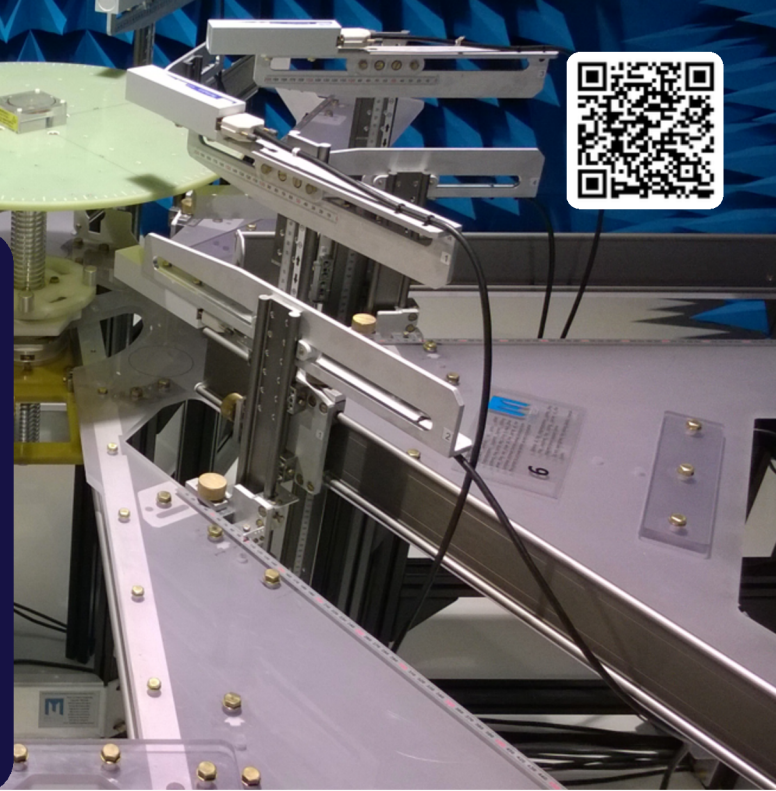




Snapshot Multi Magnetometer Facility

A high-precision measurement and modeling facility designed for spacecraft magnetic cleanliness applications, enabling rapid and accurate characterization of the magnetic signature of equipment under test (EUT).



Integrated Measurement and Modelling System

Developed through ESA programs and validated in operational environments such as ESTEC, combines optimized magnetometer configuration, dedicated processing software, and proven modeling accuracy.

- ✓ Speed and Efficiency
- ✓ Precision and Quality
- ✓ Agility and Automation

- **High Spatial Resolution:** Multi-magnetometer setup enabling accurate & flexible magnetometer positioning.
- **End-to-End Operation:** Unified system including Data Acquisition (DAQ) & mechanical structures.
- **Part of Emtech Magnetics Ecosystem:** Easy Integration with additional tools including DC & AC Modelling and more.



Multi-magnetometer architecture

Typically utilizes 12 fluxgate or search coil sensors arranged around a fixed test article for instantaneous data acquisition.

Measurement Software

Dedicated environment for data filtering, calibration, and automated processing.

Snapshot Acquisition

Captures the full Equipment Under Test (EUT) magnetic signature in less than one second.

Integrated Magnetic Dipole Modeling (MDM)

Reconstruct equivalent dipole and quadrupole representations of the EUT magnetic behavior

Flexible Design

Mechanical structure allowing adjustable sensor positioning to support various EUT configurations.

Specifications*



Measuring Elements

Magnetometers

Up to 12

Type

Fluxgate

Brand

Bartington Mag03-MS series

Range

70 or 100 μ T

Power Supply Units

2xBartington PSU1

1xBartington deca PSU

Software Application

Graphical User Interface

Measurement Configuration

Data Acquisition & Processing

Solver Interface

Measurement Data Reporting



Mechanical

Concept

Common Panel Design

Scheme: Circular (~2,3m)

Magnetometers Support System

Up to 12 Magnetometers

Gradiometers Support

(optional, via adaptors)

Radial Movement

(5 to 100 cm from centre)

Vertical Movement

Continuous, $\sim \pm 35$ cm from $z=0$

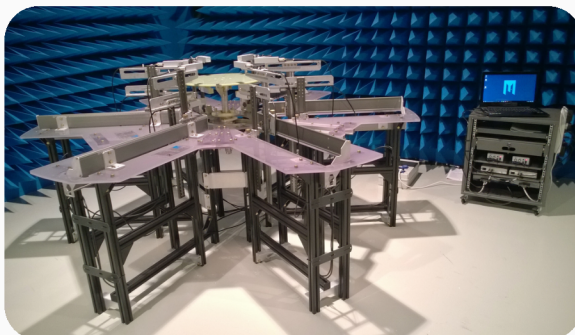
EUT Support System

Z-axis movement

Continuous, $\sim \pm 25$ cm from $z=0$

Easy EUT loading

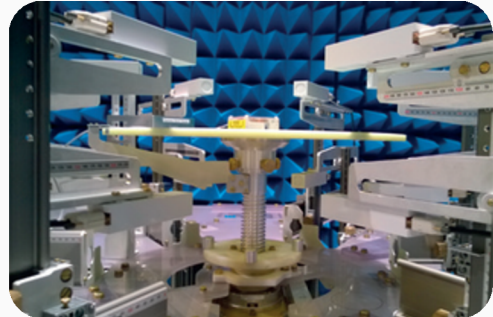
(EUT support table can be moved at the outer perimeter of the facility)



Facility Main Elements

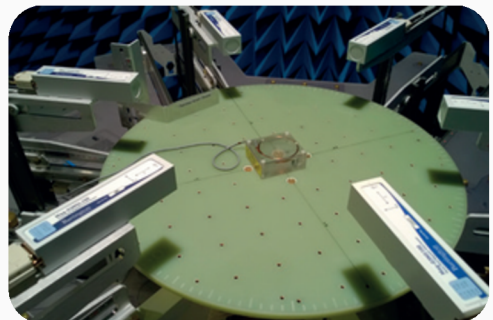
Mechanical support system

- Hosts the magnetometers and the EUT support table.



Magnetometers & DAQ

- Measurement of the EUT magnetic field and data collection



Software application

- Controls the operation of snapshot MMF, data processing.

Proven Capability

- **Validated:** Successfully used in ESA ESTEC for space missions.
- **Accurate:** High fidelity with proven small discrepancy between measured data and theoretical models.
- **Reliable:** Consistent results with low residual errors across multiple test cases

*Contents are subject to change without prior notice.

