



**SPACECRAFT DESIGN
& ENGINEERING**

ENGINEERING MISSION SUCCESS

Terran Orbital designs and manufactures standard and customized solutions for the most critical government and commercial missions. From ISR and space domain awareness to communications and Earth observation, the flexible architecture built into the design allows for customization, and the multiple platform models provide a wide range of sizes and capabilities. We leverage our flight heritage across all platforms, delivering the highest-quality solutions for our customers.

The vertical integration employed in Terran Orbital's process starts with our machine shop and continues with ~90% of our components being built in-house. This allows us to maintain quality control, timelines, and costs. For third-party subsystems, we work closely with key strategic supply-chain partners and establish multiple sources for each to minimize risk.

Our vertically integrated method removes the need for multiple Interface Control Documents (ICDs) and black boxes and reduces supply chain delays. We apply lessons learned in the design process to update our builds for faster, easier, and more comprehensive testing and assembly.

Our internal production process puts components through multiple levels of testing and acceptance. Expert designers are on-site to delegate and solve any issues immediately.

Scalable manufacturing provides increased production, quick throughput, and cost-effective delivery of complete turnkey solutions and spacecraft platforms at scale. Terran Orbital is committed to providing the best solutions for our customers' needs.



FLIGHT HERITAGE

Terran Orbital has decades of experience in spacecraft construction, operation, and deployment. We have built 60 spacecraft that have been placed in orbit. Our engineers have provided launch services to numerous satellites and supported over 80 missions with operational support over the past decade. From establishing the CubeSat standard to sending spacecraft to orbit the moon, our flight heritage is unmatched.



MANUFACTURING FACILITIES

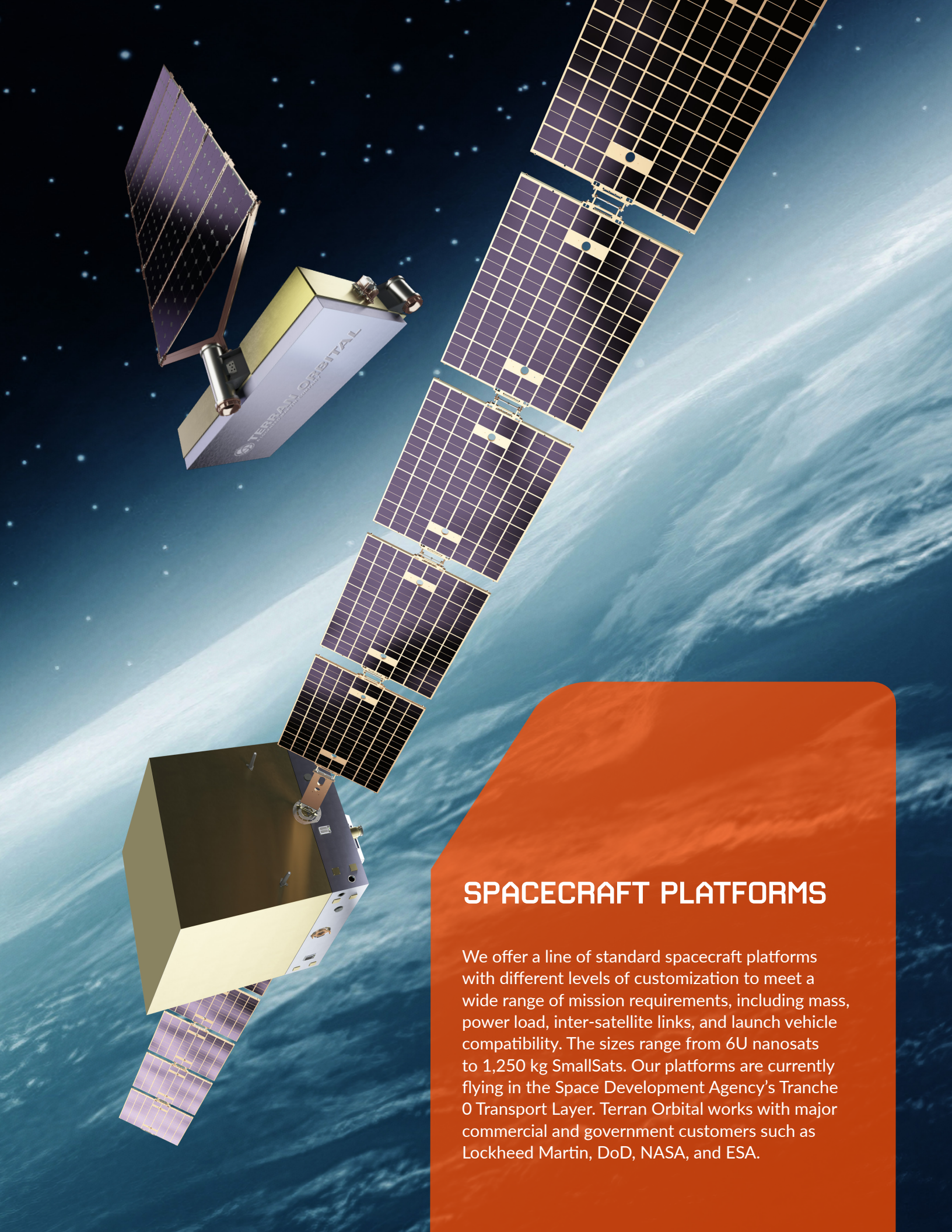
Terran Orbital is reinventing manufacturing in the space market and leads the way in small spacecraft production. We strive for high levels of vertical integration (~90% of spacecraft platform components are made in-house) and employ Lean processes and robotic automation.

Our facilities have the capability and technology to produce printed circuit board assemblies (PCBA). 3D automated optical inspection (AOI) and X-ray systems are utilized for quality assurance. This capability adds another component to Terran Orbital's vertical integration by minimizing reliance on third-party suppliers and significantly improving the timely delivery of PCBAs to the co-located next-level module assembly facility.

Terran Orbital performs Assembly, Integration, and Test (AI&T) at its facilities. Cleanroom spaces operate at Class 100k (ISO-8), bringing bench surfaces down to 1K for optics and sensitive payload work. Parts move on a circular path through the lab to prevent contamination of clean components, while Robotic Process Automation (RPA) decreases cycle times and increases capacity.

System requirements for spacecraft platform components are met by undergoing module-level acceptance, stress screening, testing, and inspection before vehicle integration. Several tests are conducted to verify and validate system requirements throughout module production, platform assembly, and payload integration.





SPACECRAFT PLATFORMS

We offer a line of standard spacecraft platforms with different levels of customization to meet a wide range of mission requirements, including mass, power load, inter-satellite links, and launch vehicle compatibility. The sizes range from 6U nanosats to 1,250 kg SmallSats. Our platforms are currently flying in the Space Development Agency's Tranche 0 Transport Layer. Terran Orbital works with major commercial and government customers such as Lockheed Martin, DoD, NASA, and ESA.

RF SOLUTIONS

Terran Orbital's RF Solutions Group has extensive expertise in passive RF, antenna arrays, and active synthetic aperture radar (SAR). We design and build satellites to meet the requirements of our commercial and national security customers.



OPTICAL SOLUTIONS

The Optical Solutions Group develops and builds cost-effective, responsive space-based imaging solutions for Earth Observation and Space Domain Awareness. Terran Orbital's family of spacecraft platforms employ these solutions, featuring agile boresight and broadband communications coupled with internally developed and partner payloads.

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