Agamik BarCoder Manual

A guide to using Agamik BarCoder Version 4

(last updated November 2012 for release 4.23)

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Installation

To install the program, run setup.exe.

When you first run the program you will be asked for a serial number. This will be written on your user licence.

Clicking the demo button will allow the program to run in Demo mode. Demo mode will allow you to create one barcode of each type that can be saved for testing purposes.

If you already in Demo mode, you can enter your serial number from the Edit Menu.

If you have BarCoder Options, you will need to activate your individual barcode types from the Edit Menu. The keys for these are also on your user licence.

Introduction

Thank you for buying your copy of Agamik BarCoder Version 4.

This software has been designed to support most commonly used kinds of barcodes, referred to in this manual as Barcode Types, including many of the modern 2-D barcodes.

This manual (which can be printed) will guide you through the program in greater detail. The first chapters are designed to cover the general use of the program. The remaining chapters are dedicated to specific barcode types.

Each barcode can be customised to your requirements and will be displayed on screen. You may then print the barcode directly to a printer. Should you wish to import the barcode into another application, you can save it as an EPSF, in Adobe Illustrator® format or as a TIFF.

BarCoder Version 4 is backward compatible with previous BarCoder programs.

We want to hear from you, both in terms of any improvements you would like to see, and any other barcode types you would like us to support.

Thanks again from the development team.

Douglas Gray

Dawn Hill

Douglas McCallum

Angela Nixon

Ewan Paterson

Menus -

File menu

Open

This opens a previously saved barcode .eps file.

Save As

This invokes a save dialogue which lets you specify three things:

1. The file name to be used - the program will offer a default name based on the barcode data;

2. Where to place the file - navigate using the standard interface - the program will default to the location you last used;

3. The file format - choose from EPSF, TIFF and Illustrator - the program will default to the format specified in your preferences;

Note that the program will only save your barcode if it has valid data; if there is a problem with any aspect of your barcode, a screen alert will occur.

You can restore barcode data at a later date, by saving as an EPSF then using the Open command.

Create Sequence

You can create a sequence of barcodes in ascending numerical order. The Create Sequence section deals with this in greater detail.

Activate Watch Mode...

This will cause the program to monitor the watch folder to check if an instructions file is written to it. When a file is detected, the barcode files requested by the instructions will all be written to the watch save folder. The Watch Mode section deals with this in greater detail.

Menus -

File menu *(continued)*

Preferences

You can make the following choices:

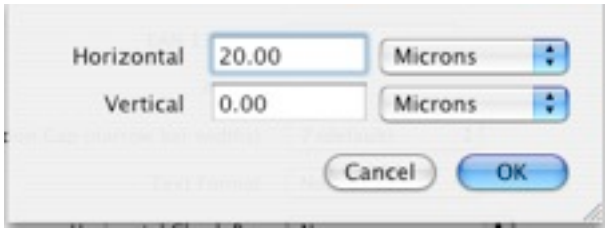
1. Startup Type – this lets you choose which barcode type will appear when you start up the program. You can choose a specific barcode type or opt for the last barcode type saved.
2. Changing Types Use – this is what will appear in the input and colour windows when you change to a new barcode type. You can choose whether to have the details of the last barcode saved or the factory settings (no data.
3. Default File Format – there are three file formats which can be used when you save your barcodes. You can select the format when you do the save, but the default format is set here. You can opt to default to the last format used or always default to either EPSF, TIFF or Illustrator.
4. Screen Display Units – whenever you select a barcode type, a barcode will be displayed, showing its size as well as appearance. You can choose here the units you want the size to be shown in.
5. Watch Data Folder - if you activate watch mode this is the folder where the program will look for an instruction file.
6. Watch Save Folder - if you activate watch mode and provide an instruction file, this is the folder where the program will save the barcode files from the instruction file.

Menus -

Edit menu

Device Compensation

Device compensation works in addition to the Bar Reduction you can set in the Input Window. The values you enter here will be applied to all your barcodes.



You can specify values, in microns or thou, which you expect the output device to add to the bar width and bar height.

BarCoder will adjust the width and height of the bars in your barcode to allow for this increase. If you enter a negative value, the bars will be made wider than required.

Enter Serial Number

This allows you to enter a new serial number, if required. When you first run the program, you will be asked for your serial number. If you have an Options serial number, you will also need to enter your barcode key(s) using the Enable Barcode Type option.

Demo Mode

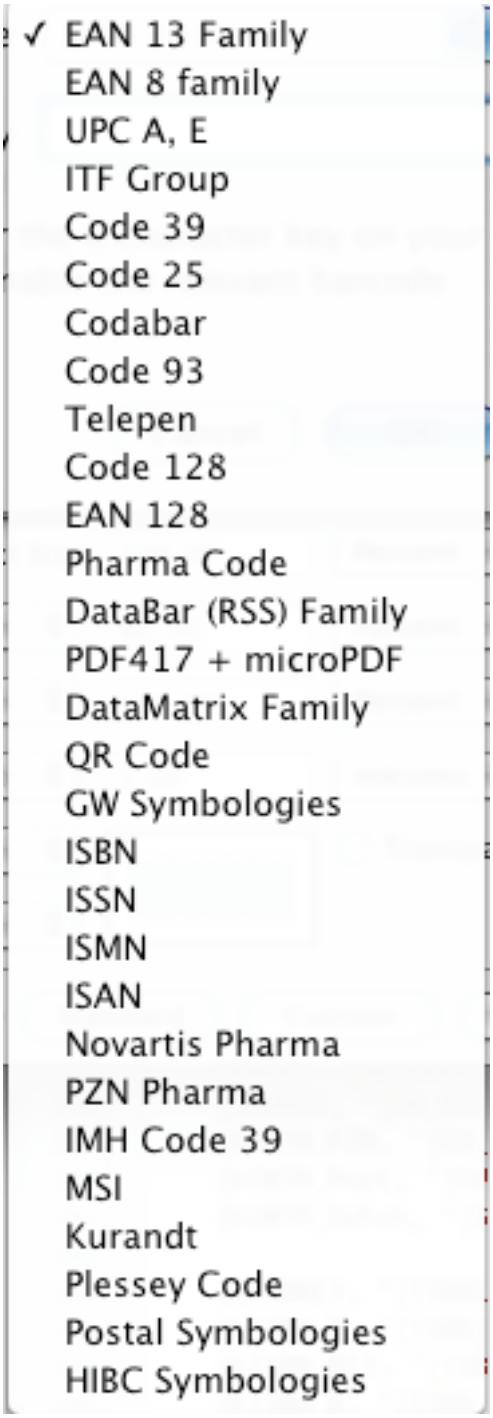
If you do not have a serial number, the program can be run in Demo mode. This lets you use all the on-screen features, but will allow you to save just one barcode of each type, for evaluation purposes. Note that you can save your evaluation barcode in as many different ways as you like, but cannot change the encoded data.

Scan for PostScript Fonts

This allows you to scan disks for PostScript fonts which BarCoder can then use when creating your barcodes.

Menus -

Edit menu *(continued)*



Enable Barcode Type

If you are using the Options version of the program, you will need to enter separate number keys for each barcode type you wish to use. Use this menu to select the barcode type and enter your key. Some barcode types are grouped together and are all unlocked with the same key.

The options that are not single barcode types are:

EAN 13 family - EAN 13, JAN 13, ASDA 13 and IKS

EAN 8 family - EAN 8, JAN 8, M&S7, Wickes8, Woolworth8 and ASDA8

UPCA, E - UPC-A and UPC-E

ITF group - ITF and UPC Shipping

Pharma Code - Pharma Code, Pharma Code (Multi Part) and Binary Code

DataBar (RSS) family - DataBar 14, DataBar Limited and DataBar Expanded

PDF417 + microPDF - PDF417 and Micro PDF417, including Hex Input formats

Data Matrix family - Data Matrix and 2D Pharma Code and Hex Input format

GW Symbologies - All barcode types in the GlaxoSmithKline sub-menu

ISBN - Includes all ISBN variations

ISSN - Includes SISAC

Postal Symbologies - Four State, Postnet and FIM

HIBC Symbologies - All barcode types in the HIBC sub-menu

Note that when a barcode type is not enabled, the Save As button on the input window is greyed out.

Menus -
Standard Types menu

EAN 13
EAN 8
UPC A
UPC E
JAN 13
JAN 8
UPC Coupon

ITF
UPC Shipping
Code 39
Code 25
Codabar
Code 93
Telepen
Code 128
EAN 128 (GS1-128)

Pharma Code
Pharma Code (Multi Part)
Binary Code

DataBar (RSS) 14
DataBar (RSS) Limited
DataBar (RSS) Expanded
GS1 Coupon

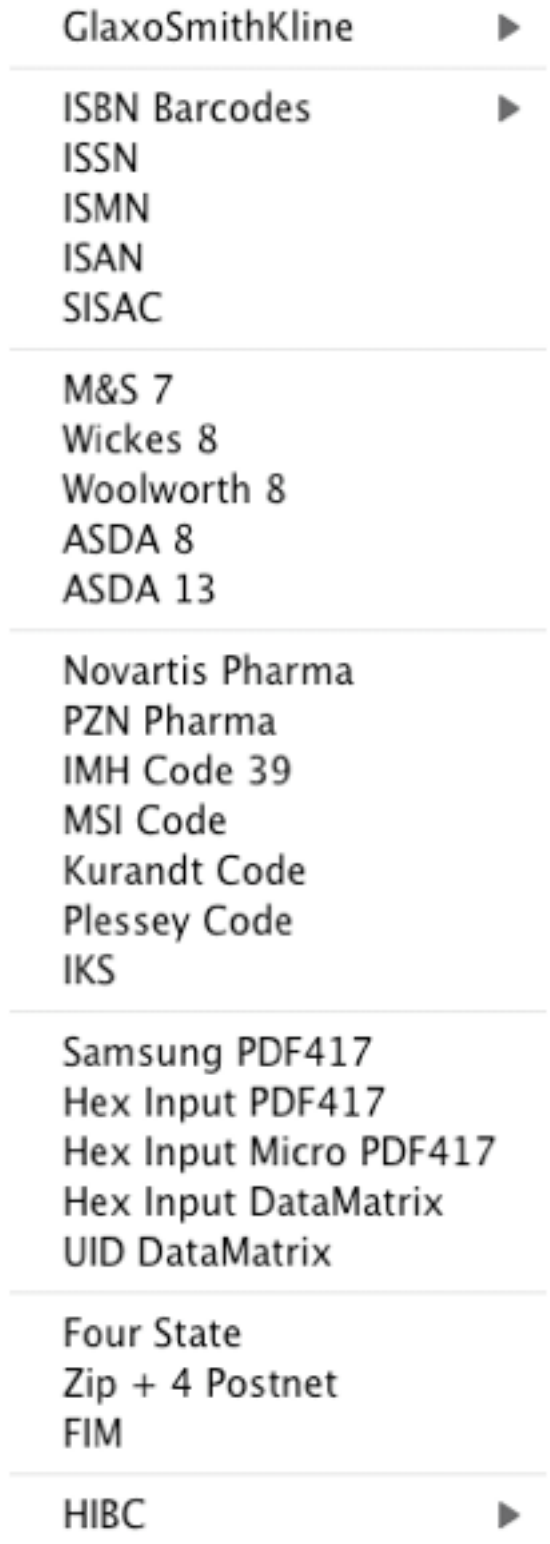
PDF417
Micro PDF417
Data Matrix
GS 1 Data Matrix
2D-Pharmacode
QR Code

Standard Types Menu

This is one of two menus which you will use when changing from one barcode type to another. For reasons of space, not all barcode types are shown on this menu. Proprietary barcode types, including publishing and postal barcodes, appear on a separate menu.

Each of the barcode types is described in detail in its own section.

Menus -
Other Types menu



Other Types Menu

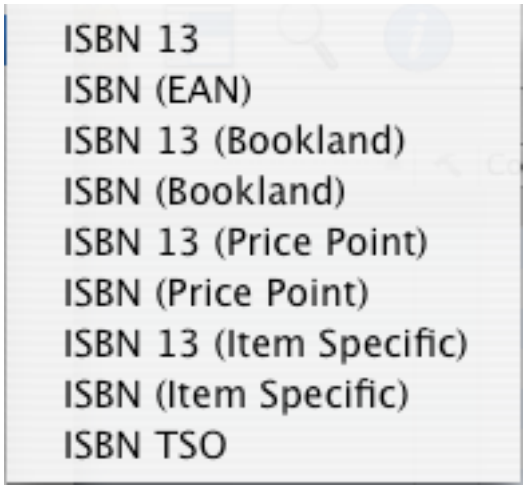
Some barcode types and variations of standard types are used by particular organisations or companies. These are included in this menu, even though you may wish to use them for an application not related to the organisation or company.

Each of the barcode types is described in detail in its own section.

Menus -

Other Types menu *(continued)*

Within this menu are three sub-menus, to be used for ISBN, GlaxoSmithKline and Health Industry Business Communications Council (HIBC) barcodes.



Each of the barcode types is described in detail in its own section.

Windows -
Input window

Input Window

Each barcode type has its own input window which is used to enter barcode data and characteristics. As you key information in, a screen representation of your barcode will be displayed.

The input window for each barcode type contains two kinds of field: general fields applicable to all (or most) barcode types; specific fields unique to this barcode type. General fields are described below while specific fields are described in the chapter for each barcode type.

Initial Settings

When you start the program, or select a new barcode type, the dialogue window will be shown containing the data indicated by your Preference selection. This will be one of:

Factory Settings (no data, standard shape and size);

Last Barcode Saved;

Factory settings are described in the section for individual barcode types.

Notice that the program will attempt to draw a barcode on screen, even though there are insufficient or no data characters; it does this by padding out the data field with zeros or other neutral values.

Windows -
Input window *(continued)*

General Fields

These fields relate to the size and appearance of the barcode. It allows you to set these aspects of the barcode.

Constrain Proportions / Customise Dimensions /Constrain Text and Width

This is a popup menu, usually with with three options. Constrain proportions forces the barcode's width, height and text size to retain the standard proportions. Changing one of the size fields will change the other size fields by the same ratio. If Customise Dimensions is selected then the individual sizes can be altered without affecting the other dimensions. Constrain Text and Width keeps the text size in proportion with the width, but allows you to adjust the height separately.

Text size

This field allows you to set the size of the text that displays the barcode data. It can be set as a percentage of the default size, or as a fixed size either in points or millimetres. Note that, for some barcode types, there are separate text control fields if there is a second text display associated with the barcode.

Barcode Height / Bar Height (/ Row Height)

This popup menu is used when you wish to adjust the height of your barcode. You may choose to use the full barcode height or the bar height as a term of reference. The barcode height is the full height of the barcode including any margin and text above and below. Where more than one bar height is present in the barcode (e.g. when there are guard bars or an addon is present, or when there is a composite component), the bar height refers to the bars associated with the barcode data. The barcode height and bar height are both indicated beside the barcode displayed on screen. The row height is applicable only for stacked or 2-d barcodes.

You may adjust the height as a percentage of the standard size or as a value specified in inches, millimetres, centimetres, tenths (of an inch) or sixths (of an inch).

Barcode Width / Bar - Bar Width / Narrow Bar Width (/ Chars per Inch)

This popup menu is used when you wish to adjust the width of your barcode. You may choose to use the full barcode width, the bar to bar width or the narrow bar width as a term of reference. The barcode width is the full width of the barcode including any margin to the left and right. The bar to bar width measures from the first to last bar inclusive; including any addon, but not any composite component. The narrow bar width is the nominal width of a narrow bar - where the widths of individual narrow bars may vary according to their position in the barcode, this value refers to the unadjusted narrow bar. The barcode width and bar to bar width are both indicated beside the barcode displayed in the barcode window.

Windows -

Input window *(continued)*

Your may adjust the width as a percentage of the standard size or as a value specified in inches, millimetres, centimetres, tenths (of an inch) or sixths (of an inch). Chars per Inch is a measure of the number of data characters encoded in an inch of barcode and is restricted to those barcode types which have a one to one relationship between bars and characters. If this option is selected, the value entered is a decimal number.

Bar Reduction Horiz / Bar Reduction Vert

This popup menu will be relevant only if you experience dot gain during the printing process and wish to allow for this when creating your barcode. You need to indicate whether the gain is in the vertical or horizontal plain. A vertical gain will generally have an effect only for 2-d barcodes, or barcodes with composite components. A positive value entered here will be the increase in width which is caused by the printing process you are using. The program will create narrower bars to allow for this increase. If you enter a negative value, then a decrease in width will be allowed for and the program will create wider bars. You can specify your bar reduction as an absolute value in microns or thousandths of an inch and it is also possible to specify a percentage gain which will allow a different gain for different widths of bar.

Show Text / Hide Text / No Text

Most barcodes consist of bars and text. Hide Text allows you to display the bars only but leaves white space where the text would have gone. No Text displays the bars only and leaves no space for any text.

Transparent

If this option is selected, the barcode will be saved with no background. When this is imported into another application, the barcode can be placed on a background which will show round and between the bars and associated text.

If the transparent option is not active, the barcode will be saved enclosed in a rectangle of the background colour. The dimensions of this rectangle are shown on screen when the barcode is drawn in the barcode window.

Windows -

Input window *(continued)*

Font

Agamik BarCoder will display your text in any font, though most barcode types have a preferred font which is given in the sections for each barcode type.

Note that for publishing barcodes and composite barcodes you will be able to select different fonts for the different text components of the barcode.

Barcode Symbol

The barcode symbol can be used to set the colours for your barcode. If you drag the required colour from the Swatch panel onto either the bars part (centre) or background part (surround), that colour will be used to colour your barcode

Extras

This button lets you add one or two lines of extra text to be printed alongside your barcode.

Notes

This button allows you to make notes regarding the current barcode. These are for your reference only and are not printed with the barcode.

Standard

This button will overwrite your settings with the factory default, and clear all input data.

Custom

This function has been discontinued.

Save As

A standard file save dialog will appear allowing you to select the file name, location and format. The procedure is identical to that described in the Save As option from the File Menu chapter.

Note that if you have an Options version of the program, and you have not enabled this barcode type, the Save As button will not be activated and will be greyed out.

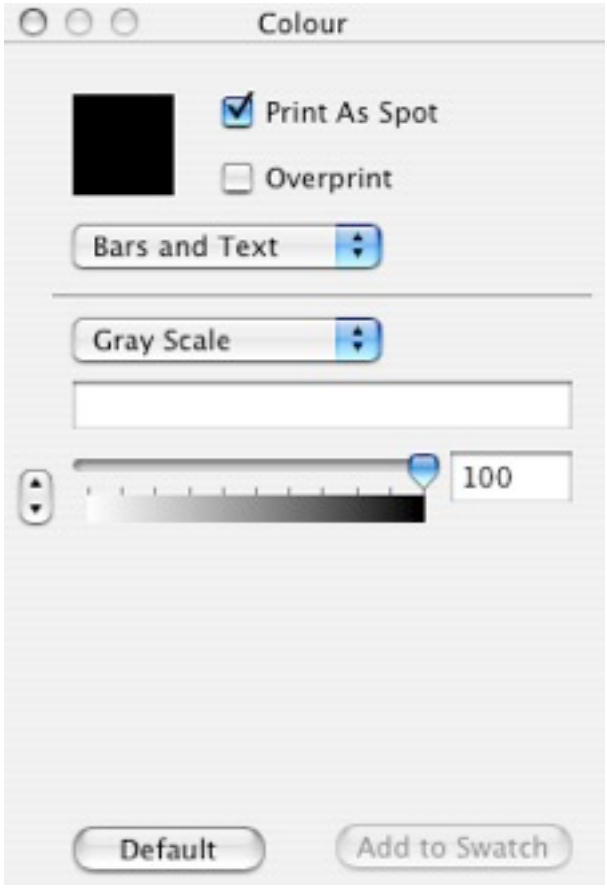
Windows -
Barcode window

Barcode Window

The Barcode window gives an on screen representation of your barcode. The numbers displayed in the border are the dimensions of the barcode in the unit indicated in your preferences.

Windows -
Colour window

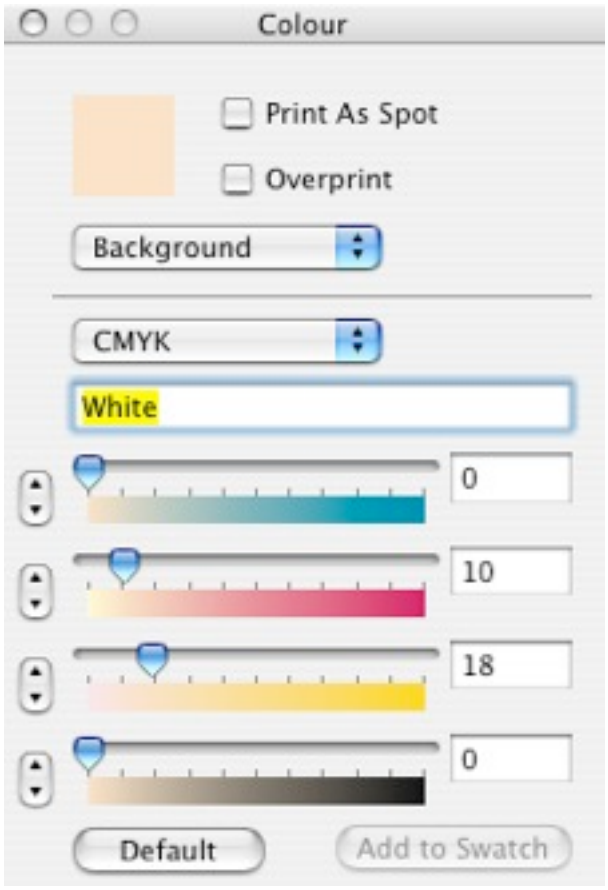
Colour Windows



Bars and text

Agamik BarCoder lets you select the colours for your barcode from your swatches or by specifying RGB or CMYK values. You can choose one colour for your bars and text and another colour for the background; if you do not, the default values are black bars and text on white background.

If you do specify your own colour, you can store it in a swatch for future use.



Background

You can also use the colour window to set how the job is printed; whether it is spot/process, or overprint/knockout.

Note that some barcode types (e.g. pharma code) allow you to have different colours for different bars.

Windows -

Colour window *(continued)*

Colour Models

Gray Scale

This can be any shade of grey between 100% (black) and 0% (white).

Custom Colour

This will generally be a colour imported from your Swatch window. As with Gray Scale, you can use the slider to reduce the intensity of your chosen colour.

CMYK

CMYK colours are set either by setting the scrollbar to the desired percentage in the value field, or by typing that value (range 0-100) into the relevant box.

RGB

RGB colours are set either by setting the scrollbar to the desired number in the value field, or by typing the number (range 0-255) into the relevant box.

Colour Name

Black

Black is the default colour for the bars and text.

White

White is the default colour for the background.

If you select a colour from a swatch, the associated name will be placed in the colour name field.

Note that the colour name is for your reference only.

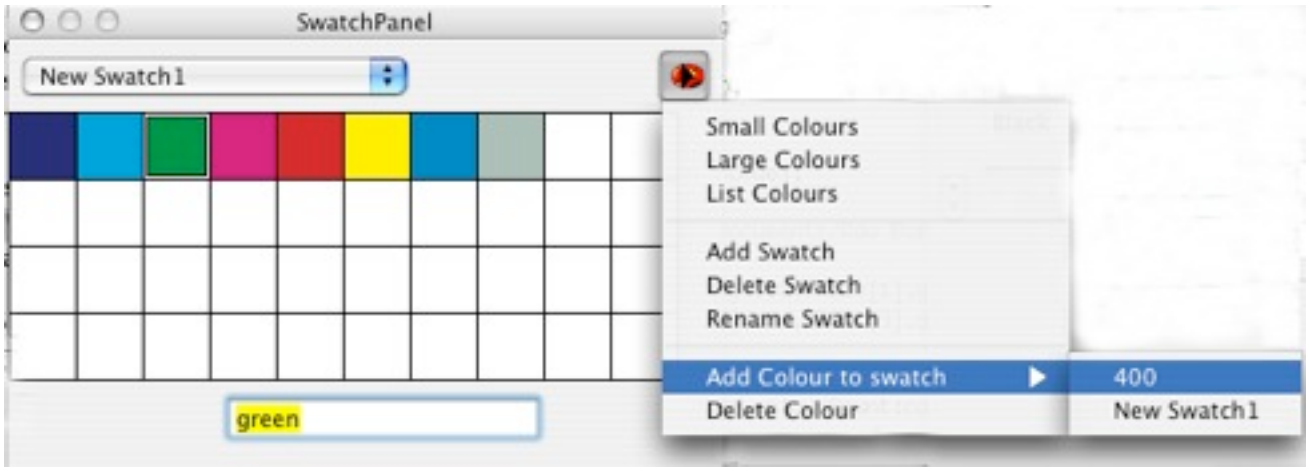
Add to swatch

You can add the colour currently in the colour window to one or more of your swatches.

Default

If you press this button, the current colour will revert to its default value (i.e. black for bars and text or white for background).

Windows -
Swatch window



You can use swatches to hold specific colours which you are likely to use for your barcodes.

Selecting a Colour

Select the swatch you need, using the popup menu. You can display the colours either as small squares (default), large squares, or as a list, by using the menu icon. To select a colour, either scroll to the colour you want or type in the name in the swatch data field. BarCoder will attempt to match the name you enter with the colour names for the swatch you have selected.

Creating a New Swatch

You can start a new swatch by using the menu icon. You should give a name for your swatch, then add colours to it. You can also delete a swatch using the menu icon.

Adding Colours to a Swatch

If you are transferring from an existing swatch, then select the colour and use the menu icon to add it to another swatch.

If you want to add your own colour to a swatch, then create it in the colour window, give it a name, and use the Add to Swatch button.

You can rearrange the order of the colours in your swatch by dragging the colour boxes.

Generating a barcode

Generating a Barcode

You should select the type of barcode you wish to create from the menus provided by Agamik BarCoder.

Different barcode types have their own data requirements; these are detailed in this manual in the different sections for each barcode type.

As you enter data for your barcode, the program will draw a represention of the barcode on screen in the Barcode window. If insufficient data characters have been entered, the program will pad the data with neutral characters, usually zeros. The program will check that the data you have entered is valid. If there is a problem with your data, the program will display a Warning message. If you cannot see the barcode, check that it is not behind one of the other windows.

Agamik BarCoder always draws the Barcode window in the same place as the previous time, and you can drag the window using the mouse. Once you have drawn your barcode, all subsequent changes and adjustments will be shown (if possible) as you make them. Changes will all be made through the input window and can be grouped in seven categories:

Encoded Characters

You can edit any of the fields which contribute to the encoded characters using the mouse and keyboard. The displayed barcode will be updated as you go. Restrictions applying to the encoded characters are discussed in the sections on the different barcode types.

Barcode Options

These options are specific to individual barcode types. They are generally located in the input window below the character input fields and above the dimension fields. The options for the different barcode types are described in the section for each barcode type.

Size and Shape of the Barcode

You have control over the width and height of your barcode and also the size of your text.

If you select Constrain Proportions then, whenever you change one of these three values, the other two will be updated automatically. Similarly, you can select Constrain Text with Width which allows you to adjust the barcode height without affecting the barcode width or text size. Customise Dimensions allows you to change any value without without affecting the other two.

A general discussion on defining the dimensions of your barcode is given in the section on controlling barcode size; details specific to individual barcode types, including exceptions to the general rule, are given in their own sections. In particular, for publishing barcodes you will be able to specify the two text height dimensions.

Printing Options

Agamik BarCoder offers two fields which enable you to specify special printing requirements:

Bar Reduction

Note that this value is specific to this barcode only and applies in the direction chosen.

Transparent

If this option is selected, the barcode will be saved with no background.

Character Display

Show Text / Hide Text / No Text

You can display your barcode without the barcode text.

Font

Agamik BarCoder will display your text in any font.

Generating a barcode

File handling

File Handling

Agamik BarCoder saves barcodes as Encapsulated PostScript Files (EPSFs), Tagged Image Font Files (TIFF), Adobe Illustrator® Format Files (version 10).

The Save As option in the Input window lets you save your current barcode. Agamik BarCoder uses the standard system interface to let you select the directory and file name for your barcode as well as the format you want to use. If you are creating a new barcode, the default name will be derived from the barcode type and data. If you are editing a previously saved barcode, the default name will be the same as you used before unless you have changed the data or addon field.

Note that if you wish to overwrite a previously saved file for the barcode you are editing, you can select Save from the File Menu (or simply use Save As with the same file name).

You may print a barcode without saving it by selecting Print from the File menu. Page Setup... lets you define output details.

You can set your preferences so that, once you have saved a barcode, or printed it directly from the program, the next time you select the same barcode type the fields in the input window will be set to contain the same values. This both acts as a reminder of your last barcode and means you do not have to reenter the same data again.

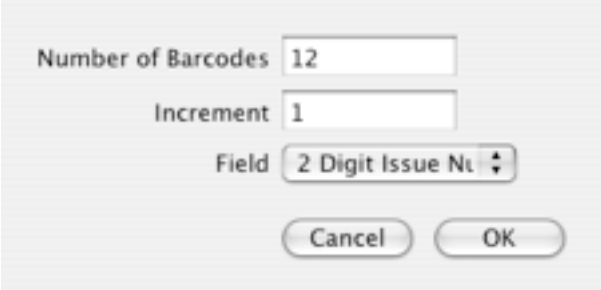
If you wish to revert to default values, then click the Standard button in the input window. These values are generally those most commonly used and/or those recommended by the relevant controlling authority, though all data fields will be cleared.

If you make a mistake and wish to revert to the values you started with, simply reselect from the Barcode Types Menu. If you wish to restore a previously saved barcode, you can select Open from the File menu to access a barcode file stored on disk, though this works only for EPSF files.

Note that you can set your preferences so that, when you start-up Agamik BarCoder, the program remembers which was the last barcode type you saved as well as the data for all barcode types.

Generating a barcode

Create sequence



Create Sequence

This allows you to create barcode files for a sequence of consecutive barcode numbers.

Note that not all barcode types support this facility. If the create sequence option is not available, then you will not be able to select it from the File menu.

You may elect the sequencing to apply to any of the data components of your barcodes. In each case, successive barcodes will have their data (or addon) incremented by a value specified by you. For barcode types with a check digit, the increment will be applied only to the data before the check digit. For barcode data which contains non-digits, only the digits and letters will be incremented.

Selecting the Barcode Sequence

You should enter the data for the first barcode in your sequence in the input window, along with the non-data fields. These non-data fields will apply to all barcodes in the sequence. When you select Create Sequence from the File menu, the program will check that the data you have entered is correct in the same way as it would for a single barcode.

Selecting the Destination for Your Barcodes

When you have entered the number of barcodes required, you will be asked to provide the name (and folder) for the first of the barcode files.

If you choose to use the default name for the first file, all the saved files will be given their own default name, derived from the barcode data.

If you choose a different name for the first file, then each saved barcode will have the same name with a “+n” suffix, where n is the position in the sequence.

Agamik BarCoder will check only the first file name to see if a file of the same name already exists. It is up to the operator to ensure that you do not accidentally overwrite existing files.

Examples

A sequence of three EAN 13 EPSF barcodes from 5030666000095, using the default file name, will create files:

EAN13 5030666000095.eps

EAN13 5030666000101.eps

EAN13 5030666000118.eps

A sequence of four PDF barcodes from 5030666000002 with addon 00, incrementing the addon, will create default files:

EAN13 5030666000002_00.pdf

EAN13 5030666000002_01.pdf

EAN13 5030666000002_02.pdf

EAN13 5030666000002_03.pdf

Note that if an addon of 99 is incremented, then “next” addon value will be 00.

Generating a barcode

Create sequence *(continued)*

A sequence of barcodes, with a non-default name for the first file of EXAMPLE.eps, will create files:

EXAMPLE.eps

EXAMPLE+1.eps

EXAMPLE+2.eps

A sequence of four date barcodes, each incremented by seven days, and in Illustrator files:

EAN128 (11)050120.ai

EAN128 (11)050127.ai

EAN128 (11)050203.ai

EAN128 (11)050210.ai

BarCoder will increment your data field up to the maximum possible value for the field length, after which it will wrap back to zero, e.g.

Code128 998.eps

Code128 999.eps

Code128 000.eps

Code128 001.eps

Generating a barcode

Watch Mode

Watch Mode

When the program is in watch mode, it behaves exactly as normal but will also monitor a watch folder at the same time.

If a file is written to the watch folder, the program will immediately open it to obtain instructions for creating barcodes. These will be saved as files in a separate, watch save folder.

Setting up Watch Mode

You need to do two things to put the program into watch mode.

1. Specify the watch folder and watch save folder in Preferences from the BarCoder menu.

2. Activate watch mode from the File Menu.

Creating a Watch File

Your watch file is a text file which will contain instructions for the barcodes you want to create. It must adhere to a strict format which is explained later in this section. There is no restriction on the name for your watch file.

Using the Watch File

When you save the watch file into the watch folder, the program will create barcodes from the instructions in the file and place them in the designated watch save folder.

The program will also create a log file listing those barcodes which were and were not created (a barcode will not be created if there is a problem with any of the fields). The watch file is moved to the watch save folder at the same time.

Generating a barcode

Watch Mode *(continued)*

Watch File Format

For each barcode required, indicate the following information, separated by commas:

*Barcode Type (spelling as in Standard/ Other Types menu),

*Data (checksum optional),

Barcode Height value,

Barcode Height unit (mm or percent),

Barcode Width value,

Barcode Width unit (mm or percent),

Bar Reduction direction (horiz or vert),

Bar Reduction value,

Bar Reduction unit (microns or percent),

Save File Type (epsf, tiff, pdf or ai),

Save File Name,

Extra Data Fields (if required, order as in input window e.g. for ISSN, sequence variant then issue number)

Notes:

All information for each barcode must be on one line

Only the fields marked with * are essential; extra data fields may be essential for some barcode types

Exact spelling is required (e.g. microns, percent) though case is not important; spaces are ignored (except in file name)

If a field is left empty, the default value will be used

If all remaining fields on a line are to be left empty, further commas are not required

Fields not specified in the instructions will also have default values

Default values will be as designated in BarCoder Preferences (i.e. last saved, custom or standard) - not necessarily those shown on screen at the time

All barcodes will treat width and height independently, using the setting Constrain Width and Text where there is displayed data and Customise Dimensions otherwise.

Folder for Saved Barcode

Unless specified otherwise, your saved barcode file will be written to the default save folder indicated in your preferences. You may, however, include the full pathname for your barcode along with the barcode file name. This should be of the form:

/folder1/folder2/filename

or, if the default file name is required,

/folder1/folder2/

If the specified folder does not exist, the file will go in the default folder.

Generating a barcode

Watch Mode *(continued)*

Example File:

EAN 13, 5030967000008, 110, percent, 110, percent, ,,, epsf, EAN13 Enlarged, 44
EAN 13, 5030967000018, 110, percent, 110, percent, ,,, epsf,, 44
EAN 13, 503096700001, , , 38.5, mm, horiz, 2.5, percent
EAN 13, 503096700002, , , , , , , , C:\documents\barcodes\

The first barcode will encode data 5030967000008 with addon 44, enlarged to 110% of standard size, saved as an epsf to a file called EAN13 Enlarged.eps

The second barcode will fail because the checksum is wrong.

