Quantum Ecosystem
The Next Generation in IoT Edge Gateways

ELPRO Technologies

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Quantum Ecosystem: Unified Architecture for Industrial Connectivity, Monitoring and Control

For more than 40 years, **ELPRO Technologies** has delivered highly reliable industrial wireless solutions for critical infrastructure across the world. From water utilities and energy networks to mining, transportation and oil & gas, ELPRO systems have been trusted to monitor and control mission-critical assets in some of the most demanding environments.

As industrial operations evolve toward greater connectivity, distributed intelligence and large-scale data integration, the requirements placed on industrial communication systems have fundamentally changed.

Modern infrastructure now demands systems that are:

- Scalable across thousands of connected devices
- Secure and resilient by design
- Flexible across multiple communication technologies
- Capable of operating in remote and harsh environments
- Designed to integrate seamlessly with modern industrial platforms

To address these challenges, ELPRO Technologies has developed a new generation platform designed to support the future of industrial connectivity.

The result is the **Quantum Ecosystem**.

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Quantum Ecosystem

The Quantum Ecosystem is a modular, interoperable hardware platform designed to connect field assets, integrate industrial protocols and deliver secure data and control from the edge of the network through to enterprise systems. Built around a common architecture, the ecosystem provides solutions ranging from high-performance industrial gateways through to ultra-low-power remote sensors.

Rather than delivering isolated technologies, the Quantum platform has been engineered as a **complete industrial connectivity ecosystem**, where each device family plays a specific role while operating seamlessly with the others.

A New Era of Industrial Connectivity

Industrial infrastructure around the world is undergoing a major transformation. Systems that once operated as isolated control networks are increasingly expected to integrate with enterprise platforms, cloud environments and large-scale digital infrastructure.

This shift requires a new approach to industrial connectivity—one that moves beyond standalone devices toward integrated, scalable ecosystems capable of supporting modern industrial operations.

The **ELPRO Quantum Ecosystem** has been developed specifically to meet this challenge.

Instead of designing individual products for isolated applications, ELPRO has engineered a unified platform of interoperable technologies that together form a complete industrial connectivity architecture.

From ultra-low-power remote monitoring devices through to high-performance industrial edge gateways, every component within the Quantum Ecosystem has been designed to operate as part of a larger integrated system.

This architecture enables organizations to build layered industrial networks capable of supporting everything from remote asset monitoring to complex distributed automation systems.

The result is a flexible platform that can scale across industries, geographic regions and infrastructure sizes while maintaining consistent reliability, security and operational performance.

Seamless Interoperability Across the Quantum Ecosystem

A defining characteristic of the **Quantum Ecosystem** is the seamless interoperability between all product families within the platform.

Each device within the ecosystem has been engineered around a common design philosophy, allowing **Quantum Edge, Quantum Classic, Quantum Go Wi-Fi, Quantum Go I/O and Quantum ION** devices to operate together as part of a unified industrial communications network.

Rather than deploying multiple independent technologies to solve different connectivity challenges, organizations can build a fully integrated infrastructure where every layer of the network communicates efficiently and securely with the others.

This interoperability enables the Quantum platform to deliver a complete end-to-end solution—from ultra-low-power sensors and distributed I/O through to advanced edge processing and enterprise system integration.

The result is a **cohesive industrial architecture capable of scaling from individual assets to large multi-site infrastructure networks**.

A Modular Ecosystem for Modern Industrial Networks

Within the Quantum Ecosystem, each product family serves a specific role while remaining fully compatible with the others.

This modular approach allows organizations to deploy the right technology at each layer of their infrastructure while maintaining a unified system architecture.

The ecosystem consists of five key technology platforms:

- **Quantum Edge**
- **Quantum Classic**
- **Quantum Go Wi-Fi**
- **Quantum Go I/O**
- **Quantum ION (Ultra-Low Power Platform)**

Together these platforms create a layered industrial architecture capable of supporting complex operational environments while remaining flexible and scalable.

Quantum Edge The Intelligent Industrial Gateway

Quantum Edge represents the high-performance gateway layer of the Quantum Ecosystem. Designed for modern industrial networks, it provides the processing capability, protocol integration and security required to connect complex operational systems.

Quantum Edge acts as the central intelligence layer within industrial networks, aggregating data from field devices, processing information at the network edge and securely integrating with SCADA systems, cloud platforms and enterprise applications.

