BarCodeJet®
Universal Barcode Printing Device

Implementation Guide

TYPEHAUS

Extending the Resources and Abilities of Your Printer

Contents

Implementing the BarCodeJet

Barcodes are activated using a font-like escape sequence, generated:

- from specific applications, where developers can program code that generates PCL escape sequences with BarCodeJet functionalities,

- from standard software, which feature a native driver (for example: SAP R/3). Refer to the SAP R/3 section in this guide for more details.

Barcode Readability

The barcodes and OCR fonts generated by the BarCodeJet have been found to be highly readable. However, TypeHaus does not guarantee and has not tested that the barcodes, OCR-A and OCR-B fonts contained within the BarCodeJet product are readable by ALL machines. TypeHaus highly recommends that you test the readability of barcodes prior to final implementation.

MS Windows

There is no standard Windows driver for the BarCodeJet and we do not support the BarCodeJet for printing barcodes from Windows applications. However, there are ways to implement the commands to call the barcodes in your Window's application. For example, Word has a "printer field" for inserting escape sequences into documents. See your Window's applications manual for instruction on inserting printer commands or escape sequences.

Call **TypeHaus** for available window's printing options.

BarCodeJet Parameter Specification

Barcodes are generated by inserting font like escape sequences into the data stream. The escape sequence should consists of multiple parameters. Each parameter specifies a different characteristic of the barcode to be printed.

T parameter Esc(s#T (Typeface):

Control barcode symbology selection.

See Barcode Specifications Section for Typeface numbers

p parameter Esc(s#p

Determines the location of where the text is printed with bar code

 0 Use default value

 1 No Text

 2 Print text embeded

 3 Print text half embeded

 4 Print text under code

 5 Print text above code

h parameter Esc(s#h

Selects the font and style for the text.

Format: use numerical value and format CBA (Style, Size, Font)

A = Font

 0 Courier to print text (default)

 1 Letter Gothic

 2 Univers
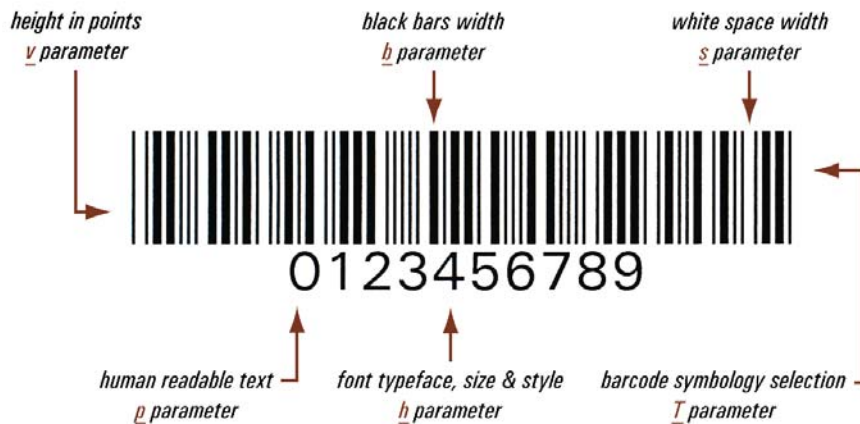
 3 Univers Condensed

 4 CG-Times

 5 OCR-B

B = Size

 0 Use default font size

C = Style

0 Use Default (Bold)

1 Use Regular

2 Use Italics

3 Use Bold

4 Use Bold Italic

Example: text in OCR-B Regular Default size use: 105h

height in points
v parameter

black bars width
b parameter

white space width
s parameter

0123456789

human readable text
p parameter

font typeface, size & style
h parameter

barcode symbology selection
T parameter

v parameter Esc(s#v

Selects the height of the bar in points (1/72 inch)

Except in symbologies where height is a fixed value, the bar height can be specified in point.

Example: To print a barcode that is ½ inch tall use: 36v

b parameter Esc(s#1,#2,#3,#4b

Select black bar widths in dots (1/600 inch)

1 first thinnest width

2 second width

3 third width

4 fourth thickest width

Example: Thin bars 10 dots, thick bars 30 dots : 10,30b

s parameter Esc(s#1,#2,#3,#4s
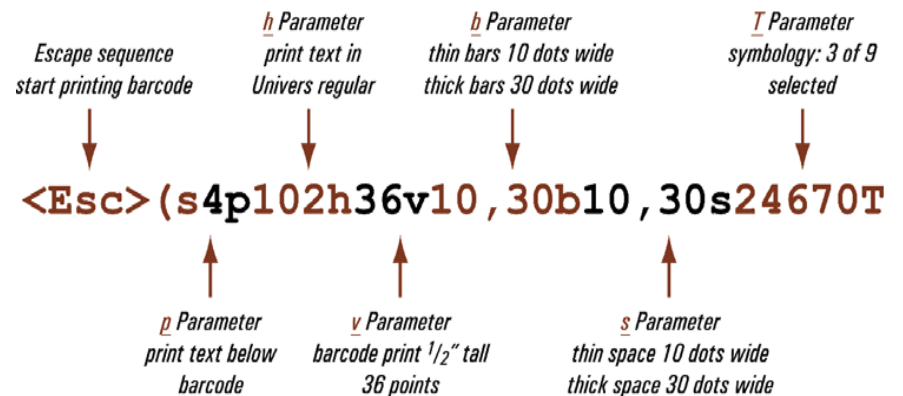
Select white space widths in dots (1/600 inch)

