valentin DRUCKSYSTEME

MICRA II

Interface Description

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Edition: 12/22

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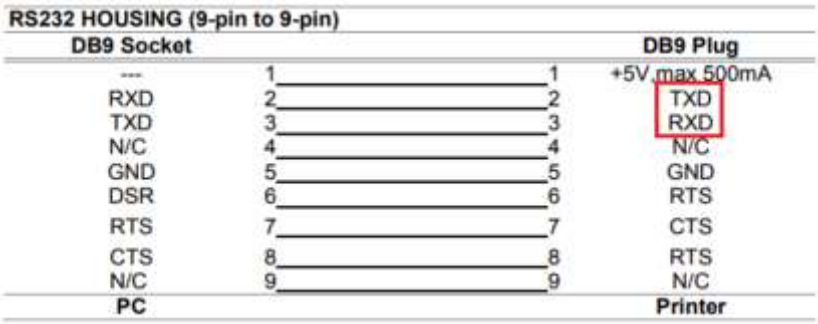
1 Serial Data Transmission

1.1 Connector Assignment (9-pin DSUB Socket)

Pin	Signal	Description
2	R x D	Receiving data line
3	T x D	Transmitting data line
4	CTS	HW Handshake
5	GND	GND signal

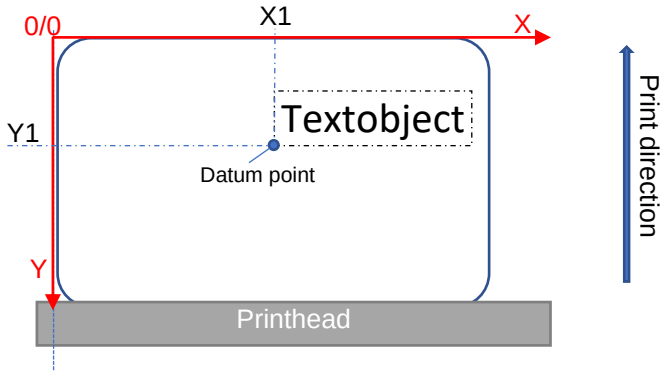
1.2 Connection Plan RS232



2 Text, Bar Code, Graphic

2.1 Coordinate System

The coordinate system is defined as follows:



The printout at rotation 0 is upside down.

Example:

Printout

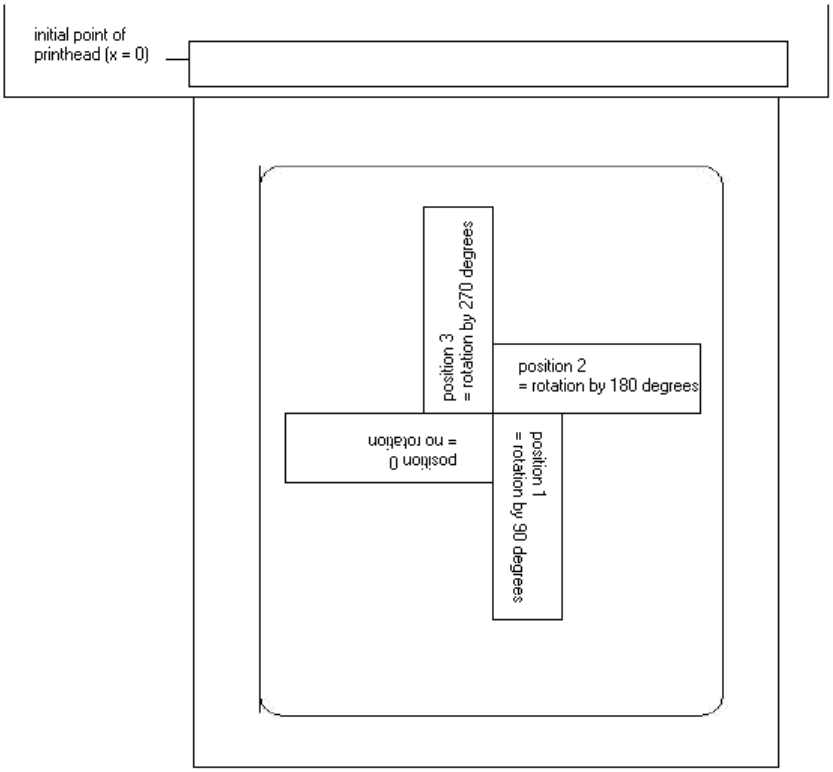
```
// TEXT (1/100 mm)
SOHAM[1]3000;5000;0;1;0;4;1;1;5ETB
SOHBM[1]TestobjektETB

// COPIES: 1
SOHFBBA--r00001---ETB
// PRINT
SOHFBC---r--------ETB
```

Data – *Test1.prn*

2.2 Definition of Rotation

NOTICE!

Objects generated by the printer itself (text, bar code) can be rotated in steps of 90° degrees. The rotation is specified in the object's mask set (0, 1, 2, 3).



