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Report On

Radio Testing of the
VSP Global
LEVEL1.1 Fitness Tracker

FCC Part 15 Subpart C §15.249

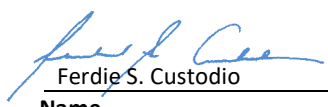
Report No. PK72131031-0917A Rev.1

September 2017



America

TÜV SÜD America Inc., 10040 Mesa Rim Road, San Diego, CA 92121
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REPORT ON	Radio Testing of the VSP Global Fitness Tracker
TEST REPORT NUMBER	PK72131031-0917A Rev.1
PREPARED FOR	VSP Global 3333 Quality Drive Rancho Cordova, CA 95670
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PREPARED BY	 Kathy MacKenzie Name Authorized Signatory Title: EMC/Wireless Test Technician
APPROVED BY	 Ferdie S. Custodio Name Authorized Signatory Title: EMC/ Senior Wireless Test Engineer
DATED	<u>September 18, 2017</u>



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Revision History

PK72131031-0917A Rev.1 VSP Global LEVEL1.1 Fitness Tracker					
DATE	OLD REVISION	NEW REVISION	REASON	PAGES AFFECTED	APPROVED BY
09/18/17	Initial Release				Ferdinand Custodio
10/10/17		Rev.1	Removed photos from Section 1.3.1	8	Ferdinand Custodio



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SECTION 1

REPORT SUMMARY

Radio Testing of the
VSP Global
Fitness Tracker



1.1 INTRODUCTION

The information contained in this report is intended to show verification of the VSP Global Fitness Tracker to the requirements of FCC Part 15 Subpart C §15.249

Objective	To perform Radio Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	VSP Global
Model Number(s)	Minsky, Hedy, Nikola
FCC ID Number	2AMRYLEVEL11
Serial Number(s)	N/A
Number of Samples Tested	3
Test Specification/Issue/Date	FCC Part 15 Subpart C §15.249 (October 1, 2016).
Start of Test	September 5, 2017
Finish of Test	September 6, 2017
Name of Engineer(s)	Kathy MacKenzie
Related Document(s)	None. Supporting documents for EUT certification are separate exhibits.



1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out in accordance with FCC Part 15 Subpart C §15.249 is shown below.

Section	Spec Clause	Test Description	Result	Comments/Base Standard
2.1	§15.207(a)	Conducted Emissions	N/A	
2.2	§15.215(c)	20 dB Bandwidth	Compliant	
2.4	§15.249(a)	Field Strength Limits for Fundamental and Harmonics	Compliant	
2.5	§15.249(d)	Spurious Radiated Emissions	Compliant	

N/A *Not applicable, EUT is battery powered*



1.3 PRODUCT INFORMATION

1.3.1 Technical Description

The Equipment Under Test (EUT) was a VSP Global Minsky, Hedy, Nikola Fitness Tracker. The EUT is a fitness tracker contained in fashion eyewear. The EUT is available in 3 different models which denote different frames but contain the same electronics. For testing purposes the radio board that is installed in the eyewear was tested in standalone configuration. The fashion eyewear is made of plastic and will not affect the results of testing.



1.3.2 EUT General Description

EUT Description	Fitness Tracker
Model Name	LEVEL1.1
Model Number(s)	Minsky, Hedy, Nikola
Rated Voltage	3.7 VDC (Rechargeable Lithium Ion Battery)
Output Power	80.5 dBμV/m @ 3 meters
Frequency Range	2402MHz to 2480 MHz in the 2400 MHz to 2483.5 MHz Band
Number of Operating Frequencies	12
Channels Verified	Low Channel 2402MHz Mid Channel 2440MHz High Channel 2480MHz
Antenna Type (used during evaluation)	Integral (Complies with Part 15.203 requirements)

1.3.3 Antenna Details

Model	2450 MHz Antenna Part No. 2450AT18B100
Manufacturer	Johanson Technology
Antenna Type	2.4GHz Chip Antenna
Antenna Gain	0.5 dBi
EUT Antenna Connector	N/A (surface mount).
Maximum Dimensions	3.2 x 1.6mm

1.4 EUT TEST CONFIGURATION

1.4.1 Test Configuration Description

Test Configurations	Description
Default	Radiated only configuration. EUT transmitting through the integral antenna. The EUT's were programmed at low, medium, and high continuous transmit for radio testing. The EUT was tested at 3.7VDC from a DC power supply.

1.4.2 EUT Exercise Software

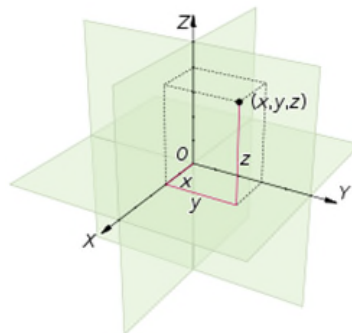
None. No special software was used during evaluation.

1.4.3 Support Equipment and I/O cables

Manufacturer	Equipment/Cable	Description
Protek	DC Power supply	Model: 18020M

1.4.4 Worst Case Configuration

For radiated measurements X, Y and Z orientations were verified. For Z orientation, the EUT was rotated 90° from Y position. Worst case was determined to be the X orientation so verification was performed using X orientation.



Worst case channel used is Mid Channel (2440 MHz). This is based from Peak Output Power test results under Section 2.4 of this test report.

1.4.5 Simplified Test Configuration Diagram

N/A EUT was tested as a stand-alone device.



1.5 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standards or test plan were made during testing.

1.6 MODIFICATION RECORD

Description of Modification	Modification Fitted By	Date Modification Fitted
Serial Number N/A		
N/A		

The table above details modifications made to the EUT during the test programme. The modifications incorporated during each test (if relevant) are recorded on the appropriate test pages.

1.7 TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

For conducted and radiated emissions the equipment under test (EUT) was configured to measure its highest possible emission level. This level was based on the maximized cable configuration from exploratory testing per ANSI C63.10-2013. The test modes were adapted according to the Operating Instructions provided by the manufacturer/client.

1.8 TEST FACILITY LOCATION

1.8.1 TÜV SÜD America Inc. (Mira Mesa)

10040 Mesa Rim Road, San Diego, CA 92121-2912 (32.901268,-117.177681). Phone: 858 678 1400 FAX: 858-546 0364

1.8.2 TÜV SÜD America Inc. (Rancho Bernardo)

16936 Via Del campo, San Diego, CA 92127-1708 (33.018644,-117.092409). Phone: 858 678 1400 Fax: 858 546 0364.



1.9 TEST FACILITY REGISTRATION

1.9.1 FCC – Registration No.: US1146

TUV SUD America Inc. (San Diego), is an accredited test facility with the site description report on file and has met all the requirements specified in §2.948 of the FCC rules. The acceptance letter from the FCC is maintained in our files and the Registration is US1146.

1.9.2 Innovation, Science and Economic Development Canada (ISED) Registration No.: 3067A-1 & 22806-1

The 10m Semi-anechoic chamber of TUV SUD America Inc. (San Diego Rancho Bernardo) has been registered by Certification and Engineering Bureau of Innovation, Science and Economic Development Canada for radio equipment testing with Registration No. 3067A-1.

The 3m Semi-anechoic chamber of TUV SUD America Inc. (San Diego Mira Mesa) has been registered by Certification and Engineering Bureau of Innovation, Science and Economic Development Canada for radio equipment testing with Registration No. 22806-1.



SECTION 2

TEST DETAILS

Radio Testing of the
VSP Global
Fitness Tracker



2.1 CONDUCTED EMISSIONS

2.1.1 Specification Reference

Part 15 Subpart C §15.207(a)

2.1.2 Standard Applicable

An intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5–30	60	50

**Decreases with the logarithm of the frequency.*

2.1.3 Equipment Under Test and Modification State

Not performed. EUT is battery operated only.