1 first thinnest width

2 second width

3 third width

4 fourth thickest width

Example: Thin spaces 10 dots, thick spaces 30 dots : 10,30s

Note: When specifying either the s or b parameter, both parameters must be included in the printer command.

Assembling the Parameters

Barcodes A valid PCL escape sequence to select a barcode appears like the following:

h Parameter
print text in
Univers regular

b Parameter
thin bars 10 dots wide
thick bars 30 dots wide

T Parameter
symbology: 3 of 9
selected

Escape sequence
start printing barcode

<Esc>(s4p102h36v10,30b10,30s24670T

p Parameter
print text below
barcode

v Parameter
barcode print ½" tall
36 points

s Parameter
thin space 10 dots wide
thick space 30 dots wide

Barcode Rotation

To rotate a barcode, you can use regular PCL rotation commands. It is recommended you save the curor position before activating the barcode, and resport that position after the barcode.

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Sample 90° Barcode Rotation

<Esc>&fS	Save cursor position
<Esc>&a30000h2000v	Cursor positioning
<Esc>&a90P	90° rotation
<Esc>(s4p102h40v10,30b10,30s24670T	Select Barcode
0123456789	Barcode Data
<Esc>(10U<Esc>(sp10hsb4099T	Select Courier 10cpi font
<Esc>&a0P	End rotation
<Esc>&1f1S	Return to saved cursor position

Although barcodes are generated using escape sequences that are very similar to font calls they are not using barcode fonts. Therefore there are limitations.

- No font ID can be set to the BarCodeJet's symbologies
- BarCodeJet works with PCL5 and PCL5e drivers only
- BarCodeJet barcode symbologies cannot be executed from HPGL2, PCL6 and Postscript language

Escape Swap

In some applications it is very difficult to insert an escape sequence into the data, because of the fact the escape character is not available on the keyboard. For these situations, it is possible to use the EscapeSwap option. The BarCodeJet will search for an assigned character on the key while analyzing the print data. If the assigned character is followed by a valid symbology call the BarCodeJet will print the barcode. For example:

```
$(s4p102h36v10,30b10,30s24670T
```

becomes a valid BarCodeJet command for printing Code 3of9 if the $ dollar sign is designated as the EscapeSwap character. EscapeSwap character selection is set-up in the BarCodeJet Management Utility accessed through your browser. The BarCodeJet EscapeSwap setting default is set to disabled.

Barcode Specifications

There are many standard used to encode information as bars. The BarCodeJet supports a host standard barcodes:

Typeface # - 24630 EAN-13 | 24631 EAN-13+2 | 24632 EAN-13+5

Barcode Details - Non-compressed barcode with an input length of 12 digits.

Foreign interest in the UPC led to the adoption of the EAN code format, similar to UPC, in December 1976. EAN-13 is a superset of UPC-A. Like the UPC-A the EAN-13 contains numeric data only but encodes 13 digits rather than 12. Instead of having a single number system digit, the EAN implements a 2 digit country code. The following 5 digits are the manufacturer's ID. Then the 5 product number and checksum character are printed. The checksum is calculated by the BarCodeJet.

Typeface # - 24620 EAN-8 | 24621 EAN-8+2 | 24622 EAN-8+5

Barcode Details - Compressed barcode with an input length of 7 digits.

The EAN-8 is the compressed version of the EAN-13. Instead of encoding 13 digits it encodes only 8. The first two digits are the country code, the next 5 digits are the product number and the last one required checksum character. You do not need to specify the checksum product number and the last one required checksum character. You do not need to specify the checksum digit as BarCodeJet recalculates it.

Unlike the UPC codes the EAN8 data is not an exact subset of the EAN-13 data. In other words the UPC-E barcode may be "expanded" back to UPC-A. This is not the case with EAN-8. An EAN-8 barcode is a 2- or 3-digit number system code followed by a 4- or 5-digit product code.

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CODE 39 — ABC1234

Typeface # - 24670 Code 39 | 24671 Code 39 + Checksum

Barcode Details - Non-compressed barcode with an input length of 1 to 99 digits.

