

TEST REPORT

Test report no.: 1-4554/12-01-02-B



Testing laboratory

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Accredited Testing Laboratory:

The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2005) by the Deutsche Akkreditierungsstelle GmbH (DAkkS)
 The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with the registration number: D-PL-12076-01-01
 Area of Testing: Radio/Satellite Communications

Applicant

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 20158 Milano / ITALY
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Manufacturer

CIAS Elettronica s.r.l.
 Via Durando, 38
 20158 Milano / ITALY

Test standard/s

| | |
|-------------------|--|
| 47 CFR Part 15 | Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices |
| RSS - 210 Issue 8 | Spectrum Management and Telecommunications - Radio Standards Specification Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment |

For further applied test standards please refer to section 3 of this test report.

Test Item

Kind of test item: Microwave barrier
Model name: ERMO482XPROF5
FCC ID: OIFERMO-482PRO-K
IC: 3325A-ERMOPROK
Frequency: 24.075 GHz – 24.175 GHz
Antenna: Parabolic integrated
Power Supply: 13.8 V DC from power supply
Temperature Range: -25 °C to +55 °C



This test report is electronically signed and valid without handwriting signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Test report authorised:

[Signature box for Karsten GERALDY]

Karsten GERALDY
 Senior Testing Manager

Test performed:

[Signature box for Meheza WALLA]

Meheza WALLA
 Expert

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2 General information

2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

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This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

2.2 Application details

| | |
|------------------------------------|----------------|
| Date of receipt of order: | 2012-03-29 |
| Date of receipt of test item: | 2012-04-12 |
| Start of test: | 2012-04-16 |
| End of test: | 2012-04-19 |
| Person(s) present during the test: | Giovanni Sanna |

3 Test standard/s

| Test standard | Date | Test standard description |
|-------------------|---------|---|
| 47 CFR Part 15 | 2010-10 | Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices |
| RSS - 210 Issue 8 | 2010-12 | Spectrum Management and Telecommunications - Radio Standards Specification Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment |

4 Test environment

| | | |
|----------------------------|-----------|---------------------------------------|
| Temperature: | T_{nom} | +22 °C during room temperature tests |
| Relative humidity content: | | 55 % |
| Barometric pressure: | | not relevant for this kind of testing |
| Power supply: | V_{nom} | 13.8 V DC from power supply |
| | V_{max} | 14.8 V DC |
| | V_{min} | 11.0 V DC |

5 Test item

| | | |
|---------------------|---|---|
| Kind of test item | : | Microwave barrier |
| Type identification | : | ERMO482XPROF5 |
| S/N serial number | : | 0102 |
| HW hardware status | : | Fw_Ermo482xproRx_ver8.10.BIN; Fw_Ermo482xproTx_ver8.10.hex |
| SW software status | : | -/- |
| Frequency band | : | 24.075 GHz – 24.175 GHz |
| Type of modulation | : | NON |
| Number of channels | : | 1 |
| Antenna | : | Parabolic integrated antenna |
| Power supply | : | 13.8 V DC from power supply |
| Temperature range | : | +22 °C (tests made under nominal temperature) |

6 Test laboratories sub-contracted

None

7 Summary of measurement results

- No deviations from the technical specifications were ascertained**
- There were deviations from the technical specifications ascertained

| TC Identifier | Description | Verdict | Date | Remark |
|---------------|---|---------|------------|--------|
| RF-Testing | 47 CFR Part 15 RSS 210, Issue 8, Annex 7 | Passed | 2012-09-04 | -/- |

| Test specification clause | Test case | Temperature conditions | Power source voltages | Pass | Fail | NA | NP | Results (max.) |
|---|---|------------------------|-----------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|-------------------|
| §15.245(b) RSS 210 / A7.1 | Field strength of emissions (wanted signal) | Nominal | Nominal | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 121.55 dBµV @ 3 m |
| §2.1049 | Occupied bandwidth (99% bandwidth) | Nominal | Nominal | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 635 kHz |
| §15.209(a) / §15.245(b)(1)(2)(3) RSS 210 / A7.1-4 | Field strength of emissions (spurious) | Nominal | Nominal | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | complies |
| §15.207(a) ICES-003 | Conducted emissions < 30 MHz | Nominal | Nominal | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | complies |

Note: NA = Not Applicable; NP = Not Performed

8 RF measurement testing

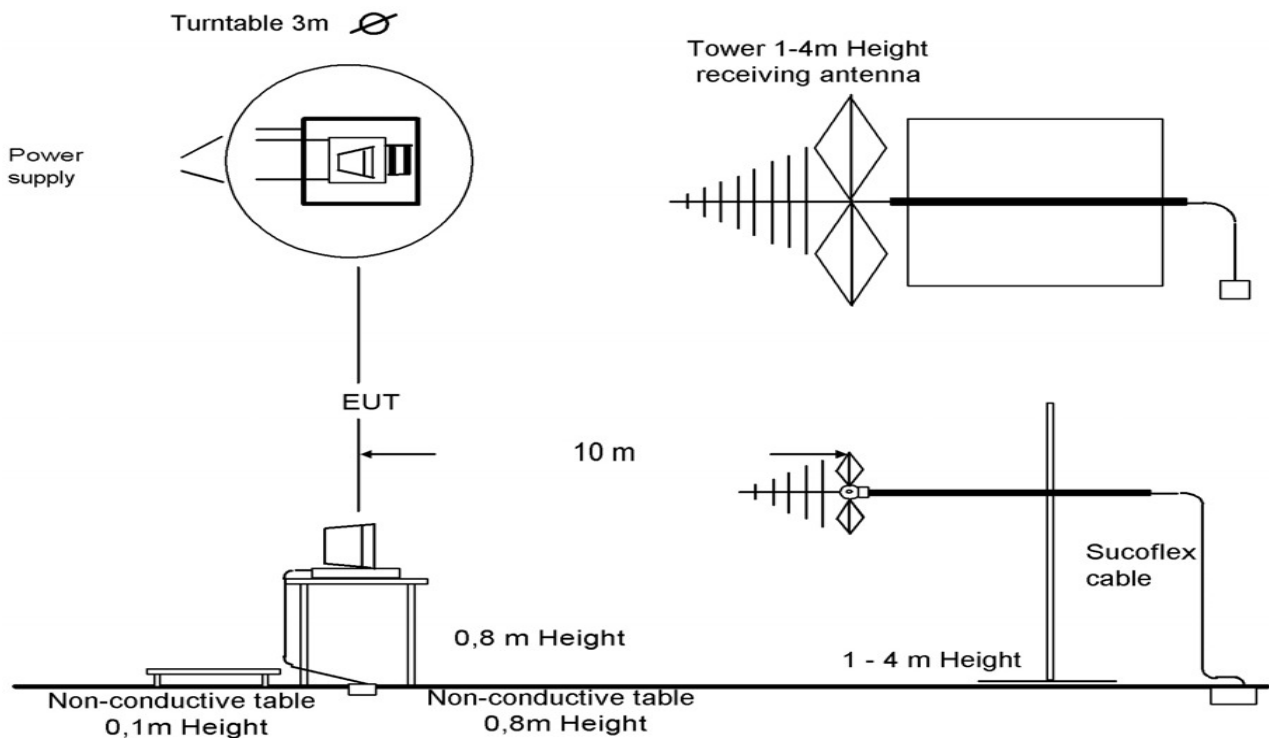
8.1 Description of test setup

8.1.1 Radiated measurements

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 9 kHz to 25 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber. The receiving antennas are confirmed with specifications ANSI C63.2-1996 clause 15 and ANSI C63.4-2009 clause 4.1.5. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test setups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received. The wanted and unwanted emissions are received by spectrum analyzers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63-4-2009 clause 4.2.

Antennas are confirmed with ANSI C63.2-1996 item 15.

Semi anechoic chamber



Picture 1: Diagram radiated measurements

| | |
|-----------------|---------------------|
| 9 kHz - 30 MHz: | active loop antenna |
| 30 MHz – 1 GHz: | tri-log antenna |
| > 1 GHz: | horn antenna |

The EUT is powered by an external power supply with nominal voltage.

8.1.2 Additional comments

Reference documents: None

Special test descriptions: None

Configuration descriptions: None

Test mode: Normal operation, no special test mode available.

Special software is used.

9 Measurement results

9.1 Field strength of emissions (wanted signal)

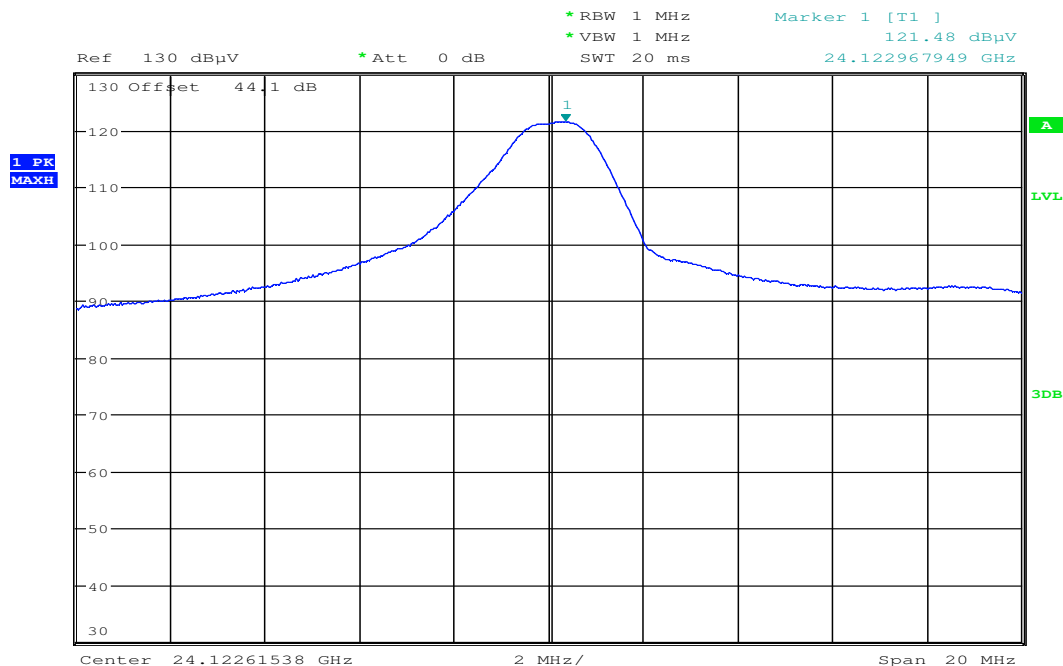
Description:

Measurement of the maximum radiated field strength of the wanted signal.

