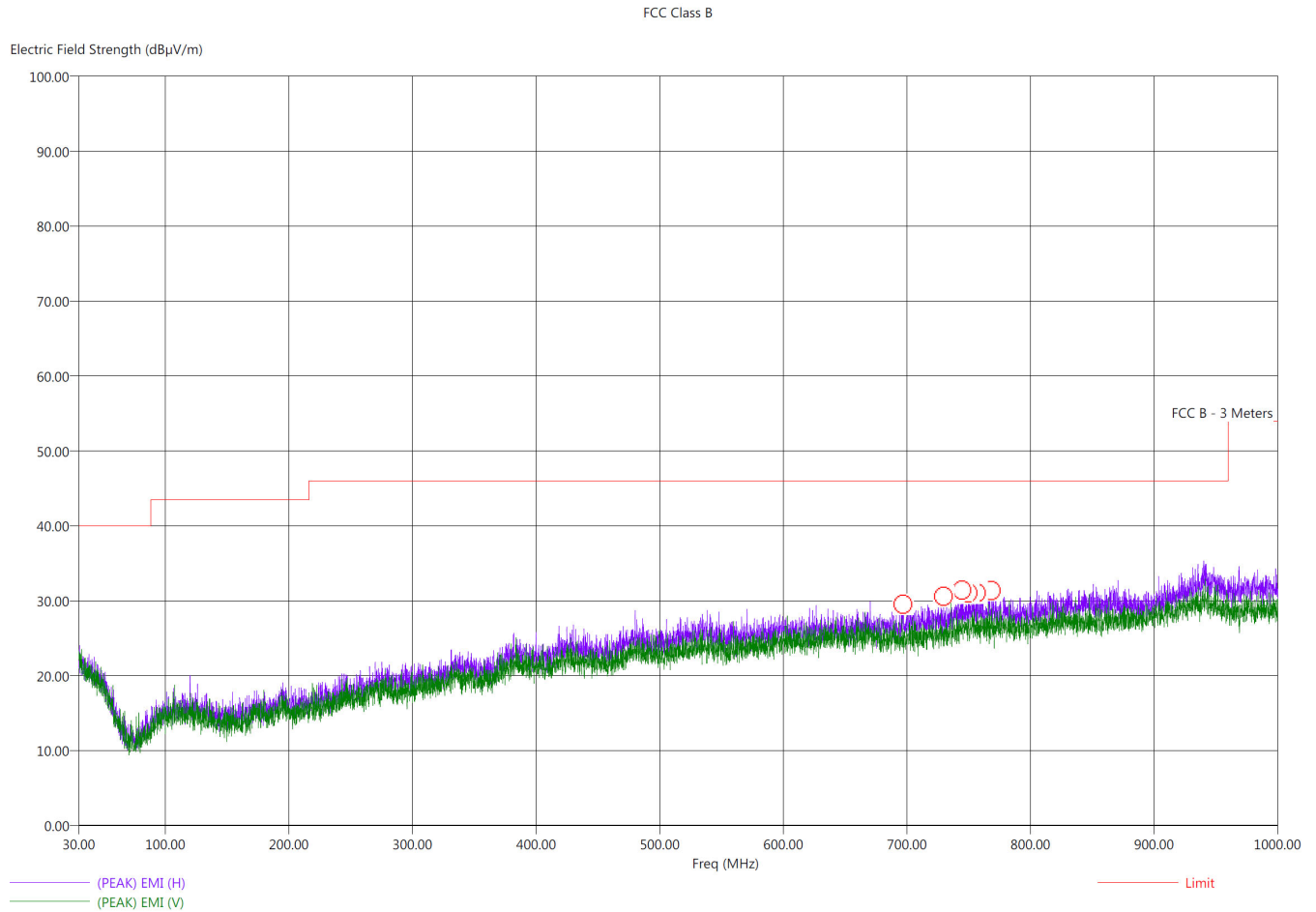
FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	TtBl Aql (deq)	Twr Ht (cm)
523.00	H	28.82	23.16	-17.18	-22.84	46.00	24.00	1.69	287.00	111.47
684.10	H	29.82	24.28	-16.18	-21.72	46.00	25.00	1.58	268.25	223.23
697.10	H	29.31	24.54	-16.69	-21.46	46.00	25.00	1.85	107.00	207.29
770.20	H	31.13	26.29	-14.87	-19.71	46.00	26.70	1.94	143.25	207.41
784.10	H	31.29	26.09	-14.71	-19.91	46.00	26.60	1.80	49.00	191.23
823.20	H	32.46	27.02	-13.54	-18.98	46.00	27.30	1.91	296.75	111.47



Title: Pre-Scan - FCC Class B
File: 11 - LF - Pre-Scan - FCC Class B - Nordic - Thread.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting Thread (Nordic)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/28/2024 10:09:50 PM
Sequence: Preliminary Scan