Code 39 is a barcode symbology developed in 1969. It is widely used in numerous industries, including libraries and pharmaceuticals. Code 39 is a discrete (the bar(s) encoding one character are contained in a space of specified width) symbology with two different bar widths, a start sequence on its left end and a stop sequence on its right end. The standard encoding of the start and stop asterisks ("*") characters is automatically inserted by the BarCodeJet.   The barcode itself does not have to contain a check digit, however the BarCodeJet can calculate it.

Code 39 is also known as "3 of 9 bar code". Code 3of 9 gets it's name because there are 9 white and black bars in each code, and 3 of these bars are wide. 3 "wide" of 9 "bars".

Code 39 can encode uppercase letters (A through Z), digits (0 through 9) and punctuation/special characters below.

-	hyphen	/	slash
.	period	+	plus
	SPACE	%	percent
$	dollar		

CODE 39 EXTENDED — abCD[123]

Typeface # - 24680 Code 39 Extended | 24681 Code 39 Extended + CheckSum.

Barcode Details - Non-compressed output with a variable input length of 1 to 99 characters.

The regular Code 39 barcode symbology supports only 43 characters. Extended 39 allows the encoding whole 128 ASCII character set. Unlike other barcode solutions, the BarCodeJet does not require the combination of two regular Code 39 characters to obtain the additional characters. The BarCodeJet applies this translation transparently to the data. Code 39 Extended is also available with a check digit.

Code 39 extended can encode all 128 ASCII characters, including both uppercase, as well as lowercase alpha characters.

INTERLEAVED 2of5 — 1234567890

Typeface # - 24640 Interleaved 2 of 5 | 24641 Interleaved 2 of 5 with Checksum

Barcode Details - Non-compressed output with a variable input length of 1 to 99 characters.

Numeric-only code, requires an even number of digits in the string to be encoded. It can have from 2 to 30 digits.

INDUSTRIAL 2of5 — 1234567890

Typeface # - 24650   Industrial 2 of 5 | 24651 Industrial 2 of 5 with Checksum

Numeric-only codes, can have from 1 to 30 digits.

UCC-128 & EAN-128
01212344

Typeface # - 24710 UCC-128 | 24720 EAN-128

Barcode Details - Non-compressed input with a variable input length of 1 to 99 characters.

Variable length bar code starting with FNC1 code and based on Code 128 sets A, B and C to encode the string. EAN-128 is used for pallet labels and EDI related barcode labels. The BarCodeJet adds automatically the FNC1 code at the beginning and the checksums at the end.

CODE 93 & CODE 93 EXT
ABCD0123

Typeface # - 24690 Code93 + Checksum | 24691 Code93 Extended + Checksum

Barcode Details - Non-compressed input with a variable input length of 1 to 99 characters.

Code93 was introduced in 1982, as a high density alternative for bar code 3 of 9. It offers virtually the same character set as barcode 3 of 9, but requires a double checksum (calculated automatically by the BarCodeJet) to provide an extra security. Code 93 Extended is an extended version of Code 93 that supports the ASCII character set. Code 93 Extended can also code the 26 lower letters (a-z), as well as the special characters on the keyboard.

MSI PLESSY
0123456

Typeface # - 24760 MSI Plessey | 24761 MSI Plessey + Mod 10 Checksum | 24762 MSI Plessey with two Mod 10 | Checksums 24763 MSI Plessey with Mod 11 and Mod 10 Checksums

Barcode Details - Non-compressed input with a variable input length of 1 to 99 digits.

The Plessey barcode was designed in the 1970s by the Plessey Company in England and has been used primarily in libraries and retail applications. MSI Data Corporation introduced MSI from the original Plessey Code. Therefore, MSI is also known as Modified Plessey. Most applications still support MSI only for backward compatibility, because MSI/Plessey is based on Pulse-Width Modulation technology. There are multiple checksum choices for MSI Plessey, including Modulo 10, Modulo 10 + 10 and Modulo 11 + 10. MSI is sometimes called Plessey Code or MSI/Plessey.

CODEBAR
a1234567b

Typeface # - 24750 Codabar | 24751 Codabar + Checksum

Barcode Details - Non-compressed input with a variable input length of 1 to 99 digits upper case letters A to D and the following symbols: - . $ / +

The Codabar bar code symbology is used for various numeric bar coding applications including libraries, blood banks and parcels. Codabar was designed for character self-checking eliminating the requirement for checksum characters. However, checksum characters in the Codabar barcode are optional and they do maximize data integrity.

