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# 1 Introduction

MW6 Aztec Win32 DLL can create device independent 2D Aztec images for your application, you can save the Aztec as either BMP or WMF image file or copy Aztec WMF image to the clipboard.

Aztec is designed to pack a lot of information in a very small space, it is capable of encoding 1914 bytes, 3067 alphanumeric characters, or 3832 numeric digits.

## 2 Installation

### 2.1 Trial Version

1. UnZip MW6AztecWin32.ZIP, run the setup.exe to install Aztec Win32 DLL.
2. The trial version Aztec Win32 DLL appends "MW6 Demo" to the string encoded with Aztec format.

### 2.2 Full Version

1. Uninstall the trial version Aztec Win32 DLL if applicable.
2. UnZip full version Aztec Win32 DLL .zip file and run the setup.exe to install the full version Aztec Win32 DLL.

## 3 How to Distribute It

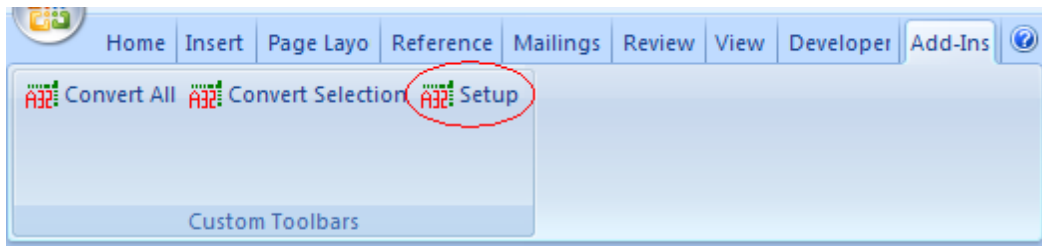
If you want to redistribute Aztec Win32 DLL as part of your application, on the target machine, simply put **AztecWin32.dll** into the windows 32-bit system folder (e.g. "c:\windows\system32" or "c:\winnt\system32") for 32-bit Windows OS, or the SysWow64 folder (e.g. "c:\windows\SysWow64") for 64-bit Windows OS.

## 4 Office 2007

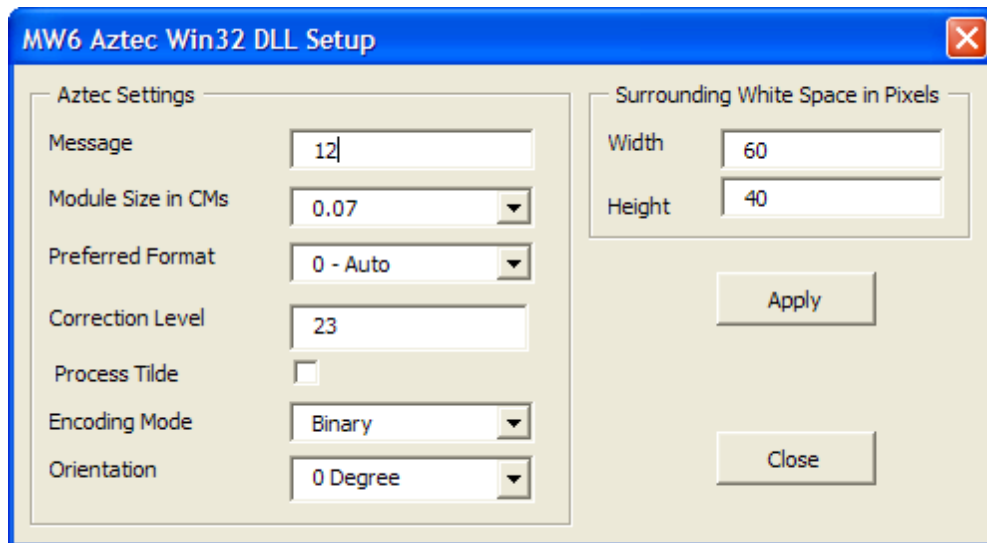
### 4.1 Word

#### 4.1.1 Install Template File

1. Locate the Office Word STARTUP folder, which usually is "C:\Documents and Settings\\Application Data\Word\STARTUP".
  2. Copy MW6\_Aztec\_Win32.dotm, which usually is in the folder "c:\Program Files\MW6 Win32 DLL\Aztec", to the Word STARTUP folder.
  3. Click on "**Add-Ins**", then click on "**Setup**".
-

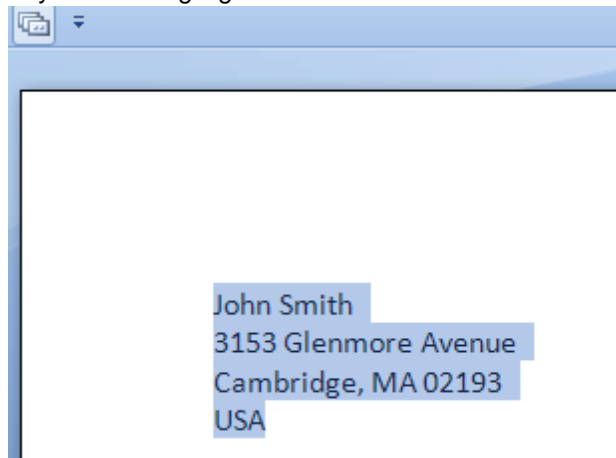


4. Choose a few appropriate values for Aztec configurations, click on "**Apply**" button to allow the changes to take effect.

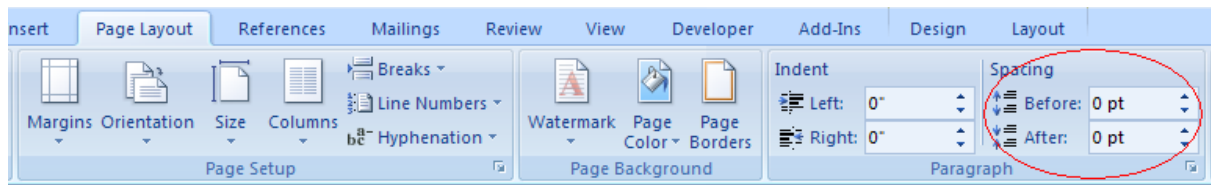


#### 4.1.2 Create Single Barcode

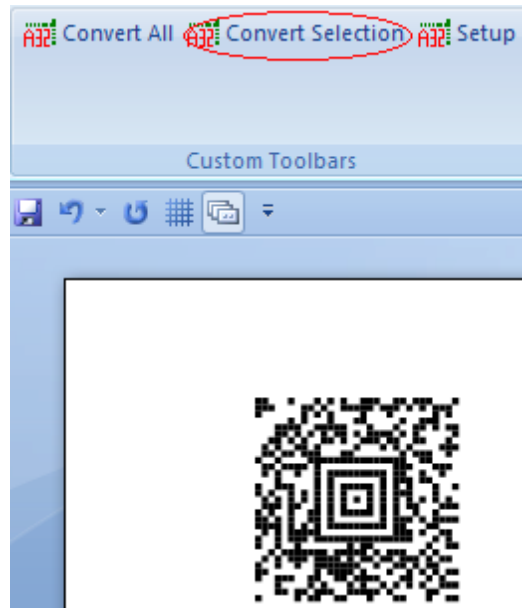
1. Enter a few strings line by line and highlight them.



