# eFORMz Mini-Manual

# Barcodes

# Minisoft<sup>®</sup> eFORMz<sup>®</sup>

Version 10.0

Minisoft, Inc. 1024 First Street Snohomish, WA 98290 U.S.A.

1-800-682-0200 360-568-6602 Fax: 360-568-2923 Minisoft Marketing AG Papiermühleweg 1 Postfach 107 Ch-6048 Horw Switzerland

> +41-41-340 23 20 info@minisoft.ch www.minisoft.ch

Internet access: sales@minisoft.com

sales@minisott.com support@minisoft.com http://www.minisoft.com http://www.minisoft.us

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#### D. Limited Warranties and Limitations on Damages and Remedies.

1. Only the limited warranties expressly described in this section are made to the Customer purchasing this Product. No warranty of any kind, whether express or implied, is made to any third-party or other transferee or successor of the Customer.

2. MINISOFT warrants that it has the right to grant the licenses contained in this Agreement.

3. MINISOFT warrants that this product will execute its programming instructions when properly installed on a properly configured computer for which it is intended. MINISOFT makes no warranty of any kind, implied or express, that the Product will meet Customer's requirements or that the Product will be uninterrupted or error-free 4. MINISOFT, Inc. warrants the media upon which this Product is recorded to be free from defects in materials and workmanship under normal use for a period of 90 days from the date of purchase. During the warranty period MINISOFT will replace media that prove to be defective. Customer's exclusive remedy for any media that proves to be defective shall be to return the media to MINISOFT for replacement.

5. MINISOFT' only obligation, liability and/or remedy, with respect to the warranties set forth in this Agreement shall be one of the following, which MINISOFT shall have sole discretion to choose: (1) as described above, to provide replacement media (whether in the form of the current release or otherwise) for the Product; (2) to replace, without charge, the Product with a functionally equivalent software product; or (3) to refund the applicable license fees paid to MINISOFT by Customer.

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4. Entire Agreement. This Agreement contains the complete understanding between the parties and shall as of the date the Product is first installed supersede all other agreements, whether they are written or oral, between the parties concerning the particular subject matter. The language of this Agreement shall for all purposes be construed as a whole, according to its fair meaning, not strictly for or against either party, and without regard to the identity or status of any person who drafted all or any part of it. No purchase order or any other purchasing instruments issued by Customer, even if such purchase order or other purchasing instrument provides that it takes precedence over any other agreement between the parties, shall be effective to contradict, modify, delete from or add to the terms of this agreement in any manner whatsoever.

5. Severability. In the event that any one or more provisions of this Agreement is found by a court of competent jurisdiction to be unenforceable or invalid, then notwithstanding any such finding the remainder of this Agreement shall remain in full force and effect, and such provision that is found to be unenforceable or invalid shall be deemed severed.

6. Waiver. Neither party's right to require performance of the other party's obligations hereunder shall be affected by any previous waiver, forbearance, or course of dealing, nor shall any waiver or forbearance or other course of dealing at any time with respect to any term or condition in this Agreement be effective unless evidenced in writing signed by the waiving party as to such waiver, forbearance or other course of dealing. No waiver or modification of this Agreement or any covenant, condition or limitation herein contained shall be valid and no evidence of waiver or modification shall be offered or received in evidence in any proceeding, arbitration or litigation between the parties hereto arising out of or affecting this Agreement or the rights or obligations of the parties hereunder, unless such waiver or modification is in writing duly signed by both parties.

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# **1D Barcodes**

1D Barcodes can be created using a custom or system variable. eFORMz supports the following barcode types:

3 of 9	UPCE	CODE128
3 of 9 Extended	EAN8	USER-DEFINED
CODEABAR	EAN13	POSTNET
2 of 5	JAN8	USPS Intelligent Mail
MSI	JAN13	
UPCA	CODE11	

To create a barcode using data from your input file, use the following method:

1. From the Data Viewer highlight the selected range of data you would like to barcode.

A Minisoft eFORMz Composer (8.00.00), Licensed	o Minisoft	- 0 <b>X</b>
File Project Run Host Tools Window Help		
Project 🛛 🖾	Viewer	d, 🛛
A sampstm     ←     B sample_statement     ∲     B sample_statement	View - 🔄 Open Data	46.0:408.0
Variables		• • • • • • •
← III Rules		
Place Text P ™ placeDATE P Ø Actions	0000012345	
	90 <sup>.</sup>	
	05/01/00	• • • •
Variables	ACCOUNT NO.	
Variable Value CompanyName HINISOFT, INC.	200	
	DATE 05/01/00	
		• • • • • •
		0.00
sample_statement	ample_statement	

2. *Right click* and select *Add Rule* > 1*D Barcode*.

3. From the *Variable* dialog box enter a new variable name and click *OK*:

Name ACCTNUM			
Horizontal position 4419.8	Vertical position	936.0	
# of characters 10	Height	0.0 * 0 = Form li	* ne height
Repeat 1 time(s)	Increment lin	e by 1	
Copy original data to output Include variable in XML output			
	<u>0</u> K		ancel

- *TIP*: If you would like the original data to appear in its original position select *Copy original data to output.* 
  - 4. The *Rules* dialog box displays. Enter a new rule name and click *OK*.

Rule Properties		×	
Name Account	Number		
Execute on all copies			
Edit condition	<u>о</u> к	<u>C</u> ancel	

5. From the *Barcode Action* dialog box, select the barcode type along with the desired width and height. Default values are:

-	, 3
Barcode Action	×
Position	
Barcode type 30F9  Generate checksum Trim data	Barcode Color
Horizontal position 2088.0 With Vertical position 175.6 Heid	tth 10.0000
Alignment Rotation 0   None	
Center Wid	th: 0.0
Repeat Interval Spacing <sup>*</sup> 0.0 *0=Use Form	's lines per inch
Conditional vertical increment	
<u></u> K	<u>C</u> ancel

width = 10 height = 300.0

Once your barcode specifications have been set click OK.

- \_\_ 0 <mark>\_\_X</mark>\_ Minisoft eFORMz Composer (8.00.00), Licensed to Minisoft File Project Run Host Tools Window Help Project 🗹 🛛 👔 🗎 Viewer ø 🛛 Sample\_statement
   Samp -View 👻 🚭 Open Data stmdata.dat (= 1 🛋 🔍 🔍 120 dpi 🗄 🕂 🛃 4878.0:510.0 B Rules PaceCompanyName P I O Actions C Place Text 0000012345 → Place Text → PlaceDATE → O Actions → O Place Text 90 - M AccountNumber - O Actions - O 30F9 Barcode 05/01/00 -• 4 Project eDIRECT ø' 🛛 🔲 Variables 
   Variable
   Value

   CompanyName
   NINISOFT, INC.

   DATE
   05/01/00

   ACCTNUM
   0000012345
   90 DATE 05/01/00 4 • **∢** ≪ ≫ Þ 0.0 **4 ≪ ≫ Þ 0.0** I≣ 6.000 **I** 10.00 🗎 sample\_statement sample\_statement
- 6. The newly created barcode will appear in your eFORMz Viewer:

If the barcode is not in the exact position you would like it to be, using your mouse, click-and-drag the barcode into place.

## **Barcode Rotation**

To rotate a barcode:

1. From the *Barcode Action* dialog box, select the rotation angle from the *Alignment* > *Rotation* field. Options available are 0, 90, 180, and 270.

Barcode Action
Position
Barcode type 30F9
Generate checksum
✓ Trim data
Horizontal position 2088.0 Width 10.0000
Vertical position 175.6 Height 300.0000
Alignment
Rotation 0 💌 🖲 None
0 C Right
90 Center Width: 0.0
270
Repeat Interval Spacing* 0.0 *0-Lise Form's lines per inch
Conditional vertical increment
QK Cancel

2. Once an angle has been selected, click *OK*. The rotated barcode will now appear in the eFORMz Viewer.



## **Direct Reference**

As with strings of characters, 1D barcodes can be placed directly from the data viewer. All incoming barcodes will appear in the Form Viewer, however, if the barcode needs to be moved or changed in some way, it can be copied by direct reference.

1. From the eFORMz Data Viewer, *right click* the barcode to be placed on the form and select *Add Rule > 1D Barcode*.

Viewer				<u>م</u> ک
View 👻 🚭 Open Data				
🔍 🕄 120 dpi 🔣 🖶 🛃 🔢 🔒	P1018001_0402_1712.J103	1.txt (= 1 🛋	4392.0:5	358.0
	<u> </u>			8
	8			8 I
	36			36
	.8 · · · · · · · · · · · · · · · · · · ·			8 -
		Add Variable	]	2
	÷	Add Procedure 🕨		
•	· ฏ. · · · · · · · · · · · · ·	Add Rule 🕨	Place Text	
		Grid	2D Barcode	
		Edit Variable	Special Fonts	
			Load Image	
			Bar Chart	
			Page Number	
			Notify	=
				-
		0.0 [1≣ 6.0	500 <b>1</b> 16.67	
Blank				

2. The Rule Properties dialog box will display. Enter a value for the *Name* field, and make any adjustments to positioning and size.

Rule Properties	X		
Name Barcode			
Horizontal position 4554.5 Vertical position 5860.0			
Rotation 90 V Height 170.0 *			
* 0 = Form line he	eight		
Repeat 1 time(s) Increment line by 1			
Execute on all copies			
Edit condition OK Cancel	I		

3. The Barcode Action dialog box will appear. Select the *Barcode type* and click *OK* to continue.

Barcode Action	×	
Position		
Barcode type CODE 128 CODE 128 EAN8 Trit EAN13 JAN8 Horizot JAN13 Vert MSI UPCA UPCE Rotation 90 V (Non	Barcode Color Width 7.8483 Height 170.0000	
⊖ Rigt ⊖ Cen	it ter Width: 0.0	
Repeat Interval Spacing* 0.0 *0=Use Form's lines per inch		
	<u>O</u> K <u>C</u> ancel	



4. The barcode will be visible in the Form Viewer.

## 1D Barcode Types



#### H-P

Code 39 is an alphanumeric bar code that can encode decimal numbers, the upper case alphabet, and the following special symbols:

- . \* \$ / % +

Code 39 characters are constructed using nine elements, five bars and four spaces. Of these nine elements, two of the bars and one of the spaces are wider than the rest. Wide elements represent binary ones (1), and narrow elements represent binary zeros (0) corresponding to check character values.

