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## CERTIFICATION TEST REPORT

**Manufacturer:** Spectrovation.com, LLC  
14313 Poplar Hill Road  
Darnestown, Maryland 20874 USA

**Applicant:** Same as Above

**Product Name:** SV R5

**Product Description:** R5 Board for use in approved OEM equipment.

**Operating Voltage/Frequency:** Battery-Operated (3.3V)

**Model:** SV R5-N001

**FCC ID:** O64R5N001

**Testing Commenced:** Aug. 31, 2017

**Testing Ended:** Apr. 27, 2018

**Summary of Test Results:** In Compliance, with Modifications

The EUT complies with the EMC requirements when manufactured identically as the unit tested in this report, including any required modifications and/or manufacturer's statement. Any changes to the design or build of this unit subsequent to this testing may deem it non-compliant.

**Standards:**

- FCC Part 15 Subpart C, Section 15.247
- FCC Part 15.31(e)
- ANSI C63.10:2013



Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

**Evaluation Conducted by:** Julius Chiller, EMC/Wireless Engineer  
(also signing for Joe Knepper, EMC Proj. Eng.)

**Report Reviewed by:** Ken Littell, Director of EMC & Wireless Operations

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Order Number: F2LQ9792B

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Model: SV R5-N001

## TABLE OF CONTENTS

Section	Title	Page
1	ADMINISTRATIVE INFORMATION	4
2	SUMMARY OF TEST RESULTS/MODIFICATIONS	7
3	TABLE OF MEASURED RESULTS	8
4	ENGINEERING STATEMENT	9
5	EUT INFORMATION AND DATA	10
6	LIST OF MEASUREMENT INSTRUMENTATION	11
7	FCC Part 15.247(a)(2) – OCCUPIED BANDWIDTH	12
8	FCC Part 15.247(b)(3) – CONDUCTED OUTPUT POWER	16
9	FCC Part 15.247(d) – CONDUCTED SPURIOUS EMISSIONS	20
10	FCC Part 15.247(d) – RADIATED SPURIOUS EMISSIONS	38
11	FCC Part 15.247(e) – PEAK POWER SPECTRAL DENSITY (PSD)	49
12	PHOTOGRAPHS	53



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## 1 ADMINISTRATIVE INFORMATION

### 1.1 Measurement Location:

F2 Labs in Middlefield, Ohio. Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD.

### 1.2 Measurement Procedure:

All measurements were performed according to the 2013 version of ANSI C63.10 and recommended FCC procedure of measurement of DTS operating under Section 15.247 and in KDB558074. A list of the measurement equipment can be found in Section 6.



### 1.3 Uncertainty Budget:

The uncertainty in EMC measurements arises from several factors which affect the results, some associated with environmental conditions in the measurement room, the test equipment being used and the measurement techniques adopted.

The measurement uncertainty budgets detailed below are calculated from the test and calibration data, and are expressed with a 95% confidence factor using a coverage factor of  $k=2$ . The Uncertainty for a laboratory are referred to as  $U_{lab}$ . For Radiated and Conducted Emissions, the Expanded Uncertainty is compared to the  $U_{cispr}$  values to determine if a specific margin is required to deem compliance.

$U_{lab}$

Measurement Range	Combined Uncertainty	Expanded Uncertainty
Radiated Emissions <1 GHz @ 3m	2.54	5.07dB
Radiated Emissions <1 GHz @ 10m	2.55	5.09dB
Radiated Emissions 1 GHz to 2.7 GHz	1.81	3.62dB
Radiated Emissions 2.7 GHz to 18 GHz	1.55	3.10dB
AC Power Line Conducted Emissions, 150kHz to 30 MHz	1.38	2.76dB
AC Power Line Conducted Emissions, 9kHz to 150kHz	1.66	3.32dB

$U_{cispr}$

Measurement Range	Expanded Uncertainty
Radiated Emissions <1 GHz @ 3m	5.2dB
Radiated Emissions <1 GHz @ 10m	5.2dB
Radiated Emissions 1 GHz to 2.7 GHz	Under Consideration
Radiated Emissions 2.7 GHz to 18 GHz	Under Consideration
AC Power Line Conducted Emissions, 150kHz to 30 MHz	3.6dB
AC Power Line Conducted Emissions, 9kHz to 150kHz	4.0dB

If  $U_{lab}$  is less than or equal to  $U_{cispr}$ , then:

- compliance is deemed to occur if no measured disturbance exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance exceeds the disturbance limit.

If  $U_{lab}$  is greater than  $U_{cispr}$  in table 1, then:

- compliance is deemed to occur if no measured disturbance, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit.

Note: Only measurements listed in the tables above that relate to tests included in this Test Report are applicable.



Order Number: F2LQ9792B

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#### 1.4 Document History

Document Number	Description	Issue Date	Approved By
F2LQ9792B-01E	First Issue	Apr. 27, 2018	K. Littell



Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

## 2 SUMMARY OF TEST RESULTS

Test Name	Standard(s)	Results
-6dB Occupied Bandwidth	CFR 47 Part 15.247(a)(2) / KDB558074	Complies
Conducted Output Power	CFR 47 Part 15.247(b)(3) / KDB558074	Complies
Voltage Variations	CFR 47 Part 15.31(e)	Complies*
Conducted Spurious Emissions	CFR 47 Part 15.247(d) / Part 15.207 / KDB558074	Complies
Radiated Spurious Emission with 1.9 dBi Circular Antenna	CFR 47 Part 15.247(d) / Part 15.209 / KDB558074	Complies
Peak Power Spectral Density	CFR 47 Part 15.247(e) / KDB558074	Complies

\*Note: Product was operated using a new battery.  
Requirements of 15.31 were met by using new batteries.

Modifications Made to the Equipment
The following modifications were made to meet Band Edge requirements: Manufacturer supplied revised software image to lock out 902 MHz and 928 MHz. Unit's default frequency is 903 MHz.



Order Number: F2LQ9792B

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Model: SV R5-N001

### 3 TABLE OF MEASURED RESULTS

Test	Low Channel 903 MHz	Mid Channel 913 MHz	High Channel 927 MHz
Conducted Output Power	52.36mW (17.19dBm)	53.34mW (17.27dBm)	49.32mW (16.93dBm)
Conducted Output Power Limit	1 Watt, (30dBm)	1 Watt, (30dBm)	1 Watt, (30dBm)
E.I.R.P. with 1.9dBi Integral Antenna	81.10mW (19.09dBm)	82.60mW (19.17dBm)	76.38mW (18.83dBm)
E.I.R.P. Limit	4 Watts, (36.02dBm)	4 Watts, (36.02dBm)	4 Watts, (36.02dBm)
Peak Power Spectral Density	4.54dBm	4.48dBm	4.25dBm
Peak Power Spectral Density Limit	8 dBm	8 dBm	8 dBm
-6dB Occupied Bandwidth	0.710 MHz	0.7076 MHz	0.698 MHz
-6dB Occupied Bandwidth Limit	≥ 500KHz	≥ 500KHz	≥ 500KHz

Note: To meet the requirements of 15.31, new batteries were used.



Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

#### 4 ENGINEERING STATEMENT

This report has been prepared on behalf of Spectrovation.com, LLC, to provide documentation for the testing described herein. This equipment has been tested and found to comply with Part 15.247 of the FCC Rules using ANSI C63.10:2013 and KDB558074 standards. The test results found in this test report relate only to the items tested.



Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

## 5 EUT INFORMATION AND DATA

### 5.1 Equipment Under Test:

Product: SV R5

Model: SVR5-N001

Serial No.: None Specified

FCC ID: O64R5N001

### 5.2 Trade Name:

Spectrovation.com, LLC

### 5.3 Power Supply:

Battery-Operated (3.3V)

### 5.4 Applicable Rules:

CFR 47, Part 15.247, subpart C

### 5.5 Equipment Category:

Radio Transmitter-DTS

### 5.6 Antenna:

1.9dBi Antenna

### 5.7 Accessories:

N/A

### 5.8 Test Item Condition:

The equipment to be tested was received in good condition.

### 5.9 Testing Algorithm:

The EUT was configured to permit frequency changes from low-mid-upper transmission channel using digital modulation (required for digital transmission systems). For RF antenna conducted tests, the EUT was equipped with an SMA connector for connection to the measuring equipment. For radiated emissions tests, in a semi-anechoic chamber and on the OATS, the EUT was equipped with a 1.9dBi gain antenna. The highest emissions were recorded in the data tables.



Order Number: F2LQ9792B

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Model: SV R5-N001

## 6 LIST OF MEASUREMENT INSTRUMENTATION

Testing Conducted Aug. 31 to Sept. 6, 2017

Equipment Type	Asset Number	Manufacturer	Model	Serial Number	Calibration Due Date
Shielded Chamber	CL166	AlbatrossProjects	B83117-DF435-T261	US140023	Nov. 14, 2017
Temp/Hum. Recorder	CL137	Extech	RH520	CH16992	June 21, 2018
Receiver	CL151	Rohde & Schwarz	ESU40	100319	Nov. 28, 2017
Pre-amplifier	CL153	Keysight Tech.	83006A	MY39500791	June 20, 2018
Horn Antenna	CL098	Emco	3115	9809-5580	Dec. 28, 2018
Software:	Tile Version 1.0			Software Verified: Aug. 31, 2017	
Software:	EMC 32, Version 5.20.2			Software Verified: Aug. 31, 2017	
Antenna, JB3 Combination	CL175	Sunol Sciences	JB3	A030315	May 3, 2018

Testing Conducted Apr. 5-9, 2018

Equipment Type	Asset Number	Manufacturer	Model	Serial Number	Calibration Due Date
Shielded Chamber	CL166-E	AlbatrossProjects	B83117-DF435-T261	US140023	Jan. 9, 2019
Spectrum Analyzer	CL147	Agilent	E7402A	MY45101241	Nov. 16, 2018
Receiver	CL151	Rohde & Schwarz	ESU40	100319	Nov. 17, 2019
Antenna	CL175	Sunol	JB3	A030315	Oct. 11, 2019
Pre-amplifier	CL153	Keysight Tech.	83006A	MY39500791	June 20, 2018
Pre-Amplifier	0197	Hewlett Packard	8447D	1726A01006	Nov. 17, 2018
Software:	EMC 32, Version 8.53.0			Software Verified: Apr. 6, 2018	



Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

## 7 FCC PART 15.247(a)(2) – OCCUPIED BANDWIDTH

### 7.1 Requirements:

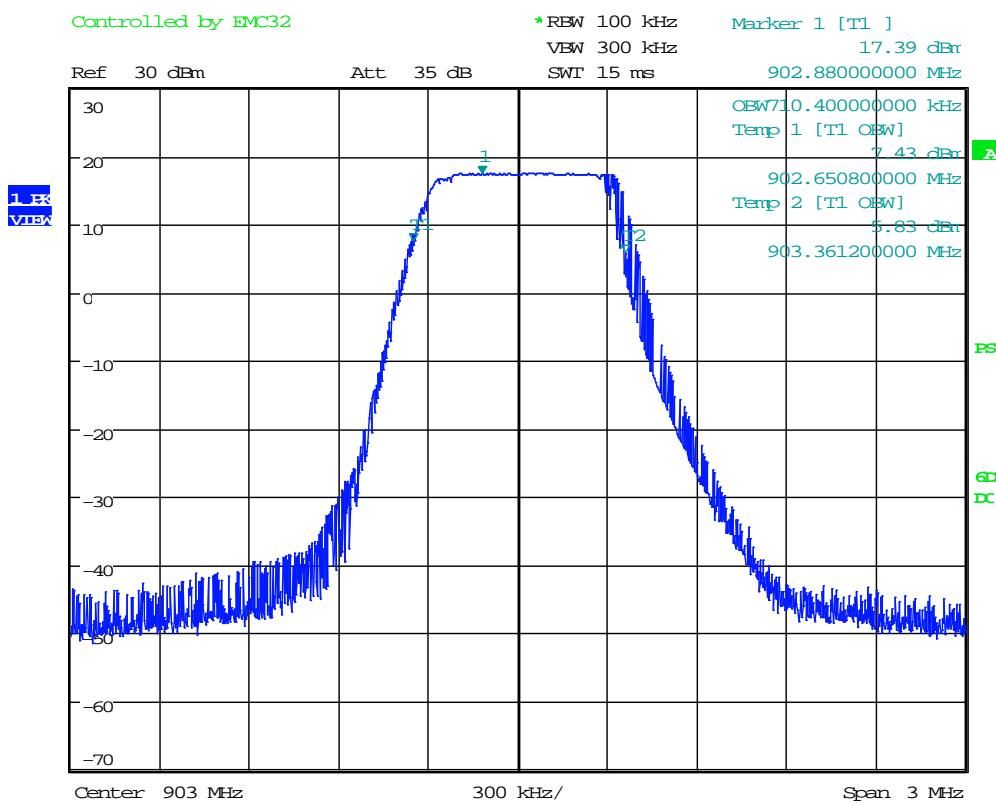
The 6dB bandwidth shall be greater than 500 kHz.

