



## TEST REPORT nr. R09096801\_rev60

### Federal Communication Commission (FCC)

**This test report cancel and replace document nr. R09096801\_rev50 date 19.11.09**

#### Test item

Description.....: BlueTooth Communication System

Trademark.....: Suomy s.p.a.

Model/Type.....: Suomy SCS / Blueaudio v.5.3

#### Test Specification

Standard .....: FCC Rules & Regulations, Title 47 (2005) - Part 15 paragraph(s) : 247(a), 247(b), 247(c), 209 and 207

**Client's name.....:** WIFYCITY S.r.l.

Address .....: Via Assarotti, 14/1 - 16122 Genova (GE) – ITALY

**Manufacturer's name.:** Same ad client

Address .....:

#### Report

Tested by.....: A. Bertezolo - *Technician*

Approved by.....: R. Beghetto - *Laboratory Manager*

Date of issue.....: 27.11.09

Contents .....: 49 pages

This test report shall not be reproduced except in full without the written approval of CMC.  
The test results presented in this report relate only to the item tested.



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| 1. Summary                                  |                             |                |          |
|---------------------------------------------|-----------------------------|----------------|----------|
| Emission: FCC Rules & Regulations, Title 47 |                             |                |          |
| Test specifications                         | Environmental Phenomena     | Tests sequence | Result   |
| Part 15.203 and 15.204                      | Antenna Requirement         | 1              | Complies |
| Part 15.247(a)                              | Bandwidth                   | 2              | Complies |
| Part 15.247(a)                              | Channel Separation          | 3              | Complies |
| Part 15.247(a)                              | Time of Occupancy           | 4              | Complies |
| Part 15.247(a)                              | Number of Hopping Frequency | 5              | Complies |
| Part 15.247(b)                              | Peak Output Power           | 6              | Complies |
| Part 15.247(c)                              | Band Edge                   | 7              | Complies |
| Part 15.247(c)<br>Part 15.209               | Radiated Spurious           | 8              | Complies |
| Part 15.207                                 | Conducted Emission          | 9              | Complies |

*The Test Report was given to the Client representatives for necessary documentation of ratification of the tested equipment and it is valid for the FCC certification.*



## 2. Description of Equipment under test (EUT)

Power supply..... : 3,7 Vdc from battery

Type of equipment..... : ☒ Transmitter Unit ☒ Receiver Unit  
☐ Fixed station ☒ Portable station ☐ Mobile station

Receiver class ..... : --

Alignment range..... : 2400 – 2483,5 MHz

Switching frequency ..... : 2400 – 2483,5 MHz

Number of channels ..... : --

Channel separation..... : --

Modulation ..... : --

Extreme conditions ..... : --

Maximum transmitter output power..... : --

Information on antenna..... : ☒ Integrated  
☐ Extern  
☐ Other:

Duty cycle..... : --

Mode of operation..... : ☐ Simplex mode  
☐ Duplex mode  
☒ Other : Full Duplex transmission

## 3. Testing and sampling

Date of receipt of test item ..... : 13.07.09

Testing start date..... : 13.07.09

Testing end date..... : 09.09.09

Samples tested nr. .... : 1

Sampling procedure ..... : Equipment used for testing was picked up by the manufacturer, at the end of the production process with random criterion

Internal identification..... : adhesive label with the product number P090649

## 4. Operative conditions

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36016 Thiene (VI)

## 5. Photograph(s) of EUT





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## 6. Equipment list

| <i>Id. number</i> | <i>Manufacturer</i> | <i>Model</i> | <i>Description</i>        | <i>Serial number</i> | <i>Last calibration</i> | <i>Due date calibration</i> |
|-------------------|---------------------|--------------|---------------------------|----------------------|-------------------------|-----------------------------|
| CMC S001          | Rohde & Schwarz     | ESHS30       | EMC interference receiver | 862024/003           | January '09             | January '10                 |
| CMC S108          | Emco                | 3115         | Horn antenna              | 9811-5622            | April '07               | April '10                   |
| CMC S124          | Spin                | AMTP42-20    | Horn Antenna 18-26GHz     | 103                  | May '07                 | May '10                     |
| CMC S127          | SCHAFFNER           | HLA6120      | Loop Antenna              | 1191                 | January '07             | January '10                 |
| CMC S129          | Rohde & Schwarz     | ESPI7        | Receiver                  | 836.914/004          | January '09             | January '10                 |
| CMC S136          | Schwarzbeck         | VULB 9163    | Broadband Antenna         | 9136-205             | May '07                 | May '10                     |
| CMC S164          | Rohde & Schwarz     | ESU26        | EMC interference receiver | 100052               | January '09             | January '10                 |



## 7. Measurement uncertainty

| Test                                                                | Expanded Uncertainty | note |
|---------------------------------------------------------------------|----------------------|------|
| <b>Conducted Emission</b>                                           |                      |      |
| (50Ω/50μH AMN) - (9 kHz – 150 kHz)                                  | ±3.8 dB              | 1    |
| (50Ω/50μH AMN) - (150 kHz – 30 MHz)                                 | ±3.4 dB              | 1    |
| (Voltage probe) - (150 kHz – 30 MHz)                                | ±3.0 dB              | 1    |
| (50Ω/5μH AMN) - (150 kHz – 108 MHz)                                 | ±3.2 dB              | 1    |
| <b>Discontinuous Conducted Emission</b>                             |                      |      |
| Conducted Emission (50Ω/50μH AMN) - (9 kHz – 150 kHz)               | ±3.8 dB              | 1    |
| Conducted Emission (50Ω/50μH AMN) - (150 kHz – 30 MHz)              | ±3.4 dB              | 1    |
| <b>Disturbance Power (30 MHz – 300 MHz)</b>                         |                      |      |
|                                                                     | ±3.2 dB              | 1    |
| <b>Radiated Emission</b>                                            |                      |      |
| (0,150 MHz – 30 MHz)                                                | ±4.5 dB              | 1    |
| (30 MHz – 1000 MHz)                                                 | ±4.8 dB              | 1    |
| (1 GHz – 6 GHz)                                                     | ±4.4 dB              | 1    |
| <b>Electromagnetic field EMF</b>                                    |                      |      |
|                                                                     | ±18.8 dB             | 1    |
| <b>Harmonic current emissions test</b>                              |                      |      |
|                                                                     | ±2.4 %               | 1    |
| <b>Voltage fluctuation and flicker test</b>                         |                      |      |
|                                                                     | ±6.0 %               | 1    |
| <b>Insertion loss test</b>                                          |                      |      |
|                                                                     | ±2.6 %               | 1    |
| <b>Radiated electromagnetic disturbance test (loop antenna)</b>     |                      |      |
|                                                                     | ±2.5 %               | 1    |
| <b>Radiated electromagnetic field immunity test</b>                 |                      |      |
|                                                                     | 0.9 V/m at 3V/m      | 1    |
| <b>Pulse modulated radiated electromagnetic field immunity test</b> |                      |      |
|                                                                     | 0.9 V/m at 3V/m      | 1    |
| <b>Injected currents immunity test</b>                              |                      |      |
|                                                                     | 0.6 V at 3V          | 1    |
| <b>Bulk current</b>                                                 |                      |      |
|                                                                     | 9 mA at 60 mA        | 1    |
| <b>Power frequency magnetic field immunity test</b>                 |                      |      |
|                                                                     | 0.3 A/m at 3 A/m     | 1    |
| <b>Electrostatic discharge immunity test</b>                        |                      |      |
|                                                                     |                      | 2    |
| <b>Electrical fast transients / burst immunity test</b>             |                      |      |
|                                                                     |                      | 2    |
| <b>Surge immunity test</b>                                          |                      |      |
|                                                                     |                      | 2    |
| <b>Short interruption immunity test</b>                             |                      |      |
|                                                                     |                      | 2    |
| <b>Voltage transient emission test</b>                              |                      |      |
|                                                                     | ±5 %                 | 1    |
| <b>Transient immunity test</b>                                      |                      |      |
|                                                                     |                      | 2    |

