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1 Introduction

MW6 PDF417 ActiveX is a powerful ATL-based control for handling PDF417 2D barcode and can be used in any ActiveX-compliant environment such as Word, Access, Excel, VB.NET, C#.NET, Visual Basic, Visual C++, Visual FoxPro, Delphi or C++ Builder.

PDF417 is a multi-row, variable-length symbology offering high data capacity and error-correction capability, it is capable of encoding 1100 bytes, 1800 ASCII characters, or 2700 digits.

Every PDF417 symbol is composed of a stack of rows, from a minimum of 3 to a maximum of 90 rows, a PDF417 symbol character consists 17 modules arranged into 4 bars and 4 spaces.

2 Installation

2.1 Trial Version

1. UnZip MW6PDF417.zip, run the setup.exe to install PDF417 ActiveX.

2. The trial version PDF417 ActiveX appends "MW6 Demo" to the string encoded with PDF417 barcode.

3. If you want to use PDF417 ActiveX in 64-bit version Office Word, Excel or Access, go to the installation sub folder (e.g., *"C:\Program Files (x86)\MW6 ActiveX Components\PDF417\64BitDLL")* to grab trial version 64-bit version **MW6PDF417_x64.dll** and go to "**How to Distribute It**" section to find out how to get it registered.

2.2 Full Version

1. Uninstall the trial version PDF417 ActiveX if applicable.

2. UnZip full version PDF417 ActiveX .zip file and run the setup.exe to install the full version PDF417 ActiveX.

1. If you want to use PDF417 ActiveX in 64-bit version Office Word, Excel or Access, go to the installation sub folder (e.g., *"C:\Program Files (x86)\MW6 ActiveX Components\PDF417\64BitDLL")* to grab full version 64-bit version **MW6PDF417_x64.dll** and go to "**How to Distribute It**" section to find out how to get it registered.

3 How to Distribute It

If you want to redistribute the PDF417 ActiveX as part of your application, please follow the instructions below:

1) For 32-bit version Windows OS, put **MW6PDF417.dll** into the windows 32-bit system folder (e.g. "c:\windows\system32" or "c:\winnt\system32") on the target machine and run "regsvr32 MW6PDF417.dll" to register it.

2) For 64-bit version Windows OS, put **MW6PDF417.dll** into the SysWOW64 folder (e.g. "c:\windows

\SysWOW64") on the target machine, and run the following commands to register it:

- cd c:\windows\SysWOW64
- regsvr32 MW6PDF417.dll

3) If you want to use PDF417 ActiveX in 64-bit version Office Word, Excel or Access, put 64-bit version **MW6PDF417_x64.dll** into "c:\windows\system32" folder, and run the following commands to register it:

- cd c:\windows\system32
- regsvr32 MW6PDF417_x64.dll

4) For Windows Vista or above, you need to use an elevated Command Prompt to run *regsvr32.exe* command, click "**Start"** > "**All Programs**" > "**Accessories**", right-click "**Command Prompt**", and then click "**Run as administrator**".

4 Office 2007 & 2010

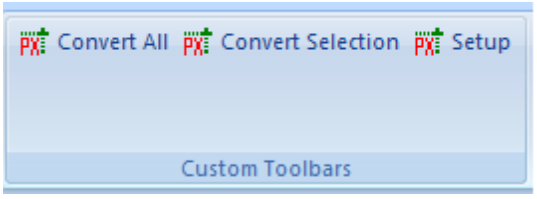
4.1 Word

4.1.1 Install Template File

1. Locate Microsoft Word Startup folder, which usually is "C:\Documents and Settings\<user name>\Application Data\Microsoft\Word\STARTUP" for **Windows XP** or "C:\Users\<user name>\AppData\Roaming\Microsoft\Word\STARTUP" for **Windows Vista and above**.

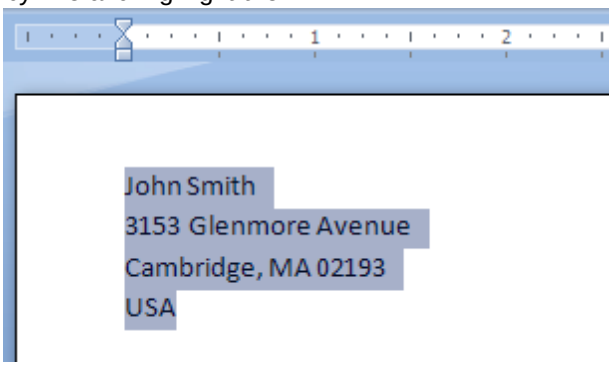
2. Copy MW6_PDF417_ActiveX.dotm to this folder.

3. Click on "**Add-Ins**", then click on "**Setup**". Change the configurations for PDF417 format, if the string contains some Unicode texts (Japanese, Chinese, Korean, etc), toggle on "Unicode Message" check box, so the VBA macro code can apply the special treatments to those Unicode characters.



4.1.2 Create Single Barcode

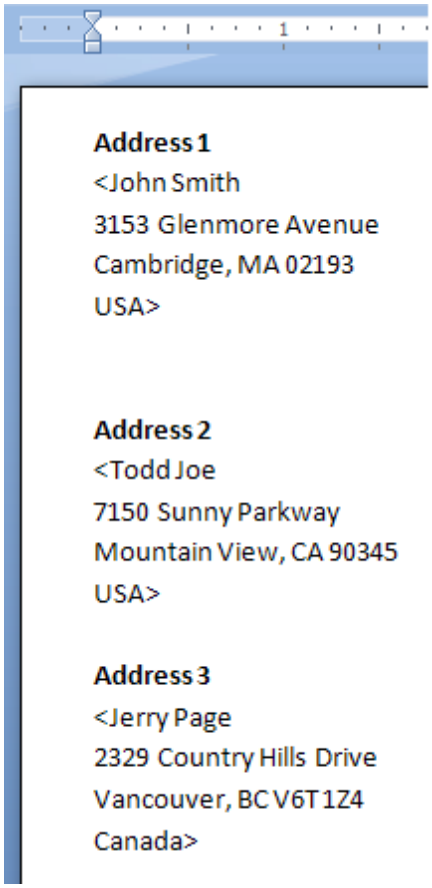
1. Enter a few strings line by line and highlight them.



2. Click on "**Add-Ins**", then click on "**Convert Selection**" to create a PDF417 barcode.

4.1.3 Create Multiple Barcodes

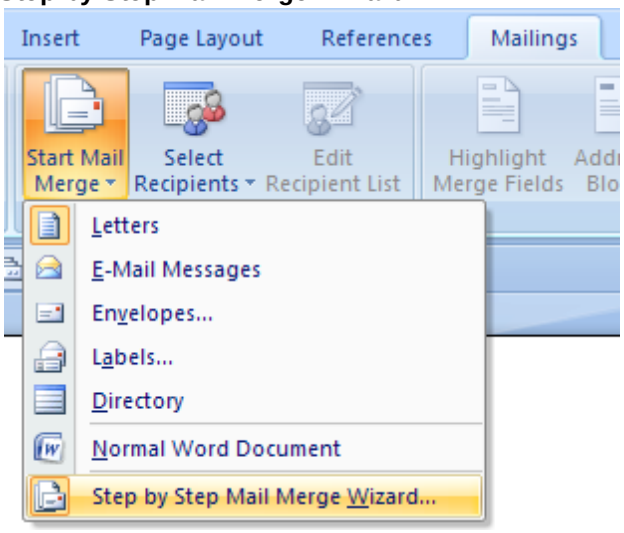
1. Enter a few string sections, surround those sections which will be converted to the barcodes with the "<" and ">" characters.



2. Click on "**Add-Ins**", then click on "**Convert All**" to create PDF417 barcodes for the string sections surrounded with the "<" and ">" characters.

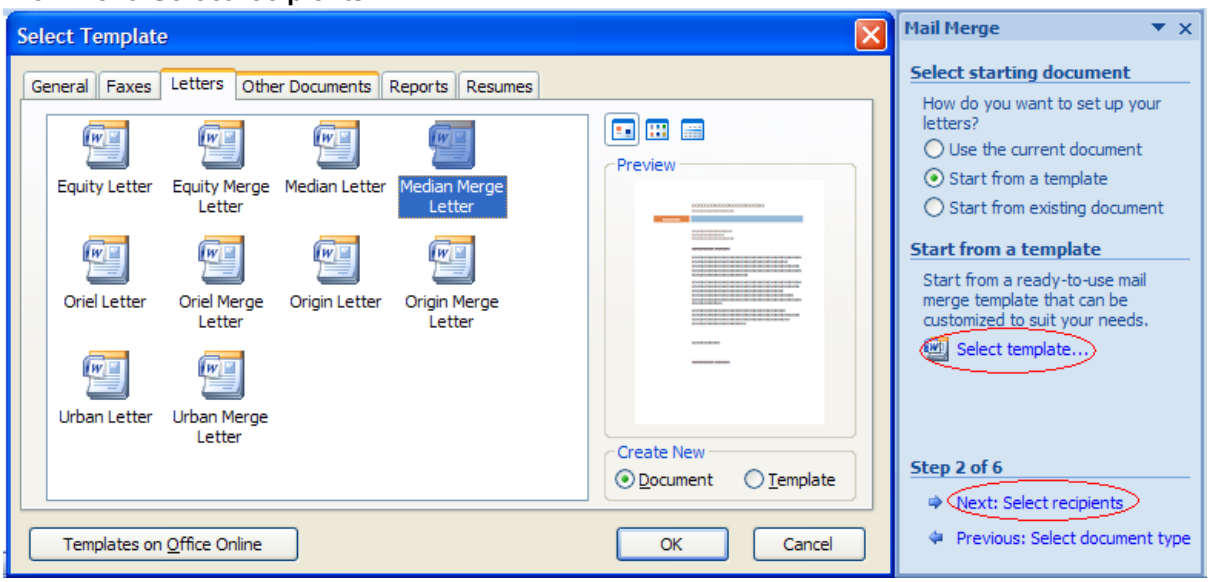
4.1.4 Mail Merge

1. Click on "**Mailings**", then click on "**Start Mail Merge**". A drop-down list appears as shown below, select the last option "**Step by Step Mail Merge Wizard**".