Bandwidth measurements were made at the low (903 MHz), mid (913 MHz) and upper (927 MHz) frequencies with the resolution Bandwidth set at 100 kHz (video bandwidth set at 300 kHz) while the span was set at 3 MHz. The bandwidth was measured using the analyzer's marker function.

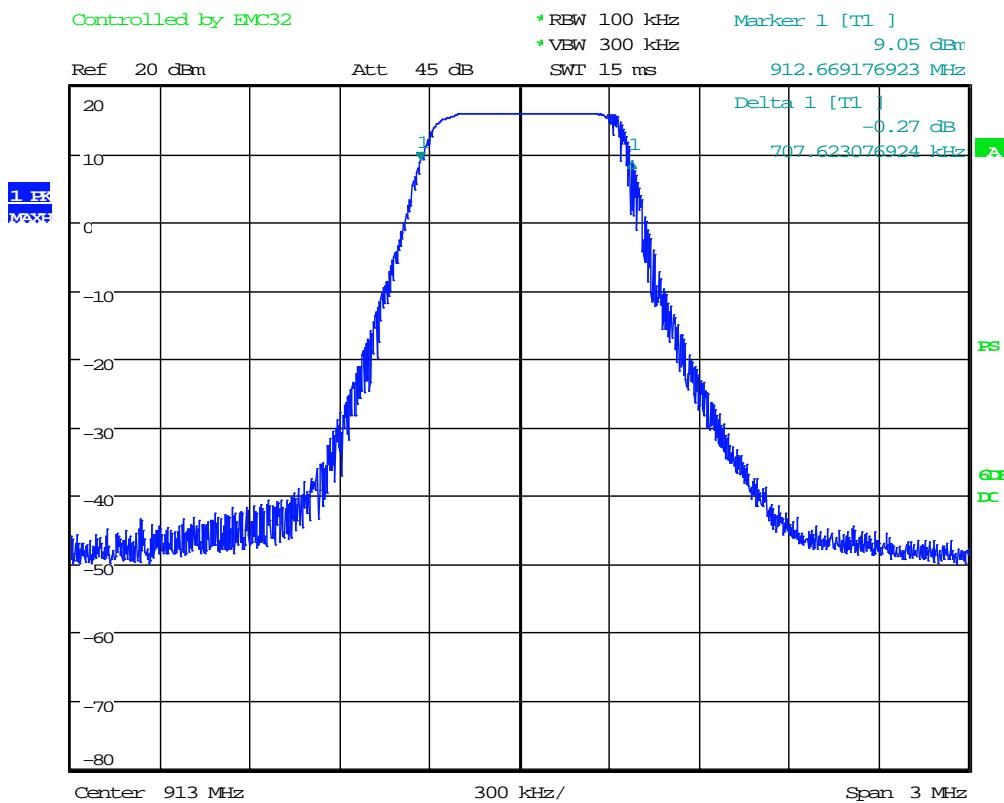
## 7.2 Occupied Bandwidth Test Data

<b>Test Date(s):</b>	Aug. 31, 2017; Apr. 6, 2018	<b>Test Engineer(s):</b>	J. Knepper ; J. Chiller
<b>Standards:</b>	CFR 47 Part 15.247(a)(2); KDB558074	<b>Air Temperature:</b>	21.2°C; 21.2°C
		<b>Relative Humidity:</b>	48%; 37%

### Low Channel



Date: 6.APR.2018 16:37:54

**Mid Channel**

Date: 31.AUG.2017 15:07:13

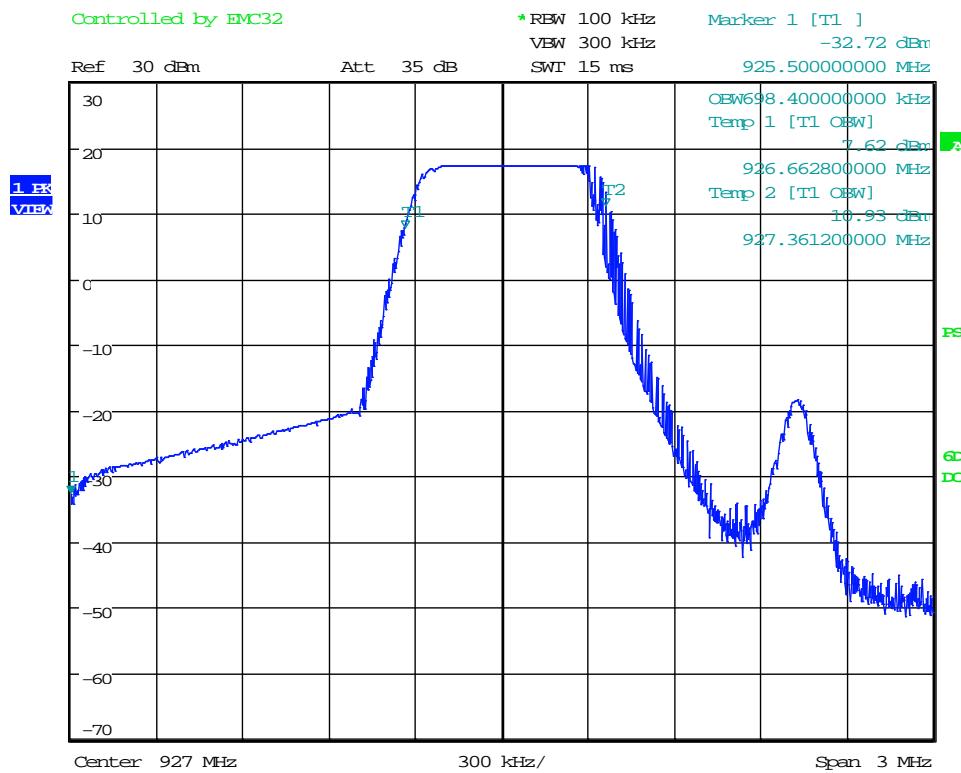


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

## High Channel



Date: 6.APR.2018 16:53:35

051816

Report Number: F2LQ9792B-01E

Page 15 of 55

Issue Date: Apr. 27, 2018



Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

## 8 FCC PART 15.247(b)(3) – CONDUCTED OUTPUT POWER

The EUT antenna port was fitted with an SMA connector and directly connected to the input of the receiver. The peak power output was measured.

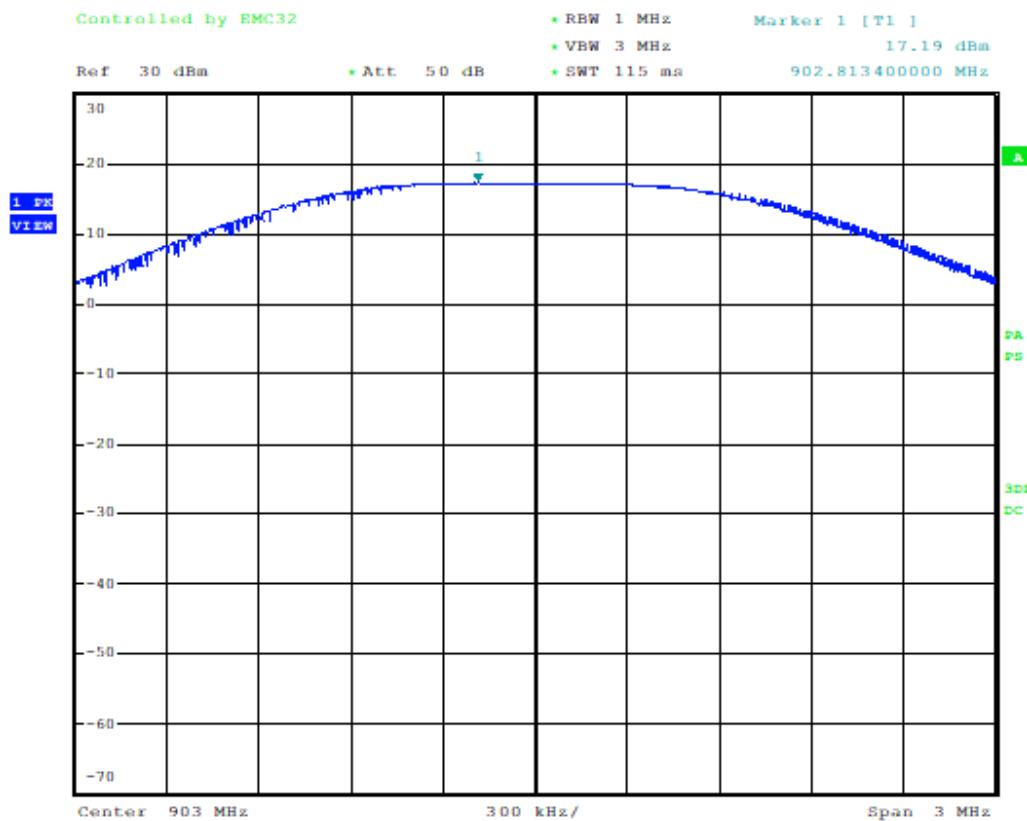
### 8.1 Requirements:

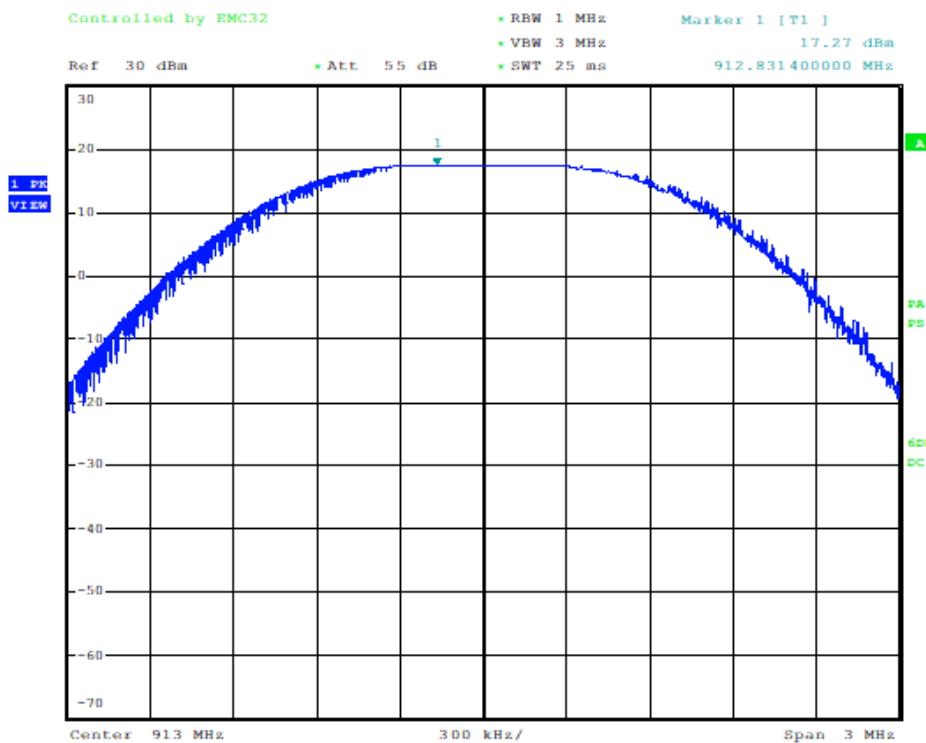
The peak power output shall be 1 watt (30 dBm) or less when using an antenna with a gain of less than 6dBi. For antennas having a gain of more than 6dBi, the limit is reduced by 1dB for every dB the antenna gain is over 6dBi.

