PHOENIX TESTLAB
Königswinkel 10
32825 Blomberg
Germany
Phone: +49 (0) 52 35 95 00-0
Fax: +49 (0) 52 35 95 00-10

# Test Report

Report Number:

**F135706E1**

Equipment under Test (EUT):

**Induction cooking range**

Applicant:

**Miele & Cie. KG**

Manufacturer:

**Miele & Cie. KG**

DAkkS
Deutsche
Akkreditierungsstelle
D-PL-17186-01-01
D-PL-17186-01-02
D-PL-17186-01-03

Laboratory (CAB) accredited by
Deutsche Akkreditierungsstelle GmbH (DAkkS)
in compliance with DIN EN ISO/IEC 17025
under the Reg. No. D-PL-17186-01-02,
FCC Test site registration number 90877 and
Industry Canada Test site registration IC3469A-1

## References


**[1] FCC/OST MP-5 (1986)** FCC methods of measurement of radio noise emissions from industrial, scientific and medical equipment.

**[2] FCC 47 CFR Part 2** General Rules and Regulations

**[3] FCC 47 CFR Part 18** INDUSTRIAL, SCIENTIFIC, AND MEDICAL EQUIPMENT


## Test result

The requirements of the tests performed as shown in the overview (chapter 4 of this test report) were fulfilled by the equipment under test.
The complete test results are presented in the following.

| | Name | Signature | Date |
|---|---|---|---|
| Test engineer: | Michael DINTER |  | 20 May 2014 |
| Authorized reviewer: | Bernd STEINER |  | 20 May 2014 |

## Reservation

This test report is only valid in its original form.

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# 1 Identification

## 1.1 Applicant

| | |
|---|---|
| Name: | Miele & Cie. KG<br>Werk Oelde |
| Address: | Carl- Miele -Platz 1<br>59302 Oelde |
| Country: | Germany |
| Name for contact purposes: | Mr. Andreas FABRIZIUS |
| Phone: | +49 52 45 91 – 74 615 |
| Fax: | +49 52 45 91 – 78 46 15 |
| eMail Address: | andreas.fabrizius@miele.de |
| Applicant represented during the test by the following person: | Mr. Andreas FABRIZIUS |

## 1.2 Manufacturer

| | |
|---|---|
| Name: | Miele & Cie. KG<br>Werk Oelde |
| Address: | Carl- Miele -Platz 1<br>59302 Oelde |
| Country: | Germany |
| Name for contact purposes: | Mr. Andreas FABRIZIUS |
| Phone: | +49 52 45 91 – 74 615 |
| Fax: | +49 52 45 91 – 78 46 15 |
| eMail Address: | andreas.fabrizius@miele.de |
| Applicant represented during the test by the following person: | Mr. Andreas FABRIZIUS |

## 1.3 Test Laboratory

The tests were carried out at:

**PHOENIX TESTLAB GmbH**
**Königswinkel 10**
**32825 Blomberg**
**Germany**

Test Laboratory (CAB) accredited by Deutsche Akkreditierungsstelle GmbH (DAkkS) in compliance with DIN EN ISO/IEC 17025 under the Reg. No. D-PL-17186-01-02, recognized by Bundesnetzagentur under the Reg.-No. BNetzA-CAB-02/21-104.
CAB Designation Number DE0004, listed by FCC 31040/SIT1300F2, IC OATS Listing 3469A-1.

The tests were performed at:

**PHOENIX TESTLAB GmbH**
**Königswinkel 10**
**32825 Blomberg**
**Germany**

## 1.4 EUT (Equipment Under Test)

| | |
|---|---|
| Test object*: | Induction cooking range of the kitchen oven |
| Type*: | HR1622 |
| FCC ID*: | SSVRSKI3001 |
| IC*: | not applicable |
| Order number*: | --- |
| Serial number*: | 00/727039713 |
| PCB identifier*: | 75.08018.xxx |
| Hardware version*: | --- |
| Software version*: | none [EUT contains no firmware] |
| Category*: | consumer |

Remark *: As declared by the applicant

## 1.5 Technical data of equipment

| | |
|---|---|
| Power supply*: | AC-mains (120 V AC / 60 Hz) (HR1622), two phases either with 120 ° or 180 ° phase angle |
| Supply voltage*: | $U_{nom}$ = 240V AC 60 Hz L1 – L2 |
| Operating frequncy*: | Below 90 kHz |
| highest internal frequency[1]: | < 108 MHz |

Remark [1]: Highest internal frequency of the inductive cooking range.
The oven with temperature sensor inside was not subject of this test.

.

## 1.6 Dates

| | |
|---|---|
| Date of receipt of test sample: | 23 November 2013 |
| Start of test: | 28 November 2013 |
| End of test: | 14 December 2013 |

# 2 Operational states and test setup

Description of function of the EUT:

- The EUT is an induction cooking range of the kitchen oven with 4 hobs.

The following states were defined as the operating conditions:

- During all tests the EUT is powered by 240 V AC 60 Hz power supply.
- During all tests the integrated oven was switched off so that for each hob separate measurements were done.
- During each test a cooking pot with water was heated with the highest setting of the inductive cooking range (max power was found as worst case).

The following picture shows the EUT:


**Periphery devices**

The ancillary equipment mentioned below was used:

Cooking pots from Silit.

# 3 Additional information

These emission tests according to **FCC 47 CFR Part 18** were only done for the integrated induction cooking range of the kitchen oven HR1622.
Therefore for all tests the oven was switched off and for each hob separate measurements were done.

A pre-test was performed on the EUT in cooking mode with max, mid and low power in order to find the worst case of emission. Therefore the EUT in cooking mode with max power was found as worst case.

EMC measures

The following EMC components were used to fulfil the emission tests:

a) EMC measures induction cooking range

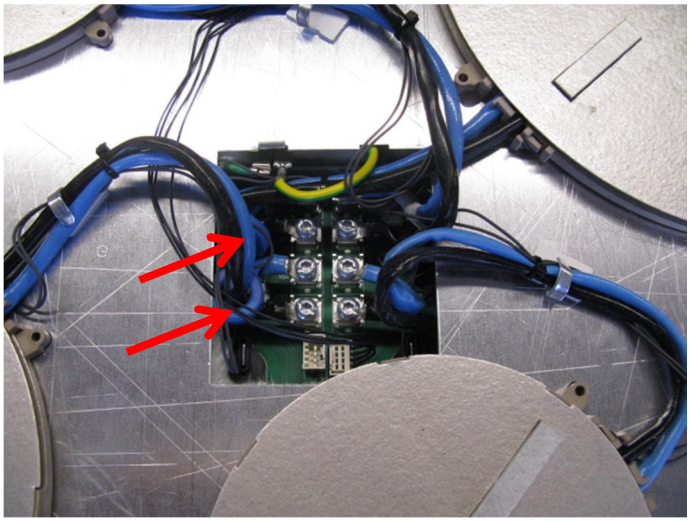


Figure 1: each tape core M607 at the two large cooking zones

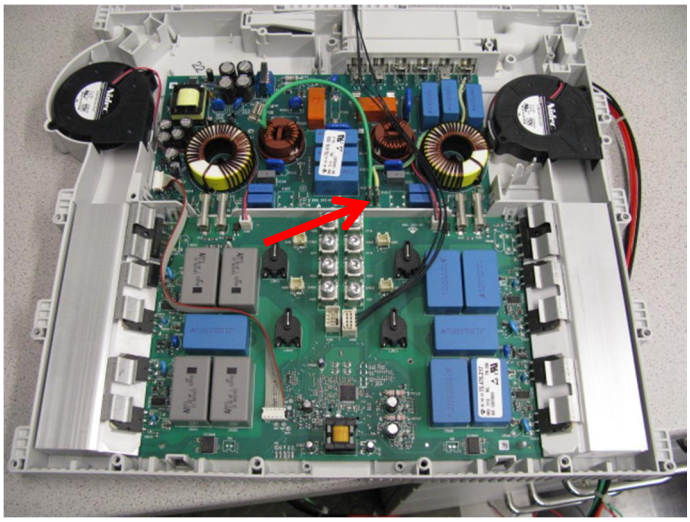


Figure 2: two PE connections (not here yet original configuration)

