



## TEST DATA

Test Data Number: 3158189MIN-003  
Project Number: 3158189

Testing performed on the  
URH-PCS, Universal Radio Head-SMR

To  
47 CFR, Part 90

For  
ADC Telecommunications Inc.

Test Performed by:  
Intertek Testing Services NA, Inc.  
7250 Hudson Blvd., Suite 100  
Oakdale, MN 55128

Test Authorized by:  
ADC Telecommunications Inc.  
5341 12<sup>th</sup> Avenue East  
Shakopee, MN 55379

Prepared by: *SKhazon*  
Simon Khazon

Date: August 13, 2008

Reviewed by: *U. Spector*  
Uri Spector

Date: August 13, 2008



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## 1.0 DESCRIPTION OF THE SAMPLE (EUT)

<b>Model:</b>	URH-PCS, Universal Radio Head-SMR
<b>Type of EUT:</b>	Outdoor Repeater
<b>Serial Number:</b>	N/A
<b>Company:</b>	ADC Telecommunications Inc.
<b>Customer:</b>	Mr. Mark Miska
<b>Address:</b>	1187 Park Place Shakopee, MN 55379
<b>Phone:</b>	952-403-8340
<b>Fax:</b>	952-403-8858
<b>Test Standards:</b>	<input type="checkbox"/> EN 55022:2006, Class A <input type="checkbox"/> EN 55011:1998 + A1:1999 + A2:2002, Group <input type="checkbox"/> , Class <input type="checkbox"/> <input type="checkbox"/> 47 CFR, Part 15:2007, §15.107 and §15.109, Class A <input type="checkbox"/> 47 CFR, Part 22:2007 <input type="checkbox"/> 47 CFR, Part 24:2007 <input checked="" type="checkbox"/> 47 CFR, Part 90:2007 <input type="checkbox"/> EN 55014-1:2000 + A1:2001 + A2:2002 <input type="checkbox"/> EN 61326-1:2006 <input type="checkbox"/> Class <input type="checkbox"/> for Radiated and Conducted Emissions <input type="checkbox"/> EN 60601-1-2:2001 +A1:2006 <input type="checkbox"/> Class <input type="checkbox"/> Radiated and Conducted Emissions <input type="checkbox"/> EN 61000-6-3:2007 <input type="checkbox"/> EN 61000-6-4:2007 <input type="checkbox"/> EN 61000-3-2:2006 <input type="checkbox"/> EN 61000-3-3:1995 +A1:2001 +A2:2006 <input type="checkbox"/> Other <input type="checkbox"/>

## 2.0 TEST SUMMARY

Referring to the performance criteria and the operating mode during the tests specified in this report, the equipment complies with the requirements according to the following standards.

TEST STANDARD	TEST	RESULT
Part 90	Spurious Enclosure Radiated Emissions	Pass

### 2.1 Statement of the Measurement Uncertainty

**Note:** The measured result in this report is within the specification limits by more than the measurement uncertainty; the measured result indicates that the product tested complies with the specification limit.

The expanded uncertainty ( $k = 2$ ) for radiated emissions from 30 to 1000 MHz has been determined to be:  $\pm 4$  dB at 10m and  $\pm 5.4$  dB at 3m

The expanded uncertainty ( $k = 2$ ) for conducted emissions from 150 kHz to 30 MHz has been determined to be:  $\pm 2.6$  dB

General notes:

1. Test was performed with the EUT tuned to two middle frequencies (815MHz and 898.5MHz), of the operating band.

Testing was performed in frequency range from 30MHz to 10GHz.

2. The Spurious Radiated Power limits of -13dBm was correlated with field strength reference level of 82.2dB $\mu$ V/m during field strength measurements at 3m measurement distance

### **3.0 TEST RESULTS**

#### **3.1 Spurious Radiated Emissions**

Tables 1 and 2 show detected Radiated Emissions.

Graphs 1 to 8 show the EUT peak Radiated Emissions.