2. Click on "**Page Layout**", change Spacing "**Before**" and "**After**" to 0.

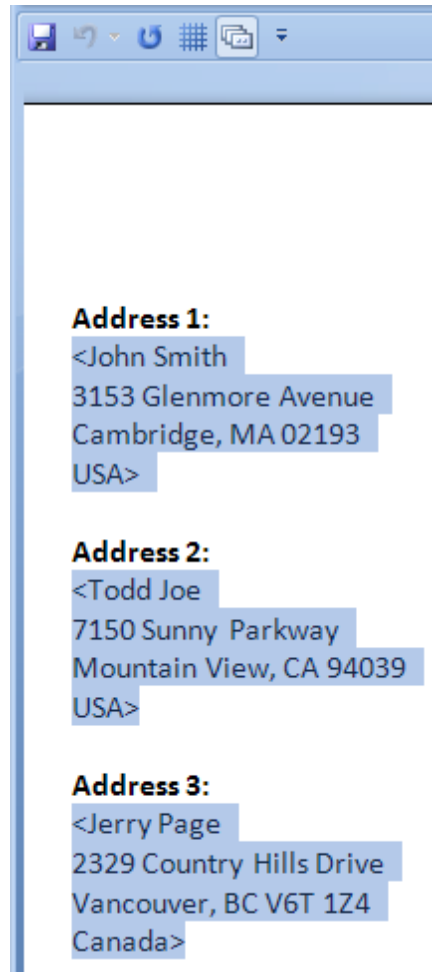


3. Click on "Add-Ins", then click on "Convert Selection" to create an Aztec barcode.

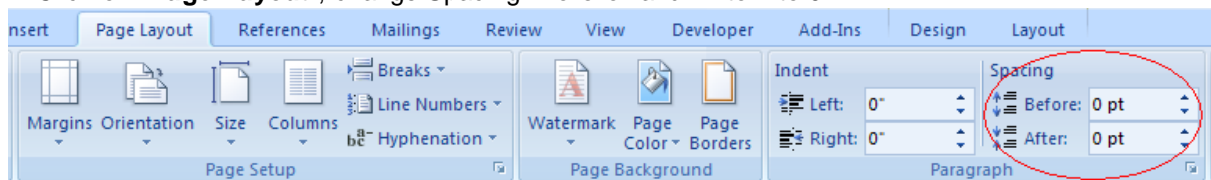


### 4.1.3 Create Multiple Barcodes

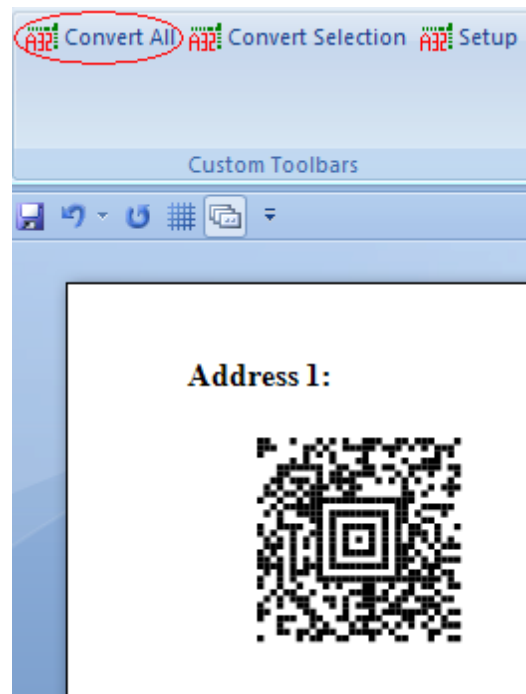
1. Enter a few string sections, surround those sections which will be converted to Aztec barcodes with the "<" and ">" characters.



2. Click on "**Page Layout**", change Spacing "**Before**" and "**After**" to 0.

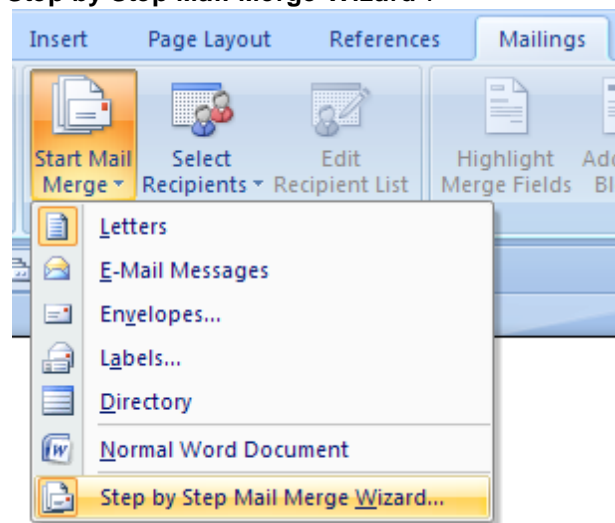


3. Click on "**Add-Ins**", then click on "**Convert All**" to create Aztec barcodes for the string sections surrounded with the "<" and ">" characters.

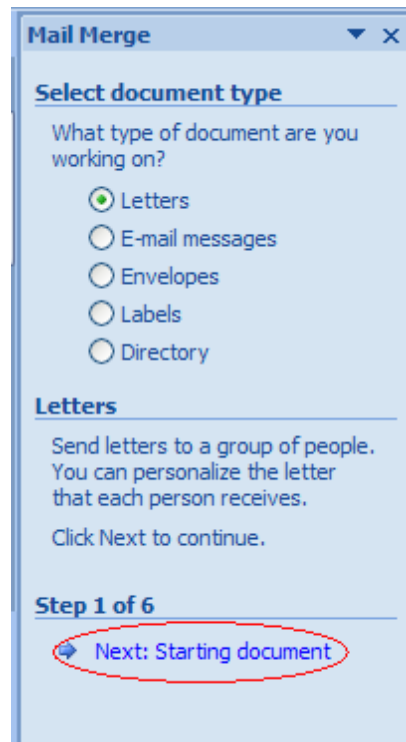


#### 4.1.4 Mail Merge

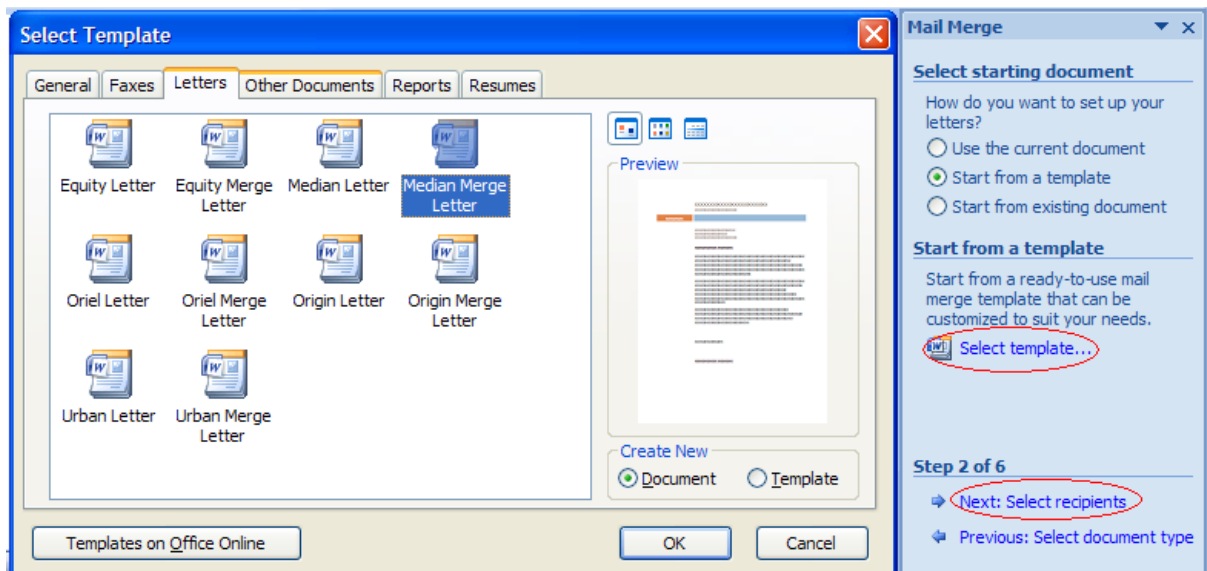
1. Click on "**Mailings**", then click on "**Start Mail Merge**". A drop-down list appears as shown below, select the last option "**Step by Step Mail Merge Wizard**".



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

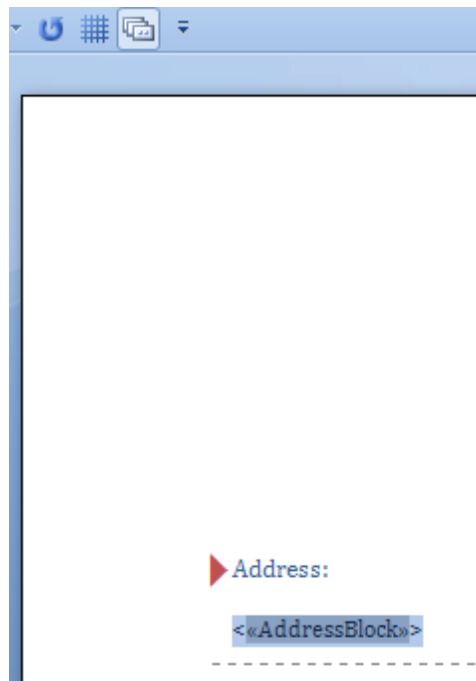


3. Click on "**Start from a template**", then click on the link "**Select template**", choose a template, click on "**Next: Select recipients**".

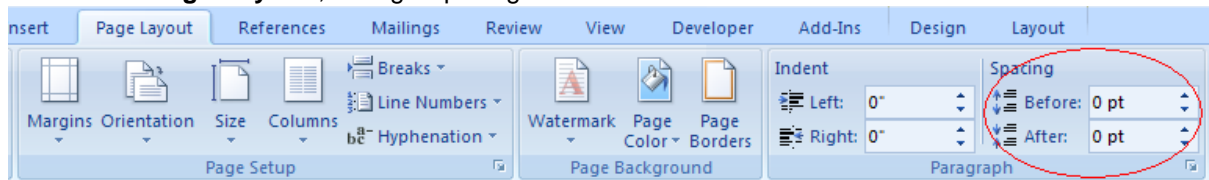


4. Select "**Use an existing list**" and click on "**Browser**" link, choose a database as an existing list, click "**Next: Write your letter**". Surround the section which will be converted to Aztec barcode with the "<" and ">" characters and highlight it.

