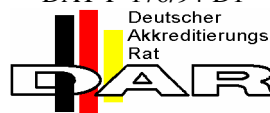


Recognized by the  
Federal Communications Commission  
**Anechoic chamber registration no.: 90462 (FCC)**  
**Anechoic chamber registration no.: 3463 (IC)**  
TCB ID: DE 0001



Accredited by the  
German Accreditation Council  
DAR-Registration Number  
DAT-P-176/94-D1



Independent ETSI  
compliance test house



Accredited Bluetooth<sup>®</sup> Test Facility (BQTF)

|                      |                                     |
|----------------------|-------------------------------------|
| Test report no.      | : 4-2173-01-07/06                   |
| Applicant            | : Philips Consumer Electronics B.V. |
| Type                 | : SJM3130/27                        |
| Test Standard        | : FCC Part 15 / RSS210              |
| FCC ID               | : OYM-JM3130                        |
| Certification No. IC | : 135M-SJM3130                      |

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## 1 General information

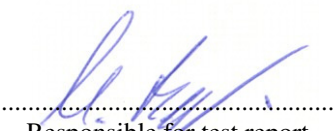
### 1.1 Administrative data of the test facility

#### 1.1.1 Identification of the testing laboratory

|                                     |                                                                                                                                       |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Company name:                       | Cetecom ICT Services GmbH                                                                                                             |
| Address:                            | Untertürkheimerstr. 6-10<br>D-66117 Saarbruecken<br>Germany                                                                           |
| Laboratory accreditation:           | DAR-Registration No. DAT-P-176/94-D1<br>Bluetooth Qualification Test Facility (BQTF)<br>Federal Communications Commission (FCC)       |
| Responsible for testing laboratory: | Identification/Registration No : 90462<br>Michael Berg<br>Phone: +49 681 598 0<br>Fax: +49 681 598 9075<br>email: info@ict.cetecom.de |

### 1.2 Notes

The test results of this test report relate exclusively to the test item specified in 1.5. The CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalizations 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.

  
.....  
Responsible for testing laboratory  
(Jacob Reschke)  
.....  
Responsible for test report  
(Michael Berg)

## 1.3 Details of Applicant

Name : Philips Consumer Electronics B.V.  
Address : Building SFF 6.23  
City : 5616 Eindhoven  
Country : Netherlands  
Phone : +31-40-273-5518  
Fax : +31-40-273-7256  
Contact : Karel Rysman  
Phone : +31-40-273-6589  
Fax : -.-  
e-mail : Karel.Rysman@philips.com

## 1.4 Application Details

Date of receipt of application : 2007-03-21  
Date of receipt of test item : 2007-03-21  
Date(s) of test : 2007-03-21 to 2007-07-22  
Date of report : 2007-07-22

Test report no.: 4-2491-01-04/07

Date: 2007-07-22

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## 1.5 Test Item

|                                                  |   |                                       |
|--------------------------------------------------|---|---------------------------------------|
| Type of equipment                                | : | FM Transmitter                        |
| Model name                                       | : | SJM3130/27                            |
| Manufacturer                                     | : | Fujikon Industrial Co., Ltd           |
| Address                                          | : | 16/F., Tower I, Gand Central Plaza    |
| City                                             | : | 138 Shatin Rural Committee Rd. Shatin |
| Country                                          | : | N.T., Hong Kong                       |
| Tested to Radio Standards Specification(RSS) No. | : | 210 Issue 7                           |
| Open Area Test Site Industry Canada Number       | : | 3463A-1                               |
| Frequency Range (or fixed frequency)             | : | 88.1 to 107.9 MHz                     |
| R F: Power in Watts                              | : | 6.67 nW                               |
| Type of Modulation                               | : | FM                                    |
| Emission Designator                              | : | 158KF3E                               |
| Antenna Information                              | : | Wire antenna                          |
| Transmitter Spurious (worst case)                | : | 45.7 $\mu$ V/m at 3m                  |
| Receiver Spurious (worst case)                   | : | n.a.                                  |
| IC no.                                           | : | 135M-SJM3130                          |
| FCC ID                                           | : | OYM-JM3130                            |

### ATTESTATION:

**DECLARATION OF COMPLIANCE:** I declare that the testing was performed or supervised by me; that the test measurements were made in accordance with the above-mentioned Industry Canada standard(s); and that the equipment identified in this application has been subjected to all the applicable test conditions specified in the Industry Canada standards and all of the requirements of the standard have been met.

### Laboratory Manager :

2007-07-22

Jakob Reschke

Date

Name

  
Signature

## 1.6 Test Setup

|          |   |     |
|----------|---|-----|
| Hardware | : | -.- |
| Software | : | -.- |

## 1.7 Test Specifications

|             |                         |
|-------------|-------------------------|
| <b>FCC:</b> | <b>CFR Part 15.209</b>  |
| <b>IC:</b>  | <b>RSS 210, Issue 7</b> |

## 2 Statement of Compliance

No deviations from the technical specification(s) were ascertained in the course of the tests performed.

