



**TEST REPORT CONCERNING THE COMPLIANCE OF A  
8.2 MHz EAS SYSTEM,  
BRAND NEDAP, MODEL FLEUR<sub>as</sub>  
WITH 47 CFR PART 15 (JULY 10, 2008).**

FCC listed : 90828  
Industry Canada : 2932G-1  
VCCI Registered : R-1518, C-1598  
R&TTE, LVD, EMC Notified Body : 1856

**TÜV Rheinland EPS B.V.  
P.O. Box 15  
9822 ZG Niekerk (NL)  
Smidshornerweg 18  
9822 TL Niekerk (NL)**

Telephone: +31 594 505005  
Telefax: +31 594 504804

E-mail: [info@tuv-eps.com](mailto:info@tuv-eps.com)  
Web: [www.tuv-eps.com](http://www.tuv-eps.com)

## MEASUREMENT/TECHNICAL REPORT

**N.V. Nederlandsche Apparatenfabriek "Nedap"**  
**Model : FLEUREas**

**FCC ID: CGDFLEUREAS**

May 13, 2009

|                                                                                           |                  |                          |  |
|-------------------------------------------------------------------------------------------|------------------|--------------------------|--|
| This report concerns: Original grant/certification <del>Class 2 change</del> Verification |                  |                          |  |
| Equipment type: Anti-Pilferage Device, operating on 8.2 MHz                               |                  |                          |  |
| Deferred grant requested per 47 CFR 0.457(d)(1)(ii) ? <del>Yes</del> <del>No</del> n.a.   |                  |                          |  |
| Report prepared by:                                                                       | Name             | : Richard van der Meer   |  |
|                                                                                           | Company name     | : TÜV Rheinland EPS B.V. |  |
|                                                                                           | Address          | : Smidshornerweg 18      |  |
|                                                                                           | Postal code/city | : 9822 TL Niekerk        |  |
|                                                                                           | Mailing address  | : P.O. Box 15            |  |
|                                                                                           | Postal code/city | : 9822 ZG Niekerk        |  |
|                                                                                           | Country          | : The Netherlands        |  |
|                                                                                           | Telephone number | : + 31 594 505 005       |  |
|                                                                                           | Telefax number   | : + 31 594 504 804       |  |
|                                                                                           | E-mail           | : info@tuv-eps.com       |  |

The data taken for this test and report herein was done in accordance with 47 CFR Part 15 (july 10, 2008) and the measurement procedures of ANSI C63.4-2003. TÜV Rheinland EPS B.V. at Niekerk, The Netherlands, certifies that the data is accurate and contains a true representation of the emission profile of the Equipment Under Test (EUT) on the date of the test as noted in the test report. I have reviewed the test report and find it to be an accurate description of the test(s) performed and the EUT so tested.

Date: May 13, 2009

Signature:



O. Hoekstra  
Senior Engineer Telecom TÜV Rheinland EPS B.V.

**Description of test item**

Test item : Anti-Pilferage Device for detection of 8.2MHz EAS labels, hard tags or disposable paper tags.  
Manufacturer : N.V. Nederlandsche Apparatenfabriek "Nedap"  
Brand : Nedap  
Model(s) : FLEUREas  
Serial number(s) : n.a.  
Revision : n.a.

**Applicant information**

Applicant's representative : Mr. J. Hulshof  
Company : N.V. Nederlandsche Apparatenfabriek "Nedap"  
Address : Parallelweg 2  
Postal code : 7141 DC  
City : Groenlo  
Country : The Netherlands  
Telephone number : +31 544 471 444  
Telefax number : +31 544 466 839

**Test(s) performed**

Location : Niekerk  
Test(s) started : April 20, 2009  
Test(s) completed : May 08, 2009  
Purpose of test(s) : Equipment Authorization (Original grant/certification)  
Test specification(s) : 47 CFR Part 15 (July 10, 2008)

Test engineer(s) : R. van der Meer



Report written by : R. van der Meer



Report date : May 13, 2009

This report is in conformity with NEN-EN-ISO/IEC 17025: 2005

This report shall not be reproduced, except in full, without the written permission of TÜV Rheinland EPS B.V.  
The test results relate only to the item(s) tested.

## Table of contents

|       |                                                                                                     |    |
|-------|-----------------------------------------------------------------------------------------------------|----|
| 1     | General information.....                                                                            | 5  |
| 1.1   | Product description.....                                                                            | 5  |
| 1.1.1 | Introduction. ....                                                                                  | 5  |
| 1.2   | Related submittal(s) and/or Grant(s).....                                                           | 5  |
| 1.2.1 | General. ....                                                                                       | 5  |
| 1.3   | Tested system details.....                                                                          | 5  |
| 1.3.1 | Description of input and output ports. ....                                                         | 8  |
| 1.4   | Test methodology.....                                                                               | 10 |
| 1.5   | Test facility. ....                                                                                 | 10 |
| 1.6   | Test conditions. ....                                                                               | 10 |
| 2     | System test configuration. ....                                                                     | 11 |
| 2.1   | Justification.....                                                                                  | 11 |
| 2.2   | EUT mode of operation. ....                                                                         | 11 |
| 2.3   | Special accessories.....                                                                            | 11 |
| 2.4   | Equipment modifications. ....                                                                       | 11 |
| 2.5   | Product Labelling.....                                                                              | 11 |
| 2.6   | Block diagram of the EUT. ....                                                                      | 11 |
| 2.7   | Schematics of the EUT.....                                                                          | 11 |
| 2.8   | Part list of the EUT. ....                                                                          | 11 |
| 3     | Radiated emission data.....                                                                         | 12 |
| 3.1   | Radiated field strength measurements (30 MHz – 1 GHz, E-field).....                                 | 12 |
| 3.2   | Radiated field strength measurements (frequency range of 0.009-30 MHz, H-field) Average values..... | 13 |
| 3.3   | Radiated field strength measurements (frequency range of 0.009-30 MHz, H-field) Peak values.....    | 14 |
| 4     | Carrier stability under special conditions.....                                                     | 15 |
| 4.1   | Frequency stability (on 8.2 MHz) in accordance with 47 CFR Part 15, section 15.31:.....             | 15 |
| 4.1.1 | At 85% and 115% of rated voltage supply level .....                                                 | 15 |
| 5     | Conducted emission data.....                                                                        | 17 |
| 5.1   | Conducted emission data of the EUT .....                                                            | 17 |
| 6     | List of utilized test equipment. ....                                                               | 19 |

## 1 General information.

### 1.1 Product description.

#### 1.1.1 Introduction.

The Nedap FLEUREas system is an EAS (Electronic Article Surveillance) system for detection of 8.2MHz EAS labels, hard tags or disposable paper tags, used at the entry of shops, libraries etc. Up to 4 antennas (ports) can be used, allowing for max 3 entries. Choice of the antenna width can be either 30cm or a 45cm. The system operates in the frequency range: 7.4 MHz up to 8.8 MHz with a sweep of 600Hz.