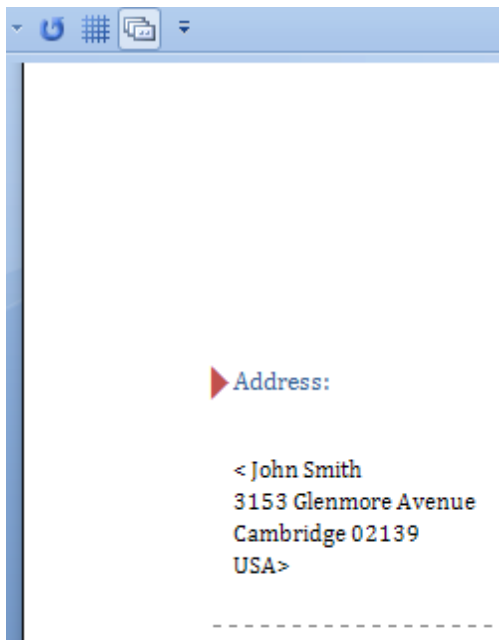




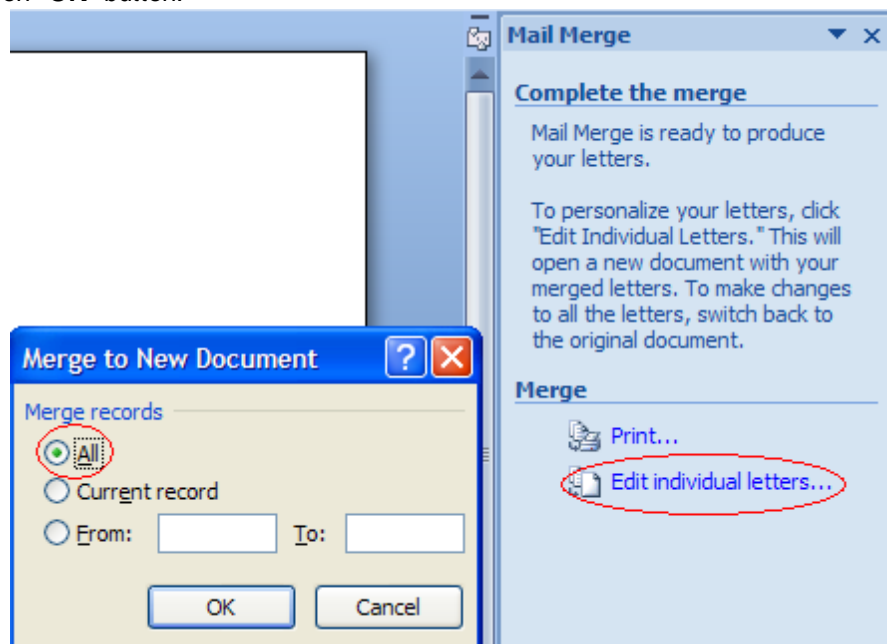
5. Click on "**Page Layout**", change Spacing "**Before**" and "**After**" to 0.



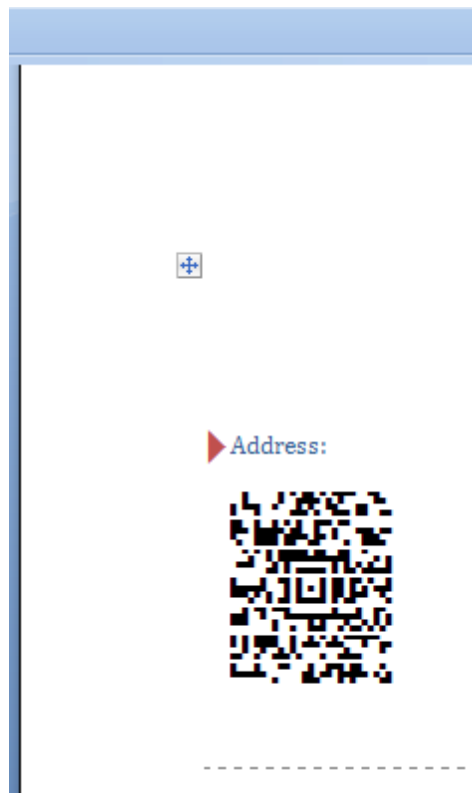
6. Click on "**Next: Preview your letters**", then click on "**Next: Complete the merge**".



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



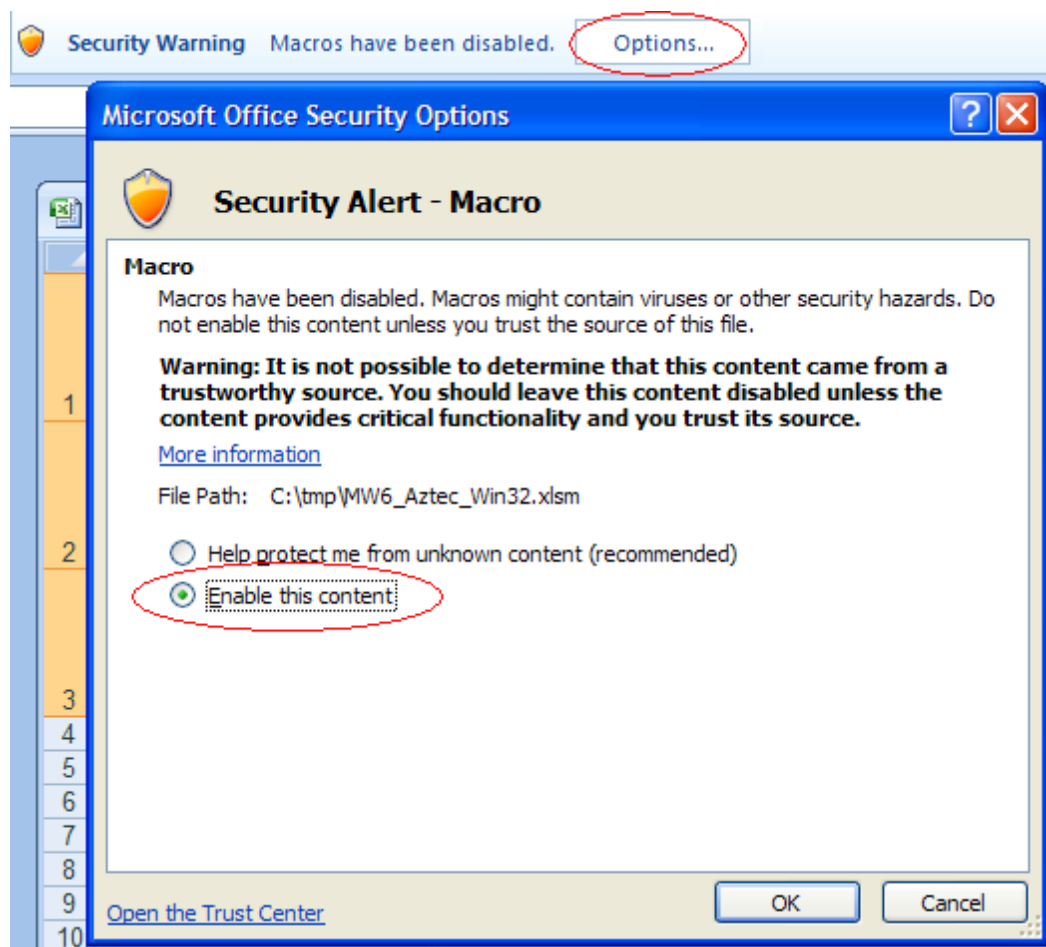
8. Click on "**Add-Ins**", then click on "**Convert All**" to create Aztec barcodes.