### Notes

#### Note 1:

The expanded uncertainty reported according to EN55016-4-2(2004-10) is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of p = 95%

#### Note 2:

It has been demonstrated that the used test equipment meets the specified requirements in the standard with at least a 95% confidence, covering factor k = 2.



## 8. Reference documents

| Reference no.                                      | Description                                                                                                                                                    |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC Rules and Regulation Title 47 part 15 (2008)   | --                                                                                                                                                             |
| ANSI C63.4                                         | American National Standard for Methods of Measuring of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz – 40GHz |
| Internal Procedure PM001 rev. 1.0 (Quality Manual) | Measure Procedure                                                                                                                                              |
| Internal procedure INC_M rev. 6.0 (Quality Manual) | Measurement uncertainty calculation                                                                                                                            |



## 9. Deviation from test specification

In agreement with the client, emission tests were performed with peak detector .  
At the frequencies where the measures exceed the limit or within 6dB from it, the test was repeated with quasi-peak detector and/or average detector.

## 10. Test case verdicts

Test case does not apply to the test object..... : N / N.A.

Test item does meet the requirement..... : P / Pass / Complies

Test item does not meet the requirement..... : F / Fail / Does not comply

Test not performed ..... : NE / Not Executed

## 11. Results

In this clause tests results are reported.

All measurements are done in accordance with the Filling and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems DA-705

Measurement uncertainty is in accordance with document CMC INC\_M rev. 6.0.



## 11.1 Antenna Requirements

### Test configuration and test method

Test site

Laboratory

Auxiliary equipment

See clause 4 of this test report

### Environmental conditions

Temperature 21 °C Atmospheric pressure 100 kPa Relative humidity 48 %

### Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.203 and 15.204
- Internal Procedure PM001
- See clause 4 of this test report

### Test Requirements

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

The use of a permanently attached antenna or of an antenna that uses unique coupling to the intentional radiator shall be considered sufficient comply with the provisions of this section.

The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

### Test specification

Port: Antenna.

### EUT exercising

See clause 4 of this test report

### Result

| Antenna Type     | Gain  | Remarks | Results  |
|------------------|-------|---------|----------|
| Integral antenna | 0 dBi | --      | Complies |

### Remarks

//////////

### Reference documents

See clause 8 of this test report

### Result

The requirements are met



## 11.2 Bandwidth

### Test configuration and test method

Test site

Laboratory

Auxiliary equipment

See clause 4 of this test report

### Environmental conditions

Temperature 23 °C Atmospheric pressure 99 kPa Relative humidity 46 %

### Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(a)
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

### Test specification

Port: Antenna;

### EUT exercising

See clause 4 of this test report

### Result

| Frequency                            | Graph(s)  | Bandwidth | Remark |
|--------------------------------------|-----------|-----------|--------|
| 2402 MHz                             | G09096891 | 956 kHz   | --     |
| 2441 MHz                             | G09096892 | 952 kHz   | --     |
| 2480 MHz                             | G09096893 | 960 kHz   | --     |
| Measurement uncertainty: $\pm 1$ kHz |           |           |        |

### Remarks

//////////

### Reference documents

See clause 8 of this test report

### Test equipment used (Id number – see clause 6 of this test report)

CMC S129

### Result

The requirements are met



### 11.3 Channel Separation

#### Test configuration and test method

Test site

Laboratory

Auxiliary equipment

See clause 4 of this test report

#### Environmental conditions

Temperature 23 °C Atmospheric pressure 99 kPa Relative humidity 46 %

#### Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(a)
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

#### Test specification

Port: Antenna;

#### EUT exercising

See clause 4 of this test report

#### Acceptance limits

Limit: Minimum 25kHz or the 20dB Bandwidth of the hopping system

#### Result

| Port                                 | Graph(s)  | Channel Separation | Remark |
|--------------------------------------|-----------|--------------------|--------|
| Enclosure                            | G09096817 | 1,00 MHz           | --     |
| Measurement uncertainty: $\pm 1$ kHz |           |                    |        |

#### Remarks

//////////

#### Reference documents

See clause 8 of this test report

#### Test equipment used (Id number – see clause 6 of this test report)

CMC S129

#### Result

The requirements are met



## 11.4 Time of Occupancy

### Test configuration and test method

Test site

Laboratory

Auxiliary equipment

See clause 4 of this test report

### Environmental conditions

Temperature 22 °C Atmospheric pressure 100 kPa Relative humidity 45 %

### Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(a)
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

### Test specification

Port: Antenna;

### EUT exercising

See clause 4 of this test report

### Acceptance limits

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

### Result

| Frequency (MHz) | Packets | Graph(s)  | Dwell time | Remark |
|-----------------|---------|-----------|------------|--------|
| 2441            | DH1     | G09096894 | 0,39 ms    | --     |
| 2441            | DH3     | G09096895 | 1,66 ms    | --     |
| 2441            | DH5     | G09096896 | 2,90 ms    | --     |

| Packets | Calculation                                                     | Time of Occupancy | Remarks |
|---------|-----------------------------------------------------------------|-------------------|---------|
| DH1     | $(1600/2 \times \text{ON-timeDH1 ms}) \times 31,6\text{s} / 79$ | 124,80 ms         | --      |
| DH3     | $(1600/4 \times \text{ON-timeDH3 ms}) \times 31,6\text{s} / 79$ | 265,60 ms         | --      |
| DH5     | $(1600/6 \times \text{ON-timeDH5 ms}) \times 31,6\text{s} / 79$ | 309,33 ms         | --      |

