

## **5 TEST CONDITIONS AND RESULTS**

### **5.1 Conducted emissions**

For test instruments and accessories used see section 6 Part A 4.

#### **5.1.1 Description of the test location**

Test location:                      Shielded Room S2

#### **5.1.2 Photo documentation of the test set-up**



#### **5.1.3 Applicable standard**

According to FCC Part 15, Section 15.207(a):

Except as shown in paragraphs (b) and (c) of this Section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the given limits.

#### **5.1.4 Description of Measurement**

The measurements are performed following the procedures set out in ANSI C63.4 described under item 4.4.3. If the minimum limit margin appears to be less than 20 dB with a peak mode measurement, the emissions are remeasured using a tuned receiver with quasi-peak and average detection and recorded on the data sheets.

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IC ID: 8748A-2503

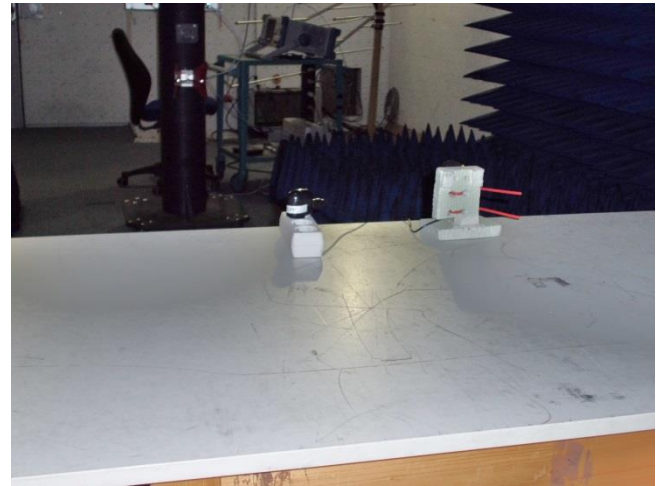
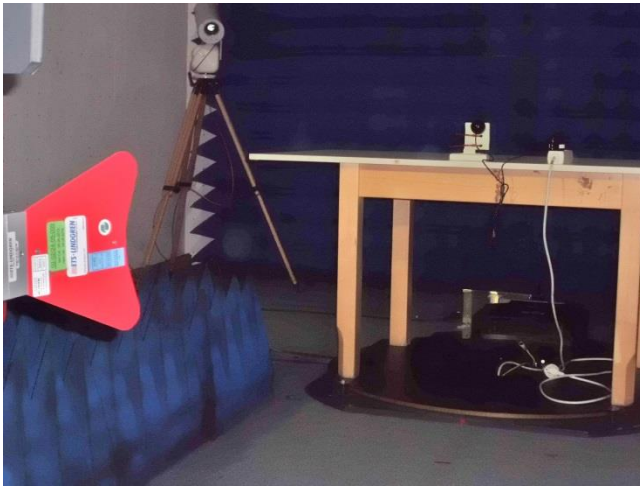
## 5.2 Radiated emission of the fundamental wave

For test instruments and accessories used see section 6 Part CPR 3.

### 5.2.1 Description of the test location

Test location: Anechoic chamber 2  
Test distance: 3 m

### 5.2.2 Photo documentation of the test set-up



### 5.2.1 Applicable standard

According to FCC Part 15C, Section 15.249(a):

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the effective limits.

### 5.2.2 Description of Measurement

The radiated emission of the fundamental wave from the EUT is measured using a spectrum analyser and appropriate linear polarized antennas. The set up of the EUT and the measurement procedure is in accordance to ANSI C63.4, Item 8.3. The EUT is measured in TX continuous mode modulated under normal conditions.

Analyser settings:

Peak measurement: RBW: 1 MHz  
AV measurement: RBW: 1 MHz

VBW: 1 MHz  
VBW: 10 Hz

Detector: Max peak  
Detector: Max peak

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### 5.3 Spurious emissions radiated

For test instruments and accessories used see section 6 Part **SER1**, **SER 2**, **SER 3**.

