

TEST REPORT

Test Report Reference: R50476_A Edition 1

Equipment under Test: APR400 / BiTech BHI

Serial Number: 7140101001

Applicant: deister electronic GmbH

Manufacturer: deister electronic GmbH

**Test Laboratory
(CAB)
accredited by
DATech e.V.
in compliance with DIN EN ISO/IEC 17025
under the
Reg. No. DAT-P-105/99-21
and listed by
FCC 31040/SIT1300F2**

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1 IDENTIFICATION

1.1 APPLICANT

| | |
|----------------------------|---|
| Name: | deister electronic GmbH |
| Address: | Hermann-Bahlsen-Straße 11 – 13 30890 Barsinghausen |
| Country: | Germany |
| Name for contact purposes: | Mr. Stefan Eichler |
| Tel: | +49 51 05 516-129 |
| Fax: | +49 51 05 516-266 |
| e-mail address: | eichler@deister-gmbh.de |

1.2 MANUFACTURER

| | |
|----------------------------|---|
| Name: | deister electronic GmbH |
| Address: | Hermann-Bahlsen-Straße 11 – 13 30890 Barsinghausen |
| Country: | Germany |
| Name for contact purposes: | Mr. Stefan Eichler |
| Tel: | +49 51 05 516-129 |
| Fax: | +49 51 05 516-266 |
| e-mail address: | eichler@deister-gmbh.de |

1.3 DATES



| | |
|---------------------------------|------------------|
| Date of receipt of test sample: | 21 February 2005 |
| Start of test: | 08 March 2005 |
| End of test: | 08 March 2005 |

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1.4 TEST LABORATORY

The tests were carried out at: **PHOENIX TESTLAB GmbH**
Königswinkel 10
D-32825 Blomberg **Phone: +49 (0) 52 35 / 95 00-0**
Germany **Fax: +49 (0) 52 35 / 95 00-10**

accredited by DATech e.V. in compliance with DIN EN ISO/IEC 17025 under Reg. No. DAT-P-105/99-21 and listed by FCC 31040/SIT1300F2.

| | | | |
|----------------------|---------------|--|---------------|
| Test engineer: | Thomas KÜHN |  | 26 April 2005 |
| | Name | Signature | Date |
| Test report checked: | Bernd STEINER |  | 26 April 2005 |
| | Name | Signature | Date |

PHOENIX TESTLAB GmbH
Königswinkel 10
32825 Blomberg
Tel. 0 52 35 / 95 00-0
Fax 0 52 35 / 95 00-10

Stamp

1.5 RESERVATION

This test report is only valid in its original form.

Any reproduction of its contents without written permission of the accredited test laboratory PHOENIX TESTLAB GmbH is prohibited.

The test results herein refer only to the tested sample. PHOENIX TESTLAB GmbH is not responsible for any generalisations or conclusions drawn from these test results concerning further samples. Any modification of the tested samples is prohibited and leads to the invalidity of this test report. Each page necessarily contains the PHOENIX TESTLAB Logo and the TEST REPORT REFERENCE.

1.6 NORMATIVE REFERENCES

- [1] **ANSI C63.4-2003** American National Standard for Methods of Measuring of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
- [2] **FCC 47 CFR Part 15 (January 2005)** Radio Frequency Devices

1.7 TEST RESULTS

The requirements of this test document are fulfilled by the equipment under test. The complete test results are presented in the following.

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2 TECHNICAL DATA OF EQUIPMENT

2.1 DEVICE UNDER TEST

| | |
|-----------------------------|---------------------|
| Type of equipment: | 134.2 kHz Reader |
| Type designation: | APR400 / BiTech BHI |
| Serial No.: | 7140101001 |
| Highest internal frequency: | 15.56 MHz |
| Antenna type: | Integral |

The following external I/O cables were used:

No cables can be connected to the EUT.

2.2 PEREPHERY DEVICES

The following equipment was used as control unit and ancillary equipment:

During all measurements the EUT was reading a 134.2 kHz transponder chip.

2.3 SPECIAL EMC MEASURES

The following EMC measures were necessary to reach the documented results:

None

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3 OPERATIONAL STATES AND PHYSICAL BOUNDARIES

During all tests the EUT was supplied by the internal batteries (two batteries AA type).

If not otherwise stated, the tests were carried out with the EUT in the in the following operation mode:
Fixed field operation on 134.2 kHz and placing a passive 134.2 kHz TAG in front of the EUT.

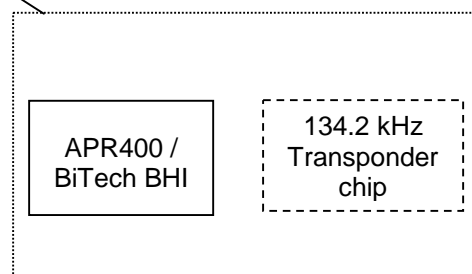
For the whole frequency range a preliminary measurement in a fully anechoic chamber with a measuring distance of 3 m was carried out to determine the frequencies, which were radiated by the EUT.

The final measurements on the detected frequencies were carried out on an outdoor test site without ground plane (for the frequency range 9 kHz to 30 MHz) and on an open area test site with ground plane (for the frequency range 30 MHz to 1 GHz).

During the tests, the EUT was not labelled with a FCC-label.

The physical boundaries of the Equipment Under Test are shown below.

