

FCC ID: KR537978000
IC ID: 7812D-37978000

5.2 Radiated emission 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 15.249(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 power 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. Measurements between 30 MHz and 1000 MHz are made with 120 kHz/6 dB bandwidth and quasi-peak detection. Table top equipment is placed on a 1.0 X 1.5 meter non-conducting table 80 centimetres above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. The set up of the Equipment under test will be in accordance to ANSI C63.4-2003.

The Interface cables that are closer than 40 centimetres to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimetres from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna was positioned 3, 10 or 30 meters horizontally from the EuT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarization's and the EuT are rotated 360 degrees.

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5.3 Spurious emissions radiated

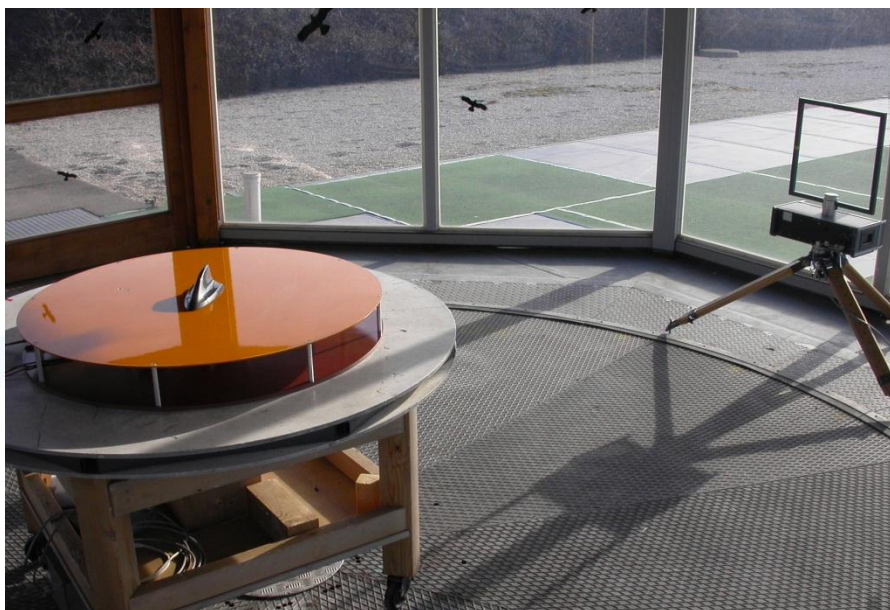
For test instruments and accessories used see section 6 Part **SER1**, **SER 2**, **SER 3**.

5.3.1 Description of the test location

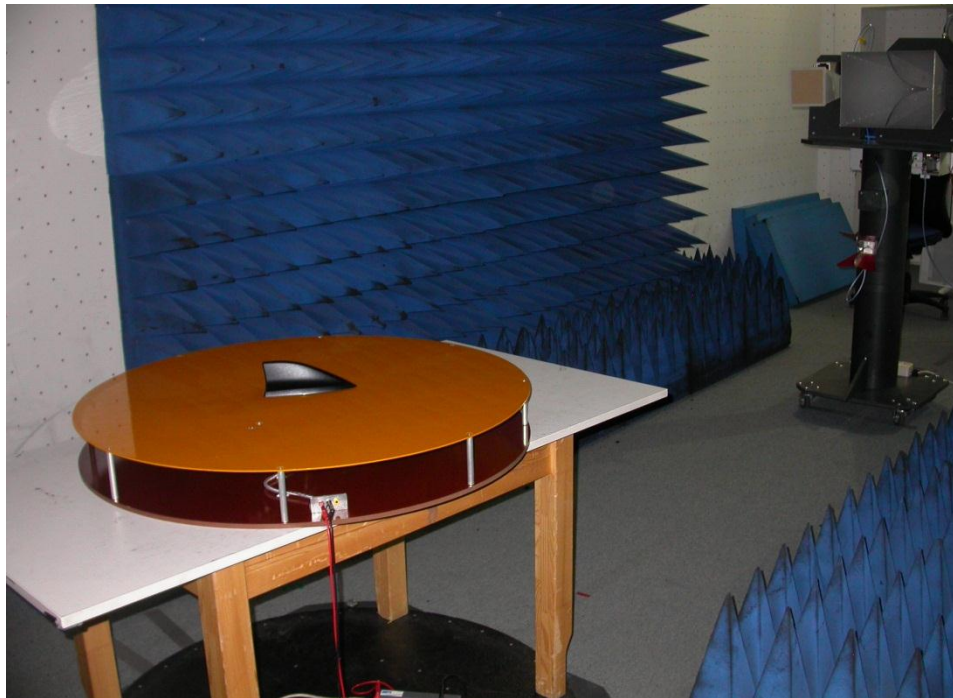
Test location: OATS 1
Test location: Anechoic chamber 2

Test distance: 3 m

5.3.2 Photo documentation of the test set-up



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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 set up of the EUT will be in accordance to ANSI C63.4. 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 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. During the test, the EUT was set into continuous transmitting mode modulated.