Title: Radiated Final - FCC Class B
File: 11 - LF - Final Scan - FCC Class B - Nordic - Thread.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting Thread (Nordic)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/28/2024 10:16:00 PM
Sequence: Final Measurements

FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Ttbl Agl (deg)	Twr Ht (cm)
697.00	H	29.76	24.52	-16.24	-21.48	46.00	25.00	1.85	88.75	207.05
729.70	H	30.47	25.35	-15.53	-20.65	46.00	25.64	2.05	252.50	207.11
744.70	H	31.18	26.41	-14.82	-19.59	46.00	26.50	2.12	241.25	159.11
749.70	H	31.55	26.52	-14.45	-19.48	46.00	26.67	2.14	66.00	175.41
756.50	H	31.87	26.38	-14.13	-19.62	46.00	26.60	2.08	188.75	143.11
768.50	H	31.43	26.17	-14.57	-19.83	46.00	26.60	1.95	339.00	222.94





Title: Pre-Scan - FCC Class B
File: 8 - LF - Pre-Scan - FCC Class B - Nordic - Thread and RedPine - BLE.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting Thread (Nordic) and BLE (RedPine)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/28/2024 7:22:00 PM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 8 - LF - Final Scan - FCC Class B - Nordic - Thread and RedPine - BLE.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting Thread (Nordic) and BLE (RedPine)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/28/2024 7:39:05 PM
Sequence: Final Measurements

FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Ttbl Aql (deg)	Twr Ht (cm)
697.90	H	30.01	24.57	-15.99	-21.43	46.00	25.00	1.87	97.75	111.59
704.10	H	30.32	24.78	-15.68	-21.22	46.00	25.20	1.93	28.75	222.82
752.50	H	32.26	26.39	-13.74	-19.61	46.00	26.60	2.12	360.00	207.00
782.40	H	30.92	26.19	-15.08	-19.81	46.00	26.70	1.82	280.00	223.11
792.80	H	30.74	25.94	-15.26	-20.06	46.00	26.57	1.72	272.50	239.11
794.60	H	31.04	25.95	-14.96	-20.05	46.00	26.60	1.70	248.00	143.29



Title: Pre-Scan - FCC Class B
File: 9 - LF - Pre-Scan - FCC Class B - Nordic - BLE and RedPine - BLE.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting BLE (Nordic) and BLE (RedPine)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/28/2024 8:43:05 PM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: 9 - LF - Final Scan - FCC Class B - Nordic - BLE and RedPine - BLE.set
Operator: Kyle Fujimoto
EUT Type: Residential Electronic Deadbolt
EUT Condition: The EUT is continuously transmitting BLE (Nordic) and BLE (RedPine)
Comments: Company: Spectrum Brands, Inc.
Model: 9800, HVIN: HAL3
S/N: Unit 1

6/28/2024 8:49:43 PM
Sequence: Final Measurements

FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBμV/m)	(QP) EMI (dBμV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBμV/m)	Transducer (dB)	Cable (dB)	TtBl Agl (deg)	Twr Ht (cm)
653.00	H	28.52	23.95	-17.48	-22.05	46.00	25.40	0.91	103.50	238.88
676.30	H	29.53	24.39	-16.47	-21.61	46.00	25.26	1.41	295.25	191.05
692.20	H	29.70	24.30	-16.30	-21.70	46.00	24.91	1.75	298.00	239.00
704.90	H	29.86	24.90	-16.14	-21.10	46.00	25.20	1.93	221.25	191.41
745.40	H	31.56	26.38	-14.44	-19.62	46.00	26.53	2.12	345.00	206.76
776.90	H	31.88	26.21	-14.12	-19.79	46.00	26.70	1.87	340.75	111.23