### 2.1 Summary of Measurement Results

#### 2.1.1 CFR 47 Part 15 Radio frequency devices

| Section in this Report | Test Name / Section FCC Part 15                             | Test Name / Section RSS 210 Issue 7       | applicable | Verdict |
|------------------------|-------------------------------------------------------------|-------------------------------------------|------------|---------|
| 4.1                    | § 15.209<br>Radiated emissions limits, general requirements | 2.6 General Field Strength Limits Table 2 | YES        | pass    |
| 4.2                    | §15.239<br>Operation in the band 88- 108 MHz                |                                           | YES        | pass    |
|                        |                                                             |                                           |            |         |
|                        |                                                             |                                           |            |         |
|                        |                                                             |                                           |            |         |
|                        |                                                             |                                           |            |         |
|                        |                                                             |                                           |            |         |

## 3 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 conform with 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 conform with 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, 9kHz Bandwidth, passive loop antenna.

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

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

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

All measurement settings are according to FCC 15.209

## 4 FCC Part 15 Subpart C

### 4.1 Radiated emissions limits, general requirements

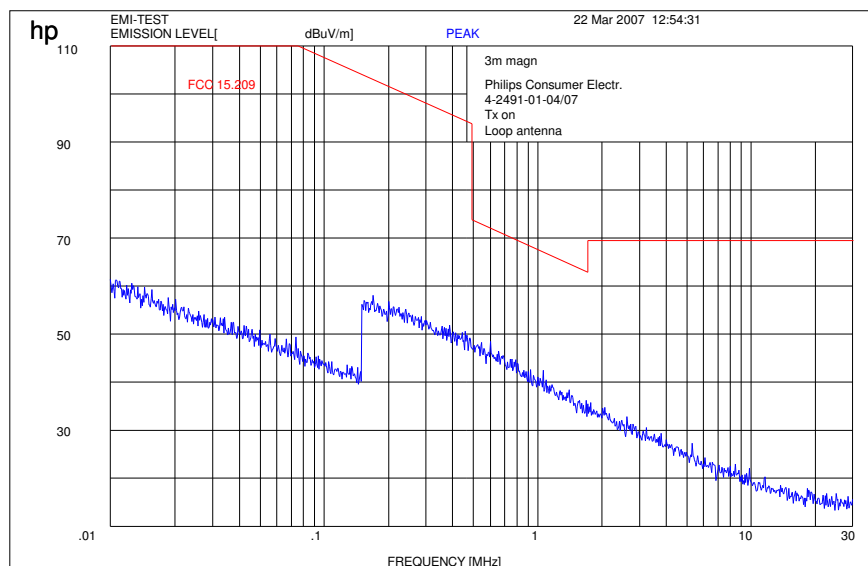
#### Reference

|      |                                                                     |
|------|---------------------------------------------------------------------|
| FCC: | CFR Part SUBCLAUSE § 15.209                                         |
| IC:  | RSS 210, Issue 7, Section 2.6 General Field Strength Limits Table 2 |

Plot 1:

**Part 15.209 Magnetics TX**

**This plot is valid for all channels**



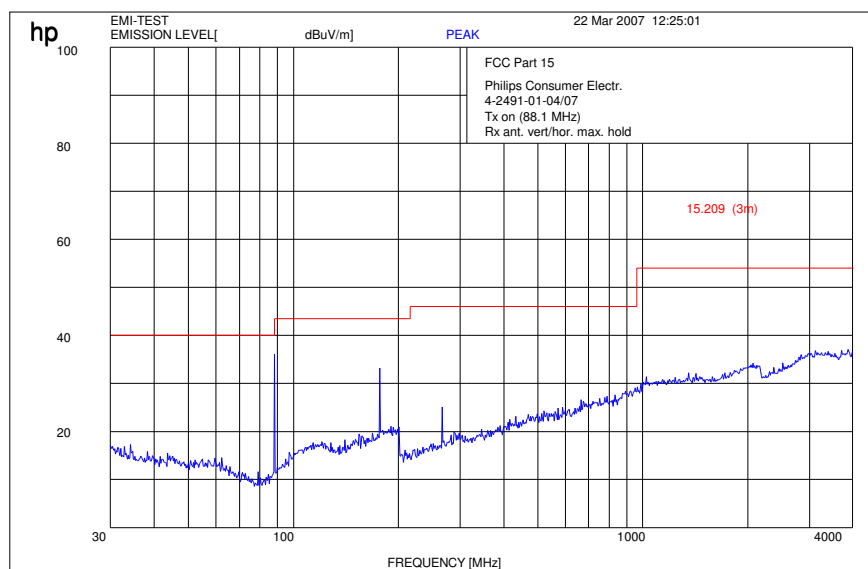
RBW/VBW : 200 Hz up to 150 kHz, 9 kHz up to 30 MHz, 120 kHz up to 1 GHz

(to convert the measuring distance from 10m to 30m and 30 to 300m a correction factor from 40 dB/decade was used)

