

**SINGAPORE STANDARD**

# **Specification for GS1 bar coding system**

**– Part 1 : GS1 – An unambiguous international  
product identification system**

(ISO title : Information technology – Automatic identification and data capture  
techniques – EAN/UPC bar code symbology specification)



Published by

**Enterprise**  
**Singapore**

**SS 362 : Part 1 : 2013**  
(ISO/IEC 15420 : 2009)  
(ICS 35.040.50)

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**Specification for GS1 bar coding system**

– Part 1 : GS1 – An unambiguous international product identification system

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ISBN 978-981-4353-68-7

This Singapore Standard was approved by Information Technology Standards Committee on behalf of the Singapore Standards Council on 22 February 2013.

First published, 1993  
First revision, 2004  
Second revision, 2013

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## **National Foreword**

This Singapore Standard was prepared by the Technical Committee on Automatic Data Capture under the direction of the Information Technology Standards Committee.

It is an identical adoption of ISO/IEC 15420 : 2009. The last paragraph of Clause 4.4 is revised in accordance to the Draft Technical Corrigendum to ISO/IEC 15420, August 2012. An informative annex that does not alter the provisions of the International Standard, Annex ZA, has been added to illustrate a comprehensive way of constructing GS1-8, GS1-12, GS1-13 and GS1-14 data structures. It also illustrates the position of the Check Digit and that of Indicator. Such information is vital to users especially for those who are implementing this Singapore Standard for the first time.

Attention is drawn to the following:

1. Whenever the words "International Standard" appear referring to this standard, they should be read as "Singapore Standard".
2. The comma has been used throughout as a decimal marker whereas in Singapore Standards it is a practice to use a full point on the baseline as the decimal marker.

The revised SS 362 comprises the following two parts under the general title, 'Specification for GS1 bar coding system':

Part 1: GS1 – An unambiguous international product identification system (to be used in conjunction with Part 2)

Part 2: GS1 code 128 and application identifier standard

In preparing this standard, reference was made of the following documents:

- Singapore Article Number Council Operating Manual – 1991;
- EAN Australia User Manual EAN.UCC Numbering and Bar Coding Version 1, 2002;
- GS1 General Specifications, Version February 2011;
- GS1 Global User Manual April 2011.

Acknowledgement is made for the use of information from the above publications.

SS 362 serves three major purposes:

- Infrastructure for GS1 bar code system management;
- Framework for national bar code standards;
- Basis for GS1 certification.

The administration of the numbering system by GS1 in Brussels and GS1 Singapore ensures that identification codes assigned to particular items are unique worldwide and are defined in a consistent way.

The major benefit for the users of the GS1 system is the availability of uniquely defined identification codes for use in their trading transactions. The GS1 bar code symbols are exclusively reserved for encoding identification numbers. The use of the symbology is restricted and subject to compliance with rules and registration procedures of the GS1 in Brussels and the GS1 Singapore. Refer to Annex C for an overview of the GS1 system.

GS1 Singapore is the national body that formulates and implements policies relating to the GS1 bar coding system in Singapore.

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. Enterprise Singapore shall not be held responsible for identifying any or all of such patent rights.

**NOTE**

1. *Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions.*
2. *An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR.*
3. *Compliance with a SS or TR does not exempt users from any legal obligations.*



## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 15420 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

This second edition cancels and replaces the first edition (ISO/IEC 15420:2000), which has been technically revised.

## Introduction

The technology of bar coding is based on the recognition of patterns encoded in bars and spaces of defined dimensions. There are numerous methods of encoding information in bar code form, known as symbologies. EAN/UPC is one such symbology. The rules defining the translation of characters into bar and space patterns, and other essential features of each symbology, are known as the symbology specification.

This International Standard serves as a normative reference in the “GS1 General Specifications”. The administration of the numbering system by GS1 ensures that identification codes assigned to particular items are unique world-wide and are defined in a consistent way. The major benefit for the users of the GS1 system is the availability of uniquely defined identification codes for use in their trading transactions. Annex C gives an overview of the GS1 system.

NOTE GS1 is the worldwide association encompassing the organizations formerly known as EAN International and Uniform Code Council (UCC).

Manufacturers of bar code equipment and users of bar code technology require publicly available standard symbology specifications to which they can refer when developing equipment and software.

# Information technology — Automatic identification and data capture techniques — EAN/UPC bar code symbology specification

## 1 Scope

This International Standard specifies the requirements for the bar code symbology known as EAN/UPC. It specifies EAN/UPC symbology characteristics, data character encodation, dimensions, tolerances, decoding algorithms and parameters to be defined by applications. It specifies the Symbology Identifier prefix strings for EAN/UPC symbols.

Data content and the rules governing the use of this symbology are outside the scope of this International Standard; they are defined in the GS1 General Specifications (see bibliography).

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 646:1991, *Information technology — ISO 7-bit coded character set for information interchange*

ISO/IEC 15416, *Information technology — Automatic identification and data capture techniques — Bar code print quality test specification — Linear symbols*

ISO/IEC 19762-1, *Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary — Part 1: General terms relating to AIDC*

ISO/IEC 19762-2, *Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary — Part 2: Optically readable media (ORM)*