Example:

Printout

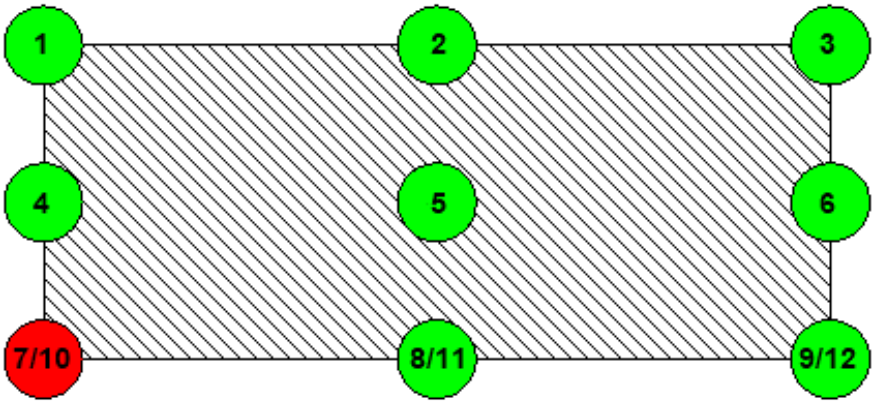
```
// TEXT (1/100 mm)
SOHAM[1]3000;5000;0;1;0;4;1;1;5ETB
SOHBM[1]TestobjektETB
SOHAM[2]3000;5000;0;1;1;4;1;1;5ETB
SOHBM[2]TestobjektETB
SOHAM[3]3000;5000;0;1;2;4;1;1;5ETB
SOHBM[3]TestobjektETB
SOHAM[4]3000;5000;0;1;3;4;1;1;5ETB
SOHBM[4]TestobjektETB

// COPIES: 1
SOHFBBA--r00001---ETB
// PRINT
SOHFBC---r--------ETB
```

Data: *Test2.prn*

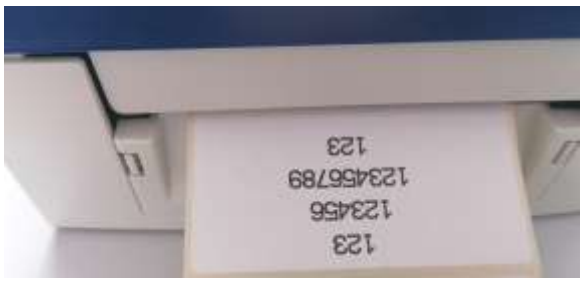
2.3 Definition of Datum Point

The so-called datum point is the relation point for indication of position. In the meantime, the datum point is also the point at which the selected object is rotated.

To determine the datum point in the mask sets, the possible datum points are numbered from left top (1) to right bottom (9/12). The default datum point is left bottom (7/10). This datum point is also used even if no indication is found in the mask set.



Example: With datum point 8/11, multiple objects can be centered regardless of their content. The X coordinate is always the same.



Printout

```
// TEXT (1/100 mm)
SOHAM[1]1000;5000;0;1;0;4;1;1;5;8ETB
SOHBM[1]123ETB
SOHAM[2]2000;5000;0;1;0;4;1;1;5;8ETB
SOHBM[2]123456ETB
SOHAM[3]3000;5000;0;1;0;4;1;1;5;8ETB
SOHBM[3]123456789ETB
SOHAM[4]4000;5000;0;1;0;4;1;1;5;8ETB
SOHBM[4]123ETB

// COPIES: 1
SOHFBBA--r00001---ETB
// PRINT
SOHFBC---r--------ETB
```

Data *Test3.prn*

3 Mask Set

The mask set defines various attributes of an object. Depending on the object type, different attributes are defined.

3.1 Text

AM[n]y;x;p;a;d;z;dy;dx;lp;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y coordinate in 1/100 mm
x	X coordinate in 1/100 mm
p	identification for phantom field 0 = printout; 1 = no printout
a	identification for field type 1 = bitmap font; 2 = bitmap font inverse
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
z	**character set not proportional bitmap fonts (1+2)** 01 = FONT 01 0,8 x 1,1 mm 127 characters 02 = FONT 02 1,2 x 1,7 mm 255 characters 03 = FONT 03 1,8 x 2,6 mm 255 characters 04 = FONT 04 4,0 x 5,6 mm 127 characters 05 = FONT 05 1,8 x 3,2 mm - descender 255 characters 07 = FONT 07 1,2 x 2,2 mm - descender 255 characters
	character set proportional bitmap fonts (1+2) 21 = FONT 21 1,0 mm; 13 pixels 255 characters 22 = FONT 22 1,8 mm; 21 pixels 255 characters 23 = FONT 23 2,6 mm; 31 pixels 255 characters 24 = FONT 24 5,6 mm; 67 pixels 255 characters 28 = FONT 28 4,0 mm; 48 pixels 255 characters 29 = FONT 29 0,8 mm; 9 pixels 255 characters
dy	extension in direction Y bitmap fonts factor 0 … 9
dx	extension in direction X bitmap fonts factor 0 … 9
lp	distance between single characters in 1/100 mm
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7/10 = left bottom (default) 8/11 = centre bottom 9/12 = right bottom

