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Hx Autopilot User Manual

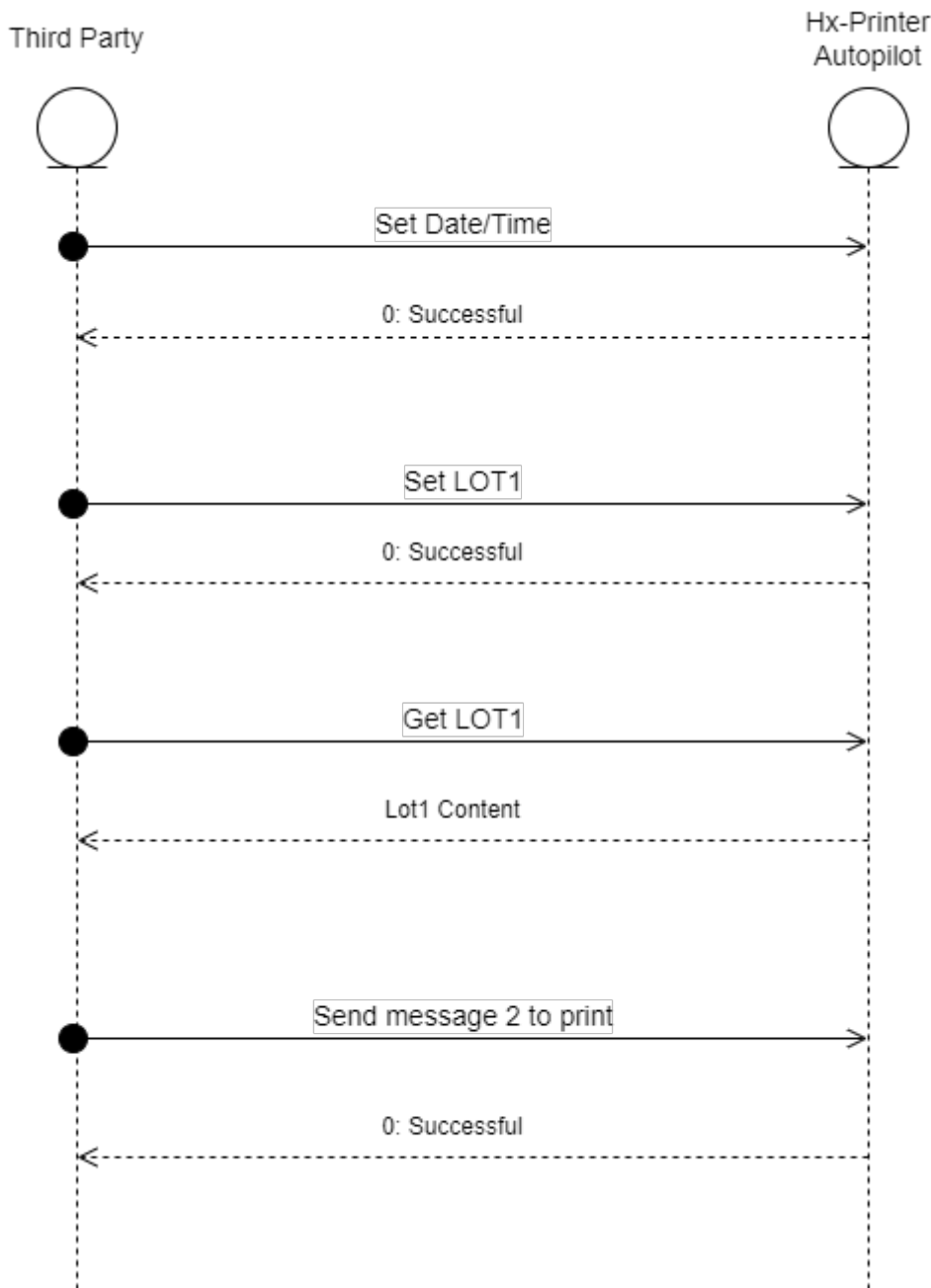
MapleJet Co

1. Overview

Autopilot is a feature in Hx printers to control and monitor printer by third party system. The third party system can be a PC or PLC that runs a software to send commands to Hx printer on the WiFi, RS232 or USB ports and it receives the response from printer.

There are three types request in Autopilot feature.

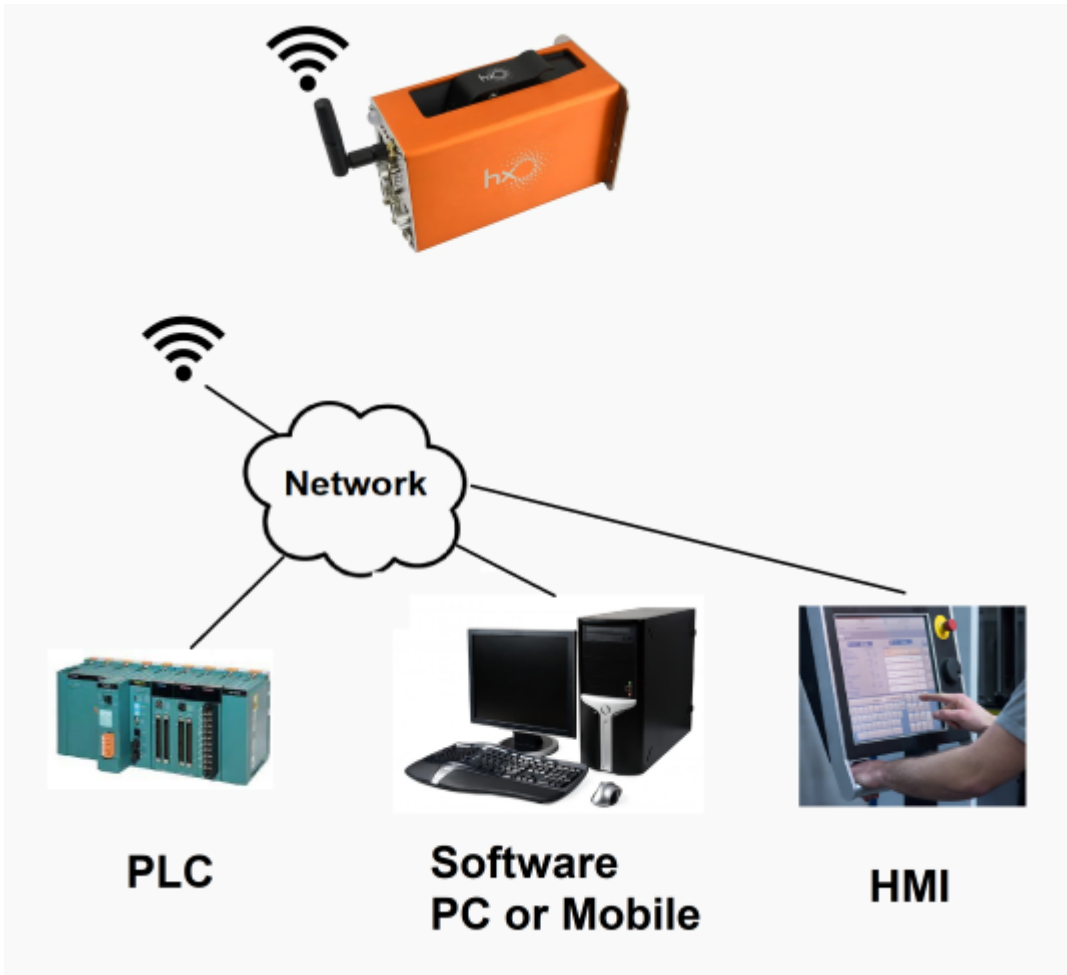
1. **Setting Command:** These commands set or change a setting or property in the Hx-Printer. These commands are described in Section 4.
2. **Query Command:** These commands get value of a property from Hx-Printer. These commands are described in Section 5.
3. **Message Design Command:** These commands provide message designing in the Hx-Printer. These commands are described in Section 6.



2. Data Transmission Modes

There are three media to send Autopilot commands and receive data from Hx printers. These media are independent and can be used at the same time. But in this case, the third party must be careful not to set a parameter from two different media with different values. Autopilot commands have specific header bytes on the raw message. Hx-Printer detects Autopilot commands by these bytes. Header bytes of each media are described separately.

2.1 WiFi



To send command through WiFi, this structure should consider:

The command should be inside of a parent tag called "APCMD" that stands for "Autopilot Command"

Example for print off command:

```
<APCMD><PRINT>0</PRINT></APCMD>
```

Another part is Cookie that is consists of a parent tag called "Cookie" and a sub tag called "Auth_token_UID" that is contain of encrypted login password to authentication.

Example of Cookie part (for Hx UID 1109 and login password "123321"):

```
<Cookie><Auth_token_1109>Yzg4MzdiMjNmZjhhYWE4YTJkZGU5MTU0NzNjZTA50TE=</Auth_token_1109></Cookie>
```

Login password has two steps encryption method, first step is "MD5 hash" encryption, second step is "Base64" encoding.

To convert your password to final encrypted authorize token do these steps:

1. enter your password here: [MD5 hash generator](#)
2. Then copy its output here: [Base64 encoding](#)
3. The output string is final encrypted authorize token that you can use it in packet.

Full request example contain of HTTP header+Cookie+Autopilot Command:

```
POST / HTTP/1.1
Content-Length: 127
Connection: keep-alive

<Cookie><Auth_token_1109>Yzg4MzdiMjNmZjhhYWE4YTJkZGU5MTU0NzNjZTA50TE=</Auth_token_1109></Cookie><APCMD><PRINT>0</PRINT></APCMD>
```

In WiFi all responses are in HTTP format with Status code "200 OK". example for response value 0 that is for successful execution:

```
HTTP/1.1 200 OK
Server: MapJet/v1.1
Connection: close
Content-Length: 1
Content-Type: text/plain

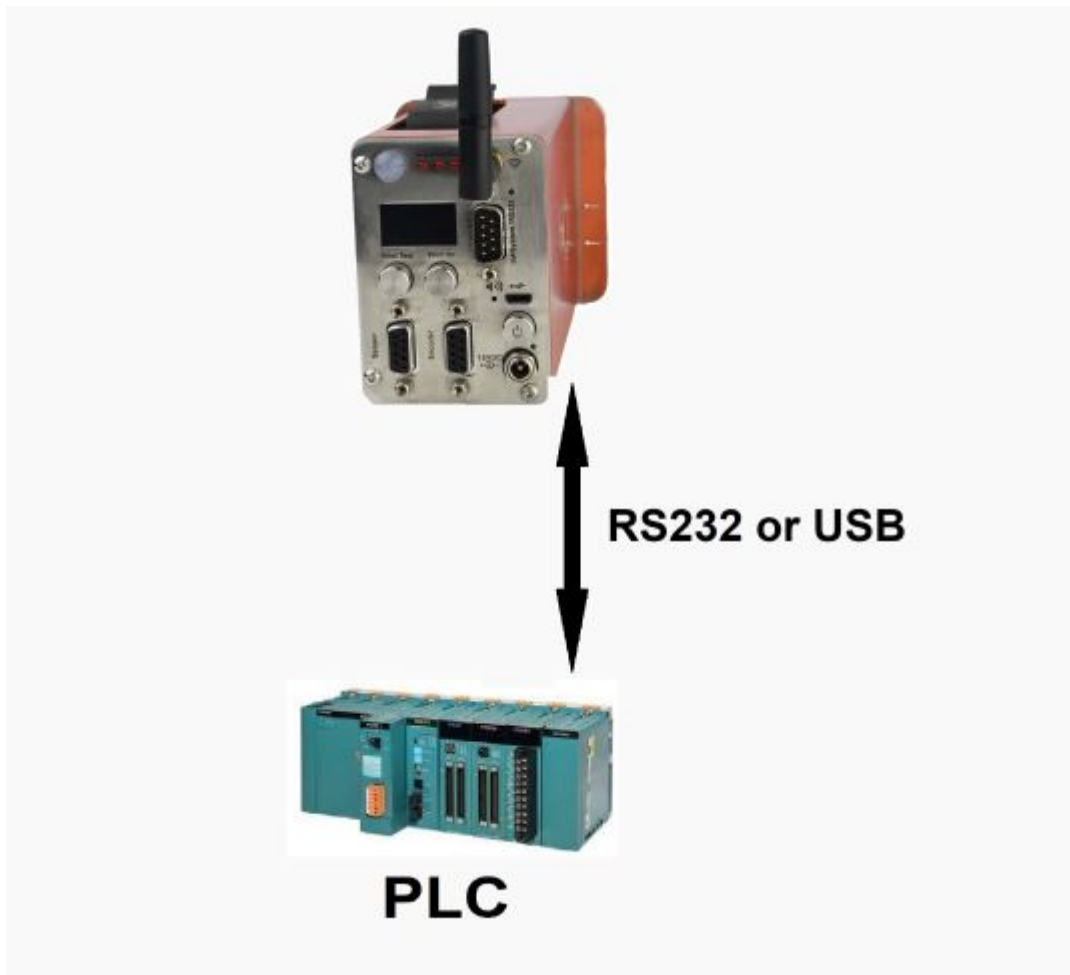
0
```

2.2 RS232 and USB

Third party can connect to Hx printer by a USB cable. The Com port configuration of USB on the Hx-printer always is fix. The third party software must sets Com port configuration based on that. These configuration is list in next table.

Baud Rate	Parity	Data Bits	Stop Bits
921600	None	8	One

Not all Hx-Printer supports RS232 port on the back plane. Contact your dealer if you are not sure that your Hx-Printer supports RS232 port or not. After ensuring Hx-Printer supports RS232 port then go to Hx-Manager, go to the Setting page and find RS232 container. then set costume setting at this container.



To send command through Serial ports (USB and RS232) these characters should send as Autopilot header:

- **SOH**: Start Of Heading character.
- **A**: 'A' character.
- **P**: 'P' character.
- **US**: Unit Seperator character.
- **EOT**: End Of Transmission character.

Note: The “AP” is stand for AutoPilot.

Note: The EOT character is as ending character.

SOH	A	P	US	Command	EOT
0x01	0x41	0x50	0x1F	...	0x04

Raw data example:

```
0x01,0x41,0x50,0x1F,<,P,R,I,N,T,>,0,<,/,P,R,I,N,T,>,0x04
```

3. Autopilot Response

The third party system receives response from Hx printer after sending command to it. The following

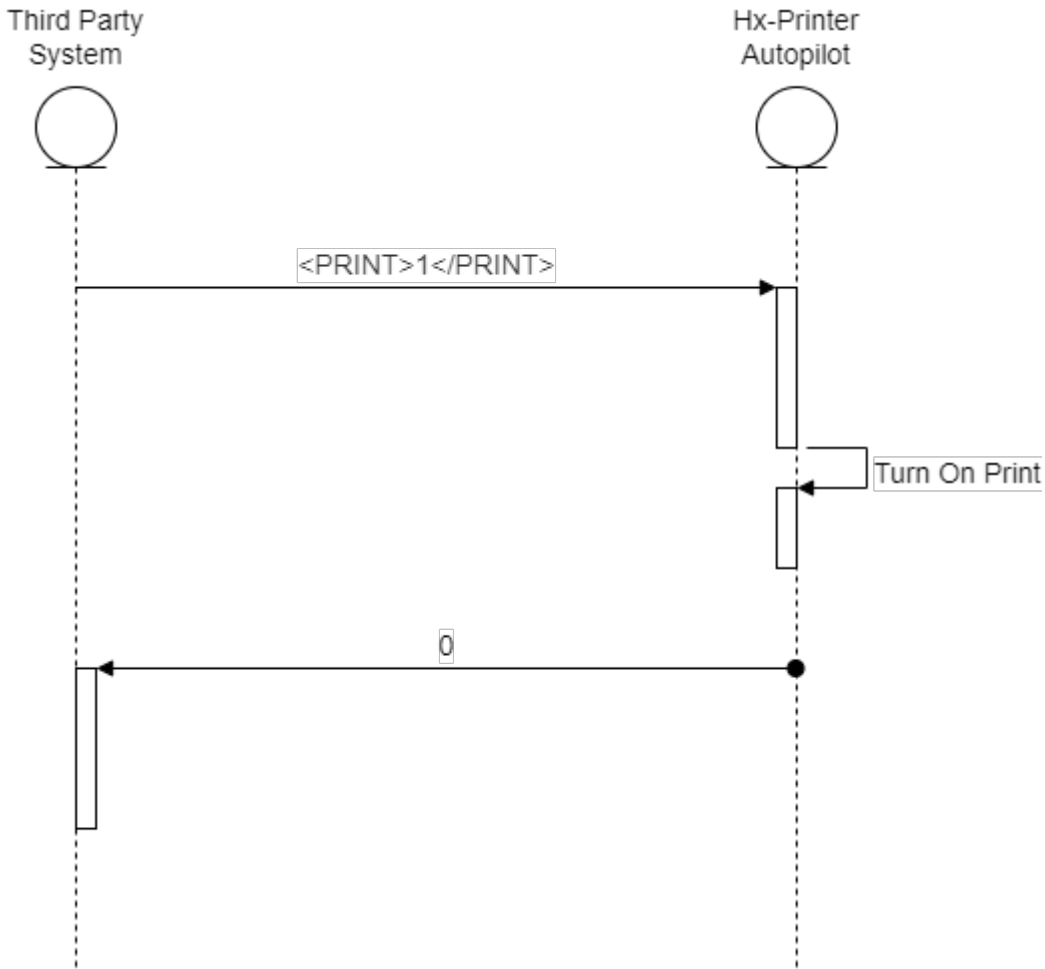
table shows response values.

