



## **Accredited testing-laboratory**

**DAR registration number: DAT-P-176/94-D1**

**Federal Motor Transport Authority (KBA)  
DAR registration number: KBA-P 00070-97**

**Recognized by the Federal Communications Commission**

**Anechoic chamber registration no.: 90462 (FCC)**

**Anechoic chamber registration no.: 3462C-1 (IC)**

**Certification ID: DE 0001**

**Accreditation ID: DE 0002**

**Accredited Bluetooth® Test Facility (BQTF)**

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**Annex to Test**                    **1-1065-39-02/09-A**  
**report no.**                    **:**  
**Type identification**        **: AAD-3880047-BV**  
**Applicant**                    **: Sony Ericsson Mobile Communications AB**  
**FCC ID**                        **: PY7A3880047**  
**IC Certification No**        **: 4170B-A3880047**  
**Test standards**            **: 47 CFR Part 15**  
                                      **ICES-003 Issue 4**

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## 1 General information

### 1.1 Notes

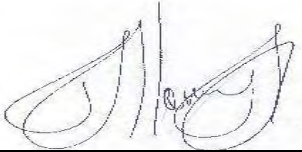
The test results of this test report relate exclusively to the test item specified in 3.1.1. The CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM ICT Services GmbH.

Test laboratory manager:

**2009-07-01**      **Daniel Muyunga**

Date

Name



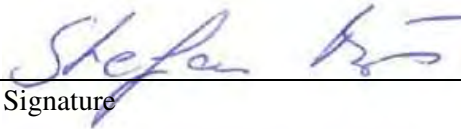
Signature

Technical responsibility for area of testing:

**2009-07-01**      **Stefan Bös**

Date

Name



Signature

## 1.2 Testing laboratory

### CETECOM ICT Services GmbH

Untertürkheimer Straße 6 - 10

66117 Saarbrücken

Germany

Phone: + 49 681 5 98 - 0

Fax: + 49 681 5 98 - 9075

e-mail: [info@ICT.cetecom.de](mailto:info@ICT.cetecom.de)

Internet: <http://www.cetecom-ict.de>

State of accreditation: The test laboratory (area of testing) is accredited according to  
DIN EN ISO/IEC 17025  
DAR registration number: DAT-P-176/94-D1

Accredited by: Federal Motor Transport Authority (KBA)  
DAR registration number: KBA-P 00070-97

Testing location, if different from CETECOM ICT Services GmbH:

Name :  
Street :  
Town :  
Country :  
Phone :  
Fax :

## 1.3 Details of applicant

|                   |                                                                                               |
|-------------------|-----------------------------------------------------------------------------------------------|
| <b>Name:</b>      | <b>Sony Ericsson Mobile Communications AB</b>                                                 |
| <b>Street:</b>    | <b>Mobilvägen 10</b>                                                                          |
| <b>Town:</b>      | <b>22188 Lund</b>                                                                             |
| <b>Country:</b>   | <b>Sweden</b>                                                                                 |
| <b>Telephone:</b> | <b>+46-46-19-3000</b>                                                                         |
| <b>Fax:</b>       | <b>+46-10-800-2441</b>                                                                        |
| <b>Contact:</b>   | <b>Mr. Peter Lindeborg</b>                                                                    |
| <b>E-mail:</b>    | <b><a href="mailto:peter.lindeborg@sonyericsson.com">peter.lindeborg@sonyericsson.com</a></b> |
| <b>Telephone:</b> | <b>+46-10-802-43 68</b>                                                                       |

## 1.4 Application details

|                                                          |                   |
|----------------------------------------------------------|-------------------|
| <b>Date of receipt of order:</b>                         | <b>2009-06-22</b> |
| <b>Date of receipt of test item:</b>                     | <b>2009-06-22</b> |
| <b>Date of start test:</b>                               | <b>2009-06-29</b> |
| <b>Date of end test</b>                                  | <b>2009-07-01</b> |
| <b>Persons(s) who have been present during the test:</b> | <b>-/-</b>        |

## 2 Technical tests

### 2.1 Details of manufacturer

|          |                                        |
|----------|----------------------------------------|
| Name:    | Sony Ericsson Mobile Communications AB |
|          |                                        |
|          |                                        |
| Street:  | Mobilvägen 10                          |
| Town:    | 22188 Lund                             |
| Country: | Sweden                                 |

