



Ubisense DIMENSION4™

Tag Module User Guide

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Ubisense Tag Module

The Ubisense Tag Module is a wireless module that you can directly integrate with other devices for the real-time location of objects within a building. For example, you can integrate the Tag Module functionality to your own custom device, so that you can fix it to your tools.



For important information about the regulatory information related to integrating the Tag Module with other devices, see [System Validation and Integrity](#).

The Tag Module transmits UWB pulses. The sensors installed in the building detect these pulses and locate the 3D position of the tag. When compared to other wireless technologies, UWB technology is less affected by multipath interference. Therefore, the position of the tag can be found with greater accuracy.

You can use Tag Modules in different types of environments including healthcare, workplace productivity, security, retail management and manufacturing.

Integrating a Tag Module

The Tag Module includes a Printed Circuit Board (PCB), with the following components:

- All required antennas, which are permanently attached to the module.
- A 20-way expansion header that can be used to supply power to the device. The header also allows the module to have two-way communication with a host device or external sensors and actuators.



When integrating the Tag Module with another device, ensure that the antennas are not obstructed by tall components, shielding, or mounting screws.

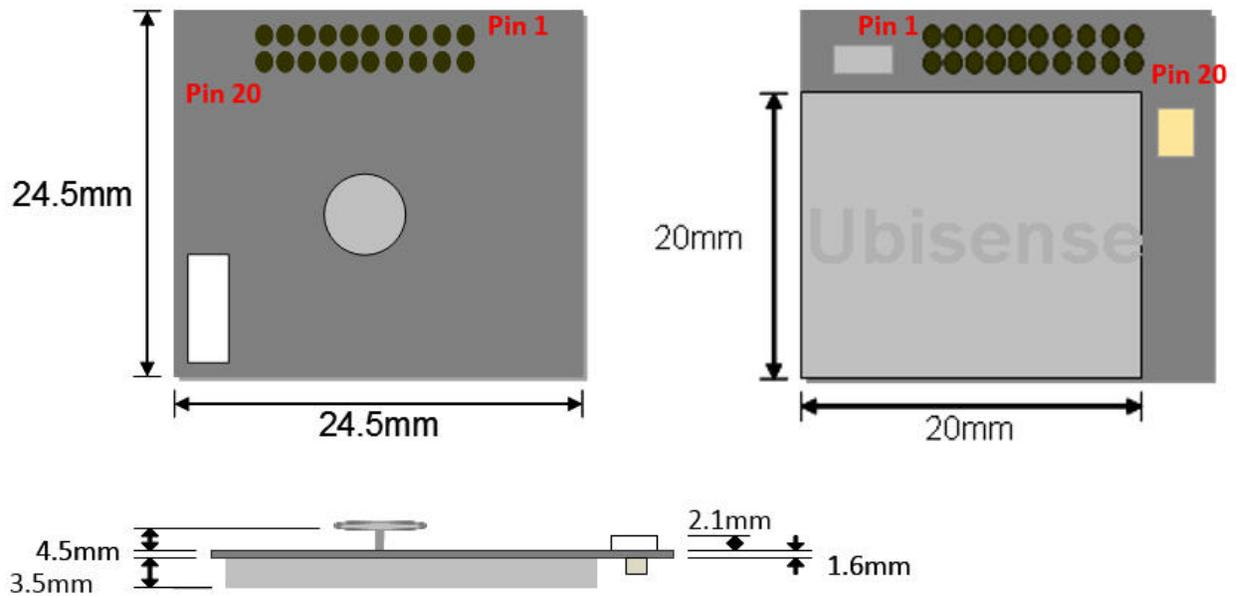
To ensure that the antennas do not get detuned, retain an air gap of at least 1 mm around both antennas.

While you can use the connector to fix the Tag Module, we recommend that you fix the module to a PCB securely by fitting the supplied double-sided pad to the top of the screening can.

For more information about the mechanical and electrical interfaces of the Tag Module, and information about integrating the Tag Module into a custom hardware platform, see the *Tag Module Integration Guide*.

Dimensions

The dimensions of the module PCB are shown in the following figure.



