

6.9 Spurious emission transmit mode – radiated**6.9.1 30 MHz to 1 GHz**

Test site: ☐ semi-anechoic chamber (foam) ☐ open test site
☒ semi-anechoic chamber (ferrites) ☐

Distance: ☒ 3 m ☐ 10 m ☐ 30 m

Position of EUT: 0.8 m (height of the equipment under test above floor)

Meas. uncertainty: ± 4.6 dB (30 - 300 MHz) / ± 3.7 dB (300 - 1000 MHz)

Test method: The electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is moved from 1 to 4 m in height successively with horizontal and vertical polarisations. The turning table is operated through 360° during the measurements. The recordings are carried out taking into account the maximum value of all the disturbances appearing while the apparatus is under test. The peak values are recorded continuously on the graph. The values exceeding a limit are remeasured manually using a receiver.

Test set-up:



Remarks: Limit values expressed in dB μ V/m and transformed to a measuring distance of 3m
 (factor used = 20 dB/decade) if necessary
 e.g.: for $f = 40$ MHz the limit is 100 μ V/m at 3 m;

$$20 \log \left(\frac{100 \frac{\mu V}{m}}{1 \frac{\mu V}{m}} \right) = 40 \frac{dB \mu V}{m} \text{ at } 3m$$

Test equipment:

Spectrum analyser	☐ 88-14	☐ 94-24	☐ 02-06	☐ 03-45	☐ 05-39	☒ 10-70
Receiver	☐ 85-04	☐ 90-43	☐ 94-35	☒ 10-70		
Preamplifier	☐ 90-01	☐ 95-86	☐ 05-56	☒ 05-59	☐ 05-62	
Antenna (bilog)	☒ 94-03	☐ 05-38				
Cables	☒ 06-01					

Result: ☒ pass ☐ fail ☐ not applicable ☐ not tested

6.9.2 1 GHz to 18 GHz

Test site: ☐ semi-anechoic chamber (ferrites) ☒ semi-anechoic chamber (foam)

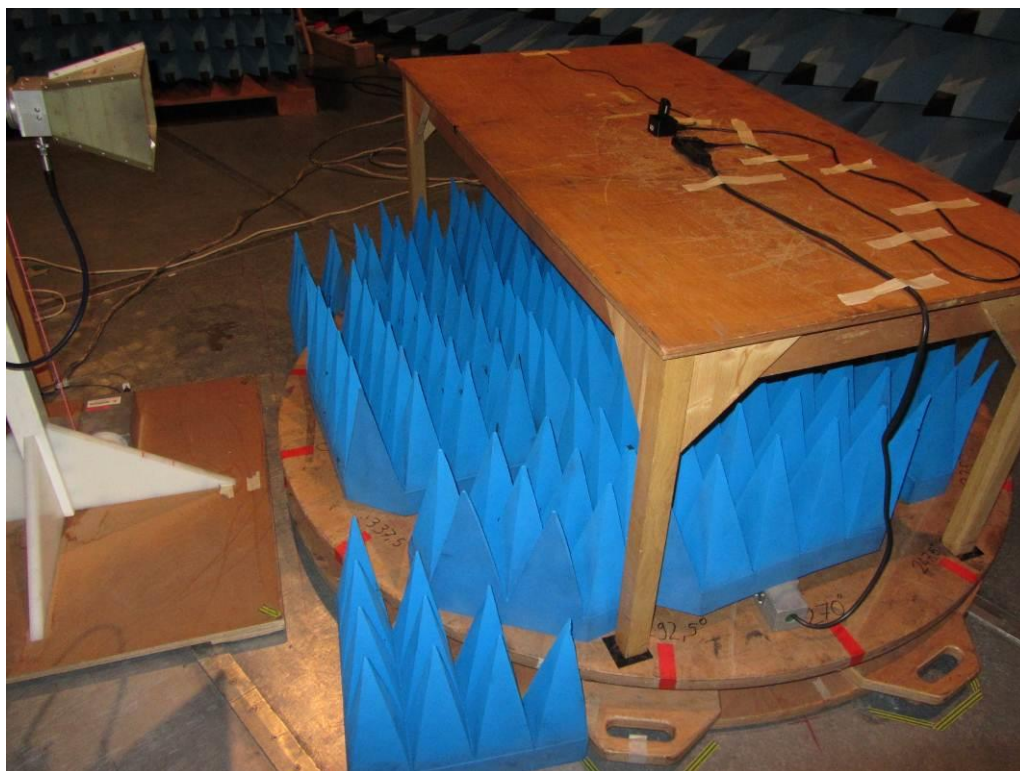
Distance: ☒ 1 m ☐ 3 m ☐ 10 m ☐ 30 m

Position of EUT: 0.8 m (height of the equipment under test above floor)