2.2 20 dB BANDWIDTH

2.2.1 Specification Reference

Part 15 Subpart C §15.215(c)

2.2.2 Standard Applicable

(c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

2.2.3 Equipment Under Test and Modification State

Serial No: N/A / Default Test Configuration

2.2.4 Date of Test/Initial of test personnel who performed the test

September 6, 2017 / KAM

2.2.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.2.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	25.9 °C
Relative Humidity	54.0 %
ATM Pressure	99.0 kPa

2.2.7 Additional Observations

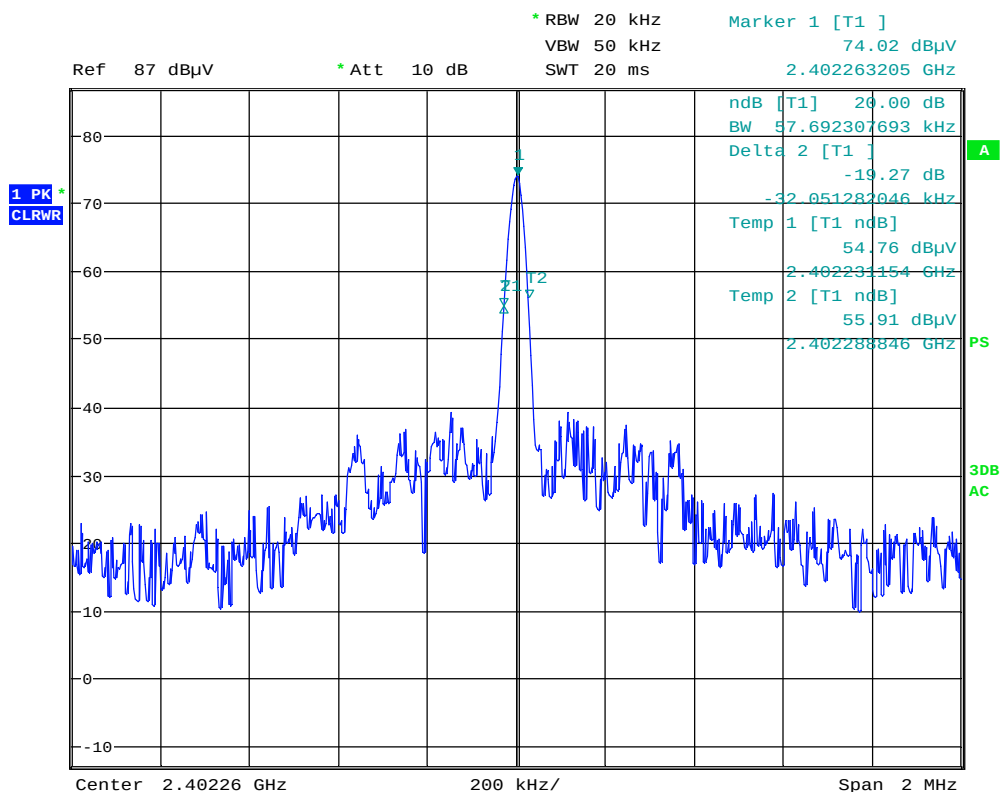
- This is a radiated test.
- “n dB down” marker function of the Spectrum Analyzer used.
- Because of the narrow occupied bandwidth, it was not practical to use the test procedure outlined in ANSI C63.10 so the following procedure was used:
- Span is wide enough to capture the channel transmission.
- RBW is 1% of the span, VBW is 3X RBW.
- Sweep is auto.
- Detector is peak.

2.2.8 Test Results

Low Channel (2402 MHz)	Mid Channel (2440MHz)	High Channel (2480MHz)
57.69 kHz	57.69 kHz	57.69 kHz

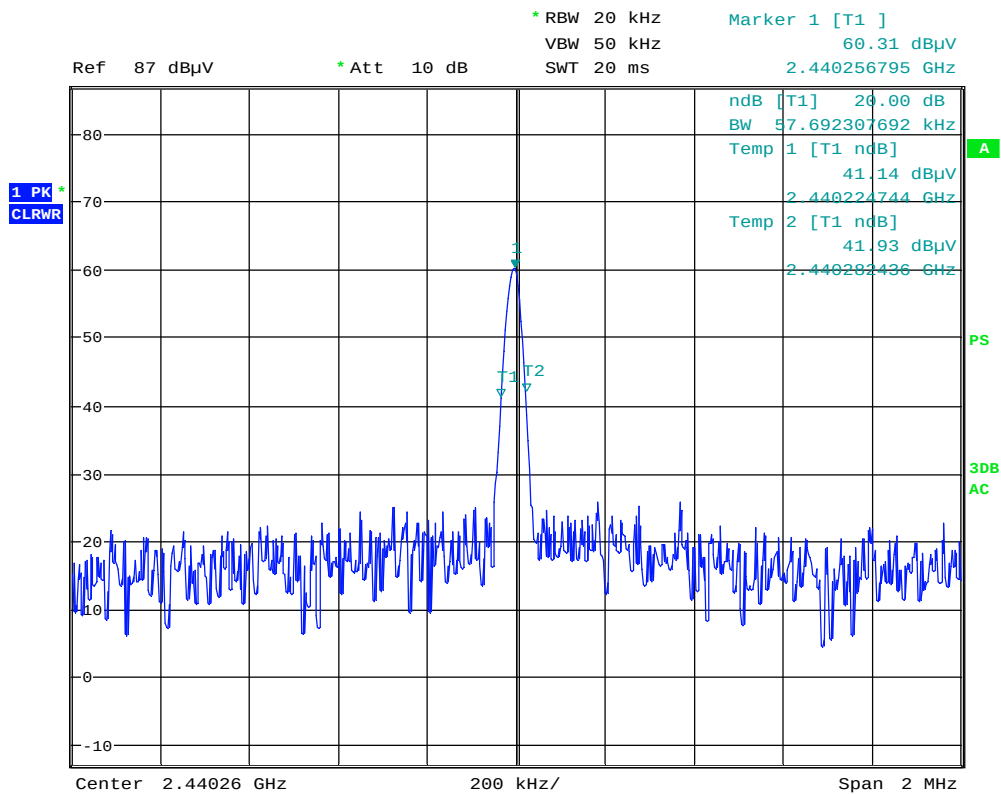
2402.00 MHz – (20dB BW/2) = 2401.971MHz (within the frequency band - **Compliant**)

2480.00MHz + (20dB BW/2) = 2480.028MHz (within the frequency band - **Compliant**)



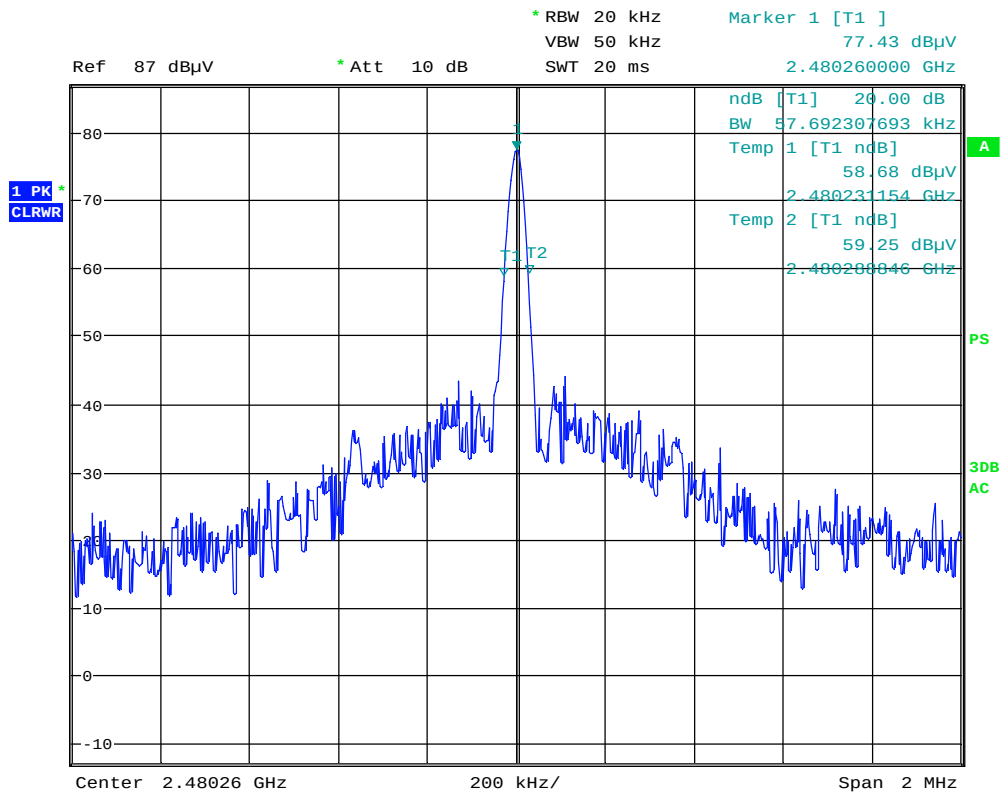
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Low Channel