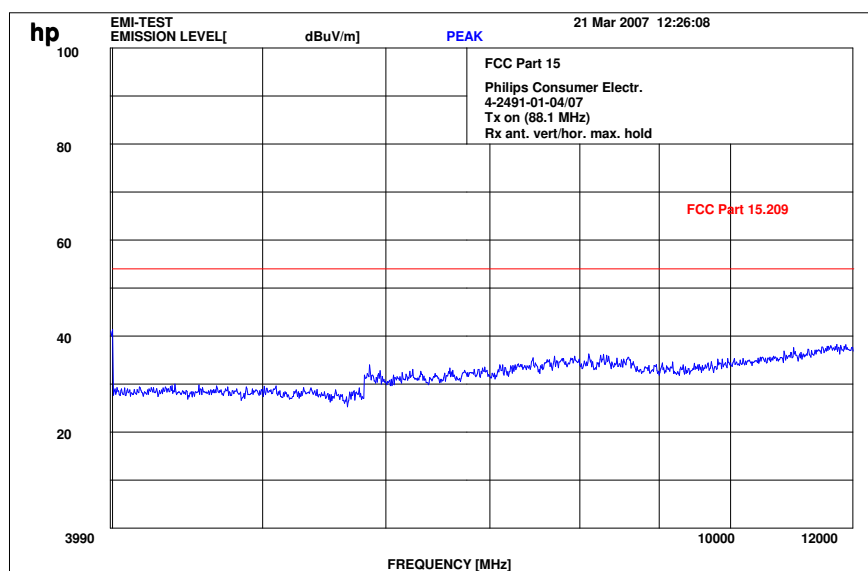
Measurement distance 3 m

This measurement was done in 3 planes, the plot shows the worst case

Plot 2: (30 MHz to 4 GHz)  
**88.1 MHz**

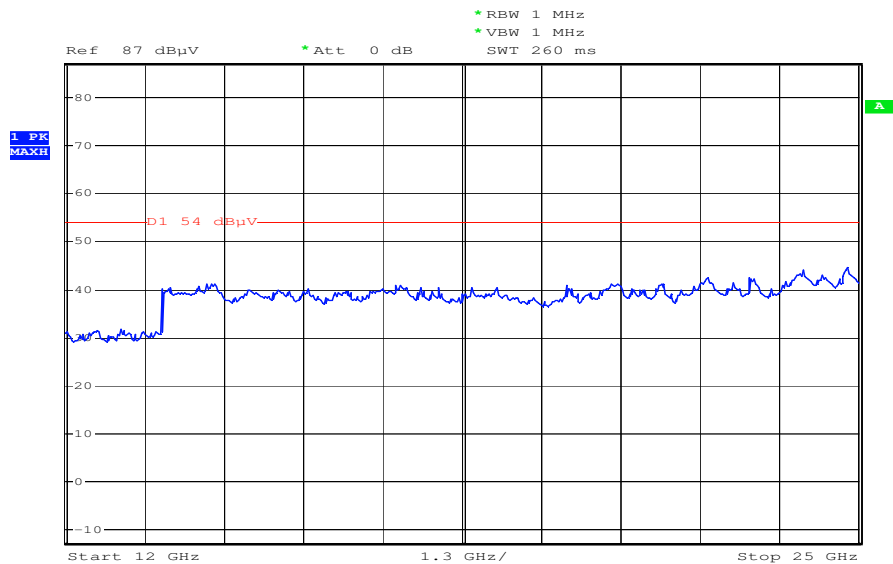


Plot 3: (4 to 12 GHz)



Plot 4: (12 to 25GHz)