## 3 of 9 Extended



h-p

Full ASCII Conversion

Extended Code 39 encodes the full 128 character ASCII character set by paring Code 39 characters.

#### Codabar

Codabar is a discrete, numeric code with special characters and four different start/ stop characters. Each character is encoded as seven elements, with two or three of the elements wide. While the Codabar check character is undefined, AIM has a recommended check character.

Data:

0-9 - \$ :/ . + A B C D



012345

Interleaved 2 of 5 code is a numeric only barcode. Each character of this code is represented by five elements, two wide and three narrow. Wide elements are decoded as binary one (1), and narrow elements are decoded as binary zero (0). The wide to narrow element ratio should be between two and three.

Whether or not the elements used to encode a character are bars or spaces depends upon the location of the character within the message. The first character of the message is encoded into the bars immediately following the start character. The second character of the message is encoded into the spaces between the bars of the first character, thus eliminating the intercharacter space. Because of this, Interleaved 2 of 5 is a continuous barcode.



1230

MSI Code is a numeric, continuous code. Each character consists of four bits, using a straight binary encodation. Each bit is encoded in the following way: if the bit is a 1, the pattern to be used is a wide bar followed by a narrow space. If the bit is to be a 0, the pattern is a narrow bar followed by a wide space.



Version A encodes a twelve-digit number. The first number encoded is the number system character, the next ten digits are the data characters, and the last digit is the check character.

The number system character is printed in human readable form to the left of the UPC symbol. Seven of the ten possible numbers have been assigned.



Version E allows zeros to be removed from the data to be encoded, resulting in a shorter tag. The encodation of the data characters is different than Version A.

EAN Codes

EAN 13

The EAN Code encode either 13 or 8 characters. The 13 character version is a superset of the UPC A code. The 8-character version is for printing on smaller packages.



EAN 8

The EAN 8 symbol encodes two flag characters, five data characters, and a check character.

### JAN Code

The JAN codes are the same as the EAN codes, with the flag characters set to "49".

Code 11



01234596

Code 11 is a numeric, high-density code with one special character -. Each character is encoded with five elements, either two wide and three narrow, or one wide and four

narrow. The wide elements are a binary one (1), and the narrow elements are a binary zero (0).



CODE 128

Code 128 is a continuous, multi-level, full ASCII code. Each of the Code 128 characters consists of three bars and three spaces. The bars and spaces may be one, two, three, or four modules wide. The total length of each code 128 character is eleven modules, with the total length of the bar modules odd, and the total length of the space modules even.

Barcode 128 has three different encoding methods: A, B and C. The encoding is determined by the start code. The default encoding method is B and it is used for upper and lower case alpha. A is used for upper case alpha and control characters, and C is used for digits, encoding 2 digits per barcode character. You can specify a different encoding method (either at the start and/or in the middle of the data) by using a special data character. eFORMz uses the exclamation mark to specify special data characters. The sequences for special data characters are:

- "!A" to specify or switch to CODE A
- "!B" to specify or switch to CODE B
- "!C" to specify or switch to CODE C

"!S" - To switch the next data character of CODE B if currently using CODE A, or to switch the next data character to CODE A if currently using CODE B.

There are also 4 different function codes that various organizations use to delimit fields within barcodes They are FNC 1, FNC 2, FNC 3, and FNC 4. The sequences for these are "!1", !2", "!3", and "4", respectively.

For example:

"[Start\_C]FNC19611804173422370101951" should be "!C!19611804173422370101951" "[Start\_C]FNC142013326" should be "!C!142013326"

For a list of Code 128 characters, visit: http://www.adams1.com/128table.html

The final size of the barcode depends on the dimension of the smallest bar, the type of barcode, and the number of characters encoded. This website has a handy calculator to figure the total width: http://www.adams1.com/128code.html

### POSTNET

The Postal Service developed the POSTNET (Postal Numeric Encoding Technique) barcode to encode zip code information on letter mail for rapid and reliable sorting by barcode sorters (BCSs). The POSTNET barcode can represent a five-digit ZIP Code (32 bars), a nine-digit ZIP+4 code (52 bars), or an eleven-digit delivery point code (62 bars).

For example:

#### Helaladaabiddadhadhaad

## **USPS** Intelligent Mail

The US Postal Service is promoting the use of this barcode because it expands the ability to track individual mail pieces and provides customers with greater visibility into the mail-stream. USPS will require the use of this barcode to qualify for automation printing beginning in May 2011. For further information, see:

https://ribbs.usps.gov/intelligentmail\_mailpieces/documents/tech\_guides/SPUSPSG.pdf

### ի հայուների անդրդուների անդրդակին անդրդանին է

The information to be barcoded is a string of numbers 20 to 31 digits long. Its layout is described in section 3.1.3 of the above manual. Please note that the only validation that eFORMz performs on the data is to make sure there are at least 20 digits and that all the characters are digits.

The physical dimensions of the barcode are described in section 3.3. From this we determined that the "Width" should be set between 14.976 and 18 decipoints and the height should be set between 30 and 39.6 decipoints.

## 2D Barcodes

2D Barcodes can be created using a custom or system variable. eFORMz supports the following 2D Barcodes:

Aztec

Data Matrix

MaxiCode

PDF417

Quick Response (QR)

To create a 2D Barcode using data from your input file, use the following method:

1. From the Data Viewer highlight the selected range of data you would like to barcode or create a custom variable.

Minisoft eFORMz Composer (8.00.00), Licensed t	to Minisoft	- 0 <b>- X</b>
File Project Run Host Tools Window Help	p	
Project 🛛 🖸	Viewer	ø' 🛛
🚔 sampstm	View 🗸 🖨 Open Data	
P I sample_statement	Q.Q. 120 dpi 🗄 🖶 🛤 🖕 stmdata.dat ← 1 ⇔	5646.0:408.0
Q Variables − XK CompanyName	· · · · · · · · · · · · · · · · · · ·	🌢
P		
P ™ placeCompanyName		
Place Text P-™ placeDATE	0000012345	
Place Text	290	
	05/01/00	
Project eDIRECT		
Variables 2 X	0000012345	
Variable Value CompanyName MINISOFT, INC.		
DATE 0 5 / 0 1 / 0 0		
		•
		10.00
sample_statement	sample_statement	

For assistance in creating the correct specification for 2D Barcodes, feel free to contact your Minisoft support representative for further information.

2. *Right click* and select *Add Rule* > 2*D Barcode*.

3. From the *Variable* dialog box enter a new variable name and click *OK*:

Variable	x		
Name ACCTNUM			
Horizontal position 4419.8	Vertical position 936.0		
# of characters 10	Height 0.0 *		
	* 0 = Form line height		
Repeat 1 time(s)	Increment line by 1		
Copy original data to output	Include variable in XML output		
Use as a bookmark in PDF output			
	<u>O</u> K <u>C</u> ancel		

*TIP*: If you would like the original data to appear in its original position select *Copy original data to output.* 

4. The *Rules* dialog box displays. Enter a new rule name and click *OK*.

Rule Properties				
Name AccountNumber				
Use variable ACCTNUM				
Execute on all copies				
Edit condition	<u>о</u> к	<u>C</u> ancel		

5. From the *2D Barcode Action* dialog box, select the barcode type:

2D Barcode Action				
Position				
Barcode type MaxiCode				
Horizontal position 2790.0 Rotation 0				
Vertical position 582.0				
Repeat Interval Spacing* 0.0 *0=Use Form's lines per inch				
Conditional vertical increment				
Properties <u>O</u> K <u>C</u> ancel				

Once your barcode specifications have been set click OK.

## 2D Barcode Types

### Aztec

The Aztec barcode is a matrix barcode type that does not require quiet zones:



0123456789 ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz

From the 2D Barcode Action dialog box, select Properties:

2D Barcode Action				
Position				
Barcode type Aztec 💌				
Horizontal position 576.0 Rotation 0				
Vertical position 690.0				
Repeat Interval Spacing* 0.0 *0=Use Form's lines per inch				
Conditional vertical increment				
Properties <u>O</u> K <u>C</u> ancel				

The Aztec Properties dialog box will display:

Aztec Properties			
Resolution	96 dpi 👻		
Error correction level 0			
Add reader initialization symbol			
<u>0</u> K	<u>C</u> ancel		

Options:

#### Resolution

The density of the barcode. 96 dpi (dots-per-inch) is low resolution, while 600 dpi is high resolution. The default is 96 dpi.

#### Error correction level

The Reed-Solomon error correction level placed in the symbol. More error correction creates a bigger symbol that is less likely to be damaged. Exceeding a level of 23 is not recommended, especially with larger amounts of data.

#### Add reader initialization symbol

Default unchecked. The reader intialization symbol is needed for older barcode scanners. If checked, the reader initilization symbol will be added to the Aztec barcode.

Characters, text, numeric values and bytes of data can be encoded in an Aztec barcode. A two-dimensional imaging device such as a CCD (charge-coupled device) camera is necessary to scan the symbology.

## Data Matrix

The Data Matrix barcode is a matrix symbol which allows efficient encoding of data into a square barcode. It includes data correction:



0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz

From the 2D Barcode Action dialog box, select Properties:

2D Barcode Action				
Position				
Barcode type Data Matrix				
Horizontal position 576.0 Rotation 0				
Vertical position 690.0				
Repeat Interval Spacing* 0.0 *0=Use Form's lines per inch				
Conditional vertical increment				
Properties <u>O</u> K <u>C</u> ancel				

The DataMatrix Properties dialog box will display:

DataMatrix Properties				
Encoding mode First character of data				
Resolution 96 dpi				
Format Automatic 💌				
Margin 1.71				
<u>OK</u> <u>C</u> ancel				

Options:

#### Encoding Mode

The data represented in the symbol may be encoded using one of the following modes:

The ASCII option encodes data that contains ASCII characters (0-127), such as text that includes uppercase and lowercase letters, with or without numbers and punctuation.