Measurement:

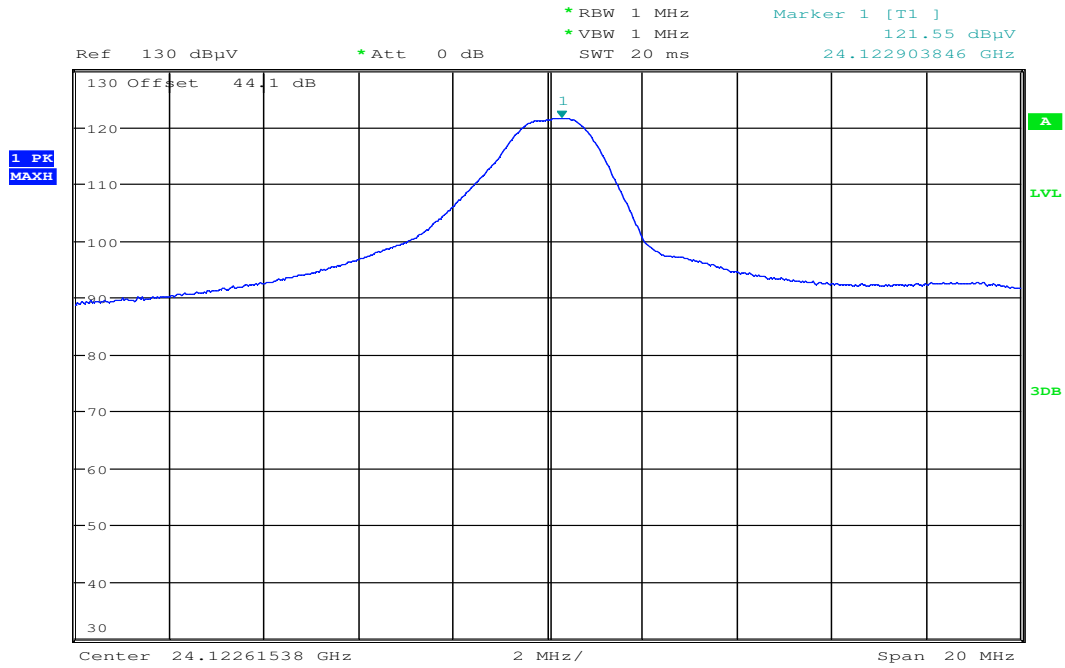
| Measurement parameter | |
|-----------------------|----------|
| Detector: | Pos-Peak |
| Sweep time: | Auto |
| Video bandwidth: | 1 MHz |
| Resolution bandwidth: | 1 MHz |
| Span: | 20 MHz |
| Trace-Mode: | Max Hold |

Plot 1: T_{nom} / V_{nom}



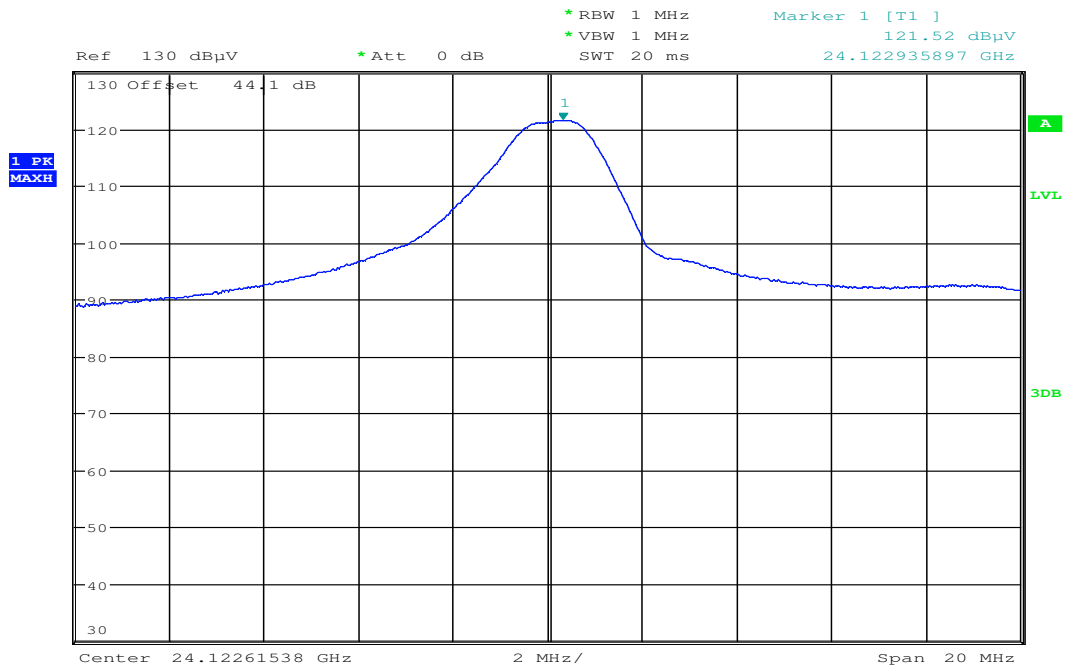
Date: 16.APR.2012 10:07:18

Plot 2: T_{nom} / V_{max}



Date: 16.APR.2012 10:14:16

Plot 3: T_{nom} / V_{min}



Date: 16.APR.2012 10:09:56

Result:

| Test condition | Maximum field strength [dB μ V/m @ 3 m] |
|-------------------------------------|---|
| T _{nom} / V _{nom} | 121.48 |
| T _{nom} / V _{max} | 121.55 |
| T _{nom} / V _{min} | 121.52 |
| Measurement uncertainty | ± 3 dB |

Limits:

| FCC | | IC |
|---|---------------------------------|----------------------|
| CFR Part 15.245(b) | | RSS - 210, Annex 7 |
| Field strength of emissions | | |
| The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following: | | |
| Frequency [GHz] | Field Strength [dB μ V/m] | Measurement distance |
| 24.075 – 24.175 | 128 | 3 |

Result: The measurement is passed.

9.2 Occupied bandwidth (99% bandwidth)

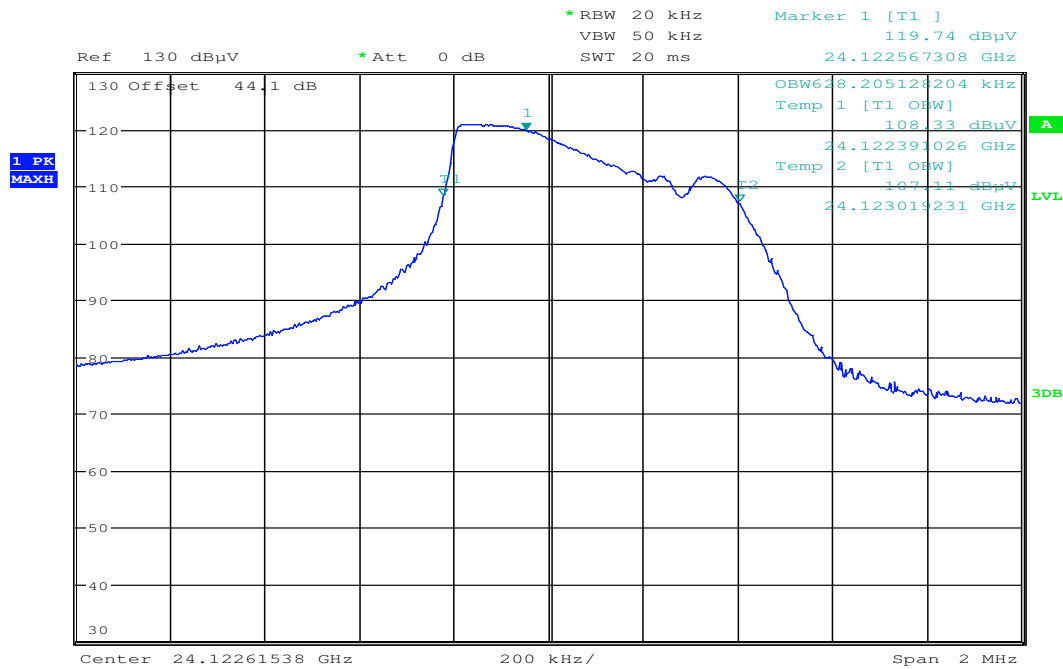
Description:

Measurement of the 99% bandwidth of the wanted signal.

Measurement:

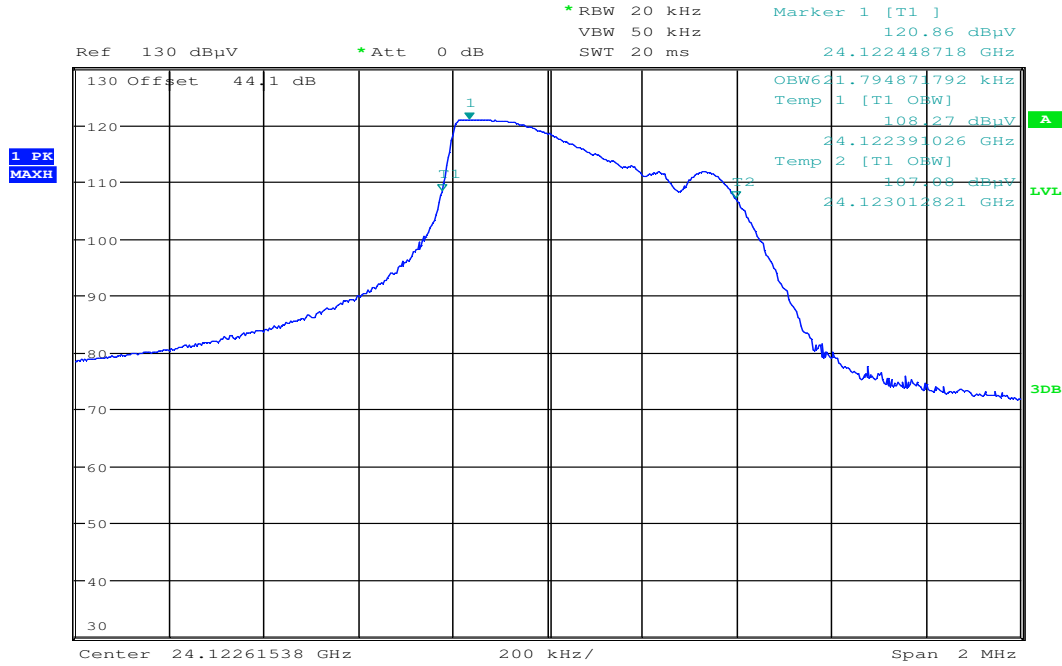
| Measurement parameter | |
|-----------------------|----------|
| Detector: | Peak |
| Sweep time: | Auto |
| Video bandwidth: | Auto |
| Resolution bandwidth: | 20 kHz |
| Span: | 2 MHz |
| Trace-Mode: | Max Hold |