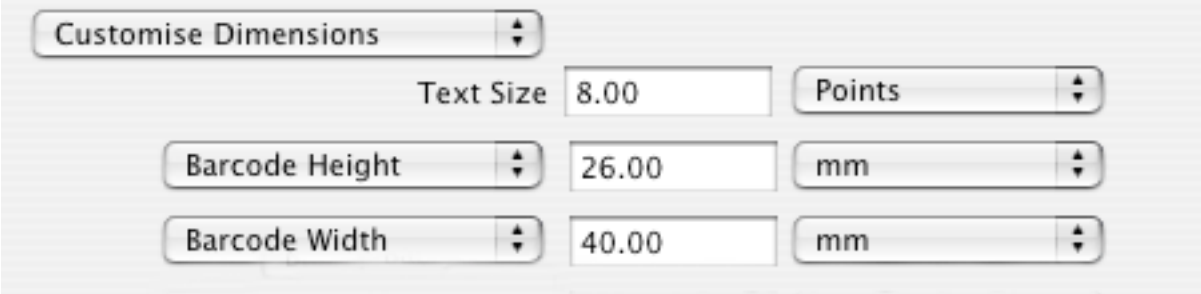
The third barcode will encode 5030967000015 with no addon, will be default height but 38.5 mm wide and have horizontal bar reduction of 2.5% and be saved in default format to the default file name (in this case EAN13_5030967000015)

The fourth barcode will encode 5030967000022 with default height and width and will be saved in the folder C:\documents\barcodes\ with default name.

The successful barcodes will otherwise have the style and appearance of the default setting for EAN 13 barcodes (as indicated in preferences) e.g. with light margin indicators, on a coloured background etc.

Generating a barcode

Barcode size



Controlling the Size of Your Barcode

You have control over the width and height of your barcode and also the size of your text.

Constrain Proportions & Customise Dimensions & Constrain Text and Width

If you select Constrain Proportions then, whenever you change one of these three values, the other two will be updated automatically. Similarly, you can select Constrain Text with Width which allows you to adjust the barcode height without affecting the barcode width or text size. Customise Dimensions allows you to change any value without without affecting the other two.

Text Size

You may specify the size of your text as a percentage of the default text height. You can also treat text height in millimetres or points, though note that digits and upper case letters will require less space than the value shown here.

If Constrain Proportions is selected, then the displayed Height and Width fields will change too. If Constrain Text and Width is selected, then the displayed Height value will remain unchanged.

Note that for publishing barcodes there is a second text field for which you can specify the height. This will have an indicative name, e.g. ISBN Text, and is treated in the same way as the conventional Text height.

Barcode Height & Bar Height (& Row Height)

With this popup menu you can specify the term of reference for your height value.

Barcode Height measures the height of the full barcode including all text and bars plus margins above and below. Bar Height measures the height of an individual bar. For barcode types with more than one length of bar, including 2-d barcodes, the bars used are indicated on the barcode displayed on screen and also stated in the section for that barcode type. For 2-dimensional barcodes, you can also specify the height of an individual row.

You may specify the height either as a percentage of the default value or as an absolute value measured in either metric or imperial units. Note that the units chosen here do not affect the units used to show the dimensions in the barcode window, which are selected in Preferences.

If Constrain Proportions is selected, then the displayed Text and Width fields will change too. If Customise Dimensions or Constrain Text and Width is selected, then the displayed Text and Width values will remain unchanged.

Generating a barcode

Barcode size *(continued)*

Barcode Width & Bar - Bar Width & Narrow Bar Width (&Chars per Inch)

With this popup menu you can specify the term of reference for your width value.

Barcode Width measures the width of the full barcode including any margin to the left and right. Bar - Bar Width measures the width from the first bar to the last bar, inclusive, including any addon, but not any composite component. The narrow bar width is the nominal width of a narrow bar - where the widths of individual narrow bars may vary according to their position in the barcode, this value refers to the unadjusted narrow bar.

You may specify the width either as a percentage of the default value or as an absolute value measured in either metric or imperial units. Note that the units chosen here do not affect the units used to show the dimensions in the barcode window, which are selected in Preferences.

Chars per Inch is a measure of the number of data characters encoded in an inch of barcode and is restricted to those barcode types which have a one to one relationship between bars and characters. If this option is selected, the value entered is a decimal number.

If Constrain Proportions is selected, then the displayed Text and Height fields will change too. If Constrain Text and Width is selected, then only the displayed Text values will change.

EXAMPLES

A. To generate a barcode (including light margins) to fit an exact area :

1. Select the barcode type from the Standard Types menu

2. Enter the characters to be encoded

3. Set the options for your barcode, including font and colour

4. Select Constrain Text with Width

5. Select Barcode Height and enter the height for your area

6. Select Barcode Width and enter the width of your area

7. Select Transparent (if required)

B. To reproduce a barcode (not including light margins) exactly :

1. Select the barcode type from the Standard Types menu

2. Enter the characters to be encoded

3. Set the options for your barcode, including font and colour

4. Select Customise Dimensions

5. Enter the required text height

6. Select Bar Height and enter the height of an individual bar

7. Select Bar - Bar Width and enter the width from the leftmost bar to the rightmost bar.

8. Select Transparent (if required)

Not all barcode types allow full control over shape and size. In particular, barcode types from the Glaxo Wellcome sub-menu are restricted to specific dimensions.

Generating a barcode

Composite barcode

Composite Barcodes

Some barcodes can have a composite component attached at the top. The composite part contains additional information which will usually conform with the GS1-128 syntax, which is described in the chapter on GS1-128.

The composite option is available only with certain barcode types, which are listed below:

EAN 13

EAN 8

UPC-A

UPC-E

EAN 128

RSS 14

RSS Limited

RSS Expanded

If you need to use the composite component, click the Composite button on the input window for that barcode type.

Data

It is possible for your composite data to be free form, but normally it will be structured such that meaningful information is contained by your barcode.

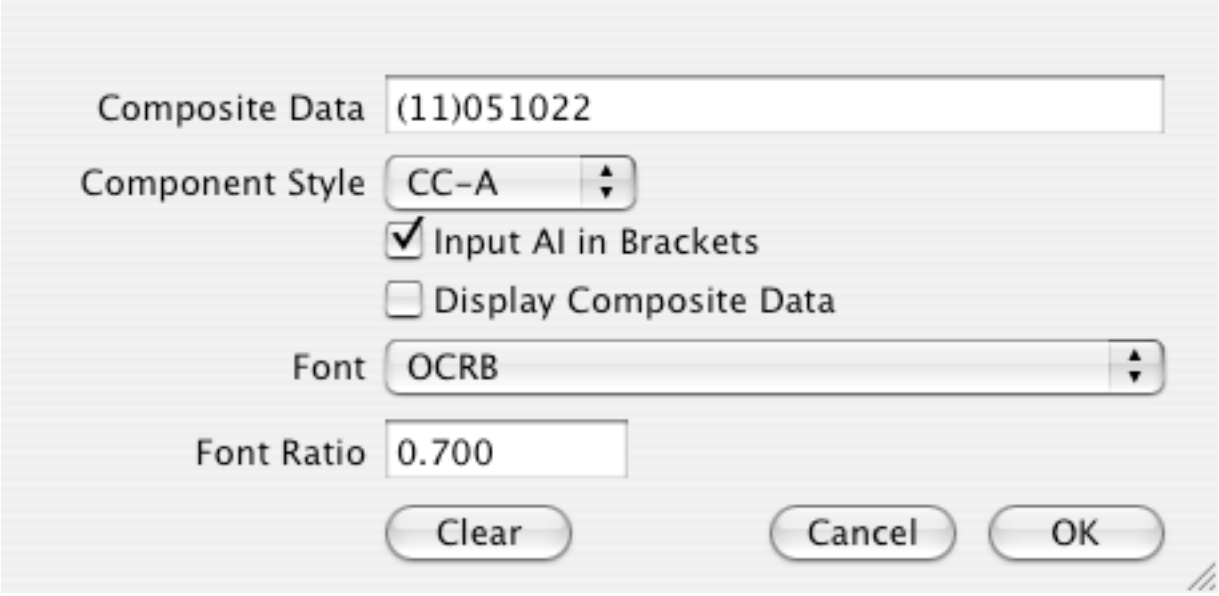
To be meaningful, your data must contain matched application identifiers and codes.

Each application identifier may be enclosed in brackets, e.g. (13), and should be followed by the appropriate code e.g. 050803.

You may include in your data more than one application identifier and code up to a total of 99 characters. You are limited to a maximum of eight application identifiers per barcode.

Before you can leave the composite window, the program will check that your data is correctly formatted and that all your application identifiers are legal and are followed by valid code.

Application identifiers and codes are described in detail in the chapter for GS1-128.



Generating a barcode

Composite barcode *(continued)*

If an application identifier is not recognised by Agamik BarCoder, or if the associated code does not conform with the required specification, the program will not be able to create a composite component. You may be using a new application identifier which has been introduced since your version of the software was released; if this is the case, you should contact Agamik who will be happy to supply you with an upgrade.

Input AI in Brackets

You may wish to avoid having brackets around your input application identifiers, e.g. 13050803 rather than (13)050803, in which case you can unselect this option. If you do not use brackets, then you must make sure that variable length application identifiers are either at the end of your data, or have the maximum length field.

CC-A, CC-B, CC-C

There are three ways of representing your composite data, known as CC-A, B and C, though CC-C is not available for all barcode types. In general, CC-B can encode more data than CC-A and CC-C more than CC-B, but CC-A is more efficient than CC-B, which is more efficient than CC-C.

Each representation goes in a fixed place for each barcode type, and sometimes will cause the overall barcode width to increase (as well as the overall height).

Input Format

You may choose the structured GS1 format with or without brackets around your input application identifiers, e.g. (13)050811 or 13050811. If you do not use brackets, you must make sure that variable length fields are either at the end of your data, or have the maximum length.

Alternatively, you can choose Free Form. In this case, BarCoder will not preform any syntax checks and the encoded data will not contain the special GS1 indicator character (FNC1).

Display Composite Data

It is possible to display the composite data above the barcode. If more than one Application Identifier is used, this may extend to more than one line.

Font

You can select the font for your composite data (if displayed). This can be different from the font used for the main part of the barcode.

Font Size

The composite data is normally 70% of the size of the main barcode data. You can vary this ratio.

Clear

This clears your composite data.

Cancel

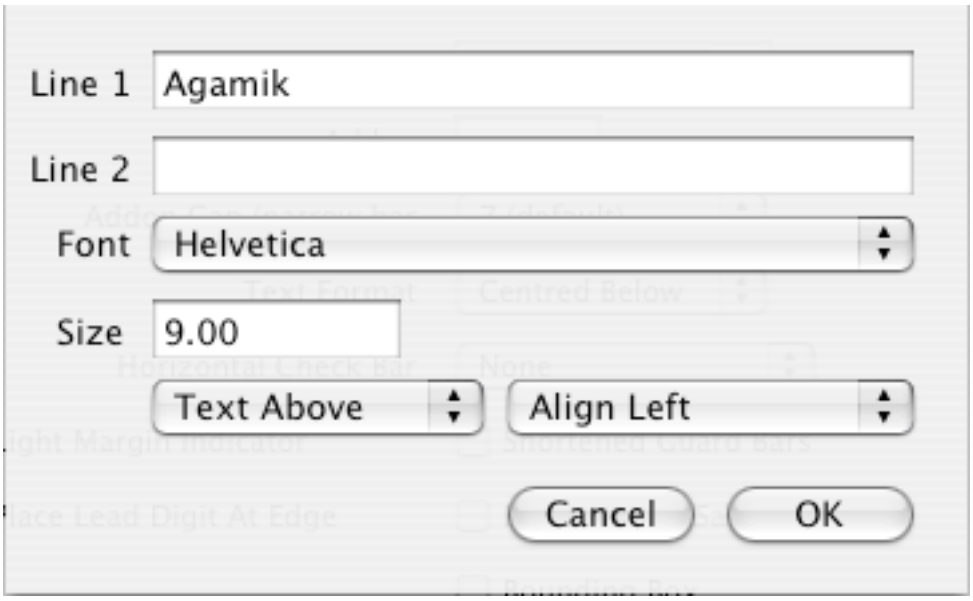
This cancels everything you have done since entering the composite dialogue.

OK

This confirms that you are happy with your composite data. If BarCoder cannot draw your barcode, it will warn you and you will not be able to leave the composite window. Notice that the composite component is shown on screen alongside the barcode display.

Generating a barcode

Extra text



Extras
You may wish to add text above or below your barcode to help subsequent identification. BarCoder allows you to add one or two lines of text, which will be saved along with the barcode in the barcode file.

Line 1
This is the first of your two possible lines of text. You can enter up to 29 characters and BarCoder will squeeze the text to ensure it fits within the barcode width.

Line 2
This is the second line of text, which can also be up to 29 characters long.

Font
This popup menu allows you to select the font you want your extra text to be displayed in.

Size
This is the size, in point, of your text.

Text Above / Text Below
Both lines of text will be displayed together, but they can be above or below the barcode.

Text Alignment
You can have your extra text left justified, centred or right justified.

Cancel
If you click this button, any changes to your extra text will be discarded.

Okay
Click this button to confirm the changes you have made.

Barcode Types

EAN 13

EAN 13

EAN 13 is used mostly for retail items which will be scanned at point of sale. The barcode encodes 13 data digits with an optional addon of 2 or 5 digits. The thirteenth data digit acts as a check digit for the first twelve; there is no check digit in the addon.

The barcode is produced in accordance with specifications provided by GS1 International.

Note that variations of EAN 13 used in the publishing industry each have their own barcode type and are described in the chapters on ISBN (EAN and Bookland), ISSN and ISMN. Glaxo Wellcome also use variations of EAN 13 described in the GW EAN 13 chapter. IKS is a variation of EAN 13 used for pharmaceutical applications.

EAN13 Data

There are always thirteen data digits for an EAN 13 barcode. You should enter at least the first twelve. If you have entered fewer than 12 data digits, a warning message will be displayed if you attempt to save the barcode and you must correct the data field. If you have entered only 12 data digits, the program will offer to insert the check digit for you. If you have entered 13 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

To calculate the EAN 13 check digit, the first twelve digits are added together, with every second digit (starting with the second from the left) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 50 30967 00000 gives a check digit of 8:

(5 + 3 + 9 + 7 + 0 + 0) + (0 + 0 + 6 + 0 + 0 + 0) x 3 = 24 + 18 = 42;

42 + 8 = 50.

Addon

The addon field may be left empty (in which case there is no addon) or it must contain either two or five digits. If you have entered 1, 3 or 4 addon digits a warning message will be displayed if you attempt to save the barcode and you must correct the addon field.

Addon Gap

The addon is normally situated apart from the main barcode, separated by the equivalent of seven narrow bar widths. It is possible to increase this gap to 8, 9 or 10 narrow bar widths.

Barcode Types

EAN 13 *(continued)*

Text Format

Most EAN 13 barcodes display the number below the barcode, with the lead digit in the left margin and the other twelve digits in two groups of six. This is defined as Normal Below. However, you may wish to display the number in a single group of thirteen digits, centred either below the barcode or above it. In these cases, the guard bars are made the same length as the other bars.

A further, non-standard, layout is offered where the data is split 2 5 5 1. Though the barcode appears slightly different, it is structurally identical and will scan correctly.

Light Margin Indicator

The light margins for EAN 13 are to the left and right of the barcode. Light Margin Indicators (LMIs) are used to indicate the extent of this margin and appear as chevrons adjacent to the barcode text. If the first data digit is displayed in the left margin, a light margin indicator (LMI) may be required only in the right margin.

Shortened Guard Bars

The guard bars are the bars at the start, middle and end of the main part of the EAN 13 barcode. These will normally be longer than the data bars and will descend to half way down the digits below. Shortened guard bars will be the same length as the data bars. Note that guard bars will be shortened automatically if your text is centred.

Horizontal Check Bar

A horizontal bar can be placed above the bars (or below if the text is displayed above). It can be extended into the margins of required.

Right Margin Same As Left

This will cause the light margin to the right of the barcode to be increased to the same size as the left margin. Normally the left margin will be 11 narrow bar widths and the right margin 7 module widths (see below).

Place Lead Digit At Edge

Normally, the lead digit is displayed in the left margin, but offset from the edge by a narrow bar width. This option allows you to move it hard against the edge of the margin.

Bounding Box

It is possible to surround the entire barcode, including text and margins, with a bounding box. The width of the box will always be a narrow bar width.

You can opt to leave a gap between the top of the bars and the box.

Composite

For EAN 13, composite components are restricted to CC-A or CC-B and extend slightly into both left and right light margins. If a composite component is present, note that some of the options above may not apply. Composite components are described in more detail in their own chapter.

Barcode Types

EAN 13 *(continued)*

Size

The default dimensions are based on the nominal barcode size specified by GS1 International. They refer to normal barcodes, with no bounding box or bearer bar, and no composite component.

EAN 13 displayed digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. All characters in the barcode, including those above the addon (but not above the composite), are the same size. Note that non-shortened guard bars always extend half way down the characters below.

The default height for an EAN 13 barcode is 26.59mm. This includes margins of 0.33mm below the text and above the bars. The bar height used here is for the data bar in the main part of the barcode which has a nominal length of 22.85mm.

The default width for an EAN 13 barcode varies according to the size of the addon (if any).

No addon: nominal barcode width is 37.29mm; bar to bar width is 31.35mm.

2 digit addon: nominal barcode width is 46.2mm; bar to bar width is 40.26mm.

5 digit addon: nominal barcode width is 55.11mm; bar to bar width is 49.17mm.

The nominal narrow bar width is 0.33mm.

It is recommended that your width is between 80% and 200% of these values.

Light margins and the gap between the main part of the barcode and the addon part remain in proportion. The nominal width of these are:

Left Margin	3.63mm
Right Margin	2.31mm
Barcode-Addon (seven narrow bar widths)	2.31mm

Font

The font recommended by GS1 International is OCRB.

Barcode Types

EAN 8

EAN 8

EAN 8 is used mostly for retail items that will be scanned at point of sale. The barcode encodes 8 data digits with the eighth digit acting as a check digit for the first seven; there is no addon with EAN 8.

The barcode is produced in accordance with specifications provided by GS1 International.

Note that variations of EAN 8 used by proprietary organisations each have their own barcode type and are described in the chapters on M&S 7, Wickes 8, Woolworth 8 and ASDA 8. Glaxo Wellcome also use variations of EAN 8 described in the GW EAN 8 chapter.

Data

There are always eight data digits for an EAN 8 barcode. You should enter at least the first seven. If you have entered fewer than 7 data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 7 data digits, the program will offer to insert the check digit for you. If you have entered 8 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

The algorithm for calculating the EAN 8 check digit is similar to that for EAN 13. The first seven digits are added together, with every second digit (starting from the leftmost) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 5012345 gives a check digit of 2:

(5 + 1 + 3 + 5) x 3 + (0 + 2 + 4) = 42 + 6 = 48;

48 + 2 = 50.

Text Format

Most EAN 8 barcodes display the number below the barcode, with the eight digits in two groups of four. This is defined as Normal Below. However, you may wish to display the number in a single group of eight digits, centred either below the barcode or above it. In these cases, the guard bars are made the same length as the other bars.

Light Margin Indicator

The light margins for EAN 8 are to the left and right of the barcode. Light Margin Indicators (LMIs) are used to indicate the extent of this margin and appear as chevrons adjacent to the barcode text.

Barcode Types

EAN 8 *(continued)*

Shortened Guard Bars

The guard bars are the bars at the start, middle and end of the main part of the EAN 8 barcode. These will normally be longer than the data bars and will descend to half way down the digits below. Shortened guard bars will be the same length as the data bars. Note that guard bars will be shortened automatically if your text is centred.

Bounding Box

It is possible to surround the entire barcode, including text and margins, with a bounding box. The width of the box will always be a narrow bar width.

You can opt to leave a gap between the top of the bars and the box.

Composite

For EAN 8, composite components are restricted to CC-A or CC-B and extend well into the left light margin and slightly into the right. Composite components are described in more detail in their own chapter.

Size

The default dimensions are based on the nominal barcode size specified by GS1 International. They refer to normal barcodes, with no bounding box or bearer bar, and no composite component.

EAN 8 displayed digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. All characters in the barcode, but not above the composite, are the same size. Note that non-shortened guard bars always extend half way down the characters below.

The default height for an EAN 8 barcode is 21.97mm. This includes margins of 0.33mm below the text and above the bars. The bar height used here is for the data bar in the main part of the barcode which has a nominal length of 18.23mm.

The default width for an EAN 8 barcode is 26.73, which includes margins to the left and right. The nominal width from bar to bar is 22.11mm and the nominal narrow bar width is 0.33mm. It is recommended that your width is between 80% and 200% of these values.

Light margins remain in proportion as the width changes. The nominal width of these are:

Left Margin	2.31mm
Right Margin	2.31mm

Font

The font recommended by GS1 International is OCRB.

Barcode Types

UPC A

UPC-A

UPC-A is used mostly for retail items which will be scanned at point of sale. The barcode encodes 12 data digits with an optional addon of 2 or 5 digits. The twelfth data digit acts as a check digit for the first eleven; there is no check digit in the addon.

The barcode is produced in accordance with specifications provided by Uniform Code Council Inc. (now GS1 US).

Note that variations of UPC-A used in the publishing industry each have their own barcode type and are described in the chapters on ISBN (UPC Price Point and UPC Item Specific).

Data

There are always twelve data digits for a UPC-A barcode with up to four optional space or hyphen characters. You should enter at least the first eleven digits.

If you have entered fewer than 11 data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 11 data digits, the program will offer to insert the check digit for you. If you have entered 12 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

The algorithm for calculating the UPC-A check digit is similar to that for EAN 13. The first eleven digits are added together, with every second digit (starting from the leftmost) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 0 12345 66666 gives a check digit of 7:

(0 + 2 + 4 + 6 + 6 + 6) x 3 + (1 + 3 + 5 + 6 + 6) = 72 + 21 = 93;

93 + 7 = 100.

The spaces and hyphens are displayed only if you choose to display the data below the guard bars, but may also be helpful if you want to highlight the component codes within the whole number.

Addon

The addon field may be left empty (in which case there is no addon) or it must contain either two or five digits.

If you have entered 1, 3 or 4 addon digits a warning message will be displayed when you attempt to save the barcode and you must correct the addon field.

Leading Letter

The leading letter is optional and is displayed immediately above the lead digit and is shown only if the lead digit is also shown. There is no restriction as to which letters may be used, but you must use upper case. The leading letter is not encoded in the bars.

Barcode Types

UPC A *(continued)*

Data Display

The normal position for the data is immediately below the bars in between the guard bars.

Alternatively, you can place the data further down, beneath the guard bars. This allows you to display the spaces and hyphens as well as the numbers.

Addon Gap

The addon is normally situated apart from the main barcode, separated by the equivalent of nine narrow bar widths. It is possible to increase this gap to 10, 11 or 12 narrow bar widths.

Lead Digit Display and Check Digit Display

These popup menus allow you to specify where the lead and check digits are to be displayed (if at all). Each of these digits may be located at the top, middle or bottom of the barcode.

If a light margin indicator (< or >) is selected, then it will be at the same position as the text. Note that if there is an addon and you select the right LMI, then the > will be shown to the right of the addon data and the check digit retained next to the barcode data.

Bounding Box

It is possible to surround the entire barcode, including text and margins, with a bounding box. The width of the box will always be a narrow bar width.

You can opt to leave a gap between the top of the bars and the box.

Composite

For UPC-A, composite components are restricted to CC-A or CC-B and extend slightly into both left and right light margins. Composite components are described in more detail in their own chapter.

Barcode Types

UPC A *(continued)*

Size

The default dimensions are based on the nominal barcode size specified by Uniform Code Council Inc. They refer to normal barcodes, with no bounding box or lowered text, and no composite component.

UPC-A displayed digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. All characters below the main bars, and above the addon (but not above the composite), are the same size. The lead digit and check digit, if shown, will be 75% size.

When data is displayed within the guard bars the barcode height is 26.59mm; when data display is below the guard bars the height is 28.25mm. In both cases this includes margins of 0.33mm below and above. The bar height used here is for the data bar in the main part of the barcode which has a nominal length of 22.86mm.

The default width for a UPC-A barcode varies according to the size of the addon (if any).

No addon: nominal barcode width is 37.95mm; bar – bar width is 31.35mm.

2 digit addon: nominal barcode width is 46.2mm; bar – bar width is 41.25mm.

5 digit addon: nominal barcode width is 55.11mm; bar – bar width is 50.16mm.

The nominal width of a narrow bar is 0.33mm.

It is recommended that your width is between 80% and 200% of these values.

Light margins and the gap between the main part of the barcode and the addon part remain in proportion as the width changes. The nominal width of these are:

No addon:	Left Margin	2.97mm
	Right Margin	2.97mm
Addon:	Left Margin	2.97mm
	Barcode-Addon (nine narrow bar widths)	2.97mm
	Right Margin	1.65mm

Font

The font recommended by Uniform Code Council Inc. is OCRB.

Barcode Types

UPC E

UPC-E

UPC-E is used mostly for retail items which will be scanned at point of sale. The barcode encodes eight data digits with an optional addon of 2 or 5 digits. The eighth data digit acts as a check digit for the first seven; there is no check digit in the addon.

The barcode is produced in accordance with specifications provided by Uniform Code Council Inc. (now GS1 US).

Data

There are always eight data digits for a UPC-E barcode. You should enter at least the first seven. The lead digit must always be zero. If any digit other than zero is entered as the first digit, the program will be unable to draw your barcode. If you have entered fewer than 7 data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 7 data digits, the program will offer to insert the check digit for you.

If you have entered 8 data digits the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

The algorithm for calculating the UPC-E check digit is identical to that for UPC-A. The first seven digits are first turned into eleven digits, depending on the value of the seventh digit as follows:

0abcde0 becomes 0ab00000cde

0abcde1 becomes 0ab10000cde

0abcde2 becomes 0ab20000cde

0abcde3 becomes 0abc00000de

0abcde4 becomes 0abcd00000e

0abcde5 becomes 0abcde00005

0abcde6 becomes 0abcde00006

0abcde7 becomes 0abcde00007

0abcde8 becomes 0abcde00008

0abcde9 becomes 0abcde00009

The new eleven digits are added together, with every second digit (starting from the leftmost) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example, the number 0123456 will give the derived number 0 12345 00006. This in turns gives a check digit of 5:

(0 + 2 + 4 + 0 + 0 + 6) x 3 + (1 + 3 + 5 + 0 + 0) = 36 + 9 = 45;

45 + 5 = 50.

Addon

The addon field may be left empty (in which case there is no addon) or it must contain either two or five digits. If you have entered 1, 3 or 4 addon digits a warning message will be displayed when you attempt to save the barcode and you must correct the addon field.

Barcode Types

UPC E *(continued)*

Addon Gap

The addon is normally situated apart from the main barcode, separated by the equivalent of nine narrow bar widths. It is possible to increase this gap to 10, 11 or 12 narrow bar widths.

Lead Digit Display and Check Digit Display

These popup menus allow you to specify where the lead and check digits are to be displayed (if at all). Each of these digits may be located at the top, middle or bottom of the barcode.

If a light margin indicator (< or >) is selected, then it will be at the same position as the text. Note that if there is an addon and you select the right LMI, then the > will be shown to the right of the addon data and the check digit retained next to the barcode data.

Bounding Box

It is possible to surround the entire barcode, including text and margins, with a bounding box. The width of the box will always be a narrow bar width.

You can opt to leave a gap between the top of the bars and the box.

Composite

For UPC-E, composite components are restricted to CC-A or CC-B and extend well into the left light margin and slightly into the right. Composite components are described in more detail in their own chapter.

Size

The default dimensions are based on the nominal barcode size specified by Uniform Code Council Inc. They refer to normal barcodes, with no bounding box and no composite component.

UPC-E displayed digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. All characters below the bars barcode, and above the addon (but not above the composite), are the same size. The lead digit and check digit, if shown, will be 75% size.

The nominal barcode height is 26.59mm which includes margins of 0.33mm below and above. The bar height used here is for the data bar in the main part of the barcode which has a nominal length of 22.86mm.

The default width for a UPC-E barcode varies according to the size of the addon (if any).

No addon: nominal barcode width is 22.11mm; bar to bar width is 16.83mm.

2 digit addon: nominal barcode width is 31.02mm; bar to bar width is 26.40mm.

5 digit addon: nominal barcode width is 39.93mm; bar to bar width is 35.31mm.

The nominal narrow bar width is 0.33mm.

It is recommended that your width is between 80% and 200% of these values.

Light margins and the gap between the main part of the barcode and the addon part remain in proportion as the width changes. The nominal width of these are:

No addon:	Left Margin	2.97mm
	Right Margin	2.31mm
Addon:	Left Margin	2.97mm
Barcode-Addon		
(nine narrow bar widths)		2.97mm
	Right Margin	1.65mm

Font

The font recommended by Uniform Code Council Inc. is OCRB.

Barcode Types

JAN 13

JAN 13

JAN 13 is a variation of EAN 13, mostly used for retail items in Japan.

The barcode encodes 13 data digits with an optional addon of 2 or 5 digits. The thirteenth data digit acts as a check digit for the first twelve; there is no check digit in the addon.

The barcode is produced in accordance with specifications provided by GS1 International.

JAN13 Data

There are always thirteen data digits for an JAN 13 barcode. You should enter at least the first twelve. If you have entered fewer than 12 data digits, a warning message will be displayed if you attempt to save the barcode and you must correct the data field. If you have entered only 12 data digits, the program will offer to insert the check digit for you. If you have entered 13 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit.

To calculate the JAN 13 check digit, the first twelve digits are added together, with every second digit (starting with the second from the left) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number of 45 01234 56789 gives a check digit of 6:

(4 + 0 + 2 + 4 + 6 + 8) + (5 + 1 + 3 + 5 + 7 + 9) x 3 = 24 + 90 = 114;

114 + 6 = 120.

Addon

The addon field may be left empty (in which case there is no addon) or it must contain either two or five digits. If you have entered 1, 3 or 4 addon digits a warning message will be displayed if you attempt to save the barcode and you must correct the addon field.

Addon Gap

The addon is normally situated apart from the main barcode, separated by the equivalent of seven narrow bar widths. It is possible to increase this gap to 8, 9 or 10 narrow bar widths.

Text Format

Most JAN 13 barcodes display the number below the barcode, with the lead digit in the left margin and the other twelve digits in two groups of six. This is defined as Normal Below. However, you may wish to display the number in a single group of thirteen digits, centred either below the barcode or above it. In these cases, the guard bars are made the same length as the other bars.

Light Margin Indicator

The light margins for JAN 13 are to the left and right of the barcode. Light Margin Indicators (LMIs) are used to indicate the extent of this margin and appear as chevrons adjacent to the barcode text. If the first data digit is displayed in the left margin, a light margin indicator (LMI) may be required only in the right margin.

Shortened Guard Bars

The guard bars are the bars at the start, middle and end of the main part of the JAN 13 barcode. These will normally be longer than the data bars and will descend

Barcode Types

JAN 13 *(continued)*

to half way down the digits below. Shortened guard bars will be the same length as the data bars. Note that guard bars will be shortened automatically if your text is centred.

Horizontal Check Bar

A horizontal bar can be placed above the bars (or below if the text is displayed above). It can be extended into the margins of required.

Right Margin Same As Left

This will cause the light margin to the right of the barcode to be increased to the same size as the left margin. Normally the left margin will be 11 narrow bar widths and the right margin 7 narrow bar widths (see below).

Place Lead Digit At Edge

Normally, the lead digit is displayed in the left margin, but offset from the edge by a narrow bar width. This option allows you to move it hard against the edge of the margin.

Bounding Box

It is possible to surround the entire barcode, including text and margins, with a bounding box. The width of the box will always be a narrow bar width.

You can opt to leave a gap between the top of the bars and the box.

Composite

For JAN 13, composite components are restricted to CC-A or CC-B and extend slightly into both left and right light margins. If a composite component is present, note that some of the options above may not apply. Composite components are described in more detail in their own chapter.

Size

The default dimensions are based on the nominal barcode size specified by GS1 International. They refer to normal barcodes, with no bounding box or bearer bar, and no composite component.

JAN 13 displayed digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. All characters in the barcode, including those above the addon (but not above the composite), are the same size. Note that non-shortened guard bars always extend half way down the characters below.

The default height for an JAN 13 barcode is 26.59mm. This includes margins of 0.33mm below the text and above the bars. The bar height used here is for the data bar in the main part of the barcode which has a nominal length of 22.85mm.

The default width for an JAN 13 barcode varies according to the size of the addon (if any).

No addon: nominal barcode width is 37.29mm; bar to bar width is 31.35mm.

2 digit addon: nominal barcode width is 46.2mm; bar to bar width is 40.26mm.

5 digit addon: nominal barcode width is 55.11mm; bar to bar width is 49.17mm.

The nominal narrow bar width is 0.33mm.

It is recommended that your width is between 80% and 200% of these values.

Light margins and the gap between the main part of the barcode and the addon part remain in proportion. The nominal width of these are:

Left Margin	3.63mm
Right Margin	2.31mm
Barcode-Addon	2.31mm

(seven narrow bar widths)

Font

The font recommended by GS1 International is OCRB.

Barcode Types

JAN 8

JAN 8

JAN 8 is a variation of EAN 8, mostly used for retail items in Japan. The barcode encodes 8 data digits with the eighth digit acting as a check digit for the first seven; there is no addon with JAN 8. The barcode is produced in accordance with specifications provided by GS1 International.

Data

There are always eight data digits for an EAN 8 barcode. You should enter at least the first seven. If you have entered fewer than 7 data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 7 data digits, the program will offer to insert the check digit for you. If you have entered 8 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.
The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.
The algorithm for calculating the EAN 8 check digit is similar to that for JAN 13. The first seven digits are added together, with every second digit (starting from the leftmost) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.
For example the number of 4910234 gives a check digit of 5:
(4 + 1 + 2 + 4) x 3 + (9 + 0 + 3) = 33 + 12 = 45;
45 + 5 = 50.

Text Format

Most JAN 8 barcodes display the number below the barcode, with the eight digits in two groups of four. This is defined as Normal Below. However, you may wish to display the number in a single group of eight digits, centred either below the barcode or above it. In these cases, the guard bars are made the same length as the other bars.

Light Margin Indicator

The light margins for JAN 8 are to the left and right of the barcode. Light Margin Indicators (LMIs) are used to indicate the extent of this margin and appear as chevrons adjacent to the barcode text.

Barcode Types

JAN 8 *(continued)*

Shortened Guard Bars

The guard bars are the bars at the start, middle and end of the main part of the JAN 8 barcode. These will normally be longer than the data bars and will descend to half way down the digits below. Shortened guard bars will be the same length as the data bars. Note that guard bars will be shortened automatically if your text is centred.

Bounding Box

It is possible to surround the entire barcode, including text and margins, with a bounding box. The width of the box will always be a narrow bar width.
You can opt to leave a gap between the top of the bars and the box.

Composite

For JAN 8, composite components are restricted to CC-A or CC-B and extend well into the left light margin and slightly into the right. Composite components are described in more detail in their own chapter.

Size

The default dimensions are based on the nominal barcode size specified by GS1 International. They refer to normal barcodes, with no bounding box or bearer bar, and no composite component.
JAN 8 displayed digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. All characters in the barcode, but not above the composite, are the same size. Note that non-shortened guard bars always extend half way down the characters below.
The default height for an JAN 8 barcode is 21.97mm. This includes margins of 0.33mm below the text and above the bars. The bar height used here is for the data bar in the main part of the barcode which has a nominal length of 18.23mm.
The default width for an JAN 8 barcode is 26.73, which includes margins to the left and right. The nominal width from bar to bar is 22.11mm and the nominal narrow bar width is 0.33mm. It is recommended that your width is between 80% and 200% of these values.
Light margins remain in proportion as the width changes. The nominal width of these are:

Left Margin	2.31mm
Right Margin	2.31mm

Font

The font recommended by GS1 International is OCRB.