The content of this report and measurement results have not been changed other than the way of presenting the data.

### 1.2 Related submittal(s) and/or Grant(s).

#### 1.2.1 General.

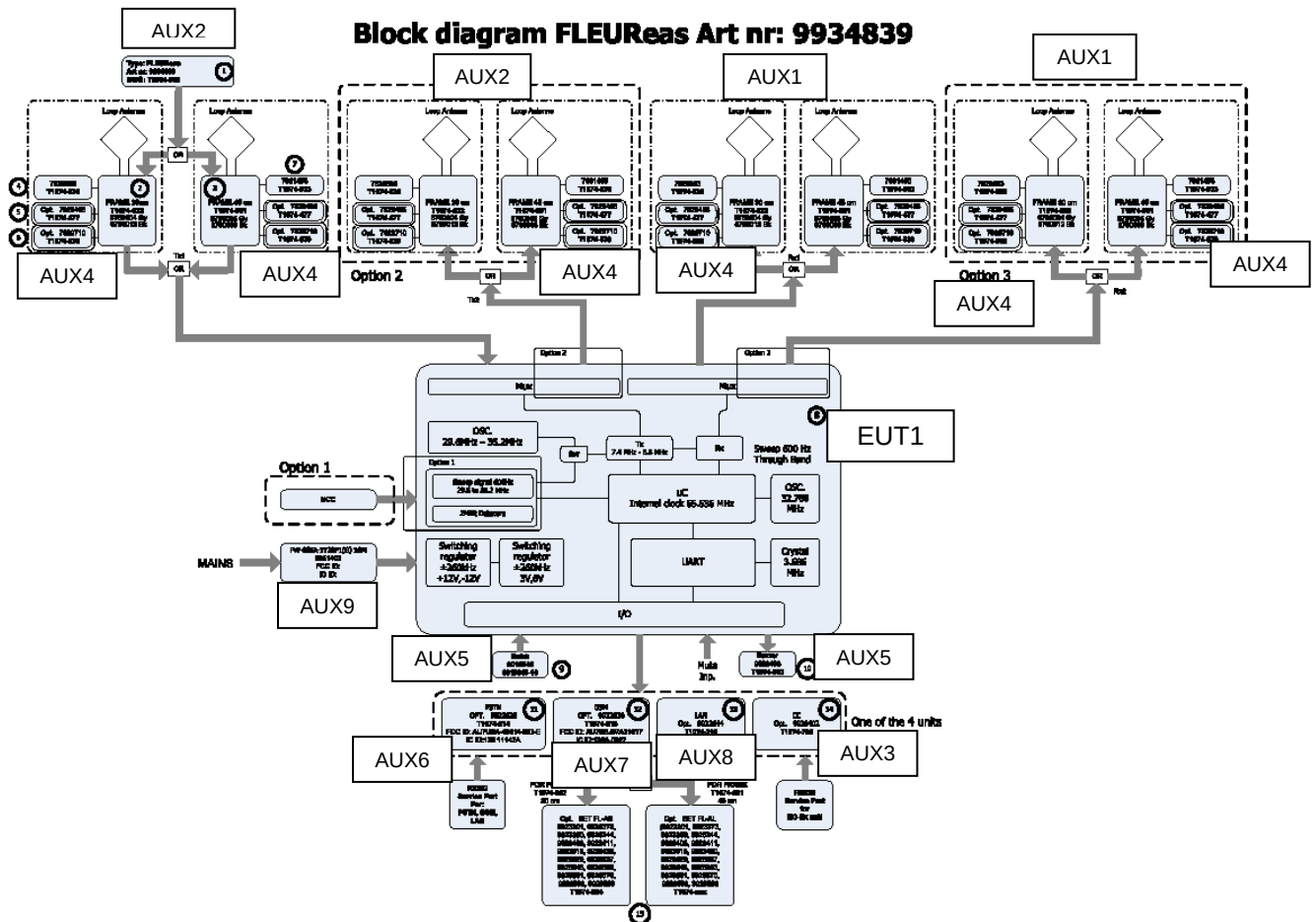
This test report supports the original grant/certification in equipment authorization files under FCC ID: **CGDFLEUREAS**.

### 1.3 Tested system details.

Details and an overview of the system and all of its components, as it has been tested, may be found below.

|                       |   |                                                                                                                                                 |
|-----------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------|
| EUT1                  | : | EC                                                                                                                                              |
| Manufacturer          | : | N.V. Nederlandsche Apparatenfabriek "Nedap"                                                                                                     |
| Brand                 | : | Nedap                                                                                                                                           |
| Model                 | : | FLEUREas                                                                                                                                        |
| Serial number         | : | X114-001                                                                                                                                        |
| Voltage input rating  | : | 100 – 240Vac                                                                                                                                    |
| Voltage output rating | : | n.a.                                                                                                                                            |
| Current input rating  | : | not provided                                                                                                                                    |
| Antenna               | : | External (AUX1-AUX2)                                                                                                                            |
| Remarks               | : | --                                                                                                                                              |
| AUX1                  | : | Antenna 30cm                                                                                                                                    |
| Manufacturer          | : | N.V. Nederlandsche Apparatenfabriek "Nedap"                                                                                                     |
| Brand                 | : | Nedap                                                                                                                                           |
| Model                 | : | FL-AS                                                                                                                                           |
| Serial number         | : | RX1=X122-001 RX2=X122-002                                                                                                                       |
| Remark                | : | production versions will be called: FL-AS and EC30, where the EC-30 will have metal coverparts in the lower part of the EUT instead of plastic. |
| AUX2                  | : | Antenna 45cm                                                                                                                                    |
| Manufacturer          | : | N.V. Nederlandsche Apparatenfabriek "Nedap"                                                                                                     |
| Brand                 | : | Nedap                                                                                                                                           |
| Model                 | : | FL-AL                                                                                                                                           |
| Serial number         | : | TX1=X122-002 TX2=X122-001                                                                                                                       |
| Remark                | : | production versions will be called: FL-AL and EC45, where the EC-45 will have metal coverparts in the lower part of the EUT instead of plastic. |
| AUX3                  | : | Customer Counter and service RS-232 connection (option)                                                                                         |
| Manufacturer          | : | N.V. Nederlandsche Apparatenfabriek "Nedap"                                                                                                     |
| Brand                 | : | Nedap                                                                                                                                           |
| Model                 | : | 9926402 (Nedap article number)                                                                                                                  |
| Serial number         | : | X417A001                                                                                                                                        |
| Remark                | : | fitted option                                                                                                                                   |

