The Global Language of Business

GSMP:
General Specifications Change Notification (GSCN)

GSCN #	GSCN Name	Effective Date
16-434	SST 2 and SST 5	20-Dec-2016

Associated Work Request (WR) Number:

16-434

Background:

It is to align the tolerances between table 2 and table 5 so that there is no possible discrepancy between the interpretations of the barcode conformance.

GS1 General Specification Change:

Insert the actual changes to the Gen Spec here.

5.5.2 Dimensional specifications and operational requirements

Over the years, operational requirements of GS1 system users have influenced the dimensional specifications of GS1 system symbols, and these dimensional specifications have in turn influenced the development of scanning system optics and printing processes. The dimensional requirements for each application area defined in section 2 are set out in the GS1 system symbol specification tables (SSTs) (see section **5.5.2.7**). Each SST provides the following barcode specification detail:

- The barcode(s) specified by the GS1 system for each application area.
- The minimum, target, and maximum X-dimension (narrow element width) for the symbol, based on the scanning environment. Please note that a smaller X-dimension may result in a lower scanning performance.
- The minimum and target barcode height, based on the scanning environment. Please note that reducing the symbol height may result in a lower scanning performance.
- The Quiet Zone width and, for primary and secondary symbols, the minimum and maximum separation between the two symbols. (These measurements are expressed as multiples of the X-dimension in the form nX.)
- The minimum ISO quality specification expressed as **g.g/aa/www**, where **g.g** is the minimum overall symbol grade to one decimal place (on a 4.0 scale), **aa** is the effective measuring aperture in thousandths of an inch, and www is the wavelength of the light source in nanometres.

Note: Please refer to section 2 for any specific application standard (such as section **2.1.2.5**, Fixed measure - regulated healthcare retail consumer trade items, and section **2.1.4**, Fixed measure - direct part marking) that may supplement or supersede these symbol specification tables for specific application areas.

Before determining the exact symbol specification required, additional factors, such as the scanning environment, SHALL be considered. These are summarised in section **5.5.2.1**.

Commented [AH1]: WR16-434 Various in 5.5.2

5.5.2.7.2 Symbol specification table 2 - Trade items scanned in general distribution only

Symbol(s) specified	(*) X-dimension mm (inches)			(**) Minimum symbol height for given X mm (inches)			Quiet Zone		(***) Minimum quality specification
	Minimum	Target	Maximum	For minimum X-dimension	For target X-dimension	For maximum X-dimension	Left	Right	
EAN-13	0.495 (0.0195")	0.660 (0.0260")	0.660 (0.0260")	34.28 (1.350")	45.70 (1.800")	45.70 (1.800")	11*X*	7*X*	1.5/10/660
EAN-8	0.495 (0.0195")	0.660 (0.0260")	0.660 (0.0260")	27.35 (1.077")	36.46 (1.435")	36.46 (1.435")	7*X*	7*X*	1.5/10/660
UPC-A	0.495 (0.0195")	0.660 (0.0260")	0.660 (0.0260")	34.28 (1.350")	45.70 (1.800")	45.70 (1.800")	9*X*	9*X*	1.5/10/660
UPC-E	0.495 (0.0195")	0.660 (0.0260")	0.660 (0.0260")	34.28 (1.350")	45.70 (1.800")	45.70 (1.800")	9*X*	7*X*	1.5/10/660
ITF-14	0.495 (0.0195")	0.495 (0.0195")	1.016 (0.0400")	31.75 (1.250")	31.75 (1.250")	31.75 (1.250")	10*X*	10*X*	1.5/10/660
GS1-128	0.495 (0.0195")	0.495 (0.0195")	1.016 (0.0400")	31.75 (1.250")	31.75 (1.250")	31.75 (1.250")	10*X*	10*X*	1.5/10/660
GS1 DataBar Omni-directional	0.495 (0.0195")	0.660 (0.0260")	0.660 (0.0260")	16.34 (0.644″)	21.78 (0.858″)	21.78 (0.858″)	NA	NA	1.5/10/660
GS1 DataBar Stacked Omni-directional	0.495 (0.0195")	0.660 (0.0260")	0.660 (0.0260")	34.16 (1.346″)	45.54 (1.794″)	45.54 (1.794″)	NA	NA	1.5/10/660
GS1 DataBar Expanded	0.495 (0.0195")	0.660 (0.0260")	0.660 (0.0260")	16.83 (0.663″)	22.44 (0.884″)	22.44 (0.884″)	NA	NA	1.5/10/660
GS1 DataBar Expanded Stacked	0.495 (0.0195")	0.660 (0.0260")	0.660 (0.0260")	35.15 (1.385″)	46.86 (1.846″)	46.86 (1.846″)	NA	NA	1.5/10/660
GS1 DataBar Stacked	0.495 (0.0195")	0.660 (0.0260")	0.660 (0.0260")	6.44 (0.254″)	8.58 (0.338″)	8.58 (0.338″)	NA	NA	1.5/10/660
GS1 DataBar Limited	0.495 (0.0195")	0.660 (0.0260")	0.660 (0.0260")	4.95 (0.195″)	6.60 (0.260″)	6.60 (0.260″)	NA	NA	1.5/10/660
GS1 DataBar Truncated	0.495 (0.0195")	0.660 (0.0260")	0.660 (0.0260")	6.44 (0.254″)	8.58 (0.338″)	8.58 (0.338″)	NA	NA	1.5/10/660

