



PRODUCT SERVICE

ETS PRODUCT SERVICE AG

# TEST - REPORT

**FCC RULES PART 15 / SUBPART B  
IC RSS-GEN ISSUE 2**

**Test report no.:**

**G0M20709-0153-C-1**



**Certificate #1983.01**

ETS  
PRODUCT SERVICE AG

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### Annex A: Pictures and diagrams

# 1 General Information

## 1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

The tests were carried out and passed in accordance to the standards:

**FCC part 15**

**IC RSS-Gen Issue 2**

The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.

Furthermore, there is no guarantee that a test sample which has passed all the relevant tests conforms to a specification (only telecommunication products).

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.

The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that its performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.6.

The test report may only be reproduced or published in full.

Reproduction or publication of extracts from the report requires the prior written approval of the ETS PRODUCT SERVICE AG.

**Important Notes:**

Proper labeling is required for each device. Devices shall be labeled in accordance with labeling requirements pursuant to section 15.19 and section 2.1074 of the FCC rules and RSP100 of the IC-Canada specification.

Devices subject to a Declaration of Conformity shall be uniquely identified by the responsible party.

This identification shall not be of a format which could be confused with the FCC Identifier required on certified, notified type accepted or type approved equipment.

The responsible party shall maintain adequate identification records to facilitate positive identification for each device.

The user manual or instruction manual shall include also a warning statement that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**Reference Section 15.21**

Furthermore information to the user regarding to the interference potential of the device and about simple measures that can be taken to correct interference is required.

**Reference Section 15.105**

The responsible party must warrant that each unit of equipment marketed under a Declaration of Conformity is identical to the unit tested and found acceptable with the standards and that the records maintained by the responsible party continue to reflect the equipment being produced under the Declaration of Conformity within the variation that can be expected due to quantity production and testing on a statistical basis.

## 1.2 Tester

13.12.2007

A. Pflug



Date

ETS-Lab.

Name

Signature

Technical responsibility for area of testing:

13.12.2007

K. Damm



Date

ETS

Name

Signature

---

Registration number: G0M20709-0153-C-1

---

## 1.3 Testing laboratory

### 1.3.1 Location

ETS PRODUCT SERVICE AG

Storkower Strasse 38c

D- 15526 Reichenwalde

Germany

Telephone : + 49 33631 888 00

Telefax : + 49 33631 888 660

### 1.3.2 Details of accreditation status

#### ACCREDITED TESTING LABORATORY

DAR-REGISTRATION NUMBER: DAT-P-201/96

#### ACCREDITED NOTIFIED BODY EMC

BNetzA-Registration No.: BNetzA-BS EMV-7/61

#### ACCREDITED NOTIFIED BODY R&TTE

BNetzA-Registration number: BNetzA-BS-02/51-53

**FCC filed test laboratory** Reg. No. 96970

**A2LA Accredited Certification** #1983.01

Bluetooth Qualification Test Facility (BQTF)

Accredited by Bluetooth Qualification Review Board

**Industry Canada filed test laboratory** Reg. No. IC 3470A

### 1.3.3 Test location, where different

|           |       |
|-----------|-------|
| Name      | : ./. |
| Street    | : ./. |
| Town      | : ./. |
| Country   | : ./. |
| Telephone | : ./. |
| Fax       | : ./. |
| Teletex   | : ./. |

## 1.4 Details of applicant

Name : PIEPS GmbH  
Street : Frauentalerstraße 102  
Town : 8530 Deutschlandsberg  
Country : Österreich  
Telephone : +43 664 800 68 172  
  
Contact : Herr Michael Schober  
E-mail : schober.michael@pieps.com

## 1.5 Application details

Date of receipt of application : 13.09.2007  
Date of receipt of test item : 13.09.2007  
Date of test : 18.09.2007

## 1.6 Test item

### 1.6.1 Description of test item

Type of product : Receiver / signal strenght measurement equipment  
Type identification : PIEPS iProbe  
Serial number : without  
Photos : Please find in Appendix.  
Power supply : 1,5 V DC (battery)

### 1.6.2 Manufacturer (if different from applicant in point 1.4)

Name : PIEPS GmbH  
Street : Frauentalerstraße 102  
Town : 8530 Deutschlandsberg  
Country : Österreich  
  
Contact : Herr Rudolf Sackl  
Phone : +43 3462 26800 402

### 1.6.3 Frequency behavior

|                         |           |
|-------------------------|-----------|
| Highest clock Frequency | < 200 MHz |
|-------------------------|-----------|

## 1.7 Test standards

**FCC part 15**  
**IC RSS-Gen Issue 2**

## 2 Technical test

### 2.1 Summary of test results

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

or

The deviations as specified in 2.4 were ascertained in the course of the tests performed. ☐

### 2.2 Test environment

|                           |                      |
|---------------------------|----------------------|
| Temperature               | : 18 ... 25 °C       |
| Relative humidity content | : 20 ... 75 %        |
| Air pressure              | : 860 ... 1030 hPa   |
| Details of power supply   | : 1,5 V DC (battery) |
| Other parameters          | : ./.                |