Description	Response value after command execution (Ascii)	Binary values
Invalid query	-1	
Command was executed successfully	0	
Invalid command	1	
Invalid syntax	2	
Invalid parameter. the parameter value is out of range or type of value is not valid.	3	
Parameter value is in range but its value is not acceptable for current setting. It depends to each command.	4	
Command does not have sufficient data to change a setting. It depends to each command.	5	
Timeout	6	
Busy, it means a command is being process.	7	

4. Setting Commands

Setting commands are used by third party system to set one or more parameter(s) in the Hx-Printer. Some commands consist of one tag to set one parameter. But some commands have a parent tag and several sub-tags to set several parameter. All commands with one tag (parameter) are described in Section 4.1. All commands with more than one tag (parameter) are described separately. Parameters are described in next table. They are 4 types. The next diagram shows setting command packet sequence.

Parameter Type	Description
uint	It is abbreviation of "unsigned int". It is 32 bits value. Its range is 0 to 4,294,967,295
int	It is 32 bits signed value. Its range is -2,147,483,648 to 2,147,483,647
ASCII string	It supports only English alphabets and numbers. Each character represents by an 8 bits value.
Unicode string	It supports all languages. Each character represents by an 16 bits value. It must encoded by UTF8 before used as parameter in XML format. For more details refer to the Set Hx-Name command.



4.1 List all setting commands, with one parameter

These commands only set one parameter. If command executes successfully the first value of the response will be 0. The second value of the response will be value of the target parameter. Following table shows setting commands list with one parameter.

Type	Command Description	XML Format	Value Type	Min Value	Max Value	Description	Example	Example Description
Settings	Turn Off/On print	<PRINT>value</PRINT>	uint	0	1	0: Print Off 1: Print On	<PRINT>0</PRINT>	Set printing to Off
	Reset PM counter	<RSTPMC>1</RSTPMC>	constant	1	1	to reset PM counter this message must be sent in the same way. value of this command is insignificant.	<RSTPMC>1</RSTPMC>	reset PM counter
	Set Economy Mode On/Off Status	<ECOMOD>value</ECOMOD>	uint	0	1	0:Disable 1:Enable	<ECOMOD>1</ECOMOD>	Enable EconomyPrint mode
	Set Hx Name	<HXNA>value</HXNA>	Unicode string	-	50(characters)	value will be name of the Hx-printer	<HXNA>Hx-Nitro1</HXNA>	set name of the printer to the "My Hx-Nitro"
	Set LOT content	<LOTn>value</LOTn>	Unicode string	-	150(characters)	n in the LOTn is a number from 1 to 9. see example	<LOT2>222</LOT2>	set value of the LOT2 to 222
	Set Output Configuration Mode	<EXBECMD>number</EXBECMD>	uint	0	2	0: Two Colored 1: Three Colored 2: Pulse Generation	<EXBECMD>0</EXBECMD>	configured output port for two colored external beacon



Hx Name and LOT content are Unicode string. If the characters of this parameters are not ASCII and it be Unicode string, then that parameter must encoded to UTF8 and then used in the XML format. Next table shows several examples.

To convert Unicode string to UTF-8 you can use this [link](#).

Parameter Value	Language	Convert to UTF-8 ASCII	XML Command Format to set Hx-Name	Description
device1	English	device1	<HXNA>device1</HXNA>	Set Hx name to device1
dispositivo1	Spanish	dispositivo1	<HXNA>dispositivo1</HXNA>	Set Hx name to dispositivo1
cihaz1	Turkish	cihaz1	<HXNA>cihaz1</HXNA>	Set Hx name to cihaz1
الجهاز 1	Arabic	Ø§ÙØØ-ÙØØ§Ø² 1	<HXNA>Ø§ÙØØ-ÙØØ§Ø² 1</HXNA>	Set Hx name to الجهاز 1
Gerät1	Germany	GerÄt1	<HXNA>GerÄt1</HXNA>	Set Hx name to Gerät1
ypeĥaj1	Serbian	ÑÑÑÐµÑÑÐ°ÑÑ1	<HXNA>ÑÑÑÐµÑÑÐ°ÑÑ1</HXNA>	Set Hx name to ypeĥaj1
设备1	Chinese(Simplified)	è®³¼å¶1	<HXNA>è®³¼å¶1</HXNA>	Set Hx name to 设备1
وسيله 1	Pashto	ÙØØ³ÙØÙØÙ 1	<HXNA>ÙØØ³ÙØÙØÙ 1</HXNA>	Set Hx name to وسيله 1
युक्ति 1	Hindi	à¸-à¸à¸à¸à¸à¸1	<HXNA>à¸-à¸à¸à¸à¸à¸1</HXNA>	Set Hx name to युक्ति 1
устройство1	Russian	ÑÑÑÑÑÐ³¼Ð¹ÑÑÐ²Ð³¼1	<HXNA>ÑÑÑÑÑÐ³¼Ð¹ÑÑÐ²Ð³¼1</HXNA>	Set Hx name to устройство1

Parameter Value	Language	Convert to UTF-8 ASCII	XML Command Format to set Hx-Name	Description
սարք 1	Armenian	Օ½Օ;ÖÖ 1	<HXNA>Ö½Ö;ÖÖ 1</HXNA>	Set Hx name to սարք 1

4.2 Setting commands with more than one parameter

These commands have two or more parameters. Each command has one table to describe all parameters of command. Each command can have all its parameters or only one of them. The ignored parameters in the command, remain at their previous value or takes default value.



These commands can set all parameters or only set one (or some) of them.

4.2.1 Set Cartridge Settings

Command	XML Format	Description			
Set Cartridge Settings	<CRT> </CRT>	Set settings of the cartridge in the printer.			
Parameters	XML Format	Value Type	Min Value	Max Value	Description
Fire Delay	<PLDEL>value</PLDEL>	uint	10	2550	Its unit is ns
Main Pulse	<MNPL>value</MNPL>	uint	50	1500	Its unit is ns
Pre Pulse	<PRPL>value</PRPL>	uint	50	1000	Its unit is ns
Pulse Voltage	<PLVO>value</PLVO>	uint	7500	13000	Its unit is mV
Pulse Warming	<PLWR>value</PLWR>	uint	20	45	Its unit is degrees centigrade
Nozzle Row	<NZRO>value</NZRO>	uint	1	3	1: First nozzle row 2: Second nozzle row 3: Ping Pong. Changing between two nozzle rows
Example XML					Description
Full Packet Example 1	<CRT><PLDEL>1200</PLDEL><MNPL>450</MNPL><PRPL>220</PRPL><PLVO>9500</PLVO><PLWR>27</PLWR><NZRO>2</NZRO></CRT>				set all settings of the cartridge
Packet Example 2	<CRT><PLVO>9450</PLVO></CRT>				Set only Pulse Voltage to 9450
Packet Example 3	<CRT><NZRO>2</NZRO></CRT>				select PingPong mode for Nozzle row

4.2.2 Set Device Settings

Command	XML Format	Description			
Set Device Settings	<DEV> </DEV>	Set special settings of the printer			
Parameters	XML Format	Value Type	Min Value	Max Value	Description
PMIE	<SPTM>value</SPTM>	uint	0	100000000	Its unit is ns
PMIE Ignore Sensor	<SPIGS>value</SPIGS>	uint	0	1	0: Off 1: On

Command	XML Format	Description			
Print Sensor Mode	<PSMOD>value</PSMOD>	uint	0	1	0: Light On 1: Dark On
Example	XML	Description			
Full Packet Example 1	<DEV><SPTM>1000000</SPTM><SPIGS>0</SPIGS><PSMOD>0</PSMOD></DEV>	Set all parameters PMIE: 1000000 us Print Sensor: Light on PMIE ignore sensore: Off			
Full Packet Example 2	<DEV><SPTM>1000000</SPTM></DEV>	only set PMIE to 1 second			

4.2.3 Set Date/Time

Command	XML Format	Description			
Set Date/Time	<TD></TD>	Set Date/Time in the printer			
Parameters	XML Format	Value Type	Min Value	Max Value	Description
Set Day	<DAY>value</DAY>	uint	1	31	
Set Month	<MNTH>value</MNTH>	uint	1	12	
Set Year	<YEAR>value</YEAR>	uint	2000	2050	
Set Hour	<HOUR>value</HOUR>	uint	1	24	
Set Minute	<MIN>value</MIN>	uint	0	59	
Set Date Rollover(Hour)	<DTRH>value</DTRH>	uint	1	24	
Set Date Rollover(Minute)	<DTRM>value</DTRM>	uint	1	59	
Example	XML	Description			
Full Packet Example 1	<TD><DAY>29</DAY><MNTH>11</MNTH><YEAR>2021</YEAR><HOUR>8</HOUR><MIN>45</MIN><DTRH>10</DTRH><DTRM>30</DTRM></TD>	Set Date and Time to(29/11/2021 8:45)			
Full Packet Example 2	<TD><HOUR>8</HOUR><MIN>45</MIN></TD>	only set the Time to 8:45 AM			

4.2.4 Set Online Data Settings

Command	XML Format	Description			
Set Online Data Settings	<ODPARAM></ODPARAM>	Set Online Data settings			
Parameters	XML Format	Value Type	Min Value	Max Value	Description
Format	<ODDL>value</ODDL>	String Ascii	-	-	
Terminator	<ODTE>value</ODTE>	String Ascii	-	-	
Time Out	<ODTO>value</ODTO>	uint	1	300	
Echo	<ODEC>value</ODEC>	uint	0	1	0: Disable Echo 1: Enable Echo
Continuous Print	<ODCP>value</ODCP>	uint	0	1	0: Disable Echo 1: Enable Echo

Example	XML	Description
Full Packet Example 1	<ODPARAM><ODDL>@#</ODDL><ODTE>6</ODTE><ODTO>200</ODTO><ODEC>1</ODEC><ODCP>0</ODCP></ODPARAM>	set all settings of the Online Data
Packet Example 2	<ODPARAM><ODTO>200</ODTO></ODPARAM>	only set Time Out to 200 ms

4.2.5 Set Encoder Settings

Command	XML Format	Response	Description		
Set Encoder Settings	<ENC></ENC>				
Parameters	XML Format	Value Type	Min Value	Max Value	Description
Timeout	<ENTMO>value</ENTMO>	uint	5000000	300000000	Its unit is us
Wheel Diameter	<ENWHD>value</ENWHD>	uint	20	150	Its unit is mm
Pulses Per Revolution	<ENPPR>value</ENPPR>	uint	1	1000000	
Two-phase mode	<ENTPM>value</ENTPM>	uint	0	1	0: One Phase 1: Two Phase
Example	XML	Description			
Full Packet Example 1	<ENC><ENTMO>7000000</ENTMO><ENWHD>56</ENWHD><ENPPR>5000</ENPPR><ENTPM>1</ENTPM></ENC>	set all settings of Encoder			
Full Packet Example 2	<ENC><ENWHD>56</ENWHD></ENC>	only set wheel diameter of encoder to 56 mm			

4.2.6 Set RS232 Settings

Command	XML Format	Response	Description		
Set RS232 Settings	<RS232PRM></RS232PRM>		set RS232 connection setting		
Parameters	XML Format	Value Type	Min Value	Max Value	Description
Baud Rate	<RSBR>value</RSBR>	uint	4800	230400	values: 4800, 9600, 14400, 19200, 28800, 38400, 57600, 76800, 115200, 230400
Parity	<RSPRT>value</RSPRT>	uint	0	2	0:None 1:Odd 2:Even
Data Bits	<RSDB>value</RSDB>	uint	5	8	
Stop Bits	<RSSB>value</RSSB>	uint	1	2	
Example	XML	Description			
Full Packet Example 1	<RS232PRM><RSBR>115200</RSBR><RSPRT>0</RSPRT><RSDB>8</RSDB><RSSB>1</RSSB></RS232PRM>	set all settings of the RS232			
Full Packet Example 2	<RS232PRM><RSBR>115200</RSBR></RS232PRM>	set only baud rate to 115200			

4.2.7 Set Auto Notify Settings

Command	XML Format	Description			
Set Auto-Notify Setting	<AUTONOT> </AUTONOT>	Set Auto-Notify settings. It includes two types of setting. The first part of the settings determine witch events generate notify. The second part of this settings determine Notify sends on witch communication ports.			
First Part: Events List	<ANLIST> </ANLIST>	List of events placed between this XML tag. This XML tag is optional and it can be ignored.			
Second Part: Communication List	<ANCONF> </ANCONF>	List of communications to send Notify on them. This XML tag is optional and it can be ignored.			
Parameters	XML Format	Value Type	Min Value	Max Value	Description
Print Done Event	<ANPD>value</ANPD>	uint	0	1	This parameter is in Event List 0: Don't Notify on print 1:Notify on each Print
Online Data Received Event	<ANODR>value</ANODR>	uint	0	1	This parameter is in Event List 0: Don't Notify on Data Received 1:Notify on each Data Received
Ink Level(Low,Critical) Event	<ANIL>value</ANIL>	uint	0	1	This parameter is in Event List 0: Don't Notify for Ink Level changes 1:Notify on Low or Critical Low Ink level
On USB Port	<ANUSB>value</ANUSB>	uint	0	1	This parameter is in Communication List 0: Don't notify on USB port 1:Notify on USB port

Command	XML Format	Description			
On RS232 Port	<ANRS232>value</ANRS232>	uint	0	1	This parameter is in Communication List 0: Don't notify on RS232 port 1:Notify on RS232 port
On WiFi (HTTP)	<ANWIFI>value</ANWIFI>	uint	0	1	This parameter is in Communication List 0: Don't notify on WiFi port 1:Notify on WiFi port
Wifi Server Address	<ANADD>value</ANADD>	String Ascii			
Wifi Server Port	<ANPORT>value</ANPORT>	uint	1024	65535	Port number of the server when Notify sends on the WiFi



<ANLIST> and <ANCONF> are optional in this command. They can be ignored when sending Auto-Notify command

Example	XML	Description
Full Packet Example	<AUTONOT><ANLIST><ANPD>0</ANPD><ANODR>1</ANODR><ANIL>1</ANIL><ANLIST><ANCONF><ANUSB>0</ANUSB><ANRS232>1</ANRS232><ANWIFI>1</ANWIFI><ANADD>192.168.10.145/ack.php</ANADD><ANPORT>8080</ANPORT></ANCONF></AUTONOT>	Send Notify when received Online Data and Ink Level changes to Low or Critical Low Send Notify on the USB port and WiFi port. the address of the server of the WiFi is 192.168.10.145/ack.php and its port is 8080
Packet Example	<AUTONOT><ANLIST><ANPD>1</ANPD><ANLIST><ANCONF><ANUSB>1</ANUSB></ANCONF></AUTONOT>	Send Notify when Print is done. Other events(settings) do not change.
Packet Example	<AUTONOT><ANLIST><ANPD>0</ANPD><ANODR>1</ANODR></ANLIST></AUTONOT>	Disable Notify when Print is done. Send Notify when Online Data received. Other settings do not change.
Packet Example	<AUTONOT><ANPD>0</ANPD><ANODR>1</ANODR><ANUSB>1</ANUSB></AUTONOT>	In this example these two XML tags (ANLIST, ANCONF) have been ignored. Disable Notify when Print is done. Send Notify when Online Data received. USB port is activated to send Notify. Other settings do not change.
Packet Example	<AUTONOT><ANPD>1</ANPD></AUTONOT>	In this example these two XML tags (ANLIST, ANCONF) have been ignored. Activate Notify when Print is done. Other settings do not change.

