

Radiated Spurious Emissions Radio Testing of the

IPS Group Inc.

Single Space Parking Meter Model: MK5J

In accordance with

FCC CFR Part 24, 27

RSS-133 issue 6 Amendment 1 (January 2018)

RSS-130 issue 2 (February 2019)

IPS Group Inc.

7737 Kenamar Court

San Diego, CA 92121

USA



America

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Date: November 2020

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Number: 01

Authorized Signatory	Alex Chang	November 10, 2020	

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

EXECUTIVE SUMMARY

A sample of this product was tested and found to be in compliance with FCC CFR Part 24, 27, RSS-133 issue 6 Amendment 1 (January 2018) and RSS-130 issue 2 (February 2019).



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REPORT ON	Radiated Spurious Emissions Radio Testing of the IPS Group Inc. Model: MK5J Single Space Parking Meter
TEST REPORT NUMBER	72162499C Rev.01
TEST REPORT DATE	November 2020
PREPARED FOR	IPS Group Inc. 7737 Kenamar Court San Diego, CA 92121 USA
CONTACT PERSON	Gary Thomas Sr. RF Design Engineer gary.thomas@ipsgroupinc.com (858) 768-2401

PREPARED BY


Xiaoying Zhang

Name
Authorized Signatory
Title: Wireless/EMC Test Engineer



Revision History

72162499C Rev.01 IPS Group Inc. Model: MK5J Single Space Parking Meter					
DATE	OLD REVISION	NEW REVISION	REASON	PAGES AFFECTED	APPROVED BY
10/21/2020	—	Initial Release			Alex Chang
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SECTION 1

1 REPORT SUMMARY

Radiated Spurious Emissions Radio Testing of the
IPS Group Inc.
Model: MK5J Single Space Parking Meter



1.1 Introduction

The information contained in this report is intended to show verification of the IPS Group Inc. MK5J Smart Parking Meter to the requirements of FCC CFR Part 24, 27, RSS-133 issue 6 Amendment 1 (January 2018) and RSS-130 issue 2 (February 2019).

Objective	To perform Class II Permissive Change verification to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out. Only radiated spurious emissions testing was performed. The NFC, RFID 13.56 MHz, 430 MHz, BLE and Cellular modules imbedded in the EUT were FCC certified.
Manufacturer	IPS Group Inc.
EUT	Smart Parking Meter
Model Name	Single Space Parking Meter
Model Name	MK5J
FCC ID	SGWIPS2007SSPM
IC Number	11583A-IPS2007SSPM
Serial Number(s)	0000466294
Number of Samples Tested	1
Test Specification/Issue/Date	• FCC CFR Part 24, 27 (October 1, 2019). • RSS-133 - 2 GHz Personal Communications Services (issue 6, Amendment 1, January 2018) • RSS-130 - Equipment Operating in the Frequency Bands 617-652 MHz, 663-698 MHz, 698-756 MHz and 777-787 MHz (issue 2, February 2019) • RSS-Gen - General Requirements for Compliance of Radio Apparatus (Issue 5, November 2019 Amendment 1)
Start of Test	September 11, 2020
Finish of Test	October 05, 2020
Name of Engineer(s)	Xiaoying Zhang
Related Document(s)	• ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services. • 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 CFR Part 24, 27 with cross-reference to the corresponding ISSED RSS standard is shown below.

Section	FCC Part 2, 24, 27 Spec Clause	RSS-133	RSS-130	Test Description	Result	Comments/ Base Standard
2.1	2.1053 24.238(a) 27.53(c)(2)	6.5	4.7	Field Strength of Spurious Radiation	Compliant	-



1.3 Product Information

1.3.1 Technical Description

The Equipment Under Test (EUT) was an IPS Group Inc. Single Space Parking Meter Model: MK5J. The EUT is part of the Smart Metering Collection System. It uses RFID 13.56 MHz for cashbox identification, BLE for user pay by phone interface during collection process. NFC for tap and go payment by credit cards, RFID 430 MHz to relay vehicle sensor data to main processor and Cellular for web-based Data Management System (DMS). The radiated spurious emissions of cellular modem LTE Band 2 and 13 functions of the EUT was verified under this test report.

1.3.2 EUT General Description

EUT Description	Smart Parking Meter
Model Name	Single Space Parking Meter
Model Number(s)	MK5J
Rated Voltage	- Lithium Battery (3.6V) IPS Group Inc. TL-5420/5P/IPS - Tadiran Batteries TLI-1550A 4V 330mAh (on-board battery)
Mode Verified	LTE Band 2 and 13
Frequency Range	LTE Band 2: 1850 – 1910 MHz LTE Band 13: 699 – 716 MHz
Capability	LTE Band 2, 4 and 13
Primary Unit (EUT)	☒ Production ☐ Pre-Production ☐ Engineering
(Client declaration, max. antenna gain covered under this test report)	Max. 0.5 dBi

1.3.3 Approved Module Installed

Technology	Model	FCC ID	Antenna Gain/Type
Cellular	Quectel BG96	XMR201707BG96	0.5 dBi, IPS LTE Batwing 795-771-PCB Rev 01
BLE	BGM13P32A	QOQ-BGM13P	0.5 dBi, Mini 2.45 GHz Antenna, Johanson Technology P/N 2450AT18A100
430 MHz	MK5 SSPM	SGWIPS2007SSPM	1.9 dBi, LINX Tech, ANT-433-HETH (helical, through-hole)

Information contained in this table were declared by the manufacturer.