The *C*4*o* option encodes data that holds only numeric values and uppercase characters.

The *Text* option encodes data that contains numeric values and lowercase characters.

The *BASE256* option can encode images, double-byte characters, binary data and 8-bit values.

The default mode is the *First character of data* option, which compresses (encodes) the data based upon the the first character of the selected string being a single digit. This first character will not be a part of the barcode.

#### Resolution

The density of the barcode. 96 dpi (dots-per-inch) is low resolution, while 600 dpi is high resolution. The default is 96 dpi.

#### Format

There are 31 formats, which refer to the sizing of the DataMatrix barcode in relation to its data capacity. The default format is *Automatic*, which adopts the barcode format based upon the numeric, alphanumeric and binary capacity of the amount of data encoded. The other 30 format sizes have various capacity requirements. An internet search for the maximum data capacity for the different symbol sizes will yield multiple results. A helpful table can be found at the following URL:

 $http://www.idautomation.com/barcode-faq/2d/data-matrix/\#DataMatrix\_Formats$ 

#### Margin

The quiet zone border. The quiet zone border is the blank border of a barcode that indicates the barcode boundaries. The default is 1.71 decipoints. 1 pixel = 7.5 decipoints.

Characters, text, numeric values and bytes of data can be encoded in a Data Matrix barcode. A two-dimensional imaging device such as a CCD camera is necessary to scan the symbology.

## MaxiCode

The MaxiCode is used primarily by UPS to route and track packages:



[)>-03001-02996890520000-029840-029003-0291Z12898809-029UPSN-029868124-029246-029-0291/1-029000-029N-029-029HENDERSON-029NV-030-004

MaxiCode barcodes are fixed-size codes which hold up to 93 data characters. MaxiCodes encode two messages. The main message typically encodes the postal code, country code and the service code. The secondary message typically encodes a shipping address, though it can also encode other information. The symbology may be used in different modes:

MaxiCode Encoding Modes			
Mode	Use		
0	Obsolete.		
1	Obsolete.		
2	Primary message encodes the numeric postal code (US Carrier) up to nine digits in length, country code and service code while the secondary message encodes additional data. Up to 93 characters may be encoded.		
3	Primary message encodes the alphanumeric postal code (International Carrier) up to six digits in length, country code and service code while the secondary message encodes additional data. Up to 93 characters may be encoded.		
4	Standard Symbol. General information is encoded. Any data up to 90 data characters is automatically split between primary and secondary messages.		
5	Secure Symbol. General information is encoded. Any data up to 74 data characters is automatically split between primary and secondary messages. Enhanced error correction is employed.		

6	Reader Program. Used for programming hardware
	devices, such as barcode readers.

The following is an example of encoding data in MaxiCode barcodes in eFORMz, using Mode 2. The data encoded begins with [)>RSo1GS as required by UPS. Next, the 2-digit format of the year (YY) is added. This is followed by the zip code, which is a numericonly 5-digit zip code with a 4-digit zip code extension. If no extension exists, four zeros (0000) must be specified. Next, the 3-digit country code is added. For mode 2, which is used for US carriers, the country code is 840. For other country codes, mode 3 should be used instead. After this, the 3-digit class of service code is added. The secondary message follows, and it has more flexibility.

The following basic format should look as follows:

[)>RSo1GSYearPostalCodeGSCountryGSServiceGSmessage

Our detailed example, with a sample secondary message, will look as follows:

"[)>"+RS+"01"+GS+"96890520000"+GS+"840"+GS+"003"+GS+"1Z128 98809"+GS+"UPSN"+GS+"868124"+GS+"246"+GS+GS+"1/1"+GS+GS+" N"+GS+GS+"HENDERSON"+GS+"NV"+RS+EOT

There are three character delimiters used, each with an American Standard Code for Information Interchange (ASCII) value. The RS character delimiter has a value of ~030, the GS character delimiter has a value of ~029 and the EOT character delimeter has a value of ~004. The data is encoded with this string:

> [)>~03001~02996890520000~029840~029003~0291Z12898809~029UPS N~029868124~029246~029~0291/1~029~029N~029~029HENDERSON~ 029NV~030~004

The following is the process of encoding data in MaxiCode barcodes in eFORMz, using Mode 2.

1. From the eFORMz Project Window, *right click* the form and select *Add Variable > By position*.



2. The *Variable* dialog box will display. Enter 'Mode' in the *Name* field.

Variable		×		
Name Mode				
Horizontal position 0.0	Vertical position 0.0	0		
# of characters 0	Height 0.0	) *		
	* 0	= Form line height		
Repeat 1 time(s)	Increment line b	y 1		
Copy original data to output	🗌 Include vari	able in XML output		
Use as a bookmark in PDF output				
	<u>о</u> к	<u>C</u> ancel		

3. *Right click* the variable and select *Add Function* > *Set Value*.

A Project		ď	$\boxtimes$	Viewer	
maxicode     f □ Page1     f □ Blank     f □ Variables         ↓         ∀ □ Uariables         ↓         ★# Mode         Edit         Add Function          Add Procedure          Add Rule				View	
		Cond	aten	ate	
		Insert string Set value			
		Rename	Subs	tring	

4. The Set Value dialog box will display. Enter a value of 2 in the Constant field.

Set Value		×
Value:		
Constant		
2		
O Variable		
Blank variables	-	-
O Image from Project		
Image		-
O Image from File		
File Name		
	<u>o</u> k	<u>C</u> ancel

5. From the eFORMz Project Window, *right click* the form and select *Add Variable > By position*. The *Variable* dialog box will display. Enter `RS' in the *Name* field.

Variable	×
Name	
Horizontal position 0.0	Vertical position 0.0
# of characters 0	Height 0.0 *
	* 0 = Form line height
Repeat 1 time(s)	Increment line by 1
Copy original data to output	Include variable in XML output
Use as a bookmark in PDF ou	Itput
	<u>O</u> K <u>C</u> ancel

6. *Right click* the variable and select *Add Function* > *Set Value*. The *Set Value* dialog box will display. Enter a value of ~030 in the *Constant* field.

Set Value	X
Value:	
Constant	
~030	
◯ Variable	
Blank variables	
O Image from Project	
Image	
Image from File	
File Name	
	<u>O</u> K <u>C</u> ancel

7. From the eFORMz Project Window, *right click* the form and select *Add Variable > By position*. The *Variable* dialog box will display. Enter `GS' in the *Name* field.

Variable		×
Name GS		
Horizontal position 0.0	Vertical position 0.0	
# of characters 0	Height 0.0	*
	* 0 :	= Form line height
Repeat 1 time(s)	Increment line by	1
Copy original data to output	🔲 Include varia	able in XML output
Use as a bookmark in PDF ou	utput	
	<u>0</u> K	<u>C</u> ancel

8. *Right click* the variable and select *Add Function* > *Set Value*. The *Set Value* dialog box will display. Enter a value of ~029 in the *Constant* field.

Set Value		×
Value:		
Constant		
~029		
O Variable		
Blank variables		-
<ul> <li>Image from Project</li> </ul>		
Image		-
<ul> <li>Image from File</li> </ul>		
File Name		
	<u>о</u> к	<u>C</u> ancel

9. From the eFORMz Project Window, *right click* the form and select *Add Variable > By position*. The *Variable* dialog box will display. Enter `EOT' in the *Name* field.

Variable	×
Name EOT	
Horizontal position 0.0	Vertical position 0.0
# of characters 0	Height 0.0 *
	* 0 = Form line height
Repeat 1 time(s)	Increment line by 1
Copy original data to output	Include variable in XML output
Use as a bookmark in PDF ou	utput
	<u>O</u> K <u>C</u> ancel

10. *Right click* the variable and select *Add Function* > *Set Value*. The *Set Value* dialog box will display. Enter a value of ~004 in the *Constant* field.

Set Value		×
Value:		
Constant		
~004		
O Variable		
Blank variables		-
<ul> <li>Image from Project</li> </ul>		
Image		-
<ul> <li>Image from File</li> </ul>		
File Name		
	<u>O</u> K	<u>C</u> ancel

11. From the eFORMz Project Window, *right click* the form and select *Add Variable > By position.* The *Variable* dialog box will display. Enter 'ZipCode' in the *Name* field.

Variable		×
Name ZipCode		
Horizontal position 0.0	Vertical position 0.0	
# of characters 0	Height 0.0	*
Repeat 1 time(s)	* 0 Increment line by	= Form line height
Copy original data to output	🗌 Include varia	able in XML output
Use as a bookmark in PDF ou	itput	
	<u>о</u> к	Cancel

12. *Right click* the variable and select *Add Function* > *Set Value*. The *Set Value* dialog box will display. Enter the value for the zip code. The first two digits should be the year, followed by the nine digit zip code. For this example, a value of 96890520000 is entered in the *Constant* field. 96 represents the year, 89052-0000 is the zip code.

Set Value		×
Value:		
Constant		
96890520000		
○ Variable		
Blank variables		-
<ul> <li>Image from Project</li> </ul>		
Image		-
O Image from File		
File Name		
	<u>о</u> к	<u>C</u> ancel

13. From the eFORMz Project Window, *right click* the form and select *Add Variable > By position*. The *Variable* dialog box will display. Enter 'CountryCode' in the *Name* field.

