



Art.-Nr.: 72801003

Interface Commands Description

iJET, X1JET, X2JET plus Touch X4JET / X4JET plus Touch XB4JET, XB8JET

Software Version > iJET V2.016
X2JET / X4JET / plus V2.016
X1JET V2.016

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Version 1.0.34

Read the operating manual before starting any work!

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Revisionen

Version	Date	Chapter	Change	Reason
1.0.1	15.02.09	All	none	First edition
1.0.2	15.04.09	All	diverse commands	First functions
1.0.3	30.05.09	All	diverse commands	all basic functions ready
1.0.4	30.06.09	<ESC>EL	Receive Print image files	new command
1.0.5	15.07.09	All	none	Release V1.001
1.0.6	29.10.09	S1, S2	New creation	add new command
1.0.7	19.04.10	M*, MG*	Advanced	New Parameter
		MP, MGP	Advanced	New commands
1.0.8	22.07.10	Call Print image TZ	Changed from ET	Wrong command
1.0.9	27.08.10	Action field	~y~	New function
1.0.10	11.12.10	TZ-Command	Expand	New parameter
		M*	revised	bug fix
		MI, MGI	Expand	New command
		M*	Expand	New parameter
		SOP	New	New command
1.0.11	21.02.11	Password	Description	Description
1.0.12	12.04.11	M*	Par 56, 57,	Upgrading
		SL	New command	Upgrading
		M*	Start parameter	Upgrading
1.0.13	16.08.11	P	New command	Upgrading
		I	New command	Upgrading
		STD	Time offset	Upgrading
		M*	Parameter 46	Rs232
		MGP	Parameter 16r	Upgrading
		MS	New command	Upgrading
		MGS	New command	Upgrading
1.0.14	27.12.11	All	Combination with X4JET, X1JET	X1JET new
1.0.15	30.12.11	All	Combination	Revision
1.0.16	12.01.12	XML Interface	Description	New function
1.0.17	20.01.12	LL, LF	command	description
		USB Stick	description	Upgrading
1.0.18	18.04.12	Databar	new barcode	New function
		DUN14	new barcode	New function
		Variable Logos,		New function
		No barcode print without data		Upgrading
		Month as characters		New parameter
1.0.19	20.07.12	STD	Roll-over time in minutes	
		M*	Day of the year offset +400	
		SCL, M*	Lenght of cable	New command / parameter



1.0.23	14.08.14	MW	Data link	New 2.011
1.0.28	01.04.14	HC	8-head	New command 8-head mode
1.0.33	30.04.15			Graphic format description additions

Overview of commands

Command	Description	Response
General		
<ESC>*	Handshake	OK<CR>
<ESC>RST	System Neustart	Ok<CR>
<ESC>K	Select print head	None
<ESC>C	Clear print memory	None
<ESC>C0	Printing pause	OK<CR>
<ESC>C1	Continue printing after pause	OK<CR>
<ESC>CR	Reset ink level	OK<CR>
<ESC>R	Rinse/spit	OK<CR>
<ESC>F	Start printing without sensor	OK<CR>
<ESC>SU	Programmversion update	Ok<CR>
<ESC>SCL	Cable lenght LX / MX	Value<CR>
<ESC>MW	Data connection	Ok<CR>
<ESC>HC	headconfiguration	Configuration<CR>
Fields		
<ESC>P	Text field	None
<ESC>B	Barcode field	None
<ESC>L	Logo	None
<ESC>X	Action field	None
<ESC>P	Additional line	None
<ESC>I	Infofield	None
Print image management		
<STX>TZ.....<ETX>	Call print image and start printing	<ACK><STX>1OK<ETX>
<ESC>EW	Send print image data in memory	
<ESC>EX	End of transmission	OK<CR>
<ESC>EL	Receive print image data	Print image data OK<CR>
<ESC>ED	Directory	Name<CR> EX<CR>
<ESC>EQ	Delete print image	OK<CR>
Parameters		
<ESC>*STD	Send time and date	OK<CR>
<ESC>*GSTD	Read time and date	Data<CR>
<ESC>MI	Send IP Address	Ok<CR>
<ESC>MGI	Read IP Address	Data<CR>
<ESC>M*	List of all parameter	OK<CR>
<ESC>MG*	Read list of all parameter	Data<CR>
<ESC>MP	Send Password	Ok<CR>
<ESC>MGP	Read Password	Data<CR>
<ESC>MS	Send Shiftcode	Ok<CR>
<ESC>MGS	Read Shiftcode	Data<CR>
<ESC>EI	Read ink list	Daten<CR>

Status		
<ESC>SV<CR>	Version	K<version><CR>
<ESC>S1<CR>	Status 1	Data<CR>
<ESC>S2<CR>	OK, warning, alarm	Data<CR>
<ESC>SOP	Set output direct	Ok<CR>

Memory		
<ESC>*WF	Sent fonts	OK<CR>
<ESC>*CF	Clear fonts	OK<CR>
<ESC>*LF	Query font names	Data<CR> EX<CR>
<ESC>EG	Sent Logo	None
<ESC>*CL	Clear logos	OK<CR>
<ESC>*LL	Query logo names	Data<CR> EX<CR>
Action fields		
<STX>TZ.....<ETX>	Fill in action fields	<ACK>, <STX>....<ETX>
<STX>CLR<ETX>	Clear buffer	

ANSI Table

4.4 ANSI- Table

DEC	HEX	Chr.	Name	DEC	HEX	Chr.	DEC	HEX	Chr.	DEC	HEX	Chr.
0	00	^@		32	20	Leer	64	40	@	96	60	'
1	01	^A	SOH	33	21	!	65	41	A	97	61	a
2	02	^B	STX	34	22	"	66	42	B	98	62	b
3	03	^C	ETX	35	23	#	67	43	C	99	63	c
4	04	^D	EOT	36	24	\$	68	44	D	100	64	d
5	05	^E		37	25	%	69	45	E	101	65	e
6	06	^F	ACK	38	26	&	70	46	F	102	66	f
7	07	^G		39	27	'	71	47	G	103	67	g
8	08	^H	BS	40	28	(	72	48	H	104	68	h
9	09	^I	TAB	41	29	)	73	49	I	105	69	i
10	0A	^J	LF	42	2A	*	74	4A	J	106	6A	j
11	0B	^K		43	2B	+	75	4B	K	107	6B	k
12	0C	^L		44	2C	,	76	4C	L	108	6C	l
13	0D	^M	CR	45	2D	-	77	4D	M	109	6D	m
14	0E	^N		46	2E	.	78	4E	N	110	6E	n
15	0F	^O		47	2F	/	79	4F	O	111	6F	o
DEC	HEX	Chr.	Name	DEC	HEX	Chr.	DEC	HEX	Chr.	DEC	HEX	Chr.
16	10	^P		48	30	0	80	50	P	112	70	p
17	11	^Q		49	31	1	81	51	Q	113	71	q
18	12	^R		50	32	2	82	52	R	114	72	r
19	13	^S		51	33	3	83	53	S	115	73	s
20	14	^T		52	34	4	84	54	T	116	74	t
21	15	^U	NAK	53	35	5	85	55	U	117	75	u
22	16	^V		54	36	6	86	56	V	118	76	v
23	17	^W		55	37	7	87	57	W	119	77	w
24	18	^X		56	38	8	88	58	X	120	78	x
25	19	^Y		57	39	9	89	59	Y	121	79	y
26	1A	^Z		58	3A	:	90	5A	Z	122	7A	z
27	1B	^[	ESC	59	3B	;	91	5B	[	123	7B	{
28	1C	^\ ^		60	3C	<	92	5C	\	124	7C	
29	1D	^] ^		61	3D	=	93	5D	]	125	7D	}
30	1E	^^		62	3E	>	94	5E	^	126	7E	~
31	1F	^_ ^		63	3F	?	95	5F	_	127	7F	

DEC	HEX	Chr.	Name	DEC	HEX	Chr.	DEC	HEX	Chr.	DEC	HEX	Chr.
128	80	€		160	A0	Leer	192	C0	À	224	E0	à
129	81	•		161	A1	ı	193	C1	Á	225	E1	á
130	82	,		162	A2	¢	194	C2	Â	226	E2	â
131	83	f		163	A3	£	195	C3	Ã	227	E3	ã
132	84	„		164	A4	¤	196	C4	Ä	228	E4	ä
133	85	...		165	A5	¥	197	C5	Å	229	E5	å
134	86	†		166	A6	¦	198	C6	Æ	230	E6	æ
135	87	‡		167	A7	§	199	C7	Ç	231	E7	ç
136	88	^		168	A8	¨	200	C8	È	232	E8	è
137	89	‰		169	A9	©	201	C9	É	233	E9	é
138	8A	Š		170	AA	ª	202	CA	Ê	234	EA	ê
139	8B	‹		171	AB	«	203	CB	Ë	235	EB	ë
140	8C	Œ		172	AC	¬	204	CC	Ì	236	EC	ì
141	8D	•		173	AD		205	CD	Í	237	ED	í
142	8E	Ž		174	AE	®	206	CE	Î	238	EE	î
143	8F	•		175	AF	™	207	CF	Ï	239	EF	ï
DEC	HEX	Chr.	Name	DEC	HEX	Chr.	DEC	HEX	Chr.	DEC	HEX	Chr.
144	90	•		176	B0	°	208	D0	Ð	240	F0	ð
145	91	‘		177	B1	±	209	D1	Ñ	241	F1	ñ
146	92	’		178	B2	²	210	D2	Ò	242	F2	ò
147	93	“		179	B3	³	211	D3	Ó	243	F3	ó
148	94	”		180	B4	´	212	D4	Ô	244	F4	ô
149	95	•		181	B5	µ	213	D5	Õ	245	F5	õ
150	96	–		182	B6	¶	214	D6	Ö	246	F6	ö
151	97	—		183	B7	·	215	D7	×	247	F7	÷
152	98	~		184	B8	¸	216	D8	Ø	248	F8	ø
153	99	™		185	B9	¹	217	D9	Ù	249	F9	ù
154	9A	š		186	BA	º	218	DA	Ú	250	FA	ú
155	9B	›		187	BB	»	219	DB	Û	251	FB	û
156	9C	œ		188	BC	¼	220	DC	Ü	252	FC	ü
157	9D	•		189	BD	½	221	DD	Ý	253	FD	ý
158	9E	ž		190	BE	¾	222	DE	Þ	254	FE	þ
159	9F	ÿ		191	BF	¿	223	DF	ß	255	FF	ÿ

DEC Decimal
 HEX Hexadecimal
 Chr. Character

Creation of the character 128-255 in the text processing:

Switch on "Num-Lock", push and hold the "ALT"- key. For the %- character (Code 137) you must type "0137" in ten-Block and loose the „ALT“-key. The character code must be wrote in decimal diction with 4 character.

Control character description: <x>

Control characters are displayed in this document as Characters in „<>“
The following control characters are used:

Control character	Hexadecimal	Decimal
<SOH>	01	1
<STX>	02	2
<ETX>	03	3
<EOT>	04	4
<ACK>	06	6
<TAB>	09	9
<CR>	0D	13
<NAK>	15	21
<ESC>	1B	27

Interface EIA-232 (RS232)

iJET

No EIA 232 existent

X1JET HP / X1JET LX / X1JET MX / X1JET XR

Serial Interface cable, socket 9-pole, to connector 15-pole (Art.No.: 72800006)

Configuration:

PC EIA232	X1JET
9-pole socket	15-pole connector

PIN 2 -----	PIN 7
PIN 3 -----	PIN 14
PIN 5 -----	PIN 1

X2JET plus Touch

Serial cable, socket 9-pole, to plug 25-pole

Configuration:

PC EIA232	X2JET plus
9-pole socket	25-pole plug

PIN 2 -----	PIN 3
PIN 3 -----	PIN 2
PIN 5 -----	PIN 7

X4JET / X4JET plus Touch

Serial null modem cable, socket 9-pole, to socket 9-pole

Configuration:

PC EIA232	X4JET / plus
9-pole socket	9-pole socket

PIN 2 -----	PIN 3
PIN 3 -----	PIN 2
PIN 5 -----	PIN 5

Settings:

Baud rate	1200 – 115000	default: 115000
Equality	none, even, odd	default: none
Stopbits	1,2	default: 1
Databits	7,8	default: 8
Handshake	Xon – Xoff	

Description Interface USB

iJET

USB-A for Data stick

mini-USB-B for PC communication

X1JET

USB-A for Data stick

USB for PC communication by USB – EIA232 Converter (Art.No.: 72800007)

X2JET plus Touch **X4JET / X4JET plus Touch**

USB-A for Data stick

USB-B for PC communication

Description Interface Ethernet

RJ45 connection socket

Plug connection:

Pin1 - Transmit+;
Pin2 - Transmit-;
Pin3 - Receive+;
Pin6 - Receive-

Connection via Standard TCP/IP settings

Set the IP address on the system or via interface.

Port 10200 for <ESC> sequences
– can be changed via interface command.

Port 10300 for I/O-Server (online feedbacks)
– The Port by iDesign will be rise for each further system by 1.

Port 10400 for XML-data transfer - fix

XML Data communication *4

A data set can send for a print image switch and filling of variable fields on port 10400 via Ethernet.

The data set is like a TZ-command to head 1 with single print mode.

A print image switch may take place if all variable data sets of the previous print image are print.

Command description:

<content	Proceed of a command
</content>	Command end
<GTIN>01234567890128</GTIN>	Variable Data GTIN Field
<PPN>111234567842</PPN>	Variable Data PPN Field
<LOT>1A234B5</LOT>	Variable Data LOT Field
<EXP>151231</EXP>	Variable Data EXP Field
<SN>1234567890123456</SN>	Variable Data SN Field

Example:

```
<content dfi="GS1">
  <GTIN>01234567890128</GTIN>
  <LOT>1A234B5</LOT>
  <EXP>151231</EXP>
  <SN>1234567890123456</SN>
</content>
```

Print image example:

```
X;#1;g=1:P1-0-00000-016;A2,5mm;GTIN ~xxxxxxxxxxxx~
X;#2;g=1:P1-0-000000064;A2,5mm;LOT ~xxxxxxx~
X;#3;g=1:P1-0-000000140;A2,5mm;EXP ~(3)5xx~.(3)3xx~.(3)1xx~
X;#4;g=1:P1-0-000000220;A2,5mm;S-N ~xxxxxxxxxxxxxxx~
X;#5;g=1:BF0I0300009600020;Auto;(01)~(1)xxxxxxxxxxx~(10)~(2)xxxxxxx~(17)~(3)xxxxxx~(21)~(4)
)xxxxxxxxxxxxxxxx~
```

Response:

```
<RES>1</RES>
```

Explanation:

```
<RES>0 = Transfer failure
<RES>1 = Transfer Ok
<RES>2:1 = Print ready head 1
<RES>3:1E1 = Failure
```

<Failure code>	1- 9	1 = Photo sensor activation without data 2 = unknown command 3 = not existing Print image name 4 = not existing print head 6 = System not ready
----------------	------	---

General

Text with star:

Some functions are not available in all systems.
These are signed with a star and a number.

*1 = only for X1JET

*2 = only for multi head system (X2JET / X4JET)

*3 = only for a group or channel (X4JET)

*4 = only for iJET

*5 = not for iJET

Print image name name.xyz

name: Long names like under "Windows", max.25 character. Max. 25 characters for print images, which will send by interface.

1.00I to 9.00I for the 9 Images for X1JET, which can call up with the keys.

xy: 00 (fixed) the actual selected print head is used.

z:	I	HP and LX
	J	MX
	R	XR
	H	CL 2.5
	M	Maxiline

Example:

Milk.00I

USB-stick communication *1

Load print images incl. fonts, logos and parameters automatically with an USB-stick.

The 9 print images of the X1JET can be selected by successive press of "123"

button. Example 3 press select print image 3.00l

Interface commands can automatically be done using the USB-stick.

After the connection of a USB stick an automatic run of commands will be made to query the system status.

At the same time a directory „Markoprint“ and a subdirectory with the name of the serial number of the system, i.e. „L12003-x1“ will be created in the main directory of the USB stick. There will be saved all system specific data.

The stick must be connected once on the system to post this information, so that the iDesign software can work with the system after that

Command sequence:

```
<Esc>SV<CR>  
<Esc>S1<CR>  
<Esc>S2<CR>  
<Esc>MG*<CR>  
<Esc>MGI<CR>  
<Esc>MGP-<CR>  
<Esc>MGPC<CR>  
<Esc>MGS-<CR>  
<ESC>ED----;<CR>  
<Esc>*LL<CR>  
<Esc>*LF<CR>  
<Esc>*GSTD<CR>  
<ESC>EI----;<CR>
```

The command sequence is in the „Command.ast“ file in the HMI directory of the system and will be transfer with the program update.

Afterwards a „Status.ast“ file will be written on the USB-stick in the subdirectory of the system.

Also a Log.txt file, in which all successful data transfers and failures are logged.