1.4 EUT Test configuration

1.4.1 Test Configuration Description

Test Configuration	Description
Default	Transmit Mode. EUT in Diagnostic Mode and NFC, RFID 13.56 MHz, 420 MHz RFID turned on. BLE set to single channel transmit mode and the cellular radio set to active mode. A CMW500 was used to establish a call using LTE Bands 2, 4 and 13.

1.4.2 EUT Exercise Software

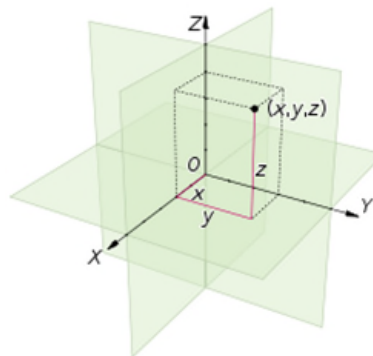
The EUT was running Diagnostic Software Version 52.79.9 when verified.

1.4.3 Support Equipment and I/O cables

Manufacturer	Equipment/Cable	Description
Protek	DC Power Supply Unit	Model: 18020M Output: 0 – 18 VDC 20A

1.4.4 Worst Case Configuration

For radiated measurements, the EUT only works at Y orientations. The verification was done at “Y” as worst-case configuration.



1.4.5 Simplified Test Configuration Diagrams

Not required. EUT verified on standalone configuration. EUT is battery operated, nonetheless DC power input connections were provided by the manufacturer in order for the EUT to sustain extended testing time without totally draining the battery.



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: 0000466294		
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 C63.26-2015, American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services.

For conducted and radiated emissions, the equipment under test (EUT) was configured to measure its highest possible emission level. 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 – Designation No.: US1146

TÜV SÜD 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 Designation is US1146.



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

The 10m Semi-anechoic chamber of TÜV SÜD 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 TÜV SÜD 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.

1.9.3 BSMI – Laboratory Code: SL2-IN-E-028R (US0102)

TÜV Product Service Inc. (San Diego) is a recognized EMC testing laboratory by the BSMI under the MRA (Mutual Recognition Arrangement) with the United States. Accreditation includes CNS 13438 up to 6GHz.

1.9.4 NCC (National Communications Commission - US0102)

TÜV SÜD America Inc. (San Diego) is listed as a Foreign Recognized Telecommunication Equipment Testing Laboratory and is accredited to ISO/IEC 17025 (A2LA Certificate No.2955.13) which under APEC TEL MRA Phase 1 was designated as a Conformity Assessment Body competent to perform testing of equipment subject to the Technical Regulations covered under its scope of accreditation including RTTE01, PLMN01 and PLMN08 for TTE type of testing and LP0002 for Low-Power RF Device type of testing.

1.9.5 VCCI – Registration No. A-0280 and A-0281

TÜV SÜD America Inc. (San Diego) is a VCCI registered measurement facility which includes radiated field strength measurement, radiated field strength measurement above 1GHz, mains port interference measurement and telecommunication port interference measurement.

1.9.6 RRA – Identification No. US0102

TÜV SÜD America Inc. (San Diego) is National Radio Research Agency (RRA) recognized laboratory under Phase I of the APEC Tel MRA.

1.9.7 OFCA – U.S. Identification No. US0102

TÜV SÜD America Inc. (San Diego) is recognized by Office of the Communications Authority (OFCA) under Appendix B, Phase I of the APEC Tel MRA.



SECTION 2

2 TEST DETAILS

Radio Testing of the
IPS Group Inc.
Model: MK5J Single Space Parking Meter



2.1 Field Strength of Spurious Radiation

2.1.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1053
FCC 47 CFR Part 24, Clause 24.238(a)
FCC 47 CFR Part 27, Clause 27.53(c)(2)
RSS-133, Clause 6.5
RSS-130, Clause 4.7

2.1.2 Standard Applicable

FCC 47 CFR Part 24.238
(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

FCC 47 CFR Part 27.53
(c)(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

2.1.3 Equipment Under Test and Modification State

Serial No: 0000466294 / Default Test Configuration

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

September 11 and October 05, 2020 / XYZ

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 (Rancho Bernardo Satellite Facility)

Ambient Temperature	23.6 - 24.6 °C
Relative Humidity	30.7 - 46.7 %
ATM Pressure	98.9 - 99.0 kPa

2.1.7 Additional Observations

- This is a radiated test. The spectrum was searched from 9 kHz to 18 GHz (to satisfy intentional emitter composite emissions requirement KDB996369 D04 Module Integration Guide V01, e.g. inclusion of NFC, RFID 13.56 MHz, 420 MHz, BLE and Cellular RF module).
- Only noise floor observed after 18GHz. Data presented is up to 18GHz only.
- Initial prescan indicates similar spurious response between LTE Bands. BW and Modulations also does not impact the test results. LTE verification was performed using LTE Band 2 and 13 5 MHz BW and QPSK modulation.
- Measurement was done using EMC32 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 2.1.8 for sample computation.



