

TEST REPORT FROM RFI GLOBAL SERVICES LTD

Test of: Satellite Tracking of People LLC, Blutag Victim Unit

To: CFR47 Parts 15.207 and 15.209

Test Report Serial No: RFI-EMC-RP76131JD02A

Version 2.0 Supersedes all previous Versions

This test report is issued under the authority of Scott D'Adamo, Operations Manager:	С. У
Checked By:	Steven White
Signature:	Skew Ellet.
Date of Issue:	13 May 2010

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1. CUSTOMER DETAILS					
Company Name:	Satellite Tracking of People LLC				
Address:	1212 North Post Oak Road Suite 100 Houston Texas 77055				

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2. SUMMARY OF TESTING

2.1. Test Specification

Reference: CFR47 Parts 15.207 and 15.209 Code of Federal Regulations Volume 47 (Telecommunications) 2008: Part 15 (Radio Frequency Devices) – Section 15. 207 and 15. 209 Title:

Company Registration No.

2.2. Summary of Test Results

Clause	Measurement Type	Applicability	Result
	EMISSIONS		
15.209	Radiated Emissions (Enclosure)	Y	②
15.207	Conducted Emissions (AC Mains Input/Output Ports)	Y	Ø

2.3. Location of Testing

All the measurements described in this report were performed at the premises of RFI Global Services Ltd, Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH.

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3. EQUIPMENT UNDER TEST (EUT)

3.1. Description of EUT

The EUT is a belt-worn tracking device incorporating ISM (915MHz) and GPRS communication capabilities.

3.2. Identification of Equipment Under Test (EUT)

ID#	# Description Brand Name		Model No	Serial No	IMEI	
E1	Tracking Device	Stalker Alert	08	000014	352023007715879	
E2	Power Supply Unit	Spry Power Products	PA1015-2HU	091201540	Not Applicable	

3.3. Port Identification

Port	Description	Туре
P1	Enclosure (Tracking Device)	-
P2	12V DC Power input (Tracking Device)	DC Barrel Socket
P3	AC Input (Power Supply Unit)	2 Pin

3.4. Operating Modes

Mode Reference	Definition
ISM Transmit Mode	The EUT was configured to constantly transmit at maximum power 915MHz

ISM Radio characteristics

Transmit Frequency Range (MHz): 902 – 928

Transmit Channel Tested (MHz): 915

3.5. Configuration and Peripherals

Description:

The Tracking Device was configured to constantly transmit at maximum power 915MHz, whilst powered via 110 V, 60 Hz.

Please refer to the Test Configuration and Photograph section for schematic

Please refer to the Test Configuration and Photograph section for schematic drawing(s) and/or photograph(s) of the test configuration(s) employed in the course of testing.

3.6. Modifications

NOTE: No modifications were made to the EUT during the course of testing.

3.7. Additional Information Related to Testing

Equipment Category:	Short Range Device
Cycle Time:	<1s
Power Supply Requirement(s):	230V AC to charger; 12V DC from Charger to Tracker; 3.7V Li Ion in Tracker
Weight:	~170g
Dimensions:	117mm x 75mm x 27mm
Antenna Type	Integral
FCC ID:	S5EBTV0909

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4. SUPPORT EQUIPMENT							
4.1. Identification of Supp	4.1. Identification of Support Equipment						
Description Manufacturer Model No Serial No							
No support equipment was used durin	g the course of testing						

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5. MONITORING PERFORMANCE

5.1. Overview

No immunity testing was performed; therefore performance criteria were not used to asses the EUT during testing.

5.2. Monitoring EUT Performance During Testing

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For the purposes of testing, the term "operate as intended" was defined as:	The EUT continued to transmit at 915MHz.
For the purposes of testing, an "unintentional response" was defined as:	Not applicable
Method used to determine whether user control functions and stored data were lost after the EMC exposure:	Not applicable
Method used to verify that a communications link was established and maintained (if appropriate):	Not applicable
Method of assessment of level of performance or degradation of performance during and/or after EMC exposure:	Not applicable

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6. MEASUREMENT UNCERTAINTY

6.1. Overview

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently, the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement regarding the uncertainty of approximation.

