

Agamik BarCoder Manual



A Guide to using Agamik BarCoder and Agamik Publisher.

**Agamik Ltd
Cathlaw House
Torphichen
West Lothian
United Kingdom
EH 48 4NW**

**Phone: (+44) (0)1506 650163
Fax: (+44) (0)1506 630216
e-mail sales@agamik.co.uk
http: www.agamik.co.uk**

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Introduction

Thank you for buying your copy of Agamik BarCoder.

This software has been designed to support the most commonly used types of barcode, referred to in this manual as barcode symbologies.

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

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, as a TIFF, or copy and paste the barcode as a Windows metafile.

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

Thanks again from the development team.

Douglas Gray

Douglas McCallum

Andy Robinson

Menus

Agamik BarCoder has several menus.

The File Menu has items associated with file input/output, setting standard defaults.

The Edit Menu is for copying and pasting barcodes from one copy of BarCoder to another running at the same time, or as a metafile to paste into another application.

The View Menu is used to alter the on screen view of the barcode. Orientation can be specified as "Upright", "Rotated CW" (clockwise), "Rotated ACW" (anti-clockwise), or "Upside Down" : this affects both the display and the printing of the barcode.

The Symbology Menu is for selecting the barcode types, it has three sub menus, for common, proprietary and publishing barcode types.

The Options Menu contains allows you to set up device compensation, scan for fonts and enable barcode types.

File Menu

New

This item sets the details for the current barcode to the last saved barcode with the same symbology.

Open

This will display the standard File Open Dialog box, enabling you to select a previously saved barcode to be opened. This option will open files saved in either .BAR format, or .EPS format.

Save

This will save the current barcode. It will be saved with the same name and format as the previous time it was saved. If this is the first time the barcode has been saved you will be presented with a standard save dialog. The file you save will have an extension of .BAR

Save As

You will be presented with a standard save dialog allowing you to save the file. The file you save will have an extension of .BAR

Revert

This will restore the values to that of the file you opened.

Set to Default

This will clear the data fields and set all the details of the barcode to the officially defined standard values.

Print Setup...

Allows you to set the format of the page when you are printing a barcode.

Print...

This will print the barcode. The standard Print Dialog box will be displayed allowing you to set the number of copies to be printed, etc.

Export as EPS

This will export the barcode in EPSF format for inclusion in other artwork.

Export as TIFF

This will export the barcode in TIFF format for inclusion in other artwork.

Exit

This will stop the program running. Any unsaved work will be lost.

About BarCoder...

This will display an about box displaying the version number and details for contacting Agamik.

Edit Menu

Copy Barcode

The Copy command copies the barcode to the clipboard both in Barcoder's private data format and as a Windows Metafile. It can therefore be pasted to another copy of Barcoder (you can run multiple copies of Barcoder at the same time on one machine) and can also be pasted as a metafile into many other PC applications. Depending on the resolution of your monitor some thin bars may become invisible on-screen, but will still print. You may run into trouble with colours, with fonts, and with "negative grip". If you do then switch to using .EPS files for exporting.

Paste Barcode

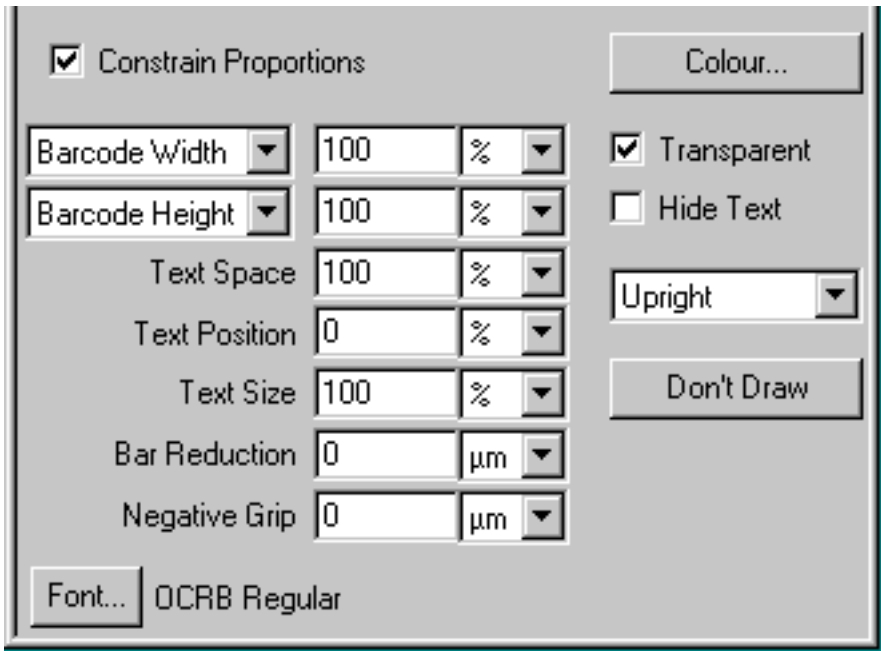
This will paste a barcode that has been copied from another running copy of BarCoder over the current barcode.

Windows

The program has two windows. The Main window that is used to enter data, set options etc, and the Display window that is used to display the barcode and its physical size.

Main Window

The Main window is a standard document window with a title bar and a set of fields and buttons. The window has two sets of fields, the fields that apply to individual symbologies and the general fields that apply to all symbologies. The fields that are specific to each symbology are described in the chapter on that symbology.



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

This is a check box with a default option of Constrain proportions. When checked the barcode's width, height and text size retain the standard proportions. Changing one of the size fields will change the other size fields by the same ratio. If the box is not checked then the individual sizes can be altered without affecting the other dimensions.

Barcode Width

This field allows you to set the width of the barcode. It may be defined as an overall width of the entire barcode including text and white borders (Barcode Width), or the width of the bars only (Bar-Bar Width) or the width of a narrow bar (Module Width). If Barcode Width, Bar-Bar Width or Module Width are selected then the width may be entered as a size value, or as a percentage of the standard size. The size may be specified in points, inches, millimetres, centimetres, tenths (of an inch), sixths (of an inch), thou (thousandths of an inch) or microns.

Barcode Height

This field allows you to set the height of the barcode. It may be defined as an overall height of the entire barcode including text and white borders (Barcode Height), or the height of the bars only (Bar Height). The height may be entered as a size value or as a percentage of the standard size. The size may be specified in points, inches, millimetres, centimetres, tenths (of an inch), sixths (of an inch), thou (thousandths of an inch) or microns.

Text Space

The "Text Space" dimension controls how much height is allocated within the barcode graphic for text — thus for a given "Bar Height", increasing the "Text Space" will make the overall barcode size taller, or alternatively if you specify the "Barcode Height" then increasing the "Text Space" will make the bars shorter. If you specify "Text Space" as a percentage then it is a percentage of the default for the current barcode type.

If you have "Constrain Proportions" then adjusting the text space will cause proportional changes in the overall barcode height and width.

Text Position

The "Text Position" and "Text Size" dimensions give additional control over the size and placement of the text itself, and have no effect on the overall barcode geometry and size. "Text Position" controls the baseline position of the text : 0 (the default) puts the baseline at the bottom of the text space, and positive measurements move it upwards. If specified as a percentage then it is a percentage of the current text space, so 50% would put the baseline halfway up the text space.

Text Size

"Text Size" controls the point size of the text used. If specified as a percentage then it is a percentage of 4/3 of the current text space. This means that 100% (the default) gives digits and capitals which approximately fill the text space, which is usually appropriate.

Bar Reduction

This field will be relevant only if you experience dot gain during the printing process and wish to allow for this when creating your barcode. 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 either as a percentage, or as an absolute value in microns or thousandths of an inch.

Note that bar reduction applies only to your current barcode and is in addition to the device compensation applied to all barcodes.

Negative Grip

This feature is aimed specifically at some specialist printing techniques, such as those used for drinks cans. It cannot be used against a white background, so you should either choose a non-

white background colour or select the transparent option to have no background. The value entered will create an ink free area of that width around all bars and text.

Note that if you change the unit of measurement, the value will change automatically so that the amount is unchanged. If you do not want the value to change, hold the SHIFT key when you select the new unit of measurement.

If you have applied a negative grip against a white background, the program will warn you when you try to save the barcode.

Hide Text

Most symbologies display the barcode number with the barcode. Hide text allows you to hide this number and display the bars only.

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 digits.

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

Font

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

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

Dont Draw

This button will stop the barcode being displayed as you type values, or change options. When it is clicked it will change to Draw. Clicking Draw will show the barcode display window, and show the barcode.

Note that the bars on screen can only be displayed in multiples of screen pixels. This will often mean that the representation shown on screen is not an exact match for the printed barcode, particularly where the bar width is less than a pixel.

