



NEAR-FIELD RF TEST CHAMBER



Steatite is a market leader in the design, development, test and supply of complex technology for demanding applications and extreme operating environments. We specialise in a number of core areas - Industrial and rugged computing, battery packs and power systems, communications, and Antennas.

The recent relocation of our Antennas unit to a brand new custom-designed building on the outskirts of Leominster in the United Kingdom, brings with it significantly enhanced accommodation and facilities across our engineering, manufacturing and testing departments, together with improvements to business and support services.

At the heart of the new facility is a World-class state-of-the-art Spherical Near-field RF Test Chamber that will significantly enhance capabilities, and in many cases enable the company to exceed clients' needs and expectations.

The test chamber, measuring an impressive 7m x 5m, and 6m in height, will accommodate antennas ranging in size from hand-held horns up to 3m diameter dishes, and across the frequency range of 500 MHz to 40 GHz. The techniques employed will allow full far-field measurements to be derived without the complication of requiring a large scale external facility.



The measurement system confers the following advantages:

Comprehensive measurements

Full three-dimensional patterns can be acquired in a single measurement with no need to separately set up for specific pattern cuts or polarisations. All data required to generate far-field co-polar, cross-polar or indeed any arbitrary polarisation component and pattern cut are captured in the near-field.

Accuracy

The system is more accurate than traditional far-field ranges. The processing system transforms raw measurement data beyond $2D^2/\lambda$ to infinity, thus removing any residual near-field influence (especially in sidelobes) that can persist even at the Rayleigh Range.

Diagnostic capability

The system has the ability to take a 3D far-field pattern profile and “back transform” to the radiating surface of the Antenna Under Test, thus revealing amplitude & phase profiles that could result in pattern anomalies.

Extended capability at high frequencies

By application of Distributed Signal Mixing, all RF signals are mixed down to Intermediate Frequency using mixing units located close to the antennas, thereby reducing signal loss in cables, thus upholding signal to noise quality and maintaining measurement accuracy.

Extended capability at low frequencies

By the application of Mathematical Absorber Reflection Suppression (MARS) technology that effectively removes wall reflections, the result is a capability that is not compromised by limitations in anechoic absorber performance.

Weather independence

The entire measurement facility is housed within a controlled environment, thus allowing year-long operation.

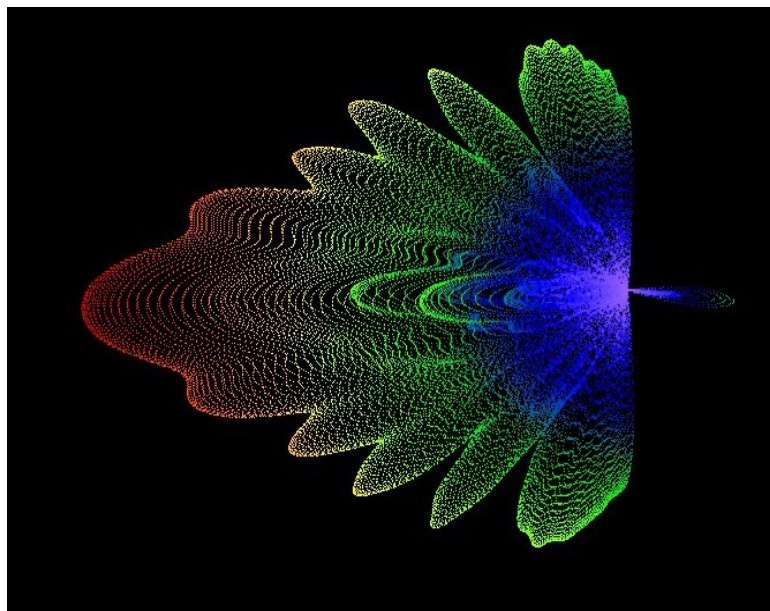
By working directly with the manufacturer of this cutting-edge test chamber it has been possible to gain invaluable practical knowledge, thus enhancing the effectiveness of the test & measurement capability.

Discussions with strategic partners regarding the use of the new facilities are taking place, not only with regard to the use of the chamber within existing procurement contracts, but also the utilisation of the capability as a stand-alone facility.

To discover more, or to discuss potential use of this new facility, please contact us directly at:

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Technical Specifications quoted are verified but do not indicate the maximum performance limitations of the equipment. Specifications are subject to change without notice. E & OE Issue A

