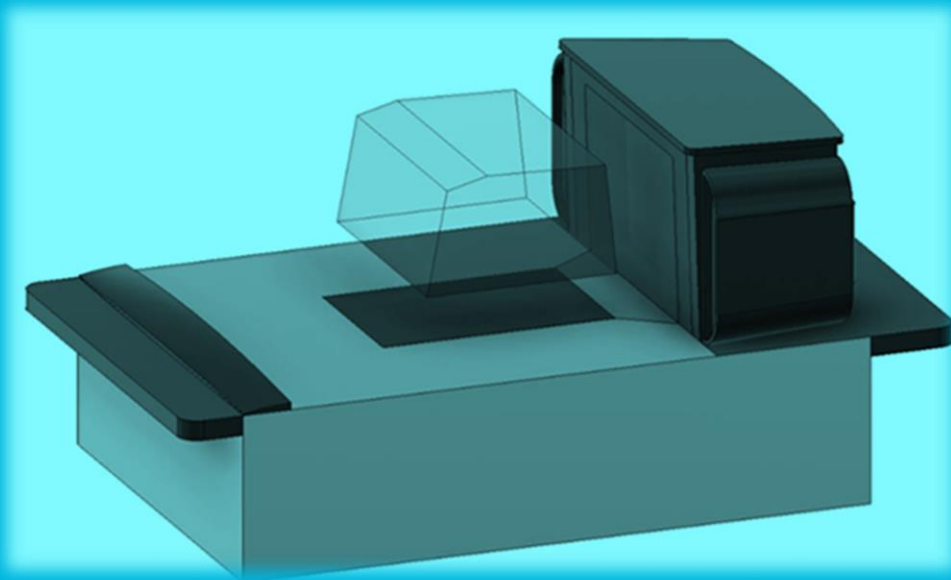# POS Scanner Criteria

POS Scanner Criteria

To make the transition to accepting 2D barcodes at point-of-sale (POS), scanner software will need to be updated:

1. To **process trade items that may have multiple barcodes encoded with GS1 data structures/syntaxes and identification keys**, for example a GS1 DataMatrix and an EAN-13 can be on the same trade item and will have the same GTIN.

2. To identify **GS1 DataMatrix** barcodes encoded with **GS1 element string syntax**, **Data Matrix and QR Code** encoded with **GS1 Digital Link URI syntax**.

3. To **convert GS1 Digital Link URI to GS1 element string syntax**.

4. GS1 Composite barcodes, GS1 DotCode and GS1 QR Code are **out of scope**.

POS Scanner Criteria (Yes/No)

1. Can recognise, decode and deliver information from all compliant retail 2D barcodes detailed in the latest [GS1 General Specifications](#) edition (i.e., EAN/UPC and GS1 DataBar retail family barcodes, GS1 DataMatrix, Data Matrix with GS1 Digital Link URI syntax & QR Codes with GS1 Digital Link URI syntax) and can be configured to ignore any non-GS1 data carriers?

2. Able recognise and decode reversed reflectance (a.k.a. inverse video) and normal reflectance for GS1 DataMatrix, Data Matrix and QR Codes?

(0 1) 0 9 5 2 1 1 0 1 5 3 0 0 0 1
Normal reflectance (Black on White)

(0 1) 0 9 5 2 1 1 0 1 5 3 0 0 0 1
Reverse reflectance (White on Black)

POS Scanner Criteria (Yes/No)

3. After initially capturing the first GTIN from either a linear or 2D barcode, irrespective of the presence of multiple GS1-compliant retail barcodes on-pack, the scanner can promptly process and transmits the GTIN with a single audible (e.g., beep) or visual signal, and awaits subsequent product scans? Also known as Mode 1.
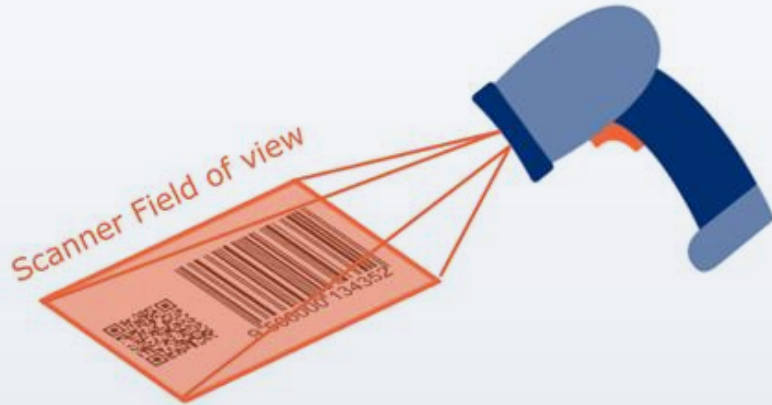
- Mode 1 Example:

9 506000 134352

- If the QR Code encoded with https://dalgiardino.com/01/09506000134352/10/ABC?17=231231 is decoded first, then the scanner signals the GTIN has been decoded and transmits 010906000134352

- If the EAN-13 is decoded first, the scanner signals the GTIN has been decoded and transmits 9506000134352

POS Scanner Criteria (Yes/No)

4. Are the results for a single product with GS1-compliant retail 2D barcodes transmitted in less than 300 milliseconds for high-speed bioptic scanners, and under 500 milliseconds for presentation and an activated handheld device (add examples), from the moment the GS1-compliant barcode enters the scanner's field of view?   Mode 1 Example:

Activated handheld scanner with barcodes in field of view.

POS Scanner Criteria (Yes/No)

5. Can be configured to prioritise the GS1 compliant retail 2D barcodes decode first with a single audible (e.g., beep) or visual signal and transmit GTIN + any additional data (e.g., lot/batch, expiry date, …) in a common format (GS1 element string syntax) and, if one cannot be found, transmit data from the linear barcode? Also known as Mode 2.

- Mode 2 Example:

9 506000 134352

Independent of direction of travel the scanner transmits:
010950600013435210ABC^17231231

In this example, the "^" replaces the unprintable hex 1D (Group Separator) character

  - QR Code encoded data https://dalgiardino.com/01/09506000134352/10/ABC?17=231231
  - EAN-13 encode data 9506000134352

POS Scanner Criteria (Yes/No)

6. Can the scanner be configured to Identify, decode, and transmit all GS1 compliant general retail barcodes (linear or 2D) on a product, while generating an 8-digit label identification to associate multiple barcodes with the same trade item? Upon capturing the first GTIN from either a linear or 2D barcode, the scanner promptly provides a single audible (e.g., beep) or visual signal. The scanner will generate an 8-digit label identification in a common format head of the barcodes Plain & GS1 element string syntax. Also known as Mode 3.

- Mode 3 example

9 506000 134352

Independent of the direction of travel the scanner transmits:

12345678~010950600013435210ABC^17231231

12345678~9506000134352

In this example, the "^" replaces the unprintable hex 1D (Group Separator) character and the "~" is not transmitted but shows the end of the label identification.

- QR Code encoded data https://dalgiardino.com/01/09506000134352/10/ABC?17=231231

- EAN-13 encode data 9506000134352

POS Scanner Criteria (Yes/No)

7. Scanner is configurable by the retailer to transmit their desired data (GTIN or GTIN + additional data) from one or all the GS1 compliant retail barcodes?

9 506000 134352