Instrument settings:

9 kHz – 150 kHz	RBW:	200 Hz
150 kHz - 30 MHz	RBW:	9 kHz
30 MHz – 1000 MHz:	RBW:	120 kHz
1000 MHz – 40 GHz	RBW:	1 MHz

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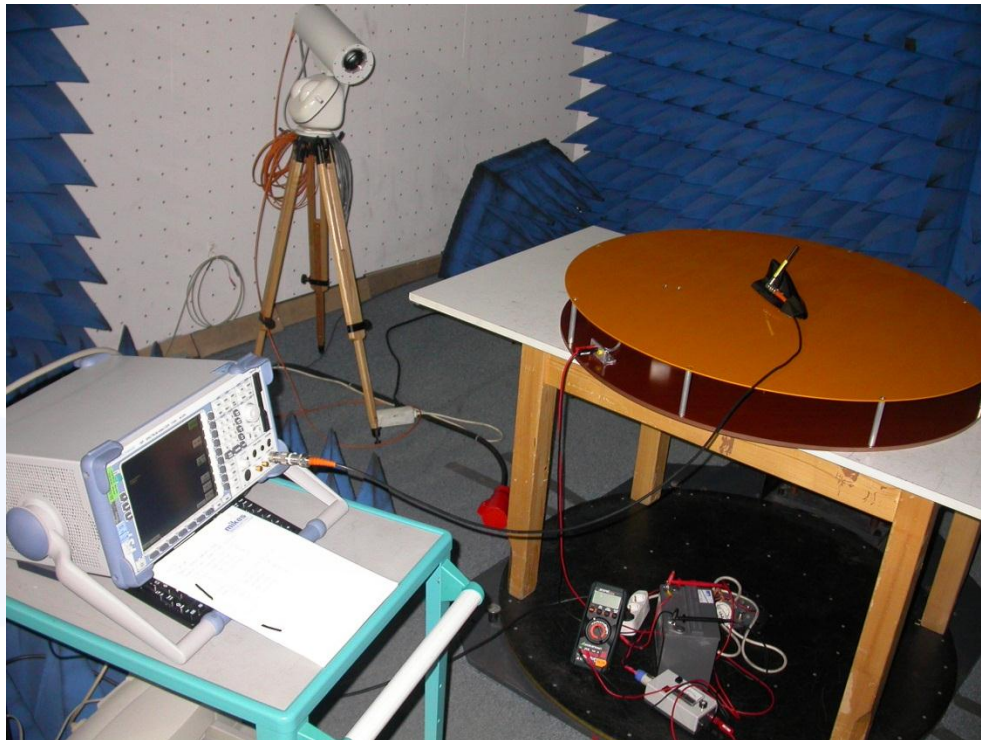
5.4 20 dB bandwidth

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

5.4.1 Description of the test location

Test location: Anechoic chamber 2

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. The reference level is the level of the highest signal amplitude observed from the transmitter at the fundamental frequency. Alternative is the x-dB-down function of the analyser used. The EBW is then directly shown in the marker display. The measurement is performed with normal modulation and a transfer rate means the worst case.

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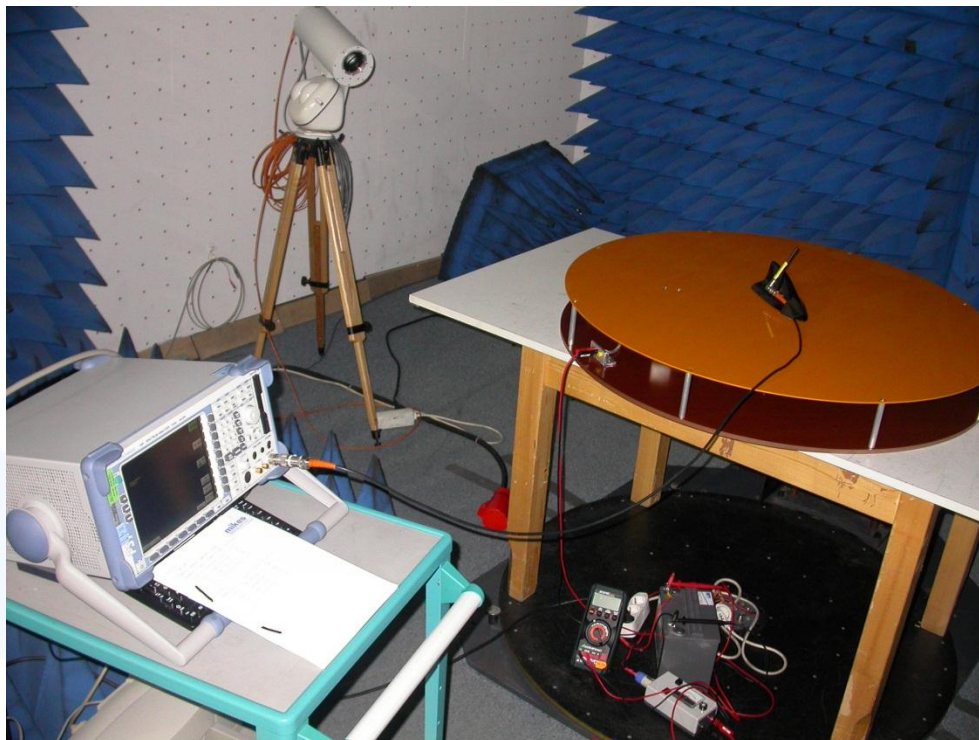
5.5 Bandwidth of momentary signals