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UPC-A (Regular, +2 & +5)
Printing Guide

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The Universal Product Code (UPC) was the first bar code symbology widely adopted. Its birth is usually set at April 3, 1973, when the grocery industry formally established UPC as the standard bar code symbology for product marking. Many national retail chains, as well as most grocery stores, require all products they sell to have a bar code that is unique for the specific product.
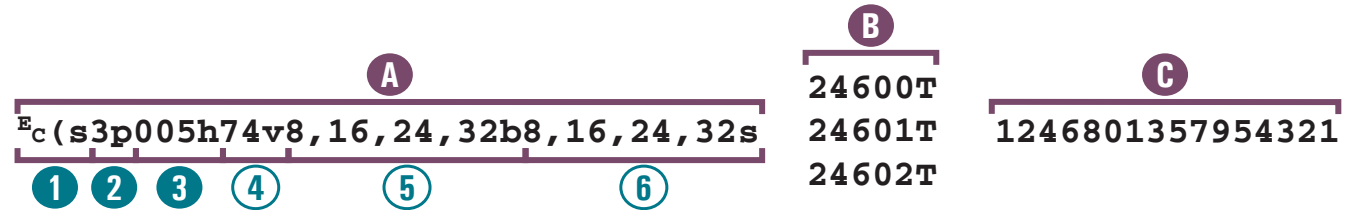
54321

A

E_C(s3p005h74v8,16,24,32b8,16,24,32s

① ② ③ ④ ⑤ ⑥

B
24600T
24601T
24602T

C
1246801357954321

1 24680 13579 8

Numbers in ⬤ indicate required information, and in ◯ indicate optional information, when printing an industry standard UPC-A full size bar code. The optional information is shown for discussion purposes to facilitate alternative formatting when desired. Example shows default values for optional information.

E_C ASCII Escape (ESC) code. Decimal 27. Hex 1B. Marks the start of a command sequence to distinguished it from printable text.

A Bar code formatting parameters.

① Start of bar code commands. Required. Must be an ESC code followed by the 2 characters exactly as shown.

② Human readable text positioning. Required as shown for standard UPC-A bar code. 0 or 1 numeric digit value followed by "p". "p" may be omitted if no value specified when default values are to be used. The following values are valid.

| 0 Same as 1 (default) | 2 Embedded | 4 Under bar code |
| 1 No human readable | 3 Half-embedded | 5 Above bar code |

③ Human readable font selection. "5h" required as shown for industry standard UPC-A bar code. Leading zeroes are optional. Parameter consists of 0-3 numeric digit value followed by "h". "h" may be omitted if no value specified when default values to be used.

First digit specifies font style as follows. For non-zero value, second and third digits discussed below must also be specified.

| 0 Bold (default) | 2 Italic | 4 Bold italic |
| 1 Regular | 3 Bold | |

Second digit reserved for future expansion. It must be zero. It must be present if font style digit is specified.

Third digit specifies font typeface as follows. Digit must be present if first and second digits discussed above are specified.

| 0 Courier (default) | 2 Univers | 4 CG Times |
| 1 Letter Gothic | 3 Univers Condensed | 5 OCR-B |

④ Bar heights in points (1/72"). Optional. Default value produces standard UPC-A full height (1.02") bar code.

⑤ Bar widths in 1/600". Optional. Default values produce standard UPC-A full width (1.469") bar code. Values must be separated by commas as shown. UPC-A uses four different bar widths. First value specifies width of single-wide (narrowest) bar, second value specifies width of double-wide bar, third value specifies width of triple-wide bar, and fourth value specifies width of quadruple-wide (widest) bar. Second, third and fourth values are normally multiples of first value as shown. "b" may be omitted if no values specified when default values to be used.

⑥ Space widths in 1/600". Optional. Default values produce standard UPC-A full width (1.469") bar code. Same requirements and value sequence as for bar widths. "s" may be omitted if no values specified when default values to be used.

B UPC-A bar code symbology selection options. Required. Follows immediately after bar code formatting parameters without spaces, line feeds, carriage returns, or any other data. Choose 1 of the 3 options shown. 6 characters must be sent exactly as shown. Use 24600 for UPC-A, 24601 for UPC-A+2 and 24602 for UPC-A+5.

C UPC-A bar code data. Follows immediately after bar code symbology selection without spaces, line feeds, carriage returns, or any other data. 11 numeric digits for standard UPC-A. 13 numeric digits for UPC-A+2. 16 numeric digits for UPC-A+5. Does not include the bar code's checksum digit. The BarCodeJet automatically calculates the checksum digit.

Standard PCL5 typeface selection, symbol set selection, and positioning commands must follow the bar code data in order to indicate the end of the data and to resume normal text printing. Refer to the introductory sections of the BarCodeJet Printing Guide for more information and instructions common to all bar codes.
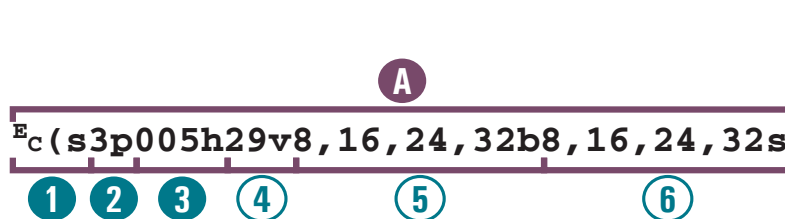
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UPC-E (Regular, +2 & +5)
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UPC version E is the second most common version of UPC. It is intended for use on packaging which would be otherwise too small to use one of the other versions. It is a zero suppression version which reduces the number of digits from 12 to 6, thereby making the code smaller by dropping out zeros which would occur in a standard UPC symbol.