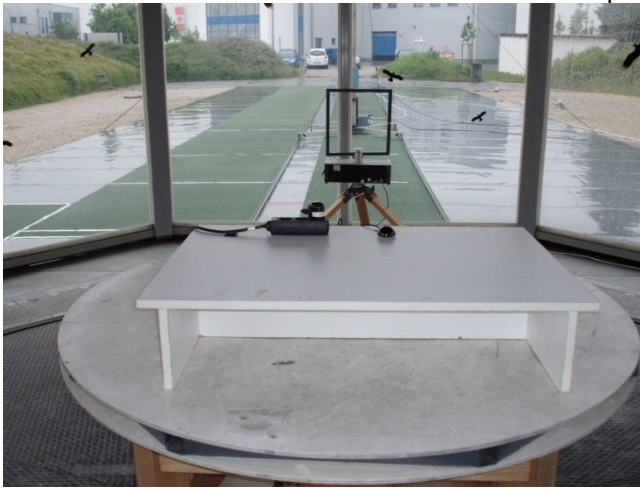
#### 5.3.1 Description of the test location

Test location: OATS 1  
 Test location: Anechoic chamber 2

Test distance: 3 m (9 kHz to 18 GHz)  
 1 m (18GHz to 25 GHz)

#### 5.3.2 Photo documentation of the test set-up

Test setup 9 kHz – 30 MHz



Test setup 30 MHz – 1000 MHz

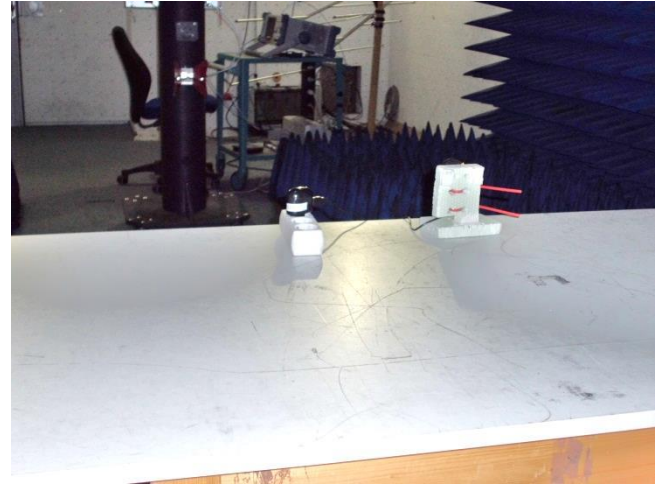
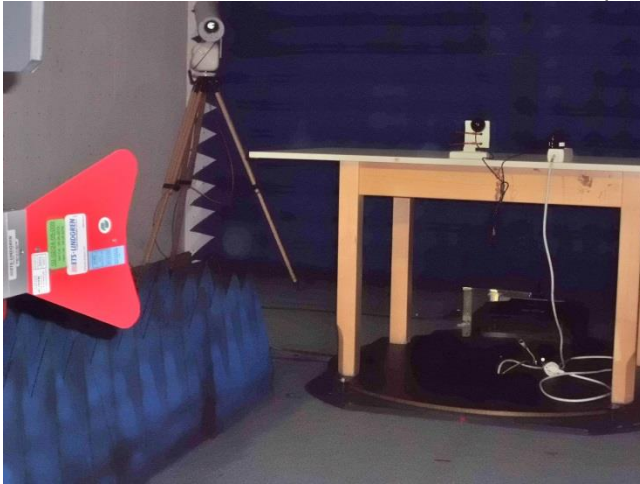




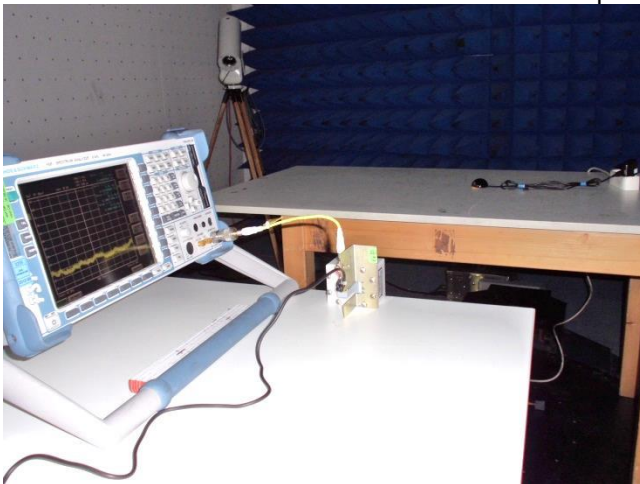
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Test setup 1 GHz – 18 GHz



Test setup 18 GHz – 40 GHz



### 5.3.3 Applicable standard

According to FCC Part 15C, Section 15.249 (d):

Emission radiated outside of the specified frequency bands, except harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated limit in FCC Part 15C, Section 15.209, whichever is the lesser attenuation.

