

SET OF COMMANDS



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1. COMMAND SYNTAX

<	Start character
NAME	Name of the command in upper case. Set up or maintenance commands always start by a \$ sign
,	Mandatory parameters separator character
parameters	Digital parameters
:	Text datas separator
Text Datas	Characters set, the previous character must specify the length
;	Optional parameters separator
Parameters	Optional digital parameters
>	Stop character
Datas to be loaded	Datas to be loaded (images, files...)

2. ANSWERS TO PC

Protocol: [ACK] [NACK]

After each command, the printer returns the following characters to the PC :

- [ACK][EOT] if the command has been successfully processed
- [NACK]0X[EOT] if the command has NOT been successfully processed, where X defines the error type :

ERROR	DESCRIPTIONS
3	Card feeding error.
5	Printhead problem : too cold, overheated or unplugged.
8	Printer busy ; printing in process.
A	Command syntax error.
B	Coordinates error.
C	Parameters limit error.
G	PC communication error.
N	Logo number error.
Q	Bar-codes data error.
R	Bar-codes ratio error.
S	Bar-codes height error.
T	Bar-codes or format type error.
U	Bar-codes text position error

When a command is used for the reception of a chain of characters, it must always be followed by the protocol characters.



3. BITMAP PRINTING COMMANDS:

3.1 <IMGNR, ... > load an image

Description :

How to load an image to be printed. The image is sent byte per byte. A time-out, initiated with the first byte, allows detection of an eventual communication error.

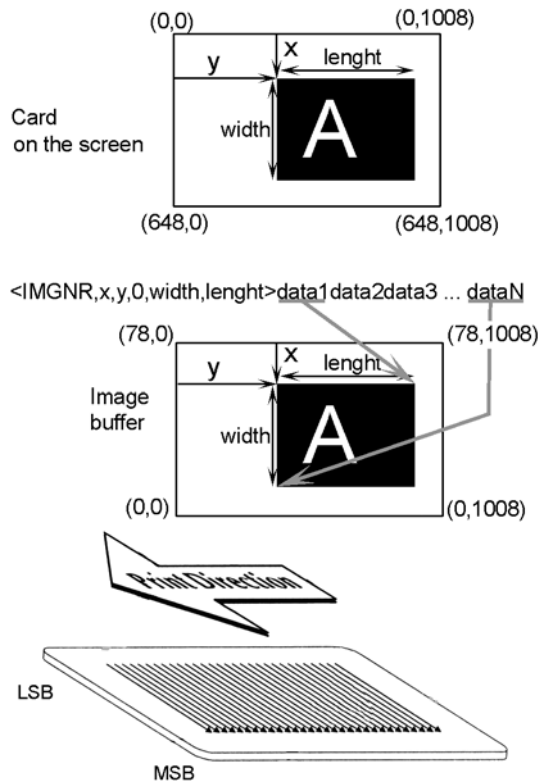
Syntax :

<IMGNR,p1,p2,p3,p4,p5>byte1byte2byte3...byteN

Parameters :

- **p1** : x value of the left upper side of the image
- **p2** : y value of the left upper side of the image
- **p3** =0
- **p4** : image width in bytes (according the dot line)
- **p5** : image length in dots (according to the card length)

Comments :





3.2 <LGNR, ... > load a line

Description :

How to load a line to be printed. The line is defined from its starting point, ending point and thickness.

Syntax :

<LGNR,p1,p2,p3,p4,p5>

Parameters :

- **p1** : x value of the starting point
- **p2** : y value of the starting point
- **p3** : x value of the ending point
- **p4** : y value of the ending point
- **p5** : thickness

Comments :

The origin point (0,0) is the left upper corner of the horizontal card. The thickness of the card is generated towards low position or left position depending on the incline of the line.

3.3 <CDNR, ... > load a frame

Description :

How to load a frame to be printed. The frame is defined from its left upper starting position, its width according to the dot line, its length according to the length of the card and its thickness.

Syntax :

<CDNR,p1,p2,p3,p4,p5>

Parameters :

- **p1** : x value of the starting point
- **p2** : y value of the starting point
- **p3** : frame width
- **p4** : frame length
- **p5** : line thickness

Comments :

The origin point (0,0) is the left upper corner of the horizontal card. The thickness of the card is generated towards the inside of the frame.



