Atmosic for Asset Tracking

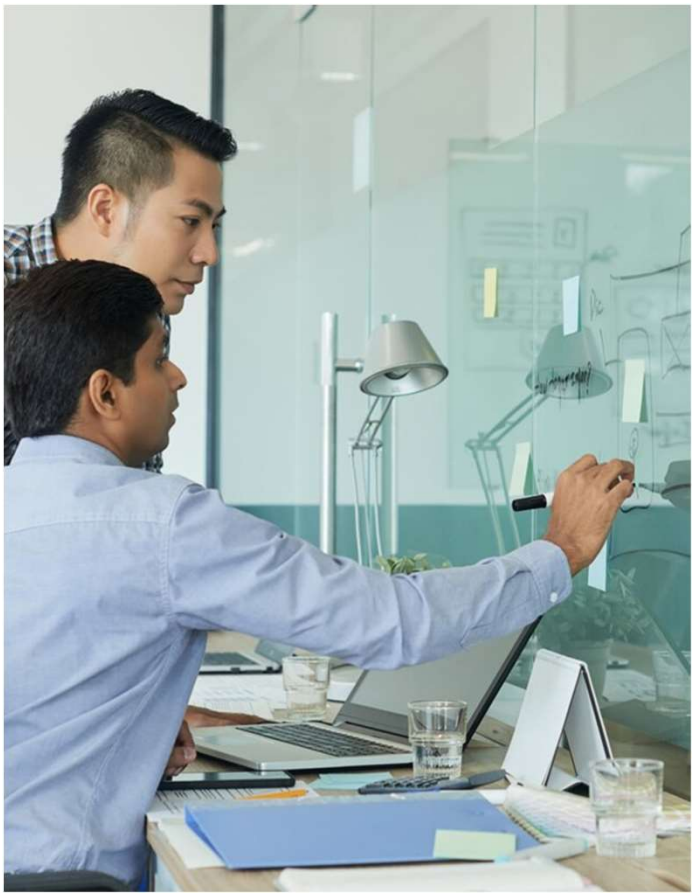
Unlock Superior Power, Performance and Functionality

Discover why leading IoT companies are turning to Atmosic's patented technology to improve system performance, enhance operational efficiency, and deliver best-in-class asset tracking.

Today's challenges in asset tracking

Limited battery life and power

Battery life often falls short in complex tagging and tracking applications depending on transmit frequency, power output, and functionality. But extending battery life requires larger batteries that increase the cost and size of the tag.



Forced trade-offs in efficiency and compute for power saving

To conserve battery life, asset trackers might reduce the frequency of location updates or limit real-time data processing, decreasing both performance and accuracy. For example, reducing tracking ping frequency to save power results in less timely updates, with downstream consequences for logistics and supply chain management.

Difficult to maintain battery uptime

Variability in tracking environments and the compact size of devices make battery upkeep difficult. Replacements are costly and can lead to longer downtime, which affects overall system performance and reliability, eroding customer trust and jeopardizing future revenue.

Harmful for the environment

Most batteries that reach the end of their life span end up in landfills, a number that has only been increasing with the proliferation of IoT products around the globe.

Why Atmosic

Dramatically improve system performance and operational efficiency by extending the battery life of your solution with Atmosic.

Atmosic's patented extreme low power wireless solutions are compatible with your existing Bluetooth LE based tag and tracking solutions, enabling a seamless transition to a longer lasting version of your existing product line.

The lowest power standards-based wireless solutions available today

Atmosic offers up to **4X lower active power consumption** compared to the competition, allowing a significantly longer battery life. Think of a coin cell battery life extending from 9 months to over 3.5 years. With Atmosic, a product requiring a battery replacement every 1.5 years can instead do so every 6 years.

Battery Type	Battery Capacity (mAh)	Atmosic Battery* Lifetime	Competitor Battery Lifetime
CR2032 Coin Cell	220	**3.8 years**	1.0 years
2 AAA	1200	**20.8 years**	5.7 years

*For battery in Tag Beacon; +0dBm transmit power, connectable beacon, 31 byte payload, 1/second

An effortless way to improve the performance of your system

Why limit yourself to only improving battery life? With Atmosic's low power consumption technology, you can increase the output power or reporting frequency while still extending battery life.

