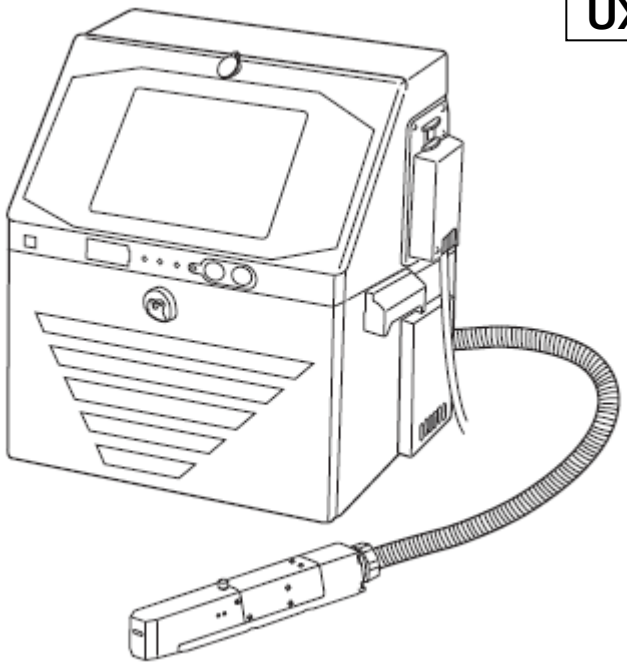
4th Edition

EtherNet/IP Communication Users Manual

HITACHI IJ Printer

Model UX

UX-161W
UX-161WP



EtherNet/IP
ODVA

Thank you for purchasing Hitachi IJ Printer.
This instruction manual describes the EtherNet/IP communication function.
For other features of the printer, please refer to Instruction manual or Technical manual.
After thoroughly reading the manual, properly store it for future reference.

HITACHI

■Notice

・For details of EtherNet / IP and notes, please refer to EtherNet / IP related equipment manual etc.

・IJ printer software is certified with EtherNet / IP authentication Composite test revision: CT14. Please note that the revision contents released from ODVA after CT 15 are not verified for operation.

■Trademark

"Ethernet" is a registered trademark of Xerox Corporation, USA.
"Windows" is registered trademarks of Microsoft Corporation, USA, in the USA and other countries.
"EtherNet/IP" is the product name of ODVA (Open DeviceNet Vendor Association).

Table of Contens

1. EtherNet/IP Function

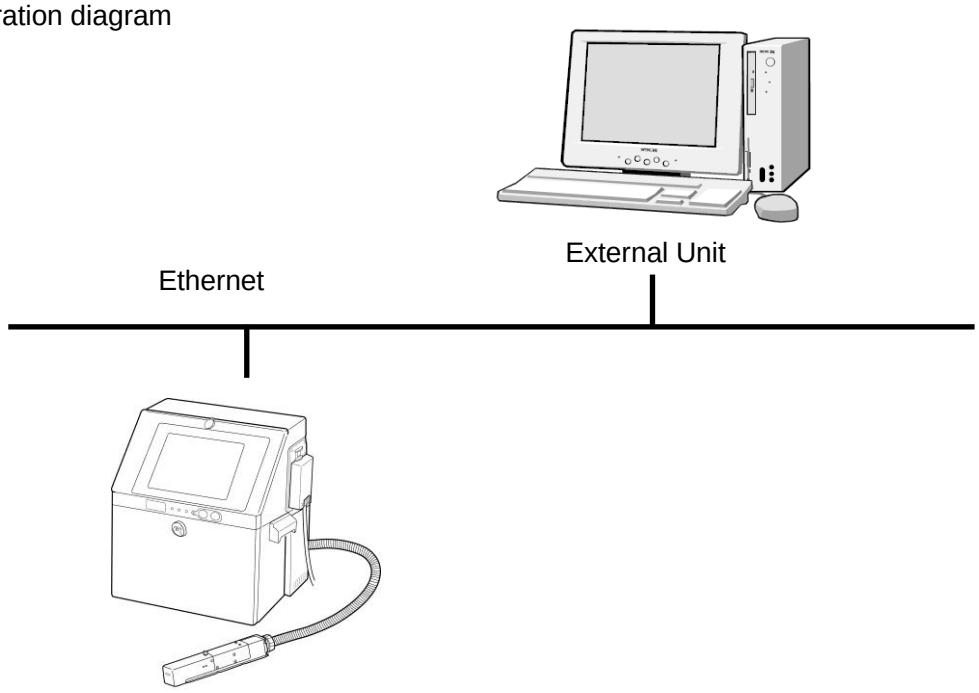
(1) Overview

- ●It is a function to communicate with an IJ printer via Ethernet from an external device using the network environment.
- ●EtherNet / IP is an industrial multi-vendor network using Ethernet, and its communication specification is adopted as an open standard in various industrial equipment.
- ●Messages that the IJ printer voluntarily outputs, such as status output and print content output, do not correspond.
- ●For the Ethernet / IP communication, it is necessary to develop a communication program on the external device side.

List of Function

No.	Function Name	Detail
1	Ethernet/IP Comminucation	Supports EtherNet/IP protocol. Because EtherNet/IP protocol is one type of protocol commonly used by industrial equipment, if EtherNet/IP communication is employed for other unit, you can create a communications program for the external unit using this asset.

