Barcoding & Print and Apply Glossary

ABCD

Air Blown Application

A print and apply labelling method in which the label is held in place on the non-adhesive side using a vacuum of air which is then reversed to blow the label onto the packaging surface.

Barcode

A barcode is a machine-readable symbol that contains data about an item in a supply chain. Typically, a barcode is comprised of lines and spaces of varying widths, alongside a series of numbers.

Barcode Bar

The bars in a barcode are used to communicate data when scanned by a barcode reader. These are generated from human-readable data, which the reader decodes.

Barcode Bar Width

A typical barcode has a "narrow bar" and a "wide bar" width, measured in "steps". In binary level barcodes (CODE 39, CODABAR and ITF), wide bars are up to twice the size of a narrow bar. In multiple level barcodes (EAN, Code-128), wide bars can be up to four times the size of a narrow bar.

Barcode Character

Barcode characters appear below the bars, and can include numbers, as well as letters or symbols, depending on the symbology (type of barcode) used.

Barcode Density

The density of a barcode is a measure of how many characters are present, in characters-per-inch. This number varies depending on the symbology (type of barcode) used.

Barcode "Quiet Zone"

A "quiet zone" on a barcode is the spaces on either side of the scannable area. Usually this acts as a margin between the barcode and other elements of the packaging and informs a barcode reader where the barcode starts and ends.

Barcode Read Rate

In an industrial setting, a read rate is the number of barcodes that can be read correctly from a batch. This is calculated by dividing the readable barcodes by total barcodes scanned and is measured as a percentage. Manufacturers should aim to hit as close to 100% as possible.

Barcode Reader

Barcode readers interpret barcodes into human-readable data. Typically, a modern reader contains a scanner to collect the barcode's data, and a decoder to convert it.

Barcode Symbology

A barcode symbology is a "language" used to encrypt data within a barcode. Each symbology comprises different combinations of bars,

spaces and digits and encode different amounts of data. Certain symbologies are preferred for specific industries and applications.

Barcode Verifier

A barcode verifier analyses barcodes to check readability and assign a quality grade to them. They are used to ensure barcodes function correctly when they enter the supply chain. They can be portable (i.e handheld verifiers) or embedded into a production or packing line (in-line verifiers).

BS5609 Standard

BS5609 is a standard that specifies the requirements for self-adhesive labels that are used in marine environments. It covers aspects such as durability, legibility, and adhesion

CFR-21

CFR-21 stands for Code of Federal Regulations, Title 21. It is a collection of regulations that pertain to public health and safety, and it covers a wide range of topics, including food and drugs, medical devices, and cosmetics.

Code 128 Barcode

Code 128 is a high-density, alpha-numeric barcode symbology that is widely used for a variety of applications. It is capable of encoding all 128 ASCII characters and is often used to encode large amounts of data in a small space. Code 128 barcodes are used in a variety of industries, including manufacturing, healthcare, and transportation.

CPID

CPID stands for **C**omponent/**P**art **Id**entifier and enables companies to uniquely identify individual components and parts of products.

CPIDs are commonly used for component parts such as circuit boards in appliances, vehicles and electronic goods.

Direct Thermal Printing

Direct thermal printing is a label printing method in which chemically treated, heat-sensitive media passes under the thermal printhead. The media blackens, creating a long-lasting image with a high print quality.

DPI

DPI stands for dots per inch, and it is a measure of the resolution of a printer or a display. A higher DPI value means that the device can produce finer, more detailed images. In some digital applications, PPI (pixels-per-inch) is used instead.

EFGH

EAN (European Article Numbering)

EAN is a system for identifying products using a unique number. The EAN system is used primarily in Europe, and it is based on the International Article Number (IAN) standard. EAN codes are used to identify products at the point of sale and in supply chain management.

FDA

The FDA (Food and Drug Administration Agency) is a US federal agency responsible for protecting public health by regulating the safety, efficacy, and security of drugs, biological products, and medical devices.