### 2.2 Test item(s) and test configuration

No.: 1      **Standard Charger – CST75**      with      **AAD-3880047-BV**  
(A-GPS active)

### 3 Summary of Measurement Results and list of all performed test cases

- ☒ No deviations from the technical specifications were ascertained
- ☐ There were deviations from the technical specifications ascertained

| Section in this Report | Test Name                                                             | Verdict |
|------------------------|-----------------------------------------------------------------------|---------|
| 5.1                    | Conducted limits<br>CFR Part 15.207, 15.107<br>ICES-003 Issue 4       | Pass    |
| 5.2                    | Unwanted emissions<br>CFR Part SUBCLAUSE § 15.109<br>ICES-003 Issue 4 | Pass    |

## 4 Measurements and results

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 9 kHz to 20 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber.

The receiving antennas are conforming to specifications ANSI C63.2-1996 clause 15 and ANSI C63.4-2003 clause 4.1.5. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test set-ups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received.

The wanted and unwanted emissions are received by spectrum analysers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63.4-2003 clause 4.2.

Antennas are conforming to ANSI C63.2-1996 item 15.

9 kHz – 150 kHz ,Quasi Peak measurement, 200 Hz Bandwidth, passive loop antenna.

150 kHz - 30 MHz: Quasi Peak measurement, 9 kHz Bandwidth, passive loop antenna.

30 MHz - 200 MHz: Quasi Peak measurement, 120 KHz Bandwidth, biconical antenna

200MHz - 1GHz: Quasi Peak measurement, 120 KHz Bandwidth, log periodic antenna

>1GHz: Average, RBW 1MHz, VBW 10 Hz, wave guide horn

All measurement settings are according to FCC 15.109 and 15.107

## 5 Annex A: FCC Part 15 Subpart B

### 5.1 Conducted Limits

#### Reference

|      |                         |
|------|-------------------------|
| FCC: | CFR Part 15.207, 15.107 |
| IC:  | ICES-003 Issue 4        |