### 2.3 Test equipment utilized

| No.      | Test Equipmen               | Type           | Manufacturer          |
|----------|-----------------------------|----------------|-----------------------|
| ETS 0001 | ESD Gun                     | SESD 30000     | Schlöder              |
| ETS 0008 | Antenna                     | Loop antenna   | Siemens               |
| ETS 0012 | Biconical Antenna           | HK 116         | R & S                 |
| ETS 0013 | LPD Antenna                 | HL 223         | R & S                 |
| ETS 0014 | Log Periodical Antenna      | HL 025         | R & S                 |
| ETS 0038 | RF amplifier                | 150L           | Amplifier Research    |
| ETS 0032 | Controller                  | HD 050         | Heinrich Deisel       |
| ETS 0039 | Absorbing clamp             | MDS 21         | R & S                 |
| ETS 0040 | Artificial Mains Network    | ESH3-Z5        | R & S                 |
| ETS 0041 | T-Artificial Mains Network  | ESH3-Z4        | R & S                 |
| ETS 0042 | Artificial Mains            | ESH3-Z6        | R & S                 |
| ETS 0045 | Vehicle LISN                | NNBM 8126D     | Schwarzbeck           |
| ETS 0052 | Audio analyzer              | UPA 4          | R & S                 |
| ETS 0056 | Ultra Compact Simulator     | UCS 500 M4     | EM Test               |
| ETS 0057 | Motor Variac                | MV 2616        | EM Test               |
| ETS 0058 | Capacitive coupling clamp   | E 502 B        | Keytek/ EMC           |
| ETS 0059 | Kikusui amplifier           | PCR 2000L      | Keytek/ EMC           |
| ETS 0064 | CDN IEC 61000-4-6           |                | Keytek/ EMC           |
| ETS 0066 | EM Injection Clamp          |                | FCC/ EMC              |
| ETS 0076 | Feeding bridge A            | SBA 1000       | ESP                   |
| ETS 0082 | PC system                   |                | Esotronic             |
| ETS 0085 | Shielded room               | SR 1           | Frankonia             |
| ETS 0086 | Semi-Anechoic chamber       | AC 1           | Frankonia             |
| ETS 0088 | Color TV pattern Generator  | PM 5518-TX VPS | Philips               |
| ETS 0092 | Power Amplifier             | 150W/1000      | AR Amplifier Research |
| ETS 0102 | CDN                         | M3-801/6       | MEB                   |
| ETS 0103 | Magnetic field test set     | MF1000         | EMC-Partner           |
| ETS 0148 | RF Current Probe            | F-65           | FCC                   |
| ETS 0155 | Signal Generator            | SMG            | R & S                 |
| ETS 0157 | TV and Sat-Signalgenerator  | VTG 700        | Grundig               |
| ETS 0161 | Harmonic / Flicker Analyzer | HFA 3000       | Schlöder              |
| ETS 0178 | Open area test side         | 10m            | ETS                   |
| ETS 0233 | Direction coupler           | RK 100         | MEB                   |
| ETS 0276 | Audio Analyzer              | UPL 16         | R & S                 |
| ETS 0282 | RF bridge 75 Ohm            | 86207 A        | HP                    |
| ETS 0287 | EMI Test receiver           | ESHS10         | R & S                 |
| ETS 0288 | Artificial mains            | ESH2-Z5        | R & S                 |
| ETS 0292 | RF Generator                | SMHU           | R & S                 |
| ETS 0348 | RF Millivolt meter          | URV 55         | R & S                 |
| ETS 0300 | RF amplifier                | 75 A 250       | Ar                    |
| ETS 0348 | RF Millivolt meter          | URV 55         | R & S                 |
| ETS 0401 | MPEG2 Generator             | DVG            | R & S                 |
| ETS 0402 | TV Messenger                | SFQ            | R & S                 |
| ETS 0409 | Stripline                   | DC220          | Schwarzbeck           |
| ETS 0428 | 4-WIRE ISN with B1          | ENY41          | R & S                 |
| ETS 0448 | RF Power Amplifier          | AR 60S1G3      | AR Amplifier Research |
| ETS 0472 | Antenna                     | BTA-H          | Frankonia             |
| ETS 0474 | EMI Test Receiver           | ESCS 30        | R&S                   |
| ETS 0485 | Radio Communication Tester  | CMU 200        | R&S                   |

## 2.4 Test results

☒ 1<sup>st</sup> test☐ test after modification☐ production test

| Test<br>Emission / Immunity |                    |                 |               | Done                                | Test<br>passed                      | Test<br>failed           |
|-----------------------------|--------------------|-----------------|---------------|-------------------------------------|-------------------------------------|--------------------------|
| Emission                    | Conducted Emission | FCC part 15.107 | RSS-Gen 7.2.2 | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> |
| Emission                    | Radiated Emission  | FCC part 15.109 | RSS-Gen 7.2.3 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

## 2.4.1 Conducted Emission

### 2.4.1.1 Test Equipment

- a) Artificial mains (ESH3-Z5)  
For your reference please find it in our test equipment list at page 9 as number: **40**.
- b) Artificial mains (ESH3-Z4)  
For your reference please find it in our test equipment list at page 9 as number: **41**.
- c) EMI test receiver ESCS-30  
For your reference please find it in our test equipment list at page 9 as number: **474**.
- d) Monitoring System  
For your reference please find it in our test equipment list at page 9 as number: **71**.
- e) Inter phone System  
For your reference please find it in our test equipment list at page 9 as number: **72**.
- f) Shielded room  
For your reference please find it in our test equipment list at page 9 as number: **85**.

### 2.4.1.2 Test Procedures

- Test configuration

The test configuration is contained inside of a shielded chamber and corresponds to the standard ANSI C.63.4: 2003. The equipment under test is placed in the facility on a wooden table 0.8m high. The equipment under test is connected with the artificial mains network (AMN) in a distance of 0,8m and also 0,8m from other subassembly and metallic area. The measurement receiver is placed in a special room adjacent to the chamber. The observation of the equipment under test is realized by 3 video cameras and by a microphone.

- Test parameters and marginal conditions

The tests are carried out with nominal impedance by  $50 \Omega / 50 \mu\text{H}$  of the AMN in a frequency range 150 kHz to 30 MHz. This measurement was transacted first with instrumentation using an average and peak detector and a 10 kHz bandwidth. If the peak detector achieves a calculated level, the measurement is repeated by an instrumentation using a quasi-peak detector, Further information please find in test report.

## 2.4.2 Spurious Emission

### 2.4.2.1 Test Equipment

- a) Antenna (HK116)  
For your reference please find it in our test equipment list at page 9 as number: **12.**
- b) Antenna (HL223)  
For your reference please find it in our test equipment list at page 9 as number: **13.**
- c) Video camera system  
For your reference please find it in our test equipment list at page 9 as number: **71.**
- d) Interphone System  
For your reference please find it in our test equipment list at page 9 as number: **72.**
- e) Semi anechoic chamber  
For your reference please find it in our test equipment list at page 9 as number: **86.**
- g) EMI test receiver ESCS-30  
For your reference please find it in our test equipment list at page 9 as number: **476.**

### 2.4.2.2 Test Procedures

- Test configuration

The test configuration corresponds to the standard ANSI C 63.4: 2003. The equipment under test is placed on a non metallic table with 0,8 m height. The power supply and the RF connection points are close to the equipment under test at the floor inside a connection box. The cables to this connection box are shielded and below the double floor. The receiving antenna is placed in a height at 1,0 to 4,0 m, in a distance of 10 m. The measurement receiver is placed in a special room. The observation of the equipment under test is realized by 3 video cameras and by a microphone.

- Test parameters and marginal conditions

The test are carried out with horizontal and vertical polarization of the antenna in a frequency range of 30 MHz to 5 000 MHz. Further information please find in the test protocol.

## 2.5 Test protocols

### Conducted Emission

# Emission

Standard : FCC part 15.107; RSS-Gen 7.2.2

Reg.-no. : G0M20709-0153-C-1

Device : PIEPS iProbe

Date : 13.12.2007

Operator : 

Class : B

| Frequency Range      | Limit<br>dB $\mu$ V |           | Passed                   | Failed                   | Number of<br>rechecks |
|----------------------|---------------------|-----------|--------------------------|--------------------------|-----------------------|
|                      | Quasi-<br>peak      | Average   |                          |                          |                       |
| 150 kHz - 500 kHz AC | 66 to 56*           | 56 to 46* | <input type="checkbox"/> | <input type="checkbox"/> | 0                     |
| 500 kHz - 5 MHz AC   | 56                  | 46        | <input type="checkbox"/> | <input type="checkbox"/> | 0                     |
| 5 MHz - 30 MHz AC    | 60                  | 50        | <input type="checkbox"/> | <input type="checkbox"/> | 0                     |

\* Decreases with logarithm of the frequency

Uncertainty:  $U_{\text{lab(cond)}} = 2,52 \text{ dB}$

Comment: not required.