Measurement uncertainty:  $\pm 10\mu\text{s} \times \text{nr. of channels}$

### Remarks //////////////

**Reference documents** See clause 8 of this test report

**Test equipment used (Id number – see clause 6 of this test report)**

CMC S129

**Result** The requirements are met



## 11.5 Number of Hopping Channels

### Test configuration and test method

Test site

Laboratory

Auxiliary equipment

See clause 4 of this test report

### Environmental conditions

Temperature 22 °C Atmospheric pressure 99 kPa Relative humidity 46 %

### Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(a)
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

### Test specification

Port: Antenna;

### EUT exercising

See clause 4 of this test report

### Result

| Port      | Graph(s)  | Number of Hopping Frequency | Remark |
|-----------|-----------|-----------------------------|--------|
| Enclosure | G09096821 | 79                          | --     |
|           | G09096822 |                             |        |

### Remarks

//////////

### Reference documents

See clause 8 of this test report

### Test equipment used (Id number – see clause 6 of this test report)

CMC S129

### Result

The requirements are met



## 11.6 Peak Output Power

### Test configuration and test method

Test site

Laboratory

Auxiliary equipment

See clause 4 of this test report

### Environmental conditions

Temperature 23 °C Atmospheric pressure 99 kPa Relative humidity 46 %

### Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(b)
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

### Test specification

Port: Antenna;

### EUT exercising

See clause 4 of this test report

### Acceptance limits

| Frequency range   | RF power output |
|-------------------|-----------------|
| 2400 – 2483,5 MHz | 1,0 W / 30dBm   |

### Result

| Frequency (MHz)                | Polarization | Graphs    | E (dBμV/m) | Peak Output Power | Remark |
|--------------------------------|--------------|-----------|------------|-------------------|--------|
| 2402                           | Vertical     | G09096870 | 97,1       | 1,55 mW           | --     |
| 2402                           | Horizontal   | G09096871 | 97,3       | 1,62 mW           | --     |
| 2441                           | Horizontal   | G09096862 | 96,6       | 1,37 mW           | --     |
| 2441                           | Vertical     | G09096863 | 96,4       | 1,31 mW           | --     |
| 2480                           | Vertical     | G09096864 | 95,8       | 1,14 mW           | --     |
| 2480                           | Horizontal   | G09096865 | 97,6       | 1,73 mW           | --     |
| Measurement uncertainty: ±3dBm |              |           |            |                   |        |

### Remarks

$$P = (E \times d)^2 / (30 \times G)$$

Where:

E = the measured maximum fundamental field strength in V/m

G = the numeric gain of the transmitting antenna with reference to an isotropic radiator (1)

d = the distance in meters from which the field strength was measured (3m)

P = the power in watts



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**Reference documents**

See clause 8 of this test report

**Test equipment used (Id number – see clause 6 of this test report)**

CMC S164

**Result**

The requirements are met



CMC Centro Misure Compatibilità S.r.l.



## 11.7 Band Edge

### Test configuration and test method

Test site

Laboratory

Auxiliary equipment

See clause 4 of this test report

### Environmental conditions

Temperature 20 °C Atmospheric pressure 99 kPa Relative humidity 46 %

### Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(c)
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

### Test specification

Port: Antenna;

### EUT exercising

See clause 4 of this test report

### Acceptance limits

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in section 15.209(a) is not required. In addition, radiated emission which fall in the restricted bands, as defined in section 15.205(a), must also comply with the radiated emission limits specified in section 15.209(a) (see section 15.205(c)).

### Result

| Radiated measurements               |                       |                                         |
|-------------------------------------|-----------------------|-----------------------------------------|
| Graph(s)                            | Attenuation Band Edge | Remark                                  |
| G09096879                           | < 54dB $\mu$ V/m      | Hopping enable<br>Worst case condition  |
| G09096880                           | < 54dB $\mu$ V/m      | Hopping enable<br>Worst case condition  |
| G09096881                           | < 54dB $\mu$ V/m      | Hopping disable<br>Worst case condition |
| Measurement Uncertainty: $\pm 4$ dB |                       |                                         |

**Remarks** //

**Reference documents** See clause 8 of this test report

**Test equipment used (Id number – see clause 6 of this test report)**

CMC S164

**Result** The requirements are met



## 11.8 Radiated Spurious

### Test configuration and test method

Test site

Semi-anechoic chamber

Auxiliary equipment

See clause 4 of this test report

### Environmental conditions

Temperature 22 °C

Atmospheric pressure 99 kPa

Relative humidity 46 %

### Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(c) and Part 15.209
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

### Test specification

Port: Antenna;

### EUT exercising

See clause 4 of this test report

### Acceptance limits

In any 100kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in cl. 15.205(a), must also comply with the radiated emission limits specified in cl. 15.209(a) (see cl.15.205(c)).

### Result

| Frequency (MHz) | Polarization | Frequency Range (MHz) | Graph(s)  | Remarks | Result   |
|-----------------|--------------|-----------------------|-----------|---------|----------|
| 2480            | Vertical     | 30 – 1000             | G09096810 | --      | Complies |
| 2480            | Horizontal   | 30 – 1000             | G09096811 | --      | Complies |
| 2441            | Horizontal   | 30 – 1000             | G09096812 | --      | Complies |
| 2441            | Vertical     | 30 – 1000             | G09096813 | --      | Complies |
| 2402            | Vertical     | 30 – 1000             | G09096814 | --      | Complies |
| 2402            | Horizontal   | 30 – 1000             | G09096815 | --      | Complies |

| Antenna      | Frequency Range (MHz) | Graph(s)  | Remarks | Result   |
|--------------|-----------------------|-----------|---------|----------|
| Loop Antenna | 9kHz – 30MHz          | G09096882 | --      | Complies |



| Nr.<br><br>Harmonics          | AV level (dBμV/m) |                               |           |                               |           |                               | AV Limits<br><br>(dBμV/m) | Remark |
|-------------------------------|-------------------|-------------------------------|-----------|-------------------------------|-----------|-------------------------------|---------------------------|--------|
|                               | 2402 MHz          |                               | 2441MHz   |                               | 2480 MHz  |                               |                           |        |
|                               | Frequency         | (dBμV/m)                      | Frequency | (dBμV/m)                      | Frequency | (dBμV/m)                      |                           |        |
| II Harmonic                   | 4802 MHz          | 53,5                          | 4800 MHz  | 53,8                          | 4958 MHz  | 53,9                          | 54,00                     | --     |
| III Harmonic                  | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 54,00                     | --     |
| IV Harmonic                   | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 54,00                     | --     |
| V Harmonic                    | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 54,00                     | --     |
| VI Harmonic                   | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 54,00                     | --     |
| VII Harmonic                  | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 54,00                     | --     |
| VIII Harmonic                 | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 54,00                     | --     |
| IX Harmonic                   | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 54,00                     | --     |
| X Harmonic                    | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 54,00                     | --     |
| Measurement Uncertainty: ±4dB |                   |                               |           |                               |           |                               |                           |        |