(2) Configuration diagram



Standard Specification

Item	Specifications
Ethernet standards	IEEE802.3 compatible, 10BASE-T, 100BASE-T
Protocol	TCP/IP
Connection cable	Category 5 UTP or STP cable

(3) Notice

- ・The time from when the signal is transmitted from an external unit to when the IJ Printer receives the signal cannot be strictly defined in the same way as with serial communications.

2. Preparations

● If connecting the IJ Printer with external unit, use a LAN connection cable.

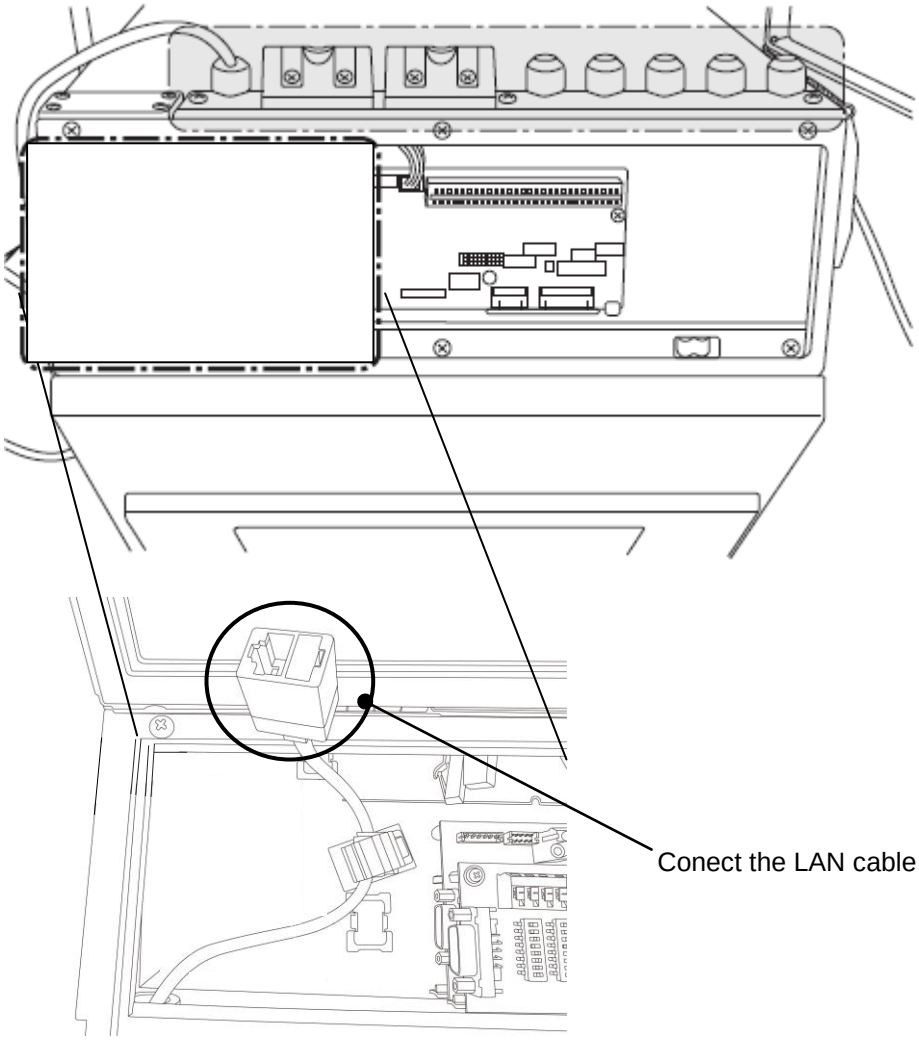
2.1 Network connection preparations

No.	Task	Remarks
1	You should obtain the IP address from the Information Systems Department of your company.	
2	You should consult with the Information Systems Department of your company concerning network settings such as gateway.	

2.2 IJ Printer preparations

No.	Task	Remarks
1	Connect the IJ Printer to the Ethernet (computer or hub, etc.) with a LAN cable.	Refer to 2.3 LAN cable connection.
2	Conduct a connection test if necessary.	Refer to 3.Connection test.
3	Set the communication environment on the IJ Printer's screen.	Refer to 4. Setting the communication environment.

2.3 LAN cable connection



[I/O section (with cover removed)]

2.4 Usage precautions

Functions listed below are not operational during the use of this function.

List of functions which are not operational during the use of this function

No	Screen	Item	Notes
1	Comm. env. setup	Buffer function	[Disable]Fixed
2		Data exchange	[Reflect at once]Fixed

Terminology	Explanation
IP address (Internet protocol address)	The IP address is a 32-bit ID number allotted to equipment connected to the Internet. The 32-bit number of the IP address is usually divided into four 8-bit segments for display. The IP address consists of a "network address" that identifies the network and a "host address" that identifies the individual pieces of equipment connected in the network.
Subnet mask	The subnet mask is a 32-bit number that defines what bits of the IP address are used for the network address. The network address segment of the IP address is determined by calculating the logical AND of the IP address and subnet mask.
Default gateway	The default gateway is equipment such as a router that functions as the "gateway" to the network. When there is communication between different networks and there is no unique path for the equipment to be accessed, the default gateway is used to connect them.
Port number	The port No. is the sub-address that specifies one of several programs running on equipment specified by the IP address. Port numbers 502 or 1024-65535 are used as the sub-address.
MAC address	It is a number registered to identify the device on the network. The MAC address consists of 12 digits like 01-23-45-67-89-AB