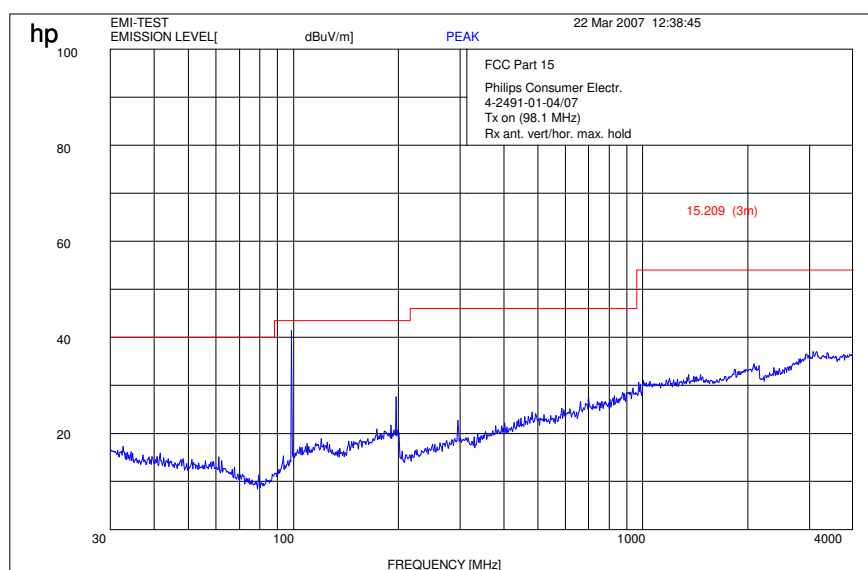
**This plot is valid for all channels**



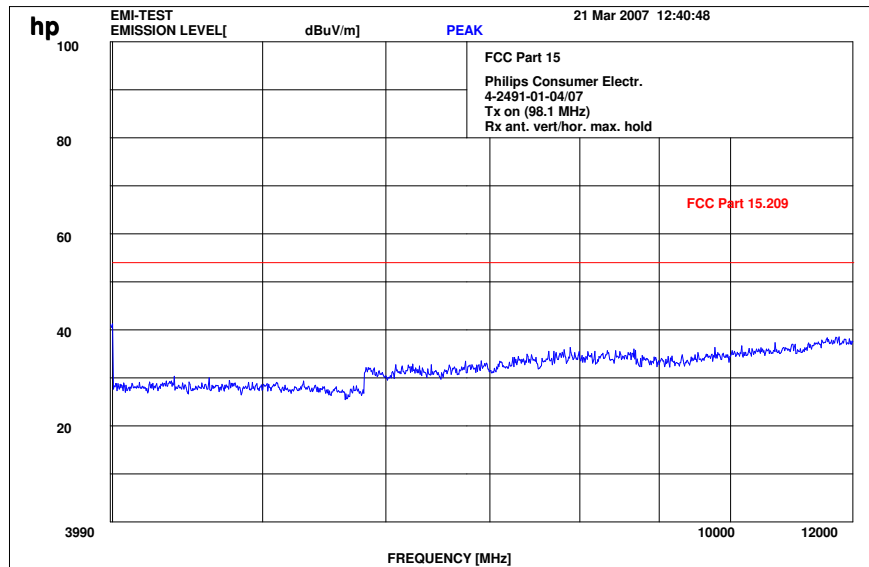
Date: 22.MAR.2007 13:05:54

Plot 5: (30 MHz to 4 GHz)

**98.1 MHz**

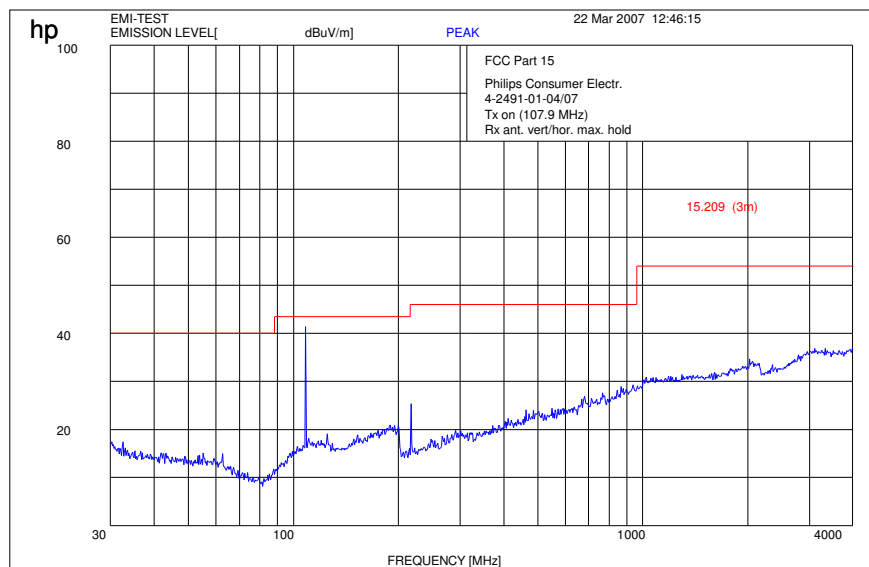


Plot 6: (4 to 12 GHz)

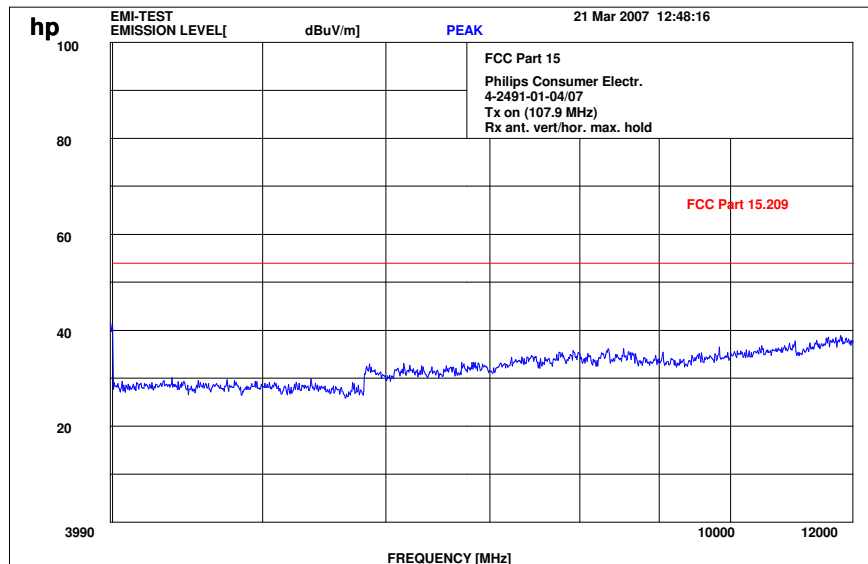


Plot 7: (30 MHz to 4 GHz)

