

SKYROOT AEROSPACE: FROM EARTHBOUND AMBITIONS TO ORBITAL HORIZONS

Skyroot Aerospace is helping expand India's role in commercial space by developing launch vehicles designed to make access to orbit more affordable and responsive. Its progress also shows why dependable electronics, disciplined production and standardized practices are essential to the country's growing private space ecosystem.

BUILDING A PRIVATE INDIAN LAUNCH COMPANY

Skyroot Aerospace was founded with a clear vision: to make space more accessible, affordable and responsive for customers in India and across the world. From the beginning, the goal was not only to build launch vehicles, but also to demonstrate that a private Indian company could **design, develop, test and operate** world-class space transportation systems.

Turning that vision into reality has been a journey of **ambition, deep engineering and continuous learning**. What started as a small team with a bold idea has grown into an organization working across propulsion, structures, avionics, systems engineering, manufacturing, integration and mission operations. Each milestone has helped build greater confidence, strengthen technical depth and deepen the understanding of what it takes to deliver dependable launch services.

Skyroot's progress has also mirrored the transformation taking place across India's space ecosystem. Policy reforms, support from ISRO and IN-SPACe, and increasing private participation have created new opportunities for startups and industry to contribute directly to national and global space missions. **Vikram-1 stands as a testament to this new chapter, demonstrating the growing capabilities of India's private space sector and its increasing role in the global space economy.**



VIKRAM-1: A BIGGER ROLE FOR INDIA

Developed by Skyroot as a launch vehicle for small satellites, Vikram-1 reflects the growing role of private enterprise in India's space program. Its successful orbital launch from Sriharikota on July 18, 2026, marked the first orbital launch from Indian soil undertaken by a private Indian company.

Beyond its significance as a launch achievement, the mission highlights the growing complexity of India's private space sector. Launch programs bring together multiple disciplines spanning precision engineering, advanced materials, fabrication, software, testing, ground-support systems and manufacturing. As private participation expands, strengthening these areas will become increasingly important to the development of India's space ecosystem.

A critical enabler within this broader ecosystem is **Electronics**.



THE ROLE OF ELECTRONICS IN REACHING HIGHER

Electronics are at the core of modern launch vehicles and space systems. Avionics, sensors, telemetry, communication systems, control systems, power systems, navigation and onboard computing all depend on reliable electronic hardware capable of performing under extreme conditions.

For manufacturers supporting these applications, reliability extends beyond the components themselves. It depends on how products are designed, assembled, inspected, tested and integrated. High-reliability printed circuit assemblies, embedded systems, harnesses, connectors and testing therefore require **skilled people, consistent processes and a strong focus on quality**.

As India's space sector continues to evolve, the expertise of the people behind these systems will become increasingly important. From design and assembly to inspection, testing and integration, workforce development and standardized practices can help manufacturers meet the demanding requirements of space applications.

BUILDING RELIABILITY THROUGH SKILLS AND STANDARDS

For Skyroot, mission assurance is built through a combination of engineering knowledge, skilled teams and disciplined production processes. Electronics must withstand vibration, shock, thermal cycling, vacuum and demanding mission environments. Solder joints, cable harnesses, connectors, component mounting, inspection, cleanliness and documentation all contribute to the **performance and integrity of the final system**.

