

# Test Report

<b>Product</b>	Inductive Charger for Initialization Devices		
<b>Name and address of the applicant</b>	Stryde Ltd. Halkin Building SE1 7ND London, United Kingdom		
<b>Name and address of the manufacturer</b>	Stryde Ltd. Halkin Building SE1 7ND London, United Kingdom		
<b>Model</b>	Initialization Device Charger AD		
<b>Rating</b>	100-240VAC - 6A, 50/60Hz		
<b>Trademark</b>	Stryde		
<b>Serial number</b>	-		
<b>Additional information</b>	-		
<b>Tested according to</b>	<b>FCC Part 15, subpart B</b> Other Class B Digital Device <b>ISED Canada ICES-001, Issue 6</b> ISM Devices, Wireless Power Transfer		
<b>Order number</b>	401299		
<b>Tested in period</b>	2018-12-01 to 2019-05-10		
<b>Issue date</b>	2020-11-03		
<b>Name and address of the testing laboratory</b>	 Instituttveien 6 Kjeller, Norway	CAB Number: FCC: NO0001 ISED: NO0470	 
An accredited technical test executed under the Norwegian accreditation scheme			
			
Prepared by [Jan G Eriksen]		Approved by [G. Suhanthakumar]	
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Template version: B

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## 1 INFORMATION

### 1.1 Test Item

Name	Initialization Device Charger AD
FCC ID	2AV78-IDCHAD
Model/version	103053489 AD
Serial number	-
Hardware identity and/or version	V1
Software identity and/or version	-
Operating Modes	Charging
Type of Power Supply	Built in AC/DC 100-240V 50/60Hz 6A
Antenna Connector	N/A
Desktop Charger	N/A

#### Description of Test Item

The EUT is an inductive charger for Initialization Devices with Wireless Power Transfer (WPT).

The charger has 45 charging points which are completely independent regarding the frequency used at any given time.

### 1.2 Normal test condition

Temperature: 21.1 – 22.1 °C

Relative humidity: 41 - 50 %

Normal test voltage: 115V<sub>AC</sub> 60Hz

The values are the limit registered during the test period.

### 1.3 Test Engineer(s)

Jan G Eriksen

### 1.4 Test Equipment

See list of test equipment in clause 4.

### 1.5 Comments

All ports were populated during spurious emission measurements.

Power supply variation within 85% to 115% of nominal value has no influence on measured values.

## 2 TEST REPORT SUMMARY

### 2.1 General

All measurements are traceable to national standards.

The tests were conducted for the purpose of demonstrating compliance with FCC CFR 47 Part 15B.

Tests were performed in accordance with ANSI C63.4-2014.

Radiated tests were made in a semi-anechoic chamber at measuring distances of 3m and 10m.

A description of the test facility is on file with the FCC and Industry Canada.

<input checked="" type="checkbox"/> New Submission	<input checked="" type="checkbox"/> Production Unit
<input type="checkbox"/> Class II Permissive Change	<input type="checkbox"/> Pre-production Unit
<b>JAB</b> Equipment Code	<input type="checkbox"/> Family Listing



#### **THIS TEST REPORT APPLIES ONLY TO THE ITEM(S) AND CONFIGURATIONS TESTED.**

Deviations from, additions to, or exclusions from the test specifications are described in "Summary of Test Data".

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## 2.2 Test Summary

Name of test	FCC Part 15 reference	Result
Supply Voltage Variations	15.31(e)	Pass 1)
Power Line Conducted Emission	15.107(a)	Pass
The field strength of radiated emissions	15.109	Pass

- 1) The device operates on AC mains 115V/60Hz
- 2) The device has internal Power Transfer Loops