3.2 One-Dimensional Bar Code

AM[n]y;x;p;a;d;h;v1;v2;pz;z;dp	
A	identification for mask set
M	identification for protocol version
n	Field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = printout; 1 = no printout
a	Identification for field type 30 = Code 39 31 = Code 2/5 interleaved 32 = EAN 8 33 = EAN 13 34 = UPC A 35 = UPC E 36 = CODABAR 37 = Code 128 38 = EAN ADD ON 39 = GS1-128 (EAN 128) 40 = Code 93 41 = PZN 42 = 2/5 Industrie 43 = Leitcode 44 = Identcode 46 = Code 39 extended 47 = Code 128 A 48 = Code 128 B 49 = Pharmacode
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
h	symbol height in 1/100 mm
v1	relation 1; module width 'THICK'
v2	relation 2; module width 'THIN' and/or SC factor
pz	check digit calculation 0 = no check digit calculation 1 = check digit calculation 4 = inverse - no check digit calculation 5 = inverse - check digit calculation
z	human readable line 0 = no human readable line; 1 = with human readable line
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7/10 = left bottom (default) 8/11 = centre bottom 9/12 = right bottom

3.3 PDF417

AM[n]y;x;p:a;d;s;rw;rh;ec;z;dp;c;r	
A	identification for mask set
M	identification for protocol version
n	Field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = printout 1 = no printout
a	identification for field type 50 = PDF417
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
s	symbol size
rw	relation width
rh	relation height
ec	error correction level 0 - ECC Level = 0 1 - ECC Level = 2 2 - ECC Level = 6 3 - ECC Level = 14 4 - ECC Level = 30 5 - ECC Level = 62 6 - ECC Level = 126 7 - ECC Level = 254 8 - ECC Level = 510
z	style 0 = standard 1 = truncated 2 = naked 3 = bare
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7/10 = left bottom (default) 8/11 = centre bottom 9/12 = right bottom
c	number of columns 0 = automatic, 1 … 30
r	number of rows 0 = automatic, 3… 90

3.4 MAXICODE

AM[n]y;x;p;a;d;0;sn;ns;m;0;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = printout 1 = no printout
a	identification for field type 51 = MAXICODE
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
0	dummy
sn	symbol number
ns	quantity of symbols
m	mode 2 = Structured Message (US Carrier) 3 = Structured Message (International Carrier) 4 = Default message
0	dummy
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7/10 = left bottom (default) 8/11 = centre bottom 9/12 = right bottom

3.5 DataMatrix

AM[n]y;x;p;a;d;s;aw;ah;ec;f;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = printout 1 = no printout
a	identification for field type 52 = DataMatrix
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
s	symbol size in 1/100 mm
aw	relation width
ah	relation height
ec	error correction 0 - ECC Type = 0 ECC Level = 0 Overhead = 0 % 1 - ECC Type = 2* ECC Level = 40 Overhead = 33 % 2 - ECC Type = 3 ECC Level = 50 Overhead = 25 % 3 - ECC Type = 6 ECC Level = 80 Overhead = 33 % 4 - ECC Type = 8 ECC Level = 100 Overhead = 50 % 5 - ECC Type = 9* ECC Level = 110 Overhead = 75 % 6 - ECC Type = 10* ECC Level = 120 Overhead = 50 % 7 - ECC Type = 11* ECC Level = 130 Overhead = 67 % 8 - ECC Type = 12 ECC Level = 140 Overhead = 75 % 9 - ECC Type = 26 ECC Level = 200 Overhead = 0 %
f	format ID of data 0 - Format ID = 11 (numeric, 2000 characters)* 1 - Format ID = 1 (numeric, 500 characters) 2 - Format ID = 2 (alphabetical, 500 characters) 3 - Format ID = 3 (alphabetical + pointers, 500 characters) 4 - Format ID = 4 (alphanumeric, 500 characters) 5 - Format ID = 5 (7 Bit, 500 characters) 6 - Format ID = 6 (8 Bit, 500 characters) 7 - Format ID = 7 (pre-programmed, 500 characters)* 8 - Format ID = 12 (alphabetical, 2000 characters) 9 - Format ID = 14 (alphanumeric, 2000 characters)
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7/10 = left bottom (default) 8/11 = centre bottom 9/12 = right bottom

* not supported from printer

3.6 CODABLOCK F

AM[n]y;x;p;a;d;h;nc;nl;m;s;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = printout 1 = no printout
a	identification for field type 53 = CODABLOCK F
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
h	line height in symbol
nc	quantity of characters/line
nl	quantity of lines
m	mode
s	module size
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7/10 = left bottom (default) 8/11 = centre bottom 9/12 = right bottom

