Report On

FCC Testing of the
Domo Ltd SOLO Receiver
In accordance with FCC CFR 47 Part 15B

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FCC ID: XRFSOLORX

Document 75907158 Report 01 Issue 2 November 2009

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REPORT ON

FCC Testing of the
Domo Ltd
SOLO Receiver

Document 75907158 Report 01 Issue 2

November 2009

PREPARED FOR

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PREPARED BY

D Yap
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APPROVED BY

C Gould
Authorised Signatory

DATED 02 November 2009

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47: Parts 15B. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

C Lewis S C Hartley D Yap

This report has been up-issued to Issue 2 to amend the FCC ID.

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SECTION 1

REPORT SUMMARY

FCC Testing of the
Domo Ltd
SOLO Receiver

Product Service

1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Domo Ltd, SOLO Receiver Assembly to the requirements of FCC CFR 47 Part 15B.

Objective	To perform FCC Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	Domo Ltd, Trading as Cobham Surveillance
Model Number(s)	Solo 2/4 Receiver
Serial Number(s)	0008038
Software Version	3.6
Hardware Version	2.3
Number of Samples Tested	1
Test Specification/Issue/Date	FCC CFR 47 Part 15B: 2007
Incoming Release Date	Declaration of Build Status 14 September 2009
Disposal Reference Number Date	Returned with client Not Applicable 10 September 2009
Order Number Date	4313 16 July 2009
Start of Test	21 August 2009
Finish of Test	07 September 2009
Name of Engineer(s)	C Lewis D Yap S C Hartley
Related Document(s)	ANSI 63.4 : 2001

1.2 BRIEF SUMMARY OF RESULTS

A brief summary of results in accordance with FCC CFR 47 Part 15B, is shown below.

Configuration 1 - Powered via PSU (110V to 12VDC)						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
2.1	15.109	Radiated Emissions (Enclosure Port)	Receive Mode	2	Pass	ANSI 63.4

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1.3 DECLARATION OF BUILD STATUS

Manufacturer	Domo Ltd, Trading as Cobham Surveillance
Country of origin	United Kingdom
Technical Description	COFDM RX
Model No	Solo 2/4 Receiver Assembly
Part No	SA0037
Serial No	008038
Drawing Number	-
Build Status	Active
Software Issue	3.6
Hardware Issue	2.3
FCC ID	XRFSOLORX
Highest Operating Frequency	255MHz

Signature	Stuart Doe
Date	14 September 2009
D of B S Serial No	75907158-41000

Note: This document has been prepared to enable manufacturers with no mechanism for producing their own Declaration of Build Status, to declare the build state of the equipment submitted for test.

No responsibility will be accepted by TÜV Product Service as to the accuracy of the information declared in this document by the manufacturer.

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1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) was a Domo Ltd, SOLO 4 Receiver. The photograph below shows the EUT. A full technical description can be found in the manufacturer's documentation.

Equipment Under Test

Product Service

1.4.2 Test Configuration

Configuration 1: Standalone

The EUT was configured as a standalone item and powered via a 12V DC supply.

1.4.3 EUT Cable / Port Identification

Port	Max Cable Length specified	Usage	Type	Screened
DC Power	1m	Power Cable	2 core	Yes (Copper Tape was used at time of test)

1.4.4 Modes of Operation

Modes of operation of each EUT during testing were as follows:

Mode 1 - Receive Mode

Information on the specific test modes utilised are detailed in the test procedure for each individual test.

1.5 TEST CONDITIONS

For all tests the EUT was set up in accordance with the relevant test standard and to represent typical operating conditions. Tests were applied with the EUT situated in a shielded enclosure as appropriate.

The EUT was powered from a 12V Car Battery.

