

# RADIO TEST REPORT

According to the standard(s):

FCC Part 15 Radio part 15.249  
RSS-210:2010

Equipment under test:

SEARCH COIL  
(Ø 22, 28 and 28/34 cm)

FCC ID: XFJ228  
IC:8392A-XP228

Company:

XPLORER

Diffusion: Mr LOUBET

(Company: XPLORER)

Number of pages: 45 including 1 annex

| Ed. | Date        | Modified<br>page(s) | Written by      |                                                                                     | Technical verification |                                                                                       |
|-----|-------------|---------------------|-----------------|-------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------|
|     |             |                     | Name            | Visa                                                                                | Quality approval       | Visa                                                                                  |
| 1   | 16 jan 2014 | 1, 2, 5 and 6       | David MONTAULON |  | Olivier HEYER          |  |

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NAME OF THE EQUIPMENT  
UNDER TEST (E.U.T.) : SEARCH COIL

Serial number : /

P/N : FCC ID: XFJ228  
IC:8392A-XP228

Software version :

MANUFACTURER'S NAME : XPLOER

APPLICANT'S ADDRESS:

Company : XPLOER

Address : 40 Chemin de Moulin  
31320 MERVILLA  
FRANCE

Person(s) present during the  
tests : Nobody

Responsible : Mr LOUBET

DATE(S) OF TESTS : February 13<sup>th</sup> to 20<sup>th</sup> and February 25<sup>th</sup> to march 1<sup>st</sup> of 2013

TESTS LOCATION(S) : Emitech Montpellier laboratory in Vendargues – FRANCE  
Open Area Test Site in Salinelles  
FCC Registration number: 8127-19  
IC Filling number : 4379C-1

TESTS SUPERVISOR(S) : None

TESTS OPERATOR(S) : David MONTAULON

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## 1. INTRODUCTION

This document submits the results of Radio tests performed on the equipment SEARCH COIL (denominated hereafter E.U.T.: equipment under test) according to document(s) listed below.

## 2. REFERENCE DOCUMENT(S)

|                                         |                                                                                                                                                                                                                                                                                        |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC part 15                             | Code of federal regulations. Title 47- Telecommunication Chapter 1- Federal Communication Commission. Part 15- Radio frequency devices Subpart B- Unintentional Radiators. Limits and methods of measurement of radio disturbance. Characteristic of information technology equipment. |
| FCC part 15.249                         | Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850MHz and 24.0–24.25 GHz                                                                                                                                                                                           |
| ANSI C 63.4:2003                        | American National Standard for Methods of measurement of Radio-Noise from low-voltage. Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz                                                                                                                             |
| RSS-210:2010<br>Issue 8, December 2010  | Dispositifs de radio communication de faible puissance, exempts de licence (pour toutes les bandes de fréquences) : matériel de catégorie I                                                                                                                                            |
| RSS-Gen: 2010<br>Issue 3, December 2010 | Exigences générales et information relatives à la certification du matériel de radiocommunication                                                                                                                                                                                      |

### 3. EQUIPMENT UNDER TEST CONFIGURATION

#### Equipment under test (E.U.T.) description:

The E.U.T. is a magnetic search coil which is able to detect metallic objects in the ground. The search coil is a part of a system including a remote control and an headphone.

The search coil metal detection system works at 4 different frequencies: 4kHz, 8kHz, 12kHz and 18kHz. Link between search coil, remote control and headphone is established by an RF signal operating between the frequency band : 2400-2483.5MHz.

A specific test program is used with the remote control which allow to use a permanent emission modulated mode on the search coil. This program also allow selection of different channel used by the RF module (2400-2483.5MHz)

Search coil have already been tested according to test report N°560101-CC-1-a made at GYL TECHNOLOGIE LABORATORY in JUIGNE SUR LOIRE (FRANCE)

Search coil is declined in 3 versions with diameters: 22cm, 28cm and 28/34cm.

FCC ID: XFJ228

Standard frequency range: 2400-2483.5MHz

Number of tested channels: 3

Tested frequencies: 2404MHz, 2440MHz & 2476MHz

Power supply: internal batteries

Consumption: /

Operating temperatures: Not provided

Mounting: hand-held

Antennas: integrated

Cycle and operating mode during emission tests: Permanent emission mode

Equipment modifications applied during tests: No

**4. EQUIPMENT UNDER TEST CONFIGURATION SCHEME**

HEADPHONE

FCC ID: XFJBKF

REMOTE  
CONTROL

FCC ID:XFJIHM

SEARCH COIL

FCC ID:XP228

E.U.T.

**5. SUMMARY OF TEST RESULTS**

| Tests designation                                                                             | Results satisfying? | Comments                      |
|-----------------------------------------------------------------------------------------------|---------------------|-------------------------------|
| Conducted power lines<br>FCC part 15.107 and 15.207                                           | N.A.                | Powered by internal batteries |
| Field strength of fundamental and harmonics<br>FCC part 15 Radio part 15.249 a)               | YES                 |                               |
| Unwanted emissions outside of §15.249 frequency bands<br>FCC part 15.209 and 15.215 b) and c) | YES                 |                               |

N.P.: Not Performed.

N.A.: Not Applicable.

▪ In emission:

Sample subject to the test complies with prescriptions of the standard(s) FCC Part 15 Radio part 15.249 & RSS 210:2010 according to limits, specified in this test report for tests made only

## 6. FIELD STRENGTH OF FUNDAMENTAL AND HARMONICS

Standards: FCC part 15 Radio part 15.249 & RSS 210:2010

Test methods: FCC part 15.249 a) c) d) e) & RSS 210:2010

Test configuration: Measurement is done on an Open Area Test Site. For each measured frequencies, E.U.T. is set via a turntable in order to find the highest level. Test antenna is set between 1m and 4m in order to find the highest level in vertical and horizontal polarization. Only highest levels are recorded.

| Frequency band | Initial position (0°) | Resolution bandwidth | Measuring distance | Detection mode   | E.U.T. height |
|----------------|-----------------------|----------------------|--------------------|------------------|---------------|
| 1GHz-25GHz     | Front side            | 1MHz                 | 3m                 | Peak and Average | 80cm          |

Test method deviation: No

Test equipment list:

| CATEGORY            | BRAND                | TYPE         | N° EMITECH | CAL DATE    | DUE DATE    |
|---------------------|----------------------|--------------|------------|-------------|-------------|
| Antenna             | ETS LINDGREN         | 3117         | 5456       | 17-aug-2012 | 17-oct-2016 |
| Antenna             | IMC                  | WR42         | 1940       | 20-apr-2012 | 20-jun-2016 |
| Antenna mast        | Heinrich Deisel      | MA240        | 4037       | -           | -           |
| Cable               | Cables & Connetiques | N-1.5m       | 4203       | 27-oct-2011 | 27-dec-2013 |
| Cable               | Huber Sumner         | N-14m        | 8146       | 09-mar-2011 | 09-may-2013 |
| Cable               | N-7m                 | N-7m         | 9243       | 04-apr-2012 | 04-jun-2014 |
| Cable               | HP                   | SMA-1m       | 8955       | 10-jan-2013 | 10-mar-2015 |
| Filter              | Micro-Tronics        | HPM 15162    | 5457       | 19-jan-2012 | 19-mar-2014 |
| Mast controller     | Heinrich Deisel      | HD100        | 4036       | -           | -           |
| Open area test site | Emitech              | Salinelles   | 3482       | 04-mar-2011 | 04-may-2014 |
| Preamplifier        | IMPULSE              | CA118-546ACN | 9169       | 27-fev-2012 | 27-apr-2013 |
| Receiver            | Agilent              | E4440A       | 5824       | 24-aug-2011 | 24-aug-2013 |
| Turntable           | Heinrich Deisel      | D4420        | 4038       | -           | -           |

Results: See Boards hereafter.

# Search coil Ø22:

## Search coil Ø22 - FUNDAMENTAL

| Frequency (MHz)        | Polarization | Azimuth (degree) | Antenna Height (cm) | Measure (dBµV/m) | Limit (dBµV/m) | Comments |
|------------------------|--------------|------------------|---------------------|------------------|----------------|----------|
| 2404<br>Low channel    | Horizontal   | 16               | 230                 | 89.18            | 94             | C        |
| 2440<br>Middle channel | Horizontal   | 20               | 230                 | 88.80            | 94             | C        |
| 2476<br>High channel   | Vertical     | 20               | 155                 | 88.01            | 94             | C        |

## Search coil Ø22 - HARMONICS (Low channel)

| Frequency (MHz) | Polarization | Azimuth (degree) | Antenna Height (cm) | Measure (dBµV/m) |         | Limit (dBµV/m) |         | Comments |
|-----------------|--------------|------------------|---------------------|------------------|---------|----------------|---------|----------|
|                 |              |                  |                     | Peak             | Average | Peak           | Average |          |
| 4808            | Horizontal   | -                | -                   | <54              | <34     | 74             | 54      | C        |
| 4808            | Vertical     | 35               | 230                 | <54              | 37.5    | 74             | 54      | C        |

All other radiated spurious are at least 20 dB below specified limits

## Search coil Ø22 - HARMONICS (Middle channel)

| Frequency (MHz) | Polarization | Azimuth (degree) | Antenna Height (cm) | Measure (dBµV/m) |         | Limit (dBµV/m) |         | Comments |
|-----------------|--------------|------------------|---------------------|------------------|---------|----------------|---------|----------|
|                 |              |                  |                     | Peak             | Average | Peak           | Average |          |
| 4880            | Horizontal   | -                | -                   | <54              | <34     | 74             | 54      | C        |
| 4880            | Vertical     | 35               | 230                 | <54              | 38.4    | 74             | 54      | C        |

All other radiated spurious are at least 20 dB below specified limits

## Search coil Ø22 - HARMONICS (High channel)

| Frequency (MHz) | Polarization | Azimuth (degree) | Antenna Height (cm) | Measure (dBµV/m) |         | Limit (dBµV/m) |         | Comments |
|-----------------|--------------|------------------|---------------------|------------------|---------|----------------|---------|----------|
|                 |              |                  |                     | Peak             | Average | Peak           | Average |          |
| 4952            | Horizontal   | -                | -                   | <54              | <34     | 74             | 54      | C        |
| 4952            | Vertical     | -                | -                   | <54              | <34     | 74             | 54      | C        |

All other radiated spurious are at least 20 dB below specified limits

Search coil Ø28:

*Search coil Ø28- FUNDAMENTAL*

| Frequency (MHz)        | Polarization | Azimuth (degree) | Antenna Height (cm) | Measure (dBµV/m) | Limit (dBµV/m) | Comments |
|------------------------|--------------|------------------|---------------------|------------------|----------------|----------|
| 2404<br>Low channel    | Horizontal   | 22               | 230                 | 91.63            | 94             | C        |
| 2440<br>Middle channel | Vertical     | 60               | 225                 | 93.00            | 94             | C        |
| 2476<br>High channel   | Vertical     | 60               | 240                 | 91.47            | 94             | C        |

*Search coil Ø28 - HARMONICS (Low channel)*

| Frequency (MHz) | Polarization | Azimuth (degree) | Antenna Height (cm) | Measure (dBµV/m) |         | Limit (dBµV/m) |         | Comments |
|-----------------|--------------|------------------|---------------------|------------------|---------|----------------|---------|----------|
|                 |              |                  |                     | Peak             | Average | Peak           | Average |          |
| 4808            | Horizontal   | -                | -                   | <54              | <34     | 74             | 54      | C        |
| 4808            | Vertical     | -                | -                   | <54              | <34     | 74             | 54      | C        |

All other radiated spurious are at least 20 dB below specified limits

*Search coil Ø28 - HARMONICS (Middle channel)*

| Frequency (MHz) | Polarization | Azimuth (degree) | Antenna Height (cm) | Measure (dBµV/m) |         | Limit (dBµV/m) |         | Comments |
|-----------------|--------------|------------------|---------------------|------------------|---------|----------------|---------|----------|
|                 |              |                  |                     | Peak             | Average | Peak           | Average |          |
| 4880            | Horizontal   | -                | -                   | <54              | <34     | 74             | 54      | C        |
| 4880            | Vertical     | 55               | 230                 | <54              | 36.32   | 74             | 54      | C        |

All other radiated spurious are at least 20 dB below specified limits

*Search coil Ø28 - HARMONICS (High channel)*

| Frequency (MHz) | Polarization | Azimuth (degree) | Antenna Height (cm) | Measure (dBµV/m) |         | Limit (dBµV/m) |         | Comments |
|-----------------|--------------|------------------|---------------------|------------------|---------|----------------|---------|----------|
|                 |              |                  |                     | Peak             | Average | Peak           | Average |          |
| 4952            | Horizontal   | -                | -                   | <54              | <34     | 74             | 54      | C        |
| 4952            | Vertical     | 55               | 230                 | <54              | 42.40   | 74             | 54      | C        |

All other radiated spurious are at least 20 dB below specified limits

Search coil Ø28/34:
*Search coil Ø28/34- FUNDAMENTAL*

| Frequency (MHz)        | Polarization | Azimuth (degree) | Antenna Height (cm) | Measure (dBµV/m) | Limit (dBµV/m) | Comments |
|------------------------|--------------|------------------|---------------------|------------------|----------------|----------|
| 2404<br>Low channel    | Horizontal   | 0                | 215                 | 92.21            | 94             | C        |
| 2440<br>Middle channel | Vertical     | 30               | 230                 | 93.45            | 94             | C        |
| 2476<br>High channel   | Vertical     | 40               | 230                 | 93.81            | 94             | C        |

*Search coil Ø28/34 - HARMONICS (Low channel)*

| Frequency (MHz) | Polarization | Azimuth (degree) | Antenna Height (cm) | Measure (dBµV/m) |         | Limit (dBµV/m) |         | Comments |
|-----------------|--------------|------------------|---------------------|------------------|---------|----------------|---------|----------|
|                 |              |                  |                     | Peak             | Average | Peak           | Average |          |
| 4808            | Horizontal   | -                | -                   | <54              | <34     | 74             | 54      | C        |
| 4808            | Vertical     | -                | -                   | <54              | <34     | 74             | 54      | C        |

All other radiated spurious are at least 20 dB below specified limits

*Search coil Ø28/34 - HARMONICS (Middle channel)*

| Frequency (MHz) | Polarization | Azimuth (degree) | Antenna Height (cm) | Measure (dBµV/m) |         | Limit (dBµV/m) |         | Comments |
|-----------------|--------------|------------------|---------------------|------------------|---------|----------------|---------|----------|
|                 |              |                  |                     | Peak             | Average | Peak           | Average |          |
| 4880            | Horizontal   | -                | -                   | <54              | <34     | 74             | 54      | C        |
| 4880            | Vertical     | 32               | 230                 | <54              | 34.32   | 74             | 54      | C        |

All other radiated spurious are at least 20 dB below specified limits

*Search coil Ø28/34 - HARMONICS (High channel)*

| Frequency (MHz) | Polarization | Azimuth (degree) | Antenna Height (cm) | Measure (dBµV/m) |         | Limit (dBµV/m) |         | Comments |
|-----------------|--------------|------------------|---------------------|------------------|---------|----------------|---------|----------|
|                 |              |                  |                     | Peak             | Average | Peak           | Average |          |
| 4952            | Horizontal   | -                | -                   | <54              | <34     | 74             | 54      | C        |
| 4952            | Vertical     | 40               | 230                 | <54              | 39.60   | 74             | 54      | C        |

All other radiated spurious are at least 20 dB below specified limits

## 7. UNWANTED EMISSIONS OUTSIDE OF §15.249 FREQUENCY BANDS

Standards: FCC part 15 Radio part 15.249 & RSS 210:2010

Test methods: FCC part 15.109, 15.209, 15.215 b), ANSI C63.4:2003 & RSS 210:2010

a) Pre-measurement in semi anechoic chamber:

| Frequency band | Tested side | Resolution bandwidth | Video bandwidth | Detection mode | E.U.T. height |
|----------------|-------------|----------------------|-----------------|----------------|---------------|
| 9kHz-150kHz    | Front side  | 200Hz                | 1kHz            | Peak           | 80cm          |
| 150kHz-30MHz   | Front side  | 10kHz                | 30kHz           | Peak           | 80cm          |
| 30MHz-1GHz     | Front side  | 100kHz               | 300kHz          | Peak           | 80cm          |
| 1GHz-25GHz     | Front side  | 1MHz                 | 3MHz            | Peak           | 80cm          |

E.U.T. was tested from the lowest frequency generated or used (without going below 9kHz) up to the 10<sup>th</sup> harmonics of fundamental emission in emission mode and in receiver mode.

Measurements below 30MHz are done with a loop antenna as describe in the standard.

Measurements are done in semi anechoic chamber at 3m. E.U.T. is set on a wooden table.

Measurements are done in max-hold peak detection.

### Limits:

From 9 kHz to 30MHz: Limit indicated on the curves is calculated with 40 dB/decade extrapolation factor and 51.5 dB conversion factor.

From 30MHz to 1GHz Quasi peak limit provided is the limit given in 15.209.

Above 1GHz average limits in restricted bands §15.205 and general limits §15.209 are 54dBμV/m. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20dB under any condition of modulation.

### Test method deviation:

From 9 kHz to 30MHz measurements are made in peak detection instead of average mode in frequency band 9 kHz-500 kHz

- o Measurements are given in dBμA/m instead of μV/m
- o Measuring distance is 3 meters instead of 30 and 300 meters

Radiated emissions limits in this frequency band are specified at 30 or 300 meters. Measurement distance used during the test, subject of this report, is 3 meters. Then published limits come from a theoretical conversion using an extrapolation factor of 40dB / decade.