The FDA regulates the manufacturing, labelling, and distribution of these products to ensure that they meet appropriate standards of

quality, effectiveness, and safety. Products in these categories must be compliant to be shipped to the USA, forming a baseline

Fixed Industrial Scanning

Fixed industrial scanning refers to the use of stationary, industrial-grade scanners for reading barcodes or other machine-readable codes. These scanners are typically mounted on a fixed mount or platform and located directly on a production or packing line. They are most commonly used in manufacturing or logistics environments for tasks such as tracking inventory or identifying products.

Fixed industrial scanners are designed to be rugged and reliable, and they are able to read codes at a greater distance and at a faster speed than consumer-grade scanners.

GHS (Global Harmonisation Standard)

GHS stands for Global Harmonisation Standard. This is a universal system designed to protect public health and the environment across borders. The standard provides common criteria for classifying chemicals.

GS1

GS1 is an organisation and a set of standards for barcodes for businesses to use to identify, capture, and share information the same way around the world. GS1 is used in many industries for assets, products, and locations at an international level.

GTIN

GTIN stands for **G**lobal **T**rade **I**tem **N**umber and is the unique universal identifier to link a company with its trade items throughout the supply chain. A company's GTIN is assigned by GS1 and can be

encoded in RFID tags and in barcodes. <u>GS1 also provides standards and guidance</u> to ensure consistency in GTIN management.

GLN

GLN stands for **G**lobal **L**ocation **N**umber and is used as a unique identifier for a company's locations. A GLN provides the flexibility to identify a location.

GRAI

GRAI stands for **G**lobal **R**eturnable **A**sset **I**dentifier and allows for the management of reusable transport items, equipment, and tools and can identify these returnable assets for tracking and sorting.

GIAI

GIAI stands for **G**lobal **I**ndividual **A**sset **I**dentifier and is used to uniquely identify and manage any individual asset. GIAIs can apply to a range of assets that may be owned by an organisation, including computers, furniture, vehicles, or spare parts.

GSRN

GSRN stands for **G**lobal **S**ervice **R**elationship **N**umber and is used to identify a relationship between a service product and its provider or recipient. This is commonly used for services such as club memberships, licensed service agreements and libraries.

GDTI

GDTI stands for **G**lobal **D**ocument **T**ype **I**dentifier. This identification key is used as an individual identifier for a broad range of important documents, such as passports, shipment forms and insurance policies. GDTI keys can apply to both physical and digital documents.

GSIN

GSIN stands for **G**lobal **S**hipment **I**dentification **N**umber. This is assigned by a seller and shipper of goods to identify a shipment. All items within a shipment will share a GSIN, and the number is used by other organisations such as freight forwarding services, and port managers.

GCN

GCN stands for **G**lobal **C**oupon **N**umber. This enables organisations to identify digital coupons, such as tickets and documents that are to be exchanged for discounts or points for making purchases.

GMN

GMN stands for **G**lobal **M**odel **N**umber and is assigned as a unique identifier for an individual product to be used throughout its lifecycle, from the point of design through to end-of-use.

GS1-128 Barcode

GS1-128 is a type of barcode that is used to encode information in a machine-readable format. It is based on the Code 128 barcode standard and is used for a wide range of applications, including supply chain management, product identification, and asset tracking. GS1-128 barcodes can encode a variety of data types, including alphanumeric characters, symbols, and data structures.

GS1 Application Identifiers

GS1 application identifiers (AIs) are codes that are used in GS1-128 barcodes to identify the type of data that is being encoded. Each AI consists of a two- or three-digit number that is followed by a variable-length data field. There are over 100 different AIs that can be used in GS1-128 barcodes. Each one is used to identify a specific type of data, such as a product identifier, a serial number, or a batch

number.

IJKL

Ink-Jet Printing

Ink-jet printing is a contactless printing method in which ink droplets are sprayed onto a surface. The method is designed for higher efficiency and lower cost printing but is less precise than print and apply labelling methods.