|                       |   |                                                 |
|-----------------------|---|-------------------------------------------------|
| AUX4                  | : | Lighting Unit (option)                          |
| Manufacturer          | : | N.V. Nederlandsche Apparatenfabriek "Nedap"     |
| Brand                 | : | Nedap                                           |
| Model                 | : | 7829710 (Nedap article number)                  |
| Serial number         | : | --                                              |
| Remark                | : | fitted option in all antenna units              |
| AUX5                  | : | Receiver Attenuation Switch and Buzzer (option) |
| Manufacturer          | : | N.V. Nederlandsche Apparatenfabriek "Nedap"     |
| Brand                 | : | Nedap                                           |
| Model                 | : | 8016968 (Nedap article number)                  |
| Serial number         | : | --                                              |
| Remark                | : | fitted option                                   |
| AUX6                  | : | PSTN (option)                                   |
| Brand                 | : | Multi-Tech Systems Inc.                         |
| Model                 | : | 9922628 (Nedap article number)                  |
| Serial number         | : | X415A001                                        |
| FCC ID                | : | AU7USA-46014-MD-E                               |
| IC ID                 | : | 125 11142A                                      |
| Remark                | : | fitted option                                   |
| AUX7                  | : | GSM (option)                                    |
| Brand                 | : | Multi-Tech Systems Inc.                         |
| Model                 | : | MTSMC-G-F4 (9922636= Nedap article number)      |
| Serial number         | : | X417A001                                        |
| FCC ID                | : | AU792U07A31817                                  |
| IC ID                 | : | 125A-0027                                       |
| Remark                | : | fitted option                                   |
| AUX8                  | : | LAN (option)                                    |
| Brand                 | : | Lantronix                                       |
| Model                 | : | XPORT-03 (9922644= Nedap article number)        |
| Serial number         | : | X417A001                                        |
| Remark                | : | fitted option                                   |
| AUX9                  | : | Mains Power Supply Adapter                      |
| Brand                 | : | Power-Win Technology Corp.                      |
| Model                 | : | PWY-065A-1Y30F1(G) 10M                          |
| Serial number         | : | 3766905                                         |
| Voltage input rating  | : | 100 – 240Vac~2A, 50/60Hz                        |
| Voltage output rating | : | 30Vdc / 1.5A 45W                                |
| Remark                | : | FCC approved                                    |



### 1.3.1 Description of input and output ports.

| Number | Terminal | From  | To           | Remarks        |  |
|--------|----------|-------|--------------|----------------|--|
| 1      | Mains    | Mains | Power supply | Shielded cable |  |
| 2      | TX1      | EC    | Antenna 45cm | Shielded cable |  |
| 3      | TX2      | EC    | Antenna 45cm | Shielded cable |  |
| 4      | RX1      | EC    | Antenna 30cm | Shielded cable |  |
| 5      | RX2      | EC    | Antenna 30cm | Shielded cable |  |
| 6      |          | EC    | Option       | Shielded cable |  |