**107.9 MHz**



Plot 8: (4 to 12 GHz)



| SPURIOUS EMISSIONS LEVEL ( $\mu\text{V/m}$ ) |          |                           |                   |          |                           |              |          |                           |
|----------------------------------------------|----------|---------------------------|-------------------|----------|---------------------------|--------------|----------|---------------------------|
| Low Channel                                  |          |                           | Middle Channel    |          |                           | High Channel |          |                           |
| 88.2 MHz                                     |          |                           | 98.1 MHz          |          |                           | 107.8 MHz    |          |                           |
| F [MHz]                                      | Detector | Level [ $\mu\text{V/m}$ ] | F [MHz]           | Detector | Level [ $\mu\text{V/m}$ ] | F [MHz]      | Detector | Level [ $\mu\text{V/m}$ ] |
| 176.89                                       | 100 kHz  | 45.70                     | 196.97            | 100 kHz  | 23.98                     | 217.00       | 100 kHz  | 18.62                     |
| 266.70                                       | 100 kHz  | 17.98                     |                   |          |                           |              |          |                           |
|                                              |          |                           |                   |          |                           |              |          |                           |
|                                              |          |                           |                   |          |                           |              |          |                           |
| Measurement uncertainty                      |          |                           | $\pm 3\text{ dB}$ |          |                           |              |          |                           |

$f < 1\text{ GHz}$  : RBW/VBW: 100 kHz

$f \geq 1\text{ GHz}$  : RBW/VBW: 1 MHz

## Limits

## SUBCLAUSE § 15.209

| Frequency (MHz) | Field strength ( $\mu\text{V/m}$ ) | Measurement distance (m) |
|-----------------|------------------------------------|--------------------------|
| 0.009 – 0.490   | 2400/F(kHz)                        | 300                      |
| 0.490 – 1.705   | 24000/F(kHz)                       | 30                       |
| 1.705 - 30      | 30                                 | 30                       |
| 30 - 88         | 100**                              | 3                        |
| 88 - 216        | 150**                              | 3                        |
| 216 - 960       | 200**                              | 3                        |
| above 960       | 500                                | 3                        |

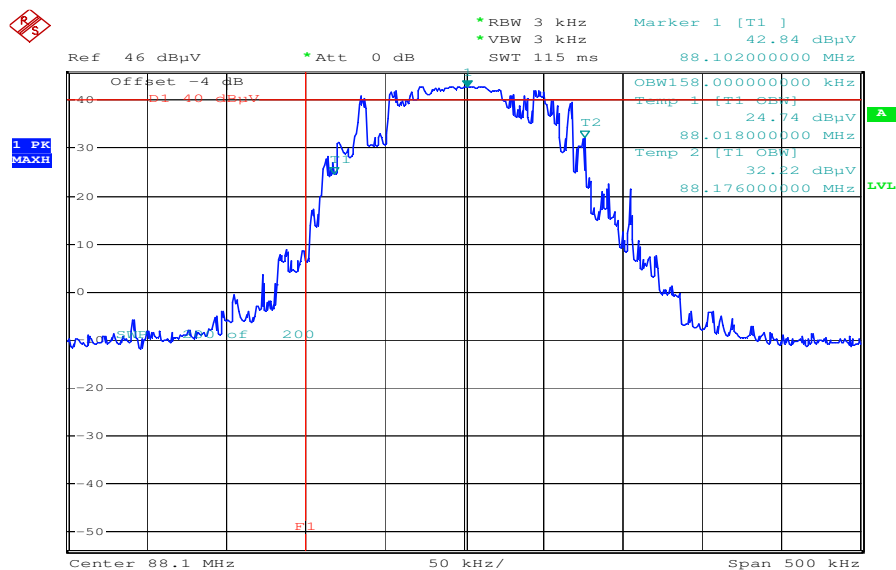
\*\* Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

## 4.2 Operation in the band 88 – 108 MHz

### Reference

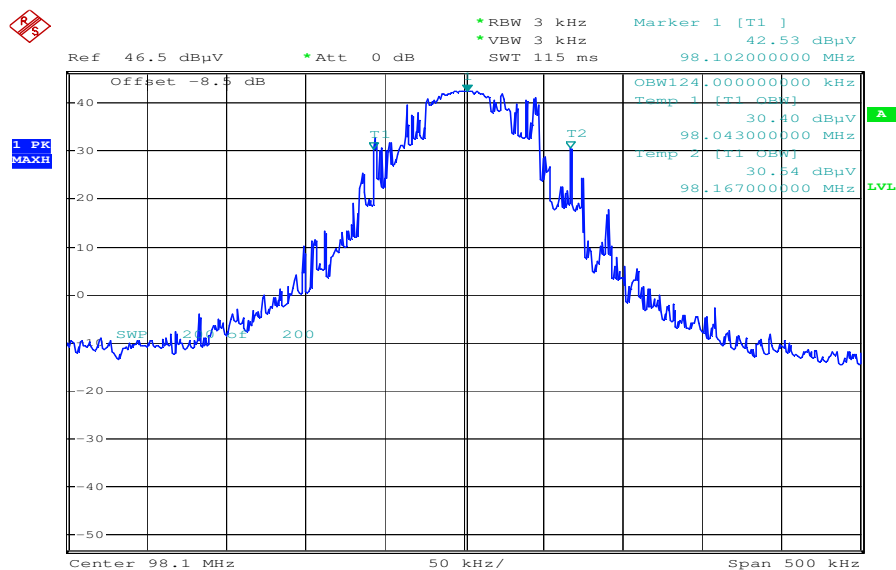
FCC: CFR Part SUBCLAUSE § 15.239

Plot 9  
(88.1 MHz)



