



FOODSERVICE

An Introduction to the
GS1 Serial Shipping Container Code (SSCC)

FOR FOODSERVICE



THE GLOBAL LANGUAGE
OF BUSINESS



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ABOUT GS1

GS1[®] is a neutral, not-for-profit, global organization that develops and maintains the most widely-used supply chain standards system in the world. GS1 Standards improve the efficiency, safety, and visibility of supply chains across multiple sectors. With local Member Organizations in over 110 countries, GS1 engages with communities of trading partners, industry organizations, governments, and technology providers to understand and respond to their business needs through the adoption and implementation of global standards. GS1 is driven by over a million user companies, which execute more than six billion transactions daily in 150 countries using GS1 Standards.

ABOUT GS1 US

GS1 US, a member of GS1 global, is a not-for-profit information standards organization that facilitates industry collaboration to improve supply chain visibility and efficiency through the use of GS1 Standards, the most widely used supply chain standards system in the world. Nearly 300,000 businesses in 25 industries rely on GS1 US for trading-partner collaboration that optimizes their supply chains, drives cost performance and revenue growth while also enabling regulatory compliance. They achieve these benefits through solutions based on GS1 global unique numbering and identification systems, barcodes, Electronic Product Code-based RFID, data synchronization, and electronic information exchange. GS1 US also manages the United Nations Standard Products and Services Code[®] (UNSPSC[®]).

ABOUT FOODSERVICE GS1 US STANDARDS INITIATIVE

The Foodservice GS1 US Standards Initiative serves as a strategic effort in which industry trade associations and individual companies may choose to join on a voluntary basis to assist with their company's adoption and implementation of GS1 Standards. Nothing herein should be construed as constituting or implying an agreement among foodservice companies to adopt or implement GS1 Standards. Nothing herein should be construed as constituting or implying an agreement regarding any company's prices, output, markets, or dealings with customers and suppliers. Nothing herein is inconsistent with the proposition that each participating company must and will exercise its independent business judgment on all standards adoption.

1 WHAT IS A SERIAL SHIPPING CONTAINER CODE?

The Serial Shipping Container Code (SSCC) is the GS1 identifier used to identify a logistic unit. This unique identifier is comprised of an Extension Digit, a GS1 Company Prefix, a Serial Reference, and a Check Digit.

2 WHAT IS AN SSCC USED FOR?

The SSCC is used to identify an individual logistic unit. A logistic unit can be any combination of units put together in a case or on a pallet or truck where the specific unit load needs to be managed throughout the supply chain. The SSCC enables this unit to be tracked individually, which brings benefits for order and delivery tracking and automated goods receiving. Because the SSCC provides a unique number for the delivery, it can be used as a lookup number to provide not only detailed information regarding the contents of the load but also as part of a pre-received Advance Ship Notice (ASN). We fully recognize that some entities will use the SSCC at the pallet level, but using this in conjunction with an ASN provides the greatest benefit as it allows for visibility along Critical Tracking Events (CTEs) along the supply chain.

Typically, this means that just one scan of the SSCC on a logistic unit at a receiving bay can be linked to a pre-received electronic ASN of the contents of the logistic unit to facilitate potential cost saving measures such as speedy receiving, reconciliation, and put-away processes. Alternatively, when tracking a unit in transit, the SSCC provides all the information required for accurate identification. The SSCC can be captured at any CTE, namely when a specific logistic unit is dispatched, arrives at its destination, or at any other intermediary point in the supply chain.

If a logistic unit with an SSCC is travelling through a hub and is broken down and repacked, then a new SSCC will need to be assigned to the new logistic unit. The SSCC can be used for any logistic units that require individual identification, such as couriered parcels, beer kegs, or even a whole container load. The SSCC is also useful for internal pallet or unit identification when the load is put away or moved within a warehouse or business.

SSCCs identify logistics units (pallets, shipping containers). They are a license plate for that particular shipment. When used in conjunction with an ASN, the SSCC will identify the contents of that shipping unit. Because it identifies shipment contents, the SSCC is only relevant from the time of shipment to the time of receipt. Once the logistics unit (pallet, shipping container etc.) is received, the SSCC is no longer of any value (except if the recipient is storing the SSCC in their system and need to trace which items were included in a specific SSCC ex: re-tracing in the event of cross-contamination of products).

