

An **Avery Dennison** White Paper

Monarch[®]
Products and Services

New GS1 2D Matrix Symbology Support

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Background

On February 18, 2005 the EAN International Group launched a new organization called GS1 to expand its role from the custodian of barcodes to a more global vision that includes establishing worldwide standards for business communications. The most widely publicized projects are the release of the Global Data Synchronization Network (GDSN) interoperability standards and the Electronic Product Code (EPC) data structure for RFID. The organization formerly known as the Uniform Code Council (UCC) is now a part of this global organization and is known as GS1-US.

Aztec Code

One of the new bar code symbologies that is becoming popular is Aztec Code. What makes Aztec more desirable than the older box like codes is that it can sustain major damage around the edges and still be highly readable.

GS1 DataBar™ (formerly known as RSS)

GS1 DataBar can identify small items and carry more information than the current EAN/UPC bar code.

Applications

Intended applications for this symbology include pharmaceuticals, produce and variable measure grocery items like those purchased at the deli counter.

GS1 (EAN.UCC) Composite Symbology

This symbology group consists of two components: a linear component, which encodes the item's primary data; and an adjacent 2D composite component, which contains supplementary data.

New GS1 2D Matrix Symbology Support

Background

On February 18, 2005 the EAN International Group launched a new organization called GS1 to expand its role from the custodian of barcodes to a more global vision that includes establishing worldwide standards for business communications. The most widely publicized projects are the release of the Global Data Synchronization Network (GDSN) interoperability standards and the Electronic Product Code (EPC) data structure for RFID. The organization formerly known as the Uniform Code Council (UCC) is now a part of this global organization and is known as GS1-US.

In accordance with this change, some bar code symbologies are undergoing a transformation in their naming conventions. Instead of applying to the UCC for a manufacturer's prefix, companies now contact a GS1 Member Organization to receive a GS1 Company Prefix. EAN/UPC are still usually identified by their original names but you will see Code 128 (UCC/EAN-128) now identified as GS1-128. Also, on March 2, 2007 Reduced Space Symbology (RSS) received its new name: GS1 DataBar™.

Today, the amount of data that companies desire to track is increasing exponentially making it necessary to deploy new standards. More compact barcodes are especially needed for the pharmaceutical and perishable goods industries. However, retailers are finding applications for 2D symbologies for coupons, printed manifests and invoices.

Our Monarch® 9800™ series printers support several 2D symbologies like PDF417 and Maxicode. However, in order to stay up with the launch of these new GS1 initiatives, the Tabletop Engineering group is working on the release of three new 2D symbologies: Aztec, Composite Bar Codes and DataBar™. Following is a brief overview of these symbologies.

Aztec Code

One of the new bar code symbologies that is becoming popular is Aztec Code. What makes Aztec more desirable than the older box like codes is that it can sustain major damage around the edges and still be highly readable. To the right is an example of the 614 characters in the opening paragraph for Charles Dickens' "A Tale of Two Cities" encoded in Aztec. Version 5.4 Firmware of the 9800™ series printers will contain this barcode. Look for the launch in June 2007.



GS1 DataBar™ (formerly known as RSS)

GS1 DataBar can identify small items and carry more information than the current EAN/UPC bar code. GS1 has launched a program to provide information to assist our industry in building an understanding of its 2010 adoption. It is capable of encoding up to 20,000,000,000,000 (20 trillion) values. It has a sunrise adoption date of 2010.



For more information on GS1 DataBar see the weblink at:
<http://www.gs1.org/databar>

GS1 DataBar Truncated

(RSS-14 Truncated)

This symbology may be scanned omni-directionally.



GS1 DataBar Stacked

Omni-directional

(RSS-14 Stacked Omni-directional).

This symbology may be scanned omni-directionally. This symbology does not allow for human readable text with the barcode.



GS1 DataBar Stacked

(RSS-14 Stacked)

This symbology cannot be scanned omni-directionally. This symbology does not allow for human readable text with the barcode.



GS1 DataBar Limited

(RSS-14 Limited)

Only include values up to 4,000,000,000,000 (4 trillion). This symbology is specifically designed to be read by wands and handheld laser scanners. Omni-directional scanners cannot read it efficiently.



[01]01501234567890

Applications

Intended applications for this symbology include pharmaceuticals, produce and variable measure grocery items like those purchased at the deli counter. However, the industrial trend is for smaller packaging for all items making this a necessity for implementation in the future for retailers and consumer goods manufacturers.

