

Bossing the basics: Barcoding for retail



Get a GS1 Company Prefix (GCP)

The number that sits beneath a barcode is called a Global Trade Item Number (GTIN). This is a globally unique identifier for your product. The barcode is just a machine-readable version of this number.

The very first step in creating barcodes for your products is to join your local [GS1 Member Organisation](#) and go about getting the GCP which you need to create these GTINs.

That GCP will be a unique number assigned to your company in the GS1 database. It's a number made up of two parts – a Country Prefix and a company code – and it forms the first part of your GTINs.



GS1 Prefix

The first three digits code for the product's country of origin. In this example, 500-509 means the product has been licensed by GS1's UK arm.



GS1 Company Prefix (GCP)

Beginning with the GS1 Prefix, this number is the unique identifier for your company.



Item reference

This number is added to your GCP to identify different product types. Usually this is three digits in length.



Check digit

The last digit of a GTIN is a check digit which makes sure the number is correctly composed. It is calculated by the Modulo 10 algorithm.

Assigning your GTINs

Once you have your GCP, you will be able to create a certain number of GTINs, based on details you provided in your application. Depending on the scope of your license, this is typically either 1,000, 10,000 or 100,000 GTINs.

However, if you ever run out of GTINs, you can just apply for another GCP which will provide an additional batch of numbers.

The GTINs you assign to your products should be stored and managed (alongside key product data attributes to show which product you've given which number to) in [My Numberbank](#), which is available through your GS1 UK member portal.

			
GTIN-8	GTIN-12	GTIN-13	GTIN-14
Used for small products scanned at point-of-sale	Typically assigned to products sold in the US	The most common GTIN type	Groupings of trade items not intended for point-of-sale scanning

Top tip

Your trading partners might refer to GTINs as EANs or UPCs. Don't worry, you're all talking about the same thing!

Selecting which barcode you need

There are a number of different forms of barcode that you can use, depending on the specific situation they'll be used in.

Below are the most common symbols:

And here's when to use them:

EAN / UPC



GS1-128



ITF-14



Type	Usage
EAN-13	This is the most commonly seen barcode. It can be read at point of sale all over the world, providing you follow GS1 best practice.
UPC-A	This barcode is used by companies in the US and can also be scanned at POS globally.
GS1-128	If you need to encode variable information, such as best before or expiry dates, or batch numbers on your product, you'd use this one. So, it's great for cases of short-shelf-life products and pallets. However, it can't be scanned at point of sale.
ITF-14	This one can be used on traded units, and is great for printing on cardboard when no extra information is required.

How to get your barcodes

If you have a design agency or packaging company producing labels for you, ask them if they can generate GS1 barcode images as part of the service. Lots of companies already have the software to produce the appropriate barcodes.

If not, and you need one of the point-of-sale symbols (EAN-13, UPC-A, EAN-8), you'll be able to download an image from the [Barcode Image Generator](#) in the member area of the website. For new GS1 UK members, the first three barcode images are free, and more are available for a fee.

Having the barcode printed as part of your packaging or labels is the most efficient solution, but you can also have barcodes printed on stickers to apply to the final product. Printing barcodes on demand is also necessary when including variable information, such as expiry dates, in GS1-128 barcodes for traded units.

If you are obtaining your own barcode software or printers, just make sure they're capable of producing compliant GS1 barcodes. You can use our [Partner Finder](#) to find GS1 UK-Approved hardware and software.

Barcode Image Generator



If you need one of the point-of-sale symbols (EAN-13, UPC-A, EAN-8), you'll be able to download an image via the [Barcode Image Generator](#) in My Numberbank, located in the member area of the GS1 UK website.

Simply click "create" next to the appropriate product, and you'll be presented some options to tailor your barcode, including its size and bar-width reduction. You'll also have a choice of output options. There's also a video tutorial which will help you make the right choice.

For new GS1 UK members the first three barcode images are free, and more are available for a fee.

Partner finder



Our partners play a leading role in maintaining and adopting GS1 standards, so that they are able to support our members to grow, innovate and thrive.





Whether you're looking to use GS1 unique identifiers to develop your supply chain and make your products and services safer, or to find the best scanning and printing hardware, our partners' extensive knowledge can help to support your business needs.

You can access our [partner finder](#) here.

The success checklist

So, those are the basic pillars behind the creation of barcodes, now you need a standardised and reproducible procedure that you can follow to eliminate costly errors made in the barcoding process.

1	Correct GTIN	Make sure that you have used the right GTIN from your GS1 UK Numberbank for the product in question.
2	The right barcode	Double check that you have selected the correct barcode for the required scanning environment.
3	Sensible location	Ensure your barcode is situated in an easy place for scanning – the lower right quadrant of the back of the package is the most common barcode location. Try to avoid the bottom of the product.
4	Correct orientation	For point of sale items, it doesn't matter which way round your barcode is. Though, for anything cylindrical, go for the ladder approach. For cases or traded units, your barcode should be horizontal like a picket fence.
5	Sufficient quiet zones	These are the spaces immediately to the left and right of the furthest bars. Make sure there is no text or imagery in the quiet zones, and that the barcode isn't too close to the product's edge. The first digit of the GTIN is normally on its own to the left of the barcode to show how much space you need to leave on this side. On the right-hand side, you sometime see an arrow which does the same thing.

6	Perfect proportions	<p>For point-of-sale barcodes, height should be proportional to width – the standard point-of-sale barcode size is 22.85mm X 37.29mm, or 100 per cent magnification. If you have a small product or limited printing space, and if your printing process allows, you can go down to 80 per cent magnification but no lower.</p> <p>Barcodes being used on traded units or cases need to be bigger than those on POS items, and the bar height should be at least 32mm.</p> <p>NB The printing process and the material you're printing on may affect the size of the barcode you're able to produce.</p>
7	Good contrast	<p>Your barcodes don't need to be black and white, but there needs to be good contrast between the bars and spaces. As barcode scanners use red lasers, the bars should never be orange or red, as they just won't get picked up.</p> <div> <div>  <p>Scannable</p> </div> <div>  </div> <div>  <p>Non-scannable</p> </div> <div>  </div> </div>
8	Optimal bar width	<p>Depending on the printing process, the ink may spread a bit wider than in the original design. To decode a barcode, the laser looks at the width of each bar and space, so you need to factor in and adjust the bar-width reduction (BWR) in the barcode generation software if the ink spreads a significant amount.</p>
9	Top quality	<p>There's no point having a barcode that doesn't work. You should have your barcodes verified (checked against international quality standards) before sending them to your customers. Poor quality barcodes may mean money spent on relabelling and lost sales. You can generate barcode images online, send them to us for review and even arrange an on-site check of your barcode processes.</p>

Further details on barcode production, symbol placement and symbol size specifications may be found in the GS1 UK document, [Barcoding – getting it right](#).

What next?

If you follow the three core principles and then check your process alongside the eight points for success, there is no reason why you can't get your barcodes right every single time.

Should you need help or have any questions on barcoding, don't hesitate to ask us. Particularly if your customers are having issues with your barcodes but even if you just want to learn more about these fascinating black and white bars! After all, we are the experts.

Barcode training



We run regular barcode training at our office in London:

www.gs1uk.org/support/academy/directory

Virtual training



We offer virtual and face-to-face training:

www.gs1uk.org/support-and-training/training

Additional support

Further information can be found at www.gs1uk.org/standards

GS1 UK

Hasilwood House
60 Bishopsgate
London. EC2N 4AW
T +44 (0)20 7092 3501
E support@gs1uk.org

www.gs1uk.org