3.7 GS1 DataMatrix

AM[n]y;x;p;a;d;s;aw;ah;ec;f;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = print 1 = no print
a	identification for field type 59 = GS1 DataMatrix
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
s	symbol size in 1/100 mm
aw	relation width
ah	relation height
ec	error correction 0 - ECC Type = 0 ECC Level = 0 Overhead = 0 % 1 - ECC Type = 2* ECC Level = 40 Overhead = 33 % 2 - ECC Type = 3 ECC Level = 50 Overhead = 25 % 3 - ECC Type = 6 ECC Level = 80 Overhead = 33 % 4 - ECC Type = 8 ECC Level = 100 Overhead = 50 % 5 - ECC Type = 9* ECC Level = 110 Overhead = 75 % 6 - ECC Type = 10* ECC Level = 120 Overhead = 50 % 7 - ECC Type = 11* ECC Level = 130 Overhead = 67 % 8 - ECC Type = 12 ECC Level = 140 Overhead = 75 % 9 - ECC Type = 26 ECC Level = 200 Overhead = 0 %
f	format ID of data 0 - Format ID = 11 (numeric, 2000 characters)* 1 - Format ID = 1 (numeric, 500 characters) 2 - Format ID = 2 (alphabetical, 500 characters) 3 - Format ID = 3 (alphabetical + pointers, 500 characters) 4 - Format ID = 4 (alphanumeric, 500 characters) 5 - Format ID = 5 (7 Bit, 500 characters) 6 - Format ID = 6 (8 Bit, 500 characters) 7 - Format ID = 7 (pre-programmed, 500 characters)* 8 - Format ID = 12 (alphabetical, 2000 characters) 9 - Format ID = 14 (alphanumeric, 2000 characters)
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7/10 = left bottom (default) 8/11 = centre bottom 9/12 = right bottom

* not supported from printer

3.8 GS1 DataBar (RSS Code)

AM[n]y;x;p;a;d;s;m;k;t;0;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = printout 1 = no printout
a	identification for field type 54 = GS1 DataBar (RSS)
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
s	number of segments per line [2…22]
m	module width [1 …12]
k	separator height [1,2]
t	symbol type 1 = GS1 DataBar Omnidirectional (RSS-14) 2 = GS1 DataBar Truncated (RSS-14 Truncated) 3 = GS1 DataBar Stacked (RSS-14 Stacked) 4 = GS1 DataBar Stacked Omnidirectional (RSS-14 Stacked Omnidirectional) 5 = GS1 DataBar Limited (RSS Limited) 6 = GS1 DataBar Expanded (RSS Expanded)
0	not use
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7/10 = left bottom (default) 8/11 = centre bottom 9/12 = right bottom

3.9 QR Code

AM[n]y;x;p;a;d;mo;cs;ms;cw;ec;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = printout 1 = no printout
a	identification for field type 57 = QR Code
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
mo	code model 1 = Code Model 1 2 = Code Model 2
cs	character set N = numeric A = alphanumeric B = 8-bit byte K = kanji
ms	Masking -1 = auto 0-7 = mask x 8 = no masking
cw	line width in 1/100 mm per module possible values: 0-800
ec	error correction (restoring capacity) L = 7 % M = 15 % Q = 25 % H = 30 %
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7/10 = left bottom (default) 8/11 = centre bottom 9/12 = right bottom

3.10 Aztec Code

AM[n]y;x;p;a;d;h;f;ec;m;0;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = print 1 = no print
a	identification for field type 61 = Aztec Code
d	rotation 0 = 0° 1 = 90° 2 = 180° 3 = 270°
h	symbol size in 1/100 mm (max 1 cm)
f	format 0 = Auto 1 = C15xC15 Compact 2 = C19xC19 Compact 3 = C23xC23 Compact 4 = C27xC27 Compact 5 = C19xC19 6 = C23xC23 7 = C27xC27 8 = C31xC31 9 = C37xC37 10 = C41xC41 11 = C45xC45 12 = C49xC49 13 = C53xC53 14 = C57xC57 15 = C61xC61 16 = C67xC67 17 = C71xC71 18 = C75xC75 19 = C79xC79 20 = C83xC83 21 = C87xC87 22 = C91xC91 23 = C95xC95 24 = C101xC101 25 = C105xC105 26 = C109xC109 27 = C113xC113 28 = C117xC117 29 = C121xC121 30 = C125xC125 31 = C131xC131 32 = C135xC135 33 = C139xC139 34 = C143xC143 35 = C147xC147 36 = C151xC151
ec	error correction (only if format = 0) 1 = 10 % 2 = 23 % 3 = 36 % 4 = 50 %
m	mode 0 = data 1 = runes (figures 0-255) 2 = Unicode (8 Bit ASCII) 3 = GS1 (not yet available)
0	dummy
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom

3.11 Rectangle

AM[n]y;x;p;a;h;b;s;m;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = print 1 = no print
a	identification for field type 10 = rectangle
h	rectangle height in 1/100 mm
b	rectangle height in 1/100 mm
s	line width in 1/100 mm
m	line type; 1 digit
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7/10 = left bottom (default) 8/11 = centre bottom 9/12 = right bottom