Physical boundary of the EUT



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4 LIST OF TEST MODULES

4.1 EMISSION

| Radiated emissions FCC 47 CFR Part 15 section 15.209 [2] | | | | | |
|--|--|---|-----------------------|--------|--------|
| Application | Frequency range | Limits (microvolts/meter) | Reference standard | Remark | Status |
| Intentional radiator | 0.009 to 0.49 MHz 0.490 to 1.705 MHz 1.705 to 30.0 MHz 30 to 88 MHz 88 to 216 MHz 216 to 960 MHz 960 to 1000 MHz | 2400/f(kHz) at 300 m 24000/f(kHz) at 30 m 30.0 dB μ V/m at 30 m 40.0 dB μ V/m at 3 m 43.5 dB μ V/m at 3 m 46.0 dB μ V/m at 3 m 54.0 dB μ V/m at 3 m | ANSI C63.4 (2003) | - | Passed |

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5 METHOD OF MEASUREMENT

5.1 RADIATED EMISSIONS 9 kHz to 30 MHz

The radiated emission measurement is divided into two stages.

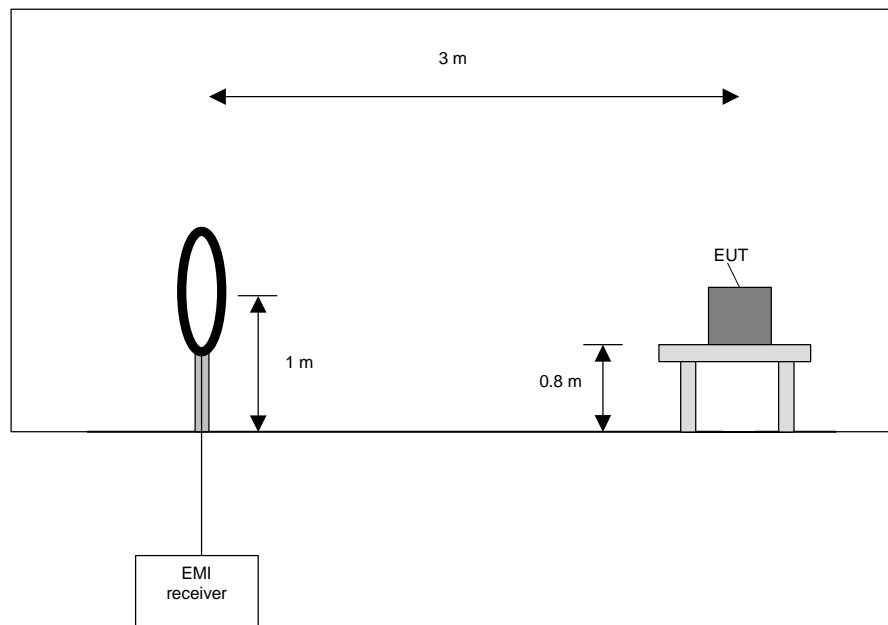
Preliminary measurement:

In the first stage a preliminary measurement will be performed in a shielded room with a measuring distance of 3 meters. Tabletop devices will set up on a non-conducting support with a size of 1 m by 1.5 m and a height of 80 cm. Floor-standing devices will be placed directly on the turntable/ground plane. The set up of the Equipment under test will be in accordance to ANSI C63.4-2003 [1].

The frequency range 9 kHz to 30 MHz will be monitored with a spectrum analyser while the system and its cables will be manipulated to find out the configuration with the maximum emission levels if applicable. The EMI Receiver will be set to MAX Hold mode. The EUT and the measuring antenna will be rotated around their vertical axis to found the maximum emissions.

The resolution bandwidth of the spectrum analyser will be set to the following values:

| Frequency range | Resolution bandwidth |
|-------------------|----------------------|
| 9 kHz to 150 kHz | 200 Hz |
| 150 kHz to 30 MHz | 10 kHz |



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Preliminary measurement procedure:

Prescans were performed in the frequency range 9 kHz to 150 kHz and 150 kHz to 30 MHz.

The following procedure will be used:

- 1) Monitor the frequency range at horizontal polarisation and a EUT azimuth of 0 °.
- 2) Manipulate the system cables within the range to produce the maximum level of emission.
- 3) Rotate the EUT by 360 ° to maximize the detected signals.
- 4) Make a hardcopy of the spectrum.
- 5) Measure the frequencies of highest detected emission with a lower span and resolution bandwidth to increase the accuracy and note the frequency value.
- 6) Repeat steps 1) to 4) with the other orthogonal axes of the EUT.
- 7) Rotate the measuring antenna and repeat steps 1) to 5).