## 8.2 Conducted Output Power Test Data

<b>Test Date(s):</b>	Aug. 31, 2017; Apr. 27, 2018	<b>Test Engineer(s):</b>	J. Knepper ; J. Chiller
<b>Standards:</b>	CFR 47 Part 15.247(b)(3); KDB558074	<b>Air Temperature:</b>	21.2°C; 21.5°C
		<b>Relative Humidity:</b>	48%; 38%

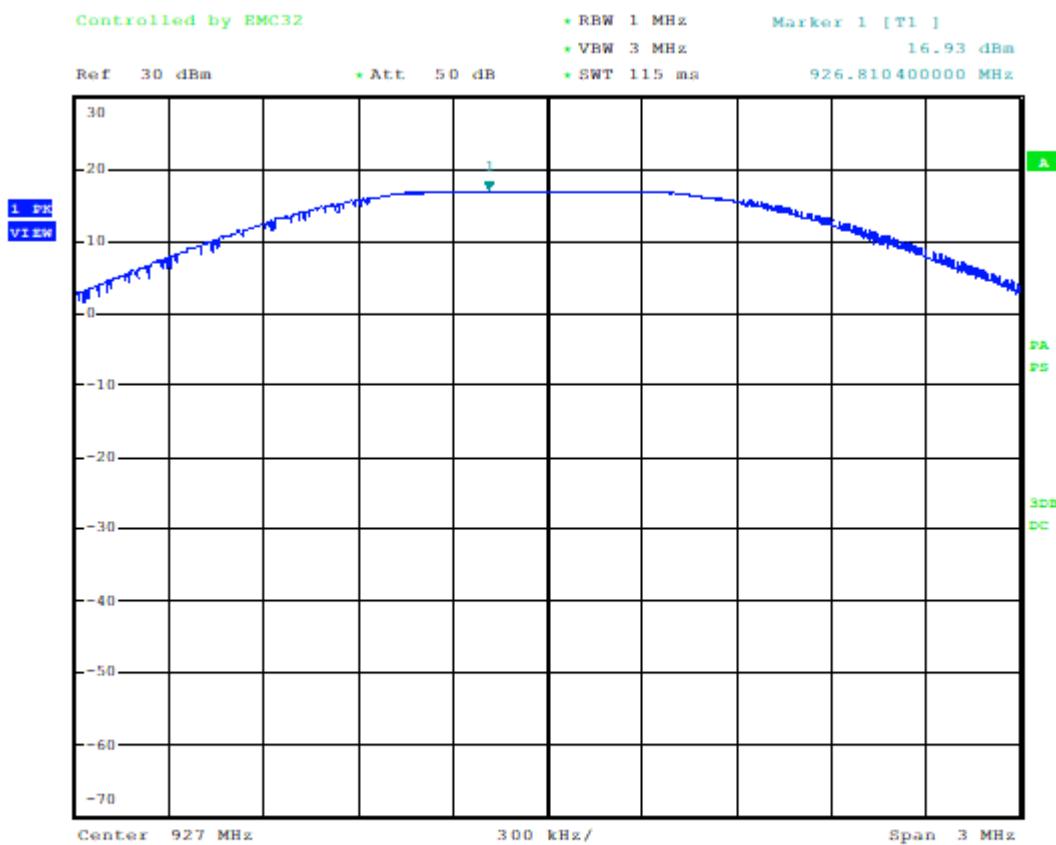
### Low Channel



**Mid Channel**

Date: 27.APR.2018 12:20:17

## High Channel



Date: 27.APR.2018 12:35:46



Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

**9 FCC Part 15.247(d) – CONDUCTED SPURIOUS EMISSIONS**

The following tests were performed to demonstrate compliance.

**RF Antenna Conducted Test**

The EUT antenna port was fitted with an SMA connector and directly connected to the input of the spectrum analyzer.

**9.1 Requirements:**

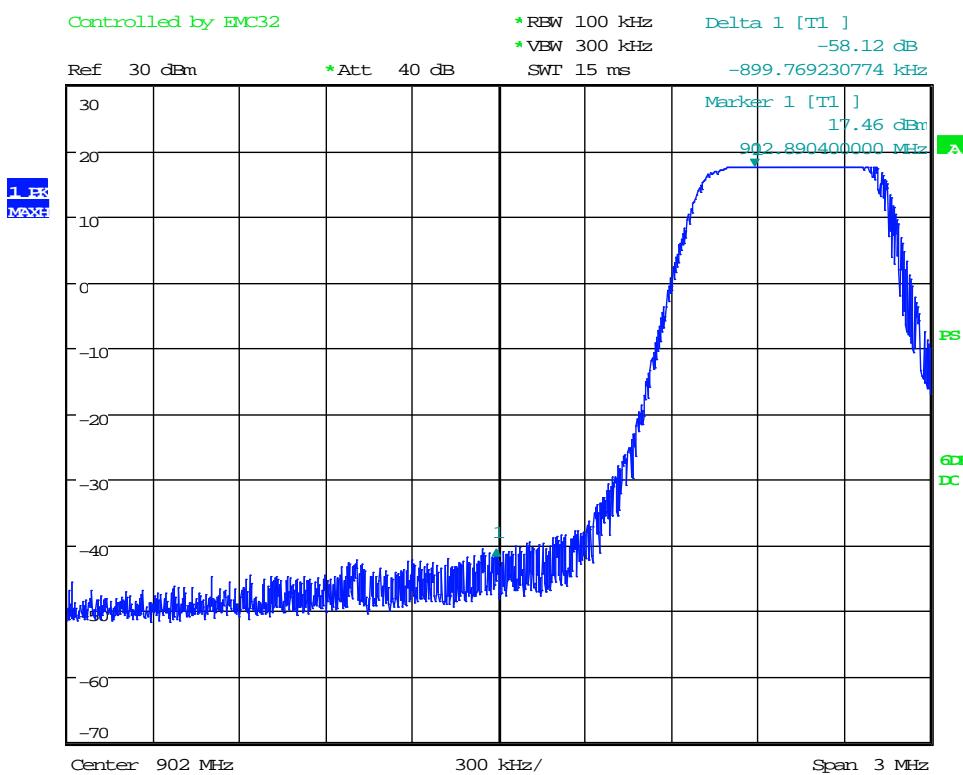
All Spurious Emissions must be at least 20dB down from the highest emission level measured within the authorized band up through the tenth harmonic.

Spurious emissions measurements were made at the low, mid, and upper channels with the appropriate spectrum analyzer impulse bandwidth. Additionally, 20dB down points were measured for the low and high channels to verify band edge compliance.

## 9.2 Conducted Spurious Emissions Test Data

Test Date(s):	Aug. 31, 2017; Apr. 6, 2018	Test Engineer(s):	J. Knepper ; J. Chiller
Standards:	CFR 47 Part 15.247(d) / Part 15.207 KDB558074	Air Temperature:	21.3°C; 22.1
		Relative Humidity:	47%; 39%