Date: 6.SEP.2017 12:48:00

Mid Channel



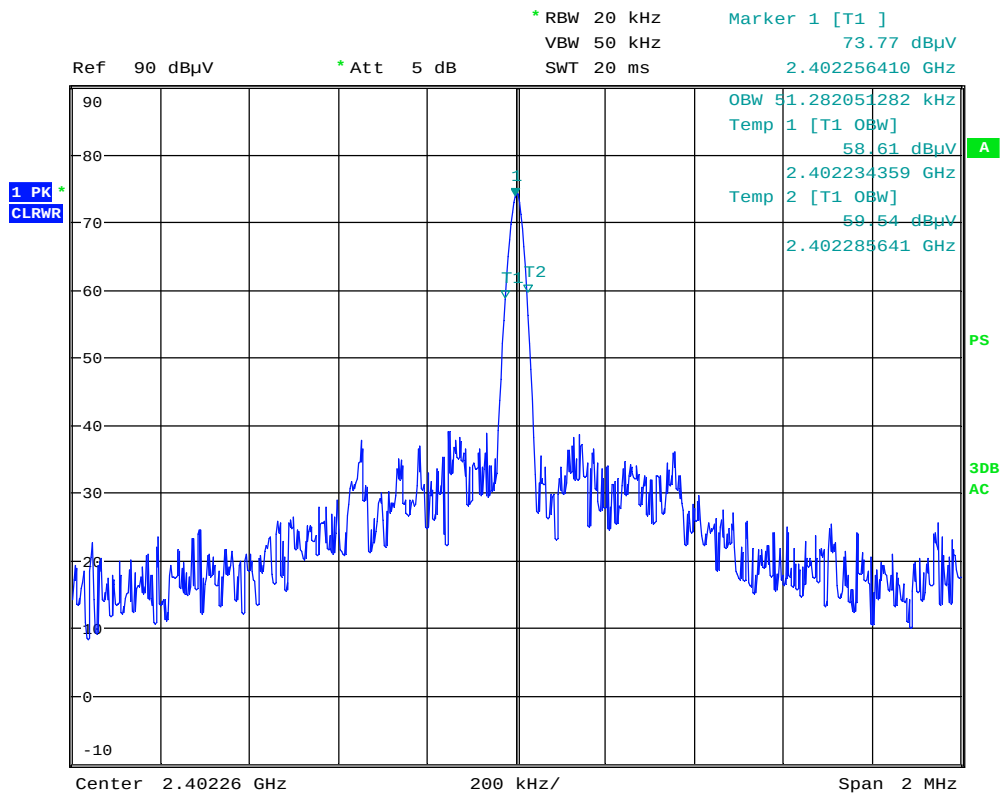
Date: 6.SEP.2017 14:11:12

High Channel

2.2.9 99% EMISSION bandwidth

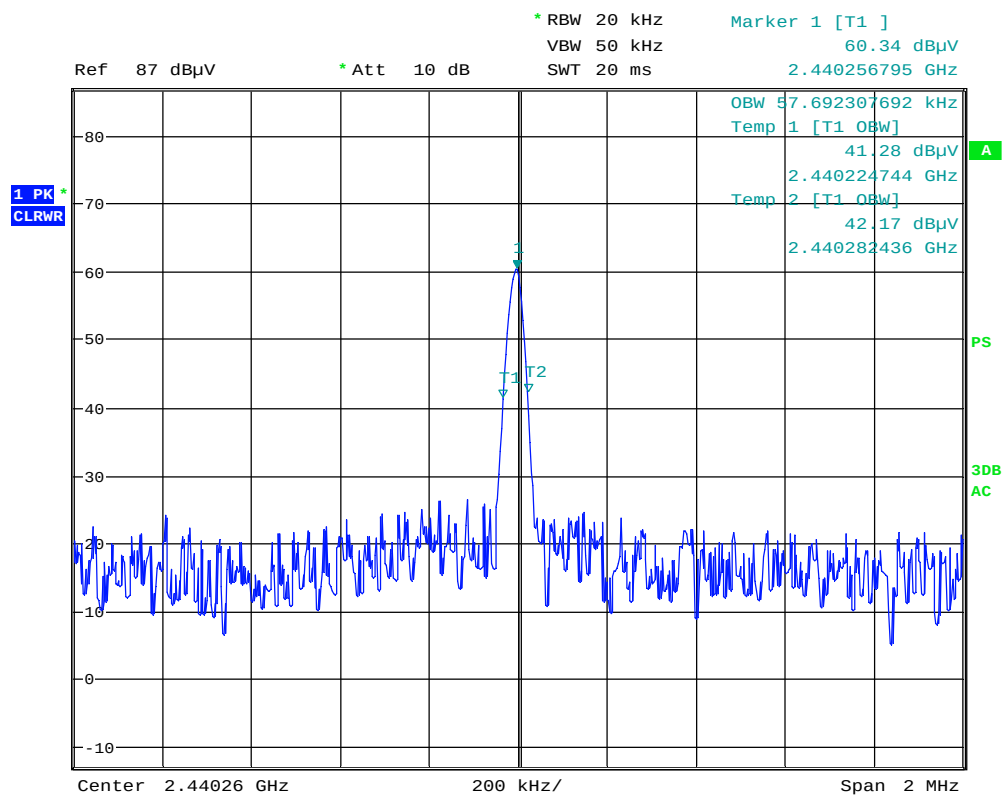
2.2.10 Test Results

Low Channel (2402 MHz)	Mid Channel (2440MHz)	High Channel (2480MHz)
51.28 kHz	57.69 kHz	51.28 kHz



