



VARCHAS
AEROSPACE

Defence Electronics Redefined



2025

AERO INDIA

VISIT US AT
HALL-A | AS3.5

Varchas Aerospace specialises in innovative and indigenous aerospace and defence solutions. With a strong commitment to self-reliance, we specialize in the design, development, and manufacturing of advanced avionics, electromechanical systems, and high-precision test rigs that meet the highest industry standards.

Our expertise in reverse engineering and indigenization plays a crucial role in strengthening India's aerospace ecosystem, ensuring mission-critical systems are developed and produced domestically. Our diverse portfolio includes Line Replaceable Units (LRUs), cockpit instruments, simulators, and automatic test equipment, all designed to enhance operational efficiency and reliability.

Our Core Capabilities:

Product Development: Our R&D facility drives the development of innovative products, precision reverse engineering, and the creation of high-accuracy test jigs and rigs.

Advanced Engineering: With deep expertise in hardware design, software development, and manufacturing, we offer end-to-end product lifecycle support—from conceptualization and prototyping to rigorous testing and full-scale production.

Indigenization & MRO: We specialize in the indigenization, reverse engineering, maintenance, repair, and overhaul of aerospace & defence electronic components, ensuring self-reliance and operational readiness for defense applications.

Why Partner with Varchas Aerospace?

- **Commitment to Excellence:** Focused on quality, precision, and reliability
- **Technical Expertise:** Driven by a team of skilled engineers & specialists
- **Innovation & Collaboration:** A culture that fosters creativity and partnerships

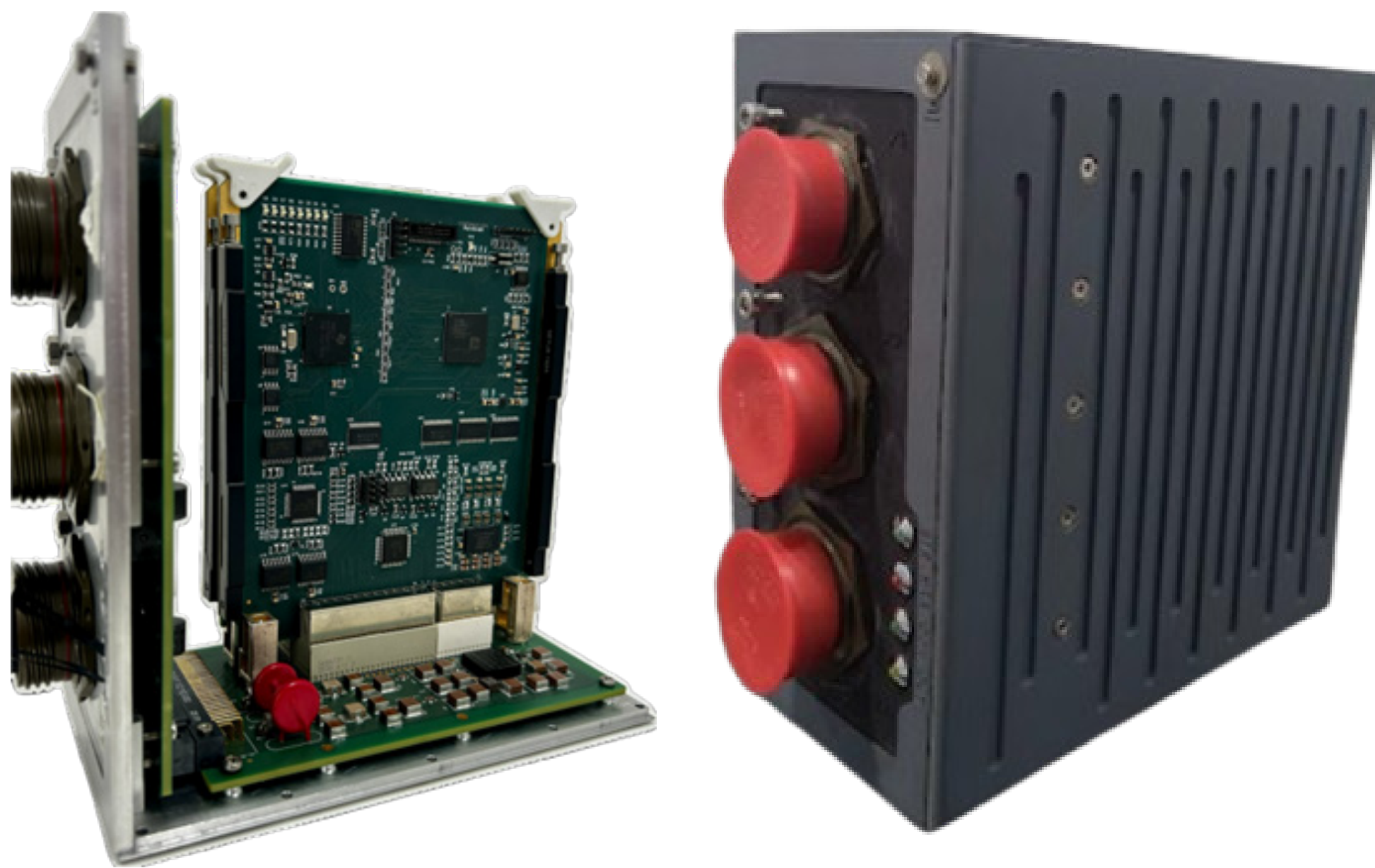
At Varchas Aerospace, we take pride in serving prestigious aerospace and defense customers. Our mission is to push the boundaries of technology, delivering high-performance, next-generation solutions that elevate defense and aviation capabilities. Let's collaborate to shape the next generation of aerospace & defence technology.