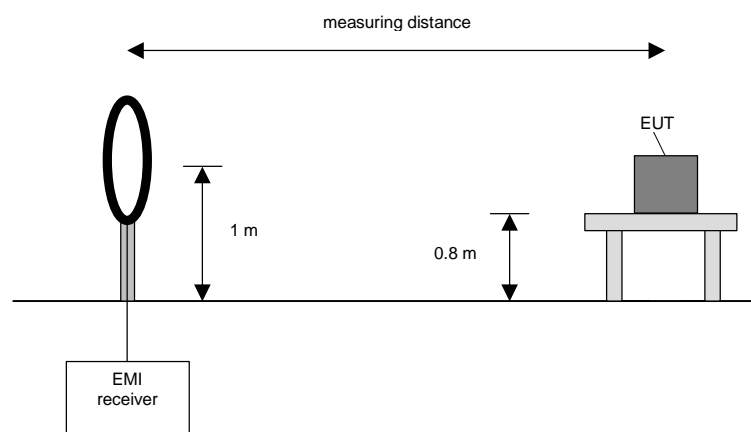
Final measurement:

In the second stage a final measurement will be performed on an open area test site with no conducting ground plane in a measuring distances of 3 m, 10 m and 30 m. In the case where larger measuring distances are required the results will be extrapolated based on the values measured on the closer distances according to Section 15.31 (f) (2) [2]. The final measurement will be performed with a EMI Receiver set to Quasi Peak detector except for the frequency bands 9 kHz to 90 kHz and 110 kHz to 490 kHz where an average detector will be used according Section 15.209 (d) [2].

On the during the preliminary measurement detected frequencies the final measurement will be performed while rotating the EUT and the measuring antenna in the range of 0 ° to 360 ° around their vertical axis until the maximum value is found.

The resolution bandwidth of the EMI Receiver will be set to the following values:

| Frequency range | Resolution bandwidth |
|-------------------|----------------------|
| 9 kHz to 150 kHz | 200 Hz |
| 150 kHz to 30 MHz | 9 kHz |



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Final measurement procedure:

The following procedure will be used:

- 1) Monitor the frequency range with the measuring antenna at vertical orientation parallel to the EUT at an azimuth of 0 °.
- 2) Rotate the EUT by 360 ° to maximize the detected signals and note the azimuth and orientation.
- 3) Rotate the measuring antenna to find the maximum and note the value.
- 4) Rotate the measuring antenna and repeat steps 1) to 3) until the maximum value is found.
- 5) Repeat steps 1) to 4) with the other orthogonal axes of the EUT if applicable (handheld equipment).

5.2 RADIATED EMISSIONS 30 MHz to 1 GHz

The radiated emission measurement is divided into two stages.

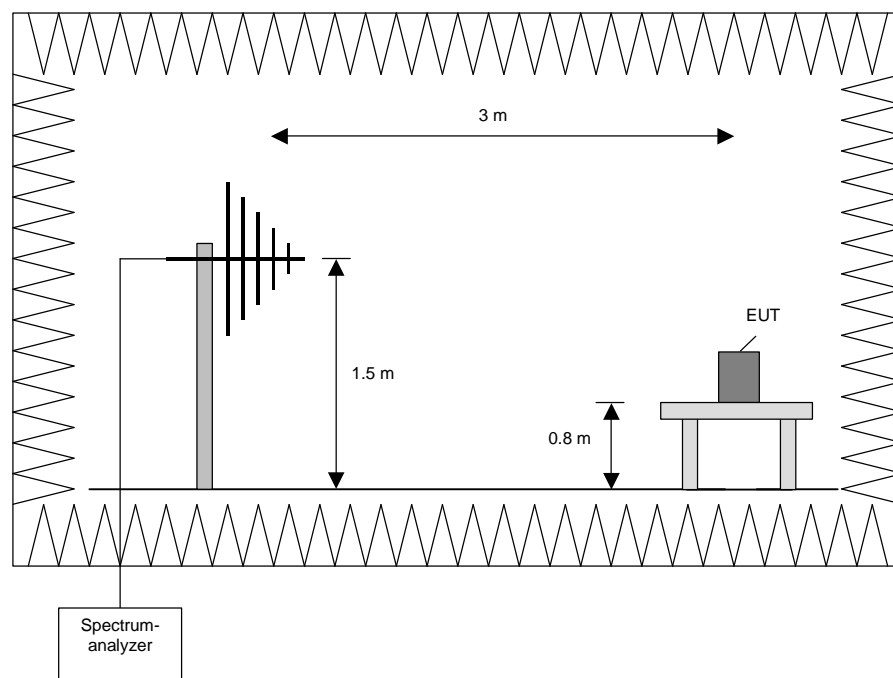
Preliminary measurement:

In the first stage a preliminary measurement will be performed in a fully anechoic chamber with a measuring distance of 3 meter. Tabletop devices will set up on a non-conducting support with a size of 1 m by 1.5 m and a height of 80 cm. Floor-standing devices will be placed directly on the turntable/ground plane. The set up of the Equipment under test will be in accordance to ANSI C63.4-2003 [1].

The frequency range 30 MHz to 1 GHz will be measured with an EMI Receiver set to MAX Hold mode and a resolution bandwidth of 100 kHz. The measurement will be performed in horizontal and vertical polarisation of the measuring antenna and while rotating the EUT in its vertical axis in the range of 0 ° to 360 °.