### Low Channel Band Edge



Date: 6.APR.2018 17:23:27

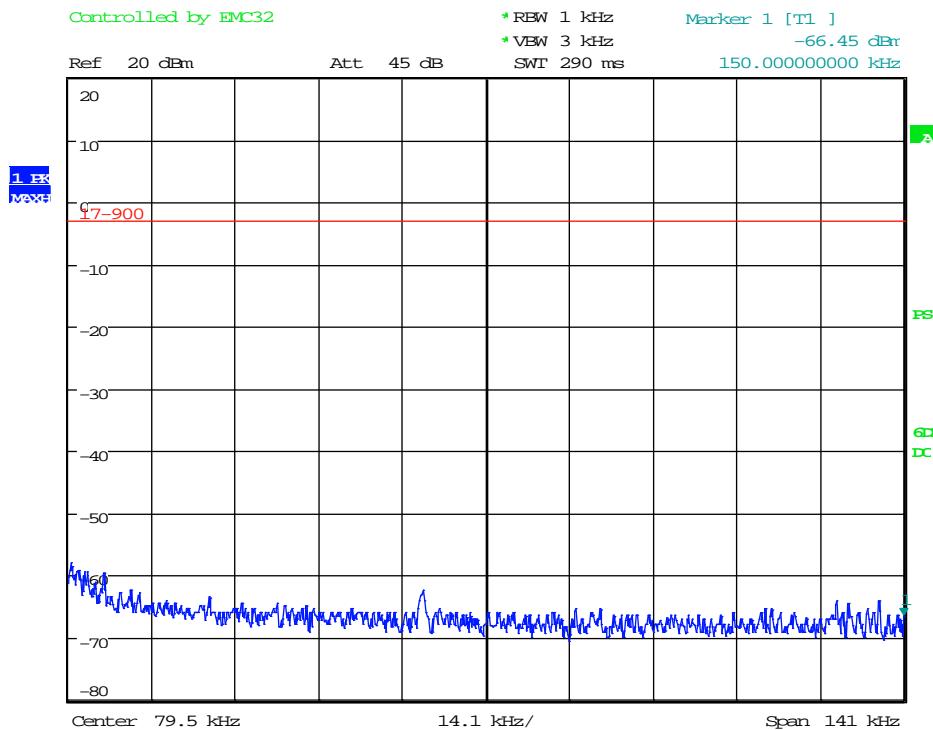


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### Low Channel, cont'd



Date: 31.AUG.2017 15:23:40

051816

Report Number: F2LQ9792B-01E

Page 22 of 55

Issue Date: Apr. 27, 2018

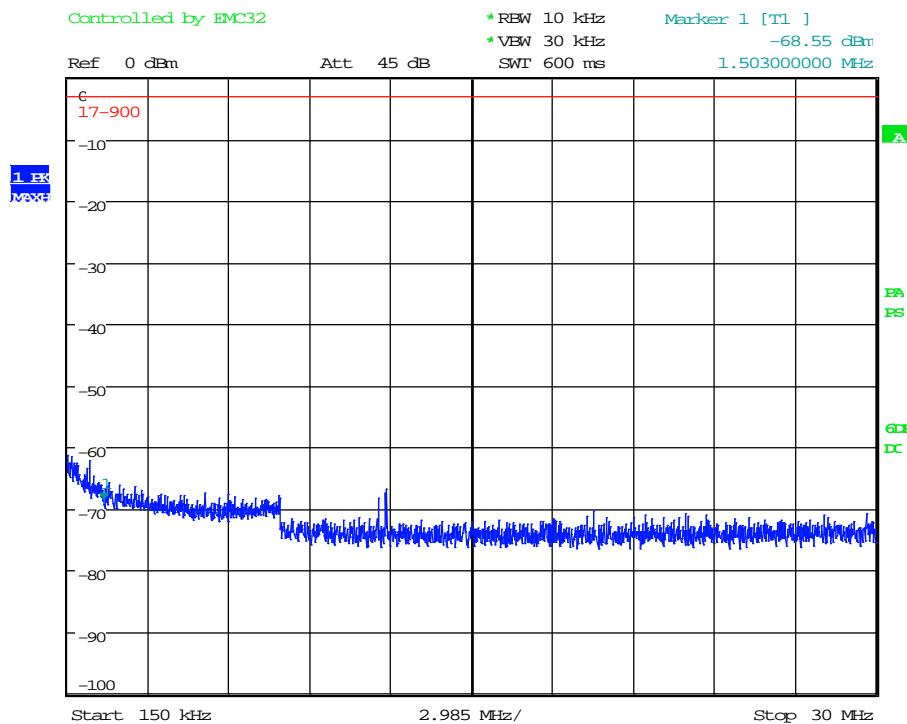


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### Low Channel, cont'd



Date: 31.AUG.2017 14:58:36

051816

Report Number: F2LQ9792B-01E

Page 23 of 55

Issue Date: Apr. 27, 2018

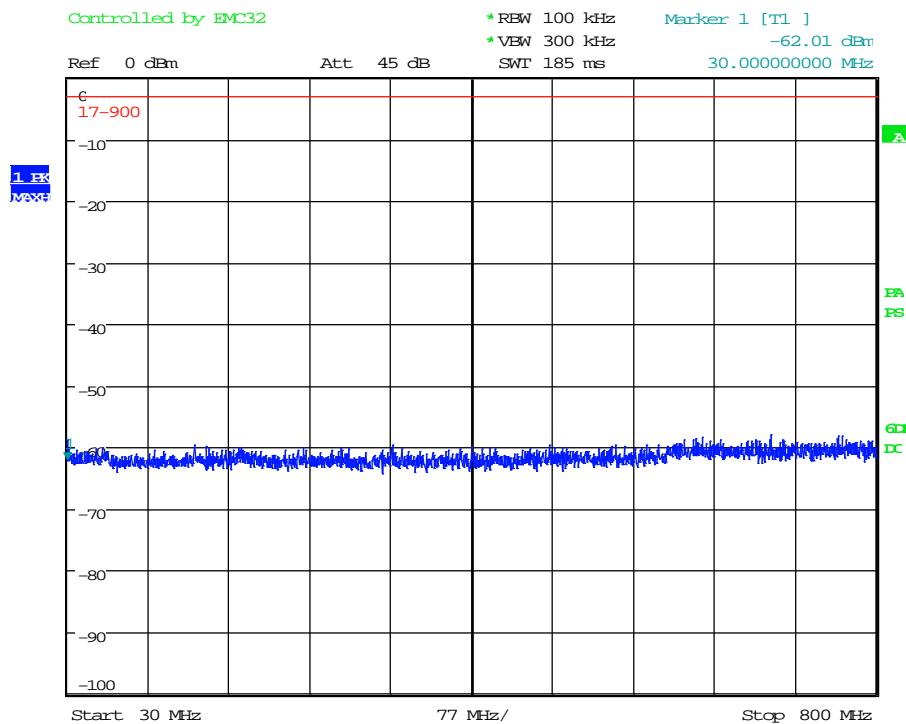


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### Low Channel, cont'd



Date: 31.AUG.2017 14:59:10

051816

Report Number: F2LQ9792B-01E

Page 24 of 55

Issue Date: Apr. 27, 2018

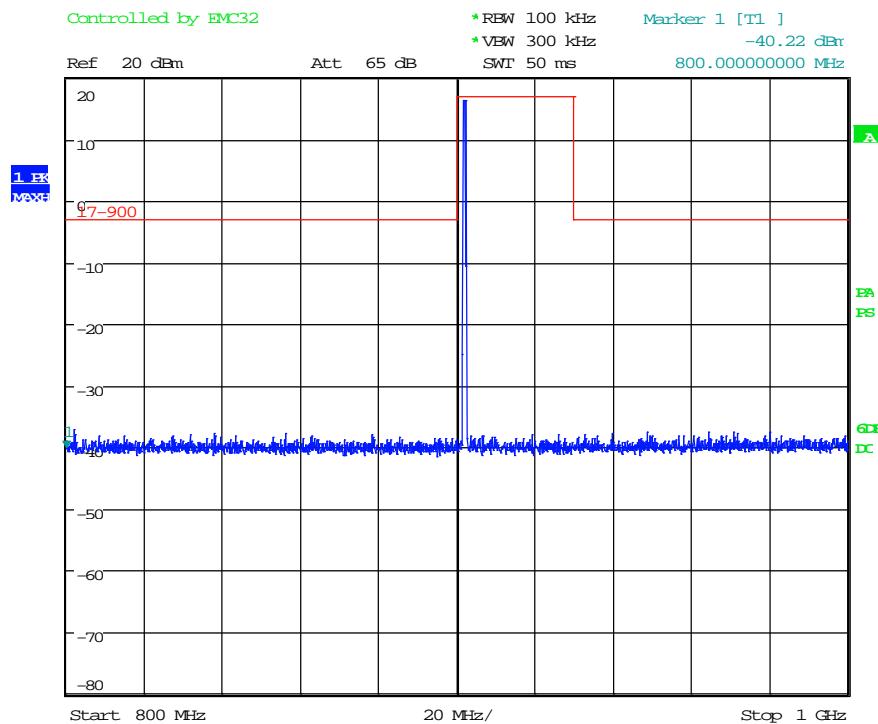


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### Low Channel, cont'd



Date: 31.AUG.2017 15:01:49

051816

Report Number: F2LQ9792B-01E

Page 25 of 55

Issue Date: Apr. 27, 2018

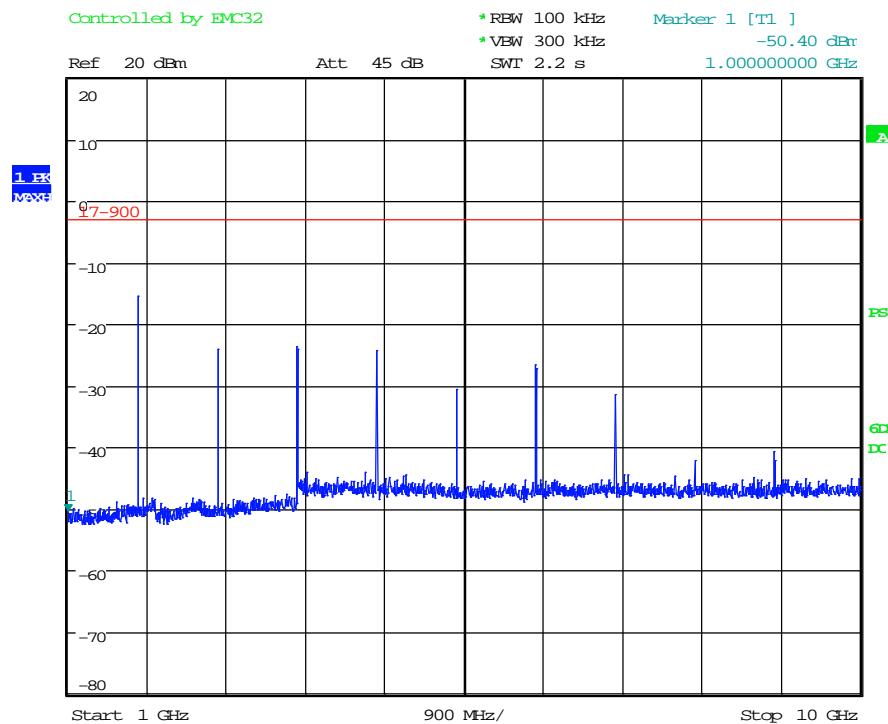


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### Low Channel, cont'd



Date: 31.AUG.2017 15:03:11

051816

Report Number: F2LQ9792B-01E

Page 26 of 55

Issue Date: Apr. 27, 2018

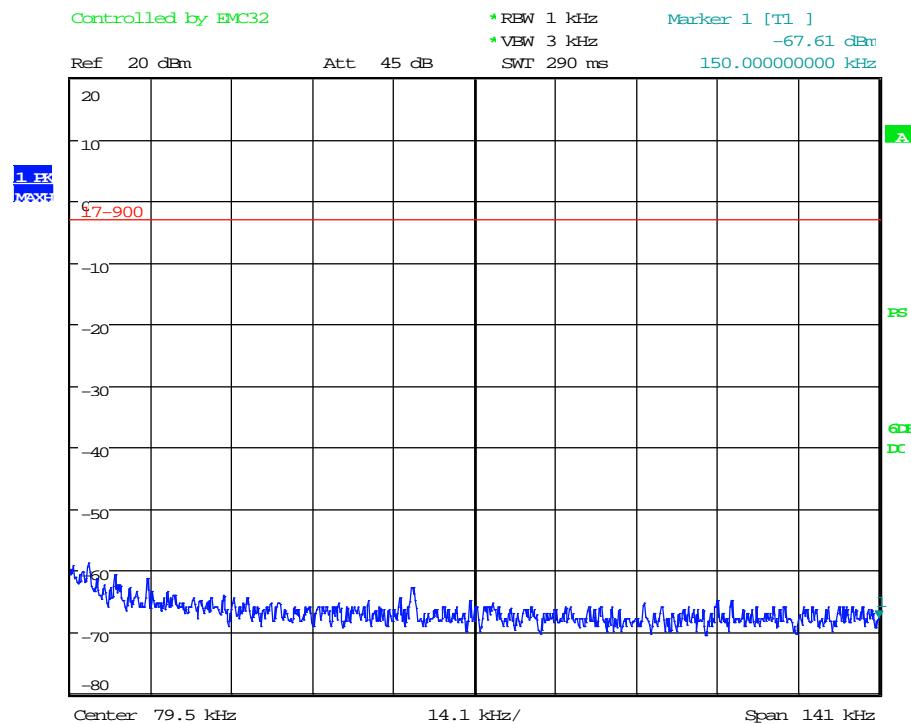


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### Mid Channel



Date: 31.AUG.2017 15:10:29

051816

Report Number: F2LQ9792B-01E

Page 27 of 55

Issue Date: Apr. 27, 2018

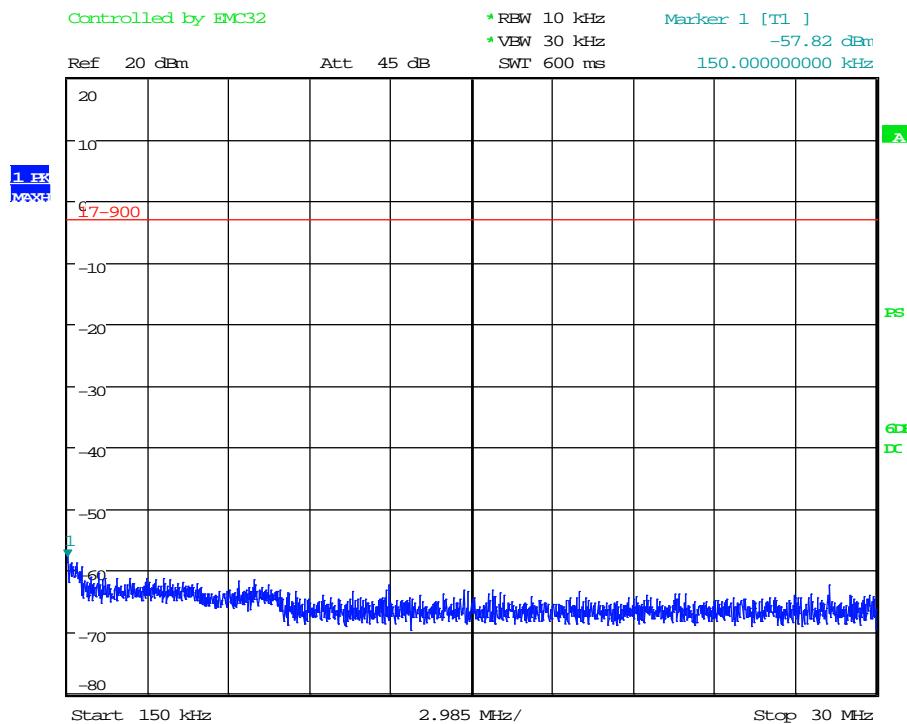


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### Mid Channel, cont'd



Date: 31.AUG.2017 15:11:19

051816

Report Number: F2LQ9792B-01E

Page 28 of 55

Issue Date: Apr. 27, 2018

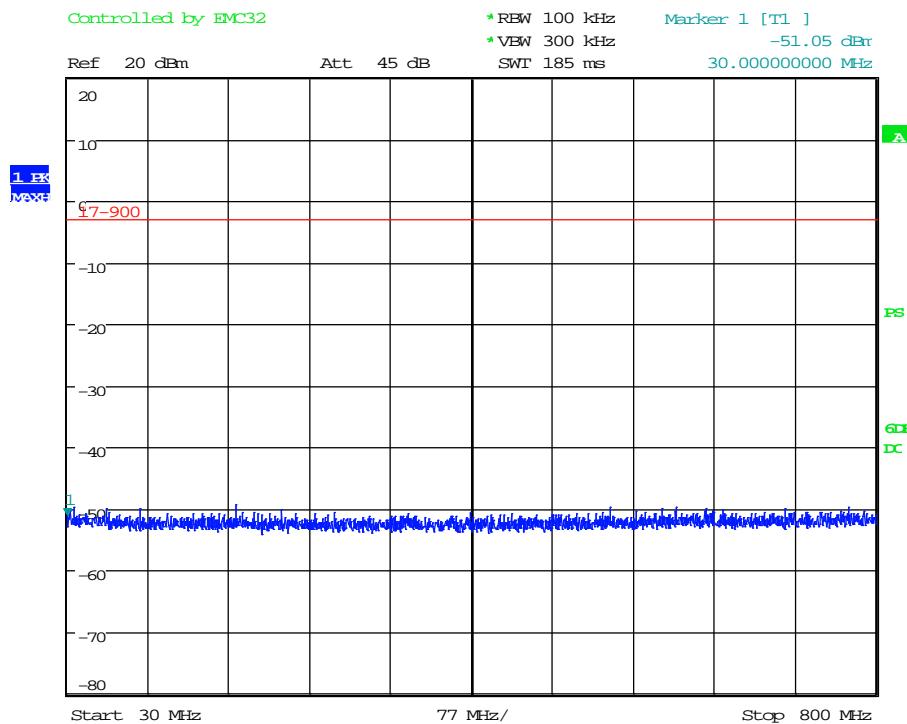


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### Mid Channel, cont'd



Date: 31.AUG.2017 15:12:41

051816

Report Number: F2LQ9792B-01E

Page 29 of 55

Issue Date: Apr. 27, 2018

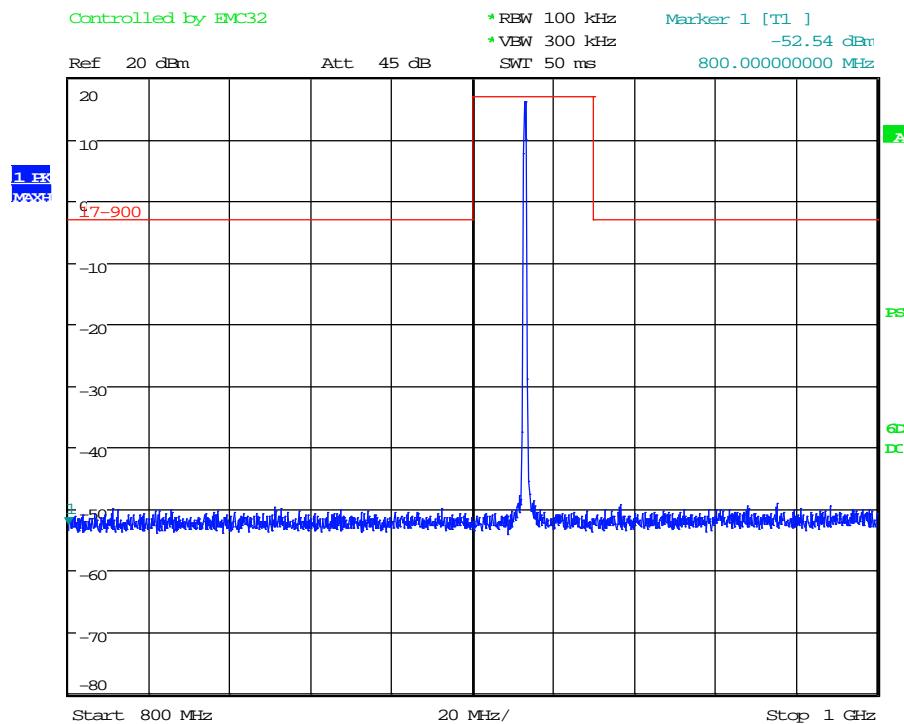


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### Mid Channel, cont'd



Date: 31.AUG.2017 15:13:09

051816

Report Number: F2LQ9792B-01E

Page 30 of 55

Issue Date: Apr. 27, 2018

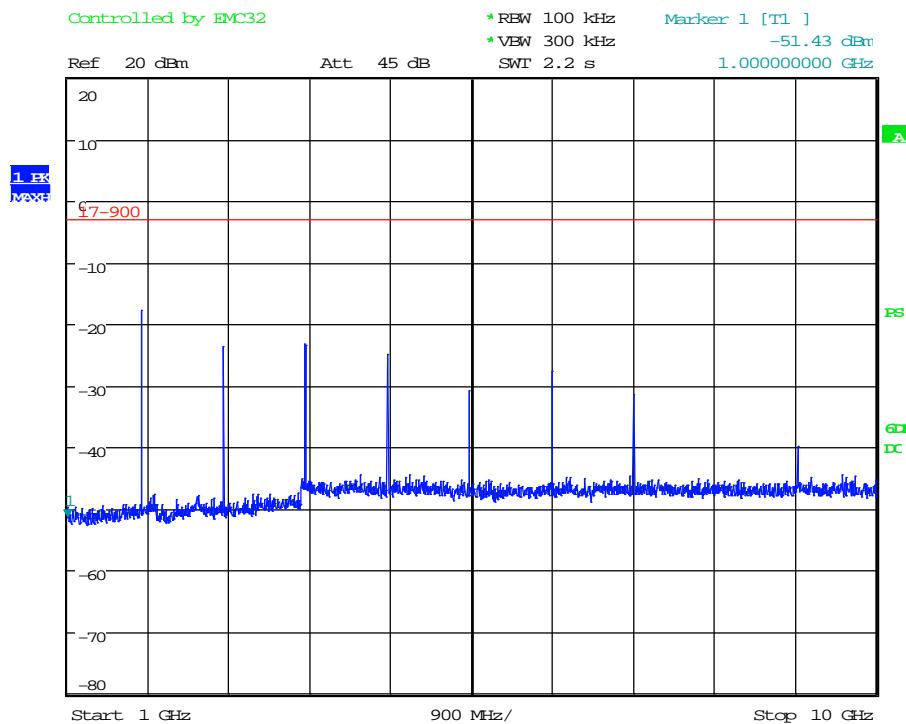


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### Mid Channel, cont'd



Date: 31.AUG.2017 15:14:36

051816

Report Number: F2LQ9792B-01E

Page 31 of 55

Issue Date: Apr. 27, 2018

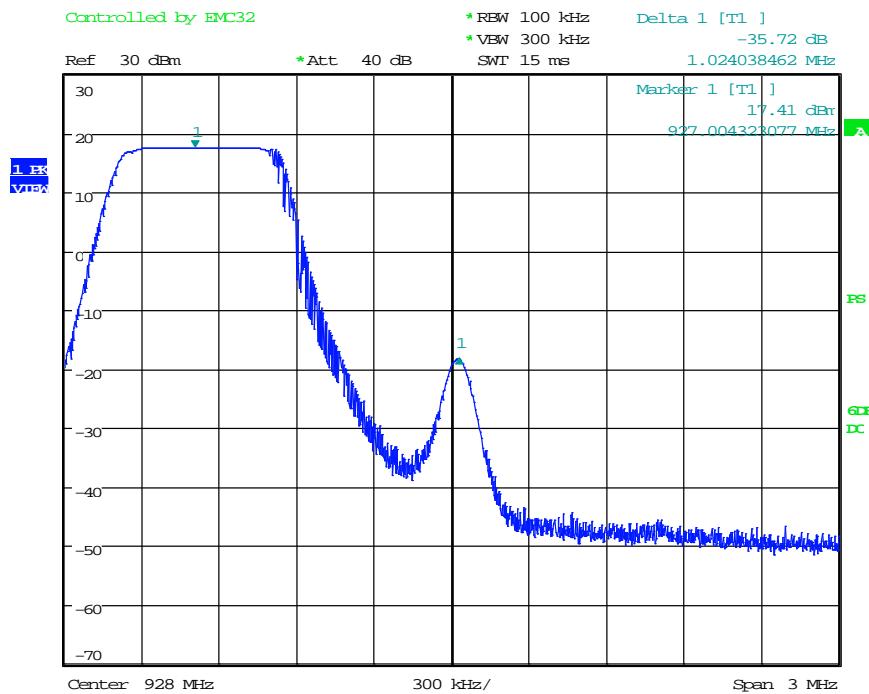


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### High Channel Band Edge



Date: 6.APR.2018 17:29:41

051816

Report Number: F2LQ9792B-01E

Page 32 of 55

Issue Date: Apr. 27, 2018

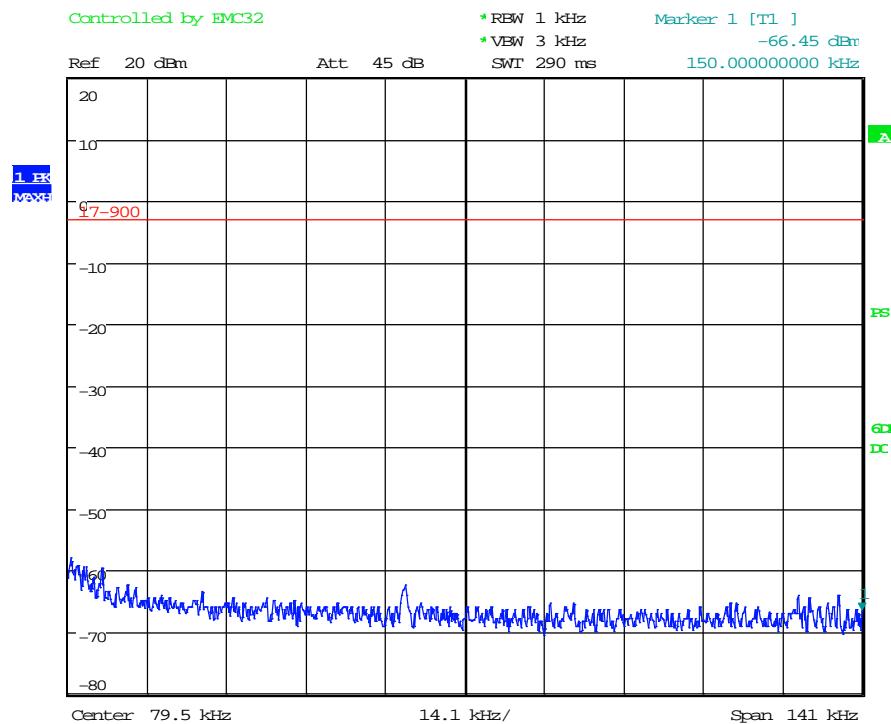


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### High Channel, cont'd



Date: 31.AUG.2017 15:23:40

051816

Report Number: F2LQ9792B-01E