Charge Amplifier

- Precision Signal Conversion: Converts electrical charge from piezoelectric sensors into proportional voltage for accurate vibration monitoring.
- High-Fidelity Data Processing: Maintains signal integrity with unity gain, preventing distortion or amplification.
- Essential for Vibration Analysis: Enables advanced diagnostics and predictive maintenance by delivering precise signals for engine performance assessment.



Pylon Logic Controller



- Mission-Critical Control: Seamlessly integrates into the Yak-130, managing external stores, weapons, and payloads with precision.
- High-Speed Processing & Safety: Ensures real-time command execution, fault detection, and risk minimization in critical missions.
- Robust & Reliable: Built for extreme conditions, delivering durable, efficient, and mission-ready performance.

IFC

- Versatile Protocol Conversion: Converts Ethernet, MIL-STD-1553B, and ARINC-429 messages for seamless avionics integration.
- Robust & Reliable: Designed for high-demand aerospace environments, ensuring stable performance.
- Optimized System Interoperability: Facilitates smooth operation within complex digital avionics architectures.



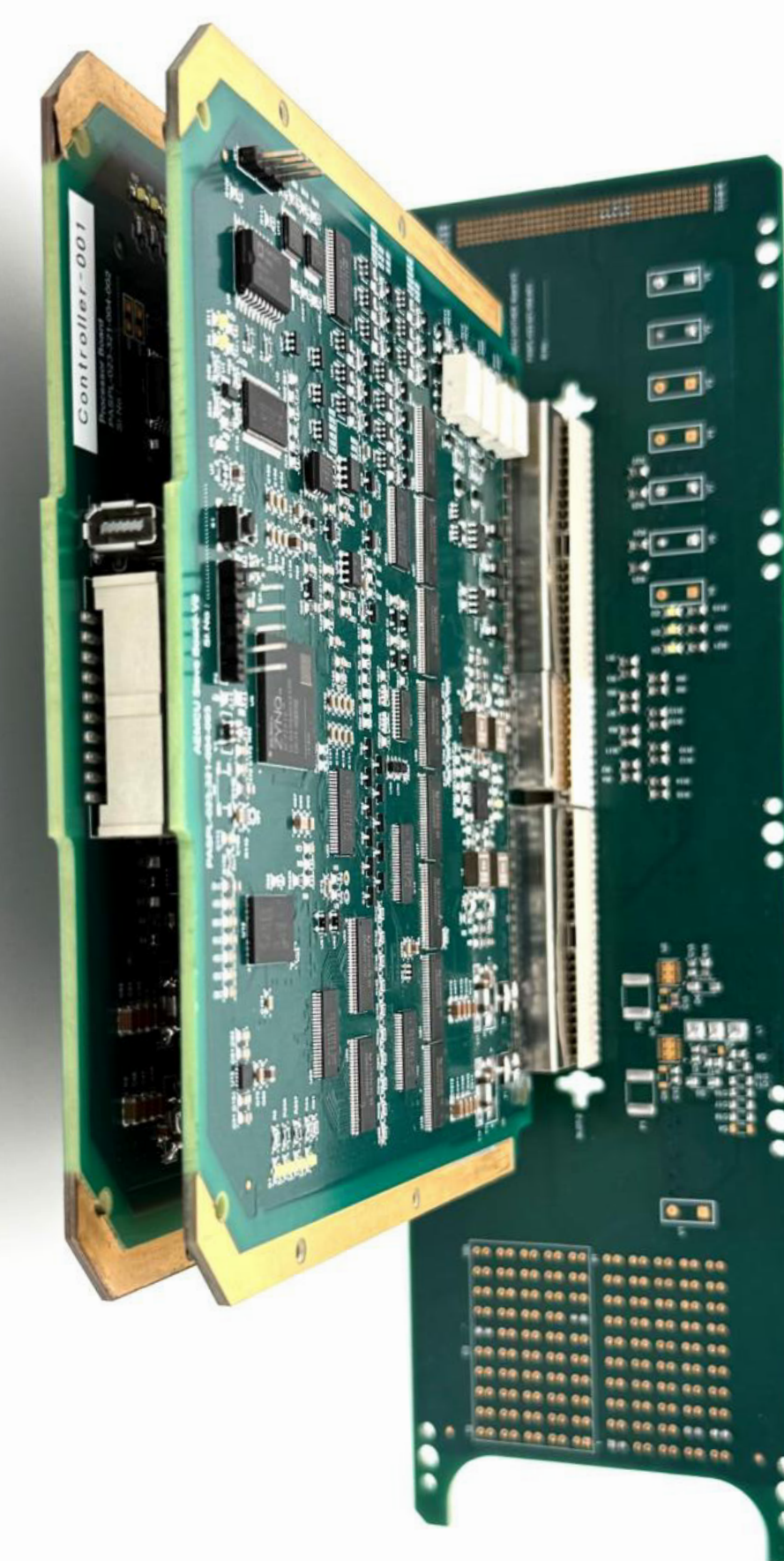
SU30 LRU 1



- Real-Time Monitoring: Tracks critical flight parameters for continuous operational awareness.
- Automatic Alerts: Warns pilots when limits are approached for timely corrective action.
- Enhanced Safety: Improves flight reliability and mission effectiveness with real-time data.

SU30 LRU 2

- EMI Management: Controls switching, blanking, and suppression to prevent signal conflicts in avionics systems.
- Blanking & Suppression: Disables receivers and transmitters to maintain communication integrity in critical operations.
- Radar Optimization: Ensures electromagnetic compatibility for the high-power N011M Fire Control Radar, enhancing system reliability.