4.2.8 Set Print Parameters of the printing message

Command	XML Format	Description			
Set Print Parameters	<SETPPARAM> </SETPPARAM>	This command sets print parameters of the current message in printing.			
Parameters	XML Format	Value Type	Min Value	Max Value	Description
Set Delay	<DELAY>value</DELAY>	uint	0	120000000	Its unit is microsecond.
Set Speed	<PRNSPD>value</PRNSPD>	uint	0	1200	Its unit is cm/minute
Set Encoder Scale	<ENCSCCL>value</ENCSCCL>	uint	0	100	It is percentage of the speed
Print Position	<DLYMM>value</DLYMM>	uint	0	120000000	Its unit is millimeter. It is unused when Encoder Status is 0.
Set Bold	<BOLD>value</BOLD>	uint	1	10	Bold of print
Set Width	<WDTH>value</WDTH>	uint	1	10	

Command	XML Format	Description			
		uint			
Set Quantity	<QUANT>value</QUANT>	uint	1	100	Print number after sensor detection
Set QDelay	<QDELAY>value</QDELAY>	uint	0	120000000	Its unit is microsecond.
Set QPosition	<QDLYMM>value</QDLYMM>	uint	0	120000000	Its unit is millimeter.
Set Encoder Status	<ENCST>value</ENCST>	uint	0	1	0: Disable 1: Active
Set Resolution	<RESMOD>value</RESMOD>	uint	0	3	0:UltraFine 1:Fine 2:Normal 3:Draft
Set Rotate	<ROTAT>0</ROTAT>	uint	0	1	0: Disable rotate 1: Enable rotate
Set Mirror	<MIRR>0</MIRR>	uint	0	1	0: Dsable mirror 1: Enable mirror
Set Invert	<REVR5>0</REVR5>	uint	0	1	0: Disable invert 1: Enable invert
Set Auto Repeat	<AUTREP>0</AUTREP>	uint	0	1	0: Disable auto repeat 1: Enable auto repeat

Example	XML	Description
Full Packet Example	<pre> <SETPPARAM> <ROTAT>0</ROTAT> <MIRR>0</MIRR> <REVRS>0</REVRS> <AUTREP>1</AUTREP> <DELAY>15000000</DELAY> <DLYMM>0</DLYMM> <PRNSPD>100</PRNSPD> <BOLD>1</BOLD> <WDTH>1</WDTH> <QUANT>2</QUANT> <QDELAY>5000000</QDELAY> <QDLYMM>0</QDLYMM> <RESMOD>0</RESMOD> <ENCST>0</ENCST> <ENCSCCL>70</ENCSCCL> </SETPPARAM> </pre>	Delay:15 sec Speed: 1 m/min (100 cm/min) Bold,Width : 1 Quantity: 2 Rotate: disable Mirror: disable Reverse: disable Auto Repeat: enable QDelay: 2 sec Encoder: Disable Resolution: Ultra Fine
Packet Example	<pre> <SETPPARAM><PRNSPD>2500</PRNSPD></SETPPARAM> </pre>	only set print speed to 2500 cm/min of current message in the print

5.Query Command List

Query commands are used to get value of a parameter from Hx-Printers. Most commands only ask one parameter. Response of these commands are single value. But some commands ask collection of parameters. Response of these commands are XML format. The query commands are determined by “/>” characters. Hx-Printer if detects “/>” characters in received message, it supposes that message is Query command. If the query is invalid the Hx-printer returns “-1” as response. This values means invalid query.



Query commands are determined by “/>” characters at the end of command.

Type	Command	Description	Packet Format	Response Example	Note
------	---------	-------------	---------------	------------------	------

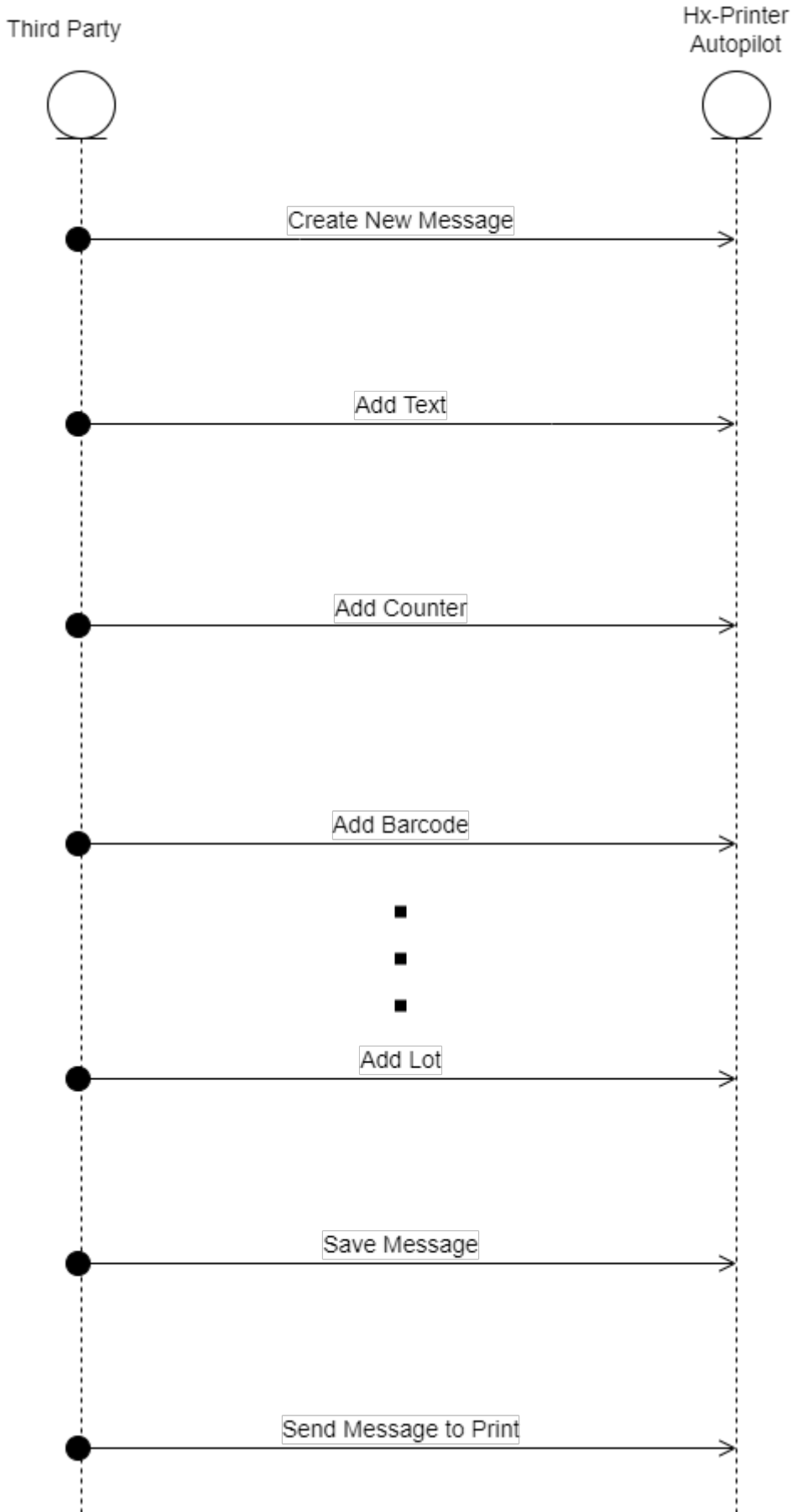
Type	Command Description	Packet Format	Response Example	Note
	Get UID	<HXUI/>	80	Get UID of Hx-Printer
	Get Print Status	<PRIN/>	1	1: Print On 0: Print Off
	Get Economy Mode Status	<ECOMOD/>	1	1: Economy mode is enable 0: Economy mode is disable
	Get Message Counter	<MSCNT/>	100	
	Get PM Counter	<PMCNT/>	10	
	Get Printing Message Name	<MSGNAM/>	Message02	name of message that is in printing.
	Get Current In-line shift	<INSH/>	Shift1	
	Get Current external data record	<EXTDATA/>		
	Get Lot Number 1	<LOT1/>	123456	
	Get Lot Number 2	<LOT2/>	123456	
	Get Lot Number 3	<LOT3/>	123456	
	Get Lot Number 4	<LOT4/>	123456	
	Get Lot Number 5	<LOT5/>	123456	
	Get Lot Number 6	<LOT6/>	123456	
	Get Lot Number 7	<LOT7/>	123456	
	Get Lot Number 8	<LOT8/>	123456	
	Get Lot Number 9	<LOT9/>	123456	
	Get Date	<DATE/>	18/01/2022	Its format is Day/Month/Year
	Get Year	<YEAR/>	2022	
	Get Month	<MNTH/>	1	
	Get Day	<DAY/>	18	
	Get Time	<TIME/>	21:11:41	
	Get Hour	<HOUR/>	21	
	Get Minute	<MIN/>	11	
	Get Current Ink Name	<INKT/>	Chronplast-W	
	Get Ink level status	<INKL/>	1	0: Not Detected 1: Normal 2: Low Ink 3: Critical Low Ink 4: No Ink
	Get Head Temperature	<PHTP/>	33	Its unit is degree Celsius
Query	Get All Print Parameters	<CPPARM/>	<CPPARM> <ROTAT>0</ROTAT> <BOLD>1</BOLD> <WDTH>1</WDTH> <QUANT>1</QUANT> <DELAY>0</DELAY> <QDELAY>0</QDELAY> <AUTREP>0</AUTREP> <REVRS>0</REVRS> <DRAFT>1</DRAFT> <MIRR>0</MIRR> <SLANT>0</SLANT> <ANG>0</ANG> <SWDLY>0</SWDLY> <SWSPD>0</SWSPD> <WPDLY>0</WPDLY> <PRNSPD>2500</PRNSPD> <ENCST>0</ENCST> <RESMOD>0</RESMOD> <DLYMM>0</DLYMM> <QDLYMM>0</QDLYMM> <ENCO>0</ENCO> <RESO>600</RESO> <RESNAM>UltraFine</RESNAM> <ENCSCSCL>100</ENCSCSCL> </CPPARM>	
	Get Print Parameter Rotate	<ROTAT/>	0	0: Disable 1: Enable
	Get Print Parameter Mirror	<MIRR/>	0	0: Disable 1: Enable
	Get Print Parameter Reverse	<REVRS/>	0	0: Disable 1: Enable
	Get Print Parameter Auto Repeat	<AUTREP/>	0	0: Disable 1: Enable
	Get Print Parameter Delay	<DELAY/>	1000000	Its unit is micro second.
	Get Print Parameter Speed	<PRNSPD/>	2500	Its unit is cm/m.
	Get Print Parameter Bold	<BOLD/>	1	
	Get Print Parameter Width	<WDTH/>	1	
	Get Print Parameter Quantity	<QUANT/>	1	
	Get Print Parameter Quantity Delay	<QDELAY/>	1000000	Its unit is micro second.
	Get Print Parameter Resolution Mode	<RESMOD/>	0	0: Ultra Fine 1: Fine 2: Normal 3: Draft
	Get Print Parameter Encoder Enable	<ENCST/>	0	
	Get Hx Name	<HXNA/>	My Hx-Nitro	
	Get Beacon Color	<BEAC/>	LG	RGB color
	Get Cartridge Setting Fire Delay	<PLDEL/>	1210	
	Get Cartridge Setting Main Pulse	<MNPL/>	450	
	Get Cartridge Setting Pre Pulse	<PRPL/>	220	
	Get Cartridge Setting Pulse Voltage	<PLVO/>	9500	
	Get Cartridge Setting Pulse Warming	<PLWR/>	27	
	Get Cartridge Setting Nozzle Row	<NZRO/>	2	
	Get Encoder Wheel Diameter	<ENWHD/>	56	
	Get Encoder Pulses Per Revolution	<ENPPR/>	5000	
	Get Encoder Two-phase mode	<ENTPM/>	1	
	Get Encoder Line Speed	<ENSPD/>	10	

Type	Command Description	Packet Format	Response Example	Note
	Get RS232 Parameters	<RS232/>	<RS232> <RSBR>115200</RSBR> <RSPRT>0</RSPRT> <RSDB>8</RSDB> <RSSB>1</RSSB> </RS232>	Get all settings of the RS232 that it includes Baudrate, Parity bit, Data bits, Stop Bit
	Get RS232 Baud Rate	<RSBR/>	115200	
	Get RS232 Data Bits	<RSDB/>	8	
	Get RS232 Parity	<RSPRT/>	0	0:None 1:Odd 2:Even
	Get RS232 Stop Bit	<RSSB/>	1	
	Get Online Data All Settings	<ODPARAM/>	<ODDL>@#</ODDL> <ODTE>&</ODTE> <ODTO>6</ODTO> <ODEC>0</ODEC> <ODCP>0</ODCP>	Get all external online data settings. It includes: ODDL: Format ODTE: Terminator ODTO: Time Out ODEC: Echo ODCP: Continuous Print
	Get Online Data Time Out	<ODTO/>	1000	Its unit is ms
	Get Online Data Terminator	<ODTE/>	&	

6. Message Design Command List

Third party can create their own message by Autopilot commands. But it is not possible to edit a message. Message design by AutoPilot has a specific sequence of commands to successful operation. First step is send.

1. Create New Message: this command must send at the startup of the message design. It clears previously object in message design.
2. Add objects step by step: for example add text or add counter or add Date/Time
3. Save Message: this command saves and finalizes designed message.



