



## Pxx - MICROPNP WIRELESS DEVICE (SmartMesh IP)

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### PRODUCT DESCRIPTION

MicroPnP™ is an Industrial Internet of Things (IIoT) suite that provides a simple, reliable and affordable solution for wireless sensing and control. Each MicroPnP Wireless Device acts as a wireless hub for up to three plug-and-play sensors (e.g. humidity or temperature) and actuators (e.g. relays or buzzers). A full list of compatible sensors and actuators can be found in the VersaSense Catalog.

The MicroPnP software automatically installs and configures all necessary drivers, eliminating the cost and complexity of deploying an IIoT network.

You can immediately interact with your sensors and actuators via a web interface or programmatically using standard REST or Web Sockets APIs.

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### NETWORK TECHNOLOGY

The MicroPnP IIoT Suite is designed for challenging environments such as factories, distribution facilities and data centers.

The Pxx version of the MicroPnP Wireless Device uses SmartMesh IP™ from Linear Technology® to automatically form a self-healing mesh network that delivers battery life of up to 10 years, 99.999% reliability and accurate time-stamping. Each wireless device acts as a repeater or 'router' with an approximate indoor range of 50M. This allows a single mesh network to cover very large areas, such as entire factories, office buildings, ships or trains.

**Note:** each SmartMesh network requires a Wireless Gateway (**M01**).

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### APPLICATION FEATURES

- ★ Atmel® ATmega1284P<sup>1</sup>
- ★ 3 \* MicroPnP sensor ports (UART, I2C, SPI, digital, analog)
- ★ Wide range of plug and play sensors and actuators
- ★ IETF CoAP network API
- ★ IPSO compliant data model
- ★ < 60μA typical passive current
- ★ Secure code updates

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### NETWORK FEATURES

- ★ SmartMesh IP LTC5800<sup>2</sup>
- ★ IEEE 802.15.4e transceiver in the 2.4GHz ISM\* band
- ★ Extensible, redundant and self-healing mesh network
- ★ Channel hopping reduces interference and multi-path fading
- ★ > 99.999% end-to-end reliability
- ★ < 50μA typical routing current
- ★ NIST-certified security

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### POWER FEATURES

- ★ LTC3335<sup>3</sup> Nanopower Buck-Boost DC/DC and Coulomb Counter
- ★ Accurate real-time battery monitoring
- ★ Up to 10 year battery lifetime

### AVAILABLE VERSIONS

- ★ P01: high capacity 2400mAh dual replaceable battery pack, 2 \* Saft 14250 batteries or similar
- ★ P02: high capacity 3000mAh fixed battery pack
- ★ P07: high capacity 4200mAh dual replaceable battery pack, 2 \* Saft 17330 batteries or similar
- ★ P06: P07 without batteries, use 2 \* Saft 17330 or Tadiran TL-4955-S

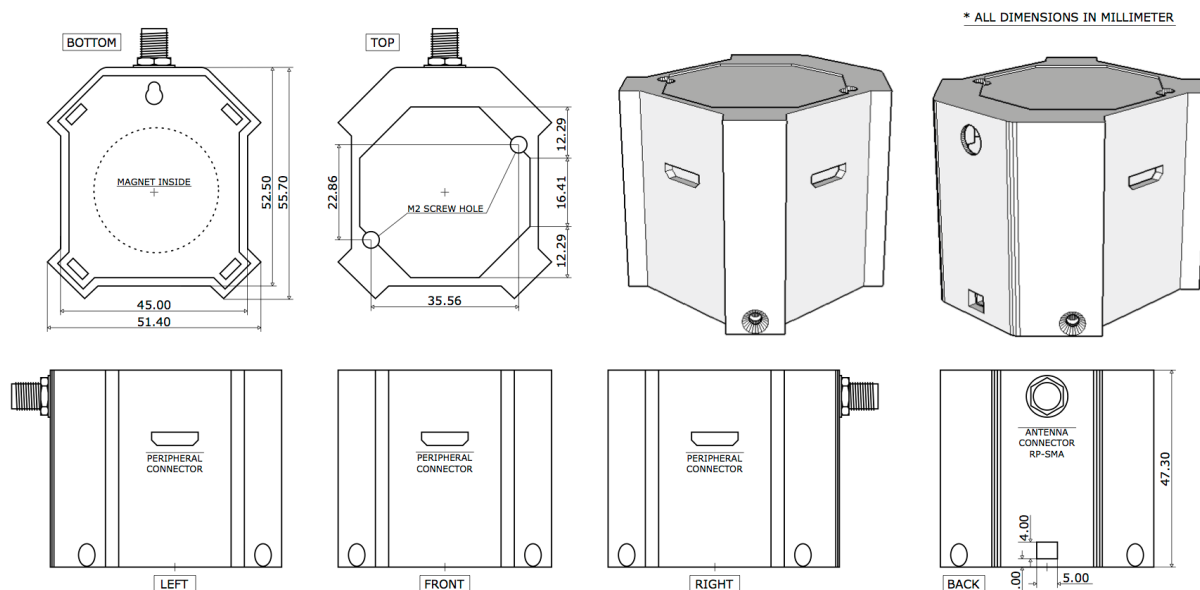
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<sup>1</sup> [www.atmel.com/ru/ru/Images/doc8059.pdf](http://www.atmel.com/ru/ru/Images/doc8059.pdf)

