Embedded Connectivity Solutions for Mission Critical Applications

Some of the most high-stakes applications for connected systems include military defense and combat operations, where secure and reliable communication, command and control are mission critical. Wireless communication platforms must be rugged enough for extreme environments and hardened against intrusion with secure devices and networks that perform reliably and securely at all times. Digi offers secure, high-performance embedded systems, as well as software and services, for rapid development and deployment of mission critical applications, and full lifecycle management.

Military Applications

Military systems across the globe require embedded devices and components that are designed from the ground up for security, reliability and rugged environments. Digi embedded solutions provide the trusted foundation to build military systems for a wide range of use cases and applications, including:

- **Unmanned and autonomous systems**: Secure wireless connections support encrypted commands and enable full-motion video downloads within computer-automated navigation, flight control and real-time telemetry for unmanned vehicles such as UAVs and UGVs.
- **Secure radio and tactical networks**: Compact, low-SWaP (size, weight and power) communication modules support resilient mesh or point-to-point links that maintain connectivity among dismounted personnel, ground vehicles and tactical operations centers.
- **Mission-critical asset tracking**: Embedded cellular, satellite and RF-enabled modules support persistent situational awareness of high-value assets, vehicles and supplies.
- **Ruggedized control and avionics systems**: Modules within airborne and aerospace platforms must withstand extreme vibration, temperature, shock and EMI to perform reliably within controllers supporting flight management, environmental control and engine monitoring.
- **Perimeter and battlefield surveillance**: Edge computing devices processing video, radar and sensor data locally use wireless backhaul to transfer intelligence to tactical operations centers.

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- **Portable and wearable devices**: Soldier-borne sensors, physiological monitors and handheld command devices require compact, power-efficient embedded architectures with GPS, Bluetooth or short-range RF connectivity.
- **Ground vehicle and fleet communications**: Ruggedized gateway modules aggregate onboard sensor data and provide secure links between manned and unmanned vehicles for coordination, diagnostics and predictive maintenance.
- **Aerospace test and simulation systems**: Embedded data acquisition and telemetry modules collect, process and transmit performance data from test articles and flight systems.

With Digi's industrial-grade embedded systems, OEMs and integrators can deliver high-performance, secure and scalable connected platforms that support multi-domain operations across air, land, sea and space.

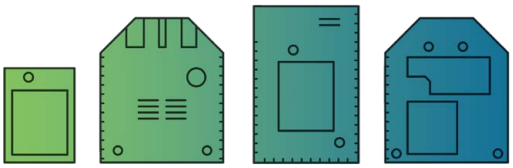
Addressing the Mission Critical Challenges of the Military Industry

Military and aerospace OEMs and integrators face increasing pressure to innovate while meeting rigorous operational and compliance standards:

- **Extreme environmental conditions**: Devices must withstand shock, vibration, temperature extremes and EMI/EMC challenges.
- **Security and data integrity**: Growing cyber threats demand hardened architectures and continuous protection at the device, network and cloud layers.
- **Longevity and supply chain stability**: Long product lifecycles require guaranteed component availability and continuity of supply.
- **Interoperability and flexibility**: Integrating multiple protocols, sensors and communication layers into a cohesive system is complex.
- **Bandwidth and connectivity in the field**: Maintaining resilient connectivity across RF, cellular and satellite links is essential for real-time situational awareness.
- **Increasing cyber security regulations**: OEMs building connected devices today, especially in regulated industries, must comply with a growing number of emerging cyber regulations, such as the EMEA Cyber Resilience Act.

Digi XBee Ecosystem

For tactical and remote communications, the Digi XBee ecosystem offers secure, low-power and resilient wireless connectivity that performs in the harshest conditions, as well as a full suite of development and management tools.



Digi XBee RF

This family of wireless communication modules offers local, short-range and long-range wireless connectivity using Digi XBee RF Modules with Zigbee, DigiMesh, 868 or 900 MHz ISM protocols. These self-healing, peer-to-peer networks operate independently of cellular or satellite infrastructure, making them ideal for close-range telemetry, robotics control, unmanned vehicle coordination and ground support equipment within a defined area of operations. XBee RF is well-suited for tactical edge environments where infrastructure is unavailable or low power consumption is critical.

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Digi XBee for Wi-SUN

Digi XBee for Wi-SUN® is the industry's first complete Wi-SUN CERTIFIED™ solution, offering secure IP-based wireless mesh networking that scales from small local sites to massive deployments.

The solution includes Digi XBee modules for Wi-SUN, flexible Digi XBee Hive border routers, and a suite of developer tools including Digi Remote Manager and Digi XBee Studio for configuration and remote management — all interoperable and optimized to work seamlessly together from day one.

Digi XBee Cellular (Cat 1, Cat 4 and LTE-M/NB-IoT)

Extend connectivity beyond line-of-sight (BLOS) with Digi XBee Cellular Modems, using cellular networks designed for low-bandwidth, long-range and low-power IoT communication.

With global carrier certifications, end-to-end encryption and device-to-cloud integration, XBee Cellular Cat 1, Cat 4 and LTE-M/NB-IoT modems support remote monitoring, command and control, and situational awareness applications across dispersed or mobile assets. The XBee Cellular line is ideal for distributed operations, asset tracking and persistent connectivity in areas covered by commercial or private LTE infrastructure, and your network is easy to monitor and manage from anywhere with Digi Remote Manager.

