

Guide to Retail Barcodes and QR Codes

INTERNATIONAL BARCODES NETWORK

internationalbarcodes.net

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What is a barcode (GTIN)?

A barcode is an image that can be read by a scanner or smartphone app. It links a product to the product information in databases. Barcodes are made from globally unique numbers, also known as Global Trade Item Numbers (GTINs).

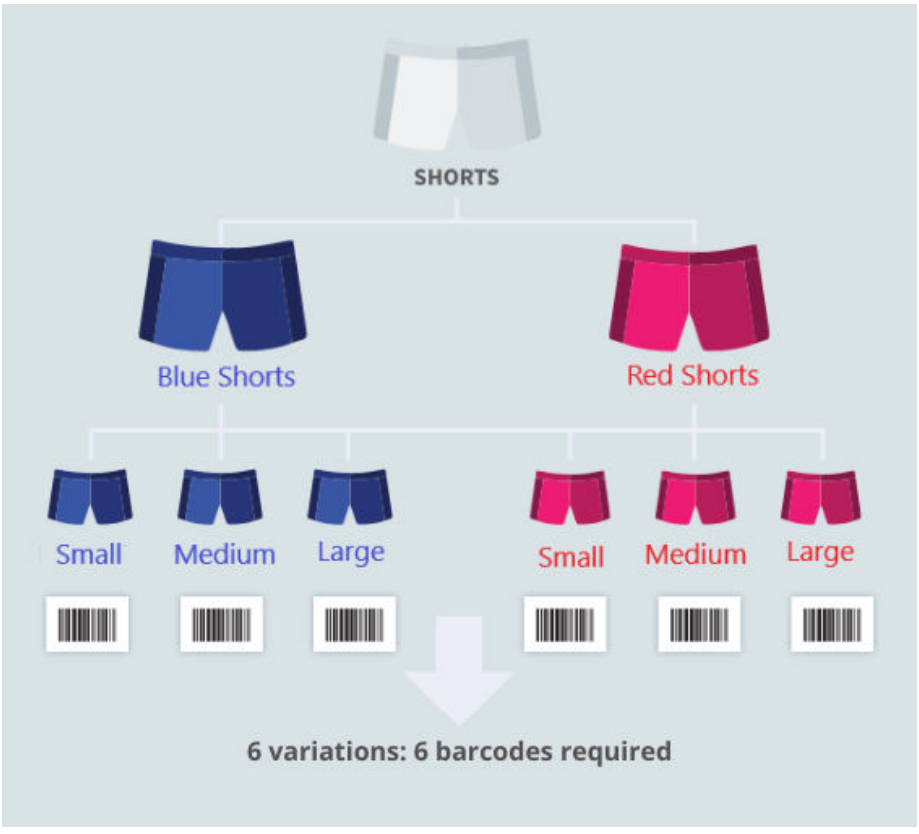
Barcodes are used at retail stores to quickly retrieve the name and price of a product at checkout and to track products as they move through the supply chain, allowing retailers to check your product stock availability in their store, and reorder products as required.

How many barcodes (GTINs) do I need?

Barcodes are used by retailers for both pricing and stock control. Every SKU (stock keeping unit) or variation of a product (e.g. each size, flavour or colour) requires its own GTIN. This means that stores can see when they are running low on a certain size, flavour or colour and are alerted to reorder.

Product	Colour	Size	SKU	Barcode
shorts	blue	small	SHR-RED-S	1234567891210
shorts	blue	medium	SHR-RED-M	1234567891227
shorts	blue	large	SHR-RED-L	1234567891234
shorts	red	small	SHR-BLU-S	1234567891241
shorts	red	medium	SHR-BLU-M	1234567891258
shorts	red	large	SHR-BLU-L	1234567891265

Every variation of a product requires its own barcode



3. Barcodes for Retail Products



EAN-13 Barcodes

EAN (European Article Numbers) Barcodes encode a 13-digit GTIN. They are used worldwide on all retail products. Books and magazines use a specific type of EAN-13 Barcode (see below). They are the most widely used barcodes globally except for in the USA and Canada where UPC-A (Universal Product Codes) barcodes are more common (see next item).



UPC-A Barcodes

UPC (Universal Product Code) Barcodes encode a 12-digit GTIN. The UPC format is common in the USA and Canada on all retail products except for books and magazines. UPC Barcodes are used in the same manner and store the same information as EAN Barcodes, with the only difference being one less GTIN digit (usually the leading number “0”).