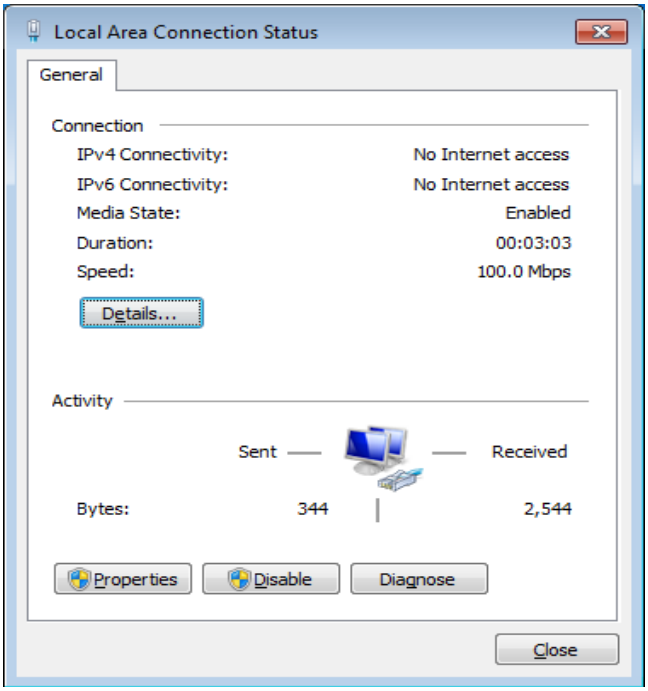
3. Connection test

Directly connect the IJ Printer to a PC and check the connection.

3.1 Procedure for connection test

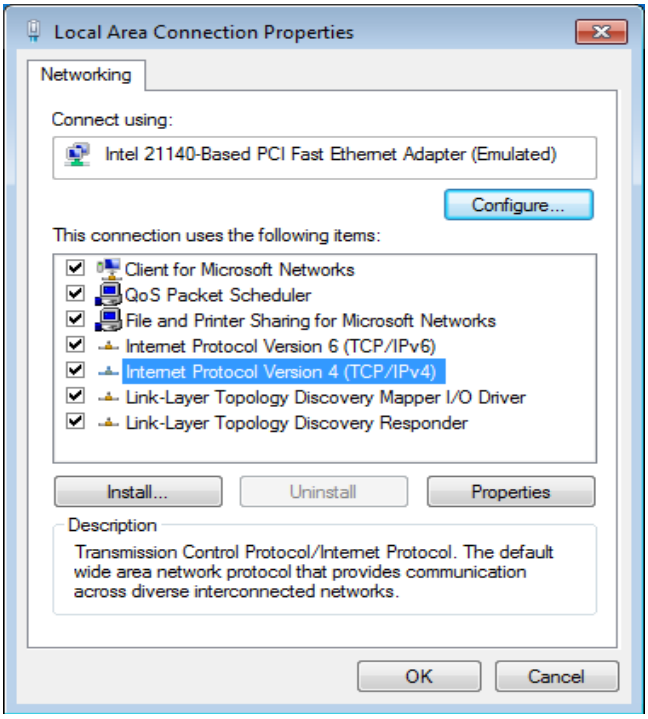
1 Directly connect the IJ Printer to the PC with a LAN cable.

2 Set the network settings of external unit by steps 2 to 5.
Click the Start menu, and double-click [Control Panel] > [View network status and tasks] > [Change adapter settings] > [Local Area Connection].
The following window is then displayed.

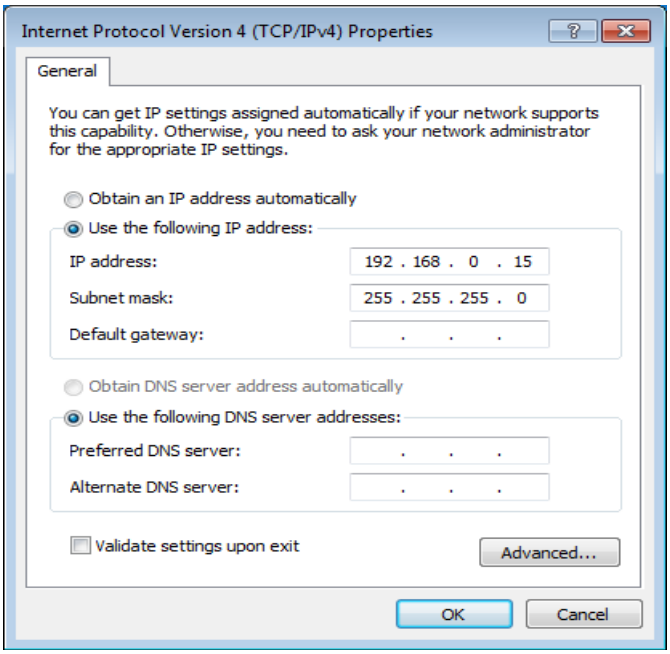


(Example using Windows 7 OS)