The resolution bandwidth of the EMI Receiver will be set to the following values:

| Frequency range | Resolution bandwidth |
|-----------------|----------------------|
| 30 MHz to 1 GHz | 100 kHz |



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Procedure preliminary measurement:

Prescans were performed in the frequency range 30 MHz to 230 MHz and 230 MHz to 1 GHz.
The following procedure will be used:

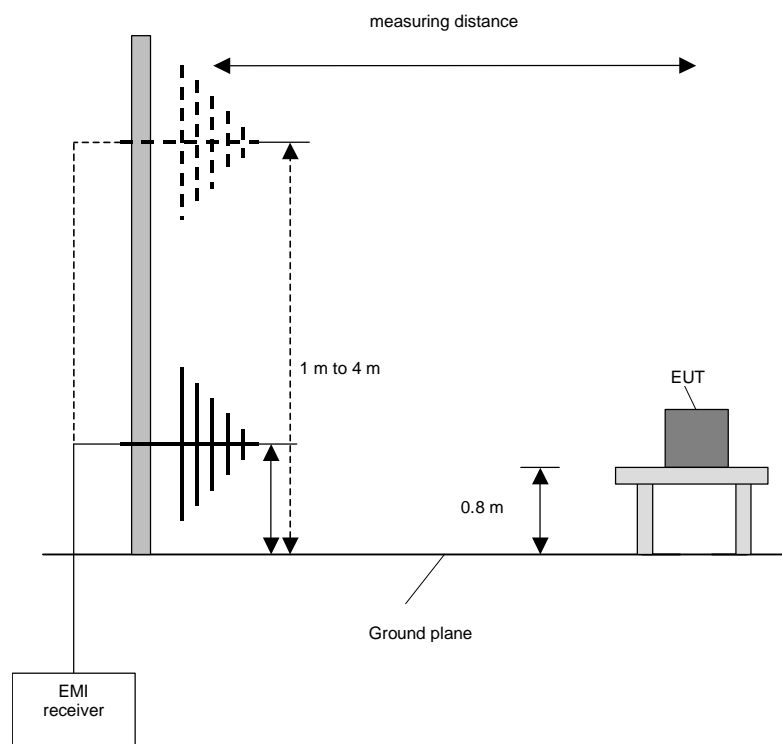
1. Monitor the frequency range at horizontal polarisation and a EUT azimuth of 0 °.
2. Manipulate the system cables within the range to produce the maximum level of emission.
3. Rotate the EUT by 360 ° to maximize the detected signals.
4. Make a hardcopy of the spectrum.
5. Measure the frequency of 3 highest detected emissions with a lower span and resolution bandwidth to increase the accuracy and note the frequency value.
6. Repeat steps 1) to 4) with the other orthogonal axes of the EUT.
7. Repeat steps 1) to 5) with the vertical polarisation of the measuring antenna.

Final Measurement:

In the second stage a final measurement on an open area test site will be performed on selected frequencies found in the preliminary measurement. During this test the EUT will be rotated in the range of 0 ° to 360 °, the measuring antenna will be set to horizontal and vertical polarisation and raised and lowered in the range from 1 m to 4 m to find the maximum level of emissions.

The resolution bandwidth of the EMI Receiver will be set to the following values:

| Frequency range | Resolution bandwidth |
|-----------------|----------------------|
| 30 MHz to 1 GHz | 120 kHz |



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Procedure final measurement:

The following procedure will be used:

- 1) Measure on the selected frequencies at an antenna height of 1 m and a EUT azimuth of 23 °.
- 2) Move the antenna from 1 m to 4 m and note the maximum value at each frequency.
- 3) Rotate the EUT by 45 ° and repeat 2) until an azimuth of 337 ° is reached.
- 4) Repeat 1) to 3) for the other orthogonal antenna polarization.
- 5) Move the antenna and the turntable to the position where the maximum value is detected.
- 6) Measure while moving the antenna slowly +/- 1 m.
- 7) Set the antenna to the position where the maximum value is found.
- 8) Measure while moving the turntable +/- 45 °.
- 9) Set the turntable to the azimuth where the maximum value is found.
- 10) Measure with Final detector (QP or AV) and note the value.
- 11) Repeat 5) to 10) for each frequency.
- 12) Repeat 1) to 11) for each orthogonal axes of the EUT if handheld equipment.

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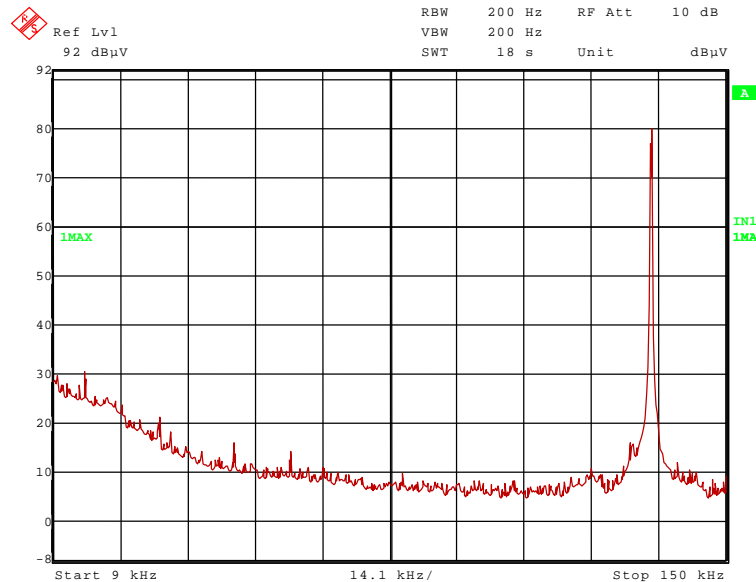
6 TEST RESULTS EMISSION TEST

6.1 PRELIMINARY RADIATED EMISSION TEST (9 kHz to 30 MHz)

| | | | |
|----------------------|-------|--------------------|------|
| Ambient temperature: | 20 °C | Relative humidity: | 31 % |
|----------------------|-------|--------------------|------|

- Position of EUT: The EUT was set-up on a non-conducting table of a height of 0.8 m. The distance between EUT and antenna was 3 m.
- Cable guide: No cables were connected to the EUT.
- Test record: The test was carried out in fixed field operation mode of the EUT (with a 134.2 kHz TAG in front of the EUT). All results are shown in the following.
- Remark: The emissions found at 15.5 kHz, 31 kHz, 47.9 kHz and 62.5 kHz caused by the measuring system and not by the EUT.