2.1.8 Sample Computation (Radiated Emission)

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 QuasiPeak Final Measurement (dBμV/m) @ 30MHz			11.8

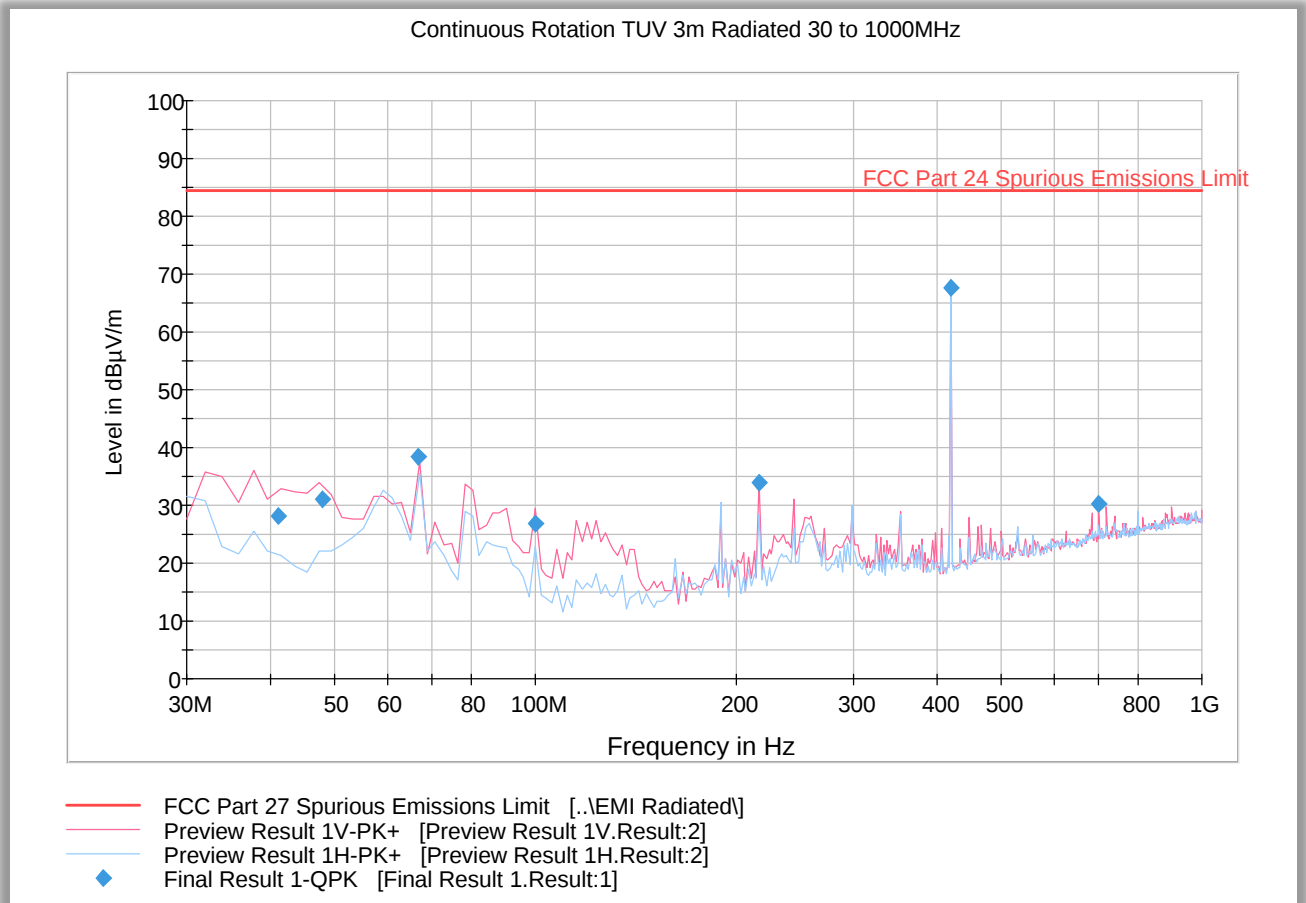
2.1.9 Test Results

See attached plots.



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2.1.10 Test Results 30MHz to 1GHz (LTE Band 2 with NFC, RFID 13.56 MHz, 420 MHz, and BTLE Active)



Quasi Peak Data (§15.209 Limits)

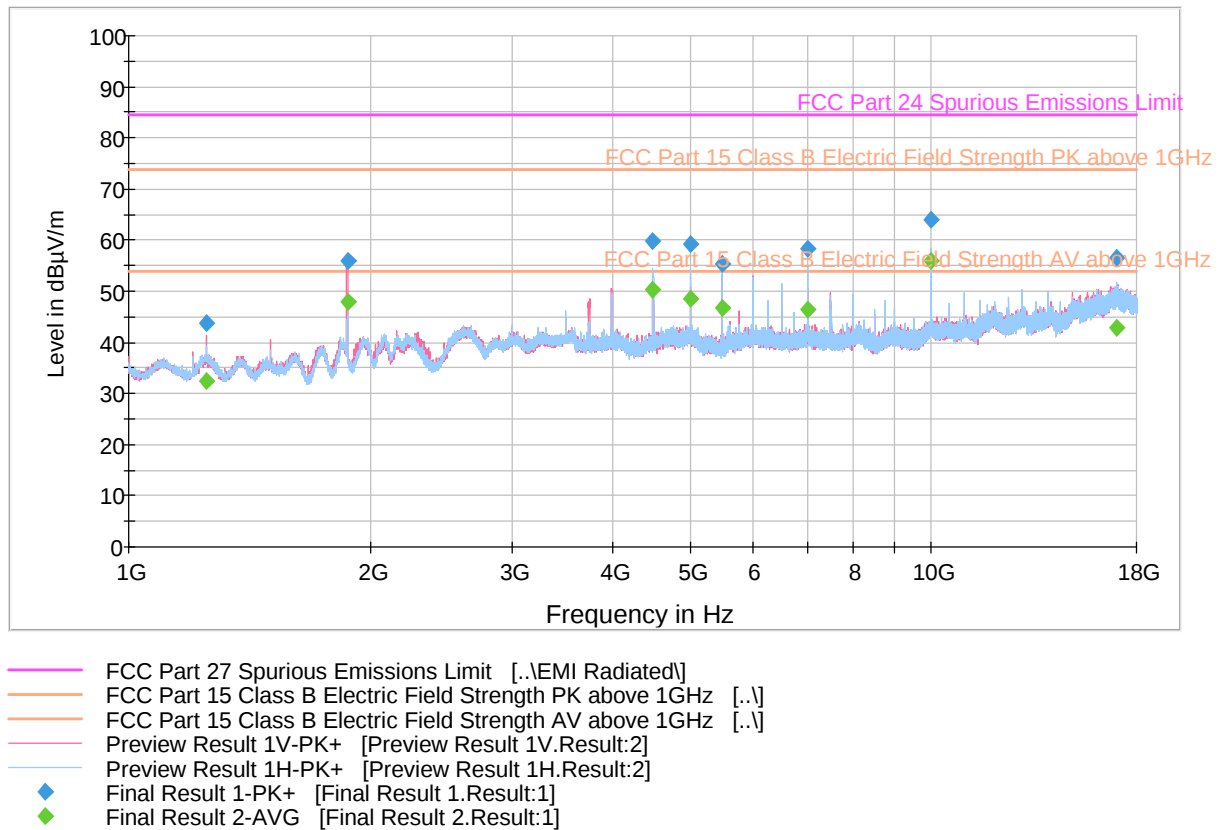
Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)
41.135551	28.1	1000.0	120.000	100.0	V	221.0	-14.4	56.3	84.4
47.974990	31.1	1000.0	120.000	127.0	V	235.0	-15.1	53.3	84.4
66.533868	38.4	1000.0	120.000	100.0	V	6.0	-18.1	46.0	84.4
99.779960	26.8	1000.0	120.000	115.0	V	-7.0	-13.7	57.6	84.4
216.933226	33.9	1000.0	120.000	139.0	V	85.0	-11.4	50.5	84.4
420.721443	67.6	1000.0	120.000	301.0	V	64.0	-5.2	420 MHz Fundamental	
700.001283	30.2	1000.0	120.000	109.0	V	191.0	1.6	54.2	84.4