Variable		×
Name CountryCode		
Horizontal position 0.0	Vertical position 0.0	
# of characters 0	Height 0.0	*
	* 0 =	= Form line height
Repeat 1 time(	s) Increment line by	1
Copy original data to output	🗌 Include varia	ble in XML output
Use as a bookmark in PDF	output	
	<u>0</u> K	<u>C</u> ancel

14. *Right click* the variable and select *Add Function > Set Value*. The *Set Value* dialog box will display. Enter the value of the country code. For MaxiCode mode 2, this is typically the United States country code of 840. So, a value of 840 is entered in the *Constant* field.

Set Value		×
Value:		
840		
O Variable		
Blank variables		-
Image from Project		-
<ul> <li>Image from File</li> </ul>		
File Name		
	<u>0</u> K	Cancel

15. From the eFORMz Project Window, *right click* the form and select *Add Variable > By position*. The *Variable* dialog box will display. Enter `ServiceCode' in the *Name* field.

Variable	×
Name ServiceCode	
Horizontal position 0.0	Vertical position 0.0
# of characters 0	Height 0.0 *
	* 0 = Form line height
Repeat 1 time(s)	Increment line by 1
Copy original data to output	Include variable in XML output
Use as a bookmark in PDF ou	utput
	<u>OK</u> <u>C</u> ancel

16. *Right click* the variable and select *Add Function* > *Set Value*. The *Set Value* dialog box will display. Enter the value of the service code. For this example, a value of oo<sub>3</sub> is entered in the *Constant* field.

Set Value		×
Value:		
Constant		
003		
<ul> <li>Variable</li> </ul>		
Blank variables		-
<ul> <li>Image from Project</li> </ul>		
Image		-
Image from File		
File Name		
	<u>0</u> K	Cancel
	-	

Once complete, the Project Window should look as follows:


17. After defining the delimiter characters and primary codes, the secondary message that will be encoded can be defined. From the eFORMz Project Window, *right click* the form and select *Add Variable > By position*. The *Variable* dialog box will display. Enter 'Message' in the *Name* field.

Variable	X
Name Message	
Horizontal position 0.0	Vertical position 0.0
# of characters 0	Height 0.0 *
	* 0 = Form line height
Repeat 1 time(s)	Increment line by 1
Copy original data to output	Include variable in XML output
Use as a bookmark in PDF ou	tput
	<u>O</u> K <u>C</u> ancel

 Right click the variable and select Add Function > Set Value. The Set Value dialog box will display. Enter the UPS tracking number. For this example, a value of 1Z12898809 is entered in the Constant field.

Set Value		×
Value:		
Constant		
1Z12898809		
O Variable		
Blank variables		-
<ul> <li>Image from Project</li> </ul>		
Image		-
<ul> <li>Image from File</li> </ul>		
File Name		
	<u>0</u> K	<u>C</u> ancel

19. *Right click* the 'Message' variable and select *Add Function > Concatenate*.

•  →  K Message				
— 🖻 Setv	Edit	09" 09"		
	Add Function	Concatenate		
	Add Procedure •	Insert string		
eDIRECT PI	Add Rule	Set value		
ables	Rename	Substring		

20. The *Concatenate* dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.

Concatenate			×
Add:			
	Constant	Vari	able
GS			-
Append n	ewline		
	<u>o</u> k		<u>C</u> ancel

21. *Right click* the 'Message' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Enter a value of 'UPSN'. This is the Standard Carrier Alpha Code for UPS.

Concatenate			<b>X</b>
Add:			
	Constant	🔾 Vari	able
UPSN			
Append	newline		
	<u>0</u> K		<u>C</u> ancel

22. *Right click* the 'Message' variable and select *Add Function* > *Concatenate*. The *Concatenate* dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.

Concatenate			×
Add:			
	Constant	Varia	able
GS			-
Appen	d newline		
	<u>0</u> K		<u>C</u> ancel

23. *Right click* the 'Message' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Enter the UPS shipper number. A value of '868124' was entered for this example.

Concatenate			×
Add:			
	Constant	🔾 Varia	able
868124			
Append	Inewline		
	<u>о</u> к		<u>C</u> ancel

24. *Right click* the 'Message' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.

Concatenate			×
Add:			
<ul> <li>Const</li> </ul>	ant 💿	Variable	
GS			-
Append newline			
	<u>о</u> к		ancel

25. Right click the 'Message' variable and select Add Function > Concatenate. The Concatenate dialog box will display. Enter the Julian day of pickup. In this example, a value of '246' was entered.

Concatenate			X
Add:			
	Constant	🔾 Vari	able
246			
Append	newline		
	<u>o</u> k		<u>C</u> ancel

26. *Right click* the 'Message' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.

Concatenate			×
Add:			
	Constant	Variable	•
GS			-
Append	newline		
	<u>0</u> K		<u>C</u> ancel

- 27. *Right click* the 'Message' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Enter the 7-digit shipment ID number. In this example, a shipment ID number is not used.
- 28. *Right click* the 'Message' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.

Concatenate			×
Add:			
	<ul> <li>Constant</li> </ul>	Vari	able
GS			-
Append	Inewline		
	<u>0</u> K		<u>C</u> ancel

29. *Right click* the 'Message' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Specify the number of packages (package x of y format). A value of '1/1' is used in this example.

Concatenate			×
Add:			
	Constant	🔾 Vari	able
1/1			
Append	d newline		
	<u>o</u> k		<u>C</u> ancel

30. Right click the 'Message' variable and select Add Function > Concatenate. The Concatenate dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.

C	oncatenate
	Add:
	Constant      Variable
	GS 🗸 🗸
	Append newline
	<u>OK</u> <u>C</u> ancel

31. *Right click* the 'Message' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Enter the package weight. A value of 'ooo' is used in this example.

Concatenat	2		×
Add:			
	Constant	🔘 Varia	able
000			
🗌 Арреі	nd newline		
	<u>0</u> K		<u>C</u> ancel

32. *Right click* the 'Message' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.

Concatenate			×	
Add:				
0	Constant	Varia	able	
GS			-	
Append newline				
	<u>0</u> K		<u>C</u> ancel	

33. Right click the 'Message' variable and select Add Function > Concatenate. The Concatenate dialog box will display. Enter a 'Y' or 'N' value for address validation. For our example, our address doesn't need to be validated, so a value of 'N' is entered.

Concatenate			×	
Add:				
	Constant	🔾 Vari	able	
N				
Append newline				
	<u>0</u> K		<u>C</u> ancel	

34. *Right click* the 'Message' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.

Concatenate			×		
Add:					
	Constant	Vari	able		
GS			-		
Append newline					
	<u>o</u> k		<u>C</u> ancel		

35. *Right click* the 'Message' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.

(	Concatenate				
	Add:				
	<ul> <li>Constant</li> <li>Variable</li> </ul>				
	GS 🗸				
	Append newline				
	<u>Q</u> K <u>C</u> ancel				

- 36. Right click the 'Message' variable and select Add Function > Concatenate. The Concatenate dialog box will display. Enter the ship-to street address. In this example, a street address is not used. After using a street address, Right click the 'Message' variable and select Add Function > Concatenate. The Concatenate dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.
- 37. *Right click* the 'Message' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Enter the ship-to city. In this example, a value of 'HENDERSON' is used.

Concatenate				
Add:				
	Constant	Variable		
HENDERSON				
Append newline				
	<u>0</u> K		<u>C</u> ancel	

38. *Right click* the 'Message' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.

Concatenate		×		
Add:				
Con:	stant 🛛 🖲 Va	riable		
GS		-		
Append newline				
	<u>о</u> к	<u>C</u> ancel		

39. Right click the 'Message' variable and select Add Function > Concatenate. The Concatenate dialog box will display. Enter the ship-to city value. In this example, a value of 'NV' is used.

Concatenate			×
Add:			
	Constant	🔾 Variabl	e
NV			
Append	newline		
	<u>о</u> к		<u>C</u> ancel

40. With the secondary message complete, the primary carrier message and the secondary message can be encoded. From the eFORMz Project Window, right click the form and select Add Variable > By position. The Variable dialog box will display. Enter 'EncodedData' in the Name field.

Variable	X
Name EncodedData	
Horizontal position 0.0	Vertical position 0.0
# of characters 0	Height 0.0 *
	* 0 = Form line height
Repeat 1 time(s)	Increment line by 1
Copy original data to output	Include variable in XML output
Use as a bookmark in PDF ou	tput
	<u>O</u> K <u>C</u> ancel

41. *Right click* the variable and select *Add Function* > *Set Value*. The *Set Value* dialog box will display. Select the 'Mode' variable created earlier from the drop-down menu.

Set Value	×
Value:	
<ul> <li>Constant</li> </ul>	
Variable	
Mode	-
<ul> <li>Image from Project</li> </ul>	
Image	-
Image from File	
File Name	
	<u>O</u> K <u>C</u> ancel

42. The required opening data string of encoded data for a mode 2 message is `[)>RS01GS'. *Right click* the `EncodedData' variable and select *Add Function* > *Concatenate.* The *Concatenate* dialog box will display. Enter a value of `[)>'. This value is required by UPS and represents the beginning of the message header.

Concatenate			×
Add:			
	Constant	🔾 Varia	able
D>			
Append ne	wline		
	<u>o</u> k		<u>C</u> ancel

43. Right click the 'EncodedData' variable and select Add Function > Concatenate. The Concatenate dialog box will display. Select the 'RS' variable created earlier from the drop-down menu. The RS character delimiter is required by UPS and completes the message header portion of the required data string.

Co	ncatenate
A	Add:
	<ul> <li>Constant</li> <li>Variable</li> </ul>
R	RS 🗾 👻
[	Append newline
	<u>O</u> K <u>C</u> ancel

44. Right click the 'EncodedData' variable and select Add Function > Concatenate. The Concatenate dialog box will display. Enter a value of 'o1'. This value is required by UPS and represents the beginning of the format header of the required data string.

Concatenate			×
Add:			
	Constant	🔾 Vari	able
01			
Append	newline		
	<u>0</u> K		<u>C</u> ancel

45. *Right click* the 'EncodedData' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'GS' variable created earlier from the drop-down menu. The GS character delimiter is required by UPS and completes the format header of the opening data string of the encoded data.