54321

0 443284 1

A
E_C(s3p005h29v8,16,24,32b8,16,24,32s

① ② ③ ④ ⑤ ⑥

B
24610T
24611T
24612T

C
0443200000854321

Numbers in ● indicate required information, and in ○ indicate optional information, when printing an industry standard UPC-E half high, full width, bar code. Optional information is shown for discussion purposes to facilitate alternative formatting when desired. Example shows default values for optional information.

E_C ASCII Escape (ESC) code. Decimal 27. Hex 1B. Marks the start of a command sequence to distinguished it from printable text.

A Bar code formatting parameters.

① Start of bar code commands. Required. Must be an ESC code followed by the 2 characters exactly as shown.

② Human readable text positioning. Required as shown for standard UPC-E bar code. 0 or 1 numeric digit value followed by "p". "p" may be omitted if no value specified when default values are to be used. The following values are valid.

0 Same as 1 (default)	2 Embedded	4 Under bar code
1 No human readable	3 Half-embedded	5 Above bar code

③ Human readable font selection. "5h" is required as shown for industry standard UPC-E bar code. Leading zeroes are optional. The parameter consists of a 0-3 numeric digit value followed by "h". The "h" may be omitted if no value is specified when default values are to be used.

First digit specifies font style as follows. For non-zero value, second and third digits discussed below must also be specified.

0 Bold (default)	2 Italic	4 Bold italic
1 Regular	3 Bold	

Second digit reserved for future expansion. It must be zero. It must be present if font style digit is specified.

Third digit specifies font typeface as follows. Digit must be present if first and second digits discussed above are specified.

0 Courier (default)	2 Univers	4 CG Times
1 Letter Gothic	3 Univers Condensed	5 OCR-B

④ Bar heights in points (1/72"). Optional. Default value produces standard UPC-E half height (0.45") bar code.

⑤ Bar widths in 1/600". Optional. Default values produce standard UPC-E full width (0.66") bar code. Values must be separated by commas as shown. UPC-E uses four different bar widths. First value specifies width of single-wide (narrowest) bar, second value specifies width of double-wide bar, third value specifies width of triple-wide bar, and fourth value specifies width of quadruple-wide (widest) bar. Second, third and fourth values are normally multiples of first value as shown. "b" may be omitted if no values specified when default values to be used.

⑥ Space widths in 1/600". Optional. Default values produce standard UPC-E full width (0.66") bar code. Same requirements and value sequence as for bar widths. "s" may be omitted if no values specified when default values to be used.

B UPC-E bar code symbology selection options. Required. Follows immediately after bar code formatting parameters without spaces, line feeds, carriage returns, or any other data. Choose 1 of the 3 options shown. 6 characters must be sent exactly as shown. Use 24610 for UPC-E, 24611 for UPC-E+2 and 24612 for UPC-E+5.

C UPC-E bar code data. Follows immediately after bar code symbology selection without spaces, line feeds, carriage returns, or any other data. 11 numeric digits for standard UPC-E. 13 digits for UPC-E+2. 16 digits for UPC-E+5. The BarCodeJet will automatically perform the zero suppression. Data does not include the bar code's checksum digit. The BarCodeJet automatically calculates the checksum digit. Data with zeroes already suppressed may alternately be specified.
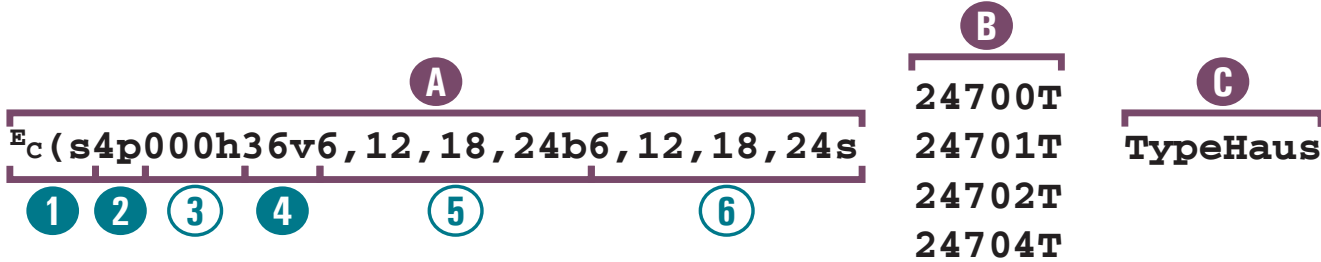
Standard PCL5 typeface selection, symbol set selection, and positioning commands must follow the bar code data in order to indicate the end of the data and to resume normal text printing. Refer to the introductory sections of the BarCodeJet Printing Guide for more information and instructions common to all bar codes.

