



**International
Standard**

ISO/IEC 15420

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

*Technologies de l'information — Techniques automatiques
d'identification et de capture des données — Spécification de
symbologie de code à barres EAN/UPC*

**Third edition
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

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

This third edition cancels and replaces the second edition (ISO/IEC 15420:2009), which has been technically revised.

The main changes are as follows:

- terminology and dimensions have been updated to align with latest GS1 General Specifications;
- clarification on what is defined in this document compared to an application standard has been added;
- example barcodes have been revised to use GS1 company prefixes reserved for examples;
- verification lighting has been changed from 670 nm to 660 nm to align with GS1 General Specifications.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

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 document is intended to be used alongside the GS1 General Specifications. The administration of the numbering system by GS1 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 system¹⁾ 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.

1) The GS1 system are specifications, standards, and guidelines administered by GS1.

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

1 Scope

This document specifies the requirements for the bar code symbology known as EAN/UPC. This document 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 document; they are defined in GS1 General Specifications.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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, *Information technology — ISO 7-bit coded character set for information interchange*

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

ISO/IEC 19762, *Information technology — Automatic identification and data capture (AIDC) techniques — Vocabulary*

GS1 General Specifications (GS1, Brussels, Belgium)²⁾

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19762 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 auxiliary pattern

pattern of bars and spaces representing non-data components of the symbol

EXAMPLE Guard patterns and inter-character delineators.

3.2 GTIN

Global Trade Item Number

GS1 identification key that is used for the unique identification of trade items worldwide and which may be 8, 12, 13 or 14 digits in length

2) Available at www.gs1.org.