Key capabilities include:

- High-performance industrial gateway architecture
- Advanced industrial protocol integration
- Secure data aggregation and edge computing
- Scalable deployment across large infrastructure networks
- Integration with modern IIoT and enterprise platforms

Quantum Edge forms the **core intelligence layer** of the Quantum Ecosystem.

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Quantum Classic Proven Industrial Wireless Communication

Quantum Classic builds on ELPRO's long heritage of highly reliable industrial wireless communication systems. Designed for mission-critical infrastructure environments, it provides robust long-distance connectivity for monitoring and control applications.

These systems deliver dependable performance in remote and challenging environments where reliable communication is essential for operational safety and efficiency.

Key characteristics include:

- Highly reliable industrial wireless communication
- Long-distance connectivity for remote infrastructure
- Designed for SCADA and telemetry networks
- Proven performance in critical infrastructure environments
- Seamless integration within the Quantum Ecosystem

Quantum Classic provides the **backbone communication layer** connecting distributed sites and assets.

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Quantum Go Wi-Fi Industrial Wireless Networking for Connected Operations

Quantum Go Wi-Fi provides secure wireless connectivity across industrial facilities and operational environments. Designed specifically for industrial use, it enables reliable networking for operational technology systems, mobile devices and connected equipment.

This platform supports modern operational environments where access to real-time data and connected systems is essential for efficient operations.

Key capabilities include:

- Industrial-grade Wi-Fi connectivity
- Secure networking for operational environments
- Support for mutable devices and connected equipment
- Flexible deployment within facilities and infrastructure sites
- Integration with other Quantum Ecosystem platforms

Quantum Go Wi-Fi provides the **facility connectivity layer** within the ecosystem.

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Quantum Go I/O Distributed Monitoring and Control

Quantum Go I/O extends the Quantum Ecosystem directly into field assets by providing flexible industrial input and output capabilities for remote monitoring and equipment control.

These devices allow operators to collect sensor data, control field equipment and integrate infrastructure assets into larger automation systems.

Key features include:

- Flexible industrial I/O capabilities
- Integration with sensors and control equipment
- Scalable deployment across distributed infrastructure
- Designed for harsh and remote environments
- Seamless communication with other Quantum Ecosystem platforms

Quantum Go I/O forms the **field interface layer** connecting physical assets to the digital industrial network.

Quantum ION Ultra-Low Power Monitoring for the Next Generation of Infrastructure

Quantum ION represents the next evolution in industrial monitoring technology. Designed for ultra-low-power operation, it enables long-term deployment of remote sensors in locations where traditional power sources may not be available.

This platform dramatically expands the reach of industrial monitoring systems, enabling organizations to deploy sensor networks across vast and previously inaccessible infrastructure environments.

Key design principles include:

- Ultra-low-power operation for extended field deployment
- Remote monitoring of distributed infrastructure assets
- Scalable sensor networks across large geographic areas
- Integration with the broader Quantum Ecosystem
- Designed for future industrial IoT applications

Quantum ION enables the **sensor layer** of next-generation industrial monitoring networks.

Designed for Flexible Deployment

The interoperable design of the Quantum Ecosystem allows organizations to deploy technology exactly where it is needed while maintaining full system compatibility.

Customers can:

- Start with a single solution to solve a specific challenge
- Expand infrastructure as operational requirements grow
- Integrate legacy systems with modern connectivity platforms
- Build multi-layered communication architectures across large geographic areas

This flexibility ensures the Quantum Ecosystem can evolve alongside industrial infrastructure while protecting long-term technology investment.

Engineering the Future of Industrial Wireless

The Quantum Ecosystem represents the culmination of decades of ELPRO engineering expertise combined with a forward-looking technology architecture designed for the next generation of industrial networks.

By bringing together multiple layers of connectivity—including edge intelligence, industrial wireless communications, distributed I/O, facility networking and ultra-low-power sensing—the platform enables organizations to deploy a unified infrastructure capable of supporting modern industrial operations.

With its interoperable design, flexible deployment capabilities and scalable architecture, the Quantum Ecosystem positions **ELPRO Technologies at the forefront of industrial wireless innovation**.

From remote infrastructure monitoring through to advanced edge computing environments, the Quantum platform provides the foundation for building secure, resilient and future-ready industrial connectivity systems.