### 3 TEST RESULTS

#### 3.1 Power Line Conducted Emissions

##### FCC Part 15.107(a)

Measurement procedure: ANSI C63.4-2014 using 50  $\mu$ H/50 ohms LISN

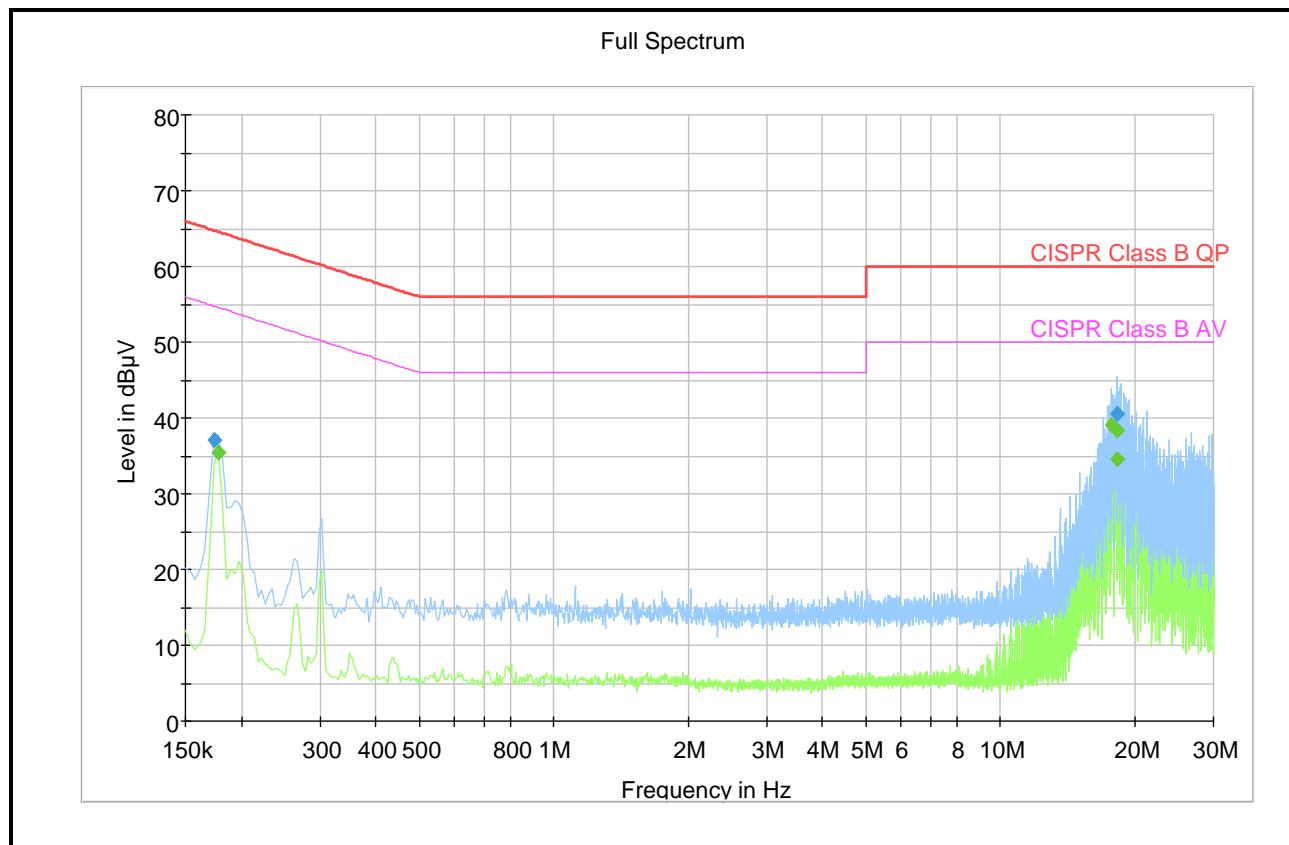
Test voltage: 115V AC 60Hz

Test Results: Complies

Measurement Data: See attached graph, (Peak detector)

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Average (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter
0.174	37.11	---	64.77	27.65	1000	9	L1	OFF
0.178	---	35.52	54.58	19.06	1000	9	L1	OFF
17.744	---	39.15	50.00	10.85	1000	9	L1	OFF
18.240	40.63	---	60.00	19.37	1000	9	L1	OFF
18.300	---	38.34	50.00	11.66	1000	9	L1	OFF
18.304	---	34.53	50.00	15.47	1000	9	L1	OFF

All values for Phase N were more than 10 dB below the Average limit, even with Peak Detector.



EUT charging @ 115V AC 60Hz

Plot shows worst case of Phase L1 and Phase N.  
 Blue trace is Peak Detector; Green is Average Detector.