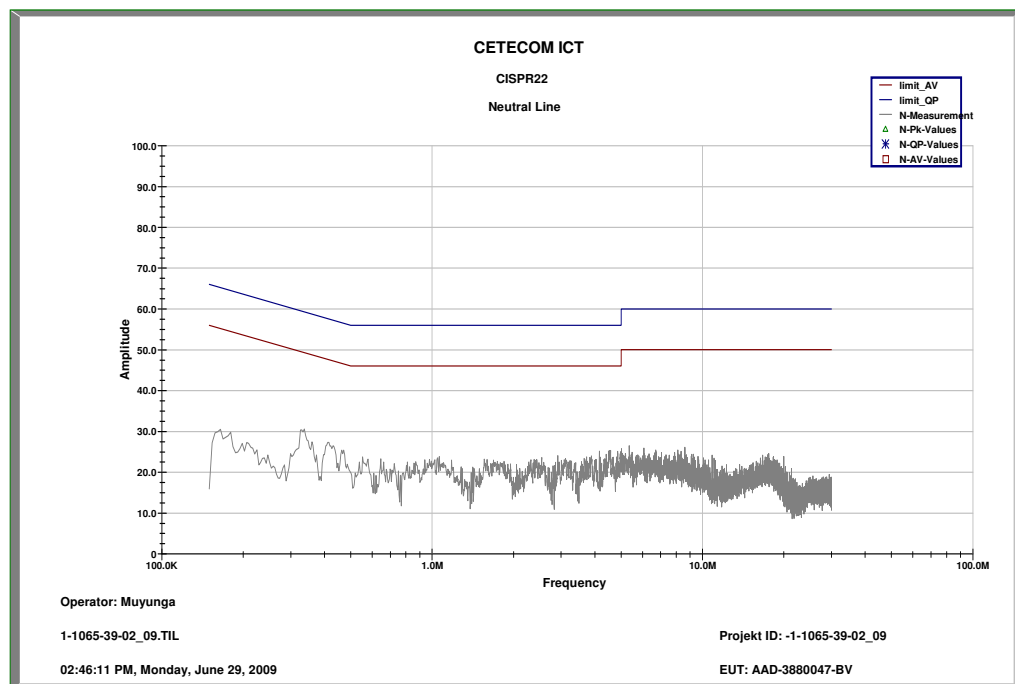
Limits: § 15.107 / 15.207

| Frequency of Emission (MHz) | Conducted Limit (dBμV) |            |
|-----------------------------|------------------------|------------|
|                             | Quasi-peak             | Average    |
| 0.15 – 0.5                  | 66 to 56 *             | 56 to 46 * |
| 0.5 – 5                     | 56                     | 46         |
| 5 - 30                      | 60                     | 50         |

\* Decreases with the logarithm of the frequency

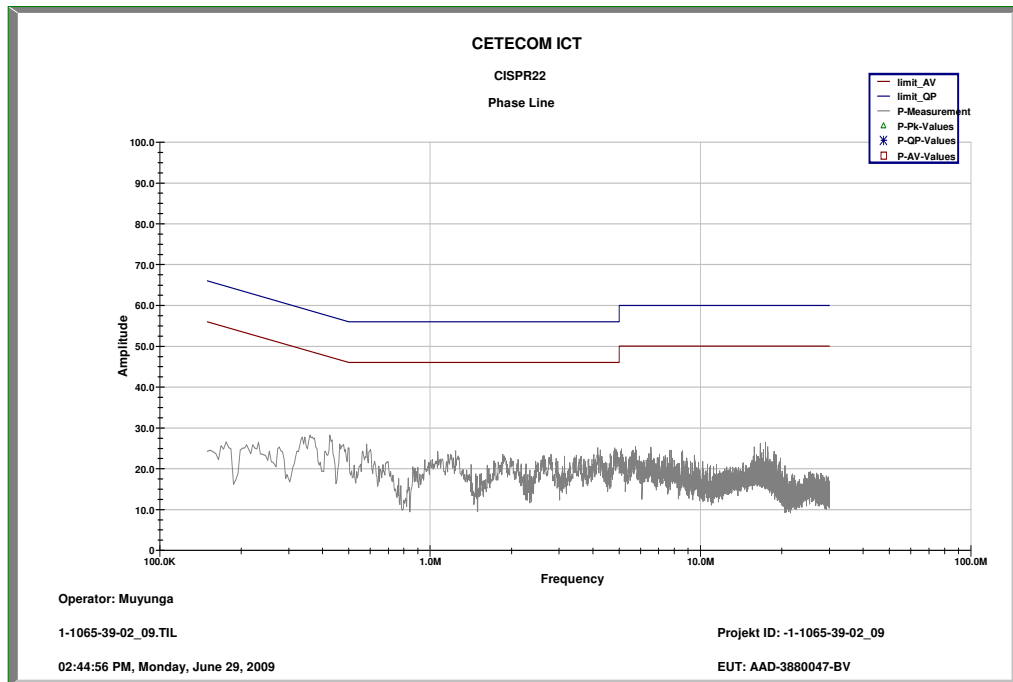
Plot 1: Neutral Line

Idle Mode: 150 kHz – 30 MHz



## Plot 2: Phase Line

Idle Mode: 150 kHz – 30 MHz



## 5.2 Unwanted emissions

### Reference

|      |                             |
|------|-----------------------------|
| FCC: | CFR Part SUBCLAUSE § 15.109 |
| IC:  | ICES-003 Issue 4            |

### Measurement Results

| SPURIOUS EMISSIONS LEVEL (dB $\mu$ V/m) |          |                         |            |          |                         |            |          |                         |
|-----------------------------------------|----------|-------------------------|------------|----------|-------------------------|------------|----------|-------------------------|
| Idle mode                               |          |                         | -/-        |          |                         | -/-        |          |                         |
| f<br>(MHz)                              | Detector | Level<br>(dB $\mu$ V/m) | f<br>(MHz) | Detector | Level<br>(dB $\mu$ V/m) | f<br>(MHz) | Detector | Level<br>(dB $\mu$ V/m) |
|                                         |          |                         |            |          |                         |            |          |                         |
|                                         |          |                         |            |          |                         |            |          |                         |
|                                         |          |                         |            |          |                         |            |          |                         |
|                                         |          |                         |            |          |                         |            |          |                         |
|                                         |          |                         |            |          |                         |            |          |                         |
|                                         |          |                         |            |          |                         |            |          |                         |
|                                         |          |                         |            |          |                         |            |          |                         |
|                                         |          |                         |            |          |                         |            |          |                         |
|                                         |          |                         |            |          |                         |            |          |                         |
| Measurement uncertainty                 |          |                         | $\pm 3$ dB |          |                         |            |          |                         |

