



UCODE[®] FOR FOOD: QUALITY & EFFICIENCY FOR TODAY'S CONSUMABLES

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The need to feed an ever-growing world population has led to remarkable innovations, with higher crop yields and the ability to mass-produce a staggering array of items.

In today's world, knowing the information about the origin of food and its journey from source to store become very important to consumers. Tracking solutions based on UCODE ICs can help bring visibility to consumables through their lifecycle.



FOOD INVOLVES EVERYONE

Throughout the supply chain for food, from producers and retailers to government regulators and actual consumers, there are questions of quality, authenticity, and affordability. Food retailers are seeking efficiency to keep costs down, while having to manage up to 40,000 Stock Keeping Units (SKUs) per store.

From the government perspective, agencies at federal and local levels are concerned about the health risks of poorly produced and improperly stored foods.

As for consumers, there is the ongoing challenge of finding quality and nutrition within the limits of the weekly food budget.

HOW UCODE CAN HELP



EFFICIENT FOOD INVENTORIES



PROTECTED PERISHABLES



ONLY PRODUCE WHAT'S NEEDED





Efficient Food Inventories

The large number of SKUs makes inventory control a major challenge, and inaccurate counts can lead to dissatisfied customers.

RAIN RFID labels using UCODE ICs can help supermarkets and other retail locations manage inventories more precisely, for more responsive logistics and greater efficiency. Shelves are always fully stocked, and shoppers always find what they look for.

Omnichannel sales processes such as Click&Collect result in customer satisfaction only if accurate store inventory is maintained and correctly reflected in the retailers' database.

Real-time inventory helps retailers optimize their order fulfillment process. With higher fulfillment rates, retailers can achieve higher customer satisfaction.



Protected Perishables

The "fresh" category is an especially important segment of the food industry, since it offers the highest growth rates. Rotten food has expenses associated with it, not just in lost sales, but also because it costs substantial money to dispose of unsaleable items.

Labels with UCODE ICs can be used to track food items more closely while they're in the supply chain as well as in the retail store, to ensure proper handling. The typical consumer behavior to fetch the product with the longest fresh time from the shelf can be reverted with UCODE based labels by providing price discount curves based on freshness.

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Only Produce What's Needed

Reducing the impact of food loss and waste is one of the United Nation's 17 Sustainable Development Goals (SDG). As stated in UN SDG 12.3, the goal is a 50% reduction in per capita global food waste at the retail and consumer levels. Also, to reduce food losses along production and supply chains, including post-harvest losses.

This is an important issue worldwide since, according to the 2021 Food Waste Index Report, published by the UN Food and Agriculture Organization (FAO), as much as 17 percent of total global food production may be wasted. In the United States, for example, the Environmental Protection Agency (EPA) has measured the impact of food loss and waste, and in 2021 reported that the country's uneaten food has an annual carbon footprint equivalent to 42 coal-fired power plants. That's in addition to the emissions from landfills, where food waste often ends up.

A key starting point for meeting the UN's 50% reduction goal is accurate, traceable, and comparable measurement of national food waste. Labels with UCODE ICs can help, by providing real-time updates on a given food product's location, within the supply chain or in retail outlets. This data, combined with intelligent algorithms that estimate trends in demand, can help suppliers avoid the kinds of overproduction and overstocking situations that lead to food waste.

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Key benefits of using UCODE based tracking solutions



Increased shelf accuracy at reduced manual work-load



Waste and shrinkage reduction



Faster checkout at point of sales

Applications



High speed inventory count



Item level supply chain management



RAIN RFID based theft protection

Target markets



Supermarkets / grocery stores



Quick service restaurants



Convenience stores

NXP'S UCODE ICs HELP RETAILERS AND CONSUMERS

Every year NXP supplies billions of UCODE chips that help leading retailers to track their sales items. Jointly with our partners we have helped retailers and brand owners in all kinds of industries, use UCODE ICs to efficiently gather information about sales items' past, current and future location. Retailers use these information to meet the demand of their customers by having the right products available at the right place.

Because it enables small, versatile RAIN RFID labels that can be reliably read at very high speed, the UCODE product family is in use on billions of retail items every year.

UCODE 9xe

Equipped with 128 bits of Electronic Product Code (EPC) memory, UCODE 9xe can store important attributes, such as expiration date or product information, directly on the IC, so the food supply chain can be smarter than ever.

Key Features

- Low power consumption and high read performance allow for fast and accurate inventory counts.
- Consistent high performance over billions of chips, ensured by strong test parameters when testing each individual chip before it leaves the fab.



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