ITF-14 Carton Barcodes (also called TUN)

ITF-14 Carton Code numbers are created from the EAN-13 or UPC-A retail barcode numbers of the products in the carton. They are used for shipping and in warehouses on cartons containing a specific quantity of the item that the product barcode represents e.g. a carton of 200 soaps. They should not be used for any carton that is sold as a single unit at retail level.



ISBN Book Barcodes

International Standard Book Number (ISBN) barcodes are for both printed books and e-books The numbers usually start with 978 and are issued by an ISBN agency in a specific county (see https://www.isbn-international.org/agencies). For self-publishing authors, ISBNs can also be obtained through independent publishing agencies such as bookisbn.org.uk. *Note: Crossword, puzzle and colouring books are not published books so do not use ISBN barcodes. They use standard retail barcodes (EAN or UPC).*



ISSN Magazine, Newspaper or Journal Barcodes

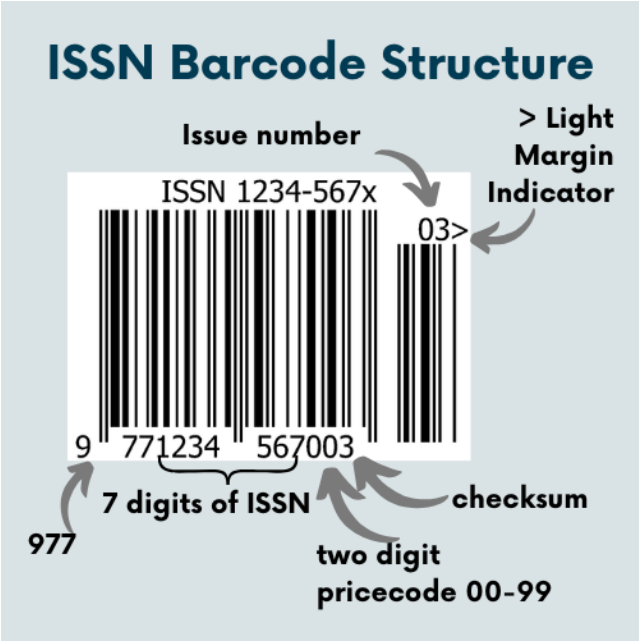
An International Standard Serial Number (ISSN) is a unique 8-digit number used to identify periodical publications such as magazines, newspapers and journals. They can be applied for at issn.org/services/requesting-an-issn.

Only apply for an ISSN if your publications meet the following criteria:

- They are serials (journals, newspapers, magazines, monographic series etc.)
- They are ongoing integrating resources (websites, databases etc.)

To accommodate the serial nature of these publications ISSN numbers are formatted in several ways, depending on the country they’re sold. The image to the left is most common in the UK where the 8-digit number is converted to a 13-digit EAN-13 barcode by removing the last checksum, adding two numbers, in this case

‘00’, to the end, and recalculating the last digit checksum (‘3’ in the image). The supplement 2-digit barcode to the right can change with each issue, monthly 01-12, or weekly 01 -52.
Alternatively, the two numbers prior to the checksum can be changed for each issue or price change (00 -99). Each issue or price change will then require a new barcode image.



It is a good idea to check the stores you hope to sell your magazine in to establish which format is the most common.

How to get a Retail Barcode in 3 easy steps:

1. Buy a barcode number:

- Establish where you will be selling your product to determine if you require EAN-13 or UPC-A barcode numbers.
- Decide how many barcode numbers you need based on product variations. Remember that each variation in size, colour or flavour requires its own barcode number to identify it in the retailer’s database.
- Purchase your EAN or UPC barcode in the quantity required at our website.
- Receive an email with your barcode number(s) package (number and image), and proof of ownership.

2. Add your barcode to your product:

DESIGN

- Choose whichever barcode image format (e.g. jpeg, pdf) you prefer.
- Resize the image to fit into your product packaging (see dimension requirements below)
- Add the barcode to your product packaging in an easily visible, flat location. Don’t print too close to the edge or over seams.
- If you are placing your barcode on a curved surface, e.g. a bottle, the barcode should be rotated to resemble a ladder (vertical), instead of a fence (horizontal).

- If you want the barcode(s) printed onto adhesive labels to be manually applied to your product, follow the same principles outlined above.

Please keep in mind the Barcode Dimensions:
Standard size for is about 38mm wide x 25mm high. The smallest recommended size is 80% of standard size – i.e. about 30mm wide x 20mm high. For full specifications see: **https://buybarcodes.co.uk/barcode-dimensions/**

PRINT

- Check your barcode artwork **BEFORE** printing your product packaging.
- Check that the barcode numbers are correct and that the barcode image(s) are of high-quality and within the official size range.
- Do a **SAMPLE PRINT** and check that the barcode(s) prints and scans correctly.

