

FCC ID: 2AA7R465BT01 IC ID: 11431A-465BT01

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: NONE

Remarks: The measurement is not applicable. The EUT has no AC mains connection.

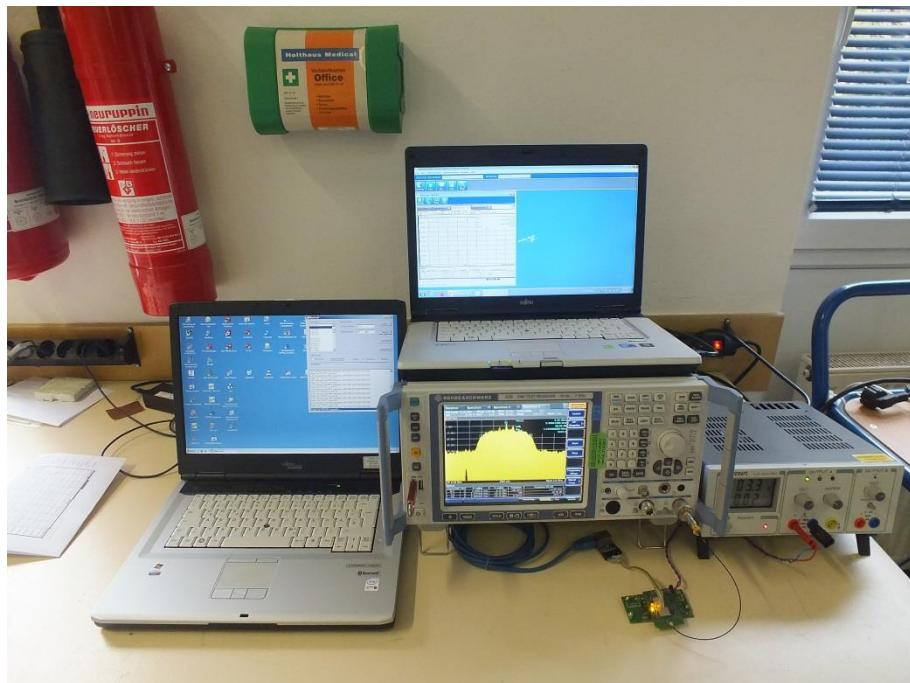
5.2 Emission bandwidth

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



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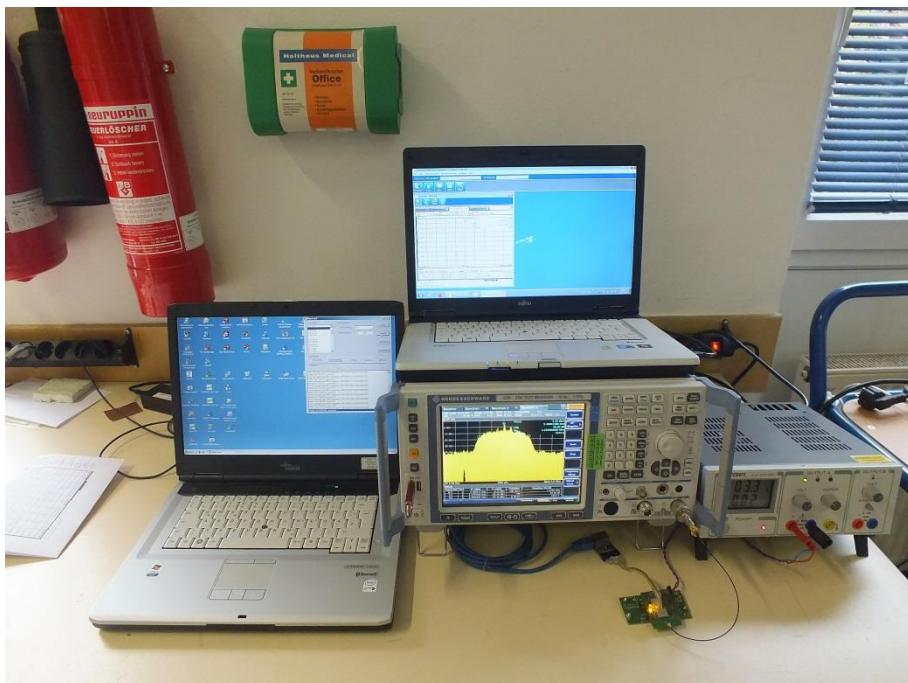
5.3 Maximum peak output power conducted

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

5.3.1 Description of the test location

Test location: AREA4

5.3.2 Photo documentation of the test set-up



5.3.3 Applicable standard

According to FCC Part 15C, Section 15.247(a)(1):

The maximum peak output power of an intentional radiator shall not exceed the limit defined in dependency of the channel separation and of the number of hopping channels.

