

5) Annotations to Performed Tests

The test setup was made in accordance with ANSI C63.4-1992.

Final radiated emission measurements in the frequency range 9 kHz to 30 MHz. were performed according to section §15.209 (d) with detector set to CISPR quasi-peak except for the frequency bands 9 - 90 kHz and 110 - 490 kHz where average detector is employed.

Preliminary scans were taken in a shielded room with a test-distance of 3 meters and detector-function of EMI-receiver set to peak. To search for the maximum emission EUT was placed in three orthogonal planes and rotated all around as well as the vertically polarized loop antenna on its vertical axis by 360°. Cables and equipment were placed and moved within the range of positions likely to find their maximum emissions. As a result of these preparations worst case configuration was recorded to determine the radiated EMI-profile of the EUT.

Final test was performed using an open-area test-site with a test-distance of 30 meters. In cases the regulation requires testing at 300 meters distance the results are extrapolated by using either an inverse linear distance extrapolation factor of 40 dB/decade or the extrapolation factor is determined by making a second measurement at 10 meters distance. The provisions of §15.31 (d) and §15.31 (f) apply.

Radiated emission tests in the frequency range 30 - 1000 MHz are performed in two steps:

First a peak scan using an anechoic room with test distance of 3 m between measuring antenna and EUT is performed to get the whole spectrum of emission caused by EUT. During testing EUT is rotated all around and measuring antenna is raised and lowered from 1 to 4 m to find the maximum emission levels. In the test report this measurement is characterized as prescan. Limit lines are added to these prescan charts to check margin to appropriate limit. In cases of required test distances differing from 3 metres limit levels are converted to 3 metres using the theoretical conversion factors.

Finally emission levels having less margin than 6 dB to or exceeding the limit are retested using an open area test site with the required test distance and detector of the test receiver set to quasi-peak. Again EUT is rotated all around and measuring antenna is raised and lowered from 1 to 4 m to find the maximum emission levels.