b) EMC measures power input

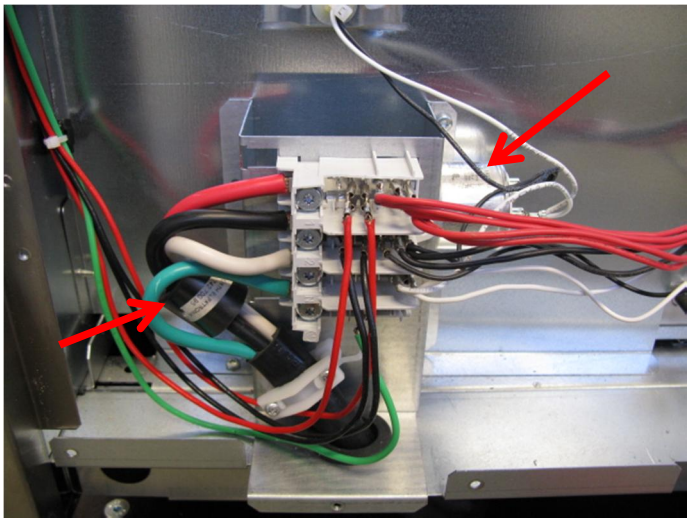


Figure 5: ferrite (Würth 74.270.095) on L1, L2 and N and Iskra-filter (type KPB7077: 0.47 µFX1 + 2x0, 015µFY2) between L and N to the Control and power module of the oven


Figure 6: Close-up left: ferrite, right: Iskra-filter

# 4 Overview

| Conducted emissions FCC 47 CFR Part 18 section 18.307 (a) [3] | | | | | |
|---|---|---|---|---|---|
| Application | Frequency range | Limits | Reference standard | Remark | Status |
| AC supply line | 0.009 to 0.05 MHz<br>0.05 to 0.15 MHz<br>0.15 to 0.5 MHz<br>0.5 to 5 MHz<br>5 to 30 MHz | 110 dBµV QP<br>90 - 80 dBµV (QP)*<br>66 to 56 dBµV (QP)*<br>56 to 46 dBµV (AV)*<br>56 dBµV (QP)<br>46 dBµV (AV)<br>60 dBµV (QP)<br>50 dBµV (AV) | FCC OST/MP-5:1986 | All Induction cooking ranges and ultrasonic equipment | Passed |
| *: Decreases with the logarithm of the frequency | | | | | |

| Radiated emissions FCC 47 CFR Part 18 section 18.305 (b) [3] | | | | | |
|---|---|---|---|---|---|
| Application | Frequency range | Limits | Reference standard | Remark | Status |
| Radiated Emission | 0.009 to 30 MHz | 1500 µV/m QP<br>63.5 dBµV/m QP<br>at 30 m for induction cooking ranges with operating frequencies below 90 kHz | FCC OST/MP-5:1986 | induction cooking range works below 90 kHz | Passed |

# 5 Results

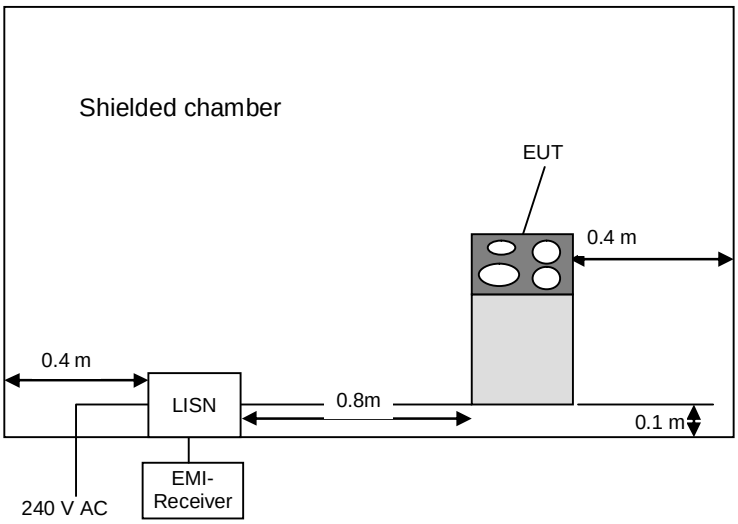
## 5.1 Conducted emissions on power supply lines

### 5.1.1 Test method

This test will be carried out in a shielded chamber. 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 above the ground plane. Floor-standing devices will be placed directly on the ground plane. The setup of the Equipment under test will be in accordance to FCC/OST MP-5 (1986) [1].

The frequency range 150 kHz to 30 MHz will be measured with an EMI Receiver set to MAX Hold mode with peak and average detector and a resolution bandwidth of 9 kHz. A scan will be carried out on the phase (or plus pole in case of DC powered devices) of the AC mains network. If levels detected 10 dB below the appropriable limit, this emission will be measured with the average and quasi-peak detector on all lines.