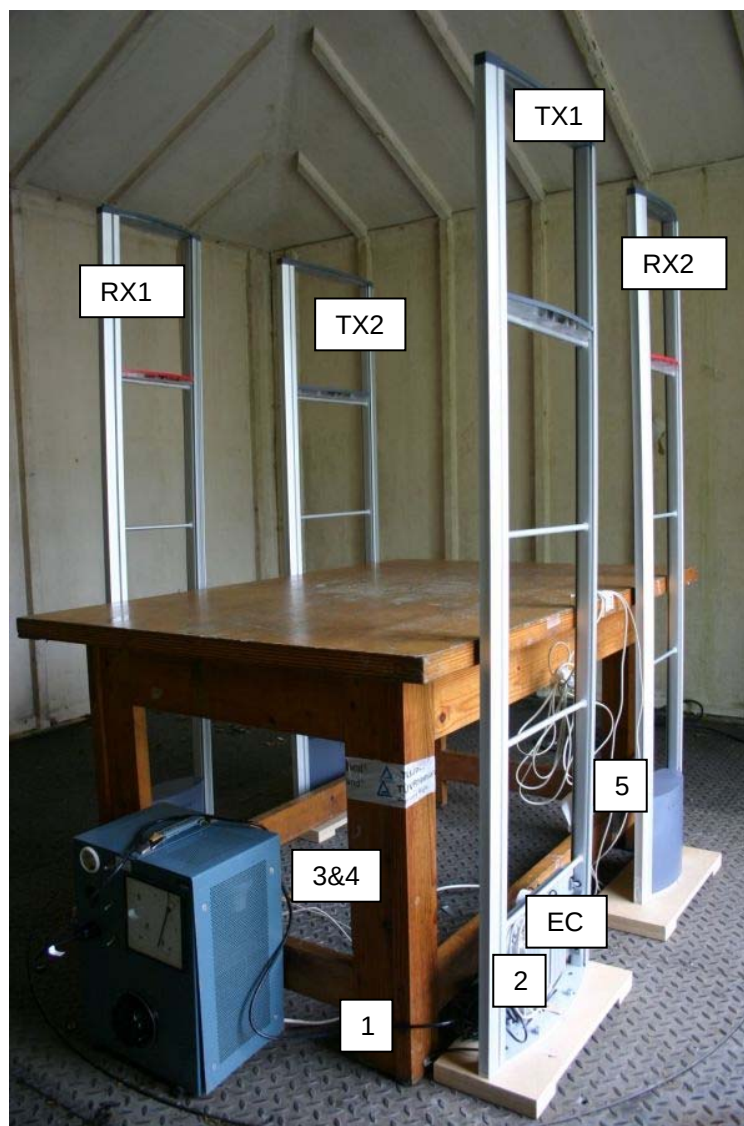


Photo 1: Basic testsetup and connections



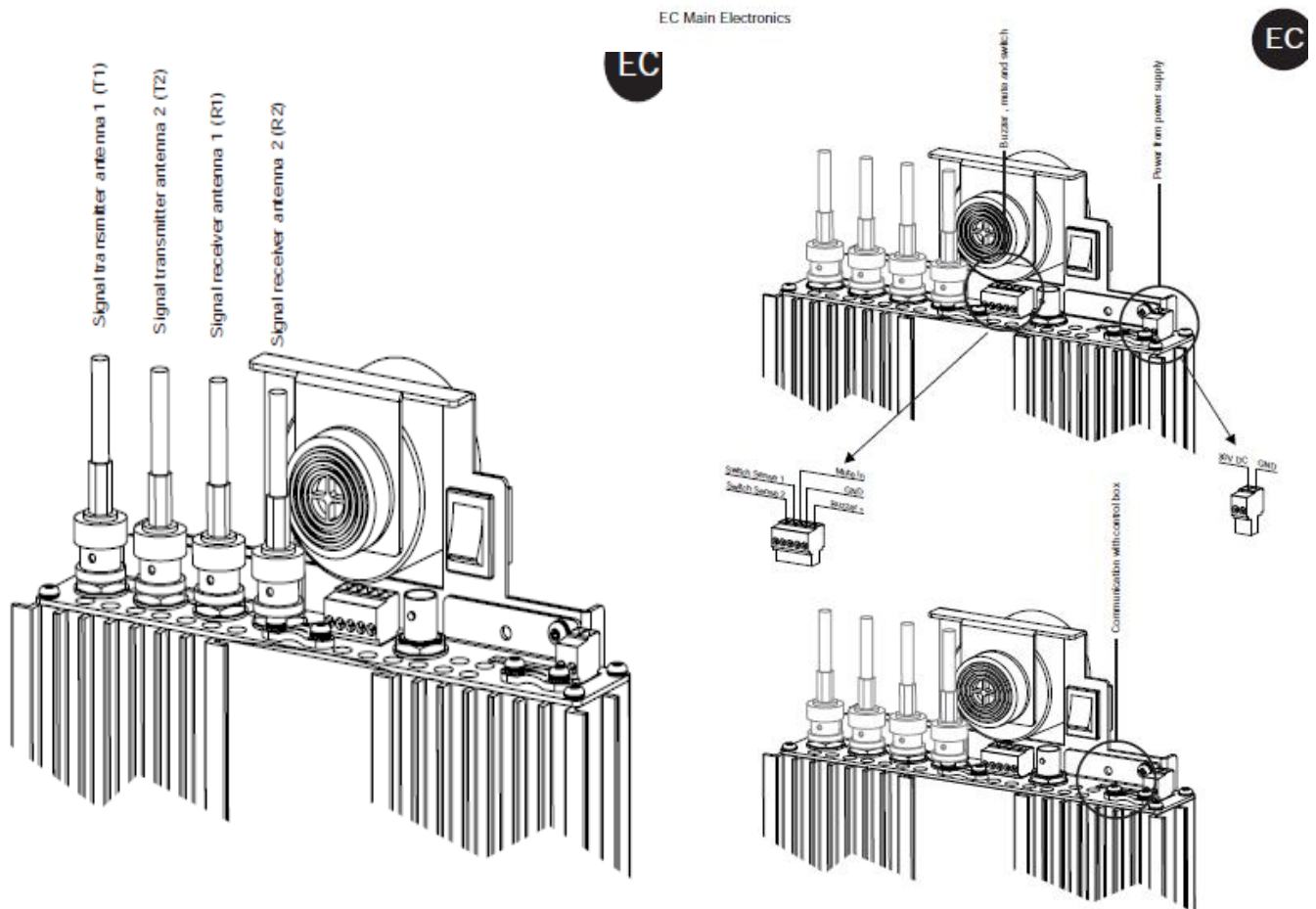


Figure 1. Connections of the EC unit (EUT1)

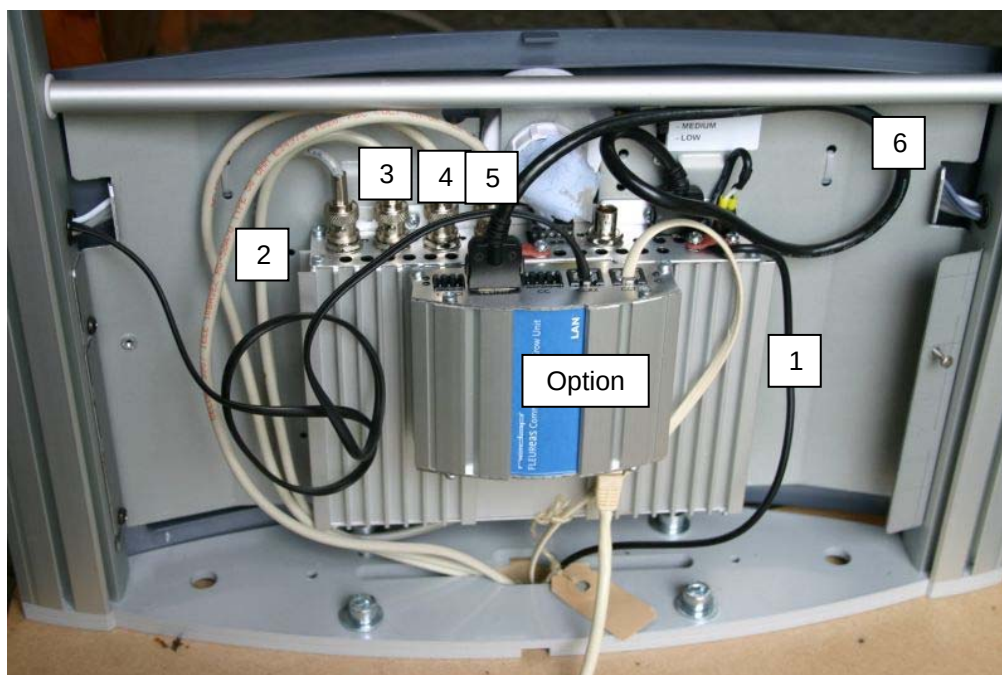


Photo 2: Input & Output ports connections

#### 1.4 Test methodology.

The test methodology used is based on the requirements of 47 CFR Part 15 (july 10, 2008), sections 15.31, 15.207 and 15.209.

