

# Shaker test of radiator panel

July 21 2016

---



Credit: ESA–G. Porter

A radiator panel designed to ensure telecommunication satellites keep their cool in space seen during testing on the most powerful electrodynamic shaker of ESA's ESTEC Test Centre.

As the capabilities of telecom satellites go on increasing, so does the

quantity of [waste heat](#) they generate. This Deployable Panel Radiator has been designed by Airbus Defence & Space to supplement the traditional fixed passive radiators employed for telecom satellite thermal control.

To see video highlights of the shaker testing in early July, [click here](#).

The radiator is threaded through with heat pipes containing ammonia. In gaseous form, the ammonia travels along the panel, condensing into liquid to dump waste heat out into [space](#). Then in liquid form it returns back again, along a specially designed capillary mesh, so the cycle can continue.

Once qualified, the Deployable Panel Radiator will be added to the company's upcoming Eurostar Neo satellite platform, in development as part of ESA's Advanced Research in Telecommunications Systems Next Generation Platform programme.

Testing was carried out on ESA's Quad shaker, with a moveable platform attached to a quartet of 160 kN electromagnetic shakers. Follow-up testing is scheduled with the Test Centre's Large European Acoustic Facility.

"From a testing point of view the DPR confirms a trend that spacecraft components are growing both larger and lighter," comments Alexander Kuebler of ETS, the company that operates the Test Centre for ESA.

"Thanks to ESA's Quad shaker we are able to offer a vibration platform that is capable of accommodating such large [test](#) articles and shake them beyond an acceleration of 18g."

Designed for full-scale satellite testing, the ESTEC Test Centre is a collection of facilities to simulate every aspect of the space environment.

Everything is located under a single roof, within a controlled cleanroom environment tailored for delicate flight hardware. Based in a dedicated building in ESTEC, it is the largest centre of its kind in Europe, and one of the largest in the world.

Provided by European Space Agency

Citation: Shaker test of radiator panel (2016, July 21) retrieved 25 April 2024 from <https://phys.org/news/2016-07-shaker-panel.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.