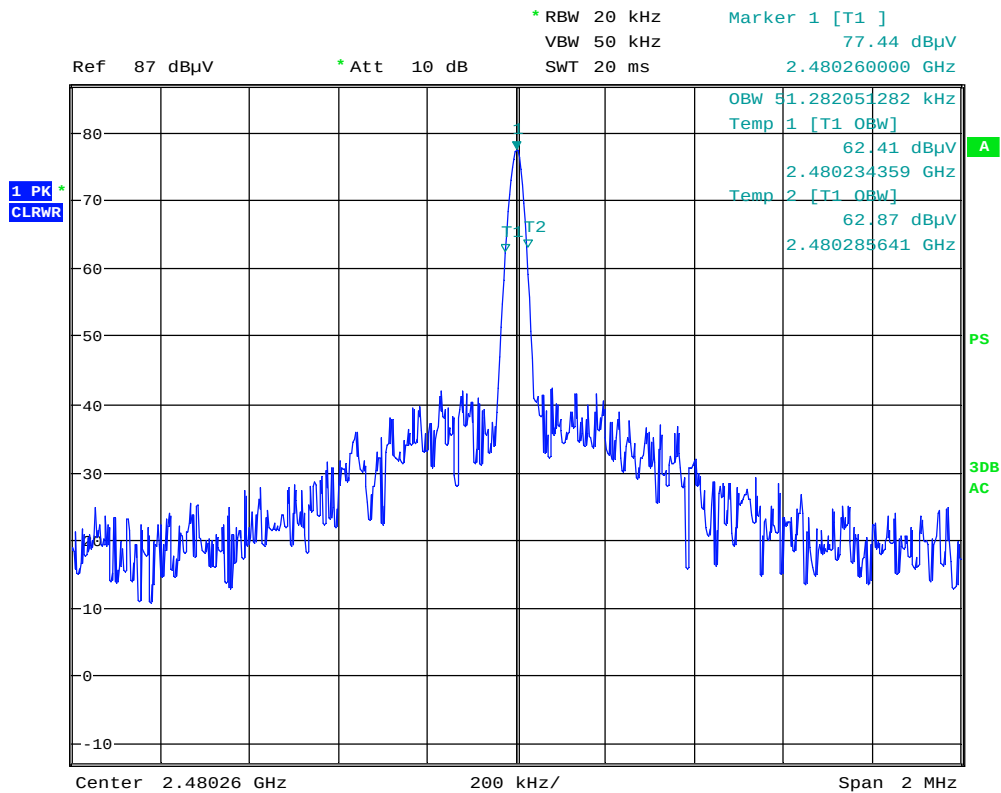
Date: 6.SEP.2017 10:33:15

Low Channel



Date: 6.SEP.2017 12:44:21

Mid Channel



Date: 6.SEP.2017 14:09:51

High Channel



2.3 FIELD STRENGTH LIMITS FOR FUNDAMENTAL AND HARMONICS

2.3.1 Specification Reference

Part 15 Subpart C §15.249(a)

2.3.2 Standard Applicable

(a) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

2.3.3 Equipment Under Test and Modification State

Serial No: N/A / Default Test Configuration

2.3.4 Date of Test/Initial of test personnel who performed the test

September 6, 2017 / KAM

2.3.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.3.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	25.9 °C
Relative Humidity	54.0 %
ATM Pressure	99.0 kPa

2.3.7 Additional Observations

- This is a radiated test. The spectrum was searched from 1GHz to the 10th harmonic (25GHz).
- There are no emissions observed above 10GHz.
- EUT is transmitting at 100 % duty cycle

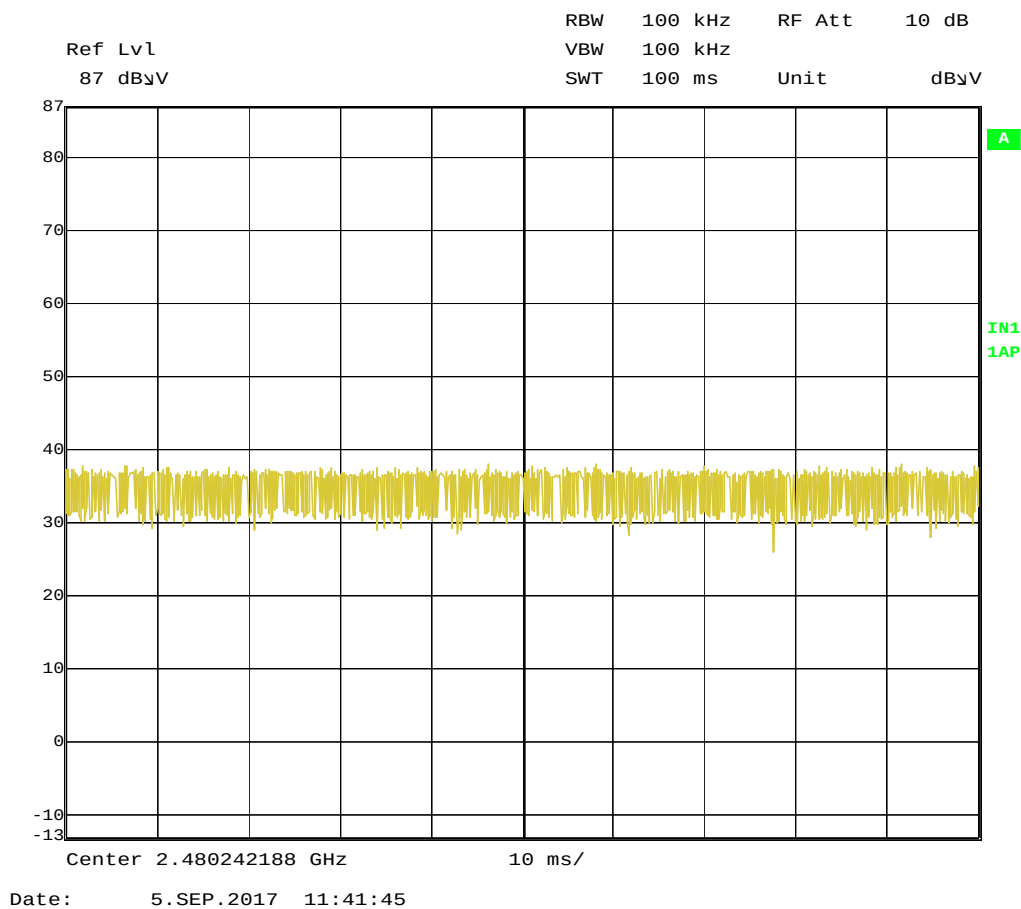


- Measurement was done using EMC32 V8.53 automated software. Reported level is the actual level with all the correction factors factored in. Correction Factor column is for informational purposes only. See Section 2.3.8 for sample computation.

2.3.8 Sample Computation (Radiated Emission)

Measuring equipment raw measurement (dBμV) @ 2400 MHz			58.4
Correction Factor (dB)	Asset# 1153 (cable)	3.3	-4.8
	Asset# 8628 (preamplifier)	-36.4	
	Asset# 6669 (antenna)	28.3	
Reported Peak Final Measurement (dBμV/m) @ 2400 MHz			53.6