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90987 Octagon House, Fareham Test Laboratory

1.6 DEVIATIONS FROM THE STANDARD

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

1.7 MODIFICATION RECORD

The table below details modifications made to the EUT during the test programme. The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
0	As supplied by the customer	N/A	N/A
1	Receiver Assembly lid gasket improved and down converters changed	Colin Wysall	11 August 2009
2	DC Input Cable has been screened using copper tape, client will manufacture screened DC Cable at a later date. The Down Converters have been removed from the Test Set Up, as client has declared they are not part of the EUT.	Colin Wysall	21 August 2009

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SECTION 2

TEST DETAILS

FCC Testing of the
Domo Ltd
SOLO Receiver

2.1 RADIATED EMISSIONS (ENCLOSURE PORT)

2.1.1 Specification Reference

FCC CFR 47 Part 15B, Clause 15.109

2.1.2 Equipment Under Test

SOLO Receiver, S/N: 008038

2.1.3 Date of Test and Modification State

21 August to 07 September 2009 - Modification State 2

2.1.4 Test Equipment Used

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

2.1.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of ANSI 63.4.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1

2.1.6 Environmental Conditions

	21 August 2009	07 September 2009
Ambient Temperature	19.6°C	20°C
Relative Humidity	42%	56%
Atmospheric Pressure	1017mbar	1015mbar

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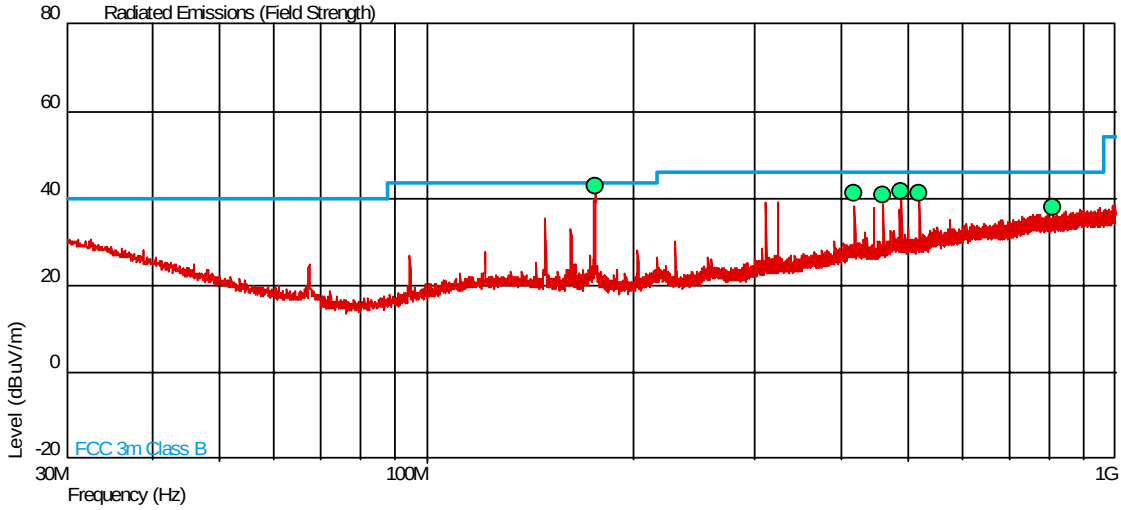
2.1.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15B for Radiated Emissions (Enclosure Port).

The test results are shown on the following pages

Configuration 1 - Mode 1

30MHz to 1GHz



Frequency (MHz)	QP Level (dBuV/m)	QP Level (uV/m)	QP Limit (dBuV/m)	QP limit (uV/m)	QP Margin (dBuV/m)	QP Margin (uV/m)	Angle (deg)	Height (m)	Polarity
175.503	42.8	138.0	43.5	150.0	-0.7	-12.0	158	1.01	Vertical
418.498	41.2	114.8	46.0	200.0	-4.8	-85.2	223	1.00	Horizontal
460.792	40.9	110.9	46.0	200.0	-5.1	-89.1	214	1.00	Horizontal
489.586	41.5	118.9	46.0	200.0	-4.5	-81.1	7	1.00	Vertical
518.387	41.1	113.5	46.0	200.0	-4.9	-86.5	340	1.00	Vertical
810.013	37.8	77.6	46.0	200.0	-8.2	-122.4	188	1.00	Horizontal

