

# Serial Shipping Container Code (SSCC-18)

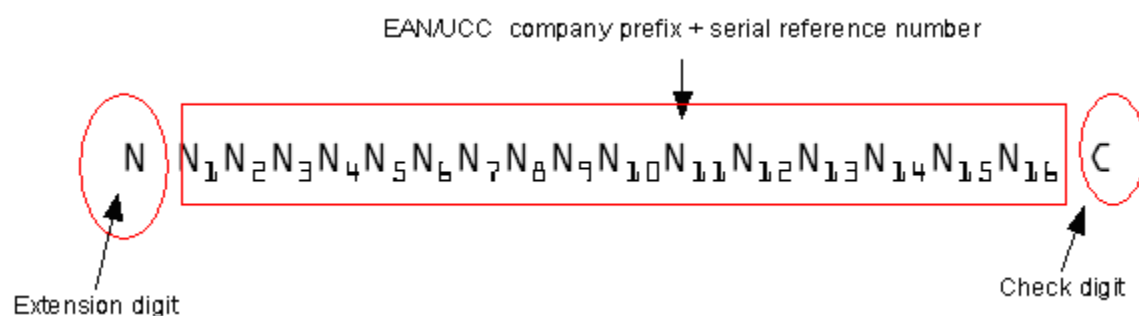
## Table of Contents

Barcode .....	1
Check Digit Calculation .....	2
Reference .....	2

The Serial Shipping Container Code (SSCC) is used throughout the supply chain as an entity identifier for item tracing and internal control. It is the only mandatory field on a GS1 logistics label.

SSCC contains 18 digits started with an extension digit and ended with a check digit. The check digit is calculated according to the GS1 mod10 algorithm (the same algorithm that calculates UPC-A/EAN-13 check digits). An online check digit calculator is provided here<sup>1</sup>.

**Figure 1. SSCC-18 number structure**



A SSCC number has the following structure:

1. The first digit is extended digit and assigned by the company. For historical reasons 0 is used to indicate that the container is a case or carton.
2. The next 16 digits are the manufacturer code, followed by the serial number of this container. The manufacturer code (or company code) is assigned by GS1 (formerly known as UCC/EAN organization). The serial number identifies this merchandise container and assigned by the manufacturer. The manufacturer should not reuse the serial number within a certain time frame, for example, 1 year.  
The company code normally comprises 7 or 8 digits. Therefore, the serial number can be 9 or 8 digits.
3. The SSCC-18 check digit. Do not confuse it with Code128 check digit. The check digit is to ensure that the data is correctly entered. It is part of the data encoded into the barcode. A receiving system is required to validate this check digit, so you should get it correct at the first place.

For each carton/pallet tracked, a unique SSCC is required. An ASN (Advance Ship Notice) may contain multiple SSCCs.

## Barcode

<sup>1</sup> <http://www.morovia.com/education/utility/upc-ean.asp>

The SSCC is usually coded with GS1-128 symbology. The Application Identifier (AI) for this type of barcodes is 00. Below shows an example SSCC-18 barcode (created with Monterey Barcode Creator<sup>2</sup> 3.3).

**Figure 2. An example SSCC-18 barcode**



The spaces in human readable text are not required but highly recommended because they help to identify the different parts of the number. In the example above, the 18 digits are divided into four parts:

- 0 is the package type - a carton.
- 0718908 is the manufacturer code assigned by GS1.
- The following part is the serial number for this merchandise container (562723189).
- At the end of this number is the check digit (6).

The barcode can also be created with Code128 Fontware<sup>3</sup>. If you want to add SSCC-18 printing functionality into your program, consider Morovia Barcode ActiveX<sup>4</sup>.

SSCC barcode is the most critical part in a GS1-compliant shipping container label<sup>5</sup>. A shipping container label may contain other barcodes and text information, such as postal code, store # and PO number. You might want to read this article<sup>6</sup> for more information on creating a shipping container label.

## Check Digit Calculation

SSCC check digits are calculated the same way as UPC-A/EAN-13 check digits. Here are the steps to calculate SSCC-18 check digits:

- From the right to left, start with odd position, assign the odd/even position to each digit.
- Sum all digits in odd position and multiply the result by 3.
- Sum all digits in even position.
- Sum the results of step 3 and step 4.
- Divide the result of step 4 by 10. The check digit is the number which adds the remainder to 10.

A web-based free utility to calculate SSCC check digit can be found here<sup>7</sup>.

## Reference

- BarcodeSchool: Creating Shipping Container Labels with Monterey Barcode Creator<sup>8</sup>

<sup>2</sup> <http://www.morovia.com/label/barcode-creator.asp>

<sup>3</sup> <http://www.morovia.com/font/code128.asp>

<sup>4</sup> <http://www.morovia.com/activex/barcode-activex.asp>

<sup>5</sup> <http://www.barcodeschool.com/wp-content/uploads/2009/02/shipping-label-barcodes.png>

<sup>6</sup> <http://www.barcodeschool.com/2009/02/creating-shipping-labels-with-monterey-barcode-creator/>

<sup>7</sup> <http://www.morovia.com/education/utility/upc-ean.asp>