America

2.1.11 Test Results above 1GHz (LTE Band 2 with NFC, RFID 13.56 MHz, 420 MHz, and BTLE Active)

Continuous Rotation TUV 3m Radiated 1000 to 18000MHz



Peak Data

Frequency (MHz)	MaxPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1249.73333	43.8	1000.0	1000.000	103.7	V	161.0	-5.9	40.6	84.4
1871.33333	56.0	1000.0	1000.000	152.6	V	34.0	-2.8	18.4	84.4
4499.93333	59.9	1000.0	1000.000	152.6	H	57.0	4.4	24.5	84.4
4999.93333	59.3	1000.0	1000.000	152.6	H	54.0	4.9	25.1	84.4
5500.10000	55.4	1000.0	1000.000	325.1	H	5.0	5.8	29.0	84.4
7000.10000	58.4	1000.0	1000.000	251.3	H	-2.0	7.5	26.0	84.4
10000.0000	64.1	1000.0	1000.000	204.5	H	13.0	9.7	20.3	84.4
16999.8000	56.5	1000.0	1000.000	269.3	H	12.0	18.4	27.9	84.4

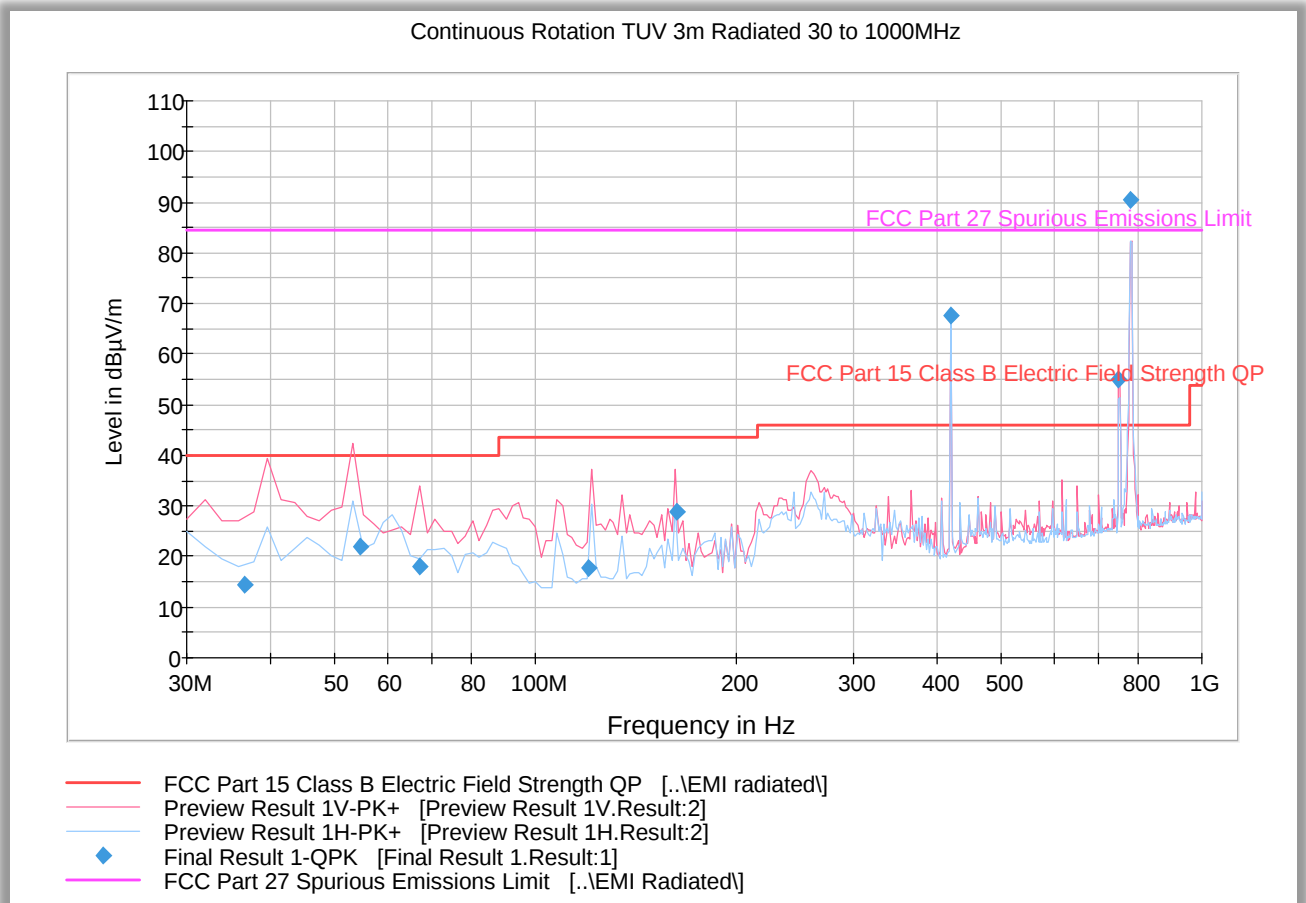


Average Data

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1249.73333	32.5	1000.0	1000.000	103.7	V	161.0	-5.9	51.9	84.4
1871.33333	48.0	1000.0	1000.000	152.6	V	34.0	-2.8	36.4	84.4
4499.93333	50.4	1000.0	1000.000	152.6	H	57.0	4.4	34.0	84.4
4999.93333	48.4	1000.0	1000.000	152.6	H	54.0	4.9	36.0	84.4
5500.10000	46.6	1000.0	1000.000	325.1	H	5.0	5.8	37.8	84.4
7000.10000	46.5	1000.0	1000.000	251.3	H	-2.0	7.5	37.9	84.4