Barcode Types

UPC Coupon

UPC Coupon is a combination of UPC-A and GS1 Extended which is used on coupons.

The barcode encodes a combination of data. These are (with values from the example above in brackets): 5 digit manufacturer ID (12345), 3 digit family code (001), 2 digit value code (66), single digit NSC (number system characteristic - 2), 5 digit offer code (20000) and 4 digit date (MMYY - 0111).

The barcode is produced in accordance with specifications published by GS1 International. It will eventually be superseded by the new GS1 Coupon barcode.

Manufacturer ID

This is the five digit number which will also appear on barcodes for retail products from the same manufacturer.

Family Code

This three digit number should be uniquely allocated by the manufacturer.

Value Code

This two digit code indicates the value of the coupon, which is derived from a list of recognised values. In the example above, 66 represents $8.00.

NSC

This is a single digit representing the manufacturer's number system characteristic. Note that the NSC 5 is always used for coupon UPC-A barcodes so this number appears in the extended part of the barcode.

Offer Code

This is a five digit number allocated by the manufacturer.

Expiration Date (MMYY)

This four digit field represents the month and year when the offer will end.

Addon Gap

The addon is normally situated apart from the main barcode, separated by the equivalent of nine narrow bar widths. It is possible to increase this gap to 10, 11 or 12 narrow bar widths.

Display Offer Above Bars

The five digit offer code can be displayed above the main barcode as well as in the data below the addon.

Barcode Types

UPC Coupon *(continued)*

Size

Text

The default dimensions are based on the nominal barcode size specified by GS1.

UPC-A displayed digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. All characters below and above the main bars are the same size. The lead digit and check digit, if shown, will be 75% size.

The digits below the addon will be 90% size.

Width

The default width for the UPC-A part of the barcode is 31.35mm, which represents a narrow bar width of 0.33mm. The default width of the addon is 33.33mm.

With a variable gap this means that the full barcode ranges from 73.59 to 74.58mm, including a margin of 9 narrow bar widths on each side.

Height

The default height for the bars is 22.86mm and the full barcode measures 29.68mm with the offer code displayed above the bars or 26.60mm without.

Font

The font recommended by GS1 International is OCRB.

Barcode Types

ITF

ITF

ITF is used mostly on materials such as cardboard where print quality is poor. The barcode may encode an even number of data digits between 4 and 18 digits, with an optional addon of 6 digits. The last data digit can be used to act as a check digit; there is no check digit in the addon. The commonly used ITF-14 can be selected as a specific option.

The barcode is produced in accordance with specifications provided by GS1 International.

Note that a variation of ITF-14 is described in the chapter UPC-Shipping. Note also that ITF is itself a variation of Code 25 which is described in the chapter on Code 25.

Data

There are always between 4 and 18 data digits for an ITF barcode. You may also enter up to six space characters as part of your data. If you have entered fewer than the required number of digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered an odd number of digits, a leading zero is added (but not displayed).

If you have opted to have your check digit verified, the program will confirm the check digit before it can save the barcode. If the check digit is wrong, the program will offer to replace it with the correct value; if you decline, then no barcode will be saved. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

The algorithm for calculating the ITF check digit is similar to that for Code 25. The first digits are added together, with every second digit (starting from the leftmost) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 0 50 30967 01234 gives a check digit of 6:

(0 + 0 + 0 + 6 + 0 + 2 + 4) x 3 + (5 + 3 + 9 + 7 + 1 + 3) = 36 + 28 = 64;

64 + 6 = 70.

Note that the space characters entered as part of your data are used for display purposes only.

Addon

The addon field may be left empty (in which case there is no addon) or it must contain six digits. No space characters are permitted with the addon digits. If you have entered fewer than six addon digits a warning message will be displayed when you attempt to save the barcode and you must correct the addon field.

ITF 14

Selecting this option ensures that you have a proper 14 digit number, including a check digit.

Checksum Calculation

This popup menu lets you specify whether you want a check digit to be added, or if you want the program to verify the one you have entered. You may also opt not to have a check digit, though this is not permitted for ITF-14.

Text Format

This pop-up menu lets you choose the format for displaying your data. It defines the spacing of the characters. If you choose Free Form the data will be displayed with the same spacing as in your Data Input field. No Gaps displays the data with no spaces.

Barcode Types

ITF *(continued)*

12551 and 3551 are valid only for barcodes with 14 digits (ITF-14). In these cases the fourteen digits are displayed in groups corresponding with the selection, each group separated by a space. Note that these spacings will override any spaces in your data input field.

Bearer

Your barcode can be created with no bearer bars, but four options are available. A full bearer bar can be drawn around the bars or around the bars and text. Narrow horizontal bearer bars can be drawn above and below the bars or above and below the bars and text.

Left H: and Right H:

H markers can be displayed in both the left and right light margins. You can specify the gap between the vertical parts of the H markers and locate them at the top, middle or bottom of the barcode. Each gap may be from 1mm to 7mm or you can select none to avoid displaying the H marker at all. You may also choose to hide an H marker, which will allow extra space in the barcode for where the H marker would have been. If there is no bearer, or if the text is inside the bearer bars, the lower H marker will be opposite the displayed text.

The left and right H markers are treated separately by the program.

Compact Spacing

You may wish the displayed text to be closely spaced; there are two settings offered by Agamik BarCoder.

Text Above Bars

The data characters may be displayed below or above the bars.

Size

The default dimensions are based on the nominal barcode size specified by GS1 International. The bearer bars and H markers are always the same size and are unaffected by any changes to other dimensions.

ITF displayed digits have a default cap height of 5.72 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 22.27 points or 7.86 mm overall size. All characters in the barcode, including those associated with the addon, are the same size.

The default height for an ITF barcode depends on the bearer bars selected.

With no bearer bar, the nominal height (including light margins) is 39.55mm.

With horizontal bearer, the nominal height is 43.62mm.

With a full bearer, the nominal height is 49.15mm.

The bars have a nominal height of 31.8mm.

The default width for an ITF barcode varies according to the number of digits being encoded, the bearer bar selected and any H markers used.

However, nominal widths for the commonly used ITF 14 are shown below:

Bar to bar nominal width for 14 data digits is 122.4mm;

Bar to bar nominal width for 6 addon digits is 57.4mm;

Bar to bar nominal width for 14 + 6 digits is 190.7mm.

The nominal width of a 14 digit barcode with full bearer and H markers is 159.8mm.

The nominal width for the narrow bar is 1.02mm.

It is recommended that your width is between 62.5% and 120% of these values.

Font

The font recommended by GS1 International is OCRB.

Barcode Types

UPC Shipping (SCC-14)

UPC-Shipping (SCC-14) barcodes are used mostly on materials such as cardboard where print quality is poor. The barcode encodes 14 data digits, with an optional addon of 6 digits. The last data digit acts as a check digit; there is no check digit in the addon.
The barcode is produced in accordance with specifications provided by Uniform Code Council, Inc. UPC-Shipping (SCC-14) is similar to ITF-14 which is described in the chapter on ITF.

Data

There are always fourteen data digits in a UPC-Shipping (SCC-14) barcode. You should enter at least the first thirteen. If you have entered fewer than 13 data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 13 data digits, the program will offer to insert the check digit for you. If you have entered 14 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.
The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.
The algorithm for calculating the UPC-Shipping (SCC-14) check digit is the same as that for ITF. The first thirteen digits are added together, with every second digit (starting from the leftmost) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.
For example the number 0 00 12345 67890 gives a check digit of 5:
(0 + 0 + 2 + 4 + 6 + 8 + 0) x 3 + (0 + 1 + 3 + 5 + 7 + 9) = 60 + 22 = 85;
85 + 5 = 90.
Note that when the data is displayed, it is punctuated with space characters to delimit the sub-codes.
These are:
Packaging Indicator (1 digit)
Number System (2 digits)
Manufacturer UPC ID Number (5 digits)
Item Number (5 digits)
Check Digit (1 digit)

Addon

The addon field may be left empty (in which case there is no addon) or it must contain six digits. If you have entered fewer than six addon digits a warning message will be displayed when you attempt to save the barcode and you must correct the addon field.

Bearer

Your barcode can be created with no bearer bars, but four options are available. A full bearer bar can be drawn around the bars or around the bars and text. Narrow horizontal bearer bars can be drawn above and below the bars or above and below the bars and text.

Left H: and Right H:

H markers can be displayed in both the left and right light margins. You can specify the gap between the vertical parts of the H markers and locate them at the top, middle or bottom of the barcode. Each gap may be from 1mm to 7mm or

Barcode Types

UPC Shipping *(continued)*

you can select none to avoid displaying the H marker at all. You may also choose to hide an H marker, which will allow extra space in the barcode for where the H marker would have been. If there is no bearer, or if the text is inside the bearer bars, the lower H marker will be opposite the displayed text. The left and right H markers are treated separately by the program.

Text Above

The data characters may be displayed below or above the bars.

Size

The default dimensions are based on the nominal barcode size specified by Uniform Code Council, Inc. The bearer bars and H markers are always the same size and are unaffected by any changes to other dimensions.
The default text size for UPC-Shipping (SCC-14) is 5.84mm or 16.56pts. All characters in the barcode, including those associated with the addon, are the same size.
The default height for a UPC-Shipping (SCC-14) barcode depends on the bearer bars selected.
With no bearer bar, the nominal height (including light margins) is 1.56 inches.
WIth horizontal bearer, the nominal height is 1.72 inches.
With a full bearer, the nominal height is 1.94 inches.
The bars have a nominal height of 1.25 inches.
A full bearer bar, with text outside, has nominal height 1.63 inches.

The default width for a UPC-Shipping (SCC-14) barcode varies according to the bearer bar selected and any H markers used. The nominal width with no addon, but with full bearer and H markers is 6.24 inches; without the H markers the barcode width is 6 inches.
The bar to bar nominal width with no addon is 4.82 inches.
The nominal width for the narrow bar is 0.04 inches.
It is recommended that your width is between 70% and 120% of these values.

Font

The font recommended by Uniform Code Council, Inc. is OCRB.

Barcode Types

Code 39

Code 39

Code 39 is used for encoding serial numbers and other character sequences using the full alphanumeric character set plus selected punctuation characters. Up to 64 characters may be encoded with the final character being an optional check character. The barcode is produced in accordance with specifications provided by AIM Inc.

Glaxo Wellcome also use variations of Code 39 described in the chapters called GW German PZN Code 39, GW Portuguese Code 39 and GW Dutch Code 39. Other variations, which also have their own chapters, are PZN Code 39 and IMH Code 39.

Data

There should be at least one data character and you may enter up to 64 altogether. The complete character set comprises all digits, all capital letters and seven selected characters: minus (-), dot (.), space ( ), dollar ($), slash (/), plus (+) and percent (%).

If you have no characters, a warning message will be displayed when you attempt to save the barcode and you must correct the data field.

If you have opted to have your checksum verified, the program will confirm the check character before it can save the barcode. If the check character is wrong, the program will offer to replace it with the correct value; if you decline, then no barcode will be saved. Note that a problem with the checksum may indicate an omission or error elsewhere in your data, so we suggest you always check all the characters.

The algorithm for calculating the Code 39 checksum assigns a value for each of the 43 characters, from 0 to 42. The values for the barcode data characters are added together and the checksum is the character whose value is the total modulo 43.

The digits, 0-9, have assigned values 0-9.

The letters, A-Z, have assigned values 10-35.

The selected characters, listed above, have assigned values 36-42.

Thus the data RX% 55 would have checkcode L:

27 + 33 + 42 + 38 + 5 + 5 = 150; 150 modulo 43 = 21.

Note the significance of the <space> character – RX%55 would have a different checkcode Q:

27 + 33 + 42 + 5 + 5 = 112; 112 modulo 43 = 26.

Prefix Characters

You can enter up to ten characters which will be displayed before the data, but not encoded in the bars.

Wide / Narrow Bar

The default ratio between the wide bars and narrow bars is 2.2 to 1. It is recommended that the wide to narrow ratio should be between 2 to 1 and 3 to 1.

Checksum Calculation

This popup menu lets you specify whether you want a check character to be added, or if you want the program to verify the one you have entered. You may also opt not to have a check character.

Barcode Types

Code 39 *(continued)*

Show Asterisks & Hide Asterisks & No Asterisks & No Start/Stop

It is possible to suppress the start and stop bars at the left and right of the barcode. If start and stop bars are present, you can elect to indicate them using asterisks which will appear next to the data characters.

Horizontal Check Bar

Horizontal bars can be placed above and below the vertical bars.

Bars / Text Gap

It is possible to vary the gap between the bars and the human readable text below (or above).

The default gap is defined to be two narrow bar widths. You can choose any gap up to five narrow bar widths, in multiples of half a narrow bar width.

Text Above Bars

The data characters may be displayed below or above the bars.

Size

The default dimensions are based on the nominal barcode size specified by AIM Inc. Note that the default height changes as you increase the number of characters.

Code 39 displayed characters have a default cap height of 2.50 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For Helvetica font, this translates to 10.31 points or 3.64 mm overall size. All characters in the barcode are the same size.

The default height for a Code 39 barcode starts at 11.9mm. This includes margins below and above. The bars have a nominal starting height of 6.35mm (0.25 inches) but should be at least 15% of the barcode width. So any bar to bar width more than 42.33mm will have a taller default bar height.

There is no default width for a Code 39 barcode as this is dependent both on the number of characters being encoded and on the ratio between wide and narrow bars. However, the default width for a narrow bar is 0.508mm (0.02 inches). It is recommended that you use at least 37.5% of the nominal width, giving a minimum narrow bar width of 0.191mm (0.0075 inches).

Note that Code 39 offers an option to enter width as a Characters Per Inch value. The nominal value is 3.68, which assumes a wide / narrow bar ratio of 2.2.

Font

The default font is Helvetica.

Barcode Types

Code 25

Code 25

Code 25 is used for encoding number sequences of variable length. Up to 64 digits may be encoded with the final digit being an optional checksum. The barcode is produced in accordance with specifications provided by AIM Inc.

Note that variations of Code 25 are described in the chapters on ITF and UPC-Shipping.

Data

There should be at least one data digit and you may enter up to 64 altogether. If you have no data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field.

If you have opted to have your checksum verified, the program will verify the check digit before it can save the barcode. If the check digit is wrong, the program will offer to replace it with the correct value; if you decline, then no barcode will be saved. Note that a problem with the checksum may indicate an omission or error elsewhere in your data, so we suggest you always check all the data digits.

The algorithm for calculating the Code 25 check digit is similar to that for ITF. The digits are added together, with every second digit (starting from the leftmost) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 140567 gives a check digit of 3:

(1 + 0 + 6) x 3 + (4 + 5 + 7) = 21 + 16 = 37; 37 + 3 = 40.

Wide / Narrow Bar

The default ratio between the wide bars and narrow bars is 2.2 to 1. It is recommended that the wide to narrow ratio should be between 2 to 1 and 3 to 1.

Checksum Calculation

This popup menu lets you specify whether you want a check digit to be added, or if you want the program to verify the one you have entered. You may also opt not to have a check digit.

If Odd Number of Digits

Code 25 barcodes encode digits in pairs. If you have an odd number of digits (including any check digit), there are three ways the program can deal with this:

Add a leading zero (default)

Add a trailing null character

Do not allow the barcode to be saved

Horizontal Check Bar

Horizontal bars can be placed above and below the vertical bars.

Bars / Text Gap

It is possible to vary the gap between the bars and the human readable text below (or above).

The default gap is defined to be two narrow bar widths. You can choose any gap up to five narrow bar widths, in multiples of half a narrow bar width.

Barcode Types

Code 25 *(continued)*

Text Above Bars

The data characters may be displayed below or above the bars.

Size

The default dimensions are based on the nominal barcode size specified by AIM Inc. Note that the default height changes as you increase the number of characters.

Code 25 displayed digits have a default cap height of 2.50 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For Helvetica font, this translates to 10.31 points or 3.64 mm overall size. All characters in the barcode are the same size.

The default height for a Code 25 barcode starts at 11.9mm. This includes margins below and above. The bars have a nominal starting height of 6.35mm (0.25 inches) but should be at least 15% of the barcode width. So any bar to bar width more than 42.33mm will have a taller default bar height.

There is no default width for a Code 25 barcode as this is dependent both on the number of digits being encoded and on the ratio between wide and narrow bars. However, the default width for a narrow bar is 0.508mm (0.02 inches). It is recommended that you use at least 37.5% of the nominal width, giving a minimum narrow bar width of 0.191mm (0.0075 inches).

Font

The default font is Helvetica.

Barcode Types

Codabar

Codabar

Codabar is used for encoding variable length character sequences using the ten digits plus selected punctuation characters. Up to 64 characters may be encoded. The barcode is produced in accordance with specifications provided by AIM Inc.

Data

There should be at least one data character and you may enter up to 64 altogether. The complete character set comprises all digits and six selected characters : minus (-), dollar ($), colon (:), slash (/), dot (.) and plus (+). If you have no characters, a warning message will be displayed when you attempt to save the barcode and you must correct the data field.

Wide / Narrow

The default ratio between the wide bars and narrow bars is 2.2 to 1. It is recommended that the wide to narrow ratio should be between 2 to 1 and 3 to 1.

Note that this field is not active if Traditional Codabar is selected.

Start / Stop Characters

Your data will be enclosed by two special start / stop characters; these are known as A, B, C and D. These are sometimes used to convey additional information. The values for the start and stop characters need not be the same.

Traditional

Codabar may encode data in one of two ways. The Traditional Codabar produces a higher character density (and therefore a narrower barcode).

Show Start/Stop

The alphabetic representation of the start and stop characters may be displayed before and after the data characters.

Horizontal Check Bar

Horizontal bars can be placed above and below the vertical bars.

Bars / Text Gap

It is possible to vary the gap between the bars and the human readable text below (or above).

The default gap is defined to be two narrow bar widths. You can choose any gap up to five narrow bar widths, in multiples of half a narrow bar width.

Text Above Bars

The data characters may be displayed below or above the bars.

Barcode Types

Codabar *(continued)*

Size

The default dimensions are based on the nominal barcode size specified by AIM Inc. Note that the default height changes as you increase the number of characters.

Codabar displayed characters have a default cap height of 2.50 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For Helvetica font, this translates to 10.31 points or 3.64 mm overall size. All characters in the barcode are the same size.

The default height for a Codabar barcode starts at 11.9mm. This includes margins below and above. The bars have a nominal starting height of 6.35mm (0.25 inches) but should be at least 15% of the barcode width. So any bar to bar width more than 42.33mm will have a taller default bar height. The nominal bar height for Traditional Codabar is always 6.35mm.

There is no default width for a Codabar barcode, as this is dependent both on the number of characters being encoded and on the ratio between wide and narrow bars. However, the default width for a narrow bar is 0.508mm (0.02 inches). It is recommended that you use at least 37.5% of the nominal width, giving a minimum narrow bar width of 0.191mm (0.0075 inches).

For Traditional Codabar, the wide narrow ratio is always 2:1 and the nominal narrow bar width is 0.165mm (0.0065 inches); it is not recommended to produce Tradional Codabar barcodes with widths of less than 100%.

The width for the light margins to the left and right of the bars is 5.08mm (0.2 inches) for Normal and 2.56mm (0.1 inches) for Traditional.

Font

The default font is Helvetica.

Barcode Types

Code 93

Code 93

Code 93 is used for encoding character sequences of variable length. Up to 64 characters may be encoded, using the complete ASCII character set. The barcode is produced in accordance with specifications provided by AIM Inc.

Data

There should be at least one data character and you may enter up to 64 altogether. If you have no data characters, a warning message will be displayed when you attempt to save the barcode and you must correct the data field.

Note that two check characters are added by the program. These are encoded in the barcode but not displayed.

Horizontal Check Bar

Horizontal bars can be placed above and below the vertical bars.

Bars / Text Gap

It is possible to vary the gap between the bars and the human readable text below (or above).

The default gap is defined to be two narrow bar widths. You can choose any gap up to five narrow bar widths, in multiples of half a narrow bar width.

Text Above Bars

The data characters may be displayed below or above the bars.

Size

The default dimensions are based on the nominal barcode size specified by AIM Inc. Note that the default height changes as you increase the number of characters.

Code 93 displayed characters have a default cap height of 2.50 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For Helvetica font, this translates to 10.31 points or 3.64 mm overall size.. All characters in the barcode are the same size.

The default height for a Code 93 barcode starts at 11.9mm. This includes margins below and above. The bars have a nominal starting height of 6.35mm (0.25 inches) but should be at least 15% of the barcode width. So any bar to bar width more than 42.33mm will have a taller default bar height.

There is no default width for a Code 93 barcode as this is dependent both on the number of characters being encoded. However, the default width for a narrow bar is 0.508mm (0.02 inches). It is recommended that you use at least 37.5% of the nominal width, giving a minimum narrow bar width of 0.191mm (0.0075 inches).

The width for the light margins to the left and right of the bars is 5.08mm (0.2 inches).

Font

The default font is Helvetica.

Barcode Types

Telepen

Telepen

Telepen is used for encoding character sequences of variable length. Up to 64 characters may be encoded, using the complete ASCII character set. The barcode is produced in accordance with specifications provided by AIM Inc.

Data

There should be at least one data character and you may enter up to 64 altogether. If you have no data characters, a warning message will be displayed when you attempt to save the barcode and you must correct the data field.

Note that a check character is added by the program. This is encoded in the barcode but not displayed.

Horizontal Check Bar

Horizontal bars can be placed above and below the vertical bars.

Bars / Text Gap

It is possible to vary the gap between the bars and the human readable text below (or above).

The default gap is defined to be two narrow bar widths. You can choose any gap up to five narrow bar widths, in multiples of half a narrow bar width.

Text Above Bars

The data characters may be displayed below or above the bars.

Size

The default dimensions are based on the nominal barcode size specified by AIM Inc. Note that the default height changes as you increase the number of characters.

Telepen displayed characters have a default cap height of 2.50 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For Helvetica font, this translates to 10.31 points or 3.64 mm overall size. All characters in the barcode are the same size.

The default height for a Telepen barcode starts at 11.9mm. This includes margins below and above. The bars have a nominal starting height of 6.35mm (0.25 inches) but should be at least 15% of the barcode width. So any bar to bar width more than 42.33mm will have a taller default bar height.

There is no default width for a Telepen barcode as this is dependent both on the number of characters being encoded. However, the default width for a narrow bar is 0.508mm (0.02 inches). It is recommended that you use at least 37.5% of the nominal width, giving a minimum narrow bar width of 0.191mm (0.0075 inches).

The bar to bar width will vary according to the make-up of the data, since some data sequences can be encoded more efficiently than others.

The width for the light margins to the left and right of the bars is 5.08mm (0.2 inches).

Font

The default font is Helvetica.

Barcode Types

Code 128

Code 128

Code 128 is used for encoding serial numbers and other character sequences using the ASCII character set. Up to 64 characters may be encoded. The barcode is produced in accordance with specifications provided by AIM Inc.

Data

There should be at least one data character and you may enter up to 64 altogether. If you have no characters a warning message will be displayed when you attempt to save the barcode and you must correct the data field.

Note that a check character is added by the program. This is encoded in the barcode but not displayed.

FNC2 (Message Append)

Some applications use the special character FNC2 to indicate that the data in this barcode is to be appended to data from another barcode. Selecting this option will include an FNC2 character immediately after the start bars. This is indicated as a superscript 2 below the bars next to your text.

FNC3 (Initialise)

Some applications use the special character FNC3 to indicate that the data in this barcode is to be used for initialisation purposes. Selecting this option will include an FNC3 character immediately after the start bars (and after the FNC2, if present). This is indicated as a superscript 3 below the bars next to your text.

FNC4 (Internal Use)

Some applications use the special character FNC4. Selecting this option will include an FNC4 character immediately after the start bars (and after FNC2 and FNC3, if present). This is indicated as a superscript 4 below the bars next to your text.

Asterisks around data

With this option you can display the encoded data together with leading and trailing asterisk characters. The asterisks are not encoded.

Start with Code A Encoding

Some applications expect the bars to be encoded using Subset A. BarCoder will normally start with either Subset B or Subset C, but can be forced to start with Subset A using this option.

Suppress Subset C Encoding

Code 128 has three code subsets which are used to encode the data into bars. Subset C is a space efficient method for encoding data which contains consecutive digits. Using Code C effectively means that your barcodes may not be as wide as when Code C is suppressed. However, if you wish to ensure that your barcode width is consistent with the number of characters being encoded, then the space efficient encoding can be avoided by selecting this option.

Light Margin Indicators

The light margins for Code 128 are to the left and right of the barcode. If light margin indicators (LMIs) are required there will be two chevrons (< and >), on either side of the displayed number, at the bottom of the barcode.

Barcode Types

Code 128 *(continued)*

Bars / Text Gap

It is possible to vary the gap between the bars and the human readable text below (or above).

The default gap is defined to be two narrow bar widths. You can choose any gap up to five narrow bar widths, in multiples of half a narrow bar width.

Horizontal Check Bar

Horizontal bars can be placed above and below the vertical bars.

Size

The default dimensions are based on the nominal barcode size specified by AIM Inc.

Code 128 displayed characters have a default cap height of 2.50 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For Helvetica font, this translates to 10.31 points or 3.64 mm overall size.. All characters in the barcode are the same size, though the superscript digits used to portray FNC2, FNC3 and FNC4 will appear smaller.

The default height for a Code 128 barcode starts at 11.9mm. This includes margins below and above. The bars have a nominal starting height of 6.35mm (0.25 inches) but should be at least 15% of the barcode width. So any bar to bar width more than 42.33mm will have a taller default bar height.

There is no default width for a Code 128 barcode as this is dependent both on the number of characters being encoded and the encoding method used. However, the default width for a narrow bar is 0.508mm (0.02 inches). It is recommended that you use at least 37.5% of the nominal width, giving a minimum narrow bar width of 0.191mm (0.0075 inches).

The width for the light margins to the left and right of the bars is 5.08mm (0.2 inches).

Font

The default font is Helvetica.

Barcode Types

EAN 128 (GS1-128)

EAN 128 (GS1-128)

EAN 128, or GS1-128, is used to encode variable information about items. It is often used on pallet labels to identify the contents of crates and boxes. EAN 128 uses the full ASCII character set, but adheres to strict guidelines about the structure and composition of the data.

Note that EAN 128 is similar to but different from Code 128.

The barcode is produced in accordance with specifications provided by GS1 International.

Data

Your data must be structured such that meaningful information is contained by your barcode. To be meaningful, your data must contain matched application identifiers and codes.

Each application identifier may be enclosed in brackets, e.g. (13), and should be followed by the appropriate code e.g. 950803. Note that spaces are meaningful characters with some application identifiers and cannot be used to punctuate your data.

You may include in your data more than one application identifier and code up to a total of 64 characters. You are limited to a maximum of eight application identifiers per barcode.

When you attempt to save the barcode the program will check that your data is correctly formatted and that all your application identifiers are legal and are followed by valid code.

Application identifiers and codes are described in detail in the specifications for GS1-128 provided by GS1 International.

If an application identifier is not recognised by Agamik BarCoder, or if the associated code does not conform with the above specification, the program will not be able to create an EAN 128 barcode. You may be using a new application which has been introduced since your version of the software was released; if this is the case, you should contact Agamik who will be happy to supply you with an upgrade.

Application identifiers and codes recognised by Agamik BarCoder are summarised on the next page.

The algorithm for calculating the check digit will be similar to EAN 13. All digits will be added together with every second digit being multiplied by three – the check digit added to this total will give a multiple of 10. For fields with an even number of digits (including the check digit), the digits multiplied by three start with the leftmost; for fields with an odd number of digits the digits to by multiplied by three start with the second from the left.

Brackets Round output AIs

Your Application Identifiers will normally be displayed in brackets, e.g. (11)050722, but it is possible to override this.

Brackets Round input AIs

Your Application Identifiers will normally be displayed in brackets, e.g. (11)050722, but your input may already be formatted without brackets. To help with these cases, you can choose to supply your input without brackets around the AIs.

Barcode Types

EAN 128 (GS1-128) *(continued)*

Prefix	Use	Code Description
00	Serial Shipping	18 digits (*c)
01	Article ID	14 digits (*c)
02	Contents	14 digits (*c)
10	Batch Number	Up to 20 characters
11	Production Date	6 digits (*d)
12	Due Date	6 digits (*d)
13	Packaging Date	6 digits (*d)
15	Minimum Durability Date	6 digits (*d)
17	Maximum Durability Date	6 digits (*d)
20	Product Variant	2 digits
21	Serial Number	Up to 20 characters
22	HIBC	Up to 29 characters(*h)
230-239	Lot Number	Up to 19 digits
240	Additional Product Identifier	Up to 30 characters
241	Customer Part Number	Up to 30 characters
250	Secondary Serial Number	Up to 30 characters
251	Reference to Source	Up to 30 characters
252	GIST	27 digits (*c)
253	Global Document Type Identifier	13 digits (*c) and up to 17 digits
254	Global Location Number Identifier	Up to 20 characters
30	Quantity (Trade)	Up to 8 digits
3100-3699	Measurements (see below)	6 digits (*m)
37	Quantity (Logistics)	Up to 8 digits
390n	Amount Payable (national)	Up to 15 digits
391n	Amount Payable (international)	3 digits + up to 15 digits
392n	Amount Payable for Variable (national)	Up to 15 digits
393n	Amount Payable for Variable (international)	3 digits + up to 15 digits
400	Purchase Order	Up to 30 characters
401	Consignment Number	Up to 30 characters
402	Shipment Identification	17 digits (*c)
403	Routing Code	Up to 30 characters
410	Delivery Location	13 digits (*c)
411	Invoice Location	13 digits (*c)
412	Purchase Location	13 digits (*c)
413	Final Destination Location	13 digits (*c)

Barcode Types

EAN 128 (GS1-128) *(continued)*

414	Physical Location Identifier	13 digits (*c)
415	Invoicing Party Location	13 digits (*c)
420	National Post Code	Up to 20 characters
421	International Post Code	3 digits and up to 9 characters
422	Country of Origin	3 digits
423	Country of Initial Processing	3 digits and up to 12 digits
424	Country of Processing	3 digits
425	Country of Disassembly	3 digits
426	Country of Full Process Chain	3 digits
7001	NATO Stock number	13 digits
7002	Meat Cut Classification	Up to 30 characters
7003	Expiry Date and Time	10 digits (*dt1)
703n	Processor Number	3 digits and up to 27 characters
8001	Roll Product	14 digits
8002	Serial Number	Up to 20 characters
8003	Returnable Asset Identifier	14 digits (*c) + up to 16 characters
8004	Serial Asset Identifier	Up to 30 characters
8005	Price per Unit Measure	6 digits
8006	Component of an Article	14 + 2 + 2 characters
8007	Bank Account Number	Up to 30 characters
8008	Date and Time of Production	8, 10 or 12 digits (*dt2)
8018	Service Relation Number	18 digits
8020	Payment Slip Reference	Up to 25 characters
8100	UPC Extended Coupon Code	6 digits
8101	UPC Extended Coupon Code	10 digits
8102	UPC Extended Coupon Code	2 digits
8110	GS1 Coupon Code (North America)	21 - 70 digits
90-99	Free	Up to 30 characters

(*c - the last digit will be a check digit)

(*d - the date is always formatted YYMMDD with leading zeros)

(*h - the format for the HIBC data is strictly defined and is described in the section on HIBC barcodes)

(*dt1 - the date and time is always formatted YYMMDDHHMM with leading zeros

(*dt2 - the date and time is always formatted YYMMDDHHmmss with leading zeros, minutes and seconds fields optional)

(*m - measures must always be six digits with leading zeros; the fourth digit in the application identifier determines where the decimal point goes in the decoded value)

Barcode Types

EAN 128 (GS1-128) *(continued)*

Application Identifiers for Measurements:

3100-3109	Net Weight, kilograms
3110-3119	Length, metres (trade)
3120-3129	Width, metres (trade)
3130-3139	Depth, metres (trade)
3140-3149	Area, square metres (trade)
3150-3159	Volume, litres (trade)
3160-3169	Volume, cubic metres (trade)
3200-3209	Net Weight, pounds
3210-3219	Length, inches (trade)
3220-3229	Length, feet (trade)
3230-3239	Length, yards (trade)
3240-3249	Width, inches (trade)
3250-3259	Width, feet (trade)
3260-3269	Width, yards (trade)
3270-3279	Depth, inches (trade)
3280-3289	Depth, feet (trade)
3290-3299	Depth, yards (trade)
3300-3309	Gross Weight, kilograms
3310-3319	Length, metres (logistics)
3320-3329	Width, metres (logistics)
3330-3339	Depth, metres (logistics)
3340-3349	Area, square metres (logistics)
3350-3359	Volume, litres (logistics)
3360-3369	Volume, cubic metres (logistics)
3370-3379	Weight per area, kg / sq metre
3400-3409	Gross Weight, pounds
3410-3419	Length, inches (logistics)
3420-3429	Length, feet (logistics)
3430-3439	Length, yards (logistics)
3440-3449	Width, inches (logistics)
3450-3459	Width, feet (logistics)
3460-3469	Width, yards (logistics)
3470-3479	Depth, inches (logistics)
3480-3489	Depth, feet (logistics)
3490-3499	Depth, yards (logistics)
3500-3509	Area, square inches (trade)
3510-3519	Area, square feet (trade)
3520-3529	Area, square yards (trade)
3530-3539	Area, square inches (logistics)
3540-3549	Area, square feet (logistics)
3550-3559	Area, square yards (logistics)
3560-3569	Net Weight, troy ounces
3570-3579	Volume, US ounces (trade)
3600-3609	Volume, quarts (trade)
3610-3619	Volume, US gallons (trade)
3620-3629	Volume, quarts (logistics)
3630-3639	Volume, US gallons (logistics)
3640-3649	Volume, cubic inches (trade)
3650-3659	Volume, cubic feet (trade)
3660-3669	Volume, cubic yards (trade)
3670-3679	Volume, cubic inches (logistics)
3680-3689	Volume, cubic feet (logistics)
3690-3699	Volume, cubic yards (logistics)

Note that for all application identifiers, we recommend you consult the manual provided by GS1 International if you are in any doubt.

Barcode Types

EAN 128 (GS1-128) *(continued)*

Bars / Text Gap

It is possible to vary the gap between the bars and the human readable text below (or above).

The default gap is defined to be two narrow bar widths. You can choose any gap up to five narrow bar widths, in multiples of half a narrow bar width.

Compact Spacing

The text displayed below the bars can be compacted and centred.

Suppress Subset C Encoding

EAN 128 has three code subsets which are used to encode the data into bars. Subset C is a space efficient method for encoding data which contains consecutive digits. Using Code C effectively means that your barcodes are not as wide as when Code C is suppressed. However, if you wish to ensure that your barcode width is consistent with the number of characters being encoded, then the space efficient encoding can be avoided by selecting this option.

Light Margin Indicators

The light margins for EAN 128 are to the left and right of the barcode. If light margin indicators (LMIs) are required there will be two chevrons (< and >), on either side of the displayed number at the bottom of the barcode.