6.1 Create, Save and Print Message

Command	XML Format	Value Type	Min Value	Max Value	Description	Example	Example Description
Create New Message	<CRTMSG>string</CRTMSG>	Unicode string	0	20	Initializes AutoPilot message design to make new message. Name of the message can be empty.	<CRTMSG>AutoPilot Message</CRTMSG>	Initializes and make new message with name "AutoPilot Message". It
Save Message	<SAVEMSG>value</SAVEMSG>	uint	1	10	Saves the previously designed message in the corresponding slot number.	<SAVEMSG>2</SAVEMSG>	save designed message in slot number 2 of the Simple Message Editor (SME). If the message number is ignored, the message number 1 is considered.
Send Message to Print	<PRINTMSG>value</PRINTMSG>	uint	1	10	Send the specified message to the print	<PRINTMSG>1</PRINTMSG>	send message number 1 to print



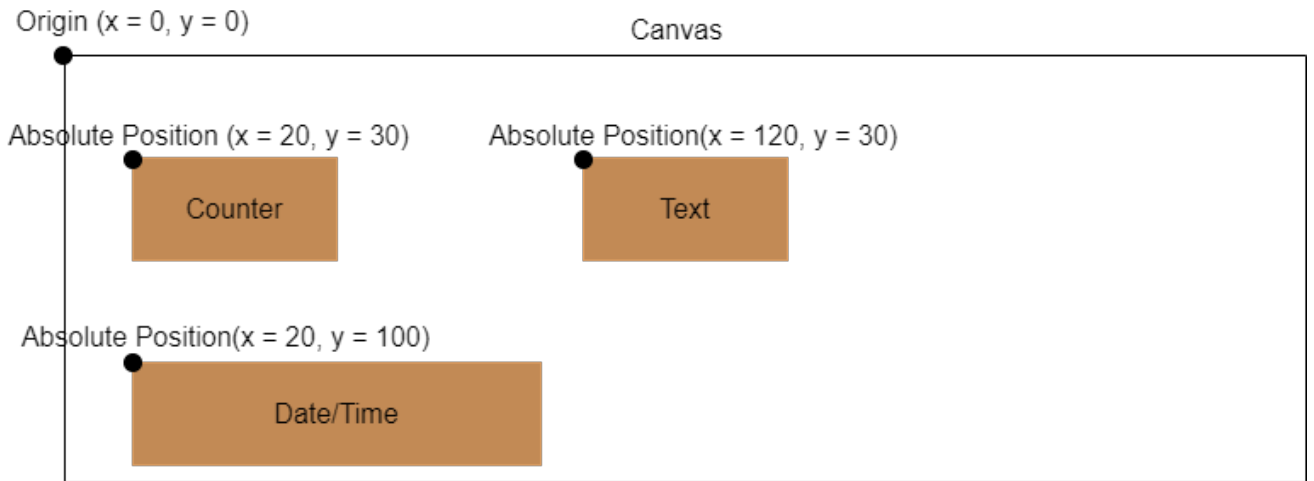
Message name is Unicode string. It must encoded to UTF-8 ASCII

6.2 Add objects for message design

Messages consist of Text, Date/Time, Counter, Barcode, Shift, Lot-No, External-Data objects. Objects are added to message one by one. Each object can have absolute position or relative position. These two position types are described below. Several parameters are common in all objects. Common parameters are described in the next table after Relative Position description.

6.2.1 Absolute Position

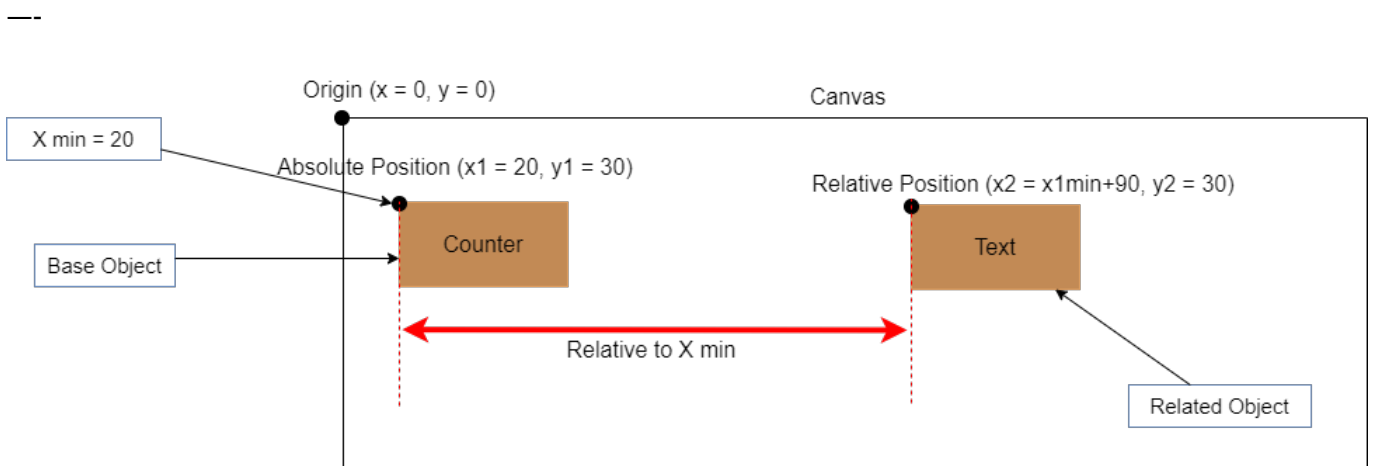
Objects that have absolute position, They have fix distance in x and y by the Origin position of the canvas. Origin point is in position (0,0) in the Canvas. Their position is independent of the size and location of other objects. If near object has changing size, it does not change the location of the object. The absolute position is determined by two X and Y values.

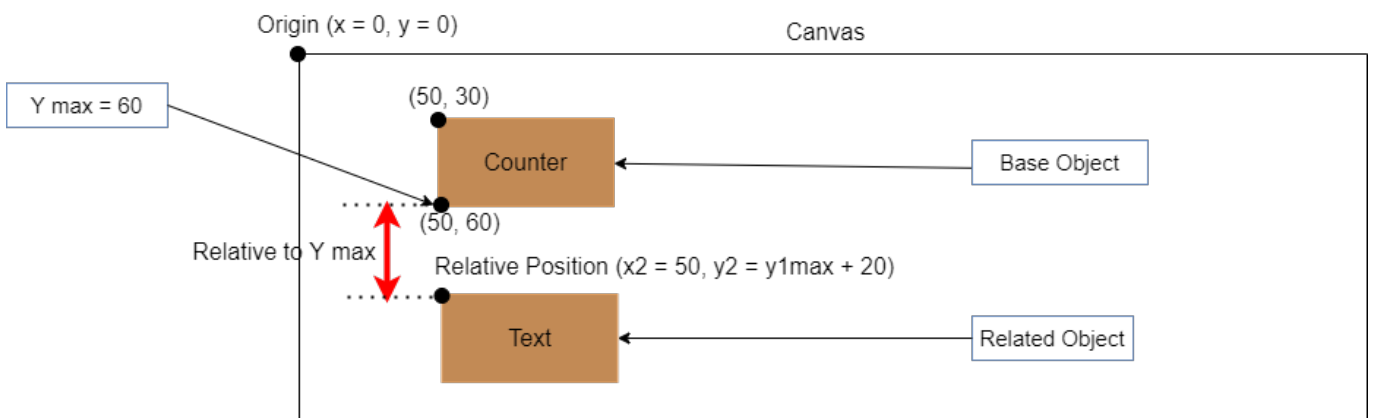
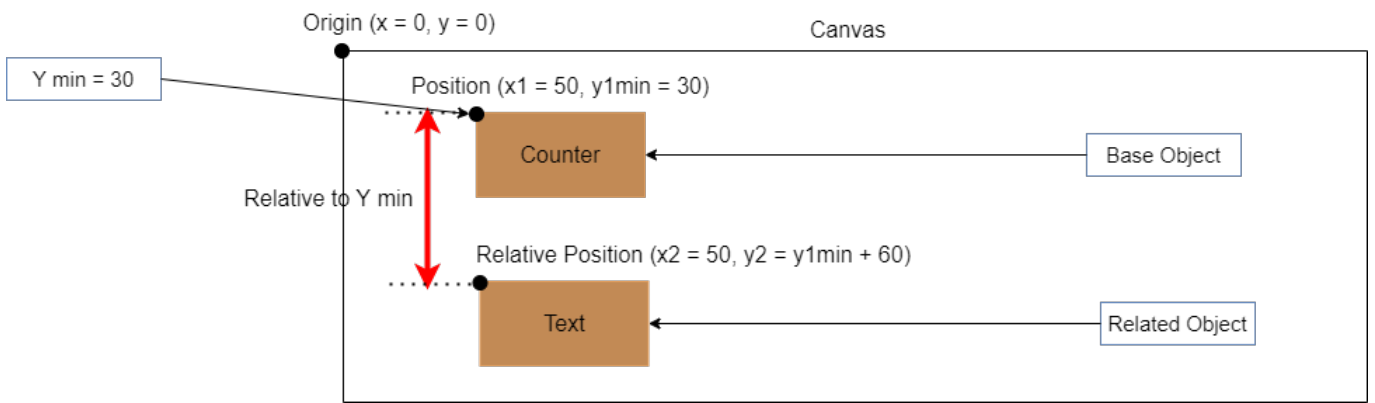
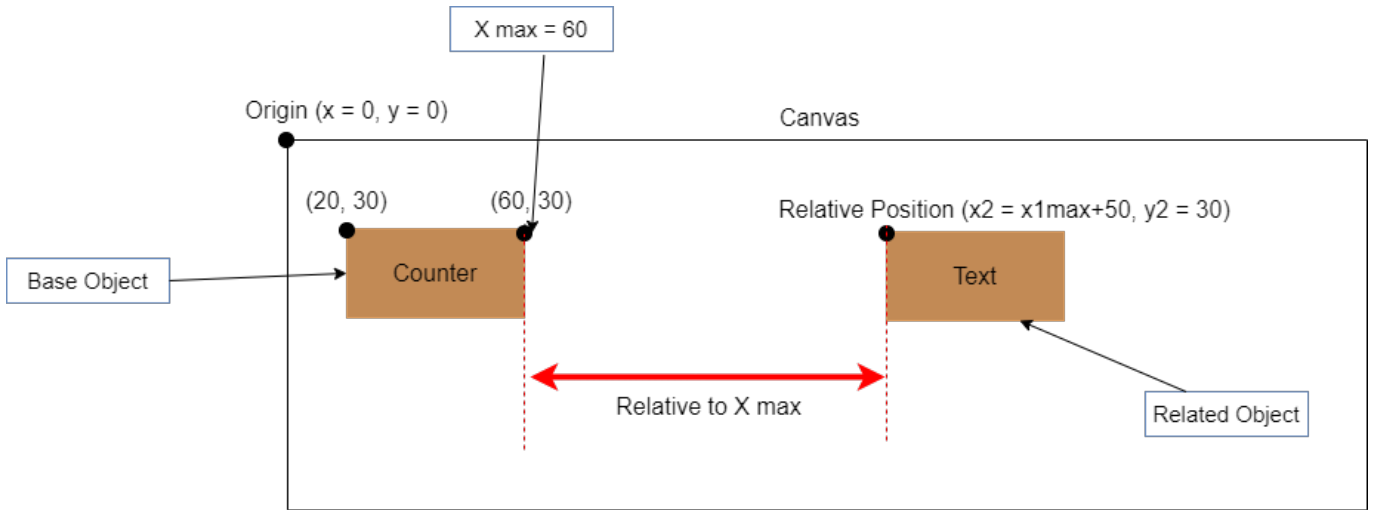


6.2.2 Relative Position

Objects that have relative position, They have relative distance in x or y by the Origin position of the canvas. Relative position is determined by Object Id of base object and distance to it. Relative position has four types.

- **Relative to X min:** X min is x of left side. If x-min of base object changes the x of related object will change.
- **Relative to X max:** X max is x of the right side. If x-min or size of base object changes it means the X max was changed and then the x of related object will change.
- **Relative to Y min:** Y min is y of the top of object. If y-min of base object changes the y of related object will change.
- **Relative to Y max:** Y max is y of the bottom of the object. If y-min or height of base object changes it means the Y max was changed and then the y of related object will change.





6.2.3 Common Parameters

Each message design object consists of three parts.

- Main Tag
- Specific Parameters
- Common Parameters.

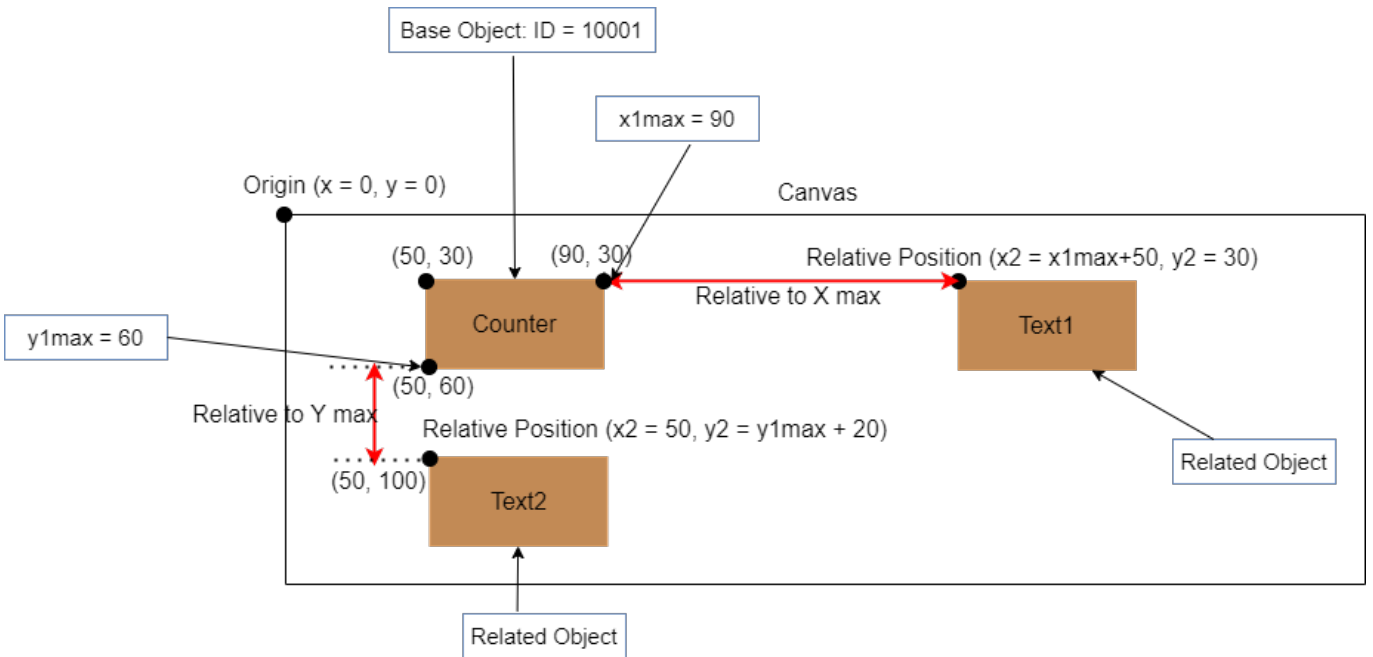
Main Tag and Specific parameters are described separately for any object. Common parameters have same role in all message design objects. They are optional for all objects. If these parameters does not set in the object the default value is considered.

Parameter	XML Format	Value Type	Min Value	Max Value	Description	Example	Example Description
Object ID	<OBJID>value</OBJID>	uint	10000	20000	Base objects must have ObjectID in the message design command. Related object is related based on the ObjectID of base object	<OBJID>10001</OBJID>	
Prefix	<PREF>value</PREF>	Unicode string	-	max length = 100 characters	Prefix text of object	<PREF>Prod:</PREF>	"Prod:" is prefix of Date/Time object. It determines this date/time object shows production time .
Postfix	<POSF>value</POSF>	Unicode string	-	max length = 100 characters	Postfix text of object	<POSF>kg</POSF>	"kg" is postfix for Online External Data object. Received data is weight of production.
Position	<POS>x,y</POS>	int, int	-	-	Position of the text on the print canvas	<POS>20,10</POS>	Origin of the canvas is top and right point of the canvas. Origin is (0,0)
Font Index	<FONTIND>value</FONTIND>	int	1	6	Index of selected fonts. They are six fonts. If the font list changes this index refers to new font list.	<FONTIND>2</FONTIND>	
Font Size	<SIZE>value</SIZE>	int	1	10	Size of the selected font index.	<SIZE>5</SIZE>	
Margin	<MARG>x,y</MARG>	int, int			Margin of the object to canvas or base object in relative position.	<MARG>10,5</MARG>	
X Reference ID	<XRID>value</XRID>	uint	10000	20000		<XRID>10001</XRID>	The x value of the object has this xml tag, is related to base object with id 10001

Parameter	XML Format	Value Type	Min Value	Max Value	Description	Example	Example Description
Y Reference ID	<YRID>value</YRID>	uint	10000	20000		<YRID>10001</YRID>	The y value of the object has this xml tag, is related to base object with id 10001
Related to X-min or X-max	<SXAS>value</SXAS>	uint	0	1	0: Related to X-max 1: Related to X-min	<XRID>10002</XRID><SXAS>0</SXAS>	the object has these xml tags, is related to X-max of object ID 10001
Related to Y-min or Y-max	<SYAS>value</SYAS>	uint	0	1	0: Related to Y-max 1: Related to Y-min	<YRID>10003</YRID><SYAS>0</SYAS>	the object has these xml tags, is related to Y-max of object ID 10001

6.2.4 Relative and Absolute Position Example

Following diagram and table shows related position of two objects and their XML tag.