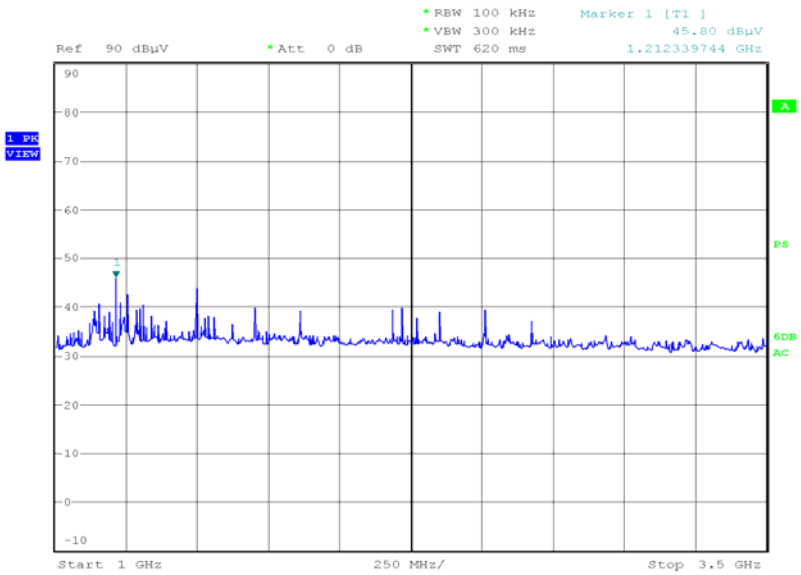
1GHz to 13GHz

Highest emission measurements are recorded in the table below.
Note: Peak Measurements performed with 1MHz RBW & VBW, Average Measurements performed with 1MHz RBW & 10Hz VBW.

Frequency (GHz)	Peak Level (dBuV/m)	Peak Level (uV/m)	Average Level (dBuV/m)	Average Level (uV/m)	Peak Limit (uV/m)	Average Limit (uV/m)	Angle (deg)	Height (m)	Polarity
1.215	37.0	70.8	33.4	46.8	5000	500	38	1.00	Vertical
1.255	35.6	60.3	29.6	30.2	5000	500	46	1.00	Vertical
1.497	34.0	50.1	28.6	26.9	5000	500	205	1.00	Vertical

1GHz to 3.5GHz

Vertical



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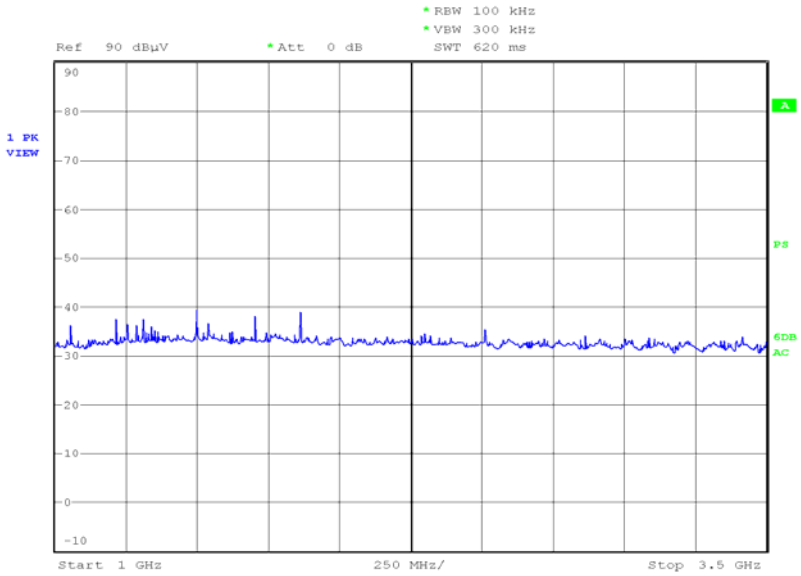