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Code 128 (Auto, A, B & C)
Printing Guide

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New standard for most bar code labels. Code 128 is a very compact bar code for numeric and alpha-numeric strings. It has 3 modes: A, B and C, which encode different character ranges. Auto mode allows encoding all 128 ASCII characters without pre-analyzing the string. Switching occurs automatically between A, B and C to create the most compact code. Auto is fully compliant with the ECR labels standard.

TypeHaus

(A) E_C(s4p000h36v6,12,18,24b6,12,18,24s
(1)(2)(3)(4)(5)(6)

(B)
24700T
24701T
24702T
24704T

(C) TypeHaus

Numbers in ● indicate required information, and in ○ indicate optional information, when printing an industry standard Code 128 0.5" high bar code. The optional information is shown for discussion purposes to facilitate alternative formatting when desired. Example shows default values for optional information.

E_C ASCII Escape (ESC) code. Decimal 27. Hex 1B. Marks the start of a command sequence to distinguished it from printable text.

(A) Bar code formatting parameters.

(1) Start of bar code commands. Required. Must be an ESC code followed by the 2 characters exactly as shown.

(2) Human readable text positioning. 0 or 1 numeric digit value followed by "p". "p" may be omitted if no value specified when default values are to be used. The following values are valid.

0 Same as 1 (default)	2 Embedded	4 Under bar code
1 No human readable	3 Half-embedded	5 Above bar code

(3) Human readable font selection. Leading zeroes are optional. Parameter consists of 0-3 numeric digit value followed by "h". "h" may be omitted if no value specified when default values to be used.

First digit specifies font style as follows. For non-zero value, second and third digits discussed below must also be specified.

0 Bold (default)	2 Italic	4 Bold italic
1 Regular	3 Bold	

Second digit reserved for future expansion. It must be zero. It must be present if font style digit is specified.

Third digit specifies font typeface as follows. Digit must be present if first and second digits discussed above are specified.

0 Courier (default)	2 Univers	4 CG Times
1 Letter Gothic	3 Univers Condensed	5 OCR-B

(4) Bar heights in points (1/72"). "36v" should be used as shown to create a standard 0.5" high bar code.

(5) Bar widths in 1/600". Optional. Default values produce standard Code 128 bar widths in multiples of 0.01". Values must be separated by commas as shown. Code 128 uses four different bar widths. First value specifies width of single-wide (narrowest) bar, second value specifies width of double-wide bar, third value specifies width of triple-wide bar, and fourth value specifies width of quadruple-wide (widest) bar. Second, third and fourth values are normally multiples of first value as shown. "b" may be omitted if no values specified when default values to be used.

(6) Space widths in 1/600". Optional. Default values produce standard Code 128 space widths in multiples of 0.01". Same requirements and value sequence as for bar widths. "s" may be omitted if no values specified when default values to be used.

(B) Code 128 bar code symbology selection options. Required. Follows immediately after bar code formatting parameters without spaces, line feeds, carriage returns, or any other data.

Choose 1 of the 4 options shown. 6 characters must be sent exactly as shown. Use 24700 for Code 128 Auto, 24701 for Code 128A, 24702 for Code 128B and 24704 for Code 128C.

(C) Code 128 bar code data. Follows immediately after bar code symbology selection without spaces, line feeds, carriage returns, or any other data. The checksum is automatically calculated. The following Code 128 control codes are supported. The first value is decimal. The second value is hexadecimal.

128 80 Shift	131 83 FNC 3	134 86 Code B
129 81 FNC 1	132 84 FNC 4	135 87 Code C
130 82 FNC 2	133 85 Code A	

Standard PCL5 typeface selection, symbol set selection, and positioning commands must follow the bar code data in order to indicate the end of the data and to resume normal text printing. Refer to the introductory sections of the Printing Guide for more information and instructions common to all bar codes.

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The United States Postal Service Intelligent Mail (formerly 4-State Customer) bar code is a height-modulated bar code that encodes up to 31-digits of mailpiece data into 65 vertical bars using 4-state symbology (ascender, descender, tracker and full bar).

A

B

E_C(s24782T

00040123456200800001987654321

1   **2**   **3**   **4**   **5**

E_C ASCII Escape (ESC) code. Decimal 27. Hex 1B. Marks the start of a command sequence to distinguished it from printable text.

A   Intelligent Mail symbology selection command. The ESC code and subsequent 8 characters must be sent exactly as shown.

B   Intelligent Mail barcode data. Follows immediately after selection command without spaces, line feeds, carriage returns, or any other data. 20, 25, 29 or 31 numeric digits depending upon the length of the data contained in the Routing Code field.

1   Barcode ID. Required. Exactly 2 numeric digits. Refer to United States Postal Service documentation for valid Barcode IDs.

