

FCC ID: LTQ31121678

## 5.2 Field strength of the fundamental wave

For test instruments and accessories used see section 6 Part CPR 2.

### 5.2.1 Description of the test location

Test location: OATS 1

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 15.231(b):

The field strength of emissions from intentional radiators shall not exceed the effective field strength limits.

### 5.2.2 Description of measurement

The radiated field strength of the fundamental wave from the EUT is measured in the frequency range of 30 to 1000 MHz using a tuned receiver and appropriate broadband linearly polarized antennas. The setup of the EUT will be in accordance to ANSI C63.4. The EUT is measured in TX continuous mode unmodulated under normal conditions.

EMI test receiver settings:

30 MHz – 1000 MHz: RBW: 120 kHz, Detector: Pk,

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### 5.3 Spurious emissions (magnetic field) 9 kHz – 30 MHz

For test instruments and accessories used see section 6 Part SER 1.

#### 5.3.1 Description of the test location

Test location: OATS 1

Test distance: 3 m

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



#### 5.3.3 Applicable standard

According to FCC Part 15C, Section 15.209:

The emissions from intentional radiators shall not exceed the effective field strength limits.

#### 5.3.4 Description of measurement

The magnetic field strength from the EUT will be measured on an open area test site in the frequency range of 9 kHz to 30 MHz using a tuned receiver and a shielded loop antenna. The set up of the Equipment under test will be in accordance to ANSI C63.4. The EUT is measured in TX continuous mode unmodulated under normal conditions.

The resolution bandwidth during the measurement is as follows:

9 kHz – 150 kHz: RBW: 200 Hz

150 kHz – 30 MHz: RBW: 9 kHz



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## 5.4 Spurious emissions radiated (electric field)

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

### 5.4.1 Description of the test location

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

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



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#### 5.4.3 Applicable standard

According to FCC Part 15C, Section 15.231(b), Section 15.209(a) and Section 15.205(a):  
The emissions from intentional radiators shall not exceed the effective field strength limits.

#### 5.4.4 Description of measurement

The radiated power of the spurious emission from the EUT is measured in a test setup following the procedures set out in ANSI C63.4. If the emission level of the EUT in peak mode complies with the average limit is 20 dB lower, then testing will be stopped and peak values of the EUT will be reported, otherwise the emission will be measured in average mode again and reported.

Instrument settings:

30 MHz – 1000 MHz: RBW: 120 kHz  
1000 MHz – 4000 MHz RBW: 1 MHz

Example:

Frequency (MHz)	Level (dBμV)	+	Factor (dB)	=	Level dB(μV/m)	-	Limit dB(μV/m)	=	Delta (dB)
170.5	5	+	20	=	25	-	30	=	-5

#### 5.4.5 Test result $f < 1$ GHz

No emissions could be detected within 20 dB to the limit at a test distance of 3 metres. Emissions 20 dB below the limit needs not to be reported.



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## 5.6 Emission bandwidth

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

### 5.6.1 Description of the test location

Test location: AREA4

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



### 5.6.3 Applicable standard

According to FCC Part 15C, Section 15.231(c):  
The bandwidth of the emission shall not exceed the effective limits.

### 5.6.4 Description of measurement

The measurement was performed conducted with intentional modulation using a spectrum analyser. The analyser span was set wide enough to capture the most of the power envelope of the signal. The function “20-dB-down” is used to determine the BW. For an overview on the adjacent restricted bands the span was set as wide as needed to show that the restricted bands are not affected.

Spectrum analyser settings:  
RBW = 10 kHz,                      VBW = 30 kHz,                      Span: 200 kHz

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## 5.7 Frequency tolerance

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

### 5.7.1 Description of the test location

Test location: AREA4

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



### 5.7.3 Applicable standard

According to FCC Part 15C, Section 15.231(d):

The frequency tolerance of the carrier signal shall be maintained within a limit of the operating frequency over extreme conditions for devices operating in the frequency range of 40.66 MHz – 40.70 MHz.