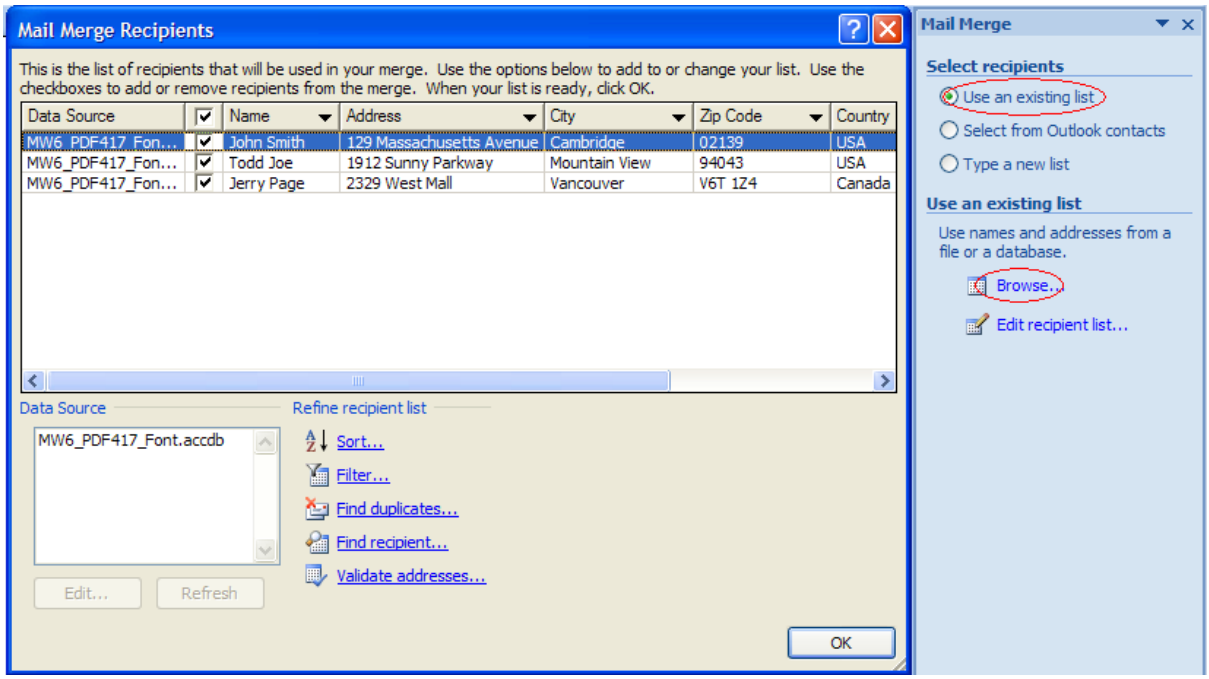


2. Select a document type and click on "**Next: Starting document**".

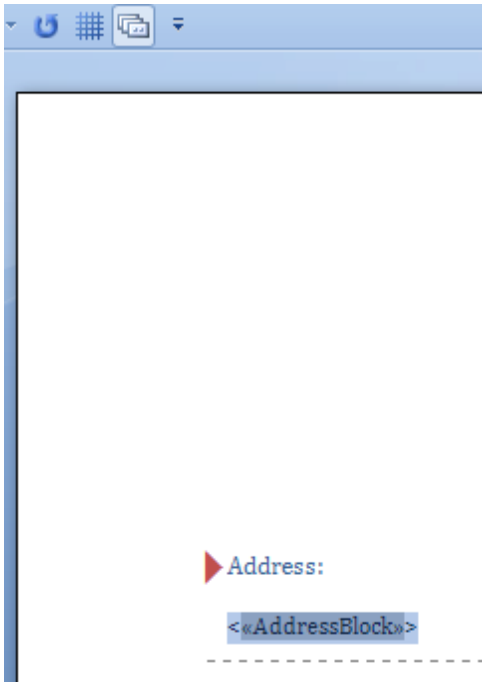
3. Click on "**Start from a template**", then click on the link "**Select template**", choose a template, click on "**Next: Select recipients**".



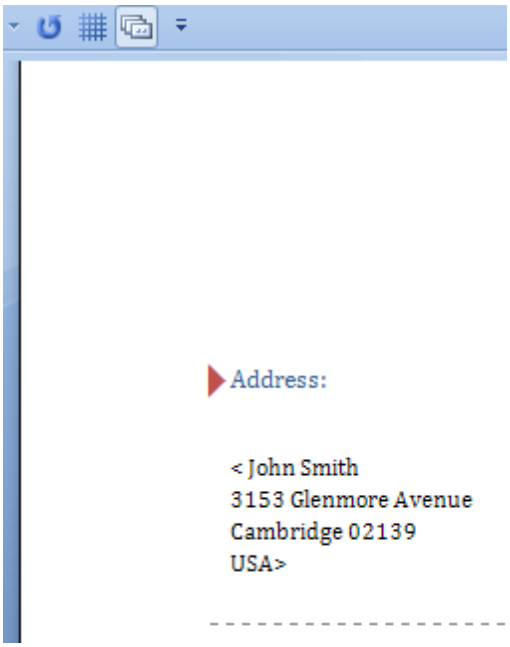
4. Select "**Use an existing list**" and click on "**Browser**" link, choose "MW6_PDF417_ActiveX.accdb" database as an existing list, click "**Next: Write your letter**".



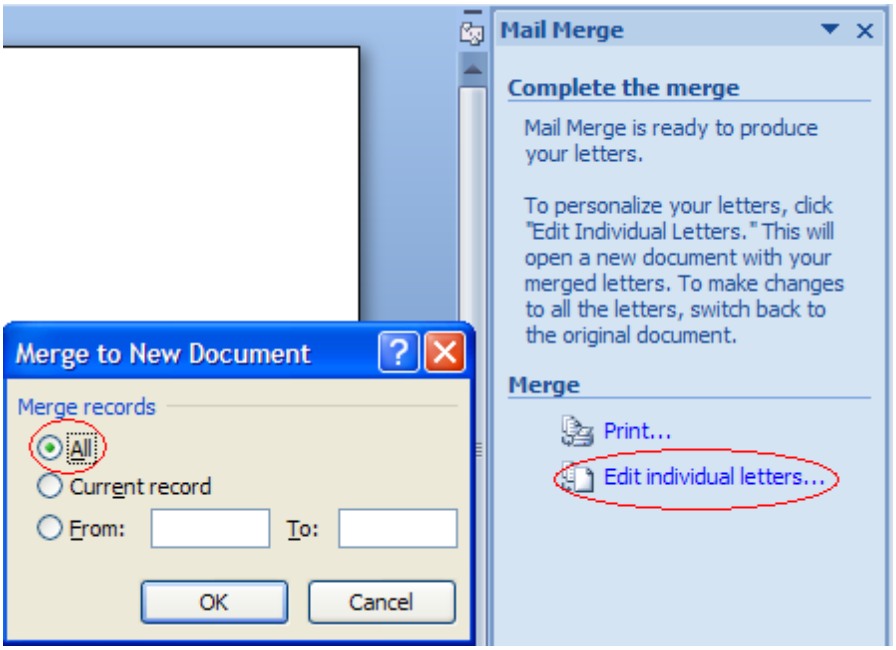
5. Surround the section which will be converted to the PDF417 barcode with the "<" and ">" characters and highlight it.



6. Click on "**Next: Preview your letters**", then click on "**Next: Complete the merge**".



7. Click on "**Edit individual letters**", this opens "**Merge to New Document**" dialog, click on "**All**" and then click on "**OK**" button.