3 Click [Properties].

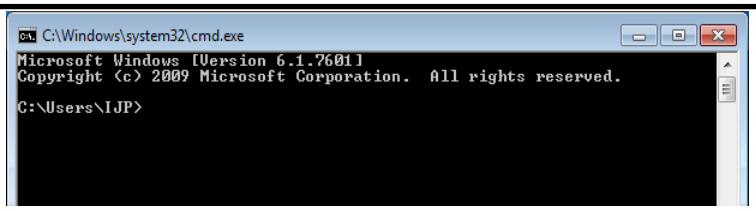


4 Click [Internet Protocol Version 4 (TCP/IPv4)].

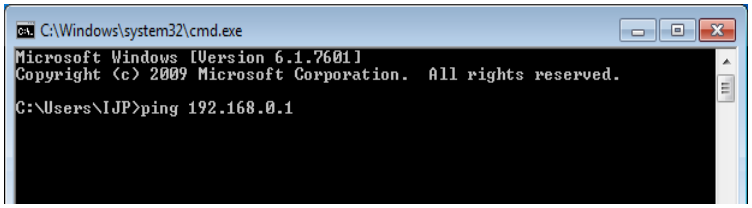


5 Select [Use the following IP address], and enter an IP address other than 192.168.0.1 and 192.168.0.255 (the example shown in the figure uses 192.168.0.15) and then enter 255.255.255.0 in the Subnet mask field. Click [OK].

6 Follow the steps below to confirm that the network connection is properly established. The following steps describe procedures for Windows 7.

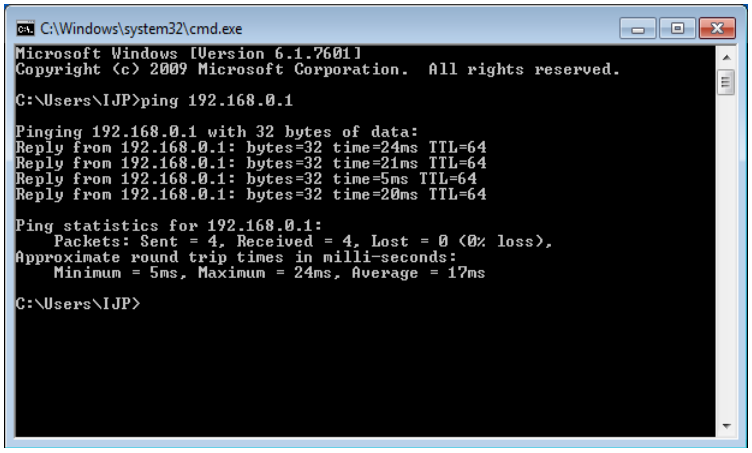


Select [Start Menu] > [All Programs] > [Accessories] > [Command prompt] to open the Command Prompt window.

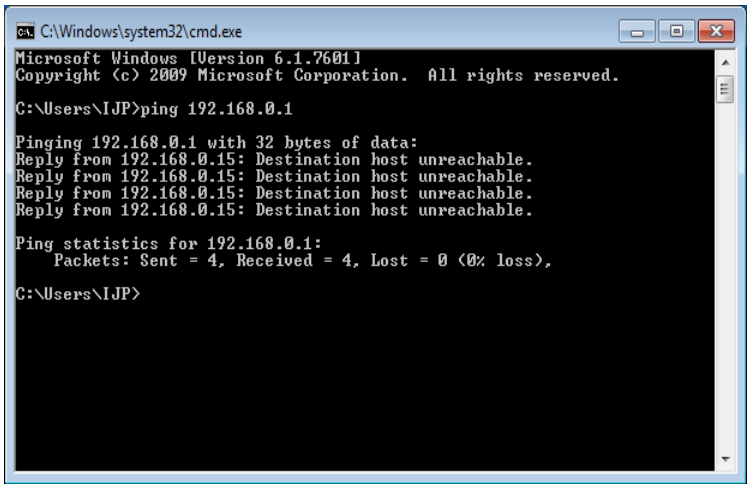


Type the following command:
Ping 192.168.0.1

Note:
This command is not case sensitive.



Byte=32 time=24 ..in four consecutive lines*1 then external unit settings are completed.
*1:
In default, the ping command returns the response for four times. For details of the ping command, type the following command: ping/help



If "Destination host unreachable." response is returned for the ping command, it means communication has not been established between the IJ Printer and external unit. Re-check the following:

[Check points]
* Have the communication settings of the IJ Printer been changed?
* Are the network settings of the external unit correct?

