



SENTON

Choose certainty.  
Add value.

December 14,  
2011

Page 1 of 28

## Prüfbericht / Test Report

Nr. / No. 14912-03917-3 (Edition 3)

Applicant: Siemens AG - Fürth  
Type of equipment: RFID Reader Module for Handheld PC  
Type designation: Handheld with RF310R  
Order No.: 2072034566  
Test standards: FCC Code of Federal Regulations,  
CFR 47, Part 15,  
Sections 15.205, 15.207, 15.209 and 15.225 (a), (d)  
  
Industry Canada Radio Standards Specifications  
RSS-GEN Issue 3, Sections 7.2.2, 7.2.4 and 7.2.5(Category I Equipment)  
RSS-210 Issue 8, Section A2.6 (a), (d)

### **Note:**

The test data of this report is related only to the individual item which has been tested. This report shall not be reproduced except in full extent without the written approval of the testing laboratory.

## Table of Contents

1	Description of the Equipment Under Test (EUT) .....	3
2	Administrative Data .....	4
3	Identification of the Test Laboratory .....	5
4	Summary .....	6
5	Operation Mode and Configuration of EUT .....	7
5.1	Radiated Emission Measurement 9 kHz to 30 MHz .....	8
5.2	Radiated Emission in Fully or Semi Anechoic Room .....	10
5.3	Radiated Emission at Alternative Test Site .....	12
6	Photographs Taken During Testing .....	14
7	Test Results .....	21
7.1	Radiated Emission Measurement 9 kHz to 30 MHz .....	22
7.2	Radiated Emission Measurement 30 MHz to 1 GHz .....	23
8	Referenced Regulations .....	24
9	Test Equipment List with Calibration Data .....	26
10	Revision History .....	27
Annex A	Charts taken during testing .....	1
A.1	Charts taken during final measurements in the frequency range 9 kHz – 1 GHz .....	1

## 1 Description of the Equipment Under Test (EUT)

General data of EUT	
Type designation <sup>1</sup> :	Handheld with RF310R
Parts <sup>2</sup> :	
Serial number(s):	00081
Manufacturer:	Siemens AG - Fürth
Type of equipment:	RFID Reader Module for Handheld PC
Version:	
FCC -ID:	--
Additional parts/accessories:	

Technical data of EUT	
Application frequency range:	13.010 - 14.110 MHz
Frequency range:	13.56 MHz
Operating frequency:	13.56 MHz
Type of modulation:	ASK,
Pulse train:	---
Pulse width:	---
Number of RF-channels:	
Channel spacing:	N/A
Designation of emissions <sup>3</sup> :	N/A
Type of antenna:	Integrated
Size/length of antenna:	N/A
Connection of antenna:	<input type="checkbox"/> detachable <input checked="" type="checkbox"/> not detachable
Type of power supply:	Battery supply
Specifications for power supply:	nominal voltage:      3.6 V

<sup>1</sup> Type designation of the system if EUT consists of more than one part.

<sup>2</sup> Type designations of the parts of the system, if applicable.

<sup>3</sup> Also known as "Class of Emission".

## 2 Administrative Data

### Application details

Applicant (full address):	Siemens AG - Fürth Siemensstraße 2-4 90766 Fürth Deutschland
Contact person:	Norbert Wluka
Order number:	2072034566
Receipt of EUT:	July 25, 2011
Date(s) of test:	July 25, 2011 – August 2, 2011
Note(s):	N/A

### Report details

Report number:	14912-03917-3
Edition:	3
Issue date:	December 14, 2011



### 3 Identification of the Test Laboratory

#### Details of the Test Laboratory

Company name:	TÜV SÜD SENTON GmbH
Address:	Aeussere Fruehlingstrasse 45 D-94315 Straubing Germany
Laboratory accreditation:	DAR-Registration No. DAT-PL-171/94-03
FCC test site registration number	90926
Industry Canada test site registration:	3050A-2
Contact person:	Mr. Johann Roidt
	Phone: +49 9421 5522-0 Fax: +49 9421 5522-99

## 4 Summary

### Summary of test results

The tested sample complies with the requirements set forth in the

**Code of Federal Regulations CFR 47, Part 15, Sections 15.205, 15.209 and 15.225 (a), (d)**

of the Federal Communication Commission (FCC) and the

**Radio Standards Specifications**

**RSS-GEN Issue 3, Sections 7.2.2, 7.2.5 and RSS 210 Issue 8, A2.6 (a), (d) (Category I Equipment)**

of Industry Canada (IC).

