Case Study

Freescale i.MX28 Processes Data for Wunder-Bar's Smart Liquor Dispensing System

CloudFlo satisfies bar managers' thirst for business intelligence

A Better Way To Manage Dispensing

You may expect to see Freescale's i.MX applications processors in applications such as automotive, healthcare, and smart mobile devices. But how about at your local bar? Wunder-Bar is a food and beverage dispensing company that has released a liquor dispensing system powered by Freescale's i.MX28 multimedia applications processor. The product, called CloudFlo, is an innovative wireless liquor dispensing and management system that uses web technologies to make inventory management and reporting much easier for bar staff and managers.

The food service and hospitality industry is a $23 billion business in the United States. A large portion of that includes liquor and beer sales. Precision pouring is important to control costs because even a quarter-ounce over-pour on a single shot of liquor can increase costs by 25 percent. Electronic monitoring has helped reduce waste and theft, but "current beverage dispensing systems are based on highly customized, specialized hardware and are very expensive," said Will Martindale, Project Manager at Wunder-Bar. "These systems are wired and corded which requires the bartender to link a liquor bottle to a ring-based security device, hindering productivity. CloudFlo is wireless and very easy for bartenders, managers and others to use. It gives the bar staff the ease of use, control, and accountability that the industry is asking for."

The CloudFlo system consists of a small hardware gateway box, about the same form factor as a wireless router, and wireless spouts for liquor bottles and beer taps. "With a wireless system, you just attach a wireless spout to a bottle, register the spout on the system and you're ready to go," said Martindale. "From a customer's or bartender's perspective, everything looks and works the same way." Each spout has a calibrated valve inside and can support four pour sizes. When liquid flows through the spout or a Beerflo meter, data is delivered to the CloudFlo unit regarding which bottle or tap has been poured, by which device, how much, and various other metrics. The CloudFlo unit then packs and delivers data to a cloud-based web application which enables bar managers and owners to monitor their establishments.

freescale.com/cloudflo

Challenge:

Create a way to capture real-time information about the exact quantity of liquids being dispensed

Solution:

Wunder-Bar's CloudFlo gateway box uses the i.MX28 applications processor to collect dispensing data from wireless spout dispensers.

Benefit:

With visibility into "pour" data, managing inventory and controlling costs is much easier for bars and restaurants.

Benefits All Around

This ecosystem of wireless dispensing devices and the data that is collected provides bar managers with a range of benefits.

- *Theft control:* Precision pouring helps to reduce waste and theft.
- *Improved operations:* Tangible real-time data provides greater awareness and insight into how a bar is operating on a daily basis.
- *Inventory management:* By knowing the exact amount of liquor that is in stock and how much has been consumed, bar managers can detect trends and are much better equipped to forecast their liquor budget.
- *Data comparison:* Detailed reports allow point of sale data to be compared with dispensing data so there are no variants.

Wunder-Bar Makes it Possible. Freescale Makes it Work.

The i.MX28 applications processor was chosen for CloudFlo because it delivers an optimal balance of power, performance and integration with low cost. Martindale noted, "Our true challenge was to reduce the cost. Customized dispensing systems are very expensive, but they are also entrenched. If CloudFlo is going to be a competitive product, we have to have a good price as well as good features." The i.MX28 family of multimedia applications processors is part of Freescale's ARM9™ product portfolio. These processors integrate display, power management and connectivity features unmatched in ARM9-based devices, reducing system cost and complexity for cost-sensitive applications.

The CloudFlo product takes advantage of many i.MX28 applications processor features including an SDIO port to support wireless connectivity, the NAND memory controller, both high-speed USB ports for exporting data (data recovery) and firmware updates, integrated power management for reduced system complexity, multiple connectivity ports and dual 10/100 Ethernet ports. Both Ethernet blocks are used and configured as a switch to support multiple use cases. For example, one Ethernet port is used for normal operation for the reporting side of the software and the second port is used for maintenance without disrupting normal operation. Another example is if there are multiple CloudFlo units in a bar environment with only a single CAT5 jack available at the bar. In this case, these units can be "daisy chain" connected. The i.MX28 is the optimal processor for performance, features and cost and provides the capabilities to add security/ encryption
if needed.

Freescale: Innovation for Consumer Applications

Freescale delivers system solutions, including reference designs, to help develop cutting-edge consumer applications. Our technology includes a complete range of microcontrollers and application processors built on ARM technology with broad operating system support. Among these are i.MX applications processors which offer a wide range of performance features and are supported by Linux and Android operating systems and Kinetis® microcontrollers, which support a range of Real Time Operating Systems (RTOS) such as Freescale MQX™. Add to that our Xtrinsic® sensing solutions – designed with the right combination of high-performance sensing capability, processing capacity and customizable software. With a comprehensive ecosystem of tools, software, technology and services, Freescale helps facilitate innovation and shorten your design cycle. Freescale also offers a formal product longevity program ensuring that a broad range of program devices will be available for a minimum of 10 years.*

Freescale Technology for Wunder-Bar CloudFlo

- i.MX28 applications processor

Wunder-Bar: Solving Problems for Food and Beverage Industry for Over 30 Years

Wunder-Bar's liquor dispensing systems have been the standard for food and beverage dispensing systems since the 1970's. Today, Wunder-Bar has expanded to also offer systems for condiments, heated cheese, oils, salad dressings, refrigerated and non-refrigerated toppings and pizza sauces. Wunder-Bar's development engineers focus on innovation, custom product development, quality and service after the sale. Their relentless pursuit of product design, customer satisfaction, superior operating performance and overall quality is un-matched in the industry.

*These products are/or may be supported by Freescale's Product Longevity Program. For Terms and Conditions and to obtain a list of available products please see: freescale.com/productlongevity.

To learn more about how Wunder-Bar CloudFlo is powered by Freescale technology, visit freescale.com/cloudflo

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