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

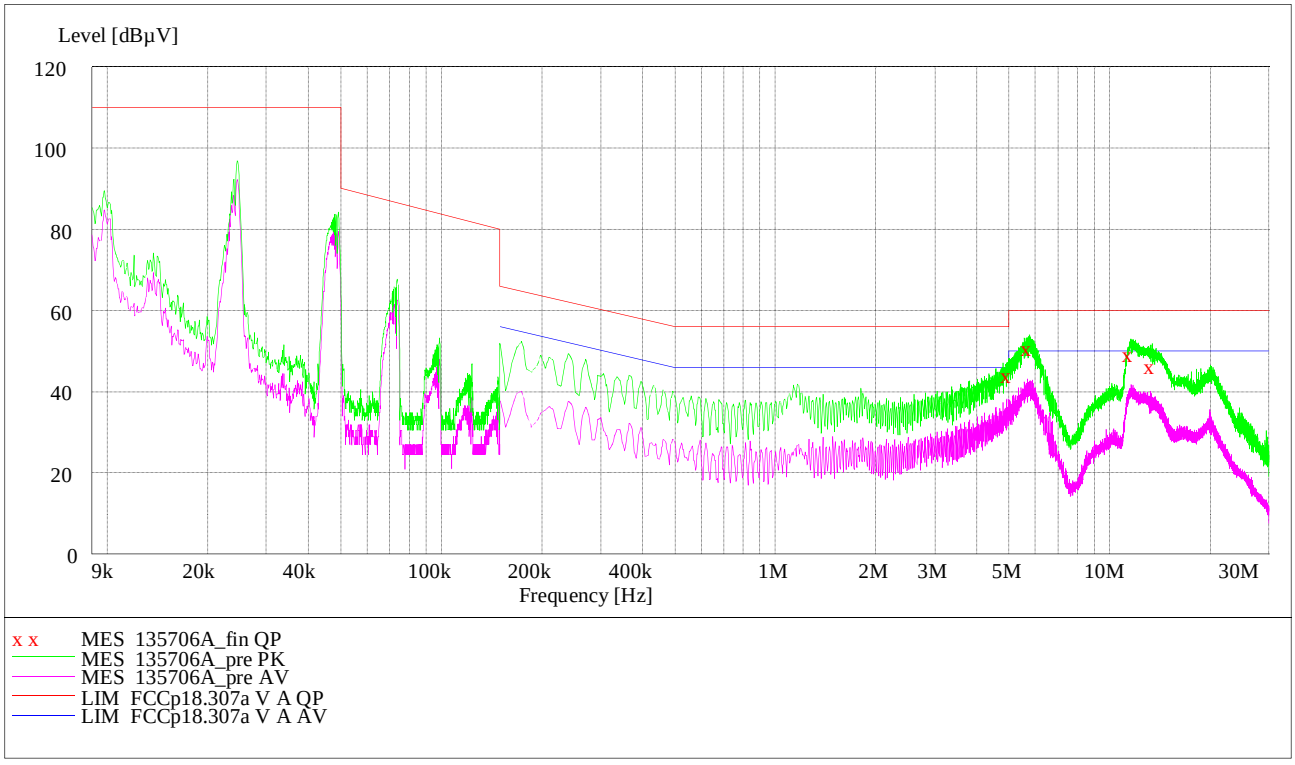


## 5.1.2 Results conducted emission measurement on AC mains

| Ambient temperature: | 21 °C | Relative humidity: | 31 % |
|---|---|---|---|

| | |
|---|---|
| Title: | Conducted emissions according to FCC 47 CFR Part 18 section 18.307 (a) test method FCC OST/MP-5:1986, receiver ESIB 26 |
| EUT: | HR 1622 |
| Manufacturer: | Miele & Cie. KG |
| Operating Condition: | 240V 60 Hz L1 L2 |
| Test site: | PHOENIX TESTLAB Blomberg M4 |
| Operator: | M. Dinter |
| Test Specification: | front left hob |

The curves in the diagram only represent for each frequency point the maximum measured value of all preliminary measurements which were made for each power supply line. The top measured curve represents the peak measurement and the bottom measured curve the average measurement. The quasi-peak measured points are marked by “x” and the average measured points by “+”.



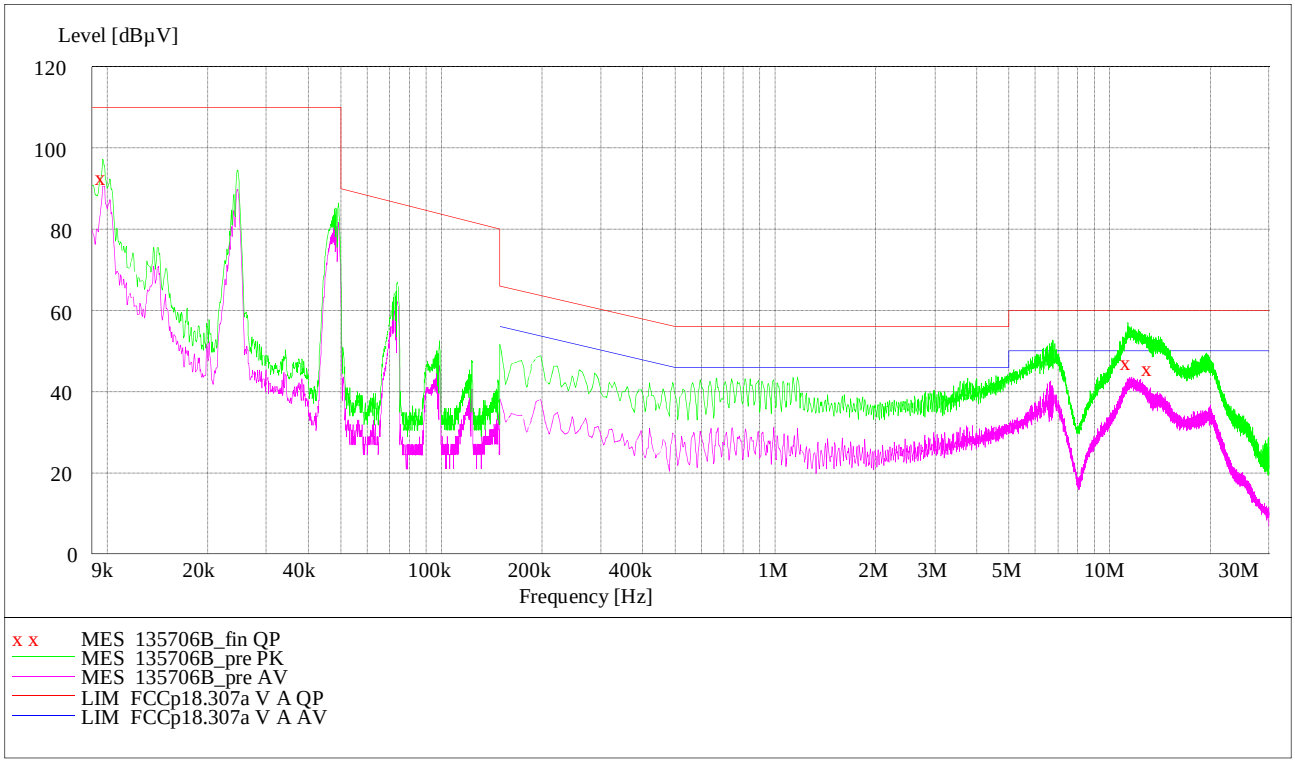

Data record name: 135706A

**Result measured with the quasipeak detector (marked by an x):**

| Frequency MHz | Level dBµV | Transducer dB | Limit dBµV | Margin dB | Line | PE |
|---|---|---|---|---|---|---|
| 4.992901 | 44.50 | 0.9 | 56.0 | 11.5 | N | GND |
| 5.770501 | 51.00 | 1.0 | 60.0 | 9.0 | N | FLO |
| 11.579101 | 49.30 | 1.5 | 60.0 | 10.7 | N | GND |
| 13.429501 | 46.70 | 1.8 | 60.0 | 13.3 | L1 | FLO |

| | |
|---|---|
| Title: | Conducted emissions according to FCC 47 CFR Part 18 section 18.307 (a) test method FCC OST/MP-5:1986, receiver ESIB 26 |
| EUT: | HR 1622 |
| Manufacturer: | Miele & Cie. KG |
| Operating Condition: | 240V 60 Hz L1 L2 |
| Test site: | PHOENIX TESTLAB Blomberg M4 |
| Operator: | M. Dinter |
| Test Specification: | rear right hob |

The curves in the diagram only represent for each frequency point the maximum measured value of all preliminary measurements which were made for each power supply line. The top measured curve represents the peak measurement and the bottom measured curve the average measurement. The quasi-peak measured points are marked by “x” and the average measured points by “+”.