By contrast, the GS1-128, which may be used on individual cases, continues to provide valuable information even when the inventory has been put away. The GS1-128 may contain information about production dates or expiration dates. This information continues to be relevant while the product is in inventory and until it is shipped or consumed.

IMPORTANT: The SSCC is fully compatible with ISO/IEC 15459—unique identifiers for transport units. This is often referred to as the ISO License Plate and is a prerequisite for tracking and tracing many international shipments.

3 KEY ATTRIBUTES OF THE SSCC

The SSCC will identify any logistic unit uniquely, ensuring that it is always identified correctly anywhere in the world. Combined with GS1 Standards for electronic messaging, this "license plate" facilitates simple tracking of goods from the carton level all the way up to the trailer load level. In addition, the SSCC allows reliable lookup of complex load detail, which saves having to encode long detailed consignment information on individual logistic unit labels.

The serial reference component of the SSCC provides virtually unlimited number capacity, simplifying number allocation and guaranteeing unique identification. An SSCC can be assigned by a GS1 Company Prefix licensee anywhere in the world and can be used anywhere in the world.

4 BUSINESS BENEFITS OF USING SSCCs

There are a number of benefits to using the SSCC for building a business-to-business tracking system, whether for finished goods or for raw materials. The structure of the SSCC and its assignment rules are administered by GS1®, a not-for-profit standards organization that is supported by implementation guidance, business examples, and maintenance. In addition, the SSCC:

- Uniquely identifies logistics units for tracking and identification
- Provides virtually unlimited numbering capacity
- Integrates with all GS1 supply chain processes
- Can be barcoded or encoded in EPC/RFID tags for simple scanning or reading
- Enables fast lookup of transactional data
- Facilitates simple electronic messaging between companies
- *Can be used at any stage in the supply chain for tracking*
- May specifically identify a dispatch, a journey, or an arrival either within or between companies
- Applies to the entire supply chain, from raw materials supplier to manufacturer to distributor/wholesaler to end user/retailer
- Applies to both inter-company and intra-company transactions
- Encompasses a common vendor numbering scheme that uses the GS1 Company Prefix so that the number cannot be duplicated

5 HOW IS THE SSCC FORMED?

- **APPLICATION IDENTIFIER (AI):** AI 00 to indicate an SSCC
- **EXTENSION DIGIT:** Used to increase the capacity of the Serial Reference within the SSCC
- **GS1 COMPANY PREFIX:** A globally unique number assigned to a GS1 member company
- **SERIAL REFERENCE:** The number allocated to identify a logistic unit
- **CHECK DIGIT:** A mod 10 digit used to check for input errors



The Application Identifier (00) indicates that the GS1 Application Identifier data field contains an SSCC. When printed in a barcode the correct symbology is GS1-128. It may also be encoded using an EPC tag.

Application Identifier	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 A. SSCC Numerical Structure

Note: SSCC is an 18-digit numerical number, including the Check Digit. The combined length of the Extension Digit, GS1 Company Prefix, and Serial Reference will always total 17 digits.

The following steps are used to form SSCCs:

- 1. USE THE EXTENSION DIGIT.** 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 Extension Digit ranges from 0 to 9.
- 2. USE YOUR GS1 COMPANY PREFIX.** Your GS1 Company Prefix is the globally unique number assigned to your company by GS1 US or another GS1 Member Organization. GS1 Company Prefixes are assigned to companies in varying lengths. Some GS1 US members may have a prefix license certificate that shows only a U.P.C. Company Prefix (formerly a UCC Company Prefix). A U.P.C. Company Prefix must be converted to a GS1 Company Prefix for use in the SSCC. This is accomplished by adding a zero to the front of the U.P.C. Company Prefix. The following table illustrates the conversion of a U.P.C. Company Prefix to a GS1 Company Prefix for use with SSCCs.