2   Service Type ID. Required. Exactly 3 numeric digits. Refer to United States Postal Service documentation for valid Service Type IDs.

3   Mailer ID (MID). Required. 6 or 9 numeric digits depending upon the ID assigned to the mailing agent. All 9 digit mailer IDs begin with the digit "9". All 6 digit mailer IDs being with "0" through "8". Contact the United States Postal Service for information on being assigned a Mailer ID.

4   Serial Number. Required. 9 or 6 numeric digits depending upon the size of the Mailer ID. If the Mailer ID is 6 digits, then this field must be 9 digits. If the Mailer ID is 9 digits, then this field must be 6 digits. The combined length of the Mailer ID and Serial Number fields must always be 15 digits.

5   Routing Code. Optional. 0, 5, 9 or 11 numeric digits. 5 digits if Routing Code is 5-digit ZIP code. 9 digits if Routing Code is 9-digit ZIP+4 code. 11 digits if Routing Code is 11-digit delivery point code.

A PCL5 command must immediately follow the Intelligent Mail bar code data to indicate to the BarCodeJet the end of the bar code data. This allows the BarCodeJet to properly determine the length of the Routing Code field.

Standard PCL5 typeface selection, symbol set selection, and positioning commands must follow the bar code data in order to resume normal text printing. Refer to the introductory sections of the BarCodeJet Printing Guide for more information and instructions common to all bar codes.
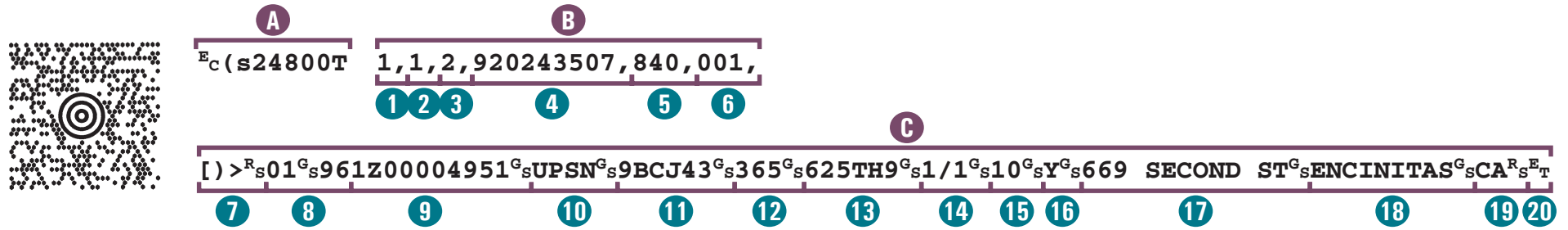
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MaxiCode (UPS)
Printing Guide

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An international 2D symbology currently used by United Parcel Service on packing slips for addressing and package sortation. Symbols are fixed size and made up of dots arranged in offset rows of hexagonal grid arranged around a bulls-eye. Symbol size is 1.11 x 1.054 inches and allows up to 93 data characters of information.

(A)

E_C**(s24800T**

(B)

1,1,2,920243507,840,001,

(1)(2)(3) (4) (5) (6)

(C)

[)>R_S01G_S961Z00004951G_SUPSNG_S9BCJ43G_S365G_S625TH9G_S1/1G_S10G_SYG_S669 SECOND STG_SENCINITASG_SCA$R_S$$E_T$

(7) (8) (9) (10) (11) (12) (13) (14)(15)(16) (17) (18) (19)(20)

E_C ASCII Escape (ESC) code. Decimal 27. Hex 1B. Marks the start of a command sequence to distinguished it from printable text.

R_S ASCII Record Separator (RS) code. Decimal 30. Hex 1E. Marks the start and end of the secondary message data.

G_S ASCII Group Separator (GS) code. Decimal 29. Hex 1D. Separates the individual fields within the secondary message data.

E_T ASCII End of Transmission (EOT) code. Decimal 4. Hex 04. Marks the end of all MaxiCode data.

(A) MaxiCode symbology selection command. The ESC code and subsequent 8 characters must be sent exactly as shown.

(B) MaxiCode primary message data. Follows immediately after selection command without spaces, line feeds, carriage returns, or any other data. Commas mark the end of each field in the primary message data.

(1) Label number. Required. Numeric.

(2) Number of labels for the shipment. Required. Numeric.

(3) MaxiCode mode. Required. Use 2 for domestic US or 3 for international shipments.

(4) Ship-to postal code. Required. 5 or 9 alpha/numeric characters. Alpha characters must be upper case.

(5) Ship-to country code. Required. Exactly 3 numeric digits.

(6) Class of service. Required. Exactly 3 numeric digits. Although

this is the last field of the message data, a comma must still be included to mark the end of this field.

(C) MaxiCode secondary message data. Follows immediately after primary message data without spaces, line feeds, carriage returns, or any other data.