Page 33 of 55

Issue Date: Apr. 27, 2018

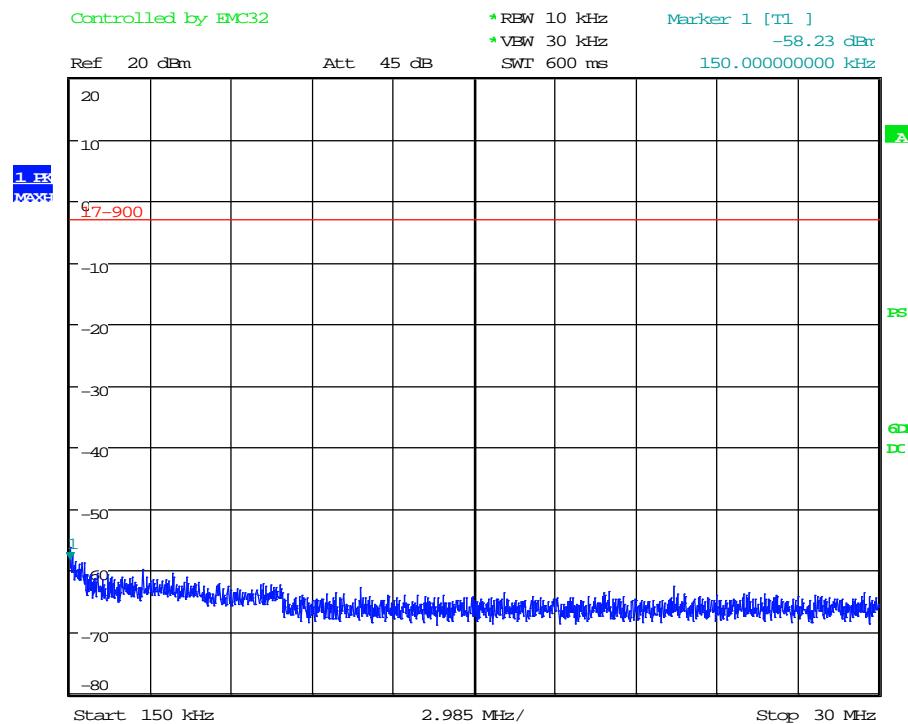


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### High Channel, cont'd



Date: 31.AUG.2017 15:24:50

051816

Report Number: F2LQ9792B-01E

Page 34 of 55

Issue Date: Apr. 27, 2018

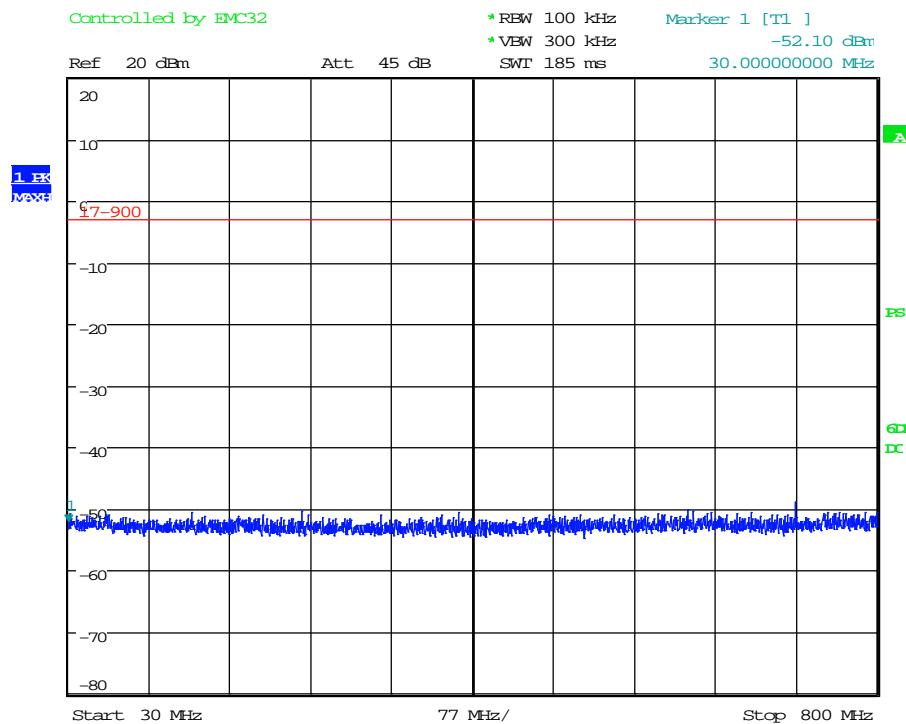


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### High Channel, cont'd



Date: 31.AUG.2017 15:25:31

051816

Report Number: F2LQ9792B-01E

Page 35 of 55

Issue Date: Apr. 27, 2018

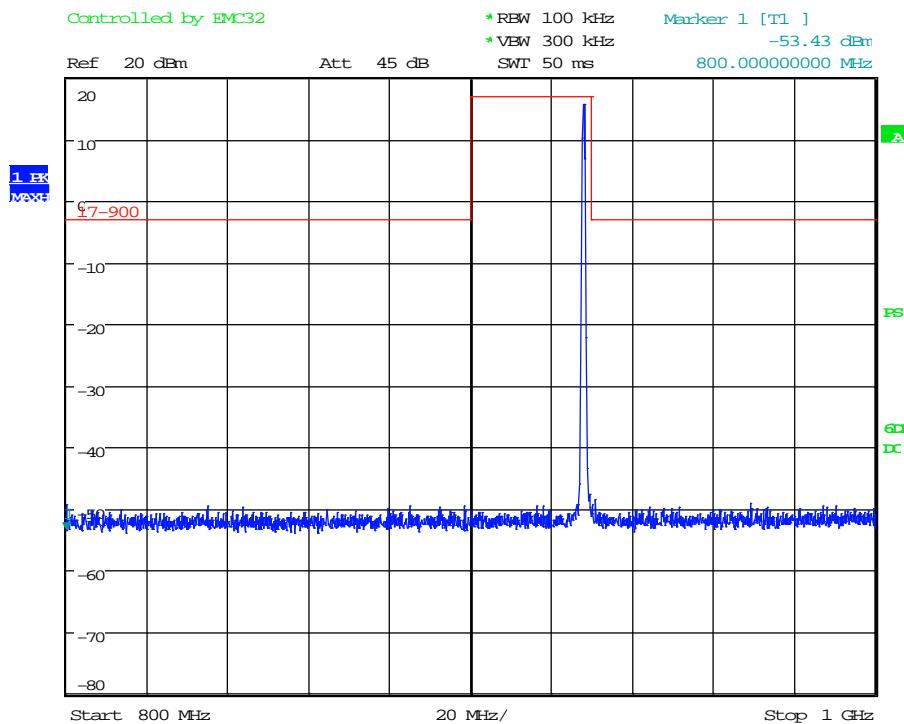


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### High Channel, cont'd



Date: 31.AUG.2017 15:26:39

051816

Report Number: F2LQ9792B-01E

Page 36 of 55

Issue Date: Apr. 27, 2018

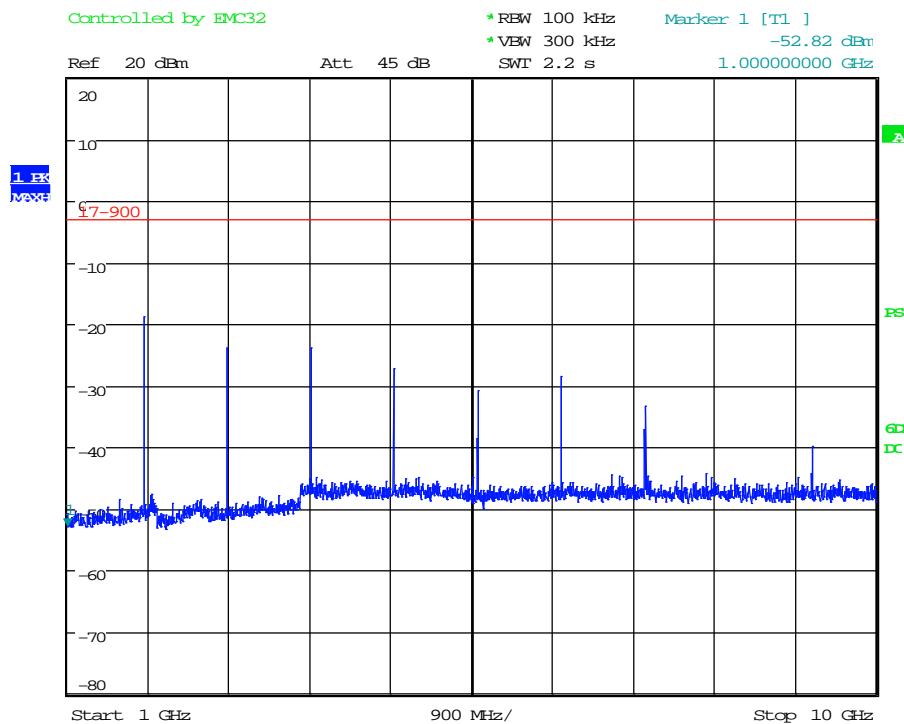


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### High Channel, cont'd



Date: 31.AUG.2017 15:27:15

051816

Report Number: F2LQ9792B-01E

Page 37 of 55

Issue Date: Apr. 27, 2018



Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

## 10 RADIATED SPURIOUS EMISSION

The EUT antenna port was fitted with its 1.9dBi gain antenna. Radiated emissions were measured in a Semi-Anechoic Chamber. All emissions generated that fall in the restricted bands per FCC Part 15.205 were examined.

### 10.1 Requirements:

All emissions that fall in the restricted bands defined in FCC Part 15.205 shall not exceed the maximum field strength listed in FCC Part 15.209(a).



Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

## 10.2 Radiated Spurious Emission Test Data

<b>Test Date(s):</b>	Aug. 31-Sept. 6, 2017; Apr. 6, 2018	<b>Test Engineer(s):</b>	J. Knepper ; J. Chiller
<b>Standards:</b>	CFR 47 Part 15.247(d); Part 15.209 / KDB558074	<b>Air Temperature:</b>	19.9°C; 22.1°C
		<b>Relative Humidity:</b>	46%; 38%

Notes: The EUT was initially placed in a semi-anechoic chamber and rotated in all three orthogonal positions to maximize the emissions. Characterization measurements were then performed to determine at which frequencies significant emissions occurred.

At least 6 of the highest frequencies were measured per ANSI 63.10 semi-anechoic chamber. From 9 kHz to 30 MHz the EUT was scanned with a loop antenna in all 3 orthogonal positions and there were no emissions above the ambient noise floor. Frequencies below 1GHz were measured using a quasi-peak detector. The antenna was raised between 1 and 4 meters and the EUT turntable was rotated 360 degrees to maximize the emissions.

Some of the frequencies did not change with the EUT on or off. At those frequencies, the test distance was shortened to 1 meter and still no emissions from the EUT were visible or over the ambient or limit.



Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