U.P.C. COMPANY PREFIX LENGTH	U.P.C. COMPANY PREFIX	CONVERTED TO A GS1 COMPANY PREFIX	SSCC CAPACITY
6	801234	0801234	100,000,000,000
7	8412340	08412340	10,000,000,000
8	81123400	081123400	1,000,000,000
9	832143200	0832143200	100,000,000
10	8443322000	08443322000	10,000,000
11	83332220000	083332220000	1,000,000

Table B. Converting a U.P.C. Company Prefix to a GS1 Company Prefix

- 3. CREATE THE SERIAL REFERENCE.** This number is assigned by you, the holder of the GS1 Company Prefix, one-by-one to create a globally unique SSCC. The Serial Reference length varies as a function of the GS1 Company Prefix length.

Note: The combined length of the Extension Digit, GS1 Company Prefix, and Serial Number is always 17 digits.

Hint: Assign your Serial Reference sequentially, and do not build in any intelligence into the number. The scheme that defines a particular Serial Reference range as having a set meaning today will mean nothing a short time into the future in the event your company reorganizes, buys or merges with another firm, or when another staff member takes over SSCC assignment duties.

4. CALCULATE THE CHECK DIGIT. The Check Digit is a calculated one-digit number used to ensure data integrity. To understand how this digit is calculated, refer to www.gs1us.org/checkdig.

5.1 EXAMPLES OF AN SSCC IN A GS1-128 BARCODE

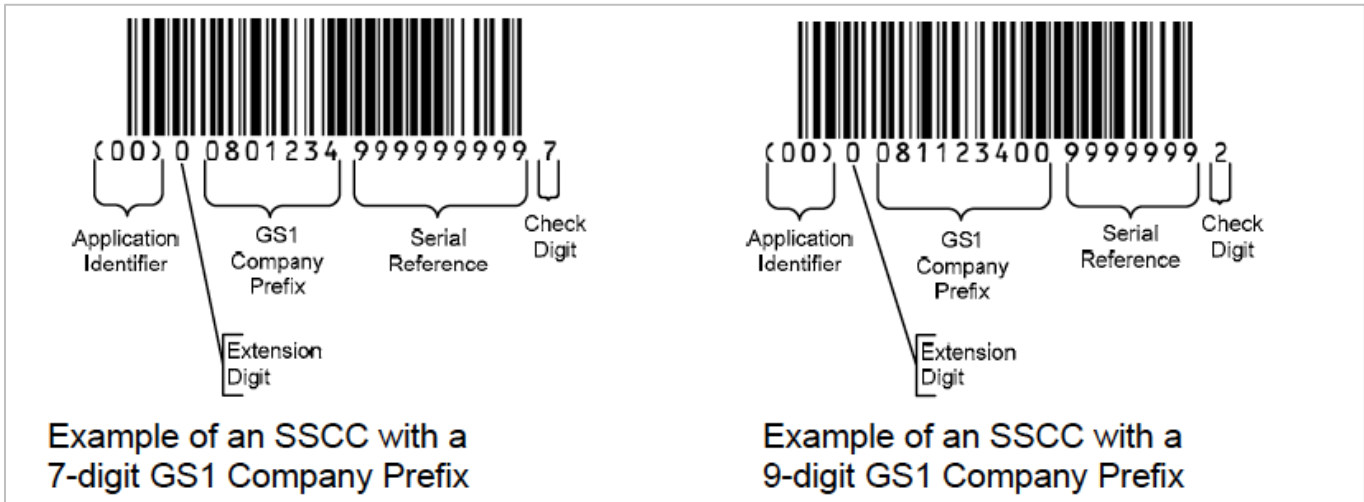


Figure 1. SSCCs Encoded in GS1-128 Barcodes

5.2 EXAMPLE OF AN SSCC ON A PALLET

Each pallet should have at least one barcode. It is recommended, however, that a pallet should contain an additional barcode on the adjacent side. This is especially helpful when the pallet is turned sideways in the truck or on the rack in the warehouse.

The SSCC should appear on the upper right half side of the pallet. Labels with barcodes should appear on the side of the pallet, from 14 to 28 inches above the surface on which the pallet stands.