Measuring distance: 3 meters

Test equipment list:

| CATEGORY           | BRAND                | TYPE         | N° EMITECH | CAL DATE    | DUE DATE    |
|--------------------|----------------------|--------------|------------|-------------|-------------|
| Antenna            | Rohde & Schwarz      | HFH2-Z2      | 5825       | 22-oct-2012 | 22-dev-2014 |
| Antenna            | Emco                 | 3115         | 1053       | 17-aug-2012 | 17-oct-2016 |
| Antenna            | Electro-Metrics      | BIA-30HF     | 0824       | 03-mar-2011 | 03-may-2015 |
| Antenna            | Electro-Metrics      | LPA-30       | 0855       | 03-mar-2011 | 03-may-2015 |
| Antenna            | IMC                  | WR42         | 1940       | 20-apr-2012 | 20-jun-2016 |
| Cable              | C&C                  | N-1.5m       | 5016       | 05-dec-2011 | 05-fev-2014 |
| Cable              |                      | N-1m         | 2701       | 27-dec-2012 | 27-fev-2015 |
| Cable              | C&C                  | N-6m         | 5015       | 27-dec-2012 | 27-fev-2015 |
| Cable              | N-7m                 | N-7m         | 9243       | 04-apr-2012 | 04-jun-2014 |
| Cable              | HP                   | SMA-1m       | 8955       | 10-jan-2013 | 10-mar-2015 |
| Filter             | Micro-Tronics        | HPM 15162    | 5457       | 19-jan-2012 | 19-mar-2014 |
| Preamplifier       | IMPULSE              | CA118-546ACN | 9169       | 27-fev-2012 | 27-avr-2013 |
| Receiver           | Agilent Technologies | E4440A       | 5824       | 24-aug-2011 | 24-oct-2013 |
| Shielded enclosure | RAY PROOF            | C.GS3        | 1123       | -           | -           |
| Software           | Nexio                | BAT EMC      | 0000       | -           | -           |

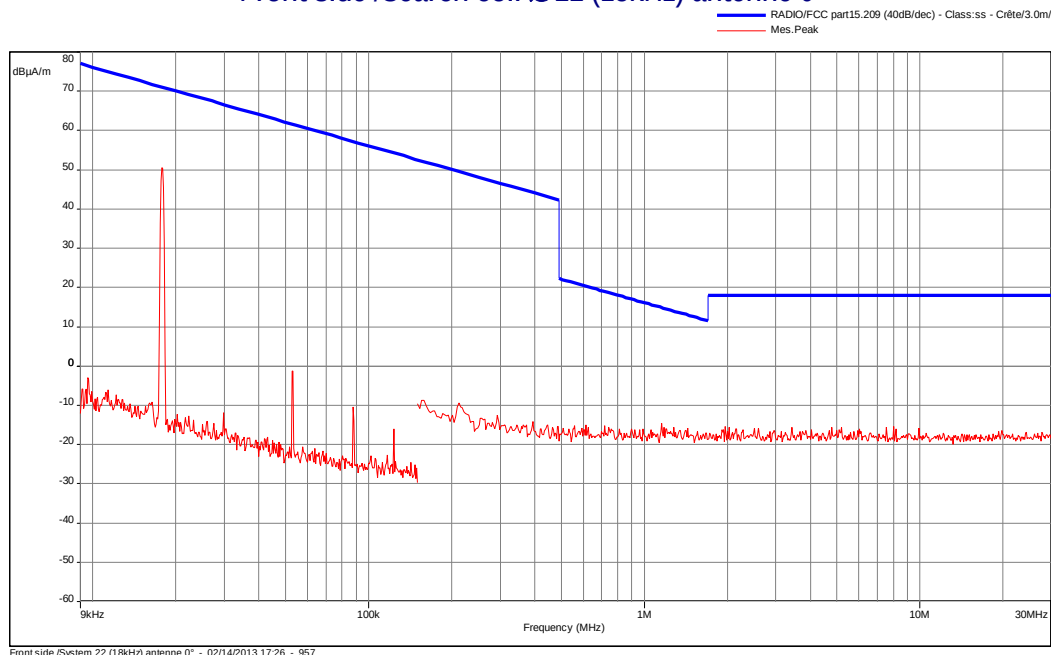
BAT-EMC software version: V3.6.0.24

Results: See Graphs hereafter.

## Radiated magnetic field emission (measurement)

EMI957

Front side / Search coil Ø22 (18kHz) antenne 0°



Date: 14/02/2013 17:26:40

Technician: DM

Class: ss of the standard

Detection:  
Peak

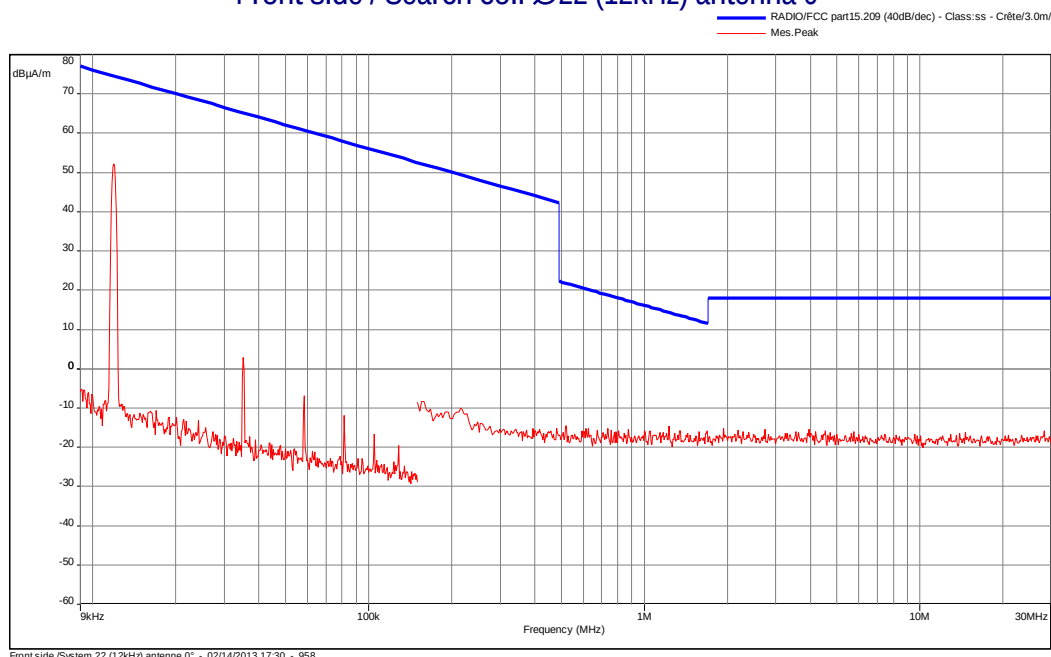
T (°C): 25  
H (%): 20.1  
P (hpa): 1

Modification(s) during test:

## Radiated magnetic field emission (measurement)

EMI958

Front side / Search coil Ø22 (12kHz) antenne 0°



Date: 14/02/2013 17:30:05

Technician: DM

Class: ss of the standard

Detection:  
Peak

T (°C): 25  
H (%): 20.1  
P (hpa): 1

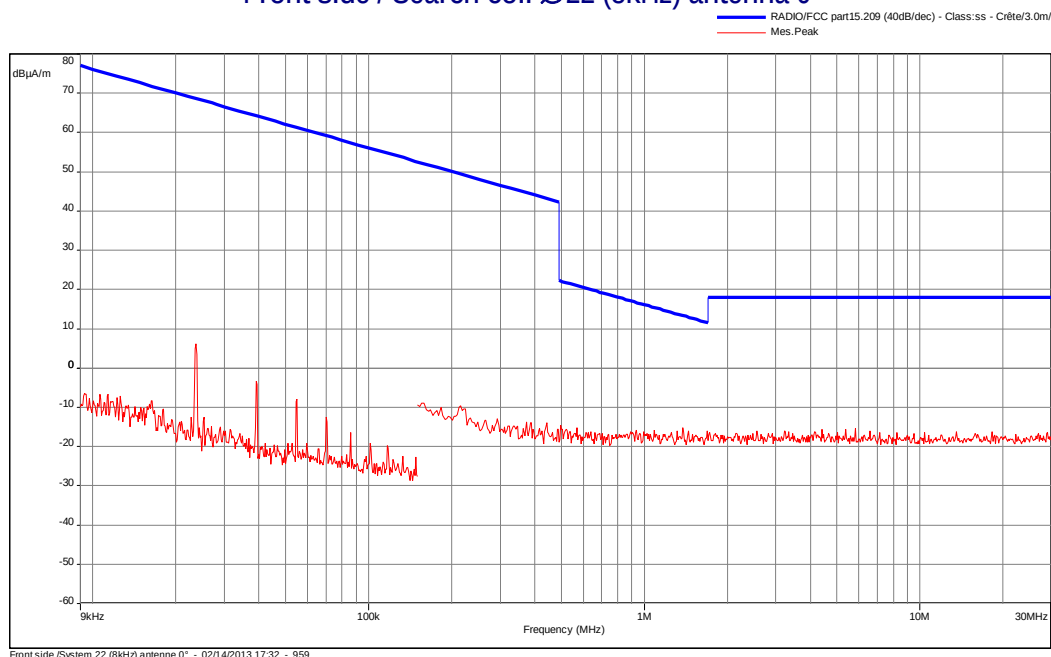
Modification(s) during test:

Limit indicated on this plot is calculated with 40 dB/decade extrapolation factor and 51.5 dB conversion factor.

## Radiated magnetic field emission (measurement)

EMI959

Front side / Search coil Ø22 (8kHz) antenna 0°



Date: 14/02/2013 17:32:13

Technician: DM

Class: ss of the standard

Detection:  
Peak

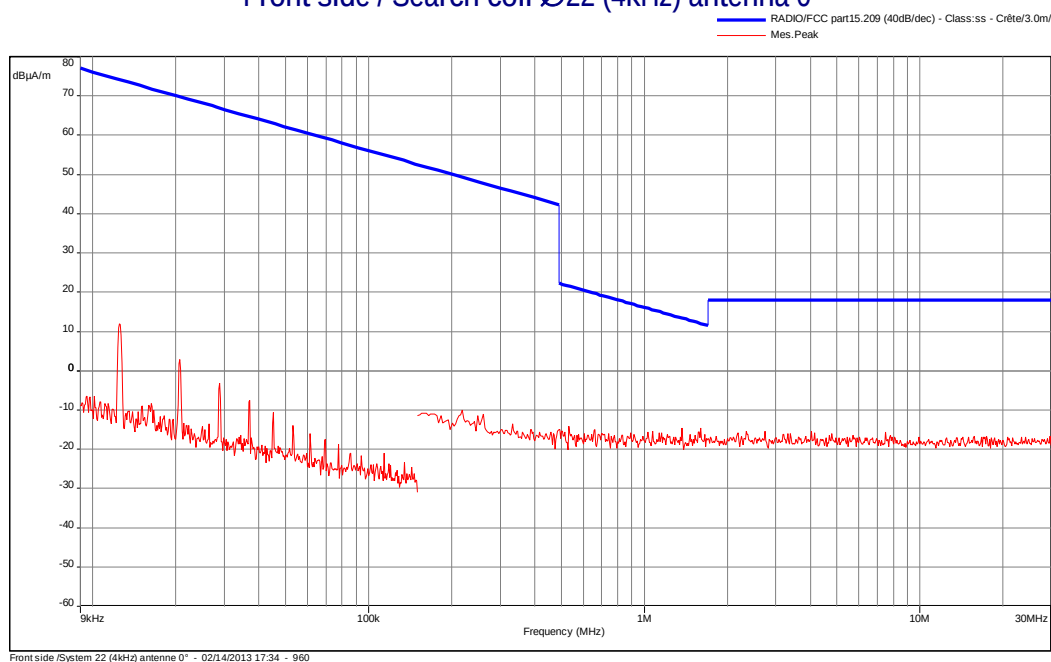
T (°C): 25  
H (%): 20.1  
P (hpa): 1

Modification(s) during test:

## Radiated magnetic field emission (measurement)

EMI960

Front side / Search coil Ø22 (4kHz) antenna 0°



Date: 14/02/2013 17:34:59

Technician: DM

Class: ss of the standard

Detection:  
Peak

T (°C): 25  
H (%): 20.1  
P (hpa): 1

Modification(s) during test:

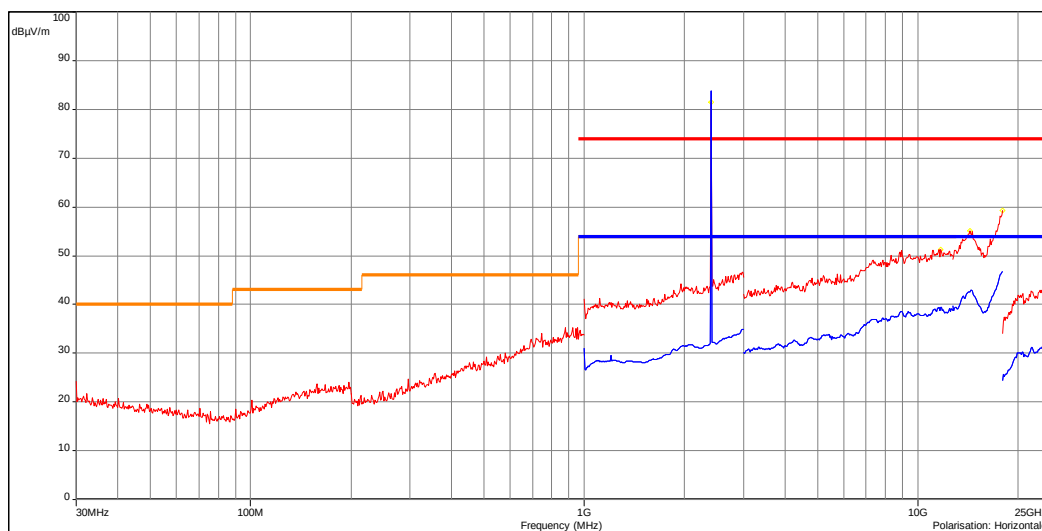
Limit indicated on this plot is calculated with 40 dB/decade extrapolation factor and 51.5 dB conversion factor.

## Radiated electric emission (measurement)

EMI924

Search coil Ø22 / low channel (2404MHz)

C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/  
 Mes.Peak (Horizontale)  
 Mes.Avg (Horizontale)  
 Peak/LimAvg (Horizontale)



Search coil 22 / low channel (2404MHz) - 02/13/2013 10:02 - 924

Date: 13/02/2013 10:02:48

Technician: DM + RB

Class: B of the standard

Detection:  
Peak and average

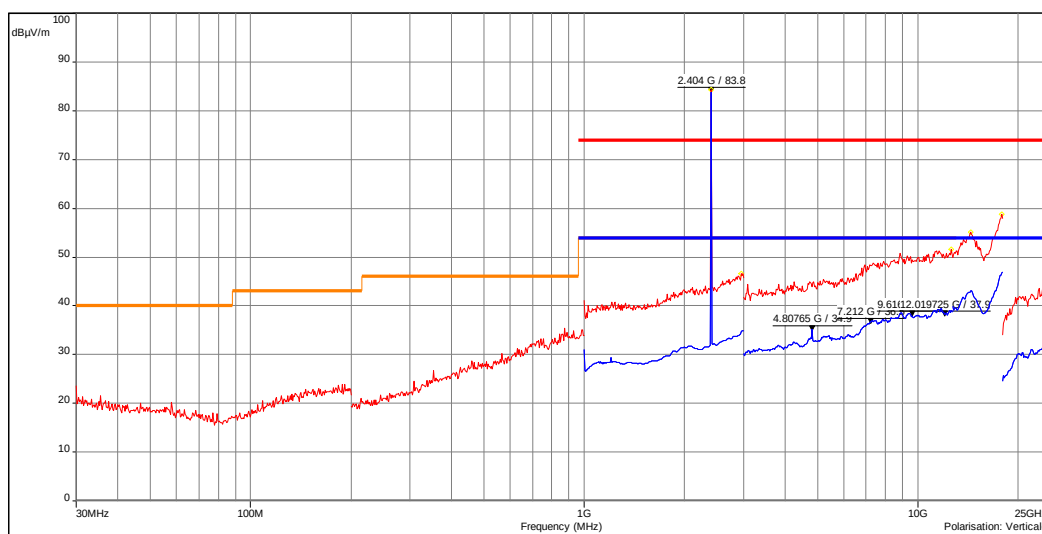
T (°C): 24.1

H (%): 25

P (hpa): 1

Modification(s) during test:

C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/  
 Mes.Peak (Verticale)  
 Mes.Avg (Verticale)  
 Peak/LimAvg (Verticale)



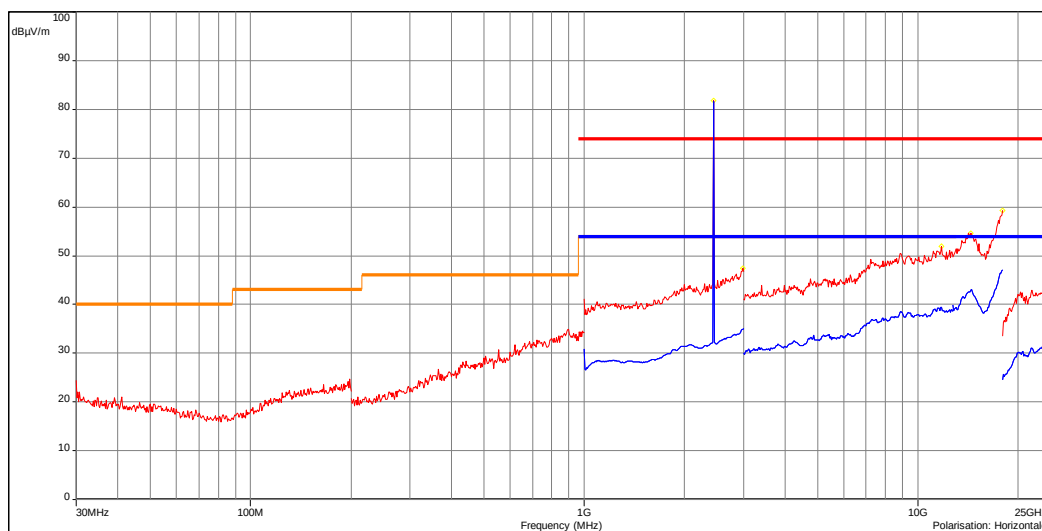
Search coil 22 / low channel (2404MHz) - 02/13/2013 10:02 - 924

