



AN-08 (Easy Print)

December 6, 2005

HOW TO SELECT FONTS IN EASY PRINT MODE

O'Neil thermal printers contain several resident fonts. In addition, many fonts can also be downloaded to the printer. Resident fonts are either ASCII (contain all ASCII characters in the original definition – printable characters below 0x7F), or Code Page 437 (contain additional characters above 0x80). Additional fonts can be downloaded for different sizes, styles, and mappings. When you select a font, you are automatically selecting the (1) text size (which can be modified using field parameters), (2) text style, (3) languages supported, including international character sets, and (4) mapping – which includes what character is printed when a value is sent to the printer.

Fonts are selected when you create a field entry for an Easy Print print job. In each field entry you need to specify the font you want to print. To print using Easy Print, the command is PRINT and the DATA is a succession of descriptors for each field, or “thing” to be printed (whether the “thing” is text, bar code, or graphic). Optional global parameters affect the entire print job.

```
{PRINT<,GLOBALPARAMETERS>:
[FIELD 1]
.
[FIELD n]
}
```

Each field, regardless of what is to be printed is virtually identical. If a field is to contain printed text, then a font must be selected for that field. Each FIELD has the form:

```
@ROW,COL:NAME<FIELD PARAMETERS>|DATA|
```

Begins with an “@” (0x40)

Is followed by WHERE the data is to be printed (ROW,COL). The row and column are always followed by a colon “:” (0x3A)

That is followed by HOW is to be printed. In this case, since we are printing text, it is the NAME

That is followed by WHAT is to be printed which is the DATA to be printed. Data is always delimited by a vertical bar (0x7C) before and after the data. Optionally, a comma “,” (0x2C) can follow HOW to be printed for modifiers (or “field parameters”) for that FIELD

The NAME for the fonts that are present in a printer is shown on the self test. The first column of the “Available Fonts” section of the self test shows if the fonts are **R**esident or **D**ownloaded. All printers have 3 or more resident fonts. In addition, there are a large number of fonts available for download. You can use the MFLASH4 Windows Configuration Program or the OPDI Suite of programs to download. A sample section of the Self Test Print is shown below with 4 Resident fonts and 1 downloaded format. Depending upon the width of the printer, there may be a difference in the way the information is presented.

Available Fonts:

LOC	CPI	*---DESCRIPTION----	*--NAMES---
R	22.6	97 CHAR SMALL BLOCK	MF226 %(25H)
R	20.4	224 CHR BLOCK NORMAL	MF204 !(21H)
R	18.5	96 CHRS BLOCK NORMAL	MF185 \$(24H)
R	10.7	96 CHARS BLOCK BOLD	MF107 &(26H)
D	34.0	96 Char Cond Font	PT05T B(42H)



Each font has two names. The five character name is more descriptive of the font, so it is generally used, but the single character name can be used for brevity. The first is a five character name used in Easy Print (see AN-06). The exact same font can also be referred to by its single character name. In the sample from the self test printout above, there are five fonts listed. The first has a 5 character name of MF226 and a single character name of '%' (0x25, or 25 Hex). The next four fonts have five character names of MF204, MF185, MF107, and PT05T. To select any of these fonts, simply replace the NAME section of the field description with the name of the font:

To print the letters A-H at Row 10, Column 10, the field description line in the Easy Print job would look like (where NAME would be replaced by the name of the font you wish to use):

```
@35,50:NAME|ABCDEFGH|
```

To print that line using MF185 font, simply replace the NAME with the name MF185

```
@35,50:MF185|ABCDEFGH|
```

To use a different font, simply call out a different name. Replacing NAME with PT05T instead would print that same line using the smaller font:

```
@35,50:PT05T|ABCDEFGH|
```

Or to print the line with a larger font, use MF107:

```
@35,50:MF107|ABCDEFGH|
```

In addition, field parameters can be used to modify the way the font looks. The valid field parameters for fonts are:

FIELD PARAMETERS	
GENERAL	
INVERSE (I)	Adding the word "INVERSE" or the letter "I" will cause whatever the field to be printed WHITE on BLACK instead of the more conventional black on white
HMULT nn (HM nn)	The "HMULT" or "HM" parameter will multiply the field nn times horizontally. If nn = 2, then the field is printed double wide. If nn = 3 then the field is printed triple wide. The value for nn must be an integer (1, 2, 3, 4, etc. up to 255)
VMULT nn (VM nn)	The "VMULT" or "VM" parameter will multiply the field nn times vertically. If nn = 2, then the field is printed double high. If nn = 3, then the field is printed triple high. The value for nn must be an integer (1,2,3,4, etc. up to 255)
ROT90	Specifying "ROT90" will rotate just that field by 90 degrees counterclockwise. Fields are rotated about the point given in the ROW,COL coordinates
ROT180	Specifying "ROT180" will rotate just that field by 180 degrees. Fields are rotated about the point given in the ROW.COL coordinates
ROT270	Specifying "ROT270" will rotate just that field by 90 degrees clockwise. Fields are rotated about the point given in the ROW, COL coordinates.

Field parameters can be used to change the way the font in that field is printed. For example we could add field parameters to any of the previous examples. To print A-H using MF185 double high and double wide, white on black, and rotated 270 degrees the field description line would be:

```
@10,10:MF185, VMULT 2, HMULT 2, INVERSE, ROT270|ABCDEFGH|
```



There is a naming convention to all fonts. Fonts that can be loaded onto the thermal printer (or the 2" impact printer) CANNOT be loaded onto the impact printers and vice-versa. Fonts are separated into impact fonts and thermal fonts. And different versions of fonts go with different families of printers. Fonts with an EV followed by the version number in their name have the Euro Symbol at 0x7F.

Table with 7 columns: VERSION, FILE NAME EXAMPLE, Original Thermal, Radio Ready Thermal, 2" Impact, Original Impact, Radio Ready Impact. Rows include versions 1.0, 1.1, 1.3 (thermal), and 1.3 (impact) with corresponding file names and compatibility markers.

Thermal Fonts Available (as both Version 1.0 and 1.3 except ZP series)

Note: Height and Width given in dots (or pixels) each dot is .005 inches wide and high

Note: All character sets are single byte unless otherwise noted in comments (DBCS = double byte character set).

Note: The following list of fonts was accurate at the time of writing of this Application Note. For the most complete list of fonts, see AN-13.

Table with 6 columns: NAME (5), NAME (1), MAPPING, HEIGHT, WIDTH, COMMENTS. Lists various font sets like A-ASC, ARABE, ARABS, ARABT, ASN-A, ASN-B, CHIN1, and DG028-DG092 with their respective mappings, dimensions, and character sets.