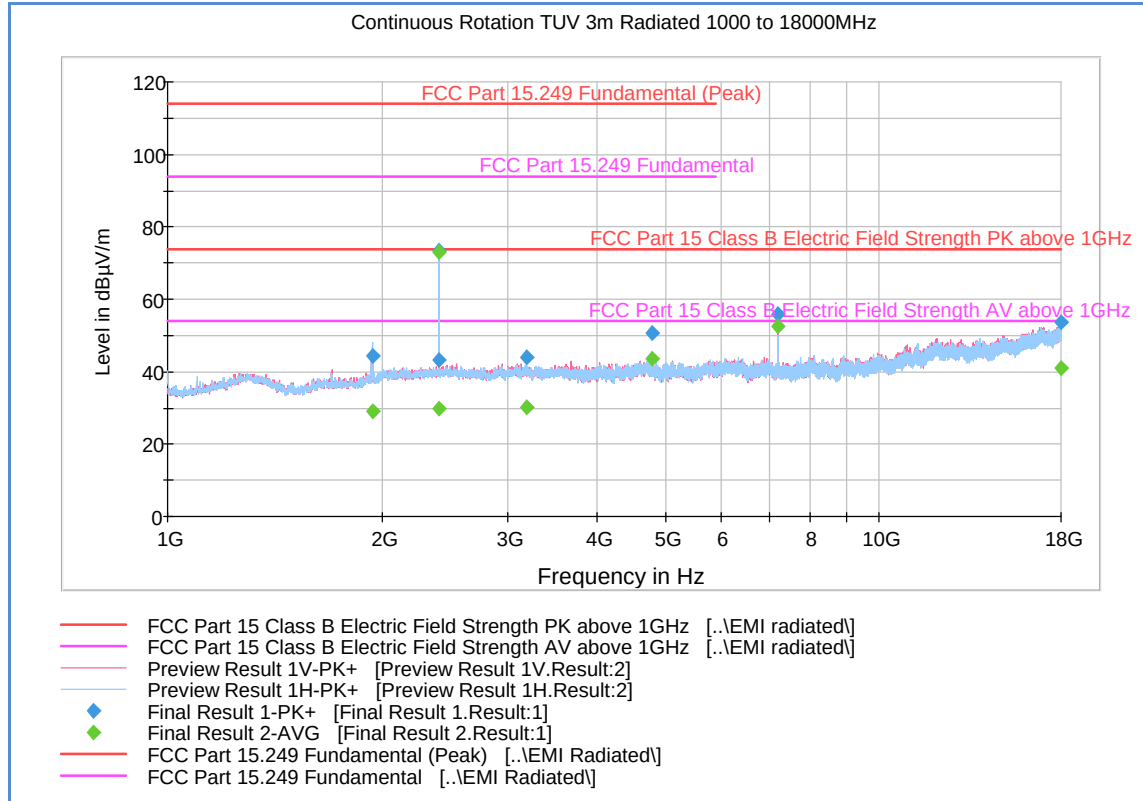
2.3.9 Duty Cycle



2.3.10 Test Results

See attached plots.

2.3.11 Test Results for Low Channel (Fundamental, Harmonics, Lower Band Edge and above 1GHz Spurious Emissions)



Peak Data

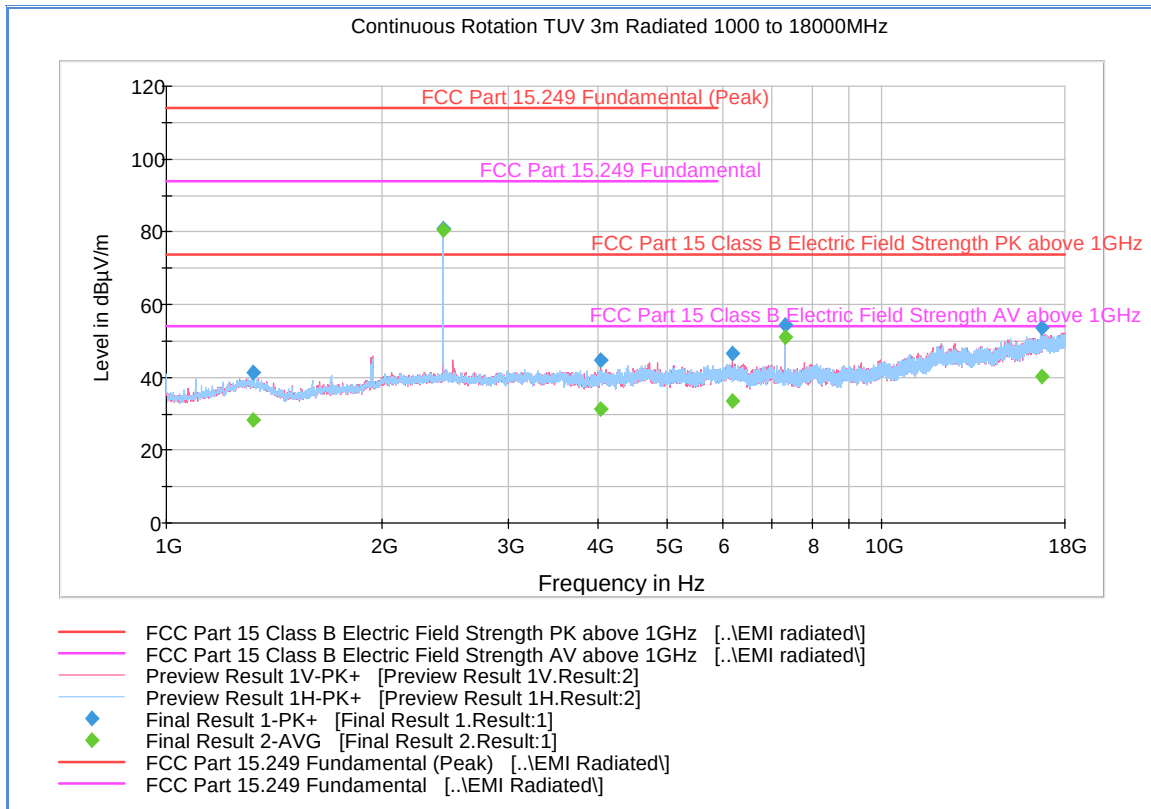
Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1939.40000	44.2	1000.0	1000.000	350.1	V	133.0	-2.3	29.7	73.9
2400.00000	43.2	1000.0	1000.000	136.4	V	-19.0	-1.0	30.7	73.9
2402.13333	73.5	1000.0	1000.000	222.3	H	220.0	-1.0	40.5	114.0
3190.70000	43.9	1000.0	1000.000	292.2	H	238.0	1.0	30.0	73.9
4804.40000	50.6	1000.0	1000.000	302.2	H	155.0	4.1	23.3	73.9
7206.90000	55.8	1000.0	1000.000	384.1	V	284.0	7.6	18.1	73.9
17966.8000	53.5	1000.0	1000.000	390.0	V	211.0	23.3	20.4	73.9

Average Data

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1939.40000	29.2	1000.0	1000.000	350.1	V	133.0	-2.3	24.7	53.9
2400.00000	29.8	1000.0	1000.000	136.4	V	-19.0	-1.0	24.1	53.9
2402.13333	73.2	1000.0	1000.000	222.3	H	220.0	-1.0	20.8	94.0
3190.70000	30.3	1000.0	1000.000	292.2	H	238.0	1.0	23.6	53.9
4804.40000	43.5	1000.0	1000.000	302.2	H	155.0	4.1	10.4	53.9
7206.90000	52.6	1000.0	1000.000	384.1	V	284.0	7.6	1.3	53.9
17966.8000	40.8	1000.0	1000.000	390.0	V	211.0	23.3	13.1	53.9



2.3.12 Test Results for Mid Channel (Fundamental, Harmonics and above 1GHz Spurious Emissions)



Peak Data

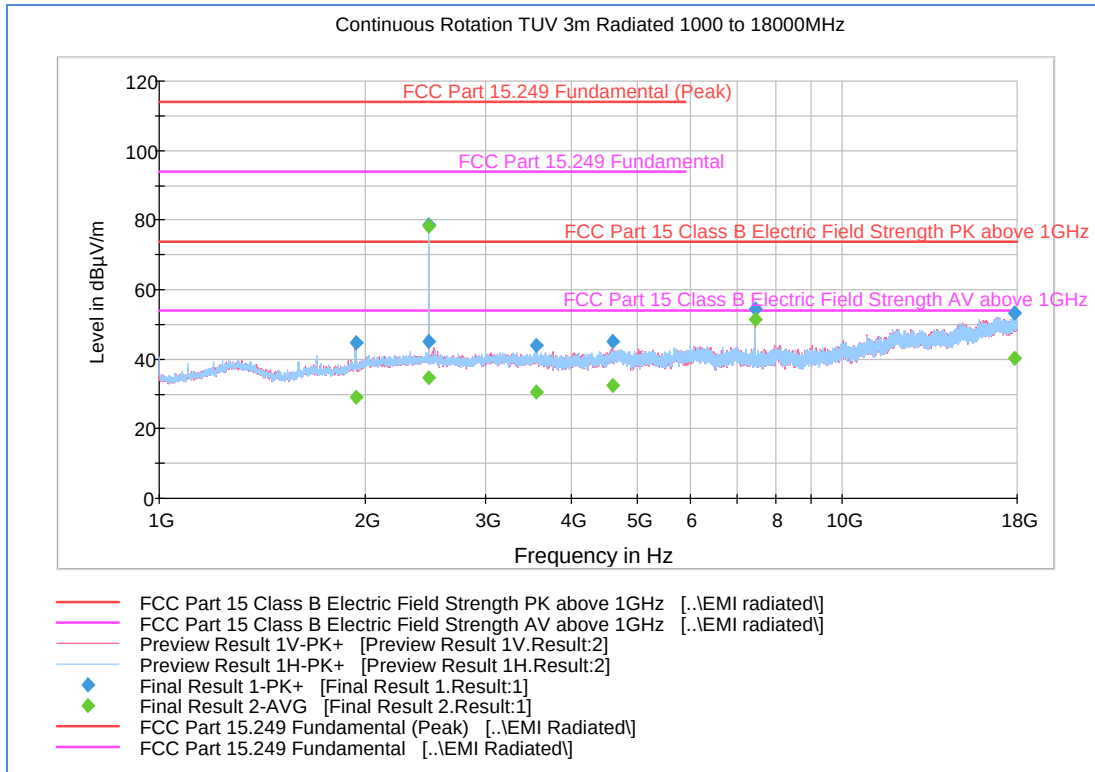
Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1319.96666	41.5	1000.0	1000.000	289.1	V	29.0	-5.0	32.4	73.9
2440.10000	80.7	1000.0	1000.000	100.4	H	185.0	-0.5	33.3	114.0
4045.26666	44.5	1000.0	1000.000	380.0	V	204.0	3.1	29.4	73.9
6175.56666	46.5	1000.0	1000.000	245.2	V	-1.0	7.2	27.4	73.9
7320.80000	54.5	1000.0	1000.000	379.0	V	171.0	7.4	19.4	73.9
16740.5000	53.6	1000.0	1000.000	179.3	V	141.0	22.7	20.3	73.9