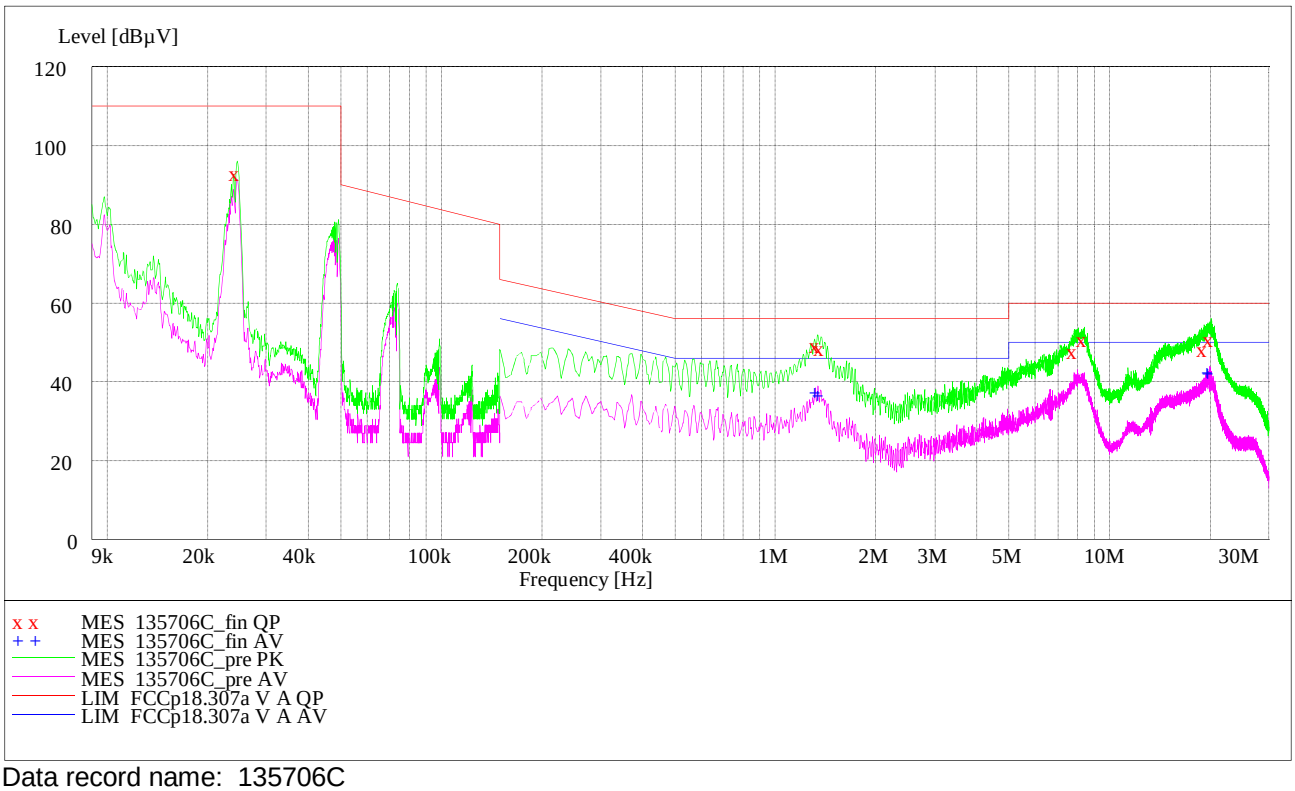

Data record name: 135706B

**Result measured with the quasipeak detector (marked by an x):**

| Frequency MHz | Level dBµV | Transducer dB | Limit dBµV | Margin dB | Line | PE |
|---|---|---|---|---|---|---|
| 0.009760 | 93.00 | 1.3 | 110.0 | 17.0 | L1 | GND |
| 11.386501 | 47.50 | 1.6 | 60.0 | 12.5 | N | FLO |
| 13.215301 | 45.90 | 1.8 | 60.0 | 14.1 | L1 | GND |

| | |
|---|---|
| Title: | Conducted emissions according to FCC 47 CFR Part 18 section 18.307 (a) test method FCC OST/MP-5:1986, receiver ESIB 26 |
| EUT: | HR 1622 |
| Manufacturer: | Miele & Cie. KG |
| Operating Condition: | 240V 60 Hz L1 L2 |
| Test site: | PHOENIX TESTLAB Blomberg M4 |
| Operator: | M. Dinter |
| Test Specification: | front right hob |

The curves in the diagram only represent for each frequency point the maximum measured value of all preliminary measurements which were made for each power supply line. The top measured curve represents the peak measurement and the bottom measured curve the average measurement. The quasi-peak measured points are marked by “x” and the average measured points by “+”.




Data record name: 135706C

**Result measured with the quasipeak detector (marked by an x):**

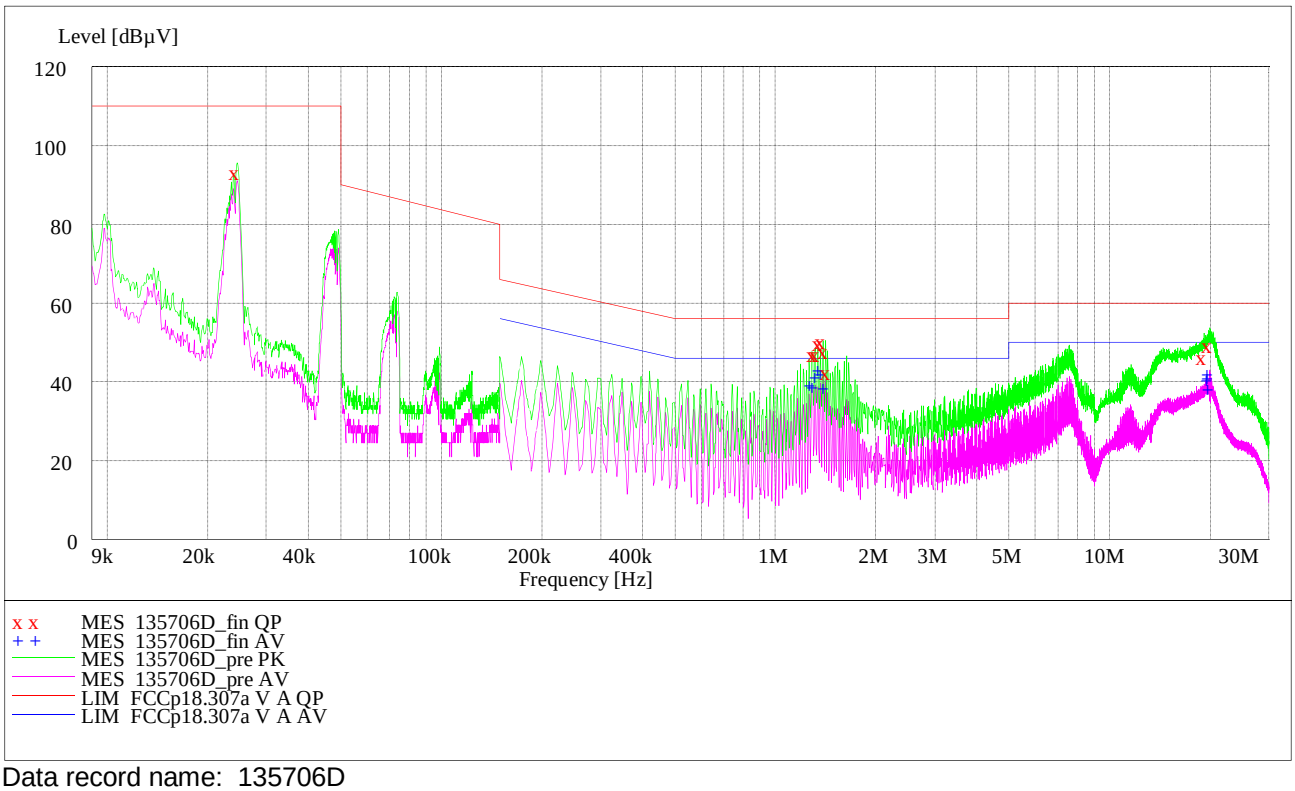
| Frequency MHz | Level dBµV | Transducer dB | Limit dBµV | Margin dB | Line | PE |
|---|---|---|---|---|---|---|
| 0.024500 | 93.40 | 0.5 | 110.0 | 16.6 | L1 | FLO |
| 1.336201 | 49.80 | 0.6 | 56.0 | 6.2 | L1 | FLO |
| 1.374901 | 48.70 | 0.7 | 56.0 | 7.3 | L1 | GND |
| 7.868401 | 48.20 | 1.2 | 60.0 | 11.8 | N | FLO |
| 8.412001 | 51.20 | 1.2 | 60.0 | 8.8 | N | FLO |
| 19.211101 | 48.80 | 2.3 | 60.0 | 11.2 | L1 | FLO |
| 20.164201 | 51.20 | 2.4 | 60.0 | 8.8 | L1 | FLO |

