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Report On

Radio Testing of the
IPS Group Inc.
Smart Mobile Cash Collection Cart

FCC Part 15 Subpart C §15.225
IC RSS-210 Issue 8 December 2010

Report No. SD72113667-0216A

March 2016





REPORT ON Radio Testing of the
IPS Group Inc.
Smart Mobile Cash Collection Cart

TEST REPORT NUMBER SD72113667-0216A

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Revision History

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SECTION 1

REPORT SUMMARY

Radio Testing of the
IPS Group Inc.
Smart Mobile Cash Collection Cart

1.1 INTRODUCTION

The information contained in this report is intended to show verification of the IPS Group Inc. Smart Mobile Cash Collection Cart to the requirements of FCC Part 15 Subpart C §15.225 and IC RSS-210 Issue 8 December 2010.

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 IPS Group Inc.

Model Number(s) 120

FCC ID Number SGWIPS2015SC

FCC Classification Low Power Communications Device Transmitter (DXX)

IC Number 11583A-IPS215SC

Serial Number(s) 0021000009

Device Capabilities

Item	Description
2G Bands	GSM 850, GSM 900, DCS1800, PCS1900
RFID	13.56 MHz
BLE	2.4 GHz

Mode Verified 13.56MHz RFID Mode

Number of Samples Tested 1

Test Specification/Issue/Date

- FCC Part 15 Subpart C §15.225 (October 1, 2015).
- IC RSS-210 Issue 8 December 2010 - Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment.
- RSS-Gen Issue 4 November 2014 - General Requirements for Compliance of Radio Apparatus.

Start of Test March 15, 2016

Finish of Test March 15, 2016

Name of Engineer(s) Alex Chang

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 §15.225 with cross-reference to the corresponding IC RSS standard is shown below.

Section	Spec Clause	RSS	Test Description	Result	Comments/Base Standard
2.1	§2.1049	RSS-Gen 6.6	Occupied Bandwidth	As Reported	
2.2	§15.225(a)(b)(c)	RSS-210 (A2.6)	In-Band Emissions	Compliant	
2.3	§15.225(d)	RSS-210 (A2.6)	Out-of-Band Emissions	Compliant	§15.209
2.4	§15.225(e)	RSS-210 (A2.6)	Frequency Tolerance	Compliant	
—	§15.207	RSS-Gen 8.8	AC Conducted Emissions	N/A *)	
2.5		RSS-Gen 7.0	Receiver Spurious Emissions	Compliant	

*) Not applicable. EUT is battery operated device.



1.3 PRODUCT INFORMATION

1.3.1 Technical Description

The Equipment Under Test (EUT) was a IPS Group Inc. Smart Collection Cart Smart Mobile Cash Collection Cart. The IPS Smart Parking Meter is used by large city municipalities to safely and securely collect cash in single and multispace parking meters the collection cart communicates to the meters by BLE and the cart and canister is identified by RFID and then information is up loaded to the IPS Management Data base by cellular modem. The RFID 13.56MHz mode was verified and evaluated in this test report.#



1.3.2 EUT General Description

EUT Description	Smart Mobile Cash Collection Cart
Model Name	Smart Collection Cart
Model Number(s)	120
Rated Voltage	Internal Battery Pack 3.6 VDC (Nominal).
Output Power	46.2 dBμV/m @ 3 meters
Frequency Range	13.56 MHz in the 13.110 to14.010 MHz band
Number of Operating Frequencies	1
Channel/s Verified	13.56 MHz
Antenna Type (used during evaluation)	Integral PCB Loop antenna (Complies with Part 15.203 requirements)
Modulation Used	ASK

1.4 EUT TEST CONFIGURATION

1.4.1 Test Configuration Description

Test Configuration	Description
Default	Radiated emission test configuration. Measurement were performed while EUT configured/simulated RFID card read in a continuously mode.

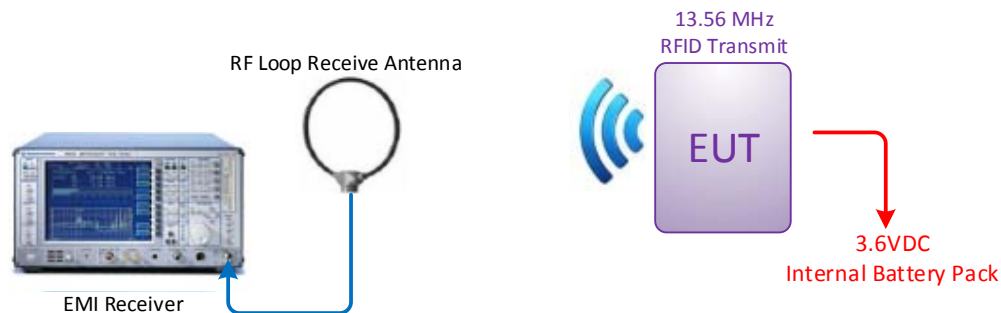
1.4.2 EUT Exercise Software

None. No special software was used to exercise the EUT. The EUT with built-in firmware revision 62.68.0 used during the investigation.

1.4.3 Support Equipment and I/O cables

Manufacturer	Equipment/Cable	Description
—	—	—

1.4.4 Simplified Test Configuration Diagram



Not To Scale – Illustration Purpose Only
 Objects may not represent actual image of
 original equipment/s or set-up



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: 0021000009		
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 C63.4-2014, 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 C63.4-2014. 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)

16530 Via Esprillo, San Diego, CA 92127-1708 (33.018644,-117.092409). Phone: 858 942 5542 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 (IC) Registration No.: 3067A

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



SECTION 2

TEST DETAILS

Radio Testing of the
IPS Group Inc.
Smart Mobile Cash Collection Cart



2.1 OCCUPIED BANDWIDTH

2.1.1 Specification Reference

Part 15 Subpart J §15.1049 and RSS-Gen 6.6

2.1.2 Standard Applicable

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured.