50476_1.wmf: Spurious emissions from 9 kHz to 150 kHz:

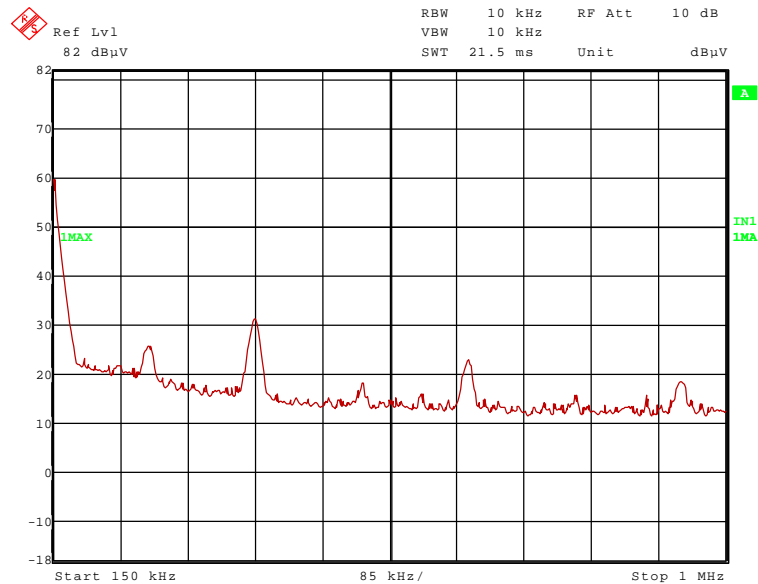


TEST EQUIPMENT USED THE TEST:

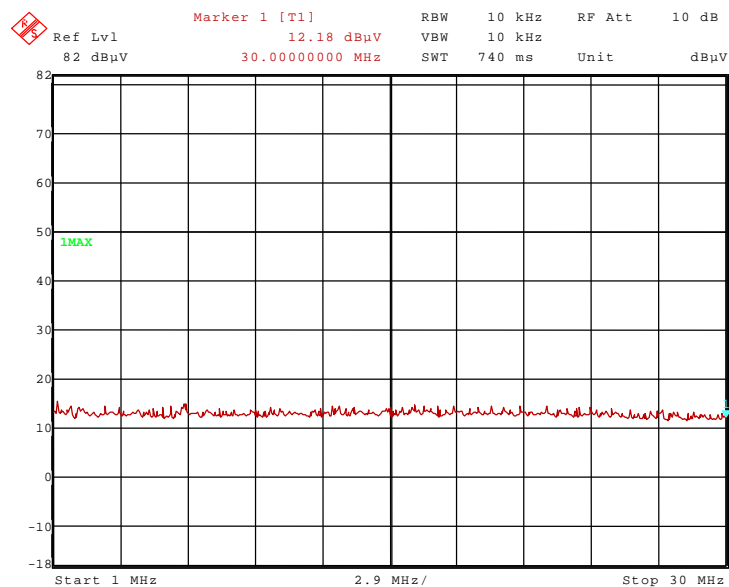
| |
|---------------------|
| 29, 31 – 33, 54, 56 |
|---------------------|

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50476_2.wmf: Spurious emissions from 150 kHz to 1 MHz:



50476_3.wmf: Spurious emissions from 30 MHz to 230 MHz:



The following emission was found according to FCC 47 CFR Part 15 section 15.209 (a).

134.243 kHz, 268.452 kHz, 402.692 kHz, 671.152 kHz and 939.601 kHz

These frequencies have to be measured on the outdoor test site. The result of this final measurement is shown in subclause 6.3 of this test report.

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6.2 PRELIMINARY RADIATED EMISSION TEST (30 MHz to 1 GHz)

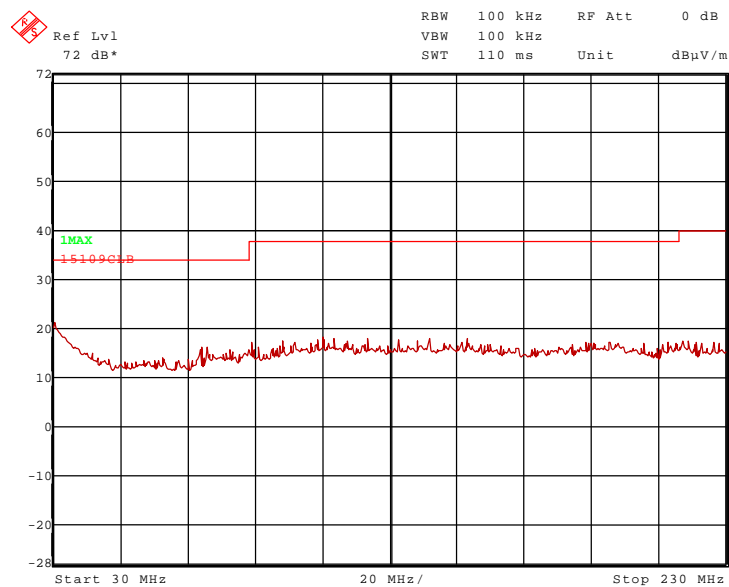
| | | | |
|----------------------|-------|--------------------|------|
| Ambient temperature: | 20 °C | Relative humidity: | 31 % |
|----------------------|-------|--------------------|------|

Position of EUT: The EUT was set-up on a non-conducting table of a height of 0.8 m. The distance between EUT and antenna was 3 m.