**Result measured with the average detector (marked by a +):**

| Frequency MHz | Level dBµV | Transducer dB | Limit dBµV | Margin dB | Line | PE |
|---|---|---|---|---|---|---|
| 1.336201 | 37.50 | 0.6 | 46.0 | 8.5 | L1 | FLO |
| 1.361401 | 36.80 | 0.6 | 46.0 | 9.2 | L1 | FLO |
| 19.943701 | 43.00 | 2.4 | 50.0 | 7.0 | L1 | FLO |
| 20.038201 | 42.50 | 2.4 | 50.0 | 7.5 | L1 | GND |

| | |
|---|---|
| Title: | Conducted emissions according to FCC 47 CFR Part 18 section 18.307 (a) test method FCC OST/MP-5:1986, receiver ESIB 26 |
| EUT: | HR 1622 |
| Manufacturer: | Miele & Cie. KG |
| Operating Condition: | 240V 60 Hz L1 L2 |
| Test site: | PHOENIX TESTLAB Blomberg M4 |
| Operator: | M. Dinter |
| Test Specification: | rear left hob |

The curves in the diagram only represent for each frequency point the maximum measured value of all preliminary measurements which were made for each power supply line. The top measured curve represents the peak measurement and the bottom measured curve the average measurement. The quasi-peak measured points are marked by “x” and the average measured points by “+”.




Data record name: 135706D

**Result measured with the quasipeak detector (marked by an x):**

| Frequency MHz | Level dBµV | Transducer dB | Limit dBµV | Margin dB | Line | PE |
|---|---|---|---|---|---|---|
| 0.024480 | 93.60 | 0.5 | 110.0 | 16.4 | L1 | GND |
| 1.311001 | 47.10 | 0.7 | 56.0 | 8.9 | L1 | GND |
| 1.335301 | 47.30 | 0.7 | 56.0 | 8.7 | L1 | GND |
| 1.361401 | 50.00 | 0.6 | 56.0 | 6.0 | L1 | FLO |
| 1.385701 | 50.70 | 0.7 | 56.0 | 5.3 | L1 | GND |
| 1.410001 | 48.30 | 0.7 | 56.0 | 7.7 | L1 | FLO |
| 1.435201 | 43.00 | 0.7 | 56.0 | 13.0 | L1 | GND |
| 19.170601 | 46.70 | 2.3 | 60.0 | 13.3 | L1 | GND |
| 19.991401 | 49.60 | 2.4 | 60.0 | 10.4 | L1 | GND |

**Result measured with the average detector (marked by a +):**

| Frequency MHz | Level dBµV | Transducer dB | Limit dBµV | Margin dB | Line | PE |
|---|---|---|---|---|---|---|
| 1.286701 | 39.40 | 0.7 | 46.0 | 6.6 | L1 | GND |
| 1.311001 | 39.00 | 0.7 | 46.0 | 7.0 | L1 | GND |
| 1.336201 | 41.40 | 0.6 | 46.0 | 4.6 | L1 | FLO |
| 1.360501 | 43.40 | 0.6 | 46.0 | 2.6 | L1 | FLO |
| 1.385701 | 42.00 | 0.7 | 46.0 | 4.0 | L1 | GND |
| 1.410001 | 38.80 | 0.7 | 46.0 | 7.2 | L1 | GND |
| 19.869901 | 40.50 | 2.4 | 50.0 | 9.5 | L1 | FLO |
| 19.943701 | 41.30 | 2.4 | 50.0 | 8.7 | L1 | FLO |
| 19.967101 | 42.20 | 2.4 | 50.0 | 7.8 | L1 | FLO |
| 19.991401 | 42.20 | 2.4 | 50.0 | 7.8 | L1 | FLO |
| 20.061601 | 38.50 | 2.4 | 50.0 | 11.5 | L1 | GND |

Test: Passed

Test equipment used for the test:

| |
|---|
| 1 - 6 |

## 5.2 Radiated emissions

### 5.2.1 Test method

The radiated emission measurement is subdivided into the following stages.

- A preliminary measurement carried out in a fully anechoic chamber with a fixed antenna height in the frequency range 9 kHz to 30 MHz.
- A final measurement carried out on an outdoor test side without reflecting ground plane and a fixed antenna height in the frequency range 9 kHz to 30 MHz.

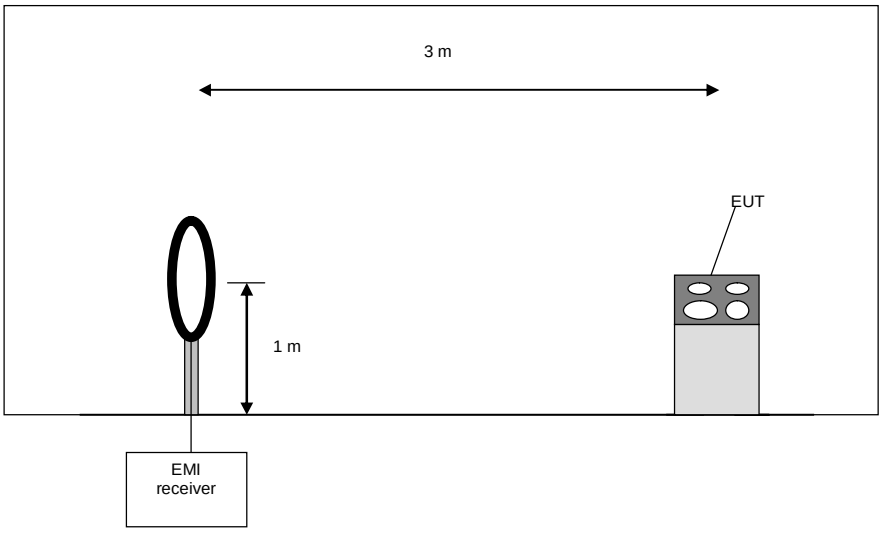
**Preliminary measurement (9 kHz to 30 MHz):**

