STAFFALERTER BRINGS MASS ALERTING TO THE MASSES
WITH THE POWER OF PARTICLE

BY NICK JOHNSON

StaffAlerter, from PM Power Products, is using Particle to make emergency and crisis response smarter and more accessible. Originally designed for application in schools, StaffAlerter can now be easily customized to send any type of notification and to trigger commands to a wide variety of internet-connected devices. With Particle, StaffAlerter has found a highly adaptable, responsive, and comprehensive platform on which to scale and evolve their lifesaving product.

Particle
Welcome to real IoT.

INTRODUCTION

Particle

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An organization's ability to respond to an emergency relies heavily on the tools at its disposal. Since the 1980s, Mass Alert Systems (MAS) have been employed to help organizations rapidly notify large groups of people of emergency situations. For example, if a bomb threat is received at a government agency, an MAS would allow someone to send a command – typically via telephone or emergency button – which would trigger the issuance of an alert to designated individuals, who could then take appropriate action.

These more traditional MASs, however, aren't without their shortcomings. They have limited functionality, complex integration, costly annual maintenance fees, and little or no ability to integrate with a wide range of input sensors and output controls.

"If you have premise-based equipment – be it a phone system, a paging system, maybe an industrial production line, anything – there was really nothing on the market that would allow you to easily adapt a combination of input, output, and messaging into those systems," explained Presence Management President, Robert Rankin.

Another major issue with traditional MASs is their up-front cost. These types of systems typically cost between $8,000 and $30,000, making them financially feasible only for high-risk, high-budget organizations, such as governments or large police forces. Meanwhile, smaller organizations, such as schools, retail stores, and elder care homes have been largely neglected by the MAS market.

STAFFALERTER FULFILLS A NEED

With the falling prices of sensors and connectivity hardware, the team at Presence Management saw an opportunity to fulfill that neglected niche; and in 2017, they created StaffAlerter. As this type of system was the first of its class, Rankin and his team had to set about creating it from the ground up.
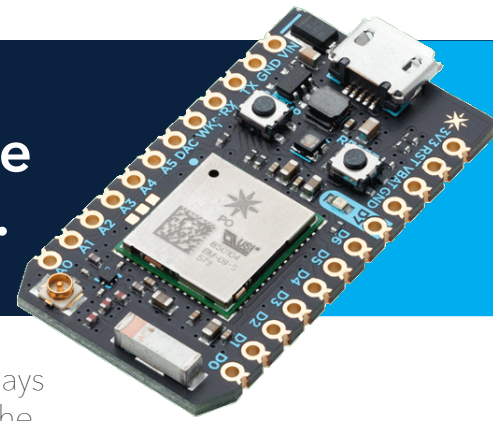
The first hurdle to consider in developing their new product was connectivity hardware. After exploring a number of options, including the Raspberry Pi and Arduino, Rankin ordered the Particle Photon. He was pleasantly surprised with the results.

> **" I was amazed at how quickly I had the Photon up and running," said Rankin.**

"In no time, I had it registered on my local Wi-Fi network, was activating relays from the Device Cloud, and integrating it with my existing infrastructure. The stability, performance and security of the Particle Cloud really helped us to quickly prototype a device that was both flexible enough to meet our product needs and that demonstrated the strong reliability that we required."

Given the ease of implementation and comprehensiveness that Particle provided, Rankin decided to use it as the core connectivity engine for StaffAlerter. Shortly thereafter, he also introduced a cellular model using the Particle Electron, which works as a failsafe when Wi-Fi is unavailable.

With this newly-crafted Mass Alert system, users can configure multiple events, with activation done via phone systems, contact switches, manually-activated switches, and wireless keypads (pictured below). The activation event can consist of a text message, e-mail, automated voice call with text to speech, social media massaging, application alert, or any combination thereof. Activation events can also can control devices that lock doors, start or stop sprinklers, and control machinery.

In addition to being 5 to 15 times less costly than most traditional Mass Alert Systems, StaffAlerter boasts an incredibly versatile list of applications. Each new StaffAlerter customer receives a customized IoT solution, including a personalized web portal where they can provision, manage, and pair their devices. These web portals can be accessed from any internet-connected personal device and allow users to manage and activate functions and messaging.

Current applications of StaffAlerter range all the way from automated gunshot sensors that initiate lockdown procedures in schools, to humidity sensors that warn of impending damage to machinery at a printing press. Some other established applications include:

- Suspicious persons alerts
- School bus delay notifications
- Severe weather alerts
- Commercial refrigeration monitoring
- Industrial monitoring
- Door locks and controls

STAFFALERTER FULFILLS A NEED (CONT.)

What's more, multiple StaffAlerter devices can be easily joined into a single, interconnected ecosystem. For example, an organization with multiple facilities can host a StaffAlerter in its central facility, which can then notify all its other locations. If an active shooter situation occurs at any of the locations, a distress signal can be generated by any authorized user with a cloud button, a Wi-Fi PAD, a phone, or any internet-connected device to generate an alert to all facilities and selected users.
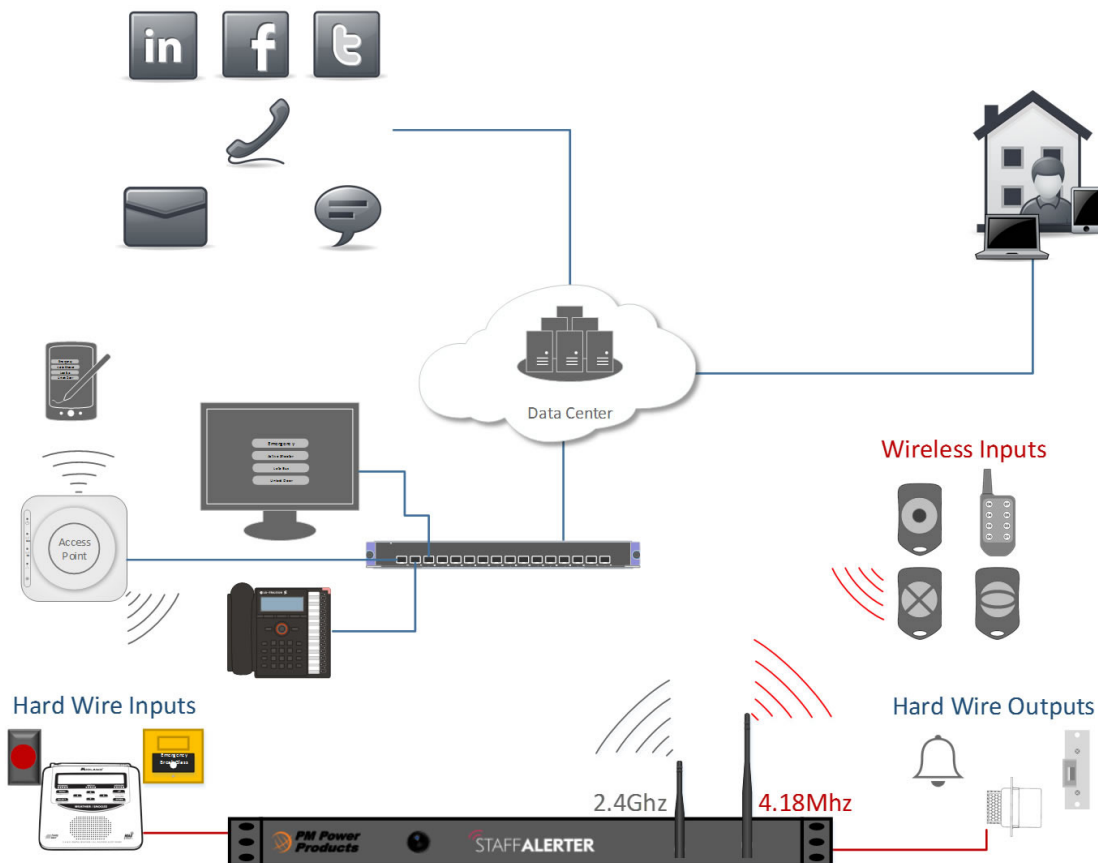
PARTICLE PROVIDES A PATH FORWARD

That near-infinite adaptability would not be possible without an equally adaptable IoT platform. Rankin explained that, in Particle, he found an extremely flexible, rapid prototyping tool that's also fit for full-scale production and deployment.

"We were able to easily leverage the Photon and Electron, plus the Particle device cloud, into a complete ecosystem," said Rankin. "And it's an ecosystem that's changing and evolving by the day, as we keep adding functionality to it. That kind of ease and adaptability is really essential for our product's continued evolution and success."

PARTICLE PROVIDES A PATH FORWARD (CONT.)

Using this fast, flexible platform, Rankin and his team are continuing to innovate and add to their StaffAlerter suite. Recently, they leveraged the Amazon Dash Button to create a Personal Alerts Device (The P.A.D.) – a single, wireless, fully-mobile button that can be programmed to relay up to three separate commands from anywhere on the facility's network.

Next on the development roadmap for StaffAlerter's expansion is an Amazon Alexa integration, which will allow users to issue voice commands to the system. After the command is issued, Alexa will request a confirmation code, and after receiving the proper code from the user, it will initiate the desired action. This integration will open up a variety of new use cases, including alert systems that are suited to individuals with limited mobility.

PM Power Products also recently developed a simpler, lower-cost version of their device, called ContactNotifier. This model is designed for use in industrial settings, or as a remote monitoring unit within a larger StaffAlerter ecosystem. And like StaffAlerter, ContactNotifier uses the Photon for Wi-Fi connectivity and the Electron as a cellular failsafe.
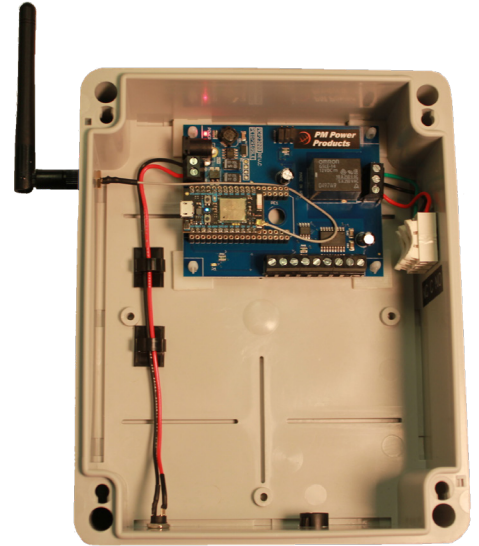
CONCLUSION

Like all great IoT products, StaffAlerter is using the latest in technology to solve long-standing problems. With the power of Particle at its core, StaffAlerter is opening up the Mass Alert and premise management markets to whole new demographics; and improving upon their capabilities at the same time.

And as their product evolves, Rankin and his team continue to discover new and unexpected applications. Whether it be a terror alert system in a government building, or a system that warns a manager of pending refrigeration failure, StaffAlerter is making rapid, widespread communication smarter and more accessible.

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