The test methods, which have been used, are based on ANSI C63.4: 2003.

Radiated emission tests above 30 MHz were performed at a measurement distance of 3 meters.

Radiated emission tests below 30 MHz were performed at a measurement distance of 3 meters and 10 meters. To calculate the field strength level from these results to the appropriate distance at which the limit is specified, the calculation on Appendix 1 is used.

The receivers are switching automatically to the right bandwidth in accordance with CISPR 16. This is implemented in the receiver. The antenna factors are programmed in the test receiver. The receiver automatically calculates the appropriate correction factor for the utilized antenna and also the appropriate antenna factor for the cable loss. The total correction is automatically added to the measured value.

#### 1.5 Test facility.

The Federal Communications Commission and Industry Canada has reviewed the technical characteristics of the test facilities at TÜV Rheinland EPS B.V., located in Niekerk, 9822 TL Smidshornerweg 18, The Netherlands, and has found these test facilities to be in compliance with the requirements of 47 CFR Part 15, section 2.948, per October 23, 2000.

The description of the test facilities has been filed at the Office of the Federal Communications Commission under registration number 90828. The facility has been added to the list of laboratories performing these test services for the public on a fee basis.

The description of the test facilities has been filed to Industry Canada under registration number 2932G-1. The facility has been added to the list of laboratories performing these test services for the public on a fee basis.

#### 1.6 Test conditions.

Normal test conditions:

|                      |                                                                                                                           |
|----------------------|---------------------------------------------------------------------------------------------------------------------------|
| Temperature (*)      | : +15°C to +35°C                                                                                                          |
| Relative humidity(*) | : 20 % to 75 %                                                                                                            |
| Supply voltage       | : 115VAC/60Hz to the AC/DC Power Supply – the DC output was varied across the voltage range specified by the manufacturer |
| Air pressure         | : 950 – 1050 hPa                                                                                                          |

When it was impracticable to carry out the tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests are stated separately.

## 2 System test configuration.

### 2.1 Justification.

The system was configured for testing in a typical fashion (as a customer would normally use it).

The justification and manipulation of cables and equipment in order to simulate a worst-case behavior of the test setup has been carried out as prescribed in ANSI C63.4: 2003.

### 2.2 EUT mode of operation.

The EUT has been tested in active mode, i.e. the EUT is ready to detect a tag. To assess the behavior of the EUT while reading the tag, the EUT is tested with a tag presented such that it continuously reads the tag. The intentional radiator tests (47 CFR Part 15 sections, 15.207 and 15.209) have been performed with a complete functioning EUT and interconnections.

### 2.3 Special accessories.

No special accessories are used and/or needed to achieve compliance.

### 2.4 Equipment modifications.

No modifications have been made to the equipment in order to achieve compliance.

### 2.5 Product Labelling

The product labeling information is available in the technical documentation package.

### 2.6 Block diagram of the EUT.

The block diagram is available in the technical documentation package.

### 2.7 Schematics of the EUT.

The schematics are available in the technical documentation package.

### 2.8 Part list of the EUT.

The part list is available in the technical documentation package.

### 3 Radiated emission data.

#### 3.1 Radiated field strength measurements (30 MHz – 1 GHz, E-field)

| Frequency (MHz) | Measurement results @3m Vertical (dBuV/m) | Measurement results @3m Horizontal (dBuV/m) | Limits @3m (dBuV/m) | Pass/Fail |
|-----------------|-------------------------------------------|---------------------------------------------|---------------------|-----------|
| 30 – 88         | <20                                       | <20                                         | 40.0                | pass      |
| 88 – 216        | <23                                       | <23                                         | 43.5                | pass      |
| 216 – 960       | <26                                       | <26                                         | 46.0                | pass      |
| 960 - 1000      | <34                                       | <34                                         | 54.0                | pass      |

Table 1

Radiated emissions of the EUT. The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15 section 15.209 with the EUT operating in active mode while detecting a tag are depicted in table 1. The system is tested as in whole, being the worst case situation. So with all equipment as shown in Figure.1 in place and functioning but with only one of the options (PSTN,LAN,CC,GSM) installed at the time since the system can only be fitted with one of these options.

#### Notes:

1. Field strength values of radiated emissions at frequencies not listed in the table above are more than 20 dB below the applicable limit.
2. Measurement uncertainty is  $\pm 5.0$  dB
3. The reported field strength values are the worst case values at the indicated frequency. The receiving antenna was varied in horizontal and vertical orientations and also in height (between 1m and 4m).
4. A Quasi-peak and Peak detector was used with a resolution bandwidth of 120 kHz.
5. Values noted are from the Peak detector which already are within limits for Quasi-peak.