### Personnel involved in this report

Laboratory Manager:



Mr. Johann Roidt

Responsible for testing:



Mr. Martin Steindl

Responsible for test report:

Mr. Martin Steindl

## 5 Operation Mode and Configuration of EUT

### Operation Mode(s)

The EUT was configured to transmitt continuously at 13.56 MHz

### Configürung(s) of EUT

The EUT was configured as stand alone device

### List of ports and cables

<i>Port</i>	<i>Description</i>	<i>Classification<sup>4</sup></i>	<i>Cable type</i>	<i>Cable length</i>
---				

### List of devices connected to EUT

<i>Item</i>	<i>Description</i>	<i>Type Designation</i>	<i>Serial no. or ID</i>	<i>Manufacturer</i>
---				

### List of support devices

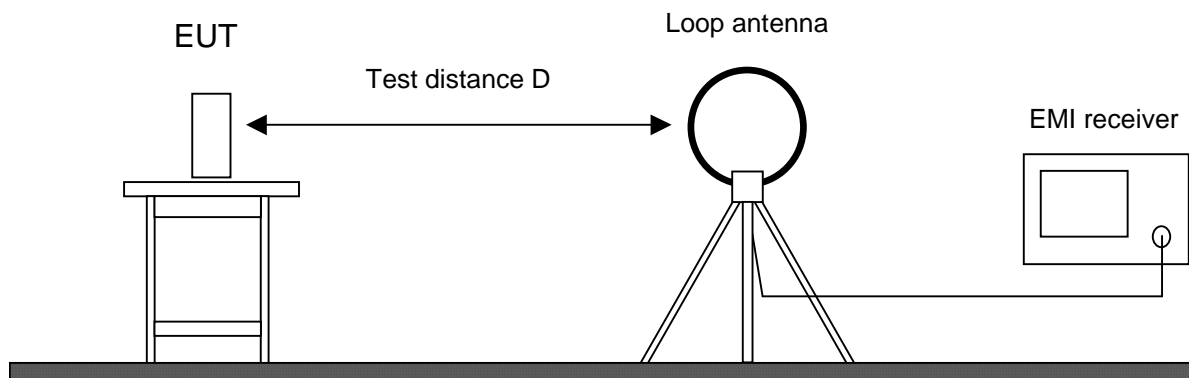
<i>Item</i>	<i>Description</i>	<i>Type Designation</i>	<i>Serial no. or ID</i>	<i>Manufacturer</i>
---				

<sup>4</sup> Ports shall be classified as ac power, dc power or signal/control port

## 5.1 Radiated Emission Measurement 9 kHz to 30 MHz

Measurement Procedure:	
Rules and specifications:	CFR 47 Part 15, sections 15.205 and 15.209 IC RSS-GEN Issue 3, sections 7.2.2 and 7.2.5
Guide:	ANSI C63.4
<p>Radiated emission in the frequency range 9 kHz to 30 MHz is measured using an active loop antenna. First the whole spectrum of emission caused by the equipment is recorded at a distance of 3 meters in a fully or semi anechoic room with the detector of the spectrum analyzer or EMI receiver set to peak. This configuration is also used for recording the spectrum of intentional radiators.</p> <p>Hand-held or body-worn devices are rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit and therefore shall be used for final testing. EUT is rotated all around to find the maximum levels of emissions. Equipment and cables are placed and moved within the range of position likely to find their maximum emissions.</p> <p>If worst case emission of the EUT cannot be recorded with EUT in standard position and loop antenna in vertical polarization the EUT (or the radiating part of the EUT) is rotated by 90 degrees instead of changing the loop antenna to horizontal polarization. This procedure is selected to minimize the influence of the environment (e.g. effects caused by the floor especially with longer distances).</p> <p>Final measurement is performed at a test distance D of 30 meters using an open field test site. In case the regulation requires testing at other distances, the result is extrapolated by either making measurements at an additional distance D of 10 meters to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). In cases of very low emissions measurements are performed at shorter distances and results are extrapolated to the required distance. The provisions of CFR 47 Part 15 sections 15.31(d) and (f)(2) apply. According to CFR 47 Part 15 section 15.209(d) final measurement is performed with detector function set to quasi-peak except for the frequency bands 9 to 90 kHz and 110 to 490 kHz where, for non-pulsed operation, average detector is employed.</p> <p>If the radiated emission limits are expressed in terms of the average value of the emission there also is a peak limit corresponding to 20 dB above the maximum permitted average limit. Additionally, if pulsed operation is employed, the average field strength is determined by averaging over one complete pulse train, including blanking intervals, as specified in CFR 47 Part 15 section 15.35(c). If the pulse train exceeds 0.1 second that 0.1 second interval during which the value of the emission is at its maximum is selected for calculation. The pulse train correction is added to the peak value of the emission to get the average value.</p>	