Example Content of the Status.ast file:

```

S: <Esc>SV<CR>
R: 0001:11(X1Jet)Version 0.001c<CR>
S: <Esc>S1<CR>
R: 0:0000:099:0:0:1.00l:0:0:1:000001:0<CR>
S: <Esc>S2<CR>
R: 01000000;00000000<CR>
S: <Esc>MG*<CR>
R:
0000;0100;0003;0000;0000;0000;0010;0010;0000;0300;0100;0000;0110;0190;0190;0000;0005;0000;
0005;0010;0010;0010;0000;0000;0000;0045;0020;0000;0000;0001;0001;0000;0000;0000;0000;0000;
0000;0000;0000;0000;0100;0100;0000;0000;3001;0000;0000;0000;0000;0000;1020;3000;0000;0000;
0000;0000;0000;0000<CR>
S: <Esc>MGI<CR>
R: 192.168.8.224;255.255.255.0;0.0.0.0;0.0.0.0<CR>
S: <Esc>MGP-<CR>
R: Free:8E40D951F9330E49BAD2CBFF7C5F670E:09;
user:70AC589DFE08CC12D0692374430F8B9D:09<CR>
S: <Esc>MGPC<CR>
R: 2122201100000002:0050C2A65392:L12003-x1<CR>
S: <Esc>MGS-<CR>
R: <CR>
S: <ESC>ED----;<CR>
R: 1.00l<CR><ESC>EX<CR>
S: <Esc>*LL<CR>
R: 03438:Cow<CR>08966:hp<CR>13102:PostOfficeLogo<CR>31562:BLWG296<CR>
09089:Cow300<CR>20853:fmb293<CR>06510:Compliments4<CR><ESC>EX<CR>
S: <Esc>*LF<CR>
R: :A1,5mm<CR>:A1,5mmB<CR>:A10mm<CR>:A10mmB<CR>:A12mm<CR>:A12mmB<CR>:A1mm
<CR>:A1mmB<CR>:A2,5mm<CR>:A2,5mmB<CR>:A2mm<CR>:A2mmB<CR>:A3mm<CR>:A3mmB
<CR>:A4mm<CR>:A4mmB<CR>:A5mm<CR>:A5mmB<CR>:A6mm<CR>:A6mmB<CR>:A7mm<CR>:
A7mmB<CR>:A8mm<CR>:A8mmB<CR>:A9mm<CR>:A9mmB<CR>:dummy<CR><ESC>EX<CR>
S: <Esc>*GSTD<CR>
R: 1235062001125<CR>
S:<ESC>EI----;<CR>
R:STABL<SOH>004<EOT>DIBL<SOH>005<EOT>SCRD<SOH>008<EOT>SCGN<SOH>009<EOT>
SCBLU<SOH>010<EOT>WEBL<SOH>011<EOT>UVINV<SOH>012<EOT>IRINV<SOH>013<EOT>
MIBL2<SOH>014<EOT>G1BL<SOH>015<EOT>CMBLK<SOH>025<EOT>RCBLU<SOH>026<EOT>
RCRD<SOH>027<EOT>UVC1<SOH>028<EOT>BEABL<SOH>030<EOT>UltraBlack<SOH>031<EO
T>FastSolid<SOH>033<EOT>CMBLK2<SOH>034<EOT>NPBLK<SOH>035<EOT>FSBLK<SOH>03
6<EOT>PTBLK<SOH>037<EOT>Bulk400<SOH>099<EOT><CR>

```

Example content of the LOG.txt file:

```

B:\Markoprint\L12003-x1\Label\*.00l -> Dir not found
B:\Markoprint\L12003-x1\Fonts\*.ft3 -> Dir not found
B:\Markoprint\L12003-x1\Logos\*.bmp -> Dir not found

```

Directory structure:

<i>Markoprint</i>	<i>L12003-x1</i>	Status.ast
	<i>L12004-x1</i>	Status.ast Command.ast Result.ast <i>Label</i> 1.00l 2.00l <i>Fonts</i> A4mm.ft3 A6mm.ft3 <i>Logos</i> Cow.bmp HP.bmp

- Global.ast is only proceed if no Command.ast file is available for the system.
- Result.ast Result of Global.ast

The 5 print images for X1JET, which can call up with the keys: 1.00l to 5.00l

Interface commands can proceed automatically with the USB-stick.

Instruction execution:

A file "Command.ast" must exist in the sub folder Markoprint/ and there in the sub folder with the serial number of the USB-stick to execute interface commands on a selected system.
If the "Command.ast" file is in the main folder of the stick it will be executed on any system if there is no "Command.ast" in the folder with the serial number.

Command.ast	→ Executed interface commands The commands will be inserted as described in the interface description The control character will be written in angle brackets. I.e.: Carriage Return: <CR> The file is a text file and can also create with the iDesign software in the terminal. Content i.e.: <Esc>*<CR> <Esc>SV<CR>
Result.ast	→ Result file of the instruction execution After the command.ast file is processed, a result protocol will be written in the result.ast file. The existing result.ast file will be overwritten. Content i.e.: S: <Esc>*<CR> R: Ok<CR> S: <Esc>SV<CR> R: 0001:11(X1Jet)Version 0.001c<CR>

The transfer of the data and commands happen by the X1JET directly after the connection of the stick.
After this the „Status.ast“ file is created.

Operation:

After the connection and identification of the stick, the data will be read from the stick and the Status LED flashes quickly meanwhile (4x/second)
Thereafter, data will be written on the stick, during that time the Status LED flashes slowly (2x/second).
If the LED lights constant, the stick can be removed after 2 seconds.

Fault code Erra<CR>

When an error message appears after a data transfer, the error can be specified more precisely by a fault code.

Response:

Erra<CR>

Parameter:

a = <fault code>

Value:

1 = Photocell triggered without data
2 = Unknown command
3 = Print image name not present
4 = Head not present
6 = System not ready

Example:

Err2<CR>

2 = Unknown command
Command was not recognised and cannot be executed

Command: <ESC>* Handshake

Handshake is to test communication with printer.

Syntax:

<Esc>*<CR>

Parameter:

Value:

None

Response:

Ok<CR>

Example:

send: <ESC>*<CR>
read: Ok<CR>

Command: <ESC>RST System Restart

After sending this command the controller will restart.
This is used after changing the configuration or after software update.

Syntax:

<Esc>RST<CR>

Parameter:

Value:

Keine

Response:

Ok<CR>

Example:

send: <ESC>*<CR>
read: Ok<CR>

The system restarts in the same way as it was switched off.

Command: <ESC>K Select head *2

The corresponding head must be selected before each print assignment or head specified command.
This is only for multi-head systems necessary.

For multi-head print images the first head of the head group will be specified.
i.e.: for 2x Twin head: K1 for the first Twin head and K3 for the second Twin head

For the X2JET the second head must be selected as K3 (Cartridge3)

For the XB8JET (CL 3.0 8head) the second board is named as head 5-8.

The head selection with connected commands has to take place once only.

Syntax:

<Esc>Kx<CR>

Parameter:

x = <headnumber>

Value X4JET:

1 = head 1
2 = head 2
3 = head 3
4 = head 4

Value X2JET:

1 = head 1
2 = not used
3 = head2
4 = not used

Value XB4JET:

1 = head 1
2 = head 2
3 = head 3
4 = head 4

Value XB8JET:

5 = head 1 - 2.board
6 = head 2 - 2.board
7 = head 3 - 2.board
8 = head 4 - 2.board

x = <Kopfnummer>

Response:

No reply

Example:

```
send: <ESC>K2<CR>
send: <ESC>CR<CR>
read: ok<CR>
```

Command: <ESC>C Delete print memory

The print memory will be deleted.

The status of the system is switched to warning (no print image) after sending this command.

Attention!

Please use the command for continuous printing only, not for single print.

Syntax:

<Esc>C<CR>

Parameter:

None

Response:

No

Command: <ESC>C0 Print pause/stop

Printing will be stopped without clearing the print memory. With <ESC>C1<CR> the Print image will continue to be printed with the variables entered and with the current count.
After the command is sent the status will switch to warning.

Attention!

Please use the command for continuous printing only, not for single print.

Syntax:

<Esc>C0<CR>

Parameter:

None

Response:

None

Example:

send: <ESC>C0<CR>
read: ok<CR>

Command: <ESC>C1 Continue printing after pause

The stopped print image in the print memory will be restarted. The last variables/counts will continue to be printed.

Attention!

Please use the command for continuous printing only, not for single print.

Syntax:

<Esc>C1<CR>

Parameter:

None

Response:

Ok<CR>

Example:

send: <ESC>C1<CR>
read: ok<CR>

Command: <ESC>CR Reset ink level

The ink level of the head selected will be reset to 100%.
The print head must be selected using <ESC>K1<CR> (or K2).

Syntax:

<Esc>CR<CR>

Parameter:

None

Response:

Ok<CR>

Example:

```
send: <ESC>K2<CR>  
send: <ESC>CR<CR>  
read: Ok<CR>
```

Command: <ESC>R Spit

Rinses/spits all nozzles once.

Start purging cycle for X1JET MX

Spitting will be carried out as soon as the command is received, regardless of the photocell.

Syntax:

<Esc>R----;aaaa<CR>

Parameter:

Value:

aaaa = Number of drop rows 0001 – 2000
 >0000 bei X1JET MX for cleaning cycles

Response:

Ok<CR>

Example:

send: <ESC>R----;0025<CR>
read: ok<CR>

Command: <ESC>F Start printing without photocell

Printing will be started as soon as the command is received, regardless of the photocell.

Syntax:

<Esc>F<CR>

Response:

Ok<CR>

Example:

send: <ESC>F<CR>
read: Ok<CR>

Print will start after set print delay.

If the <ESC> F command is sent before the print build-up is complete, the realization of the command will be delayed and is realized after the print build-up immediately.

Command: <ESC>SU Update program version

A version, which is pre-loaded via FTP server will be activate.

The file of the version has the extension .IMG. i.e.: StickV1004k_x4Jet.IMG

The controller restarts after sending the command and it can't communicate.

Don't cut off the power supply during the program update.

Syntax:

<Esc>SU----;x.xxxy<CR>

Parameter:

Wert:

x.xxx = Program version	1.004
y= Test version	k (a-z)

Response:

Ok<CR>

Erra<CR>

a = 9 : False instruction format
a = 11 : Update-file not found
a = 12 : Unknown file content
a = 13 : Updatefile not for iJet / X1JET / X4JET
a = 14 : Checksum not correct

Command: <ESC>SUS Get the last update status

Shows the status of the last update.

Syntax:

<Esc>SUS---;<CR>

Parameter:

No

Value:

Response:

Ok<CR>	: Update Ok
No Status<CR>	: No status available
Init Update<CR>	: Update prepared
Bad File<CR>	: Unknown file content
Update Error<CR>	: Update failure

Command: <ESC>SCL Set lenght of cable

If the lenght of a printhead cable for LX or MX is longer than 13m the lenght must be set.

The lenght can be set only per channel.

The maximum lenght for HP is 13m, for LX and MX and XR 50m

After sending the command without value, the value which is set will be responded, the set value will not be changed.

Syntax:

<Esc>SCL----;[Len]<CR>

Parameter:

Len Lenght of cable in m

Value:

1 - 50

Response:

Len<CR>

Command: <ESC>HC Number of heads for X1JET networking

The HC command defines the number of print heads with the networking of multiple X1JET Stitch to one print image. Up to 16 heads can be linked.

For the networking the X1Jet must have a version >2.012j.

Via the IP address of the first X1JET activate the multiple head.

The IP address of the next X1JET must set with the <ESC>MI command in the first X1JET.

Each additional X1JET receives an own address and the address of the following X1JET. The last one receives his own address only.

The HC command may sent only when the systems are linked with the MI command.

Syntax:

<Esc>HC----;[Head number]<CR>

Parameter:

Head number.

Value:

02 to 16

01 – Reset to single head

Without – query the configuration

Response:

Head conf<CR>

Each head reports a 4-digit number back. The first two digits represent the number of heads before this head, the next two digits for the number of heads behind the head incl himself. The first 4 digits reflect the total number of the linked heads.

Err<CR>

Err returns when no connection can be made to one head.

Examples:

```
07.06.2014 08:20:49 618 | send: <ESC>K1<CR>
07.06.2014 08:20:49 624 | send: <ESC>HC----;04<CR>
07.06.2014 08:20:49 633 | read: 0004;0103;0202;0301<CR>
```

```
07.06.2014 08:20:49 618 | send: <ESC>K1<CR>
07.06.2014 08:20:49 624 | send: <ESC>HC----;<CR>
07.06.2014 08:20:49 633 | read: 0004;0103;0202;0301<CR>
```

Attention!

If the system should controlled as single system, the parameter must be set to „01“.

The IP address in the MI command must set to 0.0.0.0.

Response of the TZ command:

```
07.06.2014 08:18:26 326 | send: <ESC>K1<CR>
07.06.2014 08:18:26 331 | send: <STX>TZ1.00I;11<CR><ETX>
07.06.2014 08:18:26 340 | read: <ACK>
07.06.2014 08:18:26 358 | read: <STX>3OK<ETX><STX>2OK<ETX>
07.06.2014 08:18:26 364 | read: <STX>1OK<ETX>
```


Command: <ESC>HC Head configuration for 8head systems

The <ESC>HC command can use for an application up to 4 heads alternative to par30 of the <ESC>M* command.

The 8-head operation works analog with 8 numbers.

An operation without 8-head connection uses the 4 usual numbers for the head configuration.

If the command is sent without a value, the value returns in the response without a change of the set value.

Both boards must have a firmware >2.012b for a 8-head configuration.

The head configuration is set for both boards with the <ESC>HC command automatically.

The IP address of the second board must set with the <ESC>MI command in the first board.

Syntax:

<Esc>HC----;[Head conf]<CR>

Parameter:

Head conf.

Value:

4 or 8 numbers

See also <ESC>M* command par30

Response:

Head conf<CR>

Err<CR>

Examples:

1111 = 4 Single heads

11111111 = 8 Single heads

4000 = 1 Quad head print image (4-cartridges) from head#1

80000000 = 1 8-fold head print image (8-cartridges) from head#1

2020 = 2 Twin head print images (2-cartridges) from head#1 and from head#3

20202020 = 4 Twin head print images (2-cartridges) from head#1, from head#3, from head#5 and from head#7

Command: <ESC>P Text field

Sends text field with fixed text.

In the case of text fields with several lines, the lines will be separated by tabs (HEX 09).

Syntax:

<Esc>Ps-w-xxxxxyyyy;fontname;...<CR>

Parameter:

s = <Zoom>
w = angle
xxxxx = <X-Position>
yyyy = <Y-Position>
fontname =
... = <text information>

Value:

1 fixed value
0 = 0°, 1 = 90° 2 = 180°, 3 = 270°
00000 – 99999
0000 – 9999
max. 15 digits
all ANSI characters (32 – 256)

Response:

No response

Example 1:

<Esc> P1-0-000000000;4mm;Apricots, Erdbeer<Tab>Waldbeeren<CR>

Aprikosen, Erdbeer
Waldbeeren

Example 2:

<Esc>P1-0-000000000;A10mm;2555645<CR>

2555645

Command: <ESC>Psr Text field as graphic

Send text field with fixed text. The text files will be passed graphically. This command allows using any "Widows" fonts in a text field. <SOH> separates the fixe text command from the graphic command.

- The "+" indicates a new command.
- "Arial_96_0_0" – „Windows“ font information - Name_Height_Characterset_Style
- "13254324 يسبلسيسلسيلسلسيسبب يسكايكايكايكاي" - Text information Unicode
- " EG----;18828;;1494;288;36; - The known Logoheader – Logo name is blank.

Syntax:

P1+0-000000000;Bradley Hand ITC_-
76_0_0;0041,0042,0043,0031,0032,0033,>1:1<SOH>EG----
;02127;;273;96;12;0S1C,0S38,0S7,0SC,0R18,0R3,...