The measurement uncertainty may need to be taken into account when interpreting the test results included within this test report.

6.2. Method of calculation

The methods used to calculate the uncertainties included within this test report are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty, the published guidance of the United Kingdom Accreditation Service (UKAS) is followed.

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7. MEASUREMENTS, EXAMINATIONS AND DERIVED RESULTS

7.1. General Comments

- 7.1.1. This section contains the test result sheets for the measurements listed in Section 2.2. Summary of Test Results (above).
- 7.1.2. The measurement uncertainties stated in the test result sheets were calculated in accordance with documented best practice and represent a confidence level of 95%. Where only confidence level is given, it has been demonstrated that the relevant items of test equipment used meet the specified requirements in the standard with at least this level of confidence.
- 7.1.3. Please refer to Section *6. Measurement Uncertainty* on page 10 for details of our treatment of measurement uncertainty.

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Test Site

VERSION: 2.0 ISSUE DATE: 13 MAY 2010

RADIATED EMISSIONS - TEST RESULTS This test is covered by the scope of RFI's UKAS Accreditation under ISO/IEC 17025: 2005. GENERAL INFORMATION **RFI JOB NUMBER:** 76131JD02 TEST SITE ID: Site 1 EUT: Victim Unit TEMPERATURE: 27 °C to 27 °C TEST ENGINEER: Richard Hooper/Jack Suter RELATIVE HUMIDITY: 33 % 33 % to DATE OF TEST: 27 Oct 2009/ 28 April 2010 ATMOSPHERIC PRESSURE: 1009mb to 1009 mb FIELD TYPE: MEASUREMENT DISTANCE: Electric Field Metres UNCERTAINTY (±): ±4.68 dB **EQUIPMENT CLASS:** Class B

TEST ENVIRONMENT:

TEST SPECIFICATION DETAILS

MEASUREMENT UNITS:

The EUT has been configured and tested in accordance with the methods and procedures detailed within the following basic standard:

REFERENCE: CFR47 Parts 15.209

dBµV/m

TITLE: Code of Federal Regulations Volume 47 (Telecommunications) 2008: Part 15

(Radio Frequency Devices) - Section 15. 209

COMMENTS

-

DEVIATIONS FROM TEST SPECIFICATION

There were no deviations from the test configuration and measurement arrangements defined in the test specification (identified above).

EUT RELATED

OPERATING MODE: ISM 915MHz Transmit

FUNCTION(S) MONITORED: None Applicable

MEAS	MEASUREMENT RESULTS								
No.	Frequency (MHz)	Polarity	Detector	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Graph No.	Result	
1	30.418	Vertical	Quasi-Peak	31.1	40.0	8.9	GPH\76131JD02\001	Complied	
2	41.485	Vertical	Quasi-Peak	35.0	40.0	5.0	GPH\76131JD02\001	Complied	
3	41.514	Vertical	Quasi-Peak	35.0	40.0	5.0	GPH\76131JD02\001	Complied	
4	41.525	Vertical	Quasi-Peak	35.2	40.0	4.8	GPH\76131JD02\001	Complied	
5	44.709	Vertical	Quasi-Peak	37.9	40.0	2.1	GPH\76131JD02\001	Complied	
6	51.927	Vertical	Quasi-Peak	27.9	40.0	12.1	GPH\76131JD02\001	Complied	
7	86.242	Vertical	Quasi-Peak	23.5	40.0	16.5	GPH\76131JD02\001	Complied	
8	94.490	Vertical	Quasi-Peak	35.1	43.5	8.4	GPH\76131JD02\001	Complied	
9	102.295	Vertical	Quasi-Peak	32.7	43.5	10.8	GPH\76131JD02\001	Complied	
10	129.875	Vertical	Quasi-Peak	24.6	43.5	18.9	GPH\76131JD02\001	Complied	
11	696.317	Horizontal	Quasi-Peak	21.2	46.0	24.8	GPH\76131JD02\001	Complied	
12	915.00 Refer to Note 1				GPH\76131JD02\001	Complied			
13	1829.81	Horizontal	Average (CIPSR)	49.4	54.0	4.6	GPH\76131JD02\002	Complied	