FUNDAMENTAL AND HARMONICS

DATA SHEETS

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/14/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Low Channel - Y-Axis**
BLE Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	45.42	V	73.97	-28.55	Peak	104.00	175.05	
4804.00	36.86	V	53.97	-17.11	Avg	104.00	175.05	
7206.00								Not in Restricted Band
7206.00								Done via Conducted
9608.00								Not in Restricted Band
9608.00								Done via Conducted
12010.00	33.94	V	73.97	-40.03	Peak	225.75	271.00	
12010.00	21.57	V	53.97	-32.40	Avg	225.75	271.00	
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/14/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Low Channel - Y-Axis**
BLE Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	49.52	H	73.97	-24.45	Peak	102.75	127.23	
4804.00	43.57	H	53.97	-10.40	Avg	102.75	127.23	
7206.00								Not in Restricted Band
7206.00								Done via Conducted
9608.00								Not in Restricted Band
9608.00								Done via Conducted
12010.00	35.18	H	73.97	-38.79	Peak	255.00	111.29	
12010.00	22.73	H	53.97	-31.24	Avg	255.00	111.29	
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/14/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Middle Channel - Y-Axis**
BLE Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	47.81	V	73.97	-26.16	Peak	65.75	175.00	
4880.00	40.20	V	53.97	-13.77	Avg	65.75	175.00	
7320.00	43.88	V	73.97	-30.09	Peak	0.25	111.29	
7320.00	36.14	V	53.97	-17.83	Avg	0.25	111.29	
9760.00								Not in Restricted Band
9760.00								Done via Conducted
12200.00	33.19	V	73.97	-40.78	Peak	46.50	207.29	
12200.00	21.60	V	53.97	-32.37	Avg	46.50	207.29	
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/14/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Middle Channel - Y-Axis**
BLE Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	51.13	H	73.97	-22.84	Peak	296.50	111.05	
4880.00	45.67	H	53.97	-8.30	Avg	296.50	111.05	
7320.00	44.88	H	73.97	-29.09	Peak	313.50	191.35	
7320.00	37.89	H	53.97	-16.08	Avg	313.75	191.35	
9760.00								Not in Restricted Band
9760.00								Done via Conducted
12200.00	33.24	H	73.97	-40.73	Peak	85.50	270.64	
12200.00	21.22	H	53.97	-32.75	Avg	85.50	270.64	
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

FCC 15.247 and RSS-247

Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3

Date: 06/14/2024
Lab: D
Tested By: Kyle Fujimoto

**Harmonics - High Channel - Y-Axis
BLE Mode - RedPine RF Module**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	50.07	V	73.97	-23.90	Peak	138.25	127.00	
4960.00	43.49	V	53.97	-10.48	Avg	138.25	127.00	
7440.00	53.54	V	73.97	-20.43	Peak	16.50	207.05	
7440.00	46.85	V	53.97	-7.12	Avg	16.50	207.05	
9920.00								Not in Restricted Band
9920.00								Done via Conducted
12400.00	50.36	V	73.97	-23.61	Peak	141.75	143.23	
12400.00	38.79	V	73.97	-35.18	Peak	141.75	143.23	
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/14/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - High Channel - Y-Axis**
BLE Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	52.95	H	73.97	-21.02	Peak	299.50	111.35	
4960.00	47.92	H	53.97	-6.05	Avg	299.00	111.35	
7440.00	52.07	H	73.97	-21.90	Peak	310.00	111.35	
7440.00	44.46	H	53.97	-9.51	Avg	310.00	111.35	
9920.00								Not in Restricted Band
9920.00								Done via Conducted
12400.00	50.61	H	73.97	-23.36	Peak	305.75	127.41	
12400.00	38.88	H	53.97	-15.09	Avg	305.75	127.41	
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

FCC 15.247 and RSS-247

Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3

Dat: 06/10/2024
Lab: D
Tested By: Kyle Fujimoto

Non Harmonic Emissions from the Tx and Digital Portion - 9 kHz to 30 MHz
Non Harmonic Emissions from the Tx and Digital Portion - 1 GHz to 25 GHz
BLE Mode - RedPine RF Module

[illegible]