When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured.

2.1.3 Equipment Under Test and Modification State

Serial No: 0021000009 / Default Test Configuration

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

March 15, 2016 / AC

2.1.5 Test Equipment Used

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

2.1.6 Environmental Conditions/Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility.

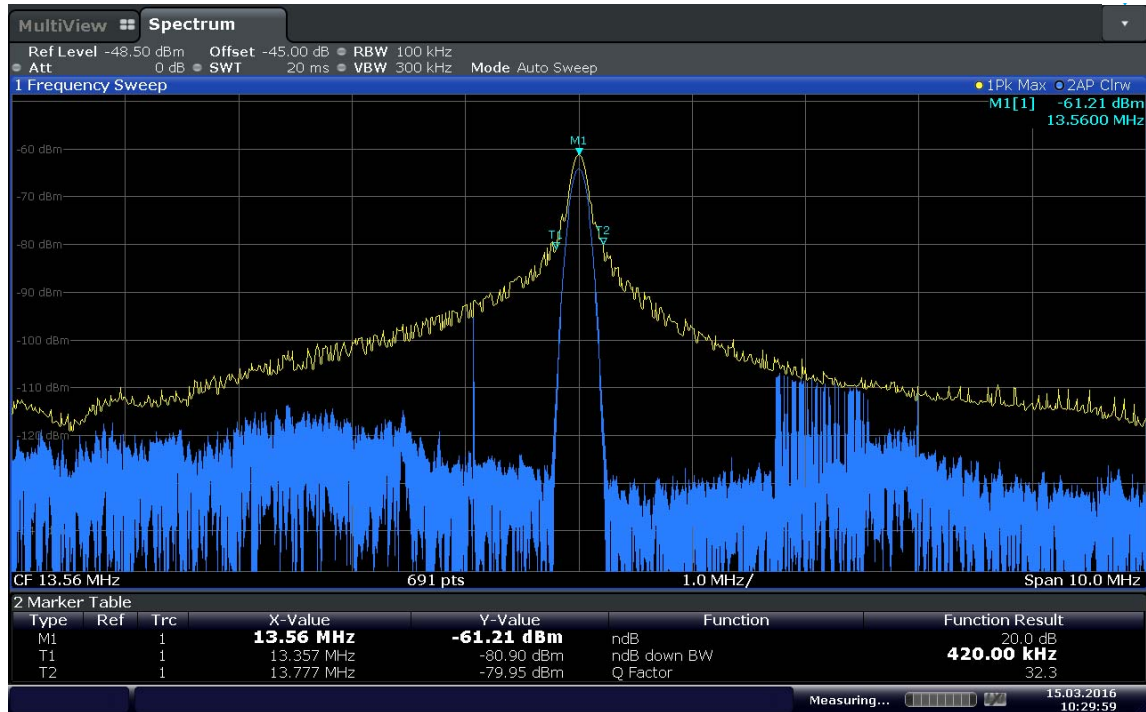
Ambient Temperature	26.2°C
Relative Humidity	44.5 %
ATM Pressure	99.0 kPa

2.1.7 Additional Observations

- This is a radiated test.
- The “n” dB down marker function of the spectrum analyzer was used for this test.
- 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.
- Trace is max hold.
- For 99% bandwidth, the OBW measurement function of the spectrum analyzer was used.

