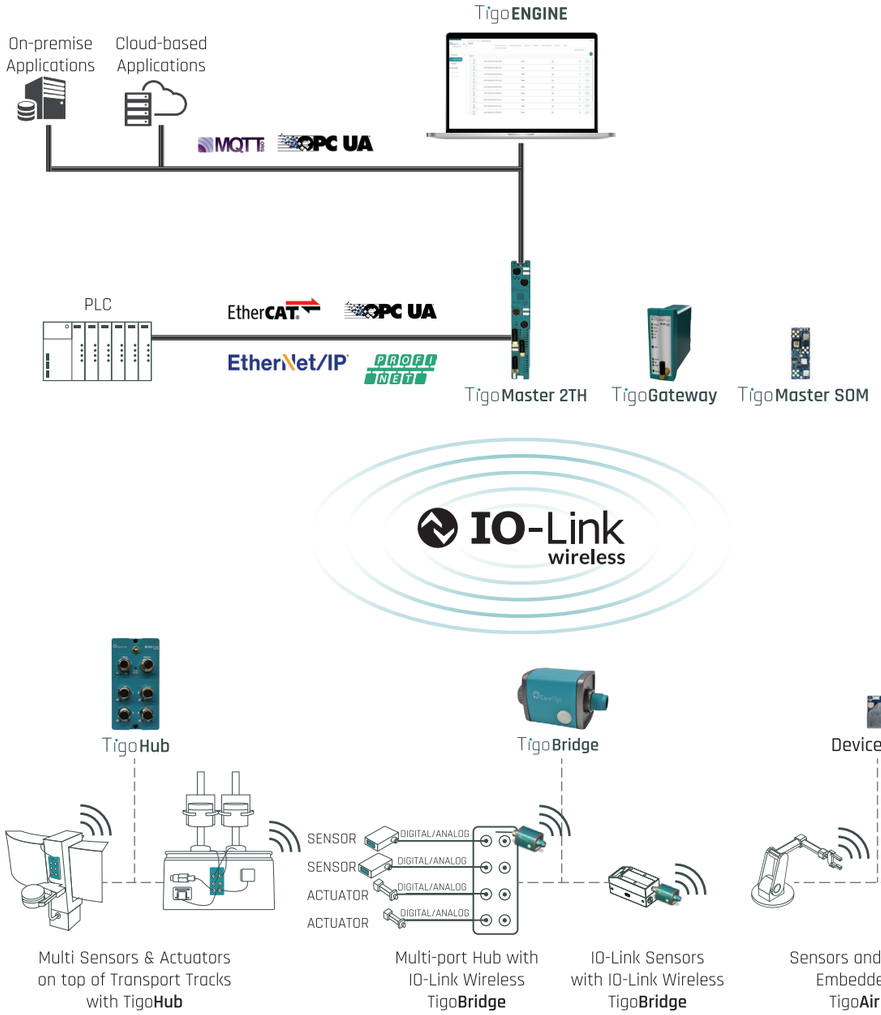
CoreTigo

Industrial Wireless Automation

Wireless Solutions Designed for Factory Automation
Enabling High-performance and Adaptive Manufacturing

IO-Link wireless

IO-Link Wireless Architecture



Software Applications

IO-Link Wireless Masters

IO-Link Wireless Devices

RANGE OF POWER OPTIONS: Slip Rings | Inductive Power | Battery | 24V

IO-Link wireless

IO-Link Wireless is a deterministic, low latency (5 msec), highly reliable, and scalable universal wireless communication protocol. Based on the IO-Link IEC 61131-9 standard, it is designed specifically for factory automation, coexisting with other networks - both wired and wireless.

