The EMI receiver families TDEMI® of GAUSS INSTRUMENTS® provide a huge fully CISPR compliant real-time bandwidth and therefore allow to speed up your measurements tremendouosly and to reduce the measurement uncertainty significantly - both at the same time. By using the full automation software suite EMI64k of GAUSS INSTRUMENTS® the test procedures can be configured according to the CISPR 16-2-3 standard for the FFT-based measuring instruments. In comparison to the previously done pre-scan and final measurement strategy, the overall test quality can be significantly increased whereas the testing times are reduced by orders of magnitudes.

In the past, therefore a pre- and final scan test procedure has been performed usually - trying to reduce the overall test time. During the pre-scan procedure, which is just a quick overview measurement by the way, the critical frequencies with maximum emissions are going to be identified. Afterwards detecting these critical frequencies the final measurement is carried out then in the single frequency mode with much longer dwell times now to achieve a more accurate result.

Now, GAUSS INSTRUMENTS® introduces a novel real-time scanning feature for their TDEMI® X test receiver series providing a several Gigahertz real-time bandwidth (Option QCDSP-UG, UFSPA-UG). Thus the final maximization can be performed at all frequencies simultaneously in just one step. By the newly designed very powerful hardware module, such measurements across several Gigahertzs can be performed in the real-time spectrum analyzer mode. E. g. in the frequency range from 1 GHz to 18 GHz all frequency points can be directly measured with a very high resolution in time and the result can be maximized instantaneously. Over the entire frequency range the results are displayed in real-time. The detectors peak, average, and RMS are available in this mode. Further the video bandwidths, which are required according to the standards, can be applied. Of course all the measurements according to the standards CISPR 16-1-1, MIL 461, DO 160 as well as many other national and international standards are fully covered.

For the very first time, a typical emission measurement in the range of 1 GHz up to 18 GHz the full frequency range is scanned in real-time now by testing with the TDEMI® X test receiver of GAUSS INSTRUMENTS®. The DUT is rotated in just one continuous movement and the angular position as well as the maximum level of emission is recorded. All the requirements of the standards CISPR 16-2-3 as well as the ANSI and FCC standards are fulfilled by the TDEMI® X receiver.