**Radio Noise Field Strength****Emission**

Standard : FCC part 15.109; RSS-Gen 7.2.3

Reg.-no. : G0M20709-0153-C-1

Device : PIEPS iPROBE

Date : 13.12.2007

Operator :



Class : B

| Frequency Range Polarization | Limit<br>$\mu\text{V/m}$ | Passed                              | Failed                   | Number of<br>rechecks |
|------------------------------|--------------------------|-------------------------------------|--------------------------|-----------------------|
| 30 MHz - 88 MHz              | 90                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                     |
| 88 MHz - 216 MHz             | 150                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                     |
| 216 MHz - 960 MHz            | 210                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                     |
| 960 MHz - 5000 MHz           | 300                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                     |

Uncertainty:  $U_{\text{lab(rad)}} = 4,54 \text{ dB}$

Comment: Above 1 GHz no relevant disturbances  
See attached diagrams.

Registration number: G0M20709-0153-C-1

## 2.6 Equipment Modification

No modifications were installed by ETS PRODUCT SERVICE AG.

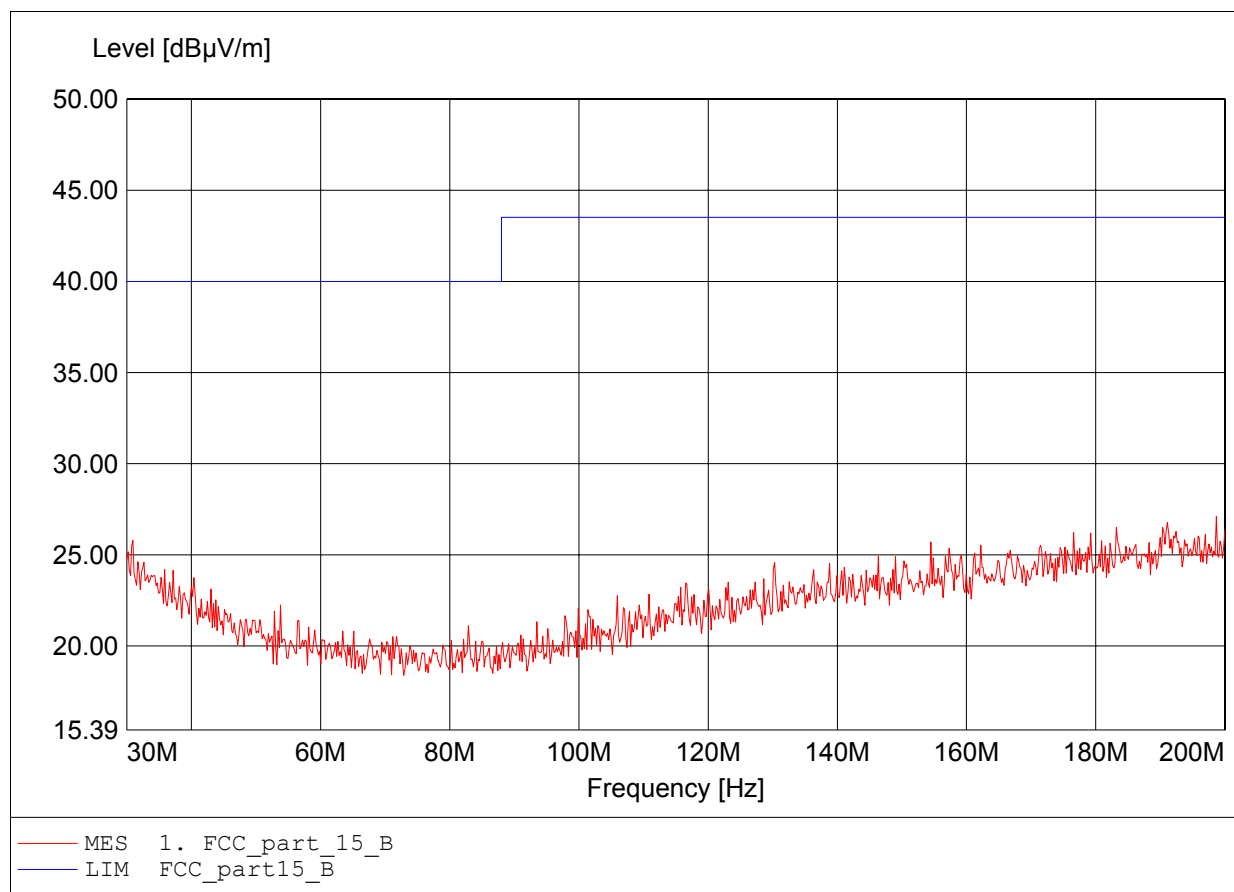
### 3 Normative references

- /1/ FCC part 15:  
Radio Frequency Devices
- /2/ CISPR 22: 1997 + Corrigendum: +A1: 2000 + A2: 2003  
Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- /3/ ANSI C 63.4: 2003  
American National Standard for Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
- /4/ IC RSS-Gen Issue 2  
General Requirements and Information for the Certification of Radio communication Equipment

## Field Strength under normal conditions

### FCC RULES PART 15, SUBPART B

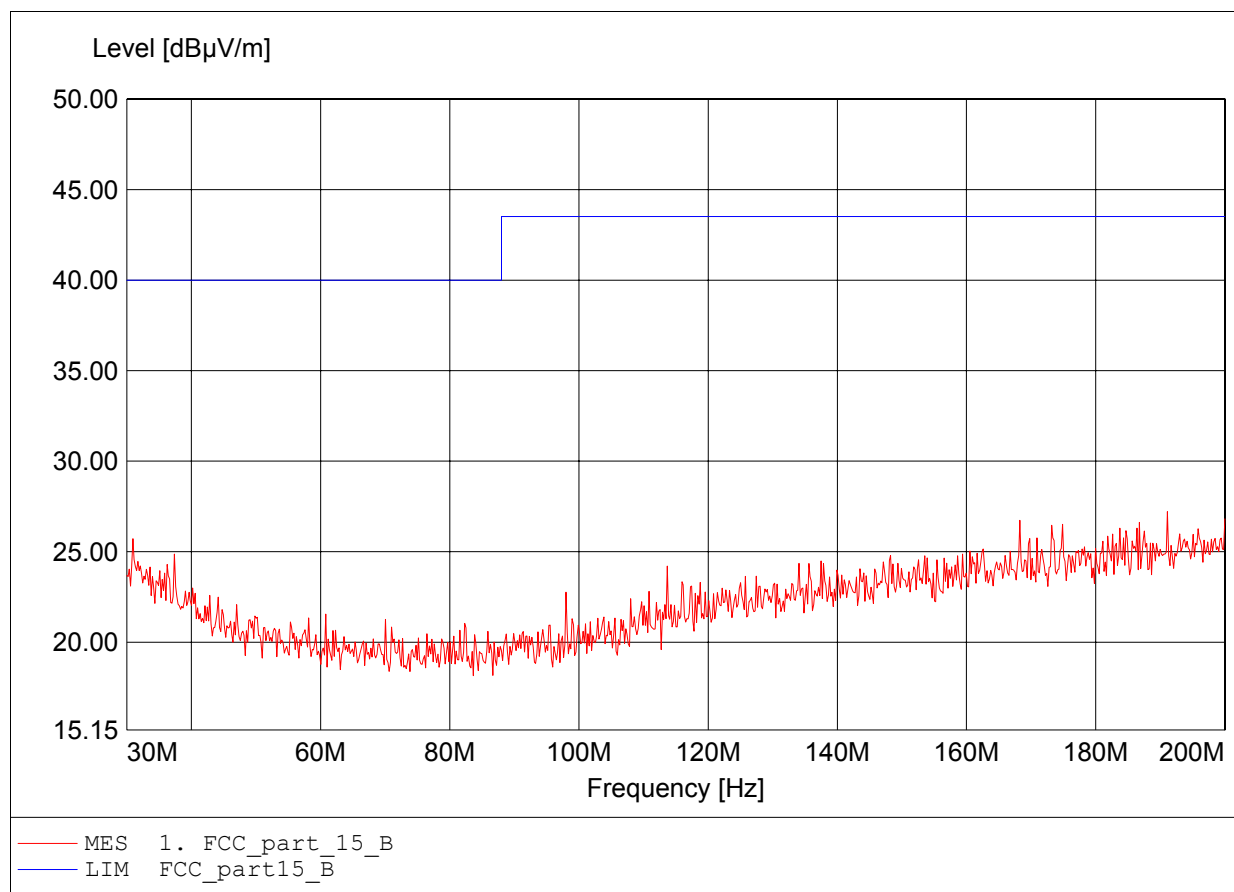
Approval Holder: Pieps GmbH  
EUT : Avalanche Receiver  
Model: PIEPS DSP / SONDE  
Operator: ETS / Mr. Meng  
Test Conditions: 25°C / Unom.: 1,5 V DC (Battery)  
Test Specification: according to §15109  
Comment 1: Dist.: 3m, Ant.: HK 116  
Comment 2: Freq:198.678MHz Emax:27.12dBµV/m RBW: 100 kHz



