

Inpixon 5000

Product User Guide

INPX-DOC-5000-1 Revision 1.1
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Table of Contents

Table of Contents	2
1 General Description.....	3
2 Features	3
2.1 Applications	3
3 System Description	4
4 Disclaimers	4
5 Ordering Information	5
6 Certifications	5
7 References.....	6
7.1 Contact and Support	6

1 General Description

This specification provides general information regarding performance and integration of Inpixon 5000 (INPX-5000), a complete wireless energy-detection and real-time location system (RTLS) solution. The Inpixon 5000 sensors deliver powerful wireless sensing capabilities with performance characteristics superior to any other available wireless sensor in a single form-factor including cellular, Wi-Fi, and Bluetooth. Embedded with the Inpixon UWB Module (INPX-400), the Inpixon 5000 sensor provides Real-time Location System (RTLS) capabilities leveraging Time-Difference of Arrival (TDOA) technology to achieve maximum range and accuracy. Inpixon 5000 is designed to simplify the operational complexity of adding RTLS to indoor infrastructure for the widest range of supported wireless devices. It is completely tested for functionality and performance along with coexistence with other wireless standards.

The specification maximum and minimum limits presented herein are to serve as representative performance characteristics of the Inpixon 5000 when properly deployed. Inpixon makes no warranty, implied or otherwise specified, with respect to design and performance characteristics presented in this specification when used in customer designs.

The latest revision of this document supersedes all previous versions of this document. Inpixon reserves the right to change this specification without notice.

2 Features

- Cellular signal detection for different frequency bands (2G, 3G, 4G, LTE) 300-348 MHz, 387-464 MHz, 600-1000 MHz, 1710-1790 MHz, 1850-1990 MHz, 2500-2570 MHz
- Dual band Wi-Fi signal detection: 802.11a/b/g/n/ac/ (2.4 GHz, 5 GHz)
- Dual mode Bluetooth signal detection (Bluetooth classic, Bluetooth LE) 2.4 GHz
- UWB RTLS Supporting 6 UWB bands from 3.5GHz to 6.5GHz
- Software Compatibility: Inpixon Aware platform
- TDOA technology for precise real-time location calculations (UWB RTLS)
- IEEE 802.3af/t PoE compliance
- 24VDC Power Input
- FCC, IC, and CE Certified radio
- ROHS Compliant

