



Zebra Enterprise Solutions

# Zebra Dart Ultra-Wideband

**When Accuracy and Precision Matter to Your Business.**

**Zebra Dart Ultra-Wideband Makes the Most Sense.**

Today's businesses demand solutions that provide complete visibility of their assets in real-time. The Zebra Dart Ultra-Wideband (UWB) Real Time Locating System (RTLS) provides that visibility. Built to capitalize on the unique RTLS functionality that UWB offers, Zebra Dart provides precision locates and constant visibility. Its extensible and flexible architecture enables real-time tracking of thousands of assets and personnel in even the most challenging indoor and outdoor environments. Dart has been developed to provide a low cost-of-ownership RTLS solution by offering easy installation, scalability, and world class performance. Additionally, the Zebra Enterprise Solutions (ZES) team brings a wealth of unmatched domain expertise to create asset management solutions tailored to each customer's unique needs. The Dart UWB RTLS solution is one of many ZES tools that enable your ability to put the right asset in the right place at the right time.



**UWB – The ultimate solution for real-time traceability**

# Why Dart UWB is Critical to Your Business

## Asset Visibility – Anywhere, Anytime

Businesses familiar with bar codes and RFID understand the exceptional value these asset management technologies bring to their operations. However, such passive tagging applications only provide visibility under tightly controlled line of sight, limited range situations. As a result, businesses may miss a vital time window to capture important location information critical to operations or even employee safety.

DartTags on average transmit a Radio-Frequency (RF) pulse typically every second, offering real-time location accuracy of one foot (30 cm) and tag read ranges of up to 650 feet (200 meters). Dart is able to provide ultimate asset management performance in demanding industrial, manufacturing, petrochemical operations, supply chain, and employee badging applications where high resolution tracking of critical assets and personnel in real-time is essential.

## Streamline Operations

In today's challenging market, staying competitive means staying efficient and agile. The superior RF range and robust visibility of Dart UWB allows businesses to track their assets, in real-time, as they move through zones and closed-loop processes. With Dart UWB, managers and employees now have access to the critical information they need for driving process improvement efficiency throughout their business operations.

## Seamless Integration and Scalability

Dart UWB uses an architecture that scales well with increasing business needs with minimal, upfront capital expenditures and installation costs. Expanding the asset tracking area is straightforward, as additional Dart Sensors can be simply daisy-chained with a single cable. The Dart solution has extremely large data processing capabilities increasing the value of the overall system and greatly reducing the per-item tracking cost. As your business adds more assets, you can simply add more tags without the need to expand infrastructure.

## Industrial-Ready Reliability

System robustness is critical for industrial, manufacturing, petrochemical operations, supply chain, and employee badging applications. These environments are often highly metallic with multi-path RF interference that reduces the range and accuracy of traditional RTLS solutions. Dart UWB RTLS is optimal for these environments. The short pulse protocol inherently allows the Dart Sensors to receive the most direct, accurate pulse, providing the best location accuracy with minimal data latency.

Accurate, real-time information allows you to accomplish more in your business processes. Taking charge of your business assets from the front-line to the bottom line - freeing up your labor and other resources to work on more value-added activities.

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# Accelerate Your Business Processes

## Positive Asset and Inventory Management

Managing physical assets and inventory can range from tracking items in a tool crib, to movement of forklifts and pallets in a warehouse environment. Passive technologies suffice for tightly controlled, non-variable, short-ranged asset tracking. However, Dart UWB active tracking opens up the ability to track the most demanding, variable warehouse and operations assets and processes such as providing management information on highly-valued assets moving throughout a facility, yard, or industrial complex. The result is better efficiency of physical storage areas and equipment and of process speed and execution. Positive inventory management means accurately knowing where all your critical assets are at, in real-time down to the second. Now with Dart, your operations can decrease the time to inventory assets, improve loss prevention efforts, and better utilize existing resources.