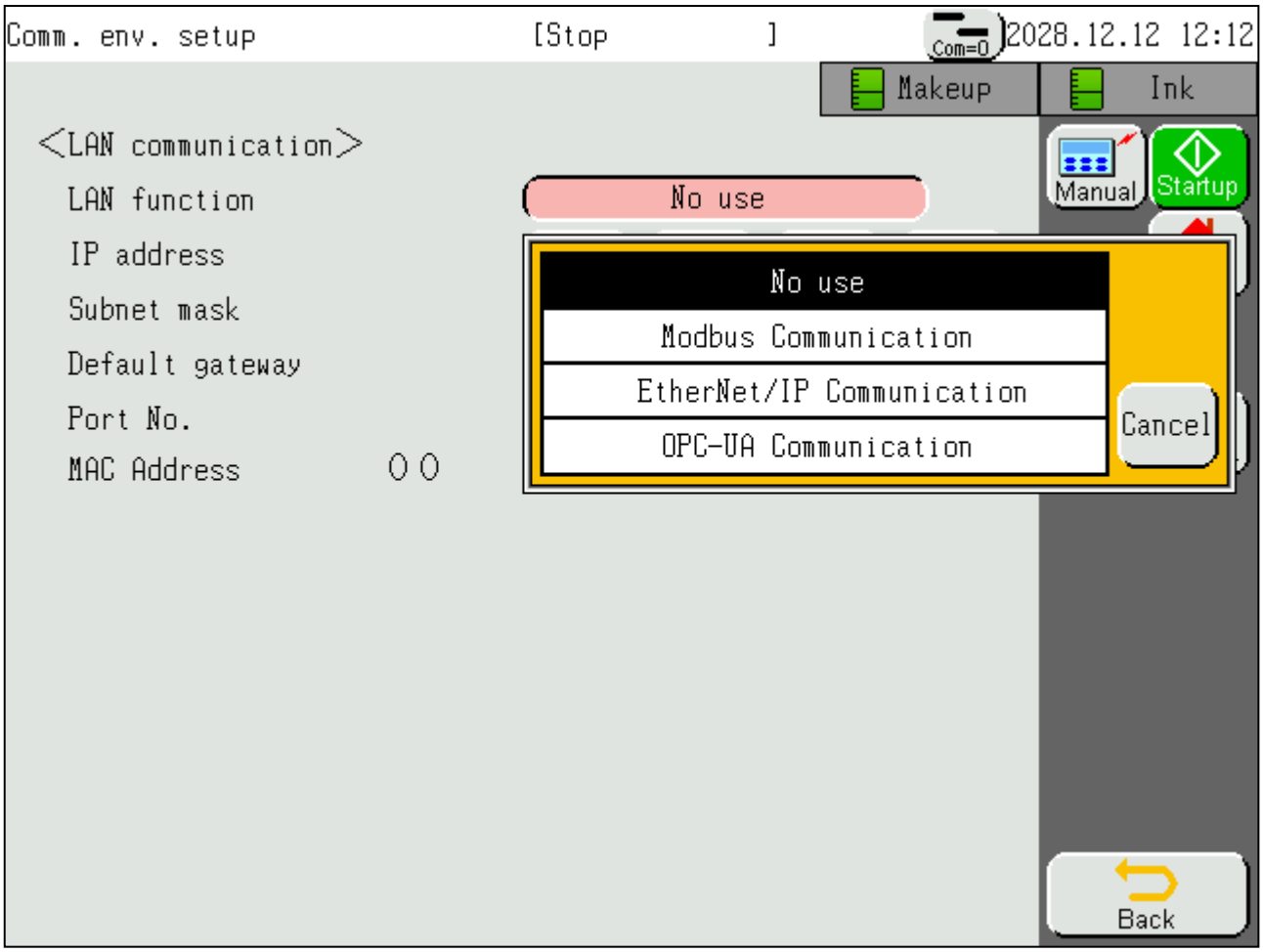
4. Setting the communication environment

4.1 Setting the communication environment

● Set the LAN function on communication environment setup screen to "EtherNet/IP communication".

Setting item of communication environment setup screen

Setting item	Description
LAN Function	● No use : Modbus communication function cannot be used. ● Modbus Communication : Modbus communication function can be used. ● EtherNet/IP Communication : EtherNet/IP communication function can be used. ● OPC-UA Communication : OPC-UA communication function can be used.



Example communication environment setup screen

5. EDS File

Please obtain it from the enclosed CD.

//IJP-Common/UX161.eds

6. Communication Specification

Specify the following Access Code, Class Code, Attribute, and control the operation of the IJ printer.

6.1 Access Code

There are three types of access codes, “Set”, “Get”, and “Service”.

List of Access Code

No.	Access Code	Detail
1	0x32 (Set)	Set the information specified for the IJ printer.
2	0x33 (Get)	Acquire information set in the IJ printer.
3	0x34 (Service)	Executes the function of the IJ printer.

(1) 0x32(Set)
The address of the target item and the setting content are transmitted from the external device to the IJ printer. The IJ printer updates the setting contents of the specified address.

(2) 0x33(Get)
Send the target address from the external device to the IJ printer. The IJ printer notifies the content of the specified address.

(3) 0x34(Service)
Send the target address from the external device to the IJ printer. The IJ printer performs the specified function.

(4) Other Code
When setting values other than 0x32 (Set), 0x33 (Get), 0x34 (Service), unsupported "0x2e" is transmitted.

Example) Case of Setting the character string to "ABC"
0x32 0x67 0x71 0x41 0x42 0x43 0x00
0x32=Set,
0x67=Print format function,
0x71=Print character string setting,
0x41, 0x42, 0x43=Character string "ABC"
0x00=Ending Code

6.2 Class Code

The class code has the following settings.

List of Class Code

Class Code	Function	Detail
0x7A	Index Function	Set / Get IJP item information.
0x66	Print data management func.	It sets and acquires setting values concerning print data management.
0x67	Print format func.	Set and acquire set values related to print format.
0x68	Print specification func.	Set and acquire setting values related to print specification function.
0x69	Calendar func.	Set and acquire setting values related to the calendar function.
0x6B	User pattarn func.	Sets and acquire the user pattern.
0x6C	Substitution rules func.	Sets and acquire the substitution rules.
0x71	Enviroment setting func.	Sets and acquire the environment setting value.
0x73	Unit Information func.	Acquire the unit information.
0x74	Operation management func.	Sets and acquire the operation management information.
0x75	IJP operation func.	It is a function to operate IJ printer.
0x79	Count func.	Set and acquire setting values related to the count function.