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3.4 <NTXT, ... > load a text

Description :

How to load of a text.

Syntax :

<NTXT,p1,p2,p3,p4,p5,p6,p7: text datas ; p8 ; p9>

Parameters :

- **p1** : x value of the starting point: first character left lower position
- **p2** : y value of the starting point: first character left lower position
- **p3** : code orientation : (based on text command orientation)
 - 0 for 0°
 - 1 for 90°
 - 2 for 180°
 - 3 for 270°
- **p4** : font number :
 - from 0 to 11 for the downloaded fonts
 - from 12 to 23 for the resident fonts
- **p5** : characters font horizontal expansion : from 1 to 3
- **p6** : characters font vertical expansion : from 1 to 3
- **p7** : number of characters in the text
- **Text datas** : characters to be printed
- **P8** : optional, reverse video printing
 - 0 normal printing
 - 1 reverse video printing
- **p9** : optional, space between each character :number of additional points between each character

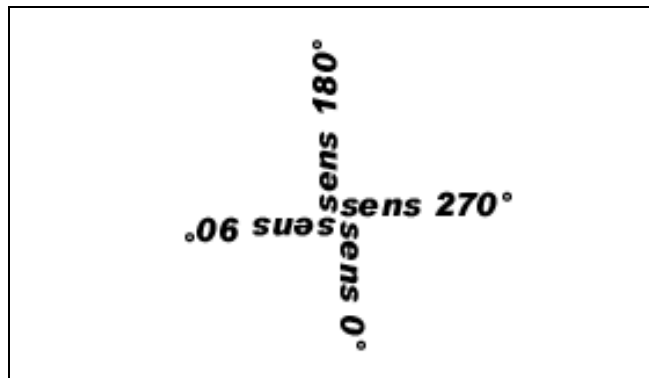
Comments :

The optional parameters can be used according to the following rules only:

- **p8**
- **p8 ; p9**

The origin point (0,0) is the left upper corner of the horizontal card. The printing directions are :

(0,0)





3.5 <COD, ... > load a bar-code

Description :

How to load a bar-code.

Syntax :

<COD,p1,p2,p3,p4,p5,p6,p7,p8 :datas>

Parameters :

- **p1** : x value of the starting point: lower position left to the code
- **p2** : y value of the starting point: lower position left to the code
- **p3** : code orientation (based on text command)
 - 0 for 0°
 - 1 for 90°
 - 2 for 180°
 - 3 for 270°
- **p4** : code type:
 - 0 for US39
 - 1 for 2/5 interleaved
 - 2 for 2/5 standard
 - 3 for EAN8
 - 4 for EAN13
 - 5 for 2/5 interleaved with key
 - 6 for 128
 - 7 for EAN128
- **p5** : ratio :
 - 22 (coef. Multipl. X2) available for type 0,1,2,5,
 - 23 (coef. Multipl. X3) available for type 0,1,2,5
 - 32 (coef. Multipl. X2) available for type 0,1,2,5
 - 33 (coef. Multipl. X3) available for type 0,1,2,5
 - 52 (coef. Multipl. X2) available for type 0,1,2,3,4,5,6,7
 - 53 (coef. Multipl. X3) available for type 0,1,2,3,4,5,6,7
- **p6** : code height in number of dots
- **p7** : code alphanumeric text :
 - 0=no,
 - 1=yes
- **p8** : number of characters within the code
- **Datas** : characters of the code

Comments :

The origin point (0,0) is the left upper corner of the horizontal card .
The characters of the code correspond to the DOS format ASCII table.



3.6 <CRBL, ... > draw a white square

Description :

How to draw a white square.

Syntax :

<CRBL,p1,p2,p3,p4>

Parameters :

- **p1** : x value of starting point
- **p2** : y value of starting point
- **p3** : square width
- **p4** : square length

Comments :

This function can be used to erase an area of the card.

4. BITMAP ERASING COMMAND

4.1 <RAZ> erase the bitmap

Description :

How to erase a bitmap

Syntax :

<RAZ>

Parameters :**Comments :**

You can use this command to cancel printing process queue.