Dimensions of the Tag Module

Power Requirements

Power should be supplied to the following pins on the header:

- Pin 3: 2.3V – 5.25V DC power input.
- Pins 5, 6, 9, 10, 14, 18, 19: Ground.

Header and Connector Specifications

You can use a number of pins on the module header for:

- Digital input and output.
- Analogue input.



If you want to make application-specific use of these pins, contact Ubisense to obtain modified firmware for your device.

The header used on the module is **Major League TSHS-5 10-D-04-A-F-LF**, which is a standard 1.27 mm pitch through-hole pin header.

The recommended connector to use with the module is **Connector: Major League LSSHS-5 10-D-06-F-TB-P-LF** (SMD). For more information and ordering details, see the Major League Electronics website, at: <https://www.mlelectronics.com/products/>.

System Validation and Integrity

The Tag Module is supplied with integration instructions you can follow, to ensure that the tag element of the design meets US and EU regulatory requirements.

However, the regulatory compliance of the Tag Module is likely to change in the scenarios listed in the following table.

Scenario	Description
Modifications to the Tag Module	If you modify the supplied Tag Module, it might become non-conformant with performance or regulatory specifications. In such situations, it is your responsibility to ensure the regulatory compliance of the Tag Module.
Integration of the Tag Module to other equipment beyond the tag circuit.	The integration partner must ensure the regulatory compliance of elements of equipment into which the tag is integrated beyond the tag circuit itself. Ubisense does not take responsibility for the performance or regulatory conformance of those elements of the design.
OEM applications	The end manufacturer must ensure that their final product continues to meet all relevant approvals and (if applicable) EU Directives. Ubisense will not accept liability for any subsequent non-conformations in this scenario.



Due to the complexities and inter-dependencies that are inbuilt in an UWB system, we recommend that any development partner contact Ubisense for advice about ensuring regulatory compliance.

After you have fully integrated the Tag Module, you can also contact Ubisense for consulting services to assist with optimizing and evaluating system performance.

Regulatory Information

Regulatory Information for the United States of America

The Modular Ubitag V3.0 is approved under Parts 15.249 and 15.250 of the FCC rules as a Modular Transmitter.

The product into which the Modular Ubitag V3.0 is incorporated must bear a label per the FCC requirements which shows the FCC ID assigned to the Modular Ubitag V3.0 as follows.

Contains FCC ID: SEAMOD30

The following information must be conveyed in the information supplied to the End User of the product into which the Modular Ubitag V3.0 is incorporated:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The user's manual or instruction manual shall caution the user that changes or modifications to the equipment not expressly approved by the party responsible for the grant of equipment authorization issued by the FCC could void the user's authority to operate the equipment under the grant of equipment authorization, for example:



Any changes or modifications made to the Modular Ubitag V3.0 which are not expressly approved by Ubisense Limited could void the user's authority to operate the equipment.

Regulatory Information for Canada

The Modular Ubitag V3.0 is approved under Industry Canada documents RSS-GEN, RSS-210 and RSS-220 as a Modular Transmitter.



In order to meet the RF exposure requirements of RSS-102 (general exposure conditions) products into which the Modular Ubitag V3.0 is incorporated should be designed such that a user/bystander should be no closer than 5 mm to the antenna of the module.

The product into which the Modular Ubitag V3.0 is incorporated must bear a label per Industry Canada requirements which shows the Industry Canada ID assigned to the Modular Ubitag V3.0 as follows.

Contains IC: 8673A-MOD30

The following information must be conveyed in the information supplied to the End User of the product into which the Modular Ubitag V3.0 is incorporated:

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme avec Industrie Canada RSS standard exempts de licence (s). Son utilisation est soumise aux deux conditions suivantes: (1) cet appareil ne peut pas provoquer d'interférences et (2) cet appareil doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement du dispositif.

Regulatory Information for Europe

CE 0889

Hereby, Ubisense declares that this Ubisense tag is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. A copy of the Declaration of Conformity for this equipment may be obtained from:

Ubisense
St. Andrew's House
St. Andrews Road
Chesterton
Cambridge
CB4 1DL
United Kingdom

This UWB transmitter must not be installed at a fixed outdoor location or used in flying models, aircraft and other forms of aviation.