

Performing full compliance emission measurements is a time consuming task, as every EMC operator can tell.

As a result, several companies developed automated test programs, which sequential run the required tests unattended. Preparing such a sequence and running the programs overnight is a very good extension to normal working hours and efficient use of the facility. Its effect however, will become less valuable when the results were found inconsistency due to any error. An analysis of the measuring set-up and a redo of the task is the result. Trying to avoid such time consuming jobs a regular evaluation of the entire measurement set-up would take out the guess work and most likely avoid these re-do's.

Introducing the use of the Field Reference Source (FRS) model 1410-000, will help the facility operator to eliminate most of the error sources. The FRS provides a well-known stable RF spectrum output which is used to simulate an EUT. Using this stable wide band frequency generator in the EMC chamber located on the position of the EUT, a quick scan will provide all data required to compare to earlier data taken. The quick scan will use all the items in a normal EMI measurement set-up including antenna, cables and receiver. Comparing the measurement data will justify the correctness of the set-up. Such regular tests, which may take not more than 30 minutes, contribute to a proven measurement set-up for EMI measurements.

There are many more applications using the Field Reference Source. Due to RF pollution, the use of Open Area Test Sites becomes more and more evident. Besides this many organisations do not have the space available to locate such an EMC measurement site. As a consequence organisations, which perform in-house testing, are forced to use alternative sites and even non-compliant sites due to space or budget limitations. Getting optimal results for EMI measurements; comparison data from an official site and the alternative site will help to develop knowledge on the behaviour of the measuring site, daily used. Using the Field Reference Source and performing quick scan, is not a time-consuming aid to gain this important information. A frequency related correction table would now help the facility operator to correct the limit lines to be used in order to correctly compare the results.

Adding the Field Reference Source to the standard facility equipment, many more applications can be developed. Since the unit is equipped with a sturdy N-type RF female connector, its known RF output can be used for transmission loss measurements on coaxial cables for example. Using a set of calibrated antennas, the FRS can be included in a Normalised Site Attenuation measurement set-up.

Performing regular evaluations using the Field Reference Source shall become common practise to create a base standard quality check for EMC facilities performing EMI measurements.