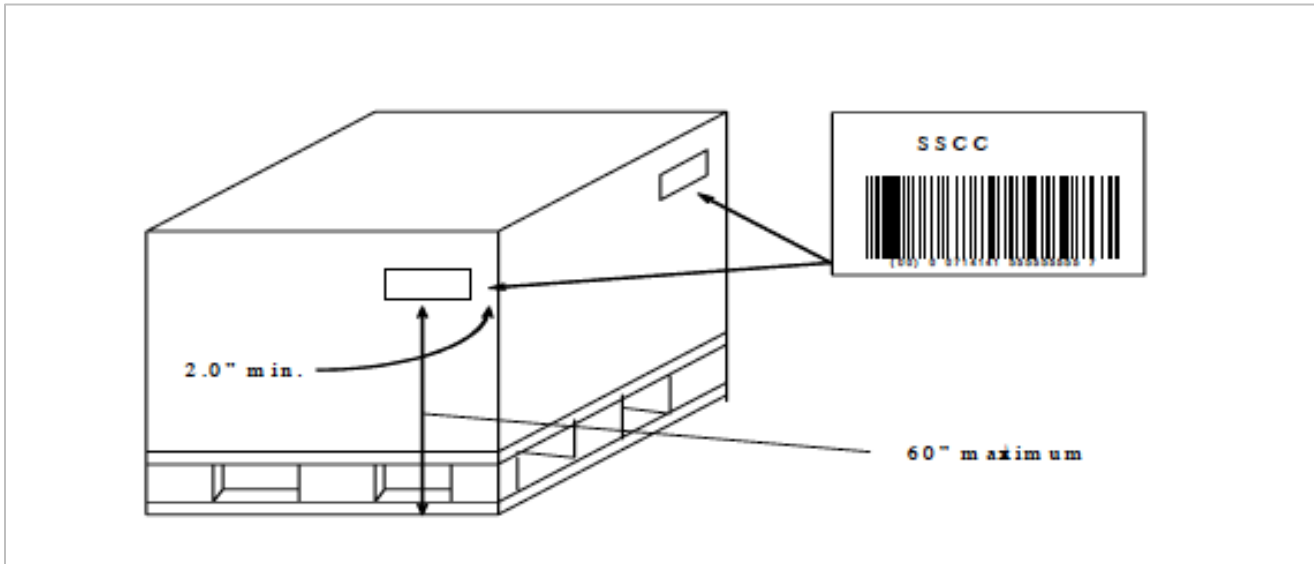


Figure 2. SSCC on a Pallet



6 FREQUENTLY ASKED QUESTIONS ABOUT THE SSCC

Does my company need another GS1 Company Prefix to use SSCCs?

No. The GS1 Company Prefix that you already have been assigned is used in the SSCC.

What are some examples of when I should apply an SSCC?

A shipping container could be a case, carton, pallet, or air cargo container of trade items. Currently the Foodservice best practice is to apply the SSCC at the shipping level (typically the pallet for Foodservice)

Should the Global Trade Item Number® (GTIN®) be included in the SSCC?

No. GTIN information is included in the Advance Ship Notice (ASN) that is sent to the receiver of the product prior to shipment. The SSCC acts as a license plate number. That number is linked to the ASN and provides access to the GTIN information.

How is an SSCC different than a GTIN?

SSCCs are distinctly different from GTINs. The SSCC acts as a license plate to track a shipment of logistics units through the supply chain. The GTIN uniquely identifies trade items (products and services).

Can the SSCC be used at the point of sale?

No. The SSCC is only used at the distribution or warehouse environment and is not a GTIN.

What is an Extension Digit?

The Extension Digit is available to the member company to increase the capacity of the serial number. It has no defined logic and can be any digit between 0 and 9.

Do I need to purchase special equipment to scan an SSCC?

The equipment you choose should have software that is compatible with the type of scanner you have selected and should be able to read the GS1-128 symbol.

How many SSCCs can I create?

With a 7-digit GS1 Company Prefix, one can assign 10 billion SSCCs (1-digit Extension Digit × 9-digit Serial Reference). With a 9-digit GS1 Company Prefix, one can assigned 100 million SSCCs (1-digit Extension Digit × 7-digit Serial Reference). That's a lot of shipments or logistics units that can be tracked!

Do I need to put more than one SSCC label on a carton or pallet?

Each logistics unit should have at least one barcode. It is recommended that a pallet should contain an additional barcode on the adjacent side.



