

PrecisionID Code 128 Barcode Font User Manual

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Code 128 Symbology Overview

Code 128 is also referred to as UCC-128, EAN-128 or UCC/EAN 128. Code 128 can encode uppercase and lowercase letters, numbers, special characters and functions such as tabs and returns. Code128 requires that a MOD 103 check digit be included in the barcode before the stop digit for the scanner to read it. All barcodes require start and stop characters.

Product Overview

Code 128 is a more complex linear barcode type than Code 3 of 9 because it requires a check digit and contains 3 character sets with special switch functions. PrecisionID Font Formatting Components™ are provided with this package to simplify this process and make printing barcodes with our fonts an easy task. The PrecisionID Font Formatting Components™ include a Crystal Reports UFL, Microsoft VBA module for Excel and Access and Visual Basic source code which may also be used as a guide for conversion to other languages. This package also provides working examples for Word, Access, Excel and Crystal Reports.

Installation

Microsoft Windows

Decompress the fonts in the supplied ZIP file with a decompression utility, such as Winzip. Our fonts are compatible with all 32 bit versions of Windows. We recommend using the supplied **Setup.exe** file to install the fonts automatically in Windows. If you wish to manually install the fonts in Windows, open Control Panel and choose Fonts; then choose Install New Font and browse to the folder that contains the fonts with the TTF extension you extracted from the zip file.

Macintosh OS X

Our fonts are compatible with all versions of Macintosh OS Version 10.1 and greater (OSX). Decompress the fonts in the supplied ZIP file with a decompression utility such as Stuffit Expander. Drag the files with the TTF extension to the Library/Fonts folder of your hard drive. To activate the fonts, restart the application; some applications may require a restart of the computer.

Other Operating Systems

We supply Windows TrueType (TTF) fonts as well as Binary (PFB) and ASCII (PFA) versions of PostScript fonts. Consult the documentation for your operating system about instructions and which font to install.

Using the Fonts to Create Bar Codes

When creating barcodes with our fonts, we recommend using the PrecisionID Font Formatting Components™ which automatically calculate the required Start, Stop and MOD 103 check characters and simply return the text that is formatted to the barcode font. When this text is printed with our barcode font, a correct barcode is created.

To calculate the check digit manually, we suggest following the Visual Basic source code we provide. This code is located in the [Examples\VB Module](#) folder of the package.

Tutorials for Specific Applications

The results for the following tutorials are saved in the [examples](#) folder of the product zip file. We encourage you to refer to the examples provided in this folder.

Microsoft Access

To create a barcode in a Microsoft Access report:

1. Run the Setup program to install the fonts and Access Example file.
2. Before we can create barcodes in Access, we must import the required module. Choose Modules – Import and select the Access Example.mdb file, which will be located in the [Program Files\Precision ID Code 128 Font Package](#) folder.

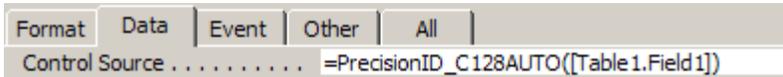


3. Choose the module to import from the other database; this module should be named [PrecisionID_C128_Module](#). After it is properly imported, it will appear as one of the modules in

the database.



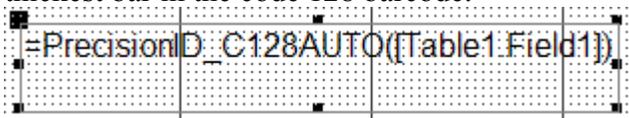
4. Open a report in design view and add a text box to your report. The text box will be modified to contain a barcode.
5. Right click on the text box and choose properties.
6. Place the formula `=PrecisionID_C128AUTO([Table1.Field1])` in the control source property of the text box where Table1 is the table and Field1 is the field that contains the data you want to barcode.



7. Run the report. You should see that the formula changed the data from the database and appended additional characters at the beginning and ending of the text. You may notice that the numbers from the data are compressed into other characters, this is normal when you are using Code 128 Auto and the barcode contains 4 or more consecutive number characters.

İTESTÇ,Dgİ

8. Open a report in design view, select the text box and choose one of the PrecisionID fonts such as [PrecisionID C128 T08](#) and choose 12 for the point size of the font. You must select the appropriate font for the formula you are using. For example, if you have a formula for a Code 128 barcode, you must select the Code 128 Font.
9. Size the text box so it is large enough to contain the entire barcode. You will need to adjust both the height and width. Be sure to leave some extra space to the right and left of the barcode on the report. Generally, you need about 3 times the space to the left and right of the barcode as the thickest bar in the code 128 barcode.

