

## 5 TEST CONDITIONS AND RESULTS

### 5.1 AC power line 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 C63.10 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 re-measured using a tuned receiver with quasi-peak and average detection and recorded on the data sheets.

**FCC ID: KR5FBD5 IC: 7812D-FBD5**

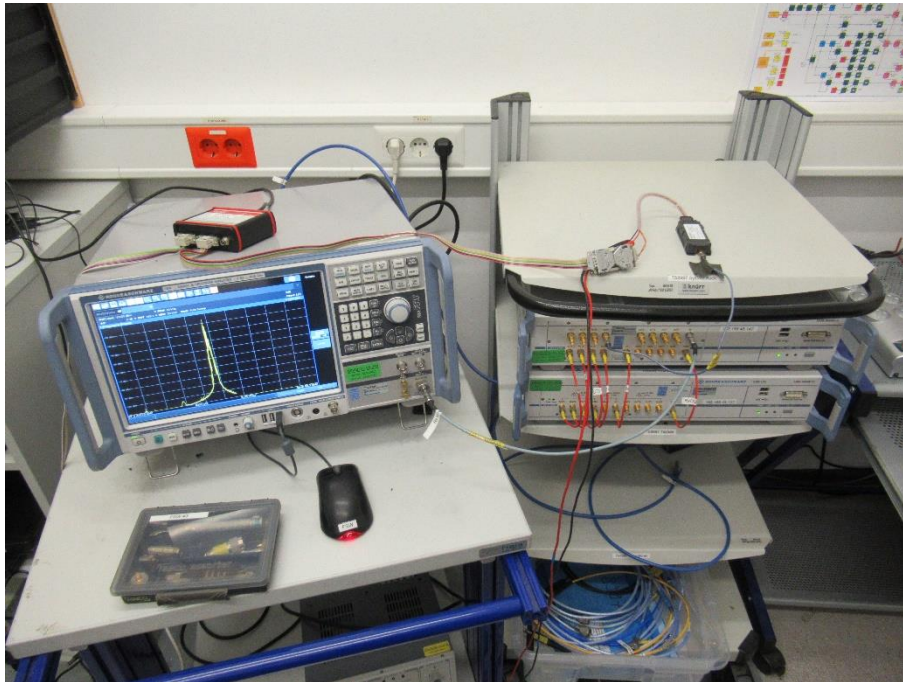
**5.2 EBW, OBW and frequency stability**

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

**5.2.1 Description of the test location**

Test location:                   Shielded Room S6

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



**5.2.3 Applicable standard**

According to FCC Part 15, Section 15.247(a)(2):  
Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 – 2483.5 MHz and 5725 – 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

**5.2.4 Description of Measurement**

The bandwidth was measured at an amplitude level reduced from the reference level of a modulated channel by a ratio of -6 dB. The reference level is the level of the highest signal amplitude observed at the transmitter at either the fundamental frequency or the first order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical. An alternative is to use the bandwidth measurement of the analyser.

Spectrum analyser settings for EBW:  
RBW: 100 kHz,   VBW: 300 kHz,   Detector: Max peak,   Sweep time: 5 s,   Span: 2 EBW;  
Spectrum analyser settings for OBW:  
RBW: 1-5% OBW, VBW: 3 RBW,   Detector: Max peak,   Sweep time: 5 s,   Span: 2 OBW;