# Radiated electric emission (measurement)

EMI926

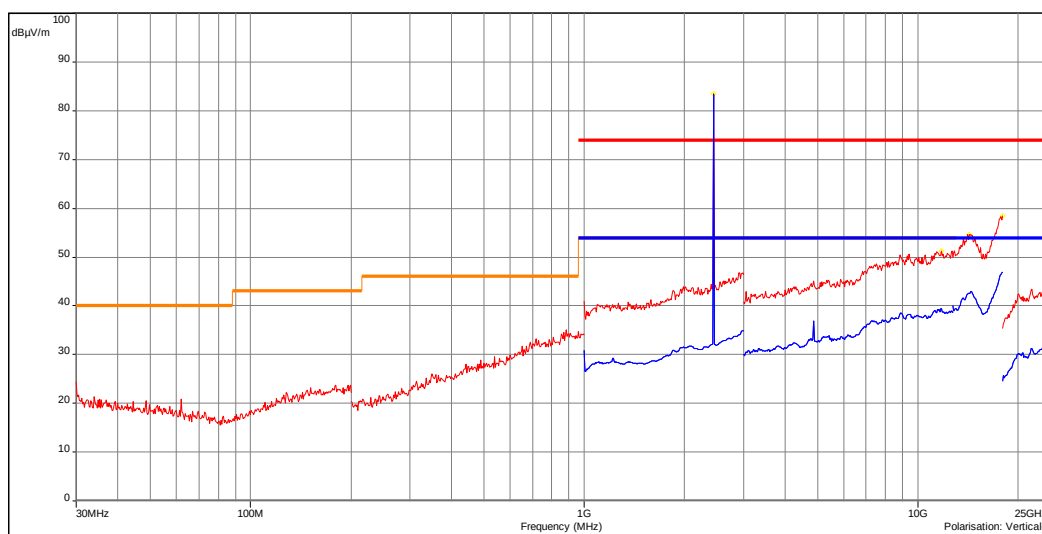
Search coil Ø22 / Middle channel (2440MHz)

- C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/
- Mes.Peak (Horizontale)
- Mes.Avg (Horizontale)
- Peak/LimAvg (Horizontale)



Search coil 22 / Middle channel (2440MHz) - 02/13/2013 11:28 - 926

- C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/
- Mes.Peak (Verticale)
- Mes.Avg (Verticale)
- Peak/LimAvg (Verticale)



Search coil 22 / Middle channel (2440MHz) - 02/13/2013 11:28 - 926

Date: 13/02/2013 11:28:18

Technician: DM + RB

Class: B of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hpa): 1

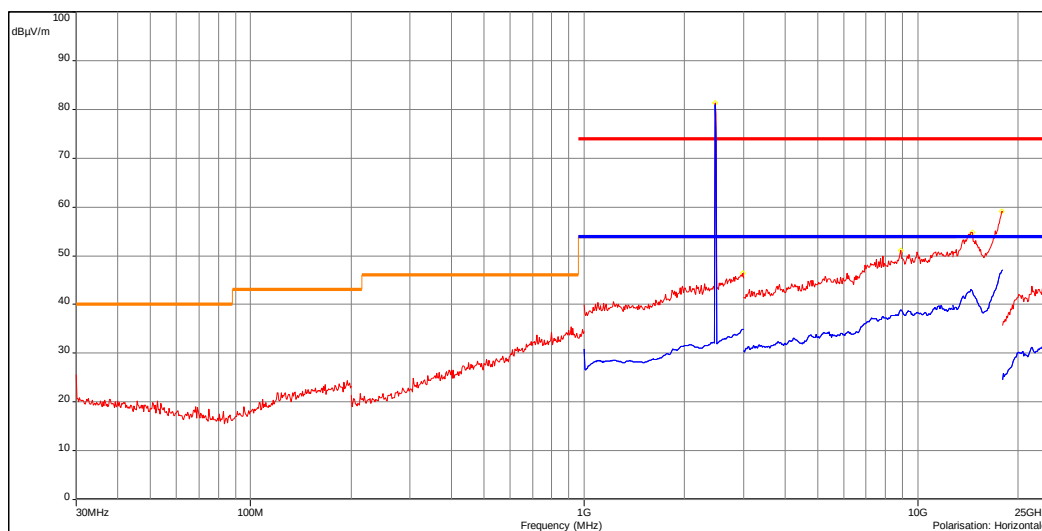
Modification(s) during test:

## Radiated electric emission (measurement)

EMI927

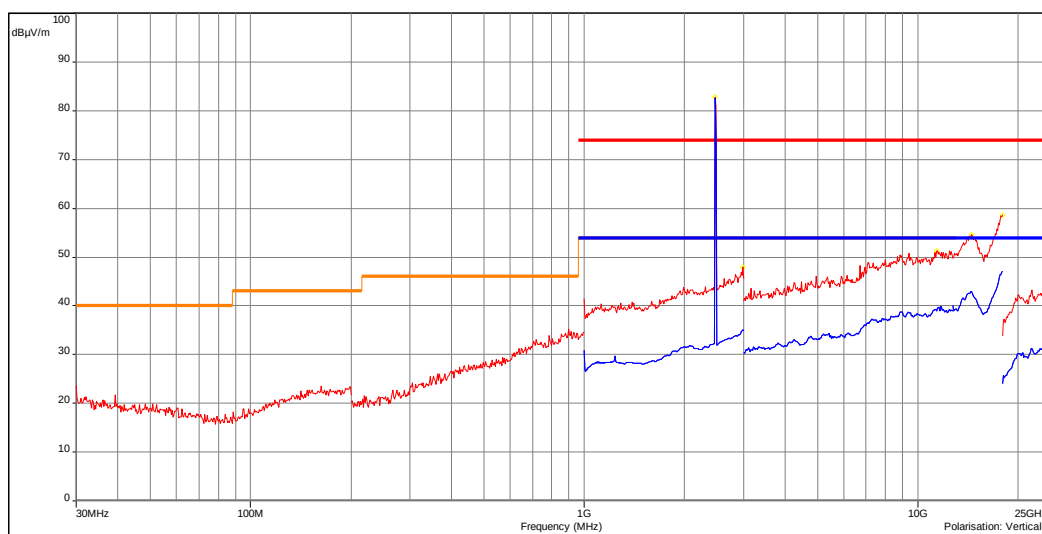
Search coil Ø22 / High channel (2476MHz)

- C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/
- Mes.Peak (Horizontale)
- Mes.Avg (Horizontale)
- ◊ Peak/LimAvg (Horizontale)



Search coil 22 / High channel (2476MHz) - 02/13/2013 13:47 - 927

- C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/
- Mes.Peak (Verticale)
- Mes.Avg (Verticale)
- ◊ Peak/LimAvg (Verticale)



Search coil 22 / High channel (2476MHz) - 02/13/2013 13:47 - 927

Date: 13/02/2013 13:47:32

Technician: DM + RB

Class: B of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hpa): 1

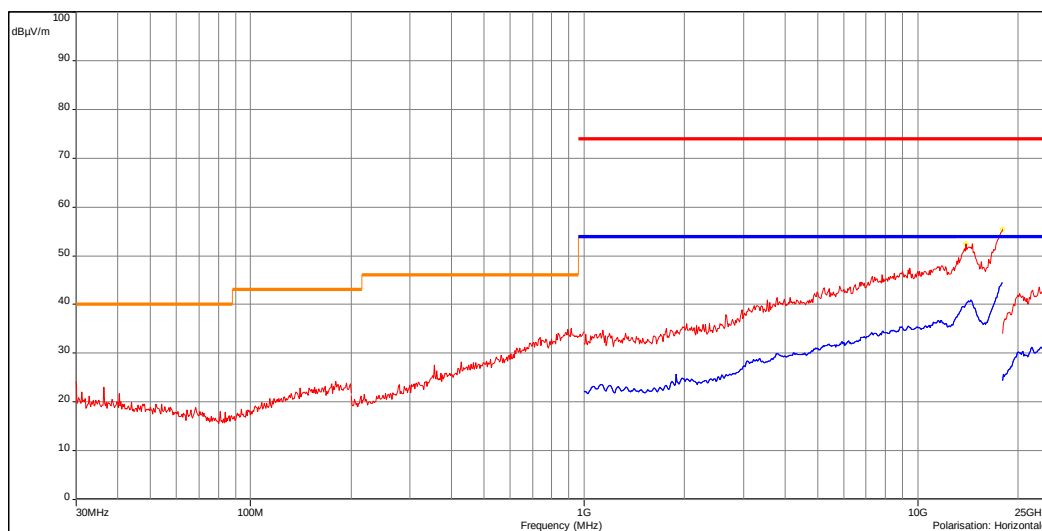
Modification(s) during test:

## Radiated electric emission (measurement)

EMI966

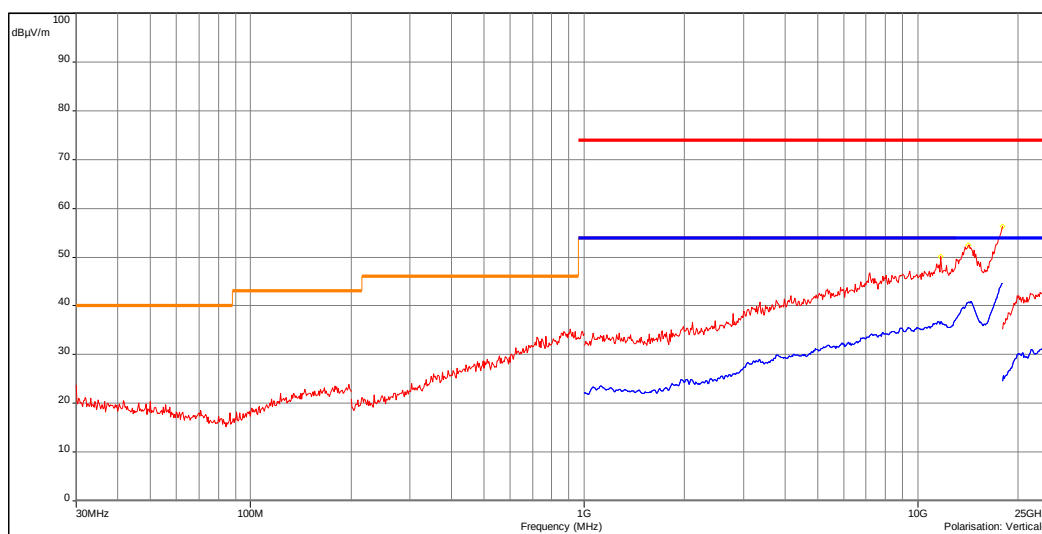
Search coil Ø22 / Receiver

- C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/
- Mes.Peak (Horizontale)
- Mes.Avg (Horizontale)
- ◊ Peak/LimAvg (Horizontale)



Search coil 22 / Receiver - 02/15/2013 13:34 - 966

- C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/
- Mes.Peak (Verticale)
- Mes.Avg (Verticale)
- ◊ Peak/LimAvg (Verticale)



Search coil 22 / Receiver - 02/15/2013 13:34 - 966

Date: 15/02/2013 13:34:56

Technician: DM + RB

Class: B of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

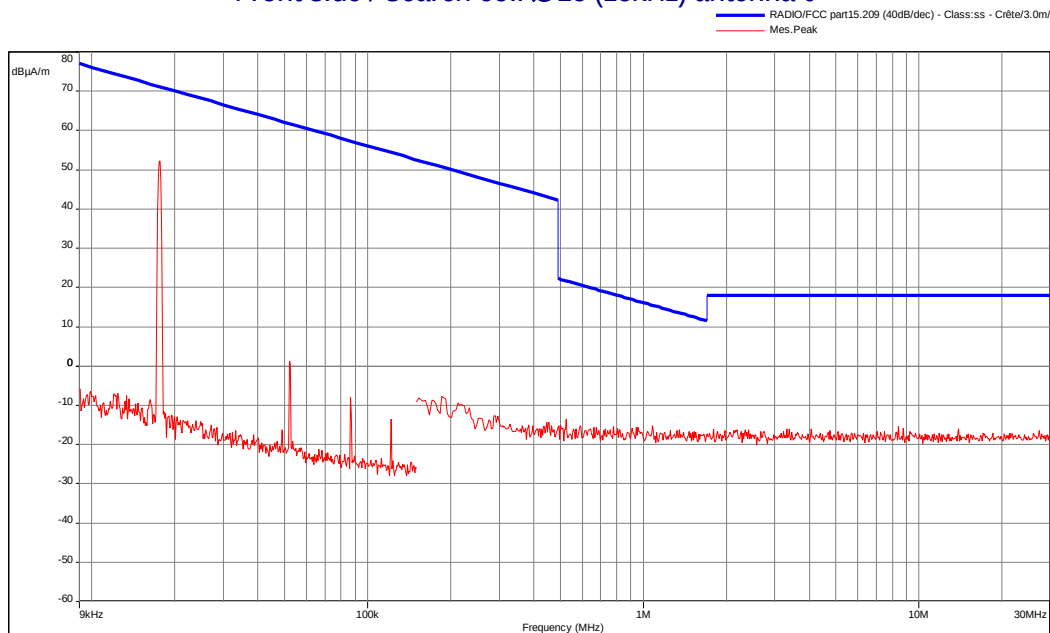
P (hpa): 1

Modification(s) during test:

## Radiated magnetic field emission (measurement)

EMI961

Front side / Search coil Ø28 (18kHz) antenna 0°



Date: 14/02/2013 17:38:23

Technician: DM

Class: ss of the standard

Detection:  
Peak

T (°C): 25  
H (%): 20.1  
P (hpa): 1

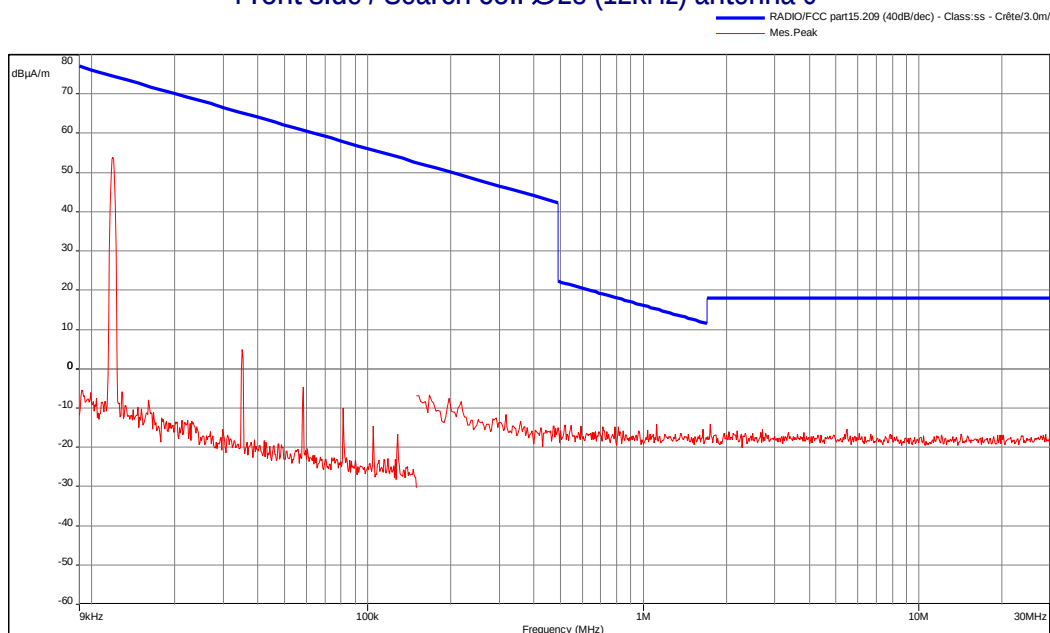
Modification(s) during test:

Front side /System 28 (18kHz) antenne 0° - 02/14/2013 17:38 - 961

## Radiated magnetic field emission (measurement)

EMI962

Front side / Search coil Ø28 (12kHz) antenna 0°



Date: 14/02/2013 17:40:59

Technician: DM

Class: ss of the standard

Detection:  
Peak

T (°C): 25  
H (%): 20.1  
P (hpa): 1

Modification(s) during test:

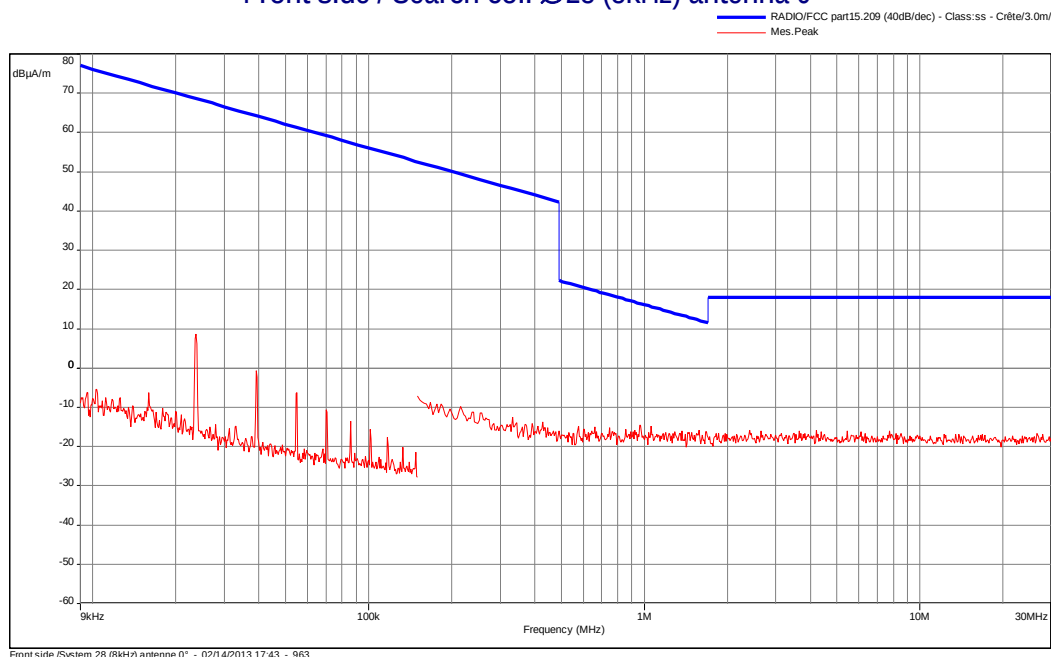
Front side /System 28 (12kHz) antenne 0° - 02/14/2013 17:40 - 962

Limit indicated on this plot is calculated with 40 dB/decade extrapolation factor and 51.5 dB conversion factor.