Horizontal Check Bar

Horizontal bars can be placed above and below the vertical bars. These will not add to the overall height of the barcode.

Composite

For EAN 128, composite components are not restricted,allowing CC-A, CC-B or CC-C. CC-C will extend into the left and right margins. For very short EAN-128 barcodes, the CC-A and CC-B composites may extend into the right margin.

Composite components are described in more detail in their own chapter.

Size

The default dimensions are based on the nominal barcode size specified by GS1 International.

EAN 128 displayed characters have a default cap height of 4.5 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 17.52 points or 6.18 mm overall size. All characters in the barcode, except those above the composite, are the same size.

The default height for an EAN 128 barcode (height scale 1.00) is 43mm. This includes margins below and above. The bars have a nominal height of 31.8mm, or 29.1mm if horizontal check bars are used. It is recommended that your height is at least 62.5% of these values (height scale no less than 0.625).

There is no default width for an EAN 128 barcode as this is dependent on the number of characters being encoded and also on how many application identifiers are included.

The nominal width (width scale = 1.00) for the narrow bar is 1mm. It is recommended that your width is between 25% and 120% (narrow bar width between .25mm and 1.20mm).

Font

The font recommended by GS1 International is OCRB.

Barcode Types
Pharma Code

Pharma code
Pharma Code is used mostly with packaging for the pharmaceuticals industry. Up to 19 bars may be encoding, representing a number from 1 to 1048574.

Pharma Code differs from other barcode types in that single bars can be coloured differently from the others.

The barcode is produced in accordance with specifications provided by Laetus am Sandberg GmbH.

Note that a separate chapter called Pharma Code (Multi Part) is available for data which consists of up to five parts and which allows up to 30 bars to be used. Two variations of Pharma Code used by Glaxo Wellcome and one used by Novartis each have their own barcode type and are described in their own chapters.

There is also a separate barcode type called 2D-Pharmacode, which is a variation of Data Matrix, and also has its own chapter.

Bars Colour
You can colour single bars individually. Either click the colour box corresponding with the bar position or drag a colour from another colour box. Holding the Alt-Key will cause dragging to copy rather then move.

Note that all unspecified bars will have the colour chosen for “Bars and Text”.

Mini
This option causes all bars and spaces (including margins) to be reduced to two thirds of normal width.

Input Format
Each of the numbers may be entered as a decimal or in “binary” format with 1 representing a thick bar and 0 representing a thin bar.

Application
A popup menu is provided to set default margins and bar height for different possible applications for Pharma Code barcodes.

The following applications are supported (default heights are for height 100%, default margins for width scale 100%):

Folding Boxes

height 7mm, margins 5mm

Leaflets

height 8mm, margins 12mm

Labels, cut

height 6mm, margins 6mm

Labels, adhesive

height 5mm, margins 6mm

Tubes

height 6mm, margins 3mm

Film

height 12mm, margins 10mm

Round

height 7mm, margins 3mm

In addition there are two default options, each with a notional height of 1mm, with margins of 4mm and 8mm.

Note that for tubes, the gap between bars is greater.

Barcode Types

Pharma Code *(continued)*

Raised Bar

This causes the left or right bar to be raised by 15%. The other bars will remain unaffected.

Sentinel Bars

Sentinal Bar Location

You may have sentinel bars to the left and/or right of your barcode margins. You may opt to make the margins exactly 6mm.

Sentinal Bar Form

The sentinel bars may be the same width as the narrow bar or the thick bar.

Alternatively, they can be triangular. Each triangle will be half square with the same height as the bars.

Thin/Thick

The sentinel bars may be the same width as the narrow bar or the thick bar.

Size

The default dimensions are based on the nominal barcode size specified by Laetus am Sandberg GmbH.

Pharma Code bars are the full height of the barcode, as there is no margin above or below the bars. The default height for Pharma Code depends on the selected application and is shown above.

The default width for a Pharmacode barcode varies with the numbers encoded as well as the margin for the application selected. The nominal module width is 0.5mm and represents the width of a narrow bar. It is recommended that your width is between 66% and 400% of these values.

Note that the Display As Scanner option in the Barcode window is disabled. This is because pharma codes are not scanned using infrared scanners.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types
Pharma Code Multi

Pharma Code (Multi Part)
This is a specific variation of Pharma Code which encodes up to five different numbers. Each part number represents its own set of bars, with the two restrictions that a single part can have no more than 19 bars and the total number of bars cannot exceed 30.

Each part may have its own bar colour and there is a wider gap between the parts, even if they are the same colour.

The barcode is produced in accordance with specifications provided by Laetus am Sandberg GmbH.

First Part
This is the number which will be encoded at the left of the barcode. The display is according to the input format.

Second Part to Fifth Part
These numbers will be encoded from left to right and are also displayed according to the input format.

Note that if the number of bars needed to represent all of the parts exceeds 30, then the barcode cannot be created.

Overall Code Check
This decimal number is the number which is represented by the whole barcode. It is effectively the combination of all of the parts. The maximum value for the code check is 2147483646 (represented by 30 thick bars).

Mini
This option causes all bars and spaces (including margins) to be reduced to two thirds of normal width.

Input Format
Each of the numbers may be entered as a decimal or in “binary” format with 1 representing a thick bar and 0 representing a thin bar.

In decimal format, each part can be up to 999999. In binary format, each input have up to 19 ones and zeros.

Parts Colour
You can choose different colours for each part . Either double click the colour box corresponding with the part or drag a colour onto that colour box. If you hold the Alt-key at the same time, the drag will cause a copy rather than move. Note that unspecified parts will have the colour chosen for “Bars and Text”.

Input Format
Each of the numbers may be entered as a decimal or in “binary” format with 1 representing a thick bar and 0 representing a thin bar.

Application
A popup menu is provided to set default margins and bar height for different possible applications for Pharma Code barcodes.

The following applications are supported (default heights are for height 100%, default margins for width scale 100%):

Folding Boxes

height 7mm, margins 5mm

Leaflets

height 8mm, margins 12mm

Labels, cut

height 6mm, margins 6mm

Barcode Types

Pharma Code Multi *(continued)*

Labels, adhesive

height 5mm, margins 6mm

Tubes

height 6mm, margins 3mm

Film

height 12mm, margins 10mm

Round

height 7mm, margins 3mm

In addition there are two default options, each with a notional height of 1mm, with margins of 4mm and 8mm.

Note that for tubes, the gap between bars is greater.

Raised Bar

This causes the left or right bar to be raised by 15%. The other bars will remain unaffected.

Sentinel Bars

Sentinal Bar Location

You may have sentinel bars to the left and/or right of your barcode margins. You may opt to make the margins exactly 6mm.

Sentinal Bar Form

The sentinel bars may be the same width as the narrow bar or the thick bar.

Alternatively, they can be triangular. Each triangle will be half square with the same height as the bars.

Thin/Thick

The sentinel bars may be the same width as the narrow bar or the thick bar.

Size

The default dimensions are based on the nominal barcode size specified by Laetus am Sandberg GmbH.

Pharma Code bars are the full height of the barcode, as there is no margin above or below the bars. The default height for Pharma Code depends on the selected application and is shown above.

The default width for a Pharmacode barcode varies with the numbers encoded as well as the margin for the application selected. The nominal module width is 0.5mm and represents the width of a narrow bar. It is recommended that your width is between 66% and 400% of these values.

Note that the Display As Scanner option in the Edit menu is disabled. This is because pharma codes are not scanned using infrared scanners.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types

Binary Code

Binary code

Binary Code allows you to customise your own barcode to encode simple binary data.

Your customised barcode will consist of narrow bars and wide bars with uniform spaces between the bars.

Bar Data: 0 = thin, I = thick

The data for your barcode is entered as a string of ones and zeros representing wide bars and narrow bars.

Bars Colour

You can colour single bars individually. Either click the colour box corresponding with the bar position or drag a colour from another colour box. Holding the Alt-Key at the same time will cause draggng to copy rather than move that colour.

Note that all unspecified bars will have the colour chosen for “Bars and Text”.

Wide / Narrow Bar Ratio

This is the ratio of a wide bar and a narrow bar. A value of 2.0 will mean that the wide bars are twice as thick as the narrow bars.

Space / Narrow Bar Ratio

This is the ratio of the inter-bar gap and a narrow bar. A value of 1.5 will mean that the space between neighbouring bars is one and a half times the width of a narrow bar.

Margin / Narrow Bar Ratio

The margins to the left and right of the bars will be the same and are measured as a multiple of the narrow bar width. A value of 10 will mean that both margins are equivalent to ten narrow bar widths.

Raised Bar

This causes the left or right bar to be raised by 15%. The other bars will remain unaffected.

Size

You can customise your binary barcode to any size you want, subject to the restrictions of having just the two bar widths and one gap width, plus equal margins to the left and right.

There is no margin above or below.

The notional bar height is 8mm and notional narrow bar width is 0.5mm.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types

DataBar 14 (or RSS 14)

DataBar 14

DataBar 14, or RSS 14, is a reduced space barcode type which encodes 14 data digits. The fourteenth digit acts as a check digit for the first thirteen. There are four ways of displaying a DataBar 14 barcode, including two 2-d versions.

The barcode is produced in accordance with specifications provided by GS1 International.

DataBar 14 Data

There are always fourteen data digits for a DataBar 14 barcode. You should enter at least the first thirteen. If you have entered fewer than 13 data digits, a warning message will be displayed if you attempt to save the barcode and you must correct the data field. If you have entered only 13 data digits, the program will offer to insert the check digit for you. If you have entered 14 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

To calculate the DataBar 14 check digit, the first thirteen digits are added together, with every second digit (starting with the leftmost) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 050 30967 00000 gives a check digit of 8:

(0 + 0 + 0 + 6 + 0 + 0 + 0) x 3 + (5 + 3 + 9 + 7 + 0 + 0) = 18 + 24 = 42;

42 + 8 = 50.

Note that some applications will produce the fourteen digit data with a leading (01) application identifier, which may not be in brackets. This is not encoded in the bars and should be stripped off before creating the barcode.

Format

The four formats you can choose from are DataBar 14 Normal, DataBar 14 Truncated, DataBar 14 Stacked and DataBar 14 Stacked Omnidirectional. These are described below in the section on Size.

Show (01) with Data

It is possible to display a leading (01) along with the 14 data digits (though this is not encoded).

Barcode Types

DataBar 14 *(continued)*

Composite

For DataBar 14, composite components are restricted to CC-A or CC-B. For the two stacked formats, the composite part will extend slightly to the right of the barcode; for the other two formats, the composite part extends slightly to the left.

Composite components are described in more detail in their own chapter.

Size

The default dimensions are based on the nominal barcode size specified by GS1 International. They refer to normal barcodes, with no composite component. Note that there are no margins around an DataBar 14 barcode.

DataBar 14 displayed digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. All characters in the barcode, but not above the composite, are the same size.

The default height for DataBar 14 barcodes depends on the format and whether or not text is required. It also depends on the width magnification; the values shown below are with text and assume a width magnification of 100%:

Format	Barcode Height	Bar Height (total bars for 2-d)
Normal	14.30mm	10.89mm
Truncated	7.70mm	4.29mm
Stacked	7.70mm	4.29mm
Omni	26.18mm	22.77mm

The default width for DataBar 14 barcodes varies according to the format. If there is not a composite component, then no margins are used to the left or right.

The nominal width for each format is shown below:

Format	No Composite	With Composite
Normal	31.68mm	33.66mm
Truncated	31.68mm	33.66mm
Stacked	16.50mm	18.81mm
Omni	16.50mm	18.81mm

The nominal narrow bar width is 0.33mm.

It is recommended that your width is between 80% and 200% of these values.

Font

The font recommended by GS1 International is OCRB.

Barcode Types

Databar Limited (RSS Limited)

DataBar (RSS) Limited

DataBar Limited, or RSS Limited, is a reduced space barcode type which encodes 14 data digits, though the first digit is restricted to a value of 0 or 1. The fourteent data digit acts as a check digit for the first thirteen.

The barcode is produced in accordance with specifications provided by GS1 International.

DataBar Limited Data

There are always fourteen data digits for a DataBar Limited barcode. You should enter at least the first thirteen. If you have entered fewer than 13 data digits, a warning message will be displayed if you attempt to save the barcode and you must correct the data field. If you have entered only 13 data digits, the program will offer to insert the check digit for you. If you have entered 14 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The DataBar Limited check digit is calculated in the same was as DataBar 14: the first thirteen digits are added together, with every second digit (starting with the leftmost) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 050 30967 00000 gives a check digit of 8:

(0 + 0 + 0 + 6 + 0 + 0 + 0) x 3 + (5 + 3 + 9 + 7 + 0 + 0) + = 18 + 24 = 42;

42 + 8 = 50.

Note that some applications will produce the fourteen digit data with a leading (01) application identifier, which may not be in brackets. This is not encoded in the bars and should be stripped off before creating the barcode.

Show (01) with Data

It is possible to display a leading (01) along with the 14 data digits (though this is not encoded).

Composite

For DataBar Limited, composite components are restricted to CC-A or CC-B and will have the same width as the main bars.

Composite components are described in more detail in their own chapter.

Size

The default dimensions are based on the nominal barcode size specified by GS1 International. They refer to normal barcodes, with no composite component. Note that there are no margins around an DataBar Limited barcode.

DataBar Limited displayed digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. All characters in the barcode, but not above the composite, are the same size.

The default height for DataBar Limited barcodes depends on the barcode width and has bar height equal to 10 x narrow bar width.

The default width for DataBar Limited barcodes 24.42mm which corresponds with a nominal narrow bar width of 0.33mm.

It is recommended that your width is between 80% and 200% of these values.

Font

The font recommended by GS1 International is OCRB.

Barcode Types

DataBar Expanded (RSS Expanded)

DataBar Expanded

DataBar Expanded, or RSS Expanded, is a reduced space alternative to EAN 128 (GS1-128) and is used for encoding variable information about items. It is often used on pallet labels to identify the contents of crates and boxes. Like EAN 128, DataBar Expanded uses the full ASCII character set, and adheres to strict guidelines about the structure and composition of the data.

The barcode is produced in accordance with specifications provided by GS1 International.

Data

Your data must be structured such that meaningful information is contained by your barcode. To be meaningful, your data must contain matched application identifiers and codes.

Each application identifier may be enclosed in brackets, e.g. (13), and should be followed by the appropriate code e.g. 950803.

You may include in your data more than one application identifier and code up to a total of 84 characters. You are limited to a maximum of eight application identifiers per barcode.

When you attempt to save the barcode, the program will check that your data is correctly formatted and that all your application identifiers are legal and are followed by valid code.

Application identifiers and codes are described in detail in the chapter for EAN 128.

If an application identifier is not recognised by Agamik BarCoder, or if the associated code does not conform with the required specification, the program will not be able to create an RSS Expanded barcode. You may be using a new application identifier which has been introduced since your version of the software was released; if this is the case, you should contact Agamik who will be happy to supply you with an upgrade.

Brackets Round input Alís

Your Application Identifiers will always be displayed in brackets, e.g. (11)050722, but your input may already be formatted without brackets. For these cases, you can choose to supply your input without brackets around the AI's.

Row Count

DataBar Expanded barcodes can be stacked in up to five rows. Note that, if a composite component is used, there is a minimum width requirement so stacking may not save space.

Composite

For DataBar Expanded, composite components are restricted to CC-A or CC-B and will always fit above the main bars.

Composite components are described in more detail in their own chapter.

Barcode Types

DataBar Expanded *(continued)*

Size

The default dimensions are based on the nominal barcode size specified by GS1 International. They refer to normal barcodes, with no composite component. Note that there are no margins around an DataBar Expanded barcode.

DataBar Expanded displayed digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size.. All characters in the barcode, but not above the composite, are the same size.

The default height for DataBar Expanded barcodes depends on the number of rows, and also on the width. The default height for a single row is 34x narrow bar width and the separator pattern between rows is 3x narrow bar width.

The default width for DataBar Expanded barcodes depends on the amount of data, but the nominal narrow bar width is 0.33mm. With a composite component, the minimum width is 33.66mm.

It is recommended that your width is between 80% and 200% of these values.

Font

The font recommended by GS1 International is OCRB.

Barcode Types

GS1 Coupon

GS1 Coupon is a specific application of GS1 (RSS) Expanded which is used on coupons in North America.

The barcode encodes a combination of data fields, some of which are optional.

The barcode is produced in accordance with specifications published by GS1 International. It is being introduced as a replacement for the existing UPC Coupon barcode.

Company Prefix

This is the number which indicates the company which is funding the offer. It will be between 6 and 12 digits long and is assigned to the company by GS1.

Offer Code

This is a six digit number which identifies the offer and is allocated by the funding company.

Family Code

This three digit number should be uniquely allocated by the funding company.

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Save Value

The meaning for this number depends on the popup menu to the right. The save value can be between 1 and 5 digits.

Save Value Popup

This indicates what the Save Value refers to. It can have one of five different meanings:

- 0 - Cents off cost of qualifying items
- 1- Maximum value (in cents) for which qualifying item is free
- 2 - Number of items which are free
- 3 - Percentage off cost of qualifying items
- 4 - Cents off total transaction amount

Purchase Requirement

The meaning for this number depends on the popup menu to the right. The purchase requirement can be between 1 and 5 digits.

The field is not needed if Cashier Intervention Required is selected in the popup menu.

Purchase Requirement Popup

This indicates what the Purchase Requirement refers to. It can have one of six different meanings:

- 0 - Minimum number of qualifying items to purchase
- 1 -Minimum cost (in cents) of qualifying items
- 2 - Minimum cost (in cents) for total transaction
- 3 - Minimum weight (in hundredths of pounds) for qualifying items
- 4 - Minimum weight (in grams) for qualifying items
- 9 - Cashier intervention required

Barcode Types

GS1 Coupon *(continued)*

Expiration Date (YYMMDD)
This optional six digit field represents the date when the offer will end. The format must be YYMMDD.

Start Date
This optional six digit field represents the date when the offer will start. The format must be YYMMDD.

Serial Number
This optional field is a number with between 6 and 15 digits allocated by the funding company.

Retailer ID
This optional field is a number with between 7 and 13 digits which identifies the retailer where the offer applies.

Don't Multiply
This flag indicates that coupons should not be multiplied (used with the same purchase).

Store Coupon Options
This popup indicates if the coupon is a Store Coupon and, if so, how many qualifying items it applies to.

Display Dates Below Bars
This flag allows you to display the Expiration and/or Start Dates below the bars. The format for both dates will be: MM/DD/YY.

Display Raw Data
This flag allows you to see the raw data which is encoded in the bars. The string of digits will be displayed below the barcode and any date display.

You will not generally want to include this on your printed coupon, but it may be useful for checking you have encoded the correct values.

Second and Third Purchase
It is possible to identify requirements for a second or third purchase item associated with the coupon.

If required details of these items can be entered after pressing this button.

Purchase Rules Code
This popup lets you specify the rules for dealing with the multiple purchase items. The four possibilities are:

- 0 - Primary or Second or Third Purchase Item
- 1 - Primary and Second and Third (if present) Purchase Items
- 2 - Primary Purchase Item and either Second or Third Purchase Item
- 3 - Can use the Second or Third (if present) Family and Company Prefix instead of the Primary Purchase fields

2nd (and 3rd) Purchase Requirement
The meaning for this number depends on the popup menu to the right. The purchase requirement can be between 1 and 5 digits.

The field is not needed if Cashier Intervention Required is selected in the popup menu. Neither is it required if the Purchase Rules Code indicates the Second or Third Purchase Family and Company Prefix can be used instead of the Primary.

Barcode Types

GS1 Coupon *(continued)*

2nd (and 3rd) Purchase Requirement Popup

This indicates what the Purchase Requirement refers to. It can have one of six different meanings:

- 0 - Minimum number of qualifying items to purchase
- 1 - Minimum cost (in cents) of qualifying items
- 2 - Minimum cost (in cents) for total transaction
- 3 - Minimum weight (in hundredths of pounds) for qualifying items
- 4 - Minimum weight (in grams) for qualifying items
- 9 - Cashier intervention required

2nd (and 3rd) Family Code

This three digit number should be uniquely allocated by the funding company.

2nd (and 3rd) Company Prefix

This is the number which indicates the company which is funding the offer. It will be between 6 and 12 digits long and is assigned to the company by GS1.

If this field is left empty, the prefix is assumed to be the same as for the Primary Purchase Company Prefix.

Import Notes

If you are using the Import option to create multiple barcodes from a formatted input file, note that it is possible to specify values for the popup fields.

The value you should use is the digit shown next to the required choice.

Size

Text

Only the Company Prefix and Offer Code are displayed above the bars with an option to display Expiration and Start Dates below the bars.

Displayed characters have a default cap height of 2.25 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 8.76 points or 3.09 mm overall size.

Width

The default width for a GS1 Coupon barcode varies with the amount of data being encoded.

At 100% magnification, the possible widths are 49.83mm, 66.00mm, 82.17mm and 98.34mm.

Height

The default height for the bars part of the barcode is 23.43mm. The full barcode measures 29.91mm with dates below and 26.34mm without.

Font

The font recommended by GS1 International is OCRB.

Barcode Types

PDF 417

PDF 417

PDF 417 is a multi-row (2-dimensional) barcode type. It can encode up to 2700 digits or up to 1100 extended ASCII characters. The barcode contains a high error-correction capability.

The barcode is produced in accordance with specifications provided by AIM Inc.

This barcode type allows only keyboard characters to be input. A separate type, which allows the full range of 256 characters, is described in the chapter on Hex Input PDF 417.

PDF 417 Text

Data to be encoded can be in any form, using characters from the extended ASCII character set, including white space characters such as carriage return and horizontal tab. The data is not usually displayed with the barcode. Up to 2700 characters may be input.

Data Columns

This is a number between 1 and 30 and represents the number of columns in the barcode used to encode data words. Each data column will consist of 17 bars and spaces. There will additionally be four more columns: a left and right guard pattern and left and right indicator words. Because of this overhead, more columns selected will generally result in a smaller overall space requirement. A number of columns may not be selected which would lead to more than 90 rows.

Encode New Line As

If you have formatted data you can elect to ignore the new lines.

Alternatively, new lines can be encoded in one of three ways:

Carriage Return / Line Feed (default)

Carriage Return

Line Feed

Error Correction Level

Extra checksums are added to allow degraded barcodes to be read. The higher the level, the more checksum words are used, but the more degradation can be incurred. The minimum level is 2 checksum words, but there is a recommended default which increases with the amount of data. The program offers the opportunity to select the default level.

Note that, because the program updates the barcode display as you enter data, it may appear slow to respond if you have a high level of error correction. You can avoid this by selecting a low error correction level while you are entering the data and then choosing the required higher level.

Truncated

In environments where barcode degradation is not expected, it is possible to reduce the size of the barcode by truncating the right part. The saving is equivalent to two data columns.

Barcode Types

PDF 417 *(continued)*

Size

There is no default height or width for PDF 417 barcodes as both depend on the number of data characters and the number of data columns selected.

However, each row has a nominal height of 1mm.

Each single (narrow) bar has a nominal width of 0.33mm, with each column measuring 17x narrow bar width (5.61mm). The stop pattern measures 18x narrow bar width. For truncated barcodes, the right indicator column and right stop pattern are replaced by a single bar (saving 34x narrow bar width).

There is a quiet zone (light margin) around the entire barcode, equivalant to 2x narrow bar width (nominal width 0.66mm).

It is recommended that width and height are kept in proportion, meaning that each cell is a rectangle with height equal to 3x width.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types
Micro PDF 417

Micro PDF 417
Micro PDF 417 is a multi-row (2-dimensional) barcode type. It differs from the related PDF 417 in several important ways:

Smaller data capacity (max 366 digits, 150 extended ASCII characters);

Limited set of symbol sizes;

Fixed error correction levels;

Visually distinct with different start and stop patterns.

The barcode is produced in accordance with specifications provided by AIM Inc.

This barcode type allows only keyboard characters to be input. A separate type, which allows the full range of 256 characters, is described in the chapter on Hex Input Micro PDF 417.

Text
Data to be encoded can be in any form, using characters from the extended ASCII character set, including white space characters. The data is not usually displayed with the barcode. Up to 366 characters may be input.

Columns
This is a number between 1 and 4 and represents the number of columns in the barcode used to encode data words. Each data column will include 17 bars and spaces. There will additionally be a start and stop pattern and, for three or four columns, a centre pattern. There is a maximum number of rows associated with each number of data columns and it may not be possible to use a small number of data columns for larger data sizes.

Encode New Line As
If you have formatted data you can elect to ignore the new lines.

Alternatively, new lines can be encoded in one of three ways:

Carriage Return / Line Feed (default)

Carriage Return

Line Feed

Size
There is no default height for Micro PDF 417 barcodes as this depends on the number of data characters and the number of data columns selected.

However, each row has a nominal height of 0.667mm.

The four different column selections each have their own nominal width:

Columns	Nominal Bar to Bar Width
1	13.33mm
2	19mm
3	28mm
4	33.66mm

There is a quiet zone (light margin) around the entire barcode, equivalant to one narrow bar width (nominal width 0.33mm).

It is recommended that width and height are kept in proportion.

Text
You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types

Data Matrix

Data Matrix

Data Matrix is a 2-dimensional barcode type. It can encode up to 3116 digits or up to 1556 extended ASCII characters. The barcode contains a high error-correction capability. The barcode will generally be square shaped and will be one of a fixed set of sizes, though there are also a limited number of rectangular sizes available. It is possible to select either a specific size or opt for the smallest size which will fit.

The barcode is produced in accordance with specifications provided by AIM Inc.

Note that only the widely used ECC 200 variation is supported.

This barcode type allows only keyboard characters to be input. A separate type, which allows the full range of 256 characters, is described in the chapter on Hex Input Data Matrix.

Text

Data to be encoded can be in any form, using characters from the extended ASCII character set, including white space characters. The data is not displayed with the barcode. Up to 3116 characters may be input.

Barcode Size

There are a number of different fixed sizes available, mostly square but a few rectangular. It is possible to choose the smallest size which will hold all your data or, if shape is important, to choose the smallest square or smallest rectangular size. If you want a fixed size, it is possible to choose from a list of all available sizes. The largest size is 132x132 (132 rows and 132 columns).

If you select a fixed size and your data will not fit, the program will not be able to draw your barcode.

If you select a size which is bigger than required, the program adds neutral “pad” characters to your input data.

Note that the larger sizes have more error correction data which takes time to calculate. If you are changing your data, while displaying a large size of barcode on screen, the screen update may lag slightly – if you need to make significant changes to your data, it may be quicker to do it offline in a text file and import the final data using Copy and Paste.

Encode New Line As

If you have formatted data you can elect to ignore the new lines.

Alternatively, new lines can be encoded in one of three ways:

Carriage Return / Line Feed (default)

Carriage Return

Line Feed

Barcode Types

Data Matrix *(continued)*

Size

There is no default height for Data Matrix barcodes as this depends on the barcode size selected.

However, each row has a nominal height of 1mm.

Each of the possible sizes, as indicated in the barcode size menu, gives the number of rows as the first number (e.g. 8x18 will have 8 rows). So the nominal bar height will be that number x 1mm.

Similarly, the second number in the barcode size menu is the number of columns. In this case, a column is either a bar or a space. Each column has a nominal width also of 1mm, so the nominal width is the second number x 1mm.

There is a quiet zone (light margin) around the entire barcode, equivalant to one narrow bar width (nominal width 1mm).

It is recommended that width and height are kept in proportion, meaning that each cell in the barcode will be a square.

Inverse Colouring

It is possible to produce valid Data Matrix barcodes which are light (white) on a dark (black) background. You can do this by selecting the appropriate colours from the colour dialogues. Notice that, if you do this, the screen image of your barcode may appear to have thin lines between the white cells; this is due to the pixel resolution on screen and will not occur in your printed barcodes.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types

GS1 Data Matrix

GS1 Data Matrix

GS1 Data Matrix, is used to encode variable information about items.. GS1 Data Matrix uses the full ASCII character set, but adheres to strict guidelines about the structure and composition of the data.

GS1 Data Matrix is a variation of Data Matrix.

The barcode is produced in accordance with specifications provided by GS1 International.

Data

Your data must be structured such that meaningful information is contained by your barcode. To be meaningful, your data must contain matched application identifiers and codes.

Each application identifier may be enclosed in brackets, e.g. (13), and should be followed by the appropriate code e.g. 950803. Note that spaces are meaningful characters with some application identifiers and cannot be used to punctuate your data.

You may include in your data more than one application identifier and code up to a total of 255 characters. You are limited to a maximum of 32 application identifiers per barcode.

When you attempt to save the barcode the program will check that your data is correctly formatted and that all your application identifiers are legal and are followed by valid code.

Application identifiers and codes are described in detail in the specifications for GS1-128 provided by GS1 International.

If an application identifier is not recognised by Agamik BarCoder, or if the associated code does not conform with the above specification, the program will not be able to create a barcode. You may be using a new application which has been introduced since your version of the software was released; if this is the case, you should contact Agamik who will be happy to supply you with an upgrade.

Application identifiers and codes are described in detail in the chapter for GS1-128.

Brackets Round input AIs

Your Application Identifiers will normally be displayed in brackets, e.g. (11)050722, but your input may already be formatted without brackets. To help with these cases, you can choose to supply your input without brackets around the AIs.

Barcode Size

There are a number of different fixed sizes available, mostly square but a few rectangular. It is possible to choose the smallest size which will hold all your data or, if shape is important, to choose the smallest square or smallest rectangular size. If you want a fixed size, it is possible to choose from a list of all available sizes. The largest size is 132x132 (132 rows and 132 columns).

If you select a fixed size and your data will not fit, the program will not be able to draw your barcode.

If you select a size which is bigger than required, the program adds neutral “pad” characters to your input data.

Barcode Types

GS1 Data Matrix *(continued)*

Size

There is no default height for GS1 Data Matrix barcodes as this depends on the barcode size selected.

However, each row has a nominal height of 1mm.

Each of the possible sizes, as indicated in the barcode size menu, gives the number of rows as the first number (e.g. 8x18 will have 8 rows). So the nominal bar height will be that number x 1mm.

Similarly, the second number in the barcode size menu is the number of columns. In this case, a column is either a bar or a space. Each column has a nominal width also of 1mm, so the nominal width is the second number x 1mm.

There is a quiet zone (light margin) around the entire barcode, equivalent to one narrow bar width (nominal width 1mm).

It is recommended that width and height are kept in proportion, meaning that each cell in the barcode will be a square.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types
2D Pharmacode

2D-Pharmacode
2D-Pharmacode is a 2-dimensional barcode type based on Data Matrix, but with reduced data capacity. It can encode up to 88 digits or up to 42 extended ASCII characters and contains the same high error-correction capability as Data Matrix. A subset of the range of barcode sizes for Data Matrix are available. It is possible to select either a specific size or opt for the smallest size which will fit.

The main difference from Data Matrix (apart from the reduced data) is that 2D-Pharmacode supports colour field bars and can have an associated trigger mark. An additional difference is that 2D-Pharmacodes tend to be smaller scale (typically half to a quarter).

The barcode is produced in accordance with specifications provided by Laetus.

Data
Data to be encoded can be in any form, using characters from the extended ASCII character set, including white space characters. The data is not displayed with the barcode. Up to 88 characters may be input.

Colour Fields
Up to eight colours may be selected in addition to the colour used for the main barcode. These colours are arranged as additional bars around the barcode and conform with preset patterns. Each shape of barcode (square and rectangular) has two possible arrangements for the eight colour bars.

You can select the colours by double-clicking the appropriate colour field. You may change the order by dragging a colour box to a different position; holding the Alt-key copies a colour. To unselect a colour, double click to access the Colour dialogue and select Default (or drag from an empty colour box).

Notice that each colour box matches a predefined position around the barcode; if no colour is selected for a given position, no colour bar is drawn.

Magnification
There are three magnifications which can be used with 2D-Pharmacode. These are Standard, Miniature and Micro. Standard has a module (bar) width of .5mm, which is half that for normal Data Matrix. Miniature is smaller (module width 0.375mm) and micro smaller still (0.25mm).

Barcode Size
There are eleven different fixed sizes available, nine square and two rectangular. It is possible to choose the smallest size which will hold all your data or, if shape is important, to choose the smallest square or smallest rectangular size. If you want a fixed size, it is possible to choose from a list of all available sizes. The largest size is 26x26 (26 rows and 26 columns).

If you select a fixed size and your data will not fit, the program will not be able to draw your barcode.

If you select a size which is bigger than required, the program adds neutral “pad” characters to your input data.

Barcode Types

2D Pharmacode *(continued)*

Encode New Line As

If you have formatted data you can elect to ignore the new lines.

Alternatively, new lines can be encoded in one of three ways:

Carriage Return / Line Feed (default)

Carriage Return

Line Feed

Trigger Mark

It is possible to associate a trigger mark with a 2D-Pharmacode. The trigger mark can be placed to any of the four sides of the barcode and will appear beyond any colour field bars. The trigger mark is not affected by the magnification selected and will always face in towards the barcode.

Variant B

There are two possible arrangements for the colour bars around both square and rectangular barcodes. These are known as Variant A and Variant B.

Expanded Tolerance

It is possible to increase the spacing between colour bars and the main barcode and also between different colour bars.

The normal gap is two module widths between colour bars, which increase to four module widths if expanded tolerance is selected. Similarly, the normal gap between a colour bar and the main barcode is three module widths, which also increases to four module widths with expanded tolerance.

Size

There is no default size for 2D-Pharmacode barcodes as this depends on the barcode size selected.

The size will also depend on the magnification selected:

Standard module size is 0.5mm

Miniature module size is 0.375mm

Micro module size is 0.25mm

Each of the possible sizes, as indicated in the barcode size menu, gives the number of rows as the first number (e.g. 8x18 will have 8 rows). Each row will have the same height as the module size and the nominal height of the left hand bar (which goes all the way up) will be the number of rows times module size.

The second number in the barcode size menu is the number of columns. As with Data Matrix, a column is simply a bar or space. Each column will have the same width as the module size and the nominal width of the bottom bar (which goes all the way across) will be the number of columns times module size.

There is a quiet zone (light margin) around the entire barcode, equivalent to three module sizes.

It is recommended that width and height are kept in proportion, meaning that each cell in the barcode will be a square.

If colour field bars are used, these will add to the overall size of the barcode. Each colour bar will have width equal to two times the module size. The gap between colour bars will also be two time the module size as will the quiet zone beyond the outside colour bar. Note that the barcode size is extended only where colour bars are used.

If a trigger mark is used, nominally it will add a further 7.5mm to the barcode size (regardless of magnification), on the side where it is placed.

Inverse colouring

It is possible to produce valid 2D-Pharmacode barcodes which are light (white) on a dark (black) background. You can do this by selecting the appropriate colours from the colour dialogues.

However, if you are also using colour field bars, these will appear inside the dark background and similarly a trigger mark will also be light on dark.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types

QR Code

QR Code

QR Codes (also known as Quick Response Codes) are 2-dimension barcodes which are popular for identifying items which can be scanned by a camera, such as those on mobile phones.

The barcode encodes text and can cope with the full ASCII character set.

Quick Response Text

This is the text which will be encoded.

Note that white space is encoded.

Version

There are a number of different fixed sizes available, which are identified as different versions. It is possible to choose the smallest size which will hold all your data. If you want a fixed size (or specific version), it is possible to choose from a list of all available sizes. The largest size is version 40 (177x177 - 177 rows and 177 columns).

If you select a version and your data will not fit, the program will not be able to draw your barcode.