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MEAS	MEASUREMENT RESULTS								
No.	Frequency (MHz)	Polarity	Detector	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Graph No.	Result	
	4000					GPH\76131JD02\003 to			
14	to 10000			Refer to Note 2				Complied	

NOTES

- 1 This emission was observed to be the transmit frequency of the equipment under test; therefore no further measurements were made.
- Within this frequency range, no emissions were noted above the noise floor of the measurement system. Therefore no further measurements were made.

TEST EQUIPMENT USED						
RFI ID	INSTRUMENT DESCRIPTION	MODEL NUMBER	CALIBRATION DUE	INTERVAL		
K0001	5m Semi-Anechoic Chamber	N/A	25 Apr 2011	12		
L1001	26.5 GHz Test Receiver	ESU26	28 Jan 2011	12		
A553	Bi-log Antenna	CBL6111A	16 Mar 2011	12		
A1817	1-18GHz Horn Antenna	3115	27 Nov 2010	12		
C1306	15m Rosenberger Cable	FA210A0015005050	23 Feb 2011	12		
C1303	8m Rosenberger Cable	FA210A1080005050	23 Feb 2011	12		
A1834	3dB N-Type Attenuator	8491B	24 Oct 2010	12		
L1005	CMU200 Radio Communication Tester	CMU200 Radio Communication Tester CMU200 Calibration not required		I		
C1339	N-male to N-male cable	0	23 Feb 2011	12		
M172	Electronic Environmental Monitor	BA-116	21 Jul 2010	12		

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CONDUCTED EMISSIONS - TEST RESULTS

This test is covered by the scope of RFI's UKAS Accreditation under ISO/IEC 17025: 2005.

GENERAL INFORMATION

RFI JOB NUMBER:	76131JD02	TEST SITE ID:	Site 8
EUT:	Victim Unit	TEMPERATURE:	30 °C to 30 °C
TEST ENGINEER:	Eric Phiri	RELATIVE HUMIDITY:	31 % to 31 %
DATE OF TEST:	30 Oct 2009	ATMOSPHERIC PRESSURE:	1011 mb to 1011 mb
UNCERTAINTY (±):	±3.99 dB	EQUIPMENT CLASS:	Class B
CATEGORY:	Not applicable	MEASUREMENT METHOD:	LISN (AC)

TEST SPECIFICATION DETAILS

The EUT has been configured and tested in accordance with the methods and procedures detailed within the following basic standard:

REFERENCE: CFR47 Parts 15.207

TITLE: Code of Federal Regulations Volume 47 (Telecommunications) 2008: Part 15

(Radio Frequency Devices) - Section 15. 207

COMMENTS

No comments were noted by the engineer at the time of the test.

DEVIATIONS FROM TEST SPECIFICATION

There were no deviations from the test configuration and measurement arrangements defined in the test specification (identified above).