Scalable
Factory-Wide Solutions Supporting 100s of devices per work cell and a broad range of applications

High-Speed Motion Solutions
Made for rotating & dynamic machine components

Ultra-High Reliability
One million times more reliable than other wireless protocols

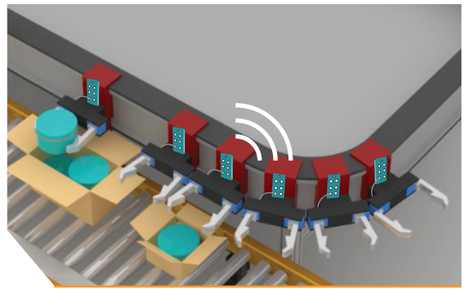
Real-Time Control & Monitoring
Connect any actuator and sensor wirelessly at the lowest latency

Industry Standard
IEC-61131-9 designed for harsh industrial applications

Solutions & Applications

CoreTigo enables faster and more flexible manufacturing by providing high-performance machine digitalization, wireless connectivity and edge solutions for machine builders, system integrators and industrial equipment manufacturers. Industrial-grade wireless communication is a key pillar of Industry 4.0 applications.

It's about enabling more sophisticated transport and conveyer systems, real-time control and monitoring of rotating machinery, the ability to place sensors anywhere in the factory for real-time data collection, and more. It's about a truly intelligent production line that can take flexibility and agility to new levels, and further drive predictive maintenance and operational excellence.



Real-time wireless control & monitoring on-board independent mover systems

Transport Tracks & Smart Conveying Systems

Increased Capacity – Perform actions while movers are in constant dynamic motion

Mass Customization – Enable automatic changeover and rapid tooling setup for range of product/package types

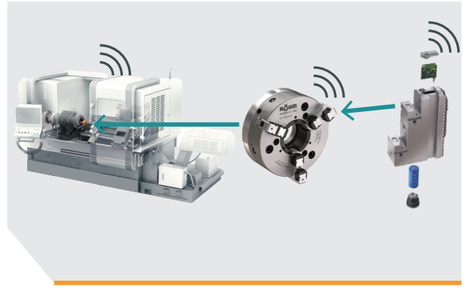
Footprint & Cost Reduction - Support multiple designs and materials within a single machine

Simplified Maintenance - Reduce mechanical components and external automation equipment

Downtime Reduction - Condition monitoring and predictive maintenance

Enabling Adaptive Machines and Production Lines with IO-Link Wireless for a variety of industries:

- Packaging – food & beverage, pharmaceutical, cosmetics, and additional consumer packaged goods
- Material handling and Logistics
- Assembly lines - automotive, batteries



Data Collection (e.g. force, vibration, temperature) at the Clamping/Tooling point while machining with integrated IO-Link Wireless

See online at:
coretigo.com/solutions

Intelligent Tooling

Automatic Setup – Precise workpiece and tool setup without manual intervention

Machine Tuning – Improve quality and performance through real-time measurement of excessive and declining clamping while machining

Safety - Reduce safety hazards and machine damage caused by inadequate clamping forces

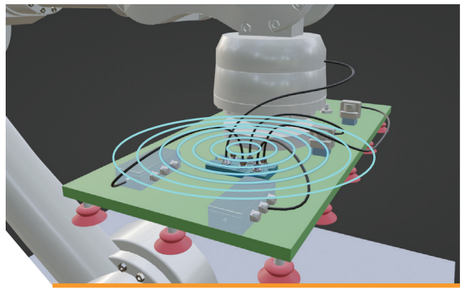
Predictive Maintenance - Early indication of wear and tear and production deficiencies

Traceability & Analytics - Measure, document and archive manufacturing process stages in real-time

Intelligent Tooling Solution for CNC, milling and grinding machines:

- The most precise and robust solution designed for industrial conditions (1000's of RPM, harsh & noisy environments) fully integrated inside tools
- Suitable for a variety of industries, e.g. Metalworks, Automotive, Aerospace

Solutions & Applications



Multiple sensors (e.g. vibration, proximity) and actuators connected wirelessly on end of arm

Robotics

Increased Flexibility – Full rotation flexibility and agility without cable interference and constraints

Complexity Reduction – Efficient deployment without cable clusters and mounting accessories, simple tool changeover

Maintenance Reduction - Reduce downtime and maintenance due to cable wear and tear

Payload Reduction - Multiple sensors/actuators connected wirelessly on end of arm reduce the weight burden on the robot

Cost Reduction - Significant reduction of expensive high-torsion cables and accessories