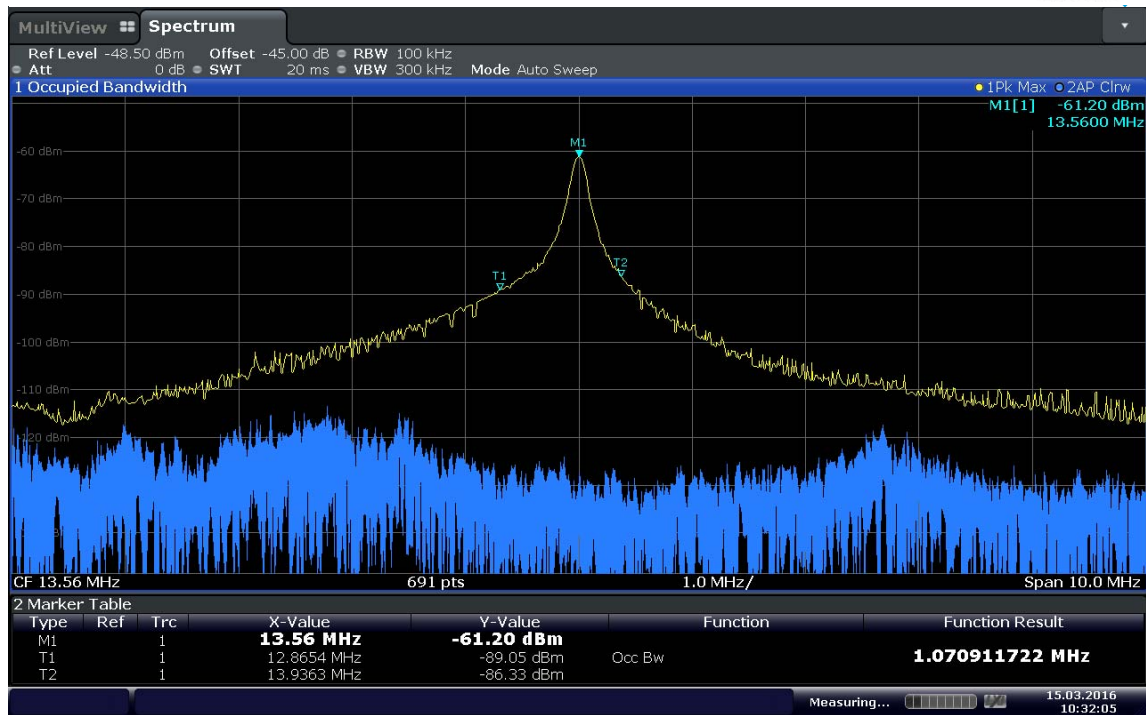
2.1.8 Test Results

Frequency	20 dB Bandwidth	99% Bandwidth
13.56 MHz	420.0 kHz	1070.9 kHz



Date: 15 MAR 2016 10:29:59

20 dB BW



Date: 15 MAR 2016 10:32:05

99% OBW

2.2 IN BAND EMISSIONS

2.2.1 Specification Reference

Part 15 Subpart C §15.225(a)(b)(c) and RSS-210 (A2.6)

2.2.2 Standard Applicable

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

2.2.3 Equipment Under Test and Modification State

Serial No: 0021000009 / Default Test Configuration

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

March 15, 2016 / AC

2.2.5 Test Equipment Used

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

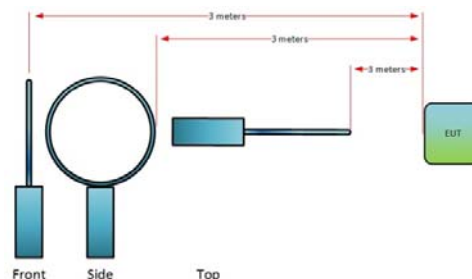
2.2.6 Environmental Conditions/Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility.

Ambient Temperature	23.9 °C
Relative Humidity	45.7 %
ATM Pressure	99.2 kPa

2.2.7 Additional Observations

- This is a radiated test. The spectrum was searched from 9 kHz to 1GHz.
- Below 30MHz, prescans were performed to determine best antenna position with the highest recorded emissions. No significant results difference noted. Verification performed using "Front" position.





- Measurement was done at 3 meter. Limits below 30MHz were corrected using extrapolation factor of 20 dB/decade. See sample computation below:

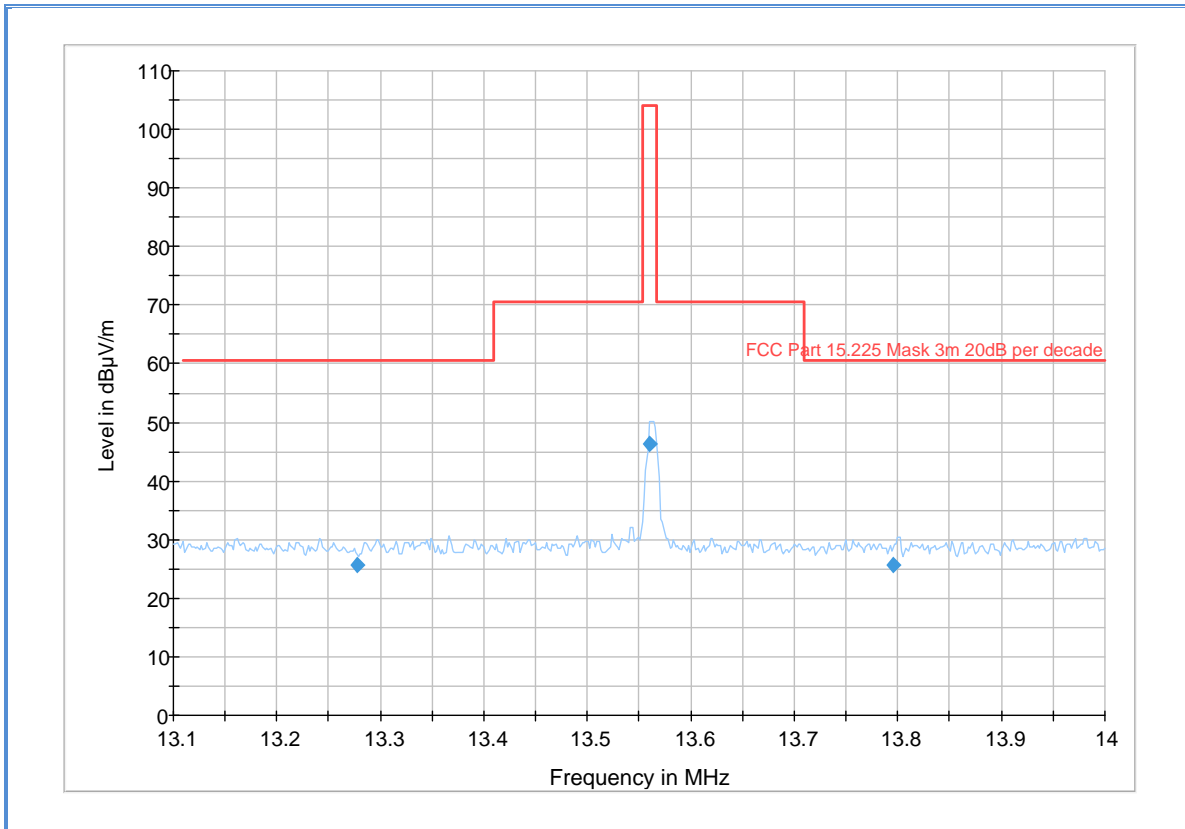
$$\begin{aligned}
 \text{Limit @ 9kHz} &= 2400/F(\text{kHz}) \mu\text{V/m} \\
 &= 20 \log (2400/9) \text{ dB}\mu\text{V/m} \\
 &= 48.52 \text{ dB}\mu\text{V/m @ 300 meters} \\
 &= 48.52 \text{ dB}\mu\text{V/m} + (20 \log 300/3) \text{ @ 3 meters} \\
 &= 88.52 \text{ dB}\mu\text{V/m @ 3 meters}
 \end{aligned}$$

- There are no other emissions observed “in-band” other than the fundamental (13.56 MHz).
- 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 2.2.8 for sample computations.