Colour

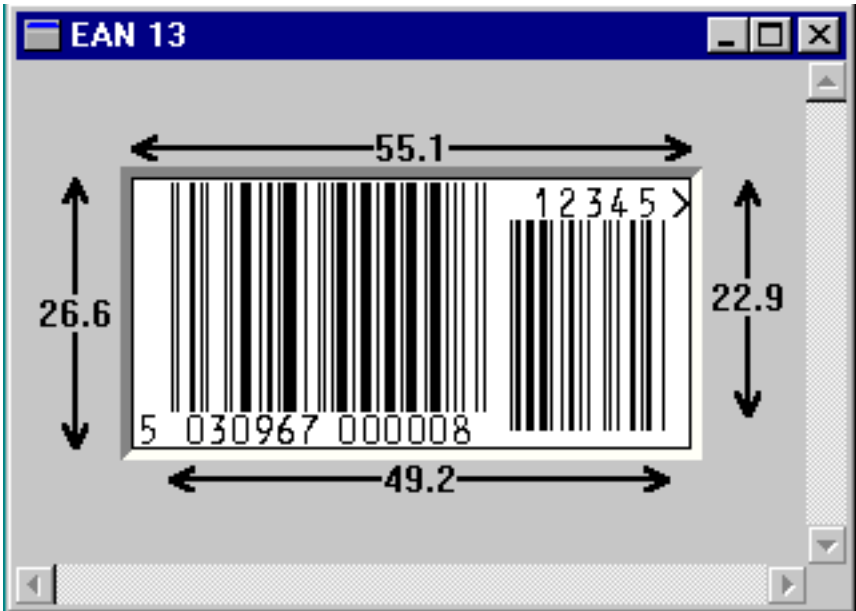
This will bring up the Colour Selection dialog. This allows you to select colours for the various elements of the barcode. It is described in more detail in the Colour chapter.

Orientation

This is a menu allowing the barcode to be rotated, the default orientation is upright, though it may be created in any of the four main orientation

Display Window

The Display window is the on screen representation of the barcode. It displays the barcode in the actual size it will be printed, or scaled as selected from the View menu. The numbers displayed in the border are the sizes of the barcode in millimetres.



Generating a Barcode

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

Different symbologies have their own data requirements; these are detailed in this manual in the different sections for each symbology.

While you are entering the characters to be encoded, the barcode is displayed on screen, unless the Dont Draw button has been selected. The program will check that the data you have entered is valid. If there is a problem with your data, the program cannot draw the barcode and will display a Warning message in the Display window. If there is no warning message, then your barcode will be displayed on the screen.

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 when you press TAB or ENTER on the keyboard, or when you select a non-data field with the mouse. Restrictions applying to the encoded characters are discussed in the sections on the different symbologies.

Barcode Options

These options are specific to individual symbologies. They are generally located in the operator interface below the character input fields and above the dimension fields. The options for the different barcode symbologies are described in the section for each symbology.

Size and Shape of the Barcode

You have control over the width and height of your barcode and also the height of your text. If you select Constrain Proportions then whenever you change one of these three values the other two will be updated automatically. When Constrain Proportions is not selected you will be able to define one dimension 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 symbologies, including exceptions to the general rule, are given in their own sections. In particular, for publishing symbologies you will be able to specify the two text height dimensions.

Printing Options

Agamik BarCoder offers three fields and one menu item which enable you to specify special printing requirements. These are described in detail in the sections on Menus and Windows.

Device Compensation

This item appears under the Options Menu. It is to allow you to compensate for any variation in bar width that your PostScript printing device may cause.

Bar Reduction

This field will be relevant only if you experience dot gain during the printing process and wish to allow for this when creating your barcode EPSF.

Negative Grip

This feature is aimed specifically at some specialist printing techniques, such as those used for drinks cans.

Transparent

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

Character Display

Hide Text

You can display your barcode without the barcode number.

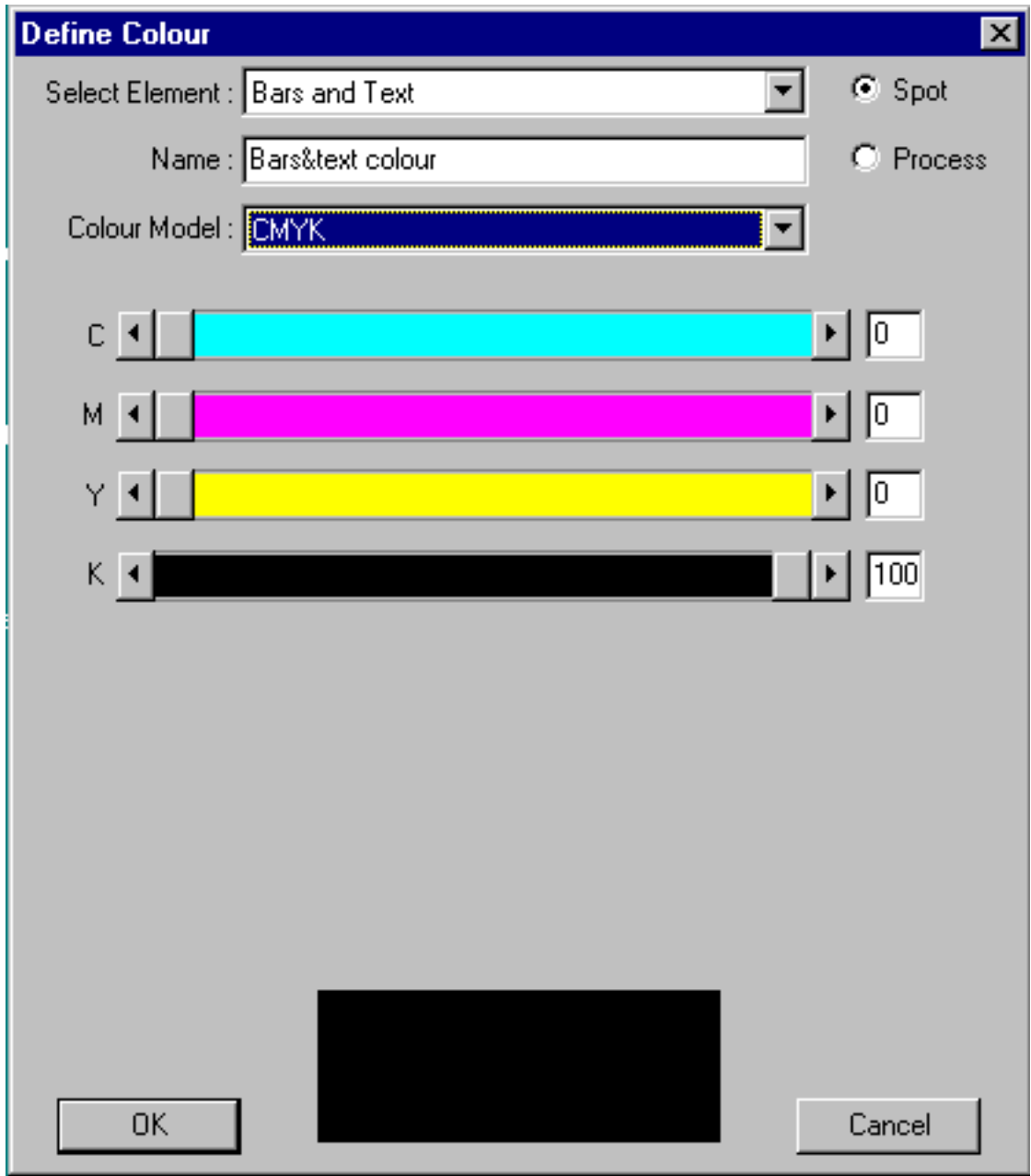
Font

Agamik BarCoder will display your text in any font.

Colour

Agamik BarCoder lets you select the colours for your barcode from the either the full PANTONE range, or by specifying RGB or CMYK values. The RGB option is not offered if you specify "Process Colour".

You can choose one colour for your bars and text and another colour for the background.



The Colour dialog allows you to set the various aspects of the colour of the barcode. It also allows you to set how the job is printed, whether it is spot/process. You can set the colour for both foreground (bars and text) and background

Colour Models

Black

Black is the default colour for the bars and text. The colour name for the bars will appear in the name field as Bar&text Colour.

White

White is the default colour for the background. The colour name for the bars will appear in the name field as Background Colour.