3. Send your product to retailers:

- Once you've printed your product packaging, send the barcoded products and product information to your retailers.
- The retailer will scan the barcode numbers into their system and enter the specific product and price information for that item into their database. The correct product information will now appear whenever the barcode is scanned in that retail store.

The future of barcodes



2D Barcodes

By December 2027 it is expected that the same globally unique 12, 13, 14 and 8-digit numbers will be represented at checkouts (point-of-sale) as 2D barcodes. The most common 2D barcodes are based on the QR code format and have advantages over traditional '1D' barcodes.

2D barcodes will contain the same unique GTIN as before but will also be able to hold considerably more information including best before dates and batch numbers. They can also direct professionals, retailers, and consumers, to other digital resources such as user instructions, traceability, and user engagement.

While the transition to 2D barcodes is underway, most retailers will continue to accept traditional 1D EAN or UPC barcode images. However, we recommend adopting 2D barcodes in conjunction with traditional barcodes, as soon as possible to ensure your products will be compatible with the latest retail technology and customer expectations.

The Sunrise 2027 initiative, led worldwide by GS1, aims for all retail point-of-sale (POS) systems to be capable of scanning and processing 2D barcodes by December 31, 2027. By this date, retailers are expected to have updated their POS systems to handle 2D barcodes, facilitating a transition from traditional 1D barcodes.

During the transition phase, products will generally have both an EAN-13/UPC-A barcode and a 2D barcode. Currently, there is no set date for the retirement of traditional barcodes.

How to get a 2D Barcode

1. Buy a 2D barcode:

- Purchase a 2D barcode from **IBN LINK**. Each unique product needs a unique 2D barcode, which is based on a unique EAN-13 or UPC-A number.
- For information on how to get a 2D barcode and link it to your product please see**: https://ibn.link/get-started-with-2d-barcodes/**

2. Add your 2D barcode to your product:

DESIGN

- Download the 2D graphic file.
- Resize the image to fit into your product packaging, the minimum recommended size for a 2D Barcode is 25mm by 25mm.
- Place it within 50mm of the 1D traditional barcode to ensure that both can be scanned together.
- Both barcodes should be on an easily visible, flat location. Don't print too close to the edge or over seams.
- If you want the barcodes printed onto adhesive labels to be manually applied to your product, follow the same principles outlined above.
- For more details, visit: **ibn.link/2d-barcode-sizing-and-placement**.

> **Note:** Many Point-of-Sale systems may not yet support 2D barcodes.

QR Codes

What are QR Codes?

"QR" stands for "Quick Response". A QR Code is a two-dimensional matrix barcode that stores data and can be scanned quickly and easily. Originally developed by the Japanese company Denso Wave in 1994 for logistics, QR Codes have since evolved into a popular, cost-effective tool for sharing information.

Today, QR Codes are commonly used to link directly to product information, discounts, coupons, and other promotional content. They're also a valuable way for businesses to track customer engagement with their products and services. QR Codes offer a simple and affordable way to build brand awareness and expand customer reach. By integrating QR Codes into marketing efforts, businesses can save time and money without requiring extra resources.

What's the difference between Dynamic and Static QR Codes?

Dynamic QR Codes

Our Dynamic QR Code service uses a URL hosting feature that allows the target URL to be changed at any time. Dynamic QR codes offer unlimited scans within **fair-use** limits. Dynamic QR Codes are designed to last a lifetime. Initially, they include two years functionality. After that, they will continue to function with a renewal fee every two years. You can change the target URL for free at any time through our **customer portal, portal.internationalbarcodes.net**.

Additionally, our Dynamic QR Codes come with optional tracking features. You can access insights on scan statistics, country location, sources, and sharing data. For more details on tracking, please refer to the **https://buybarcodes.co.uk/product/qr-code-tracking-report/.**

Static QR Codes

Static QR Codes encode your URL directly, making them permanent as long as the website URL remains unchanged. Static codes provide unlimited scans and don't require any ongoing fees; they hard coded to the specified URL. They will continue to work for as long as the URL is active. However, please note that Static QR Codes cannot be edited after they are created, and tracking options are not available.

Task-Specific QR Codes are types of static QR Codes configured for predefined actions, such as V Business Cards, VCalendar QR Codes for events, Make a Phone Call, Send an Email or SMS, Facebook Profiles or Likes, LinkedIn Profiles or Share, Android Market Publisher/Package, App Store QR Code, or Wi-Fi Access Point.