No emissions were chosen for substitution measurements as the maximum emission is more than 20dB below the reference limit.



TILE Instrument Control System EMI Measurement Software

Radiated Emissions from 30MHz to 1GHz

Date: 08/13-15/2008

**Company:** ADC Telecommunications Inc.  
**Model:** Universal Radio Head-SMR  
**Test Engineer:** Simon Khazon  
**Special Info:**  
**Standard:** FCC Part 90  
**Test Site:** 3m Anechoic Chamber, 3m measurement distance  
**Note:** The table shows the worst case radiated emissions  
 Measurements were taken using a Peak detector

Table # 1

Frequency	Ant. Polarity	Peak Reading dBµV	Ant.Factor dB1/m	Total at 3m dBµV/m	QP Limit dBµV/m	Margin dB
<b>Operating Frequency 815 MHz</b>						
43.784 MHz	V	40.9	11.3	52.2	82.2	-30.0
50.226 MHz	V	45.3	8.6	53.9	82.2	-28.3
53.481 MHz	V	40.7	8.0	48.7	82.2	-33.5
49.256 MHz	H	31.1	8.9	40.0	82.2	-42.2
583.99 MHz	H	20.2	22.2	42.4	82.2	-39.8
645.64 MHz	H	24.5	22.8	47.3	82.2	-34.9
829.53 MHz	H	19.1	24.6	43.7	82.2	-38.5
<b>Operating Frequency 898.5 MHz</b>						
43.784 MHz	V	40.6	11.3	51.9	82.2	-30.3
49.256 MHz	V	43.0	8.9	51.9	82.2	-30.3
51.611 MHz	V	44.7	8.3	53.1	82.2	-29.1
46.97 MHz	H	29.4	9.9	39.3	82.2	-42.9
50.226 MHz	H	33.9	8.6	42.5	82.2	-39.7
138.95 MHz	H	24.6	12.9	37.5	82.2	-44.7
599.92 MHz	H	19.6	22.4	42.0	82.2	-40.2
645.64 MHz	H	23.9	22.8	46.7	82.2	-35.5
706.45 MHz	H	20.6	23.1	43.7	82.2	-38.5