| Nr.<br><br>Harmonics          | PK level (dBμV/m) |                               |           |                               |           |                               | PK Limits<br><br>(dBμV/m) | Remark |
|-------------------------------|-------------------|-------------------------------|-----------|-------------------------------|-----------|-------------------------------|---------------------------|--------|
|                               | 2402 MHz          |                               | 2441MHz   |                               | 2480 MHz  |                               |                           |        |
|                               | Frequency         | (dBμV/m)                      | Frequency | (dBμV/m)                      | Frequency | (dBμV/m)                      |                           |        |
| II Harmonic                   | 4802 MHz          | 59,6                          | 4800 MHz  | 57,3                          | 4958 MHz  | 58,6                          | 74,00                     | --     |
| III Harmonic                  | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 74,00                     | --     |
| IV Harmonic                   | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 74,00                     | --     |
| V Harmonic                    | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 74,00                     | --     |
| VI Harmonic                   | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 74,00                     | --     |
| VII Harmonic                  | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 74,00                     | --     |
| VIII Harmonic                 | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 74,00                     | --     |
| IX Harmonic                   | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 74,00                     | --     |
| X Harmonic                    | --                | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | --        | More than 20dB<br>below limit | 74,00                     | --     |
| Measurement Uncertainty: ±4dB |                   |                               |           |                               |           |                               |                           |        |



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36016 Thiene (VI)

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### Remarks

EUT was tested in 3 orthogonal planes. In results table are reported the worst case.

### Reference documents

See clause 8 of this test report

### Test equipment used (Id number – see clause 6 of this test report)

CMC S108, CMC S124, CMC S127, CMC S136, CMC S164

Measurement uncertainty: See clause 7 of this test report

### Result

The requirements are met



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## 11.9 Emission of mains terminal disturbance voltage (continuous disturbance)

### Test configuration and test method

Test site

Laboratory

Auxiliary equipment

See clause 4 of this test report

### Environmental conditions

Temperature 23 °C Atmospheric pressure 99 kPa Relative humidity 49 %

### Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.207
- Internal Procedure PM001
- See clause 4 of this test report

### Test specification

Port: AC mains

### EUT exercising

See clause 4 of this test report

### Acceptance limits

| Limits                |                   |                |
|-----------------------|-------------------|----------------|
| Frequency range (MHz) | dB(μV) Quasi-peak | dB(μV) Average |
| 0,15 to 0,50          | 66 to 56          | 56 to 46       |
| 0,50 to 5             | 56                | 46             |
| 5 to 30               | 60                | 50             |

### Result

| Line | Graphs    | Remarks | Result   |
|------|-----------|---------|----------|
| N    | G09096840 | --      | Complies |
| L1   | G09096841 | --      | Complies |

#### Graphs Legend

PK: Peak; QP [1s] (quasi-peak at 1 second) values are marked with a X  
AV: Average; AV [1s] (average at 1 second) values are marked with a +

### Remarks

EUT in recharge with battery charger (120Vac single-phase)

### Reference documents

See clause 8 of this test report

### Test equipment used (Id number – see clause 6 of this test report)

CMC S001

Measurement uncertainty: See clause 7 of this test report

### Result

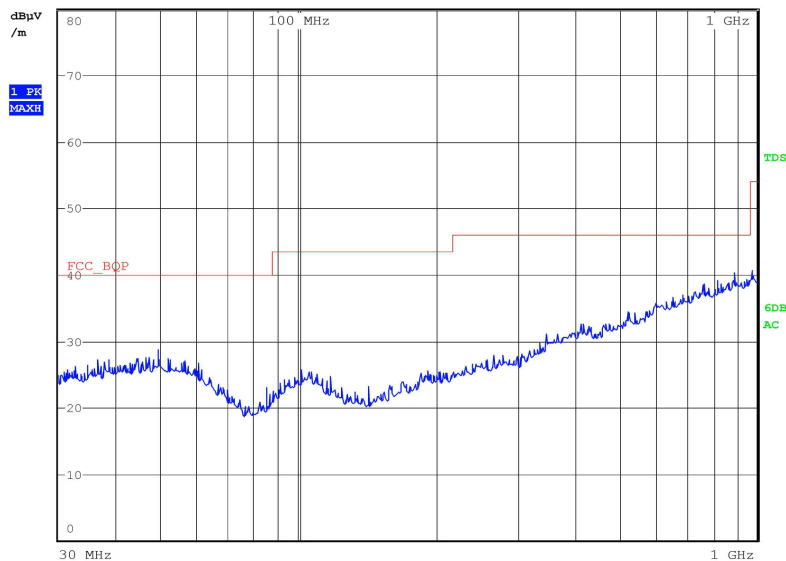
The requirements are met



## 12. Graphs and Tables

G09096810

**Meas Type** Emission 30-1000MHz  
**Equipment under Test**  
**Manufacturer**  
**OP Condition** 2.48GHz  
**Operator** Bertezolo 09096810  
**Test Spec**  
**Vert**



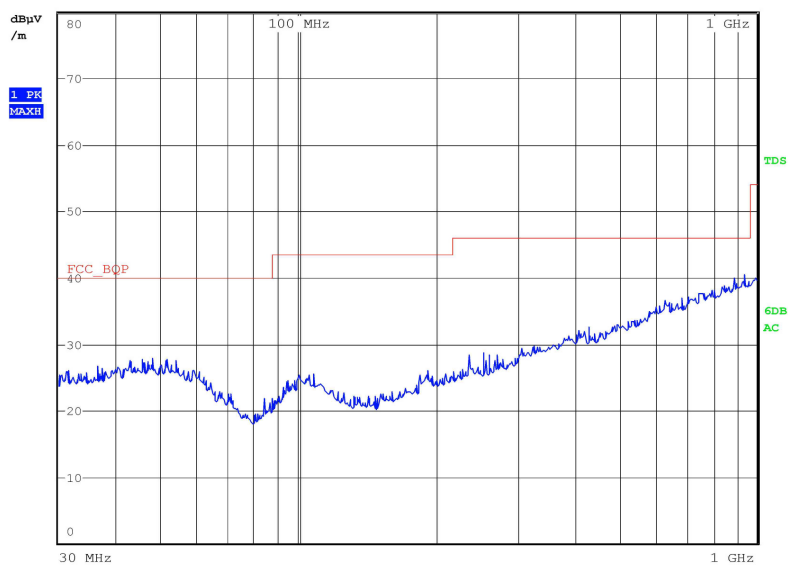
### Final Measurement

**Meas Time:** 1 s  
**Margin:** 6 dB  
**Subranges:** 0



G09096811

**Meas Type** Emission 30-1000MHz  
**Equipment under Test**  
**Manufacturer**  
**OP Condition** 2.48GHz  
**Operator** Bertezzo 09096811  
**Test Spec**  
Horiz



