



GS1 recommends scanners with imaging-based capabilities

Retail investment should include imaging-based barcode scanning capability.

Consumers are demanding access to more information online and on product labels. Consumers increasingly expect retailers and regulators to protect them from purchasing expired, counterfeit, or unsafe products.

In retail systems, including point-of-sale, fully addressing these consumer needs will require more granular identification in addition to the Global Trade Item Number (GTIN), such as batch or serial number. To support more granular identification across all product categories, barcode scanners that exclusively read one-dimensional (1D) barcodes may not be adequate in many situations. Two-dimensional (2D) barcodes will be required and imaging-based barcode scanners will be required to scan them.

As 2D barcodes begin to address the broad needs of manufacturers, retailers, consumers and regulators, there will be many years where 1D and 2D codes may coexist on products. Since it will take years to replace retail POS equipment, the time is now to consider these trends when making near-term decisions that may limit future capabilities.

Enable enhanced capabilities and future-proof your investments

The need to increase consumer engagement and connection to extended information about products will drive the move to 2D barcodes because they can enable supply chain, POS, and applications on smart devices. 2D barcodes, as well as the imaging-based (also called camera-based) scanners needed to read them, will be required to support these demands because they can carry additional data in the same space as 1D barcodes and can be printed much faster.



A standard GS1 Data Matrix code



A standard GS1 QR code

Retailers need to make an informed decision when investing in new scanner systems. Looking at the impact on retail systems, this means that imaging-based scanners will be needed to read the data held within these 2D symbols, because laser-based scanners are not capable of reading them. Additionally, retail systems will need to be able to process the additional data in order to generate new and expanded value for retailers and consumers. Such considerations should also include other types of scanning (e.g., self-scanning using dedicated smart devices, automated distribution scanners, handheld terminals or the smartphones of consumer).

Action

Retailers should consider investing in imaging-based scanning capability to be prepared for the future. 2D capable scanners will enable them to unlock the value and benefit of data-rich 2D barcodes and maximize opportunities to meet consumer and/or regulatory demands.

It should be noted that, as of today, only the latest imaging-based systems can claim to match the throughput levels of the implemented laser-based systems on 1D barcodes. Investment decisions should always be based on balanced considerations of throughput, cost and back-end systems capabilities.

In terms of barcode scanner system investment, GS1 recommends all parties who scan trade items at any level, anywhere:

- Consider introducing a minimum level of imaging-based scanner capability, for example by installing imaging-based hand-held scanners or hybrid slot capability at POS to take advantage of the speed of 1D and the additional functionality of 2D symbols.
- Enable processing of more granular identification/information in addition to GTIN in all systems.
- Encourage solution providers to develop imaging-based, high-volume scanner systems that can scan both GS1 1D and 2D symbols with more granular identification/information at equal or higher throughput levels than current laser-based systems for 1D symbols.

About GS1

GS1 is a neutral, not-for-profit organisation that provides global standards for efficient business communication. We are best known for the barcode, named by the BBC as one of “the 50 things that made the world economy”.

GS1 standards enable unique identification, accurate capture and automatic sharing of vital information about products, locations,

assets and more—raising visibility of data across physical and digital channels and in 25 sectors around the world.

Our scale and reach—112 local Member Organisations, serving 1.5 million user companies in 150 countries—help ensure that GS1 standards support a common language of business, every day. Find out more at www.gs1.org.

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