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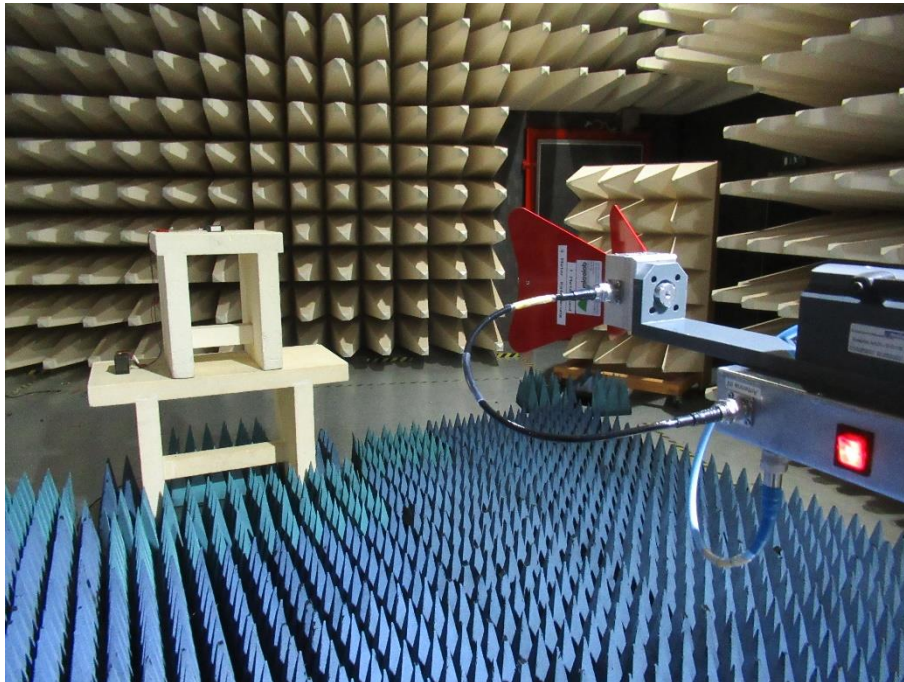
5.3 Maximum peak radiated output power

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

5.3.1 Description of the test location

Test location: Anechoic chamber 1

5.3.2 Photo documentation of the test set-up



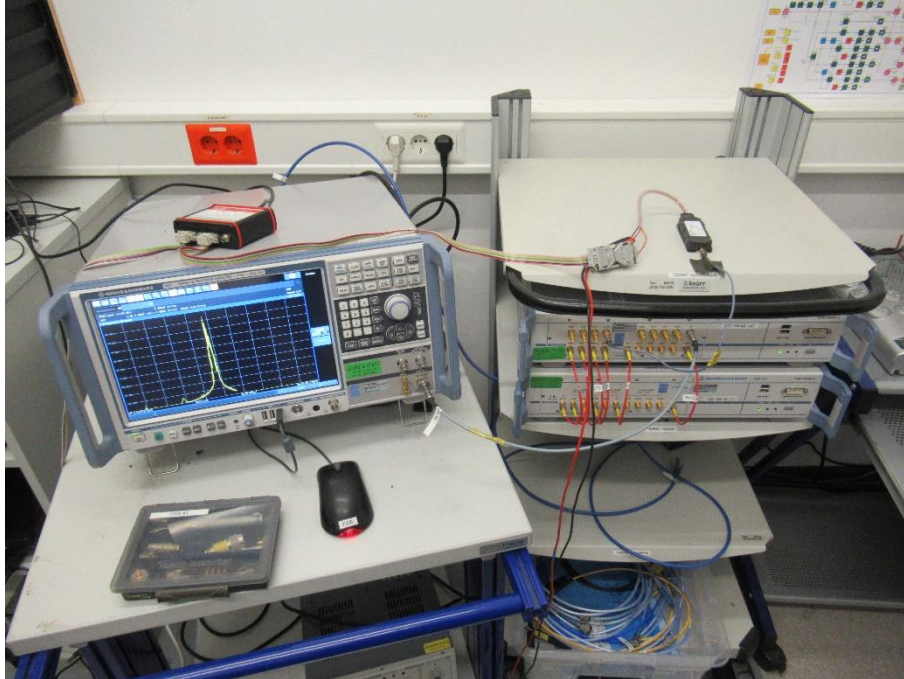
## 5.4 Power spectral density

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

### 5.4.1 Description of the test location

Test location: NONE

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



### 5.4.3 Applicable standard

According to FCC Part 15, Section 15.247(e):

For digitally modulated systems, the power spectral density radiated from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the radiated output power shall be used to determine the power spectral density.