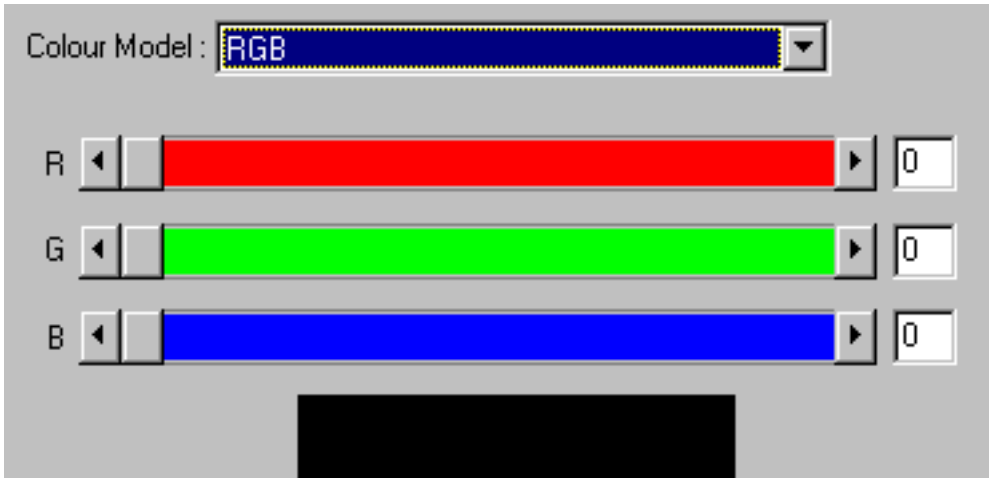
CMYK

CMYK colours are set either by setting the scrollbar to the desired percentage in the value field, or by typing that value into the relevant box.



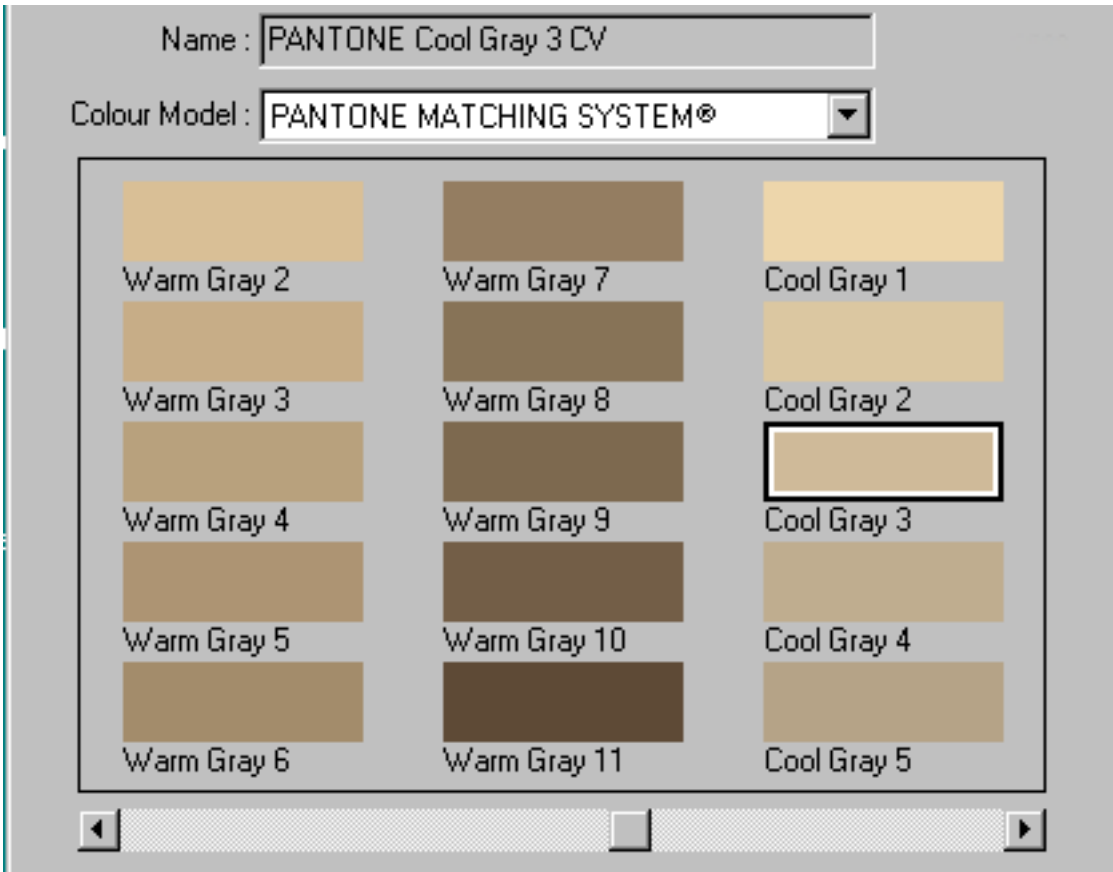
RGB

RGB colours are set either by setting the scrollbar to the desired percentage in the value field, or by typing that value into the relevant box.



PANTONE®

The PANTONE® Matching System™ is supported within BarCoder. All the colours are defined within a scrolling selection box.



Colours may be selected by either using the scroll bar, scrolling to the relevant colour is displayed and clicking on it, or by clicking in the selection box, holding the button down and dragging the mouse left or right until the desired colour is displayed and releasing the button with that colour highlighted.

File Handling

Agamik BarCoder saves barcodes as Encapsulated PostScript Files (EPSFs), Tagged Image Font Files (TIFF), or as its own format.

The Save As option on the operator interface lets you save your current barcode. Agamik BarCoder uses the standard Windows interface to let you select the directory and file name for your barcode. If you are creating a new barcode, the default name will be “Untitled” and the extension will be “.BAR”. If you are editing a previously saved barcode, the default name will be the same as you used before. Files saved in the .BAR format cannot be imported into other programs. The .BAR format is designed to allow you reuse barcodes, and modify them.

To create files that can be imported into other programs you have to use the Export as TIFF, or Export as EPS options.

Export as EPS

This option will create an encapsulated postscript file. If the barcode is going to be printed on a postscript device then this is the best format to ensure maximum accuracy. The barcode is defined with an accuracy greater than any output device. If the barcode type has text then the fonts will be included in the file.

A File saved this way will have a default extension of .EPS.

Export as TIFF

This option will create a Tag Image File Format. This is a graphics format that can be used to give high resolution images on non postscript printers. The resolution of the TIFF can be defined as one of several resolutions. The higher resolutions will create bigger files than lower resolutions. Doubling the resolution will increase the file size by a factor of 4.

A file saved this way will have a default extension of .TIF.

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. Print Setup... lets you define output details.

Once you have saved a barcode, or printed it directly from the program, the next time you select the same symbology the fields in the operator interface 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 select Set To Default from the File menu. 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 the barcode type from the relevant barcode type menu or select New from the File 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.

Note that when you start-up Agamik BarCoder, the program remembers the last symbology you saved or printed as well as the data for all symbologies. This information is stored in a Preferences file.

Note also that you can activate Agamik BarCoder by double-clicking any of the icons that represent saved .BAR files.

About Fonts and PostScript

This information is for advanced users, and you only need to read it if you are having difficulties with PostScript fonts.

Barcoder is supplied ready-configured for the standard 35 PostScript fonts, and will also handle TrueType fonts and download fonts (when it finds them on your hard disk) by downloading them. Any changes you specify to font handling are recorded in the registry (your "preferences") for future use.

If you want to output EPS files then you should select a PostScript printer as your current printer even if you haven't actually got one. This will cause the standard PostScript fonts to appear in the Font Select dialog, and will cause Barcoder to offer you options regarding the handling of the selected font in PostScript. Tell Control Panel that you have a PostScript printer even if you haven't - it doesn't really matter which, an Apple LaserWriter Plus would do fine.

Barcoder generates its own PostScript both for printing and EPS (Encapsulated PostScript) file generation, and this means that Barcoder also controls font selection and downloading options (rather than leaving it to the Windows PostScript driver). In the Font Select dialog (if your current printer is PostScript) Barcoder will tell you how it will handle each font you select when it comes time to output it as PostScript, and you can alter this handling if you want by hitting the "Specify" button. You can even use fonts which Windows doesn't know about (i.e. fonts which are not installed for Windows). If, for instance, your typesetter has font OCRB on its hard disk or available as a soft font then you can type the name OCRB in the Font Select dialog (even though it will not be offered in the list of fonts), and hit the "Specify" button to tell Barcoder how to handle it in PostScript. The on-screen display, and any print to a non-PostScript printer, will of course use some other convenient font in this case.

The "Print Setup" command ("File" menu) allows you to configure the Windows print driver. Options offered by the Windows PostScript driver regarding PostScript font handling will have no effect on Barcoder's output.

The three options offered by Barcoder for PostScript font output are :

i) PostScript font, no download

You can use this any time, but it is up to you to ensure that the font is available when the file is printed. If you are printing directly from Barcoder then the font would have to be resident in your printer. If you are outputting EPS files then either the font must be resident in the printer ultimately used, or the application into which the EPS is imported must detect the font usage of the imported file and take care of downloading if necessary. You must also specify the correct PostScript name for the font : this is case-sensitive and must be exactly correct or selection will fail. The documentation for any PostScript font should give its true name.

ii) PostScript font, downloaded

You can only use this if you have a PostScript download font file (typically a ".PFB" file) on your hard disk for the font in question. You must specify the full file name for Barcoder to find it (use the "Browse" button). You must also specify the correct PostScript name for the font : this is case-sensitive and must be exactly correct or selection will fail. The documentation for any PostScript font should give its true name. When you have a PFB file, you can also find the PostScript name by searching the file for a line that says something like `"/FontName /ZapfDingbats def"`, the name in this case being ZapfDingbats.

iii) Download as TrueType

This option is only available if the font has been installed for Windows as TrueType. Barcoder will obtain TrueType font data from Windows, convert it to a PostScript "Type 1" font, and download it as part of the job. Only those characters actually used will be downloaded.