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 FCC/OST MP-5 (1986) [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 |



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:

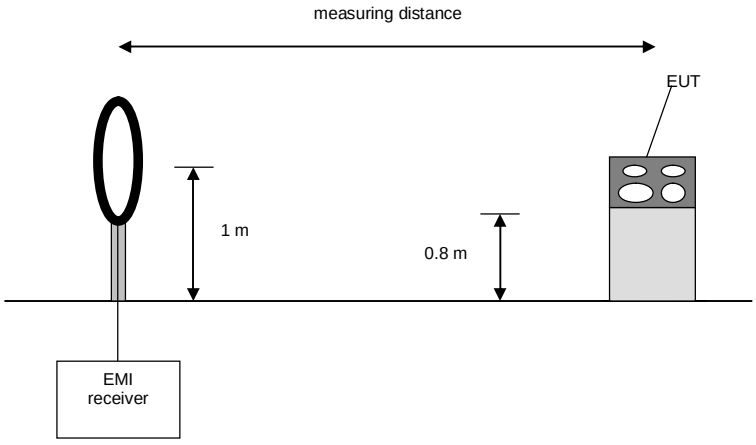
1) Monitor the frequency range at horizontal polarisation and a EUT azimuth of 0 °.
2) Manipulate the system cables within the range to produce the maximum level of emission.
3) Rotate the EUT by 360 ° to maximize the detected signals.
4) Make a hardcopy of the spectrum.
5) Measure the frequencies of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

**Final measurement (9 kHz to 30 MHz):**

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 30 m. The commission as an alternative shall accept measurements at a closer fixed distance, Provided l7D is used as an attenuation law factor (where d is the distance measured in appropriate units) according to MP-5 Section 2.2.6 [1]. The final measurement will be performed with a EMI Receiver or alternatively a spectrum analyser set to average detector.
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 |



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 (because of EUT is a module and might be used in a handheld equipment application).

### 5.2.2 Results preliminary measurement 9 kHz to 30 MHz

| | | | |
|---|---|---|---|
| Ambient temperature | 21 °C | Relative humidity | 35 % |

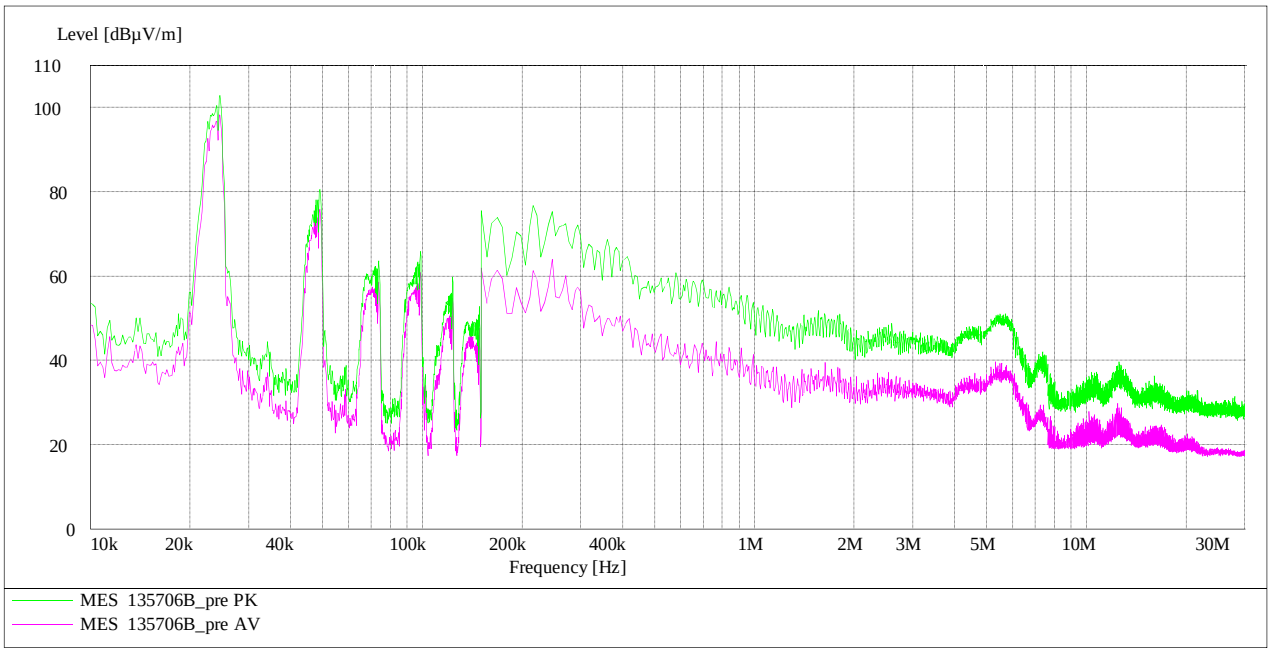
| | |
|---|---|
| Title: | preliminary measurement at a 3 m distance<br>according to FCC 47 CFR Part 18 section 18.305 (b)<br>test method FCC OST/MP-5:1986, receiver ESIB 7 |
| EUT: | HR 1622 |
| Manufacturer: | Miele & Cie. KG |
| EUT: | HR 1622 |
| Manufacturer: | Miele |
| Operating Condition: | 240 V AC 60 Hz L1/L2 |
| Test site: | Phoenix Testlab, anechoic chamber M5 |
| Operator: | M.Dinter |
| Test Specification: | Front left hob |

Data record name: 135706A

The following frequencies were found during the preliminary emission test:
24.550 kHz, 49.100 kHz,73.650, 98.650 kHz, 123.400 kHz and 150.000 kHz

These frequencies below 30 MHz had to be measured on the open area test site. The results are shown in clause 5.2.3.

| | |
|---|---|
| Title: | preliminary measurement at a 3 m distance<br>according to FCC 47 CFR Part 18 section 18.305 (b)<br>test method FCC OST/MP-5:1986, receiver ESIB 7 |
| EUT: | HR 1622 |
| Manufacturer: | Miele & Cie. KG |
| EUT: | HR 1622 |
| Manufacturer: | Miele |
| Operating Condition: | 240 V AC 60 Hz L1/L2 |
| Test site: | Phoenix Testlab, anechoic chamber M5 |
| Operator: | M.Dinter |
| Test Specification: | rear right hob |