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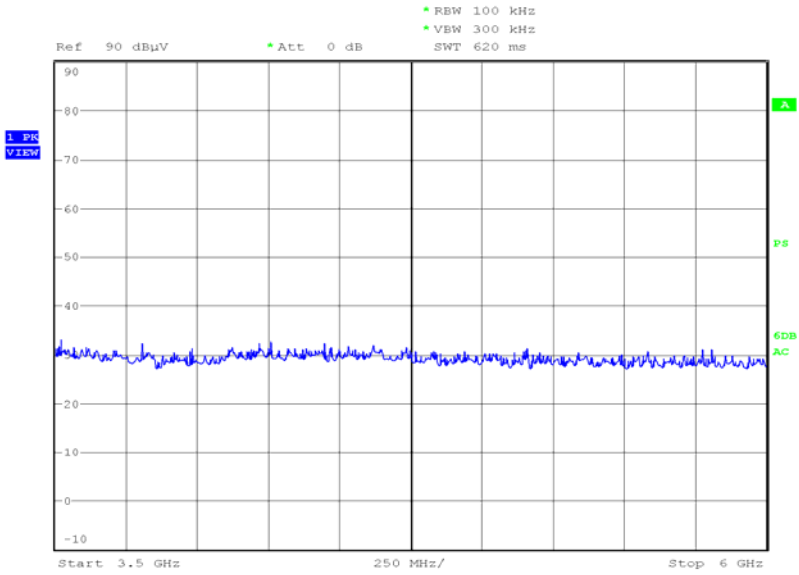
3.5GHz to 6GHz

Vertical



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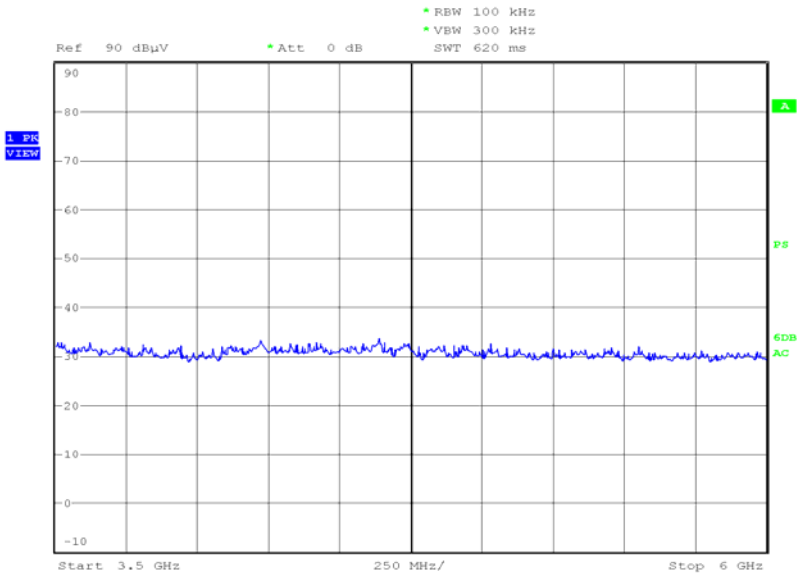