If you select a version which is bigger than required, the program adds neutral “pad” characters to your input data.

Error Correction Level

There are four different error correction levels available, coded by letter.

Level L provides the fewest error correction words, through levels M and Q up to level H which offers the most error correction.

Mask Pattern

The mask pattern is superimposed on the encoded data pattern in order to optimise the scannability of the barcode. There are eight different patterns, numbered 0 to 7, and usually the most effective is chosen.

However, you may wish to match an existing barcode which uses a particular mask, in which case you can override the Best Fit option.

Encode in Byte Mode

There are ways of encoding data which can optimise the size of the final barcode. However, the simplest (and least efficient) method is to encode each character individually - this is known as Byte Mode.

Encode New Line As

If you have formatted data you can elect to ignore the new lines.

Alternatively, new lines can be encoded in one of three ways:

Carriage Return / Line Feed (default)

Carriage Return

Line Feed

Barcode Types

QR Code *(continued)*

Size

There is no default height for Quick Response barcodes as this depends on the barcode size selected.

However, each row has a nominal height of 1mm.

Each of the possible sizes, as indicated in the version menu, gives the number of rows and columns, which are always the same. So the nominal bar height will be that number x 1mm.

Similarly, the second number in the barcode size menu is the number of columns. Each column has a nominal width also of 1mm, so the nominal width is the second number x 1mm.

There is a quiet zone (light margin) around the entire barcode, equivalant to four narrow bar widths (nominal width 4mm).

It is recommended that width and height are kept in proportion, meaning that each cell in the barcode will be a square.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types

QR Micro

QR Micro

QR Micro is a variation of QR Code which encodes fewer characters and requires less space.

Visually, the main difference is that there is just the single finder in the top left.

Quick Response Text

QR Micro can use any characters in the basic ASCII character set.

Because of its smaller size, Micro QR is capable of encoding a maximum of 35 numeric characters. If non-numeric characters are entered, the maximum may be as low as 15 characters.

Note that BarCoder will encode your text exactly as input, including white space.

Version

There are four different fixed sizes available, which are identified as different versions. It is possible to choose the smallest size which will hold all your data. You can also choose a fixed size (or specific version).

If you select a version and your data will not fit, the program will not be able to draw your barcode.

If you select a version which is bigger than required, the program adds neutral “pad” characters to your input data.

Error Correction Level

There are three different error correction levels available, coded by letter.

Level L provides the fewest error correction words, through level M and up to level Q which offers the most error correction.

Note that some error correction levels are not available for the smaller sized codes.

If you choose Optimum, BarCoder will use the highest error correction level which can be used with your chosen barcode size.

Mask Pattern

The mask pattern is superimposed on the encoded data pattern in order to optimise the scannability of the barcode. There are four different patterns, numbered 00 to 11, and selecting Best Fit will use the most effective.

However, you may wish to match an existing barcode which uses a particular mask, in which case you can override the Best Fit option.

Barcode Types

QR Micro *(continued)*

Encode New Line As

If you have formatted data you can elect to ignore the new lines.

Alternatively, new lines can be encoded in one of three ways:

Carriage Return / Line Feed (default)

Carriage Return

Line Feed

Encode in Byte Mode

There are ways of encoding data which can minimise the size of the final barcode. However, the simplest (and least efficient) method is to encode each character individually - this is known as Byte Mode.

Personalise Finders

The finder is the concentric square structure at top left of the barcode.

It is possible to make this a slightly different shape without causing the barcode not to scan.

BarCoder offers the following alternatives:

Circle, Hexagon, Octagon, Heart.

Personalise Cells

Some scanners may not be able to cope with non-standard cell shape. However, most modern applications will work for cells which are at least 70% filled.

You may wish to personalise your barcodes with the cells shapes on offer. These are all above the 70% guideline and should work for most scanners.

Size

There is no default height for Micro QR as this depends on the barcode size selected.

However, each row has a nominal height of 1mm.

Each of the possible sizes, as indicated in the version menu, gives the number of rows and columns, which are always the same. So the nominal bar height will be that number x 1mm.

Similarly, the second number in the barcode size menu is the number of columns. Each column has a nominal width also of 1mm, so the nominal width is the second number x 1mm.

There is a quiet zone (light margin) around the entire barcode, equivalent to two narrow bar widths (nominal width 2mm).

It is recommended that width and height are kept in proportion, meaning that each cell in the barcode will be a square.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types
GSK Pharma

Glaxo Wellcome Pharma
GlaxoWellcome Pharma is a variation of Pharma Code which is used by Glaxo Wellcome for product identification.

The barcode encodes a number which may be up to 1048574 (19 thick bars). There is a facility to colour up to eleven of the thick bars in different colours from the rest of the bars.

Pharmacode Data
This is the number which will be encoded in the barcode. The display is according to the input format.

Thick Bar Colours
You can choose up to eleven colours to be used for the thick bars in your GlaxoWellcome Pharma barcode. To select a colour, double click one of the boxes and follow the colour menus; alternatively drag a colour from the Swatch Panel or Colour Window.

The order in which you select your colours will be the same as the order used in the barcode. You may change the order by dragging a colour box to a different position. If there are more colours selected than there are thick bars, then the program will not be able to save your barcode. To unselect a colour, double click and select Default from the Colour Window.

Input Format
The number may be entered either in decimal format or in “binary” format with 1 representing a thick bar and 0 representing a thin bar.

Application
This popup menu is provided to set default margins and bar height for different possible applications for GlaxoWellcome Pharma barcodes.

Note that when you select a new application from this menu, the bar height field is changed automatically.

The following applications are supported (default heights are shown):

Cartons (standard)

height 7mm, margins 7.5mm

Cartons (miniature)

height 7mm, margins 7.5mm

Leaflets

height 14mm, margins 12mm

Foils

height 7mm, margins 10mm

Tubes (standard)

height 6mm, margins 7mm

Tubes (miniature)

height 6mm, margins 4mm

Labels (standard)

height 7mm, margins 6mm

Labels (miniature)

height 7mm, margins 6mm

Other

height 14mm, margins 12mm

Miniature barcodes have bar widths at 66% of standard.

For tubes, the gap between bars is greater.

Barcode Types

GSK Pharma *(continued)*

Autoset Colours

If this option is selected then the program will choose which thick bars to apply the colours to. The algorithm prefers adjacent thick bars and avoids thick bars at the beginning or end of the barcode. If this option is not selected then the program will apply each colour to the thick bar in the same relative position in the barcode.

Size

The default dimensions are based on the nominal Pharma Code size. You can vary the bar height.

Bar Height

This default value is shown in millimetres when you select your application, after which you may enter a different value.

Note that for all applications, except cartons, there is no margin above or below the bars, so the bar height is the same as the barcode height.

It is recommended that for all applications your bar height is at least 5mm and for miniature applications the maximum height is 7mm.

The width scale for a GlaxoWellcome Pharma barcode is fixed. The barcode width and bar to bar width are both shown on screen when you draw your barcode and depend on the data being encoded.

The number of colours selected also affects the barcode width as the gap before and after a colour bar is slightly wider than normal.

The following widths are used to build the barcode:

narrow bar 0.5mm (0.35mm for miniature).

thick bar 1.5mm (1.00mm).

space between colour bar and next bar - 1.5mm (1.00mm)

space between two non-coloured bars - 1.00mm (0.65mm)

[tubes only] 1.20mm (0.80mm)

Colour Verification

When you select a colour, either for all bars or for a single thick bar, the program will check the voltage difference with brilliant white. If this value is less than 1.3V, a warning will be given asking if you want to use the colour.

Note that the Display As Scanner option in the Edit menu is disabled. This is because pharma codes are not scanned using infrared scanners.

Barcode Types
GSK Dartford Code

GW Dartford Codes
GW Dartford Codes is a variation of Pharma Code which is used by Glaxo Wellcome in Dartford for product identification.

The barcode encodes a number which may be up to 1048574 (19 thick bars). There is no facility to colour bars individually.

Pharmacode Data
This number will be encoded in the barcode. The display is according to the input format.

Input Format
The number may be entered in decimal format or in “binary” format either with 0 representing a thin bar and 1 representing a thick bar or with A representing a thin bar and B representing a thick bar.

Application
This popup menu is provided to set default margins, bar widths and bar height for different possible applications for GW Dartford barcodes.

Note that when you select a new application, the default bar height is adopted regardless of what is already in the Barcode Height field.

The following applications are supported:

Pharma Label

default and minimum height

7mm, margins 6mm

Pharma Leaflet

default and minimum height

10mm, margins 6mm

Pharma Mini

default height 6mm, minimum

height 5mm, margins 5mm

Size
You are not able to adjust the width of your barcode. You may adjust the height by entering a new value for the barcode height.

GW Dartford Codes bars are the full height of the barcode, as there is no margin above or below the bars. Agamik BarCoder will not allow you to save a barcode with a height which is less than the minimum for your application.

The Width Scale for GW Dartford Codes is fixed at 1.0.

The gaps between bars are always 1mm.

Thick bars 1.5mm (1.00mm for mini).

Thin bars 0.5mm (0.30mm for mini).

Barcode Types
GSK EAN 13

GW EAN 13
GW EAN 13 is a subset of EAN 13 which is used by Glaxo Wellcome.

The barcode encodes a thirteen digit number.

The barcode is produced in accordance with specifications provided by GS1 International, but restricts you to a range of shapes and sizes chosen by Glaxo Wellcome.

Data
There are always thirteen data digits for a GW EAN 13 barcode. You should enter at least the first twelve. If you have entered fewer than 12 data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 12 data digits, the program will offer to insert the check digit for you. If you have entered 13 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

To calculate the GW EAN 13 check digit, the first twelve digits are added together, with every second digit (starting with the second from the left) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 50 30967 00000 gives a check digit of 8:

(5 + 3 + 9 + 7 + 0 + 0) + (0 + 0 + 6 + 0 + 0 + 0) x 3 = 24 + 18 = 42;

42 + 8 = 50.

Application
This popup menu lets you choose the standard Glaxo Wellcome barcode size you require. As well as the size reference number, each menu entry also shows the barcode dimensions and a width magnification factor.

The barcode drawn on screen will show the barcode dimensions together with the bar height and bar to bar width.

Applications supported by Agamik BarCoder are:

Size 1 : 40mm x 29mm, 100%

Size 2 : 36mm x 26mm, 90%

Size 3 : 40mm x 22mm, 100%

Size 4 : 36mm x 20mm, 90%

Note that there are other sizes available in the GW EAN 8 barcode type.

Bold Text
Some applications require digits 5-12 to be displayed in bold. The first four digits and the check digit will be displayed normally.

Note that the program will use the bold form of your current font. If there is no bold form present, then all the digits will be displayed normally.

Size
You are not able to adjust the dimensions of your barcode other than through the application menu. The text size, barcode height and barcode width in the dialogue window are shown for consistency with the rest of the program.

Font
Glaxo Wellcome recommend that you use OCRB if possible.

Barcode Types
GSK EAN 8

GW EAN 8
GW EAN 8 is a subset of EAN 8 which is used by Glaxo Wellcome.

The barcode encodes a eight digit number.

The barcode is produced in accordance with specifications provided by GS1 International, but restricts you to a range of shapes and sizes chosen by Glaxo Wellcome.

Data
There are always eight data digits for a GW EAN 8 barcode. You should enter at least the first seven. If you have entered fewer than 7 data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 7 data digits, the program will offer to insert the check digit for you. If you have entered 8 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

To calculate the GW EAN 8 check digit, the first seven digits are added together, with every second digit (starting with the leftmost) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 5012345 gives a check digit of 2:

(5 + 1 + 3 + 5) x 3 + (0 + 2 + 4) = 42 + 6 = 48;

48 + 2 = 50.

Application
This popup menu lets you choose the standard Glaxo Wellcome barcode size you require. As well as the size reference number, each menu entry also shows the barcode dimensions and a width magnification factor.

The barcode drawn on screen will show the barcode dimensions together with the bar height and bar to bar width.

Applications supported by Agamik BarCoder are:

Size 5 : 29mm x 24mm, 100%

Size 6 : 27mm x 22mm, 90%

Size 7 : 29mm x 17mm, 100%

Size 8 : 25mm x 12mm, 80%

Note that there are other sizes available in the GW EAN 13 barcode type.

Size
You are not able to adjust the dimensions of your barcode other than through the application menu. The text size, barcode height and barcode width in the dialogue window are shown for consistency with the rest of the program.

Font
Glaxo Wellcome recommend that you use OCRB if possible.

Barcode Types
GSK Belgian MSI

GW Belgian MSI
GW Belgian MSI is a variation of standard MSI code which is used by Glaxo Wellcome in Belgium.

The barcode encodes a seven digit number which may include a check digit.

The barcode is produced in accordance with specifications provided by MSI, but restricts you to a range of shapes and sizes chosen by Glaxo Wellcome.

Data
There are always seven data digits for a GW Belgian MSI barcode. You should enter at least the first six if you are using a check digit or all seven if you are not using a check digit. If you have entered fewer than the required number of data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 6 data digits, the program will offer to insert the check digit for you. If you have entered 7 data digits, and have elected to use a check digit, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

The algorithm for calculating the GW Belgian MSI checkcode uses a “modulus 10” addition of the first six digits. This involves compiling a decimal number from the digits in odd positions (right digit is position 1), then multiplying this number by 2. The digits in this new number are added together, plus the even position digits in the original number. The check digit, when added to this sum gives a multiple of 10.

Thus the number 123456 would have the check digit 6:

odd number = 246

x 2 = 492

4 + 9 + 2 = 15

15 + 1 + 3 + 5 = 24

30 – 24 = 6

Giving code 1234566

Style
This popup menu lets you choose the standard Glaxo Wellcome barcode size you require.

Note that as well as having different barcode dimensions, the different style options use different human readable text formats.

Styles supported by Agamik BarCoder are:

7mm:

Bar Height 7mm, Total Height 15mm, Bar to Bar Width 26mm, Barcode Width 30mm

8mm:

Bar Height 8mm, Total Height 16mm, Bar to Bar Width 28mm, Barcode Width 32mm

Verify Check Digit
This option allows you to disable the check digit in your data. It is included because some Belgian MSI numbers have been issued without the check digit and so the program must be capable of supporting these. Glaxo Wellcome strongly recommend that you should have the check digit enabled unless you are certain that the data has been allocated without a check digit.

Barcode Types

GSK Belgian MSI *(continued)*

Size

You are not able to adjust the dimensions of your barcode other than through the style menu. The text size, barcode height and barcode width in the dialogue window are shown for consistency with the rest of the program.

Font

There is no recommended font.

Barcode Types

GSK German PZN Code 39

GW German PZN Code 39

PZN Code 39 is a variation of Code 39 used in pharmaceuticals industry by Glaxo Wellcome, particularly in Germany. The barcode is derived from a seven digit Pharmazentralnummer (PZN), the seventh digit acting as a check digit.

The barcode is produced in accordance with specifications laid down by Arzneispezialitaeten GmbH. This company is also in charge of allocating the PZNs.

7-digit PZN

There are always seven data digits for a PZN barcode. You should enter at least the first six. If you have entered fewer than 6 digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 6 digits, the program will offer to insert the check digit for you. If you have entered 7 digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

To calculate the PZN check digit, the first six digits are added together, each weighted by its position in the barcode plus one. The check digit, when subtracted from the total, gives a multiple of 11.

For example the number 317181 gives a check digit of 9:

3x2 + 1x3 + 7x4 + 1x5 + 8x6 +1x7 = 6 + 3 + 28 + 5 + 48 + 7 = 97;

97 - 9 = 88.

A check digit of 10 is represented by 0.

Wide / Narrow

The recommended ratio between the wide bars and narrow bars is 2.5 to 1.

Size

There are three standard sizes for PZN barcodes. You can choose Large (Gross), Normal or Small (Klein).

Horizontal Check Bar

Horizontal bearer bars can be added above and below the bars.

Dimensions (Size)

The default dimensions, shown on the next page, are based on the nominal barcode size specified by Arzneispezialitaeten GmbH, which assume a Wide/Narrow ratio of 2.5.

Unlike the other Glaxo Wellcome barcode types, you are able to adjust the size of your barcodes outwith the default dimensions.

Font

The default font is Helvetica.

Size	Text Size	Bar Height	Barcode Height	Bar to Bar Width	Barcode Width	Chars per Inch
Large	3mm or 8.5 points	20mm	25.03mm	48.66mm	68.66mm	5.18
Normal	2.5mm or 7.09 pts	10mm	13.99mm	35.75mm	45.75mm	7.06
Small	2mm or 5.67 pts	7mm	10.12mm	26.81mm	33.81mm	9.41

Barcode Types

GSK Portuguese PZN Code 39

GW Portuguese Code 39

GW Portuguese Code 39 is a variation of Code 39 which is used by Glaxo Wellcome in Portugal.

The barcode encodes a seven digit number.

The barcode is produced in accordance with specifications provided by AIM Inc, but is restricted to a single size determined by Glaxo Wellcome.

Data

There are always seven data digits for a GW Portuguese Code 39 barcode. You should enter all seven.

There is no check code for the GW Portuguese Code 39 data.

Size

You are not able to adjust the dimensions of your barcode.

The text size, bar height and bar-bar width are shown in the dialogue window are shown for consistency with the rest of the program.

The dimensions chosen by Glaxo Wellcome are:

Bar Height:	5mm
Barcode Height:	8mm
Bar to Bar Width:	27.5mm
Barcode Width:	32.6mm

The ratio between wide and narrow bars is fixed at 2.2.

Font

There is no recommended font.

Barcode Types
GSK Dutch Code 39

GW Dutch Code 39
GW Dutch Code 39 is a variation of Code 39 which is used by Glaxo Wellcome in the Netherlands.

The barcode encodes fourteen data characters, including a check code character.

The barcode is produced in accordance with specifications provided by AIM Inc, but is restricted to a single size determined by Glaxo Wellcome.

Data
There are always fourteen character for a GW Dutch Code 39 barcode. You should enter at least the first thirteen.

The complete character set comprises all digits, all capital letters and seven selected characters : minus (-), dot (.), space ( ), dollar ($), slash (/), plus (+) and percent (%). Glaxo Wellcome usually use code numbers starting +E.

If you have entered fewer than 13 data characters, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 13 data characters, the program will offer to insert the checkcode character for you. If you have entered 14 data characters, the program will verify the checkcode before it can draw the barcode. If the checkcode is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct checkcode character. Note that a problem with the checkcode may indicate an omission or error elsewhere in your data, so we suggest you always check all the characters.

The algorithm for calculating the GW Dutch Code 39 checkcode assigns a value for each of the 43 characters, from 0 to 42. The values for the barcode data characters are added together and the checkcode is the character whose value is the total modulo 43.

The digits, 0-9, have assigned values 0-9.

The letters, A-Z, have assigned values 10-35.

The selected characters, listed above, have assigned values 36-42.

Thus the data +EF23A1234560 would have checkcode K:

41 + 14 + 15 + 2 + 3 + 10 + 1 + 2 + 3 + 4 + 5 + 6 + 0 = 106;

106 modulo 43 = 20

Size
You are not able to adjust the dimensions of your barcode.

The text size, bar height and bar-bar width are shown in the dialogue window are shown for consistency with the rest of the program.

The dimensions chosen by Glaxo Wellcome are:

Bar Height:	5mm
Barcode Height:	8mm
Bar to Bar Width:	27.5mm
Barcode Width:	32.6mm

The ratio between wide and narrow bars is fixed at 2.2.

Font
There is no recommended font.

Barcode Types

ISBN 13

ISBN 13

ISBN 13 is a publishing barcode type based on EAN 13 which came into use in 2007. The barcode encodes a thirteen-digit ISBN number with an optional addon of 2 or 5 digits. The ISBN number is displayed above the bars, fully hyphenated, and appears below the bars without hyphens.

The barcode is produced in accordance with specifications provided by the ISBN International.

Note that ISBN 13 replaces earlier ISBN barcode types and encodes the new 13 digit ISBN numbers. If you need to produce a reprint of a 10 character ISBN barcode, you should use the ISBN (EAN) barcode type.

ISBN No.

There are always thirteen digits in an ISBN number and it will always start 978 or 979. The thirteenth digit is a check digit. You should enter at least the first twelve digits. If you have entered fewer than 12 digits, a warning message will be displayed when you attempt to save the barcode and you must correct the ISBN No. field. If you have entered only 12 digits, the program will offer to insert the check digit for you. If you have entered 13 digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

To calculate the ISBN check digit, the first twelve digits are added together, with every second digit (starting with the second from the left) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 978096312345 gives a check digit of 9:

(9 + 8 + 9 + 3 + 2 + 4) + (7 + 0 + 6 + 1 + 3 + 5) x 3 = 35 + 66 = 101;

101 + 9 = 110.

Hyphenated Input

It is possible to include hyphens in your ISBN number input. The program will warn you if your hyphenation is not correct and give you the option of overriding the program hyphenation.

You may not have more than four hyphens in your input data.

Addon

The addon field may be left empty (in which case there is no addon) or it must contain either two or five digits. If you have entered 1,3 or 4 addon digits a warning message will be displayed when you attempt to save the barcode and you must correct the addon field. There is no checkcode in the addon field.

Hyphenation

The ISBN number displayed above your barcode must be hyphenated. If you select Auto Hyphenate then Agamik BarCoder

Barcode Types

ISBN 13 *(continued)*

will automatically insert the hyphens in the correct place. However, you may wish to override the program's choice of hyphenation, or to use an ISBN number the program does not recognise. In these cases you should select the hyphenation you require from the list provided.

Note that there will always be four hyphens in a well formed ISBN and that the last hyphen always precedes the check digit. The first hyphen always follows the leading 978 or 979 and the list indicates the number of digits before, between and after the next three hyphens.

For example 3_1_2_6_1 would punctuate the number 9780123456786:

ISBN 978-0-12-345678-9 (which is correct).

If you try to use a hyphenation scheme which differs from the recommended format, Agamik BarCoder will always ask for confirmation before it will save the barcode.

The default hyphenation is Auto Hyphenate.

ISBN Text Position

The full ISBN number can be displayed above your barcode in various positions.

Use Both Margins

The usual form is for the ISBN to start in the left margin and the check digit to be in the right margin. This is most effective with Justify ISBN selected.

Centred in Margins

This is similar to Use Both Margins except that the ISBN starts slightly closer to the bars. This is because the left margin is slightly wider than the right. If Justify ISBN is not selected, the displayed text will be centred above the bars.

Left Margin Only

The ISBN number starts in the left margin. If Justify ISBN is selected, the check digit will be above the right bars.

Right Margin Only

The ISBN number starts above the first bar. If Justify ISBN is selected, the check digit will be in the right margin.

Above Bars Only

The ISBN number starts above the first bar. If Justify ISBN is selected, the check digit will be above the last bars.

Do not Display

It is possible not to display the ISBN text.

Show Digits Only

Some applications require only the thirteen digits of the ISBN number to be displayed above the bars.

Justify ISBN

The ISBN text will be displayed above the barcode in the chosen font and font size, and positioned according to the ISBN Text Position. If the text string is too wide, then it is reduced to fit the barcode exactly. This option also causes ISBN text which is too narrow to be stretched to fit the whole width of the bars (excluding the addon).

Note that if Justify ISBN is not selected, your ISBN text may not fit onto your barcode.

Type K

This option can be used only if you have a five digit addon and causes three horizontal bars to appear above the addon text. If you select this option without a five digit addon field, a warning message will be displayed and the program will not save the barcode.

Barcode Types

ISBN 13 *(continued)*

Light Margin Indicator

The light margins for ISBN 13 are to the left and right of the barcode. The first data digit is displayed in the left margin, so a light margin indicator (LMI) is required only in the right margin. If there is an addon the LMI will be at the top right; if there is no addon the LMI will be at the bottom right.

Shortened Guard Bars

The guard bars are the bars at the start, middle and end of the main part of the ISBN barcode. These will normally be longer than the data bars and will descend to half way down the digits below. Shortened guard bars will be the same length as the data bars.

Size

The default dimensions are based on the nominal barcode size specified by ISBN International.

ISBN Text Size

The displayed characters in the ISBN string have a default cap height of 2.00 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 7.79 points or 2.75 mm overall size.

Note that the characters in the ISBN number are punctuated by four hyphens as selected in the Hyphenation popup.

Text Size

The digits below the barcode (and above the addon) have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size.

Height

The default height for an ISBN (EAN) barcode is 29.91mm. This includes margins of 0.33mm below and above the text displays. The bar height used here is for the data bar in the main part of the barcode which has a default length of 22.85mm.

Width

The default width for an ISBN (EAN) barcode varies depending on the size of the addon (if any).

Version NR (no addon):

nominal barcode width is 37.29mm;

bar - bar width is 31.35mm.

Version NT (2 digit addon):

nominal barcode width is 46.2mm;

bar - bar width is 40.26mm.

Version NF and NK (5 digit addon):

nominal barcode width is 55.11mm;

bar - bar width is 49.17mm.

The default module width is 0.33mm and represents the width of a narrow bar.

It is recommended that your width is between 80% and 200% of these values.

Light margins and the gap between the main part of the barcode and the addon part remain in proportion as the width changes.

Fonts

Font

This is the font to be used for the EAN number display including the addon. The font recommended by the ISBN International is OCRB.

ISBN Font

This is the font to be used for the ISBN number display. The font recommended by ISBN International is OCRB.

Barcode Types

ISBN (EAN)

ISBN (EAN)

ISBN (EAN) is a publishing barcode type based on EAN 13 which is used only for reprints of publications prior to 2007. The barcode encodes a ten-digit ISBN number with an optional addon of 2 or 5 digits. The number appearing below the barcode is derived from the ISBN number which is written above the barcode.

The barcode is produced in accordance with specifications provided by the ISBN International.

Note that from 2007, ISBN numbers have been increased in length to 13 digits. For new publications, you should use the ISBN 13 barcode type.

ISBN No.

There are always ten characters in an ISBN number. The first nine should be digits and the tenth is a check code which may be a digit or X. You should enter at least the first nine digits. If you have entered fewer than 9 digits, a warning message will be displayed when you attempt to draw the barcode and you must correct the ISBN No. field. If you have entered only 9 digits, the program will offer to insert the check code for you. If you have entered 10 characters, the program will verify the check code before it can draw the barcode. If the check code is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct checkcode. Note that a problem with the checkcode may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

The checkcode is calculated by multiplying each digit in the ISBN number by its position from the right and adding the resulting values together. The check code, when added to the total, gives a multiple of 11. By convention, a checkcode of 10 is replaced by X.

For example the ISBN 001456987 gives a checkcode of 6:

0 x 10 + 0 x 9 + 1 x 8 + 4 x 7 + 5 x 6 + 6 x 5 + 9 x 4 + 8 x 3 + 7 x 2 =

0 + 0 + 8 + 28 + 30 + 30 + 36 + 24 + 14 = 170;

170 + 6 = 176.

Addon

The addon field may be left empty (in which case there is no addon) or it must contain either two or five digits. If you have entered 1,3 or 4 addon digits a warning message will be displayed when you attempt to save the barcode and you must correct the addon field. There is no checkcode in the addon field.

Hyphenation

The ISBN number displayed above your barcode must be hyphenated. If you select Auto Hyphenate then Agamik BarCoder will automatically insert the hyphens in the correct place. However, you may wish to override the program's choice of hyphenation, or to use an ISBN number the program does not recognise. In these cases you should select the hyphenation you require from the list provided.

Note that there will always be three hyphens in a well formed ISBN and that the last hyphen always precedes the checkcode. The list indicates the number of digits before, between and after the three hyphens. Note also that the hyphenation

Barcode Types

ISBN (EAN) *(continued)*

may be different for the same ten-digit ISBN when used with the two different prefixes.

For example 1_2_6_1 would punctuate the number 0123456789:

0-12-345678-9 (which is correct for prefix 978).

When you attempt to use a hyphenation scheme which differs from the recommended format, Agamik BarCoder will always ask for confirmation before it will save the barcode.

The default hyphenation is Auto Hyphenate.

EAN Prefix

The number below the barcode will always begin either 978 or 979; you should select which one from the popup menu.

Justify ISBN

The ISBN text will be displayed above the barcode in the chosen font and font size, always starting above the left guard bar. If the text string is too wide, then it is reduced to fit the barcode exactly. This option causes ISBN text which is too narrow to be stretched to fit the whole width of the bars (excluding the addon).

Note that this option has no effect where the text is already wide enough to cover the whole barcode width.

Type K

This option can be used only if you have a five digit addon and causes three horizontal bars to appear above the addon text. If you select this option without a five digit addon field, a warning message will be displayed and the program will not save the barcode.

Light Margin Indicator

The light margins for ISBN (EAN) are to the left and right of the barcode. The first data digit is displayed in the left margin, so a light margin indicator (LMI) is required only in the right margin. If there is an addon the LMI will be at the top right; if there is no addon the LMI will be at the bottom right.

Shortened Guard Bars

The guard bars are the bars at the start, middle and end of the main part of the ISBN barcode. These will normally be longer than the data bars and will descend to half way down the digits below. Shortened guard bars will be the same length as the data bars.

Size

The default dimensions are based on the nominal barcode size specified by ISBN International.

ISBN Text Size

The displayed characters in the ISBN string have a default cap height of 2.00 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 7.79 points or 2.75 mm overall size.

Note that the characters in the ISBN number are punctuated by three hyphens as selected in the Hyphenation popup.

Text Size

The digits below the barcode (and above the addon) have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size.

The default height for an ISBN (EAN) barcode is 29.91mm. This includes margins of 0.33mm below and above the text displays. The bar height used here is for the

Barcode Types

ISBN (EAN) *(continued)*

data bar in the main part of the barcode which has a default length of 22.85mm.

The default width for an ISBN (EAN) barcode varies depending on the size of the addon (if any).

Version NR (no addon):

nominal barcode width is 37.29mm;

bar - bar width is 31.35mm.

Version NT (2 digit addon):

nominal barcode width is 46.2mm;

bar - bar width is 40.26mm.

Version NF and NK (5 digit addon):

nominal barcode width is 55.11mm;

bar - bar width is 49.17mm.

The default module width is 0.33mm and represents the width of a narrow bar.

It is recommended that your width is between 80% and 200% of these values.

Light margins and the gap between the main part of the barcode and the addon part remain in proportion as the width changes.

Fonts

Font

This is the font to be used for the EAN number display including the addon. The font recommended by the ISBN International is OCRB.

ISBN Font

This is the font to be used for the ISBN number display. The font recommended by ISBN International is OCRB.

Barcode Types

ISBN 13 (EAN Bookland)

ISBN 13 (EAN Bookland)

ISBN 13 (Bookland) is a publishing barcode type based on EAN 13 which came into use in 2007. The barcode encodes a thirteen digit ISBN number with an optional addon of 5 digits.

The ISBN number is displayed above or below the bars, fully hyphenated, and appears below the bars without hyphens.

The barcode is produced in accordance with specifications provided by the ISBN International.

Note that ISBN 13 replaces earlier ISBN barcode types and encodes the new 13 digit ISBN numbers. If you need to produce a reprint of a 10 character ISBN barcode, you should use the ISBN (Bookland) barcode type.

ISBN No.

There are always thirteen digits in an ISBN number and it will always start 978 or 979. The thirteenth digit is a check digit. You should enter at least the first twelve digits. If you have entered fewer than 12 digits, a warning message will be displayed when you attempt to save the barcode and you must correct the ISBN No. field. If you have entered only 12 digits, the program will offer to insert the check digit for you. If you have entered 13 digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

To calculate the ISBN check digit, the first twelve digits are added together, with every second digit (starting with the second from the left) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 978096312345 gives a check digit of 9:

(9 + 8 + 9 + 3 + 2 + 4) + (7 + 0 + 6 + 1 + 3 + 5) x 3 = 35 + 66 = 101;

101 + 9 = 110.

Hyphenated Input

It is possible to include hyphens in your ISBN number input. The program will warn you if your hyphenation is not correct and give you the option of overriding the program hyphenation.

You may not have more than four hyphens in your input data.

Addon

The addon field may be left empty (in which case there is no addon) or it must contain five digits. If you have entered fewer than five addon digits a warning message will be displayed when you attempt to save the barcode and you must correct the addon field.

The ISBN (EAN Bookland) addon is usually used to indicate a price in $US. For prices between $0.01 and $99.98, the price code starts with 5 followed by the price in cents. For example, a price of $12.00 would be encoded as an addon of 51200. For prices between $100.00 and $499.99 the addon is the number of cents. All other prices have a code of 59999.

Barcode Types

ISBN 13 (EAN Bookland) *(continued)*

Hyphenation

The ISBN number displayed above or below your barcode must be hyphenated. If you select Auto Hyphenate then Agamik BarCoder will automatically insert the hyphens in the correct place. However, you may wish to override the program's choice of hyphenation, or to use an ISBN number the program does not recognise. In these cases you should select the hyphenation you require from the list provided. Note that there will always be four hyphens in a well formed ISBN and that the last hyphen always precedes the check digit. The list indicates the number of digits before, between and after the four hyphens.

For example 3_1_3_5_1 would punctuate the number 9780300456783:

978-0-300-45678-3 (which is correct!)

When you attempt to use a hyphenation scheme which differs from the recommended format, Agamik BarCoder will always ask for confirmation before it will save the barcode.

The default hyphenation is Auto Hyphenate.

ISBN Text Position

The ISBN number can be displayed either full size above or below the barcode, normal size close above the main part of the barcode, or not displayed at all.

If it is displayed full size, additional space may be required to the right of the barcode, which will be done automatically.

Justify ISBN

The ISBN text will be displayed above or below the barcode (as selected) in the chosen font and font size. If the text string is too wide, then it is reduced to fit the barcode exactly. This option also causes ISBN text which is too narrow to be stretched.

Light Margin Indicator

The light margins for ISBN 13 (Bookland) are to the left and right of the barcode. The first data digit is displayed in the left margin, so a light margin indicator (LMI) is required only in the right margin. If there is an addon the LMI will be at the top right; if there is no addon the LMI will be at the bottom right.

Size

The default dimensions are based on the nominal barcode size specified by the ISBN International.

The default text size for ISBN text differs depending on whether the text extends the full width of the barcode, or is only over the main part. For a full width ISBN display, the default cap height is 3.05 mm. For a normal width ISBN, the default cap height is 2.00 mm. To achieve these, the pitch for your text size will vary depending on the font chosen. For full width OCRA font, this translates to 11.87 points or 4.19 mm overall size; for normal width OCRB font, it is 7.79 points or 2.75 mm.

All characters in the ISBN number will be this height, while all other text digits, including those in an addon, will be controlled by the separate Text menu. Note that the characters in the ISBN number are punctuated by four hyphens as selected in the Hyphenation popup.

The EAN 13 digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. All digits in the EAN 13 number below the barcode and the number above the addon will have the same height.

Note that guard bars always extend half way down the characters below.

Barcode Types

ISBN 13 (EAN Bookland) *(continued)*

The default height for an ISBN 13 (Bookland) barcode varies according to which ISBN text option is chosen. All heights include margins of 0.33mm below and above the text displays. For a full ISBN text, the nominal barcode height is 32.28mm. For normal ISBN text, the nominal barcode height is 29.91mm. If ISBN text is not displayed, the nominal barcode height is 26.59mm.

The bar height used here is for the data bar in the main part of the barcode and in all cases has a nominal length of 22.85mm.