## Improve Safety and Security

Key initiatives in the petrochemical industry are to ensure safety, tightened security, and better manage employee and visitor access. Traditional personnel tracking methods rely on passive RFID and global positioning systems (GPS). However, these approaches generally suffer from RF interference, short range, and in the case of GPS, require direct line of sight to the sky.

Slow transmit rates mean that a person could walk through a large area and the tracking system would miss key data points, possibly causing security or safety issues. The high transmit rate of DartTags enable low latency alarms, essential when operational requirements mandate "a need to know" where all personnel are located at all times and how long they were there. This precise accuracy allows businesses to create permanent and temporary geo-fences and help reduce accidents resulting from people moving into unsafe or unauthorized zones.

## Tighten Work-in-Process (WIP) Tasks

Today's lean manufacturing processes rely on parts and subassemblies tagged with bar codes, which often require labor-intensive and hands-on scanning. Dart UWB eliminates the need to manually scan individual assets, saving labor and human data entry error. When the part arrives at the workstation, the DartTag with its always-on transmission updates the system in real-time. The use of ZES or partner applications easily translates this real-time location information in actionable management information such as work zone or area tracking, triggering of custom build options or a part's work-in-process time. Once deployed, Dart UWB allows businesses to make greatly improved, educated decisions on how to best shift their production lines and accurately track small cells of closed-loop processes.



## Dart UWB – When Deep Traceability Matters:

- **High Tag Throughput and Capacity** – Deploy up to 10,000 tags per Hub, or 3,500 1 Hz tagged assets /second throughput
- **Exceptional Performance and Range** – Performs in high RF multi-path environments with ranges up to 650 feet (200 meters)
- **Unmatched Accuracy** – As good as 1 foot (30 cm) line of sight
- **Intuitive, Quick Setup** – Virtual planning for fast planning and configuration and simple, single cable daisy-chained Sensor installation

# An Integrated, Complete Solution

The Dart UWB system is a tightly integrated solution that consists of DartTag UWB Active Tags, Sensors, and a control Hub. Each DartTag contains a unique ID that users can associate to a specific asset. To ensure reliability and performance, the Dart UWB system operates as a separate environment decoupled from the corporate wired or wireless Ethernet network. This frees up the system to achieve maximum throughput without consuming bandwidth of the corporate network.

- **Seamless Integration** – One platform that you can deploy widely and implement across more sites since Dart is certified for the US and EU markets and also supports the majority of open-band UWB RTLS market.
- **Extreme Scalability** – Expand as your needs grow with the peace of mind that Dart can handle the tag blink rate and capacity for your ever-changing business requirements.
- **Unmatched Flexibility** – Dart supports the toughest indoor and outdoor applications, including explosive (ATEX) environments. Configure tags, utilize targeted partner applications, and directly connect via Hub or the Zebra Location Appliance to best meet your asset tracking needs.
- **Fast Deployment and Setup** – Virtually design a Dart RTLS/ RFID infrastructure and utilize only one shielded Cat5e cable daisy-chain to installation the Sensors for fast, efficient installation.
- **Superior Value** – Seven-year tag battery life and industry-leading receiver range maximize your investment while achieving UWB accuracy and performance.

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## About Zebra Enterprise Solutions

Zebra Enterprise Solutions, a division of Zebra Technologies Corporation, extends Zebra's reach beyond passive RFID by employing state-of-the-art software and hardware solutions to locate, track, manage, and optimize high-value assets, equipment and people across the world's largest supply chains. Whether tracking containers through a port, optimizing parts for manufacturing, or managing ground support equipment at an airport, the real-time asset management solutions from the combination of Navis, WhereNet, proveo, and Multispectral Solutions provide improved visibility and velocity to gain measurable business improvements. Utilizing products that are based on ISO/IEC 24730-2, Cisco CCX Wi-Fi, precision GPS, and UWB technologies, Zebra Enterprise Solutions offers a wide range of location solutions that are "application matched," enabling its customers to put the right asset in the right place at the right time.

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