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The Facts on Reduced Space Symbology

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Introduction

Studies conducted in the early 1990's by the Food Marketing Institute (FMI) and the Grocery Manufacturers of America (GMA) found there was potential for significant savings and benefits if a universally acceptable random weight coding and tracking process could be developed. The problem with bar code currently used for variable measure products (i.e., UPC-A Number System 2) is that it does not have sufficient capacity for information necessary to track and manage perishable products. Its limited capacity (12-digits) does not allow for encoding and capture of data such as product supplier, expanded product identification, price per pound, extended price, product weight, sell-by dates, and etc.

The Uniform Code Council (UCC) formed the Random Weight Perishable Task Force to define a new bar code based on the business needs and data requirements. Over the course of the next few years the Task Force explored multiple options but could not find a solution that was acceptable to the industry until 1998 when a new bar code symbology, called Reduced Space Symbology (RSS) was introduced.

This led to the formation of RSS Variable Measure and Produce User Groups, which were comprised of retailers, suppliers, equipment providers and trade associations. The role of the User Groups was to develop application guidelines for RSS that would meet and support the data requirements and business needs of the industry.

RSS became the enabler by allowing up to 74 characters of data to be encoded for variable measure products with one exception. Due to space and labeling constraints for produce products it was decided that a fixed length bar code consisting of 14 characters of data identifying the supplier and a unique product identification number would be used.

A pilot test using RSS was conducted at Dorothy Lane Markets in Dayton, Ohio. The objective of the pilot was to test the functionality of RSS, measure productivity, provide a cost/benefit analysis, and develop a "road map" for users in the supply chain who desire to take advantage of this new technology.

BUSINESS CASE

According to a recent study, the UPC symbol today is generating $17 billion in annual savings for manufacturers, retailers and consumers through the grocery channel alone. This figure does not include the many soft benefits of capturing data at the POS.

E.g., Computer Assisted Ordering, Direct Store Delivery, and data sharing between trading partners

The one area that has not achieved the same level of savings and benefits as dry grocery is perishables (i.e., variable measure products). One of the main reasons for this is because the UPC coding structure used to capture point of sale movement for variable measure products is insufficient.

The UPC Number System 2 (NSC2) was created in 1978 for identification of variable measure product. NSC2 contains the retailers randomly assigned item identification number and extended retail price. In the 1980's, retailer product identification was subdivided into commodity codes but the data structure still limited the amount and type of data that could be captured and used to effectively manage variable measure products. In short, the NSC2 bar code is an impediment to more effective and sophisticated category management of perishable products.

But all is not lost and help is on the way. Retailers and suppliers have an opportunity today that the industry has not had in the last 25 years. That opportunity is RSS: a new bar code symbology that will enable the capture of detailed item level information about perishable products. The RSS bar code provides the capacity to encode product related information such as:

- ❒ Brand and /or Supplier name
- ❒ Date and Location of packaging
- ❒ Product packaged weight or count
- ❒ Price per measure and extended price
- ❒ Sell-by date

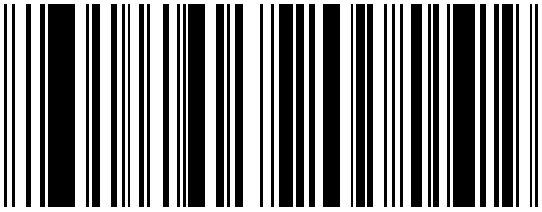
RSS SYMBOLOGY

RSS was developed as a family of seven (7) linear symbologies to provide users with features that address specific space limitation and application needs. RSS is designed to allow encoding of up to 74 characters of data, all of which can be captured at the Point-of-Sale. Of the seven (7) different formats of RSS, four (4) are designed specifically for use in Retail PoS. They are:

- ❒ **RSS-14**

Encodes the full 14-digit Global Trade Item Number (GTIN). For use at point-of-sale for standard EAN.UCC item identification.

❒ **RSS Expanded**

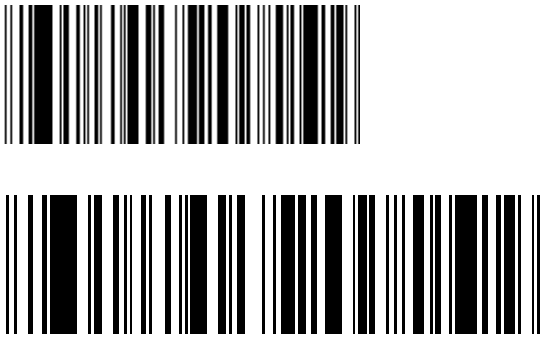


Encodes up to 74 alphanumeric Characters of information. For use at point-of-sale for variable measure identification of items such as meat, seafood and deli.

❒ **RSS-14 Stacked Omnidirectional**

Encodes the full 14-digit GTIN. For use at point-of-sale for items where space limitation require a narrow and tall symbol. E.g., loose produce items such as apples, potatoes or oranges. The symbol format is designed for fixed-position omnidirectional scanners commonly used in supermarkets

❒ **RSS Expanded Stacked**



Has the same characteristic As RSS Expanded except where There are width constraints, it is Printed in multiple rows as a Stacked symbol. For use at point-of-sale for variable measure identification such as meat, deli, and seafood

The three (3) remaining RSS formats are designed for applications other than retail point-of-sale. They are as follows:

❒ **RSS-Truncated**

Encodes the full 14-digit GTIN. It is designed for use on items such as cosmetics and jewelry. Its' truncated format is not designed to be read omnidirectionally.