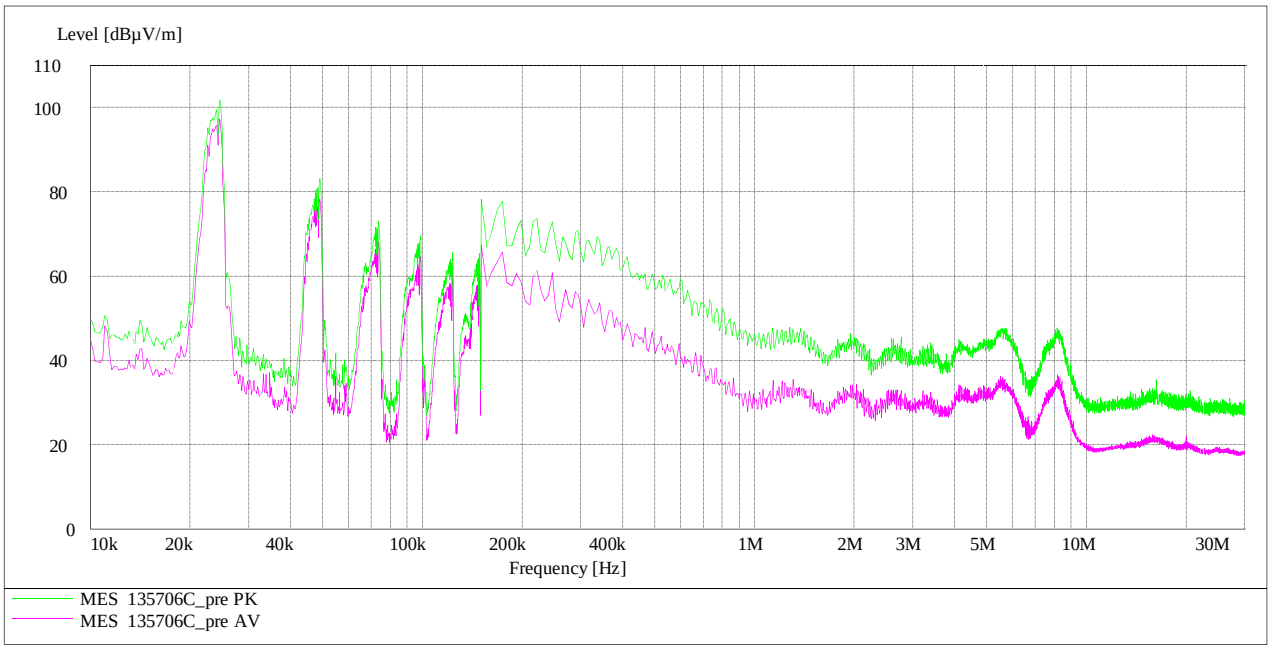



Data record name: 135706B

The following frequencies were found during the preliminary emission test:
24.550 kHz, 49.100 kHz,73.650, 98.650 kHz, 123.400 kHz and 150.000 kHz

These frequencies below 30 MHz had to be measured on the open area test site. The results are shown in clause 5.2.3.

| | |
|---|---|
| Title: | preliminary measurement at a 3 m distance<br>according to FCC 47 CFR Part 18 section 18.305 (b)<br>test method FCC OST/MP-5:1986, receiver ESIB 7 |
| EUT: | HR 1622 |
| Manufacturer: | Miele & Cie. KG |
| EUT: | HR 1622 |
| Manufacturer: | Miele |
| Operating Condition: | 240 V AC 60 Hz L1/L2 |
| Test site: | Phoenix Testlab, anechoic chamber M5 |
| Operator: | M.Dinter |
| Test Specification: | front right hob |

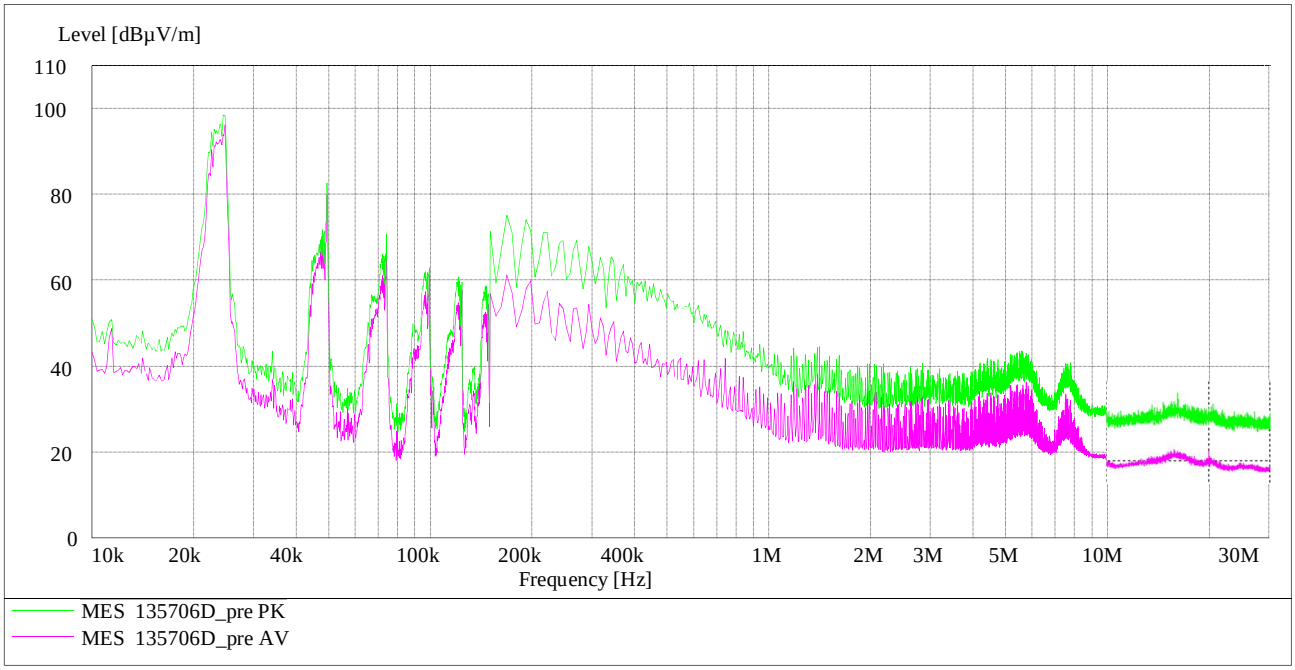



Data record name: 135706C

The following frequencies were found during the preliminary emission test:
24.550 kHz, 49.100 kHz,73.650, 98.650 kHz, 123.400 kHz and 150.000 kHz

These frequencies below 30 MHz had to be measured on the open area test site. The results are shown in clause 5.2.3.

| | |
|---|---|
| Title: | preliminary measurement at a 3 m distance<br>according to FCC 47 CFR Part 18 section 18.305 (b)<br>test method FCC OST/MP-5:1986, receiver ESIB 7 |
| EUT: | HR 1622 |
| Manufacturer: | Miele & Cie. KG |
| EUT: | HR 1622 |
| Manufacturer: | Miele |
| Operating Condition: | 240 V AC 60 Hz L1/L2 |
| Test site: | Phoenix Testlab, anechoic chamber M5 |
| Operator: | M.Dinter |
| Test Specification: | rear left hob |




Data record name: 135706D

The following frequencies were found during the preliminary emission test:
24.550 kHz, 49.100 kHz,73.650, 98.650 kHz, 123.400 kHz and 150.000 kHz

These frequencies below 30 MHz had to be measured on the open area test site. The results are shown in clause 5.2.3.

Test equipment used for the preliminary test:

| |
|---|
| 6 - 11 |

### 5.2.3 Results final measurement 9 kHz to 30 MHz

| Ambient temperature: | 8 °C | Relative humidity: | 59 % |
|---|---|---|---|

Position of EUT: The EUT was standing on the floor. The distance between EUT and antenna was 30 m.

Cable guide: For further information of the cable guide refer to the pictures in annex A of this test report.

Test record: The test was carried out in high power operation mode of the hob. All results are shown in the following.

Power supply: During this test the EUT was powered with 240 V AC 60 Hz.

