

Laboratory Facilities



The Higgs Centre for Innovation was created to provide access to the expertise of the UK ATC and the University of Edinburgh in the areas of remote sensing instrumentation, space technology and data intensive science. The Centre's facilities and this technical expertise are available to businesses wherever they are based.

The range of facilities available to incubation companies will grow over the next few years, becoming one of the most comprehensive suites available to industry and researchers alike.

Current facilities include:

EMC pre-compliance testing:

- Radiated susceptibility (immunity):
 - Capabilities: Field Strength up to 10V/m, 80MHz to 3GHz inside GTEM cell, AM and Pulse Modulation. Dimensions up to 0.41m x 0.41m x 0.31m.
 - Key equipment: Teseq GTEM 500 Ferrite cell; PMM 3030 signal generator; Bonn BLMA 0830-30/20D Power Amp; PMM PIMS EMC immunity software.
 - Located within a Class 10,000 cleanroom.

- Radiated emission:

- Capabilities: 30MHz to 3+GHz inside GTEM cell. Dimensions up to 0.41m x 0.41m x 0.31m.
- Key equipment: Teseq GTEM 500 Ferrite cell; Keysight N9030B (26GHz); Nexio BAT-EMC emission software.
- Located within a Class 10,000 cleanroom.

- Conducted emission:

- Capabilities: DC 100KHz to 110MHz (10A, <60V); AC 9KHz to 30MHz (8A, <260V, 50-60Hz).
- Key equipment: Teseq GTEM 500 Ferrite cell (for isolation); Tekbox TBOH01 & TBLC08 LISN; Keysight N9030B (26GHz); Nexio BAT-EMC emission software.
- Located within a Class 10,000 cleanroom.

- Near field probing:

- Capabilities: E-field and H-field measurement; up to 3GHz.
- Key equipment: Beehive 100A, B, & C H-field probes and 100D E-field probe; Beehive 150A probe amplifier; Tektronix MDO4034B-3 (3GHz, with MDO4TRIG & DPO4BND)
- Located within a Class 10,000 (or better) cleanroom.



Vibration (shaker) testing:

- Sine and Random:

- Capabilities: 40KN force; 0-2.5KHz; 116G (sine) or 82G (random). Dimensions up to 0.6m.
- Key equipment: IMV i250 shaker; 600mm head-expander; RT600 slip-table; 20-channel K2 vibration controller/DAQ; IMV sine & random software; Meggitt 2222C & 2221F accelerometers.
- Located within a Class 10,000 cleanroom.

- Shock:

- Capabilities: 80KN force; 233G half-sine shock. Dimensions up to 0.6m.
- Key equipment: IMV i250 shaker; 600mm head-expander; 20-channel K2 vibration controller/DAQ; Meggitt 2222C & 2221F accelerometers.
- Located within a Class 10,000 cleanroom.

Vacuum testing:



- Thermal vacuum:
 - Capabilities:
 - Key equipment:
 - Located within a clean lab.
- Cryo vacuum:
 - Capabilities: large cryostat (1m diameter) room-temp to 20K; smaller cryostats room-temp to 1-4K. A range of electrical feed-throughs.

- Key equipment: various cryostats with a range of capacities.
- Located within a clean lab.

Other:

- FlatSat (functional electronic test)
 - Clyde Space (NANOBED)
 - OBC: Nanomind
 - EPS: FlexU
 - Battery: 30 W.hr
 - TMTC: (Outernet variant)
 - OB S/W: BAL Gen 1
 - S-band: (Standard)
 - Mission I/F: Xiphos
 - Pumpkin
 - Tyvac



- Functional RF test (including comms links for VHF and S-band)
- Functional optical test (both full 10cm aperture and 30cm with obscured central section)
- SpaceWire functional test.

For more information on our facilities, please contact karina.wardak@stfc.ac.uk