Test engineer

Signature :



Name : Richard van der Meer

Date : May 05, 2009

### 3.2 Radiated field strength measurements (frequency range of 0.009-30 MHz, H-field) Average values.

| Frequency (MHz) | Measurement results (dBμV) |           | Detector | Antenna factor | Cable loss | Measurement results (calculated) | Limits                  |
|-----------------|----------------------------|-----------|----------|----------------|------------|----------------------------------|-------------------------|
|                 | 3 meters                   | 10 meters |          |                |            |                                  |                         |
| 0.009 - 0.490   | <20                        | n.m.      | Av       | 20.1           | 1          | n.i                              | 48.5 down to 13.8 @300m |
| 0.490 - 1.705   | <20                        | n.m.      | Qp       | 19.7           | 1          | n.i                              | 33.8 down to 22.9 @30m  |
| 1.705 – 10.0    | <30                        | n.m.      | Av       | 19.5           | 1          | <10.5                            | 40 @30m                 |
| Except:         |                            |           |          |                |            |                                  |                         |
| 6.0006          | 42                         | 8.0       | Av       | 19.5           | 1          | 22.5                             | 40 @30m                 |
| 7.42 – 7.48     | 50                         | n.m.      | Av       | 19.5           | 1          | 30.5                             | 40 @30m                 |
| 7.48 – 8.74     | 55                         | n.m.      | Av       | 19.5           | 1          | 35.5                             | 40 @30m                 |
| 10 -30          | <20                        | n.m.      | Qp       | 20.0           | 1          | <20                              | 29.5 @30m               |

Table 2a

Radiated emissions of the EUT. The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15 section 15.209 and 15.223 with the EUT operating in continuous transmit mode on 8.2 MHz, are depicted in table 2a.

#### Notes:

1. Calculated measurement results are obtained by using the 40dB/decade factor (antenna factor and cable loss is included). i.e at 7.48 – 8.74 MHz: 55dBuV + 19.5dB + 1dB - 40dB= 35.5 dBuV/m.
2. except in a. and b. below a detector was used during testing as noted in table 2a.
  - a. 9- 90 kHz Average detector used during measurements
  - b. 110-490 kHz Average detector used during measurements
3. A resolution bandwidth of 9kHz was used during testing
4. n.i. Indicates that no field strength values could be measured on the listed frequencies or in the listed frequency range. N.m. means not measured.
5. Field strength values of radiated emissions at frequencies not listed in table 2a are more than 20 dB below the applicable limit
6. The loop antenna was varied in horizontal and vertical orientations and also around it's axis. The reported value is the worst case found at the reported frequency.
7. The EUT was tested in both normal mode (i.e. without a tag in its proximity) and in activated mode (i.e. with a tag in its proximity).
8. The EUT was tested with all options installed but with only one communication option at the time, so or a LAN or a GSM or a PSTN unit installed. Hardly any change in values noted between the options, worst case noted.
9. Measurement uncertainty is ±5.0dB

#### Test engineer

Signature : 

Name : R. van der Meer  
Date : May 05, 2009

### 3.3 Radiated field strength measurements (frequency range of 0.009-30 MHz, H-field) Peak values.

| Frequency (MHz) | Measurement results (dB $\mu$ V) |           | Detector | Antenna factor | Cable loss | Measurement results (calculated) | Limits Part 15.209/223 |
|-----------------|----------------------------------|-----------|----------|----------------|------------|----------------------------------|------------------------|
|                 | 3 meters                         | 10 meters |          |                |            |                                  |                        |
| 0.009 - 0.490   | <20                              | n.m.      | Peak     | 20.1           | 1          | n.i                              | 68.5 – 33.8 (300 m)    |
| 0.490 - 1.705   | <20                              | n.m.      | Peak     | 19.7           | 1          | n.i                              | 53.8 - 42.9 (30 m)     |
| 1.705 – 10.0    | <30                              | n.m.      | Peak     | 19.5           | 1          | <10.5                            | 60 (30 m)              |
| Except:         |                                  |           |          |                |            |                                  |                        |
| 6.0006          | 45                               | 9.5       | Peak     | 19.5           | 1          | 25.5                             | 60 (30 m)              |
| 7.42 – 7.48     | 55                               | n.m.      | Peak     | 19.5           | 1          | 35.5                             | 60 (30 m)              |
| 7.48 – 8.74     | 57.9                             | n.m.      | Peak     | 19.5           | 1          | 38.4                             | 60 (30 m)              |
| 10 -30          | <20                              | n.m.      | Peak     | 20.0           | 1          | <20                              | 49.5 (30m)             |

Table 2b

Radiated emissions of the EUT. The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15 section 15.209 and 15.223 with the EUT operating in continuous transmit mode on 8.2 MHz, are depicted in table 2b.

#### Notes:

1. Calculated measurement results are obtained by using the 40dB/decade factor (antenna factor and cable loss is included). i.e at 7.48 – 8.74 MHz: 57.9dBuV + 19.5dB + 1dB - 40dB= 38.4 dBuV/m.
2. A Peak detector was used during testing.
3. A resolution bandwidth of 9kHz was used during testing
4. n.i. Indicates that no field strength values could be measured on the listed frequencies or in the listed frequency range. N.m. means not measured.
5. Field strength values of radiated emissions at frequencies not listed in table 2b are more than 20 dB below the applicable limit
6. The loop antenna was varied in horizontal and vertical orientations and also around it's axis. The reported value is the worst case found at the reported frequency.
7. The EUT was tested in both normal mode (i.e. without a tag in its proximity) and in activated mode (i.e. with a tag in its proximity).
8. The EUT was tested with all options installed but with only one communication option at the time, so or a LAN or a GSM or a PSTN unit installed. Hardly any change in values noted between the options, worst case noted.
9. Measurement uncertainty is  $\pm 5.0$ dB

#### Test engineer

Signature : 

Name : R. van der Meer

Date : May 05, 2009

## 4 Carrier stability under special conditions.

### 4.1 Frequency stability (on 8.2 MHz) in accordance with 47 CFR Part 15, section 15.31:

- 1) The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of -20 °C to +50 °C at normal supply voltage (see table 3).
- 2) Variation in temperature is not a requirement, tested for information only.
- 3) EUT generates a swept frequency of which the 20dB bandwidth is given in the tables below and the plot showing the emission is given in Plot 1 on the next page.

| Stability under special conditions | Measured frequency (MHz)  | Frequency deviation (limit: N.A.) (%) | PASS/FAIL |
|------------------------------------|---------------------------|---------------------------------------|-----------|
| Temperature (°C)                   |                           |                                       |           |
| 20.0                               | 7.414 – 8.818 (reference) | N.A.                                  | N.A.      |
| -20.0                              | 7.414 – 8.818             | 0.00                                  | N.A.      |
| 50.0                               | 7.414 – 8.818             | 0.00                                  | N.A.      |

Table 3.