2.2.8 Test Results Summary Table

Frequency	Antenna Position	QuasiPeak (dBμV/m)
13.56 MHz	Front	46.2

2.2.9 Test Results (Worst-Case Antenna Position present)



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)
13.277968	25.7	1500.0	9.000	100.0	H	170.0	21.1	34.8	60.5
13.559723	46.2	1500.0	9.000	100.0	H	174.0	21.1	57.8	104.0
13.795603	25.6	1500.0	9.000	100.0	H	0.0	21.2	34.9	60.5



2.3 OUT OF BAND EMISSIONS

2.3.1 Specification Reference

Part 15 Subpart C §15.225(d) and RSS-210 (A2.6)

2.3.2 Standard Applicable

(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

2.3.3 Equipment Under Test and Modification State

Serial No: 0021000009 / Default Test Configuration

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

March 15, 2016 / AC

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	26.2 °C
Relative Humidity	44.5 %
ATM Pressure	99.0 kPa

2.3.7 Additional Observations

- This is a radiated test. The spectrum was searched from 9 kHz to 1GHz.
- Below 30MHz, prescans were performed to determine best antenna position with the highest recorded emissions. No significant difference noted on the results. Verification performed using "Front" position.
- The EUT was verified with three (3) antenna positions. Only the worst case configuration presented ("Front").
- Measurement was done at 3 meter. Limits below 30MHz were corrected using extrapolation factor of 20 dB/decade. See sample computation below:

Limit @ 9kHz = $2400/F(\text{kHz}) \mu\text{V/m}$
= $20 \log (2400/9) \text{ dB}\mu\text{V/m}$
= $48.52 \text{ dB}\mu\text{V/m} @ 300 \text{ meters}$
= $48.52 \text{ dB}\mu\text{V/m} + (20 \log 300/3) @ 3 \text{ meters}$
= $88.52 \text{ dB}\mu\text{V/m} @ 3 \text{ meters}$



- 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 and 2.3.9 for sample computations.

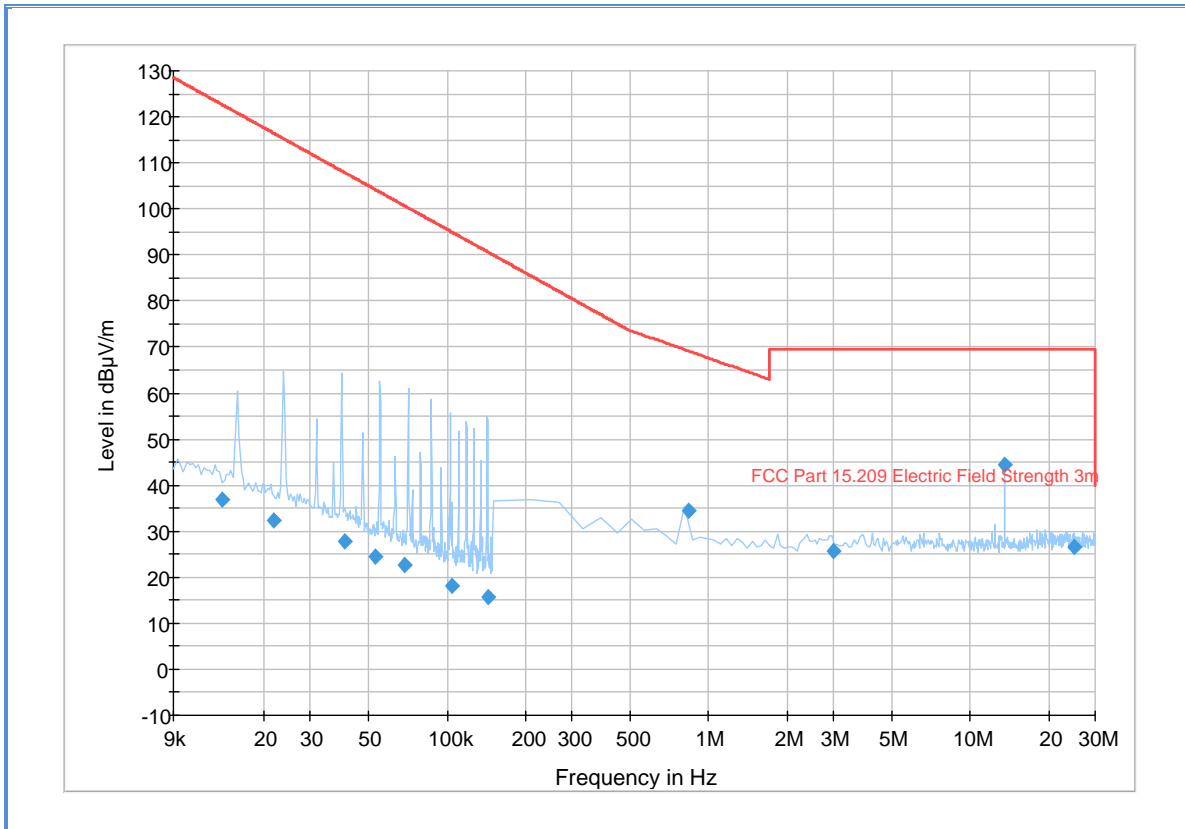
2.3.8 Sample Computation (Radiated Emission 9kHz to 30MHz)