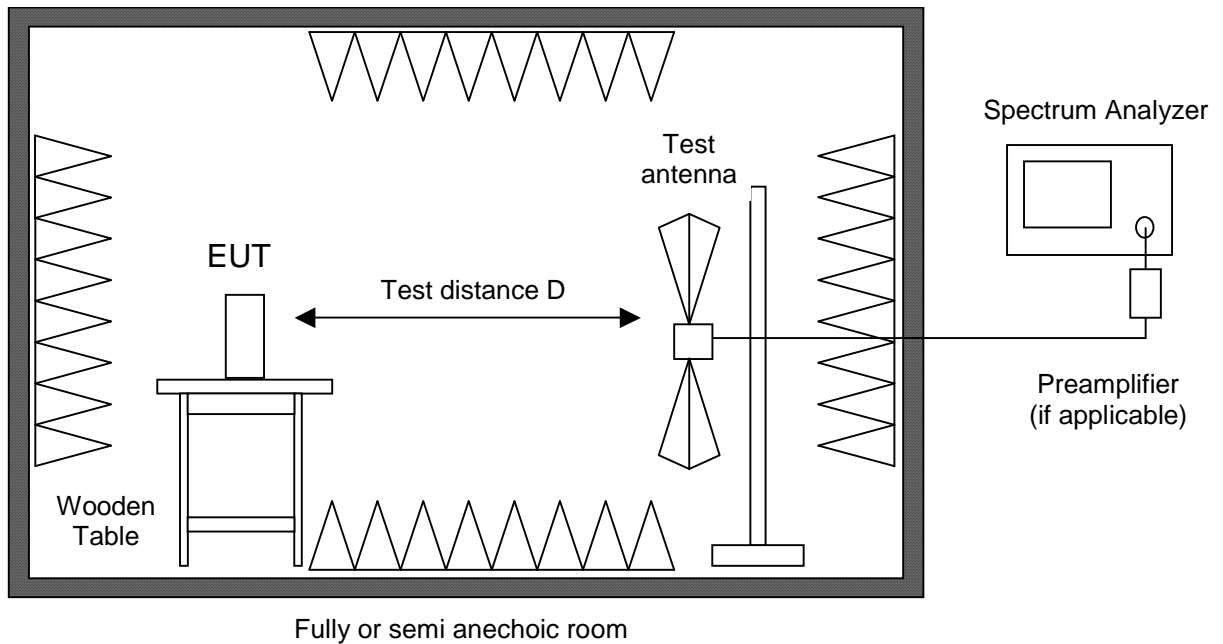


Test instruments used:

Type		Designation	Inv.-no.	Serial No. or ID	Manufacturer
<input checked="" type="checkbox"/>	Spectrum analyzer	FSP30	1666	100036	Rohde & Schwarz
<input type="checkbox"/>	EMI test receiver	ESMI	1569	839379/013 839587/006	Rohde & Schwarz
<input type="checkbox"/>	Test receiver	ESHS 10	1028	860043/016	Rohde & Schwarz
<input checked="" type="checkbox"/>	EMI test receiver	ESU8	2044	100232	Rohde & Schwarz
<input type="checkbox"/>	Preamplifier	Cabin no. 2 CPA9231A	1651	3393	Schaffner
<input checked="" type="checkbox"/>	Loop antenna	HFH2-Z2	1016	882964/1	Rohde & Schwarz
<input checked="" type="checkbox"/>	Fully anechoic room	No. 2	1452	---	Albatross
<input type="checkbox"/>	Semi anechoic room	No. 3	1453	---	Siemens
<input checked="" type="checkbox"/>	Semi anechoic room	No. 8	2057	---	Albatross

## 5.2 Radiated Emission in Fully or Semi Anechoic Room

Measurement Procedure:	
Rules and specifications:	CFR 47 Part 15, section 15.209 IC RSS-GEN Issue 3, section 7.2.5
Guide:	ANSI C63.4
<p>Radiated emission in fully or semi anechoic room is measured in the frequency range from 30 MHz to the maximum frequency as specified in CFR 47 Part 15 section 15.33.</p> <p>Measurements are made in both the horizontal and vertical planes of polarization using a spectrum analyzer with the detector function set to peak and resolution as well as video bandwidth set to 100 kHz (below 1 GHz) or 1 MHz (above 1 GHz).</p> <p>Testing up to 1 GHz is performed with a linear polarized logarithmic periodic antenna combined with a 4:1 broadband dipole ("Trilog broadband antenna"). For testing above 1 GHz horn antennas are used.</p> <p>All tests below 8.2 GHz are performed at a test distance D of 3 meters. For higher frequencies the test distance may be reduced (e.g. to 1 meter) due to the sensitivity of the measuring instrument(s) and the test results are calculated according to CFR 47 Part 15 section 15.31(f)(1) using an extrapolation factor of 20 dB/decade. If required, preamplifiers are used for the whole frequency range. Special care is taken to avoid overload, using appropriate attenuators and filters, if necessary.</p> <p>If the radiated emission limits are expressed in terms of the average value of the emission there also is a peak limit corresponding to 20 dB above the maximum permitted average limit. Additionally, if pulsed operation is employed, the average field strength is determined by averaging over one complete pulse train, including blanking intervals, as specified in CFR 47 Part 15 section 15.35(c). If the pulse train exceeds 0.1 second that 0.1 second interval during which the value of the emission is at its maximum is selected for calculation. The pulse train correction is added to the peak value of the emission to get the average value.</p> <p>Hand-held or body-worn devices are rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit and therefore shall be used for final testing.</p> <p>During testing the EUT is rotated all around to find the maximum levels of emissions. Equipment and cables are placed and moved within the range of position likely to find their maximum emissions.</p> <p>For final testing below 1 GHz a semi anechoic room complying with the NSA requirements of ANSI C63.4 for alternative test sites is used (see 5.3). If prescans are recorded in fully anechoic room they are indicated appropriately.</p>	