DG107	0xA1	ASCII subset	32	19	Digits 0-9, '\$', '.' and cents ¢
FC12G) (0x29)	ISO 8859-1	25	16	224 Chars (Space – 0xFF)
FC107	' (0x27)	ISO 8859-1	26	19	224 Chars (Space – 0xFF)
FC226	((0x28)	ISO 8859-1	24	9	224 Chars (Space – 0xFF)
GRISO	l (0x69)	ISO 8859-7	24	10	224 Chars (Space – 0xFE)
IS204	P (0x50)	ISO 8859-1	24	10	224 Chars (Space – 0xFF)
IS340	[(0x5B)	ISO 8859-1	24	6	224 Chars (Space – 0xFF) meant to appear condensed
K-ASC	z	ASCII	16	8	96 Chars (0x20 – 0x7F)
MB113	= (0x3D)	CP437	31	18	224 Chars (0x20 – 0xFE) Gothic Roman Characters
MF025	- (0x2D)	ASCII	190	80	96 Chars (0x20 – 0x7A) Stylized with clipped corners
MF036	/ (0x2F)	ASCII	154	56	96 Chars (0x20 – 0x7A) Stylized with Clipped corners
MF055	# (0x23)	ASCII	39	37	96 Chars (0x20 – 0x7E)
MF072	" (0x22)	ASCII	31	28	96 Chars (0x20 – 0x7E)
MF102	SP (0x20)	CP437	26	20	223 Chars (0x20 – 0xFE)
MF107	& (0x26)	ASCII	26	19	96 Chars (0x20 – 0x7E)
MF113	< (0x3C)	CP437	31	28	224 Chars (0x20 – 0xFE) Gothic Roman Characters
MF156	* (0x2A)	ISO 8859-1	27	13	224 Chars (0x20 – 0xFF)
MF185	\$ (0x24)	ASCII	24	11	96 Chars (0x20 – 0x7E)
MF204	! (0x21)	CP437	24	10	224 Chars (0x20 – 0xFE)
MF226	% (0x25)	ASCII	24	9	97 Chars (0x20 – 0x7F)
MF340	> (0x3D)	CP437	24	6	224 Chars (0x20 – 0xFE)
OCA1R	O (0x4F)	OCR-A ASCII digits subset	24	14	OCR-A Digits Only Rotated
OCRA1	O (0x4F)	OCR-A subset	20	15	OCR-A 96 Chars (0x20 – 0x7F)
OCR-A	((0x28)	OCR-A	31	19	OCR-A 192 Chars (0x20 – 0xE0)
OCR-B) (0x29)	OCR-B	31	19	OCR-B 220 Chars (0x20 – 0xFC)
PT04A	A (0x41)	ASCII subset	5	4	64 Chars (0x20 – 0x60) up to lower case
PT05H	B (0x42)	ASCII	9	6	96 Chars (0x20 – 0x7F)
PT05T	B (0x42)	ASCII	24	6	96 Chars (0x20 – 0x7F) same as PT05H except double high
PT06H	C (0x43)	ASCII	12	8	96 Chars (0x20 – 0x7F)
PT06X	C (0x43)	CP437 Subset	12	8	193 Chars (0x20 – 0xE0)
PT08H	D (0x44)	ASCII	15	11	96 Chars (0x20 – 0x7F)
PT10B	E (0x45)	ASCII	20	14	96 Chars (0x20 – 0x7F) bolder chars
PT12F	F (0x46)	ASCII	25	16	96 Chars (0x20 – 0x7F) with serif
PT12G	G (0x47)	ASCII	25	16	96 Chars (0x20 – 0x7F) with serif (bold version of PT12F)
PT18B	H (0x48)	ASCII	35	24	96 Chars (0x20 – 0x7F) bolder chars
PT18T	I (0x49)	ASCII	35	24	96 Chars (0x20 – 0x7F) thinner chars
PT24B	J (0x4A)	ASCII	49	32	96 Chars (0x20 – 0x7F) bolder chars
PT24F	K (0x4B)	ASCII	49	32	96 Chars (0x20 – 0x7F) with serif
SHJIS	c (0x63)	Shift JIS	16	16	7000+ Japanese Characters



