



GS1 Logistic Label and Serial Shipping Container Code (SSCC)

Fact Sheet

A logistic unit is an item of any composition established for transport and/or storage which needs to be managed throughout the supply chain. The GS1 Logistic label allows users to identify logistic units uniquely so that they can be tracked and traced throughout the supply chain. The one mandatory requirement is that each logistic unit must be identified with a unique serial number, the Serial Shipping Container Code (SSCC) – much like a vehicle number plate.

The purpose of the GS1 Logistic Label is to provide information about the unit to which it is fixed, clearly and concisely. The core information on the label should be represented both in machine (barcode) and human readable form. There may be other information, which is represented in human readable form only.

Scanning the SSCC barcode on each logistic unit allows the physical movement of units to be matched with the electronic business messages that refer to them. Using the SSCC to identify individual logistic units provides the opportunity to implement a wide range of applications such as cross docking, shipment routing, and automated receiving.

A GS1 Logistic Label can be applied to a single item, or a grouping of several items made up to facilitate the operation of handling, storing and shipping. This can be:

- A carton
- A pallet
- A group of shrink-wrapped units
- A tray
- A container
- Any other similar type of packaging created for the purpose of handling, storing or shipping

Assigning a Serial Shipping Container Code (SSCC)

The SSCC is a unique, non-significant, eighteen-digit number which is assigned by the brand owner or physical builder of the logistic unit. It remains the same for the life of the logistic unit. The SSCC is encoded in a GS1-128 barcode and is represented by the Application Identifier AI (00).

GS1 Application Identifier	SSCC (Serial Shipping Container Code)																	
	Extension digit	GS1 Company Prefix										Serial reference						Check digit
00	N ₁	N ₂	N ₃	N ₄	N ₅	N ₆	N ₇	N ₈	N ₉	N ₁₀	N ₁₁	N ₁₂	N ₁₃	N ₁₄	N ₁₅	N ₁₆	N ₁₇	N ₁₈

Table 1: Structure of the SSCC



An individual SSCC must not be reassigned within one year of the shipment date from the SSCC assignor to a trading partner. However, prevailing regulatory or industry organisation specific requirements may extend this period.

How you assign an SSCC depends on the length of your allocated GS1 Company Prefix. Currently, GS1 Australia allocates GS1 Company Prefixes that vary in lengths to its membership, so it is important that you know the length of your GS1 Company Prefix when assigning SSCCs. Please note that other GS1 Member Organisations may allocate GS1 Company Prefixes of different lengths.

	AI	Ext. Digit	GS1 Company Prefix	Serial Reference	Check Digit
Seven-digit GS1 Company Prefix	00	0-9	n ₂ n ₃ n ₄ n ₅ n ₆ n ₇ n ₈	n ₉ n ₁₀ n ₁₁ n ₁₂ n ₁₃ n ₁₄ n ₁₅ n ₁₆ n ₁₇	n ₁₈
Eight-digit GS1 Company Prefix	00	0-9	n ₂ n ₃ n ₄ n ₅ n ₆ n ₇ n ₈ n ₉	n ₁₀ n ₁₁ n ₁₂ n ₁₃ n ₁₄ n ₁₅ n ₁₆ n ₁₇	n ₁₈
Nine-digit GS1 Company Prefix	00	0-9	n ₂ n ₃ n ₄ n ₅ n ₆ n ₇ n ₈ n ₉ n ₁₀	n ₁₁ n ₁₂ n ₁₃ n ₁₄ n ₁₅ n ₁₆ n ₁₇	n ₁₈
Ten-digit GS1 Company Prefix	00	0-9	n ₂ n ₃ n ₄ n ₅ n ₆ n ₇ n ₈ n ₉ n ₁₀ n ₁₁	n ₁₂ n ₁₃ n ₁₄ n ₁₅ n ₁₆ n ₁₇	n ₁₈

Table 2: Structure of the SSCC with varying GS1 Company Prefix lengths.

The Application Identifier (AI) is used to indicate that the data following is an 18-digit SSCC.

The Extension Digit is used to increase the capacity of the Serial Reference within the SSCC. It is assigned by the company that constructs the SSCC.

The GS1 Company Prefix used should belong to the brand owner or physical builder of the logistic unit. It makes the SSCC unique worldwide but does not identify the origin of the unit.