## Field Strength under normal conditions

### FCC RULES PART 15, SUBPART B

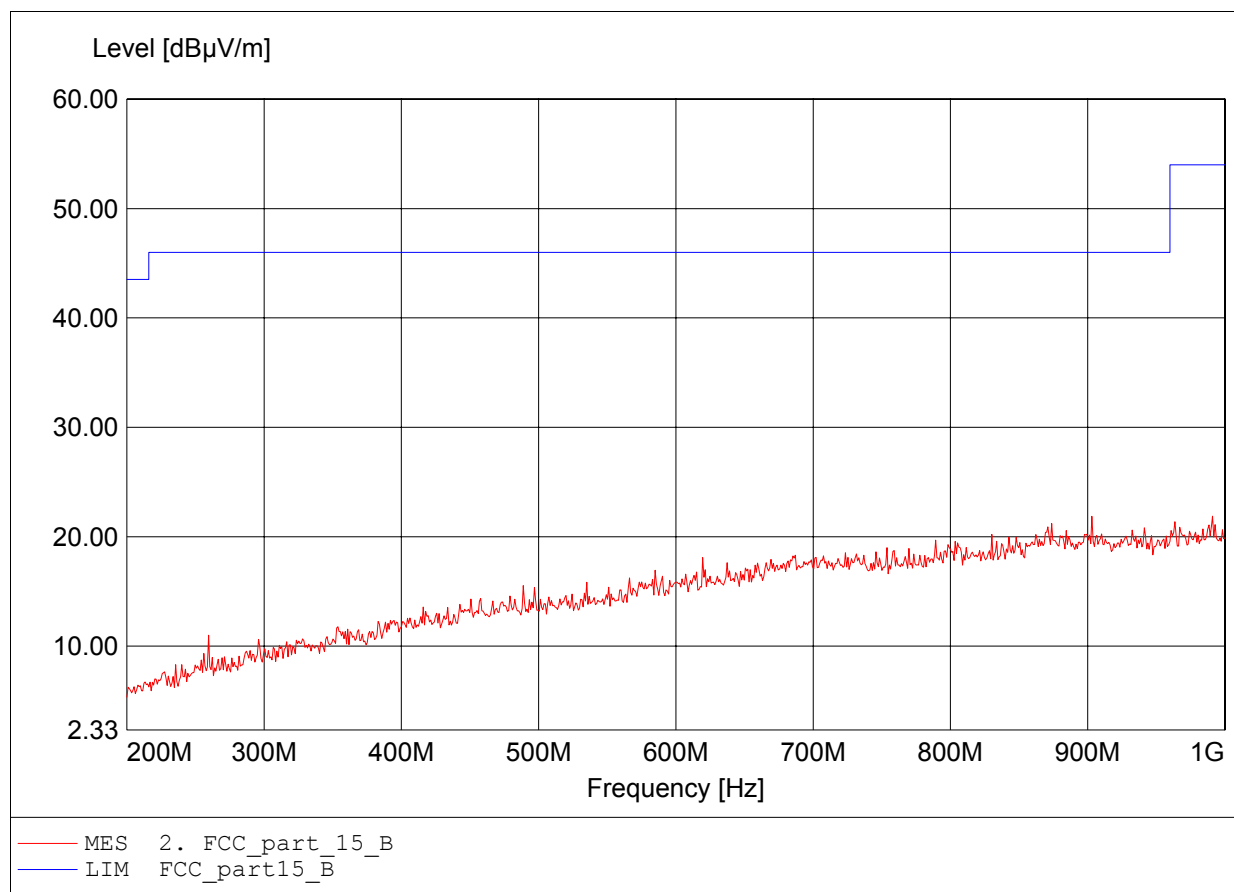
Approval Holder: Pieps GmbH  
EUT : Avalanche Receiver  
Model: PIEPS DSP / SONDE  
Operator: ETS / Mr. Meng  
Test Conditions: 25°C / Unom.: 1,5 V DC (Battery)  
Test Specification: according to §15109  
Comment 1: Dist.: 3m, Ant.: HK 116  
Comment 2: Freq:191.122MHz Emax:27.21dBµV/m RBW: 100 kHz