7 ADDITIONAL RESOURCES

GS1 US offers a number of easily accessible online tools and resources that can help guide you through the GS1 Standards and processes:

Check Digit Calculator:

GS1 US provides a check digit calculator to automatically calculate check digits. The check digit calculator can be found at <http://www.gs1us.org/resources/tools-and-services/check-digit-calculator>

GS1 US Glossary:

Provides the terminology and language of the GS1 System standards to help you better understand what you are seeing and learning.

https://www.gs1us.org/gs1-us-library?Command=Core_Download&EntryId=769&method=attachment

GS1 US Product Catalog:

Includes an order form for printed publications, calibration kits and more. Partner Connections members receive a premium discount. <https://productcatalog.gs1us.org/default.aspx>

Partner Connections Solutions Center:

Provides a ready reference to education and online materials to speed your barcode and e-commerce processes. <https://members.gs1us.org/Login?returnurl=/solutions-center>

Resource Library:

Documents, videos, and other information to increase the value of standards for all trading partners in the value chain. <http://www.gs1us.org/resources/education-and-training>

FAQs:

Frequently Asked Questions about GS1 Standards, implementation, and how to get started.

<http://www.gs1us.org/get-started/im-new-to-gs1-us/faqs>

For more information about GS1 US, GSRNs, and other GS1 Standards:

- Email: info@gs1us.org
- Call: 937.435.3870
- Visit: www.gs1us.org

8 GS1 US: BRINGING THE GLOBAL TRADING COMMUNITY TOGETHER

For a supply chain to generate maximum value, it must move products from supplier to distributor to customer in a way that minimizes costs, redundancies, and waste and maximizes coordination and collaboration among trading partners. GS1 US enables companies to effectively turn their supply chains into value chains through the use of global Standards that provide a foundation and common language for companies to uniquely and globally identify, capture, and share product and location information with their trading partners.

- **IDENTIFY:** GS1 Identification Numbers uniquely distinguish all companies, products, trade items, logistic units, locations, assets, and service relations in the value chain—from manufacturer to consumer.
- **CAPTURE:** GS1 System Data Carriers in the form of barcodes can hold various amounts of data to accommodate different needs, such as batch/lot numbers and expiration dates. This additional data can be very helpful in numerous business processes in the food service and fresh food industries, to name a few examples.
- **SHARE:** GS1-enabled interoperability allows electronic commerce information, including master data, transactional data, and physical event data, to flow through the value chain between trading partners and to the consumer.

9 MOVING YOUR BUSINESS FORWARD WITH GS1 STANDARDS

Every industry has its own needs and challenges. GS1 takes a leadership role by working with industry communities to articulate, identify, resolve, and share industry issues and best practices and by enabling standards-based solutions that help companies run their businesses more successfully. Today, more than 300,000 member companies throughout in the United States employ GS1 Standards to make their value chain more visible, efficient, secure, and sustainable.

- **VISIBILITY:** GS1 Standards enable the reciprocal sharing of product information both internally and with trading partners throughout each step in the value chain. Having ready access to such comprehensive data helps companies to assure product availability, enable efficient product recoveries, and ensure customer convenience, satisfaction, and safety.
- **EFFICIENCY:** GS1 Standards dramatically increase the amount of data available for decision making, enabling companies to automate processes and optimize forecasting and inventory planning to reduce duplication and waste.
- **SECURITY:** GS1 Standards provide an accurate and standardized way to validate, access, send, and receive information with trading partners through the use of unique identification numbers. GS1 Standards protect your brand, promote safety for your customers, and help to combat counterfeiting.
- **SUSTAINABILITY:** GS1 Standards help companies build processes that are flexible, enduring, and adaptable. Electronic exchange of information is efficient and eco-friendly.



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IAPMO

In this publication, the letters "U.P.C." 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 a Uniform Plumbing Code as authorized by IAPMO.



THE GLOBAL LANGUAGE
OF BUSINESS

CORPORATE HEADQUARTERS
Princeton Pike Corporate Center
1009 Lenox Drive, Suite 202, Lawrenceville, NJ 08648 USA
T +1 937.435.3870 E info@gs1us.org W www.gs1us.org

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*Please work with your
marketing associate on
assignment of a barcode*