Average Data

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1319.96666	28.4	1000.0	1000.000	289.1	V	29.0	-5.0	25.5	53.9
2440.10000	80.5	1000.0	1000.000	100.4	H	185.0	-0.5	13.5	94.0
4045.26666	31.2	1000.0	1000.000	380.0	V	204.0	3.1	22.7	53.9
6175.56666	33.4	1000.0	1000.000	245.2	V	-1.0	7.2	20.5	53.9
7320.80000	51.1	1000.0	1000.000	379.0	V	171.0	7.4	2.8	53.9
16740.5000	40.4	1000.0	1000.000	179.3	V	141.0	22.7	13.5	53.9



2.3.13 Test Results for High Channel (Fundamental, Harmonics, Upper Band Edge and above 1GHz Spurious Emissions)



Peak Data

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1944.30000	44.8	1000.0	1000.000	368.0	V	306.0	-2.2	29.1	73.9
2480.33333	78.5	1000.0	1000.000	175.3	H	148.0	-0.2	35.5	114.0
2483.50000	45.2	1000.0	1000.000	101.4	H	174.0	-0.2	28.7	73.9
3559.20000	44.1	1000.0	1000.000	200.5	H	95.0	1.7	29.8	73.9
4606.30000	45.2	1000.0	1000.000	406.7	V	326.0	3.6	28.7	73.9
7440.93333	54.5	1000.0	1000.000	333.1	V	186.0	7.6	19.4	73.9
17820.5666	53.3	1000.0	1000.000	206.3	H	310.0	23.1	20.6	73.9

Average Data

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1944.30000	29.2	1000.0	1000.000	368.0	V	306.0	-2.2	24.7	53.9
2480.33333	78.3	1000.0	1000.000	175.3	H	148.0	-0.2	15.7	94.0
2483.50000	34.6	1000.0	1000.000	101.4	H	174.0	-0.2	19.3	53.9
3559.20000	30.6	1000.0	1000.000	200.5	H	95.0	1.7	23.3	53.9
4606.30000	32.2	1000.0	1000.000	406.7	V	326.0	3.6	21.7	53.9
7440.93333	51.2	1000.0	1000.000	333.1	V	186.0	7.6	2.7	53.9
17820.5666	40.4	1000.0	1000.000	206.3	H	310.0	23.1	13.5	53.9



2.4 SPURIOUS RADIATED EMISSIONS

2.4.1 Specification Reference

Part 15 Subpart C §15.249(d) and §15.209

2.4.2 Standard Applicable

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

Radiated Emissions Field Strength Limits at 3 Meters (Section 15.209)

Frequency in MHz	EIRP at 3 meter in dBμV/m
0.009 to 0.490	128.5 to 93.8
0.490 to 1.705	73.8 to 63
1.705 - 30	69.5
30 - 88	40
88 - 216	43.5
216 - 960	46

2.4.3 Equipment Under Test and Modification State

Serial No: N/A / Default Test Configuration

2.4.4 Date of Test/Initial of test personnel who performed the test

September 7, 2017 / KAM

2.4.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.4.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	25.9 °C
Relative Humidity	54.0 %
ATM Pressure	99.0 kPa



2.4.7 Additional Observations

- This is a radiated test. The spectrum was searched from 9kHz to the 10th harmonic (25GHz). There are no significant emissions observed beyond 18GHz.
- No significant emission difference between the three channels observed below 1GHz. Data presented is from worst configuration based from fundamental/harmonics verification ("X" axis configuration).
- Above 1GHz measurement results are identical to test results presented under Section 2.3.11 up to Section 2.3.13 of this test report. No other significant spurious emissions observed other than harmonics of the fundamental frequency.
- Measurement was done using EMC32 V8.53 automated software. Reported level is the actual level with all the correction factors factored in. Correction Factor column is for informational purposes only. See Section 2.4.8 for sample computation.

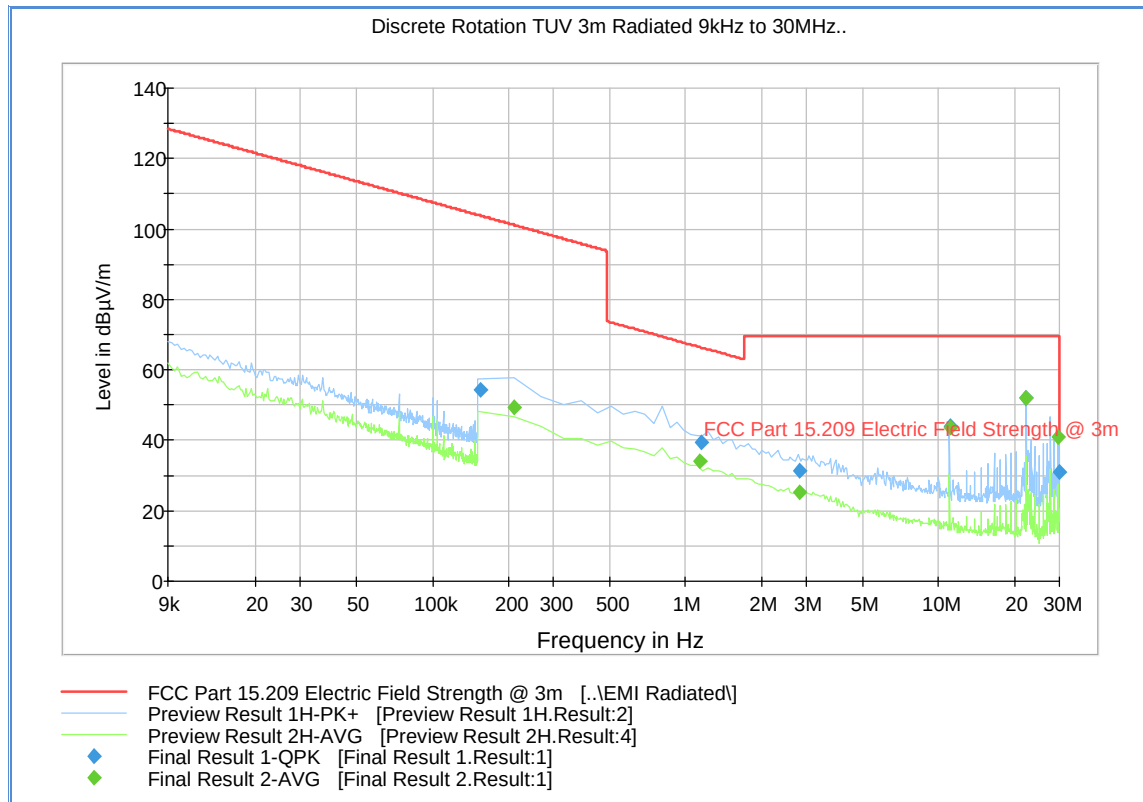
2.4.8 Sample Computation (Radiated Emission)

Measuring equipment raw measurement (dbμV) @ 30 MHz			24.4
Correction Factor (dB)	Asset# 1066 (cable)	0.3	-12.6
	Asset# 1172 (cable)	0.3	
	Asset# 1016 (preamplifier)	-30.7	
	Asset# 1175(cable)	0.3	
	Asset# 1002 (antenna)	17.2	
Reported QuasiPeak Final Measurement (dbμV/m) @ 30MHz			11.8

2.4.9 Test Results

See attached plots.