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Quantum Edge Range

Product Code	Description	Frequency Range
EL-QE-CEL	Quantum Cellular 3 G & 4G, I/O analogue and digital, Ethernet, Serial ports,	
EL-QE-CEL-LW8	Quantum Cellular 3G & 4G, I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 869 MHz)	
EL-QE-CEL-LW9	Quantum Cellular 3G & 4G, I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 915 MHz)	
EL-QE-CEL-R-C1	Quantum Dual Cellular 4G & Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports	148-174 MHz
EL-QE-CEL-R-C3	Quantum Dual Cellular 4G & Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports	340-400 MHz
EL-QE-CEL-R-C4	Quantum Dual Cellular 4G & Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports	400-480 MHz
EL-QE-CEL-R-C5	Quantum Dual Cellular 4G & Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports	470-520 MHz
EL-QE-CEL-R-U8	Quantum Dual Cellular 4G & Radio (Unlicensed), I/O analogue and digital, Ethernet, Serial ports	865-869MHz
EL-QE-CEL-R-U9	Quantum Dual Cellular 4G & Radio (Unlicensed), I/O analogue and digital, Ethernet, Serial ports	902-928 MHz
EL-QE-CEL-WiFi-2.4	Quantum Edge Unit, 2.4 WiFi Long Range & Cell	2.4 GHz
EL-QE-CEL-WiFi-5	Quantum Edge Unit, 5 WiFi Long Range & Cell	5 GHz
EL-QE	Quantum Base Unit, WiFi (2.4/5 GHz), (Short Range), I/O analogue and digital, Ethernet, Serial ports	
EL-QE-LW8	Quantum Base Unit, WiFi (2.4/5 GHz), (Short Range), I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 869 MHz)	
EL-QE-LW9	Quantum Base Unit, WiFi (2.4/5 GHz), (Short Range), I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 915 MHz)	
EL-QE-R-C1	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports	148-174 MHz
EL-QE-R-C1-LW8	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 869 MHz)	148-174 MHz
EL-QE-R-C1-LW9	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 915 MHz)	148-174 MHz
EL-QE-R-C3	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports	340-400 MHz
EL-QE-R-C3-LW8	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 869 MHz)	340-400 MHz
EL-QE-R-C3-LW9	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 915 MHz)	340-400 MHz
EL-QE-R-C4	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports	400-480 MHz
EL-QE-R-C4-LW8	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 869 MHz)	400-480 MHz
EL-QE-R-C4-LW9	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 915 MHz)	400-480 MHz
EL-QE-R-C5	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports	470-520 MHz
EL-QE-R-C5-LW8	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 869 MHz)	470-520 MHz
EL-QE-R-C5-LW9	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 915 MHz)	470-520 MHz
EL-QE-R-U8	Quantum Radio (Unlicensed), I/O analogue and digital, Ethernet, Serial ports	865-869MHz
EL-QE-R-U8-LW8	Quantum Radio (Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN869 MHz)	865-869MHz
EL-QE-R-U9	Quantum Radio (Unlicensed), I/O analogue and digital, Ethernet, Serial ports	902-928 MHz
EL-QE-R-U9-LW9	Quantum Radio (Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN915 MHz)	902-928 MHz
EL-QE-WB900	Quantum Base Unit, Long Range WiFi (900MHz) I/O analogue and digital, Ethernet, Serial ports	
EL-QE-WB900-LW9	Quantum Base Unit, Long Range WiFi (900MHz) I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 915 MHz)	
EL-QE-WiFi-2.4	Quantum Base Unit, Long Range WiFi (2.4 GHz) I/O analogue and digital, Ethernet, Serial ports	
EL-QE-WiFi-2.4-LW8	Quantum Base Unit, Long Range WiFi (2.4 GHz) I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 869 MHz)	
EL-QE-WiFi-2.4-LW9	Quantum Base Unit, Long Range WiFi (2.4 GHz) I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 915 MHz)	
EL-QE-WiFi-5	Quantum Base Unit, Long Range WiFi (5 GHz) I/O analogue and digital, Ethernet, Serial ports	
EL-QE-WiFi-5-LW8	Quantum Base Unit, Long Range WiFi (5 GHz) I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 869MHz)	
EL-QE-WiFi-5-LW9	Quantum Base Unit, Long Range WiFi (5 GHz) I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 915 MHz)	

