

Custom components for the New Space Era

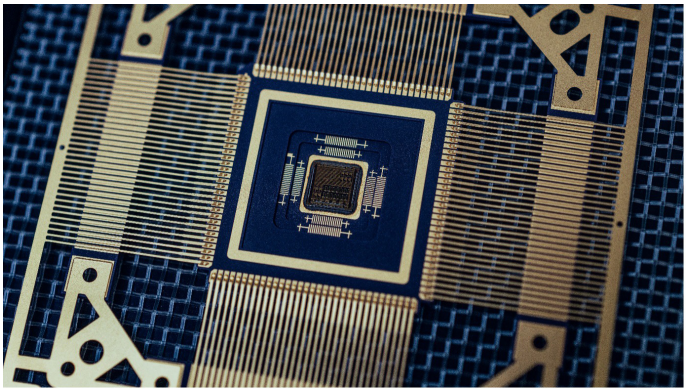
Space is no longer the exclusive domain of large agencies—today, it's a dynamic frontier for innovation, business, and connectivity. Imec empowers satellite builders with custom, space-grade electronics that combine cutting-edge performance with mission-critical reliability.

As satellite payloads become more compact, intelligent, and multifunctional, the demand for custom-designed components is surging. Imec supports the full journey from early-stage innovation to manufacturing of custom payload components. With decades of semiconductor expertise and a proven track record in space-grade electronics, imec co-develops solutions tailored to your mission needs – whether you're building smallsats, scientific instruments, or commercial constellations.

Imec's offering includes:

DARE: Radiation-hardened design for space

Imec's DARE platform, developed with ESA, enables the integration of custom digital and analog blocks into radiation-hardened chips for space applications. It supports advanced CMOS nodes (down to 7nm) and includes reusable IP, design kits, and mitigation techniques for radiation effects.

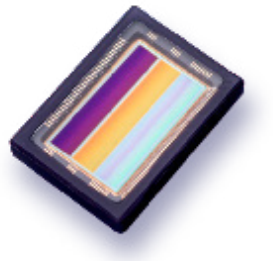


180nm mixed-signal rad-hard ASIC

Custom imager development

Imec offers a platform to co-develop specialty imagers tailored to your mission needs – from design and prototyping to low-volume manufacturing.

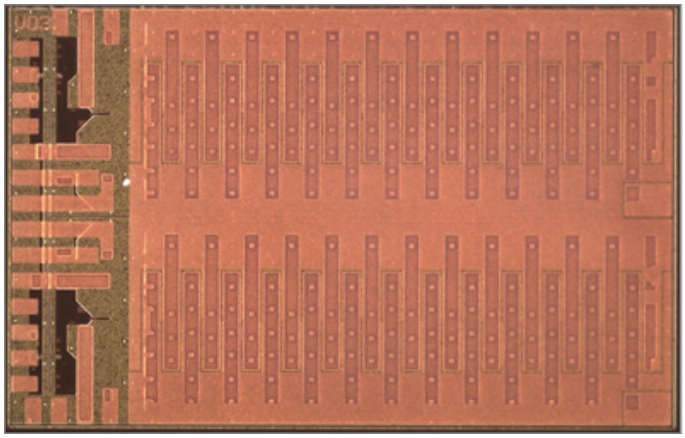
- Custom imagers
- Hyperspectral detectors
- Ultra-high-speed imaging
- Flat optics
- Infrared sensors
- Microbump technology



Linescan LS96 VNIR spectral sensor chip

Radiation-hardened power electronics for satellites

Imec supports the development of compact, integrated, and radiation-hardened power components based on GaN-on-Si technology, from concept to testing and qualification.



Monolithic integrated symmetrical half-bridge with integrated drivers, temperature and current sensors.

Optical communication for space

Imec's integrated photonics platform enables compact, low-power, and ultra-reliable optical transceivers – ideal for intra-satellite, satellite-to-satellite and satellite-to-Earth links. The hybrid optical beamforming platform supports non-mechanical beamforming, ready for harsh space environments.clean and high-yield optical filter integration with scalability to high-volume and low cost.

Non-Terrestrial Networks (NTN)

Imec's expertise spans satellite communication, positioning, and timing systems, with innovations like digital beamforming and GaN-on-silicon devices powering the future of 5G, 6G, and beyond.

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