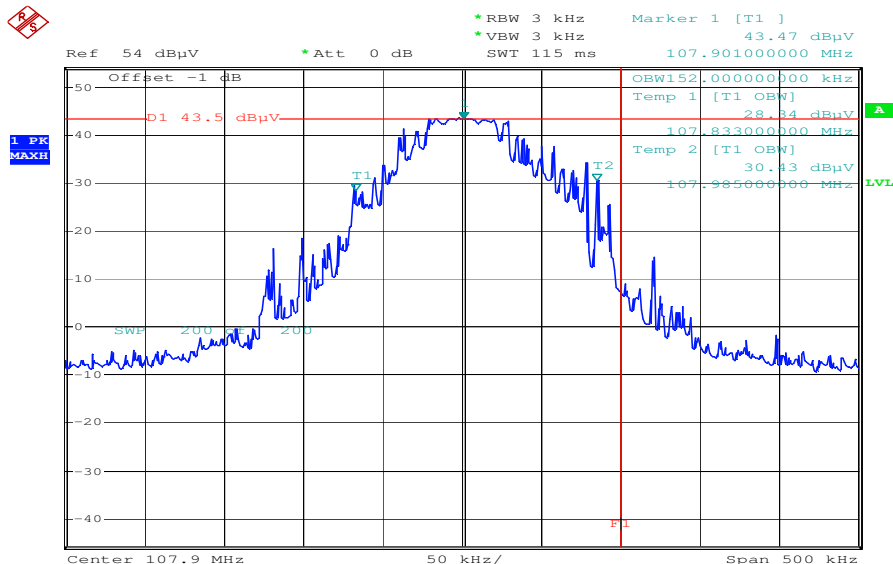
Date: 2.AUG.2007 13:56:41

Plot 10  
(98.1 MHz)



Date: 2.AUG.2007 13:59:49

Plot 11  
(107.9 MHz)



Date: 2.AUG.2007 14:03:58

| Frequency [MHz] | Occupied bandwidth [kHz] | Maximum Output power (dBμV/m @ 3m) |
|-----------------|--------------------------|------------------------------------|
| 88.1            | 158                      | 42.84                              |
| 98.1            | 124                      | 42.53                              |
| 107.9           | 152                      | 43.47                              |

## Test Set-up

The EUT was measured in a anechoic chamber.

The output power was measured with a RBW&VBW wide enough (200 kHz) to capture the whole signal.

The RBW&VBW was changed to 3 kHz (about 1% of the OBW) and a Span of 300 kHz.

A peak detector was used with the max. hold function.

The bandwidth was measured with the internal function of the analyzer. The 99.5% bandwidth was measured.

The audio input was from an iPod nano with a typical audio file. Mp3 and wave files were used with different songs (eg. Frank Zappa – Bobby Brown).

The plots show the worst case.

The bandwidth was tested with the maximum audio input. The max. volume was tuned on the iPod nano.

All tests were made using different frequencies (lowest, middle and highest possible).

The maximum tuningrange of the equipment is 88.1 MHz to 107.9 Mhz.

Also a displayline was added to 88MHz (for the lowest channel measurement) and to 108MHz (for the highest channel measurement) to show that the whole signal lies in the frequency range of 88-108 MHz.

## Limits

(a)

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88 – 108 MHz.

(b)

The field strength of any emissions within the permitted 200 kHz band shall not exceed 250 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in Section 15.35 for limiting peak emissions apply.