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Quantum Classic Range

Product Code	Description	Frequency Range
EL-QC-CEL	Quantum Cellular 3 G & 4G, I/O analogue and digital, Ethernet, Serial ports,	
EL-QC-CEL-LW8	Quantum Cellular 3G & 4G, I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 868 MHz)	
EL-QC-CEL-LW9	Quantum Cellular 3G & 4G, I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 915 MHz)	
EL-QC	Quantum Base Unit, WiFi (2.4/5 GHz), (Short Range), I/O analogue and digital, Ethernet, Serial ports	
EL-QC-LW8	Quantum Base Unit, WiFi (2.4/5 GHz), (Short Range), I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 868 MHz)	
EL-QC-LW9	Quantum Base Unit, WiFi (2.4/5 GHz), (Short Range), I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 915 MHz)	
EL-QC-R-C1	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports	148-174 MHz
EL-QC-R-C1-LW8	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 868 MHz)	148-174 MHz
EL-QC-R-C1-LW9	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 915 MHz)	148-174 MHz
EL-QC-R-C3	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports	340-400 MHz
EL-QC-R-C3-LW8	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 868 MHz)	340-400 MHz
EL-QC-R-C3-LW9	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 915 MHz)	340-400 MHz
EL-QC-R-C4	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports	400-480 MHz
EL-QC-R-C4-LW8	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 868 MHz)	400-480 MHz
EL-QC-R-C4-LW9	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN 915 MHz)	400-480 MHz
EL-QC-R-C5	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports	470-520 MHz
EL-QC-R-C5-LW8	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 868 MHz)	470-520 MHz
EL-QC-R-C5-LW9	Quantum Radio (Licensed & Unlicensed), I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 915 MHz)	470-520 MHz
EL-QC-R-U8	Quantum Radio (Unlicensed), I/O analogue and digital, Ethernet, Serial ports	865-869MHz
EL-QC-R-U8-LW8	Quantum Radio (Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN868 MHz)	865-869MHz
EL-QC-R-U9	Quantum Radio (Unlicensed), I/O analogue and digital, Ethernet, Serial ports	902-928 MHz
EL-QC-R-U9-LW9	Quantum Radio (Unlicensed), I/O analogue and digital, Ethernet, Serial ports, (LoRaWAN915 MHz)	902-928 MHz

Quantum Go (Wi-Fi)

Product Code	Description	Frequency Range
EL-QGW	Quantum Base Unit, Long Range WiFi (2.4 & 5 GHz) I/O analogue and digital, Ethernet, Serial ports	2.4 & 5 GHz
EL-QGW-CEL	Quantum Base Unit, 2.4 & 5 WiFi Long Range & Cell	2.4 & 5 GHz, Cell LTE
EL-QGW-LW8	Quantum Base Unit, Long Range WiFi (2.4 & 5 GHz) I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 869MHz)	2.4 & 5 GHz LW868
EL-QGW-LW9	Quantum Base Unit, Long Range WiFi (2.4 & 5 GHz) I/O analogue and digital, Ethernet, Serial ports (LoRaWAN 915 MHz)	2.4 & 5 GHz LW900
EL-QGW-WB900	Quantum Base Unit, 2.4 & 5 WiFi (900MHz) Long Range	2.4 & 5 GHz 900 MHz

Quantum Go (I/O)

Product Code	Description	Frequency Range
EL-QGI-CEL	Quantum Cellular 3 G & 4G, I/O analogue and digital, Ethernet, Serial ports,	
EL-QGI-EXPA	Quantum Range Expansion Module 4 A I/O & D A I/O	
EL-QGI-EXPD	Quantum Range Expansion Module 4 D I/O & 2 A I/O	
EL-QGI-LW8	Quantum LoRaWAN Field Device I/O analogue and digital, Ethernet, Serial ports	
EL-QGI-LW9	Quantum LoRaWAN Field Device I/O analogue and digital, Ethernet, Serial ports	
EL-QGI-R-U8	Quantum Radio (Unlicensed), I/O analogue and digital, Ethernet, Serial ports	865-869MHz
EL-QGI-R-U9	Quantum Radio (Unlicensed), I/O analogue and digital, Ethernet, Serial ports	902-928 MHz

Thank You.

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