Parameter:

s = <Zoom>
+ = Graphic command
w = angle

xxxxx = <X-Position>
yyyy = <Y_Position>
fontname = <Fontname>
... = <Text information>

Value:

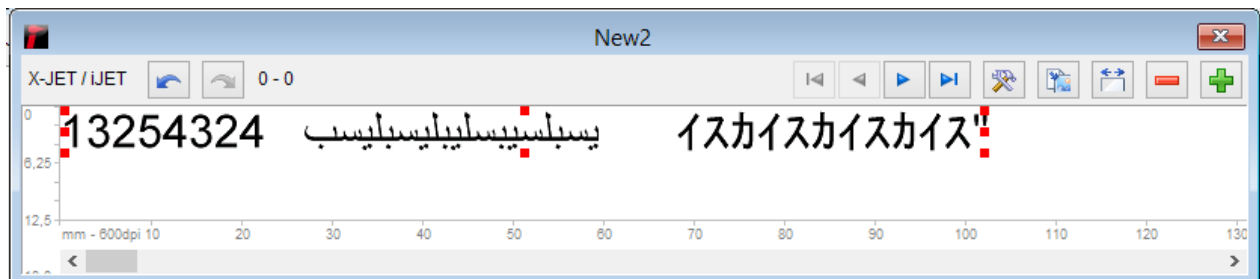
1 fixed value
1 = Transfer graphic
0 = 0°, 2 = 180°
1 = 90°, 3 = 270°
00000 – 99999
0000 – 9999
max.15-digits
all ANSI characters (32 – 256)

Response:

No response

Example1:

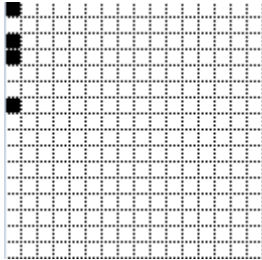
```
<ESC>P1+0-000000000;Arial_-
123_0_0;0031,0033,0032,0035,0034,0033,0032,0034,0020,0020,0020,064A,0633,0628,0644,0633,0
64A,0628,0633,0644,064A,0628,0644,064A,0633,0628,0644,064A,0633,0628,0020,0020,0020,0020,
0020,0020,FF72,FF7D,FF76,FF72,FF7D,FF76,FF72,FF7D,FF76,FF72,FF7D,0022,>1:1 EG----
;18268;;2465;144;18;,,,,,,,,,00FFC,....<CR>
```



Graphic command description

The monochrome graphics - array columns compressed. The coordinate origin is the upper left. Counting from 0 to column width in pixels - 1. The column is numbered from 0 to height in pixels. The height in pixels must be a multiple of 8. The first to be encoded byte is top left and is divided into 2 x 4 bits. (Nibble)

sample 1



orientation of bytes

sample
X=black / 0=white

[3]	[X]
[2]	[0]
[1]	[X]
[0]	[X]
[3]	[0]
[2]	[0]
[1]	[X]
[0]	[0]

Nibble 1 = 1101 = dec. 11 = hex B

Nibble 2 = 0100 = dec. 2 = hex 2

first byte = B2

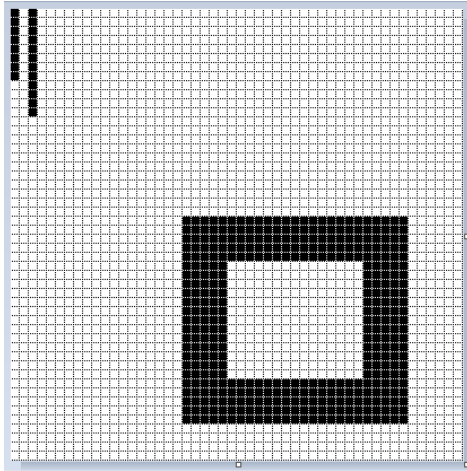
Each column is separated by a comma.

<CR> = dez. 13

<ESC> = dez. 27

<ESC>EG----;00044;logo;16;24;3;B2,,,,,,,,,,,,,<CR>

Sample2



Two identical nibble be written next to each: **FF**

If number of nibble >1 and <22 is numbered G-Z: FG

2 repeats equals G.

22 repeats equals Z

From more than 32 repeats a new byte is written and again the same FF to FZ.

EG----

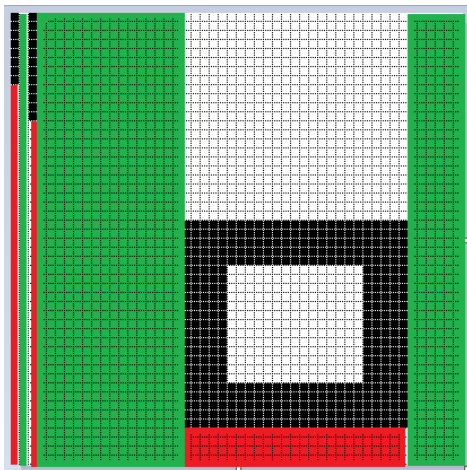
```

;00260;logo;50;56;7;FF,FG,,,,,,,,,,,,,,,,,01FIC,01FIC,01FIC,01FIC,01FIC,01F0G7C,01F0G7C,01F
0G7C,01F0G7C,01F0G7C,01F0G7C,01F0G7C,01F0G7C,01F0G7C,01F0G7C,01F0G7C,01F0G7C,01F0G
7C,01F0G7C,01F0G7C,01F0G7C,01FIC,01FIC,01FIC,01FIC,01FIC,,,,,,,,

```

From number 22 is re-numbered.

The green areas are empty column. In this case is nothing between the commas. The red areas are the rest of the column. This will be also ignored.



Command: <ESC>B Barcode field

Syntax:

<Esc>Bswchhhhxxxxxyyyy;fontname;...<CR>

<Esc>Bswchhhhxxxxxyyyy:i1=v1:i2=v2:...:in=vn;fontname;...<CR>

Parameter:

Value:

s = <Zoom>	1 – 9 or (A-Z for 2D code and barcode)
w = <angle>	0 = 0°, 1 = 90°, 2 = 180°, 3 = 270° turning with 2D codes not possible!
c = <code>	A: EAN -13 12 digits B: EAN -8 7 digits C: Code 2 of 5 40 digits even number of digits D: Code 39 25 digits E: Code 128 40 digits F: EAN 128 40 digits with (00) <18 digits G: DUN 14 14 digits with 13 digits automatic calculation of check sum Modulo10, Ratio 1:2 H: UPC-A 11 digits I: 2 of 5 with Chk 39 digits odd number of digits J: UPC-E 6 digits K: Data matrix code ECC200 L: EAN data matrix M: QR-Code N: DUN 14 14 digits with 13 digits automatic calculation of check sum Modulo10, Ratio 1:3 O: PPN-Code P: Databar omnidirectional Q: Databar Expanded
hhhh = <height>	0000 – 9999
xxxxx = <X-Position>	00000 – 99999
yyyy = <Y Position>	0000 – 9999

optional:

i1..in = Field-ID (description)	m = plain writing grouping: group length n = plain writing grouping: Number of space character between the groups
v1..vn = content	0-9
fontname = <Fontname>	max. 15 digits no font name no plain text For 2 D codes enter the size (see next page)
... = <code information>	Depending on the code, all ANSI characters (32 – 256)

for Datamatrix and QR-Code control characters can be send as HEX values. Not for GS1 Datamatrix! The HEX value must be written in angle brackets. For example: <0D> for CR. The angle brackets must be set.

If no is given, no plain text will be output.

Response:

No response

Example 1:

<Esc>B30A0300000000000;2;623457245724<CR>

**Example 2:**

<Esc> B30E0300000000000:m=4:n=2;A2mm;012345678912<CR>



Special features of the data matrix code

In the data matrix code, instead of font names, the size is indicated:

e.g.

B10J00600000000000;16x16;012345678901



If 'auto' is indicated, the size will be determined automatically.

e.g.

B10J00600000000000;Auto;854784578474917835938649561345913459098165002560560456



Auto – the optimum size will be determined automatically

By the zoom it's also possible to enter A-Z also instead of 1-9 in order to get finer tunings.

Zoom 1: A black square consists of 4x4 pixel at 600x600dpi

Zoom 2: A black square consists of 8x8 pixel at 600x600dpi

...

Zoom A: A black square consists of 2x2 pixel at 600x600dpi

Zoom B: A black square consists of 4x4 pixel at 600x600dpi

Zoom C: A black square consists of 6x6 pixel at 600x600dpi

Zoom D: A black square consists of 8x8 pixel at 600x600dpi

...

Half of pixel will be print at 300x300dpi.

Zoom A: A black square consists of 1x1 pixel at 300x300dpi

The datamatrix can contain control characters. These are added as HEX value in brackets.
For example: <OD> for CR oder <1B> for ESC.

Attention: not allowed for GS1 Datamatrix.

Square sizes:

	Data Content		Byte
	Numeric	Alphanumeric	
10x10	6	3	1
12x12	10	6	3
14x14	16	10	6
16x16	24	16	10
18x18	36	25	16
20x20	44	31	20
22x22	60	43	28
24x24	72	52	34
26x26	88	64	42
32x32	124	91	60
36x36	172	127	84
40x40	228	169	112
44x44	288	214	142
48x48	348	259	172
52x52	408	304	202
64x64	560	418	278
72x72	736	550	366
80x80	912	682	454
88x88	1152	862	574
96x96	1392	1042	694
104x104	1632	1222	814
120x120	2100	1573	1048
132x132	2608	1954	1302
144x144	3116	2335	1556

Rectangular sizes:

8x18	10	6	3
8x32	20	13	8
12x26	32	22	14
12x36	44	31	20
16x36	64	46	30
16x48	98	72	47

Special features of the QR-Code

In the QR code, instead of font names, the size and redundancy is used:

Font name format: **xyy.zz**

Parameter:	Value:
x = Error Correction Level	L,M,Q oder H L = 7% M=15% (Standard) Q=25% H=30%
y = Code Version (If the code size isn't enough for the given data, the next suitable code is used.)	01..28 oder Auto → see table
.zz = Mask (Optional)	01..08 (Pattern Mask Specification)

Example

```
<Esc>B20M0060000000000;H01;01234567890<CR>
```

If 'Auto' is used, the size will be determined automatically.

Example

```
<Esc>B10M0060000000000;Auto;8547845784749178359386495613459134590981650025605<CR>
```

Auto – the optimum size will be determined automatically, M will be set as standard.

Example

QR-Code as actionfield:

```
<Esc>X;#;g=6:B30M0300003400020;Auto;123456789A~abcdefgh~BC~zzzzzz~D123456789<CR>
```

The QR code can contain control characters. These are added as HEX value in brackets.
For example: <OD> for CR oder <1B> for ESC.

Table 7 — Number of symbol characters and input data capacity for QR Code 2005

Version	Error correction level	Number of data codewords	Number of data bits	Data capacity			
				Numeric	Alphanumeric	Byte	Kanji
1	L	19	152	41	25	17	10
	M	16	128	34	20	14	8
	Q	13	104	27	16	11	7
	H	9	72	17	10	7	4
2	L	34	272	77	47	32	20
	M	28	224	63	38	26	16
	Q	22	176	48	29	20	12
	H	16	128	34	20	14	8
3	L	55	440	127	77	53	32
	M	44	352	101	61	42	26
	Q	34	272	77	47	32	20
	H	26	208	58	35	24	15
4	L	80	640	187	114	78	48
	M	64	512	149	90	62	38
	Q	48	384	111	67	46	28
	H	36	288	82	50	34	21
5	L	108	864	255	154	106	65
	M	86	688	202	122	84	52
	Q	62	496	144	87	60	37
	H	46	368	106	64	44	27

Version	Error correction level	Number of data codewords	Number of data bits	Data capacity			
				Numeric	Alphanumeric	Byte	Kanji
6	L	136	1 088	322	195	134	82
	M	108	864	255	154	106	65
	Q	76	608	178	108	74	45
	H	60	480	139	84	58	36
7	L	156	1 248	370	224	154	95
	M	124	992	293	178	122	75
	Q	88	704	207	125	86	53
	H	66	528	154	93	64	39
8	L	194	1 552	461	279	192	118
	M	154	1 232	365	221	152	93
	Q	110	880	259	157	108	66
	H	86	688	202	122	84	52
9	L	232	1 856	552	335	230	141
	M	182	1 456	432	262	180	111
	Q	132	1 056	312	189	130	80
	H	100	800	235	143	98	60
10	L	274	2 192	652	395	271	167
	M	216	1 728	513	311	213	131
	Q	154	1 232	364	221	151	93
	H	122	976	288	174	119	74
11	L	324	2 592	772	468	321	198
	M	254	2 032	604	366	251	155
	Q	180	1 440	427	259	177	109
	H	140	1 120	331	200	137	85
12	L	370	2 960	883	535	367	226
	M	290	2 320	691	419	287	177
	Q	206	1 648	489	296	203	125
	H	158	1 264	374	227	155	96
13	L	428	3 424	1 022	619	425	262
	M	334	2 672	796	483	331	204
	Q	244	1 952	580	352	241	149
	H	180	1 440	427	259	177	109
14	L	461	3 688	1 101	667	458	282
	M	365	2 920	871	528	362	223
	Q	261	2 088	621	376	258	159
	H	197	1 576	468	283	194	120
15	L	523	4 184	1 250	758	520	320
	M	415	3 320	991	600	412	254
	Q	295	2 360	703	426	292	180
	H	223	1 784	530	321	220	136
16	L	589	4 712	1 408	854	586	361
	M	453	3 624	1 082	656	450	277
	Q	325	2 600	775	470	322	198
	H	253	2 024	602	365	250	154
17	L	647	5 176	1 548	938	644	397
	M	507	4 056	1 212	734	504	310
	Q	367	2 936	876	531	364	224
	H	283	2 264	674	408	280	173

Version	Error correction level	Number of data codewords	Number of data bits	Data capacity			
				Numeric	Alphanumeric	Byte	Kanji
18	L	721	5 768	1 725	1 046	718	442
	M	563	4 504	1 346	816	560	345
	Q	397	3 176	948	574	394	243
	H	313	2 504	746	452	310	191
19	L	795	6 360	1 903	1 153	792	488
	M	627	5 016	1 500	909	624	384
	Q	445	3 560	1 063	644	442	272
	H	341	2 728	813	493	338	208
20	L	861	6 888	2 061	1 249	858	528
	M	669	5 352	1 600	970	666	410
	Q	485	3 880	1 159	702	482	297
	H	385	3 080	919	557	382	235
21	L	932	7 456	2 232	1 352	929	572
	M	714	5 712	1 708	1 035	711	438
	Q	512	4 096	1 224	742	509	314
	H	406	3 248	969	587	403	248
22	L	1 006	8 048	2 409	1 460	1 003	618
	M	782	6 256	1 872	1 134	779	480
	Q	568	4 544	1 358	823	565	348
	H	442	3 536	1 056	640	439	270
23	L	1 094	8 752	2 620	1 588	1 091	672
	M	860	6 880	2 059	1 248	857	528
	Q	614	4 912	1 468	890	611	376
	H	464	3 712	1 108	672	461	284
24	L	1 174	9 392	2 812	1 704	1 171	721
	M	914	7 312	2 188	1 326	911	561
	Q	664	5 312	1 588	963	661	407
	H	514	4 112	1 228	744	511	315
25	L	1 276	10 208	3 057	1 853	1 273	784
	M	1 000	8 000	2 395	1 451	997	614
	Q	718	5 744	1 718	1 041	715	440
	H	538	4 304	1 286	779	535	330
26	L	1 370	10 960	3 283	1 990	1 367	842
	M	1 062	8 496	2 544	1 542	1 059	652
	Q	754	6 032	1 804	1 094	751	462
	H	596	4 768	1 425	864	593	365
27	L	1 468	11 744	3 517	2 132	1 465	902
	M	1 128	9 024	2 701	1 637	1 125	692
	Q	808	6 464	1 933	1 172	805	496
	H	628	5 024	1 501	910	625	385
28	L	1 531	12 248	3 669	2 223	1 528	940
	M	1 193	9 544	2 857	1 732	1 190	732
	Q	871	6 968	2 085	1 263	868	534
	H	661	5 288	1 581	958	658	405

Command: <ESC>L Logo

Insert logo.

Syntax:

<Esc>Lsmw-xxxxxyyyy;name<CR>

Parameter:

Value:

s = <Zoom>

m = memory

w = angle

xxxxx = <X-Position>

yyyy = <Y_Position>

name = <logo name>

1 fixed value

- Flash, Logo stored in the logo memory

1 RAM, one logo can be overwritten (temp.).

0 = 0°, 1 = 90°

2 = 180°, 3 = 270°

00000 – 99999

0000 – 9999

max. 15 digits

Response:

No response

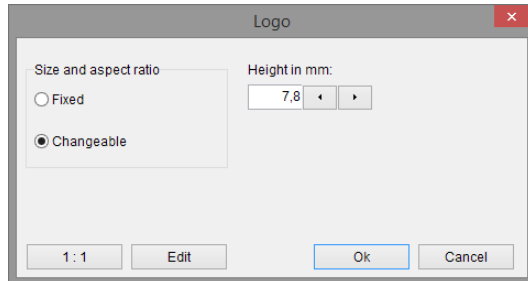
Example:

<Esc>L1-0-000000044;MOP<CR>

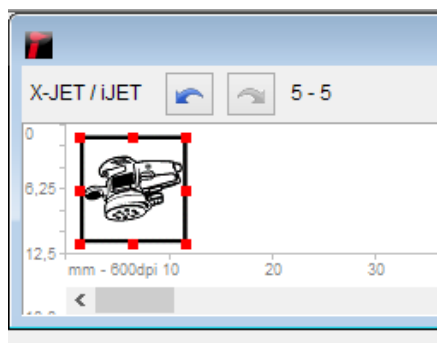
Mark-O-Print
A Weber® Company

Command: <ESC>L + STR\$LGO Logo/Graphic embedded into print message

DoubleClick on the logo field in order to see the follow menu:



If Size and aspect ratio is selected it is possible to change this with the mouse. The result graphic will be stored into the L command of the print message. A reference to the original graphic file still exists for further adjustments without loss quality.



```
P1+0-000000000;Arial_-128_0_0;STR$LGO>2.bmp>1:1 EG----
;06938;;256;256;32;,,,,,,03FZZTC,03FZZTC, ... ,,,
```

P1+0-000000000;Arial_-128_0_0; : see chapter „Text fiel das graphic“

STR\$LGO : Identifier for an embedded graphic field

1:1 : aspect ratio to original graphic

<SOH> : separator tot he graphic command

EG----;... : graphic command, see chapter „“

Command: <ESC>X Action field – remote field

Action fields are special text or barcode fields in a print image that can be filled with data and called for printing over an interface.