Cost efficient and adaptive solution for Robots and Cobots

- Suitable for variety of applications, e.g. pick & place, assembly, material handling
- Robust and immune to harsh factory environment
- Scalable to support numerous devices on end of arm

Turn any digital, analog or IO-Link sensor to IO-Link Wireless – Throughout the entire Factory

Retrofit and Condition Monitoring

Simple and Fast Deployment – Simplify relocation and upgrades of existing machines and production lines with wireless sensors

Flexible – Fit for both fixed and fast rotating/moving components. Supports analog, digital and IO-Link devices

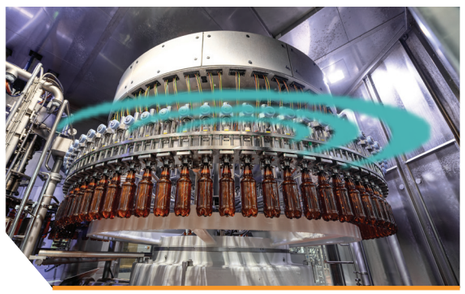
Maintenance & Downtime Reduction - Reduce cable wear and tear and unplanned downtime

Scalable - Scale to hundreds of wireless units in a single work cell or machine area, coexists with other networks

Robust - Industrial-grade, immune to RF and environmental noise, can be installed in remote and hard to reach areas

Access to data from sensors anywhere in the factory Enables powerful analysis and business intelligence

- Integration to enterprise and cloud-based applications
- Fact-based decision making, predictive maintenance, and process optimization
- Complete visibility of the entire factory



Real-time Wireless control & monitoring on rotating components

Rotary Tables & Carousels

Increased Capacity – Perform actions while in constant rotating motion

Maintenance Reduction – Reduce cables wear and tear, dependency on slip rings, and components requiring sterilization

Mass Customization - Enable automatic changeover and rapid tooling setup for range of product types

Simplify Retrofit - easy add-on of sensors and actuators with less cables, accessories and payload

Reducing complexity and increasing flexibility of rotary tables and carousels with IO-Link Wireless for a variety of industries:

- Packaging – food & beverage, pharmaceutical, cosmetics, and additional consumer packaged goods
- Automotive - Material Handling and Assembly

Machine-centric optimization and tuning platform

Machine Optimization (TigoLeap)

Centralized Visibility – a data-centric platform, view all machine data as if it was from a single source

Enhanced Support – tools for on-machine cause/effect investigation, and remote support & collaboration

Improve Development Process - Faster time-to-market R&D cycle

Process Optimization – optimal recipe tuning enabler, millisecond resolution visibility of processes

Traceability - simple access and sharing of past data, and access to real-time data as it is being generated

Powerful Development Platform for Machine Builders

- Efficiently build complex machines with minimal time to market and on-machine tuning and testing
- Enable enhanced support of machines at customer site remotely with enhanced team collaboration

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coretigo.com/solutions

Industries

CoreTigo's solutions are addressing a variety of industries, such as automotive, food & beverage, metalworks, pharmaceutical, CPG, and more. These solutions are enabling machines and production lines to do more by expanding their flexibility and capacity in a cost-effective manner. Smart ultra-reliable wireless communication in the factory is enabling applications not possible before that are driving operational efficiency, production and machine optimization, higher availability, sustainability and greater intelligence to manage the business.

Food & Beverage, Pharmaceutical, Cosmetics, CPG

- Mass customization - eliminate tradeoff between capacity and flexibility
- Improve hygiene through cable reduction in sterile environments
- Support rapid and cost-effective changeovers for multiple product and package types
- Viable for all packaging stages (primary, secondary, tertiary) with a range of solutions for robotics, transport tracks, retrofit and carousels

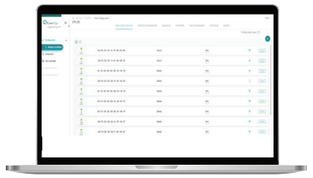
Metalworks

- Add intelligence to rotating machine tools in the most precise manner while machining – anytime, anywhere
- Machine optimization to ensure operation at peak performance
- Increase machine availability through predictive maintenance and downtime reduction
- Cost effective and flexible robotics and logistics solutions

