

Dart UWB Technology



Next Generation Ultra-Wideband Real-Time Locating System

Zebra Dart Ultra-Wideband (UWB) is designed for applications requiring accurate, precise, and high update rate real-time location. Dart UWB uses patented UWB techniques to provide these unique RTLS benefits with tags that feature exceedingly long battery life. In addition, Zebra Dart UWB is the world's first UWB solution that is compliant with the new International UWB Standard, IEEE 802.15.4.f, as well as the ISO-24730-61 Dradt International standard. This secures your infrastructure investment by making it compatible not only with Zebra's DartTags, but also other standards-compliant UWB tags

Designed with over 25 years of UWB expertise, Dart UWB provides you a world-class UWB RTLS platform that enables accurate asset and personnel visibility solutions. The Dart UWB portfolio is approved for license-free operations in the United States, Canada, the European Union, China, Singapore, Colombia, and other countries. Dart UWB includes a full set of products certified for use in hazardous and explosive environments as defined by ATEX Directive in Europe and the UL-913 intrinsically safe standard in the US. In addition, new planning and tag configuration tools allow for easier system install and system flexibility/ scalability.

Dart UWB Features

- FCC Part 15.250 and ETSI EN 302 500-1 compliant
- Compliant with International UWB Standard, IEEE 802.15.4.f
- Exceptional performance – Performs in high multi-path environments
- Excellent real-time location accuracy – Better than 30 cm (1 foot) line of sight
- Long tag battery life – Up to 7 years at 1 Hz blink rate
- Long RTLS Range – Up to 200 meters (650 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 deployed 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

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 sensor and define, manage, and persist the system parameters to optimize the performance of the installation.

Dart UWB Product Family

The Dart UWB product family consists of a Dart Hub, DartSensors, DartTags, Dart Vision Reader, and a DartWand.

Dart Hub

The Dart Hub runs Zebra's advanced UWB real-time location software, capable of delivering thousands of tag blinks per second at up to 30 cm accuracy. Unlike other systems which limit sensors to specific coverage cells, the DartHub allows all DartSensors to be used over your entire facility, yielding maximum coverage with minimal sensor count. The DartHub provides power, data, and clock to the DartSensors over a single Ethernet cable, enabling simple and fast sensor installation.

End user applications obtain RTLS data via standard APIs supported by the Hub software.

Dart Sensors

Dart Sensors are placed throughout the coverage area. They may be daisy chained to one another, providing for a simple and cost effective installation. The Dart portfolio offers three standard Sensors, each with an integral antenna (High-Gain, Mid-Gain and Omni). The Zebra Dart solution gives you industry leading range and design flexibility while providing world-class UWB location accuracy at minimal investment.

The Sensors can also be configured as presence Readers, providing Radio Frequency Identification (RFID) capabilities with user-defined detection range thru the hub and its data output.

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

DartTags

Zebra offers two types of DartTags; a DartTag and a DartTag Badge. The DartTags are battery-operated devices that are affixed to assets or personnel. The DartTag features a small circular form factor and is generally used on assets. The DartTag Badge features a low profile and is generally used on personnel or on assets. 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. In addition, the Zebra DartTag is also available as Intrinsically Safe per UL 913, Class 1, Division 1, Groups A-D, T4.

Dart Vision Reader

The Dart Vision Reader provides robust presence detection utilizing Zebra's UWB technology. The Reader allows you to create presence zones of various sizes via its software controlled attenuation. It is the perfect complement to Zebra's RTLS for areas of your facility that only require presence detection.

DartWand Module

The DartWand Module is a small table top device used to configure and inventory your DartTags. The DartWand turns tags on and off and sets their blink rate to one of a wide range of rates, 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
1	System Builder	SBT-60002-00DM
4	Dart Sensor	UWC-1200-A-00AB
4	Dual option ceiling mount	MA651-DO9
4	Shielded CAT5E cable (150')	C651-150
1	DartWand	WND-3100-A-00AA
10	DartTag	UWT-1100-A-00AC
10	DartTag Badge	UWT-1200-A-00AA
1	DartTag Snap-On Mounting Ring	UM-400-01