For a manual print image assignment the action fields are queried in the display. (As variable fields)

An action field includes a tilde ('~'). This character appears by pressing the "Alt Gr" and the "+" keys.

If an action field is entered, but a link with other fields shouldn't be print, This field can entered with a „Dummy“ font. The field will be shown in the iDesign software, but will not print.

Syntax:

<Esc>X;#=#1;i1=v1;i2=v2;...;in=vn:P...<CR>

<Esc>X;#=#1;i1=v1;i2=v2;...;in=vn:B...<CR>

<Esc>X;#=#1;i1=v1;i2=v2;...;in=vn:L...<CR>

Parameter:

Value:

i1..in = field ID
v1..vn = content

ID	Description	
#	Field number	1-25 = Consecutive numbering of the fields, query in this order Field number >50 are reserved for variable, date and counter field.
a	Counter starting value	up to 12 digit
b	Counter repeat	
c	Counter increment	
d	Counter ending value	up to 12cdigit
e	Date offset YYMMDDD	
f	Info text variable field	
g	Flags	0: variable field 1: counter 2: date for combination the value will be added.
h	Variable field specification	
i	actual counter value	
	info = info text	is displayed when the variable field is queried. An info text is recommended when there are several variables in a print image.
	P.. = <text field>	as text command
	B.. = <Barcodefield>	as barcode command
	L.. = <Logofeld>	as Logo command
	<Esc>X;#=#1;f=Logo;h=3:L1-0-000000000;logo~y~	
	Barcode plain writing lines grouping	
k	Number of signs per group	
l	Number of spaces between the groups	

Response:

No response

Example:

iDesign software entry:

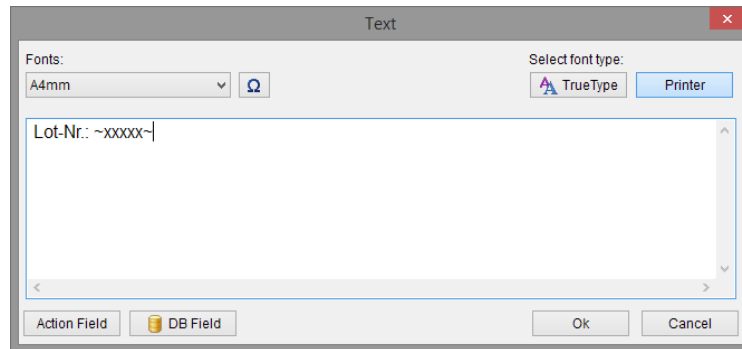
A remote field is entered with ~xxxx~.

The number of "x" shows how many characters can be used in the remote field.

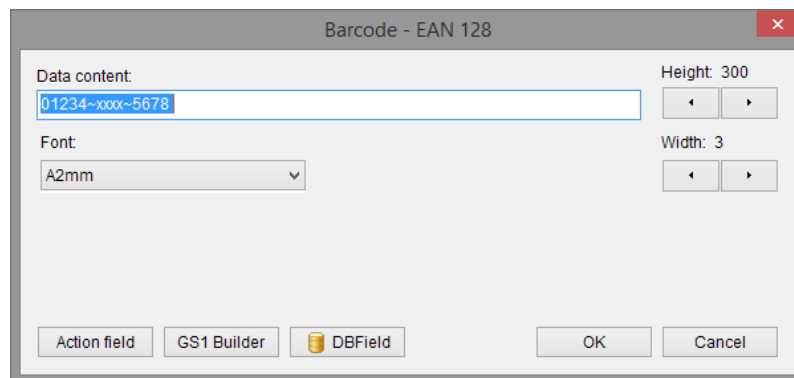
Alternative ~y~ can be used for variable length of an remote field.

Example:

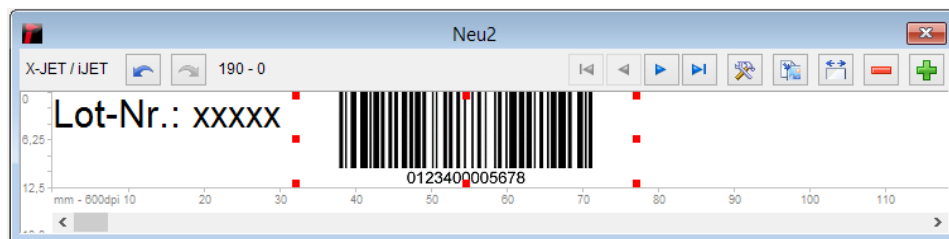
Text field entry: Lot no. ~xxxx~



Barcode field entry: 01234~xxxx~5678



The following text will appear in the editing window:



Here is the command structure in the text:

```
<Esc>X;#0;g=1:P1-0-000000000;4;LOT no. ~xxxxxx~<CR>
<Esc>X;#0;g=1:B30F030000520000;2;(01)1234~xxxx~5678<CR>
```

This print image will be saved under a specific name (e.g. Deo3) and sent to the CompactLine print image memory using the iDesign backup function.

Action field functions:

Placeholders, which are defined as follows and used to enter the information:

a	-tens place day
b	-ones place day
c	-tens place month
d	-ones place month
e	-thousands place year
f	-hundreds place year
g	-tens place year
h	-ones place year
i	-tens place hour
j	-ones place hour
k	-tens place minute
l	-ones place minute
m	-tens place second
n	-ones place second
ooo	-Month in Characters (APR,MAY)
ppp	-Day of the year
q	-Day of the week
rr	-Calendar week
s	-Hour as character (e.g. letters 0=A, 1=B, ..., 23=Z)
t	-Shift code (max. 4 characters)
u	-Hundreds place day of the year
v	-Tens place day of the year
w	-Ones place day of the year
x	-Data transfer from interface
y	- dynamic datalenght transferring from interface ~y~
z	-Counter function
zzzz	- 4-digit counter (max.8-digit)
+++z	- 4-digit counter without leading zeros (right aligned)
----z	- 4-digit counter without leading zeros (left aligned)
A	-Tens place day with zeros hidden
B	-Day as character (e.g. Letters 1-9 =A, 10-19=B, 20-29=C, 30,31=D)
C	-Tens place month with zeros hidden
D	-Month as character (e.g. letters 1=A, 2=B, ..., 12=M)
G	-Tens place year with zeros hidden
H	-Year ones place as character (e.g. 0=C, 1=M, 2=E, 3=A, 4=D, 5=J, 6=O, 7=H, 8=N, 9=S)
I	-Tens place hour with zeros hidden
K	-Tens place minute with zeros hidden
L	-Minutes as character (e.g. letters 0=A, 1=B, ..., 5=F)
M	-Tens place seconds with zeros hidden
Q	-Weekday as character (e.g. letters 1=A, 2=B, ..., 7=G)
X	-
Y	-Print ready signal
Z	-Counter as character max.6 characters

Extension of the field of action function "o":

In the software system tables can be saved for individual month abbreviation for each language.

The table is in the USB stick version of the HMI folder and then to the respective language directory, e.g. "EN"

The table is UserPar.dat and can be edited with a text editor.

Specify up to 10 monthly tables and symbol lengths of 1 to 10 characters ('_' as a space).

Example:

: TextMonth0 3JANFEBMRZAPRMAIJUNJULAUGSEPOKTNOVDEZ

: TextMonth1 3JANFEBMARAPRMAYJUNJULAUGSEPOCTNOVDEC

: TextMonth2

9Januar__Februar__März____April____Mai____Juni____Juli____August__SeptemberOktob
er__November_Dezember__

- Call table with 0 ~ 000 ~, Table 1 ~ ~ 1000, Table 2, etc. ~ ~ 2000000000

Special functions for date field:

The date field has to be entered as an action field in the text field or bar code field.

To call the function "#" with the special function number "1, 2, ..." is inserted in the action field behind the tilde character.

#1: The expiration date will always show the last day of the month.

Example:

~ #1ab.cd.gh~
Date is now: 17.05.09
Offset 5 months
Expiry date: 31.10.2009

2: The expiration date will always show the last day of the month. The leap year is also 28.02. displayed and not the 29.02.

Example:

~ #2ab.cd.gh~
Date is now: 23.03.11
Offset 11 months
Expiry date: 28.02.12

3: The month of the shelf life always changes, 15 and not by the 1st of the month.

Example:

~ #3cd.gh~
Date is now: 14.05.09 Offset five months expiry date: 10.09
Date is now: 15.05.09 Offset five months expiry date: 11.09

#5: In the day of the year, an offset of 400 days is added without that over 365 the year is added.

Example:

~#5ppp~
Date is now:12.07.12, Day of the year:194
Print day of the year 594

#5;xxx: In the day of the year, a variable offset 1-633 days is added without that over 365 the year is added.

Example:

~#5;123ppp~
Date is now:12.07.12, Day of the year:194
Print day of the year 317

Internal action field commands:

(The command <ESC>X doesn't exist no longer directly, but will translate internal in following commands)

<Esc>PXs-w-xxxxxyyy;fontname;...<CR>

- Print action fields, otherwise like the P-command
- Access to action fields can be made by ~x~ or ~y~ in the text area
- 'x' stands for a character of the field.
- 'y' stands for the total character string of the field. The number of the character for 'y' is the field length.
- Example
Field1:~(1)xxxx~ Field2:~(2)xxxx~
Field3:~(3)3xx1xx~
Field4:~(4)y~

<Esc>BXswchhhxxxxxyyy;fontname;...<CR>

- Barcode action fields, otherwise like the B-command

<Esc>LXs-w-xxxxxyyy;{attributstring}<CR>

- Logo action fields, otherwise like the L-command

<Esc>ZA;#={fieldno};a={Start value};b={Repeat};c={Step width};
;d={End value};{Attribute series}<CR>

- {Start value} = 0.
- {Repeat} = 0.
- {Step width} = 0.
- {End value} = 0.
- {Attribute series} (z.B.: SN~zz-zz~)
- Generates a counter field, that can be accessed with PX or BX

<Esc>DA;#={fieldno};e={date offset};{Attribute series}<CR>

- {fieldno} = 1..999
- {date offset} = JJMMTTT
- {Attribute series} (i.e.: ~abcdefgh~)
- Generates a date field, that can be accessed with PX or BX

<Esc>VA;#={fieldno};f={Infotext};h={Vorgabetext};<CR>

- Generates a variable field, that can be accessed with PX or BX

Command: <ESC>P Extra line in the iDesign print image

During the creation of a print image with iDesign a comment line is add on the print image to size the print image (number of needed print heads).
The comment can expand anytime.

Syntax:

<Esc>P1-0-000000000: h=x<CR>

Parameter:

x= <Print head size>	0	no definition
	1	Maxi50
	2	Maxi100
	3	Maxi150
	4	Maxi200,
	13	CI25Single
	15	CI25Twin
	24	iJET / X1JET / X4JET Single
	25	X4JET Twin
	-	-
	31	X4Jet-8head
	36	X1JET XR 54
	41	MX50
	42	X4JET MX100
	43	X4JET MX150
	44	X4JET MX200
	45	X4JET MX250
	46	X4JET MX300
	47	X4JET MX350
	48	X4JET MX400

Response:

No response

Example:

<Esc>P1-0-000000000: h=27<CR>

The print image will be created for a X4JET Quad head.

Command: <ESC>I Internal info field

An info field can be inserted in the print image, which is ignored during printing.

Any ASCII-signs can stand between <ESC>I and <CR>, except control character (< ASC 32).

Syntax:

<Esc>Ixxx<CR>

Parameter:

xxx= <Info text> any text

Response:

No response

Example:

<Esc>I“This is an info text“<CR>
<Esc>I C:\Article dates\Article.xml;Arial10Bold;21-JUN-2011<CR>

Command: <ESC>P Width of the print image

Define print image width in pixel

Syntax:

<Esc>Psrw-xxxxx0000;;<CR>

Parameter:

Value:

s = <Zoom>
r = right border
w = angle

1 fester Wert
r
0

xxxxx = <Width of the print image in pixel> 00000 – 99999

Response:

No response

Example:

<Esc> P1r0-023450000;; <CR>

Command: <STX>TZ Call print image and start printing

With each ET command a print image will be called from the memory for printing.

Syntax:

<STX>TZname.xxy;kd<CR><ETX>

Parameter:

Value:

name = <print image name>	Name of the print image in the memory	
xx = <System>	00	Fix
y = Technologie	1	HP or LX see page 14
.xxy	must not be send.	
k = <Head number>	1-2	if no info given, head group 1
d = <Printing mode>	0 for single print	
	1 continuous printing	if no info given, continuous printing
	3 continuous printing	with storage of the last print after switch off.

Example:

<STX>TZ126.00I;11<CR><ETX>
or
<STX>TZ126;11<CR><ETX>

Response:

<ACK><STX>1OK<ETX>

Error message:

<STX><head number> E<fault code><ETX>

Explanations:

<Fault code>	1- 9	1 = Photocell triggered without data
		2 = Unknown command
		3 = Print image name not present
		4 = Head not present
		5 = not used
		6 = System not ready
		7 = Wrong checksum / can't open the port (2.011c)
		8 = double block number / no response (2.011c)
		9 = not next block number / logo not loaded

Example:

send: <STX>TZ1.00I;11<CR><ETX>
read: <ACK>
read: <STX>1OK<ETX>

See also Fill Action Fields <STX>TZ

Command: <ESC>EW
memory

Send print image data to

Command: <ESC>EX

End of transfer

With the EW command the transfer of the print image data will be initiated.
With the EX command the transfer will be terminated.

Syntax:

<Esc>EW----;name.xxy<CR>

Parameter:

Value:

name = <print image name>
xx = Head
y = Head type

Name of the print image in the memory
00 = Standard
I = General

Syntax:

<Esc>EX----;<CR>

Sequence:

<Esc>EW----;name.00I<CR>

Print image commands

<Esc>EX----;<CR>

Response:

OK<CR>

Example:

```
send: <ESC>EW----;126.00I<CR>
send: <ESC>P1-0-000000020;8;WEBER<TAB>Testprint<CR>
send: <ESC>P1-0-006200000;7;EXP:31.12.2008<CR>
send: <ESC>D1-0-006800288;10;0000000;ij:kl:mn<CR>
send: <ESC>B70A0600014600000;5;401234567890<CR>
send: <ESC>EX----;<CR>
read: ok<CR>
```

Command: <ESC>EL system

Receive print image data from

Call print image data of a saved print image from the memory.

Syntax:

<Esc>EL----;name.xxy<CR>

Parameter:

Value:

name = <print image name>
xx = <machine number>
y = Head number

Name of the print image in the memory
00 General
H General

Response:

Print image data OK<CR>

Example:

<ESC>EL----;126.00I<CR>

Response:

send: <ESC>EL----;126.00I<CR>
read: <ESC>
read: P1-0-000000020;8;WEBER<TAB>Testprint<CR>
<ESC>P1-0-006200000;7;EXP:31.12.2008<CR>
<ESC>D1-0-006800288;10;0000000;ij:kl:mn<CR>
<ESC>B70A0600014600000;5;401234567890<CR>
<ESC>EX<CR>

Command: <ESC>ED

Receive directory

Receive directory from the memory.

Syntax:

<Esc>ED----;<CR>

Response:

name.xxy<CR>
name.xxy<CR>
.....
<ESC>EX<CR>

Parameter:

Value:

name = <print image name>
xx = <machine number>
y = Head type

Name of the print image in the memory
00 General
I General

Example:

<ESC>ED----;<CR>

Response:

send: <ESC>ED----;<CR>
read: 3.00I<CR>
1.00I<CR>
2.00I<CR>
4.00I<CR>
5.00I<CR>
IFA.00I<CR>
GS1.00I<CR>
<ESC>EX<CR>

Command: <ESC>EQ directory

Delete print image from

Syntax:

<Esc>EQ----;name.xxy<CR>

Parameter:

Value:

name = <print image name>
xx = <machine number>
y = Head number
*. *= <Wildcard>

Name of the print image in the memory
00 General
H General
delete all

Response:

OK<CR>

Err<CR>

Example:

send: <ESC>EQ----;temp1.00I<CR>
read: ok<CR>

Example:

send: <ESC>EQ----;*. *<CR>
read: ok <CR>

Command: <ESC>*LF

Receive Font directory

Call up the font directory from the memory.

Syntax:

<Esc>*LF<CR>

Response:

:name<CR>
:name<CR>
.....
<ESC>EX<CR>

Parameter:

name = <Fontname>

Value:

Name of the font in the memory

Example:

<ESC>*LF<CR>

Response:

send: <ESC>*LF<CR>
read: :A12mm<CR>:A2,5mmB<CR>:A2,5mm<CR>:A4mm<CR>:A12mmB<CR>
read: :A6mmB<CR>:A5mmB<CR>:A3mm<CR>:A9mmB<CR>
read: :A6mm<CR>:A5mm<CR>:A2mm<CR>
read: <ESC>EX<CR>

Command: <ESC>*CF**Delete Font in directory****Syntax:**

```
<Esc>*CF;name<CR>  
<Esc>*CF;*. *<CR>
```

Parameter:

```
name = <Fontname>  
*, *
```

Value:

```
Name of the font in the memory  
Delete all fonts
```

Response:

```
OK<CR>
```

```
Err<CR>
```

Example:

```
send: <ESC>*CF;A4mm<CR>  
read: Ok<CR>
```


Command: <ESC>*LL

Receive Logo directory

Call up logo directory from the memory.

