

Template for Pre-MIC4 Application (Resource Provider)

Provider Information

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Resources that you can provide

Centre for Nanosatellite Testing (CeNT) of Kyushu Institute of Technology can make testing facilities available to the MIC applicants at discounted rates. CeNT is capable of conducting all kinds of environment tests except radiation for a satellite up to 50cm/50kg. CeNT has tested more than 20 domestic/foreign satellites since 2010.

To obtain launch clearance from launch providers and to increase satellite reliability it is necessary to properly conduct and interpret environmental tests. CeNT opened in 2010 and provides all environmental tests (except radiation) necessary for the development of small satellites and satellite components with size and weight up to 50cmx50cmx50cm and 50kg, respectively. The tests may be generally categorized as follows:

Thermal Environment Testing

Thermal test facilities at CeNT include vacuum thermal shock, thermal vacuum and equilibrium, thermal cycle, and thermo-optical property measurement. For thermal vacuum either a ~30cm or ~1.5m diameter chamber is used, both with temperature range of approximately +/- 150 degrees C. The ~1.5m diameter chamber is pictured in Fig. 1 (b).

Electromagnetic Compatibility (EMC) Testing

To measure radiation patterns, confirm communication with ground stations, and conduct EMC testing, CeNT uses a semi-anechoic chamber that is approximately 10m x 8m x 5m.

Vibration Testing

CeNT is equipped with a vibration machine or “shaker”, type F-35000BD/LA36AP (made by EMIC Corporation), pictured in Fig. 1 (a).

Shock Testing

CeNT is equipped with both an air-gun-type and pendulum-type shock test machine. The maximum impulse is 4000G.

Outgas Measurement System

Outgassing properties from material samples are tested in a custom facility at CeNT according to ASTM E-595 standard.

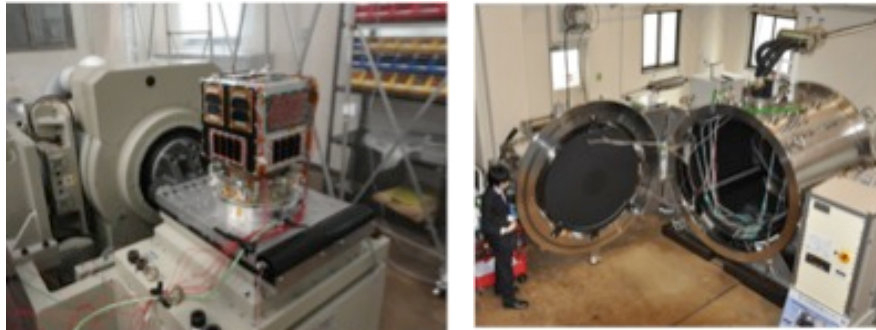


Fig. 1: (a) “Shaker” with 30 cm satellite (b) 1.5m thermal vacuum chamber

Kyutech is leading small-scale satellite testing in Japan. Approximately two-thirds of all Japanese small-scale satellites and many foreign small-scale satellites conduct environmental testing at CeNT.