Global Trade Item Number (GTIN) Creation
Proper Use of Company Prefix

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Preface

This document is designed for participants who have been issued a company prefix for the creation of GTINs. Within the following sections, separate identification practices for GTIN12s and GTIN13s will be identified. Please note that the separation is solely for the ease of understanding and construction, as both GTIN12 and GTIN13 should work simultaneously in any environment based on GS1 Standards.

1. So you have a prefix…..

Congratulations! You are the proud controller of a GS1 company prefix.

There are a few things you need to identify before continuing with this document:

1. What type of GTINs can your prefix construct (i.e.GTIN12 or GTIN13)?

2. Are there limitations due to type selection that you must be made aware of?

2. Identification of Prefix type

There are two types of prefixes available in Canada, GTIN12 and GTIN13.

GTIN12 prefixes are generally reserved for organizations that are/will produce items that pass at retail point of sale.

GTIN13 prefixes are issued to organizations that have identified themselves as producing or limiting their products for circulation within regulated healthcare environments.

You can also identify the prefix type by looking at the annual GS1 Canada Licence Certificate. The certificate will identify if the prefix assigned can produce GTIN12 or GTIN13, as shown below.

Once you have identified the correct GTIN type, please skip to the appropriate section.

3. GTIN12 type prefix

The GTIN12 type prefix is the basic prefix used for items that will pass at a retail point of sale.

Simply put the construction method is as follows:

Company prefix + Item reference number + Check digit = 12 characters

The company prefix you were issued may be of variable length. A Variable Length Company Prefix (VLCP) is currently being used, as organizations with different capacity requirements are identified. The following table illustrates how the number of digits in the Company Prefix affects the maximum number of products or locations a company can assign GTINs or GLNs to, respectively.

Company Prefix (# of digits)	Max. # of Product or Locations
6	100,000
7	10,000
8	1,000
9	100
10	10

Example:

Your company prefix is 0 12345, these first digits MUST always be the first digits of your GTIN12.

Position	1	2	3	4	5	6	7	8	9	10	11	12
GTIN	0	1	2	3	4	5						

You have a six (6) digit prefix, this means you have 5 slots (position 7 thru 11) for the product identifier, which gives you 100 000 unique item reference numbers (from 00000 to 99999)

Note to user: GS1 Canada STRONGLY recommends that you do <u>NOT</u> build any intelligence into the item reference number.

For this portion, you may choose any 5 digits from your block of reserved numbers.

NOTE: Remember, no two different products can be identified with the same GTIN.

The last digit is the check digit.

Position	1	2	3	4	5	6	7	8	9	10	11	12
GTIN	0	1	2	3	4	5	0	0	0	0	1	0

This number is the result of a mathematical equation that comprises the eleven preceding numbers of the GTIN. To calculate this number, you can use the following link:
http://www.gs1.org/barcodes/support/check_digit_calculator

Note to user: Most bar code creation software will have a check digit calculator incorporated into its design.

Congratulations! You have just created your first GTIN12.

4. GTIN13 type prefix

The GTIN13 type prefix is the basic prefix used for items that will be used in a healthcare setting.

Simply put the construction method is as follows:

Company prefix + Item reference number + Check digit = 13 characters

The company prefix you were issued may be of variable length.
A Variable Length Company Prefix (VLCP) is currently being used as organizations with different capacity requirements are identified. The following table illustrates how the number of digits in the Company Prefix affects the maximum number of products or locations a company can assign GTINs or GLNs to, respectively.

Company Prefix (# of digits)	Max. # of Product or Locations
7	100,000
8	10,000
9	1,000
10	100

11	10

Your company prefix is 7541230, these first digits MUST always be the first digits of your GTIN13.
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Position	1	2	3	4	5	6	7	8	9	10	11	12	13
GTIN	7	5	4	1	2	3	0						

You have a 7 digit prefix, this means you have 5 slots (position 8 thru 12) for the product identifier, which gives you 100 000 unique item reference numbers (from 00000 to 99999)

Note to user: GS1 Canada STRONGLY recommends that you do <u>NOT</u> build any intelligence into the item reference number.

For this portion, you may choose any 5 digits from your block of reserved numbers.
NOTE: Remember, no 2 different products can be identified with the same GTIN.

The last digit is the check digit.

Position	1	2	3	4	5	6	7	8	9	10	11	12	13
GTIN	7	5	4	1	2	3	0	0	0	0	0	1	7

This number is the result of a mathematical equation that comprises the twelve preceding numbers of the GTIN. To calculate this number you can use the following link:
http://www.gs1.org/barcodes/support/check_digit_calculator

Note to user: Most bar code creation software will have a check digit calculator incorporated into its design.

Congratulations! You have just created your first GTIN13.

5. Symbology Selection

Once you have successfully created a GTIN you must then select a symbology to carry and exchange the information. Different industries as well as different functions within an industry may require specific symbologies based on information requirements.

Some of these requirements may include the need for:

- Additional transactional data

- Specific symbology type

5.1   Symbology based on application/industry

Identified below, is a quick reference table for symbol types and their areas of application.

For additional references, please refer to the GS1 General Specifications Section 5.5.2.6 Operative Scanning Environments for GS1 System Symbols.

	Retail POS	Logistic	Healthcare	Marketing
UPC/EAN	Yes	Yes[1]	Yes[1]	Yes[1]
DataBar	Yes[2]	Yes	Yes[3]	Yes[2]
ITF	No	Yes	Yes (logistic)	No
GS1-128	No	Yes	Yes	No
QR code	No	No	No	Yes
DataMatrix	No	No	Yes[4]	Yes

1 - Limited application of types for these symbologies:

2 - POS: Omni directional; Stacked Omni-directional; Expanded and Expanded stacked
Coupons: Expanded and Expanded stacked

3 - Approved for use, but not the recommended symbology. Use only when physical characteristics are required.

4 - Symbology recommended for healthcare items (non-logistic/non-retail).

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