Syntax:

<Esc>*LL<CR>

Response:

xxxxx:name<CR>
xxxxx:name <CR>
.....
<ESC>EX<CR>

Parameter:

xxxxx = <?>
name = <Logoname>

Value:

?
Name of the logo in the memory

Example:

<ESC>*LL<CR>

Response:

send: <ESC>*LL<CR>
read: 14707:TAILLE<CR>00252:s5<CR>25916:s10<CR>
read: 11741:LOGO GERFLOR<CR>11738:LOGOGERFLORBMP BMP<CR>
read: <ESC>EX<CR>

Command: <ESC>*CL

Delete logo in directory

Syntax:

<Esc>*CL;name<CR>

<Esc>*CL;*. *<CR>

Parameter:

name = <Logoname>

*, *

Value:

Name of the logo in the memory

Delete all logos

Response:

OK<CR>

Err<CR>

Example:

send: <ESC>*CL;TAILLE<CR>

read: Ok<CR>

Command: <ESC>*STD Send date and time

Send date and time for setting the system clock.

Syntax:

```
<Esc>*STDhhmmssTTMMJJW<CR>  
<Esc>*STDhhmmssTTMMJJW[;ooooo]<CR>
```

Parameter:

Value

hh = <Hour>	01 - 24
mm = <Minute>	01 - 60
ss = <Second>	01 - 60
TT = <Day>	01 - 31
MM = <Month>	01 - 12
JJ = <Year 2digits>	01 - 99
W = <Day of the week>	1 – 7
ooooo = <timeoffset> (Optional)	-2359 - +2359 (in hour and minutes)

Response:

Ok<CR>

Err<CR>

Example:

```
send: <ESC>*STD1500592812113;+03<CR>  
read: Ok<CR>
```

Command: <ESC>*GSTD Receive date and time

Receive date and time of the system clock.

Syntax:

<Esc>*GSTD<CR>

Response:

hhmmssTTMMJJW<CR>

Parameter:

Value

hh = <Hour>	01 - 24
mm = <Minute>	01 - 60
ss = <Second>	01 - 60
TT = <Day>	01 - 31
MM = <Month>	01 - 12
JJ = <Year 2digits>	01 - 99
W = <Day of the week>	1 - 7
ooooo = <timeoffset> (Optional)	-2359 - +2359 (in hour and minutes)

Example:

send: <ESC>*GSTD<CR>
read: 1504172812113<CR>

Command: <ESC>M* Send list of all parameter

Send all parameter as a list.

Each parameter has 4 digits. Example: Pulse 0001 = Extern

Some of the parameters can have a + or – character as prefix.

Each Parameter can be a Number between -9999 to 9999.

Characters and more numbers behind a Parameter will be ignored.

If there is no value for a parameter, this parameter will be ignored and will stay at the old value.

The table is open to the end and can be expanded in the future.

Syntax:

<Esc>M*;<par1>;<par2>;...;<par n><CR>

The first parameter number can be send as an option.

<Esc>M*[p<StartPar>];<par1>;<par2>;...;<par n><CR>

Response:

Ok<CR>

Parameter:	Value	Comment	Star
par1 Pulse internal / external	0 = Internal 1 = External Encoder 1 headgroup1 or Encoder 2 on head group 2 2 = Group 2 get the pulse of group 1 and group 1 get the pulse of the master board (only by slave)		(3) *3 *2 *2 *2
Par2 Speed for internal pulse	in 1/10 m/min	0010 – 4000	(2) *3
Par3 Divider Encoder for external pulse	Encoder dpi / par3		(2) *3
Par4 Print direction	0=L<-R 1=L->R		(1)
Par5 Upside down	0=No 1=Yes		(1)
Par6 Mirror	(Not used)		(1)
Par7 Start delay	in mm		(1)
Par8 Print repeat distance	in mm		(1)
Par9 Number of repeats	0=Off 999=Endless	0000 – 0999	(1)

Parameter:	Value	Comment	Star
par10 Intensity DPI	in Dots per Inch	0000 – 0999	(2) *3
par11 Zoom	in %	0010 – 0900	(1)
par12 Nozzle Rows	0=A~B 1=A+B 2=A 3=B		(1)
par13 Head voltage	in 1/10 V	0040 - 0112	(4) *3
par14 Fire-Time Fire Time LX	in 10ns in 10ns	0050 - 0300 0020 - 0080	(4) *3 *3
par15 Fire-Pause Pre-Pulse LX	in 10ns in 10ns	0100 – 0300 0005 – 0033	(4) *3 *3
Par16 Barcode correction	in Pixel	-0005 – 0005	(1) *3
Par17 Ink warning	in %		(0)
Par18 Spit-Mode	0=Off 1=Before 2=Interval		(4) *3
Par19 Number of Spittrows	in Rows	0000 – 0100	(4)
Par20 Spit delay	in s	0000 – 0999	(4)
Par21 Spit interval	in s	0000 – 0999	(4)
Par22 Auto-Off	in min	0000 – 0999	(4)
Par23 Twin head-Offset	in Pixel	0000 – 1000	(0) *5
Par24 Offset Bidirekt. print with Twin head	in Pixel	0000 – 1000	(0) *5
Par25 Warming function	0=No 1=Yes		(4) *3
par26 Warming-temperatur	in °C		(4)
par27 Warming-Timer	in s		(4)
par28 Language	0=German 1=English 2=French 3=Spain 4 Japanese 5=Schwedish 6=Finnish 7=Türkisch 8=Italienisch 9=Russisch		(9)

Parameter:	Value	Comment	Star
par29 Counter start value How to handle the counter start value During the print start.	0 = as set in print image 1 = user prompt for start value 2 = last value ("i" section of command) 3 = user prompt for start value, last value will be displayed.	(1)	
par30 head type	3=Single	iJET, X1JET	(9) *2
par30 head type	abcd		(9) *2

- 'a': digit '1' to '4': specifies how many print heads generate a multihead print image together from head#1.
1=Single, 2=Twin, 3=Triple, 4= Quad
- 'b' digit '0' to '3': specifies how many print heads generate a multihead print image together from head#2.
'0' specifies that this head already among to a multihead print image.
- 'c' digit '0' to '2': specifies how many print heads generate a multihead print image together from head #3.
'0' specifies that this head already among to a multihead print image.
- 'd' digit '0' to '1': specifies with '1' that head#4 is a single head.
'0' specifies that this head already among to a multihead print image.

Example:

1111 = 4 Single heads
 4000 = 1 Quad head print image (4-heads) from head#1
 2020 = 2 Twin head print image (2-heads) from head#1 and from head#3
 2011 = 1 Twin head print image (2-heads) from head#1 and 2 Single heads (head#3, head#4)
 3001 = 1 Triple head print image (3-heads) from head#1 and 1 Single head (head#4)
 1201 = 1 Twin head print image (2-heads) from head#2 and 2 Single heads (head#1, head#4)

The head type can be set alternative with the command <ESC>HC.
 The counting is 8 for networked maste-slave system (XB8JET, Compactline 3.0 8-head).
 For 8 head systems the HC command must be used.

The first 4 heads will be shown with this command.

par31 ink type	HP	LX	MX	(4)
	0=STABL	???	SC II	
	1=DIBL	LX GP+	Versa	
	2=MIBL2	LX CS1	A5000	
	3=SCRD	LX SD1		
	4=SCGN	LX RD1		
	5=SCBLU			
	6=WEBL			
	7=UVC1			
	8=BEABL			
	9=UVINV			
	10=IRINV			
	11=G1BL			
	12=CMBLK			
	13=RCBLU			
	14=RCRD			
	15=UltraBlack			
	16=FastSolid as BEABL in CSV Table			
	17=CMBLK2			
	18=NPBLK			
	19=Bulk400			

Can be expanded See ink table in the HMI folder.

Parameter:	Value	Comment	Star
Par32 User1	(Not used)		(9)
Par33 Print delay for reverse printing	0 = deactivate 1 to 9999 = in mm		(1)
Par34 Store parameter into print image	0 = deactivated 1 = read only 2 = Read and write		(9)
Par35 Print-Mode	(Not used)		
Par36 stor variable fields	0=No 1=Yes		(1)
Par37 Sensor Ext/Int	0=Intern 1=Extern 0 – 3 Sensor connection X4JET 0 = Sensor 1 1 = Sensor 2 (plug 1+2) 2 = Sensor 3 3 = Sensor 4 (plug 3+4) 4 = Start of master boards (via Link cable, only slave boards)		(1) (1) *2
Par38 turn Display 180°	0=No 1=Yes		(9) *4
Par39 Setup Sensor I/O	0=Off 1=(I) Cartridge heating 2=(I) Spit-Start not active 3=(I) Print direction 4=(I) Upside down 5=(I) Print Stop not active 6=(I) Print image selection (!EXT01.00I Name to !EXT04.00I) 7=(O) Ok 8=(O) Warning 9=(O) Alarm 10=(O) Ink low 11=(O) Ink empty 12=(O) Print ready was in the iJET inverted up to version V2.006e 13=(O) Print trigger not active		(9) *4
Par40 Setup Encoder I/O	wie Par39		(9) *4
Par41 Delay output print trigger	in mm	(not used)	(9)
Par42 lenght print trigger output	in mm	(not used)	(9)
Par43 High-Speed	0=No 1=Yes		(2) *3
Par44 Optimized zoom	0=No 1=Yes		(1)

Parameter:		Value	Comment	Star
Par45 RS232 Interface	abcd	Only X4JET and X1JET	(9)	
	a =baudrate	0 = 1200, 1 = 2400, 2 = 4800, 3 = 9600, 4 = 19200, 5 = 38400, 6 = 115200		
	b =parity	0 = none, 1 = even, 2 = odd		
	c =stopbit	0 = 1, 1 = 2		
	d =bits	0 = 7bit, 1 = 8bit		
par 46 Define polarity	abcd	only X4JET	(9)	
	a : 0 = Start 1-4 NPN – 1 = PNP			
	b : 0 = Input 1-4 NPN – 1 = PNP			
	c : 0 = Input 5-8 NPN – 1 = PNP			
	d : 0 = Relay outputs closer, 1 = inverted			
par 47 – 54 not in the iJET				
par 47 Input 1,2	like par 50, par 47-50 head-related (K1 - K4)		(0)	
par 48 Input 3,4	like par 50, per input 2-digit		(0)	
par 49 Input 5,6	like par 50		(0)	
par 50 Input 7,8	00 = Off		(0)	
	01 = head heating	Not active		
	02 = Spit-Start	Not active		
	03 = Print direction			
	04 = Upside down			
	05 = Print pause as long as the input is active			
	06 = External print image selection (!EXT01.00I to !EXT99.00I)			
	07 = ZTV only by par47 for head1 = 0707 !			
	08 = Shutter printhead			
	09 = Reset ink counter			
	10 = Start purge procedure only X1JET MX			

par 51 output 1,2
 par 52 output 3,4
 par 53 output 5,6
 par 54 output 7,8

like par 54,	3020	Standard	(9)
like par 54,	1000	Standard	(9)
like par 54,	1020	Standard	(9)
	3000	Standard	(9)

00 = Off
 01 = On
 02 = Warning+Alarm (all heads)
 03 = TZ Buffer empty
 04 = Shutter open
 10 = OK (all heads)
 11 = OK (Group 1)
 12 = OK (Group 2)
 13 = OK (head 1)
 14 = OK (head 2)
 15 = OK (head 3)
 16 = OK (head 4)
 20 = Warning (all heads)
 21 = Warning (Group 1)
 22 = Warning (Group 2)
 23 = Warning (head 1)
 24 = Warning (head 2)
 25 = Warning (head 3)
 26 = Warning (head 4)
 30 = Alarm (all heads)
 31 = Alarm (Group 1)
 32 = Alarm (Group 2)
 33 = Alarm (head 1)
 34 = Alarm (head 2)
 35 = Alarm (head 3)
 36 = Alarm (head 4)
 40 = Low ink (all heads)
 41 = Low ink (Group 1)
 42 = Low ink (Group 2)
 43 = Low ink (head 1)
 44 = Low ink (head 2)
 45 = Low ink (head 3)
 46 = Low ink (head 4)
 50 = Ink empty (all heads)
 51 = Ink empty (Group 1)
 52 = Ink empty (Group 2)
 53 = Ink empty (head 1)
 54 = Ink empty (head 2)
 55 = Ink empty (head 3)
 56 = Ink empty (head 4)
 60 = Print ready (all heads) (so long as Busy is on)
 61 = Print ready (Group 1)
 62 = Print ready (Group 2)
 63 = Print ready (head 1)
 64 = Print ready (head 2)
 65 = Print ready (head 3)
 66 = Print ready (head 4)

Parameter:	Value	Comment	Star
Par55 Rev. Delay	0=Delay for reverse print from left side 1=Delay for reverse print from right side	(1)	
Par56 Head type	0=100er Trident 1= 50er Trident	(0)	
Par57 Head type	0=must be „0“ by Master or single system By slave head configuration of the upstream head. Installation like Par30.	(9)	
Par58 Encoder dpi basic setting	0 = 600dpi Standard value 1 = 636dpi 200mm Measuring wheel	(2)	
Par59 Length of cable for LX and MX printhead	in m 1 to 50 3 = 3m Standard	(4)	*3
Par60 MX-Head distance in mm	0 = Standard 150mm 1 - 200 = head distance in mm	(0)	
Par61 Set head configuration	0 = No configuration set / no change 1 = Query after next restart 11 - 33 = set configuration direct – 23 = MX/LX after restart Attention: Wait 5 seconds for a restart!	(9)	
Par62 System settings	0 = No Option used 1 = EAN-Datamatrix with FNC1 character instead GS1. 2 = Print ready (see TZ-command) 4 = send head number back at S1 8 = Standby possible 16 = one pulse for print repeat 32 = Print Busy as print ready signal 64 = FIFO print start delay Max. 250mm delay at Pro Version Max. 500mm delay at X1JET 128 = Logo Buffer, max.100kB each logo*2 256 = Fix counter for print repeat	(9)	*5
Par63 NonStopPrinting	0 = Off – no NonStopPrinting 1 = NonStopPrinting only channel 1 2 = NonStopPrinting only channel 2 3 = NonStopPrinting channel 1+2 3 = NonStopPrinting X2JET „ON“	(9)	
Par64 Datamatrix pixel shaving	number of pixel	0 – 0010	(0)

Response:

Ok<CR>

Err<CR>

Example1:

send: <ESC>K1<CR>
send: <ESC>M*;1;;3;;;123<CR>
read: Ok<CR>

External pulse
Divider 3
Print start delay 123mm

Example2:

send: <ESC>M*p38;1<CR>
read: Ok<CR>

Turn display of the iJET 180°

Startext:

Some functions are not available in all systems.
These are marked with a star and number.

- *1 = Only for X1JET
- *2 = Only for multi-head systems (X2/X4JET)
- *3 = Only for groups per channel by X2/X4JET
- *4 = Only for iJET
- *5 = Not available for iJET

Parameter characteristics:

For some parameters the physical head must select before sending the parameter.

- (0): Head-based: Always information of the physical head.
- (1): Print image-based: Information of the 1. Physical head of the print image
- (2): Pulse-based: K1 or K3.
 - By intergroup head config. only K1.
 - By pulse-chain (Pulse Group#2 of Group#1) only K1.
- (3): Pulse group : K1 or K3.
 - By intergroup head config. only K1.
- (4): Pulse group : K1 or K3. Always pulse-group, independent of the head config.
- (9): System: System parameter

For follow parameter is a reboot of the printer necessary:

28	System language
30	Head type
43	High Speed
57	Head type Master/Slave
61	Head configuration
62	Special settings
63	NonStop Printing

The restart is performed with the following command:

```
send: <ESC>RST<CR>  
read: ok<CR>
```

see also chapter: Command: <ESC>RST System Restart

Command: <ESC>MG* Receive list of all parameter

Get all parameter as a list.

Each parameter has 4 digits. Example: Pulse 0001 = Extern

Some of the parameters can have a + or – character as prefix.

The table is open to the end and can be expanded in the future.

Syntax:

```
<Esc>MG*<CR>  
<Esc>MG*[p<StartPar>]<CR>
```

Response:

```
<par1>;<par2>;...;<par n><CR>
```

Parameter:

Value

As <ESC>M*

Example:

```
send: <ESC>MG*<CR>  
read:  
0000;0150;0006;0000;0000;0000;0025;0000;0000;0200;0100;0000;0110;0190;0190;  
0000;0005;0000;0020;0010;0600;0060;0000;0000;0000;0045;0000;0000;0000;1010;  
0000;0000;0000;0000;0000;0000;0000;0000;0000;0000;0000;0000;0000;6001;  
0000;0000;0000;0000;0000;3020;1000;1020;3000;0001;0000;0000;0000<CR>
```

Text with star:

Some functions are not available in all systems.