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

5.5.1 Description of the test location

Test location: Anechoic chamber 2

5.5.2 Photo documentation of the test set-up



5.5.3 Test result

- Car roof antenna 39150-TZ6A-A013-M1

Fundamental frequency (MHz)	99% bandwidth f1 (MHz)	99% bandwidth f2 (MHz)	Measured bandwidth (MHz)	Limit (MHz)
926.225	926.099	926.352	0.253	4.63
925.925	925.799	926.052	0.253	4.63
925.775	925.663	925.889	0.225	4.63
926.375	926.263	926.489	0.225	4.63

- Car roof antenna 39150-TZ5A-A012-M1

Fundamental frequency (MHz)	99% bandwidth f1 (MHz)	99% bandwidth f2 (MHz)	Measured bandwidth (MHz)	Limit (MHz)
926.225	926.114	926.337	0.223	4.63
925.925	925.799	926.052	0.253	4.63
925.775	925.663	925.889	0.226	4.63
926.375	926.263	926.489	0.226	4.63

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5.7 Receiver radiated emissions

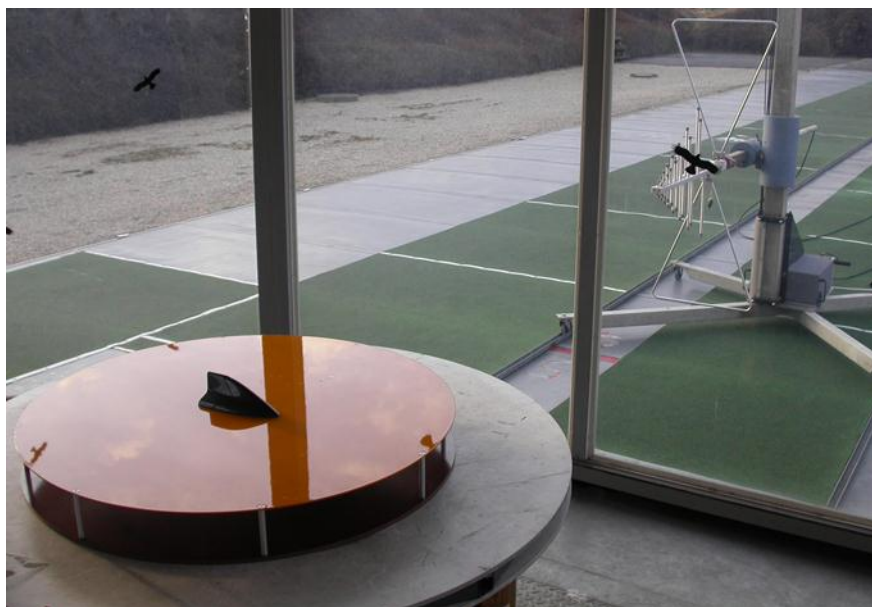
For test instruments and accessories used see section 6 Part **SER1**, **SER2** and **SER3**.

5.7.1 Description of the test location

Test location: OATS 1
Test location: Anechoic chamber 2

Test distance: 3 m

5.7.2 Photo documentation of the test set-up



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5.7.3 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.

5.7.4 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. In the frequency range above 1 GHz a spectrum analyser is used with appropriate linear polarized antennas. The set up of the EUT will be in accordance to ANSI C63.4. If the emission level in peak mode complies with the average limit 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. During the test, the EUT was set into continuous transmitting mode, modulated.

Instrument settings:

9 kHz – 150 kHz	RBW:	200 Hz
150 kHz - 30 MHz	RBW:	9 kHz
30 MHz – 1000 MHz:	RBW:	120 kHz
1000 MHz – 40 GHz	RBW = VBW:	1 MHz