8. Click on "**Add-Ins**", then click on "**Convert All**" to create PDF417 barcodes.

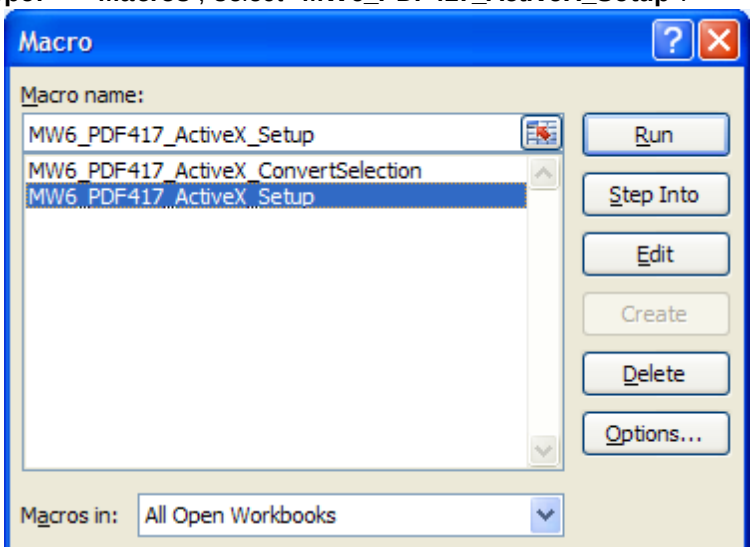
4.2 Excel

4.2.1 Change Settings

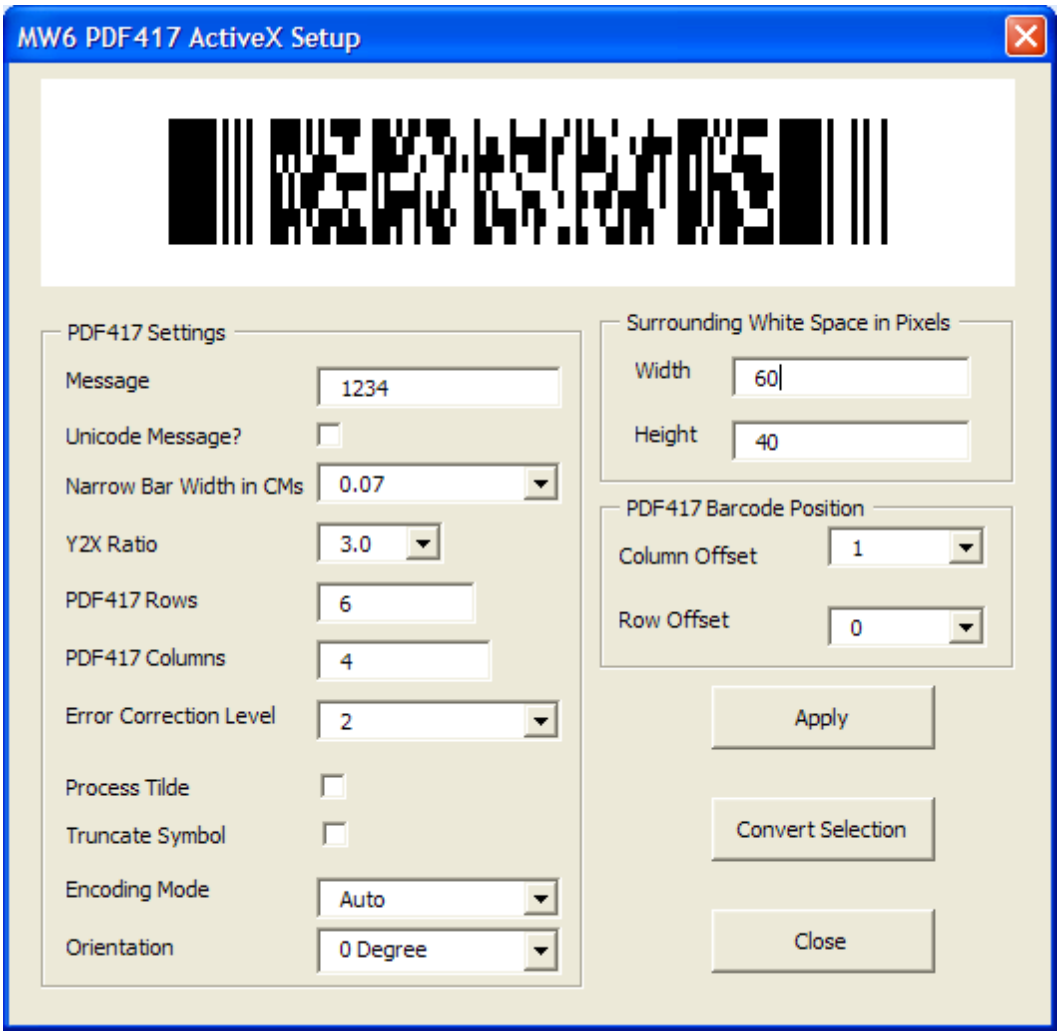
1. In Excel, open MW6_PDF417_ActiveX.xlsm.

2. If you see "**Security Warning, Macros have been disabled**", click on "**Options**" to open "**Microsoft Office Security Options**" dialog, toggle on "**Enable this content**" check box.

3. Click on "**Developer**" > "**Macros**", select "**MW6_PDF417_ActiveX_Setup**".

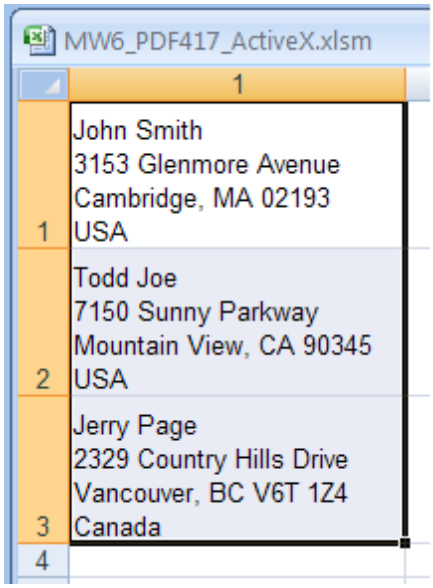


4. Choose a few appropriate values for PDF417 configurations, "**Column Offset**" and "**Row Offset**" are used to specify the barcode position relative to the position of cell which contains the regular string. If the string contains some Unicode texts (Japanese, Chinese, Korean, etc), toggle on "Unicode Message" check box, so the VBA macro code can apply the special treatments to those Unicode characters.

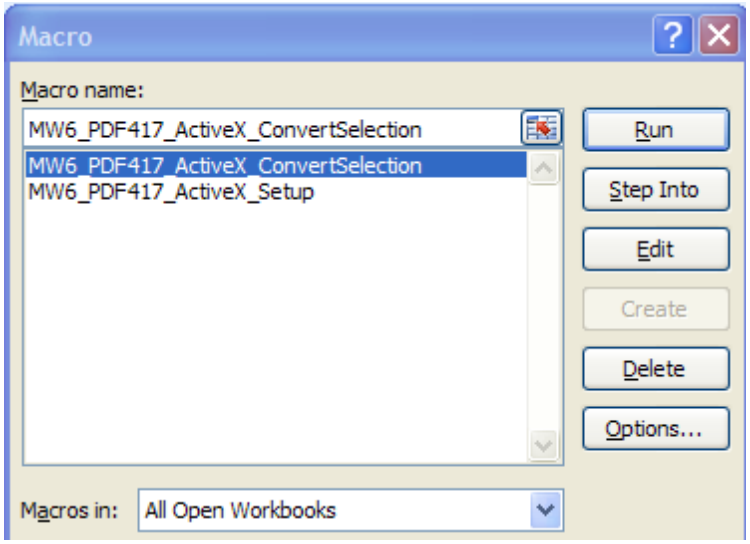

MW6 PDF417 ActiveX Setup
PDF417 Settings
Message
1234
Unicode Message?
Narrow Bar Width in CMs
0.07
Y2X Ratio
3.0
PDF417 Rows
6
PDF417 Columns
4
Error Correction Level
2
Process Tilde
Truncate Symbol
Encoding Mode
Auto
Orientation
0 Degree
Surrounding White Space in Pixels
Width
60
Height
40
PDF417 Barcode Position
Column Offset
1
Row Offset
0
Apply
Convert Selection
Close

4.2.2 Create Multiple Barcodes

1. Select a few cells.



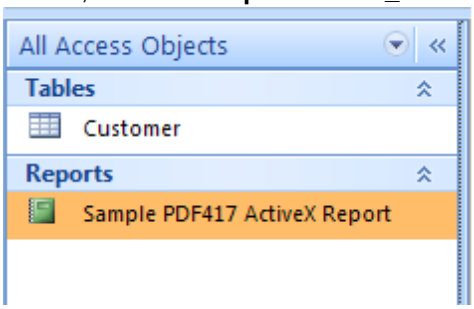
2. Click on "**Developer**" > "**Macros**", select "**MW6_PDF417_ActiveX_ConvertSelection**".



3. Click on "**Run**" to create the barcodes for the selected cells.

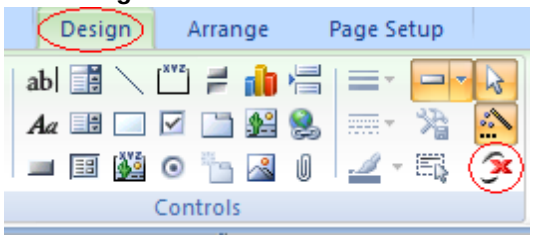
4.3 Access

1. Open MW6_PDF417_ActiveX.accdb, select "**Sample PDF417_ActiveX Report**".

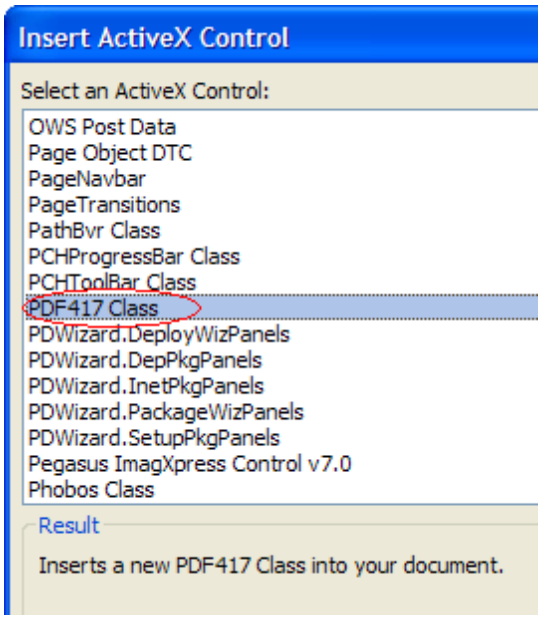


2. If you see "**Security Warning, Certain content in the database has been disabled**", click on "**Options**" to open up "**Microsoft Office Security Options**" dialog, toggle on "**Enable this content**" check box.

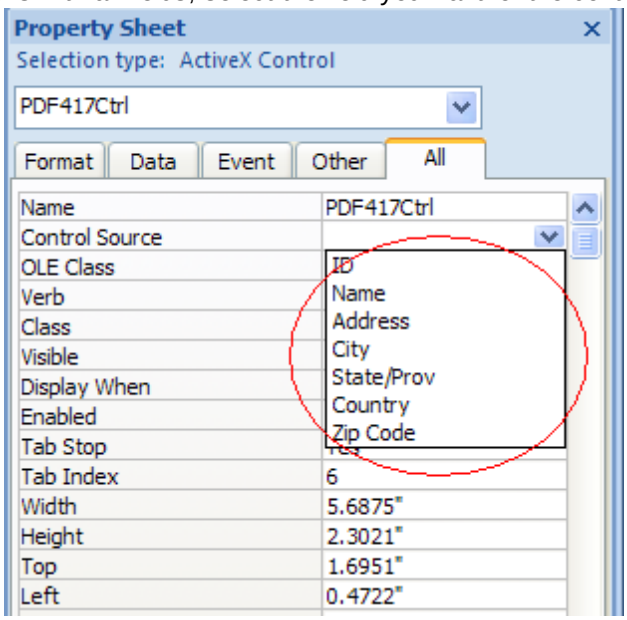
3. Click on "**Design View**", click "**Design**" > "**Insert ActiveX Control**".



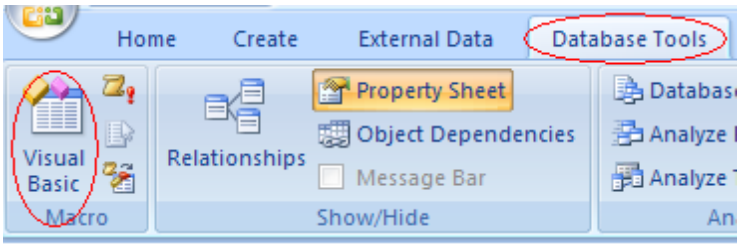
4. Insert a MW6 PDF417 ActiveX control into the report.