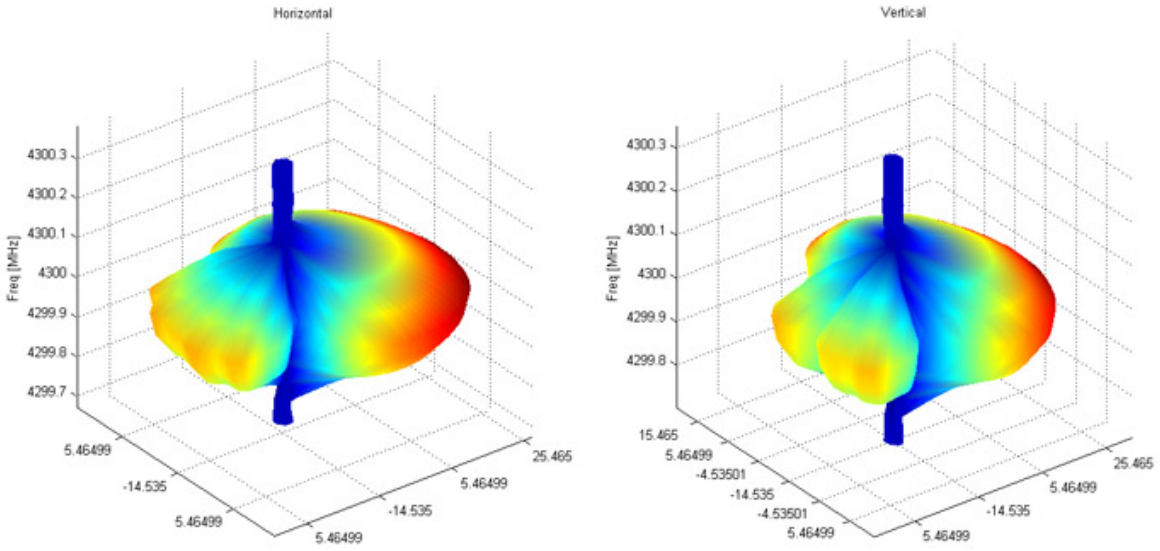

Fig 1.: – **Full 3D Radiation Pattern of a DUT over all positions of 360°.**

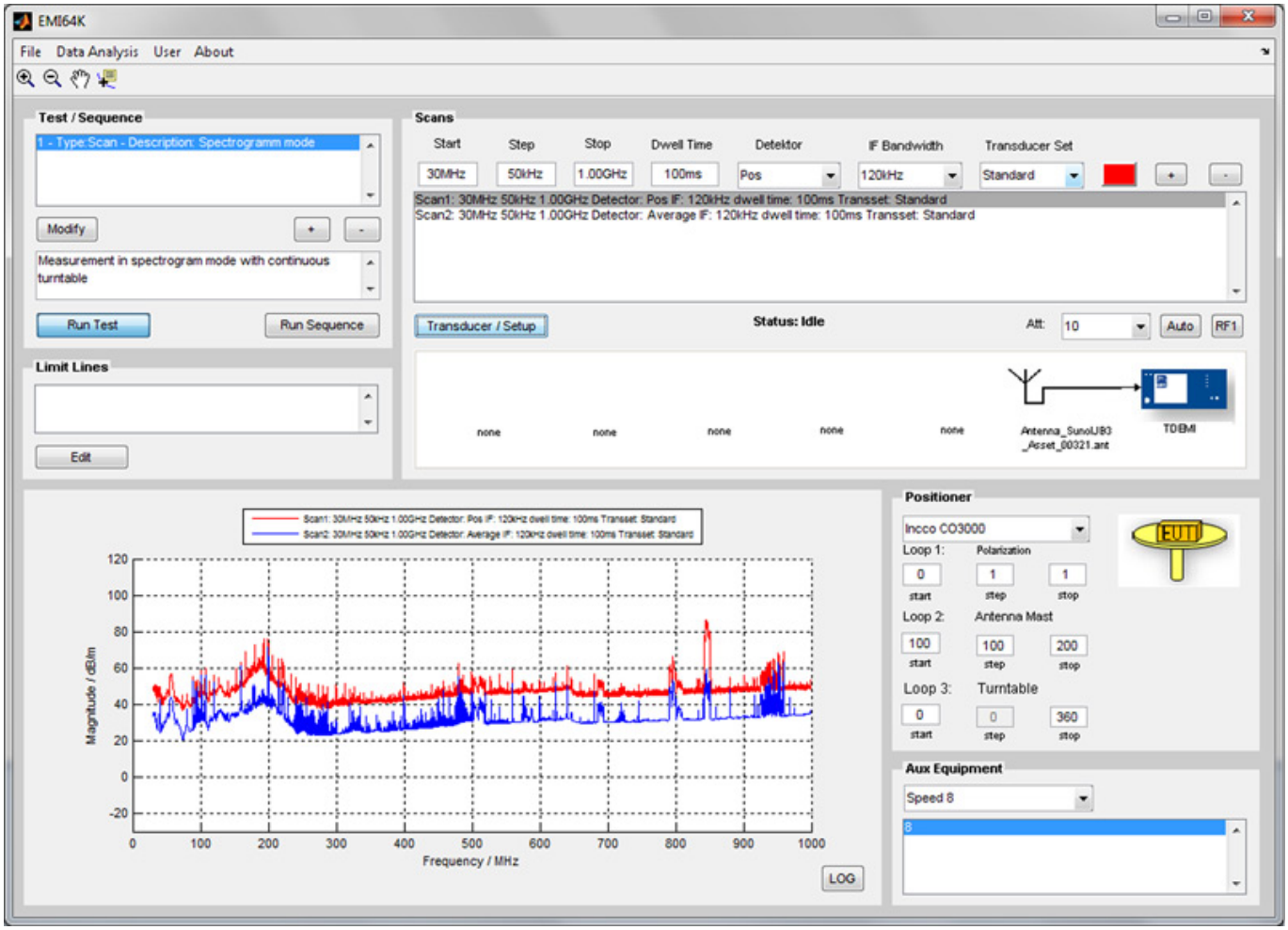

Fig 2.: – **EMI64k graphical user interface.**

This allows you to make your EMC testings more sustainable. For example it is possilble to create an entire database and documentation with radiation patterns, test procedures, and casing construction but also many more information. New product developments and designs can be tested right from the beginning to make sure all the required limits are fulfilled. This saves you time and money in your development and design process but also in the final market certification process. Of course the EMI64k is not limited only to CISPR applications, but also measurements according to FCC and ANSI or MIL-461 and DO-160 standards are also applicable as well. A overview is shown in figure 2 as a screenshot of the graphical user interface.

The TDEMI® receiver families provide the perfect match for all kind of tests and applications. Starting from pre-compliance, ultra compact and mobile receives up to high-end EMI test solutions with up to 685 MHz real-time bandwidth, 40 GHz real-time scanning as well as the lowest noise floor available in the receiver and real-time analyzer market.

Due to the modular architecture of our TDEMI® EMI receiver as well as the automation software suite EMI64k, we provide an optimum and cost effective software solution tailored to your requirements. Also upgrades to fulfill extended or new upcoming requirements are possible any time later on.