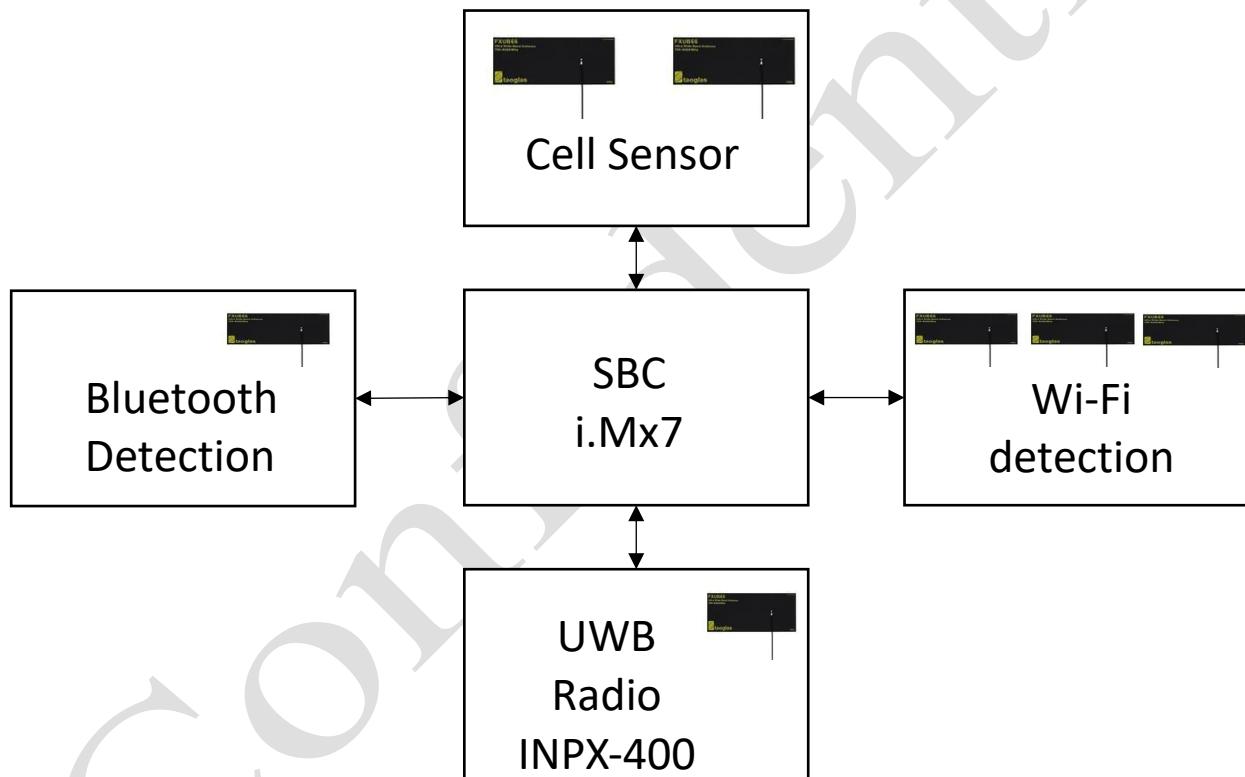
2.1 Applications

- Precision real time location systems (RTLS) for variety of markets: healthcare, retail, industrial, enterprise, and any indoor RTLS needs.
- Location aware wireless sensor network.

3 System Description

Inpixon 5000 combines Cellular, Wi-Fi, Bluetooth and ultra-wide band (UWB) sensors to provide a broad range of RF device detection. A single board computer (SBC) powers, controls, and communicates with the sensor boards to receive and process detected RF signals. Post-processed data is then communicated with a remote system by way of Ethernet connection. The system is powered by 24VDC or 802.3af/t PoE.

The active transmitter – UWB – integrates the Decawave DW1000 chip and supports 6 ultra-wide band channels (as per IEEE802.15.4-2011) (the firmware limits active transmissions to channel 2 and channel 5). The DW1000 supports UWB standard bit rates of 110 kbps, 850 kbps and 6.81 Mbps and nominal Pulse Repetition Frequencies (PRF) values of 16 MHz and 64 MHz.



4 Disclaimers

Inpixon PRODUCTS ARE NOT AUTHORISED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF Inpixon. The definitions used herein are:

a) Life support devices or systems are devices which (1) are intended for surgical implant into the body, or (2) support or sustain life and whose failure to perform when properly used in accordance with the instructions for use provided in the labeling can reasonably be expected to result in a significant injury to the user. b) A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

Inpixon does not assume responsibility for use of any of the circuitry described, no circuit patent licenses are implied and Inpixon reserves the right at any time to change without notice said circuitry and specifications.

5 Ordering Information

The following part numbering scheme is used for this part:

- INPX-5000

6 Certifications

INPX-5000 conforms to the following certifications.

- FCC (2AVTI-INPX5000)
- IC (26211-INPX5000)

FCC statement

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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could not void the user's authority to operate the equipment.

"This equipment may only be operated indoors. Operation outdoors is in violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties."

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines. This equipment has very low levels of RF energy that is deemed to comply without testing of specific absorption rate (SAR).

ISED statement

This device complies with Industry Canada's applicable licence-exempt RSSs. 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : 1) l'appareil ne doit pas produire de brouillage; 2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment and meets RSS-102 of the IC radio frequency (RF) Exposure rules. This equipment has very low levels of RF energy that is deemed to comply without testing of specific absorption rate (SAR).

Cet équipement est conforme aux limites d'exposition aux rayonnements énoncées pour un environnement non contrôlé et respecte les règles d'exposition aux fréquences radioélectriques (RF) CNR-102 de l'IC. Cet équipement émet une énergie RF très faible qui est considérée comme conforme sans évaluation du débit d'absorption spécifique (DAS).

The term "IC:" before the radio certification number only signifies that Industry Canada technical specifications were met.

7 References

- Inpixon UWB Module (INPX-400) Datasheet
- IEEE802.15.4-2011 standard

7.1 Contact and Support

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For support, please visit: <https://inpixon.com/support/>