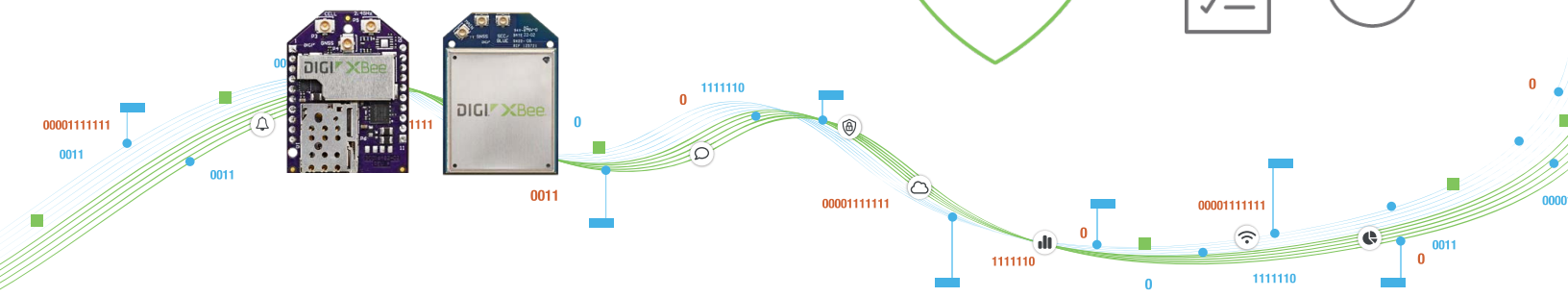
All modules in the XBee ecosystem share a common footprint and software framework, simplifying upgrades and lifecycle management.

Digi ConnectCore Developer Platform

The Digi ConnectCore developer platform offers complete end-to-end solutions for building, deploying and managing secure, reliable, connected systems.

Digi ConnectCore SOMs are embedded, scalable, production-ready platforms built on high-performance processors from NXP and STMicroelectronics.

- The Digi ConnectCore SOM portfolio provides industrial operating temperature ranges, high mean time between failures (MTBF) design and long-term product availability — ensuring continuity across multi-year defense programs and sustainment cycles.
- Pre-certified wireless (Wi-Fi, Bluetooth, cellular) and extensive peripheral options accelerate development for avionics, ground vehicles, unmanned systems and secure communication gateways.
- Integrated Digi TrustFence security provides secure boot, hardware root of trust and remote firmware management support compliance with DoD cybersecurity and supply chain integrity requirements.



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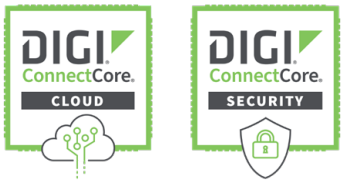
Digi ConnectCore Cloud Services

Digi ConnectCore Cloud Services offer OEMs a secure, scalable solution for remote management, monitoring and control of connected defense systems and deployed assets.

- Supports secure provisioning, over-the-air (OTA) firmware and configuration updates, and fleet-level monitoring to maintain operational readiness across distributed and unmanned platforms.
- Designed for mission critical assurance and cyber resilience, with end-to-end encryption, authentication and access control aligned to Zero Trust and DoD cybersecurity frameworks.
- Deployable within classified, tactical or private network environments, enabling air-gapped or hybrid-cloud operation while preserving command authority and data sovereignty.



Digi ConnectCore Security Services

Digi ConnectCore Security Services support flexible, defense-grade security with tools and services that enable monitoring and analysis of security risks and vulnerabilities for a custom software bill of material (SBOM) and binary image running on Digi ConnectCore system-on-modules.

These services provide:

- Tools and documentation to perform diagnostics.
- A curated vulnerability report highlighting critical issues, a security software layer including patches for common vulnerabilities and consulting services.
- Real-time vulnerability monitoring, patch deployment and threat response to maintain resilience against evolving cyber threats in both connected and contested networks.
- Device attestation, firmware integrity verification and lifecycle compliance tracking support operational assurance, auditability and adherence to DoD cybersecurity directives (e.g., RMF, NIST 800-171, CMMC).

These capabilities — which support the critical requirements for ongoing security management and compliance with regulations like the EMEA Cyber Resilience Act — enable trusted operation of deployed assets in forward operating bases, unmanned systems, or distributed tactical networks.

Outcomes

In defense and aerospace applications, success requires sustained reliability, lifecycle stability and adaptability to evolving mission requirements. OEMs and defense contractors that work with Digi can expect:

- **Longevity of supply**: Guaranteed product availability and supplier stability serving long program lifecycles.
- **Scalability and flexibility**: Shared software and hardware frameworks simplifying upgrades, expansions and re-use across platforms.
- **Defense-grade reliability**: Durability assuring mission-critical performance in harsh conditions.
- **Customizable security frameworks**: Digi's embedded high security, plus customization capabilities, ensuring alignment with security protocols and compliance standards.
- **Faster time-to-mission**: Pre-certified connectivity and modular design accelerating integration and certification timelines.
- **Remote manageability**: Cloud-enabled visibility and remote control supporting operational uptime and simplifying maintenance.

Why Digi

For over 40 years, Digi International has powered mission-critical connectivity across industries and applications where failure is not an option. Digi's embedded solutions combine rugged design, security leadership and lifecycle stability — backed by global support and a commitment to defense-grade reliability.

Whether you're modernizing legacy systems or developing next-generation autonomous platforms, Digi delivers the embedded intelligence to connect, secure and scale your mission.

Connect with Digi

Seeking next-generation solutions and support?
Here are some next steps:

- Ready to talk to a Digi expert? Contact us
- Want to hear more from Digi? Sign up for our newsletter
- Or shop now for Digi solutions: How to buy

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