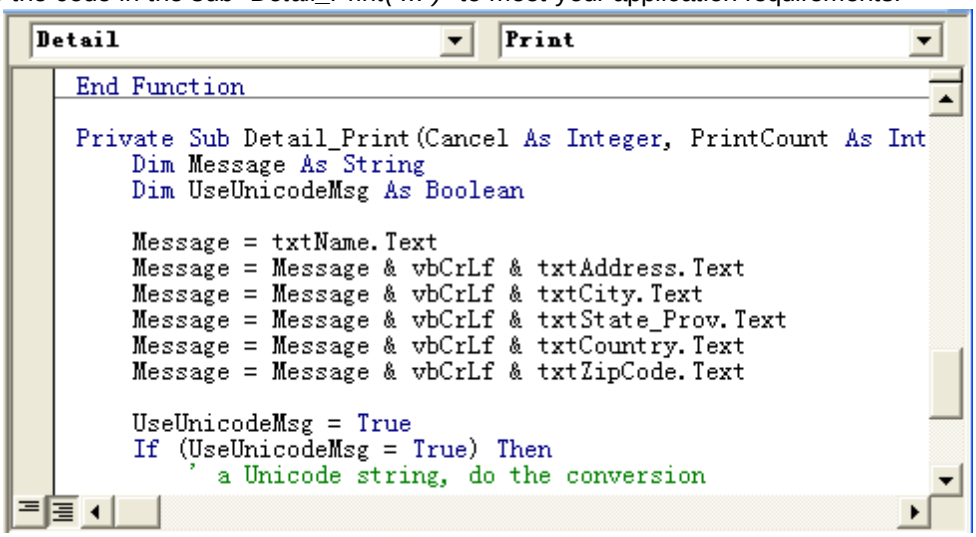
5. Change its properties to meet your application requirements, our PDF417 Barcode ActiveX supports the data binding so you can bind a field in a database to the control and generate a barcode for each data record automatically, there is an arrow on the right side of the "**Control Source**" property, click on the arrow, a list opens with all fields, select the field you want for the control.



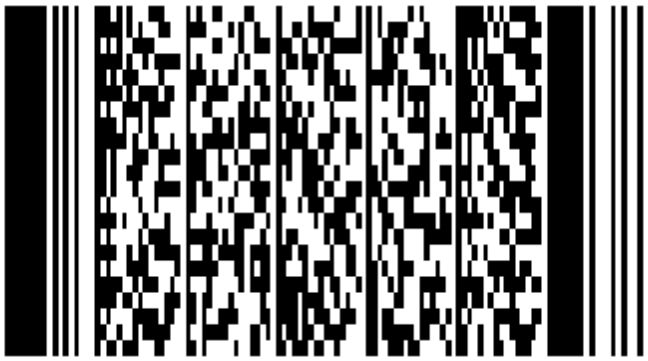
6. If the string contains some Unicode texts (Japanese, Chinese, Korean, etc), use "*Private Sub Detail_Print(Cancel As Integer, PrintCount As Integer)*" to apply the special treatments to those Unicode characters. Click "**Database Tools**" > "**Visual Basic**" to open up Visual Basic Editor.



7. Change the code in the sub "*Detail_Print(...)"* to meet your application requirements.



8. Click on "**Preview**" to view the barcodes.



5 Office 2000 & 2003

5.1 Word

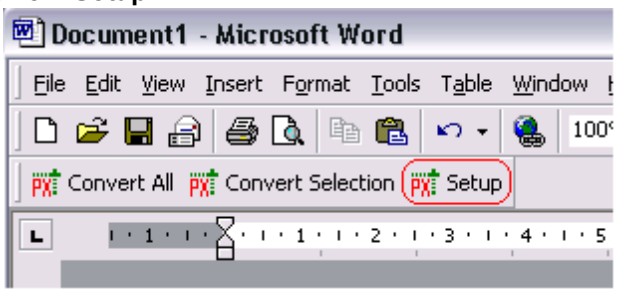
5.1.1 Install Template File

1. Locate the Word Startup folder, the Startup folder can be found in the following locations:

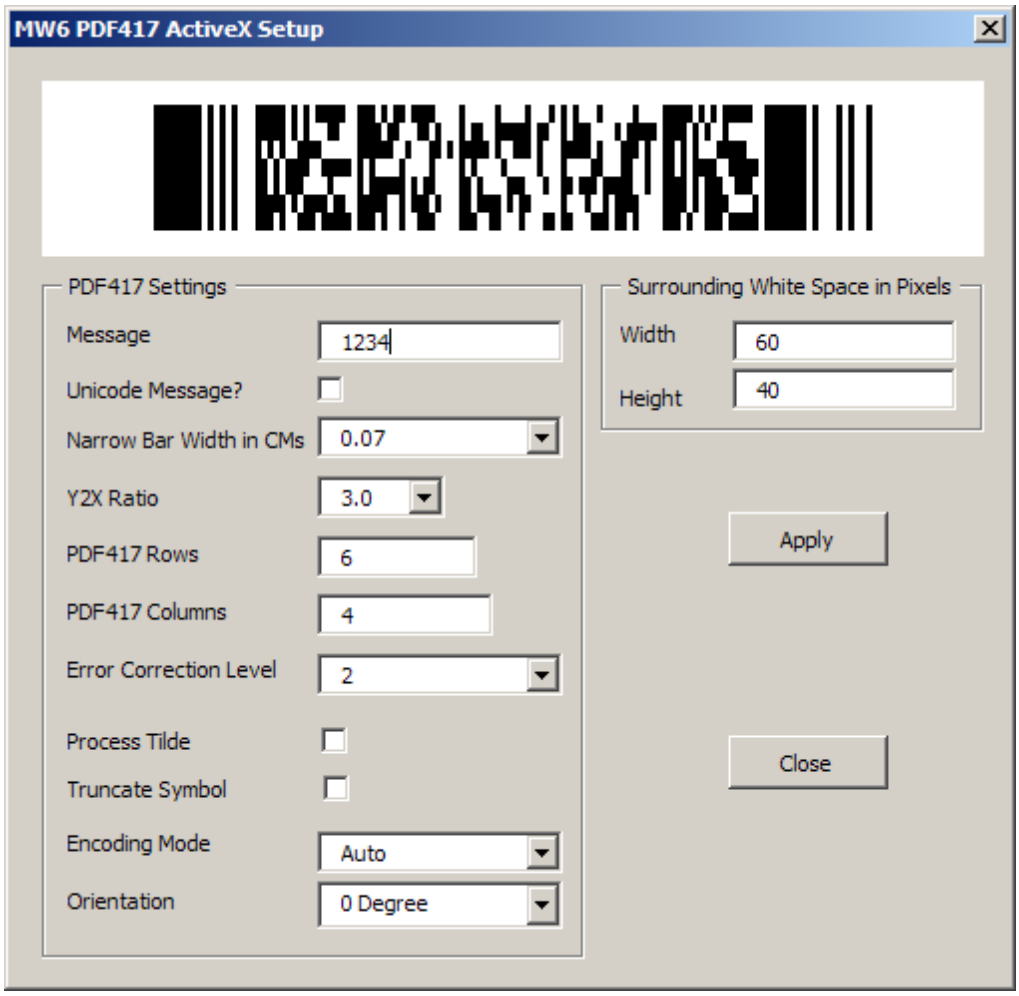
OS	Location
Windows 2000/XP	"C:\Documents and Settings\<user name>\Application Data\Microsoft\Word\Startup"
Windows NT4	"C:\Winnt\Profiles\<user name>\Application Data\Microsoft\Word\Startup"
Windows 95, 98, ME	Office XP: "C:\Program Files\Microsoft Office\Office10\Startup" Office 2000/97: "C:\Program Files\Microsoft Office\Office\Startup"

2. Copy MW6_PDF417_ActiveX.dot, which usually is in the folder "c:\Program Files\MW6 ActiveX Components\PDF417", to the Word Startup folder.

3. Open up the Word, click on "**Setup**".

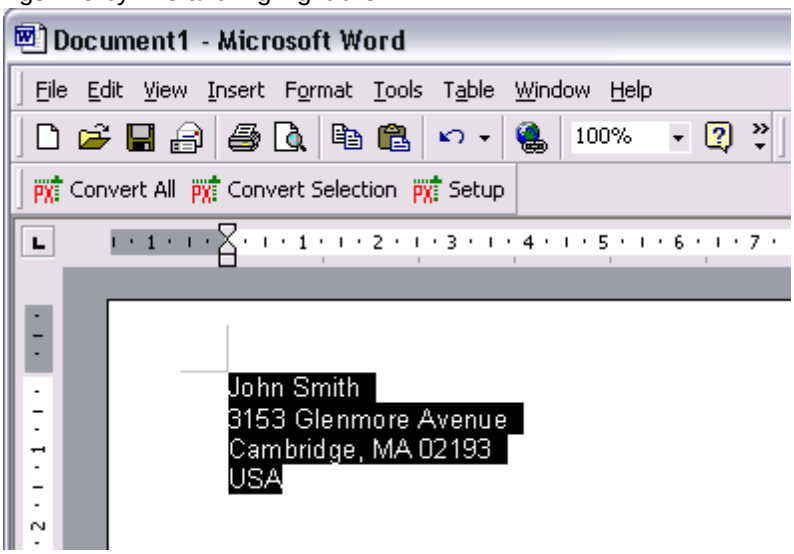


4. Choose a few appropriate values for PDF417 configurations, click on "**Apply**" button to allow the changes to take effect. If the string contains some Unicode texts (Japanese, Chinese, Korean, etc), toggle on "Unicode Message" check box, so the VBA macro code can apply the special treatments to those Unicode characters.