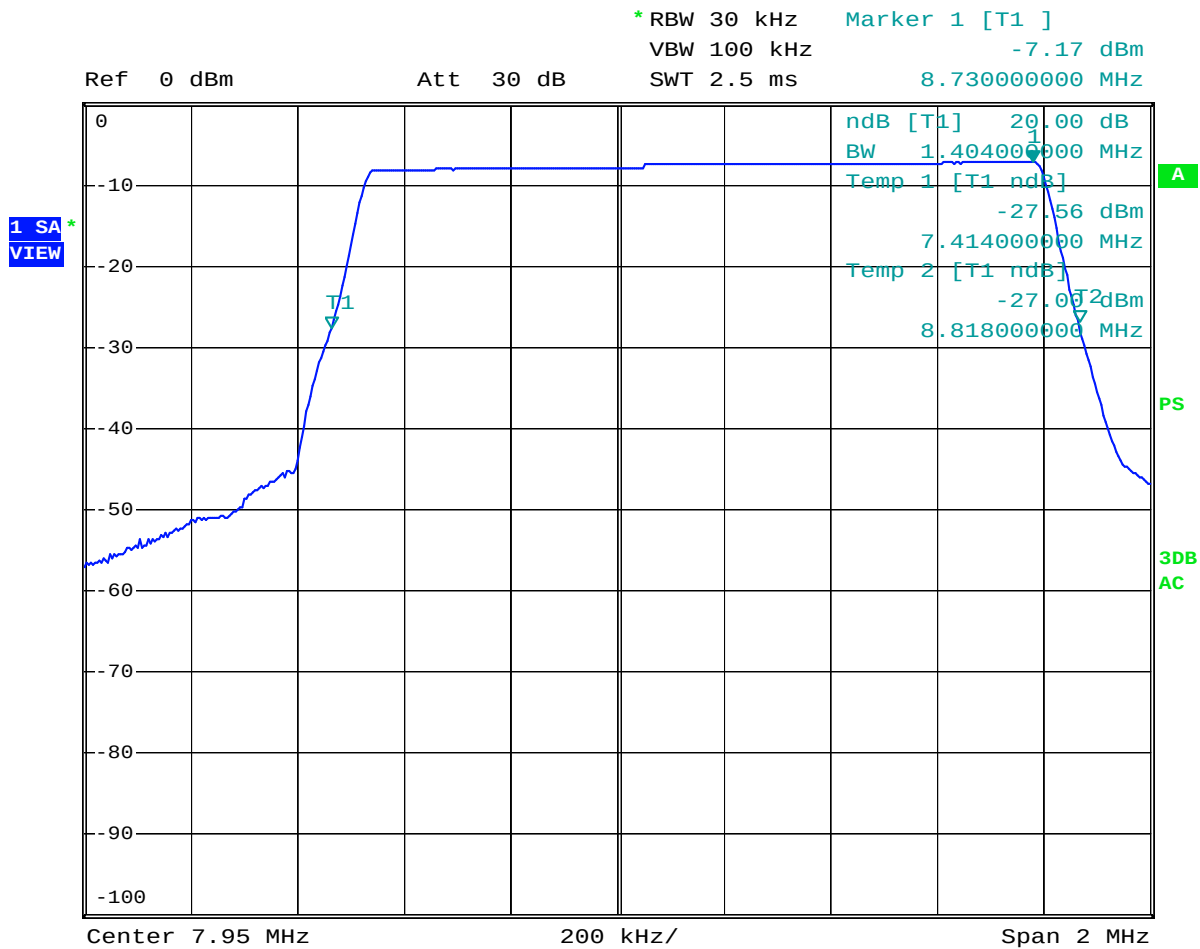
#### 4.1.1 At 85% and 115% of rated voltage supply level

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency at 85% and at 115% of the rated power supply voltage at +20 °C environmental temperature. The results are stated in Table 4.

| Stability under special conditions | Measured frequency (MHz)  | Frequency deviation (limit ±0.01%) (%) | PASS/FAIL |
|------------------------------------|---------------------------|----------------------------------------|-----------|
| % variation U                      |                           |                                        |           |
| 100.0                              | 7.414 – 8.818 (reference) | N.A.                                   | N.A.      |
| 85.0                               | 7.414 – 8.818             | 0.00                                   | PASS      |
| 115.0                              | 7.414 – 8.818             | 0.00                                   | PASS      |

Table 4





Date: 7.MAY.2009 13:53:19

Plot 1: 20 dB Bandwidth of the EUT



## 5 Conducted emission data.

### 5.1 Conducted emission data of the EUT

| Frequency<br>(MHz) | Measurement results<br>dB(μV)<br>Neutral |    | Measurement results<br>dB(μV)<br>Line 1 |    | Limits<br>dB(μV) |      | Result |
|--------------------|------------------------------------------|----|-----------------------------------------|----|------------------|------|--------|
|                    | QP                                       | AV | QP                                      | AV | QP               | AV   |        |
| 0.202              | 48                                       | 37 | 48                                      | 37 | 63.6             | 53.6 | PASS   |
| 0.338              | 33                                       | 26 | 35                                      | 24 | 59.2             | 49.2 | PASS   |
| 4.45               | 33                                       | 30 | 31                                      | 28 | 56               | 46   | PASS   |
| 5.53               | 35                                       | 32 | 35                                      | 32 | 60               | 50   | PASS   |
| 8.56               | 44                                       | 33 | 46                                      | 34 | 60               | 50   | PASS   |
| 9.846              | 50                                       | 45 | 50                                      | 45 | 60               | 50   | PASS   |
| 10.182             | 52                                       | 46 | 52                                      | 45 | 60               | 50   | PASS   |
| 10.45              | 50                                       | 44 | 50                                      | 44 | 60               | 50   | PASS   |

Table 5 Conducted emission measurements.

The results of the conducted emission tests in the range of 150 kHz up to 30 MHz, carried out in accordance with 47 CFR Part 15 section 15.207, at the 115 Volts AC mains connection terminals of the AC/DC power supply which was connected to the EUT, are depicted in table 5. The EUT was tested in both passive and active mode (while detecting a card). Maximum values recorded. The system is tested as in whole, so with all equipment as shown in Figure.1 in place and functioning. Being the worst case situation.