### 5.4.4 Description of Measurement

The measurement is performed using the procedure 10.2 set out in KDB-558074. Therefore the PKPSD is measured conducted. The max peak was located and measured with the spectrum analyser and the marker set to peak. An offset of 10.5 dB was set to compensate the matching and cable attenuation. The maximum antenna gain being computed in paragraph 5.9 of this test report is used to calculate the maximum peak power spectral density.

Spectrum analyser settings:

RBW: 3 kHz, VBW: 10 kHz, Detector: Peak, Sweep time: Auto

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5.5 Radiated emissions in restricted bands

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

5.5.1 Description of the test location

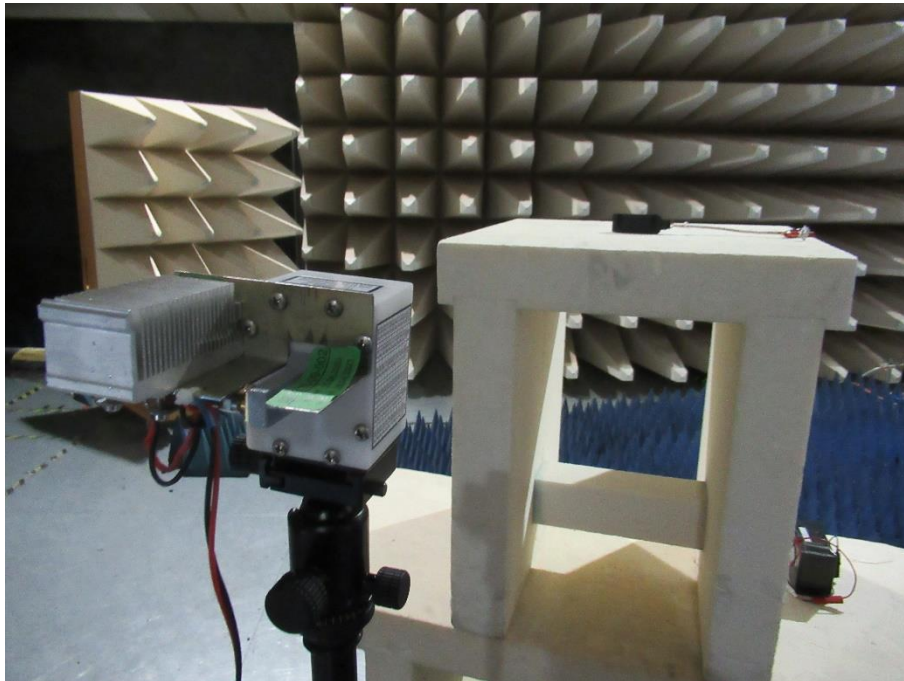
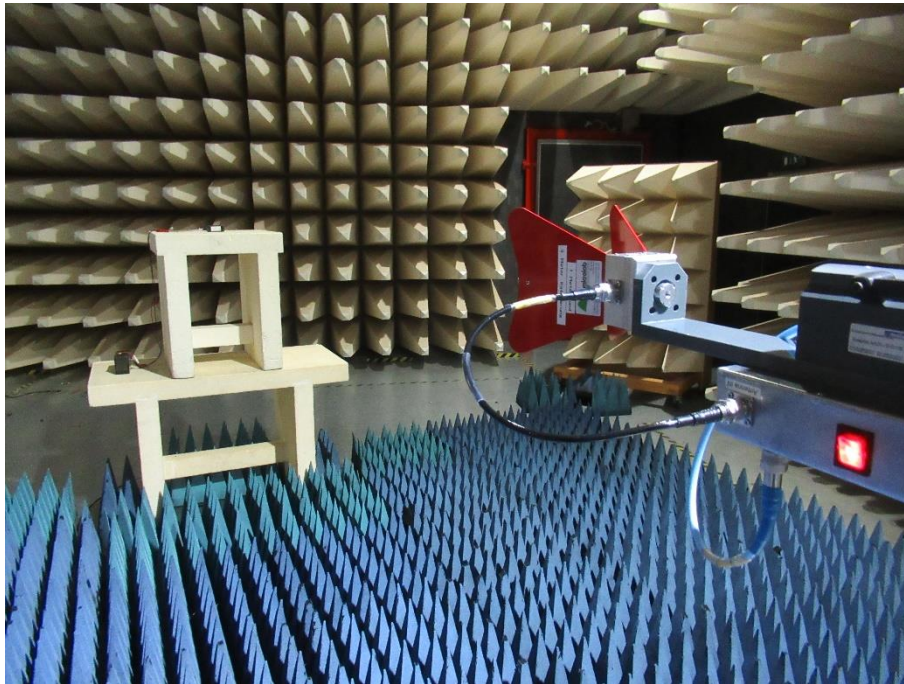
Test location: OATS 1  
Test location: Anechoic chamber 1  
Test distance: 3 m