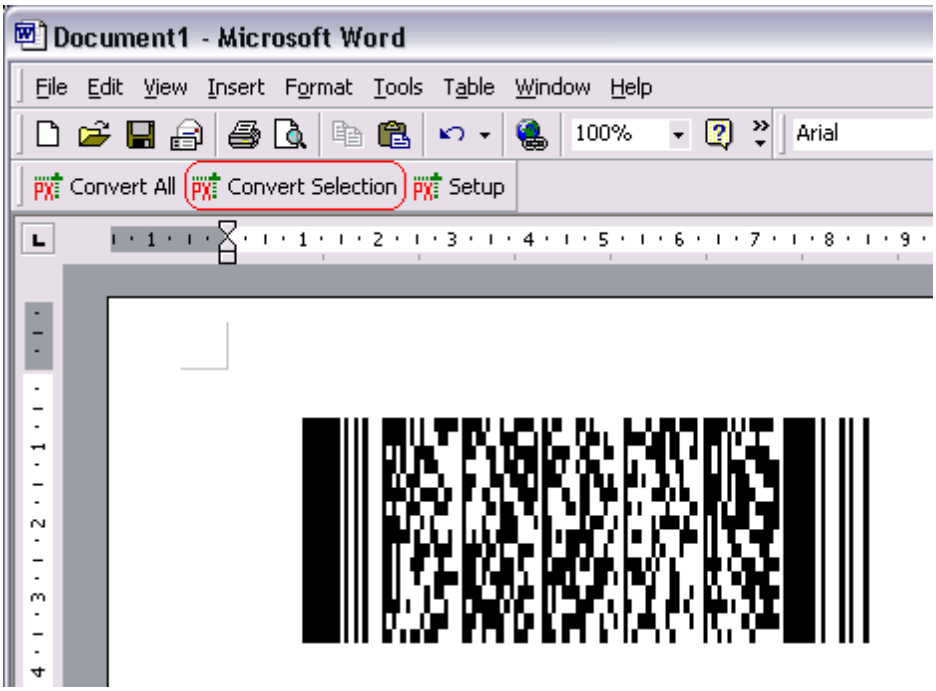


5.1.2 Create Single Barcode

1. Enter a few strings line by line and highlight them.

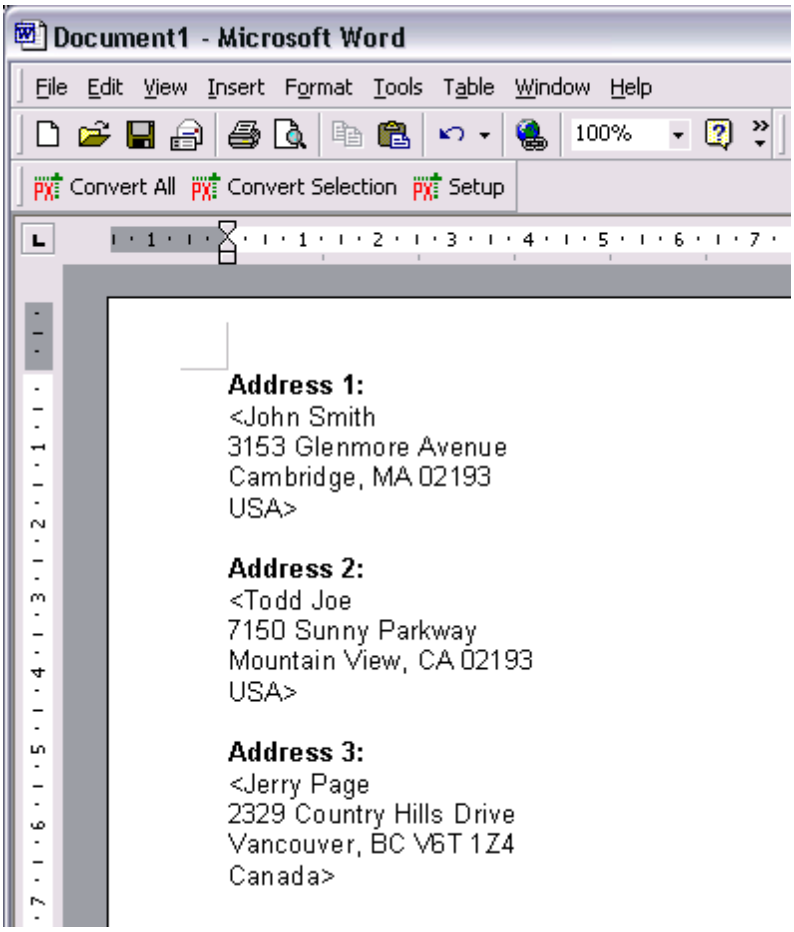


2. Click on "**Convert Selection**" to create a PDF417 barcode.

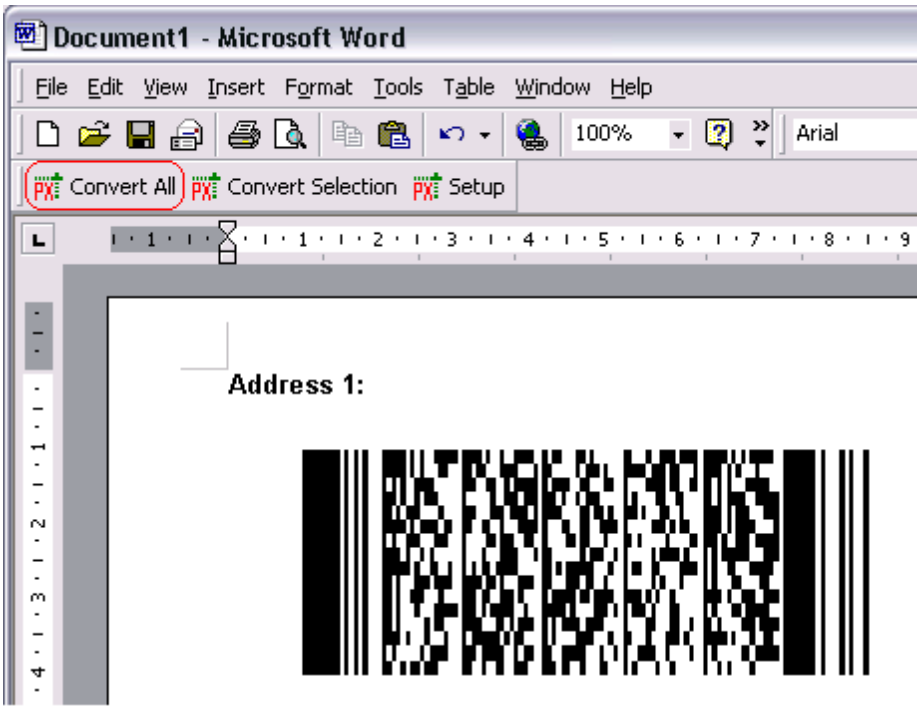


5.1.3 Create Multiple Barcodes

1. Enter a few paragraphs, surround those paragraphs which will be converted to the PDF417 barcodes with the "<" and ">" characters.

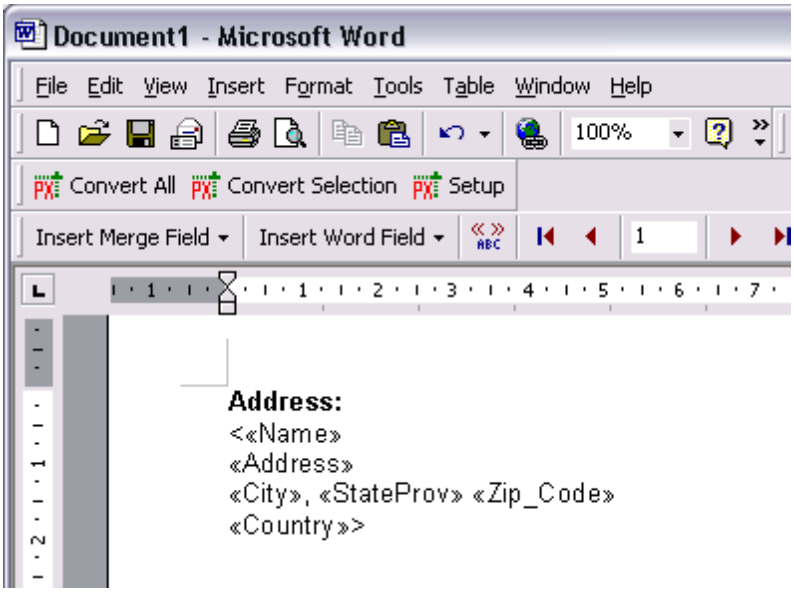


2. Click on "**Convert All**" to create PDF417 barcodes for the paragraphs surrounded with the "<" and ">" characters.



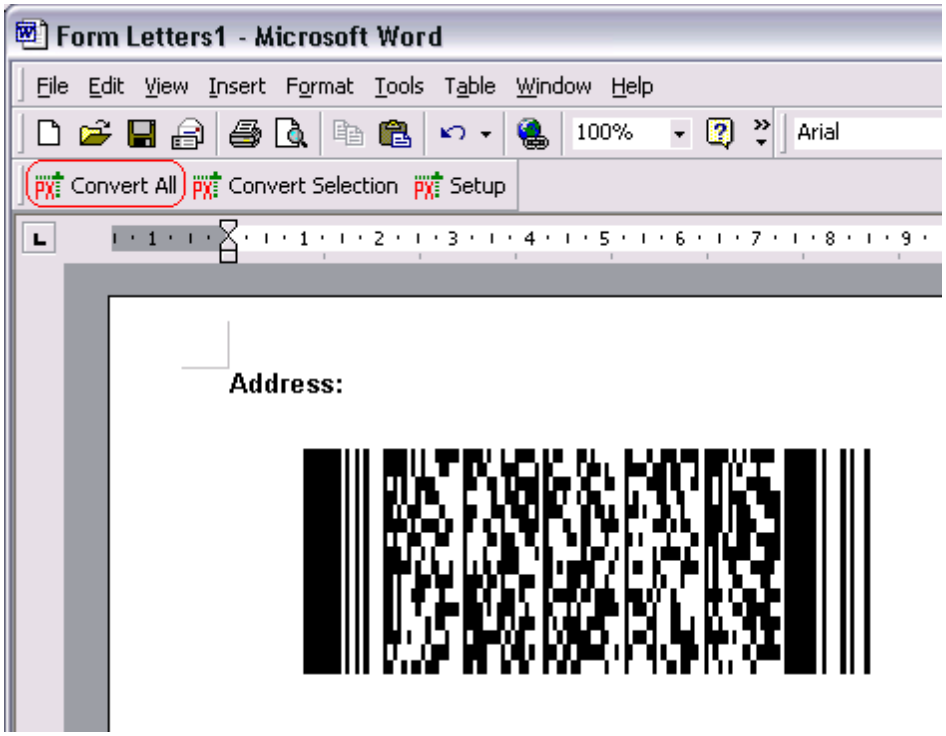
5.1.4 Mail Merge

1. In Mail Merge, choose MW6_PDF417_ActiveX.mdb as the data source, surround the paragraphs which will be converted to PDF417 barcode with the "<" and ">" characters.