## Field Strength under normal conditions

### FCC RULES PART 15, SUBPART B

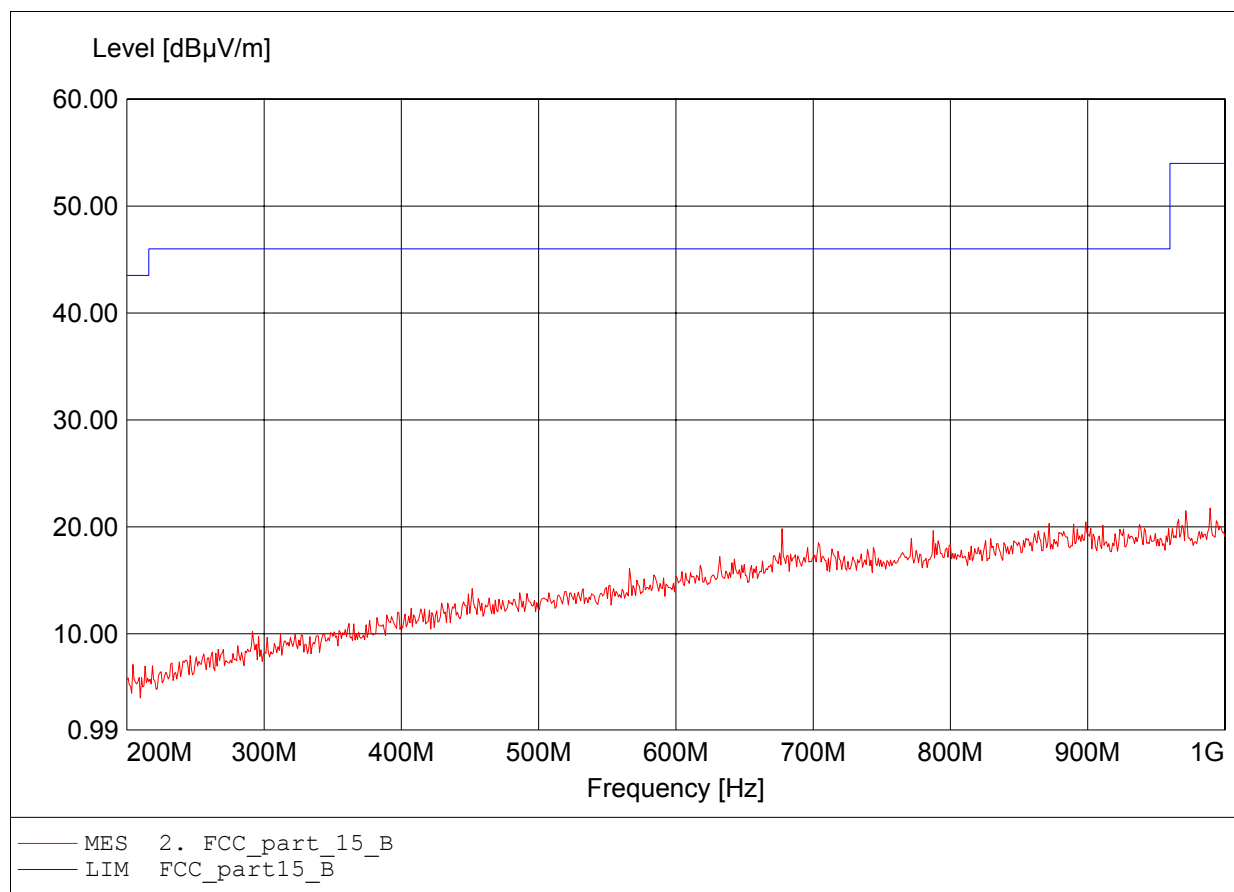
Approval Holder: Pieps GmbH  
EUT : Avalanche Receiver  
Model: PIEPS DSP / SONDE  
Operator: ETS / Mr. Meng  
Test Conditions: 25°C / Unom.: 1,5 V DC (Battery)  
Test Specification: according to §15109  
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.  
Comment 2: Freq:991.111MHz Emax:21.88dBμV/m RBW: 100 kHz



## Field Strength under normal conditions

### FCC RULES PART 15, SUBPART B

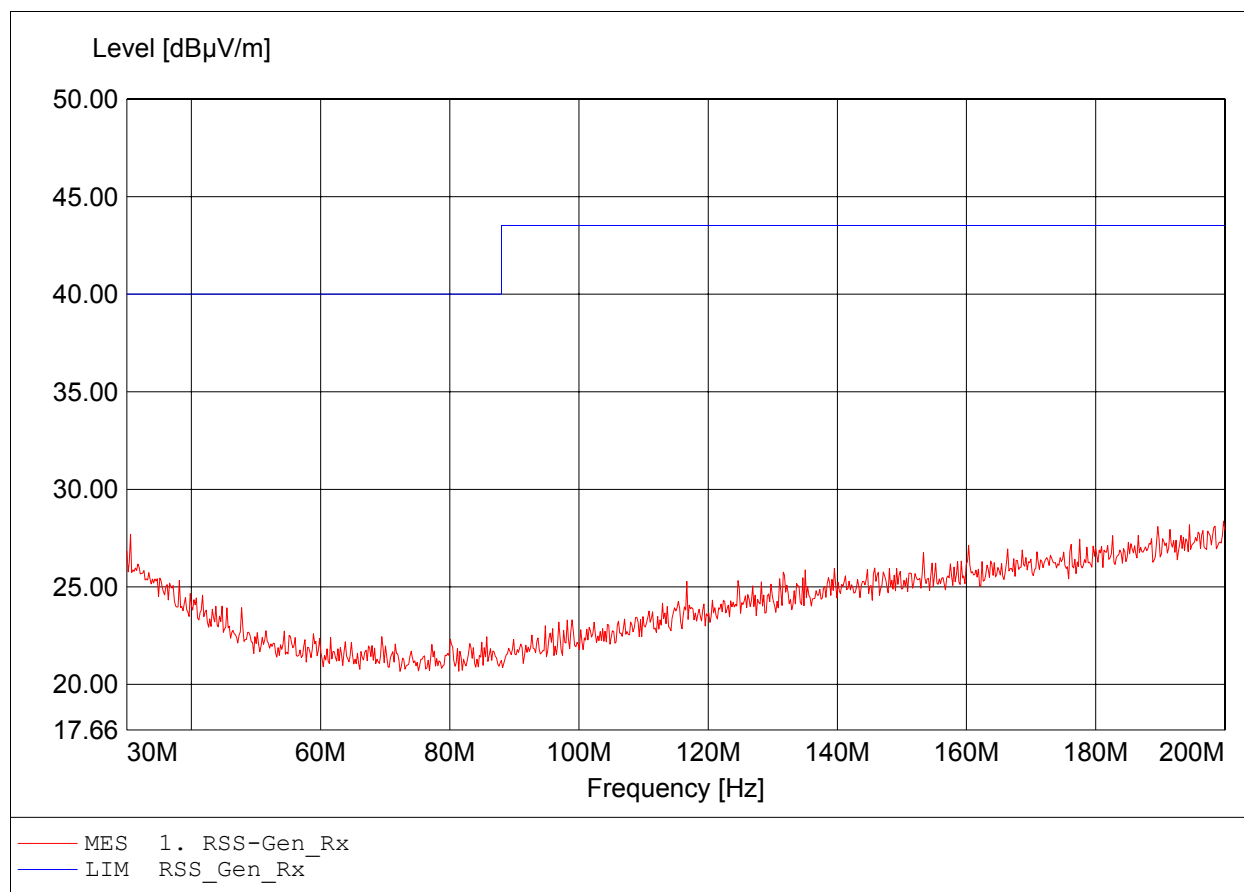
Approval Holder: Pieps GmbH  
EUT : Avalanche Receiver  
Model: PIEPS DSP / SONDE  
Operator: ETS / Mr. Meng  
Test Conditions: 25°C / Unom.: 1,5 V DC (Battery)  
Test Specification: according to §15109  
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.  
Comment 2: Freq:989.333MHz Emax:21.75dBµV/m RBW: 100 kHz