Concatenate	×	
Add:		
Constant	Variable	
GS		-
Append newline		
<u></u> K	Cancel	

46. Right click the 'EncodedData' variable and select Add Function > Concatenate. The Concatenate dialog box will display. Select the 'ZipCode' variable created earlier from the drop-down menu.

Concatenate			×
Add:			
	<ul> <li>Constant</li> </ul>	Vari	able
ZipCode			-
Append	Inewline		
	<u>o</u> k		<u>C</u> ancel

47. Right click the 'EncodedData' variable and select Add Function > Concatenate. The Concatenate dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.

Concatenate	×
Add:	
🔾 Constant	Variable
GS	-
Append newline	
<u></u> K	Cancel

48. *Right click* the 'EncodedData' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'CountryCode' variable created earlier from the drop-down menu.

Concatenate			×
Add:			
	Constant	Variable	•
CountryCode			-
Append ne	ewline		
	<u>0</u> K		<u>C</u> ancel

49. *Right click* the 'EncodedData' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.

Concatenate			×	
Add:				
	Constant	Variat	ble	
GS			•	
Append newline				
	<u>o</u> k		<u>C</u> ancel	

50. *Right click* the 'EncodedData' variable and select *Add Function > Concatenate.* The *Concatenate* dialog box will display. Select the 'ServiceCode' variable created earlier from the drop-down menu.

Concatenate			×
Add:			
	Constant	Variation	able
ServiceCode	9		-
Append	newline		
	<u>0</u> K		<u>C</u> ancel

51. *Right click* the 'EncodedData' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'GS' variable created earlier from the drop-down menu.

Concatenate				x
Add:				
	Constant	Varia	able	
GS				-
Append	d newline			
	<u>o</u> k		<u>C</u> ancel	

52. *Right click* the 'EncodedData' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'Message' variable created earlier from the drop-down menu.

Conc	atenate			×
Ad	d:			
		<ul> <li>Constant</li> </ul>	Vari	able
Me	ssage			-
	] Append	l newline		
		<u>0</u> K		<u>C</u> ancel

53. *Right click* the 'EncodedData' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'RS' variable created earlier from the drop-down menu.

Concatenate			×
Add:			
	Constant	Vari	able
RS			-
Appen	d newline		
	<u>o</u> k		<u>C</u> ancel

54. *Right click* the 'EncodedData' variable and select *Add Function > Concatenate*. The *Concatenate* dialog box will display. Select the 'EOT' variable created earlier from the drop-down menu. This character concludes the encoded data message.

Concatenate			×
Add:			
	<ul> <li>Constant</li> </ul>	Vari	able
EOT			-
Append	Inewline		
	<u>0</u> K		<u>C</u> ancel

From the 2D Barcode Action dialog box, select Properties:

2D Barcode Action		
Position		
Barcode type MaxiCode		
Horizontal position 300.0 Rotation 0		
Vertical position 570.0		
Repeat Interval Spacing* 0.0		
Conditional vertical increment		
Properties <u>O</u> K <u>C</u> ancel		

The *Maxicode Properties* dialog box will display:

Maxicode Properties		
Encoding mode	First characte	er of data 🔻
Resolution	300 dpi	-
	<u>о</u> к	<u>C</u> ancel

Options:

### Encoding Mode

The encoding mode options are noted in the MaxiCode Encoding Modes table on page 24. The default mode is the *First character of data* option, which compresses (encodes) the data based upon the the first character of the selected string being a single digit. This first character will not be a part of the barcode.

### Resolution

The density of the barcode. 96 dpi (dots-per-inch) is low resolution, while 600 dpi is high resolution. The default is 300 dpi.

A two-dimensional imaging device such as a CCD camera is necessary to scan the symbology.

## PDF417

The PDF417 barcode is a unique 2D barcode type is commonly used on FedEx shipping labels:



0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz

From the 2D Barcode Action dialog box, select Properties:

2D Barcode Action
Position
Barcode type PDF417
Horizontal position 576.0 Rotation 0
Vertical position 690.0
Repeat Interval Spacing <sup>#</sup> 0.0 *0=Use Form's lines per inch
Conditional vertical increment
Properties <u>O</u> K <u>C</u> ancel

The *PDF*<sub>417</sub> *Properties* dialog box will display:

PDF417 Properties
Encoding mode First character of data
Columns 5 Resolution 96 dpi 💌
Rows 0 Error correction level 2
X to Y ratio 3 Truncated
<u>O</u> K <u>C</u> ancel

Options:

### Encoding Mode

There are three encoding modes. The *Text* option encodes the majority of text characters, while the *Binary* option encodes data bytes. The *Binary* option is used for international and extended characters. The default mode is the *First character of data* option, which compresses (encodes) the data based upon the the first character of the selected string being a single digit. This first character will not be a part of the barcode.

### Columns

The number of data columns.

### Rows

The number of rows of codewords.

### X to Y Ratio

The X to Y ratio is the ration of the width of the narrowest barto the height of each row within the PDF417 symbol. The default value is 3, or a ratio of 1:3.

#### Resolution

The density of the barcode. 96 dpi (dots-per-inch) is low resolution, while 600 dpi is high resolution. The default is 96 dpi.

### Error correction level

The Reed-Solomon error correction level placed in the symbol. The error correction level should be increased with the amount of data encoded. There are 7 levels.

### Truncated

The *Truncated* option removes, or truncates, the right side of the PDF417 barcode.

Characters, text, numeric values and bytes of data can be encoded in a PDF417 barcode. A two-dimensional imaging device such as a CCD camera is necessary to scan the symbology.

## QR (Quick Response) Barcode

The Quick Response barcode is commonly used with smart-phone devices to direct users to additional information about a particular product:



http://www.minisoft.com/

From the 2D Barcode Action dialog box, select Properties:

2D Barcode Action	
Position	
Barcode type Quick Response 💌	
Horizontal position 288.0 Rotation 0	
Vertical position 642.0	
Repeat Interval Spacing* 0.0	
Conditional vertical increment	
Properties <u>O</u> K <u>C</u> ancel	

The *QR Properties* dialog box will display:

QR Properties	×
Encoding mode	First character of data 💌
Resolution	96 dpi 👻
Version	Automatic 💌
Error correction	15%
	<u>O</u> K <u>C</u> ancel

Options:

### Encoding Mode

There are four encoding mode options. The *Byte* option can encode text, images, double-byte characters and 8-bit values. The *AlphaNumeric* option encodes only numbers and uppecase letters. Lowercase letters are converted to uppercase. The *Numeric* option encodes numeric values only. The default mode is the *First character* of data option, which compresses (encodes) the data based upon the the first character of the selected string being A, B, or N. These represent AlphaNumeric, Byte, and Numeric respectively. The Byte option is used if a different character is found. The character is not part of the bar code.

### Resolution

The density of the barcode. 96 dpi (dots-per-inch) is low resolution, while 600 dpi is high resolution. The default is 96 dpi.

### Version

There are 41 versions, which refer to the sizing of the QR barcode in relation to its data capacity. The default format is *Automatic*, which adopts the barcode size based upon the amount of data encoded. The other 40 format sizes have various capacity requirements.

### Error correction

There are four options: 7%, 15%, 25% and 30%. The greater the error correction level, the larger the barcode size and the less data it can contain.

Characters, text, numeric values and bytes of data, including URL's, can be encoded in a QR barcode. A two-dimensional imaging device such as a CCD camera is necessary to scan the symbology.

## **Special Fonts**

## OCRA

OCRA is a special font that is used for Optical Character Recognition Systems. It is also used for server purposes when an automated systems need a standard character shape defined to properly scan numbers and text without the use of barcodes.

1234567890A8CDEFG

## Secure Numeric Font

The secure numeric font permits an extra layer of security by imposing a unique font image representing the dollar value of the check, for example:



To create a secure numeric font:

- 1. From the eFORMz Viewer, *Input Data Viewer*, select the data you would like to apply the secure font to.
- 2. Right mouse click and select Add Variable.

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## Barcodes

3. From the *Variable* dialog box, enter a new variable name and click *OK*.

Variable	x
Name SECUREFONT	
Horizontal position 4638.5	Vertical position 3274.3
# of characters 8	Height 0.0 *
	* 0 = Form line height
Repeat 1 time(s)	Increment line by 1
Copy original data to output	Include variable in XML output
Use as a bookmark in PDF ou	itput
<u></u>	

- 4. Your new variable will appear in the *Current Project* window.
- 5. Next, create a new *Special Fonts* rule specifying the new variable.

Rule Properties			
Name place SECUREFONT			
Use variable SECUREFONT			
Execute on all copies			
Edit condition <u>O</u> K <u>C</u> ancel		<u>C</u> ancel	

6. The *Special Fonts Action* dialog box will display. Select Position and Paste if you previously selected a location for the secure font to appear, otherwise, select *Secure Amount* from the drop down selection of Special font:

Special Fonts Action	
Position	
Special fonts type SECURE AMOUNT   Horizontal position 3312.0  Notice the setting 560.0	
Alignment Rotation 0 • None Right Center Width: 0.0	
Repeat Interval Spacing* 0.0 *0=Use Form's lines per inch Conditional vertical increment	
QK Cancel	

- A Minisoft eFORMz Composer (8.00.00), Licensed to Minisoft File Project Run Host Tools Window Help 🖻 😤 🖳 💌 🖻 🖻 🔍 🛠 🛅 🖀 d' 🛛 Project σX Viewer samppo Sample Purchase Order P D po P W Variables . View 👻 📹 Open Data 2, 🔍 120 dpi 🛛 🕂 🖶 🎛 💧 podata.dat 🦛 1 🖒 7590.0:5340.0 Acct ID □ ⊕ Insert string = at = # SECUREFONT P- ■ Rules
   P- ™ Accounting Copy Accounting Copy
   Actions
   O Place Text
   PlaceSECUREFONT è Actions
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- 7. The secure font will then appear in the Form and Data Viewer:

8. To implement the phrase "pay only" to the secure font, a dollar sign ( \$ ) can either be inserted at the beginning of the variable using an add Function option:



Note, spaces are represented as arrows:



## MICR 13B and CMC-7 Font

The approved MICR 13B and CMC-7 (ISO 1004) font that prints check numbers compatible for magnetic ink reader systems. Below is an example routing number defining each section:

Routing # (9 digks)	↓ Account #	Check #
1:0012345671:	987654323*	0101
TRANSIT SYMBOL	) ON US SYMBOL	

### MICR 13B and CMC-7 Symbol Sets

]	MICR Fonts		
Character	MICR 13B and CMC-7 Symbols		
1	k i		
2	2		
3	3		
4	ą.		
5	5		
6	6		
7	7		
8	8		
9	9		
0	۵		
\$			
-	•••		
/	II. <b>.</b>		
&	1		

Example routing string:

/123456/ &123456789& 9876-532/

Routing string converted into MICR code using eFORMz:

## 

**NOTE:** Routing number combinations may vary.

### Creating a MICR 13B Routing String

To create a MICR font string:

- 1. From the eFORMz Viewer, *Input Data Viewer*, select the check number you would like to include in the MICR line.
- 2. Right mouse click and select Add Variable.