5. PRINT MANAGEMENT COMMANDS

5.1 **<IMP,...> print n cards**

Description : How to print one or a series of cards
Syntax : <p style="text-align: center;"><IMP,p1></p>
Parameters : <ul style="list-style-type: none">• p1 : number of cards to be printed
Comments : If there are still cards to be printed in the queue, the <IMP,...> command will generate an ERROR 8, which indicates that the print process is still busy.

5.2 **<RIMP> resume printing**

Description : How to resume the printing process after an error has occurred
Syntax : <p style="text-align: center;"><RIMP></p>
Parameters :
Comments :

5.3 **<ST> Print status**

Description : How to get the number of cards still to be printed and the print process status
Syntax : <p style="text-align: center;"><ST></p>
Parameters :
Comments : This command displays the print status process.



5.4 <RAZ> cancel the print process

Description : How to cancel the print process and erase the bitmap
Syntax : <p style="text-align: center;"><RAZ></p>
Parameters :
Comments :

5.5 <\$ZONE, ... > rewritable thermochromic cards print and erase area

Description : The frame is defined by its mini and maxi coordinates.
Syntax : <p style="text-align: center;"><\$ZONE,p1,p2,p3,p4></p>
Parameters : <ul style="list-style-type: none">• p1 : mini x value• p2 : maxi x value• p3 : mini y value• p4 : maxi y value
Comments : The origin point (0,0) is the left upper corner of the horizontal card . This command can be used only for thermochromic rewritable cards.



5.6 <\$CTYP, ... > print technology

Description : How to set up the print technology
Syntax : <p style="text-align: center;"><\$CTYP,p1 ;p2></p>
Parameters : <ul style="list-style-type: none">• p1 : print type<ul style="list-style-type: none">• 0 : silver rewritable card• 1 : direct thermal card• 2 : thermal transfer• 3 : Leucodye rewritable card• p2 : Leucodye type<ul style="list-style-type: none">• 0 : Netcromic blue• 1 : Mitsubishi blue• 2 : Mitsubishi black• 3 : Ricoh black
Comments : The ribbon moves only when thermal transfer is used.

6. CHARACTER FONTS MANAGEMENT COMMANDS

The printer can use up to 24 different character fonts :

- 12 non upgradable resident fonts, with DOS format ASCII tables
- 12 downloadable fonts

6.1 <EFFPOL,...> erase non resident fonts

Description : How to erase one or all your downloaded fonts
Syntax : <p style="text-align: center;"><EFFPOL,p1></p>
Parameters : <ul style="list-style-type: none">• p1 : font number from 0 to 11, if p1 = 99 all the fonts will be erased
Comments : To be used when you want to update your non resident character fonts.



6.2 <POL,...> load a set of fonts into the FLASH memory

Description : How to load a character font.
Syntax : <p style="text-align: center;"><POL,p1,p2>Datas</p>
Parameters : <ul style="list-style-type: none">• p1 : font number from 0 to 11• p2 : font size in bytes• Datas : font datas
Comments :

6.3 <IPOL> get information on character fonts

Description : How to get information on the character fonts.
Syntax : <p style="text-align: center;"><IPOL></p>
Parameters :
Comments : This command displays : <ul style="list-style-type: none">• for the resident fonts : the number (12 to 23), the name (32 bytes), the first and the last character of each font.• for the downloadable fonts : the number (0 to 11), the name (32 bytes), the first character, the last character, the size of each character font and the memory space required by the downloaded fonts. Each field is separated by a ;.



7. DOWNLOADED LOGOS MANAGEMENT COMMANDS

The printer can manage up to 12 downloaded logos in the FLASH memory.

7.1 <EFFLOGO,...> erase downloaded logos

Description :

How to erase one or all the downloaded logos.

Syntax :

<EFFLOGO,p1>

Parameters :

- **p1** : logo number from 0 to 11,
if **p1 = 99** to erase all the logos

Comments :

To be used when you need to update your downloaded logos.

7.2 <ILOGO> get information on logos

Description :

How to display the list of the downloaded logos.

Syntax :

<ILOGO>

Parameters :

Comments :

This command displays the number (0 to 11), the name (16 bytes), the width in bytes (X axis), the length in dots (Y axis), the size of each logo and the memory space required for the logos.
Each field is separated by a ; .