5.3.4 Description of Measurement

A spectrum analyser is connected to the output of the transmitter via a suitable attenuator while EUT is operating in transmit mode using the assigned frequency according to DA 00-705. The correction factor takes the cable loss into account.

Analyser settings:

RBW: 3 MHz, VBW = 10 MHz, Detector: Max peak, Trace: Max hold, Sweep time: auto

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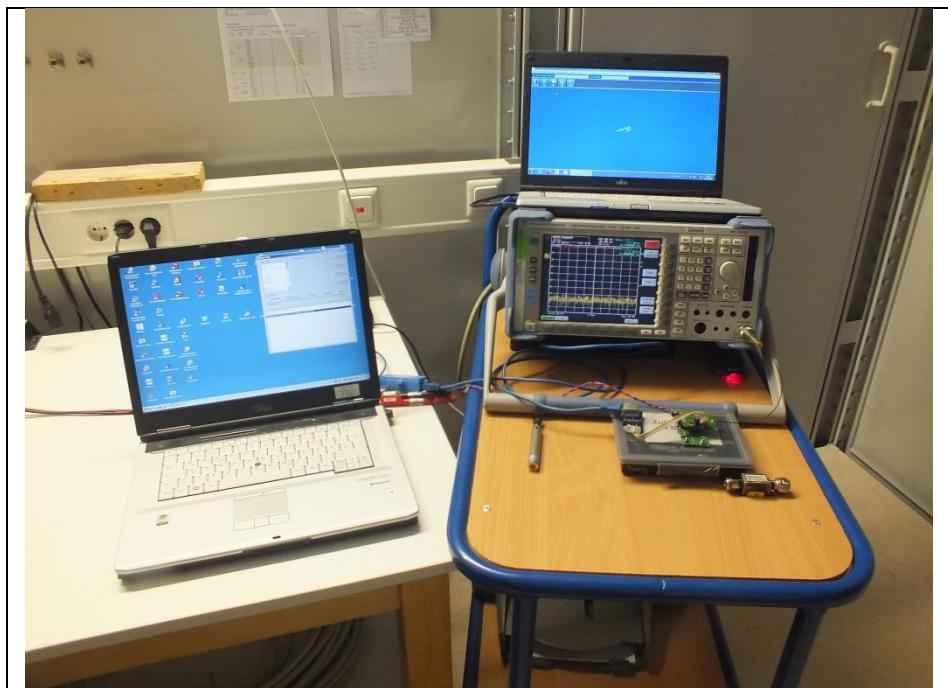
5.4 Spurious emissions conducted

For test instruments and accessories used see section 6 Part **SEC1, SEC2 and SEC3**.

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 15C, Section 15.247(d):

In any 100 kHz bandwidth outside the frequency bands 2400 – 2483.5 MHz and 5725 – 5850 MHz, the digitally modulated radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or an radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.

5.4.4 Description of Measurement

A spectrum analyser is connected to the output of the transmitter via a suitable attenuator while EUT is operating in transmit mode using the assigned frequency according to DA 00-705. In the range from 9 kHz up to 150 kHz a correction of 6 dB and in the range from 150 kHz up to 30 MHz a correction of 4.7 dB oper air test site correction factor is taken into account.

Spectrum analyser/Test receiver settings:

9 - 150 kHz:	RBW: 300 Hz,	VBW: 1 kHz,	Detector: Max peak,	Trace Mode: Max hold;
0.15 - 30 MHz:	RBW: 10 kHz,	VBW: 30 kHz,	Detector: Max peak,	Trace Mode: Max hold;
30 – 1000 MHz:	RBW: 100 kHz,	VBW: 300 kHz,	Detector: Max peak,	Trace Mode: Max hold;
1 – 25 GHz:	RBW: 100 kHz,	VBW: 300 kHz,	Detector: Max peak,	Trace Mode: Max hold;

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5.5 Band edge compliance

For test instruments and accessories used see section 6 Part **SEC3**.