## Measurements

### Low Channel - MaxPeak

Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
1804.000000	H	71.3	-5.2	66.10	74.0	-7.9
1804.000000	V	62.8	-5.2	57.60	74.0	-16.4
2706.000000	V	41.6	-4.4	37.20	74.0	-36.8
2706.000000	H	45.6	-4.4	41.20	74.0	-32.8

### Low Channel - Average

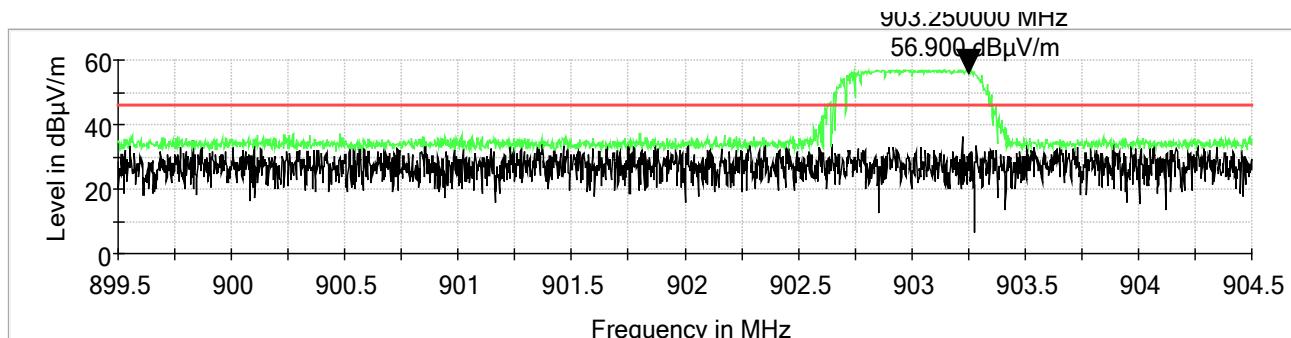
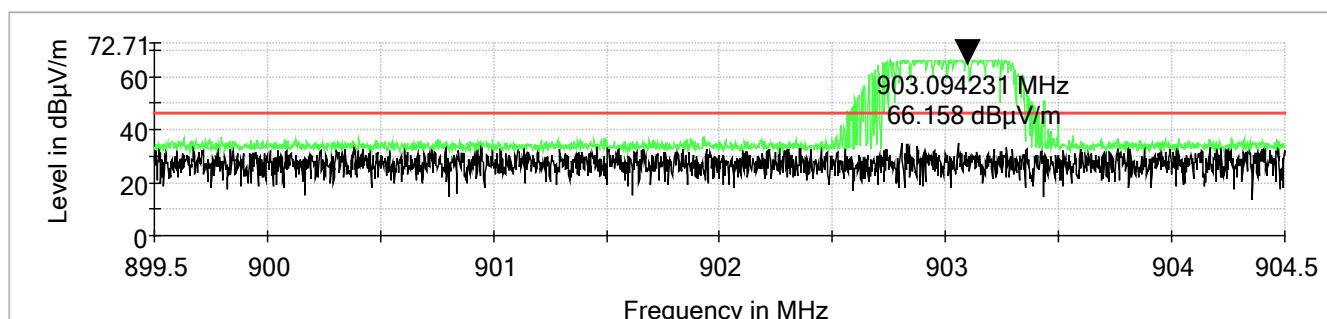
Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
1804.000000	H	57.4	-5.2	52.20	54.0	-1.8
1804.000000	V	50.5	-5.2	45.30	54.0	-8.7
2706.000000	V	27.7	-4.4	23.30	54.0	-30.7
2706.000000	H	32.6	-4.4	28.20	54.0	-25.8

### Low Channel - QuasiPeak

Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
30.388000	H	15.4	23.5	38.90	40.0	-1.1
35.820000	H	12.9	19.6	32.50	40.0	-7.5
37.500000	V	8.3	18.3	26.60	40.0	-13.4
55.608000	H	19.9	9.8	29.70	40.0	-10.3
73.000000	V	9.8	10.8	20.60	40.0	-19.4
108.000000	V	6.1	15.4	21.50	43.5	-22.0
257.098000	H	16.2	17.3	33.50	46.0	-12.5
338.000000	H	11.0	20.3	31.30	46.0	-14.7
608.000000	V	0.6	26.9	27.50	46.0	-18.5
614.000000	H	0.5	27.1	27.60	46.0	-18.4
614.000000	V	0.4	27.1	27.50	46.0	-18.5
960.000000	H	1.3	33.1	34.40	54.0	-19.6
960.000000	V	0.9	33.1	34.00	46.0	-12.0

### Band Edges - QuasiPeak

Frequency (MHz)	Antenna Polarization	Antenna Height (cm)	Azimuth (deg)	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
902.000000	V	100.00	0.00	20.5	11.5	32.00	47.0	-15.0
902.000000	H	100.00	23.00	21.7	11.5	33.20	47.0	-13.8
928.000000	H	100.00	161.00	23.0	11.9	34.90	47.0	-12.1
928.000000	V	100.00	122.00	23.7	11.9	35.60	47.0	-11.4

**Band Edge, Low Channel, Vertical****Band Edge, Low Channel, Horizontal**



Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### Mid Channel - MaxPeak

Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
1826.000000	V	59.8	-5.0	54.80	74.0	-19.2
1826.000000	H	66.7	-5.0	61.70	74.0	-12.3
2739.000000	V	51.6	-4.4	47.20	74.0	-26.8
2739.000000	H	41.3	-4.4	36.90	74.0	-37.1

### Mid Channel - Average

Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
1826.000000	V	49.1	-5.0	44.10	54.0	-9.9
1826.000000	H	56.1	-5.0	51.10	54.0	-2.9
2739.000000	V	39.0	-4.4	34.60	54.0	-19.4
2739.000000	H	27.7	-4.4	23.30	54.0	-30.7

### Mid Channel - QuasiPeak

Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
614.000000	V	-0.4	27.1	26.70	46.0	-19.3
614.000000	H	-0.3	27.1	26.80	46.0	-19.2
960.000000	V	-0.2	33.1	32.90	54.0	-21.1
960.000000	H	-0.3	33.1	32.80	46.0	-13.2



Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### High Channel - MaxPeak

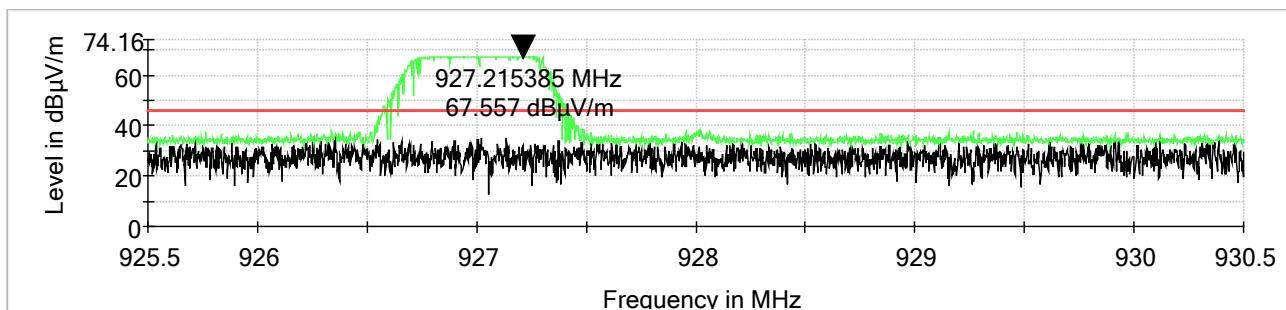
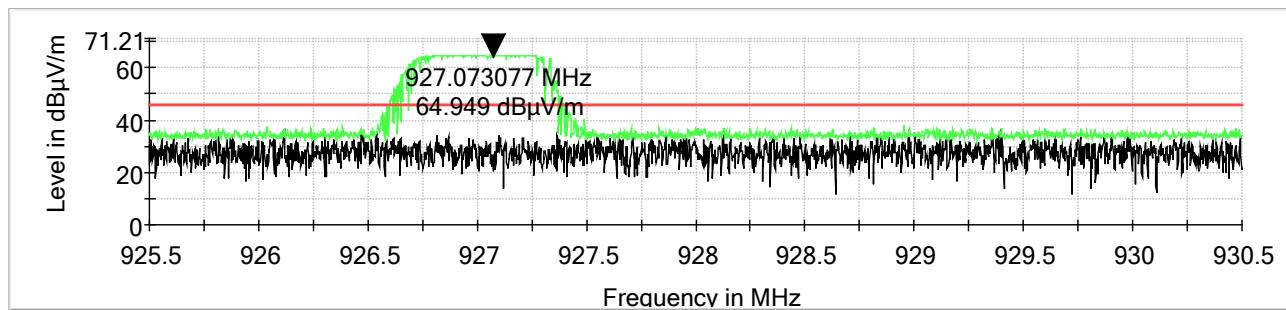
Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
1856.000000	H	47.1	-4.5	42.60	74.0	-31.4
1856.000000	V	47.8	-4.5	43.30	74.0	-30.7
2784.000000	H	51.3	-4.2	47.10	74.0	-26.9
2784.000000	V	45.1	-4.2	40.90	74.0	-33.1

