

GEOSTATIONARY (GEO) INFRARED (IR) SOUNDER

Enabling a Safer, More Weather-Ready World

As weather threats intensify, L3Harris' innovative solutions are forging a new era of preparedness.

THE IMPORTANCE OF SOUNDERS

An IR sounder is one of the most important instruments for weather prediction. It provides data about atmospheric moisture, temperature and pressure, which is critical to forecasting severe weather and studying the climate.

When it comes to extreme weather events, like hurricanes, tornadoes, wildfires, torrential rain and flooding, early and accurate detection is essential to keeping people safe and out of harm's way. For more than 60 years, L3Harris has been at the forefront of advancing weather capabilities – including space-based sounding and imaging instruments and ground system technology – to improve forecast accuracy, measure climate change and increase life-saving warning times.

PROVEN ON-ORBIT TECHNOLOGY BUILT TO EVOLVE

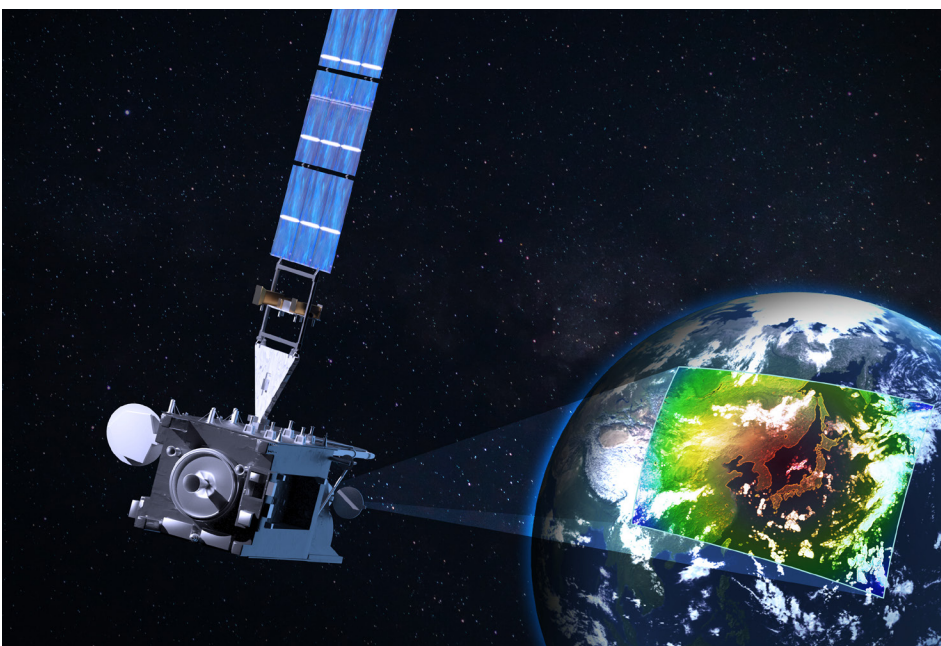
L3Harris provides world-leading weather instruments, from our proven capabilities on-orbit today – the Cross-track Infrared Sounder (CrIS) and Advanced Baseline Imager (ABI) – to our work on innovative solutions for the next generation of domestic and international weather architectures.

Our next-generation hyperspectral IR sounder on the Japanese Meteorological Agency's (JMA) Himawari-10 mission will enable forecasters to make better real-time decisions to counteract the threat of severe weather and disaster events in Japan and throughout much of Asia-Pacific.



BENEFITS

- > Helps predict the likelihood, intensity and path of severe storms, tornadoes, hurricanes, torrential rain events and fires
- > Increases preparedness and enables timely response to severe weather events to protect lives and property
- > Provides high-fidelity data for numerical weather prediction models, leading to more accurate and reliable weather forecasts
- > Advances climate monitoring, allowing scientists and researchers to better understand climate change and its effects



What's Next: The Future of Forecasting

Catastrophic weather events are becoming more frequent, destructive and widespread than ever before. As these threats intensify, L3Harris' next-generation weather instruments and ground systems are forging a new era of preparedness.

A DETAILED LOOK AT L3HARRIS' GEO IR SOUNDER

L3Harris' GEO IR sounder is a Fourier Transform Spectrometer (FTS) that provides more than 1,500 spectral channels across two bands – long-wave infrared (LWIR) and mid-wave infrared (MWIR) – with 4.2 km ground sample distance. It delivers world-class data from the surface of the Earth to the top of the atmosphere. The raw data is compressed to achieve a data rate of 135 Mbps, while maintaining all information content.

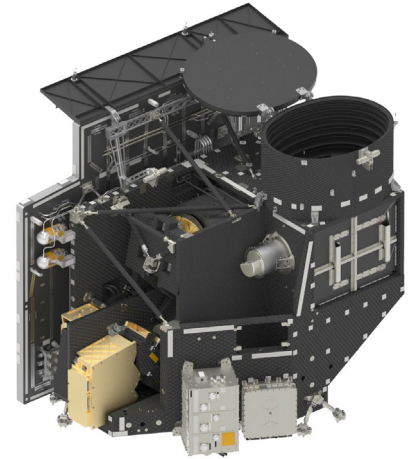
L3Harris' sounder leverages the proven Technology Readiness Level (TRL)-9 Advanced Baseline Imager (ABI) architecture and the TRL-9 hyperspectral Cross-track Infrared Sounder (CrIS) FTS technology to provide persistent, reliable and repeatable instrument performance throughout the 10-year operational life.

MISSION CONFIGURABILITY FOR A DYNAMIC WORLD

As a software-driven solution with a modular architecture, L3Harris' GEO IR sounder instrument can be readily configured to address unique mission needs – both prior to launch and on orbit.

The instrument is thermally isolated, self-calibrated and can fly on any spacecraft that has sufficient pointing control, power and SpaceWire ports for communication and data.

The step-stare mode scanning, which can be customized to user needs at any point in the life of the mission, provides the ability to collect interleaved data from the entire hemisphere, regions of interest and dynamically-controlled storm or event tracking.



KEY APPLICATIONS

Our advanced sounding technology is a leading source of life-saving data for:

- > Weather forecasting
- > Environmental observation
- > Fire behavior and smoke transport
- > Disaster management
- > Public safety
- > Resource management including aviation routing and power grid management

SPECIFICATIONS

Spectral coverage	LWIR from 680 – 1095 cm^{-1} and MWIR from 1689 – 2250 cm^{-1}
Spectral resolution	0.754 cm^{-1}
Spectral sampling	0.625 cm^{-1}
Ground sample distance	4.2 km
Data rate	135 Mbps

Geostationary (GEO) Infrared (IR) Sounder

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Nonexport-controlled Information

L3Harris Technologies is the Trusted Disruptor in the defense industry. With customers' mission-critical needs always in mind, our 50,000 employees deliver end-to-end technology solutions connecting the space, air, land, sea and cyber domains in the interest of national security.



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