## Field Strength under normal conditions

### Standards Industry Canada, RSS-GEN

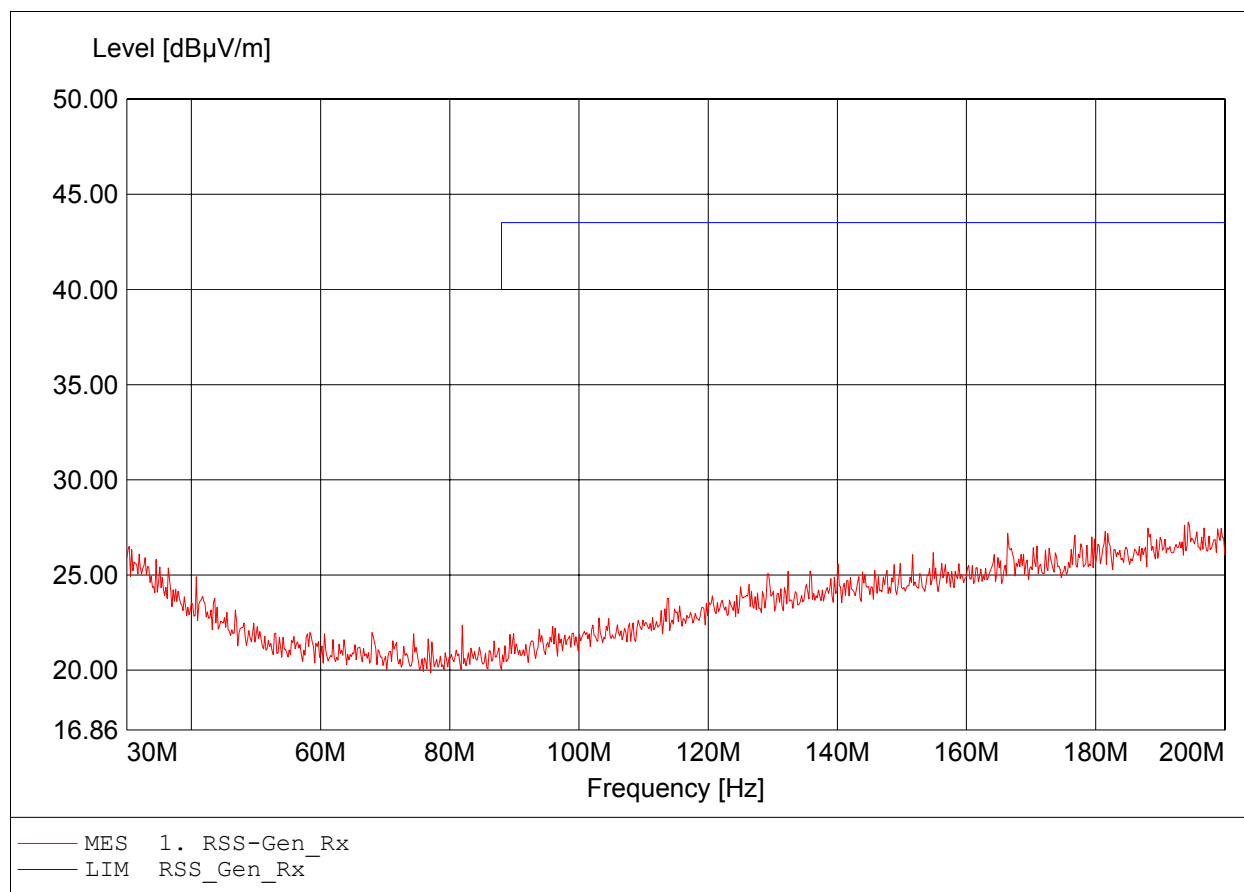
Approval Holder: Pieps GmbH  
EUT : Avalanche Receiver  
Model: PIEPS DSP / SONDE  
Operator: ETS / Mr. Meng  
Test Conditions: 25°C / Unom.: 1,5 V DC (Battery)  
Test Specification: according to RSS-Gen  
Comment 1: Dist.: 3m, Ant.: HK 116  
Comment 2: Freq:199.811MHz Emax:28.37dBµV/m RBW: 100 kHz



## Field Strength under normal conditions

### Standards Industry Canada, RSS-GEN

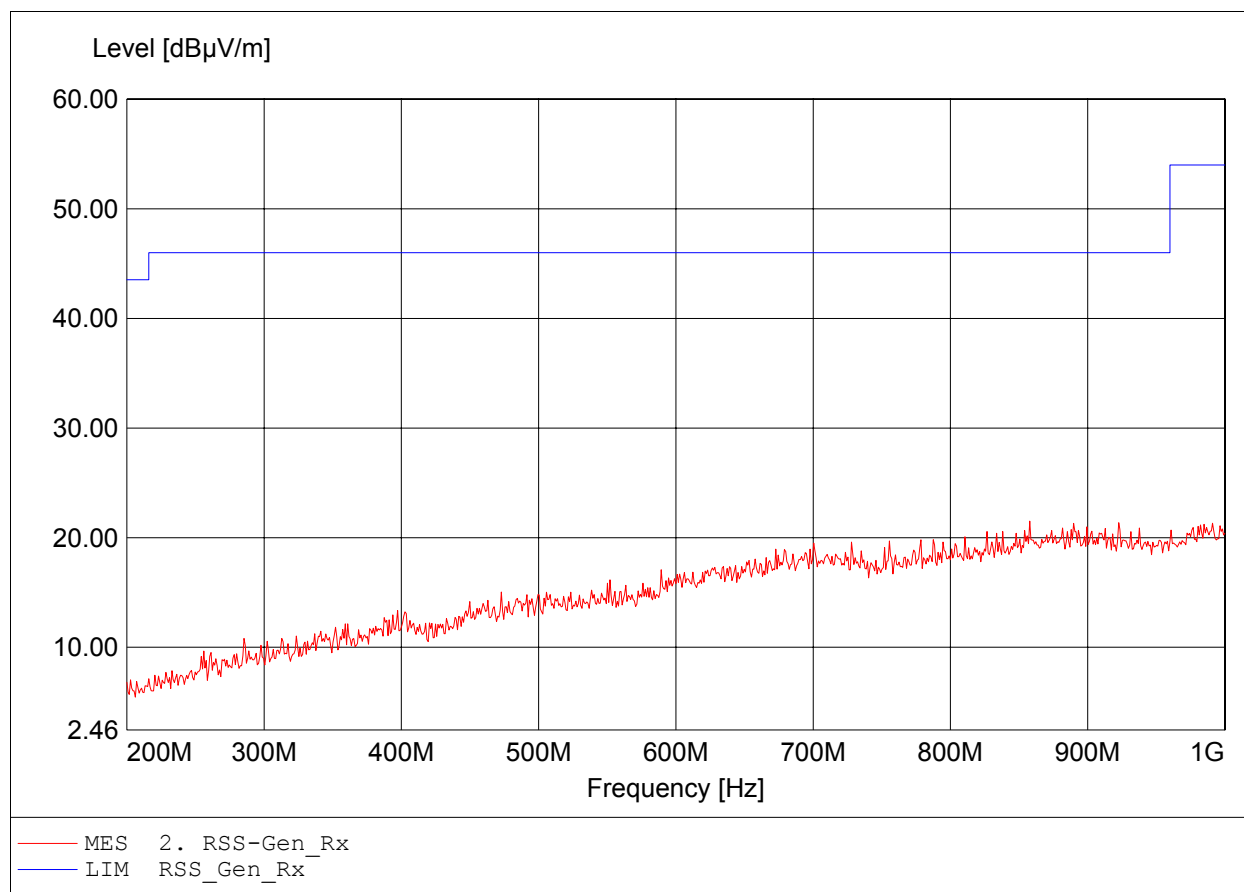
Approval Holder: Pieps GmbH  
EUT : Avalanche Receiver  
Model: PIEPS DSP / SONDE  
Operator: ETS / Mr. Meng  
Test Conditions: 25°C / Unom.: 1,5 V DC (Battery)  
Test Specification: according to RSS-Gen  
Comment 1: Dist.: 3m, Ant.: HK 116  
Comment 2: Freq:194.333MHz Emax:27.79dBµV/m RBW: 100 kHz