3.12 Line

AM[n]y;x;p;a;d;l;s;m;dp	
A	identification for mask set
M	identification for protocol version
n	field number
y	Y position in 1/100 mm
x	X position in 1/100 mm
p	identification for phantom field 0 = printout 1 = no printout
a	identification for field type 11 = line
d	rotation 0 = horizontal 1 = vertical
l	length in 1/100 mm
s	line width in 1/100 mm
m	line type; 1 digit
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7/10 = left bottom (default) 8/11 = centre bottom 9/12 = right bottom

4 Text Set

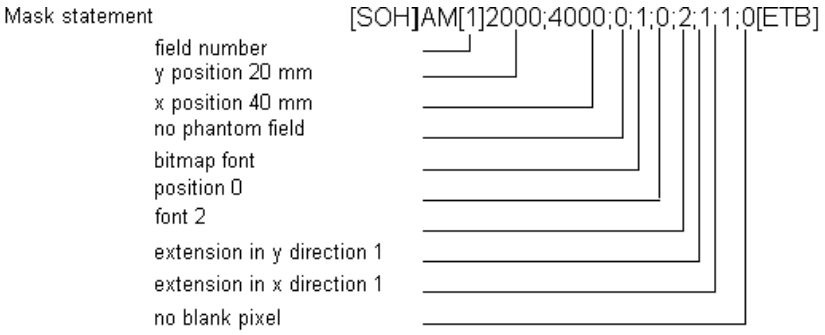
BM[n]text	
B	identification for text set
M	identification for extended protocol
n	field number
text	data contents, text

BV[n]text	
B	identification for text set
V	identification for selection by field name
n	field name
text	data contents, text

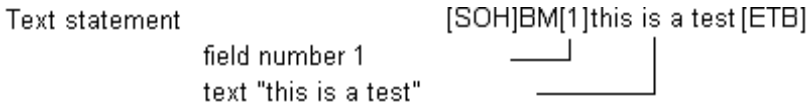
BF[n]text	
B	identification for text set
F	identification for selection by free definable field number
n	field number
text	data contents, text

4.1 Examples

Mask set



Text set



Text set with variable definition: [SOH]BM[125]=CN(0,0,3,1,1)000[ETB]

Example label

ASCII data	Explanation
⊗AM[1]3600;4600;0;33;0;1500;0;4;1;1⊕ $^{C}_{R}$ $^{L}_{F}$	mask set for bar code
⊗BM[1]444444444444⊕ $^{C}_{R}$ $^{L}_{F}$	appropriate text set
⊗AM[2]600;4700;0;1;0;1;3;3;24⊕ $^{C}_{R}$ $^{L}_{F}$	five mask sets / proportional font
⊗AM[3]600;3100;0;1;0;1;4;4;24⊕ $^{C}_{R}$ $^{L}_{F}$	
⊗AM[4]1100;4700;0;1;0;1;4;4;24⊕ $^{C}_{R}$ $^{L}_{F}$	
⊗AM[5]1800;4700;0;1;0;1;3;3;24⊕ $^{C}_{R}$ $^{L}_{F}$	
⊗AM[6]1900;3700;0;1;0;1;5;5;24⊕ $^{C}_{R}$ $^{L}_{F}$	
⊗BM[2]Art.Nr. ⊕ $^{C}_{R}$ $^{L}_{F}$	five appropriate text sets
⊗BM[3]44444⊕ $^{C}_{R}$ $^{L}_{F}$	
⊗BM[4]Artikelbezeichnung⊕ $^{C}_{R}$ $^{L}_{F}$	
⊗BM[5]EUR⊕ $^{C}_{R}$ $^{L}_{F}$	
⊗BM[6]99,-- ⊕ $^{C}_{R}$ $^{L}_{F}$	
⊗FBA---r06⊕	number of lines
⊗FBBA--r00001⊕	number of items
⊗FBC---r⊕	start

: graphic data in PCX format
⊗: SOH (1_{hex} bzw $5E_{hex}$)
⊕: ETB (17_{hex} bzw. $5F_{hex}$)
$^{C}_{R}$: CarrigeReturn ($0D_{hex}$)
$^{L}_{F}$: LineFeed ($0A_{hex}$)

5 Graphic Set

Two protocols are available to transfer graphic data to the printer.

5.1 Graphic in PCX Format

It is possible to transfer graphic data as a PCX-file (e.g., PaintBrush) to the printer. With this type of data transfer the PCX-file is transferred in a compressed form. Hereby the RLE-procedure is used and therefore the graphic data were reduced by approx. 30 %. This means that the effective transferring time for 300 dpi printers is cut in halves.