Meas. uncertainty: ± 4.7 dB

Test method: The electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is placed at the same height as the EUT successively with horizontal and vertical polarisations. The turning table is operated through 360° during the measurements. The recordings are carried out taking into account the maximum value (peak) of all the disturbances appearing while the apparatus is under test.

Test set-up:



Remarks:

Limit values expressed in dB μ V/m and transformed to a measuring distance of 1m
(factor used = 20 dB/decade) if necessary
e.g.: for $f = 1$ GHz the limit is 500 μ V/m at 3 m;

$$20 \log \left(\frac{500 \frac{\mu V}{m}}{1 \frac{\mu V}{m}} \right) + 20 \log \left(\frac{3m}{1m} \right) = 63.5 \frac{dB\mu V}{m} \text{ at } 1m$$

Test equipment:

Spectrum analyser	☐ 88-14	☐ 94-24	☒ 02-06	☐ 03-45	☐ 05-39	☐ 07-53
Preamplifier	☐ 05-56	☐ 05-87	☒ 11-29			
Antenna (horn)	☒ 90-24	☐ 07-31				
Cables	☒ 10-75	☒ 11-61				
Filters	☐ 10-65	☐ 10-66	☐ 11-08	☒ 12-06		

Result: ☒ pass ☐ fail ☐ not applicable ☐ not tested

6.9.3 18 GHz to 26.5 GHz

Test site: ☒ semi-anechoic chamber (foam) ☐ semi-anechoic chamber (ferrites)