These are signed with a star and a number.

*1 = only for X1JET

*2 = only for multi head system (X4)

*3 = only for a group or channel (X4)

*4 = only for iJET

*5 = not for iJET

Command: <ESC>N Store parameter into print image

Store a set of parameter into the print image..

Each parameter has 4 digits. Example: Pulse 0001 = External

Some of the parameters can have a + or – character as prefix.

Each Parameter can be a Number between -9999 to 9999.

Characters and more numbers behind a Parameter will be ignored.

If there is no value for a parameter, this parameter will be ignored and will stay at the old value.

The parameter number and parameter values correspond to the M* command.

The table is open to the end and can be expanded in the future.

Syntax:

<Esc>N----;<par1>;<par2>;...;<par n><CR>

The first parameter number can be send as an option.

<Esc>N----[p<StartPar>];<par1>;<par2>;...;<par n><CR>

Parameter:		Value	Star
1	Par2	Speed	*3
2	Par3	Divider encoder	*3
3	Par4	Print direction	
4	Par5	Upside down	
5	Par6	Mirror (not activ)	
6	Par7	Start delay	
7	Par8	Print repeat distance	
8	Par9	Print repeat number	
9	par10	Intensity DPI	
10	par11	Zoom in %	
11	par12	Nozzle row	
12	par16	Barcode correction	*3
13	par17	ink warning level in %	
14	par18	Spit-mode	*3
15	par19	No of spit rows	
16	par20	Spit delay	
17	par25	Warming-Function	*3
18	par26	Warming-Temp.	
19	par27	Warming-Timer	
20	par31	Inktype	*3

*3 this parameter is used for the whole channel.

With the assignment of 2 parameter sets to head 1 and 2 of a channel, the last one is valid.

That means head 1 prints with the parameter of head 2 maybe.

The parameter will be stored into the Print image with the „N“ command:

Example:

N----;;;0001;;;0050

Print direction and print delay

Command: <ESC>MI Send table of all IP-addresses, display status information

Send all IP-addresses as table.

Each IP address is shown as standard notation (xxx.xxx.xxx.xxx). Belongs a port to the IP-address, it will added with a colon (xxx.xxx.xxx.xxx:yyyy). The individual addresses separated by semicolons. If the addresses are not specified, the corresponding address will be retained. The table can be extended.

Syntax:

<Esc>MI; <adr1>;<adr2>;...;<adr n><CR>

Response:

Ok<CR>

Err<CR>

Address:

Value

adr1	Own IP-address
adr2	Own SubNet-mask
adr3	Gateway address
adr4	IP and Port for status-output
adr5	IP and Port for <ESC>U
adr6	IP address for the next board for multi system connection

Example:

send: <ESC>MI;192.168.1.1;;;192.168.1.10:10300<CR>
read: Ok<CR>

(Standard values for CUBE MK2)

Status output:

If the IP address is unequal 0.0.0.0 and port unequal 0, a status connection is build up to the specified IP address with port. A status will be displayed with each status change or after 10 seconds.

Max. 10 values will be displayed per second. If there are more values within this time, the highest value will be displayed. I.e.: the information a = 0, 2, 0 will be identified. The value 2 will be send.

If an IP address 0.0.0.0:0 is specified by adr4, the status display will be stopped.

Structure of the status information:

<ESC>abcd;efgh;ij;klmnopqrstuv<CR> xxxxxxxx<CR>

a = Status head 1		(0=Ok, 1=Warning, 2=Alarm)
b = Status head 2		(0=Ok, 1=Warning, 2=Alarm)
c = Status head 3		(0=Ok, 1=Warning, 2=Alarm)
d = Status head 4		(0=Ok, 1=Warning, 2=Alarm)
e = Print activation head 1		(0=Standby, 1=active print)
f = Print activation head 2		(0=Standby, 1= active print)
g = Print activation head 3		(0=Standby, 1= active print)
h = Print activation head 4		(0=Standby, 1= active print)
i = Missing encoder signal head group 1		(0=Ok, 1=missing signal)
j = Missing encoder signal head group 2		(0=Ok, 1=missing signal)
k = Input 1	15pol PIN11	(0=Off, 1=On)
l = Input 2	15pol PIN12	(0=Off, 1=On)
m = Input 3	Alarm 3+4 PIN5	(0=Off, 1=On)
n = Input 4	not used	
o = Input 5	15pol PIN13	(0=Off, 1=On)
p = Input 6	15pol PIN14	(0=Off, 1=On)
q = Input 7	Alarm 3+4 PIN6	(0=Off, 1=On)
r = Input 8	not used	
s = Input 9	Sensor 1	(0=Off, 1=On)
t = Input 10	Sensor 2	(0=Off, 1=On)
u = Input 11	Sensor 3	(0=Off, 1=On)
v = Input 12	Sensor 4	(0=Off, 1=On)
xxxxxxx = output 1 to 8		(0=Off, 1=On)

Command: <ESC>MGI Receive table of all IP-addresses

Receive all IP-addresses as table.

Each IP address is shown as standard notation (xxx.xxx.xxx.xxx). Belongs a port to the IP-address, it will added with a colon (xxx.xxx.xxx.xxx:yyyy). The individual addresses separated by semicolons.

The table can be extended.

Syntax:

<Esc>MGI<CR>

Response:

<adr1>;<adr2>;...;<adr n><CR>

Address:

Value

adr1	Own IP-address
adr2	Own SubNet-mask
adr3	Gateway address
adr4	IP and Port for status-output
adr5	IP and Port for <ESC>U
adr6	IP of the next board for multi system connection

Example:

send: <ESC>MGI<CR>
read: 192.168.8.221;255.255.255.0;0.0.0.0;0.0.0.0<CR>

Command: <ESC>MP Send passwords

Maximum 15 passwords.

Syntax:

<Esc>MP<mode>;<user 1>:<passw 1>:<level 1>;...;<user n>:<passw n>:<level n><CR>

Parameter:	Value	Description
<mode> = Mode	- (minus sign) A	Retransmit passwords Add passwords
<user> = User name	(text)	User name
<passw> = Password	(MD5 Hexvalue)	Password (Hex 32-digit)
<level> = Pass-Level	(Level 1-9)	Password-Level

Response:

Ok<CR>

Err<CR>

Passwords are generated with the commands <ESC>MP or <ESC>MGP as follows:

- Passwords are transmitted as 32-digit hexadecimal value (16Byte or rather 128Bit)
- The Hex-value relates to the MD5-Hash-value of the original password with 'MOP123'-appendix

Example:

Password : '1234'
 Message for MD5 : '1234MOP123'
 MD5 Hash-value : '70AC589DFE08CC12D0692374430F8B9D'

There is a small program to calculate the MD5 Hash value „**MD5_Calculator.exe**“.

Free password-level will be generated by a special password.

User-Name : 'Free'
 Password : '989898'
 equates with 'MOP123'-appendix
 MD5 Hash-value : '8E40D951F9330E49BAD2CBFF7C5F670E'

Example MP-command:

Level 1-5 should be free,
 Level 6-9 should be unlocked by User 'admin' with password '1234'.

```

send: <ESC>MP-
;Free:8E40D951F9330E49BAD2CBFF7C5F670E:5;admin:70AC589DFE08CC12D0692374430F
8B9D:9<CR>
read: Ok<CR>
  
```

Using passwords

If the passwords were activated by sending the command, the user will be ask to enter a password for a particular level.

I.e. has an operator the password for level 4, so he can use all menus of level 1 to 4, but he has no access to the menus of level 5 or greater. The previous menu is shown after a false password entry.

The user name is needed to secure in a log file which operator was logged in and to log in WEB interface.

Log out

After 10 min without using the screen saver will be activated. So long the user is logged in.

The user can log out manually by pressing the iLogik button in the status menu for more than 2 seconds. A lock symbol is shown temporary.

Specification of the user level

In the program update directory is in the subdirectory „HMI“ a CSV file with a menu table. The table „PwLvl.csv“ can opened and edit with Excel.

The HMI files loaded automatically with a program update.

If an update with the same program version is made, the HMI files will not loaded automatically. This can enforce if the button is hold by showing the version number.

Example of the table:

The first field shows the menus of the operator interface, the second field the menus of the WEB interface.

The level access to the separate menus can be set with a number between 1 and 9 in the column level.

The table can be enlarged with new program versions.

Mode Menü	Section	Level	Spare1	Spare2	Spare3	Remark
	1 M1_00	1				Status1
	1 M1_01	1				Status2
	1 M2_00	1				Menu Label Menu
	1 M2_01	3				Parameter
	1 M2_02	2				Menu Service
	1 M2_03	6				Menu System
	1 M3_00	1				Select Label
	1 M3_01	3				Print?
	1 M3_02	2				Pause?
	1 M3_021	1				Continue?
	1 M4_00	3				Print Delay
	1 M4_01	4				Speed
	1 M4_02	4				Intensity
	1 M4_03	4				Zoom
	1 M4_04	4				Direction
	1 M4_05	4				Nozzle
	1 M4_06	7				Sensor Int/Ext
	1 M4_07	7				Encoder

1	M4_08	4	Divider Encoder
1	M4_09	4	Upside down
1	M5_00	6	Time / Date
1	M5_01	8	IP-Address
1	M5_02	8	Gate-Way
1	M5_03	7	Change Ink Type
1	M5_04	7	Select Ink
1	M5_05	8	Bluetooth
1	M6_00	2	Purge
			Reset Ink
1	M6_01	3	Counter
			Head
1	M6_02	3	Temperatur
1	M6_03	6	USB-Stick

Mode	WebParam	Par Name	Level	Spare1	Spare2	Spare3	Remark
	2	PrtSensor	7				Sensor Int/Ext
	2	PrtDelay	3				Print Delay
	2	PrtEncoder	7				Encoder
	2	PrtSpeed	4				Speed
	2	PrtDivider	4				Divider Encoder
	2	PrtDensity	4				Intensity
	2	PrtZoom	4				Zoom
	2	PrtDir	4				Direction
	2	PrtNozzle	4				Nozzle
	2	PrtUpSiDo	4				Upside down
	2	PrtRSpace	5				Repeat Delay
	2	PrtRCount	5				Repeat No
	2	PrtSpitMode	7				Spit Mode
	2	PrtSpitRows	7				Spit Rows
	2	PrtSpitDly	7				Spit Delay
	2	PrtSpitCyc	7				Spit Interval
	2	PrtAutoOff	7				Spit Auto Off
	2	PrtWarmFnk	7				Warming Mode
	2	PrtWarmVal	7				Warming Temp.
							Warming
	2	PrtWarmTime	7				Timeout
	2	PrtInkType	7				Ink Type
	2	SysDisplRot	6				Display Rotation
	2	SysLanguage	6				Language
							Ink Warning
	2	PrtInkWarn	7				Level
	2	PrtVolt	9				Head Voltage
	2	PrtSpitTime	9				Fire Time
	2	PrtSpitPause	9				Fire Pause
	2	PrtBCCodeCorr	7				Barcode Corr.



2	SysUser1Md	9
2	PrtHighSpeed	7
2	SysSenIO	9
2	SysEnclIO	9
2	SysOutDly	9
2	SysOutPls	9
2	PrtFixZoom	4

Alarm Output
High Speed
Sensor Opt. IO
Encoder Opt. IO
Print Pulse Delay
Puls Length
Fixed Zoom

Command: <ESC>MGP Get passwords.

Maximum 15 passwords

Syntax:

<Esc>MGP<mode><CR>

Parameter:	Value	Description
<mode> = Mode	- (minus sign)	Get passwords

Response:

<user 1>:<passw 1>:<level 1>;...;<user n>:<passw n>:<level n><CR>

Err<CR>

<user>	= User name	(text)	User name
<passw>	= Password	(MD5 HexWert)	Password (Hex 32digits)
<level>	= Pass-Level	(Level 1-9)	Password-Level

Example:

send: <ESC>MGP-<CR>
read:

Free:8E40D951F9330E49BAD2CBFF7C5F670E:09;user:70AC589DFE08CC12D0692374430F8
B9D:09

Command: <ESC>MPC Send firmware upgrade level

To change the firmware upgrade level , an activation key must be sent to the system.
The activation key is created in a Kryptobox.

Syntax:

<Esc>MP<mode><CR>

Parameter:	Value	Description
<mode> = Mode	C	Get firmware upgrade level

Response:

Ok<CR>

Err<CR>

Example:

send: <ESC>MPC;WLP0NVMW3HN2PL03YTH1<CR>
read: ok<CR>

Creation of the code in the Kryptobox:

Example:

send: <ESC>MPC;1:21222111110010030000000:0050C2A65392<CR>
read: <ACK>WLP0NVMW3HN2PL03YTH1<CR>

Reset of the demo mode is described in the program code.

Command: <ESC>MGPC Get MAC and firmware upgrade level

The table can be extended up.

Syntax:

<Esc>MGP<mode><CR>

Parameter:	Value	Description
<mode> = Mode	C	Get upgrade level

Response:

<par1><par2>....<par n>:<mac><CR>

Err<CR>

<par1> Max. speed	0 = 30m/min 1 = 60m/min 2 = 90m/min 3=180m/min	
<par2> Counter	0 = No 1 = Yes	
<par3> Time/Date	0 = No 1 = Yes 2 = Best before date-Offset	
<par4> Variable text	0 = No 1 = By TZ-command 2 = By HMI	
<par5> Barcode	0 = No 1 = 1D Barcodes 2 = 2D Barcodes	
<par6> Password	0 = No 1 = Yes	
<par7> USB-Stick	0 = No 1 = Yes	
<par8> Interface (not used)	0 = No 1 = Yes	
<par9> Bluetooth	0 = No 1 = Yes	Only iJET
<par10> 24V Digital I/O	0 = No 1 = Yes	Only iJET

<par11> Demo		0 = No 1 = Yes 2 = Demo not possible, not any longer "Print" 3 = Demo expired
<par12> Head-coding		0 = No 1 = Yes
<par13> Print length at 300dpi		0 = 2m 1 = 4m 2 = 6m
<par14> Head type group 1 Not used from 2.016 Headtype stays as it is		0 = HP 1 = MX 2 = LX 3 = XR 4 = HP MK2
<par15> Head type group 2 Not used from 2.016 Headtype stays as it is		0 = HP 1 = MX 2 = LX 3 = XR 4 = HP MK2
<par16> Configuration-Preset		0 = Undefined 1 = BASIC 2 = ADVANCED 3 = PRO 4 = PRINT 5 = Labelfirmware ADVANCED 6 = Labelfirmware PRO
<par17> Vertikal DPI	0-3	0 = 600 dpi 1 = 300 dpi
<par18> HP MK2 Kart.Freigabe	0-3	0 = Frei für Kartuschen ohne SmartCard 1 = Nur SmartCard Kartuschen frei from MAC address 40:D8:55:14:52:00
<par19> OEM Kartuschen Freigabe	0-3	0 = Weber 1 = OEM 1 2 = OEM 2 3 = OEM 3
<par20> Reserve	0-3	0 = ... 1 = ...
<par21> Reserve	0-3	0 = ... 1 = ...
<par22> Reserve	0-3	0 = ... 1 = ...
<par23> Reserve	0-3	0 = ... 1 = ...
<mac> MAC-address		12-digit Hex-value
serNr		MOP-serial number

Example:

send: <ESC>MGPC<CR>
 read: 2122201100000002:0050C2A65027:J06037-iM<CR>

Command: <ESC>MS Send shift code.

Send shift code settings to the print system.

Maximum 6 shift codes can be generated with maximal 8 character.

Only the start time is transmitted, the end time will be calculated automatically.

The shift code is called with „t“ in the date field.

Syntax:

<Esc>MS<mode>;<code 1>:<Zeit 1>;...;<code n>:<Zeit n><CR>

Parameter:	Value	Description
<mode> = Mode	- (minus sign) A	New transmission of shift code Add shift code
<code> = Shift code	(text)	Shift code (max 8-digit)
<time> = Starttime	(SSMMss)	Time hours,min,sec

Response:

Ok<CR>

Err<CR>

Example MS-command:

Shift 1: 6 o'clock, code: FGA

Shift 2: 14 o'clock, code: MGB

Shift 3: 22 o'clock, code: NGC

send: <ESC>MS-;FGA:060000;MGB:140000;NGC:220000<CR>
read: Ok<CR>

Command: <ESC>MGS Get shift code.

Read the shift code settings out from the print system.

Syntax:

<Esc>MGS<mode><CR>

Parameter:	Value	Description
<mode> = Mode	- (minus sign)	Get shift codes

Response:

<code 1>:<time 1>;...;<code n>:<time n><CR>

Err<CR>

<code>	= Shift code	(text)	Shift code (max 8-digit)
<time>	= Start time	(SSMMss)	Time hour,min,sec

Example:

send: <ESC>MGS-<CR>
read: FGA:060000;MGB:140000;NGC:220000<CR>

Command: <ESC>MW Data connection

Mode1: Send scales data

Use the TZ command to send data to a print image.

If a scale or a scanner aren't programmable and show the data in a fixed format, the print system can be set to this case.