To set the printer ready for receiving PCX-data the protocol has to be switched over and hereby the following command set will be defined:

SOH	A	X	n	n	n	y	y	y	y	y	y	x	x	x	x	x	x	m	dp	ETB

n	Index of transferred graphic to printer internal maintenance at present not processed (000)
y	Y coordinate of graphic in 1/100 mm
x	X coordinate of graphic in 1/100 mm
m	Mode 0 = standard (background is overwritten) Mode 1 = transparency (background is maintained) Mode 2 = inverse (background is overwritten) Mode 3 = inverse transparency (background is maintained)
dp	datum point 1 = left top 2 = centre top 3 = right top 4 = left centre 5 = centre centre 6 = right centre 7 = left bottom (default) 8 = centre bottom 9 = right bottom

- It is recommended to observe that directly after the final sign (ETB) no separator res. fill character such as $^{C}{}_{R}\,{}^{L}{}_{F}$ is indicated.
- It is necessary that the corresponding PCX-file is available as monochrome (black/white).
- The graphic has to be available in the original size as the printer is not able to change the size by itself.

NOTICE!

Before print start, indicated by parameter set 'FBC', the definition of field number, lines and pieces has to be effected via the parameter sets (FBA res. FBB).

5.2 Example PCX File

-*** PCX_GRAPHIC-INFO ***-

⊗AX0010015300100941⊕##

⊗AM[1]3600;4600;0;33;0;1500;0;4;1;1⊕ $^{C}{}_{R}\,{}^{L}{}_{F}$	mask set for bar code
⊗BM[1]444444444444⊕ $^{C}{}_{R}\,{}^{L}{}_{F}$	appropriate text set
⊗AM[2]600;4700;0;4;0;1;300;200;24⊕ $^{C}{}_{R}\,{}^{L}{}_{F}$ ⊗AM[3]600;3100;0;4;0;1;400;300;24⊕ $^{C}{}_{R}\,{}^{L}{}_{F}$ ⊗AM[4]1100;4700;0;4;0;1;400;300;24⊕ $^{C}{}_{R}\,{}^{L}{}_{F}$ ⊗AM[5]1800;4700;0;4;0;1;300;200;24⊕ $^{C}{}_{R}\,{}^{L}{}_{F}$ ⊗AM[6]1900;3700;0;4;0;1;600;400;24⊕ $^{C}{}_{R}\,{}^{L}{}_{F}$	five mask set proportional font
⊗BM[2]Art.Nr. ⊕ $^{C}{}_{R}\,{}^{L}{}_{F}$ ⊗BM[3]44444⊕ $^{C}{}_{R}\,{}^{L}{}_{F}$ ⊗BM[4]Artikelbezeichnung⊕ $^{C}{}_{R}\,{}^{L}{}_{F}$ ⊗BM[5]EUR⊕ $^{C}{}_{R}\,{}^{L}{}_{F}$ ⊗BM[6]99,-- ⊕ $^{C}{}_{R}\,{}^{L}{}_{F}$	five appropriate text sets
⊗FBA00r06000000⊕ ⊗FBBA00r00001000⊕ ⊗FBC000r00000000⊕	set number of lines (FBA…) set quantity (FBBA…) start print order (FBC…)

: graphic data in PCX format
⊗: SOH (1_{hex} bzw $5E_{hex}$)
⊕: ETB (17_{hex} bzw. $5F_{hex}$)
$^{C}{}_{R}$: CarrigeReturn ($0D_{hex}$)
$^{L}{}_{F}$: LineFeed ($0A_{hex}$)

6 Variables

6.1 Set Structure

SOH	BM	[n]	=	v	v	(	p1	p2	p…	pn	)	t1	t2	t…	t70	ETB

=	start of function
vv	variable type SC link field CN counter
(	start of variable parameter block
p1…pn	variable parameter
)	end of variable parameter block

NOTICE!

In case you want to print a text, which corresponds exactly to the variable definition then you have to place '!' before.

6.2 Link Field

SOH	BM	[n]	=	S	C	(	p1	;	p2	;	p…	;	pn	)	t1	t2	t…	t70	ETB

= SC	identification of link field
p1…pn	identification of link elements (field number or constant text) field number is entered without leading '0' constant text is included in " but these marks are not printed

NOTICE!

Reference fields can be constant text or variables but no link fields.

Example

=SC(1;2;3) --> Printout: Field1Field2Field3

=SC(1;“constant“;2) --> Printout: Field1constantField2

6.3 Counter

SOH	BM	[n]	=	C	N	(	t	;	m	;	c	;	+/-	s	;	i	;	h	;	r	)	t1	t2	t…	t70	ETB

= CN	identification counter
t	type of counter 0 numerical 1 letters only 2… 36 radix, base of the counter
m	function modes 0 standard 1 return to start value
c	digit where the numbering starts counting
+/−	direction + adding − subtracting
s	step width
i	update interval (number of labels with identical number)
h	time by which the counter is reset (function mode 6 and 7) in format 'HH:MM' e.g. 00:00 = reset counter at 0:00 (optional, only for function mode 6 and 7)
r	reset value (optional, only for function mode 6 and 7; default = text and/or initial value) **Limitation:** The time-controlled resetting of counter variable is only effected in case of an active print order. If a print order is cancelled before the specified time and afterwards again restarted, then no resetting of counter value is effected.
t1, t2, …	text res. start value of counter