Plot 4: 99% Bandwidth, T_{nom} / V_{nom}



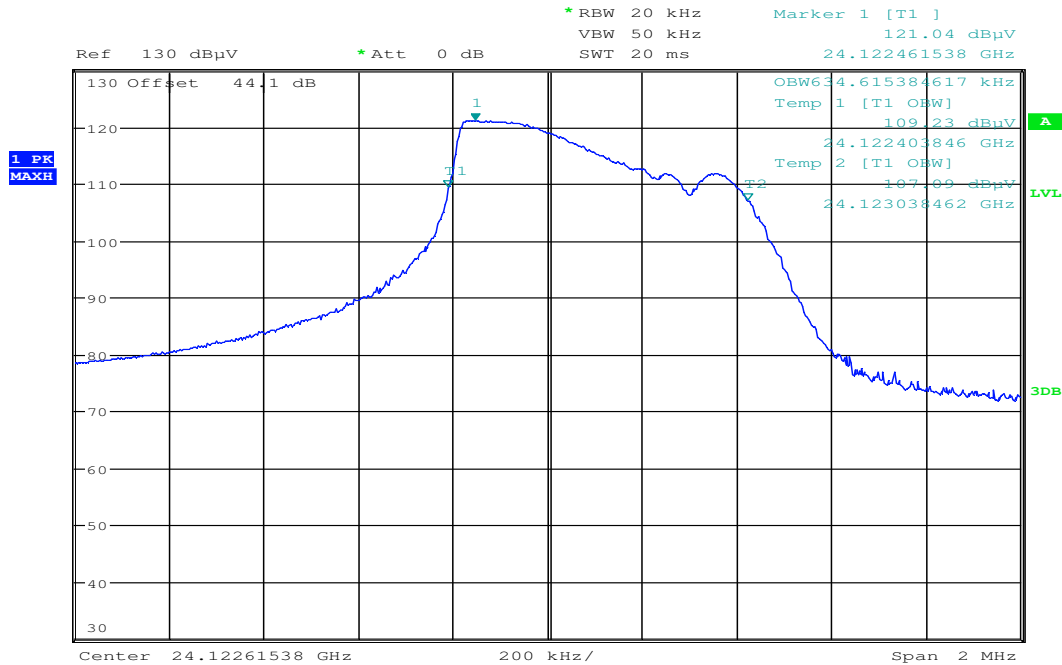
Date: 16.APR.2012 11:08:11

Plot 5: 99% Bandwidth, T_{nom} / V_{max}



Date: 16.APR.2012 11:09:31

Plot 6: 99% Bandwidth, T_{nom} / V_{min}



Date: 16.APR.2012 11:15:59

Result:

| Test condition | 99 % Occupied Bandwidth [kHz] |
|-----------------------------------|-------------------------------|
| $T_{\text{nom}} / V_{\text{nom}}$ | 628.2 |
| $T_{\text{nom}} / V_{\text{max}}$ | 621.8 |
| $T_{\text{nom}} / V_{\text{min}}$ | 634.6 |
| Measurement uncertainty | $\pm \text{span}/1000$ |

Result: The measurement is passed.

9.3 Field strength of emissions (radiated spurious)

Description:

Measurement of the radiated spurious emissions in transmit mode.

Measurement:

| Measurement parameter | |
|-----------------------|--|
| Detector: | Peak / Quasi Peak |
| Sweep time: | Auto |
| Video bandwidth: | Auto |
| Resolution bandwidth: | F < 1 GHz: 100 kHz F > 1 GHz: 1 MHz |
| Frequency range: | 30 MHz to 110 GHz |
| Trace-Mode: | Max Hold |

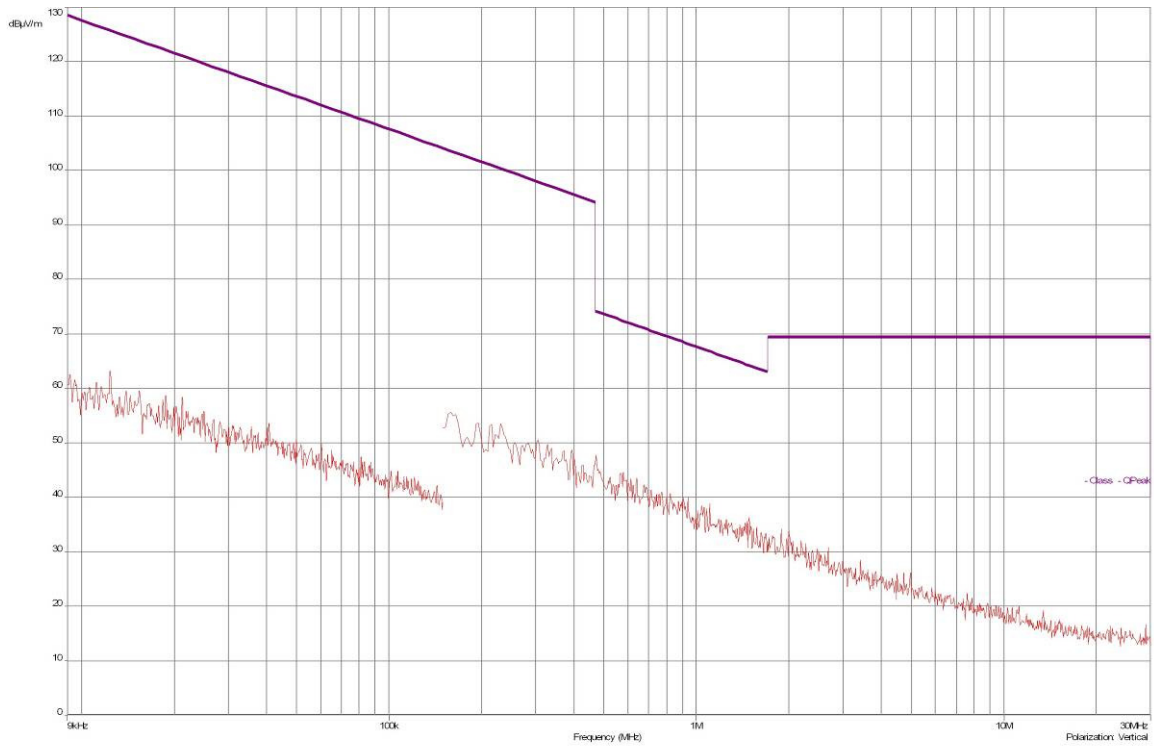
Limits:

| FCC | | IC | |
|--|-------------------------------|----------------------|--|
| CFR Part 15.209(a) | | RSS - GEN | |
| Radiated Spurious Emissions | | | |
| Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation. | | | |
| Frequency (MHz) | Field Strength (dB μ V/m) | Measurement distance | |
| 0.009 – 0.490 | 2400/F(kHz) | 300 | |
| 0.490 – 1.705 | 24000/F(kHz) | 30 | |
| 1.705 – 30.0 | 30 | 30 | |
| 30 – 88 | 30.0 | 10 | |
| 88 – 216 | 33.5 | 10 | |
| 216 – 960 | 36.0 | 10 | |
| Above 960 | 54.0 | 3 | |

Note: Harmonics shall not exceed 25.0 millivolts/meter (88.0 dB μ V/m)

Result: The measurement is passed.

Plot 7: Traffic mode up to 30 MHz



Plot 8: 30 MHz to 1 GHz, vertical / horizontal polarization

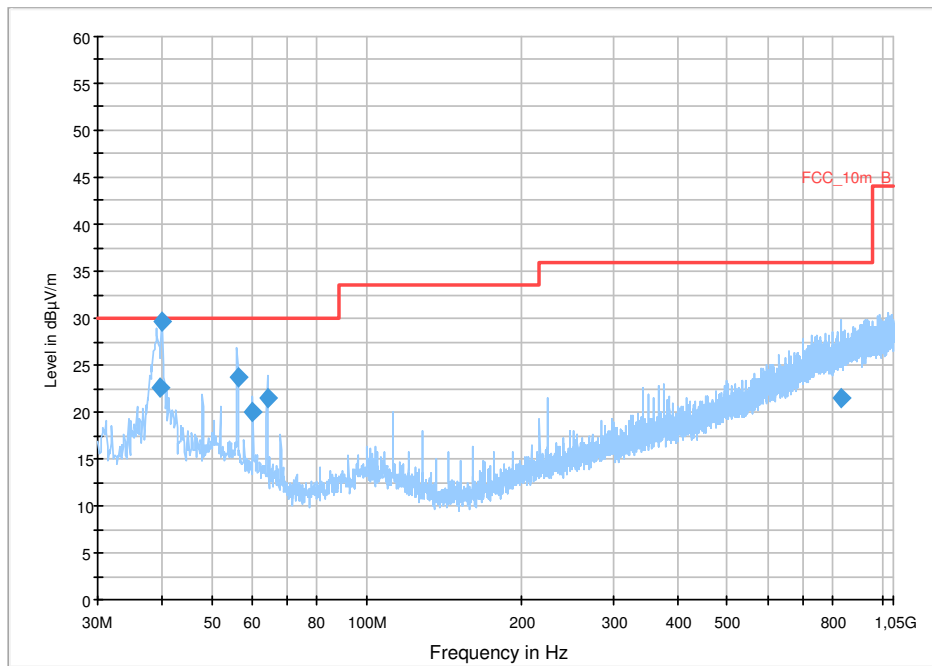
| | |
|-----------------------|--------------------|
| EUT: | ERMO482XPROF5 |
| Serial Number: | -/- |
| Test Description: | FCC class B @ 10 m |
| Operating Conditions: | TX-Mode |
| Operator Name: | Hennemann |
| Comment: | DC: 13.8 V |

Scan Setup: STAN_Fin [EMI radiated]

| | |
|-----------------|----------------------|
| Hardware Setup: | Electric Field (NOS) |
| Receiver: | [ESCI 3] |
| Level Unit: | dBµV/m |