5.5.1 Description of the test location

Test location: AREA4

5.5.2 Applicable standard

According to FCC Part 15C, Section 15.247(d):

In any 100 kHz bandwidth outside the frequency bands 2400 – 2483.5 MHz and 5725 – 5850 MHz, the digitally modulated radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or an radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.

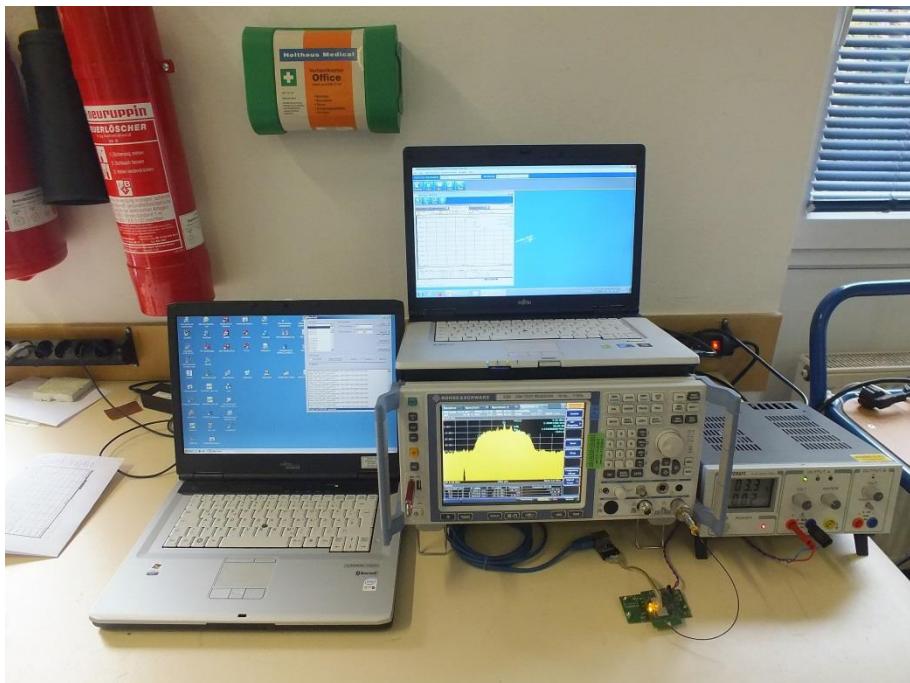
5.5.3 Description of Measurement

A spectrum analyser is connected to the output of the transmitter via a suitable attenuator while EUT was operating in transmit mode at the assigned frequency according DA 00-705:2000.

Spectrum analyser settings:

RBW: 100 kHz, VBW: 100 kHz, Detector: Max peak, Trace: Max hold, Sweep: auto

5.5.4 Photo documentation of the test set-up



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5.6 Radiated emissions in restricted bands