Detector: Average for the final result
(200 Hz RBW for 9 kHz – 150 kHz and 9 kHz RBW for 150 kHz to 30 MHz)

Measurement distance: 30 m

Test results: The test results were calculated with the following formula:

Result [dBµV/m] = reading [dBµV] + antenna factor [dB/m]

| **Results 135706A front left hob** | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency kHz | Result dBµV/m* | Limit(* dBµV/m | Margin dB | Detector | Readings dBµV | Antenna factor * dB/m | Result |
| 24.550 | 63.1 | 63.5 | 0.4 | AV | 43.1 | 20.0 | passed |
| 49.100 | 49.3 | 63.5 | 14.2 | AV | 29.3 | 20.0 | passed |
| 73.650 | 48.1 | 63.5 | 15.4 | AV | 28.1 | 20.0 | passed |
| 98.650 | 47.6 | 63.5 | 15.9 | AV | 27.6 | 20.0 | passed |
| 123.400 | 46.2 | 63.5 | 17.3 | AV | 26.2 | 20.0 | passed |
| 150.000 | 48.6 | 63.5 | 14.9 | AV | 28.6 | 20.0 | passed |
| | | | | | | | |
| Measurement uncertainty | | | +2.2 dB / -3.6 dB | | | | |

| **Results 135706B rear right hob** | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency kHz | Result dBµV/m* | Limit(* dBµV/m | Margin dB | Detector | Readings dBµV | Antenna factor * dB/m | Result |
| 24.550 | 60.6 | 63.5 | 2.9 | AV | 40.6 | 20.0 | passed |
| 49.100 | 45.5 | 63.5 | 18.0 | AV | 25.5 | 20.0 | passed |
| 73.650 | 41.4 | 63.5 | 22.1 | AV | 21.4 | 20.0 | passed |
| 98.650 | 42.3 | 63.5 | 21.2 | AV | 22.3 | 20.0 | passed |
| 123.400 | 38.2 | 63.5 | 25.3 | AV | 18.2 | 20.0 | passed |
| 150.000 | 44.5 | 63.5 | 19.0 | AV | 24.5 | 20.0 | passed |
| | | | | | | | |
| Measurement uncertainty | | | +2.2 dB / -3.6 dB | | | | |

| Results 135706C front right hob | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency kHz | Result dBµV/m* | Limit(* dBµV/m | Margin dB | Detector | Readings dBµV | Antenna factor * dB/m | Result |
| 24.550 | 59.8 | 63.5 | 3.7 | AV | 39.8 | 20.0 | passed |
| 49.100 | 45.9 | 63.5 | 17.6 | AV | 25.9 | 20.0 | passed |
| 73.650 | 40.3 | 63.5 | 23.2 | AV | 20.3 | 20.0 | passed |
| 98.650 | 39.2 | 63.5 | 24.3 | AV | 19.2 | 20.0 | passed |
| 123.400 | 35.2 | 63.5 | 28.3 | AV | 15.2 | 20.0 | passed |
| 150.000 | 42.2 | 63.5 | 21.3 | AV | 22.2 | 20.0 | passed |
| | | | | | | | |
| Measurement uncertainty | | | +2.2 dB / -3.6 dB | | | | |

| Results 135706D rear left hob | | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency kHz | Result dBµV/m* | Limit(* dBµV/m | Margin dB | Detector | Readings dBµV | Antenna factor * dB/m | Result |
| 24.550 | 57.3 | 63.5 | 6.2 | AV | 37.3 | 20.0 | passed |
| 49.100 | 44.1 | 63.5 | 19.4 | AV | 24.1 | 20.0 | passed |
| 73.650 | 38.6 | 63.5 | 24.9 | AV | 18.6 | 20.0 | passed |
| 98.650 | 39.2 | 63.5 | 24.3 | AV | 19.2 | 20.0 | passed |
| 123.400 | 35.2 | 63.5 | 28.3 | AV | 15.2 | 20.0 | passed |
| 150.000 | 40.1 | 63.5 | 23.4 | AV | 20.1 | 20.0 | passed |
| | | | | | | | |
| Measurement uncertainty | | | +2.2 dB / -3.6 dB | | | | |

*: Cable loss included
(*:Limits according to FCC 47 CFR Part 18 section 18.305 (b)

Test: Passed

Test equipment used for the final test:

| |
|---|
| 12 -14 |

# 6 Test equipment

| No. | Test equipment | Type | Manufacturer | Serial No. | PM. No. | Cal. Date | Cal. due |
|---|---|---|---|---|---|---|---|
| 1 | Shielded chamber M4 | - | Siemens | B83117S1-X158 | 480088 | Weekly verification (system cal.) | |
| 2 | Measuring receiver | ESIB 26 | Rohde & Schwarz | 100292 | 481182 | 09/03/2012 | 03/2014 |
| 3 | LISN | NSLK8128 | Schwarzbeck | 8128155 | 480058 | 04/05/2012 | 05/2014 |
| 5 | AC-filter | B84299-D87-E3 | Siemens | 930262292 | 480097 | Weekly verification (system cal.) | |
| 6 | EMI-Software | ES-K1 | Rohde & Schwarz | - | 480111 | - | - |
| 7 | Fully anechoic chamber M5 | - | Siemens | B83177-S1-X156 | 480073 | Weekly verification (system cal.) | |
| 8 | Controller | MCU | Maturo | MCU/040/971107 | 480924 | not necessary | |
| 9 | Antenna support | MA240 | Deisel | 228/314 | 480069 | not necessary | |
| 10 | Turntable | DS412 | Deisel | 412/317 | 480070 | not necessary | |
| 11 | Measuring receiver | ESIB7 | Rohde & Schwarz | 100304 | 480521 | 15/02/2012 | 02/2014 |
| 12 | Loop antenna | HFH2-Z2 | Rohde & Schwarz | 832609/014 | 480059 | 16/02/2012 | 02/2014 |
| 13 | EMI test receiver | ESPC | Rohde & Schwarz | 843756/006 | 480150 | 09/02/2012 | 02/2014 |
| 14 | Outdoor test site | - | Phoenix-Test-Lab | - | 480293 | - | |

# 7 Report history

| Report Number | Date | Comment |
|---|---|---|
| F135706E1 | 30 April 2014 | Document created |
| - | - | - |
| - | - | - |

# 8 List of annexes

| | | | |
|---|---|---|---|
| ANNEX A | TEST SETUP PHOTOS | | 4 pages |
| | 135706_con1 | Test setup fully anechoic chamber | |
| | 135706_emi2 | Test setup shielded chamber | |
| | 135706_emi3 | Test setup open area test site | |
| | 135706_emi4 | Test setup open area test site | |
| ANNEX B | EXTERNAL PHOTOS | | 4 pages |
| | 135706_eut1 | 3D front view | |
| | 135706_eut2 | 3D rear view | |
| | 135706_eut3 | top view | |
| | 135706_type | type plate | |
| ANNEX C | INTERNAL PHOTOS | | 8 pages |
| | 135706_eut4 | Internal view 1 | |
| | 135706_eut5 | Internal view 2 | |
| | 135706_eut6 | Internal view 3 | |
| | 135706_eut7 | Internal view 4 | |
| | 135706_eut7a | Internal view 5 | |
| | 135706_eut8 | Internal view 6 | |
| | 135706_eut8a | Internal view 7 | |
| | 135706_eut9 | Internal view 8 | |