EUT RELATED

OPERATING MODE: ISM 915MHz Transmit

FUNCTION(S)
MONITORED:

None

MEASUREMENT RESULTS

No.	Frequency (MHz)	Line	Detector	Level (dBµV)	Limit (dBµV)	Margin (dB)	Graph No.	Result
1	0.164	Neutral	Quasi-Peak	55.4	65.3	9.9	GPH\76131JD02\005	Complied
2	0.182	Live 1	Quasi-Peak	53.3	64.4	11.1	GPH\76131JD02\005	Complied
3	0.213	Neutral	Quasi-Peak	50.6	63.1	12.5	GPH\76131JD02\005	Complied
4	0.416	Neutral	Quasi-Peak	50.4	57.5	7.1	GPH\76131JD02\005	Complied
5	0.420	Neutral	Quasi-Peak	50.8	57.4	6.6	GPH\76131JD02\005	Complied
6	0.731	Neutral	Quasi-Peak	45.4	56.0	10.6	GPH\76131JD02\005	Complied
7	0.735	Neutral	Quasi-Peak	45.8	56.0	10.2	GPH\76131JD02\005	Complied
8	0.956	Neutral	Quasi-Peak	46.6	56.0	9.4	GPH\76131JD02\005	Complied
9	0.992	Neutral	Quasi-Peak	46.1	56.0	9.9	GPH\76131JD02\005	Complied
10	1.248	Neutral	Quasi-Peak	45.9	56.0	10.1	GPH\76131JD02\005	Complied
11	1.307	Neutral	Quasi-Peak	47.1	56.0	8.9	GPH\76131JD02\005	Complied
12	1.604	Neutral	Quasi-Peak	45.4	56.0	10.6	GPH\76131JD02\005	Complied
13	1.901	Neutral	Quasi-Peak	42.7	56.0	13.3	GPH\76131JD02\005	Complied
14	0.362	Neutral	Average (CISPR)	35.6	48.7	13.1	GPH\76131JD02\005	Complied

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MEASUREMENT RESULTS								
No.	Frequency (MHz)	Line	Detector	Level (dBµV)	Limit (dBµV)	Margin (dB)	Graph No.	Result
15	0.425	Neutral	Average (CISPR)	39.3	47.4	8.1	GPH\76131JD02\005	Complied
16	0.429	Neutral	Average (CISPR)	38.9	47.3	8.3	GPH\76131JD02\005	Complied
17	0.488	Neutral	Average (CISPR)	37.8	46.2	8.4	GPH\76131JD02\005	Complied
18	0.492	Neutral	Average (CISPR)	32.5	46.1	13.6	GPH\76131JD02\005	Complied
19	0.672	Neutral	Average (CISPR)	32.3	46.0	13.7	GPH\76131JD02\005	Complied
20	0.722	Neutral	Average (CISPR)	33.1	46.0	12.9	GPH\76131JD02\005	Complied
21	0.735	Neutral	Average (CISPR)	33.3	46.0	12.7	GPH\76131JD02\005	Complied
22	0.965	Neutral	Average (CISPR)	32.4	46.0	13.6	GPH\76131JD02\005	Complied
23	0.983	Neutral	Average (CISPR)	32.0	46.0	14.0	GPH\76131JD02\005	Complied
24	0.987	Neutral	Average (CISPR)	31.8	46.0	14.2	GPH\76131JD02\005	Complied
25	1.289	Neutral	Average (CISPR)	31.3	46.0	14.7	GPH\76131JD02\005	Complied
26	1.554	Neutral	Average (CISPR)	31.9	46.0	14.1	GPH\76131JD02\005	Complied
27	1.851	Neutral	Average (CISPR)	31.0	46.0	15.0	GPH\76131JD02\005	Complied
28	2.985	Neutral	Average (CISPR)	30.0	46.0	16.0	GPH\76131JD02\005	Complied

NOTES

N/A During measurement the engineer did not record any specific notes relevant to report.