The default width for an ISBN 13 (EAN Bookland) barcode is 32.29mm (with no addon) and 54.45mm (with addon). Nominal bar – bar width is 31.35mm (main bars) and 49.17mm (inlcuding addon). The nominal module width is 0.33mm and represents the width of a narrow bar.

It is recommended that your width is between 80% and 200% of these values.

Light margins and the gap between the main part of the barcode and the addon part remain in proportion as the width changes.

Fonts

Font

This is the font to be used for the EAN number display including the addon. The font recommended by the Publishers Association is OCRB.

ISBN Font

This is the font to be used for the ISBN number display. For a full width ISBN number, the font recommended by ISBN International is OCRA. For a normal ISBN number, the font recommended is OCRB.

Barcode Types

ISBN (EAN Bookland)

ISBN (Bookland) is a publishing barcode type based on EAN 13 which is used only for reprints of publications prior to 2007. The barcode encodes a ten-digit ISBN number with an optional addon of 5 digits. The number appearing below the barcode is derived from the ISBN number which is written above or below the barcode.

The barcode is produced in accordance with specifications provided by the ISBN International.

Note that from 2007, ISBN numbers have been increased in length to 13 digits. For new publications, you should use the ISBN 13 (Bookland) barcode type.

ISBN No.

There are always ten characters in an ISBN number. The first nine should be digits and the tenth is a check code which may be a digit or X. You should enter at least the first nine digits. If you have entered fewer than 9 digits, a warning message will be displayed when you attempt to draw the barcode and you must correct the ISBN No. field. If you have entered only 9 digits, the program will offer to insert the check code for you. If you have entered 10 characters, the program will verify the check code before it can draw the barcode. If the check code is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct checkcode. Note that a problem with the checkcode may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

The checkcode is calculated by multiplying each digit in the ISBN number by its position from the right and adding the resulting values together. The check code, when added to the total, gives a multiple of 11. By convention, a checkcode of 10 is replaced by X.

For example the ISBN 001456987 gives a checkcode of 6:

0 x 10 + 0 x 9 + 1 x 8 + 4 x 7 + 5 x 6 + 6 x 5 + 9 x 4 + 8 x 3 + 7 x 2 =

0 + 0 + 8 + 28 + 30 + 30 + 36 + 24 + 14 = 170;

170 + 6 = 176.

Addon

The addon field may be left empty (in which case there is no addon) or it must contain five digits. If you have entered fewer than five addon digits a warning message will be displayed when you attempt to save the barcode and you must correct the addon field.

Barcode Types

ISBN (EAN Bookland) *(continued)*

Hyphenation

The ISBN number displayed above or below your barcode must be hyphenated. If you select Auto Hyphenate then Agamik BarCoder will automatically insert the hyphens in the correct place (which may be different for each of the two prefixes). However, you may wish to override the program's choice of hyphenation, or to use an ISBN number the program does not recognise. In these cases you should select the hyphenation you require from the list provided. Note that there will always be three hyphens in a well formed ISBN and that the last hyphen always precedes the check digit. The list indicates the number of digits before, between and after the three hyphens.

For example 1_3_5_1 would punctuate the number 0300456786:

0-300-45678-6 (which is correct for prefix 978).

When you attempt to use a hyphenation scheme which differs from the recommended format, Agamik BarCoder will always ask for confirmation before it will save the barcode.

The default hyphenation is Auto Hyphenate.

EAN Prefix

The number below the barcode will always begin either 978 or 979; you should select which one from the popup menu.

ISBN Text Position

The ISBN number can be displayed either above or below the barcode, close above the main part of the barcode, or not displayed at all.

Justify ISBN

The ISBN text will be displayed above or below the barcode (as selected) in the chosen font and font size, always starting above the left guard bar. If the text string is too wide, then it is reduced to fit the barcode exactly. This option causes ISBN text which is too narrow to be stretched to fit the whole width of the bars (excluding the addon).

Note that this option has no effect where the text is already wide enough to cover the whole barcode width.

Light Margin Indicator

The light margins for ISBN (Bookland) are to the left and right of the barcode. The first data digit is displayed in the left margin, so a light margin indicator (LMI) is required only in the right margin. If there is an addon the LMI will be at the top right; if there is no addon the LMI will be at the bottom right.

Size

The default dimensions are based on the nominal barcode size specified by the ISBN International.

The default text size for ISBN text differs depending on whether the text extends the full width of the barcode, or is only over the main part. For a full width ISBN, the default text height is 3.05mm or 8.64pts. For a normal width ISBN, the default height is 2mm or 5.67pts.

All characters in the ISBN number will be this height, while all other text digits, including those in an addon, will be controlled by the separate Text menu described above. Note that the characters in the ISBN number are punctuated by three hyphens as selected in the Hyphenation popup.

Barcode Types

ISBN (EAN Bookland) *(continued)*

The default text size for the EAN 13 text is 2.75mm or 7.8pts. All digits in the EAN 13 number below the barcode and the number above the addon will have the same height.

Note that guard bars always extend half way down the characters below.

The default height for an ISBN (Bookland) barcode varies according to which ISBN text option is chosen. All heights include margins of 0.33mm below and above the text displays. For a full ISBN text, the nominal barcode height is 32.28mm. For normal ISBN text, the nominal barcode height is 29.91mm. If ISBN text is not displayed, the nominal barcode height is 26.59mm.

The bar height used here is for the data bar in the main part of the barcode and in all cases has a nominal length of 22.85mm.

The default width for an ISBN (Bookland) barcode is 55.11mm. Nominal bar - bar width is 49.17mm. The nominal module width is 0.33mm and represents the width of a narrow bar.

It is recommended that your width is between 80% and 200% of these values.

Light margins and the gap between the main part of the barcode and the addon part remain in proportion as the width changes.

Fonts

Font

This is the font to be used for the EAN number display including the addon. The font recommended by the Publishers Association is OCRB.

ISBN Font

This is the font to be used for the ISBN number display. For a full width ISBN number, the font recommended by ISBN International is OCRA. For a normal ISBN number, the font recommended is OCRB.

Barcode Types

ISBN 13 (Price Point)

ISBN 13 (UPC - Price Point)

ISBN 13 (UPC Price-Point) is a publishing barcode type based on UPC-A which came into use in 2007. The barcode encodes a thirteen digit ISBN number, together with a five digit publisher code and a five digit price code. The number appearing below the barcode is derived from the publisher and price codes. The number above the addon is derived from the ISBN number which is also written, fully hyphenated, above or below the barcode.

The barcode is produced in accordance with specifications provided by ISBN International and Uniform Code Council Inc.

Note that ISBN 13 replaces earlier ISBN barcode types and encodes the new 13 digit ISBN numbers. If you need to produce a reprint of a 10 character ISBN barcode, you should use the ISBN (UPC Price Point) barcode type.

ISBN No.

There are always thirteen digits in an ISBN number and it will always start 978 or 979. The thirteenth digit is a check digit. You should enter at least the first twelve digits. If you have entered fewer than 12 digits, a warning message will be displayed when you attempt to save the barcode and you must correct the ISBN No. field. If you have entered only 12 digits, the program will offer to insert the check digit for you. If you have entered 13 digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

To calculate the ISBN check digit, the first twelve digits are added together, with every second digit (starting with the second from the left) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 978096312345 gives a check digit of 9:

(9 + 8 + 9 + 3 + 2 + 4) + (7 + 0 + 6 + 1 + 3 + 5) x 3 = 35 + 66 = 101;

101 + 9 = 110.

Hyphenated Input

It is possible to include hyphens in your ISBN number input. The program will warn you if your hyphenation is not correct and give you the option of overriding the program hyphenation.

You may not have more than four hyphens in your input data.

Barcode Types

ISBN 13 (Price Point) *(continued)*

Publisher Code

The publisher code field must contain six digits. This is the number allocated to the publisher by Uniform Code Council Inc. If you have entered fewer than six digits a warning message will be displayed when you attempt to draw the barcode and you must correct the publisher code field.

Price Code

The price code field must contain five digits. This corresponds with the price of the product carrying the barcode, with leading zeros if necessary. If you have entered fewer than five digits a warning message will be displayed when you attempt to draw the barcode and you must correct the price code field.

Hyphenation

The ISBN number displayed above or below your barcode must be hyphenated. If you select Auto Hyphenate then Agamik BarCoder will automatically insert the hyphens in the correct place. However, you may wish to override the program's choice of hyphenation, or to use an ISBN number the program does not recognise. In these cases you should select the hyphenation you require from the list provided.

Note that there will always be four hyphens in a well formed ISBN and that the last hyphen always precedes the check digit. The list indicates the number of digits before, between and after the four hyphens.

For example 3_1_3_5_1 would punctuate the number 9780300456783:

978-0-300-45678-3 (which is correct).

When you attempt to use a hyphenation scheme which differs from the recommended format, Agamik BarCoder will always ask for confirmation before it will save the barcode.

The default hyphenation is Auto Hyphenate.

ISBN Text Position

The ISBN number can be displayed either above or below the barcode, close above the main part of the barcode, or not displayed at all.

Justify ISBN

The ISBN text will be displayed above or below the barcode (as selected) in the chosen font and font size, always starting above the left guard bar. If the text string is too wide, then it is reduced to fit the barcode exactly. This option causes ISBN text which is too narrow to be stretched to fit the whole width.

Light Margin Indicator

The light margins for ISBN 13 (UPC Price-Point) are to the left and right of the barcode. The first data digit is displayed in the left margin, so a light margin indicator (LMI) is required only in the right margin.

Barcode Types

ISBN 13 (Price Point) *(continued)*

Size

The default dimensions are based on the nominal barcode size specified by ISBN International and Uniform Code Council Inc.

The default text size for ISBN text differs depending on whether the text extends the full width of the barcode, or is only over the main part. For a full width ISBN display, the default cap height is 3.05 mm. For a normal width ISBN, the default cap height is 2.00 mm. To achieve these, the pitch for your text size will vary depending on the font chosen. For full width OCRA font, this translates to 11.87 points or 4.19 mm overall size; for normal width OCRB font, it is 7.79 points or 2.75 mm.

Note that the characters in the ISBN number are punctuated by four hyphens as selected in the Hyphenation popup.

The UPC-A digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. The lead digit to the left and check digit to the right will always be 75% of this value.

Note that guard bars always extend half way down the characters below.

The default height for an ISBN (UPC Price-Point) barcode varies according to which ISBN text option is chosen. All heights include margins of 0.33mm below and above the text displays. For a full ISBN text, the default barcode height is 32.28mm. For normal ISBN text, the nominal barcode height is 29.91mm. If ISBN text is not displayed, the default barcode height is 26.59mm.

The bar height used here is for the data bar in the main part of the barcode and in all cases has a default length of 22.85mm.

The default width for an ISBN (UPC Price-Point) barcode is 55.11mm. The nominal bar – bar width is 49.83mm. The default module width is 0.33mm and represents the width of a narrow bar.

It is recommended that your width is between 80% and 200% of these values.

Light margins and the gap between the main part of the barcode and the addon part remain in proportion as the width changes.

Fonts

Font

This is the font to be used for the UPC number display including the addon. The font recommended by Uniform Code Council Inc is OCRB.

ISBN Font

This is the font to be used for the ISBN number display. For a full width ISBN number, the font recommended by the ISBN International is OCRA. For a normal ISBN number, the font recommended is OCRB.

Barcode Types

ISBN UPC (Price Point)

ISBN (UPC Price Point)

ISBN (UPC Price-Point) is a publishing barcode type based on UPC-A which is used only for reprints of publications prior to 2007. The barcode encodes a ten-digit ISBN number, together with a five digit publisher code and a five digit price code. The number appearing below the barcode is derived from the publisher and price codes. The number above the addon is derived from the ISBN number which is written, fully hyphenated, above or below the barcode.

The barcode is produced in accordance with specifications provided by ISBN International and Uniform Code Council Inc.

Note that from 2007, ISBN numbers have been increased in length to 13 digits. For new publications, you should use the ISBN 13 (UPC Price Point) barcode type.

ISBN No.

There are always ten characters in an ISBN number. The first nine should be digits and the tenth is a check code which may be a digit or X. You should enter at least the first nine digits. If you have entered fewer than 9 digits, a warning message will be displayed when you attempt to save the barcode and you must correct the ISBN No. field. If you have entered only 9 digits, the program will offer to insert the check code for you. If you have entered 10 characters, the program will verify the check code before it can draw the barcode. If the check code is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct checkcode. Note that a problem with the checkcode may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

The checkcode is calculated by multiplying each digit in the ISBN number by its position from the right and adding the resulting values together. The check code, when added to the total, gives a multiple of 11. By convention, a checkcode of 10 is replaced by X.

For example the ISBN 001456987 gives a checkcode of 6:

0 x 10 + 0 x 9 + 1 x 8 + 4 x 7 + 5 x 6 + 6 x 5 + 9 x 4 + 8 x 3 + 7 x 2 =

0 + 0 + 8 + 28 + 30 + 30 + 36 + 24 + 14 = 170;

170 + 6 = 176.

Publisher Code

The publisher code field must contain six digits. This is the number allocated to the publisher by Uniform Code Council Inc. If you have entered fewer than six digits a warning message will be displayed when you attempt to draw the barcode and you must correct the publisher code field.

Price Code

The price code field must contain five digits. This corresponds with the price of the product carrying the barcode, with leading zeros if necessary. If you have entered fewer than five digits a warning message will be displayed when you attempt to draw the barcode and you must correct the price code field.

Barcode Types

ISBN UPC (Price Point) *(continued)*

Hyphenation

The ISBN number displayed above or below your barcode must be hyphenated. If you select Auto Hyphenate then Agamik BarCoder will automatically insert the hyphens in the correct place. However, you may wish to override the program's choice of hyphenation, or to use an ISBN number the program does not recognise. In these cases you should select the hyphenation you require from the list provided.

Note that there will always be three hyphens in a well formed ISBN and that the last hyphen always precedes the check digit. The list indicates the number of digits before, between and after the three hyphens.

For example 1_3_5_1 would punctuate the number 0300456786:

0-300-45678-6 (which is correct).

When you attempt to use a hyphenation scheme which differs from the recommended format, Agamik BarCoder will always ask for confirmation before it will save the barcode.

The default hyphenation is Auto Hyphenate.

ISBN Text Position

The ISBN number can be displayed either above or below the barcode, close above the main part of the barcode, or not displayed at all.

Justify ISBN

The ISBN text will be displayed above or below the barcode (as selected) in the chosen font and font size, always starting above the left guard bar. If the text string is too wide, then it is reduced to fit the barcode exactly. This option causes ISBN text which is too narrow to be stretched to fit the whole width of the bars (excluding the addon).

Note that this option has no effect where the text is already wide enough to cover the whole barcode width.

Light Margin Indicator

The light margins for ISBN (UPC Price-Point) are to the left and right of the barcode. The first data digit is displayed in the left margin, so a light margin indicator (LMI) is required only in the right margin. If there is an addon the LMI will be at the top right; if there is no addon the LMI will be at the bottom right.

Barcode Types

ISBN UPC (Price Point) *(continued)*

Size

The default dimensions are based on the nominal barcode size specified by ISBN International and Uniform Code Council Inc.

The default text size for ISBN text differs depending on whether the text extends the full width of the barcode, or is only over the main part. For a full width ISBN display, the default cap height is 3.05 mm. For a normal width ISBN, the default cap height is 2.00 mm. To achieve these, the pitch for your text size will vary depending on the font chosen. For full width OCRA font, this translates to 11.87 points or 4.19 mm overall size; for normal width OCRB font, it is 7.79 points or 2.75 mm.

Note that the characters in the ISBN number are punctuated by three hyphens as selected in the Hyphenation popup.

The UPC-A digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. The lead digit to the left and check digit to the right will always be 75% of this value.

Note that guard bars always extend half way down the characters below.

The default height for an ISBN (UPC Price-Point) barcode varies according to which ISBN text option is chosen. All heights include margins of 0.33mm below and above the text displays. For a full ISBN text, the default barcode height is 32.28mm. For normal ISBN text, the nominal barcode height is 29.91mm. If ISBN text is not displayed, the default barcode height is 26.59mm.

The bar height used here is for the data bar in the main part of the barcode and in all cases has a default length of 22.85mm.

The default width for an ISBN (UPC Price-Point) barcode is 55.11mm. The nominal bar – bar width is 50.16mm. The default module width is 0.33mm and represents the width of a narrow bar.

It is recommended that your width is between 80% and 200% of these values.

Light margins and the gap between the main part of the barcode and the addon part remain in proportion as the width changes.

Fonts

Font

This is the font to be used for the UPC number display including the addon. The font recommended by Uniform Code Council Inc is OCRB.

ISBN Font

This is the font to be used for the ISBN number display. For a full width ISBN number, the font recommended by the ISBN International is OCRA. For a normal ISBN number, the font recommended is OCRB.

Barcode Types

ISBN 13 (UPC Item Specific)

ISBN 13 (UPC Item Specific)

ISBN 13 (UPC Item Specific) is a publishing barcode type based on UPC-A which came into use in 2007. The barcode encodes a thirteen digit ISBN number, together with a five digit publisher code. The number appearing below the barcode is derived from both the publisher code and the ISBN number.

The barcode is produced in accordance with specifications provided by ISBN International and Uniform Code Council Inc.

Note that no price is encoded by this barcode – if the price is to be included in the barcode then one of the other ISBN barcode types should be used.

Note also that ISBN 13 replaces earlier ISBN barcode types and encodes the new 13 digit ISBN numbers. If you need to produce a reprint of a 10 character ISBN barcode, you should use the ISBN (UPC Item Specific) barcode type.

ISBN No.

There are always thirteen digits in an ISBN number and it will always start 978 or 979. The thirteenth digit is a check digit. You should enter at least the first twelve digits. If you have entered fewer than 12 digits, a warning message will be displayed when you attempt to save the barcode and you must correct the ISBN No. field. If you have entered only 12 digits, the program will offer to insert the check digit for you. If you have entered 13 digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

To calculate the ISBN check digit, the first twelve digits are added together, with every second digit (starting with the second from the left) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 978096312345 gives a check digit of 9:

(9 + 8 + 9 + 3 + 2 + 4) + (7 + 0 + 6 + 1 + 3 + 5) x 3 = 35 + 66 = 101;

101 + 9 = 110.

Hyphenated Input

It is possible to include hyphens in your ISBN number input. The program will warn you if your hyphenation is not correct and give you the option of overriding the program hyphenation.

You may not have more than four hyphens in your input data.

Barcode Types

ISBN 13 (UPC Item Specific) *(continued)*

Publisher Code

The publisher code field must contain six digits. This is the number allocated to the publisher by Uniform Code Council Inc. If you have entered fewer than six digits a warning message will be displayed when you attempt to draw the barcode and you must correct the publisher code field.

Hyphenation

The ISBN number displayed above or below your barcode must be hyphenated. If you select Auto Hyphenate then Agamik BarCoder will automatically insert the hyphens in the correct place. However, you may wish to override the program's choice of hyphenation, or to use an ISBN number the program does not recognise. In these cases you should select the hyphenation you require from the list provided.

Note that there will always be four hyphens in a well formed ISBN and that the last hyphen always precedes the check digit. The list indicates the number of digits before, between and after the four hyphens.

For example 3_1_3_5_1 would punctuate the number 9780300456783:

978-0-300-45678-3 (which is correct).

When you attempt to use a hyphenation scheme which differs from the recommended format, Agamik BarCoder will always ask for confirmation before it will save the barcode.

The default hyphenation is Auto Hyphenate.

ISBN Text Position

The ISBN number can be displayed either full size above or below the barcode, normal size close above the main part of the barcode, or not displayed at all.

If it is displayed full size, additional space may be required to the right of the barcode, which will be done automatically.

Justify ISBN

The ISBN text will be displayed above or below the barcode (as selected) in the chosen font and font size, always starting above the left guard bar. If the text string is too wide, then it is reduced to fit the barcode exactly. This option causes ISBN text which is too narrow to be stretched to fit the whole width of the bars.

Size

The default dimensions are based on the nominal barcode size specified by ISBN International and Uniform Code Council Inc.

The default text size for ISBN text differs depending on whether the text extends the full width of the barcode, or is only over the main part. For a full width ISBN display, the default cap height is 3.05 mm. For a normal width ISBN, the default cap height is 2.00 mm. To achieve these, the pitch for your text size will vary depending on the font chosen. For full width OCRA font, this translates to 11.87 points or 4.19 mm overall size; for normal width OCRB font, it is 7.79 points or 2.75 mm.

Note that the characters in the ISBN number are punctuated by three hyphens as selected in the Hyphenation popup.

The EAN 13 digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size.

Note that guard bars always extend half way down the characters below.

The default height for an ISBN (UPC Item Specific) barcode varies according to which ISBN text option is chosen. All heights include margins of 0.33mm below and above the text displays. For full ISBN text, the default barcode height is 32.28mm. For normal ISBN text, the default barcode height is 29.91mm. If ISBN text is not displayed, the default barcode height is 26.59mm. The bar height used here is for the data bar in the main part of the barcode and in all cases has a nominal length of 22.85mm.

The default width for an ISBN (UPC Item Specific) barcode is 37.95mm. The default bar – bar width is 31.35mm. The default module width is 0.33mm and represents the width of a narrow bar. It is recommended that your width is between 80% and 200% of these values.

Light margins remain in proportion as the width changes.

Fonts

Font

This is the font to be used for the UPC number display including the addon. The font recommended by Uniform Code Council Inc is OCRB.

ISBN Font

This is the font to be used for the ISBN number display. For a full width ISBN number, the font recommended by the ISBN International is OCRA. For a normal ISBN number, the font recommended is OCRB.

Barcode Types

ISBN (UPC Item Specific)

ISBN (UPC Item Specific)

ISBN (UPC Item Specific) is a publishing barcode type based on UPC-A. The barcode encodes a ten-digit ISBN number, together with a five digit publisher code. The number appearing below the barcode is derived from both the publisher code and the ISBN number.

The barcode is produced in accordance with specifications provided by ISBN International and Uniform Code Council Inc.

Note that no price is encoded by this barcode - if the price is to be included in the barcode then one of the other ISBN barcode types should be used.

ISBN No.

There are always ten characters in an ISBN number. The first nine should be digits and the tenth is a check code which may be a digit or X. You should enter at least the first nine digits. If you have entered fewer than 9 digits, a warning message will be displayed when you attempt to save the barcode and you must correct the ISBN No. field. If you have entered only 9 digits, the program will offer to insert the check code for you. If you have entered 10 characters, the program will verify the check code before it can draw the barcode. If the check code is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct checkcode.

Note that a problem with the checkcode may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

The checkcode is calculated by multiplying each digit in the ISBN number by its position from the right and adding the resulting values together. The check code, when added to the total, gives a multiple of 11. By convention, a checkcode of 10 is replaced by X.

For example the ISBN 001456987 gives a checkcode of 6:

0 x 10 + 0 x 9 + 1 x 8 + 4 x 7 + 5 x 6 + 6 x 5 + 9 x 4 + 8 x 3 + 7 x 2 =

0 + 0 + 8 + 28 + 30 + 30 + 36 + 24 + 14 = 170;

170 + 6 = 176.

Publisher Code

The publisher code field must contain six digits. This is the number allocated to the publisher by Uniform Code Council Inc. If you have entered fewer than six digits a warning message will be displayed when you attempt to draw the barcode and you must correct the publisher code field.

Hyphenation

The ISBN number displayed above or below your barcode must be hyphenated. If you select Auto Hyphenate then Agamik BarCoder will automatically insert the hyphens in the correct place. However, you may wish to override the program's choice of hyphenation, or to use an ISBN number the program does not recognise. In these cases you should select the hyphenation you require from the list provided.

Note that there will always be three hyphens in a well formed ISBN and that the last hyphen always precedes the check digit. The list indicates the number of digits before, between and after the three hyphens.

Barcode Types

ISBN (UPC Item Specific) *(continued)*

For example 1_3_5_1 would punctuate the number 0300456786:

0-300-45678-6 (which is correct).

When you attempt to use a hyphenation scheme which differs from the recommended format, Agamik BarCoder will always ask for confirmation before it will save the barcode.

The default is Auto Hyphenate.

ISBN Text Position

The ISBN number can be displayed either above or below the barcode (full), close above the main part of the barcode (normal), or not displayed at all.

Justify ISBN

The ISBN text will be displayed above or below the barcode (as selected) in the chosen font and font size, always starting above the left guard bar. If the text string is too wide, then it is reduced to fit the barcode exactly. This option causes ISBN text which is too narrow to be stretched to fit the whole width of the bars.

Note that this option has no effect where the text is already wide enough to cover the whole barcode width.

Size

The default dimensions are based on the nominal barcode size specified by ISBN International and Uniform Code Council Inc.

The default text size for ISBN text differs depending on whether the text extends the full width of the barcode, or is only over the main part. For a full width ISBN display, the default cap height is 3.05 mm. For a normal width ISBN, the default cap height is 2.00 mm. To achieve these, the pitch for your text size will vary depending on the font chosen. For full width OCRA font, this translates to 11.87 points or 4.19 mm overall size; for normal width OCRB font, it is 7.79 points or 2.75 mm.

Note that the characters in the ISBN number are punctuated by three hyphens as selected in the Hyphenation popup.

The EAN 13 digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size.

Note that guard bars always extend half way down the characters below.

The default height for an ISBN (UPC Item Specific) barcode varies according to which ISBN text option is chosen. All heights include margins of 0.33mm below and above the text displays. For full ISBN text, the default barcode height is 32.28mm. For normal ISBN text, the default barcode height is 29.91mm. If ISBN text is not displayed, the default barcode height is 26.59mm. The bar height used here is for the data bar in the main part of the barcode and in all cases has a nominal length of 22.85mm.

The default width for an ISBN (UPC Item Specific) barcode is 37.95mm. The default bar – bar width is 31.35mm. The default module width is 0.33mm and represents the width of a narrow bar. It is recommended that your width is between 80% and 200% of these values.

Light margins remain in proportion as the width changes.

Fonts

Font

This is the font to be used for the UPC number display including the addon. The font recommended by Uniform Code Council Inc. is OCRB.

ISBN Font

This is the font to be used for the ISBN number display. For a full ISBN number, the font recommended by ISBN International is OCRA. For a normal ISBN number, the font recommended is OCRB.

Barcode Types
ISBN (TSO)

ISBN (TSO)
ISBN (TSO) is a barcode type based on ISBN 13 which is used for publications by The Stationery Office, UK (TSO). The barcode encodes a thirteen-digit ISBN number with most fields fixed to specifications provided by TSO.

13 Digit ISBN No.
There are always thirteen digits in an ISBN number and it will always start 978 or 979. The thirteenth digit is a check digit. You should enter at least the first twelve digits. If you have entered fewer than 12 digits, a warning message will be displayed when you attempt to save the barcode and you must correct the ISBN No. field. If you have entered only 12 digits, the program will offer to insert the check digit for you. If you have entered 13 digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

To calculate the ISBN check digit, the first twelve digits are added together, with every second digit (starting with the second from the left) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 978185112874 gives a check digit of 7:

(9 + 8 + 8 + 1 + 2 + 7) + (7 + 1 + 5 + 1 + 8 + 4) x 3 = 35 + 78 = 113;

113 + 7 = 120.

Hyphenation
The ISBN number displayed above your barcode must be hyphenated. If you select Auto Hyphenate then Agamik BarCoder will automatically insert the hyphens in the correct place. However, you may wish to override the program's choice of hyphenation, or to use an ISBN number the program does not recognize. In these cases you should select the hyphenation you require from the list provided.

Note that there will always be four hyphens in a well formed ISBN and that the last hyphen always precedes the check digit. The first hyphen always follows the leading 978 or 979 and the list indicates the number of digits before, between and after the next three hyphens.

For example 3_1_3_5_1 would punctuate the number 9780215033444:

ISBN 978-0-215-03344-4 (which is correct).

If you try to use a hyphenation scheme which differs from the recommended format, Agamik BarCoder will always ask for confirmation before it will save the barcode.

The default hyphenation is Auto Hyphenate.

Barcode Types

ISBN (TSO) *(continued)*

Size

The default dimensions are based on the nominal barcode size specified by TSO. You will not be able to modify these values, but you can use the pop-up menus to display them in different ways.

ISBN Text Size

The pitch for the displayed characters in the ISBN string is fixed at 7.00.

Note that the characters in the ISBN number are punctuated by four hyphens as selected in the Hyphenation popup.

Text Size

The pitch for the digits below the barcode is fixed at 10.00.

Height

The height for an ISBN (TSO) barcode, including displayed text and margins, is fixed at 29.52mm. The length of the bars is fixed at 23.50mm.

Width

The width for an ISBN (TSO) barcode, including margins, is fixed at 37.29mm. The width from bar to bar is fixed at 31.35mm.

Fonts

Font

This is the font to be used for the ISBN digits displayed below the bars. The font recommended by TSOI is OCRB.

ISBN Font

This is the font to be used for the full ISBN number displayed above the bars. The font recommended by TSO is OCRB.

Barcode Types

ISSN (EAN)

ISSN (EAN)

ISSN is used mostly for serial publications such as newspapers and magazines. The barcode encodes an 8-character ISSN number plus a 2-digit sequence variant and a 2-or 5 digit issue number. The barcode is based on EAN 13 and the number appearing below the barcode is derived from the ISSN number and sequence variant. The issue number is encoded in the addon.

The barcode is produced in accordance with specifications provided by the International Centre for the Registration of Serial Publications and GS1 International.

ISSN No.

There are always eight data character in an ISSN number. The eighth character is a check code for the first seven. You should enter at least the first seven digits. If you have entered fewer than seven digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only seven data digits, the program will offer to add the check code for you. If you have entered eight characters, the program will verify the check code before it can draw the barcode. If the check code is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct checkcode. Note that a problem with the checkcode may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

The check code is calculated by multiplying each digit in the ISSN number by its position from the right and adding the resulting values together. The check code, when added to the total, gives a multiple of 11. By convention, a check code of 10 is replaced by X.

For example the ISSN 0345 603 gives a check code of X:

0 x 8 + 3 x 7 + 4 x 6 + 5 x 5 + 6 x 4 + 0 x 3 + 3 x 2 =

0 + 21 + 24 + 25 + 24 + 0 + 6 = 100;

100 + 10 = 110.

Hyphenated Input

It is possible to include a hyphen in your ISSN number input.

Sequence Variant

This field must have two digits and is usually used to indicate price change and/or to record subissues within the same issue number. For example a sequence variant of 14 used for a newspaper might indicate a Thursday edition (4) and one price change since the start of the year (1).

Issue Number

This field must have either two or five digits and is used to distinguish between successive issues. For regular publications this may be a 2-digit week or month number. For irregular or less frequent publications it may simply be a sequence number. The 5-digit number is used where the year is also encoded, e.g. 09001 for the first issue of 2009.

ISSN Number Display Position

If required the ISSN number will be displayed above or below the main part of the barcode. The first four digits will always be separated from the last four by a hyphen.

Barcode Types

ISSN (EAN) *(continued)*

Issue Number Below Bars

It is possible for the issue number to be displayed below the addon bars.

No Addon

In some cases, you may wish not to have the two digit issue number encoded in the addon.

Shortened Guard Bars

The guard bars are the bars at the start, middle and end of the main part of the ISSN barcode. These will normally be longer than the data bars and will descend to half way down the digits below. Shortened guard bars will be the same length as the data bars.

Justify ISSN

The ISSN text, if selected, will be displayed above the barcode in the chosen font and font size, always starting above the left guard bar. If the text string is too wide, then it is reduced to fit the barcode exactly. This option causes ISSN text which is too narrow to be stretched to fit the whole width of the bars (excluding the addon).

Note that this option has no effect where the text is already wide enough to cover the whole barcode width.

Light Margin Indicator

The light margins for ISSN are to the left and right of the barcode. The first data digit is displayed in the left margin, so a light margin indicator (LMI) may be required only in the right margin. The LMI will be at the top right, next to the issue number.

Size

The default dimensions are based on the nominal barcode size specified by the International Centre for the Registration of Serial Publications and GS1 International.

ISSN text (if displayed) has a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size.

The default text size for barcode data, below the barcode, is the same, but note that the two sizes are independent and may be varied if Customise Dimensions is active.

The default height for an ISSN barcode (height scale 1.00) varies according to whether or not the ISSN number is displayed. With an ISSN number the height 31.32mm; without an ISSN number the height is 26.59mm. In both cases this includes margins of 0.33mm below and above. The bar height used here is for the data bar in the main part of the barcode which has a default length of 22.85mm.

The default width for an ISSN barcode with 2-digit addon (width scale 1.00) is 46.2mm including light margins. The nominal width from bar to bar (from the left guard bar to the right bar of the addon) is 40.26mm. The default module width is 0.33mm and represents the width of a narrow bar. It is recommended that your width is between 80% and 200% of these values (width scale 0.80 to 2.00).

Light margins and the gap between the main part of the barcode and the addon part remain in proportion as the width changes.

Fonts

Font

This is the font to be used for the EAN number display including the addon. The font recommended by the International Centre for the Registration of Serial Publications is OCRB.

ISSN Font

This is the font to be used for the ISSN number display which will usually be the same width as the main part of the barcode. The font recommended by the the International Centre for the Registration of Serial Publications is OCRB.

Barcode Types
ISMN (EAN)

ISMN (EAN)

ISMN (EAN) is a barcode type based on EAN 13 used for printed music. The barcode encodes a thirteen digit ISMN number which appears both below and above the barcode.

The barcode is produced in accordance with specifications provided by the Music Publishers Association and GS1 International.

Note that the earlier form of ISMN, where only the final nine digits are entered and appear above the bars is still supported.

ISMN No.

Because all ISMN numbers start 9790, you can choose to enter all thirteen digits or only the last nine.

The final digit is a check digit which you do not need to enter. If you have entered too few digits, a warning message will be displayed when you attempt to save the barcode and you must correct the ISMN No. field. If you have missed only one digit, the program will assume this is the check digit and offer to insert it for you. If you have entered all the digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct checkcode. Note that a problem with the checkcode may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

The check code is calculated by multiplying each digit in the second part of the ISMN number alternately by 1 and 3, starting from the left, and adding the values. A value of 9 is then added to the total and the check code is the number then required to make a multiple of 10.

For example, ISMN 979001234567 has check code 1:

0x1 + 1x3 + 2x1 + 3x3 + 4x1 + 5x3 + 6x1 + 7x3

= 0 + 3 + 2 + 9 + 4 + 15 + 6 + 21

= 60

60 + 9 = 69

69 + 1 = 70

Note that you could enter the above ISMN either as the full 9790012345671 or as the shorter 012345671.

ISMN Input Format

The first four digits of a full ISMN number are always 9790. You can choose to enter the full thirteen digit form or only the final nine digits.

Hyphenated Input

It is possible to include hyphens in your ISMN number input. The program will warn you if your hyphenation is not correct and give you the option of overriding the program hyphenation.

You may not have more than four hyphens in your input data.

Barcode Types

ISMN (EAN) *(continued)*

Hyphenation

The ISMN number displayed above your barcode must be hyphenated. If you select Auto Hyphenate then Agamik BarCoder will automatically insert the hyphens in the correct place. However, you may wish to override the program's choice of hyphenation. In this case you should select the hyphenation you require from the list provided.

Note that a well formed ISMN will always start 979-0- (or M- in old format) with two more hyphens, the second of which always immediately precedes the check digit. The list indicates the number of digits before, between and after the the hyphens.

For example M-3-5-1 would punctuate the number 9790012345671:

979-0-012-34567-1 (which is correct).

