

DIMENSION4

UWB Tool Tag

OVERVIEW

The Ubisense DIMENSION4 Tool Tag is a small, rugged device that, when attached to tools, allows them to be located to a high accuracy in 3D in real-time. It is specifically designed for use in industrial sites where harsh environmental conditions will be encountered. In addition to its tracking capabilities, it includes additional features such as three LEDs for easy status identification and a motion detector to instantly activate a stationary tag.



ACCURATE LOCATION

The tag transmits ultra-wideband (UWB) radio pulses which can be used by the Ubisense location system to find its position. By using UWB, the system's accuracy is maintained even in cluttered, multipath-rich indoor environments.

The Ubisense UWB location system is the only one capable of measuring both Angle-of-Arrival (AoA) and Time-Difference-of-Arrival (TDoA) of the tag's signals, enabling it to generate accurate 3D tracking information even when only two sensors can detect the tag.

Specifications

Dimensions:

Head unit:

42mm x 32mm x 21mm (1.7" x 1.3" x 0.8")

Integrated battery and head unit (shown in image):

108mm x 39mm x 31mm (4.2" x 1.5" x 1.2")

Weight:

Head unit: 22g (0.8oz)

Integrated battery and head unit: 105g (3.7oz)

Temperature:

-40°C to 85°C (-40°F to 185°F)

Humidity:

0 to 95%, non-condensing

Enclosure:

ABS polycarbonate (V0); Polyurethane coating;
UV Stabilized

Update rate:

Up to 30Hz (configured during commissioning)

Peripherals:

LEDs, Push button, Motion detector

Radio frequencies:

Ultra-wideband channel: 6 - 7GHz

Configuration channel (optional): Narrow-band 2.4GHz

Certifications:

US: FCC Part 15; FCC ID SEAMOD30

EU: CE

Canada: RSS-Gen, RSS-102, RSS-210, RSS-220; IC:
8673A-MOD30

Power supply:

3.6V (Integrated unit: A-sized lithium cell)

Mounting options:

Industrial adhesive pad, strap mounting and self tapping screws

Ubisense part codes:

Tool Tag (head unit only): D4TAG31TOOL-HD

Integrated head and battery unit: D4TAG31TOOL-INT

Tool tag head unit with micro USB B cable:

D4TAG31TOOL-EXT



RUGGED AND ADAPTABLE

The Tool Tag is designed to be rugged for use in harsh industrial environments. It is mechanically robust, and can be securely mounted using a variety of attachment mechanisms.

TAG VARIANTS

The Tool Tag comes in two variants:

1. Head unit only. This is powered by the associated tool.
2. Combined head unit and A size battery integrated into a robust casing.

FLEXIBLE UPDATE RATES

The tag's update rate may be automatically varied depending on tag activity. An inbuilt motion detector ensures that when the tag is moving, a high update rate is assigned for best tracking; if it is stationary, the update rate may be reduced to preserve battery lifetime.

LONG BATTERY LIFE

The low current consumption and power management techniques result in long battery lifetimes. In a typical application, where an integrated tool tag with an A-size lithium battery is used to locate a tool twice a second, it has an expected lifetime of up to five years depending on application. Status reports and alerts make maintenance easy and batteries can simply be replaced.

OPTIONAL WIRELESS CONFIGURATION

In addition to the one-way UWB radio used for tracking, tags may optionally use a conventional, two-way 2.4GHz radio for commissioning purposes. This capability allows tag configuration parameters, such as update rate to be altered. The 2.4GHz radio is not used during normal operation.



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