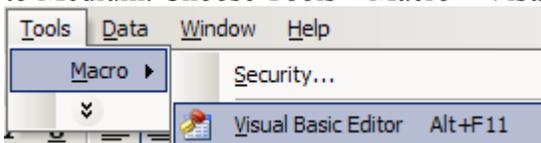


10. Save and run your report. You should see the barcode appear in the text box.



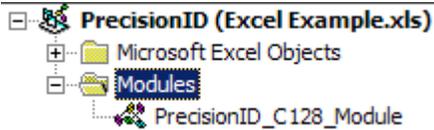
Microsoft Excel

1. NOTE: the [PrecisionID C128 T04](#) font is formatted specifically for use in Microsoft Excel. Other fonts may work but may not format properly in the cells.
2. In this example we will create a barcode in cell **B8** using the data from cell **A8** for the barcode.
3. Extract the [PrecisionID_C128_Module.bas](#) file from the package and place it in the "My Documents" folder.
4. Before we can create barcodes in Excel, we must import the required module and change the security setting so it will run. In Excel, choose Tools – Macro – Security and set the security level to Medium. Choose Tools – Macro – Visual Basic Editor.



5. Choose File – Import File and select the [PrecisionID_C128_Module.bas](#) file from the list of files. After this module is imported, it will be visible in the list of modules. Choose File – Close and

return to Excel.



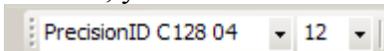
6. In cell B8, enter the formula of `=PrecisionID_C128AUTO(A10)` which is required to format the data to the font.

	A	B
8	TEST 1234	=PrecisionID_C128AUTO(A8)

7. You should notice that the formula changed the data from the spreadsheet and appended additional characters at the beginning and ending of the text. You may notice that numbers from the data are compressed into other characters, this is normal when you are using Code 128 Auto and the barcode contains 4 or more consecutive number characters.

	A	B
8	TEST 1234	ïTESTÂÇ,BÇï

8. With cell B10 selected, choose the **PrecisionID C128 T04** font, which is specifically formatted for use in Microsoft Excel, and choose 12 for the point size. We also recommend centering the text in this cell so the barcode will contain white space before and after the barcode. You must select the appropriate font for the formula you are using. For example, if you have a formula for a Code 128 barcode, you must use the Code 128 Font.



9. After selecting the bar code font, you should see the barcode appear. Size the width of the column so that there is some white space before and after the bars of the barcode.

	A	B
8	TEST 1234	

10. To create an entire column of barcodes, choose Edit – Copy with cell B10 selected.
11. Highlight cells you wish to add barcodes to in column B and choose Edit - Paste. The formula will automatically adjust for the other cells.

Microsoft Word Mail-Merge

1. Open the mail merge document.
2. To create a barcode in a Word mail-merge, we must insert a merge field from a data source that already formatted the text to the barcode font. In this example, we use Excel as the data source. The Excel spreadsheet data source must already be setup with barcodes just like the Excel Tutorial in this document.
3. In Word, Choose Tools – Letters and Mailings – Mail Merge and select the Excel spreadsheet for your data source. Be sure to select the columns and range for the cells that contain the data formatted to the barcode font. You may have to go through the Word mail-merge tutorial for assistance if you are unsure of how to connect to a data source or perform a mail-merge.
4. When connected to the data source, we insert the merge field of `<FormattedText>` into the document. When we choose the “View Merged Data” option, we see the text formatted to the barcode font from the data source appear.

Text formatted to barcode font:
ïTESTÂÇ,BÇï

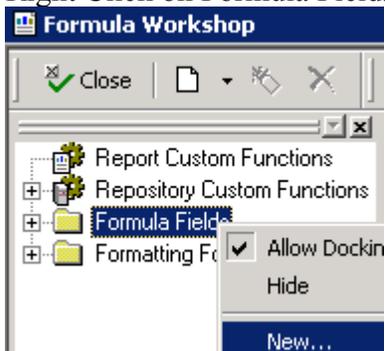
5. Select the text in the merged data and choose the **PrecisionID C128 08** font. Make the font 12 points in size.



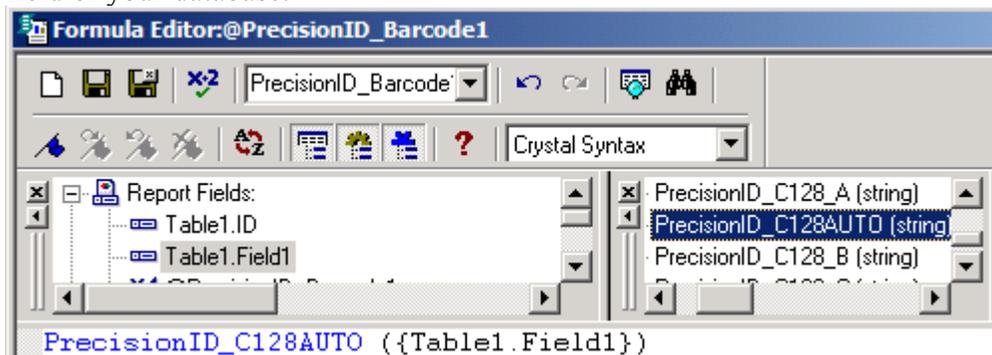
Crystal Reports

This example was created in Crystal Reports version 8. Implementation in other versions of Crystal Reports is very similar if not identical. The fonts and UFL are compatible with Crystal version 7 and above.