### 5.3.4 Description of Measurement

The radiated emissions from the EUT are measured in the frequency range of 9 kHz to 1000 MHz using a tuned receiver and appropriate broadband linearly polarized antennas. The setup of the EUT and the measurement procedure is in accordance to ANSI C63.4, Item 8.3. In the frequency range above 1 GHz a spectrum analyser is used with appropriate linear polarized antennas. If the emission level in peak mode complies with the average limit testing is stopped and peak values will be reported, otherwise, the emission is measured in average mode again and reported. The EUT is measured in TX continuous mode modulated under normal conditions.

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## 5.4 EBW 20 dB and OBW 99%

For test instruments and accessories used see section 6 Part MB.

### 5.4.1 Description of the test location

Test location: AREA4

### 5.4.2 Photo documentation of the test set-up



### 5.4.3 Applicable standard

According to FCC Part 15, Section 15.215(c):

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in Section 15.217 through Section 15.257, must be designed to ensure that the 20 dB bandwidth of the emission is contained within the frequency band designated in the rule section under which the equipment is operated.

### 5.4.4 Description of Measurement

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio of -20 dB (99%). The x-dB-down (OBW) function of the analyser is used. The measurement is performed with normal modulation in TX continuous mode.

Spectrum analyser settings:

RBW: 100 kHz

Sweep time: 10 s

VBW: 300 kHz

Detector: PK

Span: 10 MHz

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## 5.5 Correction for pulse operation (duty cycle)

For test instruments and accessories used see section 6 Part DC.

### 5.5.1 Description of the test location

Test location: Shielded Room S4

### 5.5.2 Photo documentation of the test set-up



### 5.5.3 Applicable standard

According to FCC Part 15A. Section 15.35(c):

When the radiated emission limits are expressed in terms of average value and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete puls train, including blanking intervals, as long as the pulse train does not exceed 0.1s. In cases where the puls train exceeds 0.1s, the measured field strength shall be determined from the average absolute voltage during a 0.1s interval during which the field strength is at its maximum. The exact method of calculating the average field strength shall be submitted.



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## 5.6 Receiver radiated emissions

For test instruments and accessories used see section 6 Part **SER2** and **SER3**.

### 5.6.1 Description of the test location

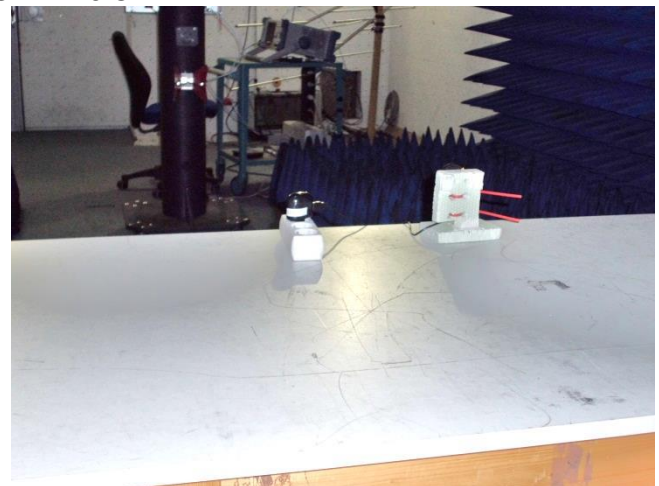
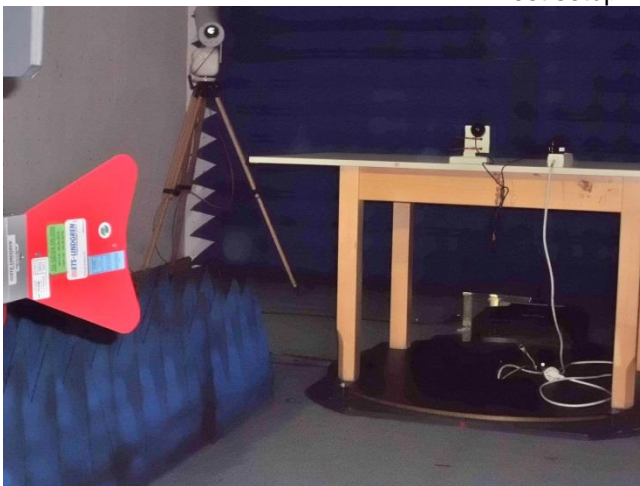
Test location: OATS 1  
Test location: Anechoic chamber 2  
Test distance: 3 m

### 5.6.2 Photo documentation of the test set-up

Test setup 30 MHz – 1000 MHz



Test setup 1 GHz – 18 GHz



### 5.6.3 Applicable standard

According to FCC Part 15C, Section 15.109(a):

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 m shall not exceed the given limit.