Measuring equipment raw measurement (dBμV) @ 9 kHz			25.0
Correction Factor (dB)	Asset# 1057 (cable)	0.1	24.8
	Asset# 1172 (cable)	0.3	
	Asset# 6628 (antenna)	24.4	
Reported Quasi Peak Final Measurement (dBμV/m) @ 9kHz			49.8

2.3.9 Sample Computation (Radiated Emission 30MHz to 1GHz)

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 Quasi Peak Final Measurement (dBμV/m) @ 30MHz			11.8

2.3.10 Test Results (Worst Case Antenna Position 9kHz to 30MHz)

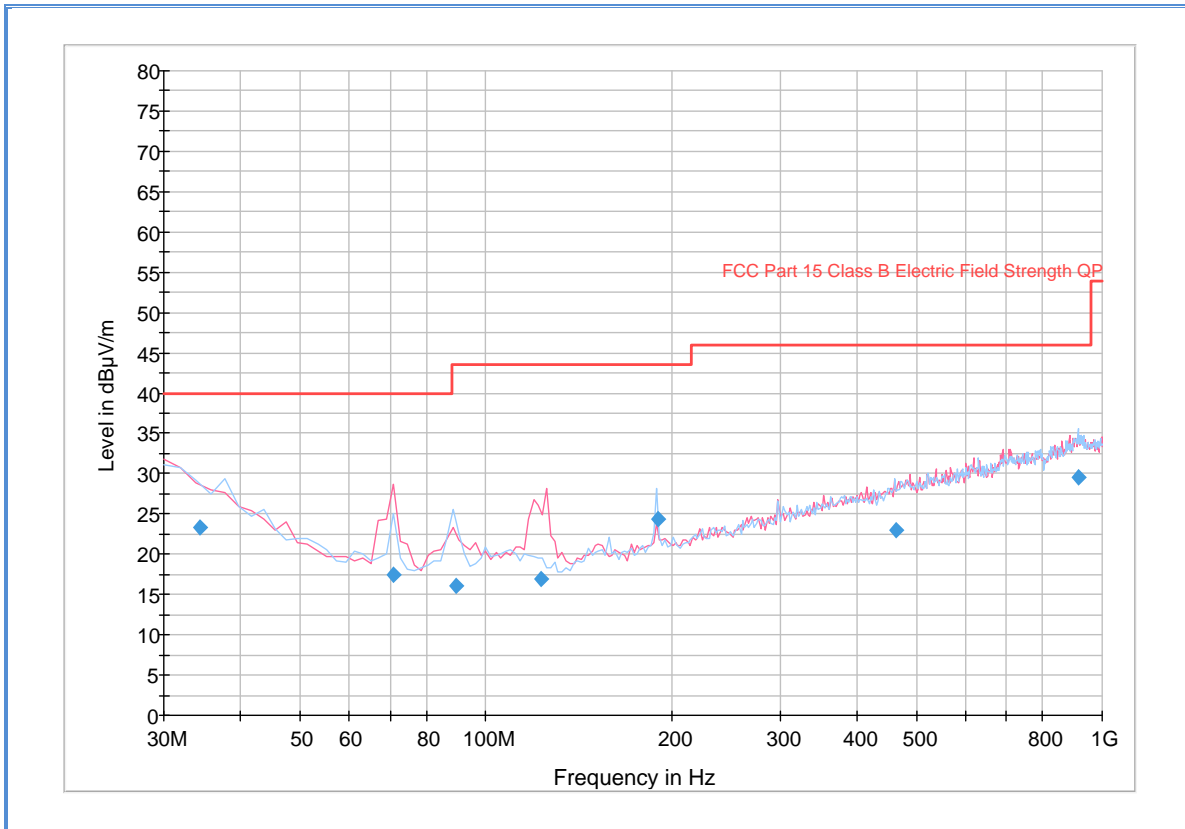


Quasi Peak Data

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.013782	36.8	1000.0	0.200	100.0	H	15.0	23.1	85.9	122.7
0.021693	32.2	1000.0	0.200	100.0	H	223.0	21.3	84.2	116.5
0.040517	27.7	1000.0	0.200	100.0	H	223.0	20.7	80.2	107.9
0.053341	24.6	1000.0	0.200	100.0	H	209.0	20.1	79.6	104.2
0.069164	22.6	1000.0	0.200	100.0	H	223.0	19.9	78.0	100.6
0.103812	18.2	1000.0	0.200	100.0	H	153.0	19.6	76.9	95.0
0.143371	15.8	1000.0	0.200	100.0	H	223.0	19.6	74.8	90.6
0.834016	34.4	1500.0	9.000	100.0	H	-9.0	19.7	34.8	69.2
3.007523	25.7	1500.0	9.000	100.0	H	-9.0	20.5	43.9	69.5
13.559599	44.4	1500.0	9.000	100.0	H	-1.0	21.1	Test Notes	
24.817511	26.5	1500.0	9.000	100.0	H	15.0	23.8	43.1	69.5

Test Notes: In-band emissions refer to section 2.2.9 in this test report.