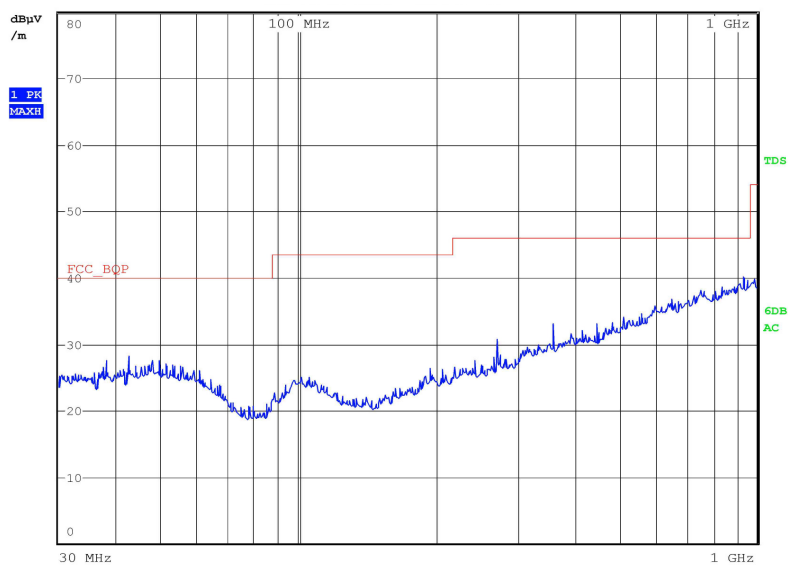
**Final Measurement**

Meas Time: 1 s  
Margin: 6 dB  
Subranges: 0



G09096812

**Meas Type** Emission 30-1000MHz  
**Equipment under Test**  
**Manufacturer**  
**OP Condition** 2.441GHz  
**Operator** Bertezzo 09096812  
**Test Spec**  
Horiz



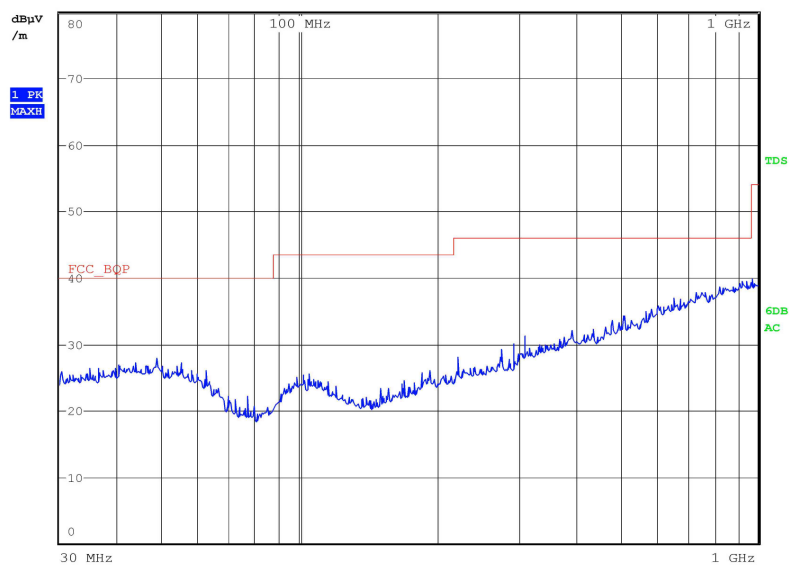
**Final Measurement**

Meas Time: 1 s  
Margin: 6 dB  
Subranges: 0



G09096813

**Meas Type** Emission 30-1000MHz  
**Equipment under Test**  
**Manufacturer**  
**OP Condition** 2.441GHz  
**Operator** Bertezzo 09096813  
**Test Spec**  
Vert



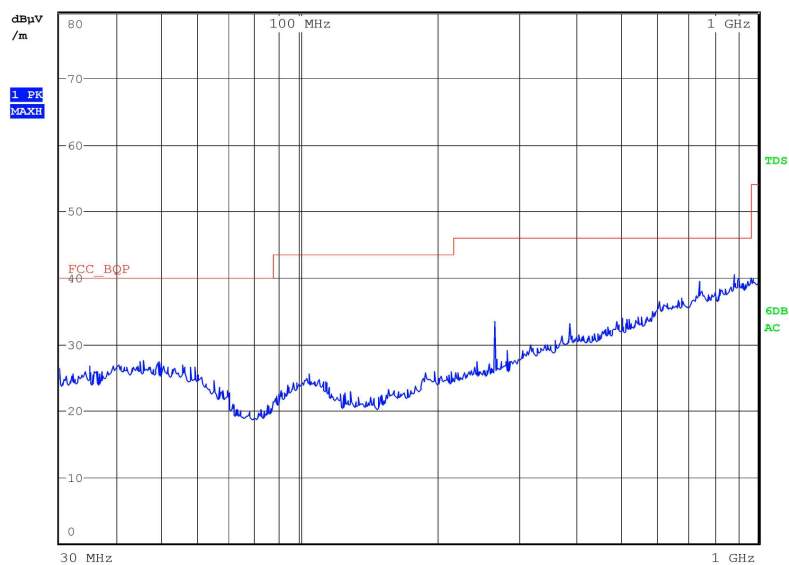
### Final Measurement

Meas Time: 1 s  
Margin: 6 dB  
Subranges: 0



G09096814

**Meas Type** Emission 30-1000MHz  
**Equipment under Test**  
**Manufacturer**  
**OP Condition** 2.402GHz  
**Operator** Bertezzo 09096814  
**Test Spec**  
Vert



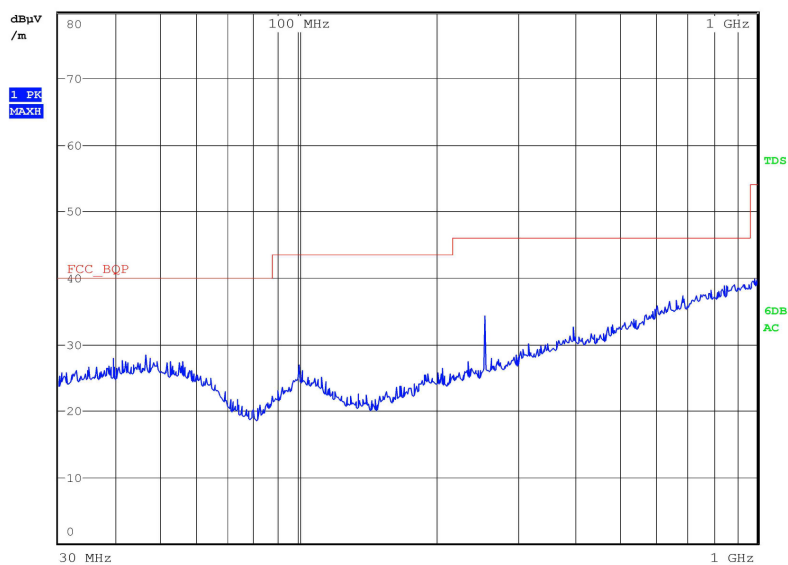
### Final Measurement

Meas Time: 1 s  
Margin: 6 dB  
Subranges: 0



G09096815

**Meas Type** Emission 30-1000MHz  
**Equipment under Test**  
**Manufacturer**  
**OP Condition** 2.402GHz  
**Operator** Bertezzo 09096815  
**Test Spec**  
Horiz