Object	XML	Position Type
Counter (base object)	<CCONT> <OBJID>10001</OBJID> <POS>50,30</POS> </CCONT>	Absolute Position

Object	XML	Position Type
Text1 (related object)	<pre><CTEXT> <TXT>Text1</TXT> <XRID>10001</XRID> <YRID>10001</YRID> <SXAS>0</SXAS> <SYAS>1</SYAS> </CTEXT></pre>	Relative Position
Text2(related object)	<pre><CTEXT> <TXT>Text2</TXT> <XRID>10001</XRID> <YRID>10001</YRID> <SXAS>1</SXAS> <SYAS>0</SYAS> </CTEXT></pre>	Relative Position

6.2.5 Relative Position Advantage to Absolute Position

Message1 [Counter(absolute position), Text(absolute position)]	Description
99ABC	counter and text has fixed position. as long as counter has 2 digits the print preview is nice.
100ABC	when counter has 3 digits and gets wider, the last digit overwrites text object. because text object has fixed position.
Message2 [Counter(absolute position), Text(relative position)]	Description
99ABC	position of the counter is fixed but position of the text is relative to counter. when counter gets wider the position of the text will change.
100ABC	counter gets wider and text object moves to right. because text object is relative to X-max of the counter. this is benefit and advantage of the relative position to the absolute position

6.3 Add Text to Message

Command	XML Format	Description			
Add Text	<pre><CTEXT> </CTEXT></pre>	Add new text component to message. the message was created before this by CreateMessage Command			
Parameters	XML Format	Value Type	Min Value	Max Value	Description
Text	<TXT>value</TXT>	Unicode string	-	250 characters	pure text
Position	<POS>x,y</POS>	int, int	-	-	common parameter

Command	XML Format	Description			
Font Index	<FONTIND>value</FONTIND>	int	1	6	common parameter
Font Size	<SIZE>value</SIZE>	int	1	10	common parameter
Margin	<MARG>x,y</MARG>	int, int			common parameter
Example	XML	Description			
Full Packet Format 1	<CTEXT> <POS>20,10</POS> <TXT>ABC Company</TXT> <FONTIND>2</FONTIND> <SIZE>5</SIZE> <MARG>0,0</MARG> <LANG>number</LANG> </CTEXT>	add a text object and set all its parameters in the message			
Packet Example 2	<CTEXT> <OBJID>10001</OBJID> <POS>20,10</POS> <TXT>ABC Company</TXT> </CTEXT>	adds a text object to message and only set its text content and position. The value of the remaining parameters is considered the default value. ID of this object is 10001.			
Full Packet Format 3	<CTEXT> <XRID>10001</XRID> <YRID>10001</YRID> <SXAS>0</SXAS> <SYAS>1</SYAS> <TXT>ABC Company</TXT> <FONTIND>2</FONTIND> <SIZE>5</SIZE> <MARG>0,0</MARG> <LANG>number</LANG> </CTEXT>	text object has relative position. 10001 is object Id of the base object			

6.4 Add Date/Time to Message

Command	XML Format	Description			
Add Date/Time	<CTDAT> </CTDAT>	Add new Date/Time component to message. the message was created before this by CreateMessage Command			
Parameters	XML Format	Value Type	Min Value	Max Value	Description
Date Time Format	<FRMT>string</FRMT>	string		Max Length = 100	*This format is described in the next table
Day	<DAY>value</DAY>	int	0	999	Offset of Day from printing day
Mount	<MON>value</MON>	int	0	999	Offset of Month from printing month
Year	<YEAR>value</YEAR>	int	0	99	Offset of Year from printing year
Position	<POS>x,y</POS>	int, int			
Font Index	<FONTIND>value</FONTIND>	int	1	6	
Font Size	<SIZE>value</SIZE>	int	1	10	

	XML	Description
Full Packet Example 1	<pre><CTDAT> <POS>20,10</POS> <FRMT>Y/M/D</FRMT> <DAY>5</DAY> <MON>3</MON> <YEAR>1</YEAR> <FONTIND>1</FONTIND> <SIZE>2</SIZE> <MARG>0,0</MARG> </CTDAT></pre>	we suppose printing date is 2022/04/10 then the output of printing is 2023/07/15
Packet Example 2	<pre><CTDAT> <POS>20,10</POS> <FRMT>Y/M/D</FRMT> <MON>5</MON> </CTDAT></pre>	only set position and month of Date/Time object. output of printing is 2022/09/10

***Elements in Date/Time Format**

Date/Time format is a string that includes special characters. Each special character determines format of the one unit of date/time in the output to printing. These special characters are list in following tables. Another characters in this string represents directly in the output.


Element: It includes one special character to determine one unit of Data/Time. Unit of Date/Time are Year, Month, Day, Hour, Minute and Second.

Description: This column describes format of special character in the first column.

Alphabetic Values: If special character represents alphabetic values this column includes those values.

Example Format: Example of the special character in the Date/Time format.

Example Output: Final output of date/time to print. It is determined based on the example format. The date/time of example is 14 April 2022 at time 08:30:15 PM

 Example is based on this date/time ⇒ 2022 April 14 — 08:30:15 PM

Element	Description	Alphabetic Values	Example Format	Example Output
Y	Year is 4 digits.		Y	2022
y	Year is 2 digits. It shows only two low significant digits of year.		y	22
M	Month is 2 digits		Y/M	2022/04
m	Month is three character alphabetic.	JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC	Y m	2022 APR
n	Month is Best Before format	JA, FE, MR, AL, MA, JN, JL, AU, SE, OC, NO, DE	Y n	2022 AL

Element	Description	Alphabetic Values	Example Format	Example Output
l	Month is full name. It is lowercase L character.	JANUARY, FEBRUARY, MARCH, APRIL, JUNE, JULY, AUGUST, SEPTEMBER, OCTOBER, NOVEMBER, DECEMBER	y l	22 APRIL
D	Day is 2 digits		Y/M/D	2022/04/14
Z	Day of week in digit. Monday is the first day	Monday=1, ..., Saturday=6,Sunday=7	Y/M/D-Z	2022/04/14-4
z	Day of week is alphabetic	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday	Y/M/D-z	2022/04/14-Thursday
H	Hour is between 0 to 23. It is 2 digits.		H-z	20-Thursday
h	Hour is between 1 to 12. It is 2 digits.		h-z	08-Thursday
U	Minute is 2 digits.		H:U-z	20:30-Thursday
E	Second is 2 digits.		H:U:E-z	20:30:15-Thursday
P	AM/PM		h:U P	08:30 PM
W	Week number in the Georgian year		W	15
j	Day number in the Georgian year. It is between 1 to 365		j	104
S	Year is 4 digits for solar year. Its font must be Persian/Arabic		S	1401
s	Year is 2 digits for solar year. Its font must be Persian/Arabic		s	01
B	Month is 2 digits for solar year. Its font must be Persian/Arabic		S/B	1401/01
b	Month is name of solar month. Its font must be Persian/Arabic		S b	
R	Day is 2 digits for solar year. Its font must be Persian/Arabic		S/B/R	1401/01/25
o	Month is Arabic alphabetic name. It is Lowercase O character		o	

6.5 Add Counter to Message

Command	XML Format	Description			
Add Counter	<CCONT> </CCONT>	Add new Counter component to message. the message was created before this by CreateMessage Command			
Parameters	XML Format	Value Type	Min Value	Max Value	Description

Command	XML Format	Description			
Source	<SRC>value</SRC>	int	0	2	1: User Defined 2: PM Counter 3: Msg Counter
Start	<STRVAL>value</STRVAL>	int	0	1000000	When source is User Defined (equal 1) this value is Start value of the counter
End	<ENDVAL>value</ENDVAL>	int	0	1000000	When source is User Defined (equal 1) this value is End value of the counter
Step	<STEP>value</STEP>	int	0	End - Start	When source is User Defined (equal 1) this value is Step of counting
Repeat	<PULS>value</PULS>	int	0	100	When source is User Defined (equal 1) then value of counter is repeated to this value
Position	<POS>x,y</POS>	int, int			
Font Index	<FONTIND>value</FONTIND>	int			
Font Size	<SIZE>value</SIZE>	int			

	XML	Description
Full Packet Example	<CCONT> <POS>0,0</POS> <PREF>Counter</PREF> <STRVAL>1</STRVAL> <ENDVAL>1000</ENDVAL> <STEP>1</STEP> <SRC>0</SRC> <FONTIND>2</FONTIND> <SIZE>4</SIZE> </CCONT>	Prefix: Counter Start:1 End:1000 Step: 1 Source: User Defined

6.6 Add Lot to Message

Command	XML Format	Description			
Add Lot Number	<CLOT> </CLOT>	Add new LotNo component to message. the message was created before this by CreateMessage Command			
Parameters	XML Format	Value Type	Min Value	Max Value	Description
Lot Number	<INDX>value</INDX>	int	1	9	index of Lot number.
Position	<POS>x,y</POS>	int, int			
Font Index	<FONTIND>value</FONTIND>	int			
Font Size	<SIZE>value</SIZE>	int			

	XML	Description
Full Packet Example 1	<pre><CLOT> <POS>0,0</POS> <PREF>LOT:</PREF> <INDX>1</INDX> <FONTIND>2</FONTIND> <SIZE>4</SIZE> </CLOT></pre>	<p>Show Lot1 in the message</p> <p>Prefix: LOT:</p>

6.7 Add Shift to Message

6.7.1 General Structure

Command	XML Format	Description			
Add Shift	<pre><CSHIF> </CSHIF></pre>	Add new Shift component to message. the message was created before this by CreateMessage Command			
Parameters	XML Format	Value Type	Min Value	Max Value	Description
Sub Shift XML	<pre><SH><SNAME>Shift Name</SNAME><STHOR>Start Hour</STHOR><STMIN>Start Minute</STMIN><EHOR>End Hour</EHOR><EMIN>End Minute</EMIN></SH></pre>				Each Shift command contains several Sub Shift. This parameters is described in the next table. See next table and Full Packet Example in this table.*
Position	<POS>x,y</POS>	int, int			
Font Index	<FONTIND>value</FONTIND>	int			
Font Size	<SIZE>value</SIZE>	int			

6.7.2 Sub Shift Structure

Parameter	XML Format	Response	Description		
Sub Shift	<pre><SH> </SH></pre>		This is not a independent command. this xml is used as parameter in the CSHIF command. This parameter determines one interval time as Shift time. Each Shift command contains several of Sub Shift parameter.		
Sub Parameters	XML Format	Value Type	Min Value	Max Value	Description
Sub Shift Name	<SNAME>Shift Name</SNAME>	Unicode string	1	50	This string determines name of the Sub Shift. This name will be show in the print. Its length must be less than 51 and more than zero.

Parameter	XML Format	Response	Description		
Start Hour	<STHOR>Start Hour</STHOR>	int	0	23	Start hour of Sub Shift
Start Minute	<STMIN>Start Minute</STMIN>	int	0	59	Start minute of Sub Shift
End Hour	<EHOR>End Hour</EHOR>	int	0	23	End hour of Sub Shift
End Minute	<EMIN>End Minute</EMIN>	int	0	59	End minute of Sub Shift
Position	<POS>x,y</POS>	int, int			
Font Index	<FONTIND>value</FONTIND>	int			
Font Size	<SIZE>value</SIZE>	int			
Margin	<MARG>x,y</MARG>	int, int			

	XML	Description
Full Packet Example	<pre> <CSHIF> <POS>0,0</POS> <SH> <SNAME>Sh1</SNAME> <STHOR>0</STHOR> <STMIN>0</STMIN> <EHOR>10</EHOR> <EMIN>0</EMIN> </SH> <SH> <SNAME>Sh2</SNAME> <STHOR>10</STHOR> <STMIN>0</STMIN> <EHOR>20</EHOR> <EMIN>0</EMIN> </SH> <SH> <SNAME>Sh3</SNAME> <STHOR>20</STHOR> <STMIN>0</STMIN> <EHOR>0</EHOR> <EMIN>0</EMIN> </SH> <FONTIND>2</FONTIND> <SIZE>4</SIZE> </CSHIF> </pre>	<p>This command defines 3 shifts.</p> <p>Sh1: 00:00 to 10:00</p> <p>Sh2: 10:00 to 20:00</p> <p>Sh3: 20:00 to 00:00</p>

6.8 Add External Data to Message

6.8.1 External Data General Structure

Command	XML Format	Description			
Add External Data	<CEXTN> </CEXTN>	Add new External Data component to message. the message was created before this by CreateMessage Command			
Parameters	XML Format	Value Type	Min Value	Max Value	Description

Command	XML Format	Description			
Source	<SRC>value</SRC>	int	0	1	0: Batch 1: Online
Online Data Type	<ODTYPE>value</ODTYPE>	int	1	12	Type of Online Data. Its values are listed in the next table.
Online Data Endian	<OENDIAN>value</OENDIAN>	int	1	2	This parameter is active when Online External Data is used(source is Online), and Data Type is more than one byte. 1: Big Endian 2: Little Endian
Position	<POS>x,y</POS>	int, int			
Font Index	<FONTIND>value</FONTIND>	int			
Font Size	<SIZE>value</SIZE>	int			

	XML	Description
Full Packet Example 1	<pre><CEXTN> <POS>0,0</POS> <SRC>0</SRC> <ODTYPE>2</ODTYPE> <OENDIAN>2</OENDIAN> <FONTIND>2</FONTIND> <SIZE>4</SIZE> </CEXTN></pre>	External Data-Batch Data
Full Packet Example 2	<pre><CEXTN> <POS>0,0</POS> <SRC>1</SRC> <ODTYPE>2</ODTYPE> <OENDIAN>2</OENDIAN> <FONTIND>2</FONTIND> <SIZE>4</SIZE> </CEXTN></pre>	Online External Data Data Type: Standard ASCII Little Endian
Full Packet Example 3	<pre><CEXTN> <POS>0,0</POS> <SRC>1</SRC> <ODTYPE>10</ODTYPE> <OENDIAN>2</OENDIAN> <FONTIND>2</FONTIND> <SIZE>4</SIZE> </CEXTN></pre>	Online External Data Data Type: Float 16-bit Little Endian

6.8.2 Online Data Types

Name	Value	Endianness
Extended ASCII	1	Little
Standard ASCII	2	Little
8-Bit Binary	3	Little

Name	Value	Endianness
16-Bit Binary	4	Little-Big
32-Bit Binary	5	Little-Big
Hexadecimal	6	Little
UNICODE	7	Little-Big
Packed BCD	8	Little
Uncompressed BCD	9	Little
Float 16-bit	10	Little-Big
Float 32-bit	11	Little-Big
Float 64-bit	12	Little-Big

6.9 Add Barcode to Message

6.9.1 General Structure

Command	XML Format	Description			
Add Barcode	<CBARC> </CBARC>	Add new Barcode component to message. the message was created before this by CreateMessage Command			
Parameters	XML Format	Value Type	Min Value	Max Value	Description
Type	<BARTYPID>value</BARTYPID>	int	1	28	Next table(6.9.2) lists barcode type values. This value is index of the Barcode Type in the Table 6.9.2
Height	<HEIT>value</HEIT>	int	0	50	
Human Readable Text	<HRT>value</HRT>	int	0	1	0:Hidden 1:Show
InkSpread	<INKSPRD>value</INKSPRD>	int	0	10	
Caption Alignment	<CAPALN>value</CAPALN>	int	0	3	0 : Bottom 1 : Above 2 : Left 3 : Right
MultiLine	<MULTLIN>value</MULTLIN>	int	0	1	0: Single Line 1: Multi Line
ITF Beare Thickness	<TIKNS>value</TIKNS>	int	1	10	
Negative	<NEG>value</NEG>	int	0	1	
Color	<COLR>value</COLR>	int			
Position	<POS>x,y</POS>	int, int			

Command	XML Format	Description			
Variable Source	<VARSRC> Text, Lot, DateTime, Shift, ExternalData </VARSRC>				based on the barcode type, a barcode has one or several Variable Source such as Text, Lot, Counter, ... see table 6.9.3 to more details

6.9.2 Barcode Types

Index	Name
1	EAN8
2	EAN13
3	EAN128
4	CODE39(Checksum)
5	CODE39
6	EXTENDED CODE39(Checksum)
7	EXTENDED CODE39
8	Code128
9	UPC-A
10	ITF(Checksum)
11	ITF
12	ITF With Bearer Bar(Checksum)
13	ITF With Bearer Bar
14	ITF14(Checksum)
15	ITF14
16	ITF14 With Bearer Bar(Checksum)
17	ITF14 With Bearer Bar
18	S2OF5
19	S2OF5 With Bearer Bar
20	OneTrack PharamaCode
21	TwoTrack PharamaCode
22	DATAMATRIX
23	GS1DATAMATRIX
24	QR(Medium)
25	QR(High)
26	GS1QR_MEDIUM
27	GS1QR_HIGH
28	GS1DataBar_Stacked

6.9.3 Variable Source Structure

Each barcode has one or more variable source.

