

BPI Guidelines on Bar Coding

Bar coding is commonplace in the record industry and benefits record companies, retailers and distributors by simplifying the process of stocktaking, reordering and delivery and easing the collection of sales data.

The weekly industry charts are compiled using electronically recorded sales data. BPI's bar coding information explains how to compile bar codes in accordance with industry guidelines.

The Global Trade Item Number

Each EAN-13 (or UPC-A) symbol assigned to a product is unique and different from those assigned to any other music product, or any other retail product. This is ensured by the structure of the global trade item number.

The Benefits of Bar Coding

Bar coding in the record industry is now commonplace. Retailers, record companies, distributors and wholesalers all enjoy the benefits it has brought to their businesses. Re-ordering, stocktaking and deliveries have become increasingly efficient and sales data is used in the weekly industry charts compiled by Millward Brown.

High quality bar code production is therefore essential to efficient trading and failures within the supply chain will cause disruption resulting in lost sales.

The Basics of Bar Coding

The GS1 system is in use worldwide and enables users to identify their products with unique global trade item numbers (GTIN) shown as bar codes. In the UK most users have GTIN-13 numbers shown in EAN-13 symbols. In North America they use GTIN-12 numbers shown in UPC-A symbols.

Equipment designed to scan the symbol can also read the UPC so equipment used in the UK can scan products marked with either bar code. Each country has a bar coding authority to develop and administer numbering. Companies operating in more than one country need only register in the country of their choice, but may wish to join each national body to keep abreast of local developments. The UK authority is GS1 UK whose contact details are given below.

1. The first digits, the company prefix number, are allocated by GS1 UK to the company marketing or manufacturing the product. Numbers issued by GS1 UK start with 50. The length of the number will be determined by GS1 UK, taking into account each company's requirements.

5012345
50123456
50123456



2. The following digits are allocated by the record company to a particular recording. If it is the company's first release it may wish to use 0001, 001 or 01 as a logical start. The bar code should now comprise 11 numbers.

50123450001
50123456001
50123456701



3. The next digit is the format code, which distinguishes between different versions of the same recording such as CD, cassette, DVD or 7" and 12" singles. The codes given on page 4 are recommendations and are not compulsory.

501234500012
501234560012
501234567012



Individual companies may use codes to suit their own numbering systems, but consistency of application is important.

4. The last digit is a check digit to make sure the bar code has been composed correctly. See below for calculating the check digit.

5012345000121
 5012345600123
 5012345670126



Getting the Bar code right

Following proper bar coding procedures ensures that all sales are properly recorded, products are re-ordered promptly and distribution is dealt with efficiently.

Here are five important points that should be an integral part of your product planning:

Correct number

Make sure that the global trade item number (GTIN) beneath the bar code is the right one for the title and the format.

Mismatches between the code on the product and on the chart database can result in sales being recorded against the wrong title. The procedure for calculating the check digit is presented below.

Calculating the check digit

Procedure	Example
1 Enter the basic digits of the EAN-13 code (ie the first 12 digits without the check digit).	5 0 1 2 3 4 5 0 0 0 1 2
2 Enter the constant weighting factors for each position in the code.	1 3 1 3 1 3 1 3 1 3 1 3
3 Multiply each digit by its associated weighting factor.	5 0 1 6 3 12 5 0 0 0 1 6
4 Sum the results of the multiplications.	5 + 0 + 1 + 6 + 3 + 12 + 5 + 0 + 0 + 0 + 1 + 6 = 39
5 The check digit is the smallest that needs to be added to the answer to reach a multiple of 10. In this example, the check digit therefore equals 1. If the answer is a multiple of 10, the check digit equals 0.	
6 Produce the complete EAN-13.	5 0 1 2 3 4 5 0 0 0 1 2 1

The [GS1 UK website](#) includes a useful section for calculating the check digit.

Bar Code Size, Height and Width

This is of primary importance and is vital for reliable, first time scanning. Smaller symbols require the use of higher quality printing processes.

The nominal size of an EAN-13 or UPC-A bar code is 25.93mm in height and 37.29mm wide.

This symbol size must not be reduced below 80%.

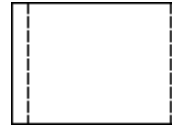
The illustrations (below) show the size of the symbol at 80% and 100% magnification. If the width is less, the symbol may be more difficult to print accurately and to scan. Similarly, the shorter the bar code, the more difficult it becomes to scan.

Bar codes should not be shortened in height (truncated) unless absolutely necessary.

Numbers

The numbers below the symbol should be 2.75mm in height at 100%, thus being easily readable.