#### Notes:

1. Measurement uncertainty is  $\pm 3.5$  dB
2. The resolution bandwidth used was 9 kHz.
3. Values of conducted emissions at frequencies not listed in table 5 are more than 20 dB below the applicable limit.
4. The EUT was tested with all options installed but with only one communication option at the time, so or a LAN or a GSM or a PSTN unit installed. Hardly any change in values noted between the options, worst case noted.

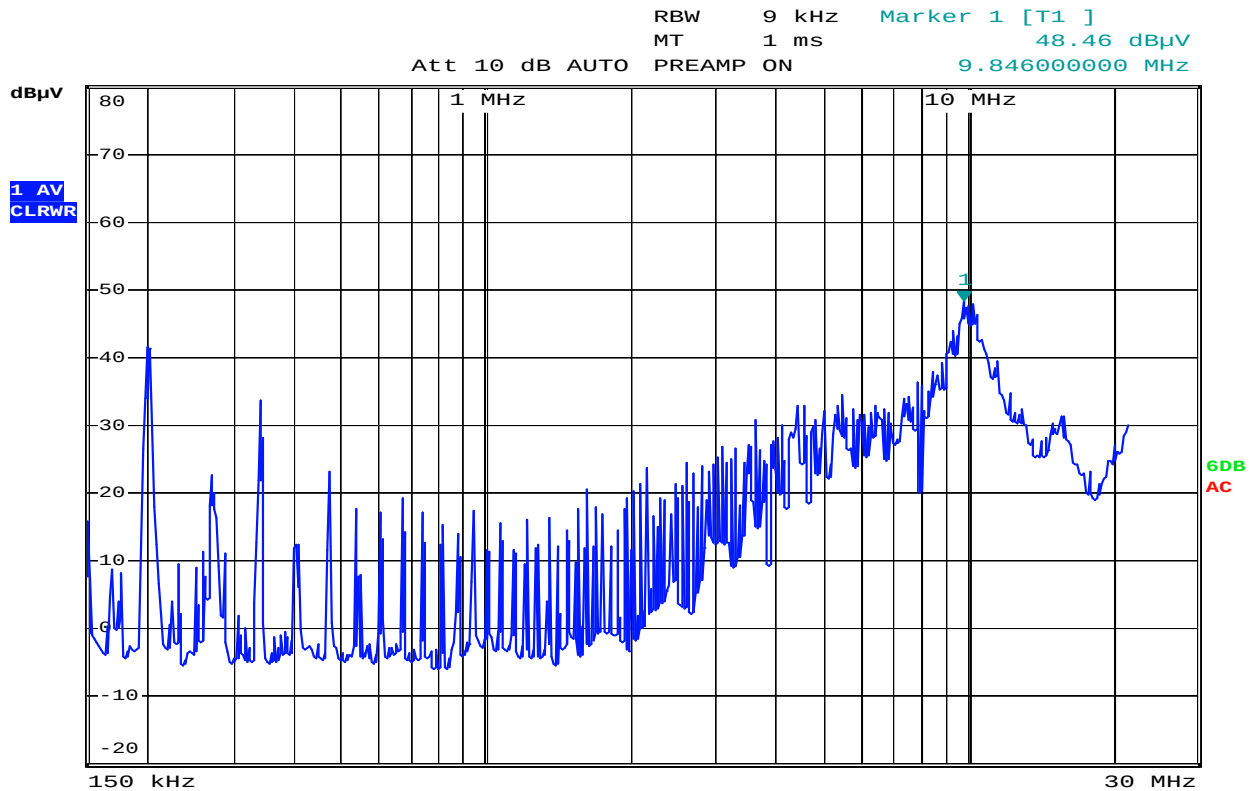
Test engineer

Signature :



Name : R. van der Meer

Date : May 08, 2009



Date: 8.MAY.2009 14:59:16

Plot 2: Graphical presentation of the conducted emissions

## 6 List of utilized test equipment.

| Inventory number | Description               | Brand           | Model                | Last cal. | Next cal. |
|------------------|---------------------------|-----------------|----------------------|-----------|-----------|
| 12503            | LISN                      | R&S             | ESH2-Z5              | 01/2008   | 01/2010   |
| 12512            | LISN                      | EMCO            | 3625/2               | 01/2008   | 01/2010   |
| 12640            | Temperature chamber       | Heraeus         | VEM03/500            | 01/2009   | 01/2010   |
| 15633            | Biconilog Testantenna     | Chase           | CBL 6111B            | 02/2009   | 02/2010   |
| 99069            | Coax 5m RG213 OATS        | NMi Certin B.V. | KABEL 5M OATS        | 11/2008   | 11/2009   |
| 99070            | Coax 15m RG213 OATS       | NMi Certin B.V. | KABEL 15M OATS       | 11/2008   | 11/2009   |
| 99071            | Coax OATS ground          | NMi Certin B.V. | KABEL GROND OATS     | 11/2008   | 11/2009   |
| 99092            | Cable Spurious Setup AR   |                 | Cable A              | 10/2008   | 10/2009   |
| 99107            | Controller OATS           | Heinrich Deisel | 4630-100             | NA        | NA        |
| 99161            | Variac 250V 6A            | RFT             | LTS006               | NA        | NA        |
| 99318            | Digital multimeter        | HP              | 34401A               | 10/2008   | 10/2009   |
| 99547            | Temperature-Humiditymeter | Europe supplies | WS-7082              | 10/2008   | 10/2009   |
| 99580            | OATS                      | Comtest         | FCC listed: 90828    | 08/2008   | 08/2011   |
| 99608            | Controller (OATS)         | EMCS            | DOC202               | NA        | NA        |
| 99609            | Antenna mast              | EMCS            | AP-4702C             | NA        | NA        |
| 99613            | Temperature-Humiditymeter | Europe supplies | WS-7082              | 10/2008   | 10/2009   |
| 99651            | Variac                    | NA              | Vast Activa: 08-9510 | NA        | NA        |
| 99667            | Laptop                    | DELL            | Latitude             | NA        | NA        |
| 99683            | Loop antenna, 6cm         | NA              | 7405-901             | 9/2008    | 9/2009    |
| 99699            | Measuring receiver        | R&S             | ESCI                 | 11/2008   | 11/2009   |

NA= Not Applicable