2.3.11 Test Results (30MHz to 1GHz)



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)
34.415551	23.2	1000.0	120.000	231.0	H	261.0	-8.1	16.8	40.0
70.701643	17.4	1000.0	120.000	200.0	V	1.0	-16.8	22.6	40.0
89.436633	16.0	1000.0	120.000	165.0	H	-3.0	-15.3	27.5	43.5
122.690501	17.0	1000.0	120.000	106.0	V	-9.0	-15.2	26.5	43.5
189.838798	24.4	1000.0	120.000	115.0	H	303.0	-10.7	19.1	43.5
462.463086	23.0	1000.0	120.000	250.0	H	47.0	-2.4	23.0	46.0
913.628938	29.6	1000.0	120.000	144.0	H	114.0	6.5	16.4	46.0



2.4 FREQUENCY TOLERANCE

2.4.1 Specification Reference

Part 15 Subpart C §15.225(e) and RSS-210 (A2.6)

2.4.2 Standard Applicable

(e) The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to $+50$ degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

2.4.3 Equipment Under Test and Modification State

Serial No: 0021000009 / Default Test Configuration

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

March 15, 2016 / AC

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	26.2 °C
Relative Humidity	44.5 %
ATM Pressure	99.0 kPa

2.4.7 Additional Observations

- This is a radiated test.
- Span is wide enough to capture the channel transmission.
- Signal count function of the Spectrum Analyzer used for this test.
- RBW set to 1kHz (below 1.356kHz [$\pm 0.01\%$ tolerance limit] for better resolution)
- A period of time sufficient to stabilize all of the components of the oscillator circuit at each temperature level was allowed prior to each frequency measurement.

2.4.8 Test Results

Voltage (%)	EUT Voltage (VDC)	Temp (°C)	Frequency (MHz)	Frequency Deviation (MHz)	Deviation (%)
100	3.6	-20	13.5603256	0.000022	0.00016
100	3.6	-10	13.5602533	0.000051	0.00038
100	3.6	0	13.5603676	0.000064	0.00047
100	3.6	+10	13.5602315	0.000072	0.00053
100	3.06	+20	13.5604038	0.0001	0.00074
100	3.6	+20	13.5603039	0	0
100	4.14	+20	13.5602967	0.000007	0.00005
100	3.6	+30	13.5603126	0.000009	0.00007
100	3.6	+40	13.5602402	0.000064	0.00047
100	3.6	+50	13.5602446	0.00006	0.00044

Maximum Deviation = 0.00074%
 = 0.00074% < 0.01% Limit **(Complies)**



2.5 RECEIVER SPURIOUS EMISSIONS

2.5.1 Specification Reference

RSS-Gen 7.0

2.5.2 Standard Applicable

Receivers shall comply with the limits of spurious emissions set out in this section, measured over the frequency range determined in accordance with Section 4.10 of RSS-Gen Issue 4 November 2014.

Table 2: Radiated Limits of Receiver Spurious Emissions

Frequency (MHz)	Field Strength (microvolts/m at 3 metres)*
30-88	100
88-216	150
216-960	200
Above 960	500

*Measurements for compliance with limits in the above table may be performed at distances other than 3 metres, in accordance with Section 7.2.7 of RSS-Gen.

2.5.3 Equipment Under Test and Modification State

Serial No: 0021000009 / Default Test Configuration

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

March 15, 2016 / AC

2.5.5 Test Equipment Used

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

2.5.6 Environmental Conditions/Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility.

Ambient Temperature	26.2 °C
Relative Humidity	44.5 %
ATM Pressure	99.0 kPa

2.5.7 Additional Observations

- This is a radiated test. The spectrum was searched from 30MHz to 1GHz performed.
- EUT in Rx (Receive) mode configuration.