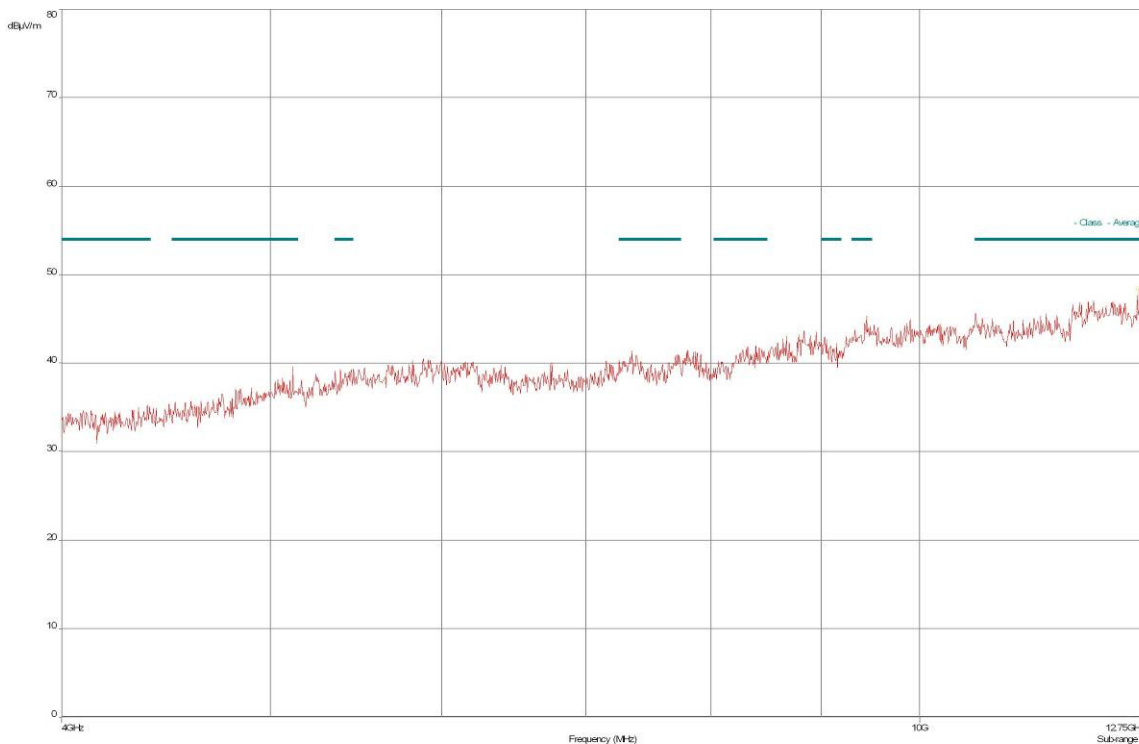
| Subrange | Step Size | Detectors | IF BW | Meas. Time | Preamp |
|----------------|-----------|-----------|---------|------------|--------|
| 30 MHz - 2 GHz | 60 kHz | QPK | 120 kHz | 1 s | 20 dB |

FCC_10m(B)

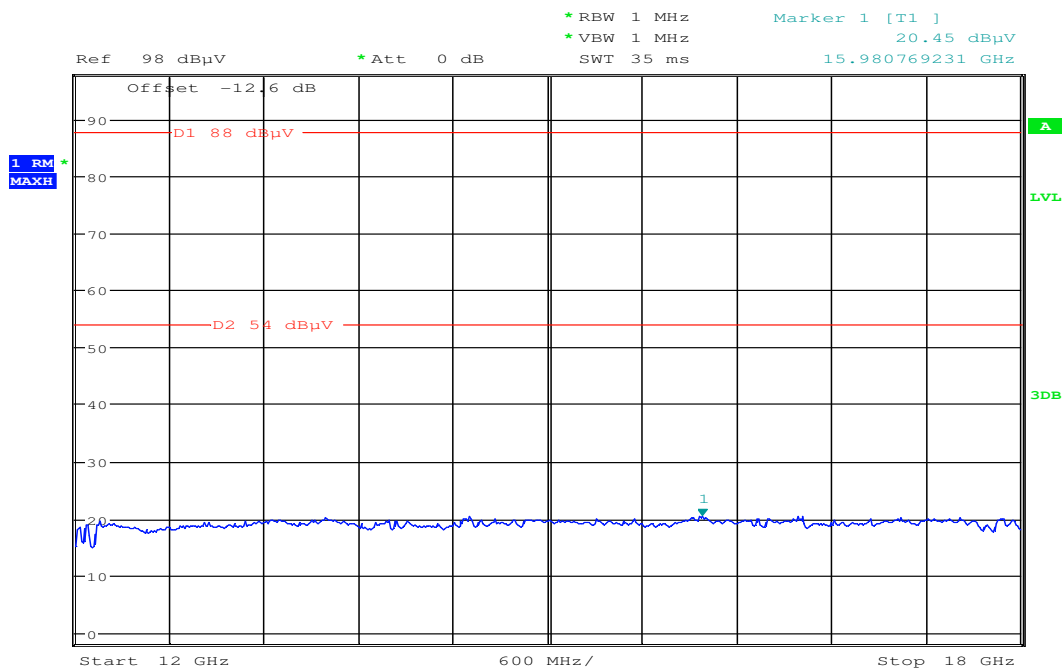


| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|-------------|--------------|---------------|------------|-------------|----------------|
| 39.54465 | 22.5 | 1000. | 120.000 | 100.0 | V | 73.0 | 13.4 | 7.5 | 30.0 |
| 40.03365 | 29.7 | 1000. | 120.000 | 100.0 | V | 88.0 | 13.4 | 0.3 | 30.0 |
| 56.06475 | 23.6 | 1000. | 120.000 | 400.0 | V | 3.0 | 12.6 | 6.4 | 30.0 |
| 60.04695 | 19.9 | 1000. | 120.000 | 200.0 | V | 61.0 | 11.6 | 10.1 | 30.0 |
| 64.07955 | 21.5 | 1000. | 120.000 | 359.0 | V | 36.0 | 10.6 | 8.5 | 30.0 |
| 834.31845 | 21.5 | 1000. | 120.000 | 179.0 | V | 195.0 | 24.3 | 14.5 | 36.0 |

