Zebra Technologies

A Rich Portfolio for Real Time Locating

Intelligently Locate and Manage Assets

Today's businesses demand a solution that enables complete visibility of their assets to optimize flow throughout their operations and supply chains. Fast, accurate fulfillment means improved efficiency and better bottom line results.

Zebra's innovative Location Solutions extend Zebra's reach far beyond the abilities of passive RFID. State-of-the-art software and hardware are employed to locate, track, manage, and maximize the utilization of high-value assets, equipment, and people. Whether tracking containers through a supply chain, optimizing manufacturing fulfillment, or providing wide-area asset traceability, real time locating systems (RTLS) from Zebra provide constant visibility. Using technologies based on ultra-wideband (UWB), ISO/IEC 24730-2, Cisco® CCX Wi-Fi®, Zebra's application-matched location solutions enable your business to put the right asset in the right place at the right time.

Only Zebra offers such a wide range of technology options for managing your end-to-end supply chain and providing optimal asset tracking visibility. Capitalizing on long range, high precision, and long battery life, RTLS solutions from Zebra provide the most cost-effective means for your enterprise to rapidly deploy multiple tracking applications. Highly scalable, these solutions enable you to track and manage thousands of assets and personnel in even the most challenging environments. The result is a more efficient supply chain. You'll increase output as you save money, time and space.

RTLS solutions from Zebra - Choose from a broad array of asset management tools to meet your unique business needs

The Right RTLS Solution for Your Unique Needs

Each Zebra RTLS solution forms a tightly integrated platform that consists of Asset Tags, Call Tags, Sensors, Exciters, and Application Software. Each tag contains a unique ID that users can associate to a specific asset, part, or workstation. A call for parts, indication of presence, or transmission for location is sent via a programmable "blink" RF signal.

The sensors or access points receive wireless transmissions from the RTLS tags. ISO/IEC 24730-2 sensors and Wi-Fi access points communicate via standard wired Ethernet, or wirelessly using the integrated 802.11 b/g Wi-Fi compliant wireless LAN. The Dart RTLS UWB system operates as a separate environment decoupled from the corporate wired or wireless Ethernet network. This allows a single cable to provide power, time synchronization and data. The Dart Vision presence reader connects using Ethernet or Wi-Fi.

Seamless Integration
One platform - a tiered stack of complementary technologies-simplifies deployment across one or many locations.

Extreme Scalability
Expand as your needs grow-with the peace of mind that each RTLS solution can handle the range, accuracy, and capacity required by your changing business needs.
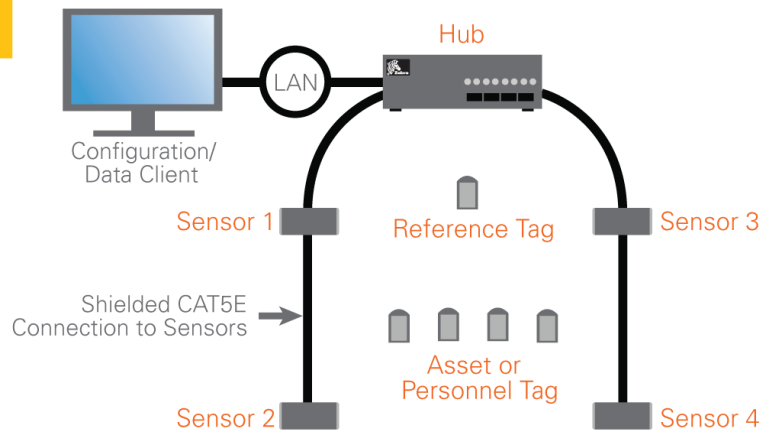
Unmatched Flexibility
Support the toughest indoor and outdoor applications. Configure tags, utilize targeted Zebra/partner applications, and directly connect via hub or Zebra Location Appliance or VSS server to best meet your asset tracking needs.

Superior Robustness and Reliability
Maximize your ROI with products that provide long life in harsh environments. Benefit from seven-year (ISO/IEC 24730-2 and UWB) and five-year (CCX/multimode) tag battery life, industry leading receiver range, and intrinsically safe hardware options.
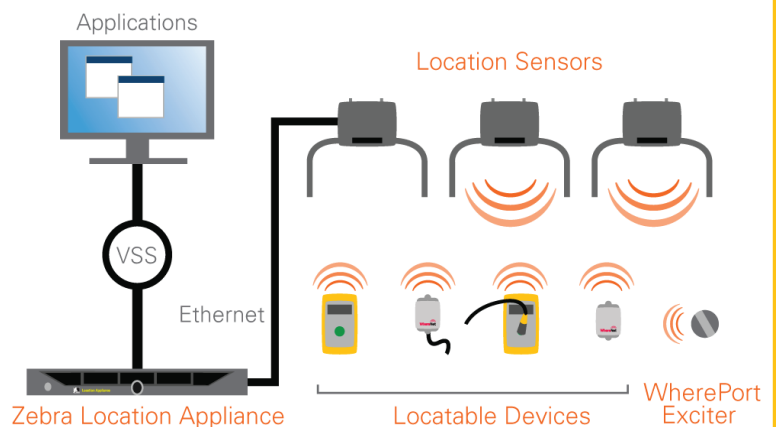
Dart UWB
Rapid Updates and Pinpoint Precision

- High Capacity and Update Rate — Deploy up to 10,000 tags, with 3,500 1 Hz tags/second throughput

