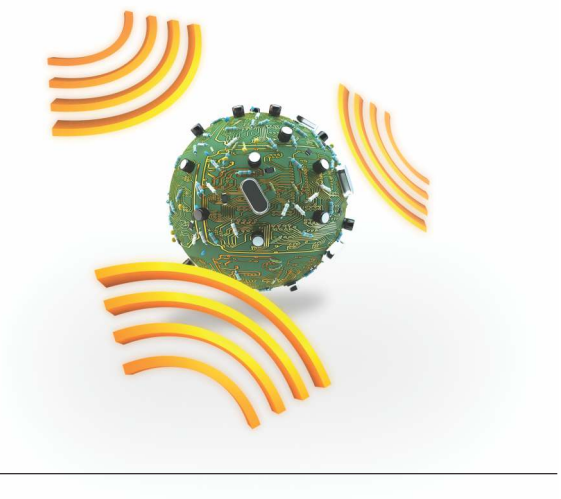
TURNKEY WIRELESS SENSOR DEVICE REALIZATION

Wipro enables a global semiconductor chip manufacturer with an ultra-low-power wireless sensor



INDUSTRY LANDSCAPE

Wireless networking technologies are gaining rapid acceptance in many industrial sectors because of its cost effectiveness, improved reliability, fast deployment, and flexibility. Until recently, Wi-Fi has never been considered a power efficient method for high-speed data transfer - system design moderations have been able to change that. Sensor devices that use Wi-Fi now have ubiquity along with power efficiency, speedy data transfer, and extended battery life. Wi-Fi enabled sensors are now set to realize futuristic concepts like remote patient monitoring, connected homes, and digital plants.

Industry sectors like healthcare, manufacturing, white goods, etc. are looking at wireless-enabled sensor devices for turnkey solutions like remote collection of vital patient data, predictive maintenance through collection of sensitive data from anywhere in the plant, better connected household appliances for the connected home, etc. This has created enormous pressure on sensor devices manufacturers, who are an integral part of the value chain to rapidly deliver wireless enabled devices that are most power efficient and cost effective.

THE OPPORTUNITY

For many years, applications like condition-based maintenance and storage monitoring have been based upon wireless technologies like ZigBee and other implementations. By leveraging a low power & ubiquitous technology like Wi-Fi, there is an opportunity to create wireless connectivity based solutions that can be quickly adopted for both local network & internet based solutions, with a lower total cost of ownership.

To address an immediate market opportunity, the client was looking for a Wi-Fi enabled sensor development with compelling features like battery powered, ultra-low power consumption, low latency, and faster response with high data transfer rates.

The client was looking for a technology partner who could enable an end-to-end solution that would include design, and develop a high-grade and low-power sensor device with Wi-Fi connectivity.

The client achieved a differentiated device with a unique selling point through Wipro's turnkey wireless sensor solution.

CLIENT BACKGROUND

The client is a US-based leading Wi-Fi devices manufacturer who provides solutions with cost and energy saving sensors and devices across multiple industries like healthcare, smart energy, industrial controls, and consumer electronics.

SOLUTION

The client chose Wipro as its strategic partner to design, develop and prototype a power efficient and next-generation wireless solution that would address the challenges of power efficiency and ubiquity. Qualifying criteria included proven expertise in wireless turnkey device realization, low-power SoC design capabilities, and end-to-end technology solution capabilities.

Wipro provided an end-to-end device system solution that included ideation to ASIC prototype, prototype manufacturing, and mass production enablement. Wipro's innovative architecture, low-power SoC design, and custom libraries prevented power leakage and guaranteed energy efficiency with up to 10 years of battery life from a single AA cell. This magnitude of power efficiency in wireless devices was unthinkable before.

Wipro delivered a scalable solution that included a general-purpose module that could be easily customized for Industrial, M2M, Medical, & other applications, and can be easily interfaced to the existing Wi-Fi infrastructure.

Wipro adapted the EagleWision® methodology to evaluate the key steps and processes to implement the solution within stringent timelines and first time pass assurance. Wipro's Analog Design Center of Excellence (CoE) built frameworks and "Port on Demand" technology helped in realizing the device quickly, and with the highest standards of quality.

The end product which complied to industrial grade requirements was a design excellence, as it was a single-chip solution with WLAN MAC + Modem + RF with Application Processor and Flash on Chip.

BUSINESS IMPACT

The client has realized significant benefits from Wipro's low-power wireless sensor solution. The solution helped the client in realizing a unique selling point and a market-leading product.

The solution helped the client with cost savings by significantly lowering the end-user maintenance and installation costs. This integrated system solution enabled the client to offer more efficient, cost effective, scalable and reliable wireless sensor solutions to the end users. Also, the solution enabled the client to address multiple opportunities across industrial control, medical devices and white goods industries.

About Wipro Technologies

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