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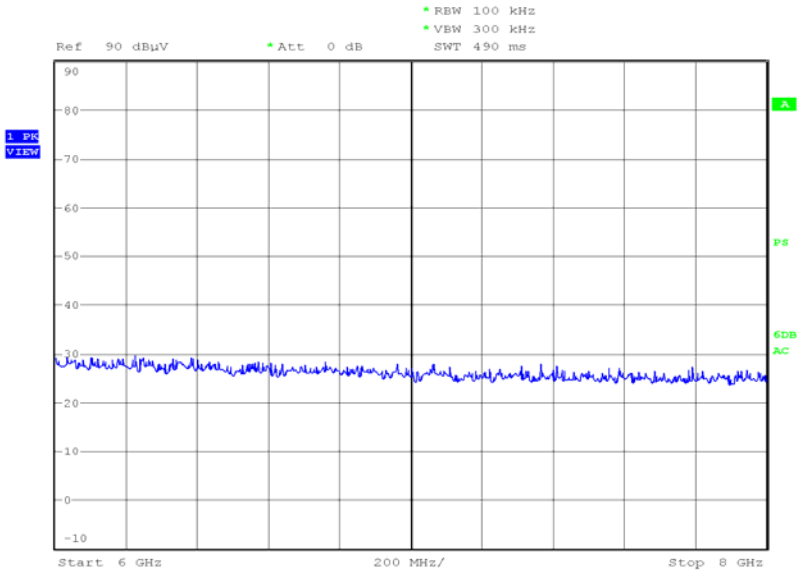
6GHz to 8GHz

Vertical



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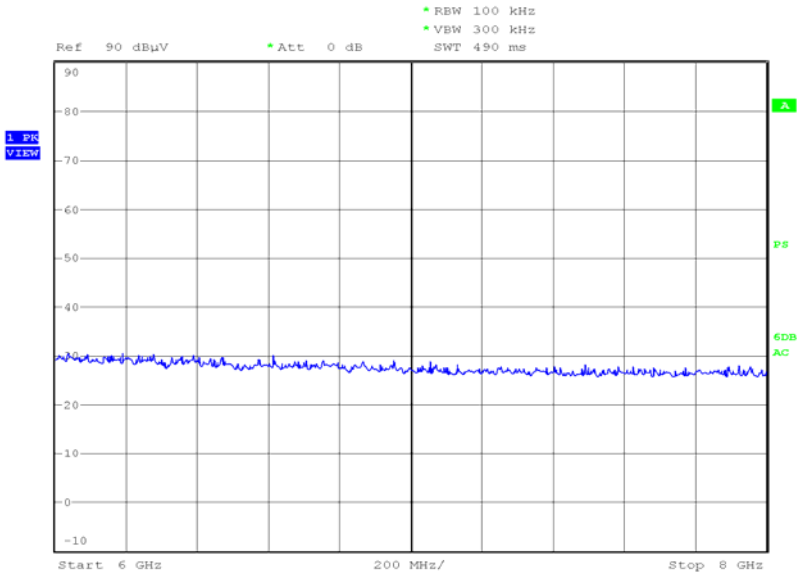

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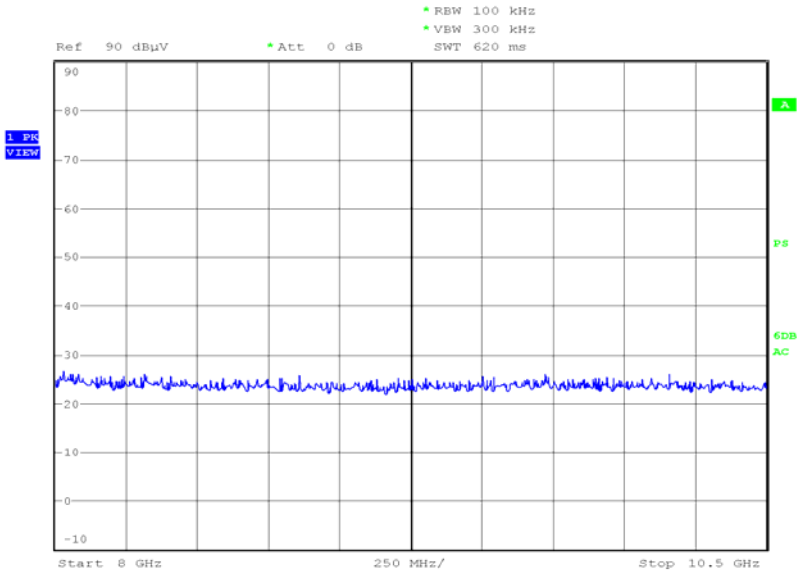
8GHz to 10.5GHz