When you attempt to use a hyphenation scheme which differs from the recommended format, Agamik BarCoder will always ask for confirmation before it will save the barcode.

The default hyphenation is Auto Hyphenate.

ISMN Text Position

The ISMN number can be displayed above your barcode in various positions with leading 979-0- or in the traditional position with leading M-.

Use Both Margins

ISMN starts in the left margin. If Justify is selected, the check digit will be in the right margin.

Centred in Margins

This is similar to Use Both Margins except that ISMN starts slightly closer to the bars. This is because the left margin is slightly wider than the right. If Justify is not selected, the displayed text will be centred above the bars.

Left Margin Only

ISMN starts in the left margin. If Justify is selected, the check digit will be above the right bars.

Right Margin Only

ISMN starts above the first bar. If Justify is selected, the check digit will be in the right margin.

Above Bars Only

ISMN starts above the first bar. If Justify is selected, the check digit will be above the last bars.

Do not Display

It is possible not to display the ISMN text.

M-Format

This is similar to Above Bars Only, but with the traditional ISMN display.

Barcode Types

ISMN (EAN) *(continued)*

Shortened Guard Bars

The guard bars are the bars at the start, middle and end of the ISMN barcode. These will normally be longer than the data bars and will descend to half way down the digits below. Shortened guard bars will be the same length as the data bars.

Justify ISMN

The ISMN text will be displayed above the barcode in the chosen font and font size, and in the chosen position. If the text string is too wide, then it is reduced to fit the barcode exactly. This option causes ISMN text which is too narrow to be stretched to fit the whole width of the bars.

Note that this option has no effect where the text is already wide enough to cover the whole barcode width.

Light Margin Indicator

The light margins for ISMN (EAN) are to the left and right of the barcode. The first data digit is displayed in the left margin, so a light margin indicator (LMI) is required only in the right margin. If selected, the LMI will be at the bottom right.

Size

The default dimensions are based on the nominal barcode size specified by the Music Publishers Association and GS1 International.

The displayed characters in the ISMN string have a default cap height of 2.00 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 7.79 points or 2.75 mm overall size. Note that the characters in the ISMN number are punctuated by three hyphens as selected in the Hyphenation popup.

The digits below the barcode have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size.

The default height for an ISMN (EAN) barcode is 28.92mm. This includes margins of 0.33mm below and above the text displays. The bar height used here is for the data bar in the main part of the barcode which has a default length of 22.85mm.

The default width for an ISMN (EAN) barcode is 37.29mm; this includes the light margins to the left and right of the bars. The bar – bar width is between the left and right guard bars and has a default width of 31.35mm. The default module width is 0.33mm and represents the width of a narrow bar. It is recommended that your width is between 80% and 200% of these values.

Light margins remain in proportion as the width changes.

Fonts

Font

This is the font to be used below the barcode. The font recommended by the Music Publishers Association is OCRB.

ISMN Font

This is the font to be used for the ISMN number display above the barcode. The font recommended by the Music Publishers Association is OCRB.

Barcode Types
ISAN (DataMatrix)

ISAN (Data Matrix)
ISAN is a barcode type based on Data Matrix used for audiovisual works. The barcode encodes a 26-character ISAN number. The barcode is usually displayed along with the ISAN logo and the ISAN number itself.

The barcode is produced in accordance with specifications provided by the ISAN International Agency and AIM International.

26 character ISAN
There are always 26 characters in an ISAN number. The seventeenth character acts as a checksum for the first sixteen and the last character is also a checksum.

The ISAN layout is always of the form XXXX-XXXX-XXXX-XXXX-c-XXXX-XXXX-c where X is hexadecimal (0-9 or A-F) and c is alphanumeric (0-9 or A-Z). You can enter the data with or without the hyphens.

If you enter the checksum characters, the program will confirm they are correct; if you omit them the program will offer to add them for you (assuming you have indicated where they should go using hyphens with your input).

The program will only be able to draw or save the barcode with correct checksums. Note that a problem with a checksum may indicate an omission or error elsewhere in your data, so we suggest you always check all the characters.

The checksums are calculated using a mod (37,36) method. The first checksum is generated from the first sixteen characters using 36 as a starting seed. The second checksum continues for the last eight characters.

This is fairly simple to calculate using a spreadsheet and works as follows.

For each character:

1. Start with the result from the previous character (first character uses 36);

2. If this is greater than 36, subtract 37;

3. Add the hexadecimal value for the character (A = 10, B = 11 and so on);

4. If this is greater than 36, subtract 36;

5. Double it to give the “result”.

When this has been done for the first sixteen characters, the first checksum is derived by:

1. Use the result from the 16th character;

2. If this is greater than 36, subtract 37;

3. If this is 1, use 0 otherwise use subtract from 37;

4. This should give a value in the range 0 to 35, respresting a checksum in the range 0 (= 0) to Z (= 35).

The second checksum is derived in the same way. Characters 18 to 25 are processed, using the result from character 16 as a starting seed, to give the second checksum.

Barcode Types

ISAN (DataMatrix) *(continued)*

ISAN Input Format

BarCoder allows you to include hyphens with your ISAN input characters.

BarCoder will only be able to add the checksum characters if you indicate a missing checksum using a pair of hyphens e.g.

0000-1100-2200-0001- -2222-3333-

Optional hyphens allows you to input some, but not necessarily all, of the hyphens.

Note that the hyphens are not encoded in the barcode.

Size

The default dimensions are based on the nominal barcode size specified by the ISAN International Agency and AIM International.

The full barcode is 96 pixels (1 inch) square. As there are 22 rows and 22 columns in the barcode, plus a surrounding light margin of equal width, each square within the barcode will measure 4x4 pixels, i.e. 1/24th inch or approximately 1.06mm square.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types
SISAC (Code 128)

SISAC (Code 128)
SISAC is a barcode type, based on Code 128, used to identify issues of a serial publication using the ISSN, date of publication, and volume or issue number.

The barcode is produced in accordance with specifications provided by SISAC (Serials Industry Systems Advisory Committee) and AIM International.

ISSN No.
There are always eight data character in an ISSN number. The eighth character is a check code for the first seven. You should enter at least the first seven digits. If you have entered fewer than seven digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only seven data digits, the program will offer to add the check code for you. If you have entered eight characters, the program will verify the check code before it can draw the barcode. If the check code is wrong, the program will offer to replace it with the correct value.

The check code is calculated by multiplying each digit in the ISSN number by its position from the right and adding the resulting values together. The check code, when added to the total, gives a multiple of 11. By convention, a check code of 10 is replaced by X.

For example the ISSN 0345 603 gives a check code of X:

0 x 8 + 3 x 7 + 4 x 6 + 5 x 5 + 6 x 4 + 0 x 3 + 3 x 2 =

0 + 21 + 24 + 25 + 24 + 0 + 6 = 100;

100 + 10 = 110.

Year
This is the year of publication and should be entered as a four digit value.

The field may be left empty but, if you do provide a value, BarCoder will not be able to save your barcode unless all four digits are provided.

Month
You should select the month of publication from the pop-up menu provided. Note that this list includes seasons and quarters as well as the twelve calendar months.

It is possible to select “No Month”, but if a month is chosen, then you will also need to enter a year.

Second Year
If the publication extends over two or more years, a second year can be entered. As with the first year, it must be four digits.

BarCoder will not be able to save the barcode if the second year is earlier than the first year. If the second year is the same as the first year, it will be ignored.

Second Month
If the publication date extends over two or more months, a second month may be chosen from the pop-up menu.

BarCoder will not be able to save the barcode if the second date is earlier than the first.

Similarly, the first and second month must be of the same “type” (e.g. you cannot mix season and calendar month).

If the two dates are identical, the second will be ignored.

Barcode Types

SISAC (Code 128) *(continued)*

Volume
This can be any number up to 6 digits long. The field can be left empty.

Issue Number
This can be any number up to 5 digits long. The issue is preceded by a colon in the SICI. The field can be left empty.

Second Number
If the publication extends over more than one issue, a second number may be added up to 5 digits long. It must be greater than the first issue number. The second issue is preceded by / in the SICI.

Supplement
If the publication is a supplement, the supplement number can be included. It is not necessary to have a volume or issue number, but there cannot be two issue numbers. The supplement is preceded by the letter 's' in the SICI code.

Data Display
The data is encoded stream of digits which are used to create the barcode. This is the SISAC number. The data can also be displayed as a SICI number which is for human-readable only.

You can display the data in either format which will be shown below the bars. If you want to show both formats, the SISAC code will appear below the bars and the SICI above.

Size
The default dimensions are based on the nominal Code 128 size specified by AIM Inc.

Displayed characters have a default cap height of 2.50 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For Helvetica font, this translates to 10.31 points or 3.64 mm overall size.

AIM standards dictate that the default height for a Code 128 barcode should vary with the width. So, as you add more data, the default barcode height will increase. If you do not want this to happen, you should set your bar height, or barcode height to the desired value.

Similarly, there is no default width for a SISAC barcode as this increases with the amount of data you are encoding. However, the default width for a narrow bar is 0.508mm (0.02 inches). It is recommended that you use at least 37.5% of the nominal width, giving a minimum narrow bar width of 0.191mm (0.0075 inches).

The width for the light margins to the left and right of the bars is 5.08mm (0.2 inches).

Font
The default font is Helvetica.

Barcode Types

M&S 7

M&S 7

M&S 7 is a proprietary barcode type used on retail items for sale in Marks and Spencer stores.

The barcode encodes 8 data digits though only seven are displayed; the last digit acts as a check digit for the first seven and the first digit is not displayed. There is no addon.

The barcode is produced according to specifications provided by Marks and Spencer Ltd and is based on EAN 8.

Data

There are always eight data digits for a M&S 7 barcode, including the unseen lead digit. You should enter at least the first seven. If you have entered fewer than 7 data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 7 data digits, the program will offer to add the check digit for you. If you have entered 8 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits. In particular, note that the unseen lead digit is required in order for the program to create your barcode correctly.

The check digit is calculated in the same way as for EAN 8.

Size Specification

There are four default sizes specified by Marks and Spencer. When you select from this list, your barcode size will resized automatically.

Note that these sizes can be adjusted through the text, height and width fields.

Bounding Box

The position of the surrounding box will always be at the limits of the barcode space. The thickness of the box is the same as a narrow bar at normal magnification.

You can opt to leave a gap between the top of the bars and the box.

Show Lead Digit

If you select this, all eight encoded digits will be shown below the bars.

Bold Text

If you select this, your data will be displayed in the bold version of your chosen font.

Barcode Types

M&S 7 *(continued)*

Size

There are four recommended sizes for M&S 7 barcodes. These are selected using the Size Specification pop-up menu:

Size 1 corresponds to a full EAN 8 barcode, with bar height 18.24mm, and uses 11 point text.

Size 2 is the same, but with 80% bar height (14.6mm).

Size 3 has bar height of 11mm and uses 9 point text.

Size 4 has 5mm bar height and 6.4 point text.

All have the same nominal width of 31.68mm, which includes light margins to the left and right of the bars and assumes the surrounding box is used. The nominal width from bar to bar is 22.11mm and of a narrow bar is 0.33mm.

It is recommended that for M&S 7 barcodes you always use one of the recommended sizes.

Font

The font recommended by Marks and Spencer Ltd. is Gill Sans.

Note that if you want to use the bold version of your chosen font, you should check the Bold Text box.

Barcode Types

Wickes 8

Wickes 8

Wickes 8 is a proprietary barcode type used on retail items for sale in Wickes stores. The barcode encodes 8 data digits though only six are displayed; the first digit and the eighth digit, which acts as a check digit, are not displayed. There is no addon.

The barcode is produced according to specifications provided by Wickes and is based on EAN 8.

Data

There are always eight data digits for a Wickes 8 barcode, including the unseen lead digit and check digit. You should enter at least the first seven. If you have entered fewer than 7 data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 7 data digits, the program will offer to add the check digit for you. If you have entered 8 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit, even though it is not displayed.

The check digit is calculated in the same way as for EAN 8.

Note that the unseen lead digit is required in order for the program to create your barcode correctly.

Size

The default dimensions are based on the nominal barcode size specified by Wickes and based on EAN 8 dimensions.

Wickes 8 displayed characters have a default cap height of 3.26 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 12.69 points or 4.48 mm overall size. All characters in the barcode are the same size.

The default height for a Wickes 8 barcode is 22.48mm. This includes margins below the text and above the bars. The bar height used here is for the data bar which has a nominal length of 18.23mm.

The default width for a Wickes 8 barcode is 30.03mm including the light margins. The nominal width from bar to bar is 22.11mm. The nominal width of a narrow bar is 0.33mm. Light margins remain in proportion as the width changes and are nominally 3.96mm.

It is recommended that for Wickes 8 barcodes you always use the Constrain Proportions option in order to maintain the barcode shape. The barcode should not be more than 200% of the nominal size and should be at least 80%.

Font

The font recommended by Wickes is OCRB.

Barcode Types

Woolworth 8 (South Africa)

Woolworth 8 (South Africa)

Woolworth 8 is a proprietary barcode type used on retail items for sale in South African Woolworth stores. The barcode encodes 8 data digits; the eighth digit acts as a check digit for the first seven. There is no addon.

The barcode is produced according to specifications provided by Woolworth and is based on EAN 8.

Data

There are always eight data digits for a Woolworth 8 barcode. You should enter at least the first seven. If you have entered fewer than 7 data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 7 data digits, the program will offer to add the check digit for you. If you have entered 8 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The check digit is calculated in the same way as for EAN 8.

Bounding Box

The position of the surrounding box will always be at the limits of the barcode space. The thickness of the box is the same as a narrow bar.

You can opt to leave a gap between the top of the bars and the box.

Size

The default dimensions are based on the nominal barcode size specified by Woolworth and based on EAN 8 dimensions.

Woolworth 8 displayed characters have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size.. All characters in the barcode are the same size.

The default height for a Woolworth 8 barcode is 22.63mm. This includes margins below the text and above the bars and assumes the surrounding box is used. The bar height used here is for the data bar which has a nominal length of 18.23mm.

The default width for a Woolworth 8 barcode is 31.35mm including the light margins and assumes there is a surrounding box. The nominal width from bar to bar is 22.11mm. The nominal width of a narrow bar is 0.33mm. Light margins remain in proportion as the width changes and are nominally 3.96mm.

It is recommended that for Woolworth 8 barcodes you always use the Constrain Proportions option in order to maintain the barcode shape.

Font

The font recommended by Woolworth is OCRB.

Barcode Types

ASDA 8

ASDA 8

ASDA 8 is a proprietary barcode type used on retail items for sale in ASDA stores. The barcode is a variation of EAN 8 and has code letters to the left and right of the 8-digit data.

Data

There are always eight data digits for an ASDA 8 barcode, including the check digit. You should enter at least the first seven. If you have entered fewer than 7 data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 7 data digits, the program will offer to add the check digit for you. If you have entered 8 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. This is calculated in the same way as for EAN 8.

Code Letters

You should enter two capital letters which will be displayed in the left and right margins.

Bounding Box

It is possible to enclose your barcode in a rectangular box, with line width equal to the narrow bar width.

You can opt to leave a gap between the top of the bars and the box.

Size

Default dimensions are based on EAN 8.

ASDA 8 displayed characters have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. All characters in the barcode are the same size.

The default height for a ASDA 8 barcode is 26.04mm. This includes margins below the text and above the bars. The bar height used here is for the data bar which has a nominal length of 21.97mm.

The default width for a ASDA 8 barcode is 30.03mm including the light margins. The nominal width from bar to bar is 22.11mm. The nominal width of a narrow bar is 0.33mm. Light margins remain in proportion as the width changes and are nominally 3.96mm.

The barcode should not be more than 200% of the nominal size and should be at least 80%.

Font

The font recommended by ASDA is OCRB.

Barcode Types

ASDA 13

ASDA 13

ASDA 13 is a proprietary barcode type used on retail items for sale in ASDA stores. The barcode is a variation of EAN 13 and has one or two capital letters to the right and left of the 13-digit data.

Data

There are always thirteen data digits for an ASDA 13 barcode, including the check digit. You should enter at least the first seven. If you have entered fewer than 12 data digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 12 data digits, the program will offer to add the check digit for you. If you have entered 13 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

The check digit is calculated in the same way as for EAN 13.

Code Letters

You should enter one or two letters.

If you enter one letter it will be shown to the right of the displayed digits. If there are two letters, the first will appear to the left of the digits and the second to the right.

Bounding Box

It is possible to enclose your barcode in a rectangular box, with line width equal to the narrow bar width.

You can opt to leave a gap between the top of the bars and the box.

Size

The default dimensions are based on the nominal barcode size specified by ASDA and based on EAN 13 dimensions.

ASDA 13 displayed characters have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size. All characters in the barcode are the same size.

The default height for a ASDA 13 barcode is 26.04mm. This includes margins below the text and above the bars. The bar height used here is for the data bar which has a nominal length of 21.97mm.

The default width for a ASDA 13 barcode, including the light margins, is 38.61mm for one letter and 42.24mm for two letters. The nominal width from bar to bar is 31.35mm. The nominal width of a narrow bar is 0.33mm. Light margins remain in proportion as the width changes.

It is recommended that for ASDA 13 barcodes you always use the Constrain Proportions option in order to maintain the barcode shape. The barcode should not be more than 200% of the nominal size and should be at least 80%.

Font

The font recommended by ASDA is OCRB.

Barcode Types
Novartis Pharma

Novartis Pharma
Novartis Pharma is a variation of Pharma Code which is used by Novartis for product identification.

The barcode encodes a number which may be up to 999999. There is a facility to colour up to eleven of the thick bars in different colours from the rest of the bars.

Pharmacode Data
This is the number which will be encoded in the barcode. The display is according to the input format.

Thick Bar Colours
You can choose up to eleven colours to be used for the thick bars in your Novartis Pharma barcode. To select a colour, double click one of the boxes and follow the colour menus; alternatively drag a colour from the Swatch Panel or Colour Window.

The order in which you select your colours will be the same as the order used in the barcode. You may change the order by dragging a colour box to a different position. If there are more colours selected than there are thick bars, then the program will not be able to save your barcode. To unselect a colour, double click and select Default in the Colour Window.

Input Format
The number may be entered either in decimal format or in “binary” format with 1 representing a thick bar and 0 representing a thin bar.

Application
This popup menu is provided to set default margins and bar height for different possible applications for Novartis Pharma barcodes.

Note that the default values apply only when the height and width values in the dialogue window are shown as percentages.

The following applications are supported (default heights are for height scale 1.0, margins are independent of width scale):

	Height	margins
Cartons (standard)	7mm,	7.5mm
Cartons (miniature)	7mm,	7.5mm
Leaflets	14mm,	12mm
Foils	7mm,	10mm
Tubes (standard)	6mm,	7mm
Tubes (miniature)	6mm,	4mm
Labels (standard)	7mm,	6mm
Labels (miniature)	7mm,	6mm

Other height 14mm, margins 12mm

Miniature barcodes have bar widths at 66% of standard.

Note that for tubes, the gap between bars is greater.

Autoset Colours
If this option is selected then the program will choose which thick bars to apply the colours to. The algorithm prefers adjacent thick bars and avoids thick bars at the beginning or end of the barcode. If this option is not selected then the program will apply each colour to the thick bar in the same relative position in the barcode.

Barcode Types

Novartis Pharma *(continued)*

Size

The default dimensions are based on the nominal Pharma Code size.

Novartis Pharma bars are the full height of the barcode, as there is no margin above or below the bars. Nominal height for Novartis Pharma depends on the selected application and is shown above. It is recommended that for all applications your bar height is at least 5mm and for miniature applications the maximum height is 7mm.

The default width for a Novartis Pharma barcode varies with the number encoded as well as whether or not a miniature application is selected. The number of colours selected also affects the width as the gap before and after a colour bar is slightly wider than normal.

The default narrow bar width is 0.5mm (0.33mm for miniature). It is recommended that you should stay within 80% and 140% of the nominal width. The width of the other components of the barcode are all derived from the narrow bar width and are as follows:

thick bar - narrow bar x 3

space between colour bar and next bar – narrow bar x 3

space between two non-coloured bars – narrow bar x 2

[tubes only] - narrow bar x 2.4

Colour Verification

When you select a colour, either for all bars or for a single thick bar, the program will check the voltage difference with brilliant white. If this value is less than 1.5V, a warning will be given asking if you want to use the colour.

Note that the Display As Scanner option in the Edit menu is disabled. This is because pharma codes are not scanned using infrared scanners.

Barcode Types
PZN Code 39

PZN Code 39
PZN Code 39 is a variation of Code 39 used in the pharmaceuticals industry, particularly in Germany. The barcode is derived from a seven or eight digit Pharmazentralnummer (PZN), the last digit acting as a checksum.

The barcode is produced in accordance with specifications laid down by Arzneispezialitaeten GmbH. This company is also in charge of allocating the PZNs.

Note that the checksum applies to the PZN number and not the barcode data. If using a barcode verifier, you should program it to look for PZN barcodes. If this is not possible, then verify Code 39 with no checksum.

Note that a variation of PZN Code 39 used by Glaxo Wellcome has its own barcode type and is described in that chapter.

PZN number
There are always seven or eight data digits for a PZN barcode. You indicate the required number of digits in the PZN Length menu. The final checksum digit need not be entered, but you should enter all the others. If you have entered fewer than the required number of digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have not entered the checksum, the program will offer to insert it for you. If you have entered the checksum, the program will verify it before it can draw the barcode. If the checksum is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct checksum. Note that a problem with the checksum may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

To calculate the PZN checksum digit, all the other digits are added together, each weighted by its position in the barcode. The checksum, when subtracted from the total, gives a multiple of 11.

Note that, for 7-digit PZN numbers, a leading zero is assumed so the weighting will be the position plus one.

For example the number 317181 gives a checksum of 9:

3x2 + 1x3 + 7x4 + 1x5 + 8x6 +1x7 = 6 + 3 + 28 + 5 + 48 + 7 = 97;

97 – 9 = 88.

The 8-digit number 0317181 has the same checksum.

It is not possible to have a checksum of 10. Any number which results in a checksum of 10 is considered illegal and will not be issued.

Wide / Narrow
The recommended ratio between the wide bars and narrow bars is 2.5 to 1.

PZN Length
From the start of 2013 all new PZN numbers will have 8 digits. However it is possible that older PZN numbers will still be in use. These may either have a leading zero attached or be used in 7-digit form.

Size
There are three standard sizes for PZN barcodes. You can choose Large (Gross), Normal or Small (Klein).

Bars / Text Gap
It is possible to vary the gap between the bars and the human readable text below (or above).

The default gap is defined to be two narrow bar widths. You can choose any gap up to five narrow bar widths, in multiples of half a narrow bar width.

Barcode Types

PZN Code 39 *(continued)*

Horizontal Check Bar

Horizontal bearer bars can be added above and below the bars.

Dimensions (Size)

The default dimensions are based on the nominal barcode size specified by Arzneispezialitaeten GmbH.

The default text size for PZN depends on the Barcode Size selected:

Large:	3mm or 8.5 points
Normal:	2.5mm or 7.09 points
Small:	2mm or 5.67 points

All characters in the barcode are the same size.

The default height for a PZN barcode depends on the Barcode Size selected. Including margins below and above these are as follows:

Large:	Cap height 3 mm
Normal:	Cap height 2.5 mm
Small:	Cap height 2 mm

To achieve these, the pitch for your text size will vary depending on the font chosen. For Helvetica font, this translates as follows:

Large:	12.37 points or 4.36 mm
Normal:	10.31 points or 3.64 mm
Small:	8.25 points or 2.91 mm

The nominal width for a PZN barcode depends on the Barcode Size selected and assumes a Wide/Narrow ratio of 2.5.

The various widths are as follows:

Barcode Size		
Large	Normal	Small
Characters per Inch		
5.2	7	9.4
Narrow Bar width (mm)		
.338	.248	.186
Bar To Bar width for PZN7 (mm)		
48.66	35.75	26.81
Bar To Bar width for PZN8 (mm)		
53.56	39.35	29.51
Barcode width for PZN7(mm)		
68.66	45.75	33.81
Barcode width for PZN8(mm)		
73.56	49.35	36.51

Font

The default font is Helvetica.

Barcode Types
IMH Code 39 (Code 32)

IMH Code 39

IMH Code 39, also known as Code 32, is a variation of Code 39 used by the Italian Health Ministry. The barcode is derived from a nine digit number, usually shown prefixed with the letter A; the ninth digit is a check digit.

The barcode is produced in accordance with specifications laid down by the Italian Health Ministry.

Note that the bars do not encode the IMH number itself, but a translation of that number.

Note also that the check digit applies only to the input data. There is no check character in the barcode itself.

9-digit Number

There are always nine data digits for an IMH barcode, including leading zeros. You should enter at least the first eight. If you have entered fewer than 8 digits, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. If you have entered only 8 digits, the program will offer to insert the check digit for you. If you have entered 9 digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

To calculate the IMH check digit, the following formula is used:

the digits in the odd positions (from the left) are added together;

the digits in the even positions are doubled, then the digits in the resulting values are all added;

the two totals are added and divided by 10;

the remainder is the check digit.

For example:

IMH code A012345676

odd digits: 0 + 2 + 4 + 6 = 12

even digits doubled : 2, 6, 10, 14

doubled values digits : 2 + 6 + 1 + 0 + 1 + 4 = 14

12 + 14 = 26; divide by 10

remainder = 6 which is the check digit

Translating the IMH number to the barcode data

The nine digit number is translated to a six character code. This code is then used to create the Code 39 barcode. The translation involves successive divisions by 32; each time the remainder gives the next character, reading from the right. The 32 characters are the digits 0-9, then the capital letters of the alphabet omitting A, E, I and O.

For example 012345676 divided by 32 gives 385802 remainder 12 (D);

385802 divided by 32 = 12056 remainder 10 (B);

12056 divided by 32 = 376 remainder 24 (S);

376 / 32 = 11 remainder 24 (S);

11 = C.

Barcode Types

IMH Code 39 (Code 32)*(continued)*

Since it is a six character code, a leading zero is added giving a code 39 barcode derived from 0CSSBD.

Note that the IMH number is displayed with the barcode and not the translated code.

Wide/Narrow

The recommended ratio between the wide bars and narrow bars is 2.2 to 1.

Text Position

The IMH number can be aligned left, centre or right or in the left margin.

Bars / Text Gap

It is possible to vary the gap between the bars and the human readable text below (or above).

The default gap is defined to be two narrow bar widths. You can choose any gap up to five narrow bar widths, in multiples of half a narrow bar width.

Text Above

The displayed text can be above or below the bars.

Dimensions (Size)

The default dimensions are based on the nominal barcode size specified by the Italian Health Ministry.

IMH displayed characters have a default cap height of 2.5 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRA font, this translates to 9.11 points or 3.21 mm overall size. All characters in the barcode are the same size.

The default height for an IMH barcode is 12.17mm including margin; nominal bar height is 8mm.

The default width for an IMH barcode assumes a Wide/Narrow ratio of 2.2 and margins of 2.54mm.

Characters per Inch 6.71

Narrow Bar width 0.2783mm

Bar To Bar width 30mm

Barcode width 35.56

Font

The default font is OCRA.

Barcode Types

MSI

MSI Code

This barcode type is used to encode numbers which will scanned by MSI scanners. Up to 15 digits may be encoded, including two optional check digits.

The barcode is produced in accordance with specifications provided by MSI.

Data

There should be at least one data digit and you may enter up to 15 altogether. If you have no characters a warning message will be displayed when you attempt to save the barcode and you must correct the data field. For display purposes only, it is possible to include '-' characters with your data digits.

Checkcode Control

You should use this popup menu to decide if you need to use a checkcode with your data. If you choose to let the program add one or two checkcode digits for you, this will be done automatically, assuming the total data length will not exceed 15 digits. If you choose the verify and add option, the program will verify your last last data digit and then add a further checkcode digit. If you have your checkcode verified, the program will confirm that the last digit or digits in your data constitute a valid checkcode before it can save the barcode. If a checkcode is wrong, the program will offer to replace it with the correct value.

If you have chosen one of the verify options, the program will only be able to save the barcode with correct checkcode. Note that a problem with the checkcode may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

The algorithm for calculating the MSI Code checkcode uses a "modulus 10" addition of all the preceding digits. This involves compiling a decimal number from the digits in odd positions (right digit is position 1), then multiplying this number by 2. The digits in this new number are added together, plus the even position digits in the original number. The check digit, when added to this sum gives a multiple of 10.

Thus the number 123456 would have the check digit 6:

odd number = 246

x 2 = 492

4 + 9 + 2 = 15

15 + 1 + 3 + 5 = 24

30 - 24 = 6

Giving code 1234566

The second check digit would also be 6:

1356 x 2 = 2712

2 + 7 + 1 + 2 + 2 + 4 + 6 = 24

30 - 24 = 6

Giving code 12345666

If you select one of the Add options, you can specify whether one (or both) checkcode digits should be displayed.

Checkcode Display

You can choose to display one or both checkcode digits. If you choose more digits than you have nominated in the Checkcode Control menu, the program will give a warning before you can save the barcode.

Barcode Types

MSI *(continued)*

Size

The default dimensions are based on the nominal barcode size specified by MSI.

The default height for a MSI Code barcode is 1 inch. This assumes no text, nor margins below and above, so this is also the nominal height for the bars.

However, recent applications use MSI barcodes with much smaller values for bar height and also display the text. Displayed text digits have a default cap height of 3 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 11.68 points or 4.12 mm overall size..

There is no default width for a MSI Code barcode as this is dependent on the number of digits being encoded. The nominal width for the narrow bar is .008 inches (0.203mm).

Font

The default font is OCRB.

Barcode Types

Kurandt

Kurandt Code

This barcode type is used for folding boxes and encodes numeric data.

The barcode is produced in accordance with specifications provided by Kurandt GmbH.

Data

This should be a number up to 14 digits.

Bar Colours

You can choose different colours for individual bars. Either double click the colour box corresponding with the bar position or drag a colour onto that colour box. If you hold the Alt key at the same time, then dragging from one box to another will copy rather than move the colour.

Note that only the first nineteen bars may be coloured in this way and that remaining bars will have the colour chosen for “Bars and Text”.

Minimum Number of Bars

There must be at least six bars in a Kurandt barcode up to a maximum of 48 bars.

If your data requires more than the minimum, then more bars will be used. If it requires fewer bars, then leading narrow bars will be added.

Size

The default dimensions are based on the nominal barcode size specified by Kurandt.

The default height for a Kurandt Code barcode is 5mm. There is no text, nor margins below and above, so this is also the default height for the bars.

Kurandt recommend that the default height is used in all cases.

There is no default width for a Kurandt Code barcode as this is dependent on the number being encoded and the number of bars selected. The default width for the narrow bar is 1mm. The wide bars are always three times the width of the narrow bar. The spaces between bars are always twice the narrow bar width.

Kurandt recommend that the default width is used in all cases.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types

Plessey Code

Plessey Code

Plessey Code is used for encoding hexadecimal sequences of variable length. Between 5 and 20 characters may be encoded.

Data

There should be at least five data characters and you may enter up to 20 altogether. If you have fewer then 5 data characters, a warning message will be displayed when you attempt to save the barcode and you must correct the data field. Each character must come from the hexadecimal character set, which consists of the digits '0' to '9', and the capital letters 'A' to 'F' which represent decimal numbers 10 to 15. The letter 'X' may be used in place of 'A' to represent 10.

Note that two check characters are added by the program; these are encoded in the barcode and may optionally be displayed.

Plessey Code options

Display 10 As

The character used to represent decimal 10 may be either 'A' or 'X'. Both letters are acceptable for input purposes.

Display Checksum Characters

The checksum characters, calculated by the program, may be displayed beside the data entered by the user.

Size

Characters in the IKS string have a default cap height of 2 mm. To achieve this, the pitch for your text size will vary depending on the font chosen.. All characters in the barcode are the same size and appear centred above the text.

The default height for a Plessey Code barcode is 15mm. This includes margins of 1mm below and above the text. The bars have a nominal height of 10mm.

There is no default width for a Plessey Code barcode as this is dependent on the number of characters being encoded. However, each character encoded uses the same amount of space, which is given as the character width. The nominal width for each character is 4mm. It is recommended that you use at least 62.5% of the nominal width, giving a minimum character width of 2.5mm. The width can also be expressed as characters per inch, with the default value (character width of 4mm) being 6.35.

Note that the total width from first bar to last bar is equal to the number of input characters, plus two check characters, plus two start/stop characters, plus a terminator bar which is the width of a quarter character.

The width for the light margins to the left and right of the bars is equivalent to 2.5 character widths.

Font

The default font is Helvetica.

Barcode Types

IKS

IKS

IKS is based on EAN 13 and is used in the pharmaceutical industry, notably in Switzerland. The barcode encodes 13 data digits with eight digits highlighted in bold and five of these are bracketed with the label IKS-OICM or Swissmedic.

Data

There are always thirteen data digits for an IKS barcode. You should enter at least the first twelve. If you have entered fewer than 12 data digits, a warning message will be displayed when you attempt to draw the barcode and you must correct the data field. If you have entered only 12 data digits, the program will offer to insert the check digit for you. If you have entered 13 data digits, the program will verify the check digit before it can draw the barcode. If the check digit is wrong, the program will offer to replace it with the correct value.

The program will only be able to draw or save the barcode with a correct check digit. Note that a problem with the check digit may indicate an omission or error elsewhere in your data, so we suggest you always check all the digits.

To calculate the IKS check digit, the first twelve digits are added together, with every second digit (starting with the second from the left) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number 76 80 12345 678 gives a check digit of 1:

(7 + 8 + 1 + 3 + 5 + 7) + (6 + 0 + 2 + 4 + 6 + 8) x 3 = 31 + 78 = 109;

109 + 1 = 110.

IKS Text String

You may choose one of three strings to display below the barcode:

IKS-OICM

SWISSMEDIC

Swissmedic

Light Margin Indicator

The light margins for IKS are to the left and right of the barcode. The first data digit is displayed in the left margin, so a light margin indicator (LMI) may be required only in the right margin next to the last data digit.

Size

The default dimensions are based on the nominal barcode size specified by GS1 International.

IKS Text Size

Characters in the IKS string have a default cap height of 2 mm. To achieve this, the pitch for your text size will vary depending on the font chosen.

Barcode Types

IKS *(continued)*

Text Size

IKS displayed digits have a default cap height of 2.75 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For OCRB font, this translates to 10.71 points or 3.78 mm overall size..

The default height for an IKS barcode is 29.25mm. This includes the IKS text string and margins of 0.33mm below the text and above the bars. The bar height used here is for the data bar in the main part of the barcode which has a default length of 22.85mm.

The default width for an IKS barcode is 37.29mm. The default bar – bar width is 31.35mm. The default module width is 0.33mm and represents the width of a narrow bar. It is recommended that your width is between 80% and 200% of these values. Light margins remain in proportion as the width changes.

Fonts

Font

This is the font to be used for the EAN number display. The font recommended by GS1 International is OCRB.

Note that the program will use the bold form of your chosen font to display the highlighted digits. If there is no bold form present, then all the digits will be displayed normally.

IKS Text Font

This is the font to be used for the IKS text string display. The recommended font is Helvetica.

Barcode Types
Samsung PDF 417

Samsung PDF 417
This is a variation of the standard PDF 417 barcode type which will be scanned by Samsung electrical applications such as microwave ovens.

The barcode is produced in accordance with specifications provided by Samsung and AIM International.