Parameter	XML Format	Description			
Variable Source	<VARSRC> </VARSRC>	Each barcode based on its type has one or several Variable Source(s). Variable Source is one previous defined objects on message design. They are Text, Lot, Shift, Date/Time, Counter and External Data object.			
Sub Parameters	XML Format	Value Type	Min Value	Max Value	Description
AI Code	<AICOD>value</AICOD>	int	0	10000	Each Shift command contains several Sub Shift. This parameters is described in the next table. See next table and Full Packet Example in this table.*
AI Code Format	<CODFRM>value</CODFRM>	int, int	0	2	0: Code: (01) 1: Data Title: (GTIN) 2: Both: GTIN(01)
Data Title	<DATATIT>value</DATATIT>	ASCII string		Max Length = 100	
Text, Lot, DateTime, Shift, ExternalData		XML			This xml is same as xml of CTEXT, CDATE, CLOT and

	XML	Description
Full Packet Example 1	<pre><CBARC> <OBJID>1</OBJID> <POS>0,0</POS> <BARTYPID>1</BARTYPID> <WCOEFF>1</WCOEFF> <HEIT>55</HEIT> <HRT>1</HRT> <INKSPRD>0</INKSPRD> <TIKNS>2</TIKNS> <CAPALN>0</CAPALN> <NEG>0</NEG> <MULTLIN>0</MULTLIN> <VARSRC> <CODFRM>0</CODFRM> <DATATIT>0</DATATIT> <AICOD>0</AICOD> <CTDAT> <PREF></PREF> <FRMT>Y.M.D</FRMT> <DAY></DAY> <MON></MON> <YEAR></YEAR> </CTDAT> </VARSRC> <MARG>0,0</MARG> </CBARC></pre>	Barcode type: EN8 Variable Source: Date/Time

	XML	Description
Full Packet Example 2	<pre> <CBARC> <OBJID>1</OBJID> <POS>0,0</POS> <BARTYPID>3</BARTYPID> <WCOEFF>1</WCOEFF> <HEIT>55</HEIT> <HRT>1</HRT> <INKSPRD>0</INKSPRD> <TIKNS>2</TIKNS> <CAPALN>0</CAPALN> <NEG>0</NEG> <MULTLIN>0</MULTLIN> <VARSRC> <CODFRM>0</CODFRM> <DATATIT> </DATATIT> <AICOD> </AICOD> <CTEXT> <PREF> </PREF> <TXT>Text in Barcode</TXT> <POSF> </POSF> <FONTIND>1</FONTIND> <SIZE>3</SIZE> </CTEXT> </VARSRC> <VARSRC> <CODFRM>0</CODFRM> <DATATIT> </DATATIT> <AICOD> </AICOD> <CCONT> <PREF> </PREF> <STRVAL>1</STRVAL> <ENDVAL>1000</ENDVAL> <STEP>1</STEP> <PULS>1</PULS> <ADDPFRF>0</ADDPFRF> <SRC>0</SRC> </CCONT> </VARSRC> <MARG>0,0</MARG> </CBARC> </pre>	<p>Barcode type: EAN128</p> <p>Variable Sources: Text and Counter</p>

6.10 Add Print Parameters to Message

Command	XML Format	Description
Add Print Parameters	<pre> <CPPARM> </CPPARM> </pre>	This command sets Print Parameters of the designed message

Command	XML Format	Description			
Parameters	XML Format	Value Type	Min Value	Max Value	Description
Delay	<DELAY>value</DELAY>	uint	0	120000000	Its unit is microsecond.
Speed	<PRNSPD>value</PRNSPD>	uint	0	1200	Its unit is cm/minute
Encoder Scale	<ENCSCCL>value</ENCSCCL>	uint	0	100	It is percentage of the speed
Print Position	<DLYMM>value</DLYMM>	uint	0	120000000	Its unit is millimeter. It is unused when Encoder Status is 0.
Bold	<BOLD>value</BOLD>	uint	1	10	Bold of print
Width	<WDTH>value</WDTH>	uint	1	10	
Quantity	<QUANT>value</QUANT>	uint	1	100	Print number after sensor detection
QDelay	<QDELAY>value</QDELAY>	uint	0	120000000	Its unit is microsecond.
QPosition	<QDLYMM>value</QDLYMM>	uint	0	120000000	Its unit is millimeter.
Encoder Status	<ENCST>value</ENCST>	uint	0	1	0: Disable 1: Active
Resolution	<RESMOD>value</RESMOD>	uint	0	3	0:UltraFine 1:Fine 2:Normal 3:Draft
Rotate	<ROTAT>0</ROTAT>	uint	0	1	0: Disable rotate 1: Enable rotate
Mirror	<MIRR>0</MIRR>	uint	0	1	0: Dsable mirror 1: Enable mirror
Invert	<REVRS>0</REVRS>	uint	0	1	0: Disable invert 1: Enable invert
Auto Repeat	<AUTREP>0</AUTREP>	uint	0	1	0: Disable auto repeat 1: Enable auto repeat

	XML	Description
Packet Example 1	<pre><CPPARM> <ROTAT>0</ROTAT> <MIRR>0</MIRR> <REVRS>0</REVRS> <AUTREP>0</AUTREP> <DELAY>2000000</DELAY> <DLYMM>0</DLYMM> <PRNSPD>2500</PRNSPD> <BOLD>1</BOLD> <WDTH>1</WDTH> <QUANT>1</QUANT> <RESMOD>0</RESMOD> <ENCST>0</ENCST> </CPPARM></pre>	Rotate: disable Mirror: disable Reverse: disable Auto Repeat: disable Delay: 2 second Print Speed:25 M/min Bold: 1 Width: 1 Quantity: 1 Encoder: disable
Packet Example 2	<pre><CPPARM><PRNSPD>2500</PRNSPD></CPPARM></pre>	only set print speed to 2500 cm/min

6.11 Examples of Message Design

6.11.1 Date/Time , Counter

```
PRO:2022/05/07
EXP:2022/09/07
PNO:1
```

Step	Command Title	Command XML	Raw Data	Description
1	Create New Message	<CRTMSG>AP-Message</CRTMSG>	0x01,0x41,0x50,0x1F,<,C,R,T,M,S,G,>,A,P,-,M,e,s,s,a,g,e,<,/,C,R,T,M,S,G,>,0x04	Message name is AP-Message
2	Add Date/Time	<pre><CTDAT> <POS>10,10</POS> <PREF>PRO:</PREF> <FRMT>Y/M/D</FRMT> <DAY>0</DAY> <MON>0</MON> <YEAR>0</YEAR> <FONTIND>1</FONTIND> <SIZE>3</SIZE> <MARG>0,0</MARG> </CTDAT></pre>	<pre>0x01,0x41,0x50,0x1F,<,C,T,D,A,T,>, , ,<,P,O,S,>,1,0,,,1,0,<,/,P,O,S,>, , ,<,P,R,E,F,>,P,R,O,;<,/,P,R,E,F,>, , ,<,F,R,M,T,>,Y,/,M,/,D,<,/,F,R,M,T,>, , ,<,D,A,Y,>,0,<,/,D,A,Y,>, , ,<,M,O,N,>,0,<,/,M,O,N,>, , ,<,Y,E,A,R,>,0,<,/,Y,E,A,R,>, , ,<,F,O,N,T,I,N,D,>,1,<,/,F,O,N,T,I,N,D,>, , ,<,S,I,Z,E,>,3,<,/,S,I,Z,E,>, , ,<,M,A,R,G,>,0,,,0,<,/,M,A,R,G,>, , ,<,/,C,T,D,A,T,>,0x04</pre>	Production Date/Time: Offset Time: 0 Position: (10,10) Format: Y/M/D Font Index: 1 Size: 3 Pref: PRO:
3	Add Date/Time	<pre><CTDAT> <POS>10,60</POS> <PREF>EXP:</PREF> <FRMT>Y/M/D</FRMT> <DAY>0</DAY> <MON>4</MON> <YEAR>0</YEAR> <FONTIND>1</FONTIND> <SIZE>3</SIZE> <MARG>0,0</MARG> </CTDAT></pre>	<pre>0x01,0x41,0x50,0x1F,<,C,T,D,A,T,>, , ,<,P,O,S,>,1,0,,,6,0,<,/,P,O,S,>, , ,<,P,R,E,F,>,E,X,P,;<,/,P,R,E,F,>, , ,<,F,R,M,T,>,Y,/,M,/,D,<,/,F,R,M,T,>, , ,<,D,A,Y,>,0,<,/,D,A,Y,>, , ,<,M,O,N,>,4,<,/,M,O,N,>, , ,<,Y,E,A,R,>,0,<,/,Y,E,A,R,>, , ,<,F,O,N,T,I,N,D,>,1,<,/,F,O,N,T,I,N,D,>, , ,<,S,I,Z,E,>,3,<,/,S,I,Z,E,>, , ,<,M,A,R,G,>,0,,,0,<,/,M,A,R,G,>, , ,<,/,C,T,D,A,T,>,0x04</pre>	Expiration Date/Time: Offset Time: 4 months Position: (10,60) Format: Y/M/D Font Index: 1 Size: 3 Pref: EXP:

Step	Command Title	Command XML	Raw Data	Description
4	Add Counter	<CCONT> <POS>10,100</POS> <PREF>PNO:</PREF> <STRVAL>1</STRVAL> <ENDVAL>1000</ENDVAL> <STEP>1</STEP> <PULS>1</PULS> <ADDPRF>0</ADDPRF> <SRC>0</SRC> <POSF></POSF> <FONTIND>1</FONTIND> <SIZE>3</SIZE> <MARG>0,0</MARG> <LANG>0</LANG> </CCONT>	0x01,0x41,0x50,0x1F,<,C,C,O,N,T,>, , <,<,P,O,S,>,1,0,,,1,0,0,<,<,P,O,S,>, , <,<,P,R,E,F,>,P,N,O,;:<,<,P,R,E,F,>, , <,<,S,T,R,V,A,L,>,1,<,<,S,T,R,V,A,L,>, , <,<,E,N,D,V,A,L,>,1,0,0,0,<,<,E,N,D,V,A,L,>, , <,<,S,T,E,P,>,1,<,<,S,T,E,P,>, , <,<,P,U,L,S,>,1,<,<,P,U,L,S,>, , <,<,A,D,D,P,R,F,>,0,<,<,A,D,D,P,R,F,>, , <,<,S,R,C,>,0,<,<,S,R,C,>, , <,<,P,O,S,F,>,<,<,P,O,S,F,>, , <,<,F,O,N,T,I,N,D,>,1,<,<,F,O,N,T,I,N,D,>, , <,<,S,I,Z,E,>,3,<,<,S,I,Z,E,>, , <,<,M,A,R,G,>,0,,,0,<,<,M,A,R,G,>, , <,<,L,A,N,G,>,0,<,<,L,A,N,G,>, , <,<,C,C,O,N,T,>,0x04	Counter: Source: User Defined Position: (10,100) Start: 1 End: 1000 Step: 1 Plus: 1 Size: 3 Font Index: 1
5	Save Message	<SAVEMSG>2</SAVEMSG>	0x01,0x41,0x50,0x1F,<,S,A,V,E,M,S,G,>,2,<,<,S,A,V,E,M,S,G,>,0x04	Save message in slot number 2
6	Send Message to Print	<PRINTMSG>2</PRINTMSG>	0x01,0x41,0x50,0x1F,<,P,R,I,N,T,M,S,G,>,2,<,<,P,R,I,N,T,M,S,G,>,0x04	Show print preview in the Monitoring page from Hx-Manager

6.11.2 Date/Time , Lot

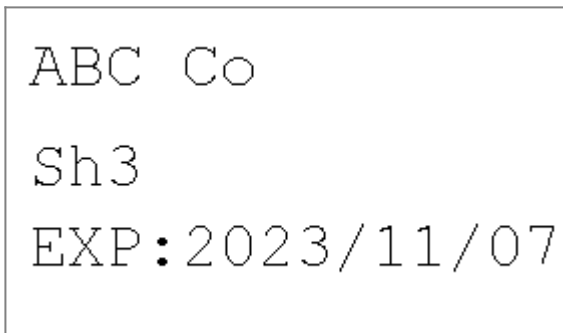
```

PRO:2022/05/07
EXP:2023/11/07
LOT:111 11
    
```

Step	Command Title	Command XML	Raw Data	Description
1	Create New Message	<CRTMSG>AP1</CRTMSG>	0x01,0x41,0x50,0x1F,<,C,R,T,M,S,G,>,A,P,1,<,<,C,R,T,M,S,G,>,0x04	Message name is AP1
2	Add Date/Time	<CTDAT> <POS>10,10</POS> <FRMT>Y/M/D</FRMT> <DAY>0</DAY> <MON>0</MON> <YEAR>0</YEAR> <FONTIND>1</FONTIND> <SIZE>4</SIZE> <PREF>PRO:</PREF> <MARG>0,0</MARG> </CTDAT>	0x01,0x41,0x50,0x1F,<,C,T,D,A,T,>, , <,<,P,O,S,>,1,0,,,1,0,<,<,P,O,S,>, , <,<,F,R,M,T,>,Y,/,M,/,D,<,<,F,R,M,T,>, , <,<,D,A,Y,>,0,<,<,D,A,Y,>, , <,<,M,O,N,>,0,<,<,M,O,N,>, , <,<,Y,E,A,R,>,0,<,<,Y,E,A,R,>, , <,<,F,O,N,T,I,N,D,>,1,<,<,F,O,N,T,I,N,D,>, , <,<,S,I,Z,E,>,4,<,<,S,I,Z,E,>, , <,<,P,R,E,F,>,P,R,O,;:<,<,P,R,E,F,>, , <,<,M,A,R,G,>,0,,,0,<,<,M,A,R,G,>, , <,<,C,T,D,A,T,>,0x04	Production Date/Time: Offset Time: 0 Position: (10,10) Format: Y/M/D Font Index: 1 Size: 4 Pref: PRO:

Step	Command Title	Command XML	Raw Data	Description
3	Add Date/Time	<CTDAT> <POS>10,60</POS> <FRMT>Y/M/D</FRMT> <DAY>0</DAY> <MON>6</MON> <YEAR>1</YEAR> <FONTIND>1</FONTIND> <SIZE>4</SIZE> <PREF>EXP:</PREF> <MARG>0,0</MARG> </CTDAT>	0x01,0x41,0x50,0x1F,<,C,T,D,A,T,>, , ,<,P,O,S,>,1,0,,,6,0,<,/,P,O,S,>, , ,<,F,R,M,T,>,Y,/,M,/,D,<,/,F,R,M,T,>, , ,<,D,A,Y,>,0,<,/,D,A,Y,>, , ,<,M,O,N,>,6,<,/,M,O,N,>, , ,<,Y,E,A,R,>,1,<,/,Y,E,A,R,>, , ,<,F,O,N,T,I,N,D,>,1,<,/,F,O,N,T,I,N,D,>, , ,<,S,I,Z,E,>,4,<,/,S,I,Z,E,>, , ,<,P,R,E,F,>,E,X,P,;,<,/,P,R,E,F,>, , ,<,M,A,R,G,>,0,,,0,<,/,M,A,R,G,>, , ,<,/,C,T,D,A,T,>,0x04	Expiration Date/Time: Offset Time: 1 year and 6 months Position: (10,60) Format: Y/M/D Font Index: 1 Size: 4 Pref: EXP:
4	Add Lot	<CLOT> <POS>10,100</POS> <PREF>LOT:</PREF> <INDX>1</INDX> <POSF></POSF> <FONTIND>2</FONTIND> <SIZE>4</SIZE> <MARG>0,0</MARG> <LANG>0</LANG> </CLOT>	0x01,0x41,0x50,0x1F,<,C,L,O,T,>, , ,<,P,O,S,>,1,0,,,1,0,0,<,/,P,O,S,>, , ,<,P,R,E,F,>,L,O,T,;,<,/,P,R,E,F,>, , ,<,I,N,D,X,>,1,<,/,I,N,D,X,>, , ,<,P,O,S,F,>,<,/,P,O,S,F,>, , ,<,F,O,N,T,I,N,D,>,2,<,/,F,O,N,T,I,N,D,>, , ,<,S,I,Z,E,>,4,<,/,S,I,Z,E,>, , ,<,M,A,R,G,>,0,,,0,<,/,M,A,R,G,>, , ,<,L,A,N,G,>,0,<,/,L,A,N,G,>, , ,<,/,C,L,O,T,>,0x04	Lot1=111 11 Position: (10,100) Font Index: 2 Size: 4
5	Save Message	<SAVEMSG>1</SAVEMSG>	0x01,0x41,0x50,0x1F,<,S,A,V,E,M,S,G,>,1,<,/,S,A,V,E,M,S,G,>,0x04	Save message in slot number 1
6	Send Message to Print	<PRINTMSG>1</PRINTMSG>	0x01,0x41,0x50,0x1F,<,P,R,I,N,T,M,S,G,>,1,<,/,P,R,I,N,T,M,S,G,>,0x04	Show print preview in the Monitoring page from Hx-Manager

6.11.3 Text, Shift, Date/Time



Step	Command Title	Command XML	Raw Data	Description
1	Create New Message	<CRTMSG>AP2</CRTMSG>	0x01,0x41,0x50,0x1F,<,C,R,T,M,S,G,>,A,P,2,<,/,C,R,T,M,S,G,>,0x04	Message name is AP2
2	Add Text	<CTEXT> <POS>10,10</POS> <PREF></PREF> <TXT>ABC Co</TXT> <FONTIND>1</FONTIND> <SIZE>3</SIZE> <MARG>0,0</MARG> </CTEXT>	0x01,0x41,0x50,0x1F,<,C,T,E,X,T,>, , ,<,P,O,S,>,1,0,,,1,0,0,<,/,P,O,S,>, , ,<,P,R,E,F,>,<,/,P,R,E,F,>, , ,<,T,X,T,>,A,B,C, ,C,o,<,/,T,X,T,>, , ,<,F,O,N,T,I,N,D,>,1,<,/,F,O,N,T,I,N,D,>, , ,<,S,I,Z,E,>,3,<,/,S,I,Z,E,>, , ,<,M,A,R,G,>,0,,,0,<,/,M,A,R,G,>, , ,<,/,C,T,E,X,T,>,0x04	Compnay Name Position: (10,10) Size:3 Font Index:1

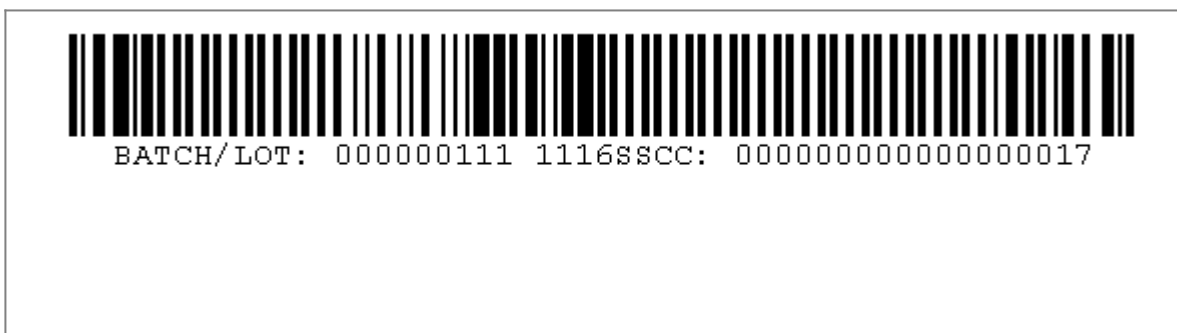
Step	Command Title	Command XML	Raw Data	Description
3	Add Shift	<pre><CSHIF> <POS>10,60</POS> <SH> <SNAME>Sh1</SNAME> <STHOR>04</STHOR> <STMIN>00</STMIN> <EHOR>10</EHOR> <EMIN>00</EMIN> </SH> <SH> <SNAME>Sh2</SNAME> <STHOR>10</STHOR> <STMIN>00</STMIN> <EHOR>20</EHOR> <EMIN>00</EMIN> </SH> <SH> <SNAME>Sh3</SNAME> <STHOR>20</STHOR> <STMIN>00</STMIN> <EHOR>23</EHOR> <EMIN>59</EMIN> </SH> <FONTIND>1</FONTIND> <SIZE>3</SIZE> <MARG>0,0</MARG> <LANG>0</LANG> </CSHIF></pre>	<pre>0x01,0x41,0x50,0x1F,<,C,S,H,I,F,>, <,P,O,S,>,1,0,,,6,0,<,/,P,O,S,>, <,S,H,>, <,S,N,A,M,E,>,S,h,1,<,/,S,N,A,M,E,>, <,S,T,H,O,R,>,0,4,<,/,S,T,H,O,R,>, <,S,T,M,I,N,>,0,0,<,/,S,T,M,I,N,>, <,E,H,O,R,>,1,0,<,/,E,H,O,R,>, <,E,M,I,N,>,0,0,<,/,E,M,I,N,>, <,/,S,H,>, <,S,H,>, <,S,N,A,M,E,>,S,h,2,<,/,S,N,A,M,E,>, <,S,T,H,O,R,>,1,0,<,/,S,T,H,O,R,>, <,S,T,M,I,N,>,0,0,<,/,S,T,M,I,N,>, <,E,H,O,R,>,2,0,<,/,E,H,O,R,>, <,E,M,I,N,>,0,0,<,/,E,M,I,N,>, <,/,S,H,>, <,S,H,>, <,S,N,A,M,E,>,S,h,3,<,/,S,N,A,M,E,>, <,S,T,H,O,R,>,2,0,<,/,S,T,H,O,R,>, <,S,T,M,I,N,>,0,0,<,/,S,T,M,I,N,>, <,E,H,O,R,>,2,3,<,/,E,H,O,R,>, <,E,M,I,N,>,5,9,<,/,E,M,I,N,>, <,/,S,H,>, <,F,O,N,T,I,N,D,>,1,<,/,F,O,N,T,I,N,D,>, <,S,I,Z,E,>,3,<,/,S,I,Z,E,>, <,M,A,R,G,>,0,,,0,<,/,M,A,R,G,>, <,L,A,N,G,>,0,<,/,L,A,N,G,>, <,/,C,S,H,I,F,>,0x04</pre>	<p>Shift has 3 duration:</p> <p>Sh1: 04:00 to 10:00 Sh2: 10:00 to 20:00 Sh3: 20:00 to 23:59</p> <p>Position: (10,60) Size:3 Font Index:1</p>
4	Add Date/Time	<pre><CTDAT> <POS>10,100</POS> <FRMT>Y/M/D</FRMT> <DAY>0</DAY> <MON>6</MON> <YEAR>1</YEAR> <FONTIND>1</FONTIND> <SIZE>3</SIZE> <PREF>EXP:</PREF> <MARG>0,0</MARG> </CTDAT></pre>	<pre>0x01,0x41,0x50,0x1F,<,C,T,D,A,T,>, <,P,O,S,>,1,0,,,1,0,<,/,P,O,S,>, <,F,R,M,T,>,Y,/,M,/,D,<,/,F,R,M,T,>, <,D,A,Y,>,0,<,/,D,A,Y,>, <,M,O,N,>,6,<,/,M,O,N,>, <,Y,E,A,R,>,1,<,/,Y,E,A,R,>, <,F,O,N,T,I,N,D,>,1,<,/,F,O,N,T,I,N,D,>, <,S,I,Z,E,>,3,<,/,S,I,Z,E,>, <,P,R,E,F,>,E,X,P,.,<,/,P,R,E,F,>, <,M,A,R,G,>,0,,,0,<,/,M,A,R,G,>, <,/,C,T,D,A,T,>,0x04</pre>	<p>Expiration Date/Time: Offset Time: 1 year and 6 months Position: (10,100) Format: Y/M/D Font Index: 1 Size: 4 Pref: EXP:</p>
5	Save Message	<pre><SAVEMSG>3</SAVEMSG></pre>	<pre>0x01,0x41,0x50,0x1F,<,S,A,V,E,M,S,G,>,3,<,/,S,A,V,E,M,S,G,>,0x04</pre>	<p>Save message in slot number 3</p>
6	Send Message to Print	<pre><PRINTMSG>3</PRINTMSG></pre>	<pre>0x01,0x41,0x50,0x1F,<,P,R,I,N,T,M,S,G,>,3,<,/,P,R,I,N,T,M,S,G,>,0x04</pre>	<p>Show print preview in the Monitoring page from Hx-Manager</p>

6.11.4 Barcode with Date/Time source



Step	Command Title	Command XML	Raw Data	Description
1	Create New Message	<CRTMSG>AP3</CRTMSG>	0x01,0x41,0x50,0x1F,<,C,R,T,M,S,G,>,A,P,3,</,C,R,T,M,S,G,>,0x04	Message name is AP3
2	Add Barcode	<CBARC> <POS>10,10</POS> <BARTYPID>2</BARTYPID> <WCOEFF>2</WCOEFF> <HEIT>50</HEIT> <HRT>1</HRT> <INKSPRD>1</INKSPRD> <TIKNS>2</TIKNS> <CAPALN>0</CAPALN> <NEG>0</NEG> <MULTLIN>0</MULTLIN> <VARSRC> <CODFRM>0</CODFRM> <DATATIT></DATATIT> <AICOD></AICOD> <CTDAT> <PREF></PREF> <FRMT>Y.M.D</FRMT> <DAY>0</DAY> <MON>0</MON> <YEAR>1</YEAR> <POSF></POSF> <FONTIND>3</FONTIND> <SIZE>4</SIZE> </CTDAT> </VARSRC> <MARG>0,0</MARG> </CBARC>	0x01,0x41,0x50,0x1F,<,C,B,A,R,C,>, , <,P,O,S,>,1,0,,,1,0,</,P,O,S,>, , <,B,A,R,T,Y,P,I,D,>,2,</,B,A,R,T,Y,P,I,D,>, , <,W,C,O,E,F,F,>,2,</,W,C,O,E,F,F,>, , <,H,E,I,T,>,5,0,</,H,E,I,T,>, , <,H,R,T,>,1,</,H,R,T,>, , <,I,N,K,S,P,R,D,>,1,</,I,N,K,S,P,R,D,>, , <,T,I,K,N,S,>,2,</,T,I,K,N,S,>, , <,C,A,P,A,L,N,>,0,</,C,A,P,A,L,N,>, , <,N,E,G,>,0,</,N,E,G,>, , <,M,U,L,T,L,I,N,>,0,</,M,U,L,T,L,I,N,>, , <,V,A,R,S,R,C,>, , <,C,O,D,F,R,M,>,0,</,C,O,D,F,R,M,>, , <,D,A,T,A,T,I,T,></,D,A,T,A,T,I,T,>, , <,A,I,C,O,D,></,A,I,C,O,D,>, , <,C,T,D,A,T,>, , <,P,R,E,F,></,P,R,E,F,>, , <,F,R,M,T,>,Y,,M,,D,</,F,R,M,T,>, , <,D,A,Y,>,0,</,D,A,Y,>, , <,M,O,N,>,0,</,M,O,N,>, , <,Y,E,A,R,>,1,</,Y,E,A,R,>, , <,P,O,S,F,></,P,O,S,F,>, , <,F,O,N,T,I,N,D,>,3,</,F,O,N,T,I,N,D,>, , <,S,I,Z,E,>,4,</,S,I,Z,E,>, , </,C,T,D,A,T,>, , </,V,A,R,S,R,C,>, , <,M,A,R,G,>,0,,,0,</,M,A,R,G,>, , </,C,B,A,R,C,>,0x04	Barcode Type: EAN13 Position: (10,10) Height: 50 pixel Variable Source: Date/Time: Date/Time offset: 1 year Date/Time format: Y.M.D
3	Save Message	<SAVEMSG>4</SAVEMSG>	0x01,0x41,0x50,0x1F,<,S,A,V,E,M,S,G,>,4,</,S,A,V,E,M,S,G,>,0x04	Save message in slot number 4
4	Send Message to Print	<PRINTMSG>4</PRINTMSG>	0x01,0x41,0x50,0x1F,<,P,R,I,N,T,M,S,G,>,4,</,P,R,I,N,T,M,S,G,>,0x04	Show print preview in the Monitoring page from Hx-Manager

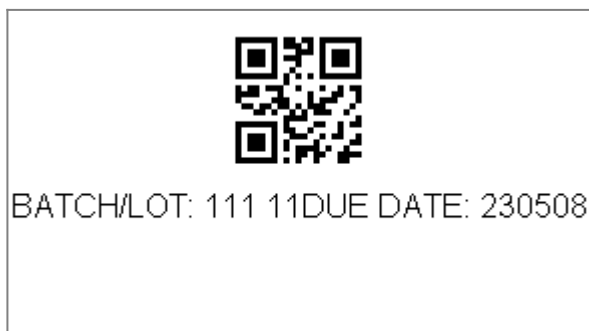
6.11.5 Barcode with Lot and Counter source



Step	Command Title	Command XML	Raw Data	Description
1	Create New Message	<CRTMSG>AP4</CRTMSG>	0x01,0x41,0x50,0x1F,<,C,R,T,M,S,G,>,A,P,4,</,C,R,T,M,S,G,>,0x04	Message name is AP4