3. From the Variable dialog box, enter a new variable name and click OK.

### Barcodes

Variable	X
Name CHKnumber	
Horizontal position 5112.0	Vertical position 7800.0
# of characters 6	Height 0.0 *
	* 0 = Form line height
Repeat 1 time(s)	Increment line by 1
Copy original data to output	Include variable in XML output
Use as a bookmark in PDF ou	itput
	OK Cancel

- *TIP*: If you do not wish the check number to appear in its original location, confirm that the option *Copy original data to output* is unchecked.
  - 4. Your new variable will appear in the *Current Project* window:



If the check number needs to be placed in a second position, for example, in the check number placeholder do the following, otherwise, see instruction number 5.

From the eFORMz Viewer, Form and Data Viewer, right mouse click in the area you would like the check number to appear and select *Copy Position*.

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Sample Checks     Sample_checks		🔍 🔍 120 dpi 🔛 🕂	🛃 🔢 🔒	chkdata.dat 😓 1	⇒	162.0:2172.0
Variables     Variables     Variables     Variables     Variables		367744	02/05/02	XGEGEE3343	200.00	• • • • • • • •
- 38 PLACEHOLDER		389999	02/08/02	X12345GDG6	50.00	
- ## AMOUNT		432345	02/10/02	XFFE545444	2.00	
HICR		445645	02/11/02	X111443433	1.00	
P III Rules → MI A III Active		467454	02/13/02	XGRERE4334	45.00	
Add Rule	Place Text	564544	02/15/02	X554345454	10.00	
← MOUNT	1D Barcode 2D Barcode	578955	02/18/02	X343433434	11.00	
	Special Fonts					•
	Load Image Rage Number	367744	02/04/02	XGEGEE3343	200.00	
Project eDIRECT	Translate	389999	02/08/02	X12345GDG6	50.00	1
Variables	Notify	432345	02/10/02	XFFE545444	2.00	
Variable		445645	02/11/02	x111443433	1.00	
ADDRESS(3)		467454	02/13/02	XGRERE4334	45.00	
PLACEHOLDER			02/15/02	x554345454	10.00	
AMOUNT(0) VOID	VOID =	578955	02/18/02	X343433434	11.00	-
AMOUNT(1) V 0 ID AMOUNT(2) V 0 ID MICR // 6 1 2 3 4 5	V0 V0ID 67894		≪ ₩ ▷ 0.0	▼ 866.6	5.0 1=4.200 ]	10.40
sample_checks		sample_checks				

From the *Current Project* window select *Rules* > *Add Rule* > *PlaceText*.

From the *Rule Properties* dialog box enter a new rule name. Select *CHKnumber* as the variable type and click *OK*.

Rule Properties		×		
Name place Cl	HKnumber			
Use variable CHKnumber 🔹				
✓ Execute on all copies				
Edit condition	<u>0</u> K	<u>C</u> ancel		

The *PlaceText* dialog box will display, select *Position > Paste*. The coordinates copied earlier will display in the horizontal and vertical position fields.

Place Text Action			
Position			
Copy Paste al position 2514.0 Text Color Vertical position 6618.0			
Horizontal Alignment Vertical Alignment			
Rotation 0			
None     Right     Uidth:     O			
Wordwrap			
Enable wordwrap Line Width 0.0 Line Spacing* 0.0  Suppress blank lines			
Repeat Interval Spacing* 0.0 *0=Use Form's lines per inch Conditional vertical increment			
Change font <u>O</u> K <u>C</u> ancel			

Click *OK* from the Move Action dialog box and the check number will appear in the Form and Data Viewer. To slightly adjust the position, take your mouse and click-and-drag the check number into position.

5. From the eFORMz Viewer, Form and Data Viewer, right mouse click in the area you would like the MICR sting to appear and select *Copy Position*.



6. From the Current Project window create a new variable by selecting *Variable > Add Variable > By Position.* 



- 7. The *Variable* dialog box will display, enter a new variable name and click *OK*.
- 8. Select the new variable from the Current Project window, *right click*, and select *Add Function* > *Insert String*.

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<ul> <li>C Add Procedure ▶</li> <li>C Add Rule ▶</li> <li>Add Rule ▶</li> <li>M Add Rule ▶</li> <li>M An Rename</li> <li>M P Remove</li> <li>C Add Rule ₽</li> </ul>	Insert string Set value Substring Replace			
Project eDIRECT	Left tim Uppercase Lowercase Table Lookup			
🗍 Variables	SQL Lookup			
Variable ADDRESS(2) SN[0H[0M[I]SH], ADDRESS(3) CHK#	eVS Barcode Data Generator SmartLabel Barcode Data Generator Bulk Concatenate			
DATE         DATE           AMOUNT(0)         ¥01D         ¥02           AMOUNT(1)         ¥01D         ¥02           AMOUNT(2)         ¥01D         ¥02           Sample_checks         X         X	11D 11D 12D 1394 → → → → → → → → → → → → →			

## Barcodes

9. The Insert Text dialog box will display. For this example we are going to split the MICR line into three sections:

/567888/ &123456789& 9876-5432/

- first character string / (ON US)check number (6 digit number)
- account and routing numbers including special characters
- (/&123456789&9876-5432/)

*Note*: Routing number combinations may vary.

	MICR Font	
Character	Symbol	Meaning
\$	, <sup>1</sup>	Amount
-		Dash
/	11=	ON US
&	1	Transit

10. From the *Insert > Constant* field enter the starting character of your MICR line. In the At character position Constant enter character position o.

Insert String			×
Insert:	Constant	Variable	
/ At characte	r position:	O Variable	
0			
	<u>0</u> K		<u>C</u> ancel

Click OK.

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	🔍 💽 120 dpi 🕂 🗰 🖶 🔒 chkdata.dat (= 1 🖙 1008.0 : 6378.0
- ## ADDRESS	
Insert string "/" at "0"	
- # CHKnumber	
∽ M⊟ CHK#	
⊷ ™ DATE ⊷ ™ AMOUNT	e e e e e e e e e e e e e e e e e e e
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ADDRESS(2) SNUHUMISH, NA	THE 1024 FIRST STREET
CHK#	OF SNOHOMISH, WA 98290
DATE	
AMOUNT(0) VOID VOID	
AMOUNT(1) V0ID V0 AMOUNT(2) V0ID V0ID	
MICR /	
sample_checks	🖹 sample_checks

11. Your new variable string will appear in the Current Project window.

- 12. From the *Current Project* window highlight the same variable as before (MICR), *right click* and select *Insert String*.
- 13. The Insert String dialog box will display. Since a check number variable was created earlier (CHK number), select *Variable* for the Insert field. From the list of options select the variable name, CHK *number*, which was created earlier.

Enter the number one (1) in the *Constant* field for the *At Character Position*.

Insert String			×
Insert:			
	Constant	Vari	able
CHKnumbe	er		-
At characte	r position:		
	Constant	🔾 Vari	able
1			
	<u>о</u> к		<u>C</u> ancel

Click OK.

14. Create a third string for the variable *MICR*. *Right click MICR* and select *Add Function* > *Insert string*.

15. The Insert String dialog box will display.

Insert the remaining characters, account and routing numbers into the *Insert* > *Constant* field. In the *At Character Position* field enter the starting position of the remaining character, in this case, character position 7.

Insert String			×
Insert:			
	Constant	🔾 Vari	able
/&1234567	89&9876-5432/		
At characte	er position:		
	Constant	🔾 Vari	able
7			
	<u>о</u> к		<u>C</u> ancel

Once complete, click OK.

16. The Current Project window will display all three *Insert String* functions.



To place the MICR line:

1. From the eFORMz Viewer, Form Viewer, *right click* in the area you would like the MICR line to appear and select *Copy Position*.