Controlling the Size of Your Barcode

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

Constrain Proportions & Customise Dimensions

If you select Constrain Proportions then whenever you change one of these three values the other two will be updated automatically. When Constrain Proportions is not selected you will have Customise Dimensions which enables you to define one dimension without affecting the other two.

Text Size, Text Position and Text Space

With this popup menu you can specify the height of your human readable characters (the text) associated with the barcode. Text Size is an absolute value which may be measured in millimetres or points, or a percentage. This will notionally be the height of an upper case letter (A) in the chosen font.

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

Note that for publishing symbologies there is a second text field for which you can specify the height. This will be called ISBN Text or ISSN Text and is treated in the same way as the conventional Text height.

Barcode Height & Bar Height

With this popup menu you can specify your barcode height. Barcode Height is an absolute value in imperial or metric units for the whole barcode (including text and light margins above and below). Bar Height is an absolute value in imperial or metric units for a data bar. For symbologies with more than one length of bar, the bars used are indicated on the barcode displayed on screen and also stated in the section for that symbology.

If Constrain Proportions is selected, then the displayed Text and Width fields will change too. If it is not selected, then the displayed Text and Width values will remain unchanged.

Barcode Width & Bar - Bar Width & Module Width

With this popup menu you can specify your barcode width. Barcode Width is an absolute value in imperial or metric units for the whole barcode (including left and right light margins). Bar - Bar Width is an absolute value in imperial or metric units for the distance between the leftmost and rightmost bars. This will include any addon, if present. Module Width is the absolute value in imperial or metric units for the module as defined by the appropriate governing body. This will often be the width of the default narrow bar.

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

If it is not selected, then the displayed Text and Height values will remain unchanged.

Changing the Value in a Displayed Field

When you change the value in a displayed field then all values for that dimension are updated automatically. For example if you change the value of text height in millimetres then the text height in points and the text height in percent are also changed.

Note that this happens whether or not Constrain Proportions is active.

If you change the unit of measurement for a field, the program will perform the conversion. For example 12mm would become 1.2cm.

EXAMPLES

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

1. Select the symbology from the symbology menu
2. Enter the characters to be encoded
3. Set the options for your barcode, including font and colour
4. Deselect Constrain Proportions.
5. Select Barcode Height and enter the height for your area
6. Select Barcode Width and enter the width of your area
7. Adjust the Text Size if required

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

1. Select the symbology from the symbology menu
2. Enter the characters to be encoded
3. Set the options for your barcode, including font and colour
4. Deselect Constrain Proportions
5. Select Text Height and enter the height of the text
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 symbologies allow full control over shape and size.

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 Article Numbering Association (UK) Ltd.

Note that variations of EAN 13 used in the publishing industry each have their own symbology and are described in the chapters on ISBN (EAN and Bookland), ISSN and ISMN.

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 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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check digit, so if you decline the offer no barcode will be drawn.

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:

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

$$42 + 8 = 50.$$

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 when you attempt to draw the barcode and you must correct the addon field.

EAN 13 options

Clicking the appropriate check box will toggle each option:

Light Margin Indicator

The light margins for EAN 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) may be required only in the right margin. If there is an add-on the LMI will be at the top right; if there is no add-on 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 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.

Horizontal Check Bar

A horizontal bar can be placed above the bars in the main part of the barcode.

Size

The default dimensions are based on the nominal barcode size specified by Article Numbering Association (UK) Ltd.

The default text size for EAN 13 text (text size 100%) is 2.75mm or 7.8pts. All characters in the barcode, including those above the add-on, 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 (height scale 100%) 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 (width scale 100%) varies according to the size of the add-on (if any).

No add-on: nominal barcode width is 37.29mm; bar - bar width is 31.35mm.

2 digit add-on: nominal barcode width is 46.2mm; bar - bar width is 40.26mm.

5 digit add-on: nominal barcode width is 55.11mm; 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 (scale 0.80 to 2.00). Light margins and the gap between the main part of the barcode and the add-on part remain in proportion.

EAN 8

EAN 8 is used mostly for retail items which 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 add-on with EAN 8.

The barcode is produced in accordance with specifications provided by Article Numbering Association (UK) Ltd.

Note that variations of EAN 8 used by proprietary organisations each have their own symbology and are described in the chapters on M&S 7, Wickes 8, Woolworth 8 and ASDA 8. Glaxo Wellcome also use a variation 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 draw 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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check digit, so if you decline the offer no barcode will be drawn.

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:

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

$$48 + 2 = 50.$$

EAN 8 options

Clicking the appropriate check box will toggle each option:

Light Margin Indicators

The light margins for EAN 8 are to the left and right of the barcode. If light margin indicators (LMIs) are required there will be two, on either side of the displayed number at the bottom of the barcode.

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.

Size

The default dimensions are based on the nominal barcode size specified by Article Numbering Association (UK) Ltd.

If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller.

Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode:

The default text size for EAN 8 text (text size 100%) is 2.75mm or 7.8pts. All characters in the barcode 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 (height scale 100%) 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 which has a nominal length of 18.23mm. The default width for an EAN 8 barcode (width scale 100%) is 26.73mm including the light margins. The nominal width from bar to bar is 22.11mm. 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 remain in proportion as the width changes.

Font

The font recommended by Article Numbering Association (UK) Ltd is OCRB.

UPC-A

UPC-A (or UPC 10) 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.

Note that variations of UPC-A used in the publishing industry each have their own symbology 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 draw 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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check digit, so if you decline the offer no barcode will be drawn. 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:

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

$$93 + 7 = 100.$$

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.

Note that only two space or hyphen characters are allowed to punctuate the middle ten digits. If more than two such characters are entered then the program will not be able to draw your barcode and will advise that you have too many non-digits.

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 draw the barcode and you must correct the addon field.

UPC-A options

Leading Letter

The leading letter 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 all will be shown in upper case.

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 is selected, then it will be at the same position as the text. Note that if there is an addon and the check digit is replaced by a LMI, then the LMI will be shown to the right of the addon data.

Data Below Guard Bars

If this option is selected, your data will be displayed below the guard bars and any space or hyphens entered in the data field will be shown.

Size

The default dimensions are based on the nominal barcode size specified by Uniform Code Council Inc.

If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller. Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode:

This default height for UPC-A text (text size 100%) is 2.75mm or 7.8pts. The characters in the addon are the same size. The default height for a UPC-A barcode (height scale 100%) varies according to whether or not the data display is below the guard bars.

When data is displayed within the guard bars the 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 (width scale 100%) 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 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.

Font

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

UPC-E

UPC-E (or UPC 6) 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.

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 draw 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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check digit, so if you decline the offer no barcode will be drawn. 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.

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 draw the barcode and you must correct the addon field.

UPC-E options

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 is selected, then it will be at the same position as the text. Note that if there is an addon and the check digit is replaced by a LMI, then the LMI will be shown to the right of the addon data.

Size

The default dimensions are based on the nominal barcode size specified by Uniform Code Council Inc. If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller.

Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode:

The default height for UPC-E text (text size 100%) is 2.75mm or 7.8pts. The characters in the addon are the same size. This is the size for the middle six digits of the UPC number; the first and last digits are smaller.

The default height for an UPC-E barcode (height scale 100%) is 26.57mm. 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 22.86mm.

The default width for a UPC-E barcode (width scale 100%) varies according to the size of the addon (if any).

No addon: nominal barcode width is 22.77mm; bar - bar width is 16.83mm.

2 digit addon: nominal barcode width is 31.68mm; bar - bar width is 26.73mm.

5 digit addon: nominal barcode width is 40.59mm; bar - bar width is 35.64mm.

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 (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.

Font

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

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 add-on of 6 digits. The last data digit can be used to act as a check digit; there is no check digit in the add-on. The commonly used ITF-14 can be selected as a specific option.

The barcode is produced in accordance with specifications provided by Article Numbering Association (UK) Ltd.

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 (interleaved) which is described in the chapter on Code 25.

Data

There are always between 4 and 18 data digits for an ITF barcode. If Check Digit is selected you may enter an odd number of data digits, otherwise you must enter an even number of digits. 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 draw the barcode and you must correct the data field. If you have entered an odd number of digits data digits, and have selected Check Digit, the program will offer to insert the check digit for you. If you have entered an even number of data digits and have selected Check Digit, the program will verify the check digit before it can draw the barcode. If the check digit is incorrect the program will offer to replace it with the correct value.