Example) Case of Getting character height
0x33 0x68 0x64
0x33=Get,
0x68=Printing specification function,
0x64=Getting of character height

6.3 Index Function (Class Code = 0x7A)

The index function is a management function of EtherNet / IP communication. There are functions such as specifying columns and Lines.
For the initial value of index function, refer to index function list below.
By turning off the power of the IJ printer, it returns to the initial value of index function.

List of Index Functions

Address		Function Name	Data Range	Initial Value	Input data		
Attribute	Access				Data	Data Length (byte)	Data Type
0x64	Set	Start / Stop Management Flag	2	2	2	1	int
	Get		0 to 1	0	Null	Null	Null
0x65	Set	Automatic reflection	0 to 1	0	0/1	1	int
	Get				Null	Null	Null
0x66	Set	Item Count	1 to 100	1	Item No.	2	int
	Get				Null	Null	Null
0x67	Set	Column	1 to 100	1	Colum No.	2	int
	Get				Null	Null	Null
0x68	Set	Line	1 to 6	1	Line No.	1	int
	Get				Null	Null	Null
0x69	Set	Character position (For Inter-character space)	1 to 1000	1	Character position	2	int
	Get				Null	Null	Null
0x6A	Set	Print data message number	1 to 2000	1	Message number	2	int
	Get				Null	Null	Null
0x6B	Set	Print data group data	1 to 99	1	Group No.	1	int
	Get				Null	Null	Null
0x6C	Set	Substitution rules Setting	1 to 99	1	Rule No.	1	int
	Get				Null	Null	Null
0x6D	Set	User Pattern Size	1 to 19	1	Size	1	int
	Get				Null	Null	Null
0x6E	Set	Count Block	1 to 8	1	Block No.	1	int
	Get				Null	Null	Null
0x6F	Set	Calendar block	1 to 8	1	Block No.	1	int
	Get				Null	Null	Null

Example) Case of specification of the first column
0x32 0x7A 0x67 0x03
0x32=Set,
0x7A=index function,
0x67=column,
0x03=column number

6.4 Print data management function (Calss Code = 0x66)

The print data management function has functions such as print data call and deletion of print data.

List of Print data namagement functions

Address		Function Name	Data Range	Input Data		
Attribute	Access			Data	Data Length (Byte)	Data Type
0x64	Service	Select message	1 to 2000	Message No.	2	short
0x65	Set	Store Print Data	Max 15 byte	Type + Group No + Nickname + "00"		short +char
0x67	Set	Delete Print Data	1 to 2000	Message No.	2	short
0x69	Set	Setting of Print Data Name	Max 15 byte	Number+ unicode (Print data name)+ "00"		short +char
0x6A	Get	Getting list of 10 messages from the specified message	1 to 2000	Number of the specified message	2	int
0x6B	Set	Setting of Print Data Number	1 to 2000	Data No + New No.	4	short+short
0x6C	Set	Change /Create group name	Max 14 byte	Group No.+unicode(Group Name)+00		short+char
0x6D	Set	Group deletion	1 to 99	Group No.	1	int
0X6F	Get	Getting list of 10 messege group from the specified group	1 to 99	Group No.	1	int
0x70	Set	Change group number	1 to 99	Group No+New group No.	2	int

Example) Case of Deletion of print data

0x34 0x66 0x67 0x01 0x2c

0x34 = Service,

0x66 = Print data management function,

0x67 = Deletion of print data,

0x01 0x2c = Message number 300

6.5 Print format function (Class Code = 0x67)

The print format function has functions such as column setting and step setting.

List of Print format functions

Address		Function Name	Data Range	Input			Notes
Attribute	Access			Data	Data Length (Byte)	Data Type	
0x64	Get	Get Message Name	-	Null	Null	Null	
0x65	Get	Get Print Item	-	Null	Null	Null	
0x66	Get	Get number of columns	1 to 100	Null	Null	Null	
0x67	Get	Get Format Type	1 to 3	Null	Null	Null	
0x69	Service	Insert column	0 to 99	Null	Null	Null	Set item number in "Column" of index function.
0x6A	Service	Delete column	0 to 99	Null	Null	Null	Set item number in "Column" of index function.
0x6B	Service	Add column	-	Null	Null	Null	
0x6C	Set	Set the number of print line and print format	0 to 1	Setting	1	int	
0x6D	Set	Format setup	0 to 2	Format Nunber *	1	int	0 : Individual setup, 1 : Overall setup , 2 : Free layout
0x6E	Service	Adding print items	-	Null	Null	Null	
0x6F	Service	Deletion of print items	1 to 100	Null	Null	Null	Set item number in "Item Count" of index function.
0x71	Get	Getting of print charcter string	Up to 750 digits (Unicode)	Null	Null	char	Set item number in "Item Count" of index function.
	Set	Setting of print character string		Char. string Unicode+"00"	Max 750	Null	
0x72	Get	Getting of line count	Line Count (1 to 6)	Null	Null	Null	Set item number in "Column" of index function.
	Set	Setting of line count		Line count	1	short	
0x73	Get	Getting of line spacing	0 to 2	Null	Null	Null	Set item number in "Column" of index function.
	Set	Setting of line spacing		Line spacing	1	int	
0x74	Get	Getting of dot matrix	1 to 16	Null	Null	Null	Set item number in "Item Count" of index function. Please refer to "7.1 Dot matrix Code" for dot matrix.
	Set	Setting of dot matrix		Dot matrix	1	int	
0x75	Get	Getting of Inter-character space	0 to 26	Null	Null	Null	Set item number in "Item Count" of index function.
	Set	Setting of Inter-character space		Inter-charcter space	1	char	
0x76	Get	Getting of charcter bold	Bold(1 to 9)	Null	Null	Null	Set item number in "Item Count" of index function.
	Set	Setting of charcter bold	1 to 9	Bold	1	int	
0x77	Get	Getting of barcode type	0 to 27	Null	Null	Null	Set item number in "Item Count" of index function. Please refer to "7.2 Barcode " for barcode.
	Set	Setting of barcode type		Barcode Number	1	int	
0x78	Get	Getting of Readable code	0 to 2	Null	Null	Null	Set item number in "Item Count" of index function. *Readable code number 0 : No identification code 1 : Size 5 x 5 2 : Size 5 x 7
	Set	Setting of Readable code		Readable code Number *	1	int	
0x79	Get	Getting of Prefix Code	0 to 99	Null	Null	Null	Set item number in "Item Count" of index function.
	Set	Setting of Prefix Code		Prefix Code	1	int	