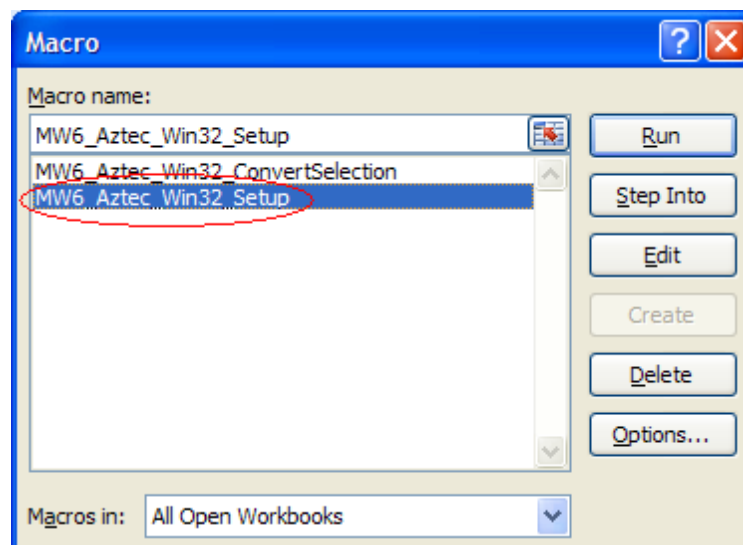
## 4.2 Excel

### 4.2.1 Change Settings

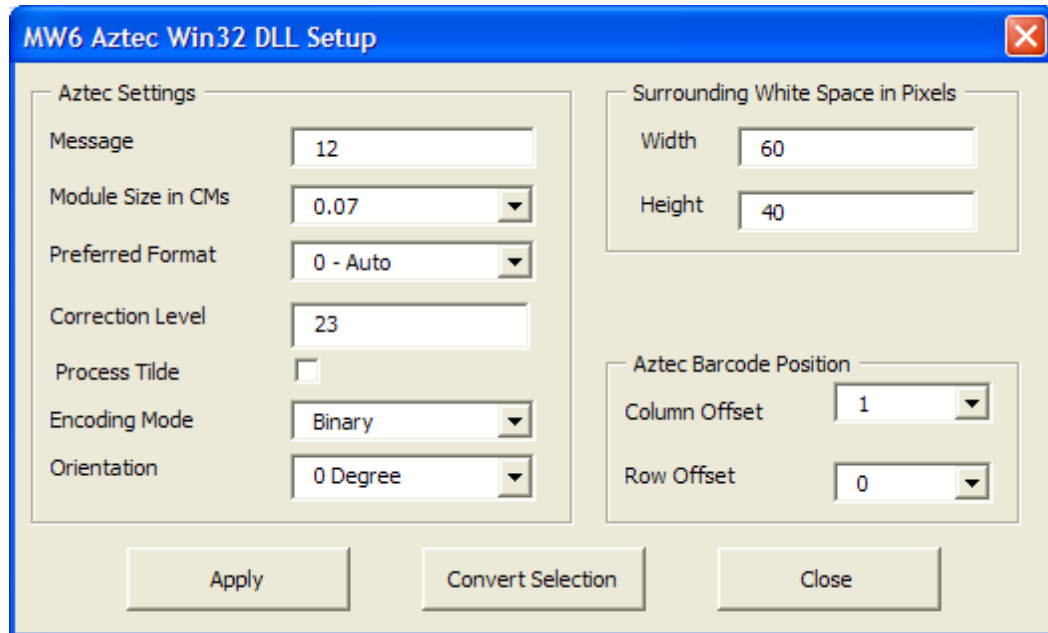
1. In Excel, open MW6\_Aztec\_Win32.xlsm.
2. If you see "**Security Warning, Macros have been disabled**", click on "**Options**" to open "**Microsoft Office Security Options**" dialog, toggle on "**Enable this content**" check box.



3. Click on "Developers" > "Macros", select "MW6\_Aztec\_Win32X\_Setup".



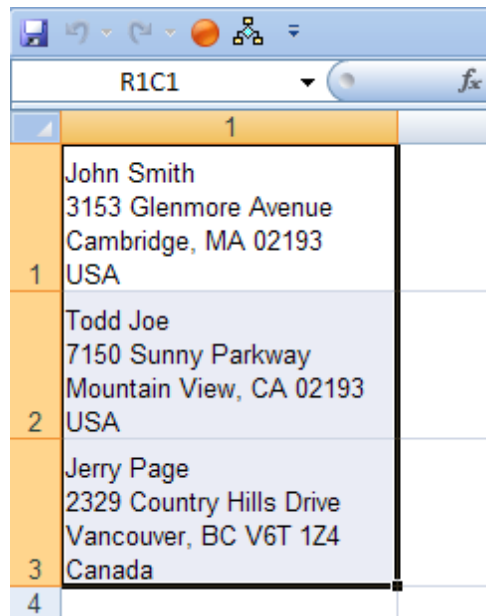
4. Click on "Run".



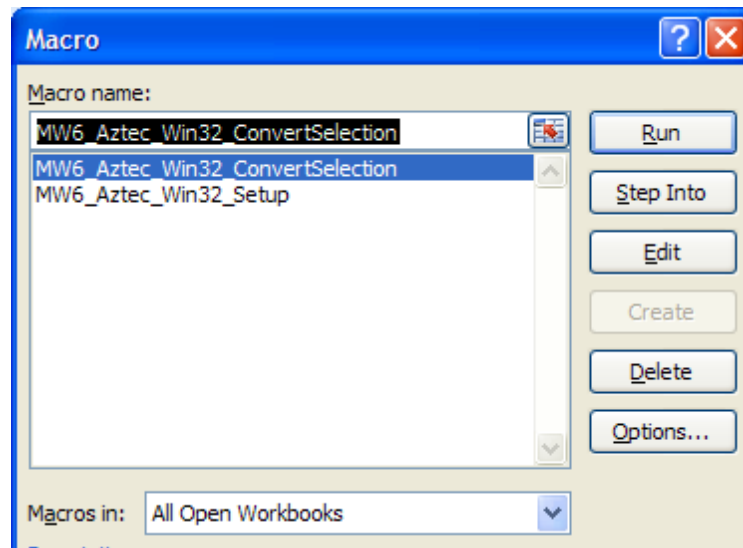
5. Choose a few appropriate values for Aztec configurations, click on "Apply" button to allow the changes to take effect, "Column Offset" and "Row Offset" are used to specify Aztec barcode position relative to the position of the cell which contains the regular string.

## 4.2.2 Create Multiple Barcodes

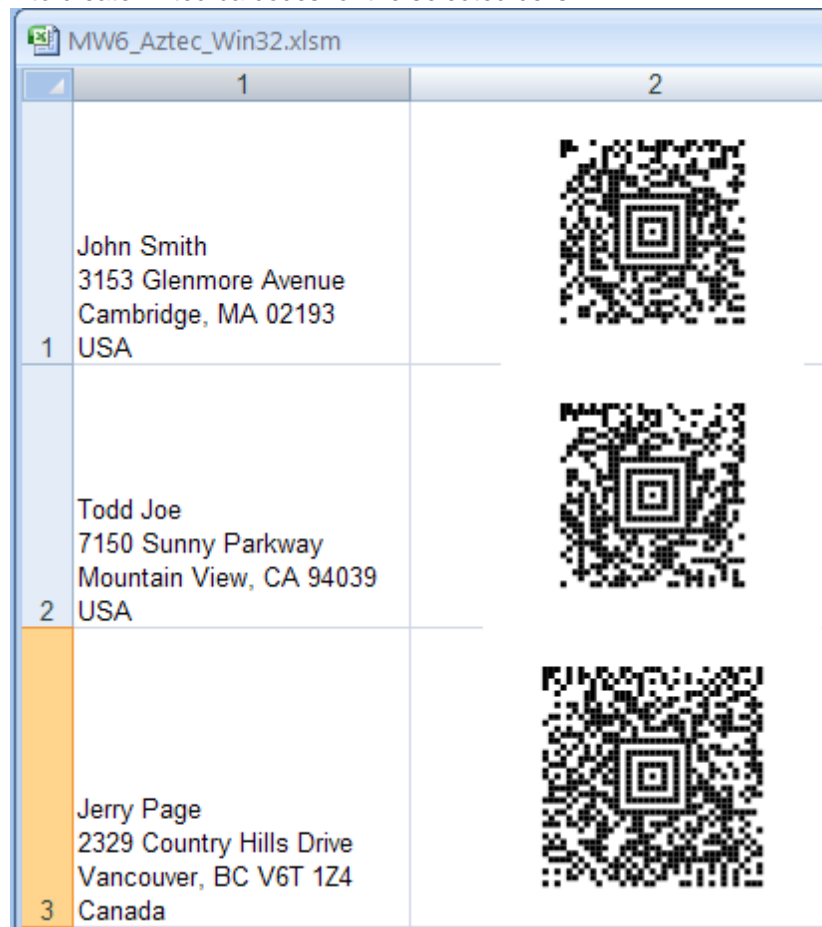
1. Select a few cells.