Static	Dynamic
Encode your URL directly in the QR code, e.g. https://yourwebsite.com	Encodes via a host link URL to land on your URL, e.g. https://myqr.pro/1234, which directs immediately to your target URL https://yourwebsite.com/sale
Permanent. They work for as long as your website URL remains unchanged.	Functions for life: *w*ill function for the first two years. Then, it will continue to function after that as long as you pay a hosting fee every two years.
Cannot be redirected as the URL is hard coded into the QR Code	FREE unlimited redirection of the target URL. Redirect your dynamic QR code via our portal at any time.
Unlimited scans	Unlimited scans (see our fair use policy).

Which barcode format do I need?

Product	Which traditional (1D) barcode do I need?	Do I need a 2D barcode? *
Alcohol	EAN or UPC Barcode	Recommended
Art books (includes illustrated books with a title page and/or text or captions)	ISBN Barcode	Recommended
Asset tracking	Code 39 or Code 128 Barcode	Not yet needed
Artwork	EAN or UPC Barcode	Recommended
Atlases	ISBN Barcode	Recommended
Audiobooks	ISBN Barcode	Recommended
Board games, jigsaws	EAN or UPC Barcode	Recommended
Book – published (includes Braille, hardback, paperback, e-book)	ISBN Barcode	Recommended
Book – non-published (includes colouring book, crossword, sudoku)	EAN or UPC Barcode	Recommended
Brochures and pamphlets	ISBN Barcode	Recommended
Calendars	EAN or UPC Barcode	Recommended
Compact discs (CDs)	EAN or UPC Barcode	Recommended
	ISBN Barcode if the CD is prose or educational	Recommended
Clothing & Footwear	EAN or UPC Barcode	Recommended
Comic books	ISBN Barcode	Recommended
Cosmetics	EAN or UPC Barcode	Recommended
Coupons	EAN or UPC Barcode – check with retailer you wish coupon to be used in	Recommended
DVDs	EAN or UPC Barcode	Recommended
	ISBN Barcode if they are educational	Recommended
Electronics	EAN or UPC Barcode	Recommended
Electronic newsletters / e-zines	ISSN Barcode	Recommended
Flash cards	ISBN Barcode if instructional in nature. EAN or UPC Barcode if a game	Recommended
Food	EAN or UPC Barcode	Recommended
Garden products	EAN or UPC Barcode	Recommended
Graphic novels	ISBN Barcode	Recommended
Greeting cards	EAN or UPC Barcode	Recommended
Historical documents	ISBN Barcode	Recommended
Homewares	EAN or UPC Barcode	Recommended
Journals and diaries	Non-published use EAN or UPC Barcode	Recommended
	Historical or published diaries use ISBN Barcode	Recommended
Library systems	Code 39 or Code 128 Barcode	Not yet needed
Magazines	ISSN Barcode	Recommended
Maps	ISBN Barcode	Recommended
Medicines	EAN or UPC Barcode	Recommended
Music (tracks or albums, not sheet music)	EAN or UPC Barcode	Recommended

Pamphlets	ISBN Barcode	Recommended
Pictures and photographs	EAN or UPC Barcode	Recommended
Postcards	EAN or UPC Barcode	Recommended
Posters and art prints	EAN or UPC Barcode	Recommended
Serials (magazines, periodicals, etc.)	ISSN Barcode	Recommended
Serials (magazines, periodicals, etc.) **if being sold as a book**	ISBN Barcode	Recommended
Sheet music	ISMN Barcode	Recommended
Software	EAN or UPC Barcode. ISBN Barcode if it is educational or instructional	Recommended
Stationery items	EAN or UPC Barcode	Recommended
Supplements & Vitamins	EAN or UPC Barcode	Recommended
Tools	EAN or UPC Barcode	Recommended
Toys, including stuffed animals	EAN or UPC Barcode	Recommended
** Remember, The Sunrise 2027 initiative, led worldwide by GS1, aims for all retail point-of-sale (POS) systems to be capable of scanning and processing 2D barcodes by December 31, 2027. By this date, retailers are expected to have updated their POS systems to handle 2D barcodes, facilitating a transition from traditional 1D barcodes.*		

Helpful videos

Barcodes and QR Codes can be confusing at first so our YouTube Channel with short video explainers will help you navigate the intricacies. QR Codes & Barcodes YouTube Channel; **youtube.com/@QRcodesBarcodes/videos**

Topics include:

- How barcodes and product information connect
- How many barcodes do I need?
- Barcode and QR Code colour do's & don'ts
- How to use your barcode
- Understanding ITF-14 Carton Codes