10000.0000	55.8	1000.0	1000.000	204.5	H	13.0	9.7	28.6	84.4
16999.8000	42.7	1000.0	1000.000	269.3	H	12.0	18.4	41.7	84.4

Test Notes: A 2.4GHz Notch and 1.8 GHz Notch were used during the testing. 10GHz spurious is verified not from BT low energy and the highest limit FCC Part 24 limit applies. No significant emissions observed above 18GHz. Measurements above 18GHz are noise floor figures. BLE operation will be ignored for this test.

2.1.12 Test Results 30MHz to 1GHz (LTE Band 13 with NFC, RFID 13.56 MHz, 420 MHz, and BTLE Active)



Quasi Peak Data (§15.209 Limits)

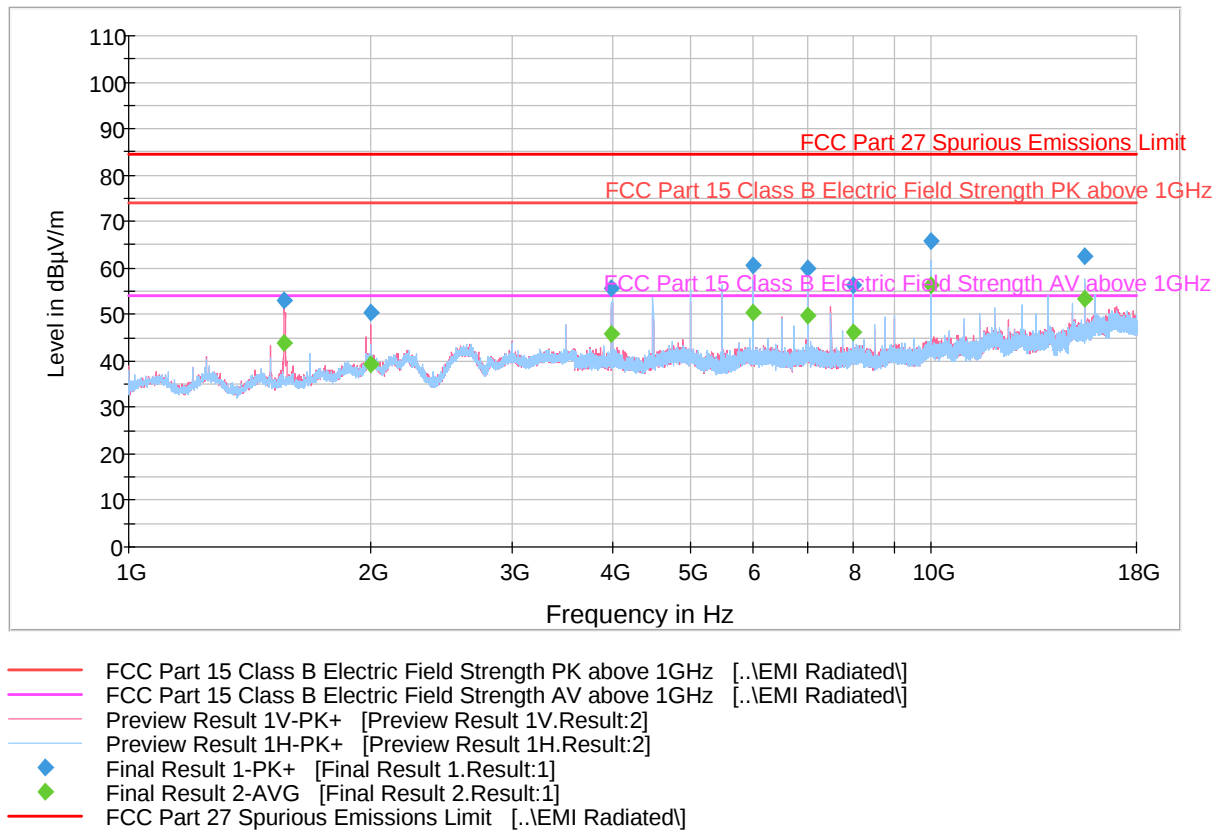
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
36.639439	14.3	1000.0	120.000	116.0	V	325.0	-13.1	70.1	84.4
54.726653	22.0	1000.0	120.000	150.0	V	19.0	-16.0	62.4	84.4
67.213868	18.1	1000.0	120.000	155.0	V	232.0	-18.0	66.3	84.4
120.082725	17.8	1000.0	120.000	100.0	V	73.0	-15.4	66.6	84.4
162.704369	28.7	1000.0	120.000	100.0	V	194.0	-12.9	55.7	84.4
420.481443	67.8	1000.0	120.000	109.0	H	355.0	-5.2	420 MHz Fundamental	
749.982365	55.1	1000.0	120.000	129.0	V	314.0	1.7	Call Box signal	
782.788457	90.4	1000.0	120.000	150.0	V	175.0	2.5	LTE Band 13 Fundamental	