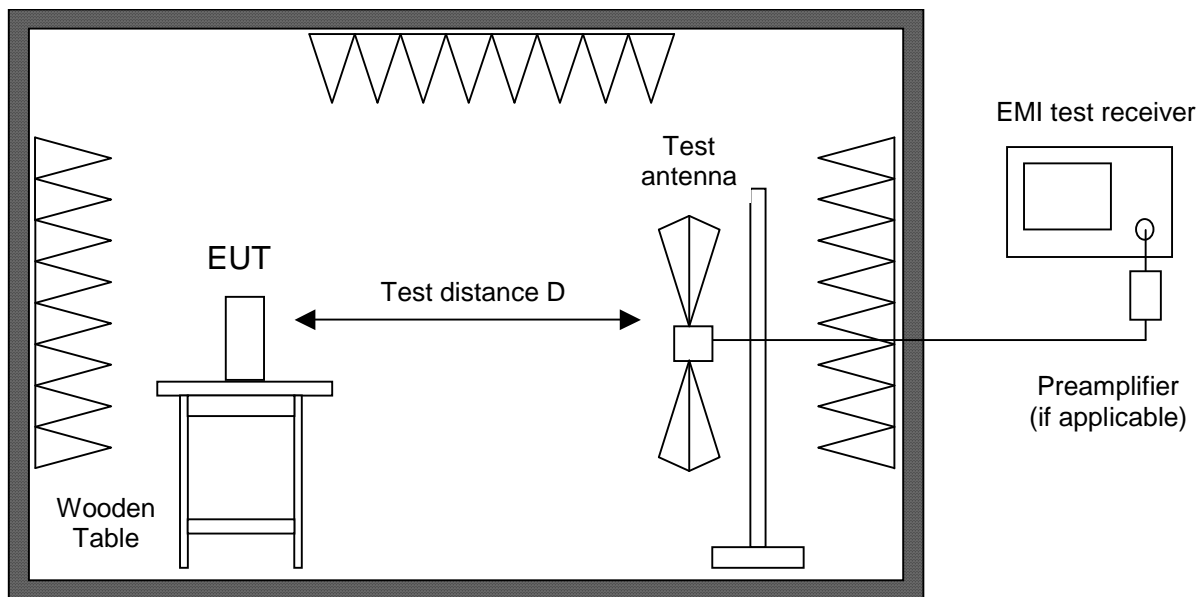


Test instruments used:

Type		Designation	Inv.-no.	Serial No. or ID	Manufacturer
<input checked="" type="checkbox"/>	Spectrum analyzer	FSP30	1666	100036	Rohde & Schwarz
<input type="checkbox"/>	EMI test receiver	Cabin no. 3 ESPI7	2010	101018	Rohde & Schwarz
<input type="checkbox"/>	EMI test receiver	ESU8	2044	100232	Rohde & Schwarz
<input type="checkbox"/>	EMI test receiver	ESMI	1569	839379/013 839587/006	Rohde & Schwarz
<input checked="" type="checkbox"/>	Pre-amplifier	Cabin no. 2 CPA9231A	1651	3393	Schaffner
<input type="checkbox"/>	Pre-amplifier	R14601	1142	13120026	Advantest
<input checked="" type="checkbox"/>	Pre-amplifier (1 - 8 GHz)	AFS3-00100800-32-LN	1684	847743	Miteq
<input type="checkbox"/>	Pre-amplifier (0.5 - 8 GHz)	AMF-4D-005080-25-13P	1685	860149	Miteq
<input type="checkbox"/>	Pre-amplifier (8 - 18 GHz)	ACO/180-3530	1484	32641	CTT
<input type="checkbox"/>	External Mixer	WM782A	1576	845881/005	Tektronix
<input type="checkbox"/>	Harmonic Mixer Accessories	FS-Z30	1577	624413/003	Rohde & Schwarz
<input checked="" type="checkbox"/>	Trilog antenna	Cabin no. 2 VULB 9163	2058	9163-408	Schwarzbeck
<input checked="" type="checkbox"/>	Horn antenna	3115	1516	9508-4553	EMCO
<input type="checkbox"/>	Horn antenna	3160-03	1010	9112-1003	EMCO
<input type="checkbox"/>	Horn antenna	3160-04	1011	9112-1001	EMCO
<input type="checkbox"/>	Horn antenna	3160-05	1012	9112-1001	EMCO
<input type="checkbox"/>	Horn antenna	3160-06	1013	9112-1001	EMCO
<input type="checkbox"/>	Horn antenna	3160-07	1014	9112-1008	EMCO
<input type="checkbox"/>	Horn antenna	3160-08	1015	9112-1002	EMCO
<input type="checkbox"/>	Horn antenna	3160-09	1265	9403-1025	EMCO
<input type="checkbox"/>	Horn antenna	3160-10	1575	399185	EMCO
<input checked="" type="checkbox"/>	Fully anechoic room	No. 2	1452	---	Albatross
<input type="checkbox"/>	Semi anechoic room	No. 3	1453	---	Siemens
<input type="checkbox"/>	Semi anechoic room	No. 8	2057	---	Albatross