Printing tips

Printing barcodes and QR Codes correctly is crucial for ensuring that they scan accurately and reliably. Poor-quality printing can result in errors, delays, and inefficiencies, especially in retail. Here are some **tips** to help ensure high-quality, scannable barcodes and QR Codes:

- **Choose the right barcode type**: Use 1D barcodes (e.g. EAN, UPC) for product IDs and 2D barcodes (e.g. QR Codes) for more detailed data.
- **Maintain print resolution**: Print at a minimum of 300 dpi to avoid blurriness or pixelation.
- **Follow size guidelines**: Ensure barcodes meet size standards (e.g. EAN-13 minimum 30mm wide x 20mm tall). For full specifications see: **https://buybarcodes.co.uk/barcode-dimensions/**
- **Provide sufficient quiet zones**: Leave adequate white space around the barcode for optimal scanning.
- **Use high-contrast colors**: Stick to black on white or other high-contrast combinations.

- **Avoid distortion**: Ensure barcodes are not skewed, stretched, or rotated.
- **Use quality materials**: Print on durable materials suitable for the product's environment (e.g., thermal transfer labels for durability).
- **Test scannability**: Always test your barcodes and QR codes to verify they scan correctly.

Other barcode services we offer

Barcode Registration

Once you receive your barcodes from us, you can register information such the product's country of origin, description, manufacturer's contact details and a product image at any time for free via **portal.internationalbarcodes.net**. Registration is optional, but it can increase your product's profile on the internet via databases such as **barcodesdatabase.org** and **ibnverified.org**.

Benefits of barcode registration:

- For greater online visibility of your product, including some apps that use barcode databases.
- To reduce illegal use of your barcode (an internet search will show if the number is already in use, discouraging unauthorised use).

Note: Barcode registration does not send product data to your retailers. You still need to send each retailer your barcode numbers and corresponding product information. Each retailer has their own system, so you need to register your products with them individually.

Barcode Verification

Barcode verification is a test scan of your barcode to ensure it will scan well in different scanning environments. Verification is not usually required; however, this is country and retailer specific. We can provide barcode verification if required.

For information about barcode verification please see **https://buybarcodes.co.uk/barcode-verification/.** For information about the stores that require verification please see **https://buybarcodes.co.uk/barcode-acceptance/.**

FREE Scanning App

There are many free barcode scanning apps for both Android and iPhone, such as Zebra. When you scan a barcode with one of these apps, the product information will appear if the app contains that product in its database or can draw that information from an online database or an online retail store.

Add our FREE scanning app to your phone's home screen:

1. On your phone, go to **zebra.barcodesdatabase.org**
2. Android phone, tap the three dots on top-right, look for option "Add to Home Screen
3. iOS device using Safari browser, tap share button bottom-centre, look for option "Add to Home Screen

If you have registered information via the **portal,** the product information will now show using the Zeba Scanning App.

Why buy from us

BuyBarcodes
U K

We're here to help small businesses grow by providing low-cost, high-quality barcodes and barcode services for a one-off cost. Because we thoroughly understand the international barcode market, we tailor our services to offer clarity, convenience, and reliability. We are a New Zealand registered company, operating internationally. We provide local offices where licensees know the market and can manage clients' individual needs in the local language and currency.

- No annual licence fees
- One-off price
- Simple and fast to buy, with no restrictions on who can buy our barcodes
- Working directly in 109 countries and sold in 160
- Barcode numbers checked for illegal use before sale
- Free barcode registration at an international barcodes database.



How to buy our barcodes

You can purchase barcodes using credit/debit card, PayPal, or bank transfer. Of those, credit/debit card and PayPal are best as you'll receive your barcodes within a few minutes of payment. Visit **buybarcodes.co.uk** to get started.

Barcode (GTIN) suppliers

A common misconception is that GS1 is the only way to obtain legally registered barcode numbers. Our barcodes are genuine GTINs. When GS1 merged with UCC (Uniform Code Council) in the 1990s, GS1 had a lawsuit filed against them by original UCC members pertaining to unnecessary membership fees. As a result, GS1 had to forfeit control of the original barcodes issued by the UCC, and license fees for these barcodes are no longer required.

These barcode numbers are now bought by resellers, like us, and sold on an individual basis. They are new, unused, and still part of the GS1 system. This is why we can sell barcodes at a one-off cost and without any membership fees. For most clients, buying from us, rather than through GS1, is far more cost-effective.

Not all barcodes sold on the internet are legitimate. Some barcode numbers may be illegal or may already be in use by another organisation. Ensure you purchase your barcodes from a reputable reseller.