TILE Instrument Control System EMI Measurement Software

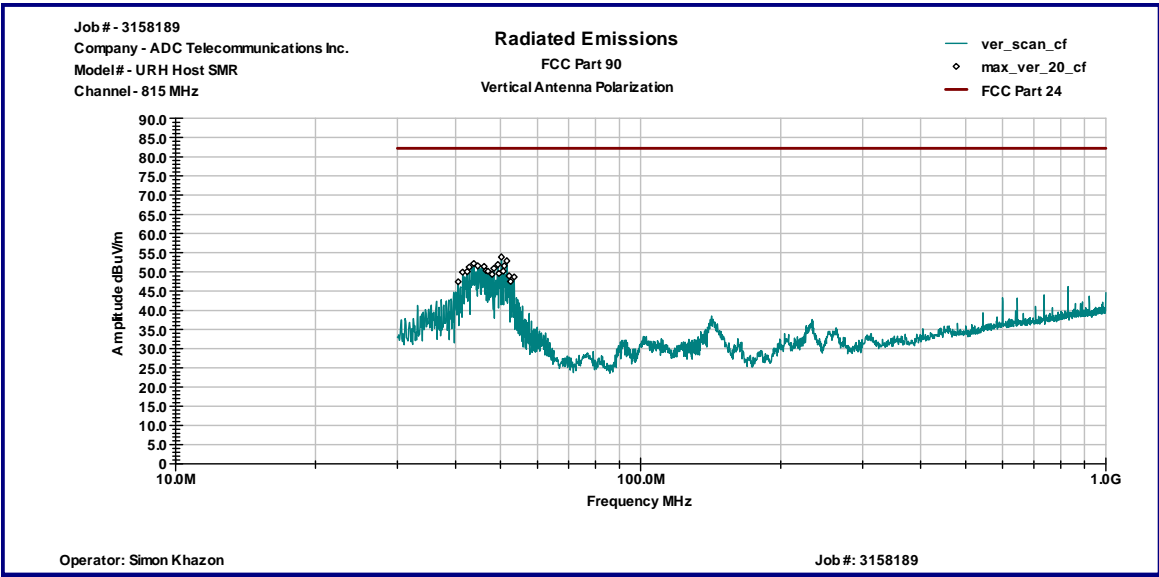
Radiated Emissions from 1GHz to 10GHz

Date: 08/13-15/2008

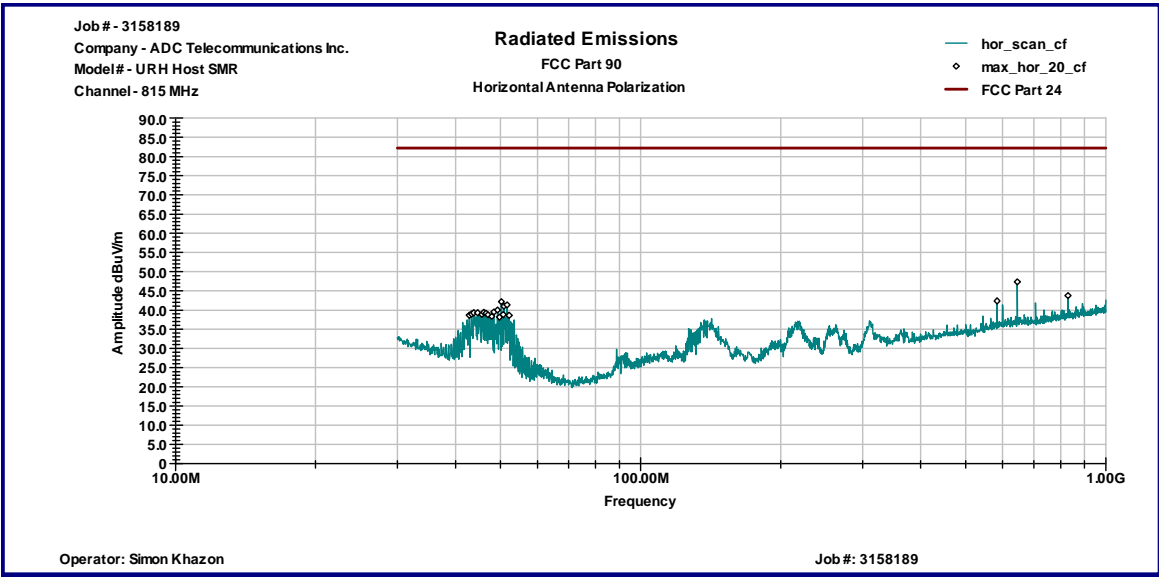
**Company:** ADC Telecommunications Inc.  
**Model:** Universal Radio Head-SMR  
**Test Engineer:** Simon Khazon  
**Special Info:**  
**Standard:** FCC Part 90  
**Test Site:** 3m Anechoic Chamber, 3m measurement distance  
**Note:** The table shows the worst case radiated emissions  
 All measurements were taken using a Peak detector

Table # 2

Frequency MHz	Antenna Polarity	Reading dBµV	Total C.F. dB1/m	Pre-Amp. Gain (dB)	Total at 3m dBµV/m	QP Limit dBµV/m	Margin dB
<b>Operating Frequency 815MHz</b>							
1.2494 GHz	V	74.0	27.5	39.6	61.9	82.2	-20.3
1.6583 GHz	V	65.5	28.9	39.2	55.2	82.2	-27.0
8.8197 GHz	V	44.0	43.1	35.6	51.5	82.2	-30.7
<b>Operating Frequency 898.5MHz</b>							
1.2494 GHz	V	73.4	27.5	39.6	61.3	82.2	-20.9
3.1343 GHz	V	54.5	33.6	37.9	50.2	82.2	-32.0
8.8197 GHz	V	42.8	43.1	35.6	50.3	82.2	-31.9
1.2494 GHz	H	64.2	27.5	39.6	52.1	82.2	-30.1
1.6583 GHz	H	60.9	28.9	39.2	50.6	82.2	-31.6
7.75 GHz	H	45.4	42.1	36.1	51.4	82.2	-30.8