## Field Strength under normal conditions

### Standards Industry Canada, RSS-GEN

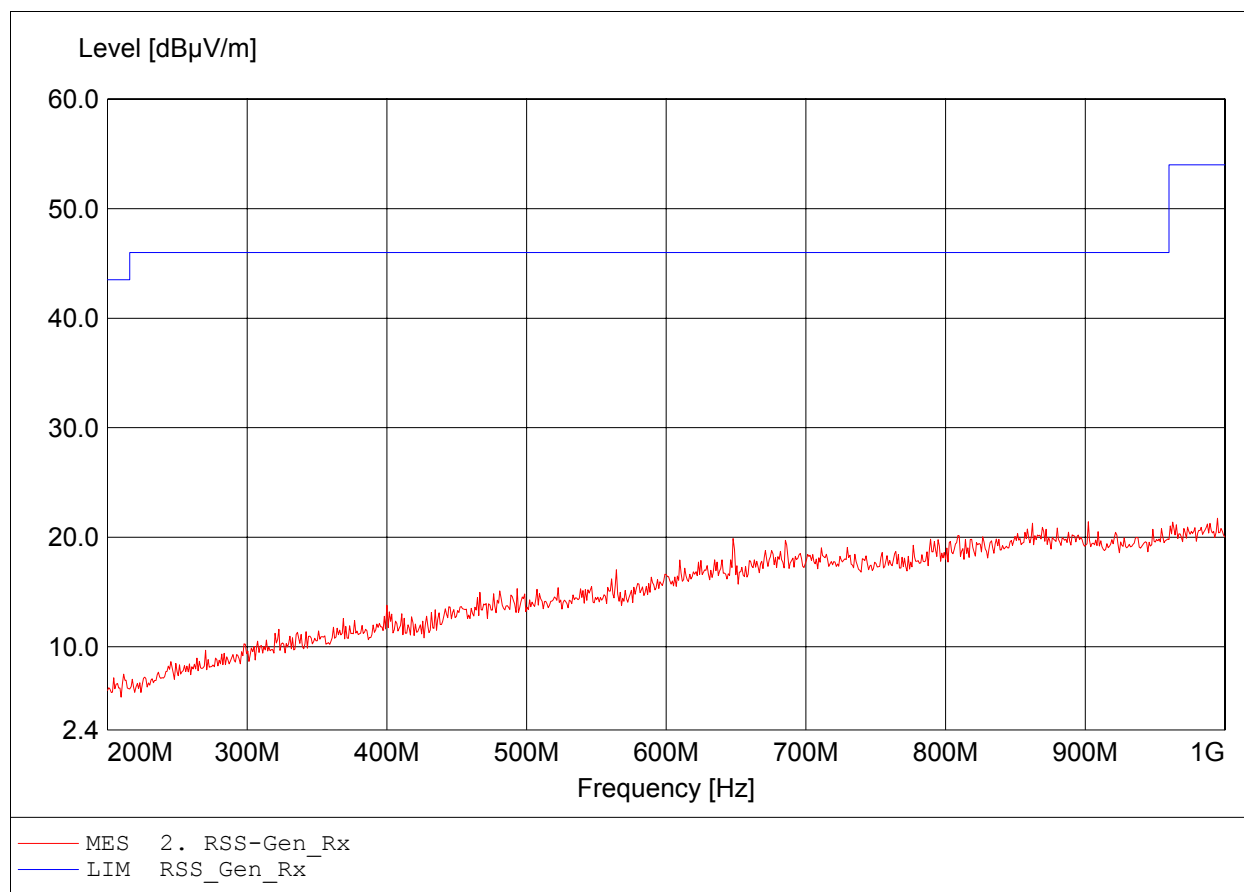
Approval Holder: Pieps GmbH  
EUT : Avalanche Receiver  
Model: PIEPS DSP / SONDE  
Operator: ETS / Mr. Meng  
Test Conditions: 25°C / Unom.: 1,5 V DC (Battery)  
Test Specification: according to RSS-Gen  
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.  
Comment 2: Freq:857.778MHz Emax:21.52dBμV/m RBW: 100 kHz



## Field Strength under normal conditions

### Standards Industry Canada, RSS-GEN

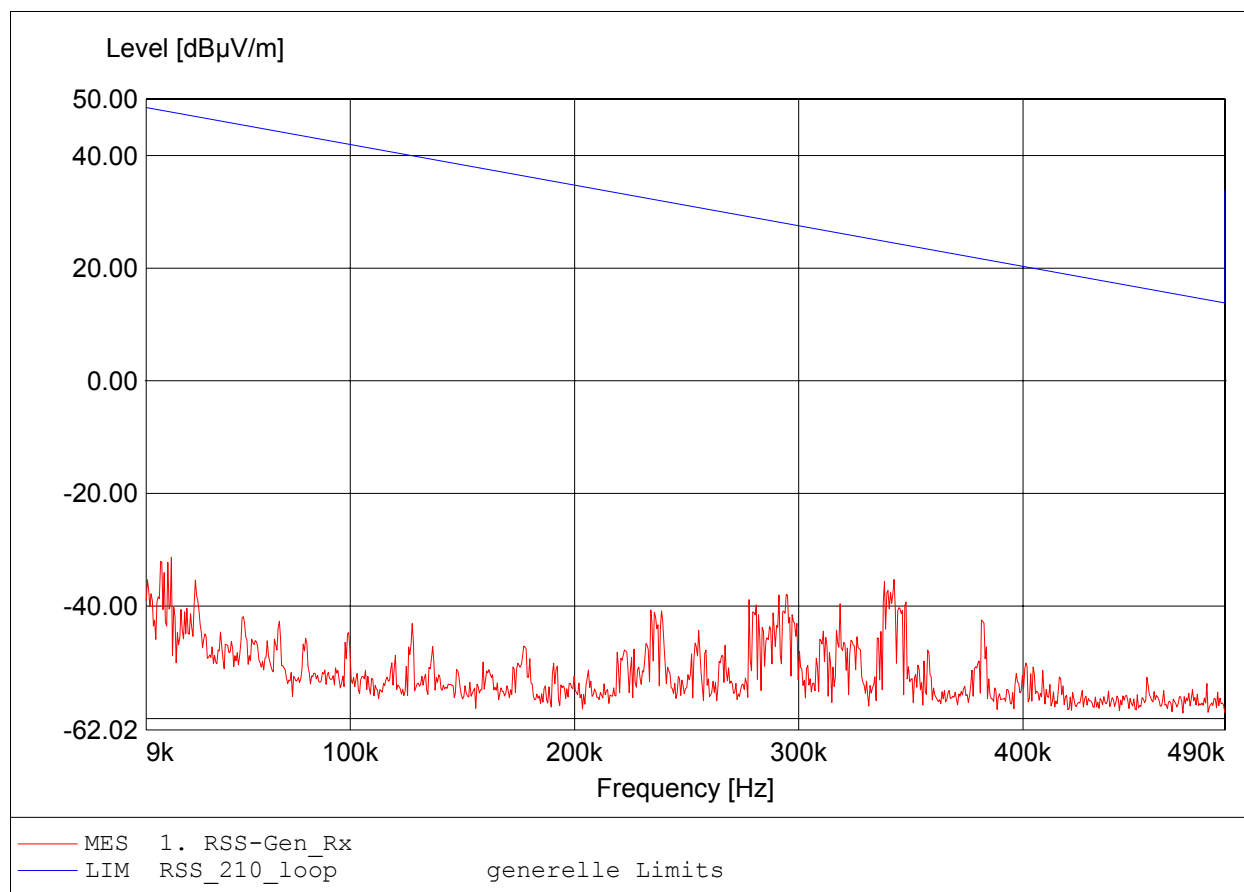
Approval Holder: Pieps GmbH  
EUT : Avalanche Receiver  
Model: PIEPS DSP / SONDE  
Operator: ETS / Mr. Meng  
Test Conditions: 25°C / Unom.: 1,5 V DC (Battery)  
Test Specification: according to RSS-Gen  
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.  
Comment 2: Freq:994.667MHz Emax:21.74dBµV/m RBW: 100 kHz