TGT Amplifier



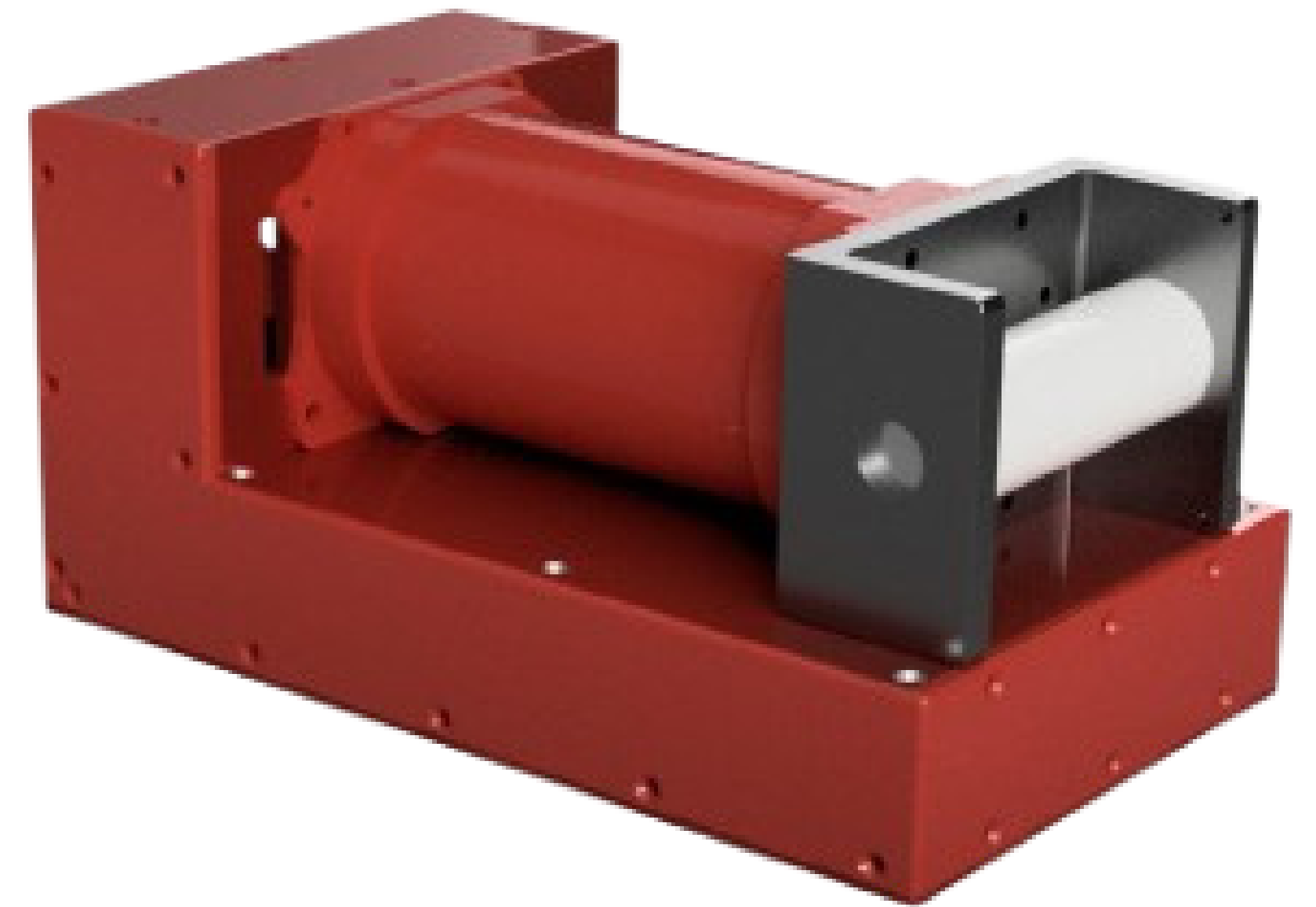
- Digital Turbine Gas Temperature Amplifier is a precision unit designed for turbine gas temperature control and fuel-flow regulation in jet engines.
- Closed-Loop Control: Ensures accurate temperature regulation.
- Smart Sensing: Detects engine rotation before start-up and adjusts fuel flow accordingly.
- Critical Functions: Monitors key parameters for optimal engine performance.
- Rugged & Reliable: Built to meet stringent aerospace standards.

Solid State Flight Data Recorder (SSFDR)

SSFDR & CVR: Avionics LRU that records flight data and cockpit voice.

Data Acquisition: Captures analog, frequency, and discrete inputs, plus two voice channels.

Storage & Retrieval: 25-hour flight data, 5-hour voice recording with automatic overwrite; supports post-flight analysis.



Software Defined Radio (SDR)

Wideband RF Capability: Multi-frequency operation for seamless interoperability.

Adaptive Waveform Processing: Real-time reconfiguration for mission flexibility.

Secure & Anti-Jamming Communication: Advanced encryption for defense applications.

Multi-Mode Operation: Supports AM, FM, SSB, digital signals, and tactical data links.

Rugged & Compact: Built for extreme aerospace conditions with high durability.

Low Latency, High Throughput: Optimized for rapid, reliable data exchange.

Scalable & Upgradable: Future-proof with software-defined adaptability.