ISBN

The **I**nternational **S**tandard **B**ook **N**umber is a code used to uniquely identify books and similar products. An ISBN contains the registrant as well as the specific title, edition and format of the book in its data. Libraries, bookstores and other organisations use this data in sales and stock management.

ISMN

ISMN stands for **I**nternational **S**tandard **M**usic **N**umber and is a unique number for the identification of printed music publications in the sale, hiring and distribution of music by publishing houses, vendors, and libraries.

ISO 15416

ISO 15416 is a standard that specifies the requirements for the evaluation of the print quality of linear (1D) barcodes. It covers aspects such as the minimum and maximum size of barcode elements, the contrast between the bars and spaces, and the presence of defects or errors in the barcode.

ISO 15415

ISO 15415 is a standard that specifies the requirements for the evaluation of the readability of 2D label-based barcodes. It covers aspects such as the size and position of the barcode, the contrast between the bars and spaces, and the presence of defects or errors in the barcode.

ISO/IEC TR 29158 (AIM DPM)

ISO/IEC TR 29158, also known as AIM DPM (Direct Part Marking), is a technical report that provides guidelines for the design, implementation, and evaluation of 2D DPM (Direct Part Marking) codes.

DPM codes are machine-readable codes that are directly marked on a product or part, rather than being printed on a label. DPM codes are often used to identify and trace parts in manufacturing and supply chain management.

ISSN

ISSN stands for **I**nternational **S**tandard **S**erial **N**umber and is an eight-digit serial number used to uniquely identify magazines and other serial publications. ISSNs are used primarily in the ordering and cataloguing of serial literature and allows for distinction between individual serials of a title.

ITF14

ITF-14 barcodes are the main data carriers used for GTIN-14 data in retail applications. ITF-14 is a 14-digit bar code that uses the "Interleaved 2 of 5" symbology (I2of5, or ITF).

Ladder Barcode

A ladder barcode is a type of barcode that consists of a series of horizontal bars arranged in a ladder-like pattern. Ladder barcodes

are used for encoding information on cylindrical products, where the barcode is positioned vertically.

Label Design Software

Label design software is a type of specialist software that is used to design and create labels for products, packaging, or other applications. It typically includes tools for creating and formatting text, images, and barcodes, and for selecting and formatting label layouts and templates.

Some label design software also includes features for printing labels, such as the ability to connect to a label printer or to generate print-ready files.

LPN Labelling

LPN stands for "license plate number", and LPN labelling refers to the use of labels with unique identifying numbers (similar to license plate numbers) to track and identify products or containers. LPN labels are often used in logistics and supply chain management to track the movement and location of goods.

MNOP

Machine Vision

Machine vision is the ability of a machine or computer system to "see" and interpret the environment or objects in it. Machine vision systems use cameras and algorithms to analyse images and extract information from them.

Narrow Edge Leading

Narrow edge leading refers to the placement of labels on a roll such that the leading edge is the narrower edge of the label.

OCR (Optical Character Recognition)

Also known
as **O**ptical **C**haracter **R**eader, **O**ptical **C**haracter **R**ecognition is the
conversion of images to text. In barcoding it refers to the conversion
of a barcode to a readable format, via a barcode reader.

One-Dimensional Barcode

A one-dimensional barcode is the most common form of barcode,
consisting of bars and spaces arranged horizontally and read left-to-
right. This format is the one typically associated with Barcodes.

PCS

PCS stands for **P**rint **C**ontrast **S**ignal. This is a measurement of the
contrast between the bars and spaces on a barcode. A "minimum
PCS" is the contrast required to ensure a barcode can be correctly
read by a scanner, and is the reason most barcodes are printed in
black ink onto a white surface.

PDF-417 Barcode

PDF-417 is a two-dimensional barcode symbology that is capable of
encoding a large amount of data in a compact space. It uses a
pattern of bars and spaces to encode data, and it is often used in
applications such as identification cards, shipping labels, and driver's
licenses.

Pharmaceutical Binary Code (Pharmacode)

A Pharmaceutical Binary Code is a barcode standard designed for
Pharmaceutical applications. Due to their use in a compliance-heavy
industry, Pharmacodes are designed to be readable in multiple
colours, and in the event of printing errors.