<u>Example:</u>

Input: =CN(10;0;4;+1;1)0001

Printout: 0001, 0002, 0003, 0004…

7 Parameter Sets

7.1 Label Parameters

Set label photocell type

SOH	F	C	D	E	-	-	r	N	-	-	-	-	-	-	ETB

N: 0 = transmission photocell normal
N: 1 = reflection photocell

Get label photocell type

SOH	F	C	D	E	-	-	w	p	p	p	p	p	p	p	p	ETB

Answer

SOH	A	N	-	-	-	-	-	-	-	p	p	p	p	p	p	p	p	ETB

Set label type

SOH	F	C	D	A	-	-	r	N	-	-	-	-	-	-	ETB

N: 0 = change to adhesive labels (automatically measure process)
N: 1 = change to continuous labels

Get label type

SOH	F	C	D	A	-	-	w	p	p	p	p	p	p	p	p	ETB

Answer

SOH	A	N	-	-	-	-	-	-	-	p	p	p	p	p	p	p	p	ETB

Set label length in 1/100 mm

SOH	F	C	C	L	-	-	r	N	N	N	N	N	N	N	-	ETB

N = value of label length in 1/100 mm, 7 digit ASCII number

Get label length in 1/100 mm

SOH	F	C	C	L	-	-	w	N	N	N	N	N	N	N	-	ETB

Answer

SOH	A	N	N	N	N	N	N	N	-	p	p	p	p	p	p	p	p	ETB

Set gap length in 1/100 mm

SOH	F	C	C	M	-	-	r	M	M	M	M	M	-	-	-	ETB

M = value of gap length in 1/100 mm, 5-digit ASCII number

Get gap length in 1/100 mm

SOH	F	C	C	M	-	-	w	M	M	M	M	M	-	-	-	ETB

Answer

SOH	A	M	M	M	M	M	-	-	-	p	p	p	p	p	p	p	p	ETB

Set label width in 1/100 mm

SOH	F	C	C	O	-	-	r	N	N	N	N	N	N	N	ETB

N = indication of label width in 1/100 mm, 7-digit ASCII number

Get label width in 1/100 mm

SOH	F	C	C	O	-	-	w	P	P	P	P	P	P	P	P	ETB

Answer

SOH	A	N	N	N	N	N	N	N	-	p	p	p	p	p	p	p	p	ETB

Set contrast

SOH	F	C	A	B	-	-	r	N	N	N	-	-	-	-	-	ETB

NNN: indication of contrast in % (010 … 200)
necessary to transmit a 3 digit ASCII number.

Get contrast

SOH	F	C	A	B	-	-	w	p	p	p	p	p	p	p	p	ETB

Answer

SOH	A	N	N	N	-	-	-	-	-	p	p	p	p	p	p	p	p	ETB

Set flip label

SOH	F	C	D	O	-	-	r	N	-	-	-	-	-	-	-	ETB

N: 0 = flip label Off
N: 1 = flip label On

Get flip label

SOH	F	C	D	O	-	-	w	p	p	p	p	p	p	p	p	ETB

Answer

SOH	A	N	-	-	-	-	-	-	-	p	p	p	p	p	p	p	p	ETB

Set rotate label

SOH	F	C	D	N	-	-	r	X	-	-	-	-	-	-	ETB

X: 0 = rotate label Off
X: 1 = rotate label On

Get rotate label

SOH	F	C	D	N	-	-	w	p	p	p	p	p	p	p	p	ETB

Answer

SOH	A	X	-	-	-	-	-	-	-	p	p	p	p	p	p	p	p	ETB

7.2 Printer Parameters

Set print speed

SOH	F	C	A	A	-	-	r	N	N	N	-	-	-	-	-	ETB

NNN: Indication of print speed in mm/s
3-digit ASCII number 050 … 130
The printer rounds up the transmitted value: 50, 75, 100 or125