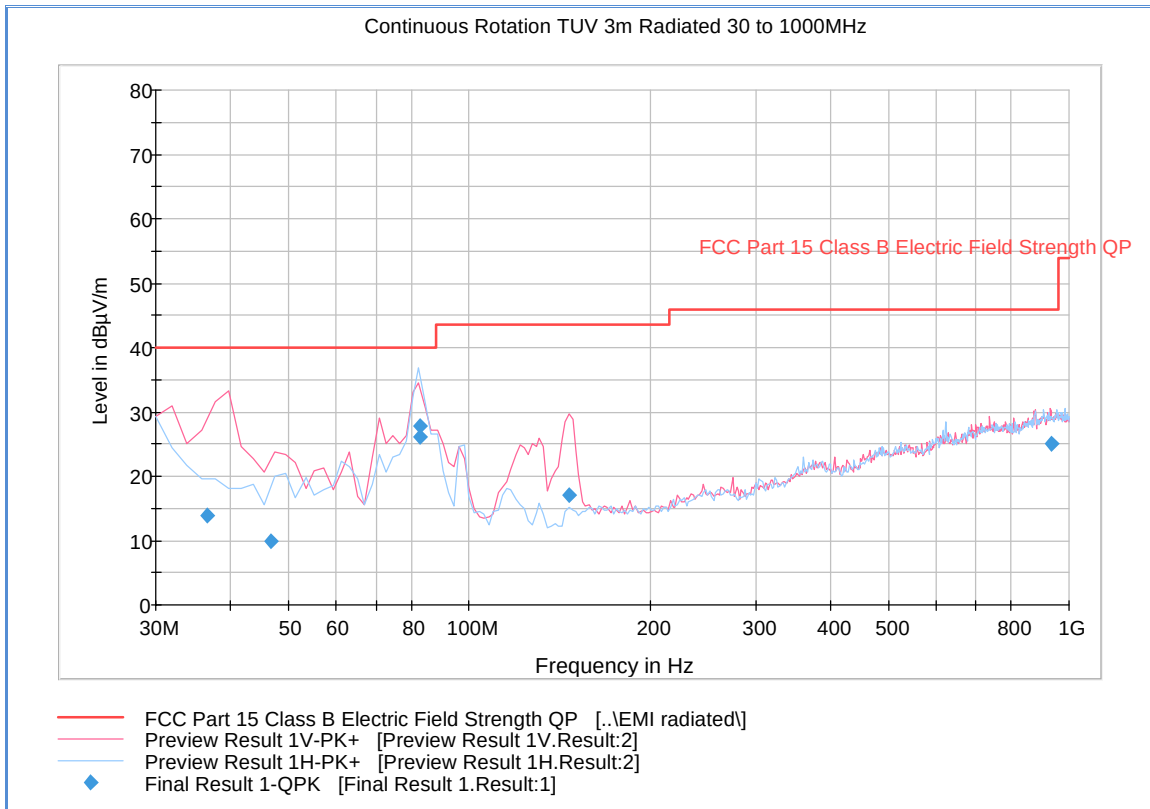
2.4.10 Test Results Below 1GHz (Mid Channel – Worst Case Configuration)



Quasi Peak Data

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
0.154000	54.4	1500.0	9.000	100.0	H	145.0	14.2	49.4	103.9
1.147754	39.4	1500.0	9.000	100.0	H	175.0	14.8	27.0	66.4
2.811064	31.4	1500.0	9.000	100.0	H	72.0	15.0	38.2	69.5
11.058174	43.9	1500.0	9.000	100.0	H	195.0	15.8	25.7	69.5
22.120627	52.0	1500.0	9.000	100.0	H	35.0	15.4	17.5	69.5
29.953000	30.8	1500.0	9.000	100.0	H	171.0	14.5	38.7	69.5

2.4.11 Test Results Below 1GHz (Mid Channel – Worst Case Configuration)



Quasi Peak Data

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
36.599439	13.8	1000.0	120.000	100.0	V	112.0	-10.6	26.2	40.0
46.694990	9.9	1000.0	120.000	100.0	V	287.0	-13.9	30.1	40.0
82.684970	26.2	1000.0	120.000	200.0	H	15.0	-17.0	13.8	40.0
82.772745	27.8	1000.0	120.000	150.0	V	19.0	-17.0	12.2	40.0
146.393267	17.1	1000.0	120.000	109.0	V	305.0	-14.4	26.4	43.5
932.483928	25.1	1000.0	120.000	325.0	V	307.0	6.1	20.9	46.0



SECTION 3

TEST EQUIPMENT USED



3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

ID Number (SDGE/SDRB)	Test Equipment	Type	Serial Number	Manufacturer	Cal Date	Cal Due Date
Radiated Test Setup						
1033	Bilog Antenna	3142C	00044556	EMCO	10/11/16	10/11/18
7575	Double-ridged waveguide horn antenna	3117	00155511	EMCO	06/01/17	06/01/18
8628	Pre-amplifier	QLJ 01182835-JO	8986002	QuinStar Technologies Inc.	02/09/17	02/09/18
1054	Horn antenna (18-40 GHz)	3116	9407-2233	EMCO	12/22/2015	12/22/2017
1040	EMI Test Receiver	ESIB40	100292	Rhode & Schwarz	10/07/16	10/07/17
1049	EMI Test Receiver	ESU	100133	Rhode & Schwarz	07/13/17	07/13/18
1016	Pre-amplifier	PAM-0202	187	PAM	02/09/17	02/09/18
Miscellaneous						
6708	Multimeter	34401A	US36086974	Hewlett Packard	07/05/17	07/05/18
7560	Barometer/Temperature /Humidity Transmitter	iBTHX-W	1240476	Omega	01/17/17	01/17/18
	Test Software	EMC32	V8.53	Rhode & Schwarz	N/A	

3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:

3.2.1 Radiated Emission Measurements (Below 1GHz)

Contribution		Probability Distribution Type	Probability Distribution x_i	Standard Uncertainty $u(x_i)$	$[u(x_i)]^2$
1	Receiver/Spectrum Analyzer	Rectangular	0.45	0.26	0.07
2	Cables	Rectangular	0.50	0.29	0.08
3	Preamp	Rectangular	0.50	0.29	0.08
4	Antenna	Rectangular	0.75	0.43	0.19
5	Site	Rectangular	3.52	1.44	2.07
6	EUT Setup	Rectangular	1.00	0.58	0.33
Combined Uncertainty (u_c):					1.68
Coverage Factor (k):					2
Expanded Uncertainty:					3.36