Hex Data
Your data should be input in a hexadecimal format with all the characters to be encoded represented this way. White space and commas can be used to delimit the different characters and will be ignored by the program. Similarly, the hex values can be prefixed 0x.

The following examples will all result in the same barcode being formed:

1. 0x00 0x22 0xAB 0xF5 0x14 0x89
2. 0x00

   0x22 0xAB

   0xF5 0x14 0x89
3. 00 22 AB F5 14 89
4. 0022ABF51489
5. 00, 22, ab, f5, 14, 89

If your data cannot be recognised as hex, the program will give a warning and the barcode will not be created.

The maximum length for your input data is 1100 hex characters, but most Samsung applications use no more than 25 hex characters.

Data Columns
This is a number between 1 and 30 and represents the number of columns in the barcode used to encode data words. This value will generally be set to 2.

Error Correction Level
Extra checksums are added to allow degraded barcodes to be read. The higher the level, the more checksum words are used, and the more degradation can be incurred. The level recommended by Samsung is 3 (16 words).

Truncated
Samsung recommend that barcodes should be truncated. This reduces the width of the barcode by removing the right column of indicator words and guard bars.

Size
It is recommended barcodes are always produced at 100% magnification with width and height kept in proportion, meaning that each cell is a rectangle with height 1mm and width 0.33mm.

Most Samsung barcodes will have 20 rows, each row measuring 1mm high.

Similarly, the barcode will have 69 columns, with each column measuring 0.33mm wide.

In addition, a light margin of 0.67mm surrounds the entire barcode.

Thus, the overall dimensions of the barcode (including light margins) will usually be 21.33mm high by 24.33mm wide, though the height will vary with the number of hex data instructions.

Text
You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types
Hex Input PDF 417

Hex Input PDF 417
This is a variation of the standard PDF 417 barcode type, but allows a full range of hex characters from 0x00 to 0xFF.

The barcode is produced in accordance with specifications provided by AIM Inc.

Hex Data
Your data should be input in a hexadecimal format with all the characters to be encoded represented this way. White space and commas can be used to delimit the different characters and will be ignored by the program. Similarly, the hex values can be prefixed 0x.

The following examples will all result in the same barcode being formed:

1. 0x00 0x22 0xAB 0xF5 0x14 0x89
2. 0x00

   0x22 0xAB

   0xF5 0x14 0x89
3. 00 22 AB F5 14 89
4. 0022ABF51489
5. 00, 22, ab, f5, 14, 89

If your data cannot be recognised as hex, the program will give a warning and the barcode will not be created.

The maximum length for your input data is 1100 hex characters.

Data Columns
This is a number between 1 and 30 and represents the number of columns in the barcode used to encode data words. Each data column will consist of 17 bars and spaces. There will additionally be four more columns: a left and right guard pattern and left and right indicator words. Because of this overhead, more columns selected will generally result in a smaller overall space requirement. A number of columns may not be selected which would lead to more than 90 rows.

Error Correction Level
Extra checksums are added to allow degraded barcodes to be read. The higher the level, the more checksum words are used, but the more degradation can be incurred. The minimum level is 2 checksum words, but there is a recommended default which increases with the amount of data. The program offers the opportunity to select the default level.

Note that, because the program updates the barcode display as you enter data, it may appear slow to respond if you have a high level of error correction. You can avoid this by selecting a low error correction level while you are entering the data and then choosing the required higher level.

Truncated
In environments where barcode degradation is not expected, it is possible to reduce the size of the barcode by truncating the right part. The saving is equivalent to two data columns.

Size
There is no default height or width for PDF 417 barcodes as both depend on the number of data characters and the number of data columns selected.

However, each row has a nominal height of 1mm.

Each single (narrow) bar has a nominal width of 0.33mm, with each column measuring 17x narrow bar width (5.61mm). The stop pattern measures 18x narrow bar width. For truncated barcodes, the right indicator column and right stop pattern are replaced by a single bar (saving 34x narrow bar width).

There is a quiet zone (light margin) around the entire barcode, equivalant to 2x narrow bar width (nominal width 0.66mm).

It is recommended that width and height are kept in proportion, meaning that each cell is a rectangle with height equal to 3x width.

Text
You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types
Hex Input Micro PDF 417

Hex Input Micro PDF 417
This is a variation of the standard Micro PDF 417 barcode type, but allows a full range of hex characters from 0x00 to 0xFF.

The barcode is produced in accordance with specifications provided by AIM Inc.

Hex Data
Your data should be input in a hexadecimal format with all the characters to be encoded represented this way. White space and commas can be used to delimit the different characters and will be ignored by the program. Similarly, the hex values can be prefixed 0x.

The following examples will all result in the same barcode being formed:

1. 0x00 0x22 0xAB 0xF5 0x14 0x89
2. 0x00

   0x22 0xAB

   0xF5 0x14 0x89
3. 00 22 AB F5 14 89
4. 0022ABF51489
5. 00, 22, ab, f5, 14, 89

If your data cannot be recognised as hex, the program will give a warning and the barcode will not be created.

The maximum length for your input data is 151 hex characters.

Columns
This is a number between 1 and 4 and represents the number of columns in the barcode used to encode data words. Each data column will include 17 bars and spaces. There will additionally be a start and stop pattern and, for three or four columns, a centre pattern. There is a maximum number of rows associated with each number of data columns and it may not be possible to use a small number of data columns for larger data sizes.

The limits for each number of columns are:

Columns	Number of characters
1	23
2	44
3	98
4	151

Size
There is no default height for Micro PDF 417 barcodes as this depends on the number of data characters and the number of data columns selected.

However, each row has a nominal height of 0.667mm.

The four different column selections each have their own nominal width:

Columns	Nominal Bar to Bar Width
1	13.33mm
2	19mm
3	28mm
4	33.66mm

There is a quiet zone (light margin) around the entire barcode, equivalant to one narrow bar width (nominal width 0.33mm).

It is recommended that width and height are kept in proportion, meaning that each cell is a rectangle with height equal to 2x width.

Text
You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types
Hex Input Data Matrix

Hex Input Data Matrix
This is a variation of the standard Data Matrix barcode type, but allows a full range of hex characters from 0x00 to 0xFF.

The barcode is produced in accordance with specifications provided by AIM Inc.

Hex Data
Your data should be input in a hexadecimal format with all the characters to be encoded represented this way. White space and commas can be used to delimit the different characters and will be ignored by the program. Similarly, the hex values can be prefixed 0x.

The following examples will all result in the same barcode being formed:

1. 0x00 0x22 0xAB 0xF5 0x14 0x89
2. 0x00

   0x22 0xAB

   0xF5 0x14 0x89
3. 00 22 AB F5 14 89
4. 0022ABF51489
5. 00, 22, ab, f5, 14, 89

If your data cannot be recognised as hex, the program will give a warning and the barcode will not be created.

The maximum length for your input data is 1300 hex characters.

Barcode Size
There are a number of different fixed sizes available, mostly square but a few rectangular. It is possible to choose the smallest size which will hold all your data or, if shape is important, to choose the smallest square or smallest rectangular size. If you want a fixed size, it is possible to choose from a list of all available sizes. The largest size is 132x132 (132 rows and 132 columns).

If you select a fixed size and your data will not fit, the program will not be able to draw your barcode.

If you select a size which is bigger than required, the program adds neutral “pad” characters to your input data.

Note that the larger sizes have more error correction data which takes time to calculate. If you are changing your data, while displaying a large size of barcode on screen, the screen update may lag slightly – if you need to make significant changes to your data, it may be quicker to do it offline in a text file and import the final data using Copy and Paste.

Size
There is no default height for Data Matrix barcodes as this depends on the barcode size selected.

However, each row has a nominal height of 1mm.

Each of the possible sizes, as indicated in the barcode size menu, gives the number of rows as the first number (e.g. 8x18 will have 8 rows). So the nominal bar height will be that number x 1mm.

Similarly, the second number in the barcode size menu is the number of columns. In this case, a column is either a bar or a space. Each column has a nominal width also of 1mm, so the nominal width is the second number x 1mm.

There is a quiet zone (light margin) around the entire barcode, equivalant to one narrow bar width (nominal width 1mm).

It is recommended that width and height are kept in proportion, meaning that each cell in the barcode will be a square.

Text
You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types

UID Data Matrix

UID Data Matrix

This is a variation of the standard Data Matrix barcode type which allows you to encode the Unique Identifier (UID) often used for military equipment.

The barcode is produced in accordance with specifications provided by AIM Inc.

Issuing Agency Code

In order to have a Unique ID, you will need to use an Issuing Agency; the code identifying the agency will normally be up to three alphanumeric characters.

First Part, Second Part, Third Part

There can be up to data three components to a unique id. These often consist of a prefix followed by a code e.g. CAG A1234 or 17V 123/04-5

The prefixes are meaningful and are often specific to the issuing authority. The codes are usually specific to the manufacturer, e.g. enterprise id, or to the product, e.g. part number.

The allowable character set for the three parts consists of all digits (0 to 9), upper case letters (A to Z) and the two characters / (slash) and - (hyphen).

BarCoder also allows you to punctuate your input with space characters, though care should be taken if you do not select the Remove Spaces option (see below).

Barcode Size

There are a number of different fixed sizes available, mostly square but a few rectangular. It is possible to choose the smallest size which will hold all your data or, if shape is important, to choose the smallest square or smallest rectangular size. If you want a fixed size, it is possible to choose from a list of all available sizes. The largest size is 132x132 (132 rows and 132 columns).

If you select a fixed size and your data will not fit, the program will not be able to draw your barcode.

If you select a size which is bigger than required, the program adds neutral “pad” characters to your input data.

Remove Spaces

Some conventions have a space character between the prefix and code.

While space is not part of the official character set for this type of barcode, BarCoder allows you to include spaces as part of your input.

You can select Remove Spaces if you do not want them encoded in the barcode. If in doubt, please check with the end user.

Barcode Types

UID Data Matrix *(continued)*

Coded String

The string of characters which will be encoded in your barcode follows a strict syntax which includes printing and non-printing control characters.

This string will be shown on screen (or the first part if it is too long to fit on one line).

The structure is always the same and is as follows:

The three characters [ ) >

The Record Separator control character (represented by rs) followed by the Issuing Agency Code

Up to three Group Separator control characters (represented by gs), each followed by part of the data

A second Record Separator control character followed by the end of transmission control (represented by eot)

An example of the structure is shown in the picture at the start of this section.

Size

There is no default height for Data Matrix barcodes as this depends on the barcode size selected.

However, each row has a nominal height of 1mm.

Each of the possible sizes, as indicated in the barcode size menu, gives the number of rows as the first number (e.g. 8x18 will have 8 rows). So the nominal bar height will be that number x 1mm.

Similarly, the second number in the barcode size menu is the number of columns. In this case, a column is either a bar or a space. Each column has a nominal width also of 1mm, so the nominal width is the second number x 1mm.

There is a quiet zone (light margin) around the entire barcode, equivalant to one narrow bar width (nominal width 1mm).

It is recommended that width and height are kept in proportion, meaning that each cell in the barcode will be a square.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types

Four State

Four State

Four State is the barcoding type chosen by the Royal Mail to encode postal codes on envelopes and address labels. Four State encodes a standard post code with optional delivery point code and international code.

The barcode is produced in accordance with specifications provided by the Royal Mail.

Post Code

Your post code must have at least five and at most seven alphanumeric characters; you may include space characters in addition if you wish. The exact format of the post code will conform with one of the following patterns:

LNL NLL

LLN NLL

LLNN NLL

LLNL NLL

LN NLL

LNN NLL

LLL NLL

where L is a letter and N is a number.

For example, the Agamik post code, EH48 4NW, corresponds with LLNN NLL.

If your post code does not conform to one of these seven patterns then the program will not be able to create a barcode and will warn you of the problem.

Delivery Point

Each post code may cover up to 400 addresses or delivery points; it is not unusual for a whole street to share the same post code. The delivery point is a two character field which, with the post code, uniquely identifies an address.

A delivery point is always a number followed by a letter. If your delivery point does not conform to this pattern then the program will not be able to create a barcode and will warn you of the problem. Note that only twenty of the letters are acceptable (C, I, K, M, O and V are not).

International Prefix

An international prefix will always be three digits. If you have entered fewer than three digits then the program will not be able to save the barcode and will warn you of the problem.

Checksum

The checksum is created from your post code plus delivery point and international prefix if present. You do not have to enter a checksum to create a barcode, but if you do then the program will compare your value with the one which it calculates. If the two do not match then the program will not draw or save the barcode.

Note that a problem with the checksum may indicate an omission or error elsewhere in your data, so we suggest you always check all the characters in all the fields.

Bar Width

The width of each bar is the same and is independent of factors such as barcode width. The default bar width is .5mm. It is recommended that your bar width is between .38mm and .63mm.

Orientation

Your barcode may be oriented horizontally or vertically and will be constructed normally or inverted (reflected). Conventionally the different orientations are located on different parts of the address label.

Barcode Types

Four State *(continued)*

Size

The default dimensions are based on the nominal barcode size the Royal Mail.

The height used here refers to the height along the dimension of the bars. The default barcode height is 9mm while the default height for the longest bar is 5mm. It is recommended that your long bar height is between 4.2mm and 5.8mm.

The width used here refers to the width across the bars. The default barcode width and bar to bar width depend on the number of characters encoded, but not on the bar width. The character width refers to the width used to encode an individual character; the default character width is 4.62mm which corresponds to a code density of 5.5 characters (22 bars) per inch. It is recommended that your width should be between 90% and 110% of these values.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is 2mm. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types

ZIP+4 Postnet

Zip+4 Postnet

Zip+4 Postnet is the barcoding type used in the United States to encode postal Zip+4 codes on envelopes and address labels.

ZIP Code

Your ZIP code should have five digits.

+4 Code

This is an optional additional four digits.

Checksum

The checksum is optional and is used only as a check that you have entered the correct Zip+4 code.

Size

The default barcode height is a quarter of an inch while the default height for the longest bar is an eighth of an inch.

The default barcode width is three inches with the width from bar to bar of two and a half inches. This applies to the full Zip+4 code. Each bar is a fiftieth of an inch.

Text

You can display your data below the barcode. Select Show Text in place of No Text.

The default size for the text is one tenth of an inch. If you want to vary this, make sure that you first select Customise Dimensions to avoid also changing the barcode size. Similarly make sure that the Height selection is Bar Height and not Barcode Height; otherwise changing the text size will affect the height of the cells.

Barcode Types

FIM

FIM

FIM barcodes are used in the United States to identify envelopes and parcels.

There are four types of FIM barcode, known as A, B, C and D.

Type

You may select the FIM you require.

Size

The default height for each FIM is five eighths of an inch.

The default barcode width is 1.03 inches with the width from bar to bar of 0.53 inches. Each bar is 0.03 inch wide.

Barcode Types
HIBC LIC

HIBC LIC

This can be either Code 39 or Code 128, and the data must follow strict rules supplied by Health Industry Business Communications Council. If you are not familiar with these rules, you can use the HIBC LIC Multi barcode type instead, which builds the data string for you. BarCoder supports both Primary and Secondary LIC barcodes as well as Combined.

Note that HIBC also use EAN 128 barcodes, which must also follow strict rules, and these are available as HIBC UCC and HIBC UCC Multi.

LIC Formatted Data

Data for a primary HIBC barcode will be between 7 and 20 characters long.

Data for a secondary HIBC barcode will be between 4 and 33 characters long.

Data for a combined HIBC barcode will be between 10 and 51 characters long.

The character set for HIBC barcodes is restricted to digits, 0-9, upper case letters, A-Z, and selected special characters (see below).

As you enter the data, the program will attempt to draw the barcode, but BarCoder will only be able to save the barcode if the data is correctly formatted. The required structure is shown on the next page for your information:

Barcode Types

HIBC LIC *(continued)*

All HIBC barcodes start with a '+' character.
For primary and combined barcodes:
the next four characters are the Labeler Identification Code (LIC) and must start with an upper case letter.
the following characters are the Labeler's Product Code and must be 1-13 alphanumeric characters.
the last character is a unit of measure digit
For combined barcodes only:
the next character is '/'
For combined and secondary barcodes:
the next character may be either a digit or '$'
if digit, then this and the following four characters represent a valid julian date (YYJJJ – see below) and no quantity is represented
if the '$' is followed by a second '$' then check next character:
if next character is '8' then the following two digits represent a quantity (00-99)
if next character is '9' then the following five digits represent a quantity (00000-99999)
the next character should be a digit (0-7), each value treated differently as follows:
if '0' or '1', then this and the following three digits represent a valid date (MMYY)
if '2' then the following six digits represent a valid date (MMDDYY)
if '3' then the following six digits represent a valid date (YYMMDD)
if '4' then the following eight digits represent a valid date and time (YYMMDDHH)
if '5' then the following five digits represent a valid julian date (YYJJJ – see below)
if '6' then the following seven digits represent a valid julian date and time (YYJJJHH – see below)
if '7' then there is no date
if single '$' then no date or quantity is represented
the next characters represent an optional lot number which can have from 0-13 digits
For secondary barcodes only:
the last character is a link character which should match the check character of the associated primary barcode (see below)
For all barcodes:
the final character is a check character, derived from the preceding data (see below) – this may be generated automatically by the program

Notes:

A julian date is of the form YYJJJ where JJJ is the day of the year

The algorithm for calculating the HIBC LIC checkcode assigns a value for each of 43 possible characters, from 0 to 42. The values for the barcode data characters are added together and the checkcode is the character whose value is the total modulo 43.

The digits, 0-9, have assigned values 0-9.

The letters, A-Z, have assigned values 10-35.

Barcode Types

HIBC LIC *(continued)*

The selected characters, minus (-), dot (.), space ( ), dollar ($), slash (/), plus (+) and percent (%), have assigned values 36-42.

Thus the data +EF23A1234560 would have checkcode K:

41 + 14 + 15 + 2 + 3 + 10 + 1 + 2 + 3 + 4 + 5 + 6 + 0 = 106;

106 modulo 43 = 20

Note that minus (-), dot (.), space ( ) and percent (%) can only be used as check (and link) characters. If a space character is used in this way, then it is displayed as underscore (_). Also, the barcode data is always displayed with leading and trailing asterisk characters (*). These are not part of the data input.

Checksum Calculation

You can opt to supply your own check character (for validation purposes), or have the program calculate it for you.

Barcode Symbology

Your barcode can use Code 39 or Code 128. Code 128 tends to be more space efficient.

Output for Corrugated

This option creates a bigger barcode (two and half times the standard size), for use on corrugated surfaces.

Size

The default dimensions are based on the nominal barcode size specified by HIBCC.

Displayed characters have a default cap height of 2.54 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For Monaco font, this translates to 9.5 points or 3.35 mm overall size.. All characters in the barcode are the same size.

The default height for both Code 39 and Code 128 barcodes starts at 10.41mm (0.41 inches). This includes text as well as margins below and above. The bars have a nominal starting height of 6.35mm (0.25 inches) but should be at least 15% of the barcode width. So any bar to bar width more than 42.33mm will have a taller default bar height.

There is no default width as this is dependent both on the number of characters being encoded and on whether the barcode is Code 39 or Code 128. However, the default width for a narrow bar is 0.254mm (0.01 inches). It is recommended that you use at least 80% of the nominal width, giving a minimum narrow bar width of 0.203mm (0.008 inches). For Code 39 barcodes, the wide bar : narrow bar ratio is fixed at 3:1.

Typically, Code 128 barcodes are between 60% and 80% of the width of the equivalent Code 39 barcodes, depending on the number of digits encoded.

Font

HIBCC recommend that zero characters should be shown with stroke through, in order to distinguish them from upper case O. Any font which supports this form of zero can be used.

Barcode Types
HIBC LIC Multi

HIBC LIC Multi
The barcodes produced for HIBC LIC Multi are identical to those you can make using HIBC LIC. The difference is the way in which you enter the data.

The barcodes can be either Code 39 or Code 128, and the data is encoded according to the rules supplied by Health Industry Business Communications Council. You can opt to create a primary barcode, secondary barcode or a combined barcode.

Note that HIBC also use EAN 128 barcodes, which must also follow strict rules, and these are available as HIBC UCC and HIBC UCC Multi.

LIC Multi Data Fields
It is not necessary to enter data in all the fields in the HIBC LIC Multi dialogue. However, you must enter data for those fields which are used to construct the barcode you require. BarCoder will create the string of data to be encoded, as well as adding the check character.

The fields are explained below:

Primary Fields
These fields are required for primary and combined HIBC LIC barcodes, and also if your secondary barcode requires a calculated link character (see below). If one or more of these fields are not present or are incomplete, BarCoder will not be able to save your barcode.

All the primary fields are in the Input Window.

LIC ID
This is the Labeler Identification Code allocated to your organization by HIBCC and consists of four alphanumeric characters, the first of which is always a letter. All letters are upper case.

Product or Catalogue Number (PCN)
This can be from 1 to 13 alphanumeric characters. Any letters must be upper case.

Unit of Measure ID
This is a single digit and indicates the level of packaging. Generally 0 will indicate that the contents are units of use, while higher numbers indicate that the contents themselves are packages.

Secondary Fields
These fields are used for secondary and combined HIBC LIC barcodes. None of the fields are essential to create a barcode, but if any field is incorrectly formed or is incomplete then BarCoder will not be able to save your barcode.

Secondary fields are in a separate window, selectable by pressing the Secondary button in the Input Window.

Expiry Date Entry Format
This is the format you can use to enter the expiry date to be encoded, if required. BarCoder accepts five formats:

DDMMYY

MMDDYY

MMYY

YYMMDD

YYJJJ

Upper case represents a fixed length field, lower case represents a variable length field. YYJJJ is a julian date format where JJJ is the day of the year.

It is not necessary for the date entry format to be the same as the date format to be encoded, which is selected separately (see below).

Barcode Types

HIBC LIC Multi *(continued)*

Expiry Date

This should be the expiry date, if required. The format used should match the Entry Format. This field must be completed unless the Encode Date As: selection is “No Date”.

Hours

This field, if required, should be a number between 0 and 23, and is required only if the Expiry Date is encoded using one of the formats which specifies time as well as date. Note that, by convention, the hour should be GMT.

Encode Date As

This indicates how your date (and time) should be encoded in the barcode. There are six possible formats:

MMYY

MMDDYY

YYMMDD

YYMMDDHH

YYJJJ

YYJJJHH

If no date is required in your barcode, then the seventh option should be used:

No Date

Quantity

This should be a number between 0 and 99999

Lot/Batch/Serial Number

This is an optional field, which can be up to 13 alphanumeric characters. Any letters are upper case.

Use Calculated Link / Supply Link Character

This is the character which will link a secondary HIBC barcode to the associated primary barcode. It is not used for combined barcodes.

If the link character is to be calculated, then all the primary fields must be completed. If the link character is to be supplied, then it should be entered in the Link Character field.

Link Character Field

This is the link character, if it is to be supplied for a secondary barcode. The character should be the check character of the associated primary barcode.

Output for Corrugated

This option creates a bigger barcode (two and half times the standard size), for use on corrugated surfaces.

Barcode Required

You can select from Primary / Secondary / Combined

Depending on your selection, some of the data fields may not be required.

Barcode Symbology

Your barcode can use Code 39 or Code 128. Code 128 tends to be more space efficient.

Barcode Types

HIBC LIC Multi *(continued)*

Size

The default dimensions are based on the nominal barcode size specified by HIBCC.

Displayed characters have a default cap height of 2.54 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For Monaco font, this translates to 9.5 points or 3.35 mm overall size. All characters in the barcode are the same size.

The default height for both Code 39 and Code 128 barcodes starts at 10.41mm (0.41 inches). This includes text as well as margins below and above. The bars have a nominal starting height of 6.35mm (0.25 inches) but should be at least 15% of the barcode width. So any bar to bar width more than 42.33mm will have a taller default bar height.

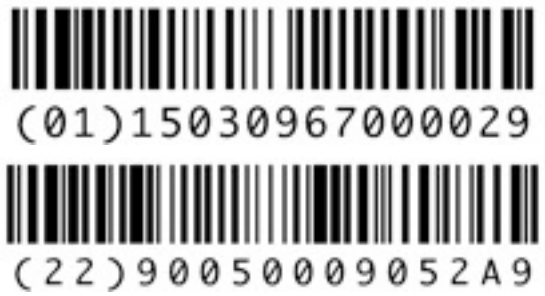
There is no default width as this is dependent both on the number of characters being encoded and on whether the barcode is Code 39 or Code 128. However, the default width for a narrow bar is 0.254mm (0.01 inches). It is recommended that you use at least 80% of the nominal width, giving a minimum narrow bar width of 0.203mm (0.008 inches). For Code 39 barcodes, the wide bar : narrow bar ratio is fixed at 3:1.

Typically, Code 128 barcodes are between 60% and 80% of the width of the equivalent Code 39 barcodes, depending on the number of digits encoded.

Font

HIBCC recommend that zero characters should be shown with stroke through, in order to distinguish them from upper case O. Any font which supports this form of zero can be used.

Barcode Types
HIBC UCC



HIBC UCC

This is an EAN128 barcode, and the data must follow strict rules supplied by Health Industry Business Communications Council. If you are not familiar with these rules, you can use the HIBC UCC Multi barcode type instead, which builds the data string for you. BarCoder supports both Primary and Secondary UCC barcodes; these can be combined, both with each other and also with other non-HIBC specified fields.

Note that HIBC also use Code 39 and Code 128 barcodes, which must also follow strict rules, and these are available as HIBC LIC and HIBC LIC Multi.

UCC Formatted Data

EAN128 barcodes encode Application Identifiers (in brackets) and their associated data fields. The full range of Application Identifiers is supported by HIBC UCC barcode type, and these are all described in the section on EAN128.

However, specific reference is made here to the HIBC-specific AI's which are shown below:

AI (01) – EAN or UPC article number (primary field), 13 or 14 digits

AI (240) – Additional Product Identification (primary field), up to 13 alphanumeric characters

AI (22) – HIBCC formated secondary field, from 3 to 29 alphanumeric characters

These three AI's are discussed below.

AI (01) – EAN or UPC article number

The data for this AI consists of the four character string "(01)" followed by thirteen or fourteen digits:

The first digit indicates the level of packaging. Generally 0 will indicate that the contents are units of use, while higher numbers indicate that the contents themselves are packages.

The next 12 digits are the UCC/EAN number, which will consist of your manufacturer number and item number, but not the check digit. Note that UCC numbers may require a leading zero to make them up to twelve digits.

The fourteenth digit is an optional check digit, for all of the preceding digits (not just the UCC/EAN number). If you do not provide this, the program will offer to add it for you. BarCoder will only save your barcode with a correct check digit.

The algorithm for calculating the check digit is similar to that for Code 25. The first digits are added together, with every second digit (starting with the level of packaging) being multiplied by three. The check digit, when added to the total, gives a multiple of 10.

For example the number (01) 0503096701234 gives a check digit of 6:

(0 + 0 + 0 + 6 + 0 + 2 + 4) x 3 + (5 + 3 + 9 + 7 + 1 + 3) = 36 + 28 = 64;

64 + 6 = 70.

AI (240) – Additional Product Identification

The data for this AI consists of the five character string "(240)" followed by up to thirteen characters. Note that the non-HIBC AI (240) allows up to thirty characters (but only if there is no AI (22) in the same barcode) – if you need more than thirteen characters in this field, then you should use the EAN 128 barcode type instead.

Barcode Types

HIBC UCC *(continued)*

AI (22) – HIBCC formatted secondary field

The data for this AI consists of the four character string “(22)” followed by up to 29 characters which should follow a strict syntax laid down by HIBCC:

If the first character is 8 or 9, the following 2 or 5 digits represent a quantity field

If more than one character remains, the next character (first character if no quantity) must be a digit between 0 and 7:

0 or 1: This is the first digit in a four digit date field representing MMYY

2: The following six digits are a date field representing MMDDYY

3: The following six digits are a date field representing YYMMDD

4: The following eight digits are a date and time field representing YYMMDDHH

5: The following five digits are a date field representing the julian date YYJJJ, where JJJ is the day of the year

6: The following seven digits are a date field representing the julian date and time YYJJJHH, where JJJ is the day of the year

7: There is no date field

The remaining characters, if any, not including the last character, are the Lot/Batch/Serial Number field and may include up to thirteen alphanumeric characters; all letters must be upper case

The final character is a link character, which should be the check digit for the associated AI (01)

Note that, if there is an AI (01) field in the same barcode, then the check digit from this field must be used

Output for Corrugated

This option creates a bigger barcode (two and half times the standard size), for use on corrugated surfaces.

Size

The default dimensions are based on the nominal barcode size specified by HIBCC.

Displayed characters have a default cap height of 2.54 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For Monaco font, this translates to 9.5 points or 3.35 mm overall size. All characters in the barcode are the same size.

The default height starts at 10.41mm (0.41 inches). This includes text as well as margins below and above. The bars have a nominal starting height of 6.35mm (0.25 inches) but should be at least 15% of the barcode width. So any bar to bar width more than 42.33mm will have a taller default bar height.

There is no default width as this is dependent on the number of characters being encoded. However, the default width for a narrow bar is 0.254mm (0.01 inches). It is recommended that you use at least 80% of the nominal width, giving a minimum narrow bar width of 0.203mm (0.008 inches).

Font

HIBCC recommend that zero characters should be shown with stroke through, in order to distinguish them from upper case O. Any font which supports this form of zero can be used.

Barcode Types
HIBC UCC Multi

HIBC UCC Multi
The barcodes produced for HIBC UCC Multi are identical to those you can make using HIBC UCC. The difference is the way in which you enter the data.

The data is encoded according to the rules supplied by Health Industry Business Communications Council. and you can opt to create a primary barcode, secondary barcode or a combined barcode.

Note that HIBC also use Code 39 and Code 128 barcodes, which must also follow strict rules, and these are available as HIBC LIC and HIBC LIC Multi.

UCC Multi Data Fields
It is not necessary to enter data in all the fields in the HIBC UCC Multi dialogue. However, you must enter data for those fields which are used to construct the barcode you require. BarCoder will create the string of data to be encoded, as well as adding the check character.

The fields are explained below:

Primary Fields
These fields are required for primary and combined HIBC UCC barcodes, and also if your secondary barcode requires a calculated link character (see below). If one or more of these fields are not present or are incomplete, BarCoder will not be able to save your barcode.

Packaging Indicator
This is a single digit and indicates the level of packaging. Generally 0 will indicate that the contents are units of use, while higher numbers indicate that the contents themselves are packages.

UCC/EAN Number
This consists of your six digit manufacturer number and six digit product identifier.

Product or Catalogue Number (PCN)
This can be from 1 to 13 alphanumeric characters. Any letters must be upper case.

Secondary Fields
These fields are used for secondary and combined HIBC UCC barcodes. None of the fields are essential to create a barcode, but if any field is incorrectly formed or is incomplete then BarCoder will not be able to save your barcode.

Secondary fields are in a separate window, selectable by pressing the Secondary button in the Input Window.

Expiry Date Entry Format
This is the format you can use to enter the expiry date to be encoded, if required. BarCoder accepts five formats:

DDMMYY

MMDDYY

MMYY

YYMMDD

YYJJJ

Upper case represents a fixed length field, lower case represents a variable length field. YYJJJ is a julian date format where JJJ is the day of the year.

It is not necessary for the date entry format to be the same as the date format to be encoded, which is selected separately (see below).

Barcode Types

HIBC UCC Multi *(continued)*

Expiry Date

This should be the expiry date, if required. The format used should match the Entry Format. This field must be completed unless the Encode Date As: selection is “No Date”.

Hours

This field, if required, should be a number between 0 and 23, and is required only if the Expiry Date is encoded using one of the formats which specifies time as well as date. Note that, by convention, the hour should be GMT.

Encode Date As

This indicates how your date (and time) should be encoded in the barcode. There are six possible formats:

MMYY

MMDDYY

YYMMDD

YYMMDDHH

YYJJJ

YYJJJHH

If no date is required in your barcode, then the seventh option should be used:

No Date

Quantity

This should be a number between 0 and 99999

Lot/Batch/Serial Number

This is an optional field, which can be up to 13 alphanumeric characters. Any letters are upper case.

Use Calculated Link / Supply Link Character

This is the character which will link a secondary HIBC barcode to the associated primary barcode. For combined barcodes, the calculated link is always used.

If the link character is to be calculated, then all the primary fields must be completed. If the link character is to be supplied, then it should be entered in the Link Character field.

Link Character Field

This is the link character, if it is to be supplied for a secondary barcode. The character should be the check character for the AI (01) in the associated primary barcode.

Output for Corrugated

This option creates a bigger barcode (two and half times the standard size), for use on corrugated surfaces.

Barcode Required:

You can select from Primary / Secondary / Combined

Depending on your selection, some of the data fields may not be required.

Barcode Types

HIBC UCC Multi *(continued)*

Size

The default dimensions are based on the nominal barcode size specified by HIBCC.

Displayed characters have a default cap height of 2.54 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For Monaco font, this translates to 9.5 points or 3.35 mm overall size. All characters in the barcode are the same size.

The default height starts at 10.41mm (0.41 inches). This includes text as well as margins below and above. The bars have a nominal starting height of 6.35mm (0.25 inches) but should be at least 15% of the barcode width. So any bar to bar width more than 42.33mm will have a taller default bar height.

There is no default width as this is dependent on the number of characters being encoded. However, the default width for a narrow bar is 0.254mm (0.01 inches). It is recommended that you use at least 80% of the nominal width, giving a minimum narrow bar width of 0.203mm (0.008 inches).

Font

HIBCC recommend that zero characters should be shown with stroke through, in order to distinguish them from upper case O. Any font which supports this form of zero can be used.

Barcode Types
HIBC Small Package

HIBC Small Package
This is a Code 128 which encodes part of a full UCC/EAN number, but without the check digit. It is used where a HIBC LIC or HIBC UCC barcode would be too big. In some cases, where the UCC/EAN number is assigned by the FDA, it is possible to lose the first two digits to make the barcode even smaller.

Data
You should enter either 12 or 10 digits, according to the Data Size field.

If you have 12 digits, the barcode will represent these 12 digits, but the number below the bars will show a leading zero and the check digit.

If you have 10 digits, the barcode will represent these 10 digits, but the number below the bars will show a leading 003 and the check digit.

Note that the check digit is not encoded. It is advisable to confirm that the number below the bars matches your full fourteen digit number before saving the barcode, as an incorrect check digit may indicate an error elsewhere in the data. If you have difficulty reading the number displayed on screen, choose a larger text size, then return to the desired text size.

Data Size
You can choose to encode ten digits or twelve digits. Ten digit barcodes are only appropriate where your UCC/EAN number starts 03 (as allocated by the FDA).

Size
The default dimensions are based on the nominal barcode size specified by HIBCC.

Displayed characters have a default cap height of 2.54 mm. To achieve this, the pitch for your text size will vary depending on the font chosen. For Monaco font, this translates to 9.5 points or 3.35 mm overall size. All characters in the barcode are the same size.

Height
The default height for the barcode, including text and margins below and above, is 10.41mm (0.41 inches).

The default height for the bars is 6.35mm (0.25 inches).

Width
Both barcode sizes use a default narrow bar width of 0.254mm (one hundredth of an inch).

The default width for 12 digit barcode, including margins to left and right, is 30.73mm (1.21 inches).

The default bar to bar width for the 12 digit barcode is 25.65mm (1.01 inches)

The default width for 10 digit barcode, including margins to left and right, is 27.94mm (1.10 inches).

The default bar to bar width for the 10 digit barcode is 22.85mm (0.9 inches)

Font
There is no recommended font.