$f < 1$  GHz : RBW/VBW: 100 kHz

$f \geq 1$  GHz : RBW/VBW: 1 MHz

H = Horizontal ; V= Vertical

For measurement distance see table below

**Limits:** § 15.109

| Frequency (MHz) | Field strength (dB $\mu$ V/m) | Measurement distance (m) |
|-----------------|-------------------------------|--------------------------|
| 30 - 88         | 30.0                          | 10                       |
| 88 - 216        | 33.5                          | 10                       |
| 216 - 960       | 36.0                          | 10                       |
| above 960       | 54.0                          | 3                        |

## Plot 1: (30 MHz to 4 GHz)

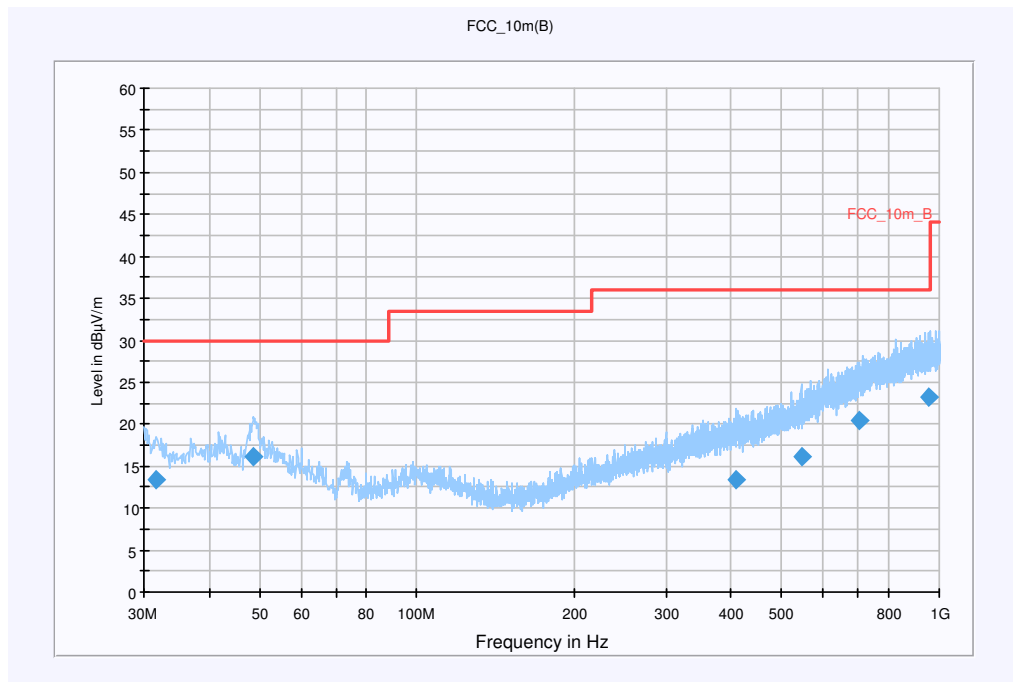
### Common Information

EUT: AAD-3880047-BV + CAA-0002001-BV  
 Serial Number: IMEI: 0044010781 9327-9 SVN 01 + 1507W352006739100  
 Test Description: FCC part 15 B class B  
 Operating Conditions: Idle Mode / A-GPS active  
 Operator Name: Lang  
 Comment: Power: 115 V/ 60 Hz

### Scan Setup: STAN\_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)  
 Level Unit: dB $\mu$ V/m

| Subrange       | Detectors | IF Bandwidth | Meas. Time | Receiver |
|----------------|-----------|--------------|------------|----------|
| 30 MHz - 1 GHz | QuasiPeak | 120 kHz      | 15 s       | Receiver |



