

## NEAR-FIELD RF TEST CHAMBER

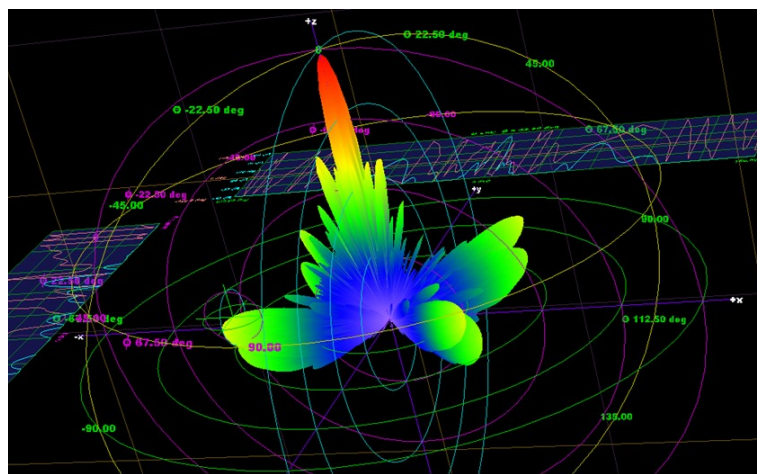
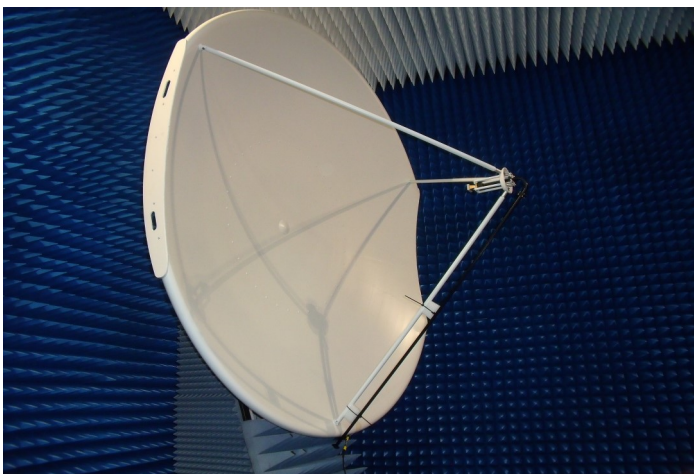
Steatite is a market leader in the design, development, test and supply of complex technology for demanding applications and extreme operating environments. We specialise in a number of core areas - industrial and rugged computing, battery packs and power systems, communications, imaging and antennas.

Our antennas unit is housed in a custom-designed building on the outskirts of Leominster, Herefordshire in the United Kingdom. This facility provides substantial accommodation and facilities across our engineering, manufacturing and testing departments, together with business and support services.



At the heart of the facility is a world-class state-of-the-art spherical near-field RF test chamber that significantly enhances our measurement capabilities, and in many cases enables the company to exceed clients' needs and expectations.

The test chamber, measuring an impressive 7m x 5m, and 6m in height, accommodates 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 allow full far-field measurements to be derived without the complication of requiring a large scale external Test Range 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 measurement system it has been possible to gain invaluable practical knowledge and theoretical understanding enhancing the effectiveness of the test & measurement facility.

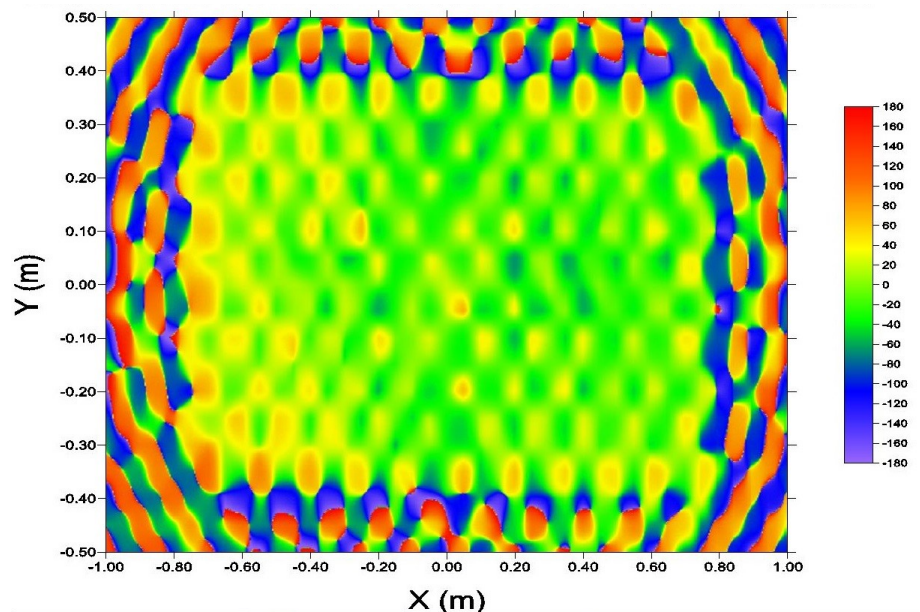
For more technical assessment of the benefits of a Near-Field range plus the comparisons to a traditional Far-Field range please see the Technical Note on our website.

To discover more, or to discuss potential use of this excellent 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.