2. Click on "Developers" > "Macros", select "MW6\_Aztec\_Win32\_ConvertSelection".



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



## 5 Office 2000 & 2003

### 5.1 Word

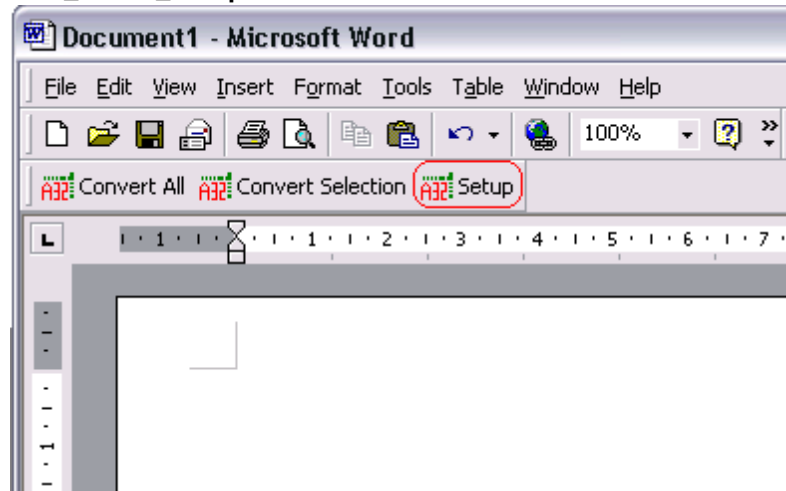
#### 5.1.1 Install Template File

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

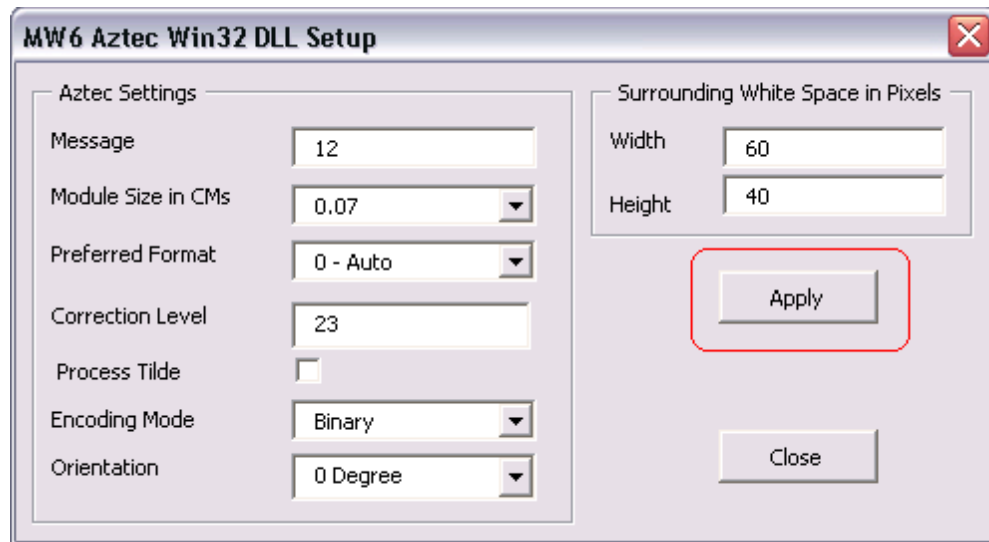
OS	Location
Windows 2000/XP	"C:\Documents and Settings\ <user name="">\Application Data\Microsoft\Word\Startup"</user>
Windows NT4	"C:\Winnt\Profiles\ <user name="">\Application Data\Microsoft\Word\Startup"</user>
Windows 95, 98, ME	Office XP: "C:\Program Files\Microsoft Office\Office10\Startup"  Office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

2. Copy MW6\_Aztec\_Win32.dot, which usually is in the folder "c:\Program Files\MW6 Win32 DLL \Aztec", to the Word Startup folder.

3. Open up Word, click on "**Setup**". If you keep getting the error message "**The macro cannot be found or has been disabled because of .....**", download Office 2000 or 2003 Service Pack 3 from Microsoft website and install it to fix this issue. Or simply click "**Tools**" > "**Macro**" > "**Macros**", select "**MW6\_Aztec\_Win32\_Setup**" and run it.

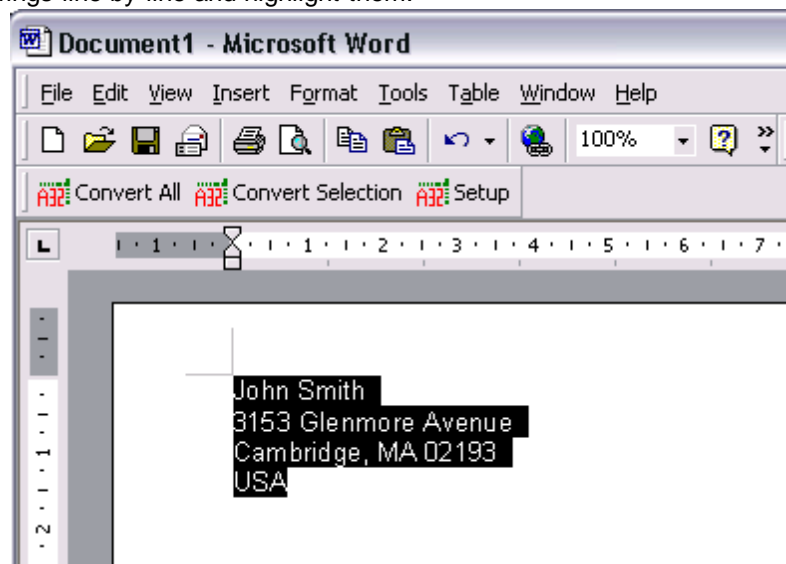


4. Choose a few appropriate values for Aztec configurations, click on "**Apply**" button to allow the changes to take effect.



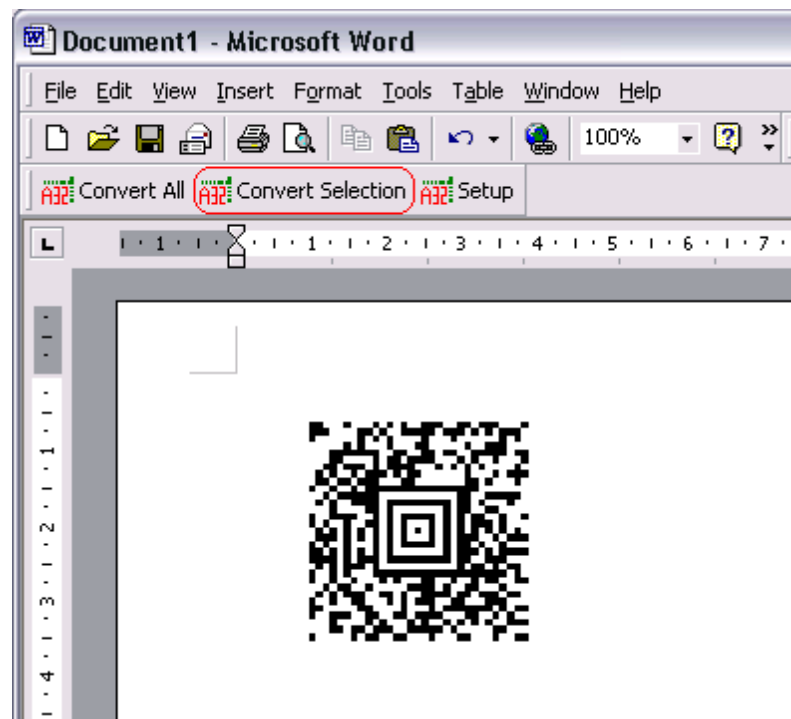
### 5.1.2 Create Single Barcode

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



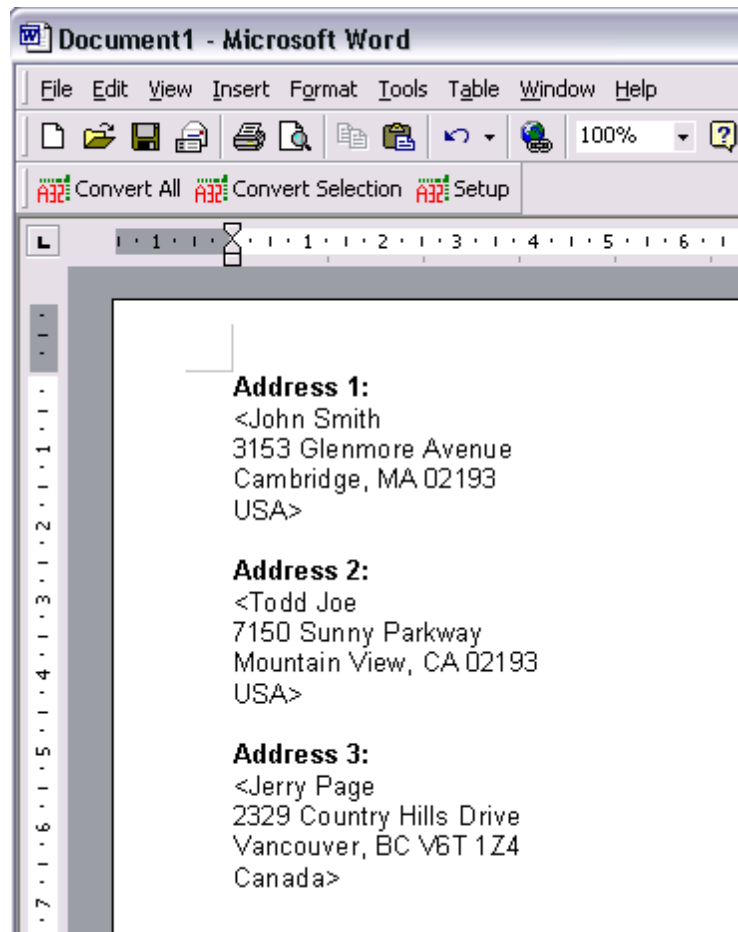
2. Click on "**Convert Selection**" to create an Aztec barcode.