PLU Code

PLU stands for "**P**rice **L**ook-**U**p" code. This is a numbering system used for bulk produce in grocery stores and supermarkets, in which each type of produce is assigned a unique code. They are used to improve stock control and make check out management more efficient.

Print and Apply

Print and Apply refers to the printing and application of labels onto products and packaging, typically on a production or packing line. Print and Apply is used for a variety of labels, including barcodes, retail labels and technical product information.

Print Engine

A print engine is a device or system that is responsible for generating printed output. In the context of label printing, a print engine refers to the portion of the printer that is responsible for creating the printed image on the label.

QRST

RFID

RFID (radio-frequency identification) is a technology that uses radio waves to communicate between a tag and a reader. RFID tags are small, wireless devices that can be attached to or embedded in products, animals, or other objects. The tags contain a unique identifying number and can store other data as well. RFID readers can read the data on the tags and use it to identify and track the objects to which the tags are attached.

SSCC

SSCC stands for **S**erial **S**hipping **C**ontainer **C**ode and is a GS1-128 code assigned to a logistic unit – typically a pallet or case – to allow them to be traced through the supply chain. The same SSCC code is shared by all items within the unit. While similar, an SSCC code is different to a GSIN – multiple logistics units with different SSCC codes can be shipped together within a shipment using a shared GSIN code.

SKU

SKU stands for Stock-Keeping Unit. This is a unique identifying number that is assigned to a specific product or item in inventory. SKUs are used to track and manage inventory in a variety of settings, such as retail and manufacturing.

Tamp Application

A print and apply labelling method in which physical pressure is used to apply the label – either by the machine mechanism or the movement of the outer packaging against the machine as it moves down a production line.

Tamp Blow Application

A print and apply labelling method in which both an air vacuum and physical pressure are used to apply the label to the packaging surface, combining both tamping and air blown application methods.

Thermal Transfer Printing

Thermal transfer printing is a label printing method that uses a heated ribbon to produce an image. Thermal transfer creates durable images that are readable on a variety of media, and produces very little waste.

Tote Label

A tote label is a label that is used to identify and track the contents of a tote (a container or bin used for storing and transporting goods). Tote labels may be attached to the outside of the tote and may contain information such as the tote's destination, contents, or handling instructions.

UVWX

UDI (Unique Device Identifier)

A UDI is a unique identifier that is assigned to a specific device or product, such as a medical device or a pharmaceutical product. The UDI system is used to identify and trace devices and products throughout their lifecycle, from production to distribution to use and disposal.

Wide Edge Leading

Wide edge leading refers to the placement of labels on a roll such that the leading edge (the edge that is fed into the printer first) is the wider edge of the label.

Wipe-on Application

A print and apply labelling method in which labels are dispensed off a beak directly onto the product, with pressure then applied (i.e. by a roller) to ensure adhesion.

Wraparound Labelling

Wraparound labelling is a method of applying labels to products or packaging in which the label is wrapped around the exterior of the

product or packaging. This is commonly used for bottles, jars, tubes, and tins.

YZ

Zebra Technologies

Zebra is a manufacturer of marking, tracking, and computer printing technologies. Zebra products include mobile computers and tablets, software, thermal barcode label and receipt printers, RFID solutions & scanning and vision solutions.

0-9

2D Datamatrix Barcode

A 2D Datamatrix barcode is a type of barcode that uses a two-dimensional pattern of squares, dots, and other geometric shapes to encode data. Datamatrix barcodes are compact and can encode a large amount of data in a small space. They are often used in applications where a high level of data density is required, such as in the automotive and aerospace industries.

2D QR Code Barcode

A 2D QR (Quick Response) code is a type of barcode that uses a two-dimensional pattern of squares and other geometric shapes to encode data. QR codes are designed to be read quickly by scanners or camera-based systems. They are often used in applications such as mobile marketing, and in a manufacturing or logistics setting, product tracking.