- Exceptional Performance and Range — Performs in high RF multi-path environments with ranges up to 200 meters (650 feet)

- High Precision Accuracy — 30 cm (1 foot) line of sight

- Intuitive, Quick Setup — System builder for fast planning and configuration

Configuration/Data Client · LAN · Hub · Sensor 1 · Reference Tag · Sensor 3 · Shielded CAT5E Connection to Sensors · Asset or Personnel Tag · Sensor 2 · Sensor 4

WhereNet
Cost-Effective RTLS for Large Installations

- Exceptional Range — Wide-area indoor or outdoor performance with a range up to 1,750 meters (5,700 feet)

- Robust Accuracy — 1 m line of sight

- Low Power— Up to seven-year battery life for tags operating in ISO/IEC 24730-2 mode

- Multimode — Supports ISO-24730-2 and Wi-Fi with Cisco CCX extensions

Applications · Location Sensors · VSS · Ethernet · Zebra Location Appliance · Locatable Devices · WherePort Exciter

Multiple Points for Achieving Enterprise Efficiency

Asset Visibility

Anywhere, Configurable, and in Real Time Enterprises that use bar codes and RFID appreciate the exceptional value these technologies bring to critical operations. However, passive tagging can only present visibility for a small segment of time when the asset actually passes within range (10 meters) of a reader. As a result, tracking systems may miss a critical time window to capture important location information essential for multiple operations.

Zebra's RTLS solutions offer you greater flexibility and precision in asset tracking and locating. Various technology and system options allow a wide range of tracking possibilities, from simple presence determination to ubiquitous RTLS locating of your assets. Combining the best "application-matched" attributes of these technologies yields an optimal, fully integrated solution. Application matching lets you meet the price/performance requirements of individual applications without burdening an enterprise-wide deployment with excessive cost.

Zebra's breadth of options includes simple telemetry, transaction requests, asset presence, and RTLS with user-configurable location updates. These updates can vary from multiple times per second to several per week, with accuracy within 30 centimeters up to meters of an asset's actual location, at ranges of meters to thousands of meters.

Tighten Critical Processes and Operations

In today's challenging market, staying competitive means staying efficient and agile. With the superior range and visibility of Zebra's Dart UWB, you can track assets, in detail, as they move through zones and closed-loop processes. Managers and process engineers now have access to the critical information they need for driving efficiency throughout their business operations.

Zebra's WhereNet ISO/IEC 24730-2 solutions help manufacturers address the ongoing challenge of parts replenishment. Automate your lean manufacturing processes by deploying WhereCall telemetry request tags. Production workers can use these mobile tools, which require no hardware connectivity, to request materials using "presence" call button. With this solution, you can streamline your entire replenishment process, whether within a single location or across multiple facilities.

> **Accurate, real-time information empowers you to redefine business processes for maximum efficiency — improvements from the front line to the bottom line.**

Seamless Integration, Scalability, and Reliability

The Zebra WhereNet ISO/IEC 24730-2 solution enables accurate tracking in industrial and outdoor applications. It employs advanced signal processing to determine the leading edge of the RF signal, even in the midst of heavy multipath environments. WhereLAN III is optimal for applications requiring reliable signal detection, accurate locates at a lower refresh rate and coverage over large areas. WhereTags and WhereCalls also provide CCX mode for "front office" applications where accuracy and range are non-critical and RF interference is mild. Manufacturing and Petrochemical environments often contain concentrations of metal, which can create RF blockage and multi-path reflections that reduce the range and accuracy. Dart UWB's short pulse window allows the sensors receiving the RF signal to only capture the initial pulse —while disregarding all other signal reflections created by metal piping, trunked cables, or building structures. Dart UWB is optimal for applications requiring highly accurate locates at a high refresh rate.

Tighten Critical Processes and Operations

An Intelligent Location Engine Bringing it all together, the Zebra Technologies Location Appliance (ZTLA) performs locating calculations, database functions and systems management for direct interface into your business systems. ZLA provides one interface that takes any set of auto-ID technologies (RTLS, bar code, RFID, etc.), captures the events, and filters and maps the disparate data. It enables your ERP system to intelligently process the real-time information so you can make proactive business decisions. Drive Efflciency Deep into Your Business Processes

Proactive Asset and Inventory Management

Knowing the location of every item in your operations provides opportunities for process optimization. Managing assets and inventory can range from items in a tool crib, to forklifts, to pallets in a warehouse slot. Passive tracking technologies are optimal for assets that do not require constant, real-time visibility. On the other hand, from large-scale tasks such as aircraft and automobile manufacturing, to batch jobs such as food and beverage production, real-time locating systems deliver visibility 24/7. With UWB and ISO/IEC 24730-2, you can tag and track items from the start of the production line through completion and shipping - and automatically manage those assets, even in large outdoor storage lots.

Improve Operational Efflciencies Across

the Enterprise Increasing your yard, dock, and gate efficiency is a solid opportunity to improve logistical performance. Proper yard management requires smart management of gate schedules and dock planning assignments. It also requires the ability to track, in real time, the location and status of all vehicles and their associated inventory throughout the yard. With Dart UWB, WhereNet ISO/IEC 24730-2, solutions from Zebra, you can create a robust yard, dock, and gate planning and management solution with real-time location capabilities that meet your unique needs.

Drive Efficiency Deep into Your Business Processes