## Radiated magnetic field emission (measurement)

EMI963

Front side / Search coil Ø28 (8kHz) antenna 0°



Date: 14/02/2013 17:43:01

Technician: DM

Class: ss of the standard

Detection:  
Peak

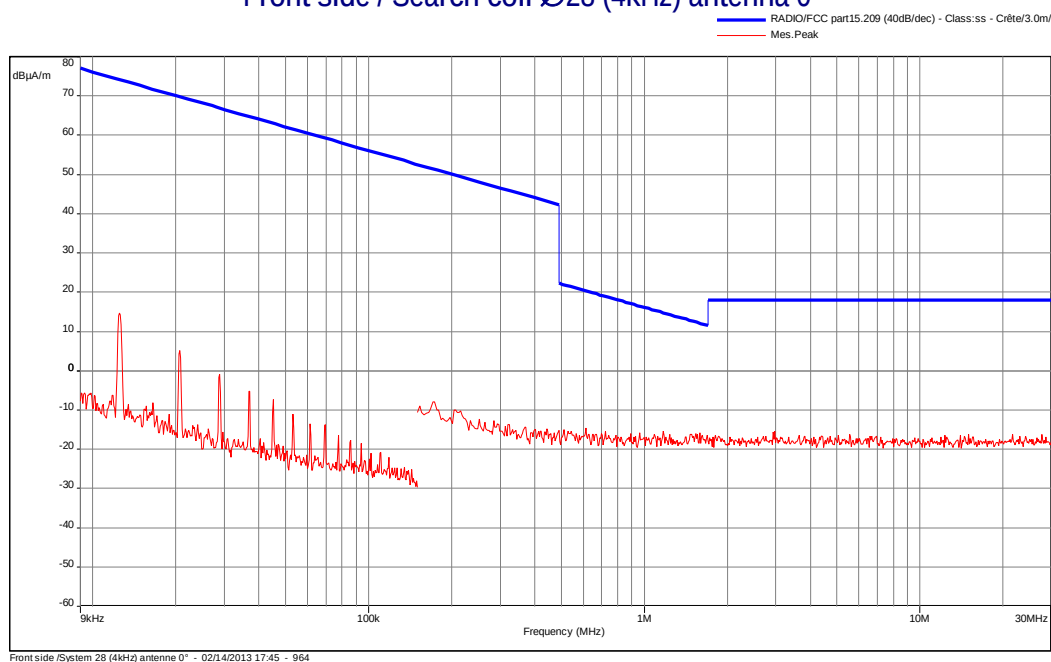
T (°C): 25  
H (%): 20.1  
P (hpa): 1

Modification(s) during test:

## Radiated magnetic field emission (measurement)

EMI964

Front side / Search coil Ø28 (4kHz) antenna 0°



Date: 14/02/2013 17:45:17

Technician: DM

Class: ss of the standard

Detection:  
Peak

T (°C): 25  
H (%): 20.1  
P (hpa): 1

Modification(s) during test:

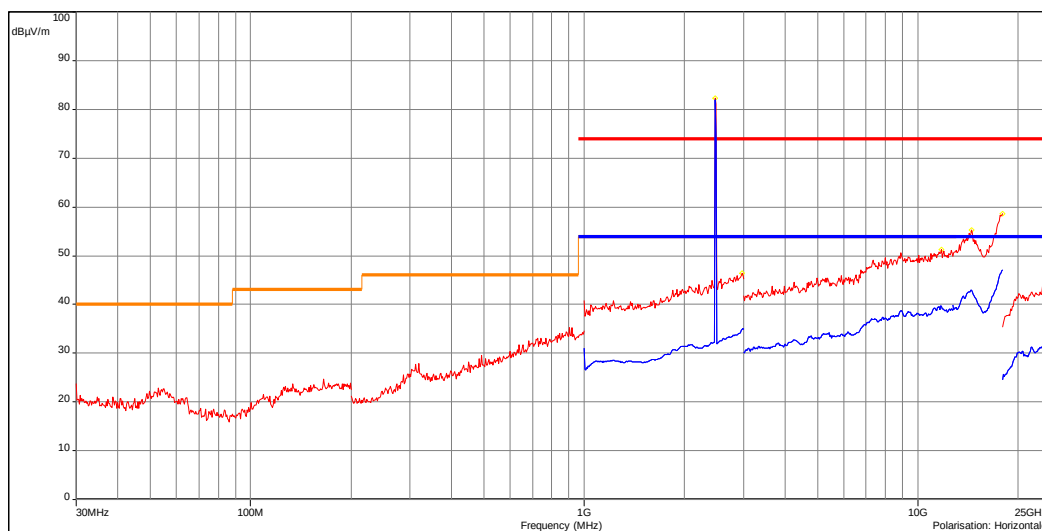
Limit indicated on this plot is calculated with 40 dB/decade extrapolation factor and 51.5 dB conversion factor.

## Radiated electric emission (measurement)

EMI928

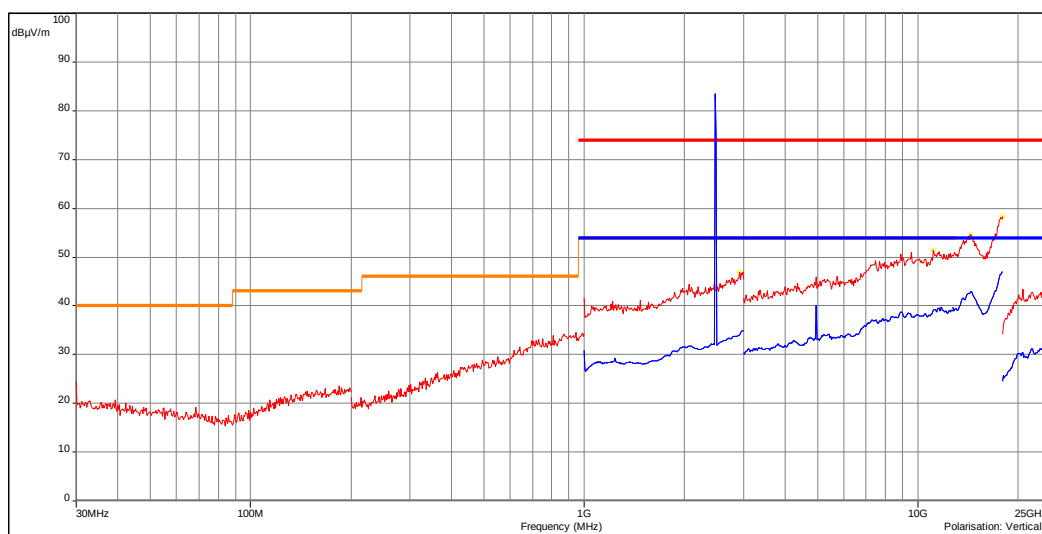
Search coil Ø28 / High channel (2476MHz)

- C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/
- Mes.Peak (Horizontale)
- Mes.Avg (Horizontale)
- ◊ Peak/LimAvg (Horizontale)



Search coil 28 / High channel (2476MHz) - 02/13/2013 14:21 - 928

- C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/
- Mes.Peak (Verticale)
- Mes.Avg (Verticale)
- ◊ Peak/LimAvg (Verticale)



Search coil 28 / High channel (2476MHz) - 02/13/2013 14:21 - 928

Date: 13/02/2013 14:21:28

Technician: DM + RB

Class: B of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hpa): 1

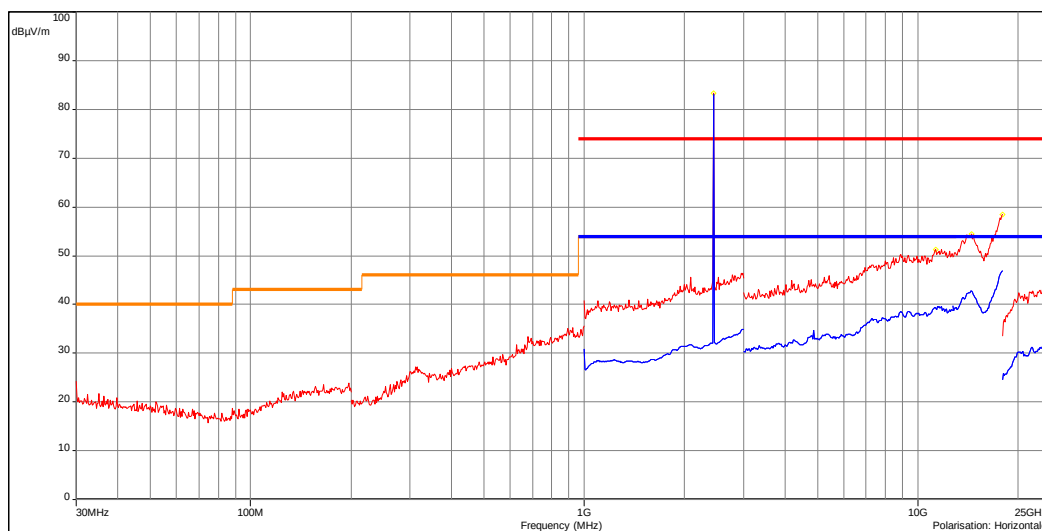
Modification(s) during test:

# Radiated electric emission (measurement)

EMI929

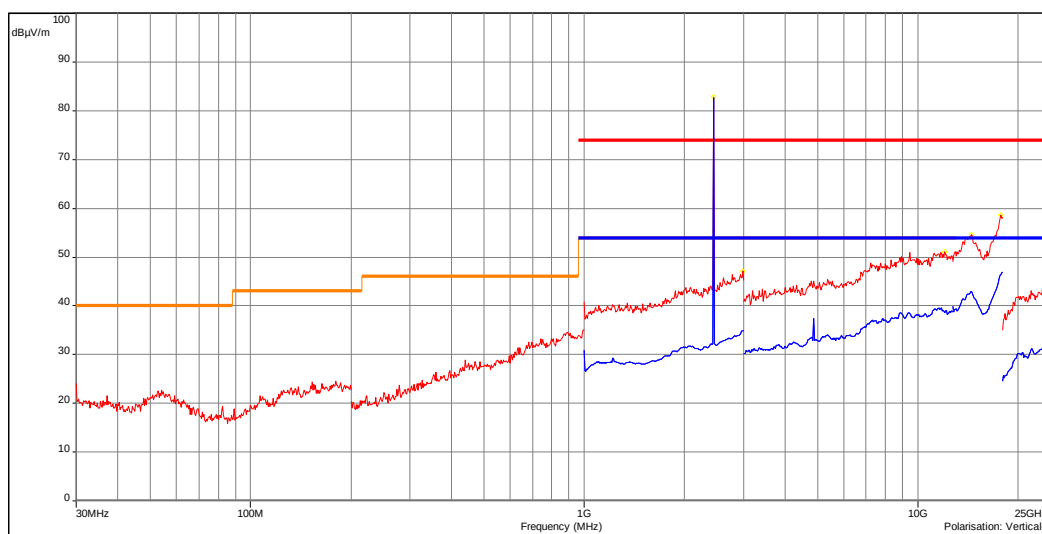
Search coil Ø28 / Middle channel (2440MHz)

- C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/
- Mes.Peak (Horizontale)
- Mes.Avg (Horizontale)
- Peak/LimAvg (Horizontale)



Search coil 28 / Middle channel (2440MHz) - 02/13/2013 14:48 - 929

- C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/
- C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/
- Mes.Peak (Verticale)
- Mes.Avg (Verticale)
- Peak/LimAvg (Verticale)



Search coil 28 / Middle channel (2440MHz) - 02/13/2013 14:48 - 929

Date: 13/02/2013 14:48:18

Technician: DM + RB

Class: B of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hpa): 1

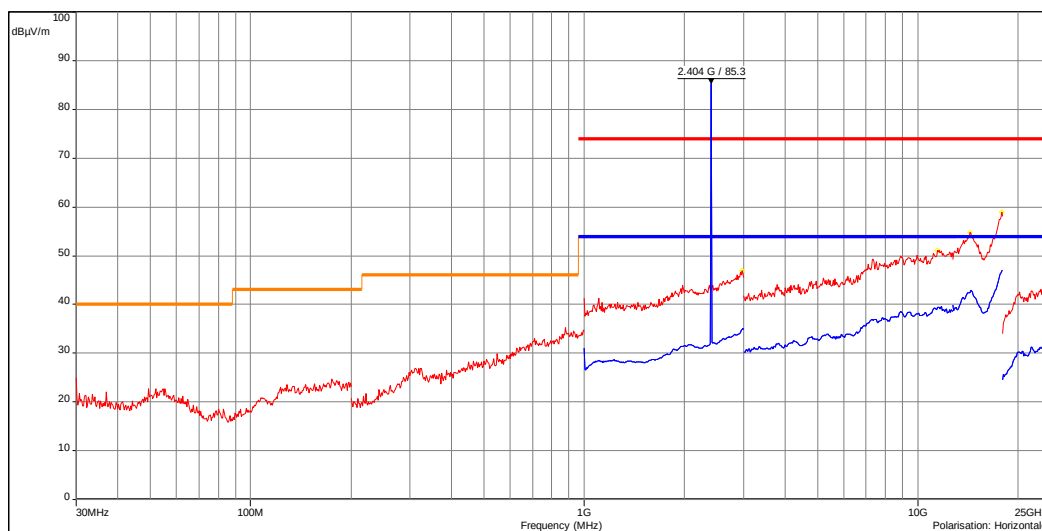
Modification(s) during test:

## Radiated electric emission (measurement)

EMI930

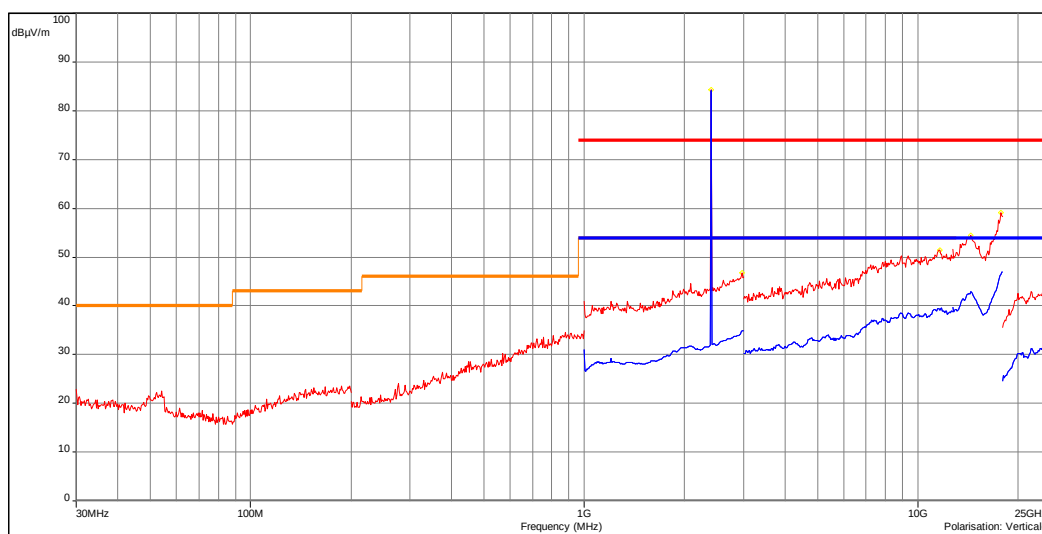
Search coil Ø28 / Low channel (2404MHz)

C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/  
 Mes.Peak (Horizontale)  
 Mes.Avg (Horizontale)  
 Peak/LimAvg (Horizontale)



Search coil 28 / Low channel (2404MHz) - 02/13/2013 15:39 - 930

C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/  
 Mes.Peak (Verticale)  
 Mes.Avg (Verticale)  
 Peak/LimAvg (Verticale)



Search coil 28 / Low channel (2404MHz) - 02/13/2013 15:39 - 930

Date: 13/02/2013 15:39:36

Technician: DM + RB

Class: B of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

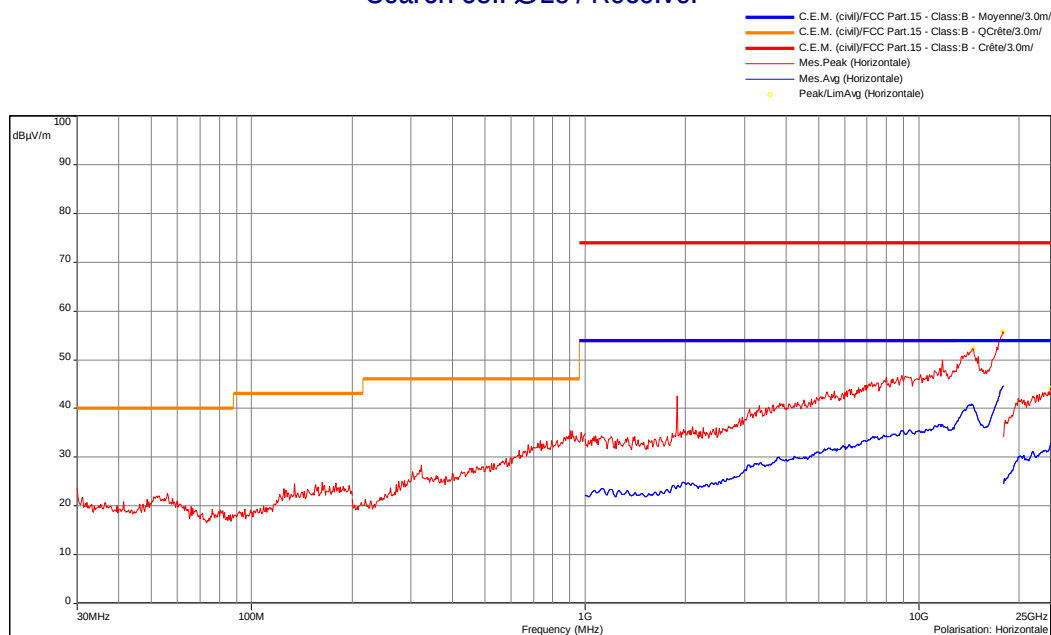
P (hpa): 1

Modification(s) during test:

## Radiated electric emission (measurement)

EMI967

Search coil Ø28 / Receiver



Date: 15/02/2013 13:51:57

Technician: DM + RB

Class: B of the standard

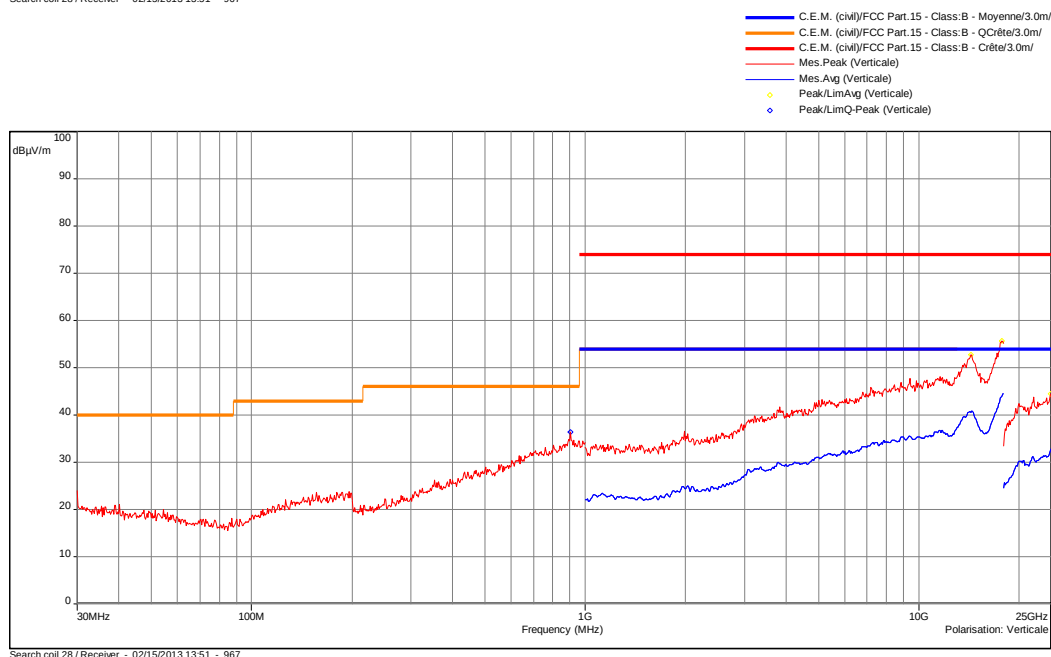
Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hpa): 1

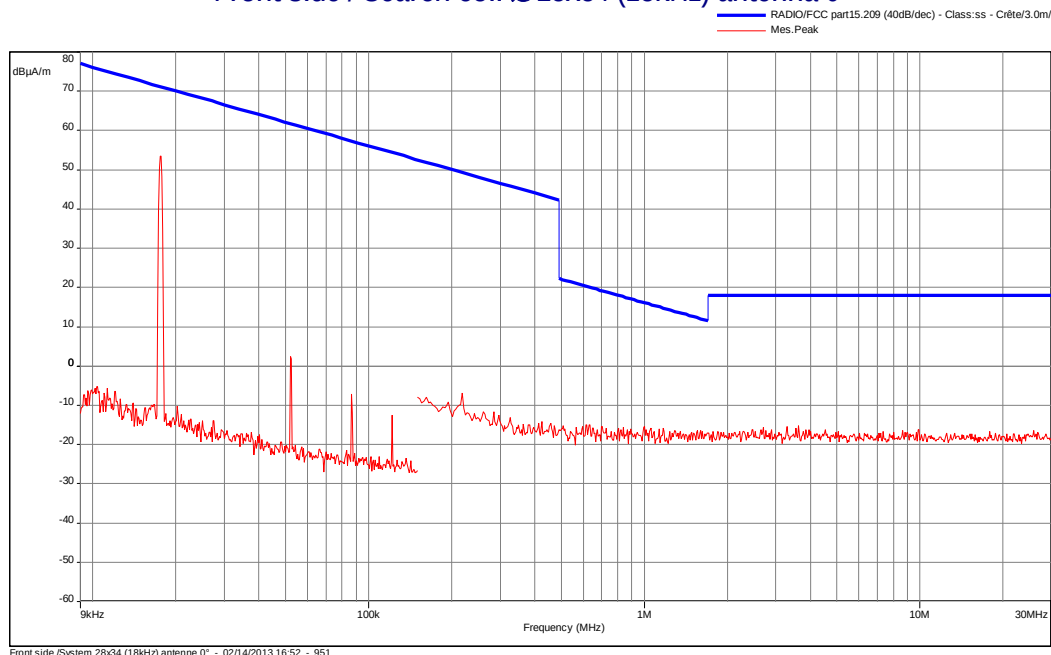
Modification(s) during test:



### Radiated magnetic field emission (measurement)

EMI951

Front side / Search coil Ø28x34 (18kHz) antenna 0°



Date: 14/02/2013 16:52:40

Technician: DM

Class: ss of the standard

Detection:  
Peak

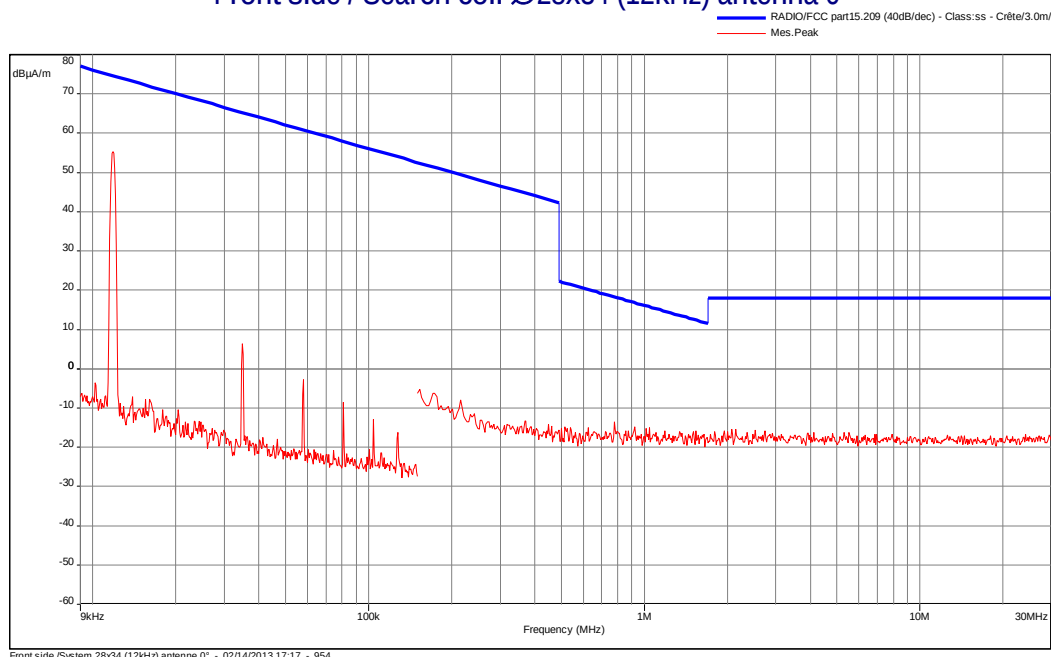
T (°C): 25  
H (%): 20.1  
P (hpa): 1

Modification(s) during test:

### Radiated magnetic field emission (measurement)

EMI954

Front side / Search coil Ø28x34 (12kHz) antenna 0°



Date: 14/02/2013 17:17:14

Technician: DM

Class: ss of the standard

Detection:  
Peak

T (°C): 25  
H (%): 20.1  
P (hpa): 1

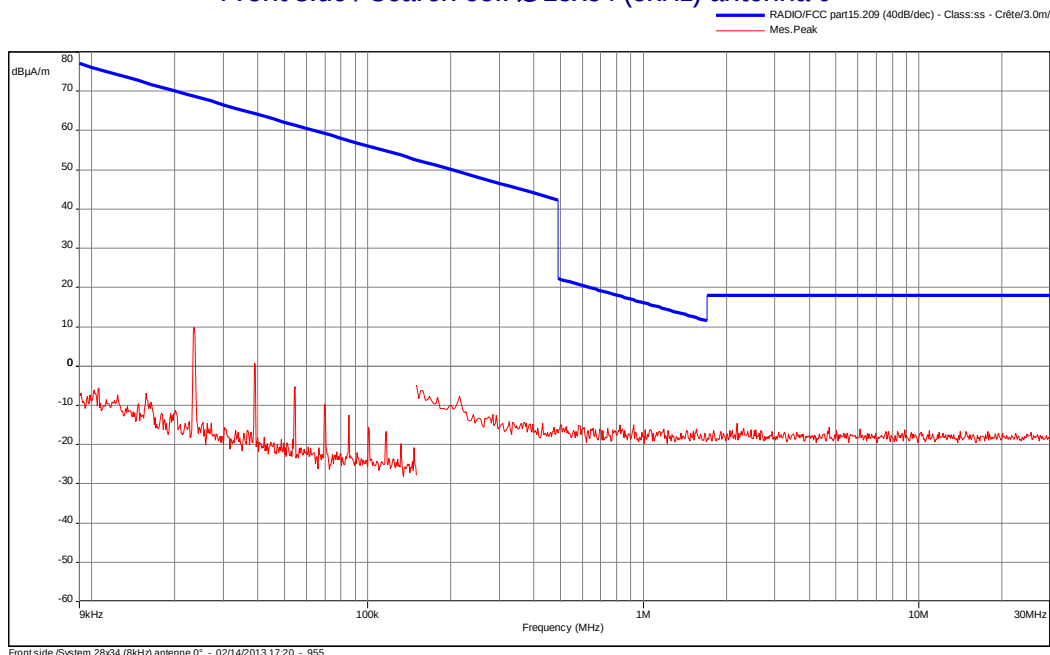
Modification(s) during test:

Limit indicated on this plot is calculated with 40 dB/decade extrapolation factor and 51.5 dB conversion factor.

### Radiated magnetic field emission (measurement)

Front side / Search coil Ø28x34 (8kHz) antenna 0°

EMI955



Date: 14/02/2013 17:20:08

Technician: DM

Class: ss of the standard

Detection:  
Peak

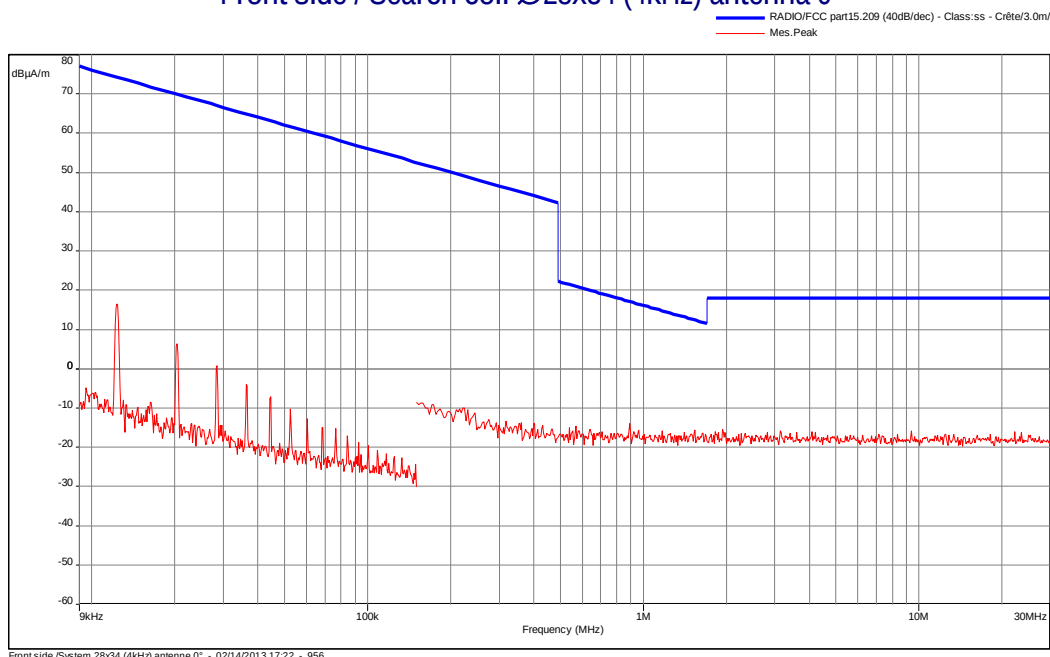
T (°C): 25  
H (%): 20.1  
P (hpa): 1

Modification(s) during test:

### Radiated magnetic field emission (measurement)

Front side / Search coil Ø28x34 (4kHz) antenna 0°

EMI956



Date: 14/02/2013 17:22:39

Technician: DM

Class: ss of the standard

Detection:  
Peak

T (°C): 25  
H (%): 20.1  
P (hpa): 1

Modification(s) during test:

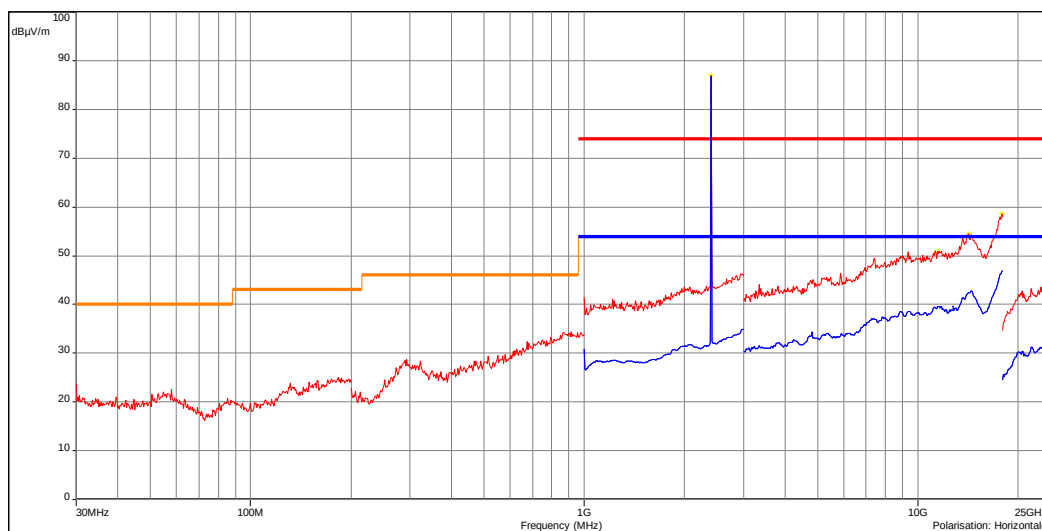
Limit indicated on this plot is calculated with 40 dB/decade extrapolation factor and 51.5 dB conversion factor.

## Radiated electric emission (measurement)

EMI931

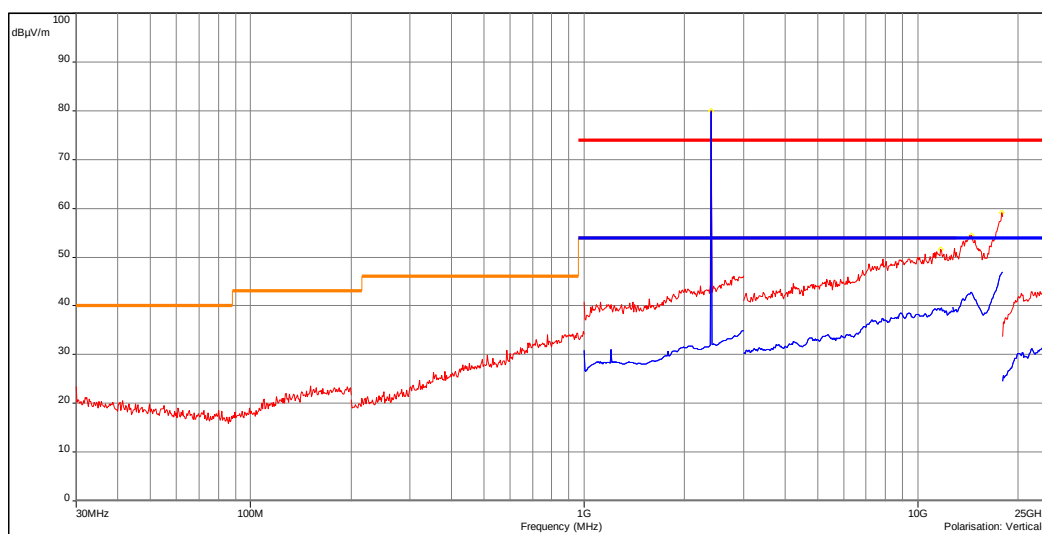
Search coil Ø28x34 / Low channel (2404MHz)

C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/  
 Mes.Peak (Horizontale)  
 Mes.Avg (Horizontale)  
 Peak/LimAvg (Horizontale)



Search coil 28x34 / Low channel (2404MHz) - 02/13/2013 16:08 - 931

C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/  
 Mes.Peak (Verticale)  
 Mes.Avg (Verticale)  
 Peak/LimAvg (Verticale)



Search coil 28x34 / Low channel (2404MHz) - 02/13/2013 16:08 - 931

Date: 13/02/2013 16:08:04

Technician: DM + RB

Class: B of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hpa): 1

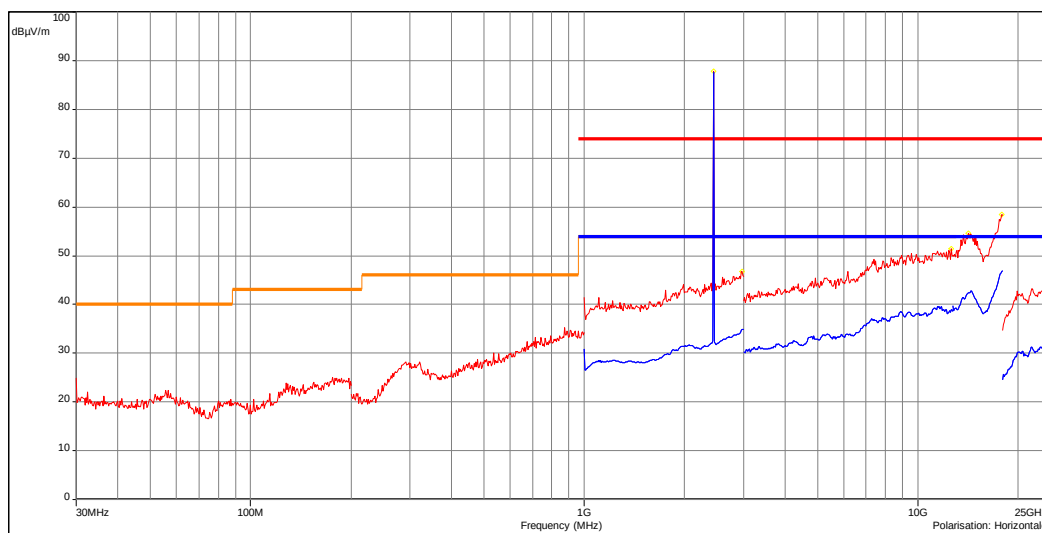
Modification(s) during test:

## Radiated electric emission (measurement)

EMI932

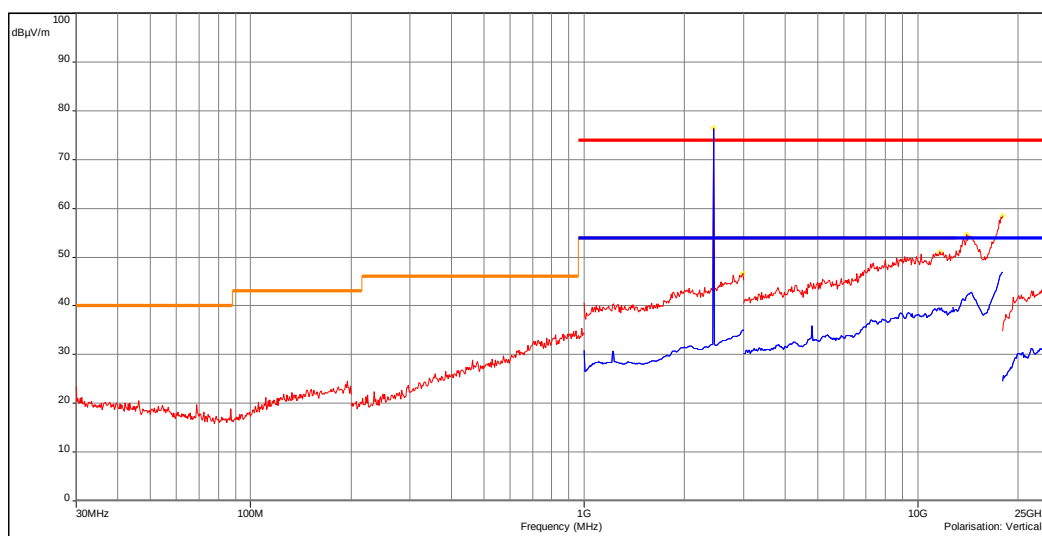
Search coil Ø28x34 / Middle channel (2440MHz)

C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/  
 Mes.Peak (Horizontale)  
 Mes.Avg (Horizontale)  
 Peak/LimAvg (Horizontale)



Search coil 28x34 / Middle channel (2440MHz) - 02/13/2013 16:34 - 932

C.E.M. (civil)/FCC Part.15 - Class:B - Moyenne/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - QCrête/3.0m/  
 C.E.M. (civil)/FCC Part.15 - Class:B - Crête/3.0m/  
 Mes.Peak (Verticale)  
 Mes.Avg (Verticale)  
 Peak/LimAvg (Verticale)



Search coil 28x34 / Middle channel (2440MHz) - 02/13/2013 16:34 - 932

Date: 13/02/2013 16:34:48

Technician: DM + RB

Class: B of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hpa): 1

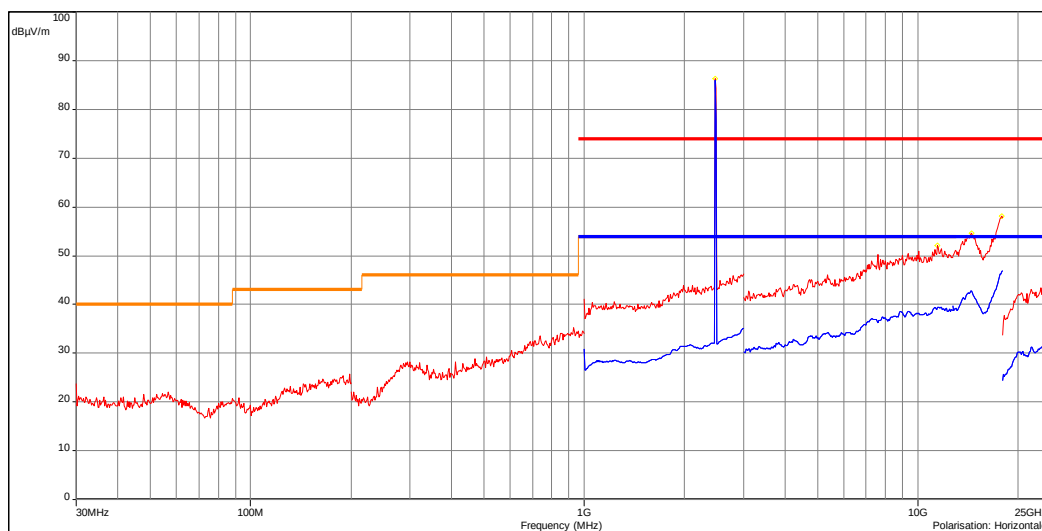
Modification(s) during test:

## Radiated electric emission (measurement)

EMI933

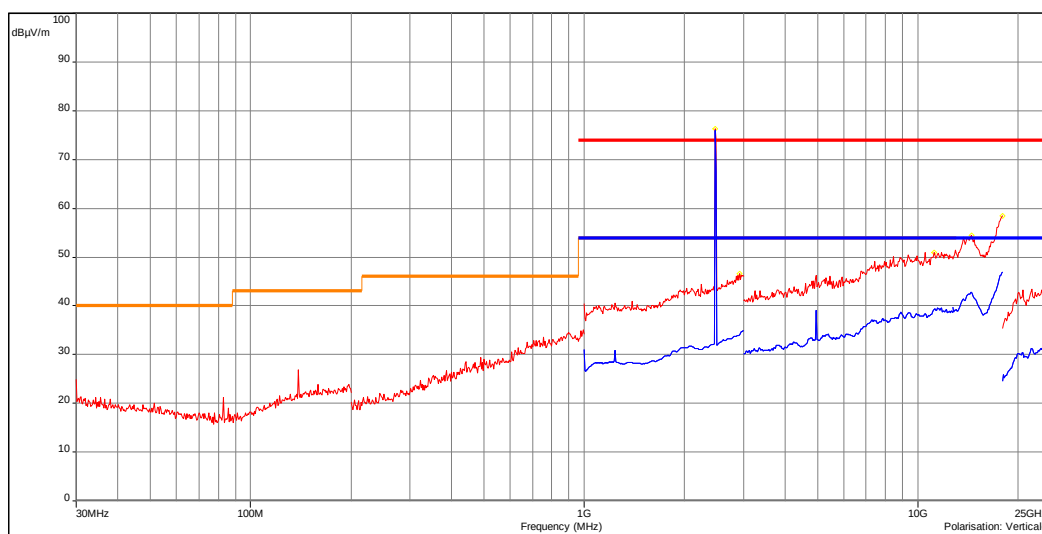
Search coil Ø28x34 / High channel (2476MHz)

C.E.M. (civil)/FCC Part 15 - Class: B - Moyenne/3.0m/  
 C.E.M. (civil)/FCC Part 15 - Class: B - QCrête/3.0m/  
 C.E.M. (civil)/FCC Part 15 - Class: B - Crête/3.0m/  
 Mes. Peak (Horizontale)  
 Mes. Avg (Horizontale)  
 Peak/LimAvg (Horizontale)



Search coil 28x34 / High channel (2476MHz) - 02/13/2013 16:58 - 933

C.E.M. (civil)/FCC Part 15 - Class: B - Moyenne/3.0m/  
 C.E.M. (civil)/FCC Part 15 - Class: B - QCrête/3.0m/  
 C.E.M. (civil)/FCC Part 15 - Class: B - Crête/3.0m/  
 Mes. Peak (Verticale)  
 Mes. Avg (Verticale)  
 Peak/LimAvg (Verticale)



Search coil 28x34 / High channel (2476MHz) - 02/13/2013 16:58 - 933

Date: 13/02/2013 16:58:39

Technician: DM + RB

Class: B of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

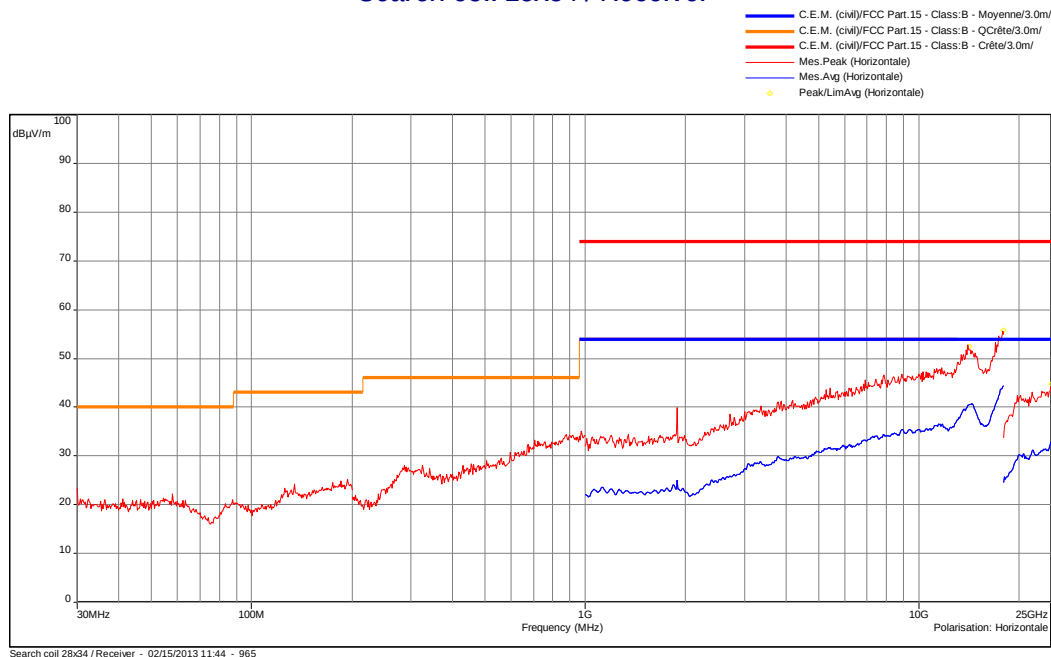
P (hpa): 1

Modification(s) during test:

## Radiated electric emission (measurement)

## Search coil 28x34 / Receiver

EMI965



Date: 15/02/2013 11:44:47

Technician: DM + RB

Class: B of the standard

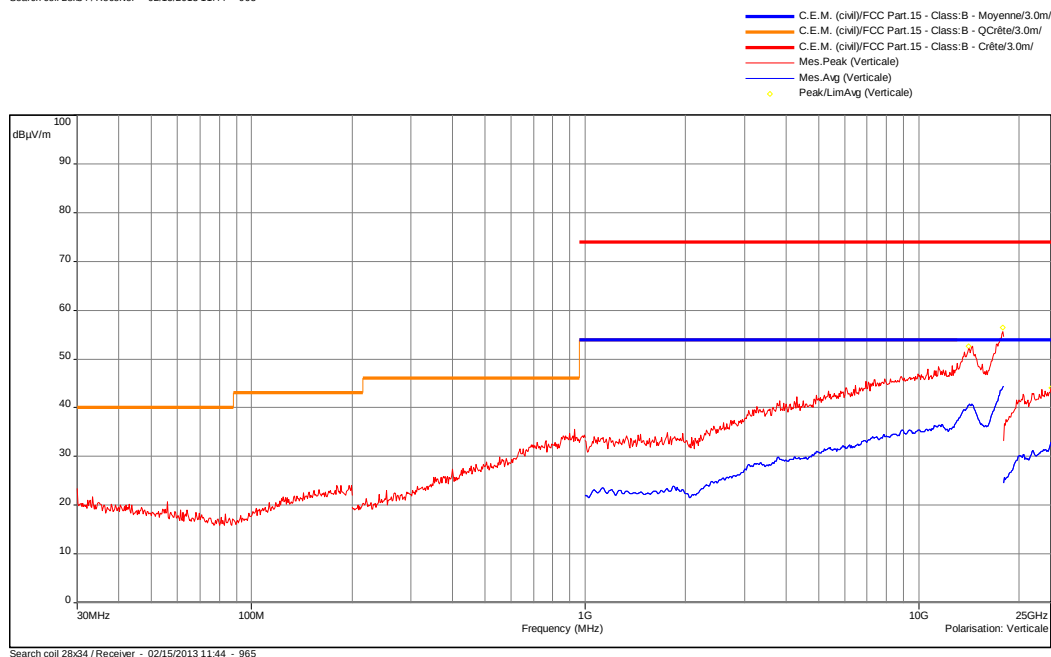
Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hpa): 1

Modification(s) during test:



**b) Measurement at 3 meters on open area test site:**

Temperature (°C): 21

Humidity (%HR): 39

Pressure (hPa): 1004

**Test configuration:** For each measured frequencies, E.U.T. is set via a turntable in order to find the highest level. Test antenna is set between 1m and 4m in order to find the highest level in vertical and horizontal polarization. Only highest levels are recorded.

| Frequency band | Initial position (0°) | Resolution bandwidth | Measuring distance | Detection mode | E.U.T. height |
|----------------|-----------------------|----------------------|--------------------|----------------|---------------|
| 9kHz-150kHz    | Front side            | 200Hz                | 3m                 | Peak           | 80cm          |
| 150kHz-30MHz   | Front side            | 10kHz                | 3m                 | Peak           | 80cm          |
| 30MHz-1GHz     | Front side            | 120kHz               | 3m                 | Quasi-peak     | 80cm          |
| 1GHz-25GHz     | Front side            | 1MHz                 | 3m                 | Average        | 80cm          |

**Test method deviation:** No

**Test equipment list:**

| CATEGORY            | BRAND                | TYPE         | N° EMITECH | CAL DATE    | DUE DATE    |
|---------------------|----------------------|--------------|------------|-------------|-------------|
| Antenna             | ETS LINDGREN         | 3117         | 5456       | 17-aug-2012 | 17-oct-2016 |
| Antenna             | Rohde & Schwarz      | HL223        | 3126       | 03-mar-2011 | 03-may-2015 |
| Antenna             | Rohde & Schwarz      | HFH2-Z2      | 5825       | 22-oct-2012 | 22-dec-2014 |
| Antenna             | Electro-Metrics      | BIA-30HF     | 1107       | 03-mar-2011 | 03-may-2015 |
| Antenna             | IMC                  | WR42         | 1940       | 20-apr-2012 | 20-jun-2016 |
| Antenna mast        | Heinrich Deisel      | MA240        | 4037       | -           | -           |
| Cable               | Cables & Connetiques | N-1.5m       | 4203       | 27-oct-2011 | 27-dec-2013 |
| Cable               | Huber Sumner         | N-14m        | 8146       | 09-mar-2011 | 09-may-2013 |
| Cable               | N-7m                 | N-7m         | 9243       | 04-apr-2012 | 04-jun-2014 |
| Cable               | HP                   | SMA-1m       | 8955       | 10-jan-2013 | 10-mar-2015 |
| Filter              | Micro-Tronics        | HPM 11630    | 4392       | 19-jan-2012 | 19-mar-2014 |
| Mast controller     | Heinrich Deisel      | HD100        | 4036       | -           | -           |
| Open area test site | Emitech              | Salinelles   | 3482       | 04-mar-2011 | 04-may-2014 |
| Preamplifier        | IMPULSE              | CA118-546ACN | 9169       | 27-fev-2012 | 27-apr-2013 |
| Receiver            | Agilent              | E4440A       | 5824       | 24-aug-2011 | 24-aug-2013 |
| Turntable           | Heinrich Deisel      | D4420        | 4038       | -           | -           |

**Results:** In emission mode and receiver mode, all unwanted radiated spurious are at least 20 dB below specified limits

## 8. 20DB BANDWIDTH AND BAND EDGE COMPLIANCE

Standards: FCC part 15 Radio part 15.215 & RSS 210:2010

Test methods: FCC part 15 Radio part 15.215 c) & RSS 210:2010

Test configuration: Measurement is done on an Open Area Test Site. For each measured frequencies, E.U.T. is set via a turntable in order to find the highest level. Test antenna is set between 1m and 4m in order to find the highest level in vertical and horizontal polarization.

Test method deviation: No

Test equipment list:

| CATEGORY            | BRAND           | TYPE       | N° EMITECH | CAL DATE    | DUE DATE    |
|---------------------|-----------------|------------|------------|-------------|-------------|
| Antenna             | ETS LINDGREN    | 3117       | 5456       | 17-aug-2012 | 17-oct-2016 |
| Antenna mast        | Heinrich Deisel | MA240      | 4037       | -           | -           |
| Cable               | Huber Sumner    | N-14m      | 8146       | 09-mar-2011 | 09-may-2013 |
| Mast controller     | Heinrich Deisel | HD100      | 4036       | -           | -           |
| Open area test site | Emitech         | Salinelles | 3482       | 04-mar-2011 | 04-may-2014 |
| Receiver            | Agilent         | E4440A     | 5824       | 24-aug-2011 | 24-aug-2013 |
| Turntable           | Heinrich Deisel | D4420      | 4038       | -           | -           |

Results: See Graphs hereafter.

