

Wireless air particles sensor

Making every particle count

Narrow-Band wireless IOT

Main features

- Narrow Band technology
- 24/7 monitoring supervision
- Up to 500 meters narrow band configuration
- Laser-based light scattering particle sensing
- Concentration range: 0 $\mu\text{g}/\text{m}^3$ to 1,000 $\mu\text{g}/\text{m}^3$
- Fully calibrated
- EMC: Heavy industrial level IEC61000
- PM2.5 output (PM10 output optional)
- RoHS compliant
- REACH compliant

Applications:

Industrial applications:

- HVAC: Air conditioners
- Air quality monitors
- Environmental monitoring

Consumer products:

- Air cleaners
- Air conditioners
- Air purifiers

The PowerTags wireless sensor uses the narrow band Sub 1-GHz technology proving long range and real-time supervision and monitoring environment. The sensor uses Honeywell's HPM sensors

FIGURE 1. PM10 AND PM2.5 COMPARISON WITH HUMAN HAIR

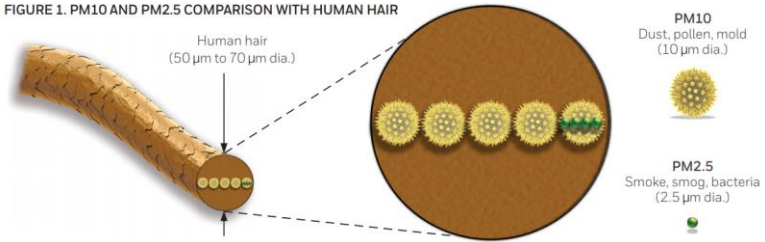


FIGURE 2. HPM SERIES OPERATION (TOP DOWN VIEW)

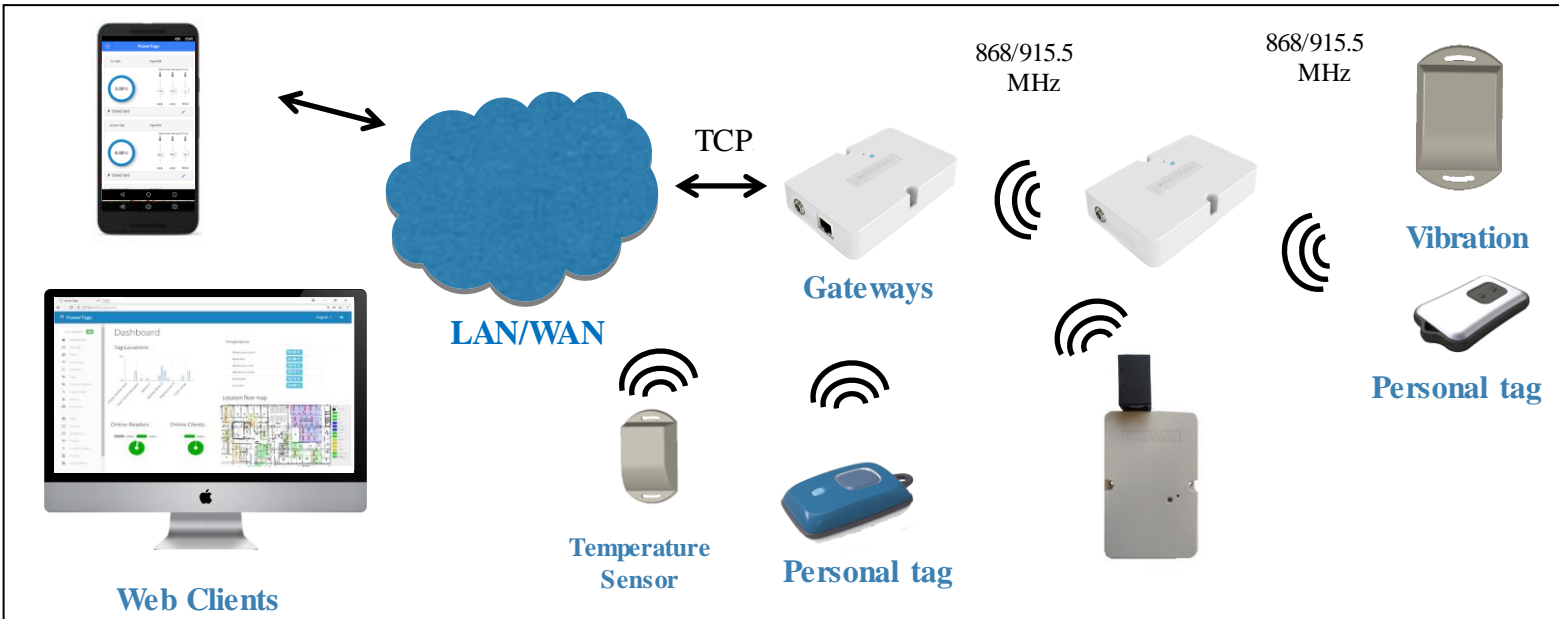
The sensor data can be monitored using PowerTags software or other via API and enables real-time notification of warnings with the sensor's status to a variety of media's that includes computer stations, mobile devices via audible alarm, email or SMS.

DID YOU KNOW that airborne particulates less than 10 μm in diameter are smaller than the diameter of a human hair? Without detection and remediation, particulates will remain suspended in the air and can have a negative impact on human health. Particles 10 μm in diameter include dust, pollen grains, and mold spores, all of which can enter and get lodged into the lungs. Particles less than 2.5 μm in diameter include smoke, smog, bacteria, fine dust and liquid droplets. These particles can get lodged deeper into the lungs, causing longer term illness.* *Environmental Protection Agency: <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>

The wireless sensor is part of PowerTags' portfolio offering that also includes, readers, gateways and management system, location tracking, controllers, sensors and more



PowerTags system's overview:



Product specifications:

Wireless technology..... NarrowBand RF
 Power Supply.....5V power supply
 Transmission Central Frequency.....868 MHz(Europe) CE/ 915.5 (FCC/IC/Israel)
 Hardware support Frequency.....720-970 MHz
 Transmission output power/ E.I.R.P1 Milliwatt (0 dBm)
 Transmission output power can be configured in production from -30dBm to 12dBm (different range detection up to 100 meters default and up to 500 with narrow band configurations)

Technical Specifications

Operating Principle	Laser scattering
Output Data	PM2.5 in $\mu\text{g}/\text{m}^3$ and PM10 in $\mu\text{g}/\text{m}^3$
Accuracy	$\pm 15\%$
Operating Time	20,000 hr (continuous mode)
Detection	PM2.5 and PM10
Concentration Range	0 $\mu\text{g}/\text{m}^3$ to 1,000 $\mu\text{g}/\text{m}^3$
Storage Temperature	-30°C to 65°C [-22°F to 149°F]

Complies with FCC/ CE/ IC regulatory standards:

- Tag FCC ID: 2AEXTTAGS3V04V0
- Tag IC ID: 21825-TAG3V04V0
- REPATER/GATEWAY FCC: 2AEXTPOWER TAGS