Mobile transmitter immunity testing

Increase product quality, lower service costs and improve product safety by discovering how your product is affected by mobile transmitters

Introduction
The number of mobile transmitters in our everyday life is constantly increasing. It is no longer just the mobile phones that are using wireless technology as more and more products get connected to data services wirelessly. In a recent experiment on 5 ordinary electronics products (PCs, printers, etc.) were tested for susceptibility to 5 different mobile transmitters. 40 % of the tests showed that the product had an unintended response to the wireless communication. Therefore DELTA has created a screening test that quickly allows you to discover if and how your product is affected.

The mobile transmitter immunity test is conducted in the reverberation chamber in Aarhus. The test takes less than an hour and will test the susceptibility against the 10 most common wireless transmitters found in residential, commercial and industrial surroundings.

Measured parameters
The test is designed to have transmitters within 10 cm of the product. The test is not designed to show the level at which your product is failing but is designed to show if and how it will fail. The susceptibility versus the technology and frequency currently tested and the error state of the product is noted for the report. The test has been designed from international standards but is not accredited since the wireless services are evolving faster than the current standardisation. Therefore we have preferred to provide the test with most value to the costumer rather than a standardised test. The test could be performed by holding various transmitters at this distance, but such an approach would require days of systematic testing since all combinations of the technologies and positions of the transmitters should be tested. By using the reverb chamber, the test will be completed within an hour. This will test for susceptibility to smart metering telemetry as well as TETRA, GSM, GPRS, CDMA, LTE, DECT, WiFi, Bluetooth and RFID.

Preparations
Since the test is an immunity test it is important that any error state in the product is either logged, transmitted to monitoring equipment or detected by visual inspection. Since the field strength in the reverb chamber is above the limits for human exposure the product cannot be operated manually during the test.

Reporting and documentation
The test is documented in a short test report in pdf format which is issued after the test. This report will list the error states which have been observed so that it can be used to troubleshoot the product. If desired DELTA can aid you in the troubleshooting process as an additional service.
Benefits for the client

If you are making products which are manufactured in great numbers or you want to increase the user experience for your customers this test is for you. If you have safety critical performance or very sensitive measurement circuits the test is also highly recommendable. Finally, if you plan to include wireless modems to your product the test can be used for screening for future immunity problems.

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