If Check Digit is selected, the program will only be able to draw the barcode with a proper check digit, so if you decline the offer no barcode will be drawn. 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:

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

$$64 + 6 = 70.$$

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

Addon

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

ITF options

Check Digit

If Check Digit is selected then an even number of data digits will be accepted only if the last digit is a valid check digit. If Check Digit is not selected then an odd number of data digits will not be accepted.

Text Above

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

Compact Spacing

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

Hide Gaps

The data may be entered with spaces to break up the digits underneath the barcode. Hide gaps will print the digits underneath with no gaps where spaces have been entered.

ITF 14

This will only allow a 14 digit barcode to be created. If this item is not checked the barcode can be any length of data, as long as it is an even number of digits.

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. Hide Gaps displays the data with no spaces.

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.

Size

The default dimensions are based on the nominal barcode size specified by Article Numbering Association (UK) Ltd. The bearer bars and H markers are always the same size and are unaffected by any changes to other dimensions. If Constrain Proportions is selected your barcode (apart from the bearer bars) will have same shape as the nominal symbol, but may be proportionally bigger or smaller.

Unlike most other symbologies, ITF text size is not constrained by the size of the other two dimensions. Changing text size will not have a proportional effect on width and height and vice versa.

Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode:

The default text size for ITF text (text size 100%) is 5.72mm or 16.2pts. All characters in the barcode, including those above the addon, are the same size.

The default height for an ITF barcode (height scale 100%) depends on the bearer bars selected. With no bearer bar, the nominal height (including light margins) is 39.56mm.

With horizontal bearer, the nominal height is 43.64mm.

With a full bearer, the nominal height is 49.16mm.

The bars have a nominal height of 31.8mm.

The default width for an ITF barcode (width scale 100%) varies according to the digits being encoded, the bearer bar selected and any H markers used.

Some examples 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 (width scale 0.625 to 1.20).

Font

The font recommended by Article Numbering Association (UK) Ltd is OCRB.

UPC-Shipping

UPC-Shipping 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 is similar to the ITF-14 symbology which is described in the chapter on ITF.

Data

There are always fourteen data digits in a UPC-Shipping 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 draw 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 incorrect the program will offer to replace it with the correct value. The program will only be able to draw the barcode with a proper check digit, so if you decline the offer no barcode will be drawn.

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 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:

$$(0 + 0 + 2 + 4 + 6 + 8 + 0) * 3 + (0 + 1 + 3 + 5 + 7 + 9) = 60 + 22 = 85;$$

$$85 + 5 = 90.$$

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 draw the barcode and you must correct the addon field.

UPC-Shipping options

Text Above

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

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.

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. If Constrain Proportions is selected your barcode (apart from the bearer bars) will have same shape as the nominal symbol, but may be proportionally bigger or smaller. As with ITF, text size is not constrained by the size of the other two dimensions. Changing text size will not have a proportional effect on width and height and vice versa. Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode.

The default text size for UPC-Shipping (text size 100%) is 5.84mm or 16.56pts. All characters in the barcode, including those above the addon, are the same size.

The default height for a UPC-Shipping barcode (height scale 100%) 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 barcode (width scale 100%) 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 (width scale 0.70 to 1.20).

Font

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

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 40 characters may be encoded with the final character being an optional check character.

It is found in the Standard sub-menu under the Symbologies menu.

The barcode is produced in accordance with specifications provided by Automatic Identification Manufacturers (AIM) Europe.

Data

There should be at least one data character and you may enter up to 40 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 draw the barcode and you must correct the data field.

Code 39 options

Text Above

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

Checkcode Control

You may use this popup menu to decide if you want use a checkcode with your data and, if so, whether you want the program to add the checkcode for you. If you have opt to have your checkcode verified the program will confirm that the last character in your data is a valid checkcode before it can draw the barcode. If the checkcode is incorrect the program will offer to replace it with the correct value. The program will only be able to draw the barcode with a proper checkcode, so if you decline the offer no barcode will be drawn.

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 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 RX% 55 would have checkcode L:

$27 + 33 + 42 + 38 + 5 + 5 = 150$; $150 \text{ modulo } 43 = 21$.

Note the significance of the <space> character - RX%55 would have a different checkcode Q:
 $27 + 33 + 42 + 5 + 5 = 112$; $112 \text{ modulo } 43 = 26$.

Asterisks

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.

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.

Size

The default dimensions are based on the nominal barcode size specified by AIM Europe. If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller. Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode:

The default text size for Code 39 (text size 100%) is 2.5mm or 7.09pts. All characters in the barcode are the same size.

The default height for a Code 39 barcode (height scale 100%) is 11.9mm. This includes margins below and above. The bars have a nominal height of 6.35mm.

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.

Note that Code 39 offers an option to enter width as a Characters Per Inch value. The nominal value (width scale = 1.00) is 3.68. The nominal width for the narrow bar is .508mm. It is recommended that your width scale is at least 0.375, giving a minimum narrow bar width of 0.191mm.

Font

The default font is Helvetica.

Code 25

Code 25 is used for encoding number sequences of variable length. Up to 40 characters may be encoded with the final character being an optional check digit.

It is found in the Standard sub-menu under the Symbolologies menu.

The barcode is produced in accordance with specifications provided by Automatic Identification Manufacturers (AIM) Europe.

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

Code 25 options

Subclass

Four subclasses of the symbology Code 25 are offered by Agamik BarCoder. Of these Interleaved is the most popular; the others are Five Bar, Matrix and Datalogic. The Five Bar subclass produces wider barcodes.

Text Above

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

Checkcode Control

You may use this popup menu to decide if you want use a checkcode with your data and, if so, whether you want the program to add the checkcode for you. If you have opt to have your checkcode verified the program will confirm that the last character in your data is a valid checkcode before it can draw the barcode. If the checkcode is incorrect the program will offer to replace it with the correct value. The program will only be able to draw the barcode with a proper checkcode, so if you decline the offer no barcode will be drawn.

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 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:

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

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.

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 Europe. If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller.

Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode:

The default text size for Code 25 (text size 100%) is 2.5mm or 7.09pts. All characters in the barcode are the same size.

The default height for a Code 25 barcode (height scale 100%) is 11.9mm. This includes margins below and above. The bars have a nominal height of 6.35mm.

For all four subclasses of Code 25 there is no default width for the barcode as this is dependent both on the number of characters being encoded and on the ratio between wide and narrow bars. The nominal width (width scale = 1.00) for the narrow bar is .508mm. It is recommended that your width scale is at least 0.375, giving a minimum narrow bar width of 0.191mm.

Font

The default font is Helvetica.

Codabar

Codabar is used for encoding variable length character sequences using the ten digits plus selected punctuation characters. Up to 40 characters may be encoded.

It is found in the Standard sub-menu under the Symbologies menu.

The barcode is produced in accordance with specifications provided by Automatic Identification Manufacturers (AIM) Europe.

Data

There should be at least one data character and you may enter up to 40 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 draw the barcode and you must correct the data field.

Codabar options

Start / Stop Pair

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.

Text Above

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

Show Start/Stop

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

Traditional

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

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.

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 Europe. If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller.

Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode:

The default text size for Codabar (text size 100%) is 2.5mm or 7.09pts. All characters in the barcode are the same size.

The default height for a Codabar barcode (height scale 100%) is 11.9mm. This includes margins below and above. The bars have a nominal height of 6.35mm.

For both Codabar and Traditional Codabar there is no nominal width for a barcode as this is dependent both on the number of characters being encoded and on the ratio between wide and narrow bars. For Codabar, the nominal width (width scale = 1.00) of the narrow bar is .508mm. It is recommended that your width scale is at least 0.375, giving a minimum narrow bar width of .191mm. For Traditional Codabar, the nominal width (width scale = 1.00) of the narrow bar is .165mm. For Traditional Codabar it is recommended that your width scale is never less than 1.00.

Font

The default font is Helvetica.

EAN 128

EAN 128 is used for encoding 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.

It is found in the Standard sub-menu under the Symbologies menu.

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

The barcode is produced in accordance with specifications provided by Article Numbering Association (UK) Ltd.

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 must be enclosed in brackets, e.g. (13), and should be followed by the appropriate code e.g. 950803. You may punctuate your data with spaces.

You may include in your data more than one application identifier and code up to a total of 42 characters.

When you attempt to draw 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 EAN 128 provided by Article Numbering Association (UK) Ltd.

If an application identifier is not recognised by Agamik BarCoder, or if the associated code does not conform with the above specification, the barcode display will say "Badly formatted EAN128 data". If this happens, press the "Check Data" button and Barcoder will give a more detailed message, and will position the text cursor to the relevant point in the data. The program will also offer you the option of creating the barcode anyway. If you do this, it may be that you are creating a non-standard application code.