7.3 <NLOGO, ... > copy of a logo into bitmap

Description :

How to copy a downloaded logo into bitmap.

Syntax :

<NLOGO,p1,p2, p3>

Parameters :

- **p1** : logo number from 0 to 11
- **p2** : x value of the logo
- **p3** : y value of the logo

Comments :



7.4 <LOGO, ... > download a logo into FLASH memory

Description :

How to download an image into FLASH memory. The image is sent byte per byte. A time-out, initiated from the first byte, will detect an eventual communication error.

Syntax :

<LOGO,*p1*,*p2*,*p3* >LogoName byte1byte2byte3...byteN

Parameters :

- *p1* : logo number 0 to 11
- *p2* : width of the image in bytes (according to the dot line)
- *p3* : length of the image in dots (according to the length of the card)
- **LogoName** : 16 characters of the logo name
- **byte1** ... logo datas

Comments :

Identical function as <IMGNR,...> command.

8. VARIABLE FIELDS AND FORMATS MANAGEMENT COMMANDS

The printer can manage up to 20 variable fields. A field can be either a text field or a bar-codes field.

8.1 <NTXTI, ... > reserve a text field (initialisation)

Description :

How to initialise a text field.

Syntax :

<NTXTI,*p1*,*p2*,*p3*,*p4*,*p5*,*p6*,*p7*, *p8* , *p9*, *p10*>

Parameters :

- *p1* : x value of the starting point : lower position left to first character
- *p2* : y value of the starting point : lower position left to first character
- *p3* : code orientation: (based on text command)
 - 0 for 0°
 - 1 for 90°
 - 2 for 180°
 - 3 for 270°
- *p4* : font number :
 - from 0 to 11 for the downloaded fonts
 - from 12 to 23 for the resident fonts
- *p5* : horizontal expansion of the characters : from 1 to 3
- *p6* : vertical expansion of the characters : from 1 to 3



- **p7** : maximum number of characters in the text field
- **P8** : reverse video printing
 - 0 normal printing
 - 1 reverse video printing
- **p9** : space between each character :number of additional points between each character
- **P10** : field number

Comments :

Identical function as <NTXT,...> command.

8.2 <NTXTA, ... > allocation of a text field (initialisation)

Description :

How to allocate the parameters of a text field.

Syntax :

<NTXTA,p1,p2 :text datas >

Parameters :

- **p1** : text field number
- **p2** : number of characters in the text
- **text datas** : set of alphanumeric characters according to the number of characters defined in p2.

Comments :

This function draw into bitmap the new text with the properties as defined within <NTXTI,...> command and the associated field number.

8.3 <NTXTA, ... > erase a text field

Description :

How to erase a text field.

Syntax :

<NTXTA,p1,p2 >

Parameters :

- **p1** : text field number
- **p2** =0

Comments :

This function erases the text corresponding to the associated field number.

8.4 <CODI, ... > allocation of a bar-codes field (initialisation)

Description :

How to initialise the parameters of a bar-codes field.

Syntax :

<NTXTI,p1,p2,p3,p4,p5,p6,p7, p8 , p9 >



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Parameters :

- **p1** : x value of the starting point: lower position left to the code
- **p2** : y value of the starting point: lower position left to the code
- **p3** : code orientation (based on text command)
 - 0 for 0°
 - 1 for 90°
 - 2 for 180°
 - 3 for 270°
- **p4** : code type:
 - 0 for US39
 - 1 for 2/5 interleaved
 - 2 for 2/5 standard
 - 3 for EAN8
 - 4 for EAN13
 - 5 for 2/5 interleaved with key
 - 6 for 128
 - 7 for EAN128
- **p5** : ratio :
 - 22 (coef. Multipl. X2) available for type 0,1,2,5,
 - 23 (coef. Multipl. X3) available for type 0,1,2,5
 - 32 (coef. Multipl. X2) available for type 0,1,2,5
 - 33 (coef. Multipl. X3) available for type 0,1,2,5
 - 52 (coef. Multipl. X2) available for type 0,1,2,3,4,5,6,7
 - 53 (coef. Multipl. X3) available for type 0,1,2,3,4,5,6,7
- **p6** : code height in number of dots
- **p7** : code alphanumeric text :
 - 0=no,
 - 1=yes
- **p8** : number of characters within the code
- **p10** : field number

Comments :

Identical function as <COD,...> command

8.5 <CODA, ... > allocation of a bar-codes field (initialisation)

Description :

How to allocate a bar-codes field parameters.