(*) UPC-E and EAN-8 symbols are designed for use on small packages. Whenever space permits, UPC-A, EAN-13, ITF-14, or GS1-128 symbols SHOULD be used in the General distribution scanning environment.

The minimum symbol height dimensions listed for all symbologies including EAN/UPC symbols do not include the human readable interpretation (or bearer bars for ITF-14 symbols). The minimum heights of EAN/UPC symbols do not include the extended bars: see section 5.2.1.4.2 for dimensions of the extended bars. Because of the operative scanning environment for EAN/UPC symbols, there is a direct relationship between the symbol's height and width. This means the minimum symbol height is tied to the minimum, target, and maximum X-dimension listed.

ITF-14 symbols with X-dimensions below 0.635 millimetre (0.0250 inch) SHOULD NOT be printed directly on corrugate with conventional (plate-based) processes. The ITF-14 symbol's bar width ratio target is 2.5:1, and the acceptable range is 2.25:1 to 3:1.

GS1-128 symbols have a maximum symbol length of 165.10 millimetres (6.500 inch), which may impact the maximum achievable X-dimension. For example, a GS1-128 symbol containing an SSCC has a maximum achievable X-dimension for 0.940 millimetre (0.0370 inch)

For GS1-128 and ITF-14, a smaller X-Dimension may be used if there is absolutely no possibility of printing the full size barcode because the trade item is physically too small; the X-Dimension SHALL NOT be less than 0.250 millimetre (0.0098 inch). For details on Barcode production and quality assessment see section 5.5.

Commented [AH2]: WR16-434 Various changes

(**)	For GS1-128 and ITF-14 symbols ~~T~~the minimum symbol height for General distribution scanning is always 31.75 millimetres (1.250 inch). The minimum symbol height dimensions ~~for ITF-14 and GS1-128 symbols~~ relate to the bar heights only (do not include human readable interpretation text or ITF-14 symbol bearer bars). If the trade item is physically too small to accommodate the minimum, for GS1-128 and ITF-14 the minimum height can be reduced to 12.70 millimetres (0.500 inch) or in case of further space constraints to no less than 5.08 millimetres (0.200 inch). For details on Barcode production and quality assessment see section 5.5. There is no maximum for the height, but if the maximum X-dimension is used, the symbol height must be equal to or greater than those listed in the Minimum Symbol Height column.
(***)	For ITF-14 symbols printed on labels with off-set, thermal, or laser print with an X-dimension 0.495 millimetre (0.0195 inch), the minimum quality specification is 1.5/10/660. For ITF-14 symbols printed directly on corrugate or labels with an X-dimension greater than or equal to 0.635 millimetre (0.0250 inch), the minimum quality specification is 0.5/20/660.

Note: See section **2.7** to ensure the correct symbol specification table is used.

5.5.2.7.5 Symbol specification table 5 – ~~trade items~~logistic units scanned in general distribution ~~that are logistics units~~

Symbol(s) specified	(*) X-dimension mm (inches)			(**) Minimum symbol height for given X mm (inches)			Quiet Zone		Minimum quality specification
	Minimum	Target	Maximum	For minimum X-dimension	For target X-dimension	For maximum X-dimension	Left	Right	
GS1-128	0.495 (0.0195")	0.495 (0.0195")	0.940 (0.0370")	31.75 (1.250")	31.75 (1.250")	31.75 (1.250")	10*X*	10*X*	1.5/10/660

(*)	If the ~~item~~ logistic unit is physically too small to accommodate the minimum X-dimension, the minimum X-dimension is 0.250 millimetre (0.0098 inch). For details on Barcode production and quality assessment see section 5.5.
(**)	The minimum symbol height indicated is for bar height only and does not include the human readable interpretation. If the ~~item~~ logistic unit is physically too small to accommodate the minimum, the minimum bar height is the greater of 15 percent of the symbol width including Quiet Zones or 12.70 millimetres (0.500 inch). If the package is physically too small to accommodate this rule, further truncation is permitted, but in no case SHALL the bar height be less than 5.08 millimetres (0.200 inch). For details on Barcode production and quality assessment see section 5.5. There is no maximum for the height, but if the maximum X-dimension is used, the symbol height must be equal to or greater than those listed in the Minimum Symbol Height column.

Note: See section **2.7** to ensure the correct symbol specification table is used.

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