Application identifiers and codes recognised by Agamik BarCoder are summarised below:

Prefix	Use	Code Description
00	Serial Shipping	18 digits (*c)
01	Article ID	14 digits (*c)
02	Contents	14 digits
10	Batch Number	Up to 20 characters
11	Production Date	6 digit (*d)

12	Due Date	6 digit (*d)
13	Packaging Date	6 digit (*d)
15	Minimum Durability Date	6 digit (*d)
17	Maximum Durability Date	6 digit (*d)
20	Product Variant	2 digits
21	Serial Number	Up to 20 characters
22	HIBC	Up to 29 characters
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
30	Quantity (Trade)	Up to 8 digits
3100-3699	Measurements (see below)	6 digit (*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
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 20 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)
414	Physical Location Identifier	13 digits (*c)
415	Invoicing Party Location	13 digits (*c)
420	National Post Code	Up to 9 characters
421	International Post Code	Up to 12 characters
422	Country of Origin	3 digits
8001	Roll Product	14 digits
8002	Serial Number	Up to 20 characters
8003	Returnable Asset Identifier	14 digits (*c) + up to 16 chars
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
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
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)
(*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)

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 be multiplied by three start with the second from the left.

Note that historically, different check digit algorithms have been used for application identifiers 410 - 414; if you wish to use one of these different algorithms the program will advise you that your check digit is unexpected, but will allow you to create the barcode.

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 unit 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 Article Numbering Association if you are in any doubt.

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, 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.

Size

The default dimensions are based on the nominal barcode size specified by Article Numbering Association (UK) Ltd. If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller. Unlike most other symbologies, EAN 128 text size is not constrained by the size of the other two dimensions. Changing text size will not have a proportional effect on width and height and vice versa.

Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode:

The default text size for EAN 128 (text size 100%) is 3mm or 8.5pts. All characters in the barcode are the same size.

The default height for an EAN 128 barcode (height scale 100%) 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 prefixes and code are included. The nominal width (width scale = 1.00) for the narrow bar is 1mm. It is recommended that your width scale is between 0.25 and 1.20 (narrow bar width between .25mm and 1.20mm).

Font

The font recommended by Article Numbering Association (UK) Ltd. is OCRB.

Code 128

Code 128 is used for encoding serial numbers and other character sequences using the ASCII character set. Up to 42 characters may be encoded.

It is found in the Standard sub-menu under the Symbologies menu.

The barcode is produced in accordance with specifications provided by Automatic Identification Manufacturers (AIM) Europe.

Data

There should be at least one data character and you may enter up to 42 altogether. If you have no characters a warning message will be displayed when you attempt to draw the barcode and you must correct the data field.

Code 128 options

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, 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.

Suppress Code Subset C

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 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.

Size

The default dimensions are based on the nominal barcode size specified by AIM Europe. If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller. Unlike most other symbologies, Code 128 text size is not constrained by the size of the other two dimensions. Changing text size will not have a proportional effect on width and height and vice versa.

Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode:

The default text size for Code 128 (text size 100%) is 2.5mm or 7.09pts. All characters in the

barcode are the same size.

The default height for a Code 128 barcode (height scale 100%) is 11.9mm. This includes margins below and above. The bars have a nominal height of 6.35mm.

There is no default width for a Code 128 barcode as this is dependent on the number of characters being encoded. The nominal width (width scale = 1.00) for the narrow bar is .508mm. It is recommended that your width scale is at least 0.375, giving a minimum narrow bar width of .191mm.

Font

The default font is Helvetica.

Pharma Code

Pharma Code is used mostly with packaging for the pharmaceuticals industry. The barcode encodes up to five different numbers.

It is found in the Standard sub-menu under the Symbolologies menu.

Two significant differences from other barcode symbolologies are that Pharma Code can use different colours for the bars used to encode each of the different numbers and that Constrain Proportions is not relevant as width is independent of height.

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

Note that two variations of Pharma Code used by Glaxo Wellcome has its own symbology and are described in a separate chapters.

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 1048574.

In binary format, each input can have up to 19 ones and zeros.

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).

Pharma Code options

Application

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

Note that when you select an application, the settings are restored for when you last used that application.

The following applications are supported (default heights are for height scale 1.0, default margins for width scale 1.0):

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. The gap between the last bar of one part and the first bar of the next part is also slightly wider.

Size

The default dimensions are based on the nominal barcode size specified by Laetus am Sandberg GmbH. There is no constrain proportions option which means changing width will not affect height and vice versa.

Selecting the appropriate popup menu option will let you specify the width and height of your barcode:

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 (height scale 100%) depends on the selected application and is shown above.

The default width for a Pharmacode barcode (width scale 100%) 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 (width scale 0.66 to 4.00).

Pharma Code Colours

Each of the five parts can be given a different bar colour. The colour for each part can be selected through the Colour menu, obtained by pressing the Colour button.

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

M&S 7

M&S 7 is a proprietary symbology 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 add-on.

It is found in the Proprietary sub-menu under the Symbologies menu.

The barcode is produced according to specifications provided by Marks and Spencer Ltd and is based on the EAN 8 symbology specified by Article Numbering Association (UK) Ltd.

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 draw 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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check digit, so if you decline the offer no barcode will be drawn.

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.

M&S 7 options

Surrounding 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.

Size

The default dimensions are based on the nominal barcode size specified by Marks and Spencer Ltd and based on EAN 8 dimensions. If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller. It is recommended that for M&S 7 barcodes you always use the Constrain Proportions option. The barcode should not be more than 120% of the nominal size (scale = 1.20).

Selecting the appropriate popup menu option will let you specify text height or the width and

height of your barcode:

The default text size for M&S 7 (text size 100%) is 2.91mm or 8.26pts. All characters in the barcode are the same size.

The default height for a M&S 7 barcode (height scale 100%) is 23.12mm. This includes margins below the text and above the bars and is unaffected by whether or not there is a surrounding box. The bar height used here is for the data bar which has a nominal length of 18.23mm.

The default width for an M&S 7 barcode (width scale 100%) is 31.68mm including the light margins and is unaffected by whether or not there is a surrounding box. The nominal width from bar to bar is 22.11mm. The nominal module width is 0.33mm and represents the width of a narrow bar.

Light margins remain in proportion as the width changes.

Font

The font recommended by Marks and Spencer Ltd. is Gill Sans.

If a different font is used, you should check that the M character in the left light margin is not too wide.

Wickes 8

Wickes 8 is a proprietary symbology 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 add-on.

It is found in the Proprietary sub-menu under the Symbologies menu.

The barcode is produced according to specifications provided by Wickes and is based on the EAN 8 symbology specified by Article Numbering Association (UK) Ltd.

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 draw 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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check digit, even though it is not displayed, so if you decline the offer no barcode will be drawn.

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

The default dimensions are based on the nominal barcode size specified by Wickes and based on EAN 8 dimensions. If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller.

It is recommended that for Wickes 8 barcodes you always use the Constrain Proportions option. The barcode should not be more than 200% of the nominal size (scale = 2.00) and should be at least 80% (scale = 0.80).

Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode:

The default text size for Wickes 8 (text size 100%) is 3.26mm or 9.24pts. All characters in the barcode are the same size.

The default height for a Wickes 8 barcode (height scale 100%) 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 (width scale 100%) is 30.03mm including the light margins. The nominal width from bar to bar is 22.11mm. The nominal module width is 0.33mm and represents the width of a narrow bar. Light margins remain in proportion as the width changes and are 3.96mm for width scale of 1.00.

Font

The font recommended by Wickes is OCRB.

If a different font is used, you should check that the W characters in the light margins are not too wide.

Woolworth 8 (South Africa)

Woolworth 8 is a proprietary symbology 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 add-on.

It is found in the Proprietary sub-menu under the Symbologies menu.

The barcode is produced according to specifications provided by Woolworth and is based on the EAN 8 symbology specified by Article Numbering Association (UK) Ltd.

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 draw 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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check digit, so if you decline the offer no barcode will be drawn.

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 8.

Woolworth 8 options

Surrounding 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.

Size

The default dimensions are based on the nominal barcode size specified by Woolworth and based on EAN 8 dimensions. If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller.

It is recommended that for Woolworth 8 barcodes you always use the Constrain Proportions option.

Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode:

The default text size for Woolworth 8 (text size 100%) is 2.75mm or 7.8pts. All characters in the barcode are the same size.

The default height for a Woolworth 8 barcode (height scale 100%) is 22.63mm. This includes margins below the text and above the bars and is unaffected by whether or not there is a surrounding box. 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 (width scale 100%) is 31.35mm including the light margins and is unaffected by whether or not there is a surrounding box. The nominal width from bar to bar is 22.11mm. The nominal module width is 0.33mm and represents the width of a narrow bar. Light margins remain in proportion as the width changes.

Font

The font recommended by Woolworth is OCRB. If a different font is used, you should check that the W characters in the light margins are not too wide.

