

RAFI

SCALABLE PLATFORM TECHNOLOGY FOR DEFENCE SYSTEMS

INTEGRATED HMI AND EMBEDDED TECHNOLOGIES ENGINEERED FOR SCALABLE, SECURE AND FUTURE-READY DEFENCE PLATFORMS



rafi-group.com

RAFI – YOUR RELIABLE PARTNER FOR DEMANDING DEFENCE APPLICATIONS

For more than 125 years, RAFI has stood for precision and reliability in HMI and electronics development. For over 20 years, our technologies have been deployed in military land systems, air defence platforms and UAV control architectures. Our defence solutions are based on a unified and scalable platform technology designed for robustness, safety and adaptability.

YOUR ADVANTAGES AT A GLANCE:

- **Unified platform architecture** for HMI and embedded electronics
- **In-house development and production** in Europe
- **Long-term availability** and lifecycle management
- **MIL-oriented design** for shock, vibration and EMC
- **High vertical integration** for full quality control
- **Custom hardware** and software development

WE INDUSTRIALIZE MISSION CRITICAL HMI AND ELECTRONIC SYSTEMS FOR DEFENCE APPLICATIONS.

Robust, cost efficient and ready for deployment.

- Design to Manufacturing and Design to Cost
- Electronics development and system integration
- Industrialized in Germany and produced across Europe
- Secure and controlled production and purchasing processes
- High in house manufacturing depth including mechanics, electronics and assembly
- Qualification support including EMC, environmental, shock and vibration

From concept to field deployment. Ensuring quality, scalability and operational readiness.

CORE PLATFORM TECHNOLOGIES



TOUCH SOLUTION

Smart interaction, precise feedback, and maximum operational safety – seamlessly integrated for all types of defense applications.



TECHNICAL ENCLOSURES

Robust, durable, sealed and temperature-resistant mechanical systems — the ideal foundation for integrating customer-specific electronics and HMIs.



HAPTIC CONTROLS

From rugged joysticks to versatile encoders and programmable haptic systems — engineered for reliable, mission-critical input in any environment.



SAFETY & SECURITY

Software-based safeguarding of mission-critical functions: from joystick and touchscreen control to protected displays, secure communication and fail-safe interfaces.



EMBEDDED ELECTRONICS

From compact, cost-efficient modules to high-performance systems for secure communication, sensor integration and advanced defense applications.



SOFTWARE SOLUTIONS

From device drivers and operating systems to customized middleware and backend software — enabling fast, cost-efficient and scalable system integration.

RAFI TECHNOLOGIES IN ARMORED VEHICLE

Vehicle Monitoring

- Embedded Electronics
- Sensor integration
- Diagnostic touch HMIs
- Rugged maintenance keypads

Electronics & Control Modules

- Gateway electronics
- Sensor-fusion controllers
- Environmental control electronics

Driver Vision & Navigation Systems

- High-brightness displays
- Optical-bonded HMIs
- Rotary encoders & input switches

Weapons Control

- Trigger/Fire-Enable Buttons
- Safe-Arming Panels
- Ammunition & sensor status indicators

Communication Systems

- Rugged keypads
- Audio control panels
- Electromechanical controls

Door, Hatch & Ramp Control

- Sealed buttons
- Status lighting
- Control electronics



RAFI TECHNOLOGIES IN AIR DEFENSE & UAV CONTROL PLATFORM

Power Management & Energy Distribution

- Power distribution boards
- Voltage regulation
- Battery management
- Thermal management

Ground Control Station

- Multi-screen consoles with rugged displays
- Touch interface for map interaction & sensor tasking

Payload & Sensor Interface Electronics

- Video signal processing
- Payload power and control distribution

Remote Control Station

- Large rugged display with optical bonding
- Multi-Touch interface for command input
- Integration of video feeds, sensor data & mission software

Communication & Data Control

- Communication interface boards
- RF module integrated
- EMI optimized PCB design

UAV Sensor Control

- Force-feedback joystick for targeting
- Encoders for zoom & mode selection

Flight Control Electronics

- Actuator control
- Signal conditioning
- Redundant electronic design



SCALABLE HMI & CONTROL SOLUTIONS

RAFI technologies are deployed across a wide range of defence platforms.

Air Defence Systems

Remote-controlled air defence platforms with mission displays. Precision joystick control for tracking and engagement. Integrated sensor fusion and stabilization systems. Mobile field units for decentralized deployment.

UAV & Ground Control Stations

Multi-screen ground control consoles. Touch-based mission planning and sensor tasking. Redundant flight control electronics. Integrated communication and RF modules.



Armored Combat Vehicles

Driver cockpit with integrated HMI for navigation and communication. Gunner console with smart input devices for targeting and weapons control. Commander station with integrated control unit and sensor interface. Portable HMI for maintenance and external operation.

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