### Final Result 1

| Frequency (MHz) | QuasiPeak (dB $\mu$ V/m) | Meas. Time (ms) | Bandwidth (kHz) | Antenna height (cm) | Polarity | Turntable position (deg) | Corr. (dB) | Margin (dB) | Limit (dB $\mu$ V/m) |
|-----------------|--------------------------|-----------------|-----------------|---------------------|----------|--------------------------|------------|-------------|----------------------|
| 31.557350       | 13.4                     | 15000.000       | 120.000         | 107.0               | V        | 43.0                     | 12.8       | 16.6        | 30.0                 |
| 48.633600       | 16.1                     | 15000.000       | 120.000         | 100.0               | V        | 279.0                    | 13.5       | 13.9        | 30.0                 |
| 408.456450      | 13.3                     | 15000.000       | 120.000         | 200.0               | V        | 249.0                    | 17.4       | 22.7        | 36.0                 |
| 544.639550      | 16.1                     | 15000.000       | 120.000         | 200.0               | V        | -1.0                     | 19.8       | 19.9        | 36.0                 |
| 703.945150      | 20.4                     | 15000.000       | 120.000         | 286.0               | V        | 283.0                    | 23.1       | 15.6        | 36.0                 |
| 958.447300      | 23.2                     | 15000.000       | 120.000         | 207.0               | V        | 75.0                     | 25.9       | 12.8        | 36.0                 |

## 6 Test equipment and ancillaries used for tests

To simplify the identification on each page of the test equipment used, on each page of the test report, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory, below.

All reported calibration intervals are calibrations according to the EN/ISO/IEC 17025 standard. These calibrations were performed from an accredited external calibration laboratory.

Additional to these calibrations the laboratory performed comparison measurements with other calibrated systems and performed a weekly chamber inspection.

All used devices are connected with a 10 MHz external reference.

According to the manufacturers' instruction is it possible to establish a calibration interval for the FSP unit of 24 month, if the device has an external 10 MHz reference.

### *Anechoic chamber C:*

| No | Equipment/Type                                  | Manuf.      | Serial Nr. | Inv. No. Cetecom | Last Calibration                   | Frequency (months) | Next Calibration |
|----|-------------------------------------------------|-------------|------------|------------------|------------------------------------|--------------------|------------------|
| 1  | Anechoic chamber                                | MWB         | 87400/02   | 300000996        | Monthly verification               |                    |                  |
| 2  | System-Rack 85900                               | HP I.V.     | *          | 300000222        | n.a.                               |                    |                  |
| 3  | Measurement System 1                            |             |            |                  |                                    |                    |                  |
| 4  | PSA-Spektrumanalysator 3 Hz - 26.5 GHz (E4440A) | Agilent     | MY48250080 | 300003812        | 05.08.2008                         | 24                 | 05.08.2010       |
| 5  | EMI Preselector 9 kHz - 1 GHz (N9039A)          | Agilent     | MY48260003 | 300003825        | 19.08.2008                         | 24                 | 19.08.2010       |
| 6  | Microwave Analog Signal Generator (N5183A)      | Agilent     | MY47420220 | 300003813        | 06.08.2008                         | 24                 | 06.08.2010       |
| 7  | PC                                              | F+W         |            |                  | n.a.                               |                    |                  |
| 8  | TILE                                            | TILE        |            |                  | n.a.                               |                    |                  |
| 9  | TRILOG Super Broadband Antenna (VULB9163)       | Schwarzbeck | 371        | 300003854        | Monthly verification (System cal.) |                    |                  |
| 10 | Double Ridged Antenna 3115                      | EMCO        | 3088       | 300001032        | Monthly verification (System cal.) |                    |                  |
| 11 | Active Loop Antenna 6502                        | EMCO        | 2210       | 300001015        | Monthly verification (System cal.) |                    |                  |
| 12 | Switch / Control Unit 3488A                     | HP          | 2719A15013 | 300001156        | n.a.                               |                    |                  |
| 13 | Power Supply 6032A                              | HP          | 2818A03450 | 300001040        | 08.01.2009                         | 36                 | 08.01.2012       |
| 14 | Busisolator                                     | Kontron     |            | 300001056        | n.a.                               |                    |                  |
| 15 | Leitungsteiler 11850C                           | HP          |            | 300000997        | Monthly verification (System cal.) |                    |                  |
| 16 | Power attenuator 8325                           | Byrd        | 1530       | 300001595        | Monthly verification (System cal.) |                    |                  |
| 17 | Band reject filter WRCG1855/1910                | Wainwright  | 7          | 300003350        | Monthly verification (System cal.) |                    |                  |
| 18 | Band reject filter WRCG2400/2483                | Wainwright  | 11         | 300003351        | Monthly verification (System cal.) |                    |                  |
| 19 | Hochpassfilter WHK1.1/15G-10SS                  | Wainwright  | 3          | 300003255        | Monthly verification (System cal.) |                    |                  |
| 20 | Hochpassfilter WHKX2.9/18G-12SS                 | Wainwright  | 1          | 300003492        | Monthly verification (System cal.) |                    |                  |
| 21 | Hochpassfilter WHKX7.0/18G-8SS                  | Wainwright  | 18         | 300003789        | Monthly verification (System cal.) |                    |                  |
| 22 | Switch / Control Unit 3488A                     | HP          | 2605e08770 | 300001443        | n.a.                               |                    |                  |
| 23 | Trenntrafo RT5A                                 | Grundig     | 9242       | 300001263        | n.a.                               |                    |                  |
| 24 | Relais Matrix PSU                               | R&S         | 890167/024 | 300001168        | n.a.                               |                    |                  |
| 25 | Netznachbildung ESH3-Z5                         | R&S         | 828576/020 | 300001210        | n.a.                               |                    |                  |