Vertical



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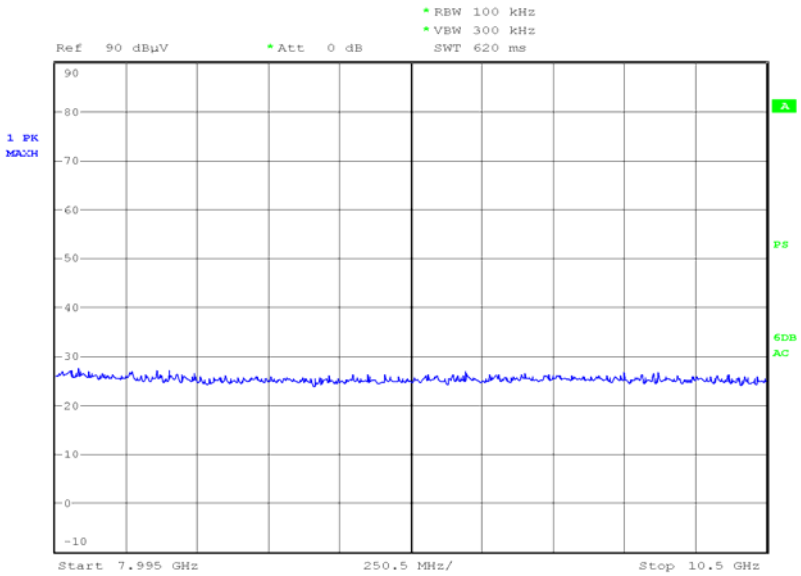

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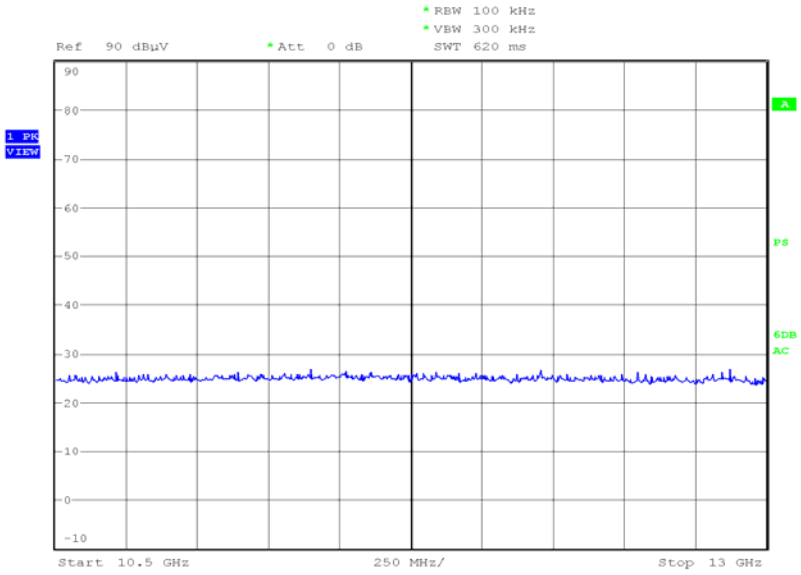
10.5GHz to 13GHz