❒ **RSS-14 Stacked**

Encodes the full 14-digit GTIN. It is designed for use on small items requiring a narrow and highly truncated format. It is not designed to be read omnidirectionally.

❒ **RSS Limited**

Encodes the full 14-digit GTIN. It is the smallest RSS symbol format. Its' indicator digit must be a '0" or "1". It is not designed to be read omnidirectionally or intended for use at point-of-sale.

The implementation of RSS will change the current infrastructure in place for variable measure products. It will impact the symbol producing and symbol reading infrastructure in stores, such as scales, printers and scanners. The expanded data content will also impact PoS and Host application software, data files and formats. RSS will, at the same time, provide the potential to create process efficiencies in identification, tracking, and management of retail products sold in varying weights and quantities.

Variable measure products such as meat can be encoded to capture information such as supplier name, packaged date, lot / batch identification, unique product identification number, package weight, sell-by date, and etc.

Variable measure products such as produce (e.g., apples, potatoes, oranges, etc.), due to space and labeling constraints, will use a fixed length stacked bar code consisting of 14 characters of data identifying the supplier and a unique product identification number.

The labels below are examples of how these bar codes may look:

Information encoded in the bar code of the Meat label includes the supplier identification number, product identification number, net weight (in pounds), price per pound, sell-by date, and the extended retail price of the product.

The bar code on the Produce label includes the supplier identification number and product identification number.

Note: The item PLU number may be printed on the label for those retailers who do not have the capability to scan RSS.

BENEFITS

The most obvious benefit of RSS is greater speed and accuracy in the checkout process. The potential savings and benefits from implementing RSS into store operations extend well beyond those associated with the checkout process.

- ❒ Training – reduction in operator training costs; operators will not longer require training on product identification and PLU memorization.
- ❒ Shrink – perishables can account for up to 50% of total store sale. The reduction of errors due to incorrect entry of PLU numbers and mis-identification of product will yield significant improvements in perishable department gross margins. Shrink in perishables can drain as much as 15% of total category sales and mistakes at the checkout with random weight items can cost 1% of category sales.

- Merchandizing – the ability to capture detailed item level information can lead to improved category management and increased sales. Industry consultants say effective category management can increase sales from 5-15%. Grocery Manufacturers of America recently published results from a study, which showed how data mining and data sharing partnerships could potentially increase brand sales by more than 10%.
- Safety – improved risk management during recalls by providing the capability to accurately trace product back to its' specific supply source, ensure greater levels of consumer safety, enforce company sell-by date policy and lead to greater customer satisfaction.

Results from recent studies have identified additional benefits that may be obtained or enhanced through the implementation of RSS.

- Gain incremental sales through more efficient promotions
- Increase profitability through improved analysis of profitability factors
- Improve item quality, assortment and freshness
- Facilitate closer trading relationships with key partners
- Support implementation of computer assisted ordering
- Enhanced inventory performance through space management applications driven by more detailed item level information

IMPLEMENTATION

Implementation of RSS into the retail environment will require equipment and software investment by product suppliers / packers and retailers. The suppliers will be required to invest in new packaging systems (equipment and software) or upgrade their existing systems. Retailers will be faced with similar investment decisions to accommodate RSS into their point-of-sale operation.

A study performed by Perishables Group, Inc. indicates the costs for a 100-store chain to implement RSS into their operation would be as follows:

- Cost to upgrade equipment and software to accommodate RSS would be about $ 2,600 per store.
- Cost to purchase new equipment and software would be about $ 62,000 per store.
- Increased item transaction time (and cost) to input an item with an RSS label: seven tents of a cent (0.7) per produce item and two tenths of a cent (0.2) per meat item. It was estimated those cost would be reduced through cashier training and label quality.

That same study indicated suppliers / packers incremental equipment / material costs would increase by about 2.3 cents per box/case for produce suppliers and about 5 cents per box/case for meat suppliers

SUMMARY

Members of the retail industry, both suppliers and individual retailer, are always looking for ways to gain competitive advantage. Implementation of RSS, if proven successful, may be one such advantage and will change the way the industry looks at the perishable category.

RSS should be viewed as an emerging technology that can be the enabler for capturing key data elements for perishable products that are missing today. RSS provides the opportunity to capture the same ECR benefits for perishable products as those obtained in dry grocery from information derived from tracking UPC coded merchandise.

ADDITIONAL INFORMATION

Additional information may be obtained from the following sources:

- Uniform Code Council web site @ www.RSS14.org
- Produce Marketing Association "Inside the Produce Industry" @ www.aboutproduce.com/faq/inside.html
- Perishable Group, "The Perishables Group to Quantify the Benefits of New Barcodes for Random Weight Items" @ www.perishablesgroup.com/news/010521
- EAN International, Inc. @ www.uc-council.org/rss14/rss_important_information.html
- UCC, Inc. & North American Variable Measure Users Group, Guideline for Application of RSS Expanded Symbols to Variable Measure Fresh Meat products, 2001