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	OID VOID VOID VOID VOID VOID VOID VOID V
← 1⊞ ADDRESS ← 1⊞ CHK#	TOM JONES
Variables         D'         Di           Variable         XURESS(2)         XURESS(2)         XURESS(2)           ADDRESS(2)         XURESS(2)         XURESS(2)         XURESS(2)           CHK#         PLACEHOLDER         DATE         DATE	Add Constant   Add Input Field > Add Rule   Grid_
AMOUNT() V01D V01D AMOUNT() V01D V01D AMOUNT(2) V01D V01D MICR /// 41234557896 ¥ sample_checks	▼         ■         ●

2. From the Current Project window *right click* and select *Rules > Add Rule > Special Fonts*.

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P B sample_checks		🔍 🔍 120 dpi 🗄 🎛 🔢 🍐 Chkdata.dat 😓 1 🔿	210.0:5400.0
Variables			<b>^</b>
► ## CHK#			
- XE PLACEHOLDER			
- XE AMOUNT	_		
P 35 MIC □ □ Edit	-0-		
- 🗟 Add Function 🕨	ble CH		
Add Procedure >	-23456	· · · · · · · · · · · · · · · · · · ·	
🕈 🗏 Rules Add Rule 🔹	Place Text		. =
Rename	1D Barcode.		-
← *⊞ D. Remove	2D Barcode.		•
	Load Image		VOID V
	Page Numb	M. NOTE NOTE NOTE NOTE NOTE	NOTE
Project eDIRECT	Translate	VOID VOID VOID VOID VOID VOID	
Variables	Notify	W TON TONES	VOID V
Variable	MA	TO 1024 FIRST CERTER	AMOUNTS CV
ADDRESS(3)	- A	THE IU24 FIRST STREET	
CHK# PLACEHOLDER		OF SNOHOMISH, WA 98290	
DATE			
AMOUNT(0) V0ID V0 AMOUNT(1) V0ID	V0		
AMOUNT(2) VOID VO	ID		
MICK // 41234567	× 1894		10.40
sample_checks		sample_checks	

3. The *Rules* dialog box will display. Enter a new rule name and select *MICRstring* as the variable selection.

Rule Properties		×			
Name Barcoo	le MICRLine				
Use variable MICR	ble MICR				
✓ Execute on all copies					
Edit condition	<u>0</u> K	<u>C</u> ancel			

Click OK.

4. The Special Fonts Action dialog box will display, select *Position > Paste*. The position previously selected will appear in the Horizontal and Vertical fields.

1	Special Fo	nts Action						
	Position							
	Сору	fonts type MICR13B - Special Fonts Color						
	Paste							
	H	lorizontel postaron 648.0						
		Vertical position 7320.0						
	Alignme	ent						
	Rotation 0 💌 🖲 None							
	⊖ Right							
		Center Width: 0.0						
	Repeat Interval Spacing* 0.0 *0=Use Form's lines per inch							
		Conditional vertical increment						
		<u>Q</u> K <u>C</u> ancel						

Select *MICR13B* as the font type and click *OK*.

- Minisoft eFORMz Composer (8.00.00), Licensed to Minisoft File Project Run Host Tools Window Help 🖻 😭 🖬 🖉 🖻 🔿 🚳 🛠 👩 🖀 Project 🗹 🛛 🛛 🖹 Viewer o 🛛 ٠ ADDRESS View 👻 🚭 Open Data - #¥ CHK# 🔍 🔍 120 dpi 🛛 🛨 🖶 👪 🎒 chkdata.dat ⇐ 1 🖨 510.0:6642.0 - ## PLACEHOLDER - # DATE 4 - 31 AMOUNT P- ₩ MICR - 🕀 Insert string "/" at "0" ⊕ Insert string variable CH
   ⊕ Insert string "/ &123456" # CHKnumber 🕈 🗉 Rules - M ADDRESS - \*⊞ CHK# ► M place CHKnumber • - M Barcode MICRLine Actions
   MICR13B Text v^ VOID VOID VOID VOID VOID • VOTD VOTD • PAY TOM JONES Project eDIRECT то AMOUNTS OF 1024 FIRST STREET THE 🔲 Variables ø 🛛 ORDER SNOHOMISH, WA 98290 OF Variable ···· ·: 123456789: 98765-43211\* SNOHOMISH, ΨA . ADDRESS(3) CHK# PLACEHOLDER DATE 
   V0ID
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   (/ 61234567896
   AMOUNT(0) AMOUNT(1) AMOUNT(2) • ∢ ≪ ≫ ▷ 0.0 MICR I≣ 4.200 <u>T</u> 10.40 • sample\_checks sample\_checks
- 5. Once complete, the MICR line will display in the Form and Data Viewer. Using your mouse, position the MICR line into position.



# **Printing Barcodes to a Zebra Printer**

It is important to work backwards from the printer when setting the width of barcodes. ZPL printers are typically 203.2 dpi. For example, if the narrowest bar should be 3 dots, then the width in the Barcode Action should be set to 10.63 ((3/203.2)\*720). This way, what is seen in the eFORMz Composer will match what is printed.

arcode Action					
Barcode type UP C Genera Trim da Horizontal ( Vertical ) Alignment	CA te checksum tta position 360.0 position 360.0	Barcode Co Width 10.6300 Height 360.0000	lor		
Rotation 0	None     Right     Center  vval Spacing* 0.0	Width: 2000.0			
Cor	nditional vertical increm	nent	ncel		
Dpi	1	2	3	4	5
Width	3.5433	7.0866	10.6299	14.1732	17.7165

If the printer is not 203.2 dpi, plug the dpi into the following equation to determine the barcode width: ( ( dpi of narrowest bar / printer dpi ) \* decipoints per inch ). For example, a 300 dpi printer where the narrowest bar should be 3 dots will have a barcode width of 7.2 ( ( 3 / 300.0 ) \* 720 ).

The same principle applies to fonts. For example, if ZPL Font F is being used and it needs to be printed at 1 times magnification, then the pitch (characters per inch) should be set to 12.7 (printer resolution / character width, or 203.2 / 16).

## Mini-Manual

Font	. 6	×
Character Set ROMAN8	▼ Ch	ars per inch 12.70
Font ZPL-F	-	Height 9.45
Bo	Id 📃 Italic	
	<u>о</u> к	<u>C</u> ancel

Font	Width	<i>x1</i>	<i>x2</i>	<i>x3</i>	<i>x4</i>
ZPL-A	6	33.87	16.93	11.29	8.47
ZPL-B	9	22.58	11.29	7.53	5.64
ZPL-C	12	16.93	8.47	5.64	4.23
ZPL-D	12	16.93	8.47	5.64	4.23
ZPL-E	20	10.16	5.08	3.39	2.54
ZPL-F	16	12.70	6.35	4.23	3.18
ZPL-G	48	4.23	2.12	1.41	1.06
ZPL-H	19	10.69	5.35	3.56	2.67

Again, if the printer is not 203.2 dpi, plug the dpi into the following equation to determine the barcode width: (printer resolution / character width). For example, if ZPL Font F is being used and it must be printed at 1 times magnification, then the pitch (characters per inch) should be set to 18.75 (300 / 16). If the magnification needs to be greater, divide by that magnification level. For example, if ZPL Font F is being used and it must be printed at 3 times magnification, divide by 3: (300 / 16 / 3). The pitch should be set to 6.25.

# **UPC-EAN Check Digit**

If the data for a UPC-A, UPC-E, EAN8 or an EAN13 barcode doesn't have a check digit, it can be calculated within eFORMz. An example using a UPC-A barcode is shown below.

1. *Right click* the UPC-A data string and select *Add Variable*.

UPCA - 07567816412	
	Add Variable
	Add Pre-condition Procedure 🕨
UPCE - 04210000520	Add Post-condition Procedure •
	Add Rule
	Move input data
•	Suppress input data
	Grid
	Edit Variable

2. The Variable dialog box will display. Enter a name and click OK.

Variable			×	
Name UPC-A Data				
Horizontal position 504.0	Vertical position	4680.0		
# of characters 11	Height	0.0	*	
	-	* 0 = Form lii	ne height	
Repeat 1 time(s)	Increment line	e by 1		
Copy original data to output Include variable in XML output				
Use as a bookmark in PDF output				
	<u>о</u> к	<u><u>C</u>:</u>	ancel	
3. *Right click* the UPC-A data string again and select *Add Variable*.



4. The Variable dialog box will display. Enter a name for the check digit and click OK.

Variable		×
Name UPC-A CheckDigit		
Horizontal position 504.0	Vertical position 468	0.0
# of characters 11	Height 0.0	*
	* 0 =	= Form line height
Repeat 1 time(s)	Increment line by	1
Copy original data to output	🗌 Include varia	ble in XML output
Use as a bookmark in PDF ou	utput	
	<u>о</u> к	<u>C</u> ancel

## Barcodes

- 🔶 🏼 Variables - # UPC-A Data ₩ UPC-A CheckDigit EAN13 - 004210000526 Edit Add Function Concatenate... Þ Insert string... Add Pre-condition Procedure Set value .... Add Post-condition Procedure > Substring... Add Rule Replace... Rename Set value from a declared constant Remove Set value from a keyed declared constant Right trim Left trim Ŧ ۲ Uppercase ct eDIRECT PLUS Lowercase URL encoder 0 🖂 riables URL decoder ariable Value UPC-EAN check digit Data 07567816412 Table Lookup... CheckDigit 07567816412 SQL Lookup... Does file exist ... eVS Barcode Data Generator SmartLabel Barcode Data Generator Bulk Concatenate
- 5. *Right click* the check digit Variable and select *Add Function > UPC-EAN check digit*.

🚔 Project - zp	Itester 🛛		Viewer
A zpitester Page1 Page1	¢		View 👻 🚭 Open Data
<b>?</b> − III V	Properties	►	
م ا¥− <b>9</b>	Display Form Display Form and Data		
	Print		JPCA - 07567816
	Output		
	Add Constant	Þ	
	Add Input Field	•	JPCE - 04210000
	Add Variable	÷	By position
	Add Pre-condition Procedure	•	Using data node
	Add Post-condition Procedure	•	For activeForms input
	Add AND Condition	•	For Queue Monitor variable
	Add Document Component	Þ	
•	Load Document from a File		

6. *Right click* the form and select *Add Variable > By position*.