ASDA 8

ASDA 8 is a proprietary symbology used on retail items for sale in ASDA 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.

It is found in the Proprietary sub-menu under the Symbologies menu.

The barcode is produced according to specifications provided by ASDA and is based on the EAN 8 symbology specified by Article Numbering Association (UK) Ltd.

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 draw 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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check digit, even though it is not displayed, so if you decline the offer no barcode will be drawn.

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 8.

Code Letters

You should enter two letters which will be displayed in the left and right margins. If you leave this field empty, then no letters will be displayed.

Size

The default dimensions are based on the nominal barcode size specified by ASDA and based on EAN 8 dimensions. If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller.

It is recommended that for ASDA 8 barcodes you always use the Constrain Proportions option. The barcode should not be more than 200% of the nominal size (scale = 2.00) and should be at least 80% (scale = 0.80).

Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode:

The default text size for ASDA 8 (text size 100%) is 2.75mm or 7.8pts. All characters in the barcode are the same size.

The default height for a ASDA 8 barcode (height scale 100%) 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 (width scale 100%) is 30.03mm including the light margins. The nominal width from bar to bar is 22.11mm. The nominal module width is 0.33mm and represents the width of a narrow bar. Light margins remain in proportion as the width changes and are 3.96mm for width scale of 1.00.

Font

The font recommended by ASDA is OCRB. If a different font is used, you should check that the characters in the light margins are not too wide.

Glaxo Wellcome Pharma

GlaxoWellcome Pharma is a variation of Pharma Code which is used by Glaxo Wellcome for product identification.

The symbology 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.

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.

Pharmacode Data

This is the number which will be encoded in the barcode. The display is according to the input format.

GlaxoWellcome Pharma options

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.

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

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.

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 draw your barcode. To unselect a colour, drag the colour box off the colour box bar. To copy a colour, control-drag the colour box to another colour box.

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. There is no constrain proportions option and you can only vary the bar height.

Bar Height

This value is shown in millimetres. You may enter a different value once you have selected your application.

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 at 1.00. 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.

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 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.

Note that a variation of PZN Code 39 used by Glaxo Wellcome has its own symbology and is described in that chapter.

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 draw 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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check digit, so if you decline the offer no barcode will be drawn.

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:

$$3*2 + 1*3 + 7*4 + 1*5 + 8*6 + 1*7 = 6 + 3 + 28 + 5 + 48 + 7 = 97;$$

$$97 - 9 = 88.$$

Note that a check 'digit' of 10 is represented by 0.

PZN Options

Wide / Narrow

The recommended ratio between the wide bars and narrow bars is 2.5 to 1.

Horizontal Check Bar

Horizontal bearer bars can be added above and below the bars.

Size

There are three standard sizes for PZN barcodes. You can choose Large (Gross), Normal or Small (Klein).

Dimensions (Size)

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

If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller.

Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode:

The default text size for PZN (text size 100%) 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 (height scale 100%) depends on the Barcode Size selected. Including margins below and above these are as follows:

- Large: Bar height 20mm, Barcode height 25.7mm
- Normal: Bar height 10mm, Barcode height 14.49mm
- Small: Bar height 7mm, Barcode height 10.49mm

The nominal width (width scale = 1.00) 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	.338mm	.248mm	.186mm
Bar To Bar width	48.66mm	35.75mm	26.81mm
Barcode width	68.66mm	45.75mm	33.81mm

Font

The default font is Helvetica.

MSI Code

This symbology 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 draw the barcode and you must correct the data field. Though check digits are optional, digits in the 14th and 15th positions must be check digits. If you enter more than 13 digits without selecting an appropriate checkcode verification, the program will not be able to display your barcode and will warn you that there are too many digits.

MSI Code options

Checkcode Control

You should use this popup menu to decide if you need to use checkcodes 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 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 are valid checkcodes before it can draw the barcode. If a checkcode is incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper checkcode, so if you decline the offer no barcode will be drawn.

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:

$$1356 \times 2 = 2712$$

$$2 + 7 + 1 + 2 + 2 + 4 + 6 = 24$$

$$30 - 24 = 6$$

Giving code 12345666

Size

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

Note that there is no Constrain Proportions option as height magnification is independent of width.

Selecting the appropriate popup menu option will let you specify the width and height of your barcode:

The default height for a MSI Code barcode (height scale 100%) is 1 inch. There or no margins below and above, so this is also the nominal height for the bars.

There is no recommended height for an MSI barcode, though the minimum bar height should be 0.3 inches. In practice, you are advised to make the bars as high as possible for acceptable first pass read rates.

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 (width scale 100%) is .008 inches.

Other popular widths are:

0.012 inches (width scale 1.5)

0.016 inches (width scale 2.0)

0.020 inches (width scale 2.5)

0.024 inches (width scale 3.0)

It is recommended that your width scale is one of the five listed above.

ISBN (EAN)

ISBN (EAN) is a publishing symbology based on EAN 13. 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 Publishers Association and Article Numbering Association (UK) Ltd.

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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check code, so if you decline the offer no barcode will be drawn.

Note that a problem with the check code may indicate an omission or error elsewhere in the ISBN No., so we suggest you always check all the characters.

The check code 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 check code of 10 is replaced by X.

For example the ISBN 001456987 gives a check code of 6:

$$0 * 10 + 0 * 9 + 1 * 8 + 4 * 7 + 5 * 6 + 6 * 5 + 9 * 4 + 8 * 3 + 7 * 2 =$$

$$0 + 0 + 8 + 28 + 30 + 30 + 36 + 24 + 14 = 170;$$

$$170 + 6 = 176.$$

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 draw the barcode and you must correct the addon field.

ISBN (EAN) options

These are toggled using the check boxes or selected using the popup menus:

EAN Prefix

The number below the barcode will always begin either 978 or 979; you should select which one from the popup menu.

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 check digit. The list indicates the number of digits before, between and after the three hyphens.

For example 1_2_6_1 would punctuate the number 0123456789:
0-12-345678-9 (which is correct).

When you attempt to use a hyphenation scheme which differs from the recommended format, Agamik BarCoder will always ask if you want to use it anyway.
The default hyphenation is Auto Hyphenate.

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.

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 draw the barcode.

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.
It is not recommended that you use shortened guard bars unless specifically requested to do so.

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.

Size

The default dimensions are based on the nominal barcode size specified by the Publishers Association and Article Numbering Association (UK) Ltd.

If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller. Selecting the appropriate popup menu option will let you specify either text height or the width and height of your barcode:

ISBN Text Scale & ISBN Text Size

The default text size for ISBN (ISBN text size 100%) 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.

Text Scale & Text Size

The default text size for the EAN 13 (text size 100%) is 2.75mm or 7.8pts. All digits in the EAN 13 number below the barcode and the number above the addon (if any) will have the same height.

Note that guard bars always extend half way down the characters below.

The default height for an ISBN (EAN) barcode (height scale 100%) 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.

The default width for an ISBN (EAN) barcode (width scale 100%) varies according to 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 (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 Publishers Association is OCRB.

ISBN Font

This is the font to be used for the ISBN number display. The font recommended by the Publishers Association is OCRB.

ISBN (EAN - Bookland)

ISBN (Bookland) is a publishing symbology based on EAN 13. 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 Publishers Association and Article Numbering Association (UK) Ltd.

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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check code, so if you decline the offer no barcode will be drawn.

Note that a problem with the check code may indicate an omission or error elsewhere in the ISBN No., so we suggest you always check all the characters.

The check code 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 check code of 10 is replaced by X.

For example the ISBN 0 01 456987 gives a check code of 6:

$$0 * 10 + 0 * 9 + 1 * 8 + 4 * 7 + 5 * 6 + 6 * 5 + 9 * 4 + 8 * 3 + 7 * 2 =$$

$$0 + 0 + 8 + 28 + 30 + 30 + 36 + 24 + 14 = 170;$$

$$170 + 6 = 176.$$

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 draw the barcode and you must correct the addon field.

ISBN (Bookland) options

These are toggled using the check boxes or selected using the popup menus:

EAN Prefix

The number below the barcode will always begin either 978 or 979; you should select which one from the popup menu.

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 if you want to use it anyway.

The default hyphenation is Auto Hyphenate.

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 add-on the LMI will be at the top right; if there is no add-on the LMI will be at the bottom right.

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 add-on).

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 the Publishers Association and Article Numbering Association (UK) Ltd.

If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller. Selecting the appropriate popup menu option will let you specify either text height or the width and height of your barcode:

The default text size for ISBN text (ISBN text size 100%) 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.

The default text size for the EAN 13 text (text size 100%) 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. The digits in the ISBN number will be set by the ISBN Text menu described above.

Note that guard bars always extend half way down the characters below.

The default height for an ISBN (Bookland) barcode (height scale 100%) 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 (width scale 100%) 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 (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 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 the Publishers Association is OCRA. For a normal ISBN number, the font recommended is OCRB.

