

Zebra UWB Hub & Sensors



Ultra-Wideband Real-Time Locating System

Zebra Ultra-wideband (UWB) is the most advanced system available for precision asset tracking and real-time locating. It uses patented UWB techniques to provide accurate, precise, and real-time location with tags that feature exceedingly long battery life. In addition, the Zebra 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 Draft International standard. This secures your infrastructure investment by making it compatible not only with Zebra's, but also other standards-compliant UWB tags. Zebra UWB provides an extensible and flexible architecture that enables real-time tracking of thousands of assets and personnel in challenging environments. Zebra UWB offers real-time location accuracy of better than 30 cm (1 foot) with read ranges of up to 200 meters (650 feet) and tag battery life in excess of 7 years while transmitting every second. The Zebra UWB system is easy to install and configure. It does not require complex calibration nor exacting Sensor pointing

or positioning. The Zebra UWB Sensors connect to one another in a daisy-chain fashion, thus minimizing your cabling and installation costs. UWB is the proven choice for demanding industrial manufacturing, supply chain and badging applications where high resolution tracking of critical assets and personnel is essential.

Zebra UWB Hub & Sensor Features

- Virtual planning tool with site file downloadable to hub
- Exceptional performance — Performs in high multi-path environments
- Compliant with International UWB Standard, IEEE 802.15.4.f
- Excellent real-time location accuracy — Better than 30 cm (1 foot) line of sight
- Long RTLS Range — Up to 200 meters (650 feet)
- Unmatched RTLS tag throughput — Up to 3500 1 Hz tags/ hub
- Fast intuitive setup — Typical single location set-up in one day
- Sensor "proximity" mode via Hub — Provides fully attenuable presence detection capabilities
- Weatherproof external antenna solution
- Fully assembled ATEX Zone1, IIB + H2,T5 sensor (optional)

Zebra UWB HUB & SENSORS

Zebra UWB HUB

Embedded software on the hub allows for system configuration and display of real-time tag locations via a browser-based GUI interface based on a Java™ run-time environment. The hub provides power, data, and clock to the Zebra UWB sensors over a single shielded Ethernet cable, enabling simple and fast sensor installation.

The Hub software allows you to use any Zebra UWB Sensor in "proximity" mode. A typical RTLS Sensor can now be turned into a proximity reader with fully attenuable UWB read range.

The Zebra UWB solution includes System Builder, a powerful virtual planning tool designed to aid in the installation and optimization of the Zebra UWB system. System Builder is used to define the site and sensor coordinate system, model the coverage of the Zebra UWB sensors and define reference and virtual groups to optimize the performance of the installation. System Builder generates a site file that is downloaded to the hub and is used to configure all RTLS parameters.

Zebra UWB SENSOR

Zebra UWB sensors are placed throughout the site originating from the hub and then typically daisy-chained from one sensor to the next. The Zebra UWB portfolio offers three standard sensors, each with an integral antenna (High-gain, Mid-gain and Omni). The Zebra UWB solution gives you industry leading range and design flexibility while providing world-class UWB location accuracy at minimal investment.

The Zebra UWB portfolio also includes a bulk-head sensor, which connects to an external antenna and is used in outdoor and hazardous environments. This combination allows for the sensor to be placed within a weatherproof or intrinsically safe enclosure with antenna external to the enclosure, achieving optimum range and performance similar to the performance seen in the standard, integrated sensor offering. For hazardous environments, Zebra offers a pre-assembled sensor within an enclosure that is certified for use in potentially explosive environments as defined by the ATEX Directive.

PRODUCT SPECIFICATIONS

Zebra UWB-HUB	
Part Number	UWH-1100-A-00AA
PERFORMANCE	
Data Throughput	Up to 3,500 1 Hz tags/second per hub
Tag Capacity	Up to 10,000 tags/ hub
ENVIRONMENTAL/PHYSICAL	
Operating Temperature	0° C to 40° C (32° F to 104° F)
Length	35.6 cm (14.0 in)
Width	22.9 cm (9.0 in)
Height	8.9 cm (3.5 in)
Weight	1.64 kg (58 oz)
Power	100 – 240 VDC 50/60 Hz 2.5 A (Provides power for up to 64 total sensors)
WIRED COMMUNICATIONS INTERFACE	
Network	Ethernet/CAT 5e
Sensor	High speed serial, RJ-45, shielded CAT 5e cabling or unshielded with use of Zebra ferrite kit
REGULATORY APPROVALS	
North America	FCC part 15 subpart B, ICES-003, UL60950-1, CAN/CSA-22.2 No. 60950-1-07
European Union	CE, EN55024, EN55022, IEC 60950-1
Zebra UWB SENSOR	
Part Numbers	High-Gain: UWC-1100-A-00AB Mid-Gain: UWC-1200-A-00AB Omni: UWC-1300-A-00AB Bulkhead: UWC-1400-A-00AB Bulkhead w/ATEX Enclosure: UWC-1410-A-0AAA
PERFORMANCE	
Frequency Range	6.35 to 6.75 GHz
Antenna Gain	High-Gain: 12.3 dBi Mid-Gain: 9.4 dBi Omni: 5.0 dBi
ENVIRONMENTAL/PHYSICAL	
Operating Temperature	-40° C to 70° C (-40° F to 158° F)
Environmental Rating	High-Gain: IP40 Mid-Gain: IP40 Omni: IP40 Bulkhead (IP66 w/ optional enclosure): IP30 Bulkhead w/ ATEX Enclosure: IP66
Length Width	High-Gain: 15.5 cm (6.1 in), 6.4 cm (2.5 in) Mid-Gain: 15.5 cm (6.1 in), 6.4 cm (2.5 in) Omni: 25.4 cm (10.0 in), 6.4 cm (2.5 in) Bulkhead: 16.0 cm (6.3 in), 6.4 cm (2.5 in) Bulkhead w/ ATEX Enclosure: 34.0 cm (13.4 in), 31.8 cm (12.5 in)