Address		Function Name	Data Range	Input			Notes
Attribute	Access			Data	Data Length (Byte)	Data Type	
0x7A	Get	Getting of the X and Y coordinate values of free layout	X : 0 to 65535 Y : 0 to 47	Coordinate X, Y	Null	Null	Set item number in "Item Count" of index function.
	Set	Setting of the X and Y Coordinate values of free layout			X:2 Y1	short	
0x7B	Get	Getting of Inter-character space	0 to 99	character	2	int	Set start character position in "Character position" of index function.
	Set	Setting of Inter-character space		setting value+character count	3	int+int	
0x8A	Set	Add character at the end of cyrret string	Up to 750 digits (Unicode)	String to be added Unicode	Max 750	int	Set item number in "Item Count" of index function.
0x8D	Get	Getting of calendar offset	0 to 1	calendar offset	Null	Null	0:Offset from yesterday
	Set	Setting of calendar offset			1	char	1:From today
0x8E	Get	Getting of DIN print	0 to 1	DIN print	Null	Null	0: Disable
	Set	Setting of DIN print			1	char	1: Enable
0x8F	Get	Getting of EAN prefix	0 to 1	EAN prefix	Null	Null	0: Edit message
	Set	Setting of EAN prefix			1	char	1: Print format
0x90	Get	Getting of barcode printing	0 to 1	Barcode printing	Null	Null	0: Normal
	Set	Setting of bardcode printing			1	char	1: Reverse
0x91	Get	Getting of QR error correction level	0 to 1	QR error correction level	Null	Null	0: M (15%)
	Set	Setting of QR error correction level			1	char	1: Q (25%)

Example) Case of Format setting
0x32 0x67 0x6D 0x02
0x32 = Set,
0x67 = Print data format function,
0x6D = Format setting,
0x02 = format number

6.6 Print specification function (Class Code = 0x68)

The print specification function has functions such as character height setting and particle usage rate setting.

List of Print specification functions

Address		Function Name	Data Range	Input Data			Notes
Attribute	Access			Data	Data Length (Byte)	Data type	
0x64	Get	Getting of charcter height	0 to 99	Null	Null	Null	
	Set	Setting of charcter height		Character height	1	unsigned short	
0x65	Get	Getting of Ink drop use	1 to 16	Null	Null	Null	
	Set	Setting of Ink drop use		Ink drop use	1	unsigned char	
0x66	Get	Getting of High-Speed print	0 to 3	Null	Null	Null	
	Set	Setting of High-Speed print		High-Speed print Mode *	1	unsigned char	*High-Speed print mode 0:HM, 1:NM, 2:QM, 3:SM
0x67	Get	Getting of charcter width	0 to 3999	Null	Null	Null	
	Set	Setting of charcter width		charcter width	2	unsigned char	
0x68	Get	Getting of Character orientation	0 to 3	Null	Null	Null	
	Set	Setting of Character orientation		Character orientation *	1	unsigned int	*Character orientation 0:Normal/Forward, 1:Normal/Reverse, 2:Inverted/Forward, 3:Inverted/Reverse
0x69	Get	Getting of Print start delay count	0 to 9999	Null	Null	Null	
	Set	Setting of Print start delay count		Print start delay count	2	short	
0x6A	Get	Getting of Print start delay(Reverse) count	0 to 9999	Null	Null	Null	
	Set	Setting of Print start delay(Reverse) count		Print start delay count	2	short	
0x6B	Get	Getting of Product speed matching	0 to 2	Null	Null	Null	
	Set	Setting of Product speed matching		Product speed matching Mode *	1	unsigned char	*Product speed matching Mode 0:None, 1:Encoder, 2:Auto
0x6C	Get	Getting of Pulse rate division Factor	0 to 999	Null	Null	Null	
	Set	Setting of Pulse rate division Factor		Pulse rate division Factor	2	unsigned short	
0x6D	Get	Getting of Speed compensation	0 to 1	Null	Null	Null	
	Set	Setting of Speed compensation		Speed compensation Number	1	unsigned int	
0x6E	Get	Getting of Line Speed	0 to 9999	Null	Null	Null	
	Set	Setting of Line Speed		Line Speed	2	unsigned short	
0x6F	Get	Getting of distance between the printing head and the object to be printed on	0 to 99	Null	Null	Null	
	Set	Setting of distance between the printing head and the object to be printed on		distance	1	unsigned int	
0x70	Get	Getting of Print target width	0 to 99	Null	Null	Null	
	Set	Setting of Print target width		width	1	unsigned int	
0x71	Get	Getting of actual print width	0 to 99	Null	Null	Null	
	Set	Setting of actual print width		width	1	unsigned int	