### High Channel - Average

Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
1856.000000	H	35.2	-4.5	30.70	54.0	-23.3
1856.000000	V	36.7	-4.5	32.20	54.0	-21.8
2784.000000	H	38.8	-4.2	34.60	54.0	-19.4
2784.000000	V	31.8	-4.2	27.60	54.0	-26.4

### High Channel - QuasiPeak

Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
37.500000	H	-1.1	18.3	17.20	40.0	-22.8
614.000000	H	-0.5	27.1	26.60	46.0	-19.4
614.000000	V	-0.4	27.1	26.70	46.0	-19.3
960.000000	V	-0.3	33.1	32.80	54.0	-21.2
960.000000	H	-0.2	33.1	32.90	46.0	-13.1

**Band Edge, High Channel, Vertical****Band Edge, High Channel, Horizontal**

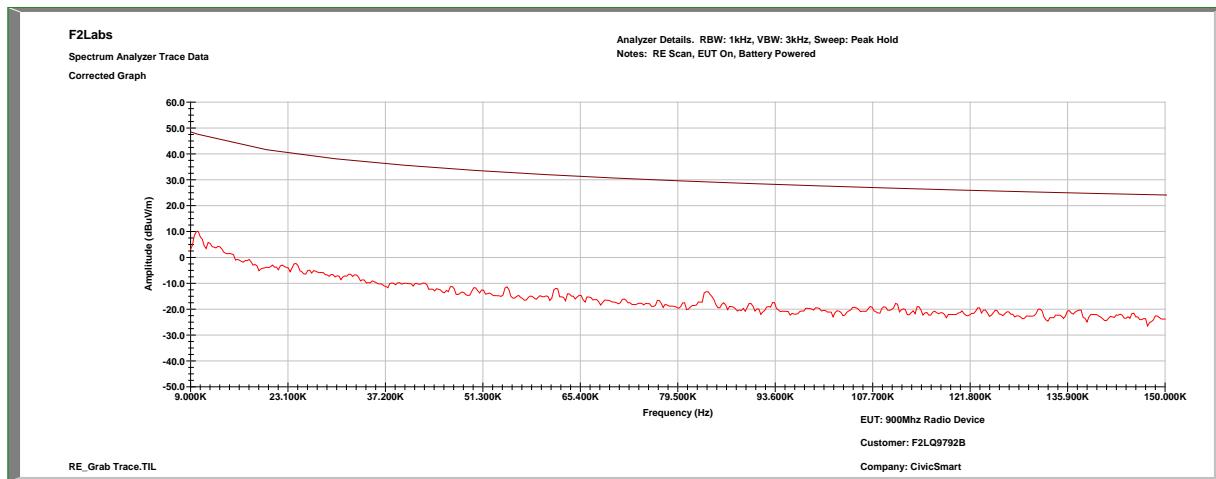


Order Number: F2LQ9792B

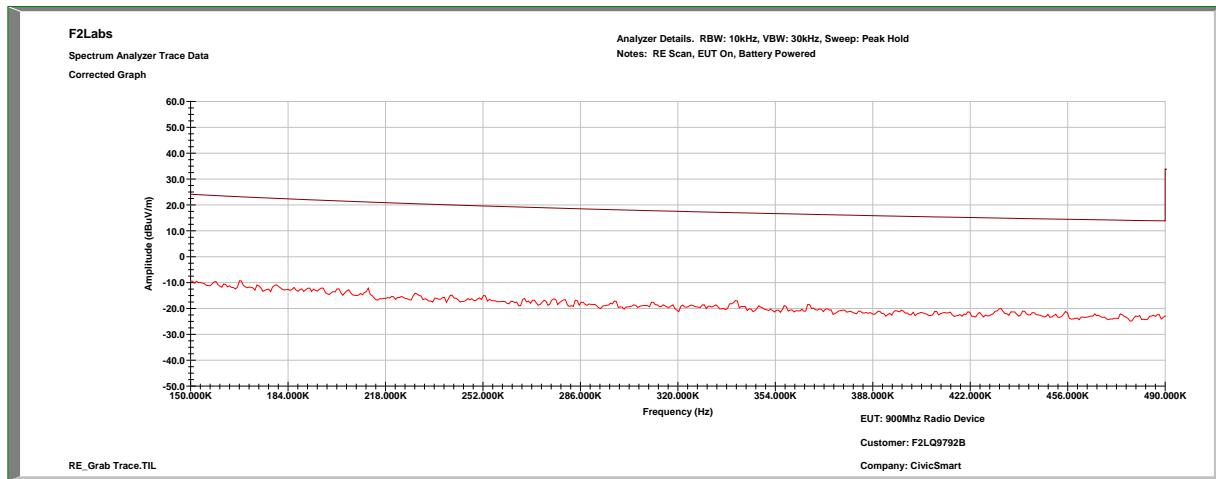
Applicant: Spectrovation.com, LLC

Model: SV R5-N001

## Characterization Scan, 0.009 MHz to 0.15 MHz



## Characterization Scan, 0.15 MHz to 5.0 MHz



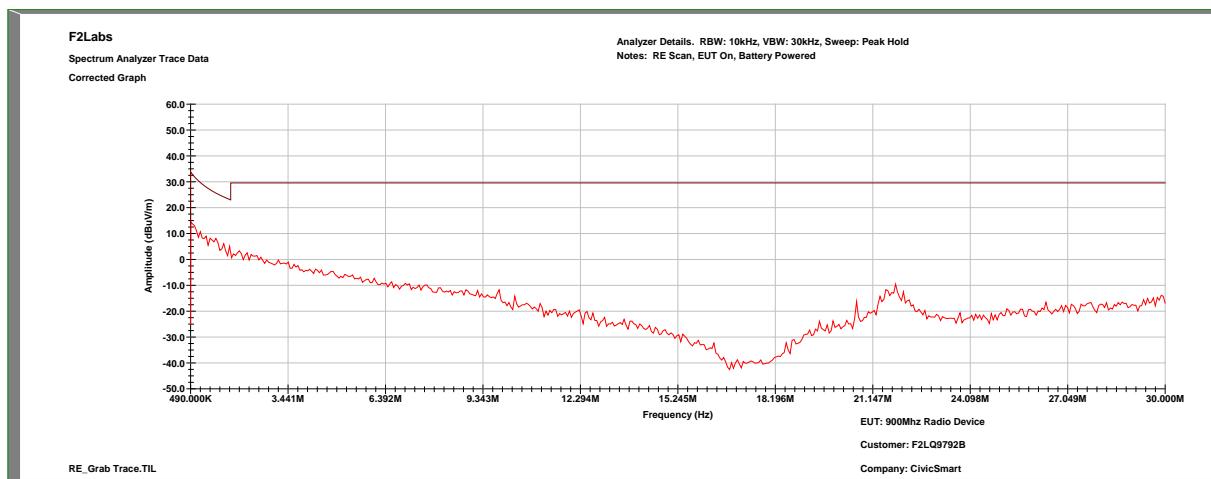


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

## Characterization Scan, 5.0 MHz to 30.0 MHz

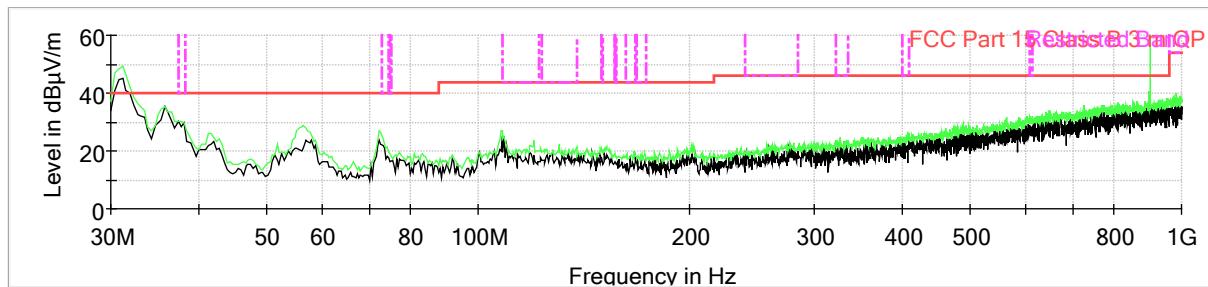
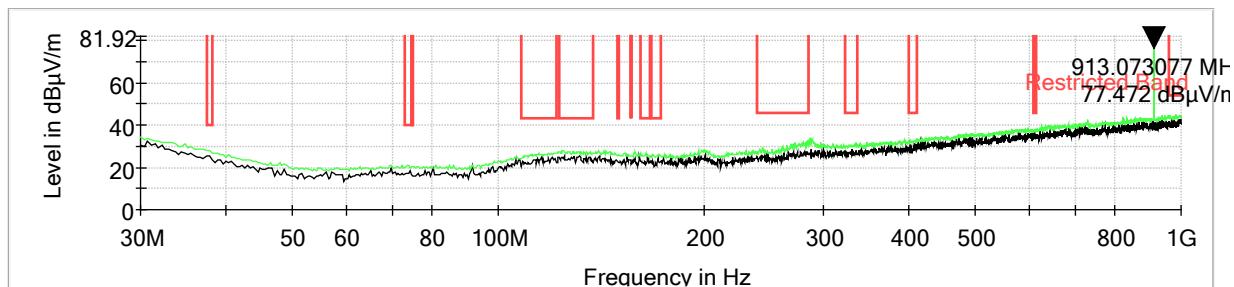


051816

Report Number: F2LQ9792B-01E

Page 46 of 55

Issue Date: Apr. 27, 2018

**Vertical, with Restricted Band****Horizontal, with Restricted Band**

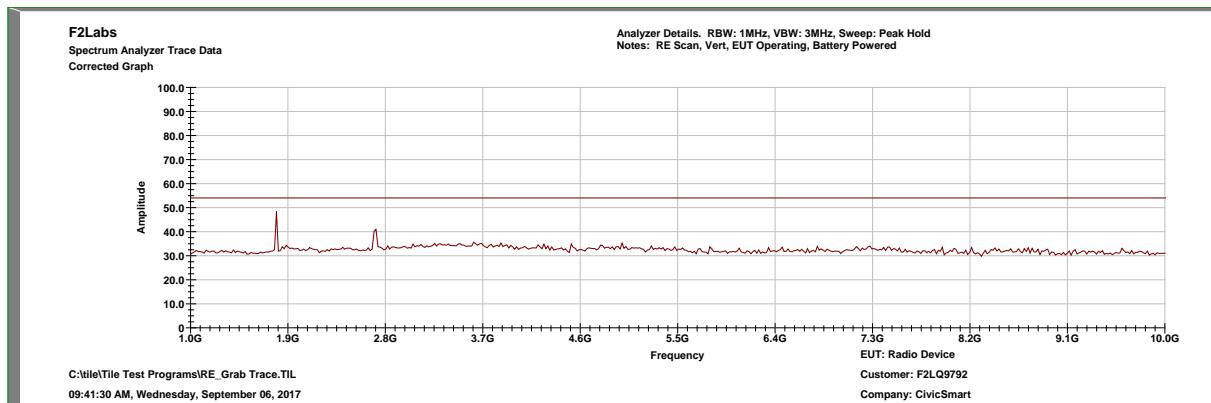


Order Number: F2LQ9792B

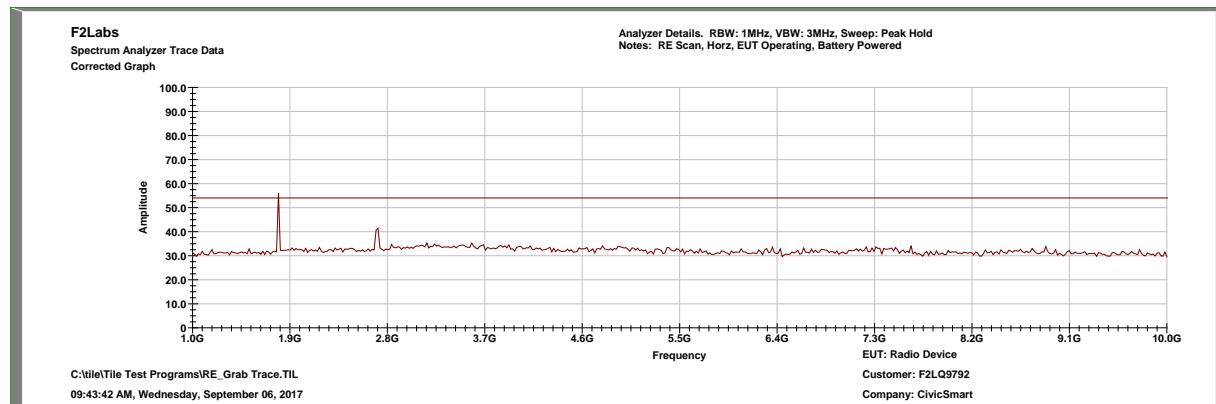
Applicant: Spectrovation.com, LLC

Model: SV R5-N001

## Characterization Scan, 1 GHz to 10.0 GHz, Vertical



## Characterization Scan, 1 GHz to 10.0 GHz, Horizontal





Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

## 11 FCC PART 15.247(e) – PEAK POWER SPECTRAL DENSITY (PSD)

Peak power spectral density measurements were performed.

