



Zebra Enterprise Solutions

Dart UWB Technology



DATASHEET

Next Generation of Ultra-Wideband Real Time Locating System

Zebra Dart Ultra-Wideband (UWB) is designed for applications where long range, multi-read, real-time location is necessary. Dart UWB uses patented short-pulse, UWB technology to provide unique performance advantages over alternative RTLS and RFID technologies.

Built on the current Sapphire UWB RTLS core capabilities, Dart UWB offers one common UWB active RFID/RTLS platform that enables fast, accurate location of personnel and equipment for operations in United States, Canada and the European Union markets. Dart UWB includes a full set of products certified for use in hazardous and explosive environments as defined by ATEX Directive in Europe. In addition, new planning and tag configuration tools allow for easier system install and system flexibility/ scalability.

The Dart Ultra-Wideband Real Time Locating System Includes:

Planning Software

System Builder is a powerful virtual planning tool designed to aid in the installation and optimization of the Dart UWB system. System Builder is used to define the site and sensor coordinate system, model the coverage of the Dart sensors and support the setting up of reference and virtual groups to optimize the performance of the installation.

RTLS Infrastructure

The Dart Hub provides power, data, and clock to the Dart Sensors over a single shielded Ethernet cable enabling simple and fast sensor installation. For full-scale deployments, RTLS edgware solutions are available from a variety of vendors.

Dart Sensors are placed throughout the site originating from the hub and then typically daisy-chained from one to another. The Dart portfolio offers three standard integrated Sensors (High-Gain, Mid-Gain and Omni) to optimize the infrastructure required to achieve the high-level UWB location accuracy. The Sensors can also be enabled as fully attenuable presence Readers providing identification (RFID) capabilities through the hub and its data output.

A bulk-head Sensor version in conjunction with deported antennas is available for use in outdoor and hazardous environments. For hazardous environments, ZES offers a pre-assembled sensor that is certified for use in potentially explosive environments as defined by the ATEX Directive.

• Dart UWB Features:

- FCC Part 15.250 and Draft ETSI EN 302 500-1 V2.1.1 compliant
- Exceptional performance – Performs in high multi-path environments
- Excellent real-time location accuracy - Better than 30cm (1 foot) line of sight
- Long tag battery life – Up to 7 years at 1 Hz blink rate
- Long RTLS Range – Up to 100 meters (328 feet) line of sight
- Unmatched real-time location tag throughput - Up to 3500 1 Hz tags/ hub
- Programmable, fast tag blink rates - Up to 200 times/ second
- Weatherproof deported antenna solution
- ATEX Tag and Sensor options
- Virtual planning tool with site file downloadable to hub
- Fast intuitive setup – typical single location set-up in one day

Tags & Tag Manager

DartTag UWB transmissions are extremely short in duration providing excellent real-time location accuracy, long battery life and high tag throughput. Both the DartTag and DartTag Badge are dust and waterproof (IP67 rated) and are built with robust components designed to withstand multiple six-foot drops. For applications in hazardous environments requiring intrinsically safe certification, both tags are also available as an ATEX Zone1, IIC, T3 option.

The DartWand Module is Dart Ultra-Wideband (UWB) tag manager enabling end user configuration and inventorying of DartTags. The DartWand is capable of turning on and off a DartTag and programming its blink rate at several nominal iterations from 0.01 Hz (one blink every 75 seconds) to 200 Hz (one blink every 0.005 seconds).

Dart UWB Starter Solution

The following recommended Dart UWB starter solution is fully extensible and allow customers to easily transition from pilot evaluation to full scale deployments.

Recommended Dart UWB Starter Solution		
Quantity	Product	Part Number
1	Dart Hub with embedded software	UWH-1100-A-00AA
4	Dart Sensor (Antenna type to be chosen on environment)	UWC-XXXX-A-00AA
4	Dual option ceiling mount	MA651-DO9
4	Shielded CAT5E cable (150')	C651-150
1	DartWand	WND-3100-A-00AA
2	DartTag programmed to 1 Hz for reference tags	UWT-1100-A-00AA
10	DartTag	UWT-1100-A-00AA
5	DartTag Badge	UWT-1200-A-00AA

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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