### 3.2 Field strength of radiated emissions

#### Radiated emission 30 – 1000 MHz.

Test voltage: 115V AC 60Hz

Detector: Quasi-Peak

Measuring distance 10 meters.

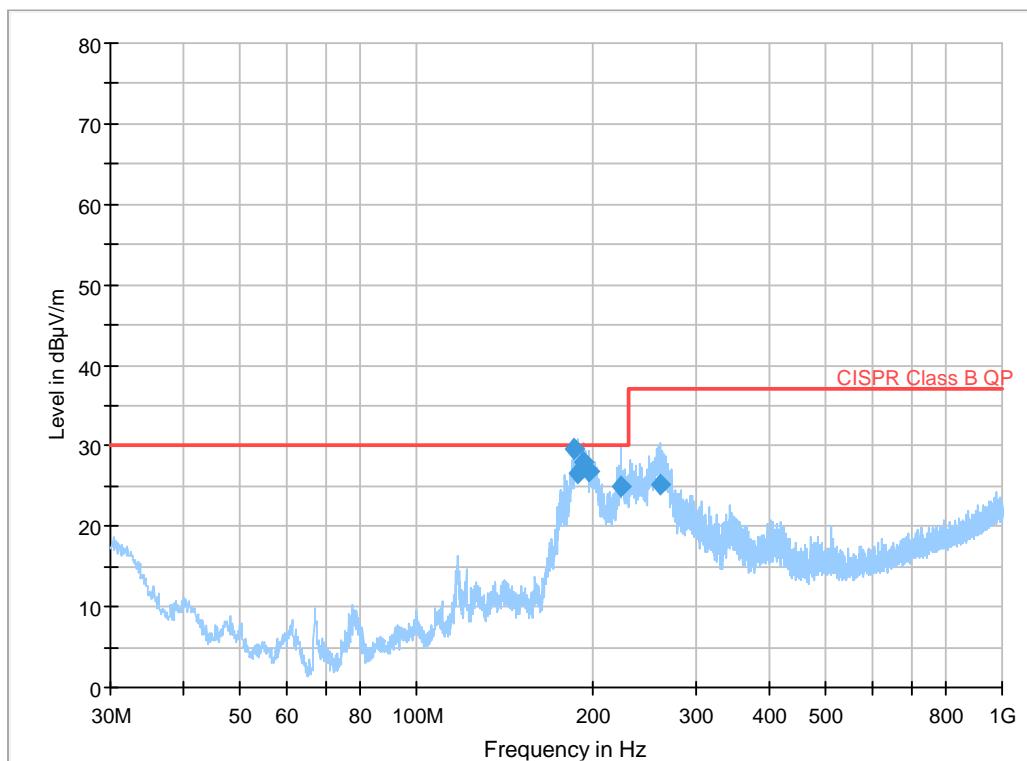
Measured according to CISPR setup, method, and Class B limits.

#### Measurement Data:

Frequency	Operational condition	Field strength	Polarization	Measuring distance	Limit CISPR Cl. B	Margin
MHz		dB $\mu$ V/m	V/H	metres	dB $\mu$ V/m	dB
186.295800	Charging	29.0	V	10	30	1.0
187.970850	Charging	26.0	V	10	30	4.0
192.304400	Charging	27.5	V	10	30	2.5
196.919500	Charging	26.4	V	10	30	3.6
223.359050	Charging	24.6	V	10	37	5.4
260.115350	Charging	24.8	V	10	37	5.2

See attached graphs.

