

November 24, 2025



Spire Global's Hyperspectral Microwave Sounder Completes Environmental Testing

Next-generation weather demonstrator completes environmental and calibration testing and ships to Vandenberg Space Force Base for launch

VIENNA, Va.--(BUSINESS WIRE)-- [Spire Global, Inc.](#) (NYSE: SPIR) ("Spire" or "the Company"), a leading global provider of space-based data, analytics and space services, announced that its Hyperspectral Microwave Sounder (HyMS) payload has successfully completed environmental testing, calibration, and flight qualification. The sensor has been fully integrated into a Spire 16U satellite and shipped to Vandenberg Space Force Base to launch aboard SpaceX's upcoming Falcon 9 Twilight mission.

The HyMS payload will launch as a technology demonstrator with the goal of demonstrating the impact of a first-of-its-kind hyperspectral microwave sounder in a compact form factor in orbit. HyMS is designed to capture detailed internal views of the Earth's atmosphere, measuring important atmospheric variables including temperature, humidity, and precipitation.

The advanced microwave sounder underwent a comprehensive series of environmental and radiometric tests, including thermal vacuum (TVAC) testing designed to replicate the extreme temperature and vacuum conditions of space. During calibration, engineers evaluated HyMS against multiple reference targets: one simulating the cold of deep space and another set to multiple Earth-like scene temperatures representing conditions such as deserts, oceans, cloud-tops and more. These tests confirmed radiometric performance, validating that the instrument can detect the faint atmospheric microwave signals with exceptional noise performance essential for high-quality temperature and moisture profiling.

"HyMS is built to sense faint microwave emissions with fine spectral resolution in Earth's atmosphere, so accuracy and sensitivity of the radiometers are critical," said Mohammed Belal, Program Director, Microwave Technologies at Spire. "Our environmental and calibration campaign demonstrated strong radiometric stability and validated the instrument's performance ahead of launch. We're excited to see HyMS reach orbit and begin delivering new levels of atmospheric insight for the global forecasting community."

In addition to environmental testing, the Company has developed the ground support equipment, calibration workflows, and a dedicated ground processor to convert raw sensor data into calibrated, geolocated and bias corrected atmospheric products once the satellite is operational. This end-to-end capability positions the HyMS mission to begin collecting and processing demonstration data after launch.

HyMS is Spire's first in-orbit demonstration of hyperspectral microwave sensing, a technology designed to complement the Company's radio occultation measurements.

Today, Spire's weather data is leveraged by agencies such as NOAA, NASA, and EUMETSAT to drive global weather predictions and gain additional insights about the Earth system.

About Spire Global, Inc.

Spire (NYSE: SPIR) is a global provider of space-based data, analytics and space services, offering unique datasets and powerful insights about Earth so that organizations can make decisions with confidence in a rapidly changing world. Spire builds, owns, and operates a fully deployed satellite constellation that observes the Earth in real time using radio frequency technology. The data acquired by Spire's satellites provides global weather intelligence, ship and plane movements, and spoofing and jamming detection to better predict how their patterns impact economies, global security, business operations and the environment. Spire also offers Space as a Service solutions that empower customers to leverage its established infrastructure to put their business in space. Spire has offices across the U.S., Canada, UK, Luxembourg and Germany. To learn more, visit spire.com.

View source version on businesswire.com:

<https://www.businesswire.com/news/home/20251124469500/en/>

For Media:

Sarah Freeman

Senior Communications Manager

Sarah.Freeman@spire.com

For Investors:

Benjamin Hackman

Head of Investor Relations

Benjamin.Hackman@spire.com

Source: Spire Global, Inc.