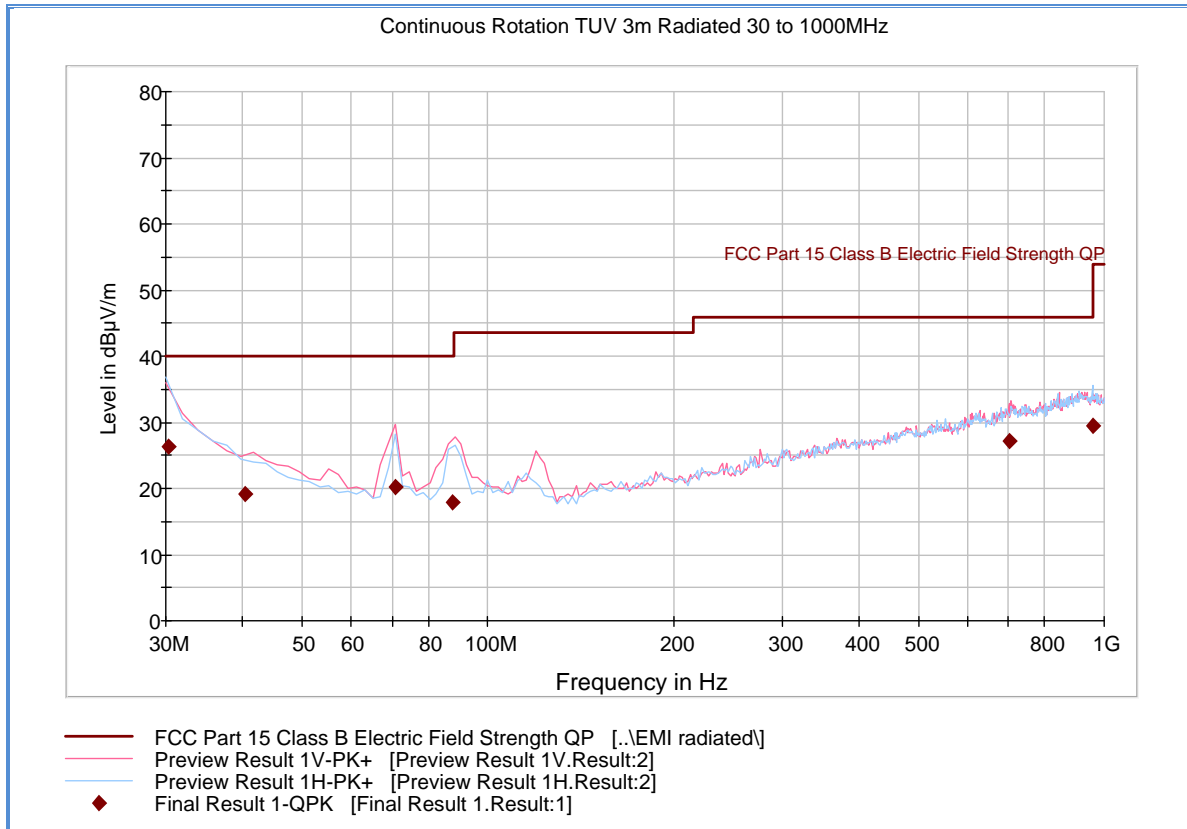


- Measurement was done using EMC32 V8.53 automated software. Reported level is the actual level with all the correction factors factored in. Correction Factor column is for informational purposes only. See Section 2.3.8 and 2.3.9 for sample computations.

2.5.8 Sample Computation (Radiated Emission 30MHz to 1GHz)

Measuring equipment raw measurement (dB μ V) @ 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 Quasi Peak Final Measurement (dB μ V/m) @ 30MHz			11.8

2.5.9 Test Results (Receive Mode 30MHz to 1GHz)



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)
30.320000	26.4	1000.0	120.000	400.0	H	18.0	-5.7	13.6	40.0
40.327214	19.2	1000.0	120.000	109.0	V	305.0	-11.1	20.8	40.0
70.661643	20.2	1000.0	120.000	400.0	V	342.0	-16.8	19.8	40.0
87.532745	18.0	1000.0	120.000	100.0	V	-12.0	-15.6	22.0	40.0
700.561283	27.1	1000.0	120.000	384.0	V	91.0	3.1	18.9	46.0
957.994469	29.4	1000.0	120.000	150.0	H	22.0	6.4	16.6	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 Emissions						
6628	Loop Antenna	HFH 2 -Z2	880 458/25	Rhode & Schwarz	10/28/15	10/28/16
1016	Pre-amplifier	PAM-0202	187	PAM	12/15/15	12/15/16
1033	Bilog Antenna	3142C	00044556	EMCO	09/25/14	09/25/16
1040	EMI Test Receiver	ESIB40	100292	Rhode & Schwarz	09/29/15	09/29/16
Miscellaneous						
7611	Signal/Spectrum Analyzer	FSW26	102017	Rhode & Schwarz	02/01/16	02/01/17
7579	Temperature Chamber	115	151617	TestQuity	08/14/15	08/14/16
7560	Barometer/Temperature /Humidity Transmitter	iBTHX-W	1240476	Omega	10/19/15	10/19/16
	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 Measurements (Below 1GHz)

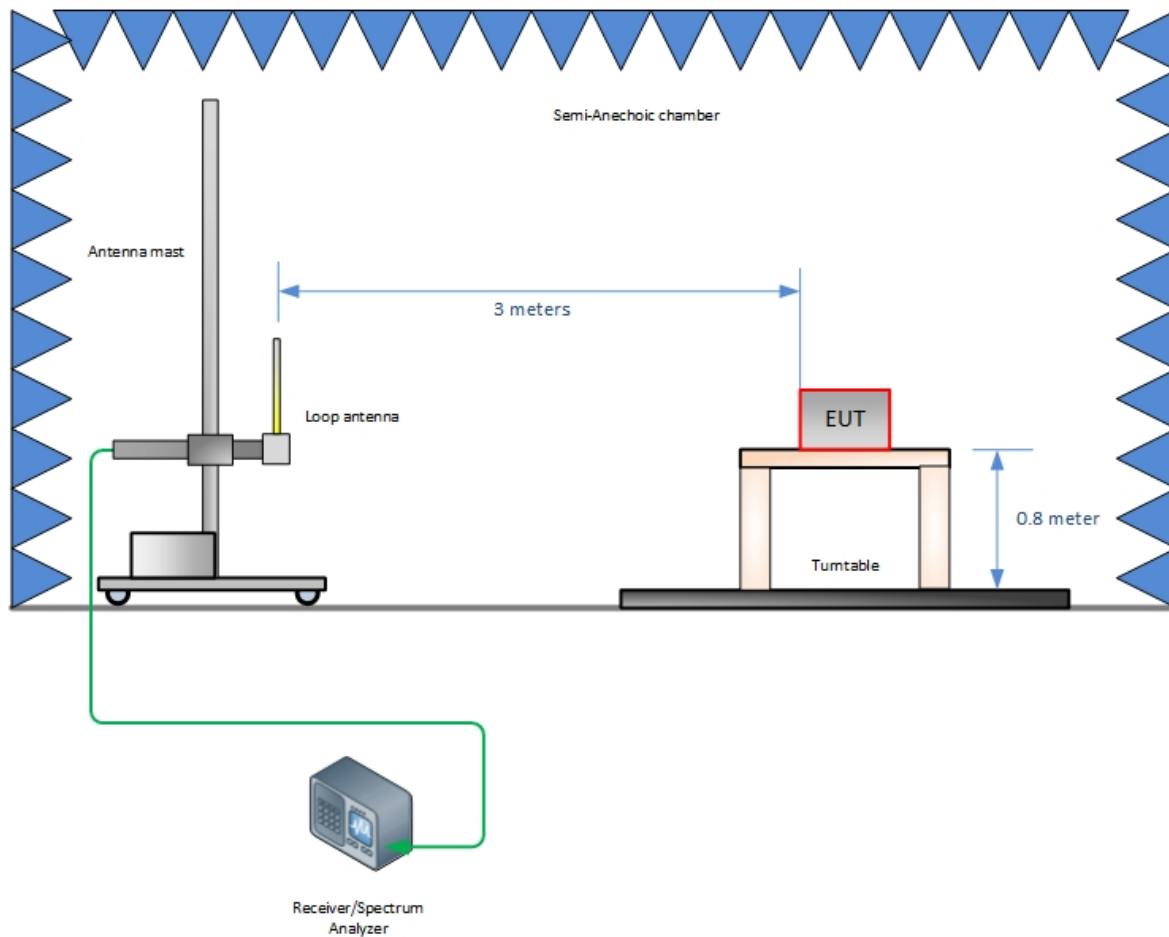
	Contribution	Probability Distribution Type	Probability Distribution x_i	Standard Uncertainty $u(x_i)$	$[u(x_i)]^2$
1	Receiver/Spectrum Analyzer	Rectangular	0.45	0.26	0.07
2	Cables	Rectangular	0.50	0.29	0.08
3	Preamp	Rectangular	0.50	0.29	0.08
4	Antenna	Rectangular	0.75	0.43	0.19
5	Site	Rectangular	2.70	1.56	2.43
6	EUT Setup	Rectangular	1.00	0.58	0.33
Combined Uncertainty (u_c):					1.78
Coverage Factor (k):					2
Expanded Uncertainty:					3.57