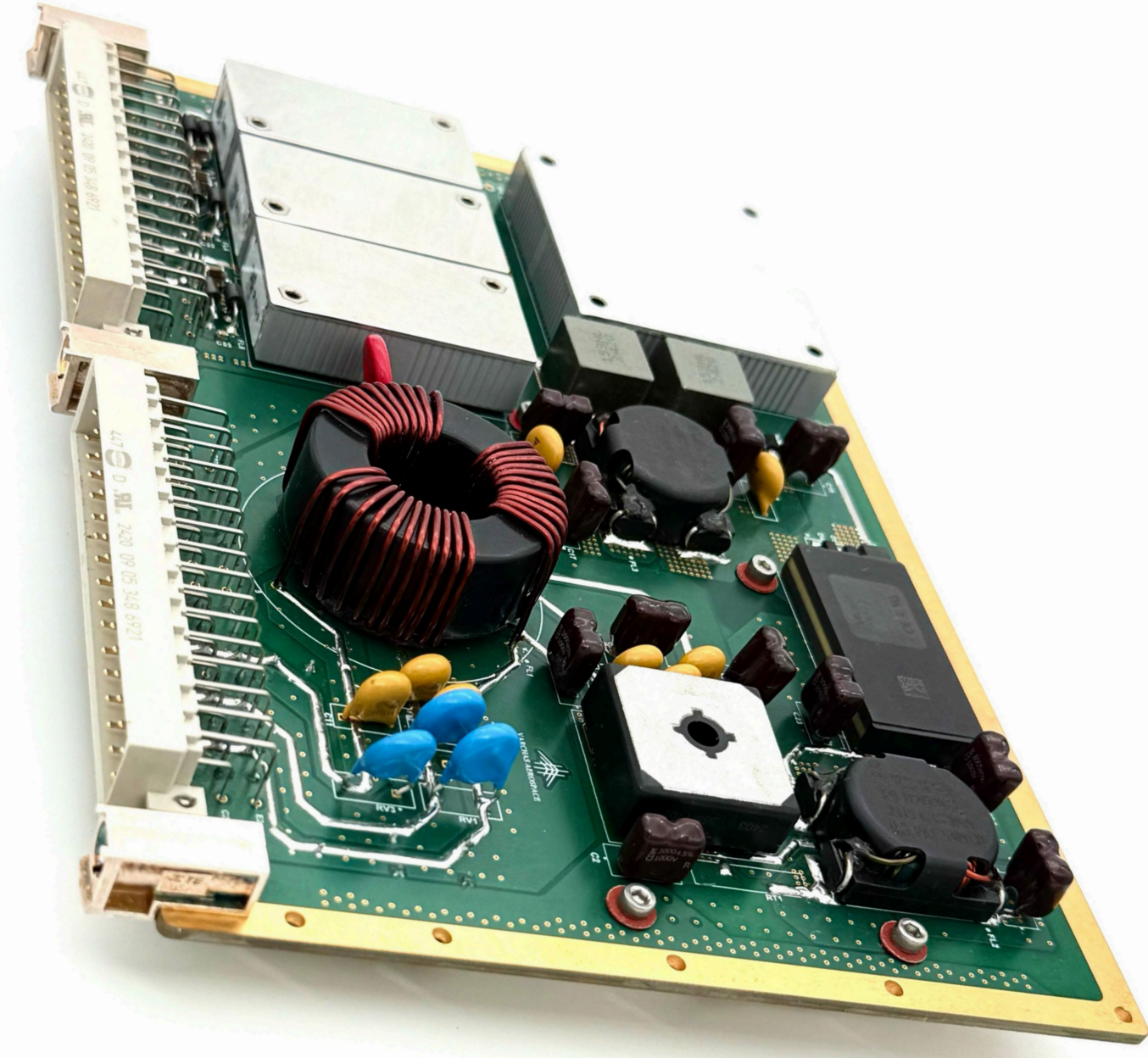
Helmet Mounted Display (HMD)

- Enhanced Situational Awareness: Projects critical flight data directly onto the pilot's visor.
- Integrated Eye/Helmet Tracking: Enables precise targeting and real-time data access.
- High-Resolution Display: Provides clear visuals for superior combat effectiveness.



Dual Input Power Supply Module

- Rugged & Reliable: Military-grade airborne power supply for extreme conditions.
- Precision Power Management: Regulated multi-output efficiency with stable performance.
- Aerospace Certified: Complies with MIL-STD-704D, 810H, and 461G for mission-critical use.



Engine Vibration Analyzer (EVA)



Handheld & Precise: Designed for avionics technicians to measure engine vibration and noise.

Advanced Sensing: Uses accelerometers to convert frequency, displacement, & acceleration into electrical signals.

Comprehensive Analysis: Enables detailed diagnostics for aircraft and helicopter engines.

Throttle Actuation System



Engine Throttle Control for Test Bench: Regulates fuel flow during jet engine testing.

Smart Throttle Motor: Mounted on the test bench for precise throttle actuation.

Multiple Control Inputs: Operated via touchscreen, mouse, or throttle lever.

Single Function Display

- **Dedicated Functionality:** Displays specific avionics data such as engine parameters, navigation, or radar information.
- **High Clarity & Reliability:** Optimized for real-time monitoring with minimal latency.
- **Rugged & Mission-Critical:** Designed for durability in extreme aerospace environments.