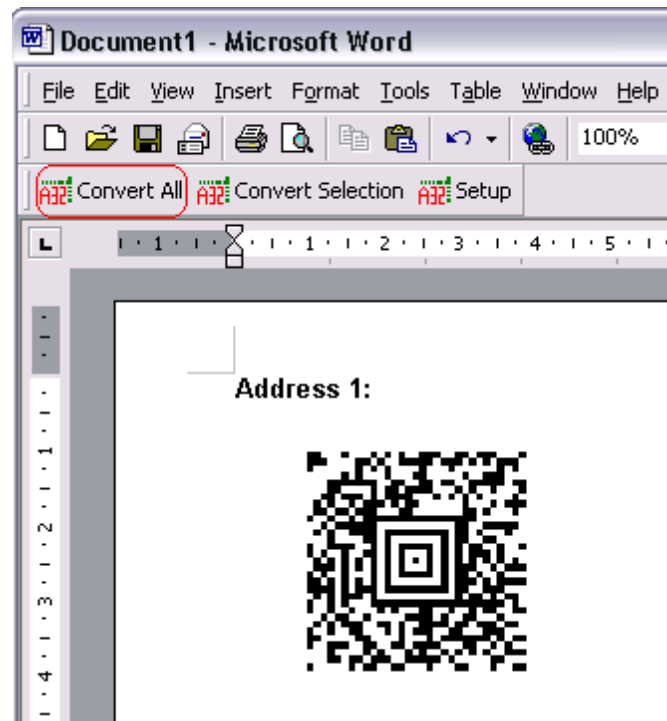


### 5.1.3 Create Multiple Barcodes

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

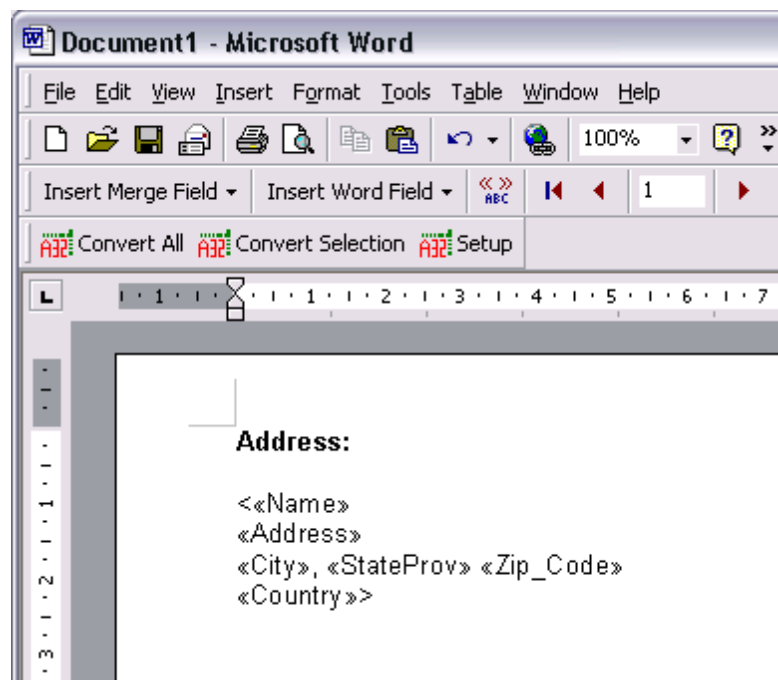


2. Click on "**Convert All**" to create Aztec barcodes for the sections surrounded with the "<" and ">" characters.



#### 5.1.4 Mail Merge

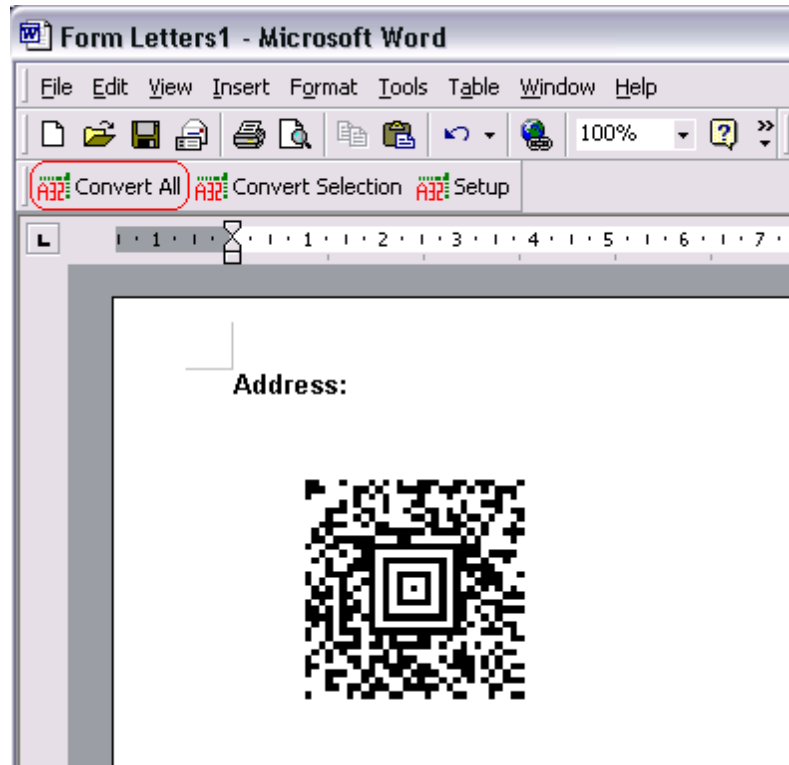
1. In Mail Merge, surround the paragraphs which will be converted to Aztec barcodes with the "<" and ">" characters.



2. Click on "Merge ..."



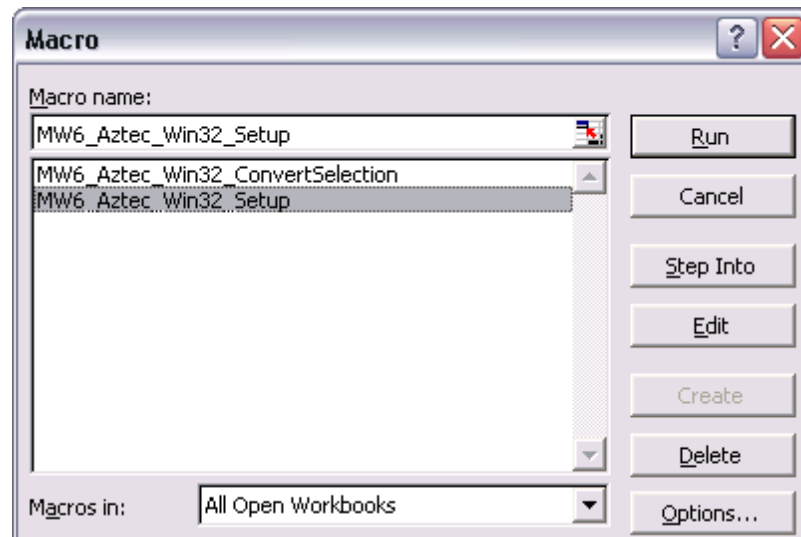
3. Click on "**Convert All**" to create Aztec barcodes for the paragraphs surrounded with the "<" and ">" characters.



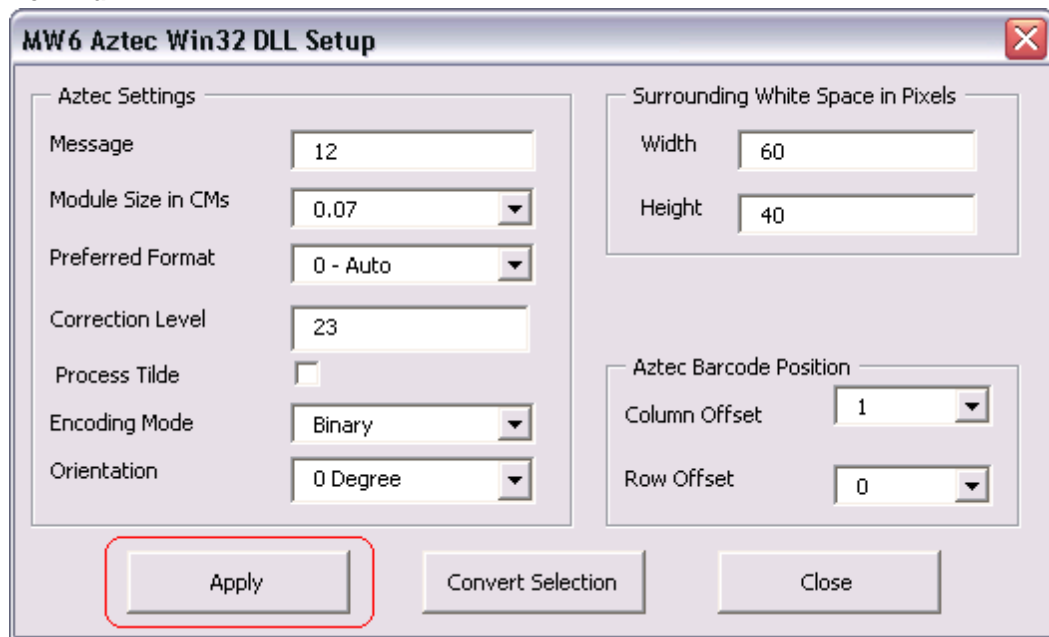
## 5.2 Excel

### 5.2.1 Change Settings

1. In Excel, open MW6\_Aztec\_Win32.XLS.
2. Click on "**Tools**" > "**Macro**" > "**Macros**", select "**MW6\_Aztec\_Win32\_Setup**".



