



The Global Language of Business

A New Dimension in Barcodes

GET READY FOR SUNRISE 2027



The one-dimensional (1D) barcode, such as EAN/UPC, has offered price lookup functionality for decades. Growing demand for greater product information, transparency, traceability, and product authentication is creating the need to move beyond the classic barcode.

Thus, industry is moving toward two-dimensional (2D) barcodes that can carry more information. Using 2D barcodes allows for a single standardized way to meet both supply chain needs and evolving consumer requirements.

The information carried by 2D barcodes can also help enable:

- Improved inventory management
- Enhanced recall readiness
- Greater sustainability and ethical sourcing practices
- Better product authentication

Industry has set a date to make the transition to accepting 2D barcodes at point-of-sale (POS)—referred to as **Sunrise 2027**.

Through this effort, GS1 US® is helping both supply- and demand-side organizations and solution providers get started with a migration path toward the “new dimension” of barcodes.

Moving Toward the Sunrise

Transitioning to 2D barcodes for POS is a multi-step process. The GS1 US Sunrise 2027 initiative lays out a plan to help ensure 2D barcodes will be scanned and processed at any retail POS by the end of 2027. It is imperative that GS1®, as a neutral global standards body, coordinate this effort to ensure that recommendations and guidance include the needs of all stakeholders to help produce a fully interoperable solution that will work for all parties in the value chain.

Retail Requirements

To prepare for Sunrise 2027, retail POS systems must be updated to process the information in 2D barcodes and continue to have efficient checkout capabilities. At a minimum, price lookup systems need to be able to use the Global Trade Item Number® (GTIN®) encoded in 2D barcodes the same way it is used today in 1D barcodes.

*Trading partner requirements will guide when dual markings are no longer needed for point-of-sale applications.

"In this publication the letters 'UPC' are used solely as an abbreviation for the 'Universal Product Code,' which is a product identification system. They do not refer to the UPC®, which is a federally registered certification mark of the International Association of Plumbing and Mechanical Officials ('IAPMO') to certify compliance with the Uniform Plumbing Code as authorized by IAPMO."

On-Pack Barcode Options

Dual-Marking Now

Transition phase

Mandatory 1D barcode and an optional 2D barcode



Single-Carrier*

2027 and beyond, depending on trading partner capabilities

Mandatory 1D barcode or a 2D barcode



Human readable interpretation (HRI) is for illustrative purposes only, and HRI guidance for 2D is available in the GS1 General Specifications.

What's Industry's Next Step?

Keep reading to learn more about the **GS1 US Barcode Capabilities Test Kit** and how to take the next step toward Sunrise 2027 readiness.

GS1 US Barcode Capabilities Test Kit

The GS1 US Barcode Capabilities Test Kit is used to evaluate baseline functionality and identify gaps in scanning and processing 2D barcodes. This includes scenarios carrying only a GTIN and with GTIN plus additional attributes (e.g., batch/lot #) in a variety of barcodes approved for use in different applications throughout the GS1 System of Standards.

The testing process provides an opportunity to empower brand owners, retailers, and their solution providers to discuss the need to work together to enable a smooth industry transition along the glide path to Sunrise 2027.

Key Findings From Initial Testing

Some retailers have already used the kit to better understand what their existing systems can and cannot do. Results from this first phase of testing include:

All retailers encountered some issues processing GS1 Application Identifier (AI) data (e.g., expiration date).

- Scanners and/or POS systems are not set up to process and store GS1 AI data.

- For retailers who could process GTIN + GS1 AI data, system limitations prevented processing and storage of all encoded data (the only requirement for the Sunrise 2027 transition is processing the GTIN).

Many of the retailers had image scanners installed. However:

- Although image scanners have the capability to read 2D barcodes, these settings were not turned on.
- Scanners that did have 2D barcode settings enabled still required updates to process advanced syntaxes, including GS1 Digital Link** URI, in addition to GS1 AI data, as noted above.

Barcode capabilities testing requires coordination among multiple parties, including retailer POS teams and POS hardware and software providers, who all must be involved to develop interoperable solutions.

GET STARTED ON THE PATH TO SUNRISE 2027

Every company is unique and has different considerations for how to approach moving forward. The GS1 US Barcode Capabilities Test Kit is the first step in developing and deploying an implementation road map and can be used to establish a baseline for any system expected to interact with GTINs. The kit can also be used to communicate requirements to your internal development teams and your solution providers.

PLAN

- Connect** with partners
- Assess system readiness** using the Barcode Capabilities Test Kit
- Determine** what you want to test

TEST

- Conduct** a pilot
- Refine** based on learning
- Develop** an implementation road map

GO

- Implement** road map
- Grow the solution** until the new barcode is the norm
- Evaluate** evolving needs and adjust



SCAN HERE

Visit gs1us.org/sunrise2027 and download the kit to start testing your system capabilities today!

SHARE FEEDBACK

✉ Sunrise2027@gs1us.org

**GET MORE INFORMATION ABOUT GS1 DIGITAL LINK

Visit <https://www.gs1us.org/industries-and-insights/standards/gs1-digital-link>

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