Syntax :

<CODA,p1,p2 :datas>

Parameters :

- **p1** : bar-codes field number
- **p2** : number of characters in the bar-codes
- **datas**: bar-codes according to the number of characters set in p2

Comments :

This function draws into bitmap the new bar-code with the properties defined within <CODI,...> command



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and the associated field number.

8.6 <CODA, ... > erase a bar-codes field

Description :

How to erase a bar-codes field.

Syntax :

<CODA,p1,p2 >

Parameters :

- **p1** : bar-codes field number
- **p2** =0

Comments :

This function erases the bar-codes corresponding to the associated field number.

9. CONFIGURATION COMMANDS

9.1 <\$CMONO,...> setting of the printing heat

Description :

How to adjust the print contrast parameters.

Syntax :

<\$CMONO,p1>

Parameters :

- **p1** : value between 0 and 20

Comments :

The higher P1, the higher the heat. Default value is 10.

9.2 <\$CEFF,...> setting of the erasing heat

Description :

How to adjust the erase contrast parameters.

Syntax :

<\$CEFF,p1>

Parameters :

- **p1** : value between 0 and 20.

Comments :

Available for thermochromic rewritable cards only.
The higher P1, the higher the heat. Default value is 10.



9.3 <\$R,...> setting of the ohm value of the printhead

Description : How to adjust the resistance medium value of the printhead.
Syntax : <p style="text-align: center;"><\$R,p1></p>
Parameters : <ul style="list-style-type: none">• <i>p1</i> : value between 2400 and 3600
Comments : Default value is 3000 ohms.

9.4 <\$FTYP, ... > type of ribbon

Description : How to define the type of ribbon used.
Syntax : <p style="text-align: center;"><\$FTYP,p1></p>
Parameters : <ul style="list-style-type: none">• <i>p1</i> : type of ribbon<ul style="list-style-type: none">• 0 : monochrome black• 1 : monochrome colour• 2 : gold• 3 : silver• 4 : for paper cards
Comments : The heat of the printhead has been optimised for each type of ribbon for better quality printing.

9.5 <\$OX,...> setting the position of the printhead on the card

Description : How to adjust the position of the printing area on the card.
Syntax : <p style="text-align: center;"><\$OX,p1></p>
Parameters : <ul style="list-style-type: none">• <i>p1</i> : number of dots from 0 to 24.
Comments : Default value = 12



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The higher the value, the printing area moves towards outside the printer.
This command is to be use only after changing the printhead.

9.6 <\$COM,...> setting the serial interface

Description :

How to set up the parameters of the serial interface.

Syntax :

<\$COM,p1,p2,p3>

Parameters :

- **p1** : transmission speed:
 - 0 : 115200
 - 1 : 57600
 - 2 : 38400
 - 3 : 19200
 - 4 : 9600
- **p2** : RTS/CTS protocol
 - 0 : non active
 - 1 : active
- **p3** : XON/XOFF protocol
 - 0 : non active
 - 1 : active

Comments :

Default values = 115200 and RTS/CTS



10. PRINTER IDENTIFICATION COMMANDS

10.1 <\$VERS> read the firmware version

Description : How to send the firmware version to the PC
Syntax : <p style="text-align: center;"><\$VERS></p>
Parameters :
Comments : Send the 12 characters of the serial number to the PC.

10.2 <\$TEST> read the printer settings

Description : How to send the printer setting parameters to the PC.
Syntax : <p style="text-align: center;"><\$TEST></p>
Parameters :
Comments : Display the printer configuration. The printer setting parameters are sent within a chain of characters separated by ;.

11. INITIALISATION COMMANDS

11.1 <\$RST> reset as powering on the printer.

Description : How to reinitialise the printer.
Syntax : <p style="text-align: center;"><\$RST></p>
Parameters : Function equivalent to a POWER ON of the printer.
Comments :