Cable guide: No cables were connected to the EUT.

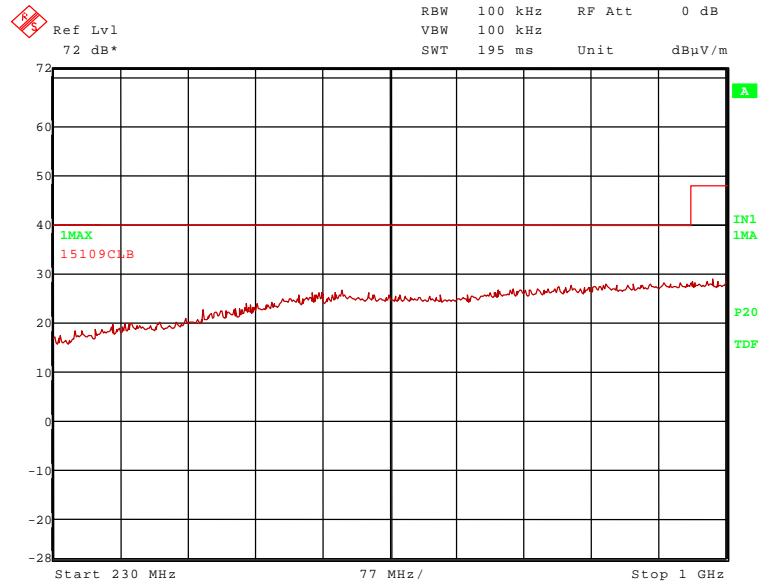
Test record: The test was carried out in fixed field operation mode of the EUT (with a 134.2 kHz TAG in front of the EUT). All results are shown in the following.

50476_4.wmf: Spurious emissions from 30 MHz to 230 MHz:



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50476_5.wmf: Spurious emissions from 230 MHz to 1 GHz:



No frequencies above the noise floor of the measuring system were found during the preliminary radiated emission test. Therefore no measurements were carried out on a open area test site.

TEST EQUIPMENT USED FOR THE TEST:

29, 31 - 35, 43, 54

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6.3 FINAL RADIATED EMISSION TEST (9 kHz to 30 MHz)

| | | | |
|----------------------|-------|--------------------|------|
| Ambient temperature: | 10 °C | Relative humidity: | 50 % |
|----------------------|-------|--------------------|------|

- Position of EUT: The EUT was set-up on a non-conducting table of a height of 0.8 m. The distance between EUT and antenna was 3 m.
- Cable guide: No cables were connected to the EUT.
- Test record: The test was carried out in fixed field operation mode of the EUT (with a 134.2 kHz TAG in front of the EUT). All results are shown in the following.
- Supply voltage: The EUT was supplied with 3 V DC via the internal batteries.
- Test results: The test results were calculated with the following formula:

$$\text{Result [dB}\mu\text{V/m]} = \text{reading [dB}\mu\text{V]} + \text{antenna factor [dB/m]}$$

| Results with measuring distance of 10 m | | | | | | |
|---|--|--------------------|-----------|----------|---------------------|-----------------------|
| Frequency MHz | Result dB μ V/m | Limit dB μ V/m | Margin dB | Detector | Readings dB μ V | Antenna factor * dB/m |
| 134.243 Hz | 73.0 | 85.0 | 12.0 | QP | 53.0 | 20 |
| 268.452 kHz | Emission was below the noise floor of the measuring system (29.0 dB μ V/m) | | | | | |
| 402.692 kHz | Emission was below the noise floor of the measuring system (31.6 dB μ V/m) | | | | | |
| 671.152 kHz | Emission was below the noise floor of the measuring system (21.0 dB μ V/m) | | | | | |
| 939.601 kHz | Emission was below the noise floor of the measuring system (29.0 dB μ V/m) | | | | | |
| Results with measuring distance of 30 m | | | | | | |
| Frequency MHz | Result dB μ V/m | Limit dB μ V/m | Margin dB | Detector | Readings dB μ V | Antenna factor * dB/m |
| 134.243 Hz | 50.0 | 65.0 | 15.0 | QP | 30.0 | 20.0 |