The Serial Reference is structured at the discretion of the company responsible for its assignment to uniquely identify each transport package. The method used to assign the Serial Reference is at the discretion of the company barcoding the unit.

The Check Digit is mathematically calculated to ensure that the whole number is correct. Correct calculation is essential for successful scanning of the barcode:

- A Check Digit Calculator Program which will automatically calculate the Check Digit can be obtained from the GS1 Australia website at <https://www.gs1au.org/resources/check-digit-calculator/> (Please remember to select SSCC button if you download the check digit calculator application) For manual calculation of the Check Digit refer to the [Manual Check Digit Calculation Fact Sheet](#).

Note: The AI (00) is not part of the Check Digit calculation.

GS1 Logistic Label Examples

Please find below some examples of GS1 Logistic Labels:

GRAND SUPPLIER COFFEE	
SSCC 0 0614141 1234567890	
CONTENT 00614141000418	COUNT 20
BEST BEFORE (DD.MM.YY) 28.02.21	BATCH/LOT 451214



(02)00614141000418(15)210228(10)451214(37)20



(00) 0 0614141 123456789 0

Figure 1: Example of a simple GS1 Logistic Label including trade item information.



Figure 2: Example of a GS1 Logistic Label for a logistic unit with variable measure items



Figure 3: Example of a GS1 Logistic Label for a parcel (including a GS1 DataMatrix barcode)

Note: The mandatory data carrier used for a logistics unit is GS1-128 barcode. A GS1 DataMatrix or GS1 QR code symbol MAY be included in addition to the GS1-128 symbol. For placement, X-dimensions, minimum symbol height for 2D barcodes please refer to GS1 Logistic Label Guideline and General Specifications.

Barcode Symbol Specifications

The GS1-128 barcode must be used for all information on the GS1 Logistic Label.

The number of GS1-128 barcodes may be minimised by using concatenation (stringing data elements together) wherever possible. When not possible due to constraint of label size, data can be represented in multiple barcodes.

Note: The exception is the SSCC, which is the identifier for the logistic unit and the most fundamental element of the label. Due to the larger magnification recommended for the SSCC, concatenation is not feasible on a standard-width label.



Text

There are three types of text information which can appear on a logistic label:

- **Plain Text:** text that is not encoded in the barcode but often required on a label e.g. name and address of the sender and receiver.
- **Human Readable Interpretation:** the information encoded in the barcode that is required to support manual operations and to facilitate key entry.
- **Data Titles:** the standard abbreviated descriptions of data fields used to denote the Human Readable Interpretation of data fields e.g. SERIAL is the data title of serial number.

Barcode Orientation

Barcodes shall be in picket fence orientation on logistic units, i.e. the bars and spaces shall be perpendicular to the base on which the logistic unit stands. In all cases, the SSCC shall be placed in the lowest portion of the label.

Magnification

The magnification (X-dimension) range for the GS1-128 barcode symbol containing the SSCC is 48.7% to 92.5%.

The magnification range for barcode symbols on the logistic label that do not contain the SSCC is 25% - 100%. However, if a magnification factor of less than 48.7% is used it is likely that the reading distance will be reduced.

For all symbols selecting a magnification factor at the higher end of the permissible range will always enhance the scanning reliability.

Height of Bars

The minimum bar height for the GS1-128 barcode symbols on a logistic label is 32mm. The minimum symbol height indicated is for bar height only and does not include the Human Readable Interpretation.

Quiet Zones

Barcodes shall be printed with quiet zones (or light margins) at each side. The quiet zones must be at least 10 X-dimension (10X) in width. Centred barcodes will help ensure the quiet zones are respected.

Human Readable Interpretation

To facilitate key entry, Application Identifiers should be set apart from the data using brackets. The brackets are strictly for the Human Readable Interpretation and must not be encoded in the barcode symbol.

Label Dimensions

The physical dimensions of the label are determined by the company applying the label to the logistic unit. However, the size of the label should be consistent with the information required in all sections of the label.

The A6 format (105mm x 148mm) is sufficient for most requirements and is the predominant label size used. Other sizes are usually variations that result from other information requirements or the logistic unit size. A recommended guide is that the width of the label should remain constant at 105mm, while the height of the label varies depending on information requirements.