## Used Testequipment

### Anechoic chamber C:

| No | Equipment/Type                       | Manufact.  | Serial Nr.          | Inv. No.<br>Cetecom | Last<br>Calibration                | Frequency<br>(months) | Next<br>Calibration |
|----|--------------------------------------|------------|---------------------|---------------------|------------------------------------|-----------------------|---------------------|
| 1  | Anechoic chamber                     | MWB        | 87400/02            | 300000996           | Monthly verification               |                       |                     |
| 2  | System-Rack<br>85900                 | HP I.V.    | *                   | 300000222           | n.a.                               |                       |                     |
| 3  | Measurement<br>System 1              |            |                     |                     |                                    |                       |                     |
| 4  | Spektrum Analyzer<br>8566B           | HP         | 2747A05306          | 300001000           | 05.10.2006                         | 24                    | 05.10.2008          |
| 5  | Spektrum Analyzer<br>Display 85662A  | HP         | 2816A16541          | 300002297           | 05.10.2006                         | 24                    | 05.10.2008          |
| 6  | Quasi-Peak-<br>Adapter 85650A        | HP         | 2811A01131          | 300000999           | 05.10.2006                         | 24                    | 05.10.2008          |
| 7  | RF-Preselector<br>85685A             | HP         | 2837A00779          | 300000218           | 08.11.2006                         | 24                    | 08.11.2008          |
| 8  | PC Vectra VL                         | HP         |                     | 300001688           | n.a.                               |                       |                     |
| 9  | Software EMI                         | HP         |                     | 300000983           | n.a.                               |                       |                     |
| 10 | Measurement<br>System 2              |            |                     |                     |                                    |                       |                     |
| 11 | FSP 30                               | R&S        | 100623              | ICT<br>300003464    | 26.10.2006                         | 12                    | 26.10.2007          |
| 12 | PC                                   | F+W        |                     |                     | n.a.                               |                       |                     |
| 13 | TILE                                 | TILE       |                     |                     | n.a.                               |                       |                     |
| 14 | Biconical antenna                    | EMCO       | S/N: 860<br>942/003 |                     | Monthly verification (System cal.) |                       |                     |
| 15 | Log. Period.<br>Antenna 3146         | EMCO       | 2130                | 300001603           | Monthly verification (System cal.) |                       |                     |
| 16 | Double Ridged<br>Antenna HP<br>3115P | EMCO       | 3088                | 300001032           | Monthly verification (System cal.) |                       |                     |
| 17 | Active Loop<br>Antenna 6502          | EMCO       | 2210                | 300001015           | Monthly verification (System cal.) |                       |                     |
| 18 | Power Supply<br>6032A                | HP         | 2818A03450          | 300001040           | 12.05.2007                         | 36                    | 12.05.2010          |
| 19 | Busisolator                          | Kontron    |                     | 300001056           | n.a.                               |                       |                     |
| 20 | Leitungsteiler<br>11850C             | HP         |                     | 300000997           | Monthly verification (System cal.) |                       |                     |
| 21 | Power attenuator<br>8325             | Byrd       | 1530                | 300001595           | Monthly verification (System cal.) |                       |                     |
| 22 | Band reject filter<br>WRCG1855/1910  | Wainwright | 7                   | 300003350           | Monthly verification (System cal.) |                       |                     |
| 23 | Band reject filter<br>WRCG2400/2483  | Wainwright | 11                  | 300003351           | Monthly verification (System cal.) |                       |                     |
|    |                                      |            |                     |                     |                                    |                       |                     |

***Bluetooth Rack:***

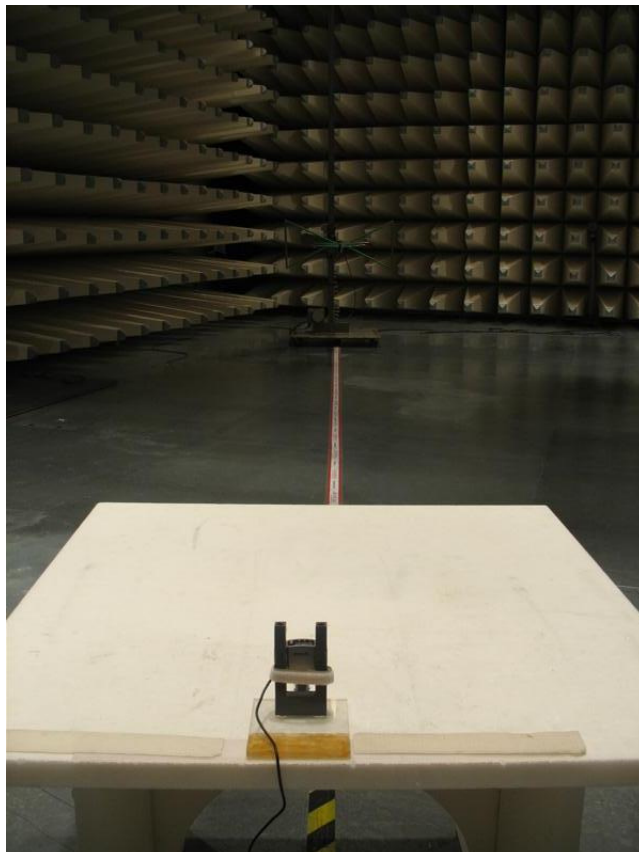
| No | Equipment/Type   | Manufact. | Serial Nr.  | Inv. No. Cetecom | Last Calibration | Frequency (months) | Next Calibration |
|----|------------------|-----------|-------------|------------------|------------------|--------------------|------------------|
| 1  | FSP 30           | R&S       |             | 300003575        | 02.04.2007       | 24                 | 02.04.2009       |
| 2  | CBT              | R&S       | 100313      | 300003516        | 24.10.2006       | 24                 | 24.10.2008       |
| 3  | Switch Matrix    | HP        |             | 300000929        | n.a.             |                    |                  |
| 4  | Power Supply     | HP        | 3041A00544  | 300002270        | 13.05.2007       | 36                 | 13.05.2010       |
| 5  | Signal Generator | R&S       | 836206/0092 | 300002680        | 30.05.2007       | 36                 | 30.05.2010       |
|    |                  |           |             |                  |                  |                    |                  |
|    |                  |           |             |                  |                  |                    |                  |

## 5 Annex B: Photographs of Test site

Photo 1 (Radiated Emissions):



Photo 2 (Radiated Emissions):



## 6 Annex C: External Photographs of the Equipment

Photo 1:

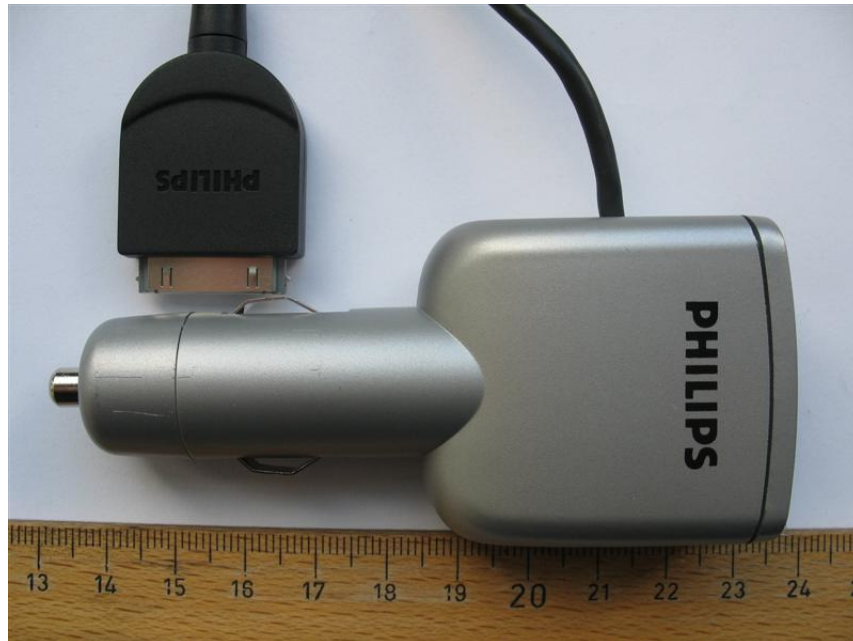


Photo 2:



## **7 Annex D: INTERNAL PHOTOGRAPHS OF THE EQUIPMENT**

Photo 3:

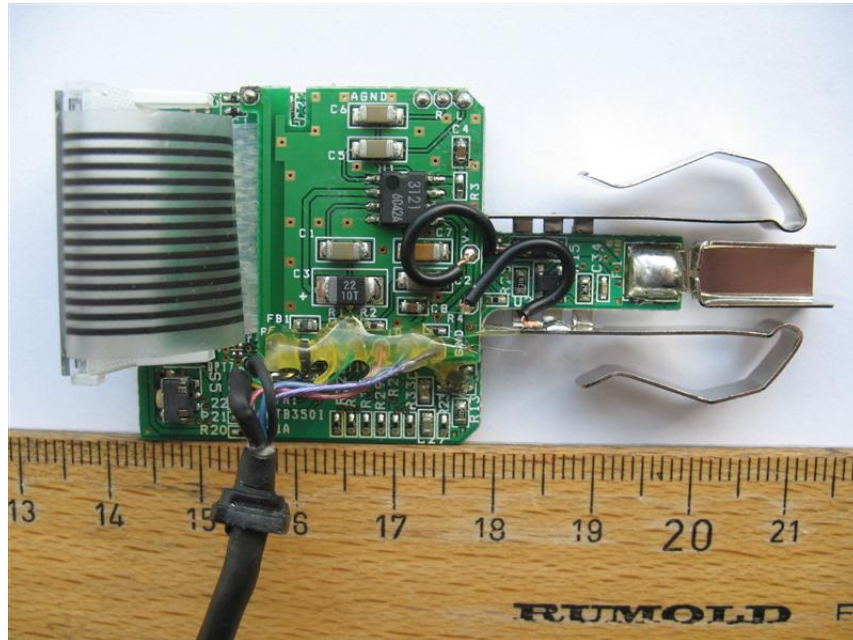


Photo 4:

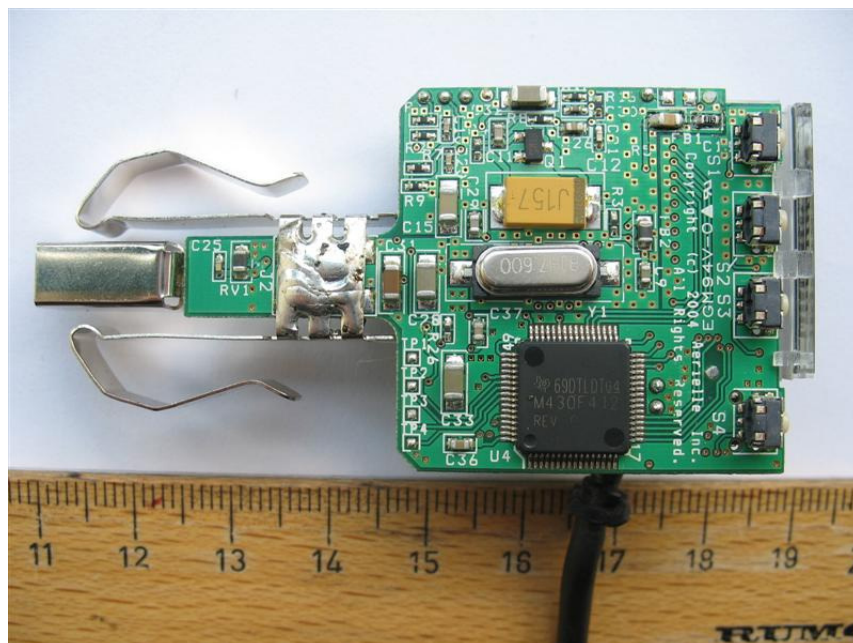


Photo 5:

