Adappt Intelligence, an Arraystorm Brand

Introduction

Adappt Intelligence strives to help its clients enhance open-office productivity by offering innovative multi-functional sensor solutions to provide feedback about how their valuable office space is being used. Through a combination of wireless occupancy nodes, density sensors, and aggregating hosts that send data to a central server, the Adappt Intelligence Occupancy Management Solution helps companies see how their spaces are being used, and more importantly, how they can improve utilization.

The Adappt Wireless Occupancy Node (AD-WON) provides granular desk occupancy data for open workspaces. Deployed beneath workstations and set to sense movement (occupancy) in predetermined intervals, the AD-WON stores detected movements and reports them to the Adappt Host (AD-HS). For conference rooms and general indoor applications, the ceiling-mounted Adappt Wireless Density Sensor (AD-WDS) measures the density of people in a given area to provide an overall view of space usage. As with the AD-WON, the AD-WDS reports its measurements to the Adappt Host. These reports are then sent by the host to a cloud server, where they're analyzed and translated into usable data viewable on a dashboard app. Adappt Intelligence customers can see at a glance how many workstations are occupied at any given time, meeting room occupancy status, total utilization factors, as well as specific information such as location of available workstations or conference rooms, etc. at the click of an icon. Additional data, such as temperature, humidity, and noise, may also be collected, reported, and analyzed.

With up to 3600 individual sensors deployed in a single building, and with 150–200 sensors per host, a major development challenge for the Adappt Intelligence team was finding a cost-effective chip solution to support up to half a million or more data points per day in a single facility. They ultimately turned to our Bluetooth Low Energy CSR1010 chip. The single-mode CSR1010 chip is optimized for ultra-low power connectivity, supporting low cost IoT solutions. Compatible with CSRmesh™ technology, the CSR1010 helps to support the Adappt system's robust networking and reporting requirements.

To learn more visit: qualcomm.com or developer.qualcomm.com

Case Study Highlights

- Adappt Intelligence is a brand of Arraystorm Lighting Pvt Ltd, an industry leader in LED lighting and automation. Adappt Intelligence, the brainchild of a team of MIT graduates, is headquartered in Boston, USA, with an R&D hub in Bangalore, India.

- Using our Bluetooth Low Energy CSR1010 chip with CSRmesh compatibility in their smart sensors, Adappt has already outfitted half a dozen buildings with their innovative system.

- **Results:** Across their installations, Adappt has deployed over 9000 active sensors to provide real-time occupancy and temperature profile information to its clients. Most installations average between 1500 and 2000 sensors per location, with the largest deploying 3600 sensors across three floors.

Qualcomm

Working with Qualcomm Technologies International, Ltd. (QTIL)

When weighing their options for chip support, Adappt Intelligence considered many factors before ultimately deciding to go with our Bluetooth Low Energy CSR1010. Among the overall benefits presented were the availability of stable, mesh-based Bluetooth Low Energy solutions; cost-effective, reliable hardware; and renowned Bluetooth technical support.

In discussing the development of their systems, the Adappt Intelligence team said, "QTIL is fantastic to work with for product companies like ours." Regarding the support provided, they added, "It is one of the most important factors. It helped reduce development time, which is very critical for product development companies [like ours]."

With the availability of cutting-edge technology, product reliability, certifications, support, and lower cost, "QTIL has played an important role in making our product a success."

Results

The Adappt Intelligence development team, using our Bluetooth Low Energy CSR1010 chips in their sensors and control units, have been able to design, develop, and deploy their innovative occupancy optimization solutions more efficiently. Supported by the CSR1010's mesh-supported code, they use the chip primarily as a Bluetooth Low Energy to UART translator in their data collection/reporting system.

Still in its early stages, Adappt has already deployed more than 9000 individual sensors in half a dozen unique locations. With one client spread over three different sites, the system's flexible architecture allows for individual reporting for each site as well as reporting to a single, dedicated cloud server to aggregate data across all three sites for a holistic picture of a company's space utilization.

The Power of CSR1010

- Bluetooth 4.1 low energy radio with direct single-ended 50Ω antenna connection

- CSRmesh-supported chip allows the Bluetooth Low Energy devices to extend the range of Bluetooth devices by helping to turn the Bluetooth-supported devices into a mesh network

- Controller, host, and application integrated on one chip, perfect for transfer of simple data sets between sensors, hosts, and the cloud server

- Software support for ease of application development and a SDK that includes example applications to help reduce product development time

Arraystorm™
Sense the future

Supported by Qualcomm Technologies International, Ltd.

Qualcomm Technologies International, Ltd. is an industry leader that strives to deliver high quality connectivity experiences that help differentiate devices in the Internet of Things. More than singular solutions, we develop flexible, robust product platforms combining silicon, software, and services with the aim of providing customers a comprehensive connectivity platform for success.

For More Information

- Visit www.arraystorm.com for more information about Arraystorm

- Visit www.adappt.com for more information about Adappt Intelligence

- Visit www.qualcomm.com/products/csr1010 for more information about the CSR1010

Qualcomm