

## 5.2 Emission bandwidth

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

### 5.2.1 Description of the test location

Test location: AREA4

### 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:

RBW: 100 kHz, VBW: 300 kHz, Detector: Peak, Sweep time: Auto sweep

The table below shows the settings according to ANSI C63.4:

Fundamental frequency	Minimum resolution bandwidth
9 kHz to 30 MHz	1 kHz
30 to 1000 MHz	10 kHz
1000 MHz to 40 GHz	100 kHz

### 5.3 Occupied bandwidth

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

#### 5.3.1 Description of the test location

Test location: AREA4

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



#### 5.3.1 Applicable standard

According to RSS-Gen, 4.6.1:

When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99 % emission bandwidth, as calculated or measured.

#### 5.3.2 Description of Measurement

The bandwidth was measured with the function "bandwidth measurement" of the spectrum analyser. The EUT is connected via suitable attenuator at the spectrum analyser. The measurement is repeated for every different modulation standard of the EUT and recorded.

Spectrum analyser settings:

RBW: 300 kHz, VBW: 1 MHz, Detector: sampling detector, Sweep time: Auto sweep

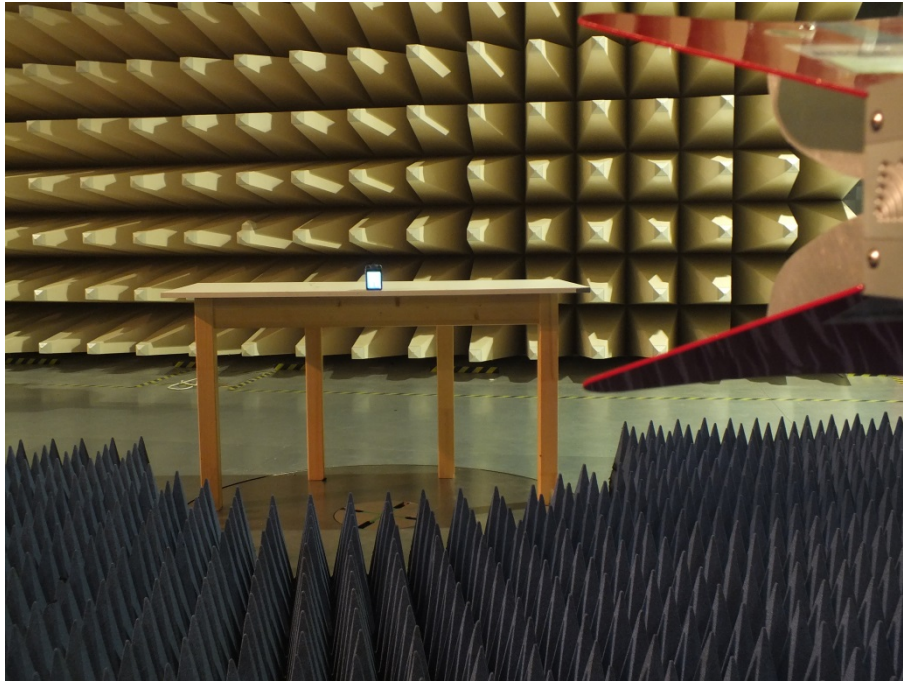
## 5.4 Maximum peak radiated output power

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

### 5.4.1 Description of the test location

Test location: Anechoic chamber 1

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



### 5.4.3 Applicable standard

According to FCC Part 15, Section 15.247(b)(3):

For systems using digital modulation in the 2400-2483.5 MHz and 5725 – 5850 MHz bands, the maximum peak output power of the transmitter shall not exceed 1 Watt. The limit is based on transmitting antennas of directional gain that do not exceed 6 dBi.