TEST EQUIPMENT USED					
RFI ID	INSTRUMENT DESCRIPTION	MODEL NUMBER	CALIBRATION DUE	INTERVAL	
K0008	Conducted AC Emissions / Conducted RF immunity Laboratory	N/A	Calibration not required	N/A	
M1273	20 Hz - 26.6 GHz EMI Test Receiver, Rhode & Schwarz	ESIB 26	08 Apr 2011	12	
C1304	3m Rosenberger Cable	FA210A1030005050	22 Feb 2011	12	
A1829	N-Type Pulse Limiter	ESH3-Z2	25 Oct 2010	12	
C1262	7m BNC Coaxial	FA210A0075008080	03 Apr 2010	12	
M172	Electronic Environmental Monitor	BA-116	21 Jul 2010	12	
A067	Line Impedance Stabilization Network	ESH3-Z5	03 Jun 2010	12	

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8. PHOTOGRAPHS OF EUT

This section contains the following photographs:

Photo Reference Number	Title
PHT\76131JD02\001	Conducted Emissions
PHT\76131JD02\002	Radiated Emissions

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PHT\76131JD02\001 - Conducted Emissions



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PHT\76131JD02\002 - Radiated Emissions

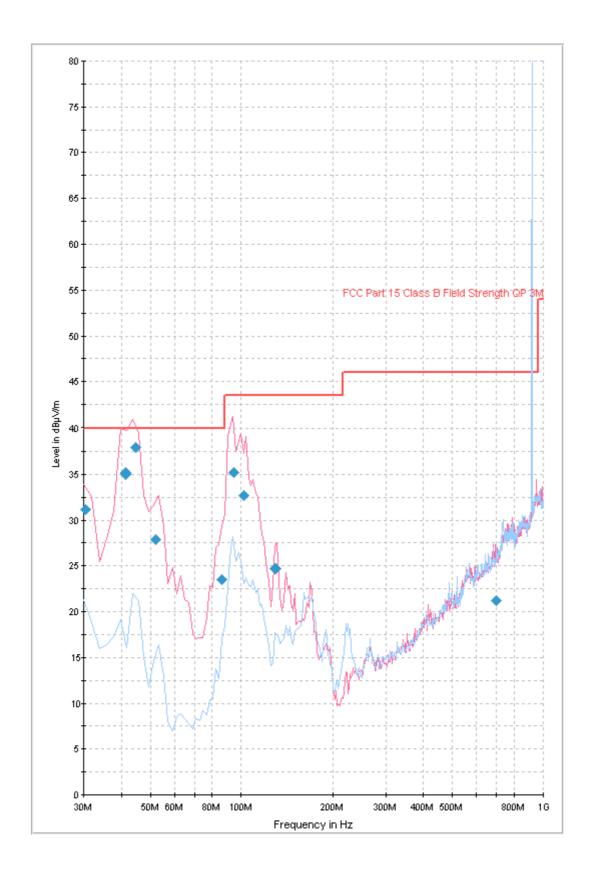


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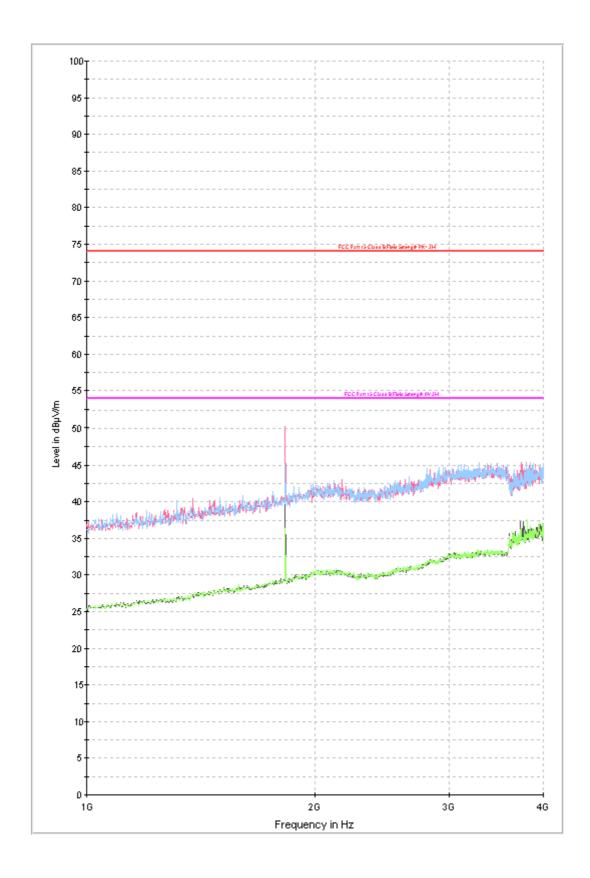
9. GRAPHICAL TEST RESULTS