A leading Bluetooth tracking brand has partnered with Atmosic to enhance the number of transmissions from their tags, achieving this without any loss in battery life compared to previous versions. This increase in reporting frequency has notably improved the accuracy of their system and boosted customer satisfaction.

Alternatively, you could opt to increase the output power of the tag, which would expand the coverage area of the system while maintaining the expected battery life. This approach offers more flexibility and a broader range of options for superior system performance.

Transmit at 2.5x higher power or 4x more frequently, and still enjoy a battery life that surpasses that of competitors' solutions operating at lower power or less frequent intervals.

Transmit Power	Reporting Frequency	Battery Capacity (mAh)	Atmosic Battery Lifetime	Competition Battery Lifetime
0dBm	1/second	220	**3.8 years**	1.0 years
+4dBm	1/second	220	**3.0 years**	0.8 years
0dBm	2/second	220	**2.3 years**	0.7 years
0dBm	4/second	220	**1.3 years**	0.3 years

Option to add energy harvesting (with th potential to go battery-free)

Harvest energy from ambient light, vibrational motion, or thermal gradients to enable battery self-charging or battery free solutions. Minimize the cost of adding energy harvesting with more efficient integrated power management, without the need for additional components. In some cases, harvested energy can completely power a remote tag or sensor over its entire lifetime, eliminating the need for batteries or battery changes entirely.

Indoor or outdoor light sources
Photovoltaic cells harness light from ambient sources, serving as both a primary and backup power source.

Keyboards & mice | Remote controls | Beacons & tags

Thermal gradient from any heat source
Thermal harvesters can capture heat energy from HVAC, machines, or the human body.

Temperature sensors | Wearables | Medical devices

Single push or constant vibration
Vibration harvesters capture energy from the vibration of motors.

Door locks | Button switches | Industrial machine monitoring

Endless power, endless security

Smart locks will lose all communication when their batteries die. Using an Atmosic solution with photovoltaic harvesting keeps the battery charged with normal light, and even offers the ability to power the lock with the light from your smartphone, making sure that users never get frustrated from being locked out.

Without Atmosic
Spend precious time and effort seeking help and waiting for assistance.

With Atmosic
Quickly charge the lock using a phone light, getting the lock up and running again. A seamless self-service experience.

Case Study: Samsung Galaxy SmartTag2

In October 2023, Samsung launched the second generation of its SmartThings Bluetooth LE and Ultrawideband (UWB) tracking solution. With Atmosic Bluetooth LE technology driving the tag, Samsung realized multiple benefits:

- **3X Longer battery life** compared to previous generation SmartTag (from up to 0.5 years to up to 1.3 - 1.9 years with Power Save Mode)
- **43% Lower power consumption**
- Significant reduction in cost, hassle, and environment impact of battery replacement

"With Atmosic's innovative technology, we are able to improve our environmental impact as well as our customer experience through extended battery life."

Jaeyeon Jung, Executive Vice President and Head of SmartThings Device Platform Center, Samsung Electronics

Amplifying Sensor Value: Targeted Applications

Explore how Atmosic can tailor solutions to enhance sensor value for your specific industry or use case. Partner with us to find the perfect custom solution for your needs.

Trucking and cargo delivery

Beyond tracking the actual cargo, low power sensors can be used to monitor trailer temperature, door openings, or even shock events. Battery-based, wireless sensors reduce installation costs and provide long operating lifetimes.

Manufacturing

Vibration sensors can monitor motors and machines to ensure proper operation, detecting anomalies, altering the operator, and avoiding a potential costly shutdown. With thermal harvesting, the heat of the motor can be used to completely power the sensor, eliminating any battery changes.

Healthcare

Tags help nurses quickly locate equipment and patients, while personnel badges with alert buttons enhance worker safety. Beacons assist visitors in navigating the facility, all powered by extended battery life technology.

About Atmosic Technologies

Atmosic™ Technologies is an innovative semiconductor company, designing ultra-low power wireless and energy harvesting solutions aiming to deliver the longest battery life for connected devices. The company's products enable the development of an IoT device ecosystem with dramatically lower deployment and maintenance costs for devices in the Personal, Home, Auto, Healthcare, Industrial, and Enterprise IoT segments.

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