

ShowCase

eMotorWerks - Adding Wireless Reliability to a Connected Product in 3.5 Weeks

Products

eMotorWerks

Results

The Zentri platform allowed eMotorWerks to redesign its initial IoT prototype for Juicebox in just 3.5 weeks, transforming the Wi-Fi connection from around 50% to nearly 100% reliability. The secure, consistent connection allowed MotorWerks to focus on innovating rather than troubleshooting and electric loads were now seamlessly passed between the charging station, the cloud service, and the mobile app for a premier, IoT customer experience.

Project Details

For more details visit:
www.zentri.com

Introduction

eMotorWerks (Electric Motor Werks) builds virtual power plants out of electric vehicles. It saves consumers, big businesses, and utility operators massive amounts of money by deferring electricity loads to off-peak hours as a vehicle is charged. In fact, commercial customers with a 1,000-person campus or office park often save more than \$1 million over 5 years. eMotorWerks offers a number of innovative EV market products, including the world's #1 connected residential charging station, Juicebox, which sold tens of thousands of units in its first 3 years.

The eMotorWerks business model relies on wireless connectivity. Electric load optimization is only successful if the charging station is wirelessly connected to the cloud service to appropriately shift the electric loads. Additionally, wireless connectivity improves the customer experience, enabling the customer's mobile app to securely connect to the charging station for real-time information and control. If wireless connectivity fails, the entire business model is at risk.

Challenges

Not only was eMotorWerks' prototype solution not staying connected to Wi-Fi, but it took weeks and even months to receive responses from the support team. eMotorWerks needed to find an IoT solution with strong uptime, a proven

track record, a fast time to market, and a support team that actually cared. eMotorWerks also saw significant benefits in adopting a solution capable of performing secure over-the-air (OTA) updates so its customers could have the most up to date firmware prior to using their charging station. The features of the revolutionary post-boxes allow for the lock to be opened by both postmen and couriers not only with their mobile phone or NFC keychain, but also when they receive one-time access.

Solution

eMotorWerks redesigned its smart charging station around Zentri's solution. Despite requiring a new way to wirelessly connect the product to cloud services, eMotorWerks did not have to restart the design from scratch. ZentriOS, Zentri's IoT operating system, included everything needed to make the charging station smart and was able to run alongside eMotorWerks' previously selected microcontroller, the ATMEGA 328. eMotorWerks will use ZentriOS as the sole microcontroller for future products which will further reduce the per unit hardware costs and the time needed to develop embedded applications.

eMotorWerks connected its mobile app to the charging station with Zentri's mobile app libraries and SDK. eMotorWerks added its impressive UI and the mobile app was ready to monitor and control the smart charging station.

References

www.zentri.com