Plot 9: 1 GHz to 12 GHz, vertical / horizontal polarization

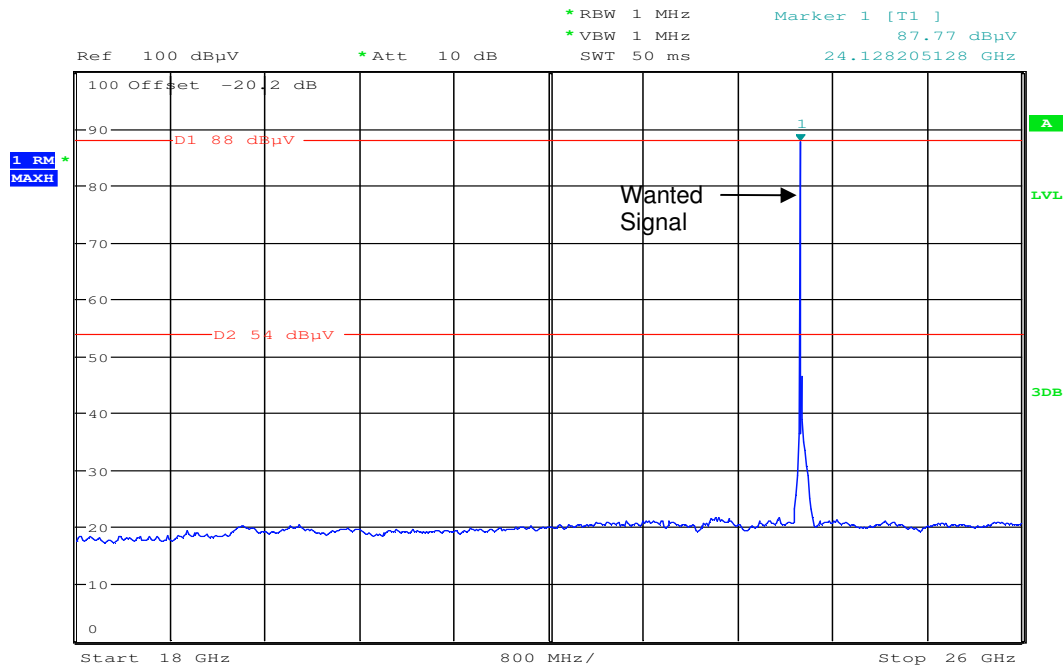


Plot 10: 12 GHz to 18 GHz, vertical / horizontal polarization



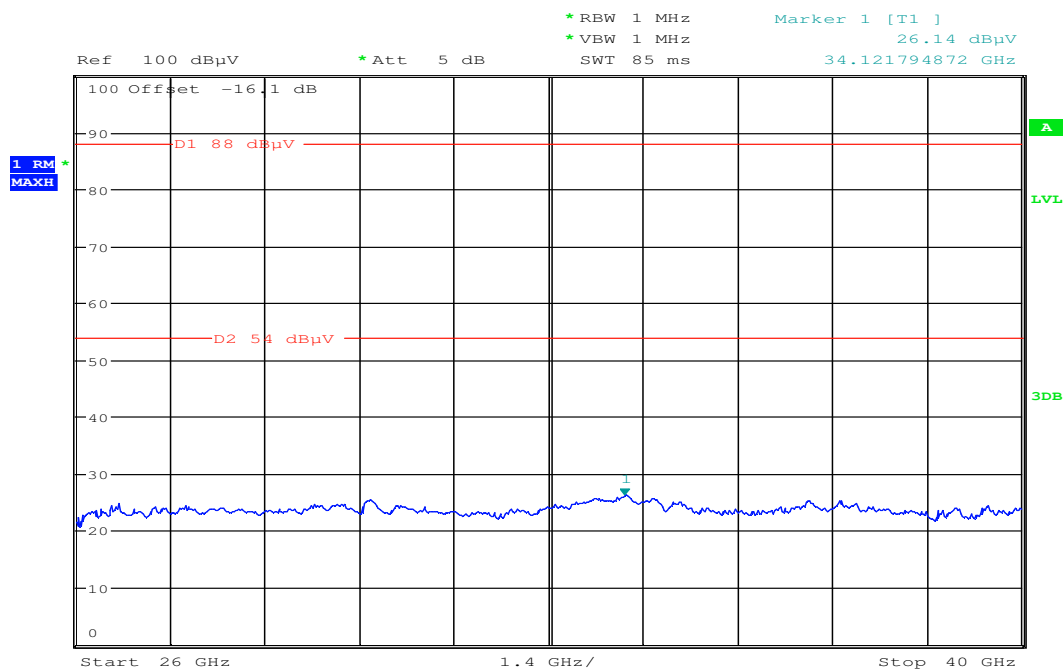
Date: 16.APR.2012 14:21:10

Plot 11: 18 GHz to 26 GHz, vertical / horizontal polarization



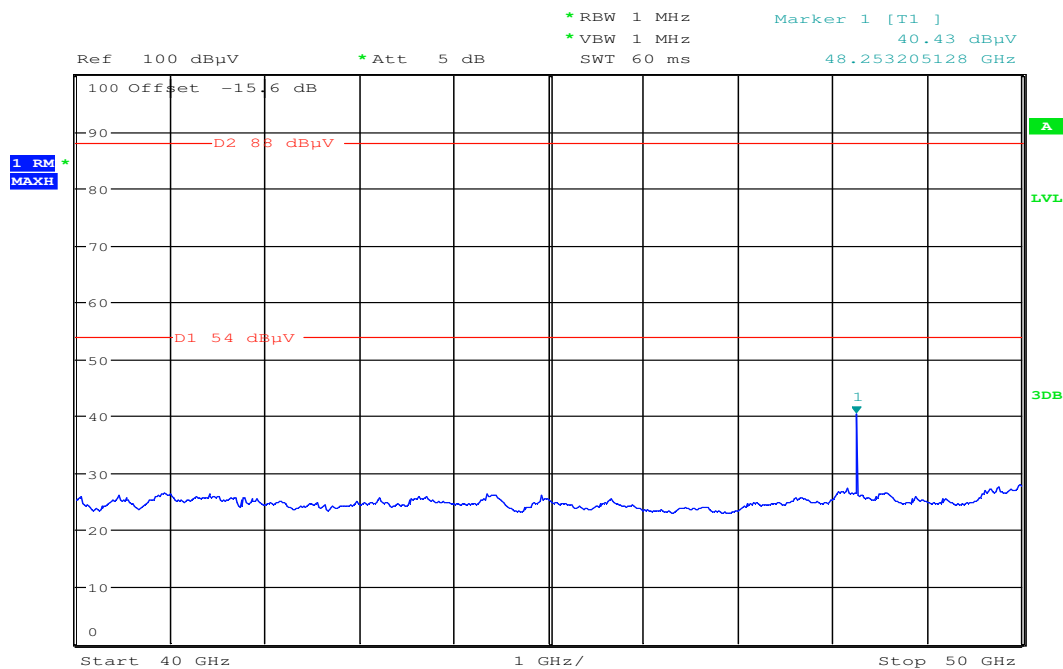
Date: 16.APR.2012 14:15:37

Plot 12: 26 GHz to 40 GHz, vertical / horizontal polarization



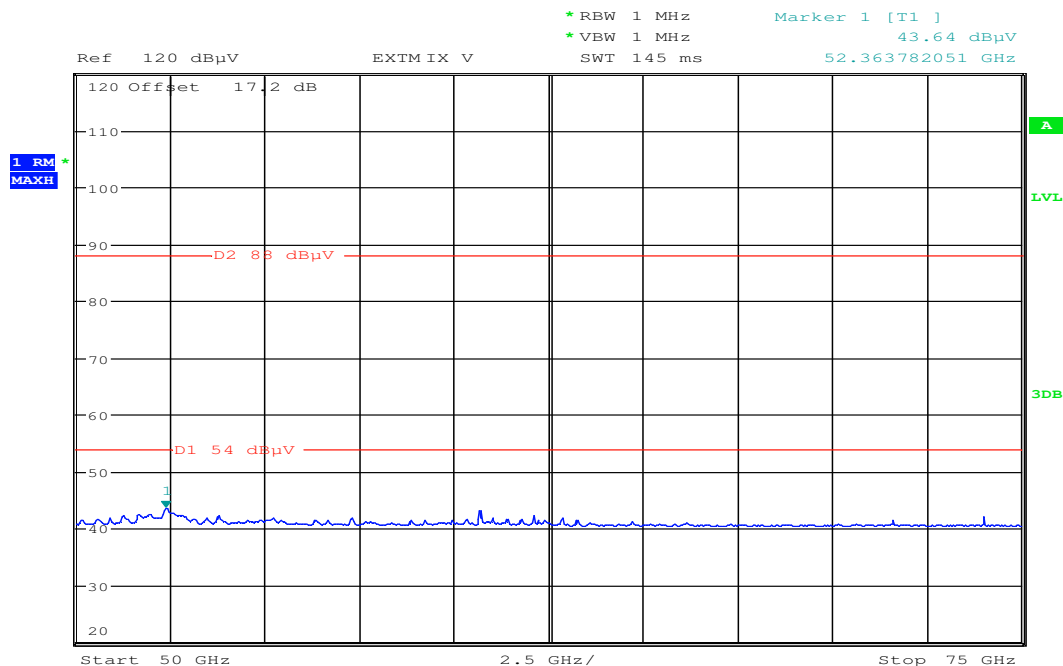
Date: 16.APR.2012 14:06:08

Plot 13: 40 GHz to 50 GHz, horizontal / vertical polarization



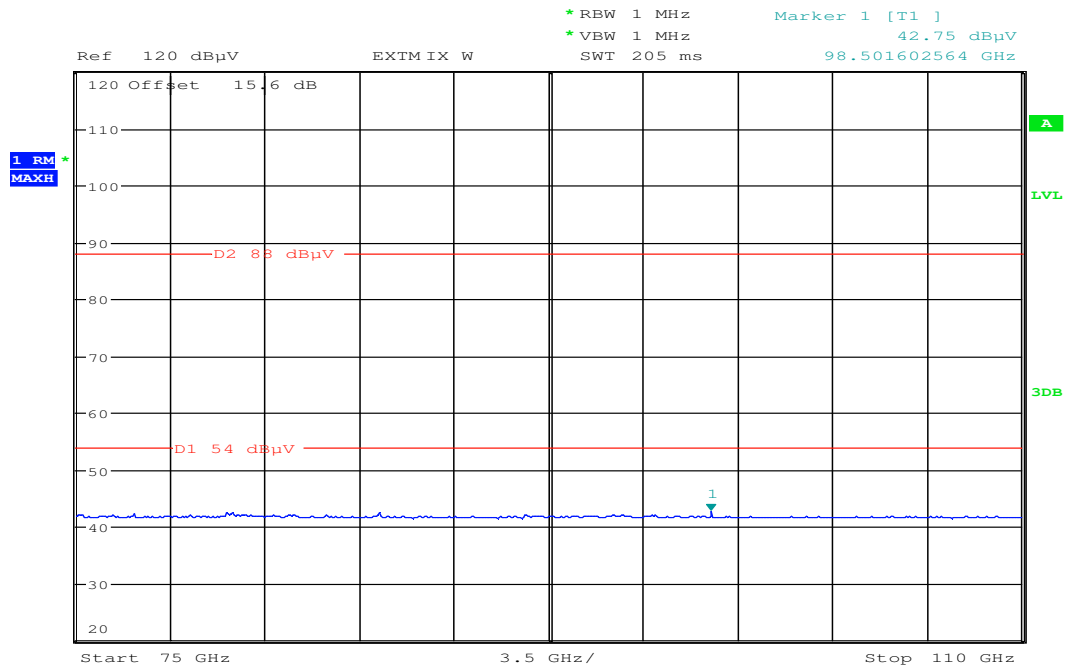
Date: 16.APR.2012 13:59:54

Plot 14: 50 GHz to 75 GHz, horizontal / vertical polarization



Date: 16.APR.2012 13:49:22

Plot 15: 75 GHz to 110 GHz, horizontal / vertical polarization



Date: 16.APR.2012 13:46:49

9.4 Conducted spurious emissions < 30 MHz

Description:

Measurement of the conducted spurious emissions in transmit mode below 30 MHz. Both power lines, phase and neutral line, are measured. Found peaks are re-measured with average and quasi peak detection to show compliance to the limits.

Measurement:

| Measurement parameter | |
|-----------------------|--|
| Detector: | Peak - Quasi Peak / Average |
| Sweep time: | Auto |
| Video bandwidth: | F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz |
| Resolution bandwidth: | F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz |
| Span: | 9 kHz to 30 MHz |
| Trace-Mode: | Max Hold |

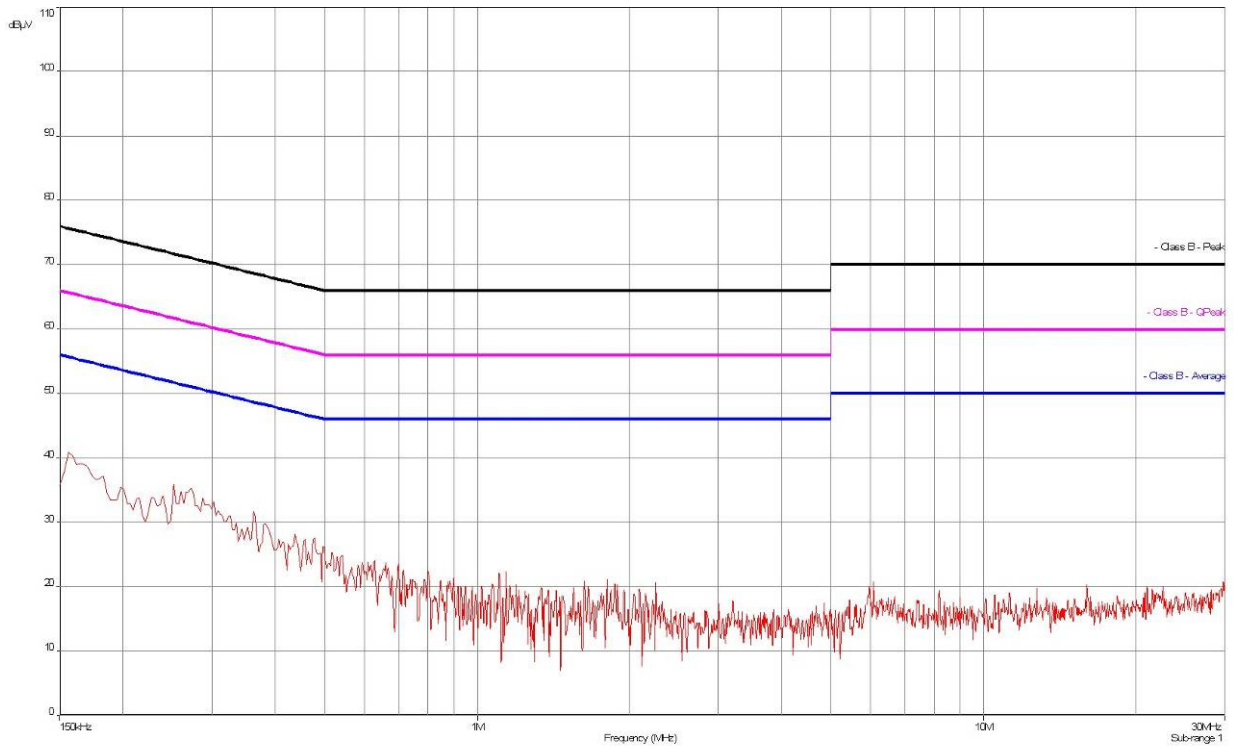
Limits:

| FCC | | IC | |
|---------------------------------------|---------------------------|------------------------|--|
| CFR Part 15.207(a) | | ICES-003, Issue 4 | |
| Conducted Spurious Emissions < 30 MHz | | | |
| Frequency (MHz) | Quasi-Peak (dB μ V/m) | Average (dB μ V/m) | |
| 0.15 – 0.5 | 66 to 56* | 56 to 46* | |
| 0.5 – 5 | 56 | 46 | |
| 5 – 30.0 | 60 | 50 | |