### 5.4.4 Description of Measurement

The maximum peak radiated output power is measured using a spectrum analyser with the function “integrated bandpower measurement” following the procedure set out in OET 558074, item 9.1.2. The EUT is set in TX continuous streaming mode while measuring. The radiated measurement was performed in a fieldstrength measurement. Therefore the formula set out in OET 558074, item 12.2.2 e) is changed into the following term:

$$\text{EIRP} = E + 20 \cdot \log_{10} 3 - 104.8$$



## 5.5 Power spectral density radiated

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

### 5.5.1 Description of the test location

Test location: AREA4

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



### 5.5.3 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.

### 5.5.4 Description of Measurement

The measurement is performed relatively to the measured fieldstrength value at 3 m measurement distance using the procedure 10.2 set out in KDB-558074. The power measurement was done using the integrated band power method. Therefore the PKPSD is measured. The maximum peak was located with the spectrum analyser and marker set to peak. The corrective offset is taken into account with an amplitude offset and can be viewed in the plots.

Spectrum analyser settings:

RBW: 100 kHz, VBW: 300 kHz, Detector: Peak, Sweep time: Auto sweep

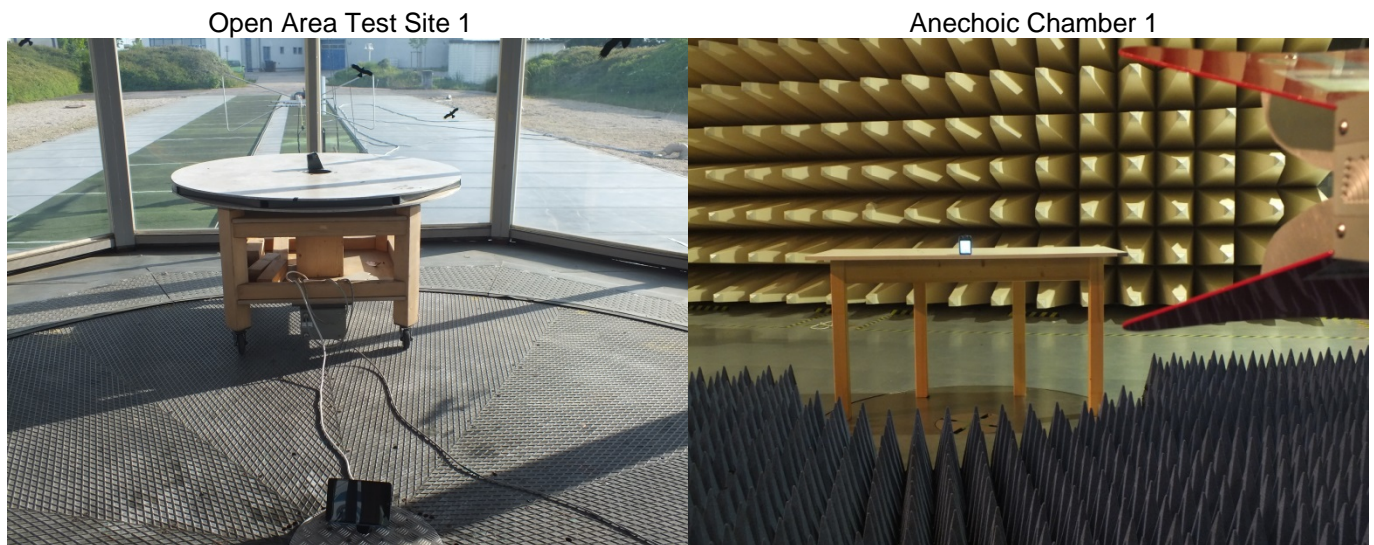
## 5.6 Radiated emissions in restricted bands

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

### 5.6.1 Description of the test location

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

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



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).

### 5.6.3 Description of Measurement

The restricted bands are measured radiated. The span of the spectrum analyser is set wide enough to capture the restricted band and measure the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products which fall outside of the authorized band of operation. The restricted bands are measured falling emissions into it and the nearest restricted band are checked for emissions also the restricted band for the harmonics of the carrier.

Spectrum analyser settings:

RBW: 1 MHz, VBW: 3 MHz, Sweep: Auto, Detector function: Peak