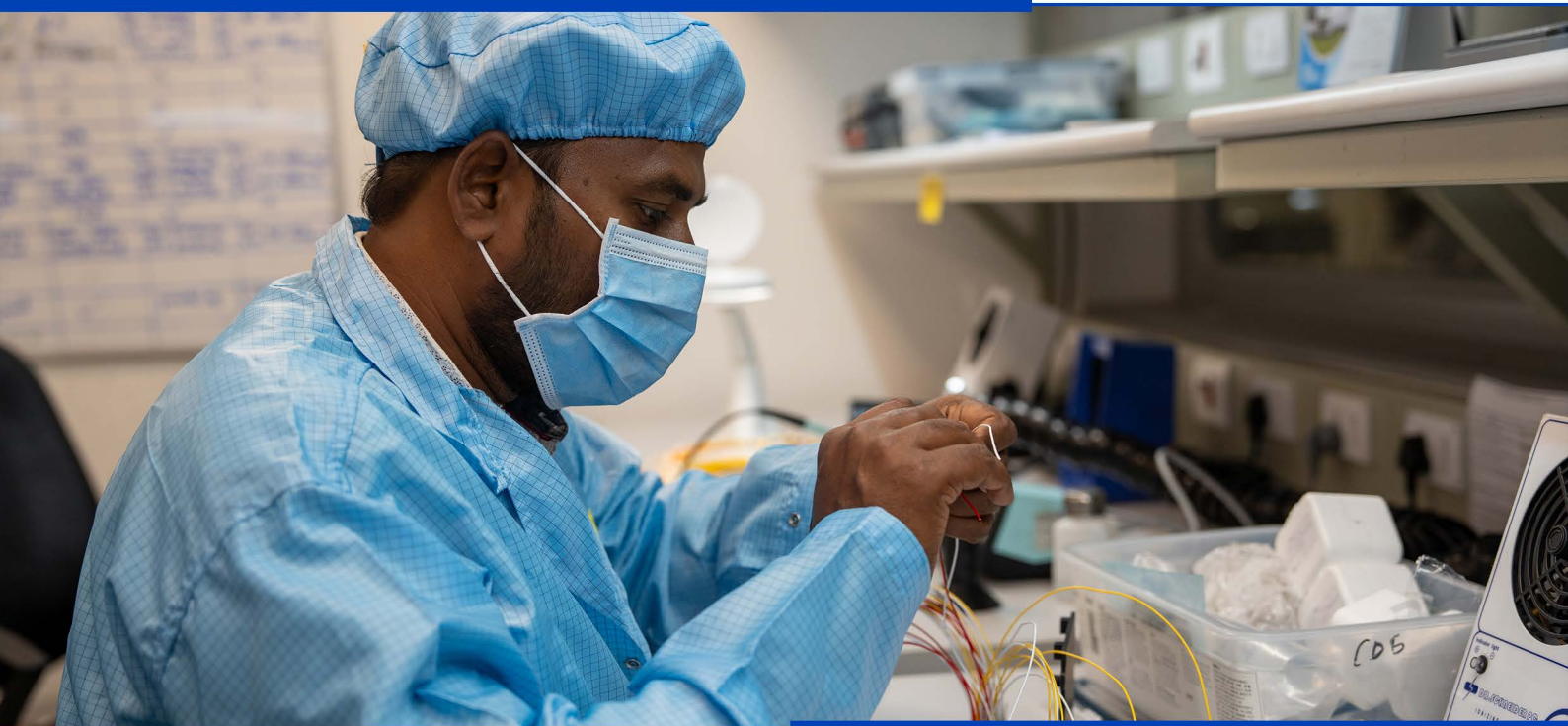


This is where IPC standards and certification play an important role. They **help establish consistent expectations for design, assembly and inspection, supporting greater consistency across teams and production activities.**



Skyroot has in-house designers who are IPC CID Advanced certified, along with CID-certified designers, strengthening the quality of its design processes. Its technicians have also been trained by IPC trainers in wire harnessing, soldering, repair and rework.

For a mission where every connection matters, standardization provides teams with a common reference for acceptability criteria and production requirements. It helps reduce ambiguity, identify issues early and maintain repeatability as systems progress from design and assembly through testing and integration.



FROM ENGINEERING TO MISSION SUCCESS

Years of development, testing, reviews and integration culminated in the Vikram-1 launch. The success of the mission demonstrated the importance of bringing multiple areas of expertise together, from propulsion and structures to avionics, electronics, manufacturing, testing and mission operations.

For Skyroot, it marked an important validation of the systems, processes and teams developed over years of work. For India, it highlighted how advances in space, electronics and manufacturing are coming together to support a new era of innovation and ambition.

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