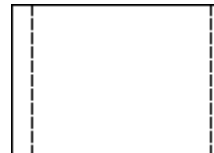
Magnification factor 0.80



Light Margins

Each bar code symbol must be printed with sufficient clear area at the left and right of the symbol - a minimum of 4mm is normally acceptable, but 5mm at each side is preferable. The light margin is vital to enable the scanner to identify the start and end of the symbol, thus distinguishing it from other printing. GS1 UK now recommends using a light margin indicator with the EAN-13 symbol. This is a symbol placed in the right hand margin. Light margin infringement is one of the main reasons for symbols not scanning properly.

Magnification factor 1.00



Location

Locate the symbol so that scanning can be an uninterrupted process.

Place the symbol away from edges, creases and particularly away from the gap at the back of some cassette cases. Never put the bar code on the spine of a cassette or CD.

The security systems used by some retailers make it difficult to read bar codes that are located towards the corners of CD cases. This can be avoided by centering the symbol from left to right (from top to bottom is unimportant).

If the gap on a cassette case covers any part of the bar code (right), it will distort the scanned image of the symbol and may render it unscannable.

Bar code quality

Retail scanning equipment is becoming more sophisticated and the print quality of bar code symbols is now a very important issue. It is advisable to use a film master as the original artwork of the symbol, and high resolution printing. The printer should be aware that impression pressure should not cause any unexpected spread of bars as the symbol would then become unscannable.

The printer must therefore carry out printability tests to determine how far the ink spreads when applied to the chosen packaging materials. Whenever possible, use a printer who understands the GS1 UK standards for bar code printing and who has bar code verification equipment to check before print production and during the production run.



Bar code colour

One of the best colour combinations is black bars on a white background, but it is acceptable to use a number of other combinations.

The bars must use a high black, blue or green content, with the background white, red or yellow. Avoid metallic colours because of their unusual reflectance properties. It is unwise to use the human eye to judge the contrast in the symbol, because the scanner uses a red light to read the symbol. Colours should be pure and not printed using the four colour process.

Contact GS1 UK



GS1 UK can offer advice and assistance on all aspects of bar coding. There is a membership fee to be paid upon joining. After becoming a member, you will be given a company prefix number, which forms the first part of the bar code.

For further details refer to the GS1 General Specifications which are available from the GS1 UK website, at <http://www.gs1uk.org/>.

GS1 UK
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W: www.gs1uk.org

or read 'Bar Coding – Getting It Right', also available from GS1 UK.

Choose UPC or EAN-13 bar codes

It is still recommended that companies exporting to the USA should use the UPC symbol as some American retailers have not upgraded their systems to deal with the 13 digit EAN code.

If a UPC symbol is required for a small quantity of products, it may be more economical to use auxiliary self-adhesive labels which can be supplied for over-sticking EAN-13 symbols.

Allocate the next digits

This identifies the recording in question (see point 2 above)

Allocate the relevant format code

These distinguish between different versions of the same recording and have been widely adopted within the UK music industry.

Digit / Format 1 LP 2 CD (album or single) 3 MiniDisc (album or single) 4 Cassette (album or single) 6 12" single 7 7" single 0 Miscellaneous (shaped discs, picture discs etc) Companies are free to make their own allocation, but they should be consistent. Numbers 5 and 8 are not generally used though of course they can be should circumstances require, for example an unusual number of different formats. Some companies also use number 1 to represent 12" vinyl, whether a 12" single or LP. Number 9 is used by companies releasing films on DVD. Some companies use the number 5 for digital releases with no physical equivalent, otherwise the same barcode can be allocated to a digital bundle as that of its physical counterpart.

The check digit

The check digit allows the scanning equipment to check that no numbers in the bar code have been misread. Ascertain whether the printer or company handling the artwork and packaging can calculate and validate this and produce the bar code.

If not, GS1 UK will provide you with a list of companies who will be able to supply you with a film master of the bar code to be used.

Ensure the symbol is produced properly

Follow the advice on pages two and three of the guide to achieve a quality symbol. It is better to use a film master as the artwork for the symbol. Take advice from the printer about magnification and other technical features.

Locate the symbol correctly



Follow the guidelines as detailed above. This is very important - poor symbol location can result in lost sales.

The finished product

Ensure that all your key trading partners have been notified of the global trade item numbers and the products they identify in time for them to be added to databases and internal systems.

It is also worthwhile verifying that the bar code is scannable at all stages of the supply chain.

Send two copies to Millward Brown, who can then add the title to their database.

Sales will then be recorded for the purpose of compiling the national charts

The copies are then passed onto the National Sound Archive (a division of the British Library) for public reference. For purposes of chart data collection, it is required that copies are sent to Millward Brown at least a week before release.

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