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2.1.13 Test Results above 1GHz (LTE Band 13 with NFC, RFID 13.56 MHz, 420 MHz, and BTLE Active)

Continuous Rotation TUV 3m Radiated 1000 to 18000MHz



Peak Data

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1563.83333	53.1	1000.0	1000.000	131.7	V	132.0	-6.0	31.3	84.4
1999.96666	50.3	1000.0	1000.000	113.7	V	152.0	-1.9	34.1	84.4
3999.73333	55.5	1000.0	1000.000	103.7	H	18.0	3.6	28.9	84.4
5999.90000	60.7	1000.0	1000.000	191.5	H	96.0	6.3	23.7	84.4
7000.06666	59.9	1000.0	1000.000	152.2	H	68.0	7.5	24.5	84.4
7999.86666	56.3	1000.0	1000.000	186.6	V	68.0	7.7	28.1	84.4
10000.0000	65.8	1000.0	1000.000	152.2	H	16.0	9.7	18.6	84.4
15500.0666	62.4	1000.0	1000.000	162.7	H	27.0	16.4	22.0	84.4



Average Data

Frequency (MHz)	Average (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
1563.83333	43.9	1000.0	1000.000	131.7	V	132.0	-6.0	40.5	84.4
1999.96666	39.3	1000.0	1000.000	113.7	V	152.0	-1.9	45.1	84.4
3999.73333	46.0	1000.0	1000.000	103.7	H	18.0	3.6	38.4	84.4
5999.90000	50.4	1000.0	1000.000	191.5	H	96.0	6.3	34.0	84.4
7000.06666	49.6	1000.0	1000.000	152.2	H	68.0	7.5	34.8	84.4
7999.86666	46.1	1000.0	1000.000	186.6	V	68.0	7.7	38.3	84.4
10000.0000	56.3	1000.0	1000.000	152.2	H	16.0	9.7	28.1	84.4
15500.0666	53.5	1000.0	1000.000	162.7	H	27.0	16.4	30.9	84.4

Test Notes: A 2.4GHz Notch was used during the testing. 10GHz spurious is verified not from BT low energy and the highest limit FCC Part 27 limit applies. No significant emissions observed above 18GHz. Measurements above 18GHz are noise floor figures. BLE operation will be ignored for this test.



SECTION 3

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 Emission						
1033	Bilog Antenna	3142C	00044556	EMCO	11/06/18	11/06/20
7575	Double-ridged waveguide horn	3117	00155511	EMCO	06/22/20	06/22/22
8628	Pre-amplifier	QLI-01182835-JO	8986002	Quinstar	02/26/20	02/26/21
6628	Loop Antenna	HFH 2 –Z2	880 458/25	Rhode & Schwarz	05/22/20	05/22/22
1040	EMI Test Receiver	ESIB40	100292	Rhode & Schwarz	10/11/19	10/11/20
7620	EMI Test Receiver	ESU 40	100399	Rhode & Schwarz	10/18/19	10/18/20
1016	Pre-amplifier	PAM-0202	187	A.H. Systems, Inc.	02/26/20	02/26/21
7562	Wideband Radio Communication	CMW 500	1201.0002k50 /103829	Rhode & Schwarz	For signalling	
Miscellaneous						
11312	Mini Environmental Quality Meter	850027	CF099-56010- 340	Sper Scientific	05/22/20	05/22/21
-	Test Software	EMC32	V8.53	Rhode & Schwarz	N/A	