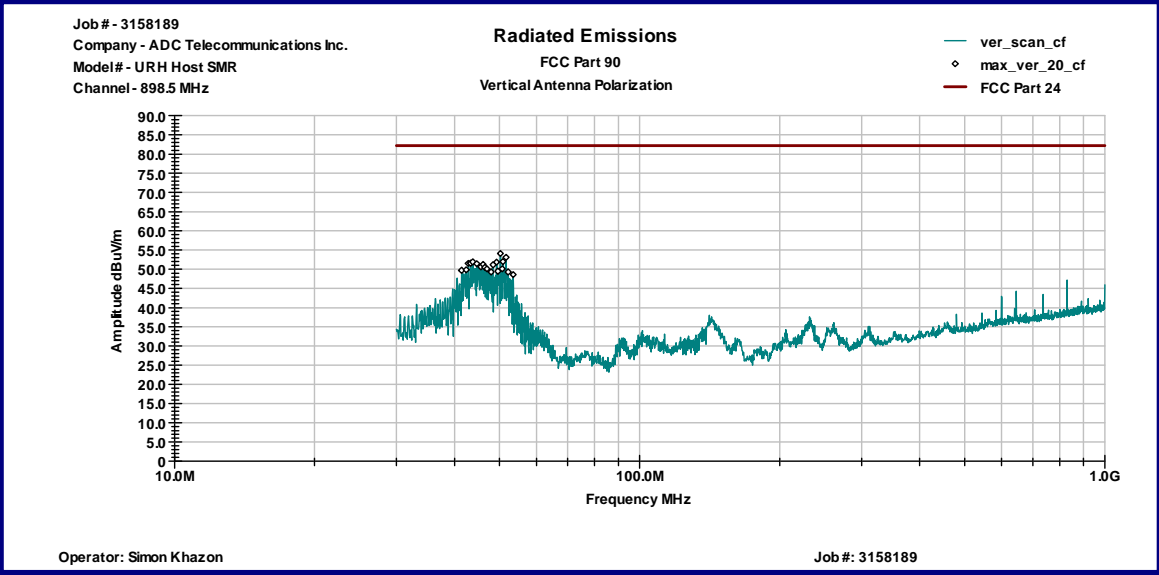


Graph 1

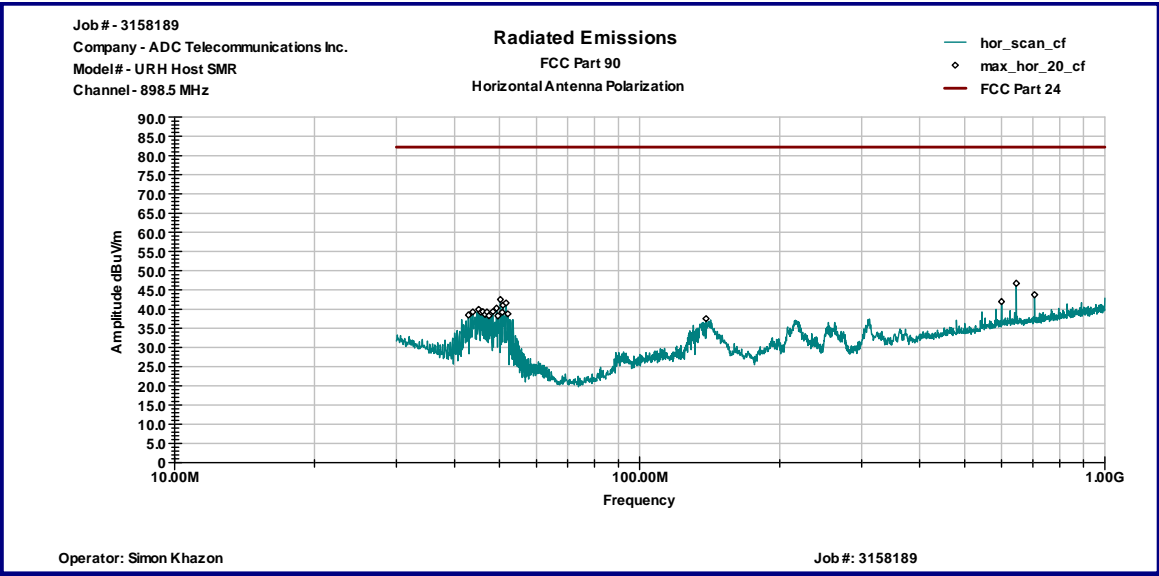


Graph 2