Multi Function Display (MFD)



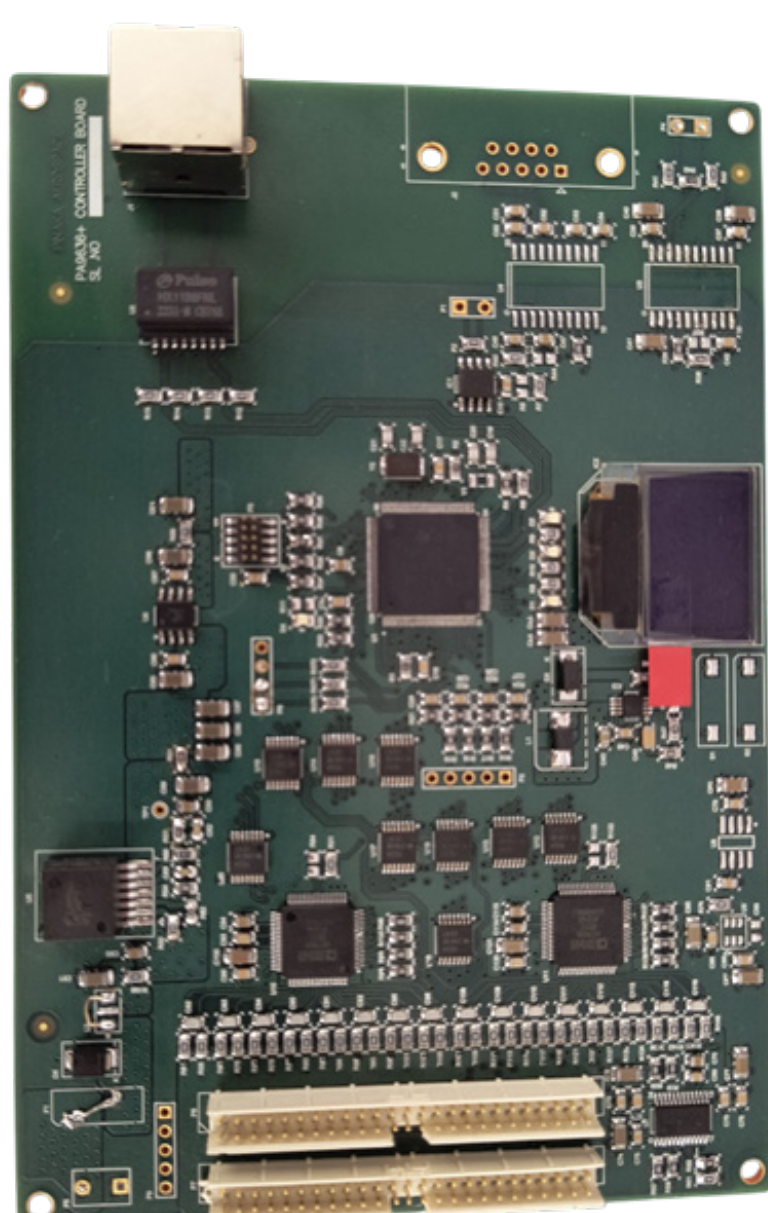
- **Advanced Graphical Interface:** Integrates radar, navigation, and system status monitoring.
- **Enhanced Situational Awareness:** Provides pilots with quick access to critical flight data.
- **Streamlined Avionics Display:** Combines multiple functions into a single, high-efficiency unit.

Three Component Accelerometer

- **High-Precision Sensing:** Three-axis accelerometer designed for the Sukhoi 30 MKI's Flight Data Recorder (FDR).
- **Compact & Lightweight:** Engineered for seamless integration without affecting power or weight specifications.
- **Reliable Performance:** Ensures accurate flight data monitoring for enhanced aircraft diagnostics.



I-Level Tester



I-Level Tester (Intermediate-Level Tester) is a diagnostic and maintenance system used for testing and troubleshooting Line Replaceable Units (LRUs) and other avionics components.

- Angle of Attack & Angle of Side Slip Vane
- Accelerometer Sensor Assembly Tester
- Rate Gyro Sensor Assembly Tester
- Total Air Temperature Tester
- Flight Control Panel Tester
- De-Icing Current Sensing Unit



VARCHAS

AEROSPACE

Phone: +91-98450-16655
email: sales@varchasaerospace.com
Website: <https://varchasaerospace.com/>

Corporate Office:
Raheja Towers, Level 10, MG Road, Bengaluru, Karnataka 560001

R&D Center:
#644, Thanisandra Main Road, Next to Elements Mall, Bengaluru 560077