7. The Variable dialog box will display. Enter a name for the first text character of the UPC-A string. Click OK.

Va	ariable
	Name FirstChar
	Horizontal position 0.0 Vertical position 0.0
	# of characters 0 Height 0.0 *
	* 0 = Form line height
	Repeat 1 time(s) Increment line by 1
	Copy original data to output Include variable in XML output
	Use as a bookmark in PDF output
	<u>Q</u> K <u>C</u> ancel

## Barcodes

- Viewer 🚔 Project - zpltester 🚔 zpitester ۰ View 👻 🚭 Open Data 🛉 🗋 Page1 🛉 🕼 blank 🔍 🔍 120 dpi 🔡 🕂 🕂 🖽 🔡 🔒 🔶 🏽 Variables - ₩ UPC-A Data - ₩ UPC-A CheckDigit DPC-EAN check digit ¥⊭ FirstChar UPCA 07567816412 \_ Edit. Add Function Concatenate. Insert string. Add Pre-condition Procedure Add Post-condition Procedure > Set value. Substring. Add Rule . Replace... Rename Set value from a declared constant Remove Set value from a keyed declared constant
- 8. *Right click* the Variable and select *Add Function* > *Set value*.

9. Select the Variable created for the UPC-A data from the *Variable* drop-down menu.

Set Value		×
Value:		
<ul> <li>Constant</li> </ul>		
Variable		
UPC-A Data		-
Image from Project		
Image		-
O Image from File		
File Name		
<u> </u>	ОК	Cancel



10. *Right click* the Variable and select *Add Function* > *Substring*.

11. The starting character position should be o, and it should span 1 character. This will set the Variable value to include only the first character of the UPC-A data string.

Substring	×
Starting character position:	O Variable
0 Number of characters:	Variable
1	
<u>0</u> ĸ	Cancel

12. Create another Variable by position by *right clicking* the form and selecting *Add Variable > By position*. This Variable should be named for the next 5 text characters of the UPC-A string.

Variable	X
Name FirstFive	
Horizontal position 0.0	Vertical position 0.0
# of characters 0	Height 0.0 *
	* 0 = Form line height
Repeat 1 time(s)	Increment line by 1
Copy original data to output	Include variable in XML output
Use as a bookmark in PDF ou	ıtput
	<u>O</u> K <u>C</u> ancel

13. Like before, right click the Variable and select Add Function > Set value. Select the Variable created for the UPC-A data from the Variable drop-down menu. Right click the Variable and select Add Function > Substring. The starting character position should be 1, and it should span 5 characters. This will set the Variable value to include the second character through the sixth character of the UPC-A data string.

Substring	×
Starting character position:	O Variable
1 Number of characters: © Constant	Variable
5	
<u></u> K	<u>C</u> ancel

14. Add a Variable by position. Name the Variable for the last 5 text characters of the UPC-A data string.

Variable	×
Name LastFive	
Horizontal position 0.0	Vertical position 0.0
# of characters 0	Height 0.0 *
	* 0 = Form line height
Repeat 1 time(s)	Increment line by 1
Copy original data to output	Include variable in XML output
Use as a bookmark in PDF ou	ıtput
	<u>O</u> K <u>C</u> ancel

15. Again, *right click* the Variable and select *Add Function > Set value*. Select the Variable created for the UPC-A data from the *Variable* drop-down menu. *Right click* the Variable and select *Add Function > Substring*. The starting character position should be 6, and it should span 5 characters. This will set the Variable value to include the seventh character through the twelfth character of the UPC-A data string.

Substring	×
Starting character position:	○ Variable
6	
Number of characters: Constant	🔾 Variable
5	
<u>о</u> к	<u>C</u> ancel

## Barcodes



16. *Right click* in the Form Viewer and select *Add Rule* > 1D Barcode.

17. Select the Variable created for the UPC-A data from the *Use variable* drop-down menu.

Rule Properties	×	
Name PlaceUPCABarcode		
Use variable UPC-A Data		
✓ Execute on all copies		
Edit condition <u>O</u> K	<u>C</u> ancel	

18. Select the 'UPCA' option from the *Barcode type* drop-down menu. Make sure that the *Generate checksum* box is checked. This generates the check digit for the barcode automatically. Click OK.

Barcode Action	×
Position	
Barcode type UPCA  Generate checksum Trim data	Barcode Color
Horizontal position 294.0	Width 10.0000
Vertical position 216.0	Height 300.0000
Alignment Rotation 0	Width: 0.0
Repeat Interval Spacing* 0.0 *0=Use I Conditional vertical increm	Form's lines per inch ient
Qł	< <u>C</u> ancel

19. The barcode will display. *Right click* below the barcode and select *Add Rule > Place Text* to begin placing the text characters.

	Copy position Add Constant Add Input Field	-
	Add Rule	Place Text
	Grid	1D Barcode 2D Barcode
		Special Fonts
Ľ <u>ଛ</u>	₩ 0.0 4	Bar Chart

20. Select the Variable created earlier that contains the first character value from the *Use variable* drop-down menu.

Rule Properties		×
Name PlaceFirst	Char	
Use variable FirstChar		•
✓ Execute on all copies		
Edit condition	<u>0</u> K	Cancel

21. The Place Text Action dialog box will display. Select the *Change font* button in the bottom left.

Place Text Action
Position
Horizontal position 246.0 Text Color
Vertical position 300.0
Horizontal Alignment Vertical Alignment
Rotation 0
None      Right     Width: 0.0
O Left O Center
Wordwrap
Enable wordwrap
Line Width 0.0 Line Spacing* 0.0
Suppress blank lines
Repeat Interval Spacing* 0.0
*0=Use Form's lines per inch
Change font <u>O</u> K <u>C</u> ancel

22. Set the appropriate font and characters per inch. Click OK.



23. To add the next 5 characters, *right click* below the barcode and select *Add Rule* > *Place Text*. Select the Variable created earlier for the second through sixth characters of the UPC-A data string from the *Use variable* drop-down menu.

Rule Properties		×
Name PlaceFire	stFive	
Use variable FirstFive	ŀ	-
⊯ Exec	ute on all copies	
Edit condition	<u>0</u> K	<u>C</u> ancel

24. The Place Text Action dialog box will display. Make any necessary modifications to the font by selecting the *Change font* button in the bottom left. Click OK when complete.

Place Text Action
Position
Horizontal position 402.0 Text Color Vertical position 300.0
Horizontal Alignment Vertical Alignment
Rotation 0
None      Right     Udth: 0.0
Wordwrap
Enable wordwrap
Line Width 0.0 Line Spacing* 0.0
Suppress blank lines
Repeat Interval Spacing* 0.0 *0=Use Form's lines per inch
Conditional vertical increment
Change font <u>O</u> K <u>C</u> ancel

25. To add the final 5 characters, *right click* below the barcode and select *Add Rule* > *PlaceText*. Select the Variable created earlier for the seventh through twelfth characters of the UPC-A data string from the *Use variable* drop-down menu.

Rule Properties		×
Name PlaceLa	stFive	
Use variable LastFive	;	-
✓ Execute on all copies		
Edit condition	<u>o</u> k	<u>C</u> ancel

26. The Place Text Action dialog box will display. Make any necessary modifications to the font by selecting the *Change font* button in the bottom left. Click OK when complete.

Place Text Action
Position
Horizontal position 834.0 Text Color
Vertical position 300.0
Horizontal Alignment Vertical Alignment
Rotation 0
None     Right
○ Left ○ Center
Wordwrap
Enable wordwrap
Line Width 0.0 Line Spacing* 0.0
Suppress blank lines
Repeat Interval Spacing <sup>®</sup> 0.0 *0=Use Form's lines per inch
Conditional vertical increment
Change font <u>O</u> K <u>C</u> ancel

27. Finally, to add the check digit, *right click* below the barcode and select *Add Rule* > *Place Text*. Select the Variable created earlier for the check digit from the *Use variable* drop-down menu.

Rule Properties		×
Name PlaceCl	heckDigit	
Use variable UPC-A	CheckDigit	-
Execute on all copies		
Edit condition	<u>0</u> K	<u>C</u> ancel

28. The Place Text Action dialog box will display. Make any necessary modifications to the font by selecting the *Change font* button in the bottom left. Click OK when complete.

Place Text Action
Position
Horizontal position 1260.0 Text Color Vertical position 300.0
Horizontal Alignment Vertical Alignment
Rotation 0
None     Right     Width:     O.0
Wordwrap
Enable wordwrap Line Width 0.0 Line Spacing* 0.0 Suppress blank lines
Repeat Interval Spacing <sup>*</sup> 0.0 *0=Use Form's lines per inch
Conditional vertical increment
Change font <u>O</u> K <u>C</u> ancel

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File Project Run HostTools Window Help	*	
A Project - zpitester		0° (
A zpitester ▲	View         Gopen Data           Q:Q         120 dpi           H         #           barcode dat         ●           1 □         38	94.0:1110.0
	3 of 9 - BARCODE1	
● 웹 PlaceFirstFive ● 웹 PlaceLastFive ● 웹 PlaceCheckDigit	3 of 9 Extended - Bar	· · · · · · · · · · · · · · · · · · ·
Project eDIRECT PLUS		-
Value         Value           PC-A Data         017561781614112           PC-A CheckDigit         5           irstChar         0           irstFrive         756718           .astFrive         16412		
blank		10.00

29. The text characters of the UPC-A data string will display below the UPC-A barcode.

**NOTE:** In this instance, the data string for the UPC-A barcode is o7567816412, without a check digit present. The UPC-EAN check digit function calculated the check digit to be 5. To confirm this manually, first add the odd number digits: 0+5+7+1+4+2 = 19. Next, multiply the result by 3:  $19 \times 3 = 57$ . From there, add the even number digits: 7+6+8+6+1 = 28. Add the two results together: 57 + 28 = 85. To finish calculating the check digit, take the remainder of the result divided by 10 (85 / 10), and subtract from 10 (8.5 - 10). The result is -1.5. The quotient is 1 and the remainder is 5, so the check digit is 5.



1024 First Street Snohomish, WA 98290 U.S.A.

800-682-0200 360-568-6602 Fax: 360-568-2923

sales@minisoft.com support@minisoft.com www.minisoft.com



Papiermühleweg 1 Postfach 107 Ch-6048 Horw Switzerland

+41.41.340.23 20

info@minisoft.ch www.minisoft.ch

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