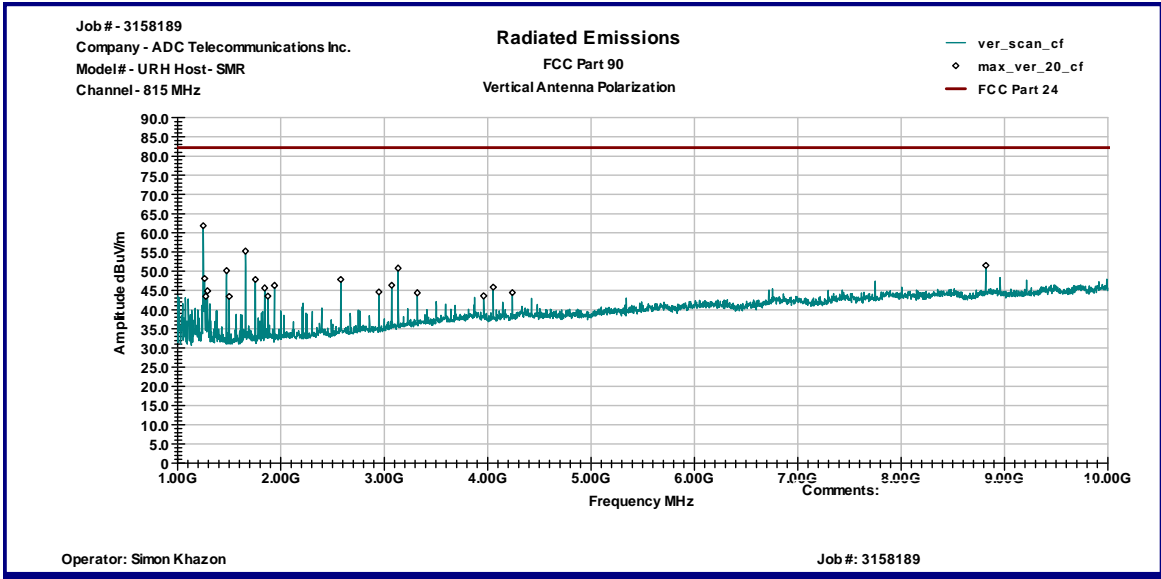




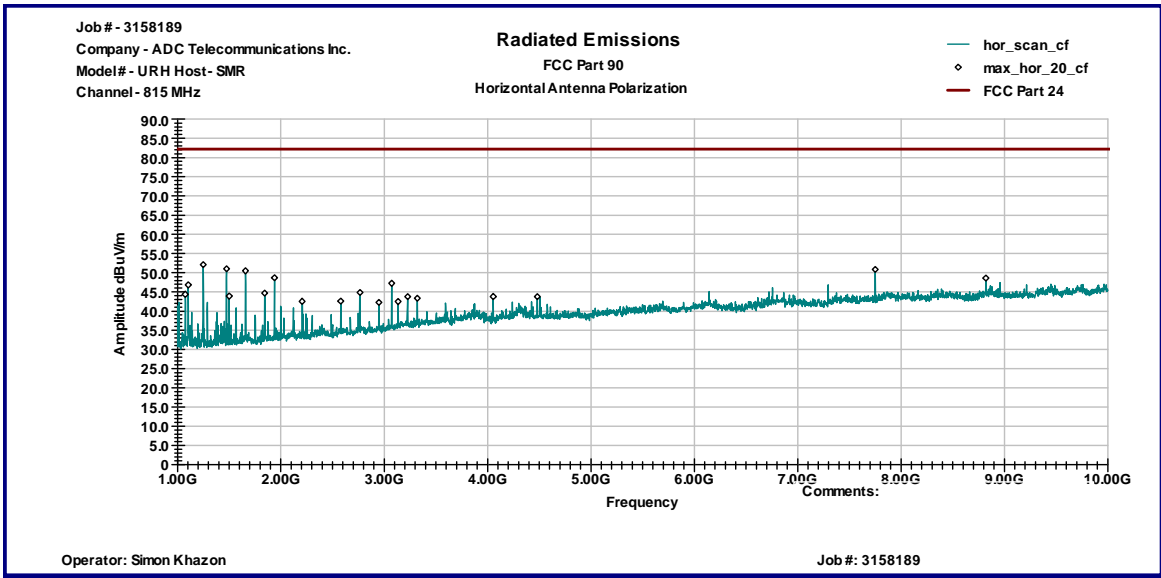
Graph 3



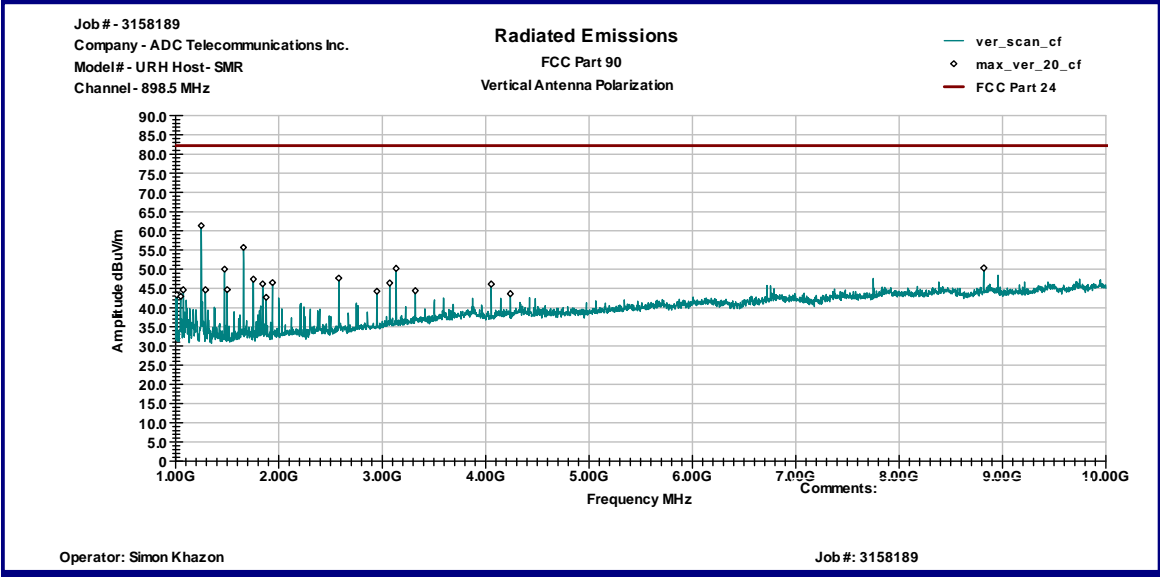