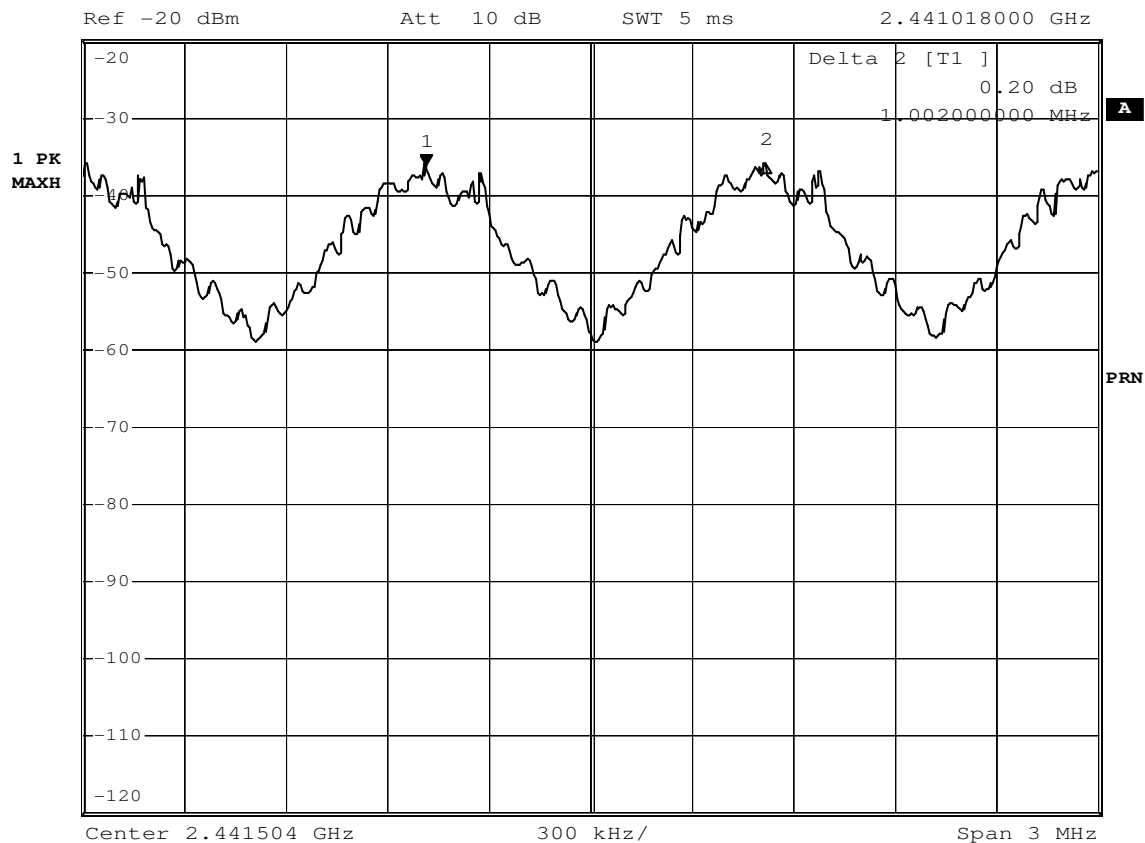
### Final Measurement

Meas Time: 1 s  
Margin: 6 dB  
Subranges: 0



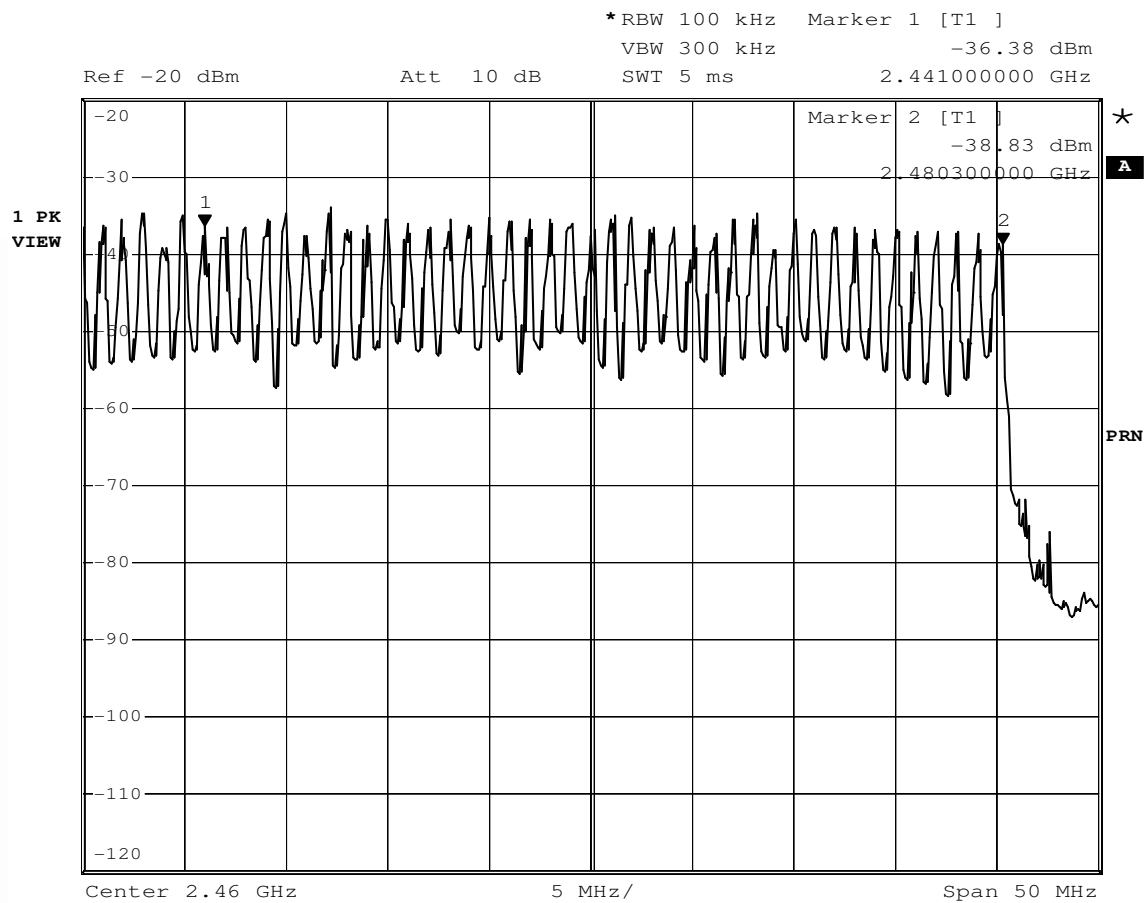
G09096817

\*RBW 30 kHz Marker 1 [T1 ]  
VBW 100 kHz -36.06 dBm  
SWT 5 ms 2.441018000 GHz



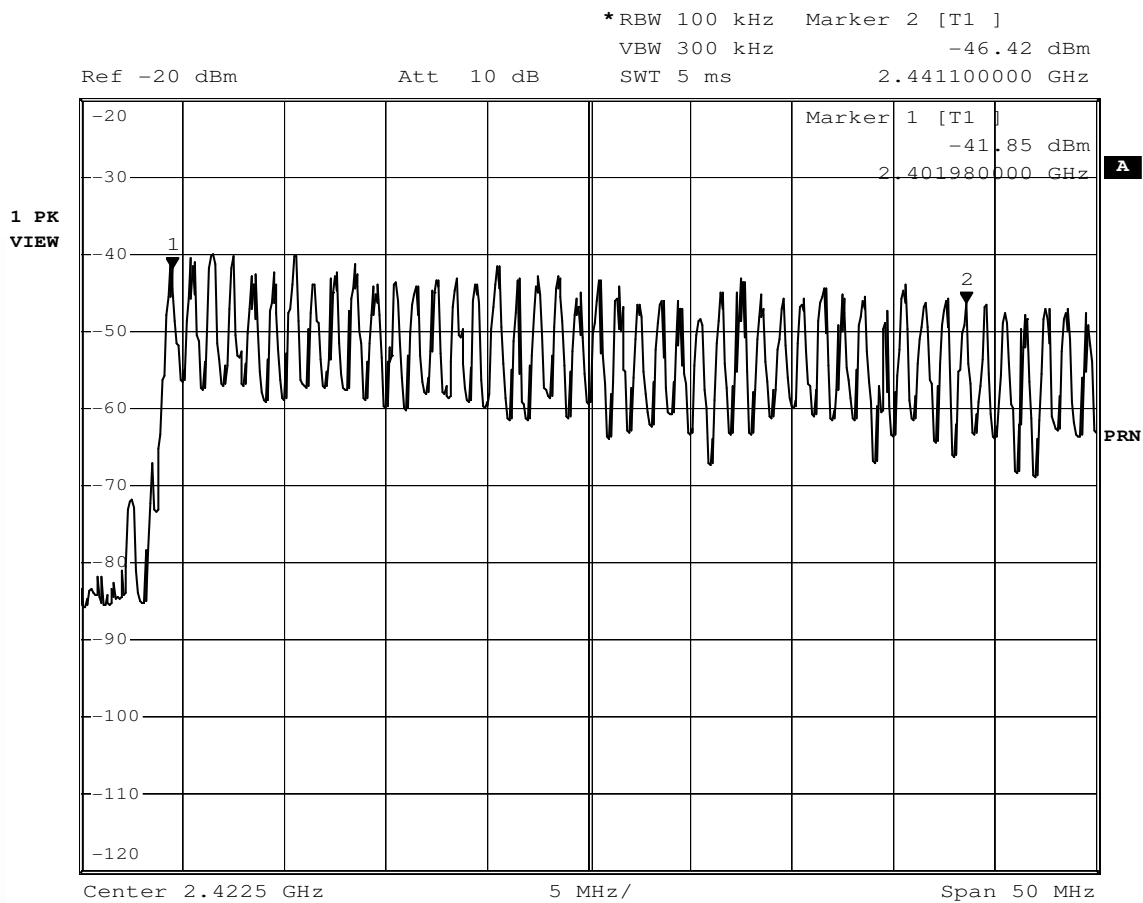


G09096821





G09096822

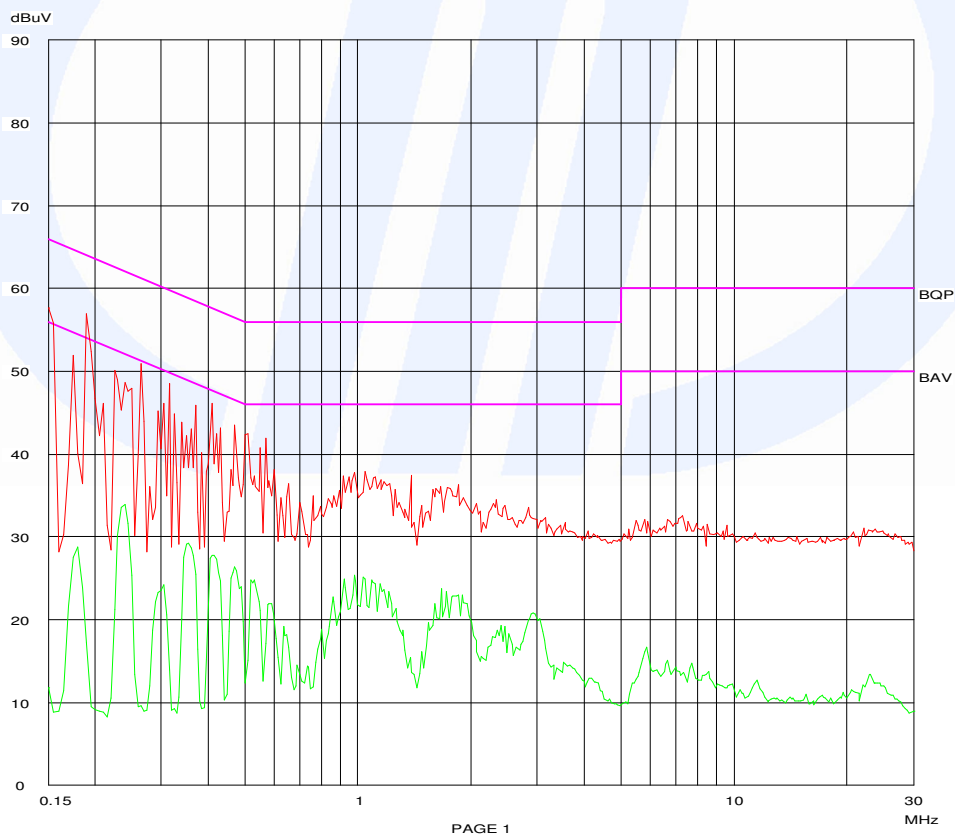




G09096840

CMC Centro misure compatibilit  srl  
Emission 0.15-30MHz