Full Spectrum



#### Charging mode

Plot shows worst case of Vertical and Horizontal Polarization

**Radiated emission 1000 – 6000 MHz.**

Test voltage 115V AC 60Hz

Detector: Peak/Average

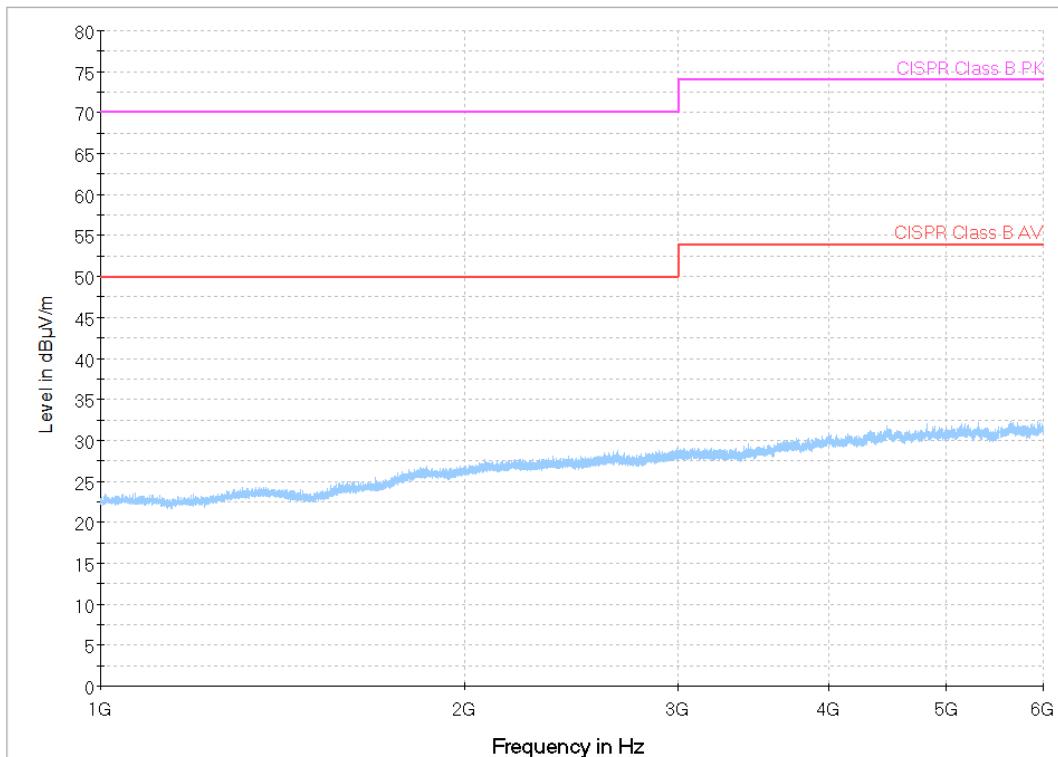
Measuring distance 3 meters.

Measured according to CISPR setup, method, and Class B limits.

**Measurement Data Vertical Polarisation:**

Frequency	Operational condition	Field strength Peak	Field strength Average	Limit Peak CISPR Cl. B	Limit Avg. CISPR Cl. B	Margin Peak	Margin Average
MHz		dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	dB
1000-6000	Charging	All measured values are more than 20 dB below limit line					

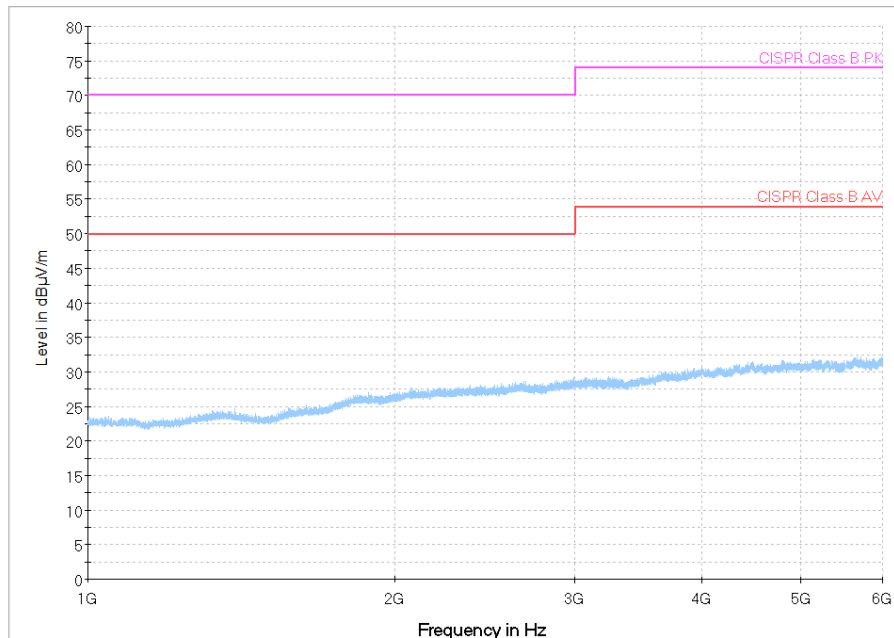
See attached graphs.


**1000-6000 MHz, Vertical polarization**

**Measurement Data Horizontal Polarisation:**

Frequency	Operational condition	Field strength Peak	Field strength Average	Limit Peak CISPR Cl. B	Limit Avg. CISPR Cl. B	Margin Peak	Margin Average
MHz		dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	dB
1000-6000	Charging	All measured values are more than 20 dB below limit line					

See attached graphs.



**1000-6000 MHz, Horizontal polarization**

## 4 Measurement Uncertainties

<b>Measurement Uncertainty Values</b>		<b>Uncertainty</b>
<b>Test Item</b>		
Spurious Emissions, Radiated	< 1 GHz	±2.5 dB
	> 1 GHz	±2.2 dB
Power Line Conducted Emissions		+2.9 / -4.1 dB
Temperature Uncertainty		±1 °C

All uncertainty values are expanded standard uncertainty to give a confidence level of 95%, based on coverage factor k=2

## 5 LIST OF TEST EQUIPMENT

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment and ancillaries are identified (numbered) by the Test Laboratory.

No.	Model number	Description	Manufacturer	Ref. no.	Cal. date	Cal. Due
1	ESU40	Measuring Receiver	Rohde & Schwarz	LR-1639	01/2019	01/2020
2	JB3	BiLog Antenna	Sunol Sciences	N-4525	11/2017	11/2019
3	3117PA	Horn Antenna with preamp	EMCO	LR-1717	12/2018	12/2019
4	HFH2-Z2	Loop Antenna	Rohde & Schwarz	LR-1660	11/2016	11/2019
5	10001iX Series II	AC Power Source	California Instruments	LR-1549	08/2015	08/2020
6	ESH3-Z5	AMN	Rohde & Schwarz	N-3403	07/2017	07/2019
7	ESHS-10	EMI Receiver	Rohde & Schwarz	N-3528	08/2017	08/2019
8	Model 87V	Multimeter	Fluke	LR-1599	02/2019	02/2021

The software listed below has been used for one or more tests.

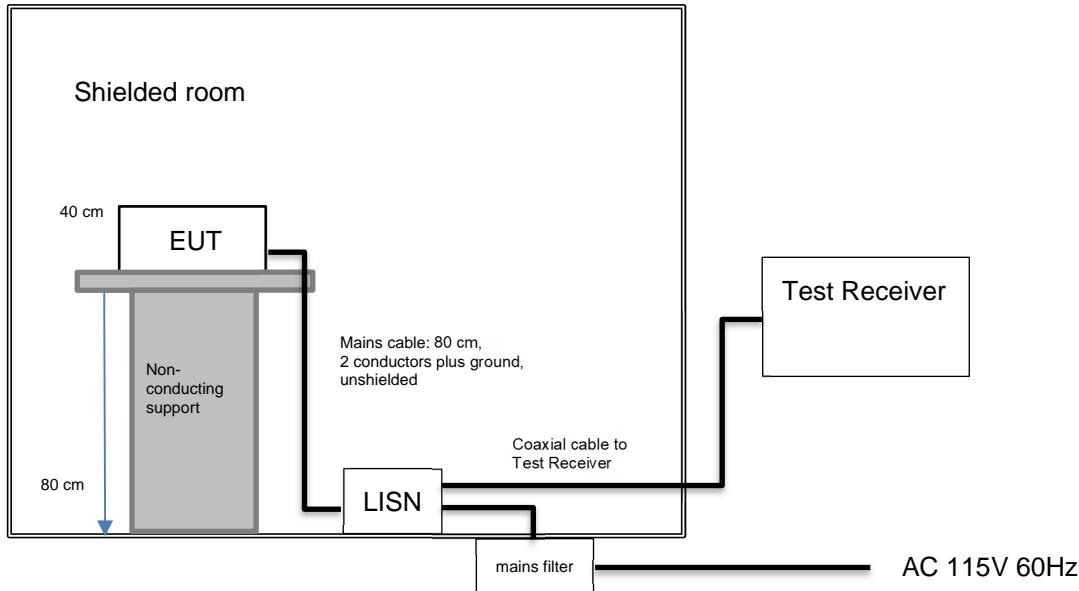
No.	Manufacturer	Name	Version	Comment
1	Rohde & Schwarz	EMC32	10.40.10	Power Line Conducted test software
2	Rohde & Schwarz	EMC32	10.40.10	Radiated Emission test software
3	Rohde & Schwarz	GPIBShot	2.7	Screenshots from R&S Spectrum Analyzers
4				