<sup>2</sup> [cds.linear.com/docs/en/datasheet/5800ipmfa.pdf](http://cds.linear.com/docs/en/datasheet/5800ipmfa.pdf)

<sup>3</sup> <http://cds.linear.com/docs/en/datasheet/3335f.pdf>

## MECHANICAL SPECIFICATIONS



|                                             |                        |
|---------------------------------------------|------------------------|
| Case construction material.....             | Polyamide <sup>4</sup> |
| Antenna connector.....                      | R-SMA                  |
| Peripheral connectors.....                  | µPnP v1.0              |
| Weight including batteries and antenna..... | 107g                   |

**NOTE:** Peripheral connectors resemble mini HDMI sockets, but they are in no way compatible. The connection of a HDMI device to a peripheral connector may result in damage to one or both devices.

### DEVICE CHARACTERISTICS:

|                                                                      |                   |
|----------------------------------------------------------------------|-------------------|
| Supply voltage range.....                                            | 1.8V to 3.8V      |
| Maximum current draw.....                                            | 30mA              |
| Temperature range.....                                               | 0°C to 40°C       |
| Maximum humidity.....                                                | 90% RH            |
| Minimum software updates before EEPROM failure.....                  | 10,000x           |
| Recommended maximum distance between wireless devices (outdoor)..... | 100M <sup>5</sup> |
| Recommended maximum distance between wireless devices (indoor).....  | 50M <sup>5</sup>  |
| Maximum link layer data rate (per wireless manager).....             | 26 Kbps           |
| Maximum link layer data rate (per wireless device).....              | 10 Kbps           |

### PRODUCT INFORMATION:

|                   |                                                                                                                               |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Product brochure: | <a href="http://www.versasense.com/files/VersaSense-Brochure.pdf">http://www.versasense.com/files/VersaSense-Brochure.pdf</a> |
| Product catalog:  | <a href="http://www.versasense.com/files/VersaSense-Catalog.pdf">http://www.versasense.com/files/VersaSense-Catalog.pdf</a>   |
| Documentation:    | <a href="http://www.versasense.com/docs/">http://www.versasense.com/docs/</a>                                                 |

### CONTACT INFORMATION:

|                   |        |                                                                    |
|-------------------|--------|--------------------------------------------------------------------|
| Technical Support | E-Mail | <a href="mailto:support@versasense.com">support@versasense.com</a> |
| Sales Enquiries   | E-Mail | <a href="mailto:sales@versasense.com">sales@versasense.com</a>     |
| General Enquiries | E-Mail | <a href="mailto:info@versasense.com">info@versasense.com</a>       |
| General Enquiries | Post   | VersaSense NV, Kapeldreef 60, 3001 Leuven, Belgium                 |

<sup>4</sup> <https://i.materialise.com/3d-printing-materials/polyamide/technical-specifications>

<sup>5</sup> **Note:** Longer range links are feasible, but are discouraged for reasons of robustness.