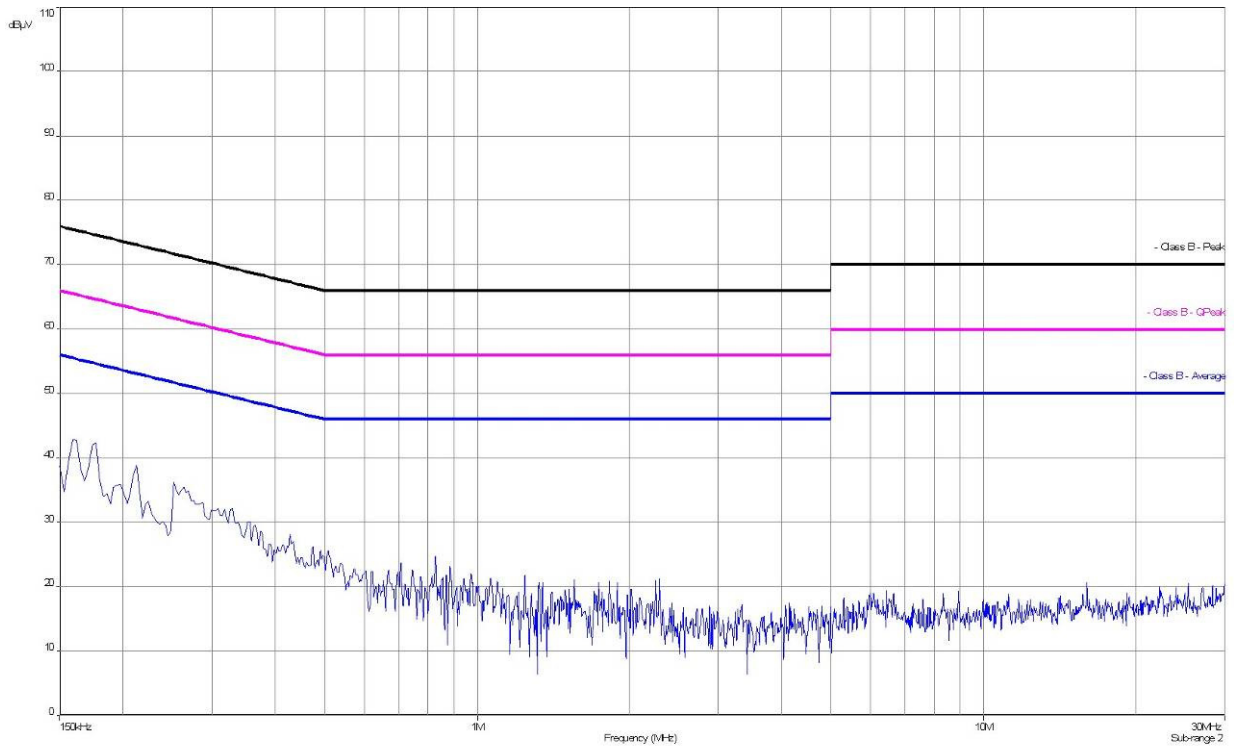
*Decreases with the logarithm of the frequency

Result: The measurement is passed.

Plot 16: Phase line



Plot 17: Neutral line



10 Test equipment and ancillaries used for tests

Typically, the calibrations of the test apparatus are commissioned to and performed by an accredited calibration laboratory. The calibration intervals are determined in accordance with the DIN EN ISO/IEC 17025. In addition to the external calibrations, the laboratory executes comparison measurements with other calibrated test systems or effective verifications. Weekly chamber inspections and range calibrations are performed. Where possible, rf-generating and signalling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Labor/Item).

| No. | Lab / Item | Equipment | Type | Manufact. | Serial No. | INV. No Cetecom | Kind of Calibration | Last Calibration | Next Calibration |
|-----|--------------|--|--------------------------------------|----------------------|------------|-----------------|---------------------|------------------|------------------|
| 1 | n. a. | Isolating Transformer | RT5A | Grundig | 8041 | 300001626 | g | | |
| 2 | n. a. | DC power supply, 60Vdc, 50A, 1200 W | 6032A | HP Meßtechnik | 2818A03450 | 300001040 | Ve | 12.01.2012 | 12.01.2015 |
| 3 | n. a. | Coaxial Attenuator 30dB/500W | 8325 | Bird | 1530 | 300001595 | ev | | |
| 4 | n. a. | Double-Ridged Waveguide Horn Antenna 1-18.0GHz | 3115 | EMCO | 8812-3088 | 300001032 | vIKI! | 11.05.2011 | 11.05.2013 |
| 5 | n. a. | Active Loop Antenna | 6502 | EMCO | 2210 | 300001015 | ne | | |
| 6 | n. a. | Anechoic chamber | FAC 3/5m | MWB / TDK | 87400/02 | 300000996 | | 23.03.2009 | |
| 7 | Spec.A. 2_2e | System rack for EMI measurement solution | 85900 | HP I.V. | * | 300000222 | ne | | |
| 8 | 9 | Artificial Mains 9 kHz to 30 MHz | ESH3-Z5 | R&S | 828576/020 | 300001210 | Ve | 06.01.2012 | 06.01.2014 |
| 9 | n. a. | Relais Matrix | 3488A | HP Meßtechnik | 2719A15013 | 300001156 | ne | | |
| 10 | n. a. | Relais Matrix | PSU | R&S | 890167/024 | 300001168 | ne | | |
| 11 | n. a. | Isolating Transformer | RT5A | Grundig | 9242 | 300001263 | ne | | |
| 12 | n. a. | Three-Way Power Splitter, 50 Ohm | 11850C | HP Meßtechnik | | 300000997 | ne | | |
| 13 | n. a. | Switch / Control Unit | 3488A | HP | 2605e08770 | 300001443 | ne | | |
| 14 | n. a. | Amplifier | js42-00502650-28-5a | Parzich GMBH | 928979 | 300003143 | ne | | |
| 15 | n. a. | Band Reject filter | WRCG185 5/1910-1835/1925-40/8SS | Wainwright | 7 | 300003350 | ev | | |
| 16 | n. a. | Band Reject filter | WRCG240 0/2483-2375/2505-50/10SS | Wainwright | 11 | 300003351 | ev | | |
| 17 | n. a. | TILE-Software Emission | Quantum Change, Modell TILE-ICS/FULL | EMCO | none | 300003451 | ne | | |
| 18 | n. a. | Highpass Filter | WHKX2.9/1 8G-12SS | Wainwright | 1 | 300003492 | ev | | |
| 19 | n. a. | Highpass Filter | WHK1.1/15 G-10SS | Wainwright | 3 | 300003255 | ev | | |
| 20 | n. a. | Highpass Filter | WHKX7.0/1 8G-8SS | Wainwright | 18 | 300003789 | ne | | |
| 21 | n. a. | PSA Spectrum Analyzer 3 Hz - 26.5 GHz | E4440A | Agilent Technologies | MY48250080 | 300003812 | k | 08.09.2010 | 08.09.2012 |
| 22 | n. a. | MXG Microwave Analog Signal Generator | N5183A | Agilent Technologies | MY47420220 | 300003813 | k | 13.09.2010 | 13.09.2012 |

| | | | | | | | | | |
|----|-------|--|---------------------|----------------------|----------------------|-----------|-------|------------|------------|
| 23 | n. a. | RF Filter Section 9kHz - 1GHz | N9039A | Agilent Technologies | MY48260003 | 300003825 | vIKI! | 08.09.2010 | 08.09.2012 |
| 24 | n. a. | TRILOG Broadband Test-Antenna 30 MHz - 3 GHz | VULB9163 | Schwarzbeck | 371 | 300003854 | vIKI! | 14.10.2011 | 14.10.2014 |
| 25 | 45 | Switch-Unit | 3488A | HP Meßtechnik | 2719A14505 | 300000368 | g | | |
| 26 | 50 | DC power supply, 60Vdc, 50A, 1200 W | 6032A | HP Meßtechnik | 2920A04466 | 300000580 | ne | | |
| 27 | n. a. | software | SPS_PHE 1.4f | Spitzberger & Spieß | B5981; 5D1081; B5979 | 300000210 | ne | | |
| 28 | n. a. | EMI Test Receiver | ESCI 1166.5950.03 | R&S | 100083 | 300003312 | k | 04.01.2012 | 04.01.2014 |
| 29 | n. a. | Analyzer-Reference-System (Harmonics and Flicker) | ARS 16/1 | SPS | A3509 07/0 0205 | 300003314 | k | 14.07.2011 | 14.07.2013 |
| 30 | n. a. | Amplifier | JS42-00502650-28-5A | MITEQ | 1084532 | 300003379 | ev | | |
| 31 | n. a. | Antenna Tower | Model 2175 | ETS-LINDGREN | 64762 | 300003745 | izw | | |
| 32 | n. a. | Positioning Controller | Model 2090 | ETS-LINDGREN | 64672 | 300003746 | izw | | |
| 33 | n. a. | Turntable Interface-Box | Model 105637 | ETS-LINDGREN | 44583 | 300003747 | izw | | |
| 34 | n. a. | TRILOG Broadband Test-Antenna 30 MHz - 3 GHz | VULB9163 | Schwarzbeck | 295 | 300003787 | k | 01.04.2010 | 01.04.2012 |
| 35 | n. a. | Spectrum-Analyzer | FSU26 | R&S | 200809 | 300003874 | k | 10.01.2011 | 10.01.2013 |
| 36 | 5 | DC Power Supply, 60V, 10A | 6038A | HP Meßtechnik | 2848A07027 | 300001174 | Ve | 05.01.2012 | 05.01.2015 |
| 37 | n. a. | Spectrum Analyzer 20 Hz - 50 GHz | FSU50 | R&S | 200012 | 300003443 | ve | 01.07.2010 | 01.07.2012 |
| 38 | 11b | Microwave System Amplifier, 0.5-26.5 GHz; 25 dB gain | 83017A | HP Meßtechnik | 00419 | 300002268 | ev | | |
| 39 | A026 | Std. Gain Horn Antenna 12.4 to 18.0 GHz | 639 | Narda | | 300000787 | ne | | |
| 40 | A029 | Std. Gain Horn Antenna 18.0 to 26.5 GHz | 638 | Narda | | 300002442 | ne | | |
| 41 | A021 | Std. Gain Horn Antenna 26.4-40.1 GHz | 2224-20 | Flann | 233 | 300001973 | ne | | |
| 42 | n. a. | Std. Gain Horn Antenna 33-50 GHz | 2324-20 | Flann | 57 | -/ | ne | | |
| 43 | n. a. | Broadband Low Noise Amplifier 18-50GHz | CERNEX | CBL19503070 | 19338 | 300004273 | ne | | |

11 Observations

No observations exceeding those reported with the single test cases have been made.