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/10/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Low Channel - Y-Axis**
802.11b Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4824.00	44.91	V	73.97	-29.06	Peak	269.75	175.05	
4824.00	38.92	V	53.97	-15.05	Avg	269.75	175.05	
7236.00	47.20	V	73.97	-26.77	Peak	355.75	255.35	
7236.00	37.68	V	53.97	-16.29	Avg	355.75	255.35	
9648.00								Not in Restricted Band
9648.00								Done via Conducted
12060.00	49.46	V	73.97	-24.51	Peak	174.00	300.01	
12060.00	38.04	V	53.97	-15.93	Avg	174.00	300.01	
14472.00								No Emission
14472.00								Detected
16884.00								No Emission
16884.00								Detected
19296.00								No Emission
19296.00								Detected
21708.00								No Emission
21708.00								Detected
24120.00								No Emission
24120.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/10/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Low Channel - Y-Axis**
802.11b Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4824.00	48.55	H	73.97	-25.42	Peak	295.25	127.41	
4824.00	44.99	H	53.97	-8.98	Avg	295.25	127.41	
7236.00	48.24	H	73.97	-25.73	Peak	305.00	207.59	
7236.00	39.29	H	53.97	-14.68	Avg	305.00	207.59	
9648.00								Not in Restricted Band
9648.00								Done via Conducted
12060.00	50.97	H	73.97	-23.00	Peak	125.50	207.23	
12060.00	38.01	H	53.97	-15.96	Avg	125.50	207.23	
14472.00								No Emission
14472.00								Detected
16884.00								No Emission
16884.00								Detected
19296.00								No Emission
19296.00								Detected
21708.00								No Emission
21708.00								Detected
24120.00								No Emission
24120.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/10/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Middle Channel - Y-Axis**
802.11b Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4874.00	44.42	V	73.97	-29.55	Peak	241.00	206.88	
4874.00	28.93	V	53.97	-25.04	Avg	241.00	206.88	
7311.00	48.54	V	73.97	-25.43	Peak	165.00	223.11	
7311.00	39.93	V	53.97	-14.04	Avg	165.00	223.11	
9748.00								Not in Restricted Band
9748.00								Done via Conducted
12185.00	50.34	V	73.97	-23.63	Peak	257.25	270.94	
12185.00	38.45	V	53.97	-15.52	Avg	257.25	270.94	
14622.00								No Emission
14622.00								Detected
17059.00								No Emission
17059.00								Detected
19496.00								No Emission
19496.00								Detected
21933.00								No Emission
21933.00								Detected
24370.00								No Emission
24370.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/10/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Middle Channel - Y-Axis**
802.11b Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4874.00	46.07	H	73.97	-27.90	Peak	105.75	111.17	
4874.00	41.66	H	53.97	-12.31	Avg	105.75	111.17	
7311.00	48.40	H	73.97	-25.57	Peak	114.50	206.88	
7311.00	39.76	H	53.97	-14.21	Avg	114.50	206.88	
9748.00								Not in Restricted Band
9748.00								Done via Conducted
12185.00	50.75	H	73.97	-23.22	Peak	321.25	110.58	
12185.00	38.54	H	53.97	-15.43	Avg	321.25	110.58	
14622.00								No Emission
14622.00								Detected
17059.00								No Emission
17059.00								Detected
19496.00								No Emission
19496.00								Detected
21933.00								No Emission
21933.00								Detected
24370.00								No Emission
24370.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/11/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - High Channel - Y-Axis**
802.11b Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4924.00	43.29	V	73.97	-30.68	Peak	77.50	159.00	
4924.00	35.72	V	53.97	-18.25	Avg	77.50	159.00	
7386.00	48.24	V	73.97	-25.73	Peak	339.50	207.11	
7386.00	39.13	V	53.97	-14.84	Avg	339.75	207.11	
9848.00								Not in Restricted Band
9848.00								Done via Conducted
12310.00	49.33	V	73.97	-24.64	Peak	202.25	255.11	
12310.00	37.39	V	53.97	-16.58	Peak	202.25	255.11	
14772.00								No Emission
14772.00								Detected
17234.00								No Emission
17234.00								Detected
19696.00								No Emission
19696.00								Detected
22158.00								No Emission
22158.00								Detected
24620.00								No Emission
24620.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/11/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - High Channel - Y-Axis**
802.11b Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4924.00	47.04	H	73.97	-26.93	Peak	286.00	111.11	
4924.00	42.83	H	53.97	-11.14	Avg	286.00	111.11	
7386.00	48.52	H	73.97	-25.45	Peak	287.25	191.05	
7386.00	38.26	H	53.97	-15.71	Avg	287.25	191.05	
9848.00								Not in Restricted Band
9848.00								Done via Conducted
12310.00	48.72	H	73.97	-25.25	Peak	83.00	255.05	
12310.00	37.34	H	53.97	-16.63	Avg	83.00	255.05	
14772.00								No Emission
14772.00								Detected
17234.00								No Emission
17234.00								Detected
19696.00								No Emission
19696.00								Detected
22158.00								No Emission
22158.00								Detected
24620.00								No Emission
24620.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/11/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Low Channel - Y-Axis**
802.11g Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4824.00	40.09	V	73.97	-33.88	Peak	123.50	239.23	
4824.00	28.50	V	53.97	-25.47	Avg	123.50	239.23	
7236.00	45.14	V	73.97	-28.83	Peak	327.00	143.35	
7236.00	33.27	V	53.97	-20.70	Avg	327.00	143.35	
9648.00								Not in Restricted Band
9648.00								Done via Conducted
12060.00	50.83	V	73.97	-23.14	Peak	53.25	111.53	
12060.00	38.42	V	53.97	-15.55	Avg	53.25	111.53	
14472.00								No Emission
14472.00								Detected
16884.00								No Emission
16884.00								Detected
19296.00								No Emission
19296.00								Detected
21708.00								No Emission
21708.00								Detected
24120.00								No Emission
24120.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/11/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Low Channel - Y-Axis**
802.11g Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4824.00	42.33	H	73.97	-31.64	Peak	87.50	175.41	
4824.00	29.97	H	53.97	-24.00	Avg	87.50	175.41	
7236.00	45.23	H	73.97	-28.74	Peak	203.25	255.59	
7236.00	33.30	H	53.97	-20.67	Avg	203.25	255.59	
9648.00								Not in Restricted Band
9648.00								Done via Conducted
12060.00	50.11	H	73.97	-23.86	Peak	187.25	239.25	
12060.00	38.29	H	53.97	-15.68	Avg	187.25	239.25	
14472.00								No Emission
14472.00								Detected
16884.00								No Emission
16884.00								Detected
19296.00								No Emission
19296.00								Detected
21708.00								No Emission
21708.00								Detected
24120.00								No Emission
24120.00								Detected