3.2 Measurement Uncertainty

Calculation of Measurement Uncertainty per CISPR 16-4-2:2011 with Corr. 1

3.2.1 Radiated Measurements (Below 1GHz)

	Input Quantity (Contribution) X_i	Value	Prob. Dist.	Divisor	$u_i(x)$	$u_i(x)^2$
1	Receiver reading	0.10 dB	Normal, k=1	1.000	0.10	0.01
2	Attenuation: antenna-receiver	0.20 dB	Normal, k=2	2.000	0.10	0.01
3	Antenna factor AF	0.75 dB	Normal, k=2	2.000	0.38	0.14
4	Receiver sinewave accuracy	1.10 dB	Normal, k=2	2.000	0.55	0.30
5	Receiver pulse amplitude	1.50 dB	Rectangular	1.732	0.87	0.75
6	Receiver pulse repetition rate	1.50 dB	Rectangular	1.732	0.87	0.75
7	Noise floor proximity	0.50 dB	Rectangular	1.732	0.29	0.08
8	Mismatch: antenna-receiver	0.95 dB	U-shaped	1.414	0.67	0.45
9	AF frequency interpolation	0.30 dB	Rectangular	1.732	0.17	0.03
10	AF height deviations	0.10 dB	Rectangular	1.732	0.06	0.00
11	Directivity difference at 3 m	3.12 dB	Rectangular	1.732	1.80	3.24
12	Phase center location at 3 m	1.00 dB	Rectangular	1.732	0.58	0.33
13	Cross-polarisation	0.90 dB	Rectangular	1.732	0.52	0.27
14	Balance	0.00 dB	Rectangular	1.732	0.00	0.00
15	Site imperfections	3.91 dB	Triangular	2.449	1.60	2.55
16	Separation distance at 3 m	0.30 dB	Rectangular	1.732	0.17	0.03
17	Effect of setup table material	0.40 dB	Rectangular	1.732	0.23	0.05
18	Table height at 3 m	0.10 dB	Normal, k=2	2.000	0.05	0.00
19	Near-field effects	0.00 dB	Triangular	2.449	0.00	0.00
20	Effect of ambient noise on OATS	0.00 dB				0.00
Combined standard uncertainty			Normal	3.00 dB		
Expanded uncertainty			Normal, k=2	6.00 dB		

3.2.2 Radiated Emission Measurements (Above 1GHz)

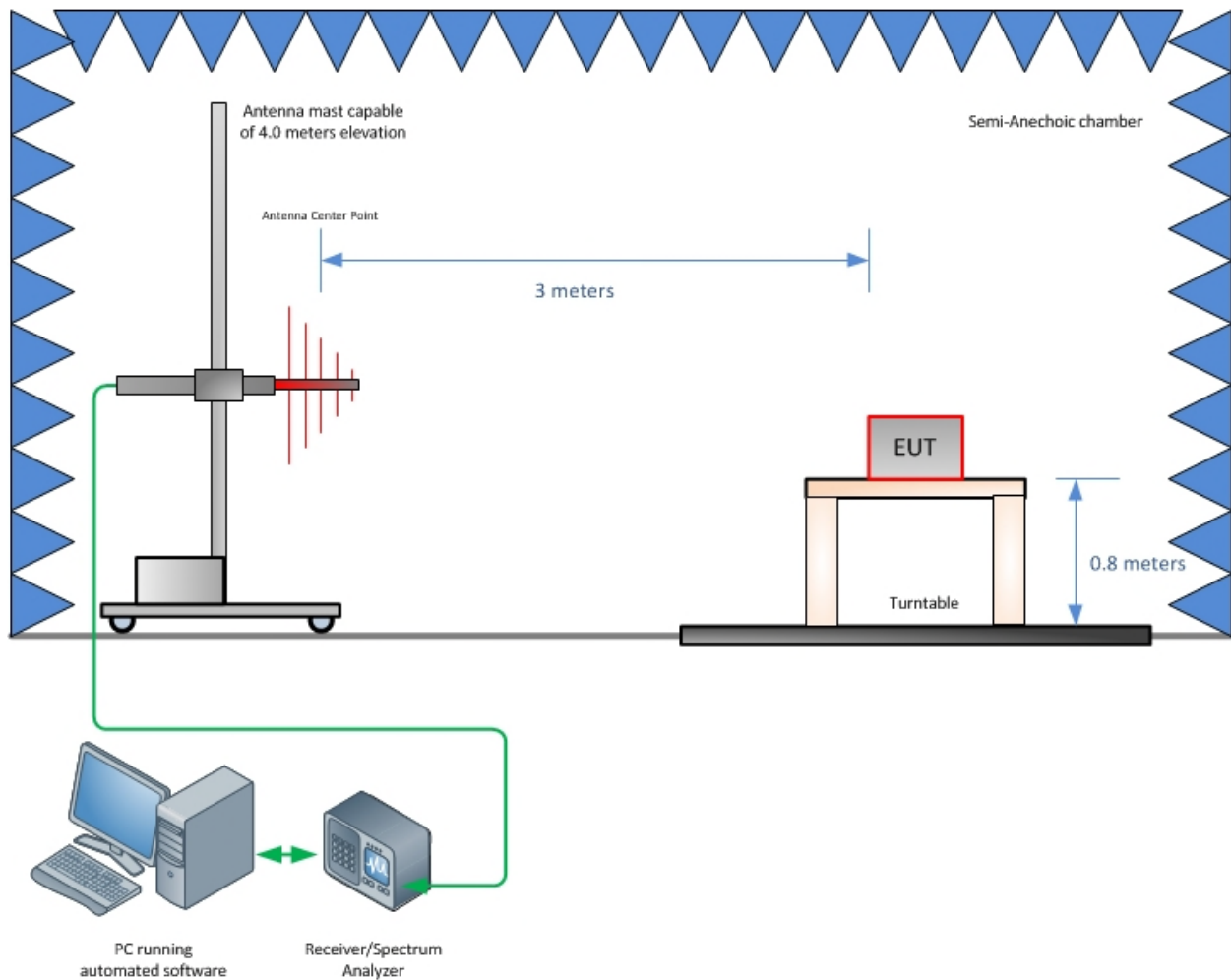
	Input Quantity (Contribution) X_i	Value	Prob. Dist.	Divisor	$u_i(x)$	$u_i(x)^2$
1	Receiver reading	0.10 dB	Normal, k=1	1.000	0.10	0.01
2	Attenuation: antenna-receiver	0.30 dB	Normal, k=2	2.000	0.15	0.02
3	Antenna factor AF	0.20 dB	Normal, k=2	2.000	0.10	0.01
4	Receiver sinewave accuracy	0.37 dB	Normal, k=2	2.000	0.19	0.03
5	Receiver pulse amplitude	0.57 dB	Rectangular	2.000	0.29	0.08
6	Receiver pulse repetition rate	1.21 dB	Rectangular	1.732	0.70	0.49
7	Noise floor proximity	0.70 dB	Rectangular	1.732	0.40	0.16
8	Mismatch: antenna-receiver	1.41 dB	U-shaped	1.414	1.00	0.99
9	AF frequency interpolation	1.30 dB	Rectangular	1.414	0.92	0.85
10	AF height deviations	0.30 dB	Rectangular	1.732	0.17	0.03
11	Directivity difference at 3 m	1.50 dB	Rectangular	1.732	0.87	0.75
12	Phase center location at 3 m	0.30 dB	Rectangular	1.732	0.17	0.03
13	Cross-polarisation	0.90 dB	Rectangular	1.732	0.52	0.27
14	Balance	5.30 dB	Rectangular	2.449	2.16	4.68
15	Site imperfections	1.15 dB	Triangular	1.732	0.66	0.44
16	Separation distance at 3 m	0.30 dB	Rectangular	1.732	0.17	0.03
17	Effect of setup table material	0.00 dB	Rectangular	2.000	0.00	0.00
18	Table height at 3 m	0.10 dB	Normal, k=2	1.000	0.10	0.01
19	Near-field effects	0.30 dB	Triangular	2.000	0.15	0.02
20	Effect of ambient noise on OATS	0.20 dB		2.000	0.10	0.01
Combined standard uncertainty			Normal	2.98	dB	
Expanded uncertainty			Normal, k=2	5.96	dB	