2. Click on "**Merge ...**"

3. Click on "**Convert All**" to create PDF417 barcodes for the paragraphs surrounded with the "<" and ">" characters.

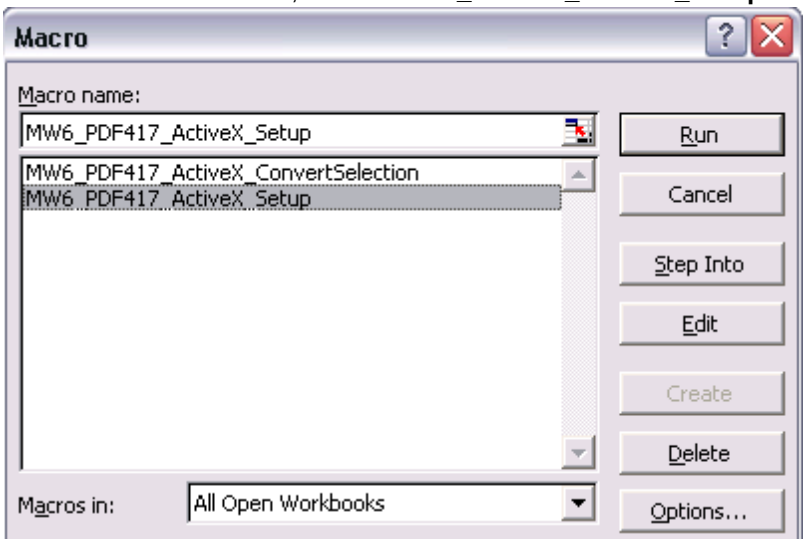


5.2 Excel

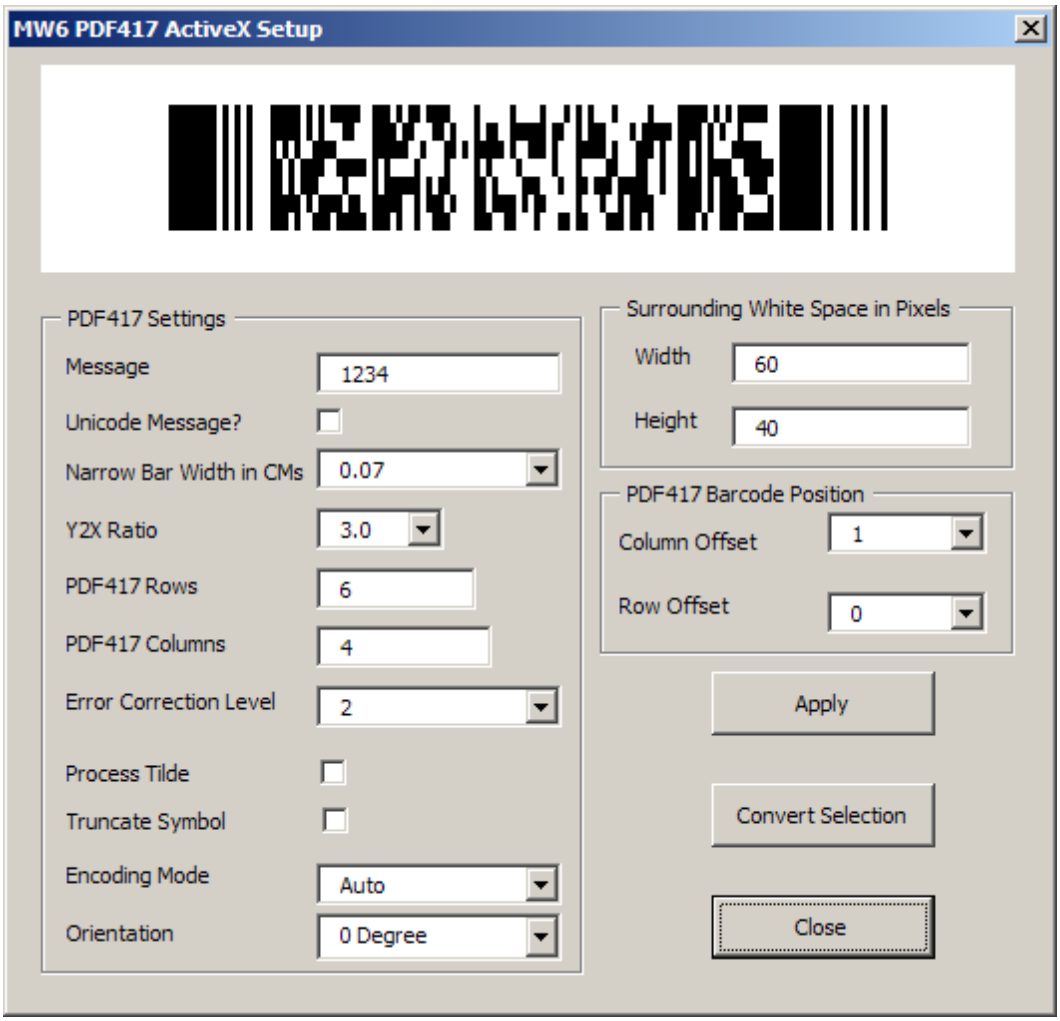
5.2.1 Change Settings

1. In Excel, open MW6_PDF417_ActiveX.XLS.

2. Click on "**Tools**" > "**Macro**" > "**Macros**", select "**MW6_PDF417_ActiveX_Setup**".



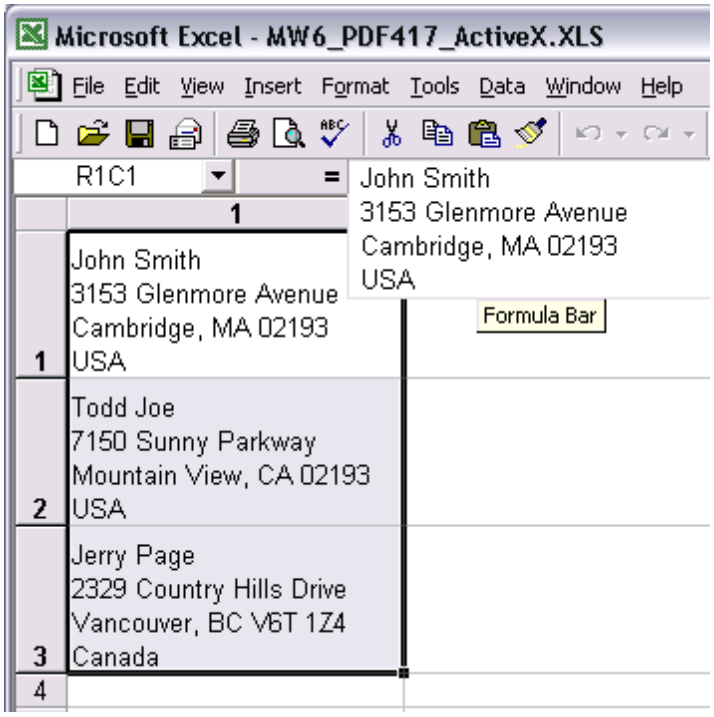
3. Click on "**Run**".



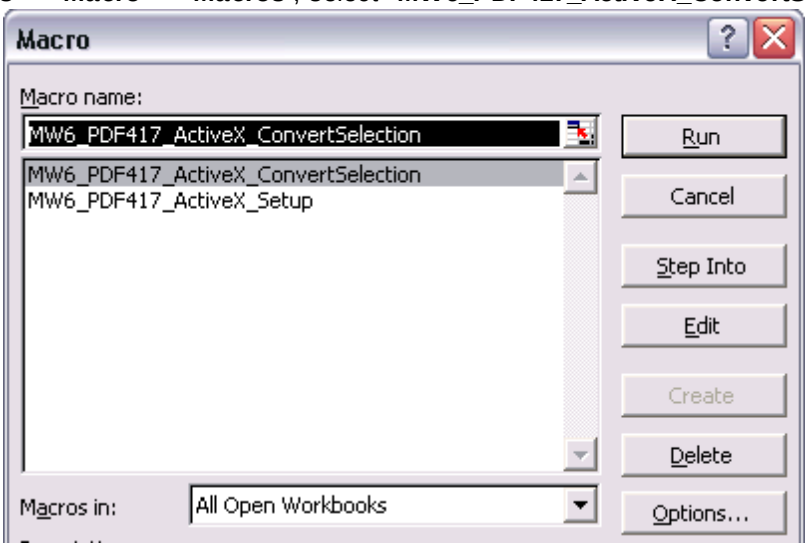
4. Choose a few appropriate values for PDF417 configurations, click on "**Apply**" button to allow the changes to take effect, "Column Offset" and "Row Offset" are used to specify PDF417 barcode position relative to the position of the cell which contains the regular string. If the string contains some Unicode texts (Japanese, Chinese, Korean, etc), toggle on "Unicode Message" check box, so the VBA macro code can apply the special treatments to those Unicode characters.