# CETECOM ICT Services GmbH

Annex to Test report no.: 1-1065-39-02/09-A

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## *Signalling Units:*

| No | Equipment/Type | Manuf. | Serial Nr.  | Inv. No. Cetecom | Last Calibration | Frequency (months) | Next Calibration |
|----|----------------|--------|-------------|------------------|------------------|--------------------|------------------|
| 1  | CBT            | R&S    | 100313      | 300003516        | 03.09.2008       | 24                 | 03.09.2010       |
| 2  | CBT            | R&S    | 100185      | 300003416        | 27.08.2008       | 24                 | 27.08.2010       |
| 3  | CMU-200        | R&S    | 103992      | 300003231        | 04.06.2008       | 12                 | 04.06.2009       |
| 4  | CMU-200        | R&S    | 106240      | 300003321        | 27.08.2008       | 24                 | 27.08.2010       |
| 5  | CMU-200        | R&S    | 832221/0055 | 300002862        | 20.03.2008       | 24                 | 20.03.2010       |

## *Anechoic chamber F:*

| No | Equipment/Type                          | Manuf.                   | Serial Nr. | Inv. No. Cetecom | Last Calibration | Frequency (months) | Next Calibration |
|----|-----------------------------------------|--------------------------|------------|------------------|------------------|--------------------|------------------|
| 1  | Control Computer                        | F+W                      | FW0502032  | 300003303        | -/-              | -/-                | -/-              |
| 2  | Trilog Antenna VULB 9163                | Schwarzbeck              | 295        | 300003787        | 01.04.2008       | 24                 | 01.04.2010       |
| 3  | Amplifier - 0518C-138                   | Veritech Micro-wave Inc. | -/-        | -/-              | -/-              | -/-                | -/-              |
| 4  | Switch - 3488A                          | HP                       |            | 300000368        | -/-              | -/-                | -/-              |
| 5  | EMI Test receiver - ESCI                | R&S                      | 100083     | 300003312        | 31.01.2007       | 24                 | 31.01.2009       |
| 6  | Turntable Controller - 1061 3M          | EMCO                     | 1218       | 300000661        | -/-              | -/-                | -/-              |
| 7  | Tower Controller 1051 Controller        | EMCO                     | 1262       | 300000625        | -/-              | -/-                | -/-              |
| 8  | Tower - 1051                            | EMCO                     | 1262       | 300000625        | -/-              | -/-                | -/-              |
| 10 | Ultra Notch-Filter Rejected band Ch. 62 | WRCD                     | 9          | -/-              | -/-              | -/-                | -/-              |