Op Cond: In carica  
Operator: Bert. 09096840  
Test Spec: Line N

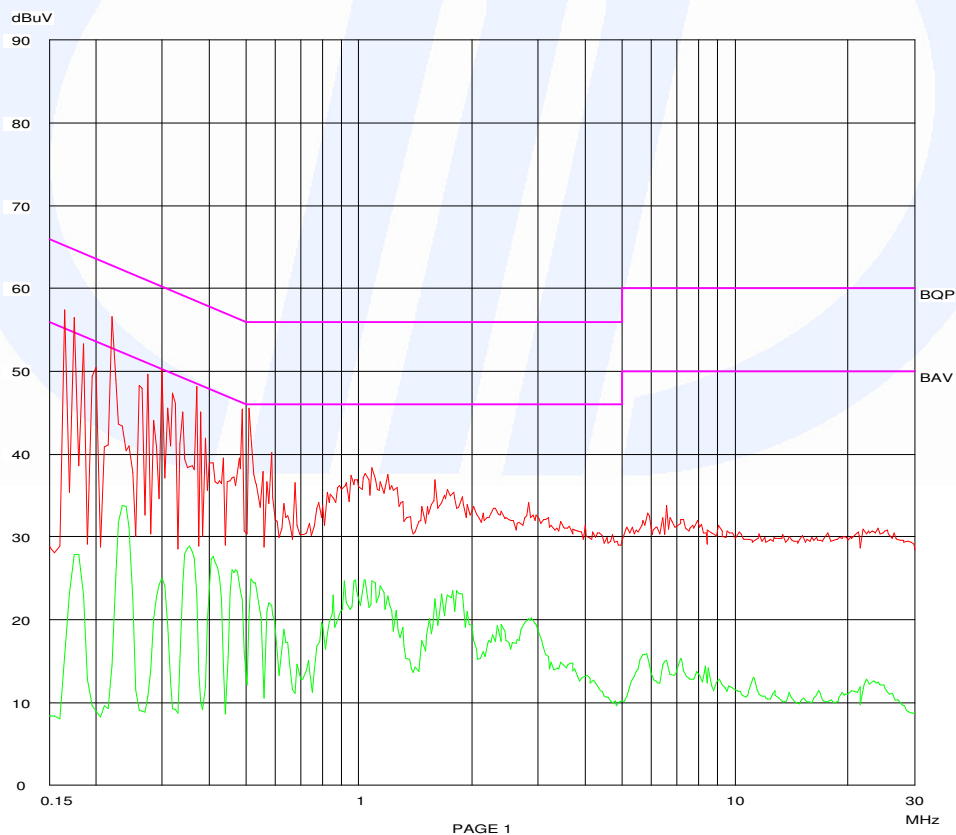




G09096841

CMC Centro misure compatibilita srl  
Emission 0.15-30MHz

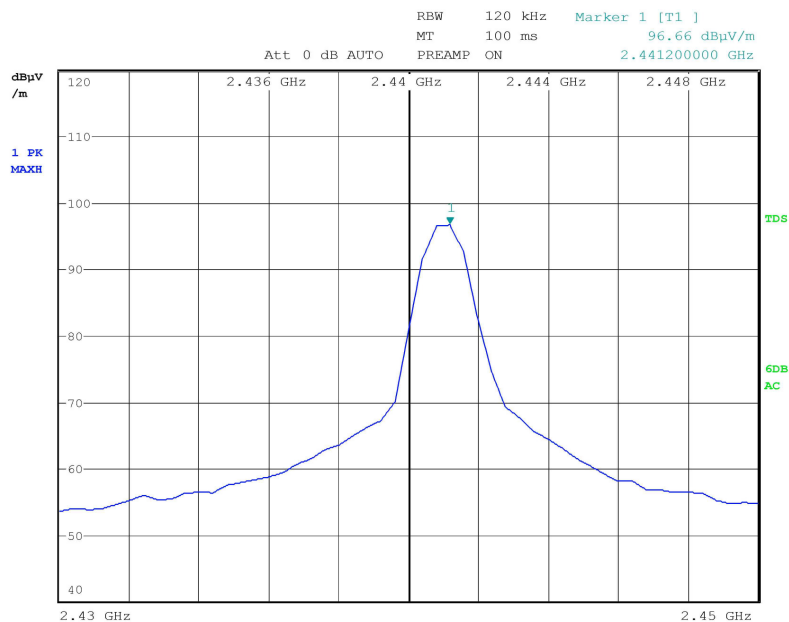
Op Cond: In ricarica  
Operator: Bert. 09096841  
Test Spec: Line L





G09096862

**Meas Type** Emission 2441 MHz  
**Equipment under Test**  
**Manufacturer**  
**OP Condition** CH min 2441  
**Operator** Bertezolo 09096862  
**Test Spec**  
Horiz