Specifications are subject to change without notice.

Height Weight	High-Gain: 7.1 cm (2.8 in), 0.45 kg (1.0 lb) Mid-Gain: 7.1 cm (2.8 in), 0.45 kg (1.0 lb) Omni: 7.1 cm (2.8 in), 0.54 kg (1.2 lb) Bulkhead: 7.1 cm (2.8 in), 0.45 kg (1.0 lb) Bulkhead w/ ATEX Enclosure: 15.7 cm (6.2 in), 17.2 kg (38.0 lb)
Power	20 – 48 VDC (24mA @ 48VDC)
POWER/WIRED COMMUNICATIONS INTERFACE	
Power/Clock/Data	High speed serial, shielded CAT 5e cabling or unshielded with use of Zebra ferrite kit
REGULATORY APPROVALS	
North America	FCC part 15 subpart B, ICES-003, UL60950-1, CAN/CSA-22.2 No. 60950-1-07
European Union	CE, EN55024, EN55022, IEC 60950-1
ATEX	Bulkhead w/ ATEX Enclosure: CE, 0539 II 2 G Ex d [ia] IIB+H2 T5 -40C ≤ Ta ≤ 70C

Zebra UWB ANTENNA (For use with Bulkhead Sensor products)	
Part Numbers	High-Gain: UA-110-0A Mid-Gain: UA-120-0A Omni: UA-130-0A

PERFORMANCE													
Frequency Range	6.35 to 6.75 GHz												
Antenna Gain	<table border="1"> <tr> <td></td> <td>w/ Bulkhead</td> <td>w/ Bulkhead in ATEX Enclosure</td> </tr> <tr> <td>High-Gain:</td> <td>13,0 dBi</td> <td>12,1 dBi</td> </tr> <tr> <td>Mid-Gain:</td> <td>5,7 dBi</td> <td>4,6 dBi</td> </tr> <tr> <td>Omni:</td> <td>4,2 dBi</td> <td>3,3 dBi</td> </tr> </table>		w/ Bulkhead	w/ Bulkhead in ATEX Enclosure	High-Gain:	13,0 dBi	12,1 dBi	Mid-Gain:	5,7 dBi	4,6 dBi	Omni:	4,2 dBi	3,3 dBi
	w/ Bulkhead	w/ Bulkhead in ATEX Enclosure											
High-Gain:	13,0 dBi	12,1 dBi											
Mid-Gain:	5,7 dBi	4,6 dBi											
Omni:	4,2 dBi	3,3 dBi											

ENVIRONMENTAL/PHYSICAL	
Operating Temperature	-40° C to 70° C (-40° F to 158° F)
Environmental Rating	IP66
Length (with mount fully extended)	High-Gain: 15.7 cm (6.2 in) Mid-Gain: 15.7 cm (6.2 in) Omni: 24.4 cm (9.6 in)
Width (with mount)	High-Gain: 16.3 cm (3.4 in) Mid-Gain: 16.3 cm (3.4 in) Omni: 6.4 cm (2.5 in)
Height (with mount)	High-Gain: 18.0 cm (3.5 in) Mid-Gain: 18.0 cm (3.5 in) Omni: 18.0 cm (3.5 in)
Weight (with mount and cable)	High-Gain: 0.42 kg (0.93 lb) Mid-Gain: 0.42 kg (0.93 lb) Omni: 0.37 kg (0.81 lb)

COMMUNICATIONS INTERFACE	
RF	SMA connector
Accessories	<ul style="list-style-type: none"> Weather Proof Mount Enclosure for Bulkhead Sensor: UM-110-00 Dual Option Ceiling Mount for Dart Sensor: MA651-D09 Industrial use Mount Bracket and Adapter: UM-120-00, UM-130-00 Ferrite Kit: CBK-030-00



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