Recommendation to Include a Barcode on Two Sides

For pallets, it is recommended that two identical logistic labels are placed on adjacent sides. If possible, one logistic label should be on one short side and a second, identical logistic label on the adjacent right-hand side.

Label Location

Cartons and Outer Cases

For cartons and outer cases, logistic labels should be placed so that the lowest edge of the bars of the GS1-128 symbol containing the SSCC is exactly 32mm from the base of the unit. Ensure that no part of the barcode symbol, including Quiet Zones (Light Margins) is closer than 19mm from any vertical edge.

If the unit is already marked with an EAN-13, UPC-A, ITF-14 or GS1-128 barcode symbol for trade item identification purposes, the logistic label must be placed so as not to obscure the pre-existing barcode symbol. The preferred location for the labels in this case is to the side of the pre-existing barcode symbol, so that a consistent horizontal location is maintained.

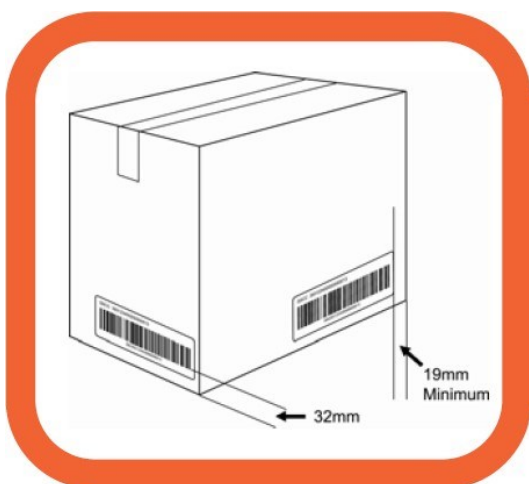


Figure 2: Preferred location GS1 Logistic Label on cartons and outer cases

Pallets and bulk items

For all types of pallets, including full pallets containing individual trade items and single trade items, barcode symbols should be placed at a height between 400mm and 800mm from the base of the unit including Quiet Zones (Light Margins). The barcode symbols should not be closer than 50mm from any vertical edge to avoid damage.

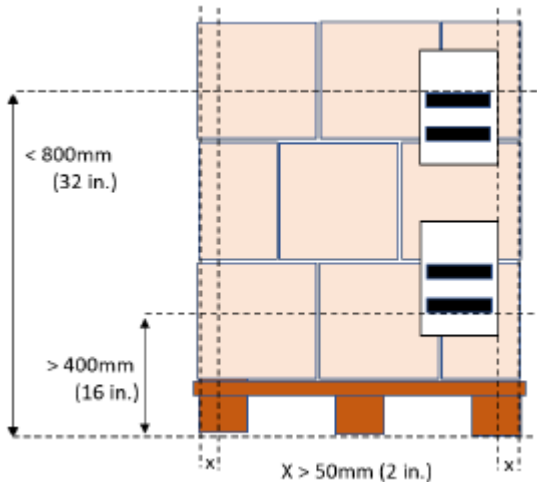


Figure 3: Preferred location on GS1 Logistic Label on pallets and bulk items

For pallets less than 400mm in height, the barcode symbols should be placed as high as possible while protecting the logistic label.

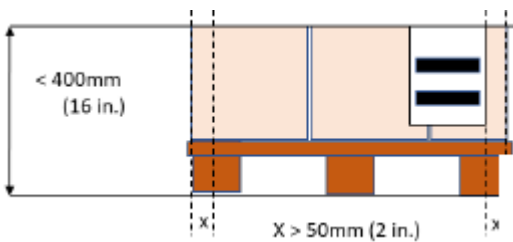


Figure 4: Preferred location GS1 Logistic Label on pallets less than 400mm in height

Please refer to [GS1 General Specification](#), Section 6 for more details on symbol placement.

More information

For more information on the normative rules and best practice recommendations based on GS1 Logistic Label implementations around the world, please refer to the [GS1 Logistic Label Guideline](#).

For a simple, easy to use solution for small businesses that need to create logistics labels, please refer to GS1 Australia's [Logistics Labelling Tool](#). Alternatively, for more advanced logistic labelling needs, GS1 Australia recommends leveraging the [GS1 Solution Provider](#) network.

Additionally, to ensure GS1 Logistic Labels scan first time, every time, all over the world, GS1 Australia recommends leveraging the [GS1 Barcode Check](#) service.