FCC 15.247 and RSS-247

Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3

Date: 06/11/2024
Lab: D
Tested By: Kyle Fujimoto

**Harmonics - Middle Channel - Y-Axis
802.11g Mode - RedPine RF Module**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4874.00	39.84	V	73.97	-34.13	Peak	158.50	287.29	
4874.00	28.23	V	53.97	-25.74	Avg	158.50	287.29	
7311.00	46.24	V	73.97	-27.73	Peak	23.00	239.17	
7311.00	33.47	V	53.97	-20.50	Avg	23.00	239.17	
9748.00								Not in Restricted Band
9748.00								Done via Conducted
12185.00	50.44	V	73.97	-23.53	Peak	274.75	159.29	
12185.00	38.72	V	53.97	-15.25	Avg	274.75	159.29	
14622.00								No Emission
14622.00								Detected
17059.00								No Emission
17059.00								Detected
19496.00								No Emission
19496.00								Detected
21933.00								No Emission
21933.00								Detected
24370.00								No Emission
24370.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/11/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Middle Channel - Y-Axis**
802.11g Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4874.00	39.90	H	73.97	-34.07	Peak	139.25	223.89	
4874.00	28.11	H	53.97	-25.86	Avg	139.25	223.89	
7311.00	45.76	H	73.97	-28.21	Peak	77.50	300.13	
7311.00	33.60	H	53.97	-20.37	Avg	77.50	300.13	
9748.00								Not in Restricted Band
9748.00								Done via Conducted
12185.00	50.66	H	73.97	-23.31	Peak	208.00	238.82	
12185.00	38.72	H	53.97	-15.25	Avg	208.00	238.82	
14622.00								No Emission
14622.00								Detected
17059.00								No Emission
17059.00								Detected
19496.00								No Emission
19496.00								Detected
21933.00								No Emission
21933.00								Detected
24370.00								No Emission
24370.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/11/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - High Channel - Y-Axis**
802.11g Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4924.00	39.99	V	73.97	-33.98	Peak	252.75	111.29	
4924.00	28.35	V	53.97	-25.62	Avg	252.75	111.29	
7386.00	45.24	V	73.97	-28.73	Peak	160.25	271.11	
7386.00	33.49	V	53.97	-20.48	Avg	160.25	271.11	
9848.00								Not in Restricted Band
9848.00								Done via Conducted
12310.00	49.89	V	73.97	-24.08	Peak	352.25	143.23	
12310.00	37.71	V	53.97	-16.26	Peak	352.25	143.23	
14772.00								No Emission
14772.00								Detected
17234.00								No Emission
17234.00								Detected
19696.00								No Emission
19696.00								Detected
22158.00								No Emission
22158.00								Detected
24620.00								No Emission
24620.00								Detected