9.1. This section contains the graphical results for the measurements listed in Section 2.2. Summary of Test Results (above).

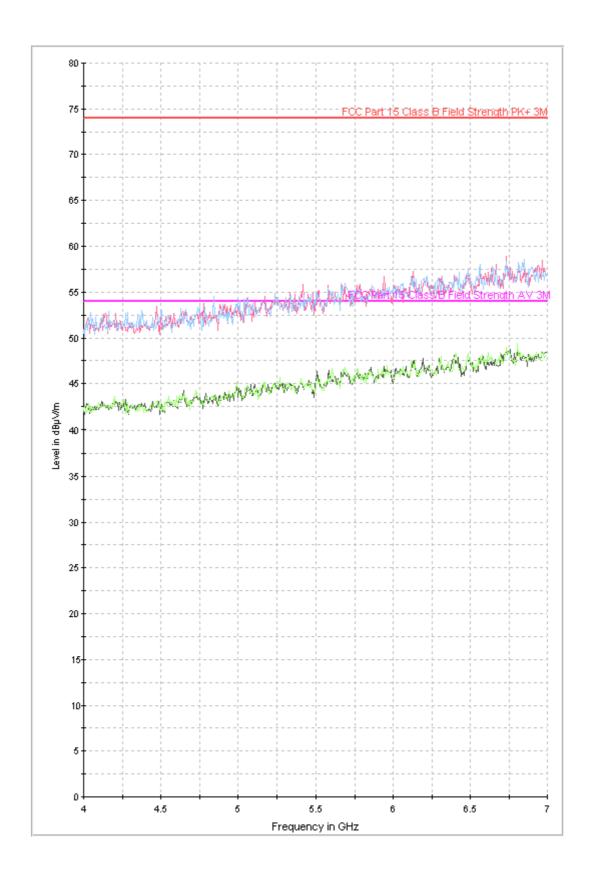
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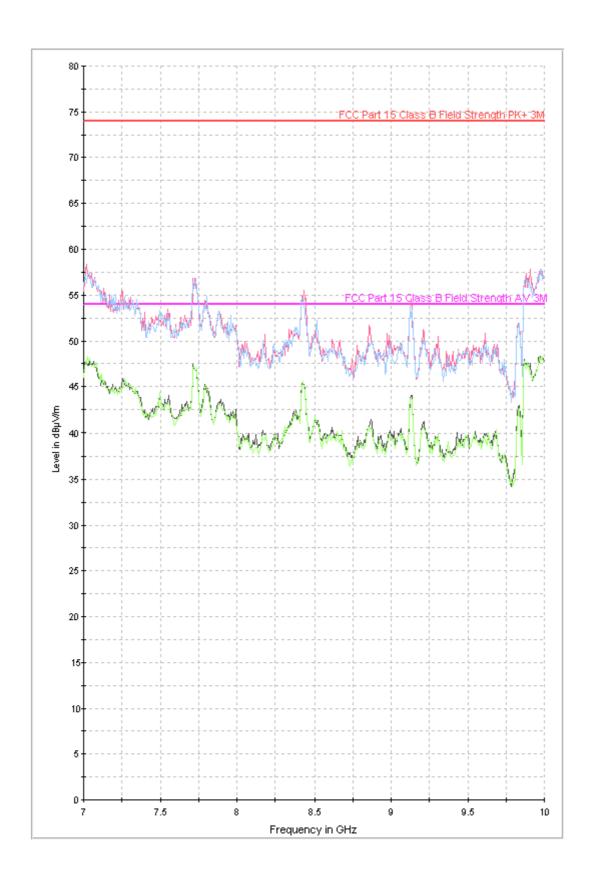
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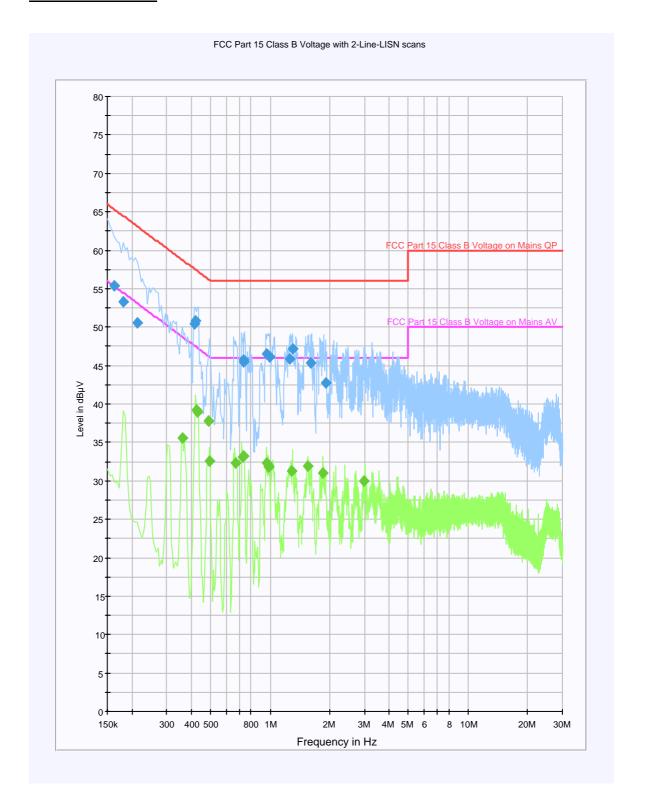
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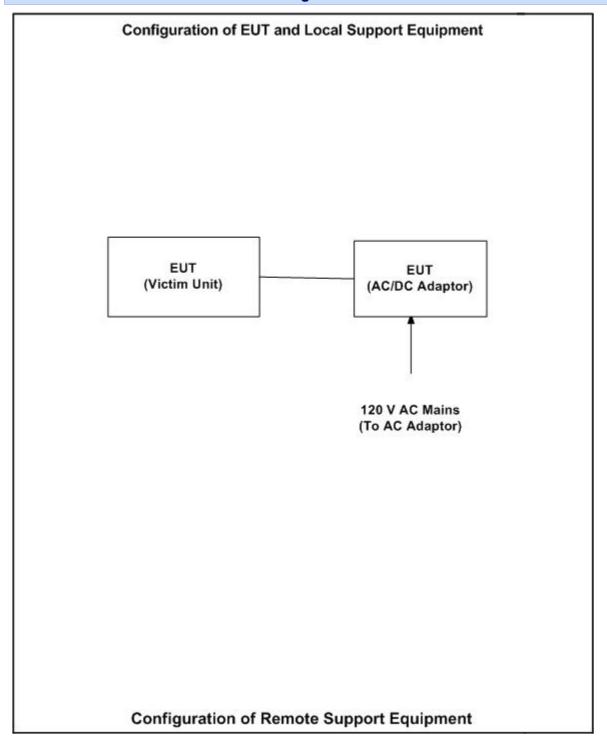
10. TEST CONFIGURATION DRAWING

10.1. This section contains the Test Configuration Drawings for the measurements listed in Section 7: Measurements, Examinations and Derived Results.

Test Configuration Reference Number	Title
DRG\76131JD02\001	Configuration of EUT and Local Support Equipment

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DRG\76131JD02\001 - Test Schematic Diagram



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