Select the print image at the system manually.

The print image must contain an action field, which is to be filled with data.

An action field number is specified in the command MW. This "virtual" action field (i.e. 30) is used for the data transfer only. The action field in the print image must have a different number (1). In this action field (and other) is referenced to the virtual field. So the sent information can be used in any various fields (plain text and datamatrix).

Syntax:

<Esc>MW<mode>;<port>;<startseq>;<endseq>;<feldnr>;<timeout><CR>

Parameter:	Value	Description
<mode> = Mode	- (minus) 1 2 3	Switch off Activate data connection Fill variable fields by scanner Fill text allocation and variable fields by scanner
<port> = TCP-Port	2048 - 30000 0	TCP-Portnumber Serial interface
<startseq>= Start-Sequence	8digit HEX-value	1 to 4digit Startseq.
<endseq> = Ende-Sequence	8digit HEX-value	1 to 4digit Endseq.
<feldnr> = Field number	1 - 0050	Field number Action field.
<timeout> = Time	1 - 999 0	Time to Blank Continuous printing until new data

Response:

Ok<CR>

Err<CR>

Example MW-command:

TCP-Port: 11000
StartSeq: <ESC>
EndSeq: <CR>
FieldNo: 30
Timeout: 5s

send: <ESC>MW1;11000;1B;0D;30;5<CR>
read: Ok<CR>

Mode 2: Fill variable fields by scanner

Field number and time aren't necessary. Field number:0, time:0.

Interrogate variable fields with start/stop, select print image and OK. This can be entered by a scanner or by a keyboard. After a scan of all fields, the print image assignment take place and the fields are visible on the display.

The old data are print with Stop / Start and F5 Start.

The sensor LED of the X1JET blinks yellow until the data are scanned. Every data set is confirmed with a short green flash. The print is assigned when all data are read.

Example:

Send MW command, switch off the system, switch on

```
send: <ESC>MW2;0;1B;0D;0;0<CR>  
read: ok<CR>
```

Attention!

The system must switch off and on after sending the command.

The layout must have one or more action fields, which must filled with data.

The action field is referenced to the specified field (here 30).

The layout must be assigned on the system.

Don't use this field (here 30), this will be referenced only.

Mode 3: Print image selection and fill variable fields

New function for X2JET plus Touch / X4JET plus Touch only.

Special software print image selection and fill variable fields by scanner

Task:

On a order form of a customer are 3 barcodes for the part number, charge number and best before date.

An operator should scan the part number of the order form with a scanner. The corresponding print image is call up with the help of the part number. The names of the print image correspond to the part numbers.

The print image has two variables for the charge number and the best before date. If the values are interrogate from the print system, those can scan with scanner or can insert manually.

Description:

To enable this function, the MW command must send once.

i.e.: **send:** <ESC>MW3;0;1B;0D;0;0<CR>

Please find detailed description of the command above.

The system must switch on and off after sending.

The system must stand in the main menu or in the print image selection menu for the print image selection.

The active print head can select in the main menu.

For safety: Only barcodes, which have exactly the same length like the print image name, are accepted. The print images must save in the controller.

The length of the read in variable fields must accord with the length of the barcodes.

A formatting is possible: i.e.: In field 2 is scanned: 2016-11, to be printed: best before date: 11.2016. Text field: „MHD: ~(2)6xx.1xxx~“. The field 2 must create with a DummyFont if it should not print.

The print image can include one or more action fields, which should be filled with data. The fields must create as text field with action field content. The fields must numbered serially from 1.

The scanner connection takes place via Ethernet (IP and Port free selectable) or RS232.

It's possible to fix a up to 4 digits start and end sequence. Minimum is one sign for start and end identification. Enter this in Hex format. The scanner send i.e.: <ESC>10100739<CR> for the print image names and the data.

Function set up

Sending i.e.: <ESC>MW3;0;1B;0D;0;0<CR> at which 1B is the Hex value for <ESC> and 0D is the Hex value for <CR>.

After sending the command the serial interface doesn't react to other interface commands. The Ethernet interface still react to interface commands on port 10200.

The mode can switch off with <ESC>MW-<CR>.

Attention!

The system must switch off and on after sending the command.

Version note:

The print image selection is available from version 2.015n in the X2JET plus Touch and X4JET plus Touch.

send: <ESC>MW3;0;1B;0D;0;0<CR>
05.05.2015 12:21:46 898 | **read:** ok<CR>

Command: <ESC>MGW Fetch data connection parameter

Syntax:

<Esc>MGW<CR>

Parameter:	Value	Description
------------	-------	-------------

Response:

<mode>;<port>;<startseq>;<endseq>;<feldnr>;<timeout><CR>

Err<CR>	: Syntax Error
-<CR>	: deaktiviert

Parameter see <ESC>MW<CR>

Example:

```
send: <ESC>MGW<CR>
read: 1;11000;1B;0D;0030;0005<CR>
```

Attention!

The system must switch off and on after sending the command.

The mode can switch off with **send:** <ESC>MW-<CR>.

```
send: <ESC>MW-<CR>
read: Ok<CR>
```


Command: <ESC>MW Data link.

Use the TZ command to send data in a print image.

If a scale or scanner isn't programmable and the data are shown in a fixed format, it is now possible to select the printer to this.

The print image is selected on the system manually.

The print image must include an action field, which should be filled with data.

The command MW indicates an action field number. This „virtual“ action field (30) is used for the data transfer only. The action field in the print image must have another number (1). In this action field (and further) is referred to the virtual field. So the transmitted information can be arbitrarily used in different fields (plain text and datamatrix).

Syntax:

<Esc>MW<mode>;<port>;<startseq>;<endseq>;<feldnr>;<timeout><CR>

Parameter:	Value	Description
<mode> = Mode	- (Minus sign) 1 2	Switch off Activate Fill variable fields with scanner
<port> = TCP-Port	2048 - 30000 0	TCP-Port number Serial interface
<startseq>= Start-Sequence	8digit HEX-value	1 to 4-digit Start seq.
<endseq>= End-Sequence	8digit HEX-value	1 bis 4-digit End seq.
<feldnr> = Field number	1 - 5000	Field number Action field.
<timeout> = Time	1 - 999 0	Time to blank Endless print until new data

Response:

Ok<CR>

Err<CR>

Example MW command:

TCP-Port: 11000
StartSeq: <ESC>
EndSeq: <CR>
FieldNo: 30
Timeout: 5s

send: <ESC>MW1;11000;1B;0D;30;5<CR>
read: Ok<CR>

Mode 2: Fill variable fields with scanner
Field number and time not used, field number:0, Time:0.

With Start / Stop choose a print image and confirm with ok.the variable can be filled with scanner or manual. After filling all fields the print image will be printed.

With Start / Stop and F5 the old data will be print.

At the X1 the sensor LED blinks yellow until data are scanned. Each set of data will be confirmed with a short green light. After reading all data the print will start.

Example:

Send MW command, switch the system off and on

```
send: <ESC>MW2;0;1B;0D;0;0<CR>  
read: ok<CR>
```

Attention!

The system must switch off and on again after sending the command.

The print image must have one or more action fields which should be filled with data.

The action fields have a reference to the selected field number (here 30)

The print image must be selected at the controller.

The selected field (30) is only used for the reference.

Command: <ESC>MGW Get Data link parameter

Syntax:

<Esc>MGW<CR>

Parameter:	Value	Description
------------	-------	-------------

Response:

<mode>;<port>;<startseq>;<endseq>;<feldnr>;<timeout><CR>

Err<CR>

See parameter <ESC>MW<CR>

Example:

send: <ESC>MGW<CR>
read: 1;00000;1B;0D;0006;0005<CR>

Attention!

The system must switch off and on again after sending the command.

The data link can be carried over ethernet (IP and Port free selectable) or RS232.

It can be set a 1- to 4-digit start and end sequence. This must be entered in Hex format. The scale send i.e. <ESC>kg12854LG7fe<CR> and 12845 for the eight in g. There must be at least a start and end character.

In order that false information will be print, the print memory will be automatically deleted after a adjusted time. I.e. 5sec. when a product is weighted all 10 sec.

Must be sent: <ESC>MW1;11000;1B;0D;30;5<CR> in which 1B is the Hex value for <ESC> and 0D is the Hex value for <CR>.

After sending this command, the serial interface isn't responding to other interface commands. The ethernet interface reacts on interface commands on the port 10200.

The mode can be switched off with <Esc>MW-<CR>.

Command: <ESC>SV Status

Query head type and version

Syntax:

<Esc>SV<CR>

Response:

```
k(iJet)Version <version><CR>
kkkk:xy(X4Jet)Version <version><CR>
```

Parameter:	Value
kkkk = <Head configuration>	abcd
- 'a': digit '1' to '4': specifies how many print heads generate a multihead print image together from head#1. 1=Single, 2=Twin, 3=Triple, 4= Quad	
- 'b' digit '0' to '3': specifies how many print heads generate a multihead print image together from head#2. '0' specifies that this head already among to a multihead print image.	
- 'c' digit '0' to '2': specifies how many print heads generate a multihead print image together from head #3. '0' specifies that this head already among to a multihead print image.	
- 'd' digit '0' to '1': specifies with '1' that head#4 is a single head. '0' specifies that this head already among to a multihead print image.	

Examples:

```
<ESC>MK---;1111<CR> : 4 Single heads
<ESC>MK---;4000<CR> : 1 Quad head print image (4-heads) from head#1
<ESC>MK---;2020<CR> : 2 Twin head print image (2-heads) from head#1 and from head#3
<ESC>MK---;2011<CR> : 1 Twin head print image (2-heads) from head#1 and 2 Single heads
(head#3,
    head#4)
<ESC>MK---;3001<CR> : 1 Triple head print image (3-heads) from head#1 and 1 Single head
(head#4)
<ESC>MK---;1201<CR> : Twin head print image (2-heads) from head#2 and 2 Single heads
(head#1,
    head#4)
```

x = <Head type channel1 (1 and 2)>	1: HP head 2: MX head 3: LX head 4: XR head 5: HP MK2 head
y = <Head type channel 2 (3 and 4)>	1: HP head 2: MX head 3: LX head 4: XR head 5: HP MK2 head
(X4Jet)	system type
version = <Version number>	actual Version number V1.002

Example:

send: <ESC>SV<CR>
read: 1(iJet)Version 2.006d<CR>

send: <ESC>SV<CR>
read: 0001:11(X1Jet)Version 0.001c<CR>

send: <ESC>SV<CR>
read: 1010:22(X4Jet)Version 1.004k<CR>

send: <ESC>SV<CR>
read: 1010:32(X4Jet+)Version 1.004k<CR>

Command: <ESC>S1

Status 1

Query status messages

The head must be selected using <ESC>K1<CR> (or K2).

Or the last head selected will be displayed.

Syntax:

<Esc>S1<CR>

Response:

ink:htmr:iuse:xclk:bat:txt:pause:headOk:headTyp:labelCnt:ztv:cp:LX:exInk:scStat <CR>

The "K<headnumber>." is prefixed by the head number response.

(M* Par62 = 4)

Parameter:

Value

ink = <ink status>	0: OK 1: Cartridge almost empty (5%) 2: Cartridge empty
htmr = <Warming temperature>	in °C if warming on. HP/LX: -001= no head, 0=not calibrated, 26=standard value MX: -001= no head, 0=failure, 20=heat, 40=Temp ok >=0: Ink level in %
iuse = <ink level>	>=0: Ink level in %
xclk = <no pulses>	0: OK 1: No encoder pulses
bat = <battery status>	0: OK 1: empty
txt = <name of the active print image>	
pause	0: Active print 1: Pause 2: Stopp
headOk	0: Head Ok 1: Head not existent
headTyp	1: HP 2: Trident 100er 3: Trident 50er 4: LexMark
labelCnt	Print image counter 6-digit
ztv	0: Not used 1: ZTV Ok 2: ZTV Warning 3: ZTV empty (print stop) 4: ZTV Failure
cp	0: Ok 1: Prozessor ID? 2: ExtChip? 3: 1 + 2?
LX	0: no voltage setting 1: LX with voltage setting
exInk	ink consumption in % after ink empty
scStat	Status SmartCard
The values are added in the case of multiple messages	1: Blocked ink selection 2: Exceed best before date 4: Exceed User best before date

Example:

send: <ESC>S1<CR>

read: 0:0000:100:1:0:12810_25x75.00J:0:0:3:000032:0<CR>

Command: <ESC>S2

Status 2

Query inputs and outputs

Syntax:

<Esc>S2<CR>

Response:

aaaaaaaa;bbbbbbbb<CR>

Parameter:

Value

aaaaaaaa = <outputs>

0: Contact OFF

1: Contact ON

a1 = <Signal light1>

Alarm

a2 = <Signal light1>

OK

a3 = <Signal light1>

Warning

a4 = <Signal light1>

Reserve

a5 = <Signal light2, Relay1>

a6 = <Signal light2, Relay2>

a7 = <Signal light2, Relay3>

a8 = <Signal light2, Relay4>

bbbbbbbb = <inputs>

0: Input OFF

1: Input ON

b1 = <USER 1>

b2 = <USER 2>

b3 = <START 1>

b4 = <START 2>

b5 = <reserve 1>

b6 = <reserve 2>

b7 = <reserve 3>

b8 = <reserve 4>

c9 = < reserve >

c9 bis c12 Only X4JET

c10 = <reserve>

c11 = <reserve>

c12 = <reserve>

Example:

send: <ESC>S2<CR>

read: 01000000;01000000<CR>

Output 2 in on (OK)

Input 2 is on.

Command: <ESC>SLX Readout LX memory

Read the memory of the Lexmark cartridge. X2/4JET with the version > 1.008b

Syntax:

<Esc>SLX<CR>

Response:

aa,bb,cc,dd,ee,ff,gg,hh,ii,kk,ll,mm,nn,oo,pp,rr<CR>

Parameter:

Value

aa	= Byte0	
bb	= Byte1	
cc	= Byte2	
dd	= Byte3	
ee	= Byte4	Temp sensor
ff	= Byte5	Ink type
gg	= Byte6	Ink type
hh	= Byte7	OEM ID
ii	= Byte8	
kk	= Byte9	
ll	= Byte10	
mm	= Byte11	
nn	= Byte12	
oo	= Byte13	Ink level
pp	= Byte14	Ink level
rr	= Byte15	

Example:

send: <ESC>SLX<CR>
read: 9C,0B,0B,BC,63,2C,2F,66,37,37,FF,FF,00,00,1F,FF<CR>

Byte 5 and 6 are the ink ID:

In Collins 33-64 decimal for the top 6 bits.

Ink	Ink ID	InkID
	Byte6	Byte5
LX CS1	0010 1111 (2F)	0010 1100 (2C)
LX GP+	0000 1111 (0F)	0000 1100 (0C)
LX SD1	1000 0100 (84)	1000 0100 (84) 21 h - 33dec
LX RD1	1010 0000 (A0)	1010 0000 (A0) 28 h – 40 dec

Byte 7 is the Company ID. For Weber = 66

The Bytes 13 and 14 are used for the ink level.

In 7% steps. 100% / 98% / 91% /

<u>BYTE</u>	<u>BIT(S)</u>	<u>YSP</u>	<u>RUSHMORE</u>	<u>BULK TANK</u>
0	6	0 = MONO CHIP	0 = MONO CHIP	NOT USED
02	3-1	AVAILABLE	AVAILABLE	NOT USED
03	6-4	AVAILABLE	AVAILABLE	NOT USED
04	7-0	TEMP SENSE	TEMP SENSE	NOT USED
05	7-2	INK TYPE	INK TYPE	INK TYPE
05	1	REDUNDANT YSP = 0	REDUNDANT RUSH = 1	NOT USED
06	7-2	REDUNDANT INK TYPE	REDUNDANT INK TYPE	REDUNDANT INK TYPE
07	7-0	SECONDARY OEM ID	SECONDARY OEM ID	SECONDARY OEM ID
08	7-0	BAR CODE	BAR CODE	MUSTANG PROG S/N
09	7-0	BAR CODE	BAR CODE	MUSTANG PROG S/N
11	7-4	AVAILABLE	AVAILABLE	NOT USED
13	7-0	INK LEVEL	INK LEVEL	INK LEVEL
14	7-0	INK LEVEL	INK LEVEL	INK LEVEL

Command: <ESC>SHP HP

Readout HP memory

Read the memory of the HP cartridge. With version 2.016

Syntax:

<Esc>SHP---<mode>;<CR>

Parameter:

Value

Description

<mode> = Mode

- (minus)
1

Hex-Dump
Plaintext readout

Response:

Mode -:

<z>:<s1>,<s2>,...,<s16><EOT>

.

<z>:<sn>,...,<sn><EOT><CR>

<z> = line

0-F

<sn>= value

00-FF

Mode 1:

<Field_Id>:<Wert><EOT>

.

<Field_Id>:<Wert><EOT>

<Field_Id> = data description

<Value> = Value

00-FF

Please find further information for SmartCard in the index "Doku/SmartCard"

Only for internal use!