FCC 15.247 and RSS-247

Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3

Date: 06/11/2024
Lab: D
Tested By: Kyle Fujimoto

**Harmonics - High Channel - Y-Axis
802.11g Mode - RedPine RF Module**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4924.00	42.85	H	73.97	-31.12	Peak	108.25	111.17	
4924.00	30.81	H	53.97	-23.16	Avg	108.25	111.17	
7386.00	45.47	H	73.97	-28.50	Peak	90.50	223.11	
7386.00	33.56	H	53.97	-20.41	Avg	90.50	223.11	
9848.00								Not in Restricted Band
9848.00								Done via Conducted
12310.00	49.90	H	73.97	-24.07	Peak	14.00	159.23	
12310.00	37.81	H	53.97	-16.16	Avg	14.00	159.23	
14772.00								No Emission
14772.00								Detected
17234.00								No Emission
17234.00								Detected
19696.00								No Emission
19696.00								Detected
22158.00								No Emission
22158.00								Detected
24620.00								No Emission
24620.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/12/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Low Channel - Y-Axis**
802.11n (HT 20) Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4824.00	40.23	V	73.97	-33.74	Peak	291.25	143.41	
4824.00	28.25	V	53.97	-25.72	Avg	291.25	143.41	
7236.00	45.85	V	73.97	-28.12	Peak	277.25	271.11	
7236.00	33.33	V	53.97	-20.64	Avg	277.25	271.11	
9648.00								Not in Restricted Band
9648.00								Done via Conducted
12060.00	50.80	V	73.97	-23.17	Peak	26.25	270.94	
12060.00	38.45	V	53.97	-15.52	Avg	26.25	270.94	
14472.00								No Emission
14472.00								Detected
16884.00								No Emission
16884.00								Detected
19296.00								No Emission
19296.00								Detected
21708.00								No Emission
21708.00								Detected
24120.00								No Emission
24120.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/12/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Low Channel - Y-Axis**
802.11n (HT 20) Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4824.00	41.06	H	73.97	-32.91	Peak	38.25	191.23	
4824.00	28.45	H	53.97	-25.52	Avg	38.25	191.23	
7236.00	45.08	H	73.97	-28.89	Peak	340.00	111.65	
7236.00	33.30	H	53.97	-20.67	Avg	340.00	111.65	
9648.00								Not in Restricted Band
9648.00								Done via Conducted
12060.00	50.71	H	73.97	-23.26	Peak	316.75	217.41	
12060.00	38.33	H	53.97	-15.64	Avg	316.75	217.41	
14472.00								No Emission
14472.00								Detected
16884.00								No Emission
16884.00								Detected
19296.00								No Emission
19296.00								Detected
21708.00								No Emission
21708.00								Detected
24120.00								No Emission
24120.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/12/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Middle Channel - Y-Axis**
802.11n (HT 20) Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4874.00	40.93	V	73.97	-33.04	Peak	283.75	191.53	
4874.00	28.84	V	53.97	-25.13	Avg	283.75	191.53	
7311.00	46.99	V	73.97	-26.98	Peak	171.00	223.59	
7311.00	34.57	V	53.97	-19.40	Avg	171.00	223.59	
9748.00								Not in Restricted Band
9748.00								Done via Conducted
12185.00	50.22	V	73.97	-23.75	Peak	77.50	255.11	
12185.00	38.76	V	53.97	-15.21	Avg	77.50	255.11	
14622.00								No Emission
14622.00								Detected
17059.00								No Emission
17059.00								Detected
19496.00								No Emission
19496.00								Detected
21933.00								No Emission
21933.00								Detected
24370.00								No Emission
24370.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/12/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Middle Channel - Y-Axis**
802.11n (HT 20) Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4874.00	44.86	H	73.97	-29.11	Peak	118.25	127.17	
4874.00	32.62	H	53.97	-21.35	Avg	118.25	127.17	
7311.00	46.98	H	73.97	-26.99	Peak	103.75	127.47	
7311.00	35.24	H	53.97	-18.73	Avg	103.75	127.47	
9748.00								Not in Restricted Band
9748.00								Done via Conducted
12185.00	50.33	H	73.97	-23.64	Peak	220.50	127.47	
12185.00	38.73	H	53.97	-15.24	Avg	220.50	127.47	
14622.00								No Emission
14622.00								Detected
17059.00								No Emission
17059.00								Detected
19496.00								No Emission
19496.00								Detected
21933.00								No Emission
21933.00								Detected
24370.00								No Emission
24370.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/12/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - High Channel - Y-Axis**
802.11n (HT 20) Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4924.00	40.02	V	73.97	-33.95	Peak	292.75	127.53	
4924.00	28.10	V	53.97	-25.87	Avg	292.75	127.53	
7386.00	45.07	V	73.97	-28.90	Peak	9.00	207.65	
7386.00	33.29	V	53.97	-20.68	Avg	9.00	207.65	
9848.00								Not in Restricted Band
9848.00								Done via Conducted
12310.00	49.32	V	73.97	-24.65	Peak	15.50	255.00	
12310.00	37.62	V	73.97	-36.35	Peak	15.50	255.00	
14772.00								No Emission
14772.00								Detected
17234.00								No Emission
17234.00								Detected
19696.00								No Emission
19696.00								Detected
22158.00								No Emission
22158.00								Detected
24620.00								No Emission
24620.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/12/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - High Channel - Y-Axis**
802.11n (HT 20) Mode - RedPine RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4924.00	44.28	H	73.97	-29.69	Peak	299.25	127.41	
4924.00	31.60	H	53.97	-22.37	Avg	299.25	127.41	
7386.00	44.61	H	73.97	-29.36	Peak	315.75	191.11	
7386.00	33.32	H	53.97	-20.65	Avg	315.75	191.11	
9848.00								Not in Restricted Band
9848.00								Done via Conducted
12310.00	49.21	H	73.97	-24.76	Peak	133.50	207.17	
12310.00	37.64	H	53.97	-16.33	Avg	133.50	207.17	
14772.00								No Emission
14772.00								Detected
17234.00								No Emission
17234.00								Detected
19696.00								No Emission
19696.00								Detected
22158.00								No Emission
22158.00								Detected
24620.00								No Emission
24620.00								Detected

FCC 15.247 and RSS-247

Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3

Date: 06/12/2024
Lab: D
Tested By: Kyle Fujimoto

Non Harmonic Emissions from the Tx and Digital Portion - 9 kHz to 30 MHz
Non Harmonic Emissions from the Tx and Digital Portion - 1 GHz to 25 GHz
802.11n (HT 20) Mode - RedPine RF Module

[illegible]