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

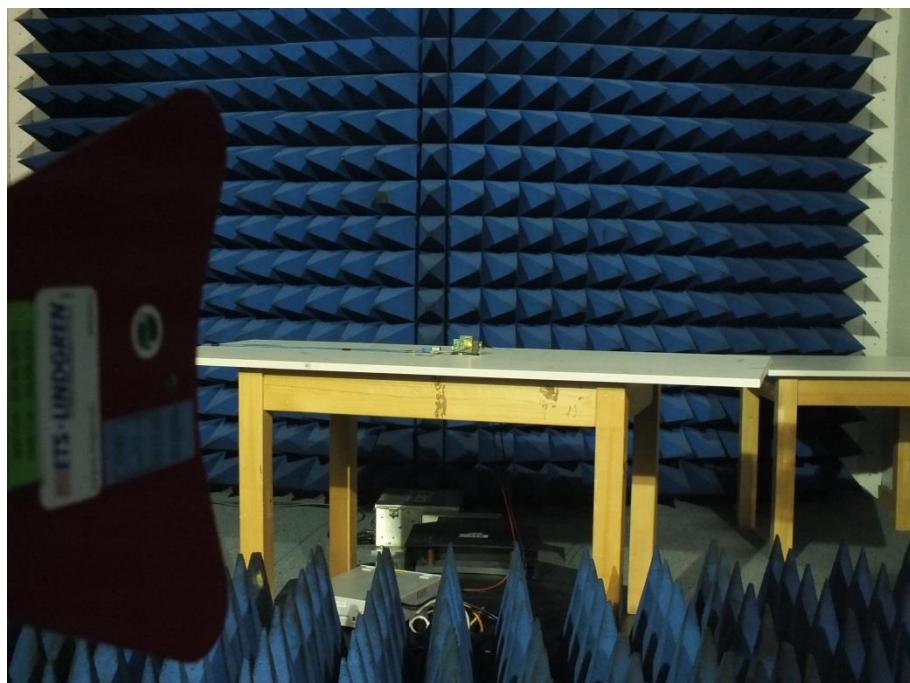
5.6.1 Description of the test location

Test location: AREA4

Test distance: 3 m

5.6.2 Photo documentation of the test set-up

Test setup 1 – 18 GHz



5.6.3 Applicable standard

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).

5.6.4 Description of Measurement

The restricted bands are measured radiated. The span of the spectrum analyser was 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.

Spectrum analyser settings:

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

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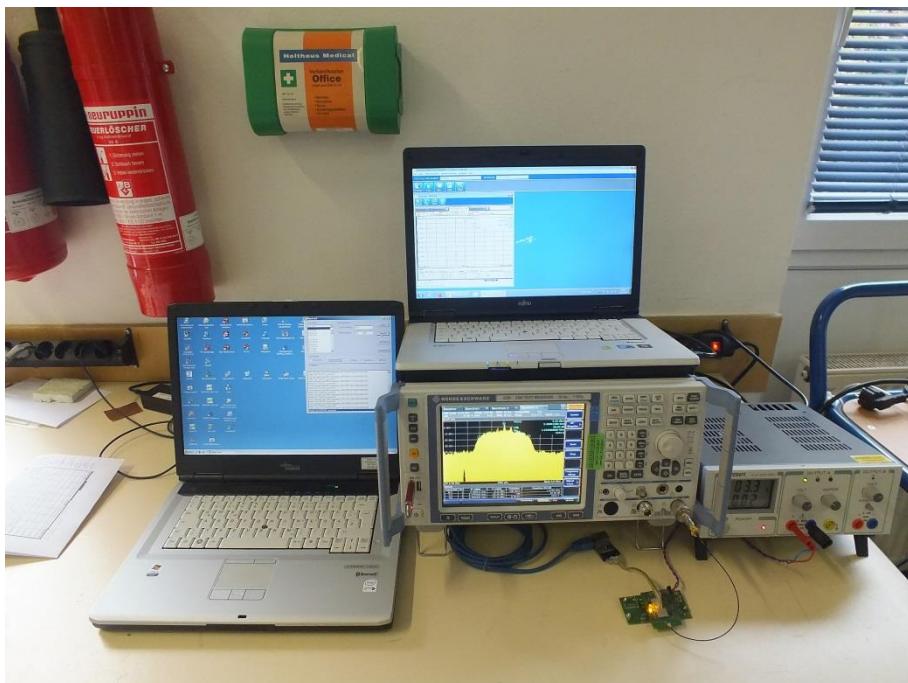
5.12 Carrier frequency separation

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

5.12.1 Description of the test location

Test location: AREA4

5.12.2 Photo documentation of the test set-up



5.12.3 Applicable standard

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

Frequency hopping systems operating in the frequency band of 2400 MHz – 2483.5 MHz may have hopping channel carrier frequencies that are separated by 25 kHz or 2/3 of the 20 dB bandwidth of the hopping channel.

5.12.4 Description of Measurement

The measurement is performed using a spectrum analyser in single sweep mode. A part of the operating frequency is used for better resolution. In normal application mode all the channels of the part of operating frequency are displayed and the separation is measured. The 20 dB OBW has to be measured before to compare whether the OBW requirement is fulfilled.

5.12.5 Test result

Channel separation in hybrid mode:

The nominal channel spacing of the Bluetooth system is 1MHz independent of the operating mode. The maximum “initial carrier frequency tolerance” which is allowed for Bluetooth is $f_{center} = 75$ kHz.

This was checked during the Bluetooth Qualification tests (Test Case: TRM/CA/07-E) for three frequencies (2402 MHz, 2441 MHz, and 2480 MHz) and approved.