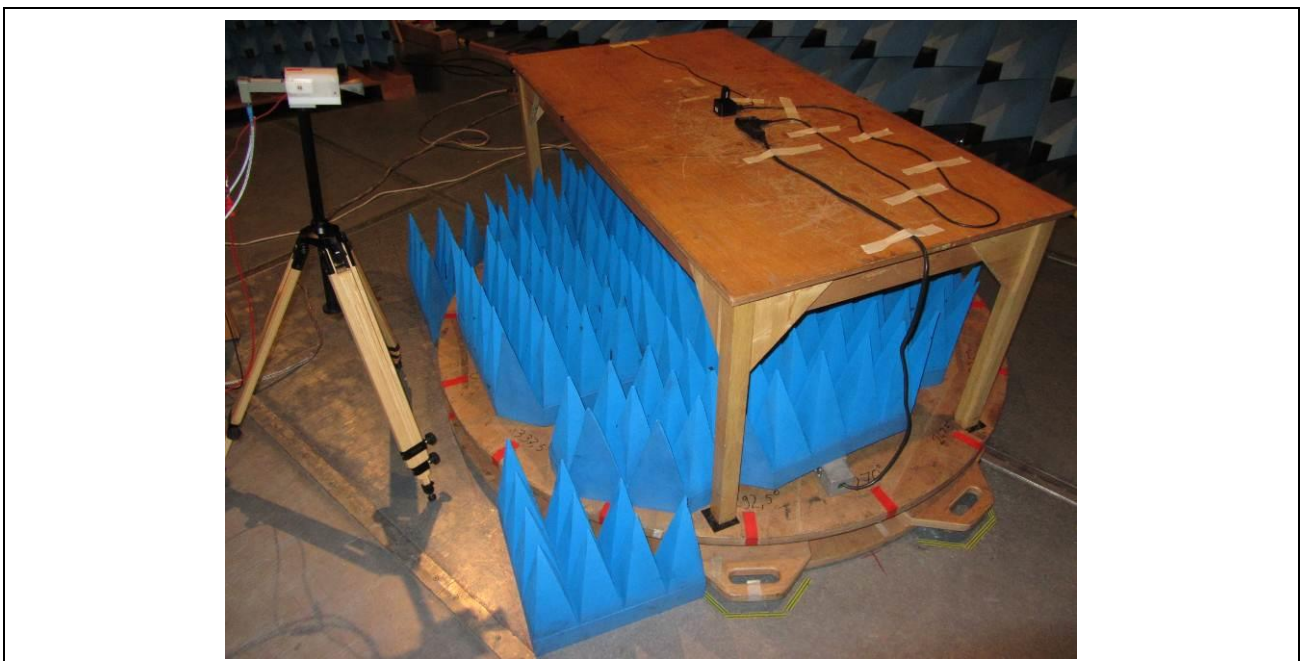
Distance: ☒ 1 m ☐ 3 m ☐ 10 m ☐ 30 m

Position of EUT: 0.8 m (height of the equipment under test above floor)

Meas. uncertainty: ± 4.7 dB

Test method: The electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is placed at the same height as the EUT successively with horizontal and vertical polarisations. The turning table is operated through 360° during the measurements. The recordings are carried out taking into account the maximum value (peak) of all the disturbances appearing while the apparatus is under test.

Test set-up:



Remarks: Limit values expressed in dB μ V/m and transformed to a measuring distance of 1m (factor used = 20 dB/decade) if necessary
e.g.: for $f = 18$ GHz the limit is 500 μ V/m at 3 m;

$$20 \log \left(\frac{500 \frac{\mu V}{m}}{1 \frac{\mu V}{m}} \right) + 20 \log \left(\frac{3m}{1m} \right) = 63.5 \frac{dB\mu V}{m} \text{ at } 1m$$

Test equipment:

Spectrum analyser	☐ 88-14	☐ 94-24	☒ 02-06	☐ 03-45	☐ 05-39	☐ 07-53
Antenna with mixer & preamp.	☒ 98-12					
Cables	☒ 11-62	☒ 10-81				
Power supply	☒ 06-62					

Result: ☒ pass ☐ fail ☐ not applicable ☐ not tested

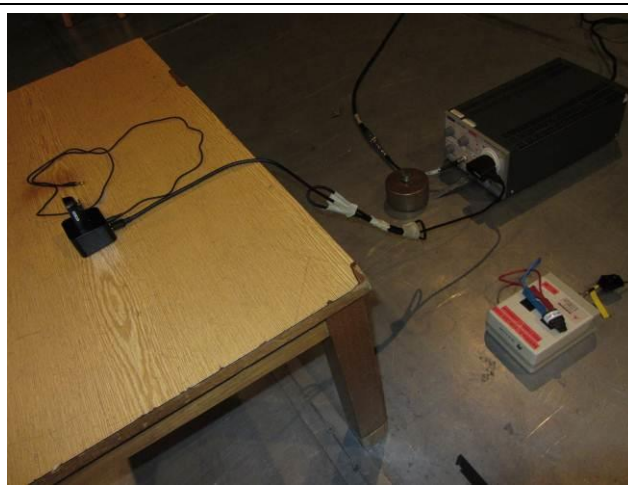
6.11 Conducted emission - Interference voltage

Test site: ☒ semi-anechoic chamber (foam) ☐ shielded room
☐ Semi-anechoic chamber (ferrites) ☐ laboratory
☐ open test site

Meas. uncertainty: ± 3.6 dB

Measuring method: The conducted disturbance is measured using a spectrum analyser and a line impedance substitution network (LISN). The measurement of the voltage against the earth is carried out successively. The peak values are recorded continuously on the graph. The values that exceed the limit are remeasured with a measuring receiver.

Test set-up:



Remarks: ---

Test equipment:

Spectrum analyser	☐ 88-14	☐ 94-24	☐ 02-06	☐ 03-45	☐ 05-39	☒ 07-53
Receiver	☐ 85-12	☐ 90-11	☒ 94-34	☐ 04-28	☐ 06-29	
LISN	☐ 85-13	☐ 90-08	☐ 94-36	☒ 94-40	☐ 95-12	☐ 00-43
Protection 10 dB	☐ 91-44	☐ 91-45	☐ 95-30	☐ 95-33	☐ 95-35	☐ 95-36
	☐ 96-38	☒ included in LISN				
Protection 20 dB	☐ 91-46	☐ 95-33	☐ 95-38	☐ included in LISN		
Cables	☒ 06-00	☒ 161				

Result: ☒ pass ☐ fail ☐ not applicable ☐ not tested