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/26/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Low Channel - Y-Axis**
BLE Mode - Nordic RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	56.83	V	73.97	-17.14	Peak	259.25	111.47	
4804.00	52.44	V	53.97	-1.53	Avg	259.25	111.47	
7206.00								Not in Restricted Band
7206.00								Done via Conducted
9608.00								Not in Restricted Band
9608.00								Done via Conducted
12010.00	52.97	V	73.97	-21.00	Peak	246.25	175.00	
12010.00	41.52	V	53.97	-12.45	Avg	246.25	175.00	
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/26/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Low Channel - Y-Axis**
BLE Mode - Nordic RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	57.29	H	73.97	-16.68	Peak	229.00	111.41	
4804.00	52.26	H	53.97	-1.71	Avg	229.00	111.41	
7206.00								Not in Restricted Band
7206.00								Done via Conducted
9608.00								Not in Restricted Band
9608.00								Done via Conducted
12010.00	50.53	H	73.97	-23.44	Peak	220.23	287.23	
12010.00	39.09	H	53.97	-14.88	Avg	220.25	287.23	
14412.00								No Emission
14412.00								Detected
16814.00								No Emission
16814.00								Detected
19216.00								No Emission
19216.00								Detected
21618.00								No Emission
21618.00								Detected
24020.00								No Emission
24020.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/26/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Middle Channel - Y-Axis**
BLE Mode - Nordic RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	47.31	V	73.97	-26.66	Peak	241.25	143.23	
4880.00	40.06	V	53.97	-13.91	Avg	241.25	143.23	
7320.00	51.76	V	73.97	-22.21	Peak	190.25	207.11	
7320.00	41.43	V	53.97	-12.54	Avg	190.25	207.11	
9760.00								Not in Restricted Band
9760.00								Done via Conducted
12200.00	50.08	V	73.97	-23.89	Peak	307.75	287.05	
12200.00	38.25	V	53.97	-15.72	Avg	307.75	287.05	
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

FCC 15.247 and RSS-247

Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3

Date: 06/26/2024
Lab: D
Tested By: Kyle Fujimoto

**Harmonics - Middle Channel - Y-Axis
BLE Mode - Nordic RF Module**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	47.74	H	73.97	-26.23	Peak	224.25	127.17	
4880.00	43.25	H	53.97	-10.72	Avg	224.25	127.17	
7320.00	49.74	H	73.97	-24.23	Peak	115.50	159.17	
7320.00	35.58	H	53.97	-18.39	Avg	115.50	159.17	
9760.00								Not in Restricted Band
9760.00								Done via Conducted
12200.00	49.72	H	73.97	-24.25	Peak	347.50	175.41	
12200.00	38.04	H	53.97	-15.93	Avg	347.50	175.41	
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/26/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - High Channel - Y-Axis**
BLE Mode - Nordic RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	54.30	V	73.97	-19.67	Peak	225.00	127.17	
4960.00	49.28	V	53.97	-4.69	Avg	225.00	127.17	
7440.00	36.23	V	73.97	-37.74	Peak	204.00	111.59	
7440.00	25.42	V	53.97	-28.55	Avg	204.00	111.59	
9920.00								Not in Restricted Band
9920.00								Done via Conducted
12400.00	32.17	V	73.97	-41.80	Peak	307.75	299.95	
12400.00	20.15	V	53.97	-33.82	Avg	307.75	299.95	
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/26/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - High Channel - Y-Axis**
BLE Mode - Nordic RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	49.34	H	73.97	-24.63	Peak	156.00	111.00	
4960.00	43.56	H	53.97	-10.41	Avg	156.00	111.00	
7440.00	36.50	H	73.97	-37.47	Peak	115.25	255.05	
7440.00	24.21	H	53.97	-29.76	Avg	115.25	255.05	
9920.00								Not in Restricted Band
9920.00								Done via Conducted
12400.00	31.86	H	73.97	-42.11	Peak	252.50	299.89	
12400.00	20.19	H	53.97	-33.78	Avg	252.50	299.89	
14880.00								No Emission
14880.00								Detected
17360.00								No Emission
17360.00								Detected
19840.00								No Emission
19840.00								Detected
22320.00								No Emission
22320.00								Detected
24800.00								No Emission
24800.00								Detected

FCC 15.247 and RSS-247

Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3

Date: 06/26/2024
Lab: D
Tested By: Kyle Fujimoto

Non Harmonic Emissions from the Tx and Digital Portion - 9 kHz to 30 MHz

Non Harmonic Emissions from the Tx and Digital Portion - 1 GHz to 25 GHz

BLE Mode - Nordic RF Module

[illegible]