Get print speed

SOH	F	C	A	A	-	-	w	p	p	p	p	p	p	p	p	ETB

Answer

SOH	A	N	N	N	-	-	-	-	-	p	p	p	p	p	p	p	p	ETB

Set transfer ribbon control On/Off

SOH	F	C	D	B	-	-	r	N	M	-	-	-	-	-	-	ETB

N: 1 = transfer ribbon control On
N: 0 = transfer ribbon control Off

Get transfer ribbon On/Off

SOH	F	C	D	B	-	-	w	p	p	p	p	p	p	p	p	ETB

Answer

SOH	A	N	M	-	-	-	-	-	-	p	p	p	p	p	p	p	p	ETB

7.3 Offset Values

Set Y offset

SOH	F	C	C	D	-	-	r	V	N	N	N	-	-	-	-	ETB

V = offset prefix (+ or −)
NNN = offset value, 3-digit ASCII number in 1/10 mm

Get Y offset

SOH	F	C	C	D	-	-	w	p	p	p	p	p	p	p	p	ETB

Answer

SOH	A	V	N	N	N	-	-	-	-	p	p	p	p	p	p	p	p	ETB

Set X offset

SOH	F	C	C	E	-	-	r	V	N	N	N	-	-	-	-	ETB

V = offset prefix (+ or −)
NNN = offset value, 3-digit ASCII number in 1/10 mm

Get X offset

SOH	F	C	C	E	-	-	w	p	P	p	p	p	p	p	p	ETB

Answer

SOH	A	V	N	N	N	-	-	-	-	p	p	p	p	p	p	p	p	ETB

Set tear-off offset

SOH	F	C	C	G	-	-	r	V	N	N	N	-	-	-	-	ETB

V = offset prefix (always +)
NNN = offset value, 3-digit ASCII number in 1/10 mm

Get tear off offset

SOH	F	C	C	G	-	-	w	p	p	p	p	p	p	p	p	ETB

Answer

SOH	A	V	N	N	N	-	-	-	-	p	p	p	p	p	p	p	p	ETB

7.4 Printing

Start printing

SOH	F	B	C	-	-	-	r	S	-	-	-	-	-	-	-	ETB

This command starts the print order which is set in the printer. The current parameters such as print mode, speed, initialization etc. are used.

S = x: sorted (e.g., pages 1-5, then again 1-5 etc. are printed)
S = 1: unsorted (page 1 is printed x times, then page 2 x times, etc.)

SOH	F	B	D	-	-	-	r	S	-	-	-	-	-	-	-	ETB

Start printing (see above) but without tear off offset.

SOH	F	B	E	-	-	-	r	n	n	n	n	n	n	n	n	ETB

With this command the printjob identifier which appears in "printing" res. "stopped" window is assigned to a print order. If only blanks are transmitted, then the printjob identifier is deleted and the display shows "noname".

8 Parameter Sets for Options

8.1 Cutter

Set cutter mode

SOH	F	C	D	D	-	-	r	N	-	-	-	-	-	-	ETB

N: 0 = Cutter mode Off
N: 1 = Single cut
N: 2 = Mode 1 (without cutter offset), print number of pieces with cut after each label without backfeed
N: 3 = Mode 2 (with backfeed), print number of pieces with cut after each label with backfeed
N: 4 = Interval cut with final cut, transmit interval with later
N: 5 = Interval cut without final cut, transmit interval width later
N: 6 = Final cut (cut after print end)

Get cutter mode

SOH	F	C	D	D	-	-	w	p	p	p	p	p	p	p	p	ETB

Answer

SOH	A	N	-	-	-	-	-	-	-	p	p	p	p	p	p	p	ETB

Set cutter offset

SOH	F	C	S	C	A	-	r	V	N	N	N	-	-	-	-	ETB

V: pre-sign of offset (always +)
NNN: offset value, 3-digit ASCII number in 1/10 mm

Get cutter offset

SOH	F	C	S	C	A	-	w	p	p	p	p	p	p	p	p	ETB

Answer

SOH	A	V	N	N	N	-	-	-	-	p	p	p	p	p	p	p	-	ETB

8.2 Dispenser I/O

Set dispenser mode

SOH	F	C	D	C	-	-	r	N	-	-	-	-	-	-	ETB

N: 0 = Dispenser mode Off
N: 2 = Dispenser photocell
N: 4 = Dispenser photocell continuous

Get dispenser mode

SOH	F	C	D	C	-	-	w	p	p	p	p	p	p	p	p	ETB

Answer

SOH	A	N	-	-	-	-	-	-	-	p	p	p	p	p	p	p	p	ETB

Set dispenser offset

SOH	F	C	S	D	A	-	r	V	N	N	N	-	-	-	-	ETB

V = prefix of offsets (always +)
NNN = offset value, 3-digit ASCII number in 1/10 mm

Get dispenser offset

SOH	F	C	S	D	A	-	w	p	p	p	p	p	p	p	p	ETB

Answer

SOH	A	V	N	N	N	-	-	-	-	p	p	p	p	p	p	p	p	ETB

9 Font Examples

9.1 Bitmap Fonts (Not Proportional)

Font 01 (8 x 11) Verhältnis 3:3
Font 02 (12 x 17) Verhältnis 3:3
Font 03 (18 x 26) Verhältnis 2:2
Font 04 (40 x 56) Verhältnis 1:1
Font 05 (18 x 32 mit Unterlängen) Verhältnis 2:2
Font 07 (12 x 22 mit Unterlängen) Verhältnis 2:2

9.2 Bitmap Fonts (Proportional)

Font 21 (10 proportional) Verhältnis 3:3
Font 22 (18 proportional) Verhältnis 2:2
Font 23 (26 proportional) Verhältnis 2:2
Font 24 (56 proportional) Verhältnis 1:1
Font 28 (40 proportional) Verhältnis 1:1
Font 29 (8 proportional) Verhältnis 5:5

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