*: Cable loss included

Test: Passed

TEST EQUIPMENT USED FOR THE TEST:

| |
|---------|
| 54 – 57 |
|---------|

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6.4 OCCUPIED BANDWIDTH

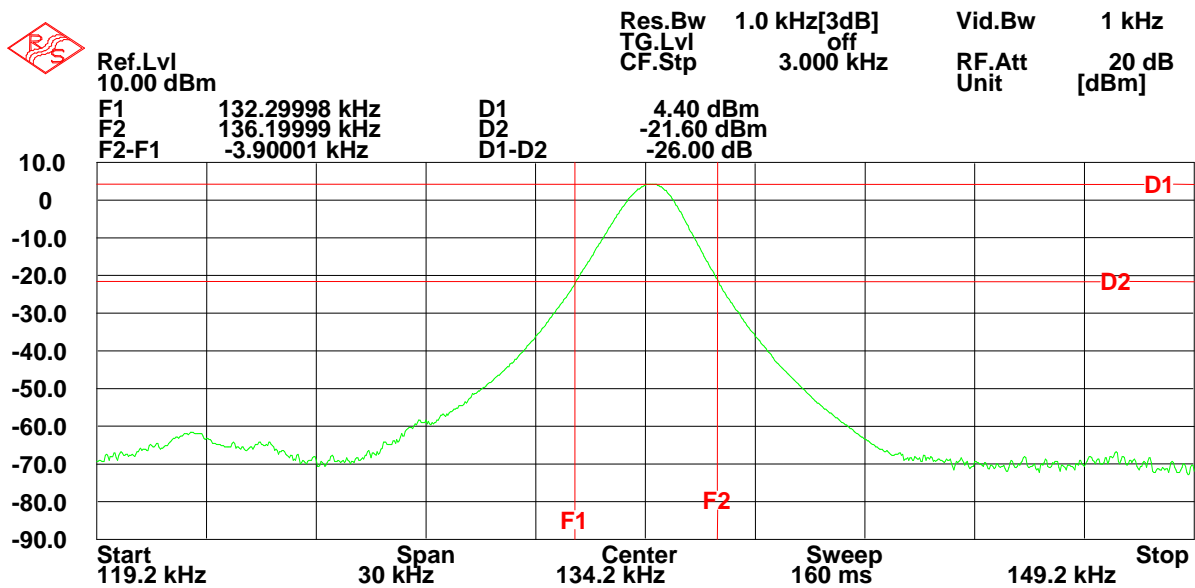
| | | | |
|----------------------|-------|--------------------|------|
| Ambient temperature: | 20 °C | Relative humidity: | 28 % |
|----------------------|-------|--------------------|------|

Test set-up: For this test the EUTR was placed on a test fixture, which was connected to a spectrum analyser.

Supply voltage: The EUT was supplied with 3.0 V DC by the internal batteries.

Test record: The test was carried out in fixed field operation mode of the EUT (with a 134.2 kHz TAG in front of the EUT). All results are shown in the following.

50476obw.hgl: Occupied bandwidth:



| F_L | F_U | BW ($F_U - F_L$) |
|-------------|--------------|--------------------|
| 132.300 kHz | 136.2000 kHz | 3.9 kHz |

TEST EQUIPMENT USED THE TEST:

| |
|----------------|
| 22, 54, 58, 59 |
|----------------|

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7 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

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| Emission measurement at AC mains and DC in / out ports at M4 | | | | | |
|--|---------------------|-------------------|-----------------|--------------------------|------------------|
| No. | Test equipment | Type | Manufacturer | Serial No. | PM-No |
| 1 | Shielded chamber M4 | - | Siemens | B83117S1-X158 | 480088 |
| 2 | Measuring receiver | ESAI | Rohde & Schwarz | 831953/001 833181/018 | 480025 480026 |
| 3 | LISN | NSLK8128 | Schwarzbeck | 8128155 | 480058 |
| 4 | LISN | NSLK 8128- | Schwarzbeck | 8128161 | 480138 |
| 5 | AC-filter | B84299-D87- E3 | Siemens | 930262292 | 480097 |
| 6 | EMI-Software | ES-K1 | Rohde & Schwarz | - | 480111 |

| Radiated emission measurement at M5 | | | | | |
|-------------------------------------|---------------------------|----------|-----------------|----------------|--------|
| No. | Test equipment | Type | Manufacturer | Serial No. | PM-No |
| 7 | Fully anechoic chamber M5 | - | Siemens | B83177-S1-X156 | 480073 |
| 8 | Measuring receiver | ESVS30 | Rohde & Schwarz | 829673/012 | 480024 |
| 9 | Controller | HD100 | Deisel | 100/324 | 480067 |
| 10 | Antenna support | MA240 | Deisel | 228/314 | 480069 |
| 11 | Turntable | DS412 | Deisel | 412/317 | 480070 |
| 12 | Antenna | CBL6112C | Chase | 2689 | 480327 |
| 13 | EMI Software | ES-K1 | Rohde & Schwarz | - | 480111 |

| Radiated emission measurement at M6 | | | | | |
|-------------------------------------|---------------------|-----------|------------------|------------|--------|
| No. | Test equipment | Type | Manufacturer | Serial No. | PM-No |
| 14 | Open area test site | - | Phoenix Test-Lab | - | 480085 |
| 15 | Measuring receiver | ESVS30 | Rohde & Schwarz | 829673/012 | 480024 |
| 16 | Controller | HD100 | Deisel | 100/670 | 480139 |
| 17 | Turntable | DS420HE | Deisel | 420/620/80 | 480087 |
| 18 | Antenna support | AS615P | Deisel | 615/310 | 480086 |
| 19 | Antenna | CBL6111 A | Chase | 1643 | 480147 |
| 20 | EMI Software | ES-K1 | Rohde & Schwarz | - | 480111 |