Annex A Photographs of the test setup

Photo 1:

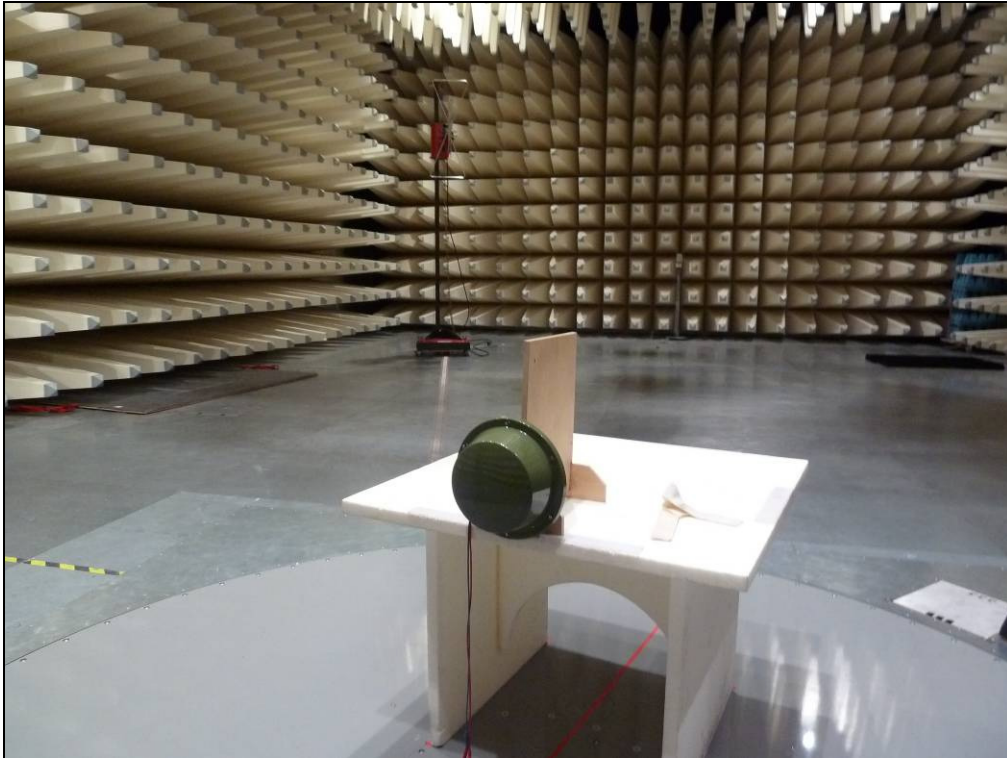


Photo 2:



Annex B External photographs of the EUT

Photo 3:



Photo 4:



Annex C Internal photographs of the EUT

Photo 5:



Photo 6:



Photo 7:

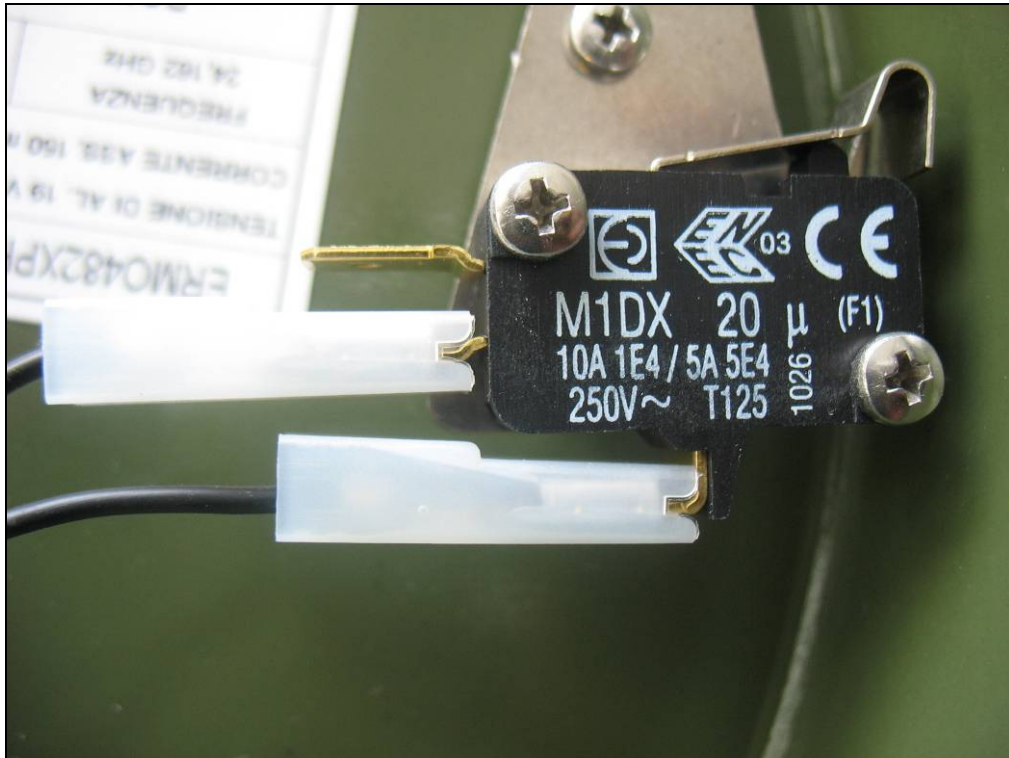


Photo 8:

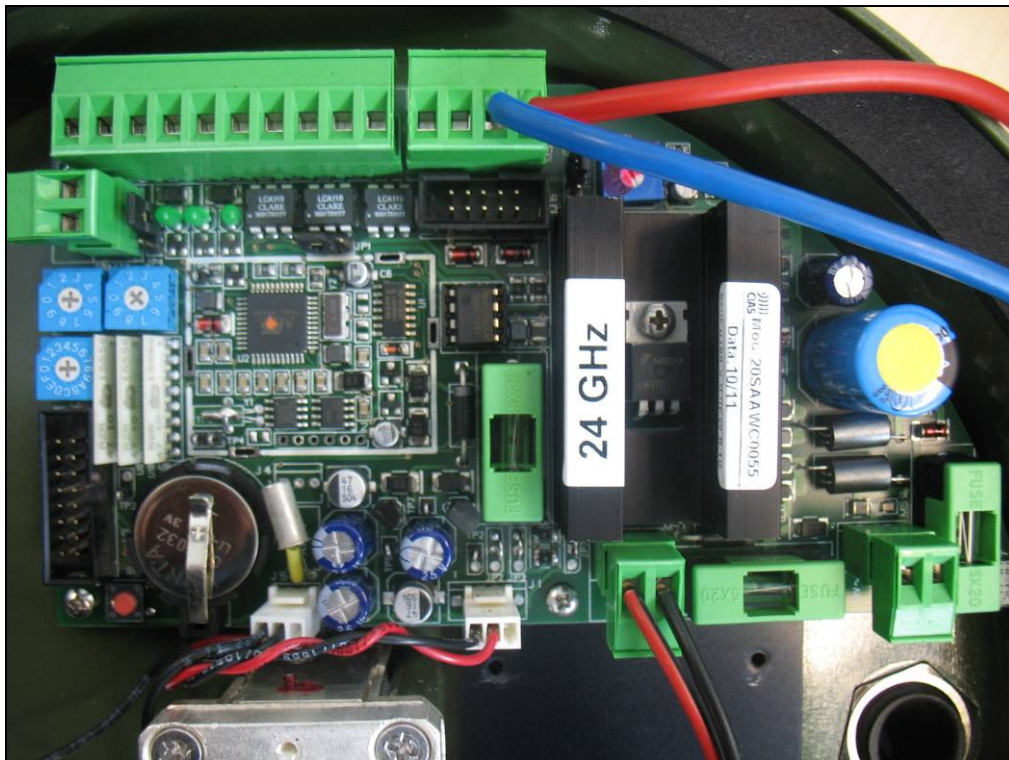


Photo 9:

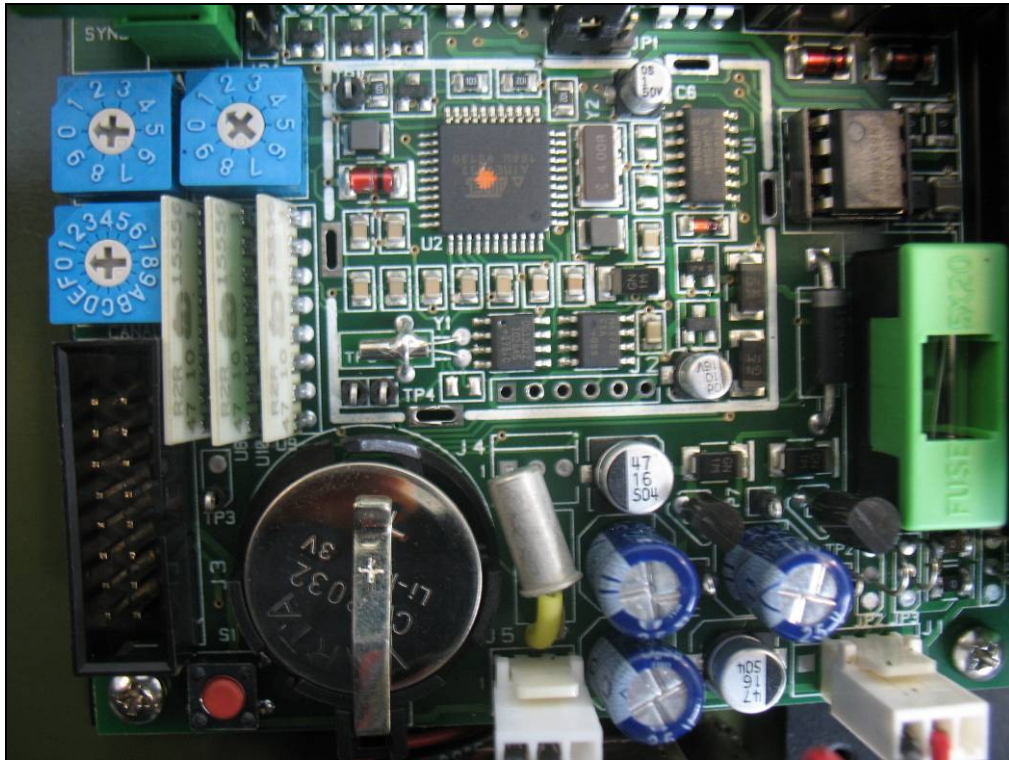


Photo 10:

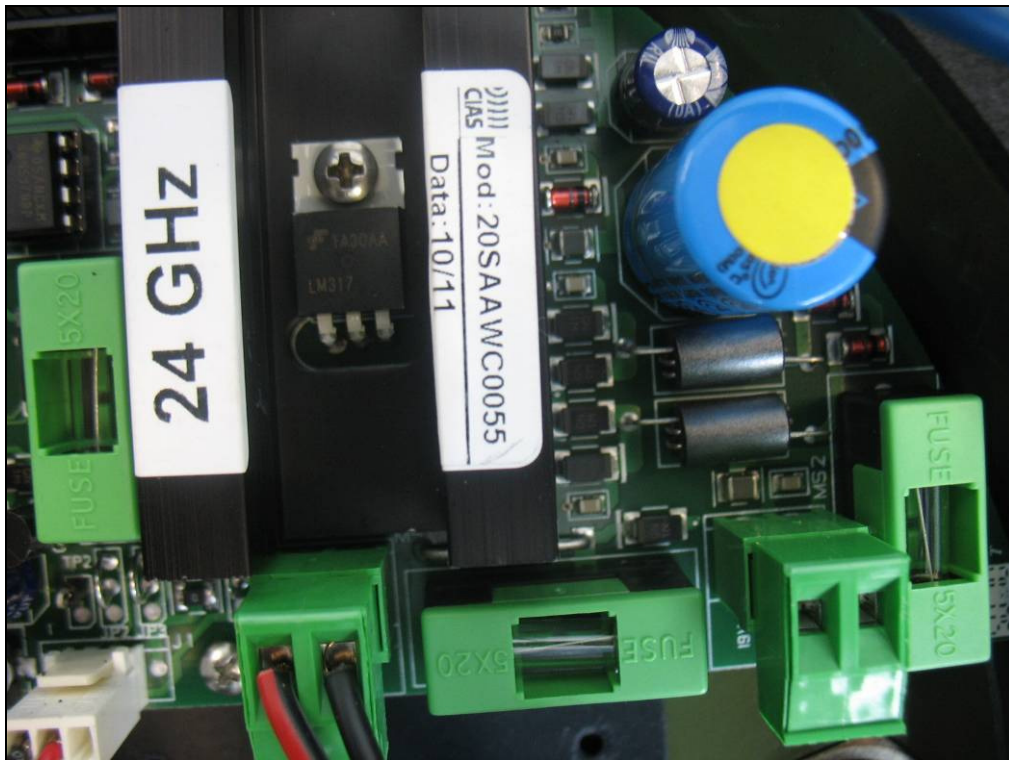


Photo 11:

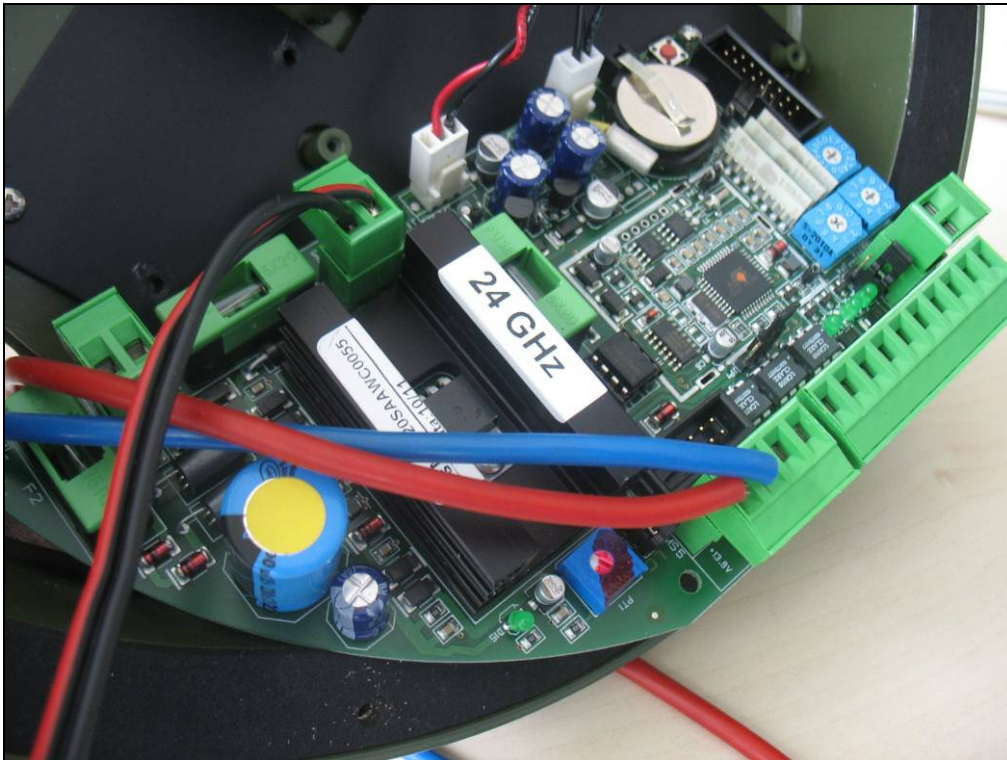
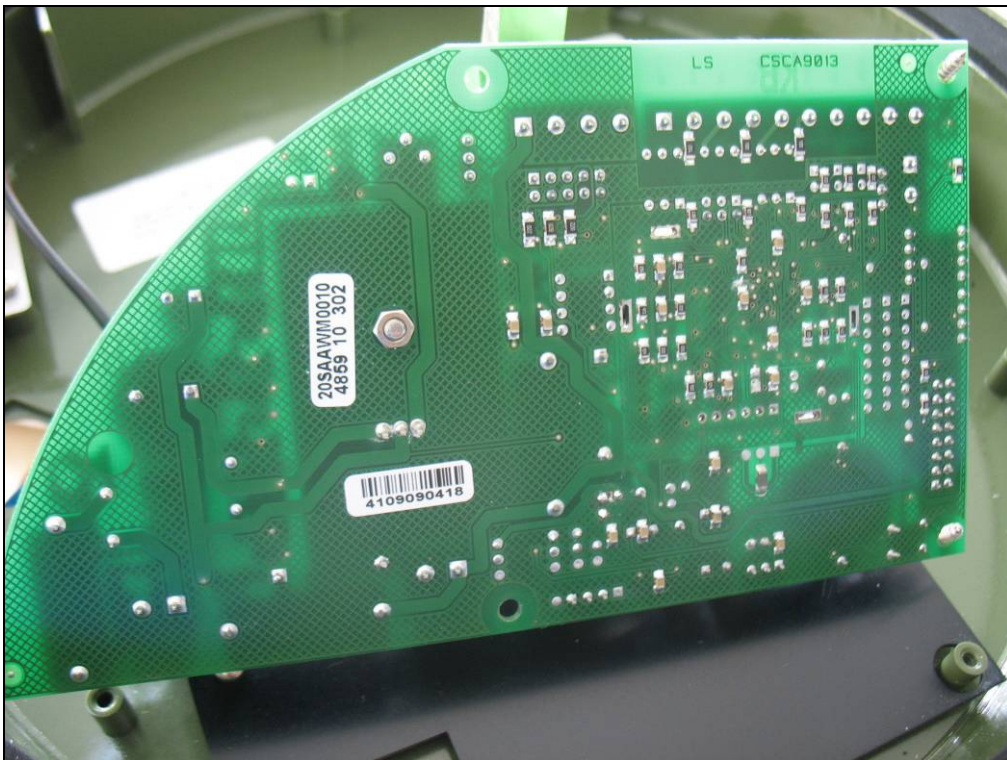


Photo 12:



Annex D Document history

| Version | Applied changes | Date of release |
|---------|---|-----------------|
| 1.0 | Initial release | 2012-04-25 |
| -A | Photos, Model name, FCC ID and IC updated | 2012-05-24 |
| -B | FCC ID updated | 2012-09-04 |

Annex E Further information**Glossary**

| | | |
|----------|---|--|
| AVG | - | Average |
| DUT | - | Device under test |
| EMC | - | Electromagnetic Compatibility |
| EN | - | European Standard |
| EUT | - | Equipment under test |
| ETSI | - | European Telecommunications Standard Institute |
| FCC | - | Federal Communication Commission |
| FCC ID | - | Company Identifier at FCC |
| HW | - | Hardware |
| IC | - | Industry Canada |
| Inv. No. | - | Inventory number |
| N/A | - | Not applicable |
| PP | - | Positive peak |
| QP | - | Quasi peak |
| S/N | - | Serial number |
| SW | - | Software |

Annex F Accreditation Certificate



Deutsche Akkreditierungsstelle GmbH
German Accreditation Body

Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV
Signatory to the Multilateral Agreements of EA, ILAC and IAF for Mutual Recognition



Accreditation

The Deutsche Akkreditierungsstelle GmbH (German Accreditation Body) attests that the testing laboratory

CETECOM ICT Services GmbH
Untertürkheimer Straße 6-10
66117 Saarbrücken

is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out tests in the following fields:

Wired communications and DECT
Acoustic
Radio
Short Range Devices (SRD)
RFID
WiMax and Richtfunk
Mobile radio (GSM / DCS), Over the Air (OTA) Performance
Electromagnetic Compatibility (EMC) incl. Automotive
Product safety
SAR and Hearing Aid Compatibility (HAC)
Environmental simulation
Smart Card Terminals
Bluetooth
Wi-Fi-Services

The accreditation certificate shall only apply in connection with the notice of accreditation of 13.04.2011 with the accreditation number D-PL-12076-01 and is valid until 03.09.2014. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 82 pages.

Registration number of the certificate: **D-PL-12076-01-01**

Frankfurt am Main, 13.04.2011

Dipl.-Ing. (FH) Dr. Egner
Head of Division 2

This document is a translation. The definitive version is the original German accreditation certificate.
See www.dakks.de

Front side of certificate

Deutsche Akkreditierungsstelle GmbH

Office Berlin
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Office Frankfurt am Main
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The current certificate including annex is published on our website (see link below) or may be received from CETECOM ICT Services on request.

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