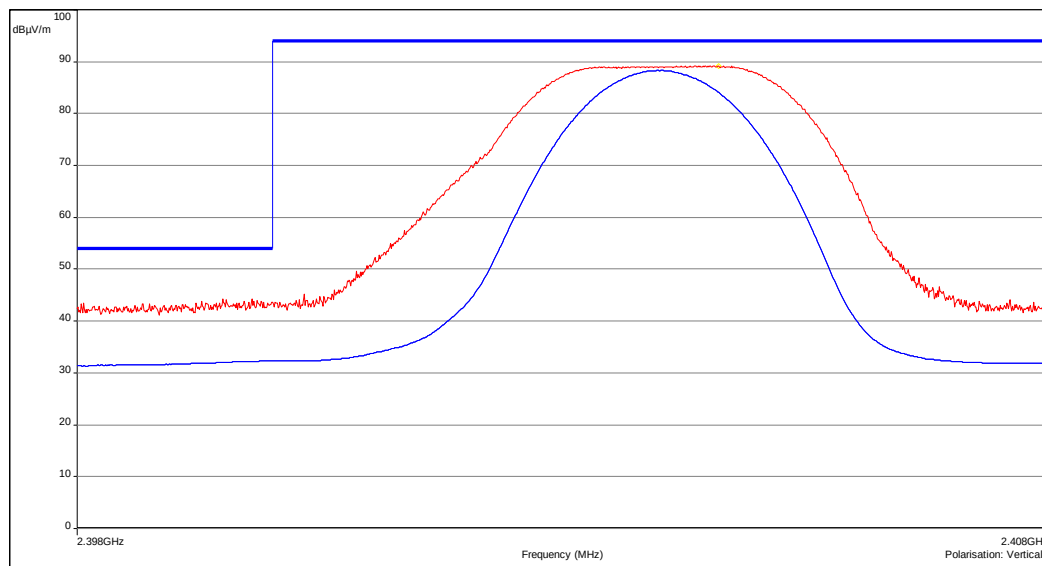
## Band edge compliance

EMI1717

### Low channel / Sear coil Ø22

Frequency (MHz) : 2.398 GHz - 2.408 GHz (Analyzer mode)  
 Settings: RBW: 1 MHz, VBW: 1 MHz, Holding time: 1 ms/Pt, sweep count 1  
 Polarisation : Verticale  
 Distance: 3 m

— RADIO/Band Edge (2400-2483.5) 15.249 - Class: Op - Moyenne/3.0m/  
 — Mes. Peak (Verticale)  
 — Mes. Avg (Verticale)  
 — Peak/LimAvg (Verticale)



Band Edge / low channel / Sear coil 22 - 02/28/2013 10:10 - 1717

Date: 28/02/2013 10:10:30

Technician: DM + RB

Class: Op of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hap): /

Modification(s) during test:

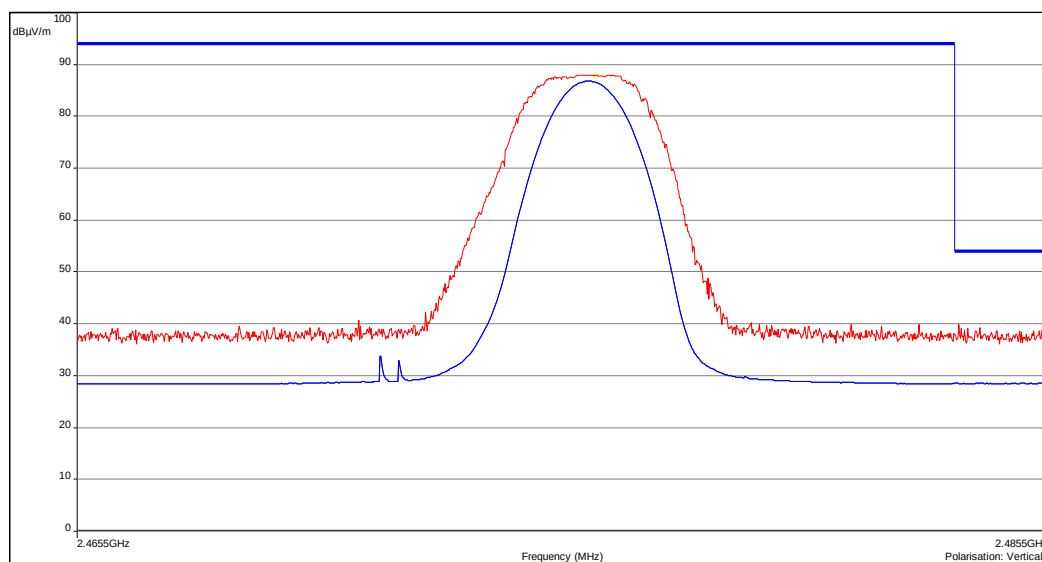
## Radiated electric emission (measurement)

EMI1721

### Band Edge / high channel / Sear coil Ø22

Frequency (MHz) : 2.4655 GHz - 2.4855 GHz (Analyzer mode)  
 Settings: RBW: 1 MHz, VBW: 1 MHz, Holding time: 1 ms/Pt, sweep count 1  
 Polarisation : Verticale  
 Distance: 3 m

— RADIO/Band Edge (2400-2483.5) 15.249 - Class: Op - Moyenne/3.0m/  
 — Mes. Peak (Verticale)  
 — Mes. Avg (Verticale)  
 — Peak/LimAvg (Verticale)



Band Edge / high channel / Sear coil 22 - 02/28/2013 10:59 - 1721

Date: 28/02/2013 10:59:09

Technician: DM + RB

Class: Op of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hap): /

Modification(s) during test:

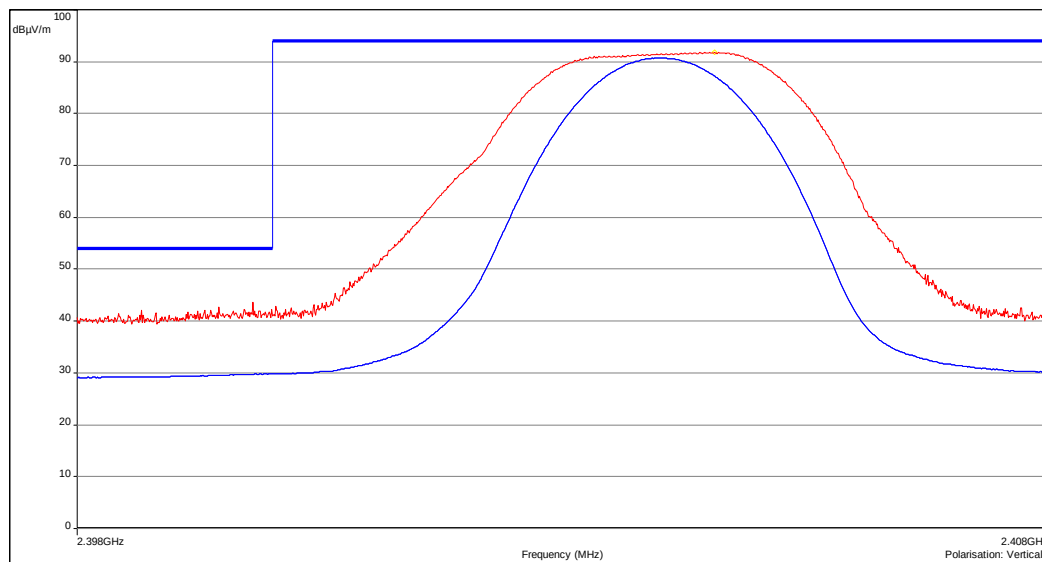
## Radiated electric emission (measurement)

EMI1742

### Band Edge / low channel / Sear coil Ø28

Frequency (MHz) : 2.398 GHz - 2.408 GHz (Analyzer mode)  
 Settings: RBW: 1 MHz, VBW: 1 MHz, Holding time: 1 ms/Pt, sweep count 1  
 Polarisation : Verticale  
 Distance: 3 m

— RADIO/Band Edge (2400-2483.5) 15.249 - Class: Op - Moyenne/3.0m/  
 — Mes. Peak (Verticale)  
 — Mes. Avg (Verticale)  
 ◊ Peak/LimAvg (Verticale)



Band Edge / low channel / Sear coil 28 - 02/28/2013 15:28 - 1742

Date: 28/02/2013 15:28:54

Technician: DM + RB

Class: Op of the standard

Detection:  
 Peak and average

T (°C): 24.1

H (%): 25

P (hap): /

Modification(s) during test:

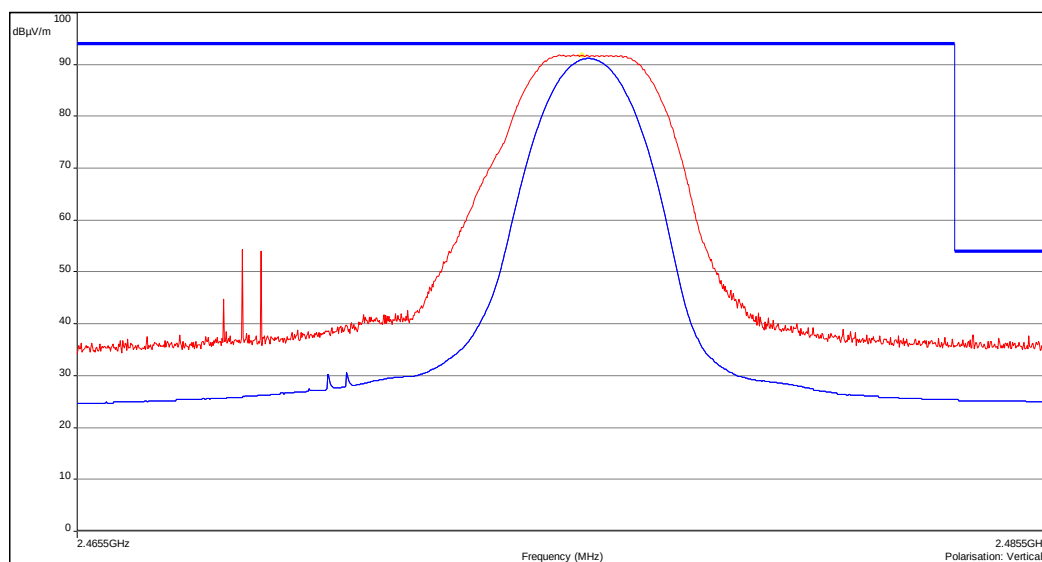
## Radiated electric emission (measurement)

EMI1744

### Band Edge / high channel / Sear coil Ø28

Frequency (MHz) : 2.4655 GHz - 2.4855 GHz (Analyzer mode)  
 Settings: RBW: 1 MHz, VBW: 1 MHz, Holding time: 1 ms/Pt, sweep count 1  
 Polarisation : Verticale  
 Distance: 3 m

— RADIO/Band Edge (2400-2483.5) 15.249 - Class: Op - Moyenne/3.0m/  
 — Mes. Peak (Verticale)  
 — Mes. Avg (Verticale)  
 ◊ Peak/LimAvg (Verticale)



Band Edge / high channel / Sear coil 28 - 02/28/2013 15:47 - 1744

Date: 28/02/2013 15:47:17

Technician: DM + RB

Class: Op of the standard

Detection:  
 Peak and average

T (°C): 24.1

H (%): 25

P (hap): /

Modification(s) during test:

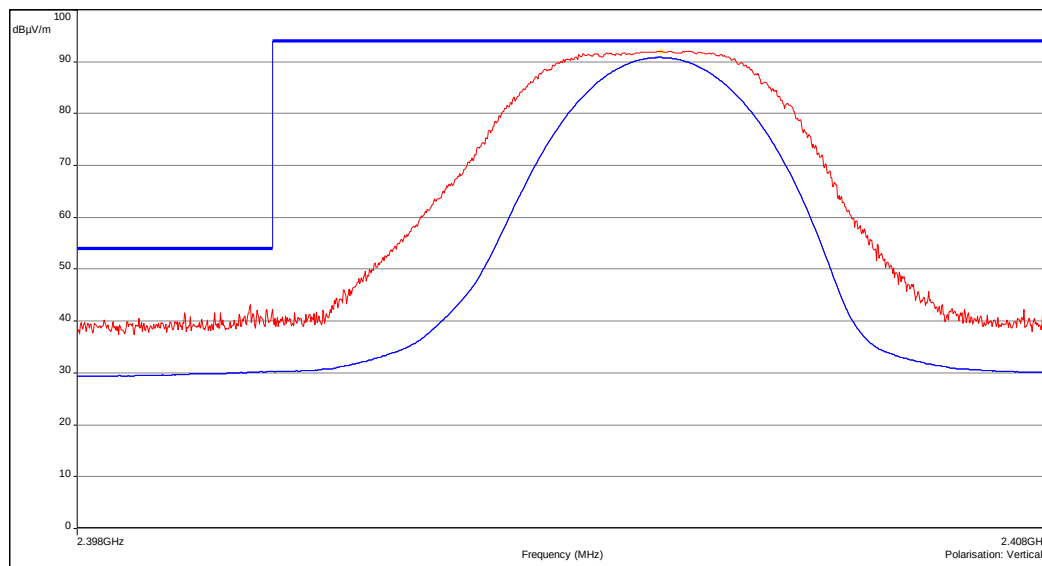
## Radiated electric emission (measurement)

EMI1693

### Band Edge / low channel / Sear coil Ø28/34

Frequency (MHz) : 2.398 GHz - 2.408 GHz (Analyzer mode)  
 Settings: RBW: 1 MHz, VBW: 1 MHz, Holding time: 1 ms/Pt, sweep count 1  
 Polarisation : Verticale  
 Distance: 3 m

— RADIO/Band Edge (2400-2483.5) 15.249 - Class: Op - Moyenne/3.0m/  
 — Mes. Peak (Verticale)  
 — Mes. Avg (Verticale)  
 • Peak/LimAvg (Verticale)



Band Edge / low channel / Sear coil 28/34 - 02/27/2013 11:04 - 1693

Date: 27/02/2013 11:04:43

Technician: DM + RB

Class: Op of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hap): I

Modification(s) during test:

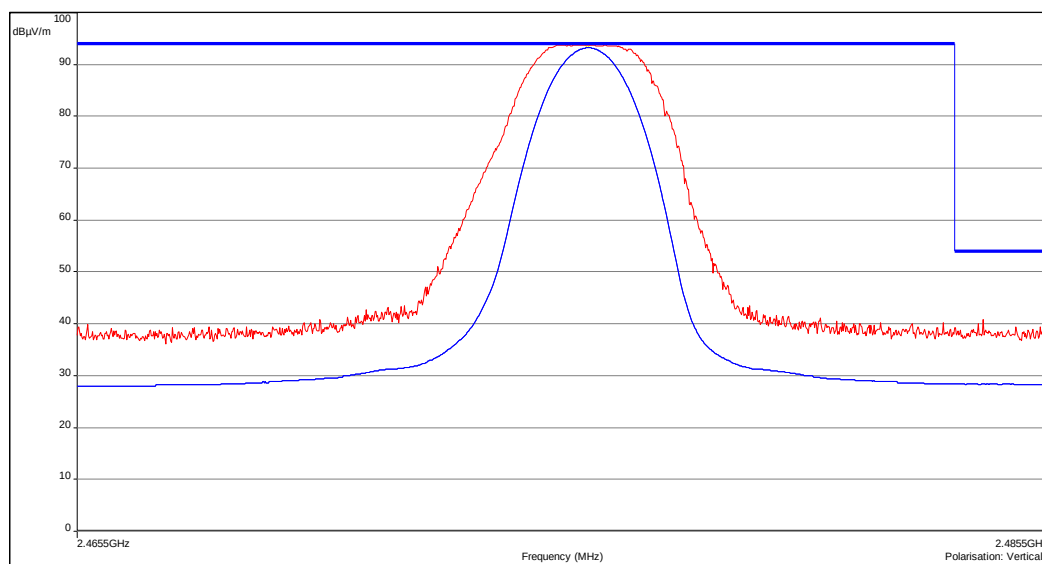
## Radiated electric emission (measurement)

EMI1694

### Band Edge / high channel / Sear coil Ø28/34

Frequency (MHz) : 2.4655 GHz - 2.4855 GHz (Analyzer mode)  
 Settings: RBW: 1 MHz, VBW: 1 MHz, Holding time: 1 ms/Pt, sweep count 1  
 Polarisation : Verticale  
 Distance: 3 m

— RADIO/Band Edge (2400-2483.5) 15.249 - Class: Op - Moyenne/3.0m/  
 — Mes. Peak (Verticale)  
 — Mes. Avg (Verticale)  
 • Peak/LimAvg (Verticale)



Band Edge / high channel / Sear coil 38/34 - 02/27/2013 11:11 - 1694

Date: 27/02/2013 11:11:10

Technician: DM + RB

Class: Op of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hap): I

Modification(s) during test:

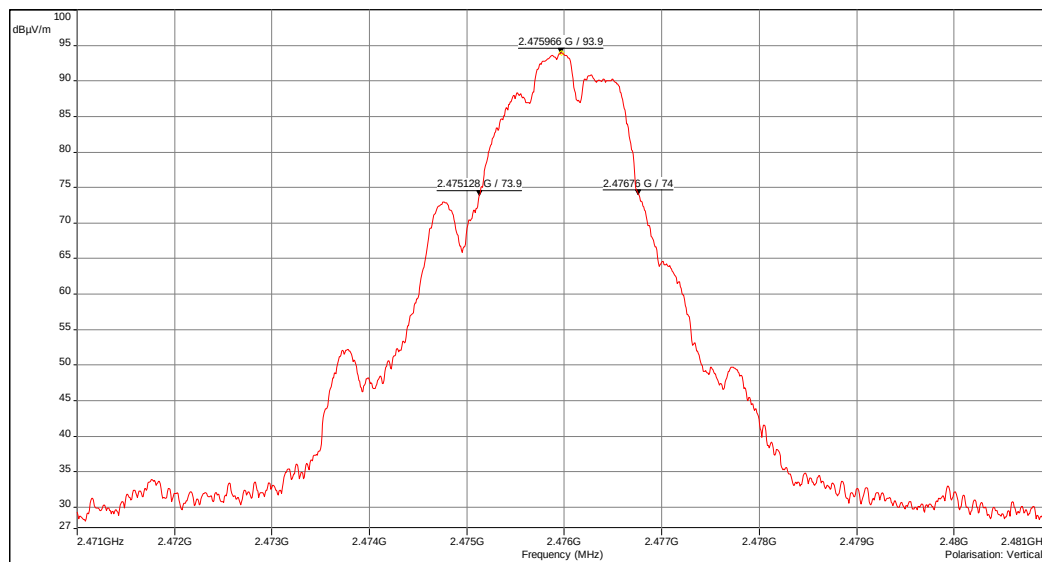
## Radiated electric emission (measurement)

EMI1695

### 20dB bandwidth/ high channel / Sear coil Ø28/34

Frequency (MHz) : 2.471 GHz - 2.481 GHz (Analyzer mode)  
Settings: RBW: 100 kHz, VBW: 300 kHz, Holding time: 1 ms/Pt, sweep count 1  
Polarisation : Verticale  
Distance: 3 m

— Mes. Peak (Verticale)  
○ Peak/LimAvg (Verticale)



20dB bandwidth/ high channel / Sear coil 38/34 - 02/27/2013 11:21 - 1695

Date: 27/02/2013 11:21:01

Technician: DM + RB

Class: Op of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hap): I

Modification(s) during test:

The 20dB bandwidth of fundamental is 1.63MHz (in RBW=100 kHz)