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| Radiated emission measurement at M8 | | | | | |
|-------------------------------------|---------------------------|-----------|-----------------|--------------------------|------------------|
| No. | Test equipment | Type | Manufacturer | Serial No. | PM-No |
| 21 | Fully anechoic chamber M8 | - | Siemens | B83117-E7019-T231 | 480190 |
| 22 | Measuring receiver | ESMI | Rohde & Schwarz | 843977/001 843530/018 | 480179 480180 |
| 23 | Measuring receiver | ESCS 30 | Rohde & Schwarz | 828985/014 | 480270 |
| 24 | Controller | HD100 | Deisel | 100/427 | 480181 |
| 25 | Turntable | DS420 | Deisel | 420/435/97 | 480186 |
| 26 | Antenna support | AS615P | Deisel | 615/310 | 480187 |
| 27 | Antenna | CBL6112 A | Chase | 2034 | 480185 |
| 28 | EMI Software | ES-K1 | Rohde & Schwarz | - | 480111 |

| Radiated emission measurement at M20 | | | | | |
|--------------------------------------|---|-----------|--------------------|--------------------------|------------------|
| No. | Test equipment | Type | Manufacturer | Serial No. | PM-No |
| 29 | Fully anechoic chamber M20 | - | Albatross Projects | B83107-E2439-T232 | 480303 |
| 30 | Measuring receiver | ESMI | Rohde & Schwarz | 843977/001 843530/018 | 480179 480180 |
| 31 | Measuring receiver | ESI 40 | Rohde & Schwarz | 100064 | 480355 |
| 32 | Controller | HD100 | Deisel | 100/670 | 480326 |
| 33 | Turntable | DS420HE | Deisel | 420/620/80 | 480315 |
| 34 | Antenna support | AS615P | Deisel | 615/310 | 480187 |
| 35 | Antenna | CBL6112 B | Chase | 2688 | 480328 |
| 36 | Antenna | 3115 A | EMCO | 9609-4918 | 480183 |
| 37 | Standard Gain Horn 11.9GHZ – 18GHZ | 18240-20 | Flann Microwave | 483 | 480294 |
| 38 | Standard Gain Horn 11.9GHZ – 18GHZ | 18240-20 | Flann Microwave | 482 | 480295 |
| 39 | Standard Gain Horn 17.9GHZ – 26.7GHZ | 20240-20 | Flann Microwave | 411 | 480297 |
| 40 | Standard Gain Horn 17.9GHZ – 26.7GHZ | 20240-20 | Flann Microwave | 410 | 480296 |
| 41 | Standard Gain Horn 26.4GHZ – 40.1GHZ | 22240-20 | Flann Microwave | 469 | 480299 |

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| No. | Test equipment | Type | Manufacturer | Serial No. | PM-No |
|-----|---|----------------------------|-----------------|------------|--------|
| 42 | Standard Gain Horn 26.4GHZ – 40.1GHZ | 22240-20 | Flann Microwave | 468 | 480298 |
| 43 | RF-cable No. 30 | RTK 081 | Rosenberger | - | 410141 |
| 44 | RF-cable No. 31 | RTK 081 | Rosenberger | - | 410142 |
| 45 | RF-cable 1m | KPS-1533- 400-KPS | Insulated Wire | - | 480300 |
| 46 | RF-cable 1m | KPS-1533- 400-KPS | Insulated Wire | - | 480301 |
| 47 | RF-cable 2m | KPS-1533- 400-KPS | Insulated Wire | - | 480302 |
| 48 | RF-cable No. 5 | RTK 081 | Rosenberger | | 410097 |
| 49 | Preamplifier | JS3- 00101200- 23-5A | Miteq | 681851 | 480337 |
| 50 | Preamplifier | JS3- 12001800- 16-5A | Miteq | 571667 | 480343 |
| 51 | Preamplifier | JS3- 18002600- 20-5A | Miteq | 658697 | 480342 |
| 52 | Preamplifier | JS3- 26004000- 25-5A | Miteq | 563593 | 480344 |
| 53 | EMI Software | ES-K1 | Rohde & Schwarz | - | 480111 |

| Ancillary equipment used for testing | | | | | |
|--------------------------------------|----------------------------|-----------|------------------|-------------|--------|
| No. | Test equipment | Type | Manufacturer | Serial No. | PM-No |
| 54 | Power supply | TOE 8852 | Toellner | 51712 | 480233 |
| 55 | Outdoor test site | - | Phoenix Test-Lab | - | 480293 |
| 56 | Loop antenna | HFH2-Z2 | Rohde & Schwarz | 832609/014 | 480059 |
| 57 | EMI test receiver | ESPC | Rohde & Schwarz | 843756/006 | 480150 |
| 58 | Test fixture | - | Phoenix Test-Lab | - | 410160 |
| 59 | RF-cable No. 10 | RG223 | Phoenix-Test-Lab | - | 410102 |
| 60 | AC power source / analyser | 6813A | Hewlett Packard | 3524A-00484 | 480155 |
| 61 | Climatic chamber | GTS500.40 | GTS | 1660 | 490073 |

All used measurement equipment was calibrated (if necessary). The calibration intervals and the calibration history will be given out on request.

TEST REPORT REFERENCE: R50476_A Edition 1

8 LIST OF ANNEXES

| | | |
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| ANNEX A | PHOTOGRAPHS OF THE TEST SET-UPS: | 3 pages |
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| ANNEX B | INTERNAL PHOTOGRAPHS OF THE TEST SAMPLE: | 3 pages |
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| ANNEX C | EXTERNAL PHOTOGRAPHS OF THE TEST SAMPLE: | 3 pages |
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