

EPC SGTIN-96

A technical description from Brian Green, International ISBN Agency

24 June 2009

1. Introduction

The following is a technical description of the SGTIN-96 structure for RFID tagging at the item-level. For a broad overview of RFID use in the book industry, see the document entitled "[Radio Frequency Identification: A Status Report](#)" (dated July 7, 2009).

2. SGTIN-96

a. Code assigned by publisher

The book trade requires the RFID tag to identify an individual copy of a book or an individual pack of books. The preferred way of doing this is by a combination of ISBN and serial number. Since the ISBN is a GTIN, it can be encoded into the EPC SGTIN-96 (96 bit Serialized Global Trade Item Number) and be totally compliant with this EPC tag.

Header	Filter value	Partition	Company prefix	Object class	Serial number
#of bits	#of bits	#of bits	#of bits	#of bits	#of bits
8	3	3	20-40	24-4	38
SGTIN-96	(e.g. Retail consumer trade item)	Indicates length of company prefix	ISBN Prefix + ISBN Registration Group + ISBN Registrant Encodes 6 to 12 decimal digits	Indicator Digit (1 st digit of GTIN-14) + ISBN Publication Encodes 7 to 1 decimal digits	Serial number of this ISBN Capacity: 274,877,906,944

This solution can be used immediately and is totally compatible with current EPC standards. A draft ISBN/EPC translation worksheet from GS1 is attached and the full specification of the SGTIN-96 with codelists can be found on page 29 of the *EPCglobal Tag Data Standards Version 1.4*

http://www.epcglobalinc.org/standards/tds/tds_1_4-standard-20080611.pdf

GS1 have provided the following comment:

The ISBN Prefix + Registration group + Registrant shall be used as the EPC manager and the number shall be registered with GS1 EPCglobal as the EPC manager number (normal fees being applied as determined by the local GS1 Member Organisation).

b. Code assigned by third party

In order to allow third parties such as wholesalers and bookstores to assign unique EPC codes to their RFID tags, it will be necessary to uniquely identify each of these organizations (“commissioners”) assigning EPC codes. This requirement has been presented as a change request to the GS1 Architecture Group who will investigate some alternative ways of doing this and come back with a proposed solution within 3 – 6 months. Since the book industry is not alone in having this requirement, the Architecture Group will be looking at generic solutions that will become part of the EPC standard and enable users to take advantage of other EPC data sharing standards.

Translating a ISBN to an EPC Translation Worksheet

ISBN example:

EPC Translation:

International Standard Book Number (ISBN)

ISBN 978-81-7525-766-5



9	7	8	= EAN Company Prefix	
8	1	= Group		
7	5	2	5	= Publisher
7	6	6	= Title	
5	= Check Digit			

Pure Identity URI: urn:epc:id:sgtin:978817525.0766.999999999999

EPC (decimal representation)

4	8	= Header for SGTIN
1	= Filter value for Retail Consumer Trade Item	
3	= Partition value to identify length of EPC Manager Number	

Note: Partition value changes based on length of EPC Manager Number

9	7	8	8	1	7	5	2	5	= EPC Manager Number			
0	7	6	6	= Indicator digit + Item reference								
9	9	9	9	9	9	9	9	9	9	9	9	= Serial #

EPC tag URI: <urn:epc:tag:sgtin-96.1.978817525.0766.999999999999>