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/26/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Low Channel - Y-Axis**
Thread Mode - Nordic RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810.00	57.87	V	73.97	-16.10	Peak	251.50	143.11	
4810.00	52.58	V	53.97	-1.39	Avg	251.50	143.11	
7215.00								Not in Restricted Band
7215.00								Done via Conducted
9620.00								Not in Restricted Band
9620.00								Done via Conducted
12025.00	51.22	V	73.97	-22.75	Peak	166.75	299.95	
12025.00	40.28	V	53.97	-13.69	Avg	166.75	299.95	
14430.00								No Emission
14430.00								Detected
16835.00								No Emission
16835.00								Detected
19240.00								No Emission
19240.00								Detected
21645.00								No Emission
21645.00								Detected
24050.00								No Emission
24050.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/26/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Low Channel - Y-Axis
Thread Mode - Nordic RF Module**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4810.00	56.74	H	73.97	-17.23	Peak	217.75	111.23	
4810.00	51.41	H	53.97	-2.56	Avg	217.75	111.23	
7215.00								Not in Restricted Band
7215.00								Done via Conducted
9620.00								Not in Restricted Band
9620.00								Done via Conducted
12025.00	50.61	H	73.97	-23.36	Peak	27.75	175.17	
12025.00	38.62	H	53.97	-15.35	Avg	27.75	175.17	
14430.00								No Emission
14430.00								Detected
16835.00								No Emission
16835.00								Detected
19240.00								No Emission
19240.00								Detected
21645.00								No Emission
21645.00								Detected
24050.00								No Emission
24050.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/27/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Middle Channel - Y-Axis**
Thread Mode - Nordic RF Module

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	46.28	V	73.97	-27.69	Peak	87.00	159.41	
4880.00	36.45	V	53.97	-17.52	Avg	87.00	159.41	
7320.00	50.56	V	73.97	-23.41	Peak	16.75	239.41	
7320.00	40.60	V	53.97	-13.37	Avg	16.75	239.41	
9760.00								Not in Restricted Band
9760.00								Done via Conducted
12200.00	50.14	V	73.97	-23.83	Peak	29.50	143.35	
12200.00	38.55	V	53.97	-15.42	Avg	29.50	143.35	
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/27/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - Middle Channel - Y-Axis
Thread Mode - Nordic RF Module**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	47.08	H	73.97	-26.89	Peak	49.75	111.29	
4880.00	36.69	H	53.97	-17.28	Avg	49.75	111.29	
7320.00	48.12	H	73.97	-25.85	Peak	313.00	175.47	
7320.00	34.69	H	53.97	-19.28	Avg	313.00	175.47	
9760.00								Not in Restricted Band
9760.00								Done via Conducted
12200.00	50.28	H	73.97	-23.69	Peak	238.25	207.11	
12200.00	38.43	H	53.97	-15.54	Avg	238.25	207.11	
14640.00								No Emission
14640.00								Detected
17080.00								No Emission
17080.00								Detected
19520.00								No Emission
19520.00								Detected
21960.00								No Emission
21960.00								Detected
24400.00								No Emission
24400.00								Detected

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/27/2024
Lab: D
Tested By: Kyle Fujimoto**Harmonics - High Channel - Y-Axis
Thread Mode - Nordic RF Module**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4950.00	53.07	V	73.97	-20.90	Peak	49.25	127.59	
4950.00	46.82	V	53.97	-7.15	Avg	49.25	127.59	
7425.00	47.16	V	73.97	-26.81	Peak	21.00	207.11	
7425.00	36.64	V	53.97	-17.33	Avg	21.00	207.11	
9900.00								Not in Restricted Band
9900.00								Done via Conducted
12375.00	50.78	V	73.97	-23.19	Peak	105.25	127.41	
12375.00	38.57	V	73.97	-35.40	Peak	105.25	127.41	
14850.00								No Emission
14850.00								Detected
17325.00								No Emission
17325.00								Detected
19800.00								No Emission
19800.00								Detected
22275.00								No Emission
22275.00								Detected
24750.00								No Emission
24750.00								Detected

FCC 15.247 and RSS-247

Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3

Date: 06/27/2024
Lab: D
Tested By: Kyle Fujimoto

**Harmonics - High Channel - Y-Axis
Thread Mode - Nordic RF Module**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4950.00	50.17	H	73.97	-23.80	Peak	28.00	111.47	
4950.00	43.41	H	53.97	-10.56	Avg	28.00	111.47	
7425.00	44.35	H	73.97	-29.62	Peak	319.75	159.47	
7425.00	33.27	H	53.97	-20.70	Avg	319.75	159.47	
9900.00								Not in Restricted Band
9900.00								Done via Conducted
12375.00	50.10	H	73.97	-23.87	Peak	115.75	207.17	
12375.00	38.39	H	53.97	-15.58	Avg	115.75	207.17	
14850.00								No Emission
14850.00								Detected
17325.00								No Emission
17325.00								Detected
19800.00								No Emission
19800.00								Detected
22275.00								No Emission
22275.00								Detected
24750.00								No Emission
24750.00								Detected