Graph 4



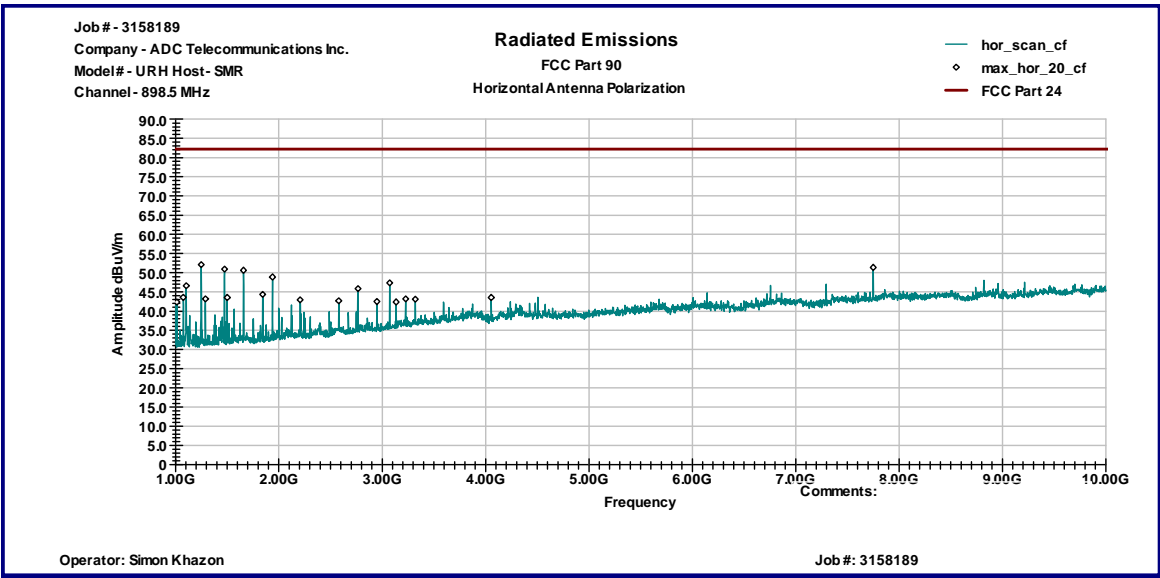
Graph 5



Graph 6



Graph 7



Graph 8

### 3.2 Environmental conditions