## Revision history

Revision	Date	Comment	Sign
00	2020-11-03	First version	FS

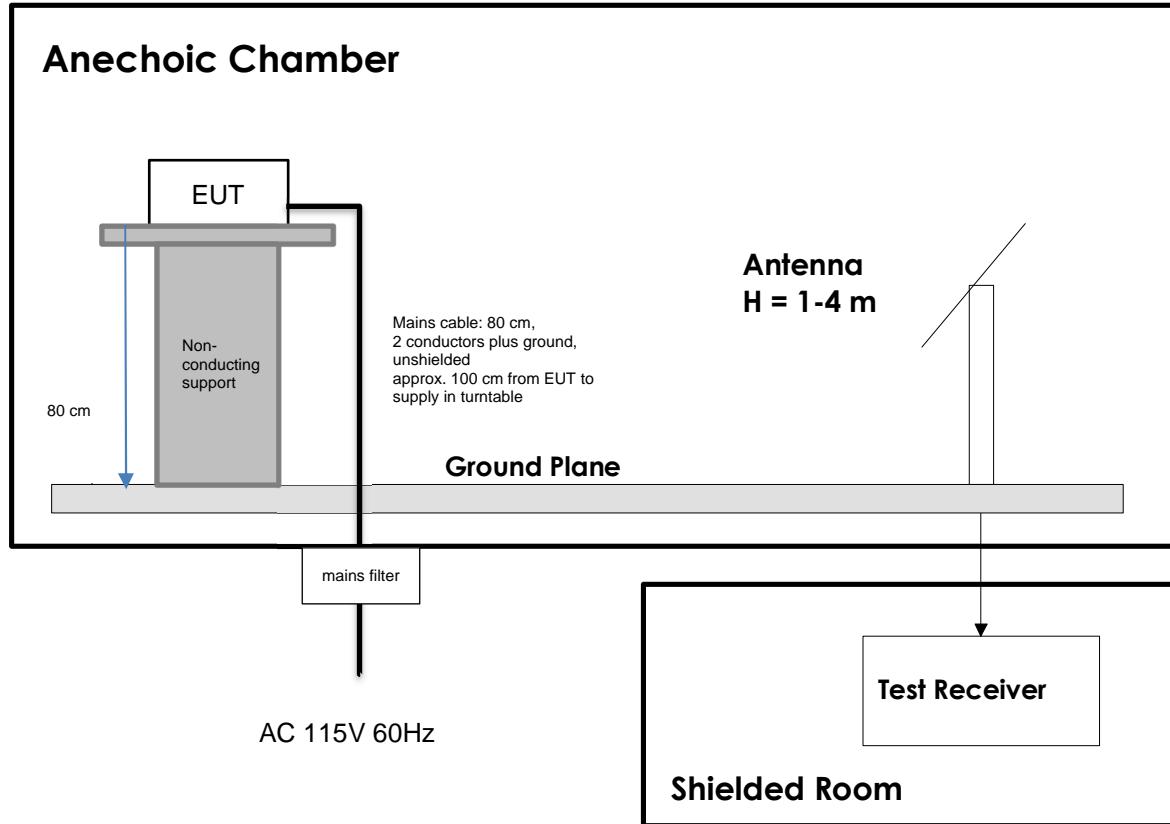
## 6 BLOCK DIAGRAM

### 6.1 Power Line Conducted Emission



The test receiver was located outside the shielded room.

## 6.2 Test Site Radiated Emission



This test setup is used for all radiated emissions tests. For frequencies below 1000 MHz the measuring distance is 10m, for all other frequencies measuring distance is 3m.

Emissions above 1 GHz are measured with a Spectrum Analyzer and Horn Antenna and with the preamplifier after the antenna. Tests above 1GHz were performed with the floor between the EUT and the measuring antenna covered by floor absorbers.