THISO	j (0x6A)	ISO 8859-1	27	10	219 Chars (0x20 – 0xFB)
UN102	v (0x76)	Unicode	26	20	Chars from CP437 only except graphics characters
UN204	u (0x75)	Unicode	27	10	Latin, Latin Supplement Extended A, Thai
UNICD	u (0x75)	Unicode	27	10	Latin, Latin Supplement Extended A, Thai
ZP00A	A (0x41)	ASCII	14	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 0
ZP00I	A (0x41)	ISO 8859-1	14	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 0
ZP00P	A (0x41)	CP437	14	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 0
ZP02A	B (0x42)	ASCII	14	Proportional	96 Chars (0x20 – 0x7E) Font 12 Size 2
ZP02I	B (0x42)	ISO 8859-1	14	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 2
ZP02P	B (0x42)	CP437	14	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 2
ZP02W	B (0x42)	ASCII	17	Proportional	96 Chars (0x20 – 0x7E) Same as ZP02A with 3 dots white space above
ZP03A	C (0x43)	ASCII	28	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 3
ZP03I	C (0x43)	ISO 8859-1	28	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 3
ZP03P	C (0x43)	CP437	28	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 3
ZP04A	D (0x44)	ASCII	28	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 4
ZP04I	D (0x44)	ISO 8859-1	28	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 4
ZP04P	D (0x44)	CP437	28	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 4
ZP06A	E (0x45)	ASCII	28	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 6
ZP06I	E (0x45)	ISO 8859-1	28	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 6
ZP06P	E (0x45)	CP437	28	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 6
ZP08A	F (0x46)	ASCII	23	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 8
ZP08I	F (0x46)	ISO 8859-1	23	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 8
ZP08P	F (0x46)	CP437	23	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 8
ZP10A	G (0x47)	ASCII	25	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 10
ZP10I	G (0x47)	ISO 8859-1	25	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 10
ZP10P	G (0x47)	CP437	25	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 10
ZP12A	H (0x48)	ASCII	25	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 12
ZP12I	H (0x48)	ISO 8859-1	25	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 12
ZP12P	H (0x48)	CP437	25	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 12
ZP13A	I (0x49)	ASCII	42	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 13
ZP13I	I (0x49)	ISO 8859-1	42	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 13



ZP13P	I (0x49)	CP437	42	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 13
ZP14A	J (0x4A)	ASCII	86	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 14
ZP14I	J (0x4A)	ISO 8859-1	86	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 14
ZP14P	J (0x4A)	CP437	86	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 14
ZP17A	K (0x4B)	ASCII	61	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 17
ZP17I	K (0x4B)	ISO 8859-1	61	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 17
ZP17P	K (0x4B)	CP437	61	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 17
ZP21A	L (0x4C)	ASCII	107	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 21
ZP21I	L (0x4C)	ISO 8859-1	107	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 21
ZP21P	L (0x4C)	CP437	107	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 21
ZP25A	M (0x4D)	ASCII	34	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 25
ZP25I	M (0x4D)	ISO 8859-1	34	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 25
ZP25P	M (0x4D)	CP437	34	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 25
ZP26A	N (0x4E)	ASCII	34	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 26
ZP26I	N (0x4E)	ISO 8859-1	34	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 26
ZP26P	N (0x4E)	CP437	34	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 26
ZP28A	O (0x4F)	ASCII	86	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 28
ZP28I	O (0x4F)	ISO 8859-1	86	Proportional	224 Chars (0x20 – 0xFF) Font 12 Size 28
ZP28P	O (0x4F)	CP437	86	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 28
AP93A	T (0x54)	ASCII	50	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 93
ZP93P	T (0x54)	CP437	50	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 93
ZP94A	U (0x55)	ASCII	25	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 94
ZP94P	U (0x55)	CP437	25	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 94
ZP95A	V (0x56)	ASCII	17	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 95
ZP95P	V (0x56)	CP437	17	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 95
ZP96A	W (0x57)	ASCII	37	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 96
ZP96P	W (0x57)	CP437	37	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 96
ZP97A	X (0x58)	ASCII	37	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 97
ZP97P	X (0x58)	CP437	37	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 97
ZP98A	Y (0x59)	ASCII	25	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 98
ZP98P	Y (0x59)	CP437	25	Proportional	224 Chars (0x20 – 0xFE) Font 12 Size 98
ZP99A	Z (0x5A)	ASCII	223	Proportional	96 Chars (0x20 – 0x7F) Font 12 Size 99
ZP99X	Z (0x5A)	CP437	2223	Proportional	32 Chars (0x20 – 0x40) Space through '@' Font 12 Size 99