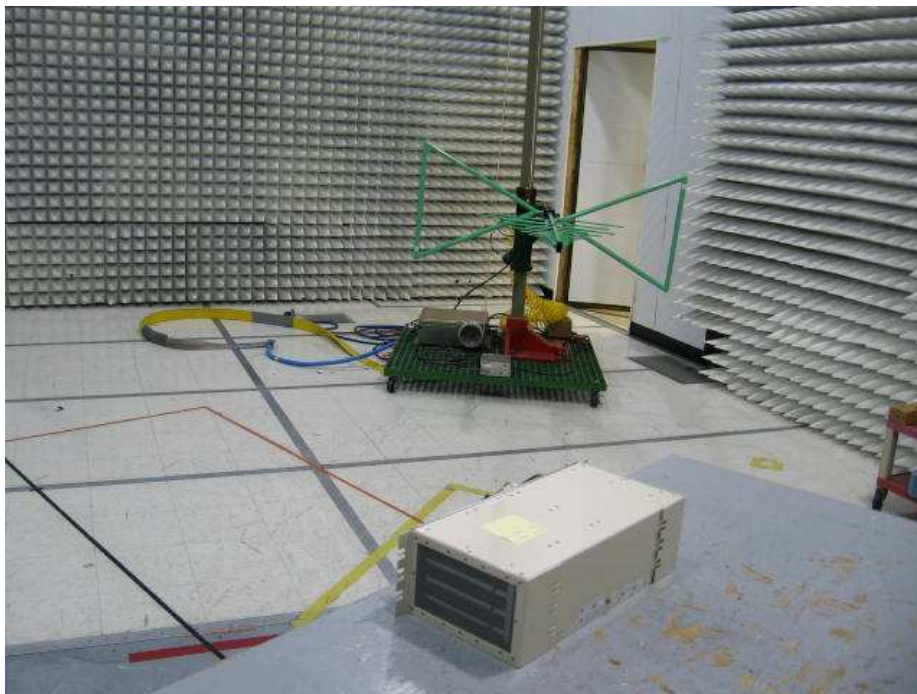
During the measurement the environmental conditions were within the listed ranges:

**Temperature:** 15-35 °C

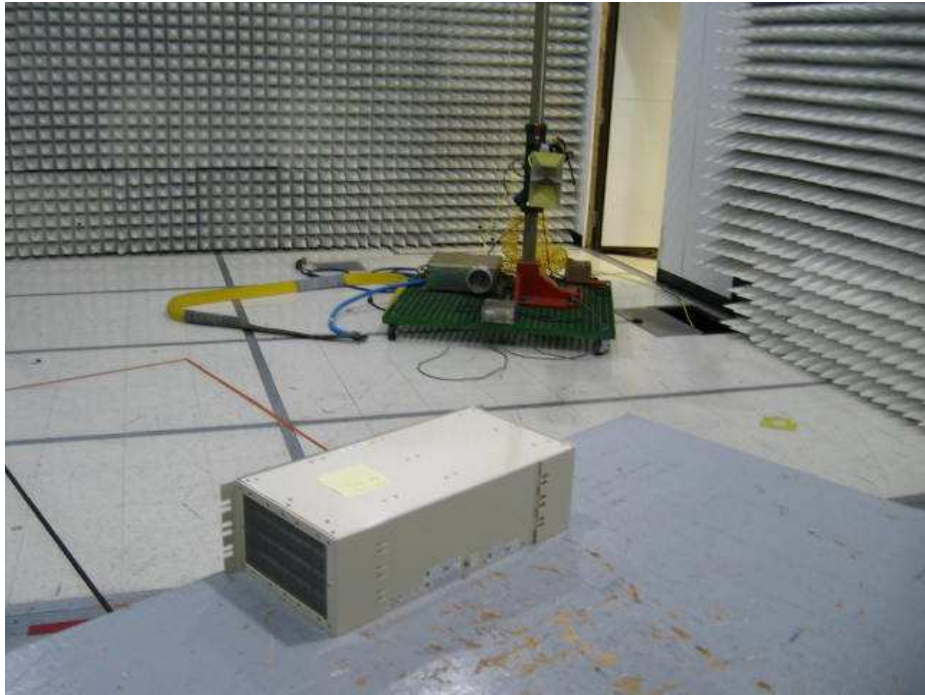
**Humidity:** 30-60 %

**Atmospheric pressure:** 86-106 kPa

4.0 PHOTOS



Test Setup Photos



**Test Setup Photo**



## 5.0 TEST EQUIPMENT

DESCRIPTION	MANUFACTURER	MODEL	SERIAL NO.	CAL DUE	USED
Spectrum Analyzer	R & S	FSP 40	100024	08/23/2008	<input checked="" type="checkbox"/>
Spectrum Analyzer	R & S	ESCI	100358	05/07/2009	<input checked="" type="checkbox"/>
Bicono-Log Antenna	Schaffner-Chase	CBL 6112 B	2630	09/07/2008	<input checked="" type="checkbox"/>
Horn Antenna	EMCO	3115	9507-4513	02/13/2009	<input checked="" type="checkbox"/>
Waveguide Horn Antenna	EMCO	3116	9904-2423	07/20/2009	<input type="checkbox"/>
Pre-Amplifier	MITEQ	AMF-5D-00501800-28-13P	1122951	04/28/2009	<input checked="" type="checkbox"/>
Pre-Amplifier	MITEQ	AMF-6F-16002600-25-10P	1222383	01/17/2009	<input type="checkbox"/>
System	TILE! Instrument Control		Ver. 3.4.K.29	VBU	<input checked="" type="checkbox"/>