### 5.3 Radiated Emission at Alternative Test Site

Measurement Procedure:	
Rules and specifications:	CFR 47 Part 15, section 15.209 IC RSS-GEN Issue 3, section 7.2.5
Guide:	ANSI C63.4
<p>Radiated emission in the frequency range 30 MHz to 1 GHz is measured within a semi-anechoic room with groundplane complying with the NSA requirements of ANSI C63.4 for alternative test sites. A linear polarized logarithmic periodic antenna combined with a 4:1 broadband dipole ("Trilog broadband antenna") is used. The measurement bandwidth of the test receiver is set to 120 kHz with quasi-peak detector selected.</p> <p>If the radiated emission limits are expressed in terms of the average value of the emission there also is a peak limit corresponding to 20 dB above the maximum permitted average limit. Additionally, if pulsed operation is employed, the average field strength is determined by averaging over one complete pulse train, including blanking intervals, as specified in CFR 47 Part 15 section 15.35(c). If the pulse train exceeds 0.1 second that 0.1 second interval during which the value of the emission is at its maximum is selected for calculation. The pulse train correction is added to the peak value of the emission to get the average value.</p> <p>Hand-held or body-worn devices are tested in the position producing the highest emission relative to the limit as verified by prescans in fully anechoic room.</p> <p>If no prescan in a fully anechoic room is used first a peak scan is performed in four positions to get the whole spectrum of emission caused by EUT with the measuring antenna raised and lowered from 1 to 4 m to find table position, antenna height and antenna polarization for the maximum emission levels.</p> <p>Data reduction is applied to these results to select those levels having less margin than 10 dB to or exceeding the limit using subranges and limited number of maximums. Further maximization is following.</p> <p>With detector of the test receiver set to quasi-peak final measurements are performed immediately after frequency zoom (for drifting disturbances) and maximum adjustment.</p> <p>Equipment and cables are placed and moved within the range of position likely to find their maximum emissions.</p> <p>In cases where prescans in a fully anechoic room are taken (e. g. if EUT is operating for a short time only or battery is discharged quickly) final measurements with quasi-peak detector are performed manually at frequencies indicated by prescan with EUT rotating all around and receiving antenna raising and lowering within 1 meter to 4 meters to find the maximum levels of emission.</p> <p>Equipment and cables are placed and moved within the range of position likely to find their maximum emissions.</p> <p>For measuring emissions of intentional radiators and receivers a test distance D of 3 meters is selected. Testing of unintentional radiators is performed at a distance of 10 meters. If limits specified for 3 meters shall be used for measurements performed at 10 meters distance the limits are calculated according to CFR 47 Part 15 section 15.31(d) and (f)(1) using an inverse linear-distance extrapolation factor of 20 dB/decade.</p>	



Alternate test site (semi anechoic room)

Test instruments used:

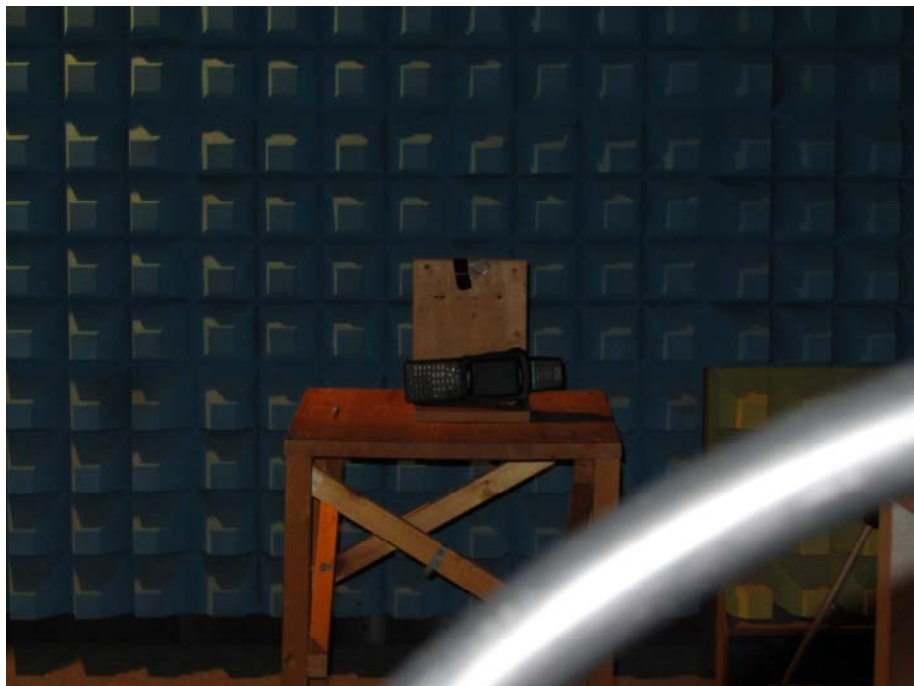
Type	Designation	Inv.-no.	Serial No. or ID	Manufacturer
<input checked="" type="checkbox"/> EMI test receiver	ESU8	2044	100232	Rohde & Schwarz
<input checked="" type="checkbox"/> Trilog antenna	Cabin no. 8 VULB 9163	1802	9163-214	Schwarzbeck
<input checked="" type="checkbox"/> Semi anechoic room	No. 8	2057	---	Albatross