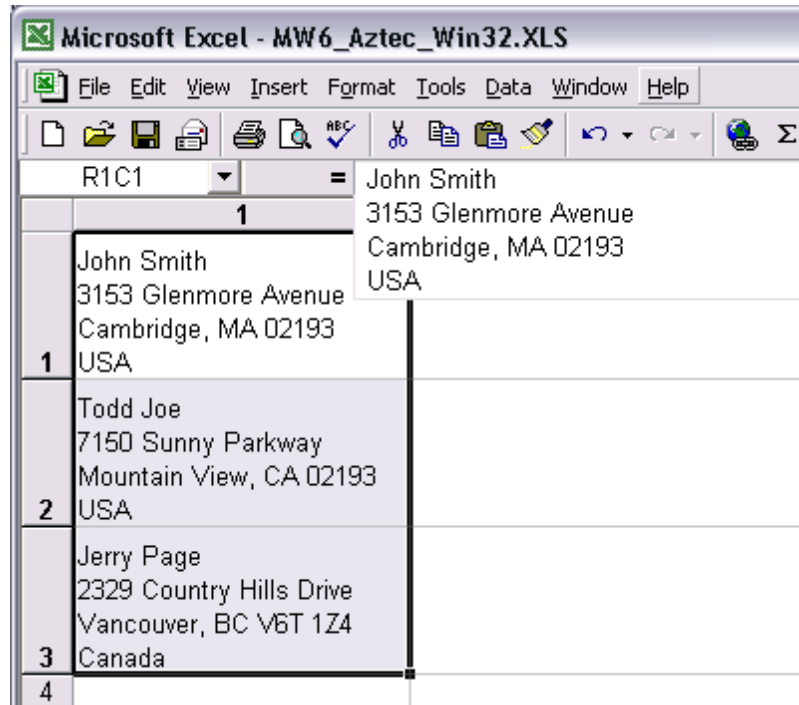
3. Click on "Run".



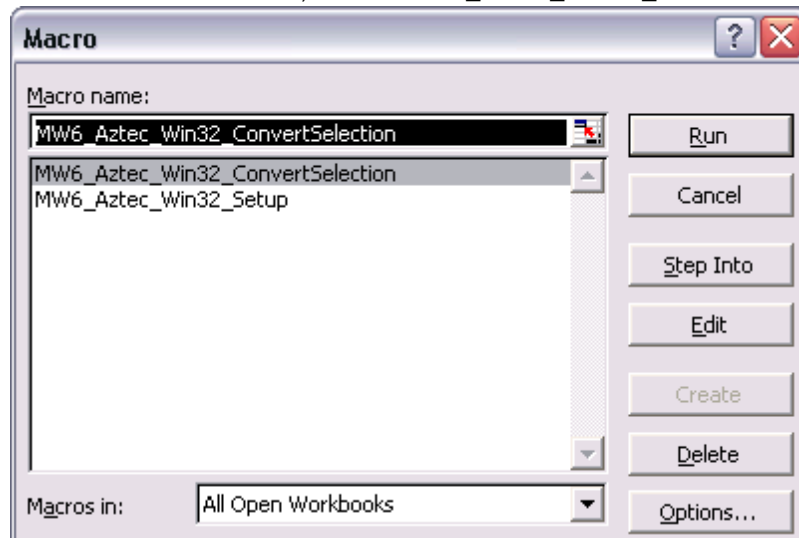
4. Choose appropriate values for Aztec configurations, click on "**Apply**" button to allow the changes to take effect, "Column Offset" and "Row Offset" are used to specify Aztec barcode position relative to the position of the cell which contains the regular string.

## 5.2.2 Create Multiple Barcodes

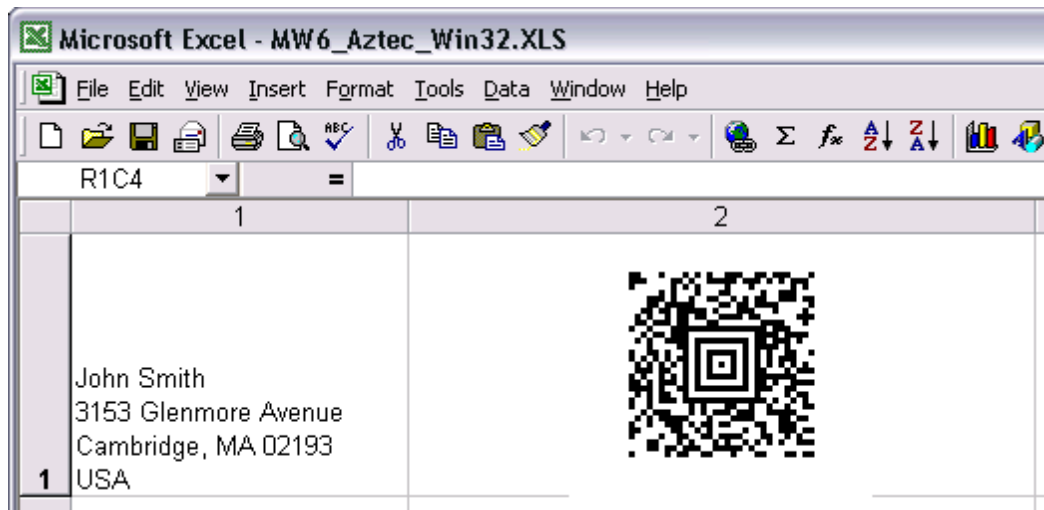
1. Select a few cells.



2. Click on "Tools" > "Macro" > "Macros", select "MW6\_Aztec\_Win32\_ConvertSelection".



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



## 6 Reference Guide

### 6.1 AztecAppearance Function

Sets up the parameters of Aztec barcode appearance.

```
void AztecAppearance(double ModuleSize, WORD Orientation, WORD BorderStyle);
```

#### Parameters

##### *ModuleSize*

Specifies the size (width/height) of the square-shaped module, please refer to this note for more information.

##### *Orientation*

Specifies the orientation of the Aztec barcode, this parameter can be one of the following values:

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

##### *BorderStyle*

Specifies the style of the border rectangle, this parameter can be one of the following values:

Value	Description
0	No Border
1	Dash Border
2	Solid Border

## 6.2 AztecConfigure Function

Sets up the parameters of Aztec barcode.

```
void AztecConfigure(WORD Mode, WORD ECLevel, WORD PreferredFormat, BOOL HandleTilde);
```

### Parameters

#### *Mode*

Indicates which encoding mode is used, this parameter can be one of the following values.

Value	Description
0	Auto mode for mainly encoding ASCII characters (0-127)
1	Binary mode for mainly encoding bytes of data

#### *ECLevel*

Specifies the value of error correction level, the valid value must be between 5 and 95, the recommended value is 23.

#### *PreferredFormat*

Specifies the format of Aztec barcode, please refer to this note for all possible formats.

#### *HandleTilde*

Indicates whether to process the tilde character "~" or not, if this parameter is set to TRUE, non-printable characters can be passed to the library 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).

## 6.3 AztecCopyToClipboard Function

Copies the Aztec barcode WMF format image into the system clipboard.

```
BOOL AztecCopyToClipboard();
```

### Return Value

If the function succeeds, the return value is a nonzero value, otherwise the return value is zero.

### Remarks

Before you call this function, use AztecGetActualSize() function to obtain the actual size of the Aztec barcode and use AztecSetSize() function to set the image size by adding surrounding white space around the Aztec barcode.

### See Also

AztecGetActualSize() Function | AztecSetSize() Function



## 6.4 AztecGetActualRC Function

Gets the actual numbers of rows and columns for the Aztec barcode.

```
void AztecGetActualRC(WORD *ActualRows, WORD *ActualCols);
```

### Parameters

*ActualRows*

A pointer to the variable that receives the final number of rows for the Aztec barcode.