3.2.2 Radiated Emission Measurements (Above 1GHz)

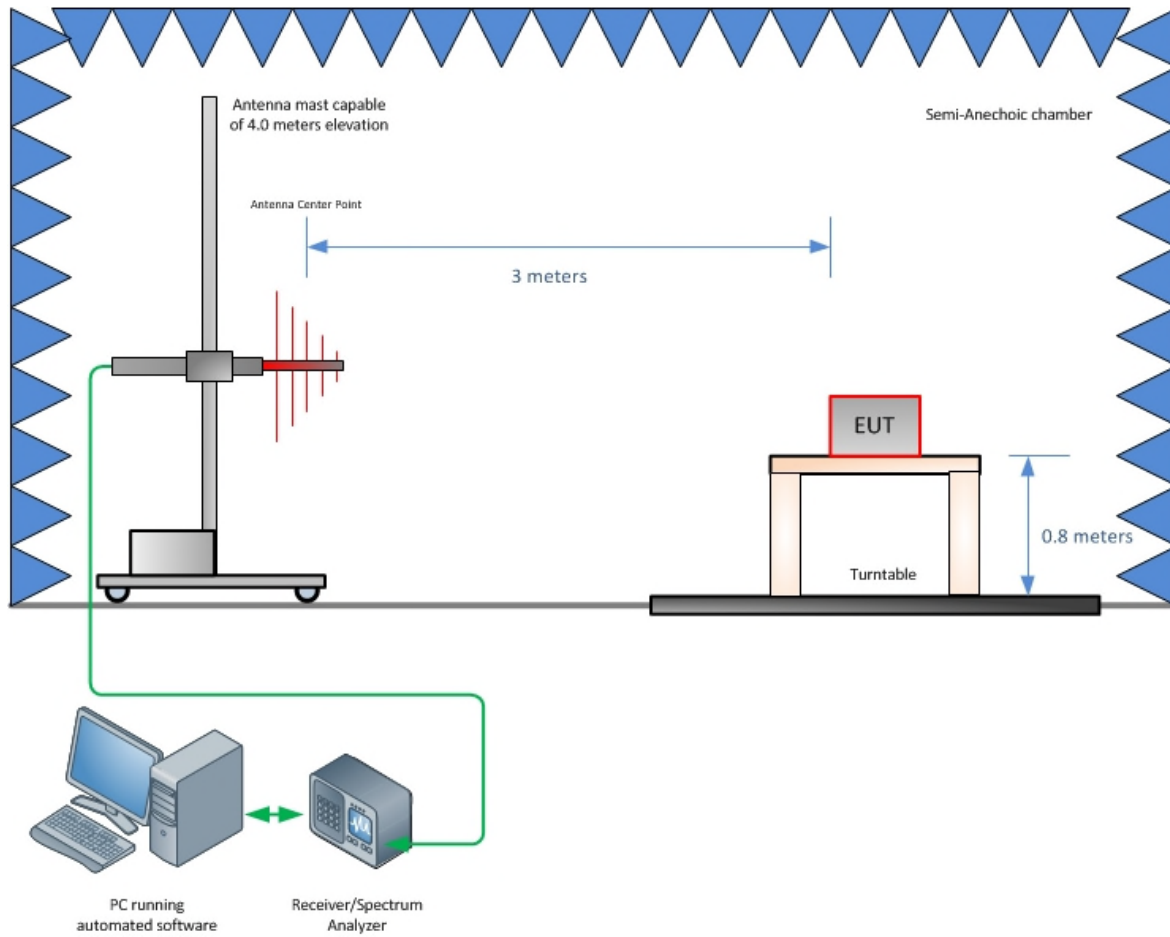
Contribution		Probability Distribution Type	Probability Distribution x_i	Standard Uncertainty $u(x_i)$	$[u(x_i)]^2$
1	Receiver/Spectrum Analyzer	Rectangular	0.57	0.33	0.11
2	Cables	Rectangular	0.70	0.40	0.16
3	Preamp	Rectangular	0.50	0.29	0.08
4	Antenna	Rectangular	0.37	0.21	0.05
5	Site	Rectangular	3.00	1.22	1.50
6	EUT Setup	Rectangular	1.00	0.58	0.33
Combined Uncertainty (u_c):					1.49
Coverage Factor (k):					2
Expanded Uncertainty:					2.99



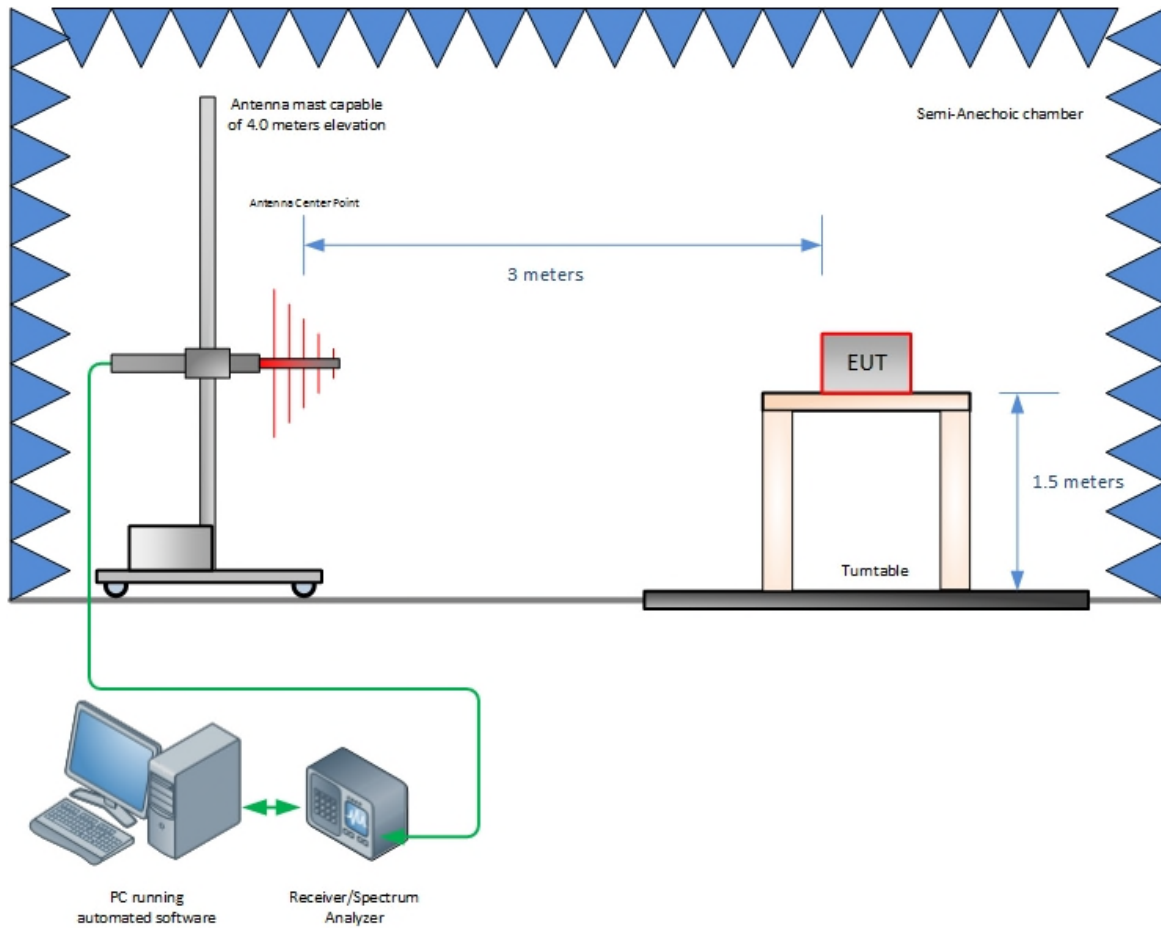
SECTION 4

DIAGRAM OF TEST SETUP

4.1 RADIATED EMISSION TEST SETUP (BELOW 1GHZ)



4.2 RADIATED EMISSION TEST SETUP (ABOVE 1GHZ)





SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT



5.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT

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