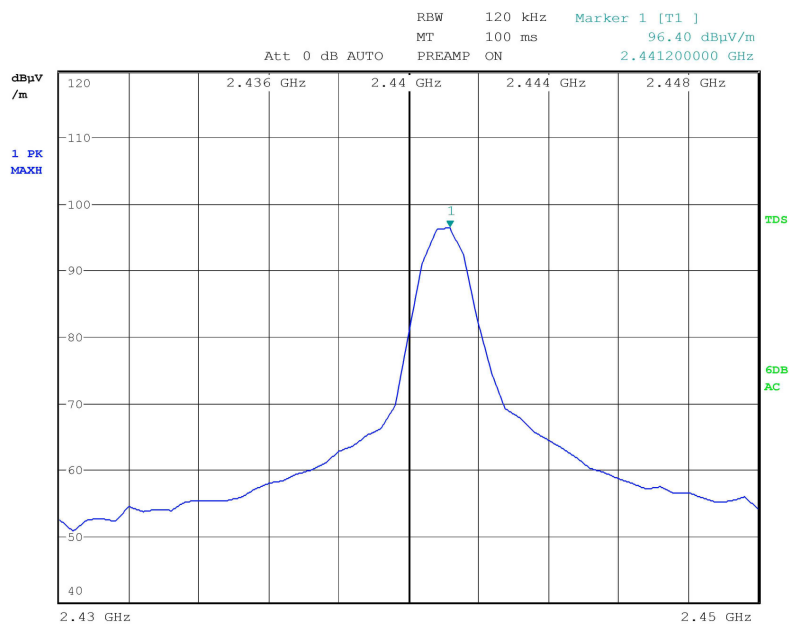
#### Final Measurement

Meas Time: 1 s  
Margin: 6 dB  
Subranges: 0



G09096863

**Meas Type** Emission 2441 MHz  
**Equipment under Test**  
**Manufacturer**  
**OP Condition** CH min 2441  
**Operator** Bertezolo 09096863  
**Test Spec**  
Vert



**Final Measurement**

Meas Time: 1 s  
Margin: 6 dB  
Subranges: 0