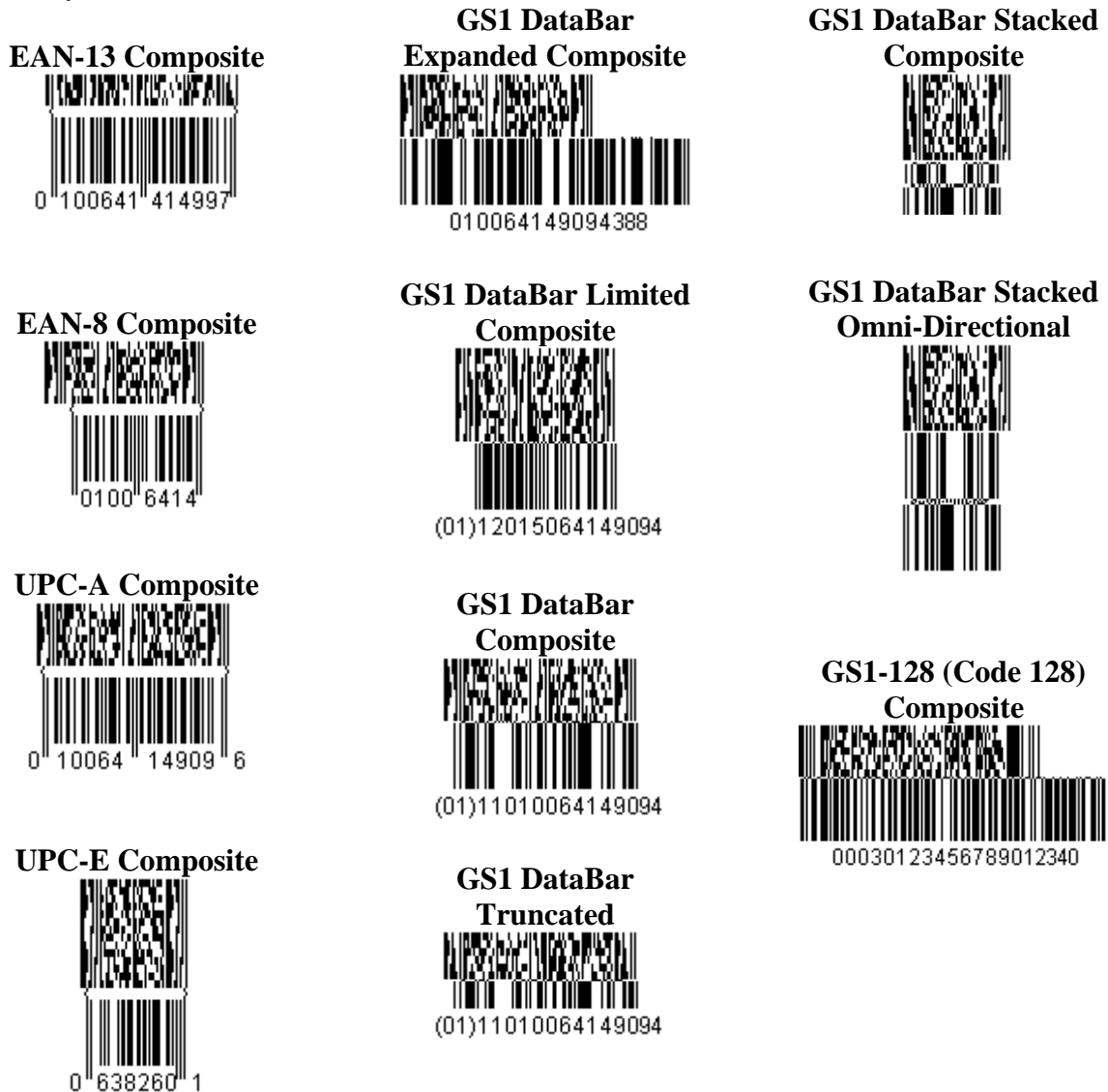
GS1 (EAN.UCC) Composite Symbology

This symbology group consists of two components: a linear component, which encodes the item's primary data; and an adjacent 2D composite component, which contains supplementary data.

The linear component will be a traditional symbology of types: GS1-128, EAN8, EAN13, UPCA, UPCE or DataBar.

The composite component will be either a MicroPD417 Composite Code A (CC-A), a PD417 Composite Code B (CC-B) or a PDF417 Composite Code C (CC-C) barcode (for GS1-128 barcodes). The difference between the three is in the amount of data encoded in the composite portion. CC-A encodes up to 56 digits, CC-B up to 338 digits and CC-C up to 2361 digits.

The following are examples of the various types of composite components used in GS1 symbols:



**For more extensive details on Avery Dennison's study regarding New GS1
2D Matrix Symbology Support, please contact:**

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