1. Open your Crystal Report and switch to design mode. In version 8, choose Insert – Formula Field or in version 9 and above choose Report – Formula Workshop.
2. Right Click on Formula Fields and choose New.



3. Give your formula field a name, in this example we will name it **PrecisionID_Barcode1**. In versions 9 and above, if you are asked to use the editor or the expert, choose Use Editor.
4. In the Formula Editor, choose Functions - Additional Functions and select the **PrecisionID_C128AUTO()** function. The U25PrecisionID.dll UFL file must be installed before you can use this formula or you will receive an error. This UFL file is installed by running the Setup.exe file in the font package. The U25PrecisionID.dll file is also provided in the Crystal DLL folder of the Zip file. To manually install it, copy it to the Windows System directory or the directory where the Crystal DLLs are located. When the U25PrecisionID.dll file is installed and active, the PrecisionID formulas will appear in the Formula Workshop under Additional Functions.
5. Place the cursor between the parentheses in the formula and select the field you wish to encode in the barcode from the Report Fields area in the Formula Editor. A correct formula will appear something like **PrecisionID_C128AUTO ({Table1.Field1})** where Table1.Field1 is the table and field of your database.



6. The tables and fields should be visible above in your database connection. Choose Save and Close.
7. From the Field Explorer, drag the **PrecisionID_Barcode1** Formula Field to the report.

8. Choose File – Print Preview. You should see that the formula field formatted the data from the database and appended additional characters at the beginning and ending of the text. You may notice that the numbers from the data are compressed into other characters; this is normal when you are using Code 128 Auto and the barcode contains 4 or more consecutive number characters.



9. Switch back to design mode, select the formula field and choose the **PrecisionID C128 T08** font. Set the point size to 12 points or to the size appropriate for your application. You must select the appropriate font for the formula you are using and the point size must be large enough for the scanner you are using (we recommend 12 points).
10. Size the formula field so it is large enough to contain the entire barcode. You will need to adjust both the height and width. Be sure to leave some extra space to the right and left of the barcode on the report. Generally, you need about 3 times the space to the left and right of the barcode as the thickest bar in the code 128 barcode.



11. The barcode should now be visible when you run your report.



Information for Specific Implementations

Creating Check Digits in Other Applications

The easiest method of creating source code for a check digit in a custom application is to use our [PrecisionID_C128_Module.bas](#) module as a guide. The module was written to be compatible with Visual Basic 6 and Microsoft Office VBA and may be viewed with a text editor. This module is located in the [Examples\VB Module](#) folder of the package.

Printing Text Below the Barcode

Human-readable or text fonts are not provided in this package because they do not work well with Code 128. If you need to place text below the barcode, we suggest simply printing the data you are encoding in a text font below the barcode on your report.

UCC/EAN-128 Barcodes

Our PrecisionID Font Formatting Components™ allow the creation of UCC128 and EAN128 barcodes by simply substituting the ASCII 202 character for the FNC1 when in C128AUTO. The same data should be used with the C128TEXT function to format the text below the barcode. If the C128TEXT function does not format the text properly, you will need to create your own text below the barcode by including the data encoded and appending in the parentheses where they are needed. You will then need to add in a field on the report below the barcode to include this text.

For example, to create the UCC/EAN barcode of (8100) 712345 (21) 12345678 the text of Ê8100654321Ê2187654321 would need to be sent to the C128AUTO function where Ê is the ASCII 202 character or Chr(202) in VB. The text portion for this barcode type must be created as a separate field below the barcode using a text font.

USPS EAN128 Barcodes

The [PrecisionID C128 14](#) font when printed at 16 points creates the required bar code size for USPS EAN128 barcodes. The text at the bottom of the barcode must be formatted properly and printed with our OCR-A font to meet the USPS specification.

Specifications

Font Point Sizes and X Dimension (Narrow Bar Width)

Our fonts are designed to print with precision on high resolution printers as well as low resolution printers such as 203 dpi thermal barcode printers. When printing at 203 dpi, the point size chosen should be a multiple of 6. When printing at 300 dpi, the point size chosen should be a multiple of 4.