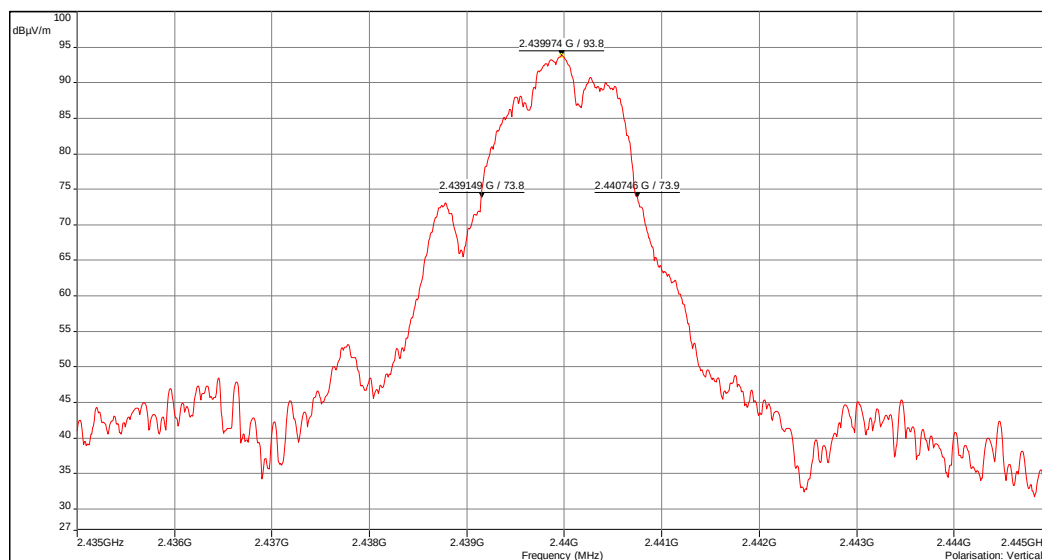
## Radiated electric emission (measurement)

EMI1696

### 20dB bandwidth/ middle channel / Sear coil Ø28/34

Frequency (MHz) : 2.435 GHz - 2.445 GHz (Analyzer mode)  
Settings: RBW: 100 kHz, VBW: 300 kHz, Holding time: 1 ms/Pt, sweep count 1  
Polarisation : Verticale  
Distance: 3 m

— Mes. Peak (Verticale)  
○ Peak/LimAvg (Verticale)



20dB bandwidth/ middle channel / Sear coil 28/34 - 02/27/2013 11:32 - 1696

Date: 27/02/2013 11:32:04

Technician: DM + RB

Class: Op of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hap): I

Modification(s) during test:

The 20dB bandwidth of fundamental is 1.60MHz (in RBW=100 kHz)

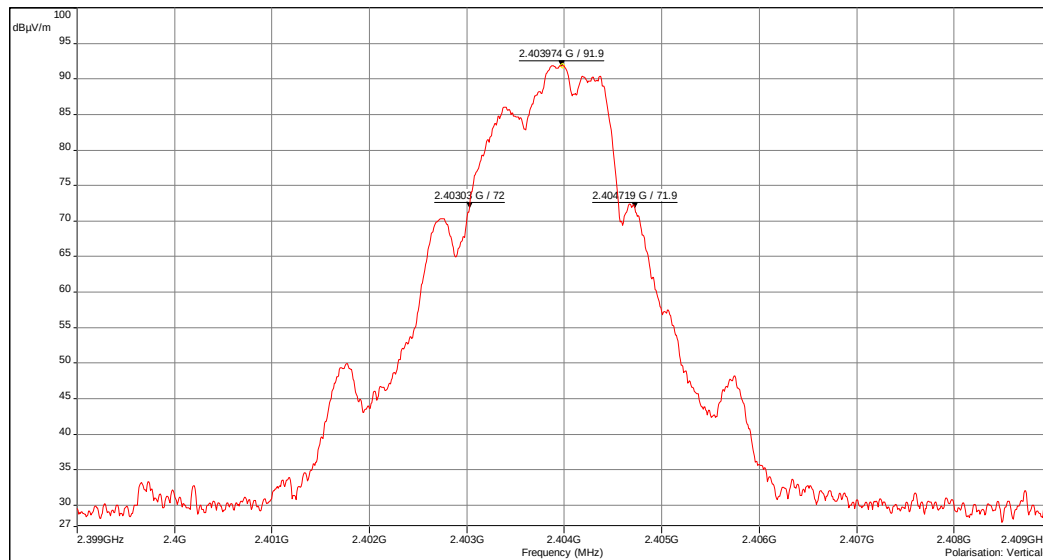
## Radiated electric emission (measurement)

EMI1697

## 20dB bandwidth/ low channel / Sear coil Ø28/34

Frequency (MHz) : 2.399 GHz - 2.409 GHz (Analyzer mode)  
 Settings: RBW: 100 kHz, VBW: 300 kHz, Holding time: 1 ms/Pt, sweep count 1  
 Polarisation : Verticale  
 Distance: 3 m

— Mes. Peak (Verticale)  
 ◊ Peak/LimAvg (Verticale)



20dB bandwidth/ low channel / Sear coil 28/34 - 02/27/2013 11:46 - 1697

Date: 27/02/2013 11:46:41

Technician: DM + RB

Class: Op of the standard

Detection:  
 Peak and average

T (°C): 24.1

H (%): 25

P (hap): I

Modification(s) during test:

The 20dB bandwidth of fundamental is 1.69MHz (in RBW=100 kHz)

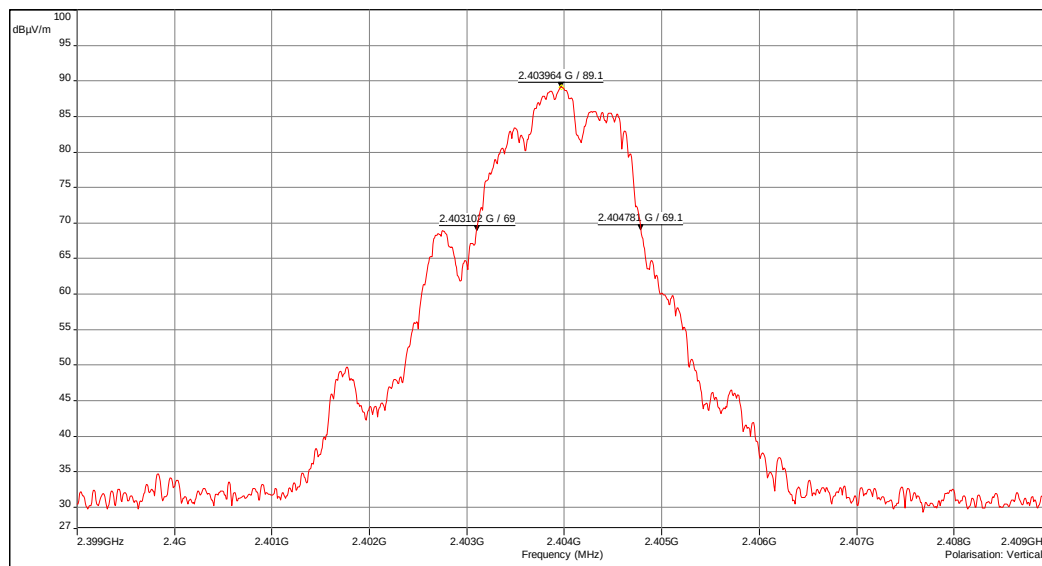
## Radiated electric emission (measurement)

EMI1718

### 20dB bandwidth/ low channel / Sear coil Ø22

Frequency (MHz) : 2.399 GHz - 2.409 GHz (Analyzer mode)  
Settings: RBW: 100 kHz, VBW: 300 kHz, Holding time: 1 ms/Pt, sweep count 1  
Polarisation : Verticale  
Distance: 3 m

— Mes. Peak (Verticale)  
○ Peak/LimAvg (Verticale)



20dB bandwidth/ low channel / Sear coil 22 - 02/28/2013 10:23 - 1718

Date: 28/02/2013 10:23:09

Technician: DM + RB

Class: Op of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hap): I

Modification(s) during test:

The 20dB bandwidth of fundamental is 1.68MHz (in RBW=100 kHz)

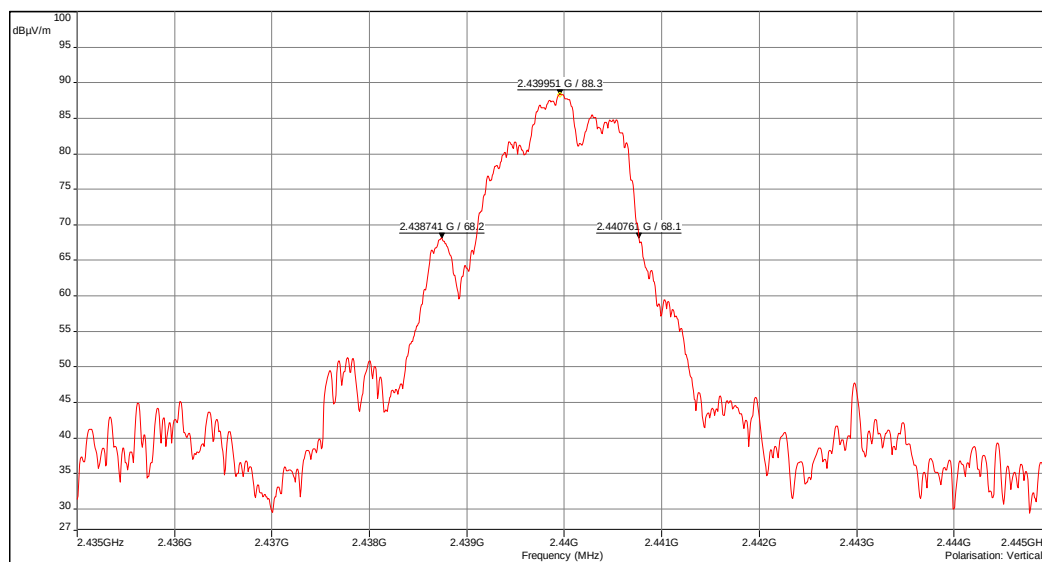
## Radiated electric emission (measurement)

EMI1719

### 20dB bandwidth/ middle channel / Sear coil Ø22

Frequency (MHz) : 2.435 GHz - 2.445 GHz (Analyzer mode)  
Settings: RBW: 100 kHz, VBW: 300 kHz, Holding time: 1 ms/Pt, sweep count 1  
Polarisation : Verticale  
Distance: 3 m

— Mes. Peak (Verticale)  
○ Peak/LimAvg (Verticale)



20dB bandwidth/ middle channel / Sear coil 22 - 02/28/2013 10:35 - 1719

Date: 28/02/2013 10:35:35

Technician: DM + RB

Class: Op of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hap): I

Modification(s) during test:

The 20dB bandwidth of fundamental is 2.02MHz (in RBW=100 kHz)

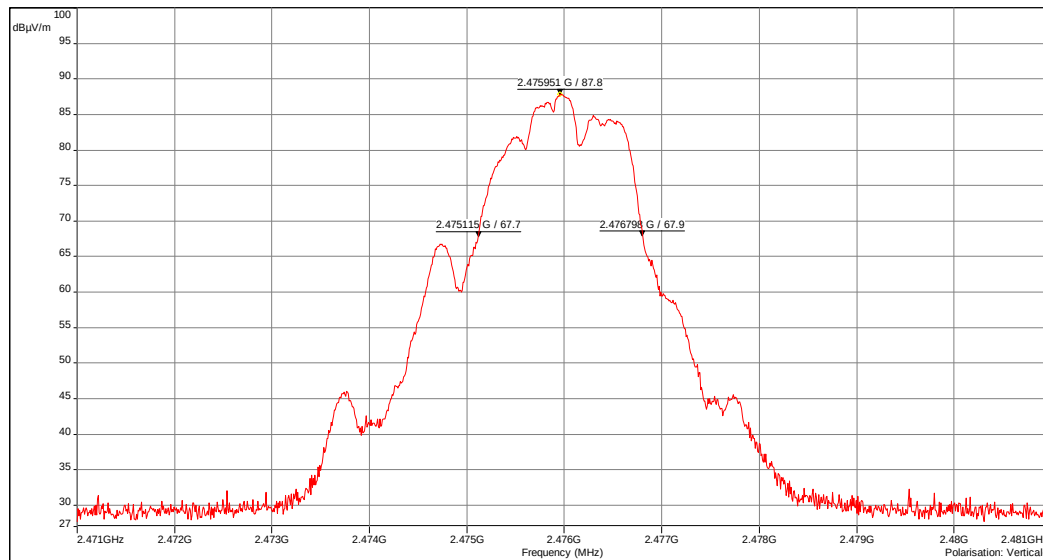
## Radiated electric emission (measurement)

EMI1720

## 20dB bandwidth/ high channel / Sear coil Ø22

Frequency (MHz) : 2.471 GHz - 2.481 GHz (Analyzer mode)  
 Settings: RBW: 100 kHz, VBW: 300 kHz, Holding time: 1 ms/Pt, sweep count 1  
 Polarisation : Verticale  
 Distance: 3 m

— Mes. Peak (Verticale)  
 ◊ Peak/LimAvg (Verticale)



Date: 28/02/2013 10:49:41

Technician: DM + RB

Class: Op of the standard

Detection:  
 Peak and average

T (°C): 24.1

H (%): 25

P (hap): /

Modification(s) during test:

The 20dB bandwidth of fundamental is 1.68MHz (in RBW=100 kHz)

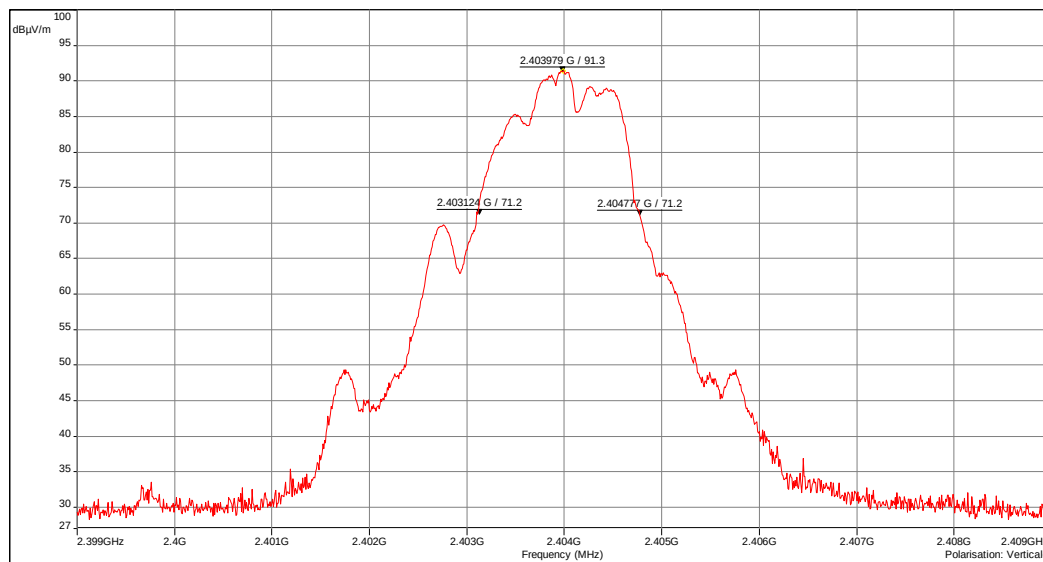
## Radiated electric emission (measurement)

EMI1743

### 20dB bandwidth/ low channel / Sear coil Ø28

Frequency (MHz) : 2.399 GHz - 2.409 GHz (Analyzer mode)  
Settings: RBW: 100 kHz, VBW: 300 kHz, Holding time: 1 ms/Pt, sweep count 1  
Polarisation : Verticale  
Distance: 3 m

— Mes. Peak (Verticale)  
○ Peak/LimAvg (Verticale)



20dB bandwidth/ low channel / Sear coil Ø28 - 02/28/2013 15:43 - 1743

Date: 28/02/2013 15:43:14

Technician: DM + RB

Class: Op of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hap): I

Modification(s) during test:

The 20dB bandwidth of fundamental is 1.65MHz (in RBW=100 kHz)

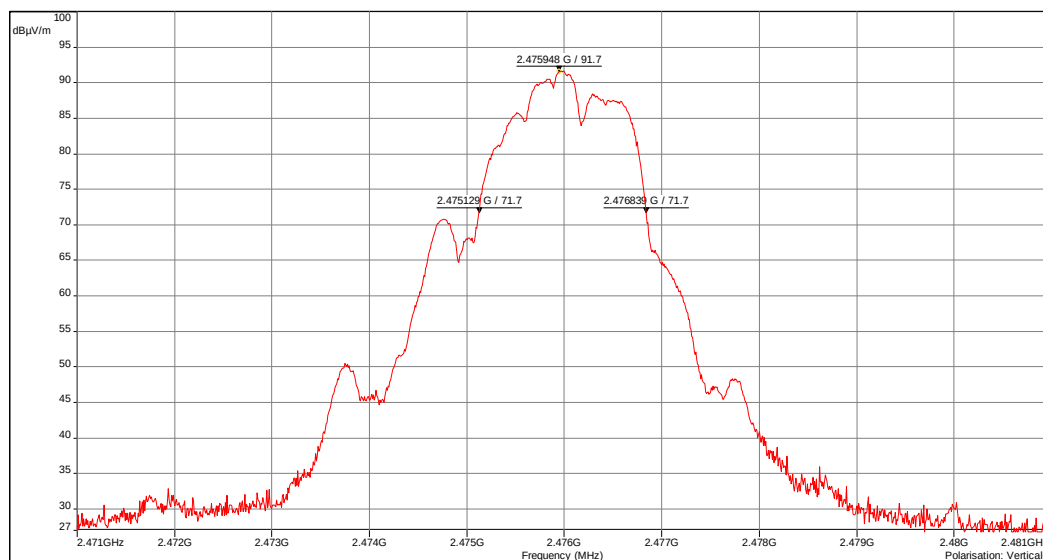
## Radiated electric emission (measurement)

EMI1745

### 20dB bandwidth/ high channel / Sear coil Ø28

Frequency (MHz) : 2.471 GHz - 2.481 GHz (Analyzer mode)  
Settings: RBW: 100 kHz, VBW: 300 kHz, Holding time: 1 ms/Pt, sweep count 1  
Polarisation : Verticale  
Distance: 3 m

— Mes. Peak (Verticale)  
○ Peak/LimAvg (Verticale)



20dB bandwidth/ high channel / Sear coil Ø28 - 02/28/2013 15:49 - 1745

Date: 28/02/2013 15:49:14

Technician: DM + RB

Class: Op of the standard

Detection:  
Peak and average

T (°C): 24.1

H (%): 25

P (hap): I

Modification(s) during test:

The 20dB bandwidth of fundamental is 1.71MHz (in RBW=100 kHz)

End of report – 1 annex to be forwarded

# ANNEX: PHOTOGRAPH(S)

EQUIPMENT UNDER TEST (E.U.T.) PHOTOGRAPH(S)

SEARCH COIL

Search coil Ø28



Search coil Ø22



Radiated emissions  
Search coil Ø28/34



Radiated emissions  
Search coil Ø22



Radiated emissions  
Search coil Ø28