5.5.2 Photo documentation of the test set-up

Open area test site



FCC ID: KR5FBD5 IC: 7812D-FBD5  
Anechoic chamber



According to FCC Part 15, Section 15.205(a):

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limit specified in Section 15.209(a).

The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test results without the written permission of the test laboratory.

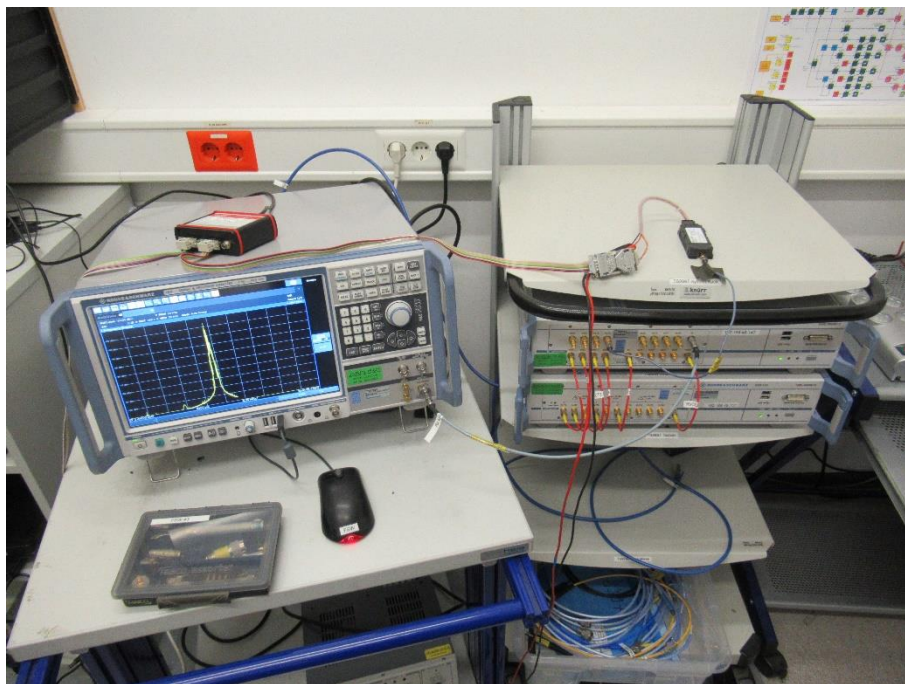
## 5.7 Antenna application

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

### 5.7.1 Description of the test location

Test location: Shielded room S6

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



### 5.7.3 Applicable standard

According to FCC Part 15C, Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit that broken antennas can be replaced by the user, but the use of a standard antenna jack is prohibited.

The EUT has an integrated antenna. No other antenna can be used with the device. Additional to that a conducted output power measurement was performed. According to the following formula the maximum gain of the antenna was calculated.

$$\text{EIRP} = P + G$$

Where:

EIRP = Equivalent isotropic radiated power

P = Conducted output power

G = Calculated gain of the antenna