5.2.2 Create Multiple Barcodes

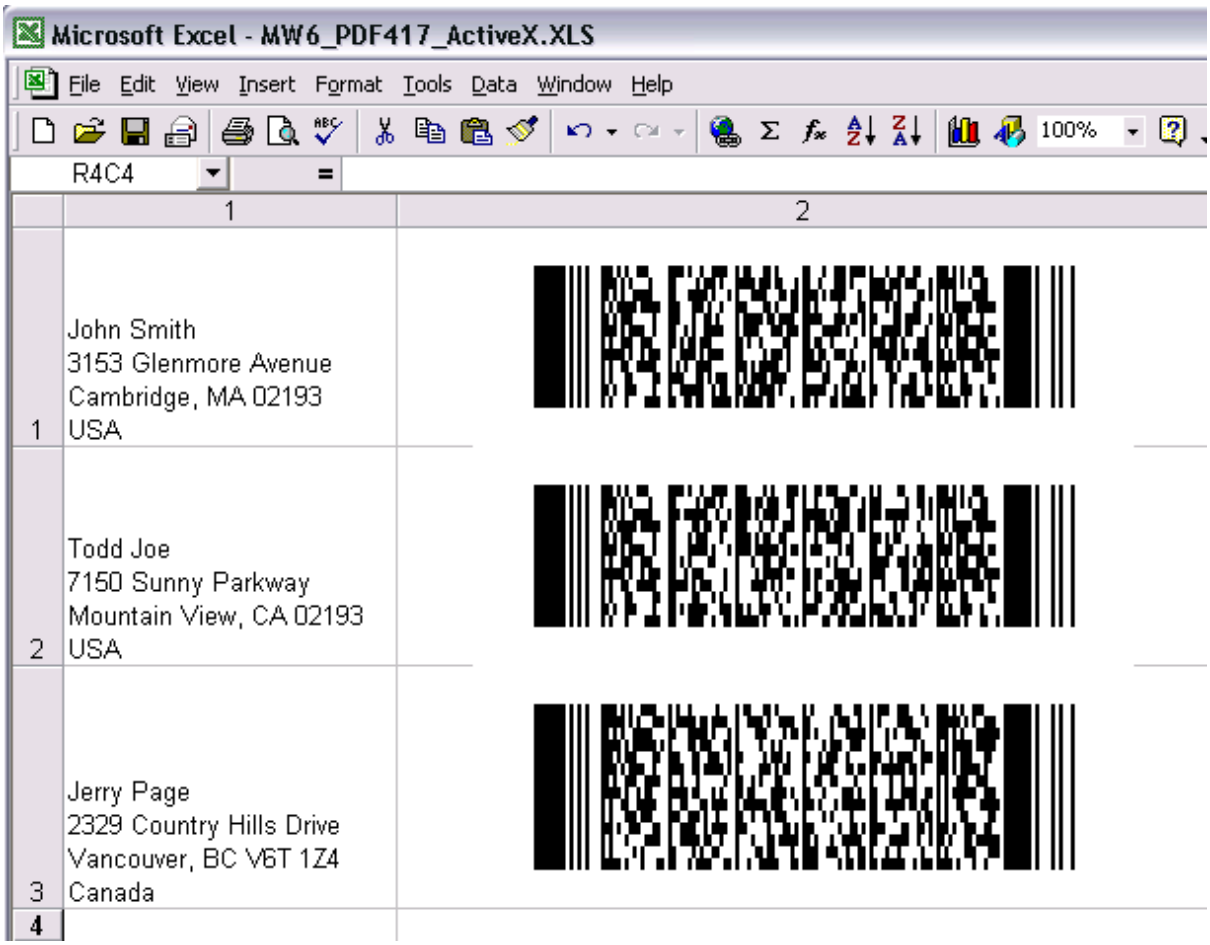
1. Select a few cells.



2. Click on "**Tools**" > "**Macro**" > "**Macros**", select "**MW6_PDF417_ActiveX_ConvertSelection**".

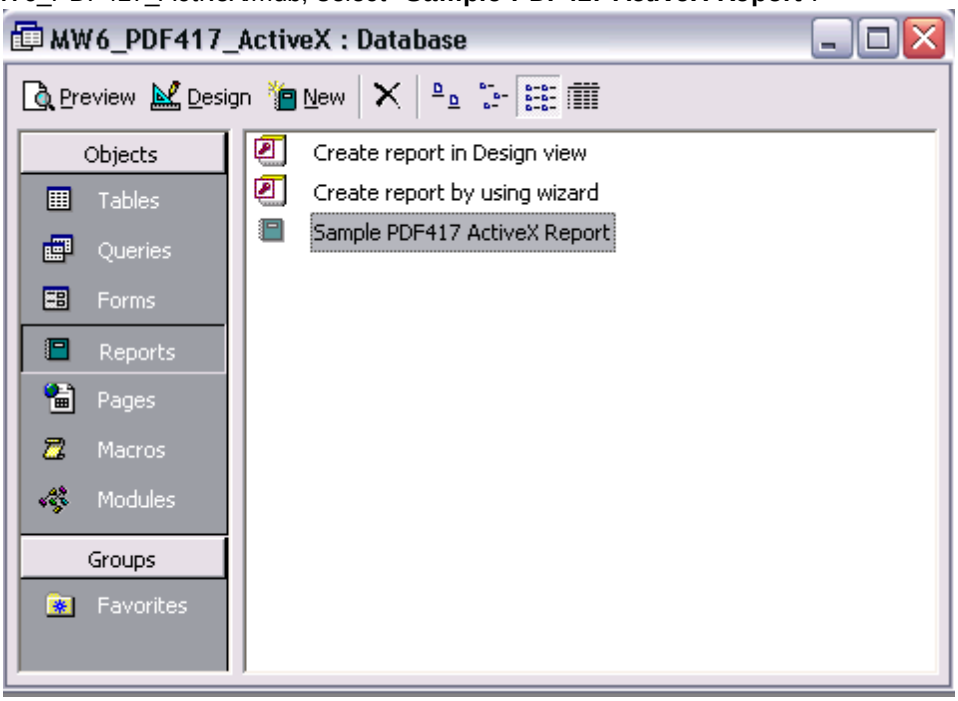


3. Click on "**Run**" to create the PDF417 barcodes for the selected cells.

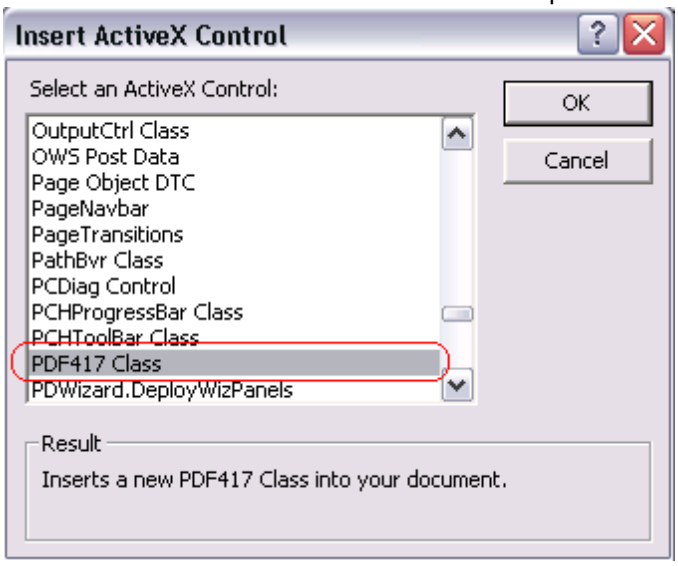

Microsoft Excel - MW6_PDF417_ActiveX.XLS
File Edit View Insert Format Tools Data Window Help
100%
R4C4
=
1
2
John Smith
3153 Glenmore Avenue
Cambridge, MA 02193
USA
Todd Joe
7150 Sunny Parkway
Mountain View, CA 02193
USA
Jerry Page
2329 Country Hills Drive
Vancouver, BC V6T 1Z4
Canada

5.3 Access

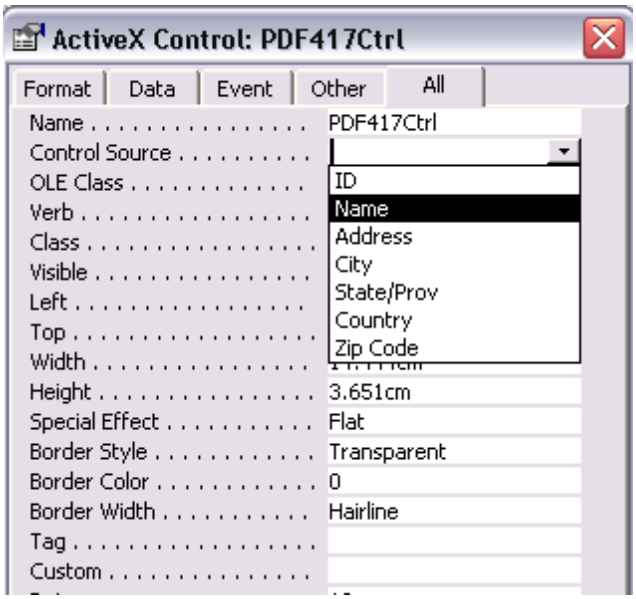
1. Open MW6_PDF417_ActiveX.mdb, select "**Sample PDF417 ActiveX Report**".



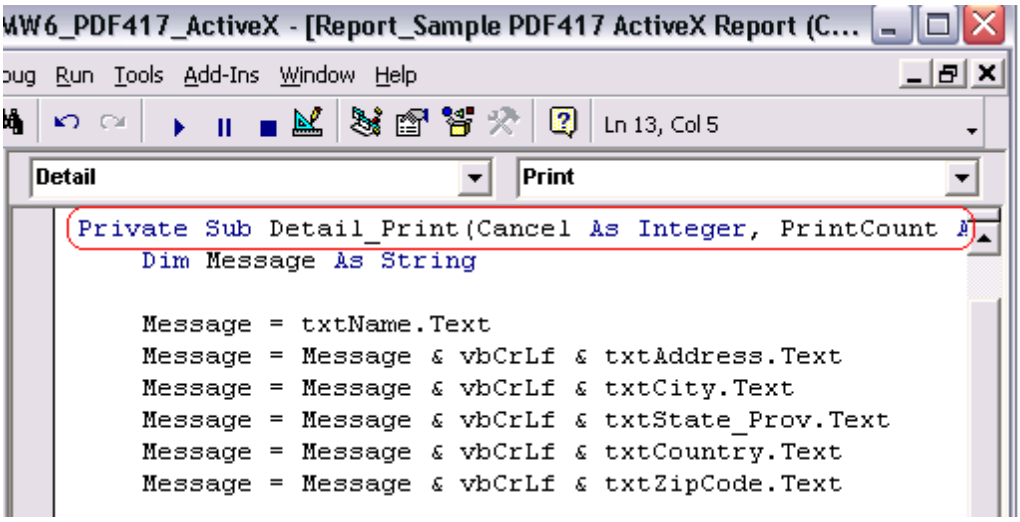
2. Click on "**Design**", insert a MW6 PDF417 ActiveX control into the report.