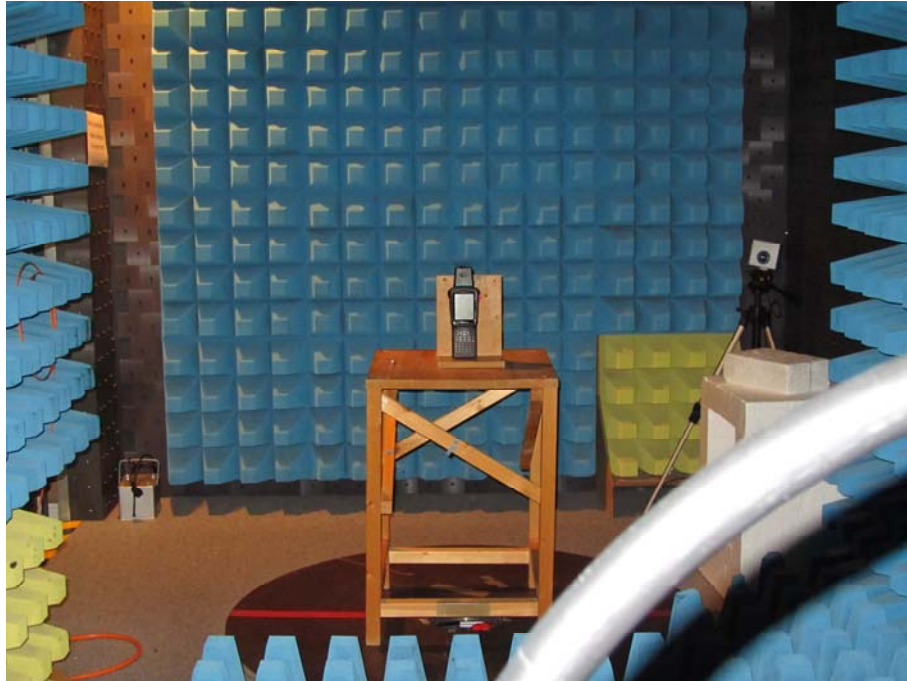
---

## 6 Photographs Taken During Testing

**Test setup for radiated emission measurement 9 kHz – 30 MHz**

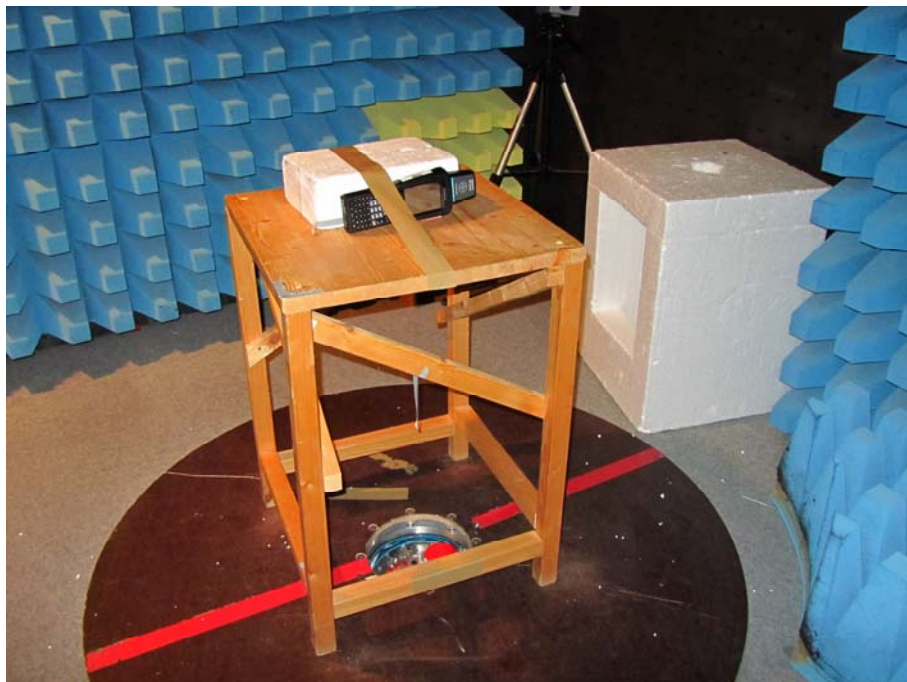


**Test setup for radiated emission measurement 9 kHz – 30 MHz  
- continued -**





### Test setup for radiated emission measurement (fully anechoic room)



## Test setup for radiated emission measurement (fully anechoic room) - continued -



### Test setup for radiated emission measurement (alternate test site)



**Test setup for radiated emission measurement  
(alternate test site) - continued -**



## 7 Test Results

FCC CFR 47 Parts 2 and 15			
Section(s)	Test	Page	Result
2.1046(a)	Conducted output power	---	Not applicable
2.202(a)	Occupied bandwidth	---	
2.201, 2.202	Class of emission	---	
15.35(c)	Pulse train measurement for pulsed operation	---	Not applicable
15.205(a)	Restricted bands of operation	---	Not performed
15.207	Conducted AC powerline emission 150 kHz to 30 MHz	---	Not applicable
15.205(b) 15.209	Radiated emission 9 kHz to 30 MHz	22	Test passed
15.205(b) 15.209	Radiated emission 30 MHz to 1 GHz	23	Test passed