## Field Strength under normal conditions

### Standards Industry Canada, RSS-GEN

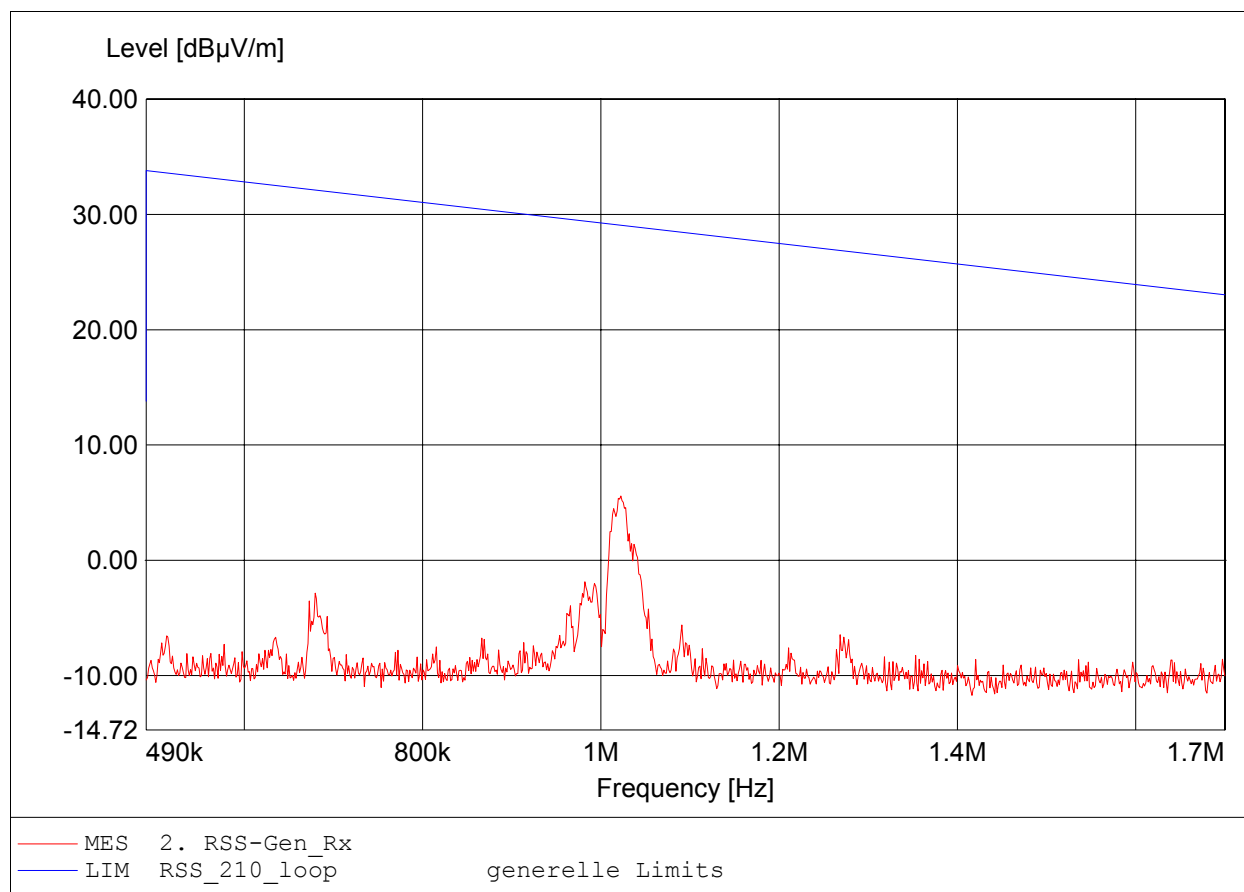
Approval Holder: Pieps GmbH  
EUT : Avalanche Receiver  
Model: PIEPS DSP / SONDE  
Operator: ETS / Mr. Meng  
Test Conditions: 25°C / Unom.: 1,5 V DC (Battery)  
Test Specification: according to RSS-Gen  
Comment 1: Dist.: 10m, Ant.: HFH2-Z2  
Comment 2: Freq:20.223kHz Emax:-31.35dBµV/m RBW: 200 Hz



## Field Strength under normal conditions

### Standards Industry Canada, RSS-GEN

Approval Holder: Pieps GmbH  
EUT : Avalanche Receiver  
Model: PIEPS DSP / SONDE  
Operator: ETS / Mr. Meng  
Test Conditions: 25°C / Unom.: 1,5 V DC (Battery)  
Test Specification: according to RSS-Gen  
Comment 1: Dist.: 10m, Ant.: HFH2-Z2  
Comment 2: Freq:1.022MHz Emax:5.58dBµV/m RBW: 10 kHz



**Field Strength under normal conditions**

**Standards Industry Canada, RSS-GEN**

Approval Holder: Pieps GmbH  
EUT : Avalanche Receiver  
Model: PIEPS DSP / SONDE  
Operator: ETS / Mr. Meng  
Test Conditions: 25°C / Unom.: 1,5 V DC (Battery)  
Test Specification: according to RSS-210, peak detector  
Comment 1: Dist.: 10m, Ant.: HFH2-Z2  
Comment 2: Freq:3.178MHz Emax:-4.98dBµV/m RBW: 10 kHz