Step	Command Title	Command XML	Raw Data	Description
2	Add Barcode	<pre><CBARC> <POS>10,10</POS> <BARTYPID>3</BARTYPID> <WCOEFF>2</WCOEFF> <HEIT>50</HEIT> <HRT>1</HRT> <INKSPRD>0</INKSPRD> <TIKNS>3</TIKNS> <CAPALN>0</CAPALN> <NEG>0</NEG> <MULTLIN>0</MULTLIN> <VARSRC> <CODFRM>-1</CODFRM> <DATATIT>BATCH/LOT</DATATIT> <AICOD>1</AICOD> <CLOT> <INDX>1</INDX> <POSF>1</POSF> <FONTIND>1</FONTIND> <SIZE>1</SIZE> </CLOT> </VARSRC> <VARSRC> <CODFRM>-1</CODFRM> <DATATIT>SSCC</DATATIT> <AICOD>0</AICOD> <CCONT> <PREF>0</PREF> <STRVAL>1</STRVAL> <ENDVAL>100</ENDVAL> <STEP>1</STEP> <PULS>1</PULS> <ADDPRF>1</ADDPRF> <SRC>0</SRC> <POSF></POSF> <FONTIND>1</FONTIND> <SIZE>1</SIZE> </CCONT> </VARSRC> <MARG>0,0</MARG> </CBARC></pre>	<pre>0x01,0x41,0x50,0x1F,<,C,B,A,R,C,>, <,P,O,S,>,1,0,,,1,0,<,/,P,O,S,>, <,B,A,R,T,Y,P,I,D,>,3,<,/,B,A,R,T,Y,P,I,D,>, <,W,C,O,E,F,F,>,2,<,/,W,C,O,E,F,F,>, <,H,E,I,T,>,5,0,<,/,H,E,I,T,>, <,H,R,T,>,1,<,/,H,R,T,>, <,I,N,K,S,P,R,D,>,0,<,/,I,N,K,S,P,R,D,>, <,T,I,K,N,S,>,3,<,/,T,I,K,N,S,>, <,C,A,P,A,L,N,>,0,<,/,C,A,P,A,L,N,>, <,N,E,G,>,0,<,/,N,E,G,>, <,M,U,L,T,L,I,N,>,0,<,/,M,U,L,T,L,I,N,>, <,V,A,R,S,R,C,>, <,C,O,D,F,R,M,>,-1,<,/,C,O,D,F,R,M,>, <,D,A,T,A,T,I,T,>,B,A,T,C,H,/,L,O,T,<,/,D,A,T,A,T,I,T,>, <,A,I,C,O,D,>,1,<,/,A,I,C,O,D,>, <,C,L,O,T,>, <,I,N,D,X,>,1,<,/,I,N,D,X,>, <,P,O,S,F,>,1,<,/,P,O,S,F,>, <,F,O,N,T,I,N,D,>,1,<,/,F,O,N,T,I,N,D,>, <,S,I,Z,E,>,1,<,/,S,I,Z,E,>, <,/,C,L,O,T,>, <,/,V,A,R,S,R,C,>, <,V,A,R,S,R,C,>, <,C,O,D,F,R,M,>,-1,<,/,C,O,D,F,R,M,>, <,D,A,T,A,T,I,T,>,S,S,C,C,<,/,D,A,T,A,T,I,T,>, <,A,I,C,O,D,>,0,<,/,A,I,C,O,D,>, <,C,C,O,N,T,>, <,P,R,E,F,>,0,<,/,P,R,E,F,>, <,S,T,R,V,A,L,>,1,<,/,S,T,R,V,A,L,>, <,E,N,D,V,A,L,>,1,0,0,<,/,E,N,D,V,A,L,>, <,S,T,E,P,>,1,<,/,S,T,E,P,>, <,P,U,L,S,>,1,<,/,P,U,L,S,>, <,A,D,D,P,R,F,>,1,<,/,A,D,D,P,R,F,>, <,S,R,C,>,0,<,/,S,R,C,>, <,P,O,S,F,>,<,/,P,O,S,F,>, <,F,O,N,T,I,N,D,>,1,<,/,F,O,N,T,I,N,D,>, <,S,I,Z,E,>,1,<,/,S,I,Z,E,>, <,/,C,C,O,N,T,>, <,/,V,A,R,S,R,C,>, <,M,A,R,G,>,0,,,0,<,/,M,A,R,G,>, <,/,C,B,A,R,C,>,0x04</pre>	<p>Barcode Type: EAN120 Position: (10,10) Cap Alignment: under barcode Height: 50 pixel Width: 2</p> <p>Variable Source: Lot-Number1 Lot1=111 11</p> <p>Variable Source: Counter User Defined Start: 1 End: 100 Step: 1 Puls: 1</p>
3	Save Message	<pre><SAVEMSG>4</SAVEMSG></pre>	<pre>0x01,0x41,0x50,0x1F,<,S,A,V,E,M,S,G,>,4,<,/,S,A,V,E,M,S,G,>,0x04</pre>	Save message in slot number 4
4	Send Message to Print	<pre><PRINTMSG>4</PRINTMSG></pre>	<pre>0x01,0x41,0x50,0x1F,<,P,R,I,N,T,M,S,G,>,4,<,/,P,R,I,N,T,M,S,G,>,0x04</pre>	Show print preview in the Monitoring page from Hx-Manager

6.11.6 Barcode(2D) with Text and Counter source



Step	Command Title	Command XML	Raw Data	Description
1	Create New Message	<CRTMSG>AP5</CRTMSG>	0x01,0x41,0x50,0x1F,<,C,R,T,M,S,G,>,A,P,5,<,/,C,R,T,M,S,G,>,0x04	Message name is AP5
2	Add Barcode	<CBARC> <POS>10,10</POS> <BARTYPID>26</BARTYPID> <WCOEFF>2</WCOEFF> <HRT>1</HRT> <INKSPRD>2</INKSPRD> <TIKNS>3</TIKNS> <CAPALN>0</CAPALN> <NEG>0</NEG> <MULTLIN>0</MULTLIN> <VARSRC> <CODFRM>1</CODFRM> <DATATIT>BATCH/LOT</DATATIT> <AICOD>10</AICOD> <CTEXT> <PREF></PREF> <TXT>abc</TXT> <POSF></POSF> <FONTIND>1</FONTIND> <SIZE>2</SIZE> </CTEXT> <VARSRC> <VARSRC> <CODFRM>1</CODFRM> <DATATIT>BEST BEFORE or BEST BY </DATATIT> <AICOD>15</AICOD> <CCONT> <PREF></PREF> <STRVAL>10</STRVAL> <ENDVAL>100</ENDVAL> <STEP>1</STEP> <PULS>1</PULS> <ADDPRF>0</ADDPRF> <SRC>0</SRC> <POSF></POSF> <FONTIND>1</FONTIND> <SIZE>2</SIZE> </CCONT> <VARSRC> <MARG>0,0</MARG> </CBARC>	0x01,0x41,0x50,0x1F,<,C,B,A,R,C,>, <,P,O,S,>,1,0,,1,0,<,/,P,O,S,>, <,B,A,R,T,Y,P,I,D,>,2,6,<,/,B,A,R,T,Y,P,I,D,>, <,W,C,O,E,F,F,>,2,<,/,W,C,O,E,F,F,>, <,H,R,T,>,1,<,/,H,R,T,>, <,I,N,K,S,P,R,D,>,2,<,/,I,N,K,S,P,R,D,>, <,T,I,K,N,S,>,3,<,/,T,I,K,N,S,>, <,C,A,P,A,L,N,>,0,<,/,C,A,P,A,L,N,>, <,N,E,G,>,0,<,/,N,E,G,>, <,M,U,L,T,L,I,N,>,0,<,/,M,U,L,T,L,I,N,>, <,V,A,R,S,R,C,>, <,C,O,D,F,R,M,>,1,<,/,C,O,D,F,R,M,>, <,D,A,T,A,T,I,T,>,B,A,T,C,H,/,L,O,T,<,/,D,A,T,A,T,I,T,>, <,A,I,C,O,D,>,1,0,<,/,A,I,C,O,D,>, <,C,T,E,X,T,>, <,P,R,E,F,>,<,/,P,R,E,F,>, <,T,X,T,>,a,b,c,<,/,T,X,T,>, <,P,O,S,F,>,<,/,P,O,S,F,>, <,F,O,N,T,I,N,D,>,1,<,/,F,O,N,T,I,N,D,>, <,S,I,Z,E,>,2,<,/,S,I,Z,E,>, <,/,C,T,E,X,T,>, <,/,V,A,R,S,R,C,>, <,V,A,R,S,R,C,>, <,C,O,D,F,R,M,>,1,<,/,C,O,D,F,R,M,>, <,D,A,T,A,T,I,T,>,B,E,S,T ,B,E,F,O,R,E ,o,r ,B,E,S,T ,B,Y, <,/,D,A,T,A,T,I,T,>, <,A,I,C,O,D,>,1,5,<,/,A,I,C,O,D,>, <,C,C,O,N,T,>, <,P,R,E,F,>,<,/,P,R,E,F,>, <,S,T,R,V,A,L,>,1,0,<,/,S,T,R,V,A,L,>, <,E,N,D,V,A,L,>,1,0,0,<,/,E,N,D,V,A,L,>, <,S,T,E,P,>,1,<,/,S,T,E,P,>, <,P,U,L,S,>,1,<,/,P,U,L,S,>, <,A,D,D,P,R,F,>,0,<,/,A,D,D,P,R,F,>, <,S,R,C,>,0,<,/,S,R,C,>, <,P,O,S,F,>,<,/,P,O,S,F,>, <,F,O,N,T,I,N,D,>,1,<,/,F,O,N,T,I,N,D,>, <,S,I,Z,E,>,2,<,/,S,I,Z,E,>, <,/,C,C,O,N,T,>, <,/,V,A,R,S,R,C,>, <,M,A,R,G,>,0,,0,<,/,M,A,R,G,>, <,/,C,B,A,R,C,>,0x04	Barcode Type: GS1QR_MEDIUM Position: (10,10) Width: 2 Variable Source: Lot-Number1 Lot1=111 11 Variable Source: Date/Time
3	Save Message	<SAVEMSG>5</SAVEMSG>	0x01,0x41,0x50,0x1F,<,S,A,V,E,M,S,G,>,5,<,/,S,A,V,E,M,S,G,>,0x04	Save message in slot number 5
4	Send Message to Print	<PRINTMSG>5</PRINTMSG>	0x01,0x41,0x50,0x1F,<,P,R,I,N,T,M,S,G,>,5,<,/,P,R,I,N,T,M,S,G,>,0x04	Show print preview in the Monitoring page from Hx-Manager

6.11.7 Counter, Text with Relative Position

Print Preview	Description
<p>99Text1-Related to X-max of counter</p> <p>Text2-Related to Y-max of counter</p>	Print preview at startup

Print Preview			Description	
<h1>100Text1-Related to X-max of counter</h1> <h1>Text2-Related to Y-max of counter</h1>			Print Preview after pulse on sensor	
Step	Command Title	Command XML	Raw Data	Description
1	Create New Message	<CRTMSG>AP-RelativeObjects</CRTMSG>	0x01,0x41,0x50,0x1F,<,C,R,T,M,S,G,>,A,P,-,R,e,l,a,t,i,v,e,O,b,j,e,c,t,s,<,/,C,R,T,M,S,G,>,0x04	Message name is AP-RelativeObjects
2	Add Counter	<CCONT> <OBJID>10001</OBJID> <POS>10,10</POS> <PREF></PREF> <STRVAL>99</STRVAL> <ENDVAL>1000</ENDVAL> <STEP>1</STEP> <PULS>1</PULS> <ADDPRF>0</ADDPRF> <SRC>0</SRC> <POSF></POSF> <FONTIND>2</FONTIND> <SIZE>3</SIZE> <MARG>0,0</MARG> <LANG>0</LANG> </CCONT>	0x01,0x41,0x50,0x1F,<,C,C,O,N,T,>,<,O,B,J,I,D,>,1,0,0,0,1,<,/,O,B,J,I,D,>,<,P,O,S,>,1,0,,,1,0,<,/,P,O,S,>,<,P,R,E,F,>,<,/,P,R,E,F,>,<,S,T,R,V,A,L,>,9,9,<,/,S,T,R,V,A,L,>,<,E,N,D,V,A,L,>,1,0,0,0,<,/,E,N,D,V,A,L,>,<,S,T,E,P,>,1,<,/,S,T,E,P,>,<,P,U,L,S,>,1,<,/,P,U,L,S,>,<,A,D,D,P,R,F,>,0,<,/,A,D,D,P,R,F,>,<,S,R,C,>,0,<,/,S,R,C,>,<,P,O,S,F,>,<,/,P,O,S,F,>,<,F,O,N,T,I,N,D,>,2,<,/,F,O,N,T,I,N,D,>,<,S,I,Z,E,>,3,<,/,S,I,Z,E,>,<,M,A,R,G,>,0,,,0,<,/,M,A,R,G,>,<,L,A,N,G,>,0,<,/,L,A,N,G,>,<,/,C,C,O,N,T,>,>,0x04	(Absolute Position) Start:99 End:1000
3	Add Text	<CTEXT> <XRID>10001</XRID> <YRID>10001</YRID> <SXAS>0</SXAS> <SYAS>1</SYAS> <PREF></PREF> <TXT>Text1-Related to X-max of counter</TXT> <FONTIND>2</FONTIND> <SIZE>3</SIZE> <MARG>0,0</MARG> </CTEXT>	0x01,0x41,0x50,0x1F,<,C,T,E,X,T,>,<,X,R,I,D,>,1,0,0,0,1,<,/,X,R,I,D,>,<,Y,R,I,D,>,1,0,0,0,1,<,/,Y,R,I,D,>,<,S,X,A,S,>,0,<,/,S,X,A,S,>,<,S,Y,A,S,>,1,<,/,S,Y,A,S,>,<,P,R,E,F,>,<,/,P,R,E,F,>,<,T,X,T,>,T,e,x,t,1,-,R,e,l,a,t,e,d ,t,o ,X-,m,a,x ,o,f ,c,o,u,n,t,e,r,<,/,T,X,T,>,<,F,O,N,T,I,N,D,>,2,<,/,F,O,N,T,I,N,D,>,<,S,I,Z,E,>,3,<,/,S,I,Z,E,>,<,M,A,R,G,>,0,,,0,<,/,M,A,R,G,>,<,/,C,T,E,X,T,>,>,0x04	(Relative Position to Counter on X-max)
4	Add Text	<CTEXT> <XRID>10001</XRID> <YRID>10001</YRID> <SXAS>1</SXAS> <SYAS>0</SYAS> <PREF></PREF> <TXT>Text2-Related to Y-max of counter</TXT> <FONTIND>2</FONTIND> <SIZE>3</SIZE> <MARG>0,0</MARG> </CTEXT>	0x01,0x41,0x50,0x1F,<,C,T,E,X,T,>,<,X,R,I,D,>,1,0,0,0,1,<,/,X,R,I,D,>,<,Y,R,I,D,>,1,0,0,0,1,<,/,Y,R,I,D,>,<,S,X,A,S,>,1,<,/,S,X,A,S,>,<,S,Y,A,S,>,0,<,/,S,Y,A,S,>,<,P,R,E,F,>,<,/,P,R,E,F,>,<,T,X,T,>,T,e,x,t,2,-,R,e,l,a,t,e,d ,t,o ,Y-,m,a,x ,o,f ,c,o,u,n,t,e,r,<,/,T,X,T,>,<,F,O,N,T,I,N,D,>,2,<,/,F,O,N,T,I,N,D,>,<,S,I,Z,E,>,3,<,/,S,I,Z,E,>,<,M,A,R,G,>,0,,,0,<,/,M,A,R,G,>,<,/,C,T,E,X,T,>,>,0x04	(Relative Position to Counter on Y-max)
5	Save Message	<SAVMSG>5</SAVMSG>	0x01,0x41,0x50,0x1F,<,S,A,V,E,M,S,G,>,5,<,/,S,A,V,E,M,S,G,>,0x04	Save message in slot number 5
6	Send Message to Print	<PRINTMSG>5</PRINTMSG>	0x01,0x41,0x50,0x1F,<,P,R,I,N,T,M,S,G,>,5,<,/,P,R,I,N,T,M,S,G,>,0x04	Show print preview in the Monitoring page from Hx-Manager

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