### 11.1 Requirements:

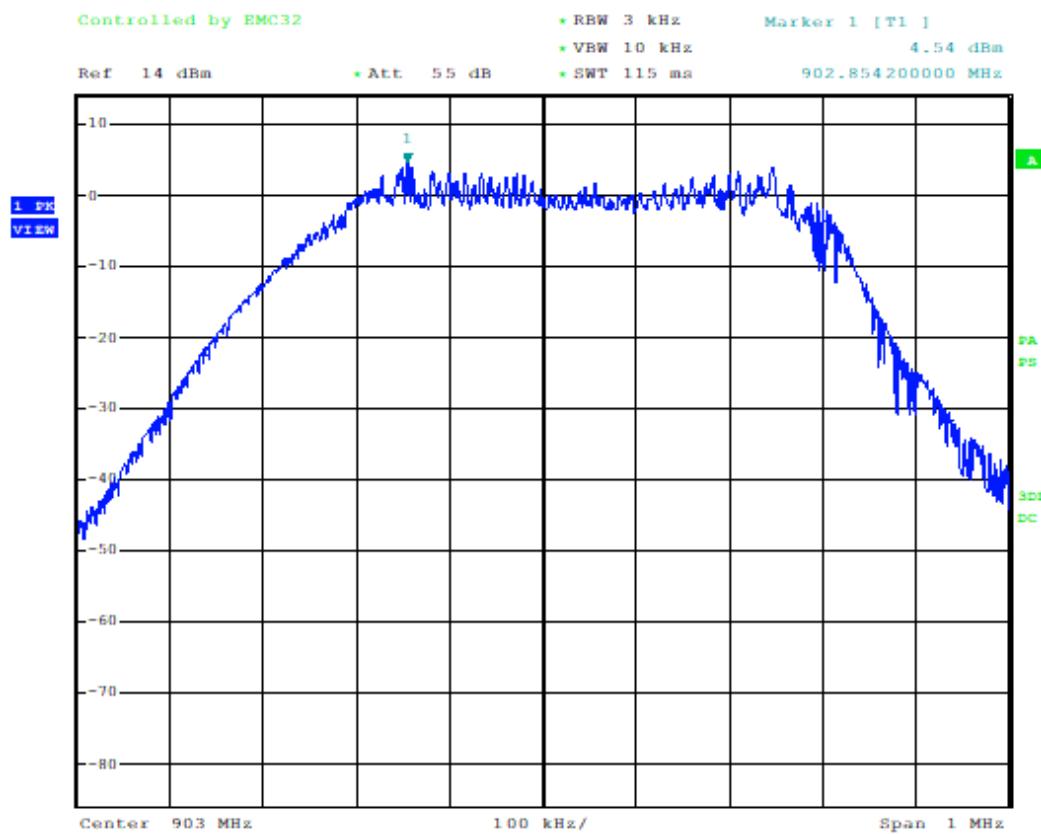
The peak power spectral density shall not exceed +8dBm in any 3 kHz band during any time interval of continuous transmission.

Power spectral density measurements were performed at a resolution bandwidth of 3 kHz (video bandwidth set at 10 KHz). The peak spectral densities were measured at the low, mid and upper channels.

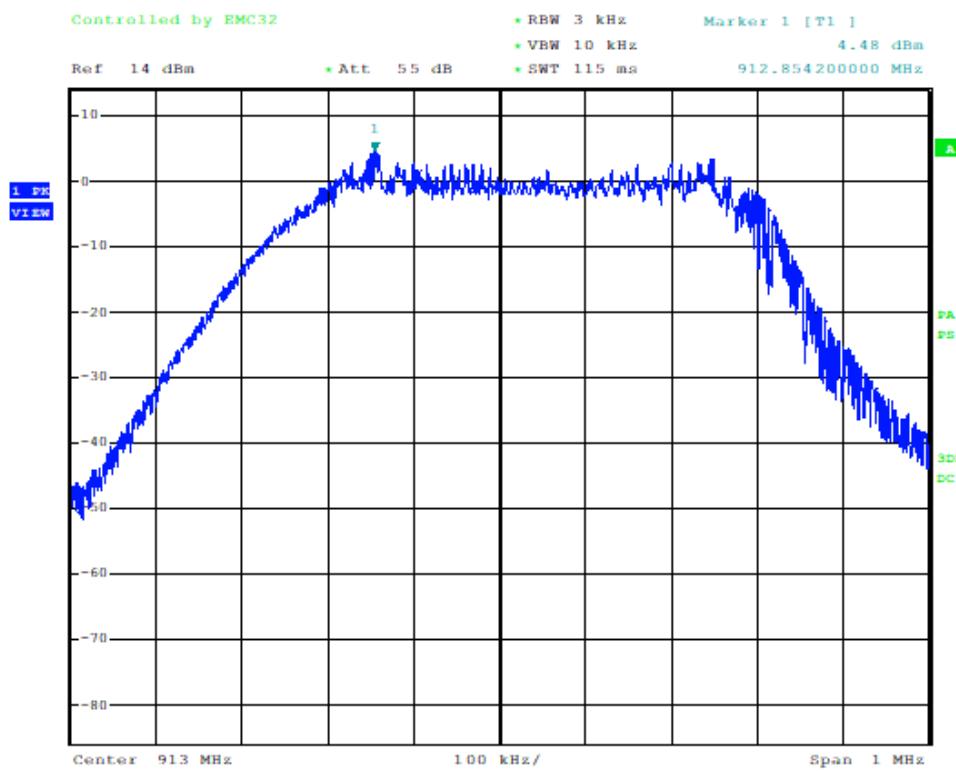
## 11.2 Peak Power Spectral Density Test Data

Test Date(s):	Aug. 31, 2017; Apr. 27, 2018	Test Engineer(s):	J. Knepper; J. Chiller
Standards:	CFR 47 Part 15.247(e); KDB558074	Air Temperature:	21.3°C; 21.6 °C
		Relative Humidity:	47%; 38%

### Low Channel



Date: 27.APR.2018 12:31:38

**Mid Channel**

Date: 27.APR.2018 12:27:27

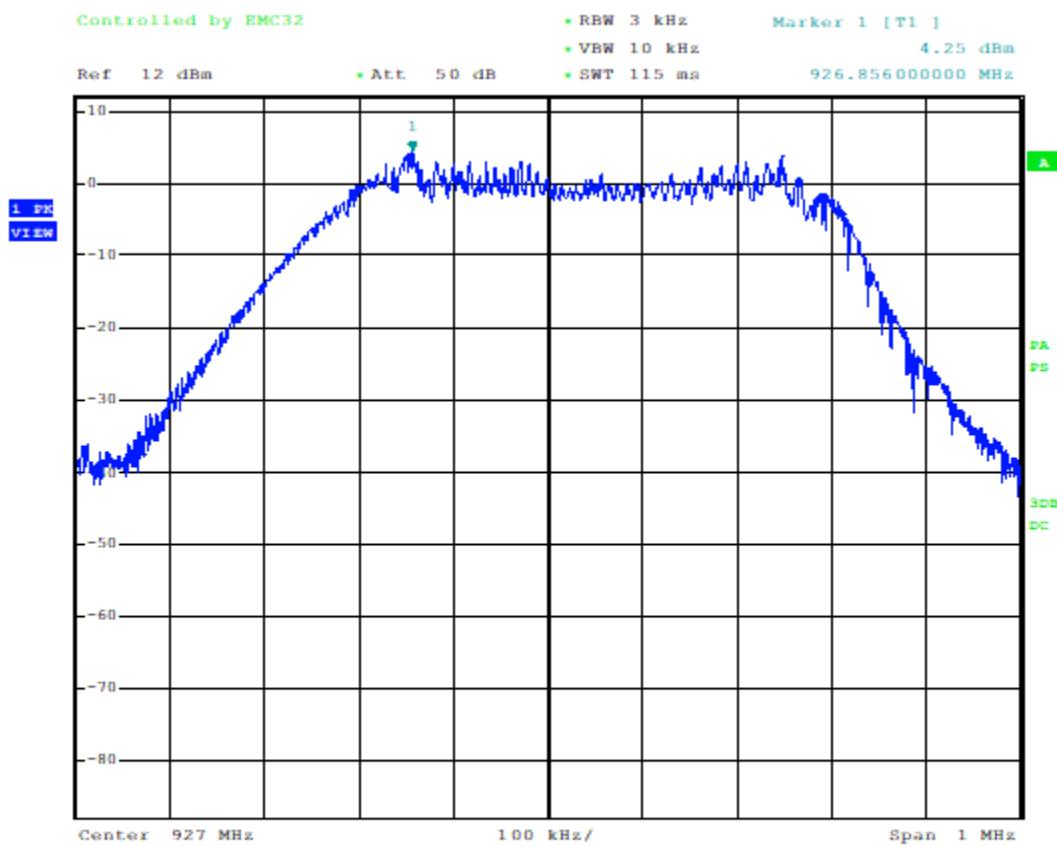


Order Number: F2LQ9792B

Applicant: Spectrovation.com, LLC

Model: SV R5-N001

### High Channel



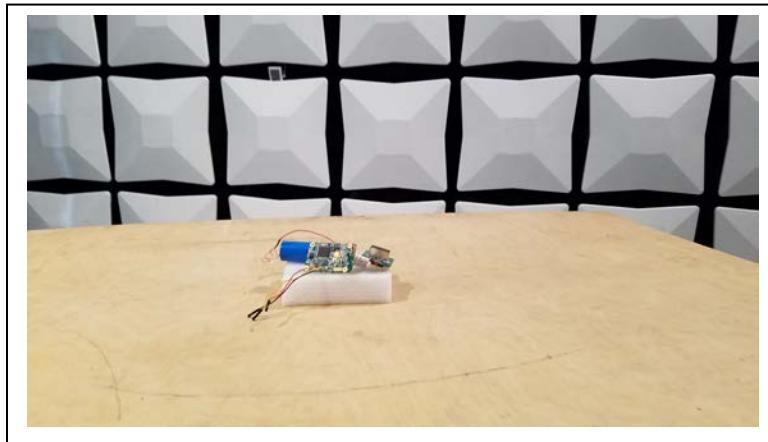
Date: 27.APR.2018 12:38:35

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Report Number: F2LQ9792B-01E

Page 52 of 55

Issue Date: Apr. 27, 2018

**12 PHOTOGRAHPS****Testing Conducted Aug. 31, 2017 to Sept. 6, 2017****Radiated Spurious Emission, Below 1 GHz****Radiated Spurious Emission, Above 1 GHz**

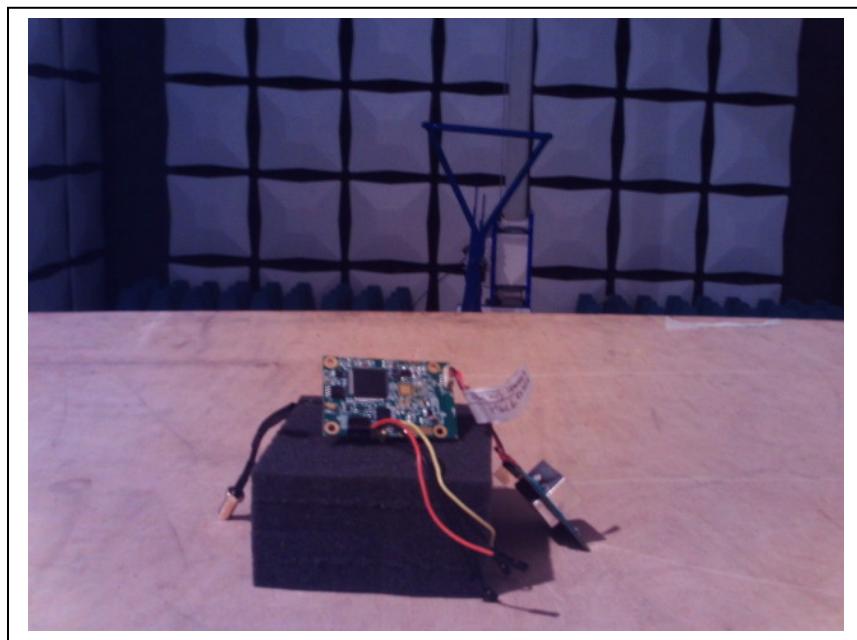
**Testing Conducted Aug. 31, 2017 to Sept. 6, 2017, cont'd**

**Conducted Output Power, Peak Power Spectral Density,  
Occupied Bandwidth, and Conducted Spurious Emissions**



**Testing Conducted Apr. 6-9, 2018**

**Radiated Spurious Emission**



**Conducted Output Power, Peak Power Spectral Density, Occupied Bandwidth, and Conducted Spurious Emissions**