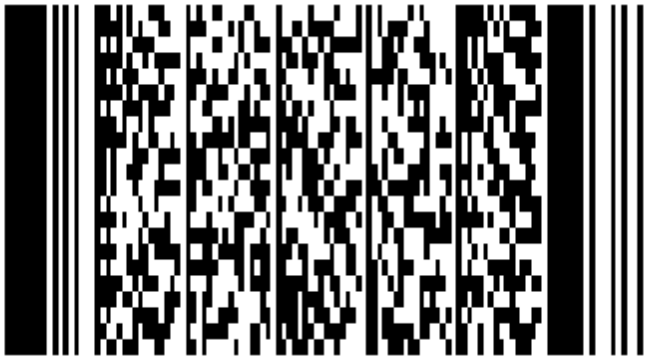
3. Change its properties to meet your application requirements, our PDF417 ActiveX supports the data binding so you can bind a field in a database to the control and generate PDF417 barcodes for each data record automatically, there's an arrow on the right side of the "**Control Source**" property, click on the arrow, a list opens with all fields, select the field you want for the control.



4. If you do not want to use the data binding feature, you can customize "*Private Sub Detail_Print (Cancel As Integer, PrintCount As Integer)*" to create PDF417 barcodes dynamically. If the string contains some Unicode texts (Japanese, Chinese, Korean, etc), use VBA code to apply the special treatments to those Unicode characters.



5. Click on "**Preview**" to view PDF417 barcodes.



6 Reference Guide

6.1 Properties

6.1.1 BackColor Property

Gets or sets the background color of the PDF417 barcode.

Property Data Type

OLE_COLOR

Remarks

The default value is white color.

6.1.2 BarColor Property

Gets or sets the color of the PDF417 barcode and text.

Property Data Type

OLE_COLOR

Remarks

The default value is black color.

6.1.3 BorderStyle Property

Gets or sets the style of the border rectangle.

Property Data Type

short

Remarks

The default value is 0, this property can be one of the following values:

Value	Description
0	No Border
1	Dash Border
2	Solid Border

6.1.4 Columns Property

Gets or sets the preferred number of the columns for the PDF417 barcode.

Property Data Type

short

Remarks

Typically this property value should be between 3 and 30.

6.1.5 Data Property

Gets or sets the message to encode with PDF417 barcode ActiveX.

Property Data Type

BSTR

Remarks

The default value is "12".

6.1.6 ErrorCorrectionLevel Property

Gets or sets the error correction level of the PDF417 barcode.

Property Data Type

short

Remarks

The valid value should be between 0 and 8, the value of 2 is recommended.

6.1.7 HandleTilde Property

Gets or sets a boolean flag indicating whether to process the tilde character "~" or not.

Property Data Type

VARIANT_BOOL

Remarks

If this property is set to TRUE, non-printable characters can be passed to PDF417 ActiveX by using the tilde character, "**~dNNN**" represents the ASCII character encoded by the 3 digits NNN, for example, "~d010" represents the character LF (line feed).

6.1.8 ImageData Property

Gets WMF format data stream of the PDF417 barcode.

Property Data Type

IPictureDisp*

6.1.9 Mode Property

Gets or sets the encoding mode of the PDF417 barcode.

Property Data Type

short

Remarks

This parameter can be one of the following values:

- 0: Binary mode to encode the characters with the ASCII value between 0 and 255.
- 1: Text mode to encode the printable characters with the ASCII value between 32 and 126, TAB character (ASCII value 9), LF character (ASCII value 10) and CR character (ASCII value 13).
- 2: Auto mode to achieve maximum encoding capacity.

6.1.10 NarrowBarWidth Property

Gets or sets the width, in centimeters, of the narrow bar element .

Property Data Type

float

Remarks

The default value is 0.07, internally our PDF417 ActiveX converts narrow bar width from centimeters to pixels based on the device resolution, round up or round down float pixel value to the nearest integer.

The centimeter to pixel conversion formula is :

*size_in_pixels = size_in_centimeters * device_resolution / 2.54*

For example, if you render the PDF417 barcode onto the computer screen and the screen resolution is 96dpi.

(1) Set NarrowBarWidth property to 0.04, size_in_pixels = 0.04 * 96 / 2.54 = 1.5118, round up 1.5118 to 2, so actual narrow bar width is 2 pixels.

(2) Set NarrowBarWidth property to 0.06, size_in_pixels = 0.06 * 96 / 2.54 = 2.2677, round down 2.2677 to 2, so actual narrow bar width is 2 pixels.

(3) Set NarrowBarWidth property to 0.07, size_in_pixels = 0.07 * 96 / 2.54 = 2.6456, round up 2.6456 to 3, so actual narrow bar width is 3 pixels.

Different NarrowBarWidth property values might end up with same narrow bar width in pixels due to performing rounding operations.

6.1.11 Orientation Property

Gets or sets the orientation of the PDF417 barcode.

Property Data Type

short

Remarks

The default value is 0, this property can be one of the following values:

Value	Description
0	0 degree
1	90 degrees
2	180 degrees
3	270 degrees

6.1.12 Rows Property

Gets or sets the preferred number of the rows for the PDF417 barcode.

Property Data Type

short

Remarks

Typically this property value should be between 3 and 90.

6.1.13 TruncateSymbol Property

Gets or sets a boolean flag indicating whether the right side the PDF417 barcode should be removed or not.

Property Data Type

VARIANT_BOOL

Remarks

The default value is FALSE.

6.1.14 Y2XRatio Property

Gets or sets the ratio of the height of the row to the width of the narrow element.

Property Data Type

float

Remarks

The default value is 3.0, typically this property value is between 3 and 6.

6.2 Methods

6.2.1 CopyToClipboard Method

Copies the PDF417 barcode image into the system clipboard.

```
void CopyToClipboard();
```

Remarks

Before you call this method, use GetActualSize() method to obtain the actual size of the PDF417 barcode and use SetSize() method to set image size by adding surrounding white space around the PDF417 barcode.

See Also

GetActualSize() Method | SetSize() Method

6.2.2 GetActualSize Method

Gets the actual size of the PDF417 barcode which is rendered onto either computer screen or other devices such as printers.

```
void GetActualSize(VARIANT_BOOL ScreenIsTarget, long TargetHDC, long *ActualWidth, long *ActualHeight);
```

Parameters

ScreenIsTarget

Indicates whether barcode is rendered onto computer screen or not.

TargetHDC

Device context on which to render the PDF417 barcode, if the parameter ScreenIsTarget is set to TRUE, set this parameter to NULL.

ActualWidth

A pointer to the variable that receives the width of the PDF417 barcode (in pixels).

ActualHeight

A pointer to the variable that receives the height of the PDF417 barcode (in pixels).

6.2.3 GetPatternData Method

Gets the PDF417 barcode pattern matrix data.

```
BOOL GetPatternData(short *Buffer,
                    long *Size,
                    short *Rows,
                    short *Columns,
                    VARIANT_BOOL *Result);
```

Parameters

Buffer

Pointer to a buffer that receives the character stream ('1's and '0's) storing the PDF417 barcode pattern matrix data row by row from the top left matrix corner, '1' indicates the narrow bar and '0' indicates the narrow space.

If the method fails and the variable pointed to by *Size* returns the required buffer size, in 16-bit integers.

Size

[in/out] On input, specifies the size, in 16-bit integers, of the *Buffer*. On output, receives the size, in 16-bit integers, of the PDF417 barcode pattern matrix data ('1's and '0's).

Rows

A pointer to the variable that receives the number of the rows for the pattern matrix.

Columns

A pointer to the variable that receives the number of the columns for the pattern matrix..

Result

If the method succeeds, the value of the variable pointed to by *Result* is VARIANT_TRUE, otherwise the value is VARIANT_FALSE.

Remarks

You can use this method to obtain the PDF417 barcode pattern matrix data and render the PDF417 barcode onto any device such as the printer, only *Columns*, *Data*, *ErrorCorrectionLevel*, *HandleTilde*, *Mode*, *Rows* and *TruncateSysmbol* properties affect the pattern matrix data output.

Based on the *Orientation* property value, rotate the pattern matrix accordingly before you render the PDF417 barcode onto a device.

If the *Orientation* property value is 0 (no rotation) or 2 (180-degree rotation), the ratio of the height to the width for the rectangles (the narrow bar and the narrow space) must be equal to the Y2XRatio property value, the width of the rectangles is specified by the NarrowBarWidth property.

If the *Orientation* property value is 1 (90-degree rotation) or 3 (270-degree rotation), the ratio of the width to the height for the rectangles (the narrow bar and the narrow space) must be equal to the Y2XRatio property value, the height of the rectangles is specified by the NarrowBarWidth property.

6.2.4 Render Method

Renders the PDF417 barcode onto the device such as computer screen or printers.

```
void Render(long hDC, int x, int y);
```

Parameters

hDC

Device context on which to render the PDF417 barcode.

x

The x coordinate, in pixels, of the top left corner of the PDF417 barcode .

y

The y coordinate, in pixels, of the top left corner of the PDF417 barcode.

6.2.5 SaveAsBMP Method

Saves the PDF417 barcode image as a BMP file.

```
void SaveAsBMP(BSTR FileName);
```

Parameters

FileName

A string that contains the name of the file to which to save BMP format barcode image.

Remarks

Before you call this method, use GetActualSize() method to obtain the actual size of the PDF417 barcode and use SetSize() method to set image size by adding surrounding white space around the PDF417 barcode.

See Also

GetActualSize() Method | SetSize() Method

6.2.6 SaveAsWMF Method

Saves the PDF417 barcode image as a WMF file.

```
void SaveAsWMF(BSTR FileName);
```

Parameters

FileName

A string that contains the name of the file to which to save WMF format barcode image.

Remarks

Before you call this method, use GetActualSize() method to obtain the actual size of the PDF417 barcode and use SetSize() method to set image size by adding surrounding white space around the PDF417 barcode.

See Also

GetActualSize() Method | SetSize() Method

6.2.7 SetSize Method

Sets the size of the image which contains the PDF417 barcode.

```
void SetSize(int Width, int Height);
```

Parameters

Width

The width, in pixels, of the image.

Height

The height, in pixels, of the image.

Remarks

First call GetActualSize() method to obtain the actual size of the PDF417 barcode, then use this method to set image size by adding surrounding white space around the PDF417 barcode.

See Also

GetActualSize() Method

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