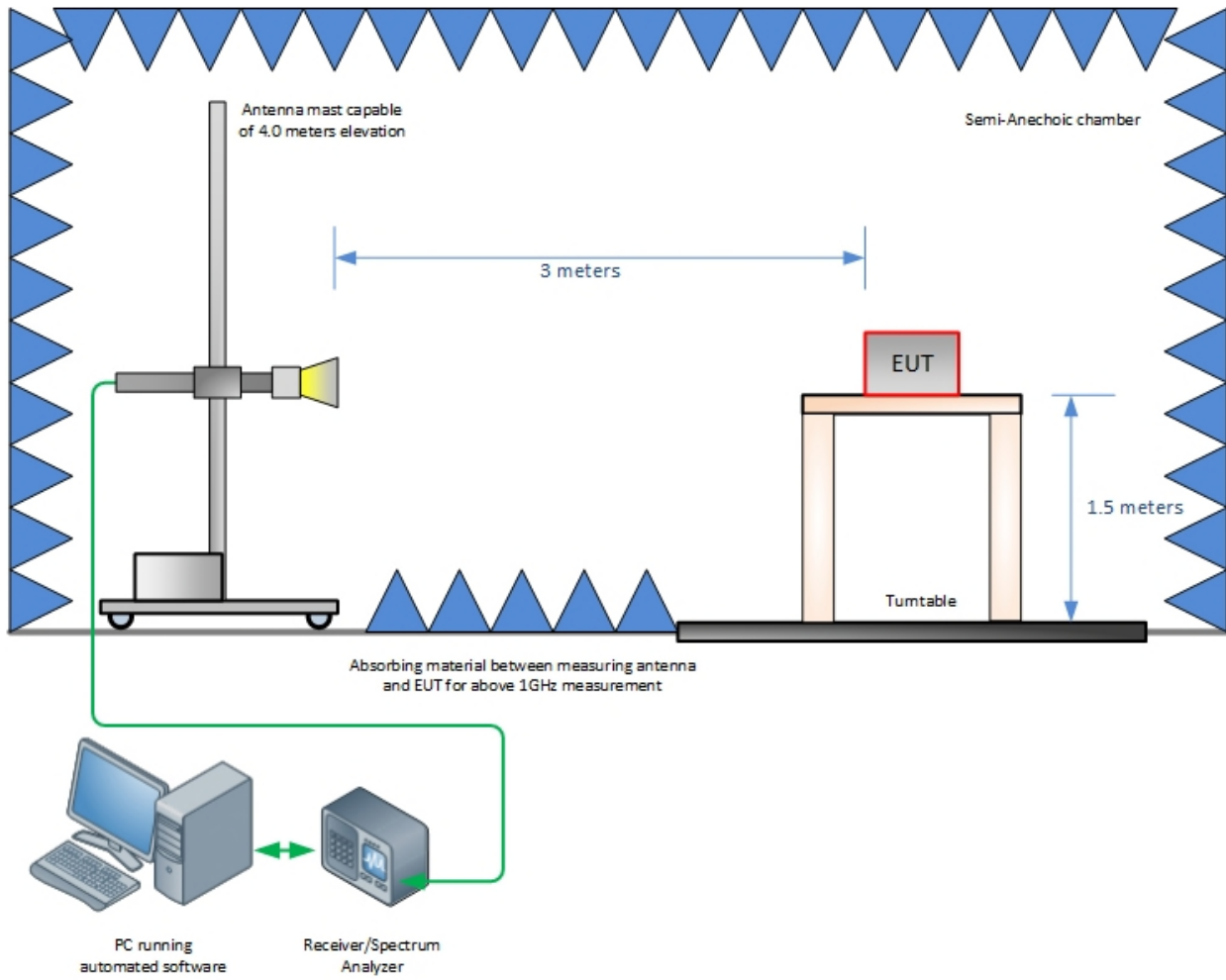
SECTION 4

4 Diagram of Test Setup

4.1 Test Setup Diagrams



Radiated Emission Test Setup (Below 1GHz)



Radiated Emission Test Setup (Above 1GHz)



SECTION 5

5 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



5.1 Accreditation, Disclaimers and Copyright

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