Font point size	X Dimension (narrow bar width) measured in mils (1/1000 of an inch)
6	5
8	7
12 (recommended)	10
16	13
20	16
24	20
36	30

Font Names and Bar Code Height

The numbers at the end of the font name are to identify the height of the font in millimeters (mm) when printed at 12 points.

Font Name	Approximate Font Height at 12 points
PrecisionID C128 04	.18" or 04mm (use in Excel)
PrecisionID C128 08	.30" or 08mm
PrecisionID C128 12	.45" or 12mm
PrecisionID C128 14	.56" or 14mm (used for USPS and EAN 128)
PrecisionID C128 18	.70" or 18mm
PrecisionID C128 22	.90" or 22mm

The Code 128 Character Chart

The fonts were created according to the chart below. If you have an advanced knowledge of the Code 128 specifications, you can use this chart to manually create your barcodes and calculate the check digit.

Value	Set_A	Set_B	Set_C	ASCII	Text
00	Space	Space	00	0194	Â
01	!	!	01	0033	!
02	"	"	02	0034	"
03	#	#	03	0035	#
04	\$	\$	04	0036	\$
05	%	%	05	0037	%
06	&	&	06	0038	&
07	'	'	07	0039	'
08	((08	0040	(
09))	09	0041)
10	*	*	10	0042	*
11	+	+	11	0043	+
12	,	,	12	0044	,
13	-	-	13	0045	-
14	.	.	14	0046	.
15	/	/	15	0047	/
16	0	0	16	0048	0
17	1	1	17	0049	1
18	2	2	18	0050	2
19	3	3	19	0051	3
20	4	4	20	0052	4
21	5	5	21	0053	5
22	6	6	22	0054	6
23	7	7	23	0055	7
24	8	8	24	0056	8
25	9	9	25	0057	9
26	:	:	26	0058	:
27	;	;	27	0059	;
28	<	<	28	0060	<
29	=	=	29	0061	=
30	>	>	30	0062	>
31	?	?	31	0063	?
32	@	@	32	0064	@
33	A	A	33	0065	A
34	B	B	34	0066	B
35	C	C	35	0067	C
36	D	D	36	0068	D
37	E	E	37	0069	E
38	F	F	38	0070	F
39	G	G	39	0071	G
40	H	H	40	0072	H
41	I	I	41	0073	I
42	J	J	42	0074	J
43	K	K	43	0075	K
44	L	L	44	0076	L
45	M	M	45	0077	M
46	N	N	46	0078	N
47	O	O	47	0079	O
48	P	P	48	0080	P
49	Q	Q	49	0081	Q
50	R	R	50	0082	R
51	S	S	51	0083	S
52	T	T	52	0084	T

Value	Set_A	Set_B	Set_C	ASCII	Text
54	V	V	54	0086	V
55	W	W	55	0087	W
56	X	X	56	0088	X
57	Y	Y	57	0089	Y
58	Z	Z	58	0090	Z
59	[[59	0091	[
60	\	\	60	0092	\
61]]	61	0093]
62	^	^	62	0094	^
63	_	_	63	0095	_
64	nul	`	64	0096	`
65	soh	a	65	0097	a
66	stx	b	66	0098	b
67	etx	c	67	0099	c
68	eot	d	68	0100	d
69	eno	e	69	0101	e
70	ack	f	70	0102	f
71	bel	g	71	0103	g
72	bs	h	72	0104	h
73	ht	i	73	0105	i
74	lf	j	74	0106	j
75	vt	k	75	0107	k
76	ff	l	76	0108	l
77	cr	m	77	0109	m
78	s0	n	78	0110	n
79	s1	o	79	0111	o
80	dle	p	80	0112	p
81	dc1	q	81	0113	q
82	dc2	r	82	0114	r
83	dc3	s	83	0115	s
84	dc4	t	84	0116	t
85	nak	u	85	0117	u
86	syn	v	86	0118	v
87	etb	w	87	0119	w
88	can	x	88	0120	x
89	em	y	89	0121	y
90	sub	z	90	0122	z
91	esc	{	91	0123	{
92	fs		92	0124	
93	gs	}	93	0125	}
94	rs	~	94	0126	~
95	us	del	95	0195	Ã
96	Fn 3	Fn 3	96	0196	Ä
97	Fn 2	Fn 2	97	0197	Å
98	Shift	Shift	98	0198	Æ
99	code C	code C	99	0199	Ç
100	code B	Fn 4	code B	0200	È
101	Fn 4	code A	code A	0201	É
102	Fn 1	Fn 1	Fn 1	0202	Ê
103	Start A	Start A	Start A	0203	Ë
104	Start B	Start B	Start B	0204	Ì
105	Start C	Start C	Start C	0205	Í
	Stop	Stop	Stop	0206	Î

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