Automotive Manufacturers and Suppliers

- Optimize the assembly process through wireless control solutions on moving transport/conveying systems such as assembly of car seats or batteries
- Enable simple and cost-efficient condition monitoring and machine retrofit, such as air flow and vibration monitoring
- Increase flexibility and reduce maintenance with wireless end-of-arm robotics for assembly, welding and inspection lines

Product Portfolio



TigoEngine

A software-based engineering tool for efficient setup of IO-Link Wireless Masters and devices. Enables installation, configuration, and monitoring of an IO-Link Wireless system. With an intuitive user interface, TigoEngine offers an advanced IODD finding and parsing tool, and an MQTT publisher along with data collection capabilities from multiple Masters for integration with cloud-based and other enterprise/IIOT systems.

See online at:
coretigo.com/products

Master

CoreTigo's IO-Link Wireless Masters and Gateway are compliant with Industrial Ethernet, Fieldbus and communication protocols such as EtherCAT, PROFINET, EtherNet/IP and OPC UA.

TigoMaster 2TH

A 2-Track IO-Link Wireless Master with IP67 enclosure. Supports up to 16 IO-Link Wireless Devices simultaneously along with Industrial Ethernet, OPC UA and MQTT protocols.

TigoMaster 2T SOM

An embedded module for designing and building a 2-Track IO-Link Wireless Master. Includes the IO-Link Wireless radios and CoreTigo's IO-Link Wireless Master software stack. Supports up to 16 IO-Link Wireless Devices simultaneously.

TigoGateway 1TE

An IP20 IO-Link Wireless Master with Edge Computing functionality. Supports up to 8 IO-Link Wireless Devices simultaneously. Includes a Linux OS Edge Processor for running a variety of advanced applications and edge-computing.

TigoMaster 1T SOM

An embedded module for designing and building a 1-Track IO-Link Wireless Master. Includes the IO-Link Wireless radios and CoreTigo's IO-Link Wireless Master software stack. Supports up to 8 IO-Link Wireless Devices simultaneously.

Device

CoreTigo's IO-Link Wireless Devices are used to convert wired sensors and actuators into IO-Link Wireless.
Range of power options: Slip Rings, Inductive Power, Battery, 24V.

TigoBridge A1 is an IO-Link Wireless Class A Bridge, converting Class A IO-Link devices to IO-Link Wireless.

TigoBridge B1 is an IO-Link Wireless Class B Bridge, converting Class B IO-Link devices to IO-Link Wireless.

TigoBridge is IP67 rated with and internal custom antenna.

TigoHub i4

Multiport hub for IO-Link Wireless connectivity of IO-Link and DIO devices. Connects up to 4 IO-Link devices and up to a combination of 6 IO-Link\DIO devices and converts them to IO-Link Wireless.

TigoAir 2 SOM

An integrated System-on-Module that enables IO-Link Wireless communication integration for industrial devices, such as sensors and actuators.

TigoAir LK1 SOM

An embedded IO-Link Wireless System-on-Module for IO-Link devices. Converts from IO-Link to IO-Link Wireless over 2-3.3V UART, replacing the wired IO-Link PHY.

TigoBridge SOM

An embedded IO-Link Wireless Bridge System-on-Module for designing and building an IO-Link Wireless Bridge or embedding in IO-Link sensors and actuators.

TigoStarter Kits

TigoStarter Kits include all components required for setting up a quick IO-Link Wireless environment for evaluation and development purposes.

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CoreTigo enables faster and more flexible manufacturing by providing high-performance machine digitalization, wireless connectivity and edge solutions for machine builders, system integrators and industrial equipment manufacturers. CoreTigo's products enable the design and retrofit of machines and production lines that were not possible before. These solutions increase flexibility, adaptivity and modularity, resulting in cost effectiveness, increased productivity and downtime reduction. Embraced by industrial leaders, CoreTigo's solutions are based on the IO-Link Wireless global standard, which is fit for harsh factory environments and motion control applications, providing the most reliable wireless connectivity for millions of sensors, actuators and industrial devices worldwide.

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