Example:

04.05.2015 09:45:34 595 | send: <ESC>K1<CR><ESC>SHP----; <CR>

04.05.2015 09:45:34 611 | read:

```
0:26,C2,42,20,00,00,20,00,13,80,0C,09,E1,6E,D2,90<EOT>
1:03,48,20,00,00,24,AB,2C,00,00,00,00,00,00,00,00<EOT>
2:00,00,00,00,00,00,35,FF,84,F0,B7,69,48,00,00,00<EOT>
3:00,00,00,00,00,00,00,00,00,00,00,00,44,FF,FF,40,0F<EOT>
4:FF,C1,55,80,53,40,34,00,68,99,00,00,53,78,64,F3<EOT>
5:21,44,67,00,00,00,00,00,00,00,65,5B,7E,17,20,C2,EB<EOT>
6:2C,6F,0A,08,F3,40,00,01,28,FC,80,00,00,00,72,80<EOT>
7:00,0B,B8,00,00,0F,A0,81,D2,D0,00,02,98,00,00,00<EOT>
8:00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00<EOT>
9:00,00,00,00,00,00,00,00,00,00,00,00,00,00,A2,00,00<EOT>
A:00,00,00,00,00,00,B8,4A,56,DB,F0,B9,06,17,59,63<EOT>
B:78,50,47,9A,00,00,00,68,00,00,00,00,00,00,00,00<EOT>
C:00,00,00,00,00,00,00,C2,00,00,00,00,00,00,00,00<EOT>
D:D1,FF,C0,00,00,E3,01,CA,5B,F2,92,5C,80,C2,E0,00<EOT>
E:80,00,F6,00,00,00,00,00,00,00,00,00,00,00,00,00<EOT>
F:00,00,00,00,00,00,00,00,00,00,00,00,00,00,56,6E<EOT><CR>
```

Command: <ESC>SL Read back variable data

Read back variable data of a print image.

Syntax:

```
<Esc>Kx<CR>
<Esc>SL<CR>
```

Response:

```
<Field type 1>(SOH)<Field no 1>(SOH)<Field content 1>(EOT)
<Field type 2>(SOH)<Field no 2>(SOH)<Field content 2>(EOT)
...
<Field type N>(SOH)<Field no N>(SOH)<Field content N>(EOT)
(CR)
```

Parameter:

Value

<Field type>	D : Date field C : Counter field V : Variable text field X : Action field
<Field no>	Field number*
<Field content>	Text content

The field number refers to the advanced iJET commands:
<ESC>VA, <ESC>ZA, <ESC>DA, <ESC>PX, <ESC>BX

The field number will be automatically generated by the <ESC>X command as follows:
(FN stands for the field number in the <ESC>X command)

Date field number:	FN + 1000
Counter field number:	FN + 1100
Field number Var.text:	FN
Field number X-command:	FN + 1200

Example:

Print command:

```
<ESC>X;#1;a=0001;d=9999;P1-0-003200060;A4mm;Z=~zzzz~D=~ijkl~<CR>
This command will be translate into three commands (counter, date and print).
```

Response:

```
D<SOH>1001<SOH>0406<EOT>
C<SOH>1101<SOH>0001<EOT>
X<SOH>1201<SOH>Z=0001 D=0406<EOT><CR>
```

Example:

```
send: <ESC>K3<CR>
send: <ESC>SL<CR>
read:
```

```
X<SOH>1252<SOH>0014<EOT>C<SOH>1152<SOH>0014<EOT>X<SOH>1251<SOH>30.01.13<EOT>
>D<SOH>1051<SOH>300113<EOT><CR>
```

Command: <ESC>EI Read back ink list

Read back the list of used inks

Syntax:

```
<Esc>Kx<CR>
<Esc>EI----;<CR>
```

Response:

```
<Name 1>(SOH)<Index 1>(EOT)
<Name 2>(SOH)<Index 2>(EOT)
...
<Name N>(SOH)<Index N>(EOT)
(CR)
```

Parameter:

Value

<Name>	Ink description
<Index>	Set-Number

Example:

```
send: <ESC>K1<CR>
send: <ESC>EI----;<CR>
read: STABL<SOH>004<EOT>DIBL<SOH>005<EOT>MIBL2<SOH>014<EOT>
      SCRD<SOH>008<EOT>SCGN<SOH>009<EOT>SCBLU<SOH>010<EOT>
      WEBL<SOH>011<EOT>UVC1<SOH>028<EOT>BEABL<SOH>030<EOT>
      UVINV<SOH>012<EOT>IRINV<SOH>013<EOT>G1BL<SOH>015<EOT>
      CMBLK<SOH>025<EOT>RCBLU<SOH>026<EOT>RCRD<SOH>027<EOT>
      UltraBlack<SOH>031<EOT>FastSolid<SOH>033<EOT>
      CMBLK2<SOH>034<EOT>NPBLK<SOH>035<EOT>Bu1k400<SOH>099<EOT>
      FSBLK<SOH>036<EOT>PTBLK<SOH>037<EOT><CR>
```

Command: <ESC>SOP Set output-ports direct

Outputs can be switched fast and direct.
They can be switched on or off or set to the function like in System settings presetted. (<ESC>M*).
The outputs can change for a while. Minimum time 100ms.

Syntax:

<ESC>SOP----;aa*****[;b]<CR>

Response:

Ok<CR>

Err<CR>

Parameter:

Value

a = <status>

0=off
1=on
2=as preset with <ESC>M*
* = position will be ignored

Optional:

b = <Pulse time>

100...99999 ms
Output change for the selected time, the
outputs will be set as originally after lapse of
time.
Minimal time 100ms

Example:

send: <ESC>SOP----;01*****;500<CR>
read: Ok<CR>

Output 1 will be switched off for 500ms, output 2 will be switched on for 500ms, all further outputs will be not changed (X4JET)

Attention!

Before using this command the outputs must be defined with the command <ESC>M*
Not possible in all versions.

The digital signals in the systems are only updated every 40 seconds. Signals, that are smaller than this time, are not recorded and cannot be displayed.

Command: <ESC>EG Transfer logo

Transfer logo data in the memory.

Syntax:

<Esc>EG-m--;bytes;name;bp;hp;hb;data....<CR>

Parameter:

m = Memory
bytes = file size
name = name of the logo
bp = width in pixel
hp = height in pixel
hb = height in byte
data = packed graphic data

Value:

- Flash, The logo will save permanent
1 RAM, a logo can overwrite every time.
5-digit (without <Esc>)

Response:

Ok<CR>

Err<CR>

Example:

```
send: <ESC>EG-1--;00063;TEST;14;40;5;;,0E,0E,0E,0E,0FJ8,0FJ8,0E,0E,0E,0E,,<CR>
send: <ESC>K1<CR>
send: <ESC>C<CR>
send: <ESC>L110-000600136;TEST<CR>
send: <ESC>EX----;<CR>
read: ok<CR>
```

To compress the logo data, a program routine in Delphi are available from Weber.
(GetLogoStream.txt)

Command: <STX>TZ Fill in action fields

Fill in action fields in a print image externally or internally.

Transfer protocol for direct head assignment using a serial interface

Syntax:

```
<STX>TZ<imagename.00I>;< head no><printing mode>[;<queue size>][;<print delay>]<CR>
<Field content 1><CR>
<Field content 2><CR>
-
<Field content n><CR>
[<counter start value>]
<ETX>
```

Parameter:

Value

	<STX>	Print image start	Dec. 2
	<imagename.00I>	max. 8 character	name
	<Head number>	1-2	if no info given, head group 1
	<Printing mode>	0 for single print 1 continuous printing 3 continuous printing	if no info given, continuous printing with storage of the last print after switch off.
optional:	< queue no>	1	maximum 1 set of TZ commandos in the queue buffer No value = the queue will be filled up to 1 kB
optional:	<Delay>	1-1000	print delay in mm No Value = the global value will be taken.
optional:	<counter start value>	1-999999999999	the start value of the first counter in the print image. Only for continuous printing
	<ETX>	Print image end	dec. 3
	<ACK>	pos. acknowledgement	Dec. 6
	<NAK>	negative acknowledgement	Dec. 21

Response:

```
<STX><head number>OK<ETX>
```


Example:

send: <STX>TZAT1227.00I;10<CR>MHD.: 06/97<CR><ETX>
read: <ACK>

Transfer print image 'AT1227.00I' to head 1 with single print and fill in variable field 1 with 'MHD.: 06/97'.

Example 2:

send: <STX>TZAT1227.00I;20;1;<CR>MHD.: 06/97<CR> LOT:
L6389<CR><ETX>
read: <ACK>

Commit print image 'AT1227.00I' to head 2 with a single print, CUE number 1, no print image-related print start delay and fill in the variable field 1 with 'MHD.: 06/97' and the variable field 2 with 'LOT: L6389'.

Response:

After a print image has been printed the following sentence will be returned:

<STX><head number>OK<ETX>

With print ready message: (M* Par62 = 6)

<STX><Head number>END<ETX>

Error message:

<STX><head number> E<fault code><ETX>
read: <STX>1E3<ETX>

Explanations:

<Fault code>	1- 9	1 = Photocell triggered without data
		2 = Unknown command
		3 = Print image name not present
		4 = Head not present
		5 = not used
		6 = System not ready
		7 = Wrong checksum / can't open the port (2.011c)
		8 = double block number / no response (2.011c)
		9 = not next block number / logo not loaded

Example:

send: <STX>TZDeo3.00I;10<CR>02354<CR>A17C<CR><ETX>
read: <ACK>

Transfer print image 'Deo3.00I' to head 1 with single print.

Printed image:

LOT Nr. 02345



Each data block to be transferred will be prefixed with **STX**.

The data block ends with **ETX**.

A successful reception will be acknowledged with **ACK**.

When data blocks are received in error, a negative acknowledge, **NAK**, will be sent.

If no acknowledgement is given, the data block will be repeated.

If a counter is present in a print image, the starting value of the counter can be included in the transmission. The content of the last data block indicates the starting value. If no data block is transferred, the counter will start with the programmed starting value.

This function is possible only in the case of continuous printing.

Example:

send: <STX>TZDeo3.00I;11<CR>02354<CR>A17C<CR>333<ETX>
read: <ACK>
read: <STX>10K<ETX>

A counter in the print image Deo3.00I starts with a value of 333

In the case of continuous printing the printed print image will be set up in print buffer 1 and updated in print buffer 2 if necessary. The date and time are always updated.

After the next print image is sent, the first print image will be overwritten.

In the case of a single print, the first print image is set up in print memory 1, the second print image in print memory 2. The third print image will be stored in the buffer. If further print images are sent <NAK> will be returned.

Date/time fields will not be updated in the case of a single print!!!

The used fonts, which are used for the creation of the first print image, are load to a cache memory to change the data faster.

Therefore the first creation of a print image may take longer, especially for large fonts.

If a font 4 print wasn't needed, it is deleted from the cache memory.

Command: <STX><BNR>TZ

Fill in action fields with Checksum

Fill in action fields in a print image externally or internally.

Transfer protocol for direct head assignment using a serial interface

Syntax:

```
<STX><BNR>TZ<imagename.00I>;< head no><printing mode>[;<queue size>][;<print delay>]<CR>
  <Field content 1><CR>
  <Field content 2><CR>
  -
  <Field content n><CR>
  <ETX><BCC>
```

Parameter:

Value

	<STX>	Print image start	Dec. 2
	<BNR>	Block number	if no info, no block check will be made
	<image name.00I>	max. 8 character	name
	<Head number>	1-2	if no info given, head group 1
	<Printing mode>	0 for single print 1 continuous printing 3 continuous printing	if no info given, continuous printing with storage of the last print after switch off.
optional:	< queue size >	1	maximum 1 set of TZ commandos in the queue buffer
optional:	<Delay>	1-1000	print delay in mm
	<ETX> Print image end		dec. 3
	<BCC> Block check		XOR logical operation of all sent characters
	<ACK> pos. acknowledgement		Dec. 6
	<NAK> negative acknowledgement		Dec. 21

Response:

```
<STX><head number>OK<BNR><ETX>
```

Example:

```
<STX>1TZAT1227.00I;10<CR>MHD.: 06/97<CR><ETX>
```

Transfer print image 'AT1227.00I' to head 1 with single print and fill in variable field 1 with 'MHD.: 06/97'.

Response:

After a print image has been printed the following sentence will be returned:

```
<STX><head number>OK1<ETX>
```

Example:

<STX>1TZDeo3.00I;10<CR>02354<CR>A17C<CR><ETX># (35dez)

Transfer print image with Block number 1 ' Deo3.00I ' to head 1 with single print.

Printed image:

LOT Nr. 02345



Each data block to be transferred will be prefixed with **STX** and a block number **BNR**. The block number consists of a number from **0 – 9**. For each new data block the number will be increased by one. After number 9, number 0 will start again. The computer uses the block numbers to determine whether data blocks are missing or were transferred twice. The data block ends with **ETX** and the check digit **BBC**. The check digit is determined by an XOR operation of the data characters (including **STX** and **ETX**). A successful reception will be acknowledged with **ACK**. When data blocks are received in error, a negative acknowledge, **NAK**, will be sent. If no acknowledgement is given, the data block will be repeated with the same block number. The next data block may be sent only if the previous data block was printed and acknowledged.

If a counter is present in a print image, the starting value of the counter can be included in the transmission. The content of the last data block indicates the starting value. If no data block is transferred, the counter will start with the programmed starting value. This function is possible only in the case of continuous printing.

Example:

<STX> TZDeo3.00I;10 <CR> 02354 <CR> A17C <CR> 333<ETX>

A counter in the print image Deo3.00I starts with a value of 333

In the case of continuous printing the printed print image will be set up in print buffer 1 and updated in print buffer 2 if necessary. The date and time are always updated.

After the next print image is sent, the first print image will be overwritten.

In the case of a single print, the first print print image is set up in print memory 1, the second print image in print memory 2. The third print image will be stored in the buffer. If further print images are sent <NAK> will be returned.

Date/time fields will not be updated in the case of a single print!!!

Command: <STX><BNR>n TZ Fill in action fields without Checksum

Fill in action fields in a print image externally or internally.

Transfer protocol for direct head assignment using a serial interface

Syntax:

```
<STX><BNR>nTZ<imagename.00I>;< head no><printing mode>[;<queue size>][;<print delay>]<CR>
  <Field content 1><CR>
  <Field content 2><CR>
  -
  <Field content n><CR>
<ETX>
```

Parameter:

Value

	<STX>	Print image start	Dec. 2
	<BNR>	Block number	if no info, no block check will be made
	<imagename.00I>	max. 8 character name	
	<Head number>	1-2	if no info given, head group 1
	<Printing mode>	0 for single print 1 continuous printing 3 continuous printing	if no info given, continuous printing with storage of the last print after switch off.
optional:	< queue size >	1	maximum 1 set of TZ commandos in the queue buffer
optional:	<print delay>	1-1000	print delay in mm
	<ETX> Print image end		dec. 3
	<ACK> pos. acknowledgement		Dec. 6
	<NAK> negative acknowledgement		Dec. 21

Response:

```
<STX><head number>OK<BNR><ETX>
```

Command: <STX>CLR Clear buffer

In the case of an action field protocol the filled buffer will be cleared.
Applies only for single print.

In the case of continuous printing <Esc>C<CR> can be entered to stop the printing or
enter <Esc>C0<CR> to stop the printing.
With <Esc>C1<CR> the print can be started again.

Syntax:

<STX>CLR[a]<ETX>

Response:

<ACK>

Parameter:

Value

a = <head number>

1 – 8
without number head 1

Example:

send: <STX>CLR<ETX>
read: <ACK>

<STX>CLR<ETX> clear all buffer
Only for head 1

send: <STX>CLR3<ETX>
read: <ACK>

<STX>CLR3<ETX> clear all buffer head 3

Example: Send and call up print image for printing.

```
send: <ESC>EW----;temp.00I<CR>
send: <ESC>X;#=0;g=4:P1-0-000000140;A4mm;~ab.cd.gh~<CR>
send: <ESC>X;#=0;g=2;a=0001;d=9999;c=1;b=0:P1-0-006200140;A4mm;~zzzz~<CR>
send: <ESC>P1-0-005400000;A4mm;L12345<CR>
send: <ESC>P1-0-000000000;A4mm;Testtext<CR>
send: <ESC>B30A0300009800000;A2mm;012345678901<CR>
send: <ESC>EX----;<CR>
read: ok<CR>
send: <STX>TZtemp.00I;13<CR><ETX>
read: <ACK>
read: <STX>10K<ETX>
```

Example: Send print image to the memory.

```
send: <ESC>EW----;Sample.00I<CR>
send: <ESC>P1-0-000000000;A4mm;Testtext<CR>
send: <ESC>X;#=0;g=4:P1-0-000000140;A4mm;~ab.cd.gh~<CR>
send: <ESC>X;#=0;g=2;a=0001;d=9999;c=1;b=0:P1-0-006200140;A4mm;~zzzz~<CR>
send: <ESC>B30A0300009800000;A2mm;012345678901<CR>
send: <ESC>X;#=0;g=1;f=Lot Nummer;h=L12345:P1-0-
005400000;A4mm;~xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx~<CR>
send: <ESC>EX----;<CR>
read: ok<CR>
```