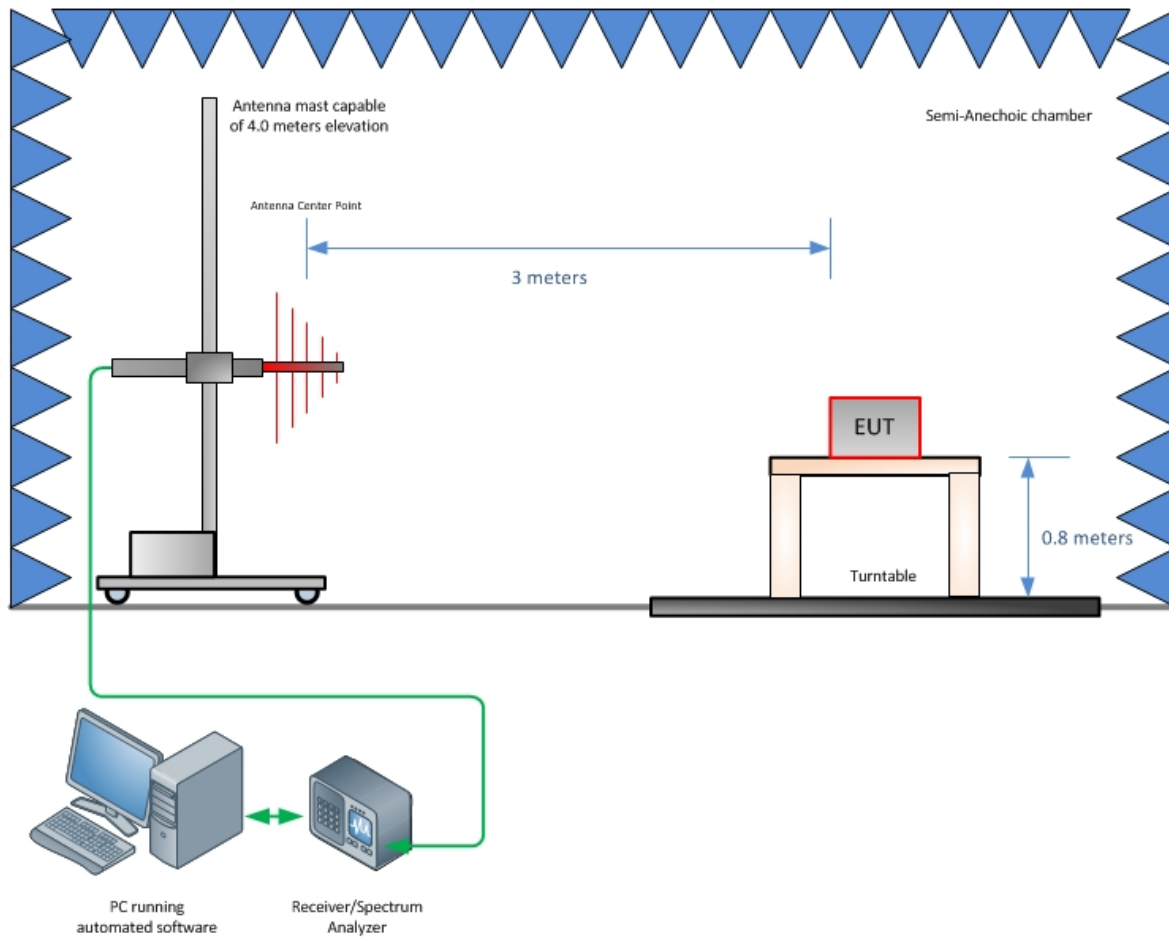
SECTION 4

DIAGRAM OF TEST SETUP

4.1 TEST SETUP DIAGRAM



Radiated Emission Test Setup (Below 30 MHz)



Radiated Emission Test Setup (30MHz to 1GHz)



SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT



5.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT

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