(7) ANSI message header. Required. The 3 characters followed by the RS code must be sent exactly as shown.

(8) Transportation data header. Required. The 5 characters, including the GS code, must be sent exactly as shown.

(9) Tracking number. Required. 10 or 11 alpha/numeric characters. Alpha characters must be upper case.

(10) Standard Carrier Alpha Code (SCAC). Required. The 4 characters followed by the GS code must be sent exactly as shown.

(11) UPS shipper number. Required. Exactly 6 alpha/numeric characters. Alpha characters must be upper case.

(12) Julian day of pickup. Required. Exactly 3 numeric digits.

(13) Shipment ID number. Optional. 0-30 alpha/numeric characters. Alpha characters must be upper case. GS code must always be sent even when no data is specified.

(14) Package X of Y. Required. 1-3 numeric digits for X. 1-3 numeric digits for Y. Forward slash must separate X and Y as shown.

(15) Package weight in pounds. Required. 1-3 numeric digits.

(16) Address validation. Required. Single character "Y" or "N". Must be upper case.

(17) Ship-to address. Optional. 0-35 alpha/numeric characters. Alpha characters must be upper case. GS code must always be sent even when no data is specified.

(18) Ship-to city. Required. 1-20 alpha/numeric characters. Alpha characters must be upper case.

(19) Ship-to state. Required. 2 alpha characters. Both characters must be upper case. RS code marks the end of this field and the end of the secondary message data.

**(20)** EOT code marks the end of the MaxiCode data.

Standard PCL5 typeface selection, symbol set selection, and positioning commands must follow the bar code data in order to resume normal text printing. Refer to the introductory sections of the BarCodeJet Printing Guide for more information and instructions common to all bar codes.

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BarCodeJet®
Universal Barcode Printing Device

Aztec Code
Printing Guide

TYPEHAUS
Extending the Resources and Abilities of Your Printer

A 2D symbology originally developed by Welch Allyn. The symbology encodes the data in a pattern of squares surrounding a group of concentric square rings at the center. The square rings provide a target for scanners to use to properly locate the bar code image. Depending upon the size, the symbology can encode up to 3,832 numeric digits, 3,067 alphabetic characters, or 1,914 bytes of binary data.
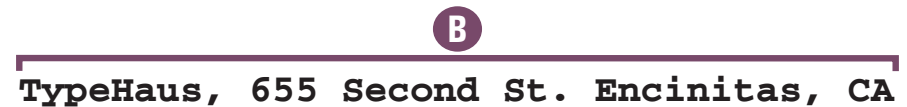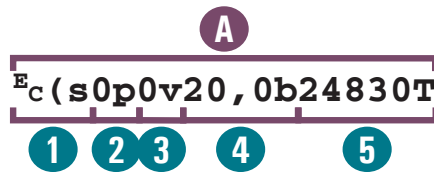
A

E_C(s0p0v20,0b24830T

1 **2** **3** **4** **5**

B

TypeHaus, 655 Second St. Encinitas, CA

E_C ASCII Escape (ESC) code. Decimal 27. Hex 1B. Marks the start of a command sequence to distinguished it from printable text.

A Aztec Code symbology selection command and parameters.

1 Start of bar code commands. Required. Must be an ESC code followed by the 2 characters exactly as shown.

2 Error correction (ECC) selection. Optional. 0 to 3 numeric digits followed by "p". 0 is default ECC of 23% + 3 codewords. 1-99 selects ECC level in %. 101-104 selects Compact ECC format 1-4 layers. 201-232 selects Full-Range ECC format 1-32 layers. 300 selects Aztec Rune ECC format. Default is 0.

3 Inverse image selection. Optional. 0 or 1 numeric digit followed by "v". 0 selects black-on-white (normal). 1 selects white-on-black (inverse). 0 is default.

4 Small modules (small black data squares) size and undercut selection. Optional. 0 or more numeric digits, followed by comma, followed by 0 or more numeric digits, followed by "b". First value (value before the comma) selects size of small modules in 1/600" increments. The example selects 20/600" which results in 0.15" square modules. Default is 20/600". Second value (value after the comma) selects the undercut in 1/600" increments. Value can be from 0 to 1 less than the module size (the first value). Default is 0/600".

5 Aztec Code bar code symbology selection. Required. 6 characters must be sent exactly as shown.

B Aztec Code bar code data. Follows immediately after selection command without spaces, line feeds, carriage returns, or any other data. Standard ASCII human-readable data can be specified as shown. Binary data, including ASCII control codes, requires the use of the Transparent Print Data command sequence discussed in the introductory sections of the BarCodeJet Printing Guide.

Standard PCL5 typeface selection, symbol set selection, and positioning commands must follow the bar code data in order to resume normal text printing. Refer to the introductory sections of the BarCodeJet Printing Guide for more information and instructions common to all bar codes.

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