IC RSS-GEN Issue 3			
Section(s)	Test	Page	Result
4.8	Transmitter output power (conducted)	---	Not applicable
4.6.1	Occupied Bandwidth	---	
8	Designation of emissions	---	
4.5	Pulsed operation	---	Not applicable
7.2.4	Transmitter AC power lines conducted emissions 150 kHz to 30 MHz	---	Not applicable
7.2.2	Restricted bands and unwanted emission frequencies	---	Not performed
7.2.2(b)(c) 7.2.5	Unwanted emissions 9 kHz to 30 MHz	22	Test passed
7.2.2(b)(c) 7.2.5	Unwanted emissions 30 MHz to 1 GHz	23	Test passed
5.6	Exposure of Humans to RF Fields	---	Exempted from SAR and RF evaluation

## 7.1 Radiated Emission Measurement 9 kHz to 30 MHz

Rules and specifications:	CFR 47 Part 15, sections 15.205, 15.209, 15.225 (a) IC RSS-GEN Issue 3, sections 7.2.2 and 7.2.5 RSS-210 Issue 8, section A2.6 (a)			
Guide:	ANSI C63.4			
Limit:	Frequency of Emission (MHz)	Field Strength ( $\mu\text{V}/\text{m}$ )	Field Strength ( $\text{dB}\mu\text{V}/\text{m}$ )	Measurement Distance d (meters)
	0.009 - 0.490	2400/F(kHz)	67.6 - 20 · log(F(kHz))	300
	0.490 - 1.705	24000/F(kHz)	87.6 - 20 · log(F(kHz))	30
	1.705 - 30.000	30	29.5	30
	Additionally, the level of any unwanted emissions shall not exceed the level of the fundamental emission.			
Measurement procedure:	Radiated Emission Measurement 9 kHz to 30 MHz (5.1)			

Comment:	Transmitting continuously with 13.56 MHz
Date of test:	July 29, 2011 and August 2, 2011
Test site:	Open field test site

Test Result:	Test passed
--------------	-------------

Extrapolation factor:		18 dB/Decade								
Frequency (MHz)	Detector	Distance d1 (m)	Distance d (m)	Reading Value ( $\text{dB}\mu\text{V}$ )	Correction Factor ( $\text{dB}/\text{m}$ )	Extrapolation Factor (dB)	Pulse Train Correction (dB)	Final Value ( $\text{dB}\mu\text{V}/\text{m}$ )	Limit ( $\text{dB}\mu\text{V}/\text{m}$ )	Margin (dB)
13,56000	Quasi-Peak	10	30	35,0	20,0	-9,1		45.9	84,0	38.1

### Sample calculation of final values:

$$\text{Extrapolation Factor (dB)} = (\text{Log}(d) - \text{Log}(d_1)) \cdot \text{Extrapolation Factor (dB/decade)}$$

$$\text{Final Value (dB}\mu\text{V}/\text{m}) = \text{Reading Value } d_1 \text{ (dB}\mu\text{V}) + \text{Correction Factor (dB}/\text{m}) + \text{Extrapolation Factor (dB)} + \text{Pulse Train Correction (dB)}$$

Note: Extrapolation factor (dB) and final value ( $\text{dB}\mu\text{V}/\text{m}$ ) are relating to distance d.

## 7.2 Radiated Emission Measurement 30 MHz to 1 GHz

Rules and specifications:	CFR 47 Part 15, section 15.209 IC RSS-GEN Issue 3, section 7.2.5		
Guide:	ANSI C63.4		
Limit:	Frequency of Emission (MHz)	Field Strength (µV/m)	Field Strength (dBµV/m)
	30 - 88	100	40.0
	88 - 216	150	43.5
	216 - 960	200	46.0
	Above 960	500	54.0
	Additionally, the level of any unwanted emissions shall not exceed the level of the fundamental emission.		
Measurement procedures:	Radiated Emission in Fully or Semi Anechoic Room (5.2) Radiated Emission at Alternative Test Site (5.3)		

Comment:	Transmitting continuously with 13.56 MHz  No fieldstrength limit for carrier frequency defined according to CFR 47 Part 15, section 15.247 and IC RSS-210 Issue 8, Annex 8, respectively.
Date of test:	July 25, 2011, July 29, 2011 and August 2, 2011
Test site:	Frequencies ≤ 1 GHz: Semi-anechoic room, cabin no. 8 Frequencies > 1 GHz: Fully anechoic room, cabin no. 2
Test distance:	3 meters