Vertical



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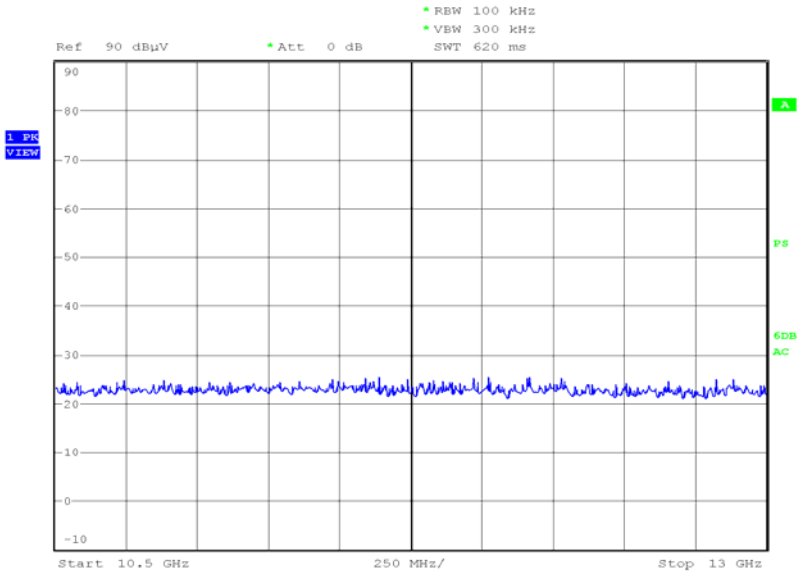

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SECTION 3

TEST EQUIPMENT USED

3.1 TEST EQUIPMENT USED

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

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Section 2.1 EMC - Radiated Emissions					
Spectrum Analyser	Hewlett Packard	8562A	14	12	15-Jul-2010
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	234	12	13-Sep-2009
Attenuator 20dB 5W	Marconi	56534-904H	377	12	29-Apr-2010
Screened Room (5)	Rainford	Rainford	1545	36	11-Feb-2011
Mast Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Turntable/Mast Controller	EMCO	2090	1610	-	TU
Antenna (Bilog)	Chase	CBL6143	2904	24	28-Nov-2009
Comb Generator	Schaffner	RSG1000	3034	-	TU
Compliance 3 Emissions	Schaffner	C3e Software V.4.00.00	3274	-	N/A - Software
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	1-Sep-2010

TU – Traceability Unscheduled

3.2 MEASUREMENT UNCERTAINTY

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

Test Discipline	Frequency / Parameter	MU
Radiated Emissions, Bilog Antenna, AOATS	30MHz to 1GHz Amplitude	5.1dB*
Radiated Emissions, Horn Antenna, AOATS	1GHz to 40GHz Amplitude	6.3dB*
Conducted Emissions, LISN	150kHz to 30MHz Amplitude	3.2dB*
Conducted Emissions, ISN	150kHz to 30MHz Amplitude	2.1dB
Substitution Antenna, Radiated Field	30MHz to 18GHz Amplitude	2.6dB
Discontinuous Interference	150kHz to 30MHz Amplitude	3.0dB*
Interference Power	30MHz to 300MHz Amplitude	3.0dB*
Radiated E-Field Susceptibility	26MHz to 2.5GHz Test Amplitude	1.4dB†
Conducted Susceptibility	100kHz to 250MHz Amplitude	1.8dB†
DC Input Ripple Immunity	Current Voltage	0.45% 0.91%
Power Frequency Magnetic Field	50Hz/60Hz Amplitude	0.45%
Magnetic Emissions	9kHz to 30MHz Amplitude	3.4dB*
Magnetic Field/Flux iaw EN 50366	10Hz to 400kHz	2.64%
Harmonics and Flicker	The test was applied using proprietary equipment that meets the requirements of EN 61000-3-2 and EN 61000-3-3	—
Mains Voltage Variations and Interrupts	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11	—
Fast Transient Burst	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	—
Electrostatic Discharge	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-2	—
Surge	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-5	—
Vehicle Transients	The test was applied using proprietary equipment that meets the requirements of ISO 7637-1 and 2	—
Compass Safe Distance	Azimuth Accuracy	0.10°

Worst case error for both Time and Frequency measurement 12 parts in 10^6.