### 5.7.4 Description of Measurement

The frequency tolerance is measured with the spectrum analyzer. The sweep points were set to maximum for higher the frequency resolution or the function "frequency counter" is used. The signal is unmodulated; the marker of the analyzer is set to maximum amplitude at normal temperature, the frequency was recorded. Then the maximum supply voltage is set and the marker of the analyzer is set to maximum amplitude. This procedure is done again for the minimum supply voltage. The EUT was now driven at normal supply voltage but in the climatic chamber to range the temperature from -20 °C to +50 °C in steps of 10 degrees. The drifting carrier is measured by setting the marker at the analyzer.



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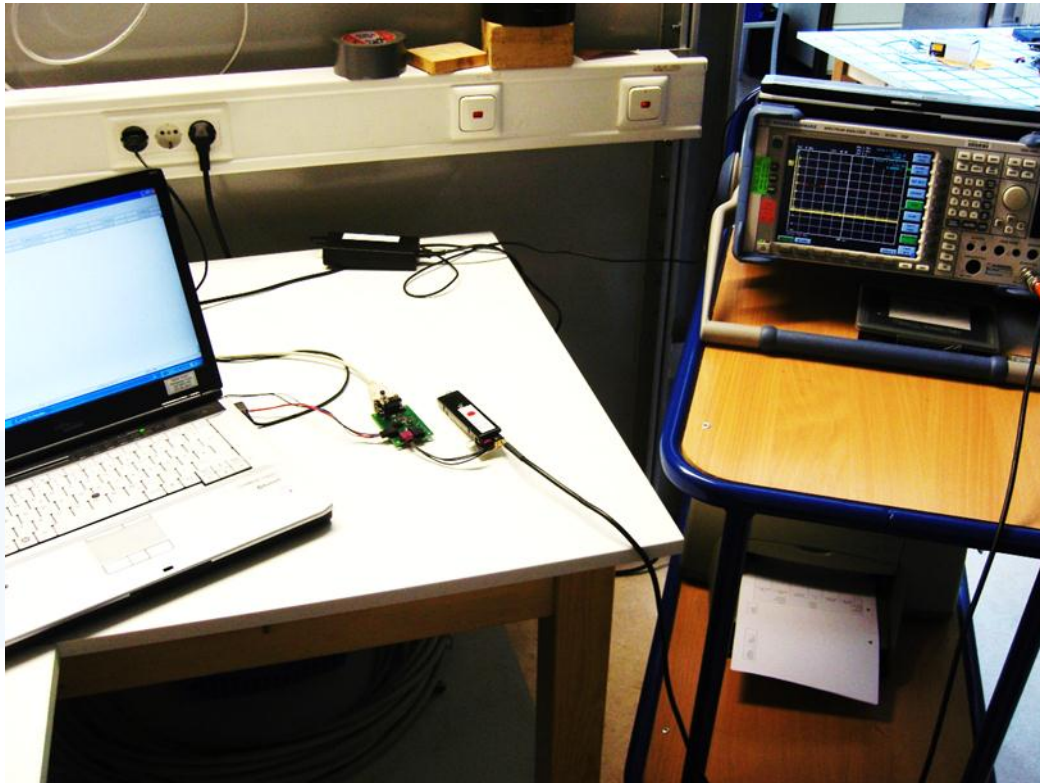
## 5.8 Signal deactivation

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

### 5.8.1 Description of the test location

Test location: AREA4

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



### 5.8.3 Applicable standard

According to FCC Part 15C, Section 15.231(a)(1):

A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter not exceeding the defined on time limit.

### 5.8.4 Description of measurement

The duration of transmission is measured with the spectrum analyzer. The sweep points were set to maximum for higher the time resolution. The signal is modulated; the analyser is set to zero span, single sweep and triggered on the button, the marker was set to the edges in order to measure the duration time and then recorded.