ISBN (UPC - Price Point)

ISBN (UPC Price-Point) is a publishing symbology based on UPC-A. 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 add-on 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 Publishers Association and Uniform Code Council Inc.

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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check code, so if you decline the offer no barcode will be drawn.

Note that a problem with the check code may indicate an omission or error elsewhere in the ISBN No., so we suggest you always check all the characters.

The check code 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 check code of 10 is replaced by X.

For example the ISBN 0 01 456987 gives a check code of 6:

$$\begin{aligned} 0 * 10 + 0 * 9 + 1 * 8 + 4 * 7 + 5 * 6 + 6 * 5 + 9 * 4 + 8 * 3 + 7 * 2 = \\ 0 + 0 + 8 + 28 + 30 + 30 + 36 + 24 + 14 = 170; \\ 170 + 6 = 176. \end{aligned}$$

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.

ISBN (UPC Price-Point) options

These are toggled using the check boxes or selected using the popup menus:

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 if you want to use it anyway.

The default hyphenation is Auto Hyphenate.

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.

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.

Size

The default dimensions are based on the nominal barcode size specified by the Publishers Association and Uniform Code Council Inc. If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller. Selecting the appropriate popup menu option will let you specify either text height or the width and height of your barcode:

The default text size for ISBN text (ISBN text size 100%) 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 number, the default text height is 3.05mm or 8.64pts. For a normal width ISBN number, 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 the 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.

The default text size for the UPC-A text (text size 100%) is 2.75mm or 7.8pts. All digits in the UPC number below the barcode and the number above the addon (if any) will have the same height. The digits in the ISBN number will be controlled by the ISBN Text menu described above.

Note that guard bars always extend half way down the characters below.

The default height for an ISBN (UPC Price-Point) barcode (height scale 100%) 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 (width scale 100%) 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 (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 UPC 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 the Publishers Association is OCRA. For a normal ISBN number, the font recommended is OCRB.

ISBN (UPC - Item Specific)

ISBN (UPC Item Specific) is a publishing symbology 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 the Publishers Association 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 symbologies 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 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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check code, so if you decline the offer no barcode will be drawn.

Note that a problem with the check code may indicate an omission or error elsewhere in the ISBN No., so we suggest you always check all the characters.

The check code 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 check code of 10 is replaced by X.

For example the ISBN 0 01 456987 gives a check code of 6:
 $0 * 10 + 0 * 9 + 1 * 8 + 4 * 7 + 5 * 6 + 6 * 5 + 9 * 4 + 8 * 3 + 7 * 2 =$
 $0 + 0 + 8 + 28 + 30 + 30 + 36 + 24 + 14 = 170;$
 $170 + 6 = 176.$

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.

ISBN (UPC Item Specific) options

These are toggled using the check boxes or selected using the popup menus:

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 if you want to use it anyway.

The default hyphenation 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 (excluding the addon).

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 the Publishers Association and Uniform Code Council Inc.

If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller. Selecting the appropriate popup menu option will let you specify either text height or the width and height of your barcode:

The default text size for ISBN text (ISBN text size 100%) differs depending on whether the text extends the full width of the barcode, or is only over the main part. For a full ISBN number, the default text height is 3.05mm or 8.64pts. For a normal ISBN number, the default height is 2mm or 5.67pts. All characters in the ISBN number will be this height, while all other text digits 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.

The default text size for the UPC-A text (text size 100%) is 2.75mm or 7.8pts. All digits in the UPC number below the barcode will have the same height. The digits in the ISBN number will be controlled by the ISBN Text menu described above.

Note that guard bars always extend half way down the characters below.

The default height for an ISBN (UPC Item Specific) barcode (height scale 100%) 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 (width scale 100%) 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 (width scale 0.80 to 2.00).

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 the Publishers Association 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 the Publishers Association is OCRA. For a normal ISBN number, the font recommended is OCRB.

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-digit issue number. The barcode is based on the EAN 13 symbology and the number appearing below the barcode is derived from the ISSN number and sequence variant. The issue number is used to encode a 2-digit addon.

The barcode is produced in accordance with specifications provided by the International Centre for the Registration of Serial Publications and Article Numbering Association (UK) Ltd. 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 draw 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 incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check code, so if you decline the offer no barcode will be drawn.

Note that a problem with the check code may indicate an omission or error elsewhere in your ISSN number, 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:

$$0 * 8 + 3 * 7 + 4 * 6 + 5 * 5 + 6 * 4 + 0 * 3 + 3 * 2 =$$

$$0 + 21 + 24 + 25 + 24 + 0 + 6 = 100;$$

$$100 + 10 = 110.$$

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 and one price change since the start of the year.

Issue Number

This field must have two digits and is used to distinguish between successive issues. For regular publications this may be the week or month number. For irregular or less frequent publications it may simply be a sequence number.

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.

ISSN options

Clicking the appropriate check box will toggle each option:

Show ISSN Number

If required the ISSN number will be displayed above the main part of the barcode. The first four digits will always be separated from the last four by a hyphen.

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.

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.

It is not recommended that you use shortened guard bars unless specifically requested to do so.

Size

The default dimensions are based on the nominal barcode size specified by the International Centre for the Registration of Serial Publications and Article Numbering Association (UK) Ltd.

If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller. Selecting the appropriate popup menu option will let you specify text height or the width and height of your barcode.

The default text size for ISSN text (text size 100%) is 2.75mm or 7.8pts. All characters in the barcode, including the ISSN number and issue number, are the same size.

The printed ISSN number will usually be the same width as the main part of the barcode. The font recommended by the International Centre for the Registration of Serial Publications is OCRB; if you use a font other than OCRB then the ISSN text may not justify across the width of the barcode. Similarly, if you choose text scale to be less than width scale, the same effect may occur.

Note that the guard bars always extend half way down the characters below.

The default height for an ISSN barcode (height scale 100%) 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 (width scale 100%) 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 80% to 200%).

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. The font recommended by the International Centre for the Registration of Serial Publications is OCRB.

ISMN (EAN)

ISMN (EAN) is a symbology based on EAN 13 used for printed music. The barcode encodes a nine-digit ISMN number. The number appearing below the barcode is derived from the ISMN number which is written above the barcode.

The barcode is produced in accordance with specifications provided by the Music Publishers Association and Article Numbering Association (UK) Ltd.

ISMN No.

There are always nine digits in an ISMN number. The ninth digit is a check code and you should enter at least the first eight digits. If you have entered fewer than 8 digits a warning message will be displayed when you attempt to draw the barcode and you must correct the ISMN No. field. If you have entered only 8 digits the program will offer to insert the check code for you. If you have entered 9 digits the program will verify the check code before it can draw the barcode. If the check code is incorrect the program will offer to replace it with the correct value.

The program will only be able to draw the barcode with a proper check code, so if you decline the offer no barcode will be drawn.

Note that a problem with the check code may indicate an omission or error elsewhere in the ISMN No., so we suggest you always check all the characters.
The check code is calculated by multiplying each digit in 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 01234567 has check code 1:

$$\begin{aligned} &0*1 + 1*3 + 2*1 + 3*3 + 4*1 + 5*3 + 6*1 + 7*3 \\ &= 0 + 3 + 2 + 9 + 4 + 15 + 6 + 21 \\ &= 60 \\ &60 + 9 = 69 \\ &69 + 1 = 70 \end{aligned}$$

Notice that the M which is often associated with the ISMN number is not entered as part of this data. It appears at the top of the barcode, with a hyphen, along with the prefix ISMN. The ISMN number, including the check code, also appears below the barcode with a 9790 prefix.

ISMN (EAN) options

These are toggled using the check boxes or selected using the popup menus:

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 there will always be three hyphens in a well formed ISMN (including the leading M-) 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 M_3_5_1 would punctuate the number 012345671:
M-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 if you want to use it anyway.

The default hyphenation is Auto Hyphenate.

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.

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.

It is not recommended that you use shortened guard bars unless specifically requested to do so.

Justify ISMN

The ISMN 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 ISMN 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.

Size

The default dimensions are based on the nominal barcode size specified by the Music Publishers Association and Article Numbering Association (UK) Ltd.

If Constrain Proportions is selected your barcode will have same shape as the nominal symbol, but may be proportionally bigger or smaller. Selecting the appropriate popup menu option will let you specify either text height or the width and height of your barcode:

The default text size for ISMN text (ISMN text size 100%) is 2mm or 5.67pts. All characters in the ISMN number shown above the barcode will be this height, while the other text digits, shown below the barcode, will be controlled by the separate Text menu described above.

Note that the characters in the ISMN number are punctuated by three hyphens as selected in the Hyphenation popup.

The default text size for the characters shown below the barcode (text size 100%) is 2.75mm or 7.8pts.

The default height for an ISMN (EAN) barcode (height scale 100%) 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 (width scale 100%) 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 (width scale 0.80 to 2.00).

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.

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