* In accordance with CISPR 16-4
† In accordance with UKAS Lab 34

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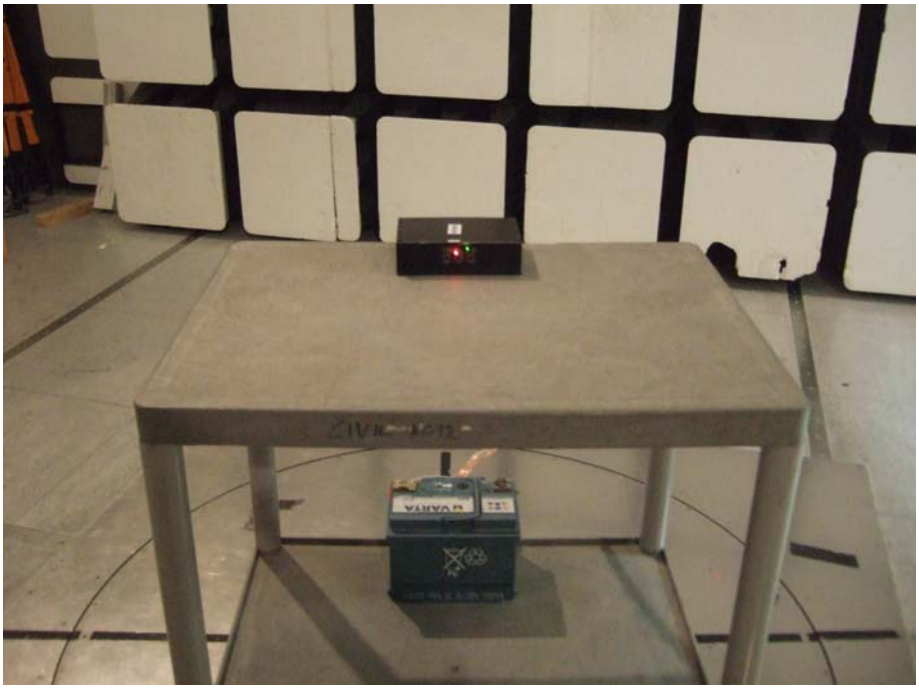
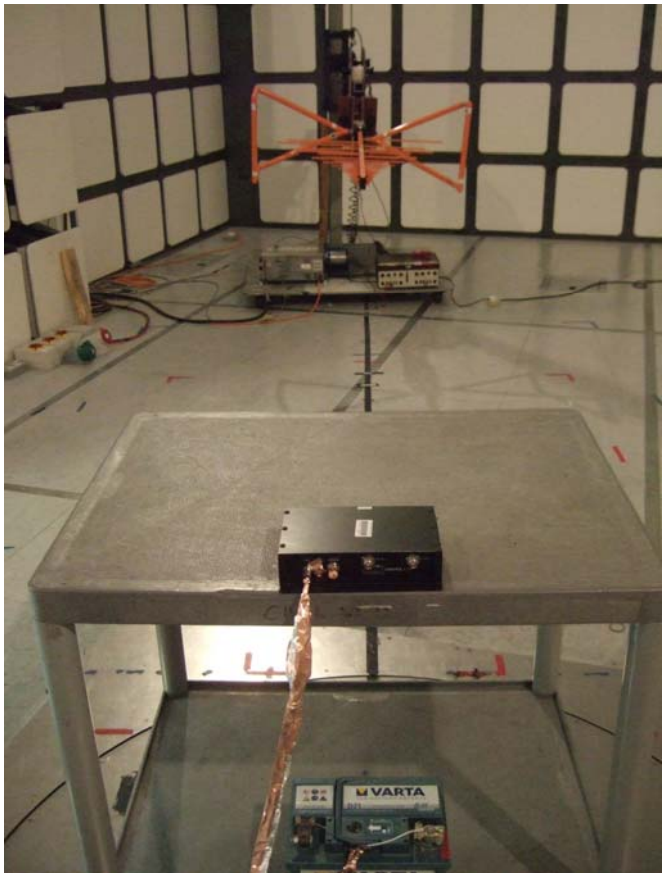
SECTION 4

PHOTOGRAPHS

4.1 TEST SET UP PHOTOGRAPHS





Radiated Emissions (Enclosure Port)

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SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT

5.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT

This report relates only to the actual item/items tested.

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Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).

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