*ActualCols*

A pointer to the variable that receives the final number of columns for the Aztec barcode.

### Remarks

If you set *PreferredFormat* to 0 (Auto format), Aztec Win32 DLL will automatically choose an appropriate format with enough data capacity to encode the string, use this function to retrieve the information about the final numbers of rows and columns.

If you set *PreferredFormat* to other values and the data capacity of the selected format is not big enough to encode the string, Aztec Win32 DLL will also automatically choose an appropriate format with bigger data capacity to encode the string, so the final numbers of rows and columns might not be equal to the numbers of rows and columns specified by the *PreferredFormat* parameter.

## 6.5 AztecGetActualSize Function

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

```
void AztecGetActualSize(BOOL ScreenIsTarget,  
                       DWORD TargetHDC,  
                       DWORD *ActualWidth,  
                       DWORD *ActualHeight);
```

### Parameters

*ScreenIsTarget*

Indicates whether the Aztec barcode is rendered onto computer screen or not.

*TargetHDC*

Device context on which to render the Aztec 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 Aztec barcode (in pixels).

*ActualHeight*

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

## 6.6 AztecGetPatternData Function

Gets the Aztec barcode pattern matrix data.

```
BOOL AztecGetPatternData(LPVOID lpBuffer,  
                        DWORD *Size,  
                        WORD *Rows,  
                        WORD *Columns);
```

### Parameters

#### *lpBuffer*

Pointer to a buffer that receives the character stream ('1's and '0's) storing the Aztec barcode pattern matrix data row by row from the top left matrix corner, '1' indicates the black module and '0' indicates the white module.

If the function fails and the variable pointed to by *Size* returns the required buffer size, in characters.

#### *Size*

[in/out] On input, specifies the size, in characters, of the *lpBuffer*. On output, receives the size, in characters, of the Aztec barcode pattern matrix ('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..

### Return Value

If the function succeeds, the return value is a nonzero value, otherwise the return value is zero.

### Remarks

You can use this function to obtain the Aztec barcode pattern matrix data and render the Aztec barcode onto any device such as the printer, call *AztecSendMessage()* and *AztecConfigure()* functions before calling this function, other functions don't affect the output of Aztec barcode pattern matrix.

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

---

## 6.7 AztecRender Function

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

```
void AztecRender(DWORD hDC, WORD x, WORD y);
```

### Parameters

*hDC*

Device context on which to render the Aztec barcode.

*x*

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

*y*

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

## 6.8 AztecSaveAsBMP Function

Saves the Aztec barcode image as a BMP file.

```
BOOL AztecSaveAsBMP(LPCTSTR FileName);
```

### Parameters

*FileName*

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

### Return Value

If the function succeeds, the return value is a nonzero value, otherwise the return value is zero.

### Remarks

Before you call this function, use `AztecGetActualSize()` function to obtain the actual size of the Aztec barcode and use `AztecSetSize()` function to set image size by adding surrounding white space around the Aztec barcode.

### See Also

`AztecGetActualSize()` Function | `AztecSetSize()` Function

## 6.9 AztecSaveAsWMF Function

Saves the Aztec barcode image as a WMF file.

```
BOOL AztecSaveAsWMF(LPCTSTR FileName);
```

**Parameters***FileName*

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

**Return Value**

If the function succeeds, the return value is a nonzero value, otherwise the return value is zero.

**Remarks**

Before you call this function, use AztecGetActualSize() function to obtain the actual size of the Aztec barcode and use AztecSetSize() function to set image size by adding surrounding white space around the Aztec barcode.

**See Also**

AztecGetActualSize() Function | AztecSetSize() Function

## 6.10 AztecSetBackColor Function

Specifies the RGB triplet of the background color.

```
void AztecSetBackColor(WORD red, WORD green, WORD blue);
```

**Parameters***red*

Specifies the value of red component for a RGB triplet, the valid value should be between 0 and 255.

*green*

Specifies the value of green component for a RGB triplet, the valid value should be between 0 and 255.

*blue*

Specifies the value of blue component for a RGB triplet, the valid value should be between 0 and 255.

## 6.11 AztecSetBarColor Function

Specifies the RGB triplet of the color for the narrow bar.

```
void AztecSetBarColor(WORD red, WORD green, WORD blue);
```

**Parameters***red*

Specifies the value of red component for a RGB triplet, the valid value should be between 0 and 255.

*green*

---

Specifies the value of green component for a RGB triplet, the valid value should be between 0 and 255.

*blue*

Specifies the value of blue component for a RGB triplet, the valid value should be between 0 and 255.

## 6.12 AztecSetDefault Function

Initializes the Aztec barcode parameters with the default values.

```
void AztecSetDefault();
```

## 6.13 AztecSetMessage Function

Specifies the message to encode using the appropriate parameters.

```
void AztecSetMessage(LPCTSTR Message);
```

### Parameters

*Message*

A string that contains the message to encode using the appropriate parameters.

## 6.14 AztecSetSize Function

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

```
void AztecSetSize(DWORD Width, DWORD Height);
```

### Parameters

*Width*

The width, in pixels, of the image.

*Height*

The height, in pixels, of the image.

### Remarks

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

### See Also

AztecGetActualSize() Function

## 6.15 AztecSetStructuredAppend Function

Specifies which symbol this is in a sequence and the total number of symbols in the sequence.

```
void AztecSetStructuredAppend(BOOL AllowSA, WORD SymbolID, WORD SymbolCount);
```

### Parameters

#### *AllowSA*

Indicates whether the structured append is allowed in the current Aztec barcode, if this is FALSE, the parameters *SymbolID* and *SymbolCount* are irrelevant.

#### *SymbolID*

Specifies which symbol this is in a sequence, the parameter must be between 1 and *SymbolCount*.

#### *SymbolCount*

Specifies the total number of symbols in the sequence, the maximum value is 26, which means that up to 26 symbols can be linked together using the structured append protocol.

### Remarks

Don't call this function if you don't need the structured append feature.

## 7 Convert Size from CMs to Pixels

Internally our Aztec Win32 DLL converts the module size 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 Aztec barcode onto the computer screen and the screen resolution is 96dpi.

(1) Set *ModuleSize* parameter to 0.04,  $size\_in\_pixels = 0.04 * 96 / 2.54 = 1.5118$ , round up 1.5118 to 2, so actual module sizewidth is 2 pixels.

(2) Set *ModuleSize* parameter to 0.06,  $size\_in\_pixels = 0.06 * 96 / 2.54 = 2.2677$ , round down 2.2677 to 2, so actual module size width is 2 pixels.

(3) Set *ModuleSize* parameter to 0.07,  $size\_in\_pixels = 0.07 * 96 / 2.54 = 2.6456$ , round up 2.6456 to 3, so actual module size is 3 pixels.

Different *ModuleSize* parameter values might end up with same module size width in pixels due to performing rounding operations.

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## 8 Aztec Formats

This table lists all possible formats of the Aztec barcode and their data capacity.

Value	Description	Capacity (in digits)	Capacity (in alphanumeric characters)	Capacity (in bytes)
0	Auto format			
1	15 X 15 compact format	13	12	6
2	19 X 19	18	15	8
3	19 X 19 compact format	40	33	19
4	23 X 23	49	40	24
5	23 X 23 compact format	70	57	33
6	27 X 27	84	68	40
7	27 X 27 compact format	110	89	53
8	31 X 31	128	104	62
9	37 X 37	178	144	87
10	41 X 41	232	187	114
11	45 X 45	294	236	145
12	49 X 49	362	291	179
13	53 X 53	433	348	214
14	57 X 57	516	414	256
15	61 X 61	601	482	298
16	67 X 67	691	554	343
17	71 X 71	793	636	394
18	75 X 75	896	718	446
19	79 X 79	1008	808	502
20	83 X 83	1123	900	559
21	87 X 87	1246	998	621
22	91 X 91	1378	1104	687
23	95 X 95	1511	1210	753
24	101 X 101	1653	1324	824
25	105 X 105	1801	1442	898
26	109 X 109	1956	1566	976
27	113 X 113	2116	1694	1056
28	117 X 117	2281	1826	1138
29	121 X 121	2452	1963	1224
30	125 X 125	2632	2107	1314
31	131 X 131	2818	2256	1407
32	135 X 135	3007	2407	1501
33	139 X 139	3205	2565	1600
34	143 X 143	3409	2728	1702
35	147 X 147	3616	2894	1806
36	151 X 151	3832	3067	1914

If you set *PreferredFormat* to 0 (Auto format), our Aztec Win32 DLL will automatically choose an appropriate format with enough data capacity to encode the string.

If you set *PreferredFormat* to other values and the data capacity of the selected format is not big enough to encode the string, our Aztec Win32 DLL will also automatically choose an appropriate format with bigger data capacity to encode the string.

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