Test Result:	Test passed
--------------	-------------

Frequency (MHz)	Antenna Polarization	Detector	Receiver Reading (dBµV)	Correction Factor (dB/m)	Pulse Train Correction (dB)	Final Value (dBµV/m)	Limit (dBµV/m)	Margin (dB)
103,220	horizontal	Quasi-Peak	7,9	14,1		22,1	43,5	21,4
110,600	horizontal	Quasi-Peak	4,6	13,6		18,2	43,5	25,3
117,980	horizontal	Quasi-Peak	12,1	12,4		24,5	43,5	19,0
126,120	horizontal	Quasi-Peak	1,0	11,2		12,2	43,5	31,3
191,680	horizontal	Quasi-Peak	12,6	12,6		25,2	43,5	18,3
206,450	horizontal	Quasi-Peak	10,7	12,1		22,8	43,5	20,7
318,140	horizontal	Quasi-Peak	10,3	15,4		25,8	46,0	20,2

### Sample calculation of final values:

$$\text{Final Value (dBµV/m)} = \text{Reading Value (dBµV)} + \text{Correction Factor (dB/m)} + \text{Pulse Train Correction (dB)}$$

## 8 Referenced Regulations

All tests were performed with reference to the following regulations and standards:

<input checked="" type="checkbox"/>	CFR 47 Part 2	Code of Federal Regulations Part 2 (Frequency allocation and radio treaty matters; General rules and regulations) of the Federal Communication Commission (FCC)	October 1, 2010
<input checked="" type="checkbox"/>	CFR 47 Part 15	Code of Federal Regulations Part 15 (Radio Frequency Devices) of the Federal Communication Commission (FCC)	October 1, 2010
<input checked="" type="checkbox"/>	ANSI C63.4	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	December 11, 2003 (published on January 30, 2004)
<input type="checkbox"/>	ANSI C63.4	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	June 7, 2009 (published on September 15, 2009)
<input checked="" type="checkbox"/>	RSS-Gen	Radio Standards Specification RSS-Gen Issue 3 containing General Requirements and Information for the Certification of Radiocommunication Equipment, published by Industry Canada	December 2010
<input checked="" type="checkbox"/>	RSS-210	Radio Standards Specification RSS-210 Issue 8 for Low Power Licence-Exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment, published by Industry Canada	December 2010
<input type="checkbox"/>	RSS-310	Radio Standards Specification RSS-310 Issue 3 for Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category II Equipment, published by Industry Canada	December 2010
<input checked="" type="checkbox"/>	RSS-102	Radio Standards Specification RSS-102 Issue 4: Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands), published by Industry Canada	March 2010
<input type="checkbox"/>	ICES-003	Interference-Causing Equipment Standard ICES-003 Issue 4 for Digital Apparatus, published by Industry Canada	February 7, 2004
<input checked="" type="checkbox"/>	CISPR 22	Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22, "Information Technology Equipment – Radio Disturbance Characteristics – Limits and Methods of Measurement"	1997





---

<input type="checkbox"/>	CAN/CSA- CEI/IEC CISPR 22	Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment	2002
		CAN/CSA CISPR 22-10 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement (Adopted IEC CISPR 22:2008, sixth edition, 2008-09)	
<input type="checkbox"/>	CAN/CSA CISPR 22-10	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement (Adopted IEC CISPR 22:2008, sixth edition, 2008-09)	2010
<input checked="" type="checkbox"/>	TRC-43	Notes Regarding Designation of Emissions (Including Necessary Bandwidth and Classification), Class of Station and Nature of Service, published by Industry Canada	October, 2008

## 9 Test Equipment List with Calibration Data

Type	Inv.-No.	Type Designation	Serial Number	Manufacturer	Calibration Organization	Last Calibration	Next Calibration
EMI test receiver	2044	ESU8	100232	Rohde & Schwarz	Rohde & Schwarz	12/2010	06/2012
Spectrum analyser	1666	FSP30	100063	Rohde & Schwarz	Rohde & Schwarz	05/2011	11/2012
Preamplifier	1651	CPA9231A	3393	Schaffner Electrotest	TÜV SÜD SENTON	05/2010	05/2012
Loop antenna	1016	HFH2-Z2	882964/0001	Rohde & Schwarz	Rohde & Schwarz	05/2011	11/2012
Double ridged waveguide horn antenna	1516	3115	9508-4553	EMCO Elektronik	Seibersdorf Laboratories	10/2010	10/2012
TRILOG Broadband Antenna	1802	VULB 9163	9163-214	Schwarzbeck	Rohde & Schwarz	07/2011	01/2013
TRILOG Broadband Antenna	2058	VULB 9163	9163-408	Schwarzbeck	Rohde & Schwarz	05/2011	11/2012

## 10 Revision History

Revision History			
<i>Edition</i>	<i>Date</i>	<i>Issued by</i>	<i>Modifications</i>
1	04.08.2011	Martin Steindl (az)	First Edition
2	14.12.2011	J. Roidt	Minor typos corrected
3	20.12.2011	J. Roidt	Test specification amended

## Annex A Charts taken during testing

### A.1 Charts taken during final measurements in the frequency range 9 kHz – 1 GHz