Address		Function Name	Data Range	Input Data			Notes
Attribute	Access			Data	Data Length (Byte)	Data type	
0x72	Get	Getting of repeat count	0 to 9999	Null	Null	Null	
	Set	Setting of repeat count		repeat count	2	unsigned int	
0x73	Get	Getting of repeat intervals	0 to 99999	Null	Null	Null	
	Set	Setting of repeat intervals		repeat intervals	3	unsigned int	
0x74	Get	Getting of target sensor timer	0 to 999	Null	Null	Null	
	Set	Setting of target sensor timer		sensor timer	2	unsigned char	
0x75	Get	Getting of target sensor filter	0,1	Null	Null	Null	
	Set	Setting of target sensor filter		sensor filteer *	1	1	*sensor filteer 0 : Time setup, 1 : Until end of print
0x76	Get	Getting of target sensor filter setting value	0 to 9999	Null	Null	Null	
	Set	Setting of target sensor filter setting value		setting value	2	unsigned short	
0x77	Get	Getting of ink drop charge rule	0 to 2	Null	Null	Null	
	Set	Setting of ink drop charge rule		Ink drop charge rule	1	1	
0x78	Get	Getting of print start position adjustment value	-50 to +50	Null	Null	Null	
	Set	Setting of print start position adjustment value		Adjust value	2	short	

Example) Case of setting character height
0x32 0x68 0x64 0x15
0x32 = Set,
0x68 = Printing specification function,
0x64 = Character height setting,
0x15 = Character height

6.7 Calendar function (Class Code = 0x69)

The calendar function has functions necessary for calendar functions such as setting of offset (year) and acquisition of zero suppression (year).

List of calender functios

Address		Function Name	Data Range	Input data			Notes
Attribute	Access			Data	Digit	Data Type	
0x65	Get	Getting of Shift Code Condition	Null	Null	Null	Null	
0x66	Get	Getting of first calendar block number	0 to 8	Null	Null	Null	Set item number in "Item Count" of index function.
0x67	Get	Getting of calender block number in item	0 to 8	Null	Null	Null	Set item number in "Item Count" of index function.
0x68	Get	Getting of offset value(Year)	0 to 99	Null	Null	Null	Set item number in "Calendar block" of index function.
	Set	Setting of offset value(Year)		Offset value (Year)	1	unsigned short	
0x69	Get	Getting of offset value(Month)	0 to 99	Null	Null	Null	Set item number in "Calendar block" of index function.
	Set	Setting of offset value(Month)		Offset value (Month)	1	unsigned short	
0x6A	Get	Getting of offset value(Day)	0 to 1999	Null	Null	Null	Set item number in "Calendar block" of index function.
	Set	Setting of offset value(Day)		Offset value (Day)	2	unsigned short	
0x6B	Get	Getting of offset value(Hour)	-23 to 99	Null	Null	Null	Set item number in "Calendar block" of index function.
	Set	Setting of offset value(Hour)		Offset value (Hour)	2	short	
0x6C	Get	Getting of offset value(Minute)	-59 to 99	Null	Null	Null	Set item number in "Calendar block" of index function.
	Set	Setting of offset value(Minute)		Offset value (Minute)	2	short	
0x6D	Get	Getting of Zero-suppression value (Year)	0 to 2	Null	Null	Null	Set item number in "Calendar block" of index function.
	Set	Setting of Zero-suppression value (Year)		Mode No. *	1	unsigned char	*Mode No. 0 : Zero-suppression disableed
0x6E	Get	Getting of Zero-suppression value (Month)	0 to 2	Null	Null	Null	Set item number in "Calendar block" of index function.
	Set	Setting of Zero-suppression value (Month)		Mode No. *	1	unsigned char	*Mode No. 0 : Zero-suppression disableed
0x6F	Get	Getting of Zero-suppression value (Day)	0 to 2	Null	Null	Null	Set item number in "Calendar block" of index function.
	Set	Setting of Zero-suppression value (Day)		Mode No. *	1	unsigned char	*Mode No. 0 : Zero-suppression disableed
0x70	Get	Getting of Zero-suppression value (Hour)	0 to 2	Null	Null	Null	Set item number in "Calendar block" of index function.
	Set	Setting of Zero-suppression value (Hour)		Mode No. *	1	unsigned char	*Mode No. 0 : Zero-suppression disableed

Address		Function Name	Data Range	Input data			Notes
Attribute	Access			Data	Digit	Data Type	
0x71	Get	Getting of Zero-suppression value (Minute)	0 to 2	Null	Null	Null	Set item number in "Calendar block" of index function. *Mode No. 0 : Zero-suppression disableed
	Set	Setting of Zero-suppression value (Minute)		Mode No. *	1	unsigned char	
0x72	Get	Getting of Zero-suppression value (Weeks)	0 to 2	Null	Null	Null	Set item number in "Calendar block" of index function. *Mode No. 0 : Zero-suppression disableed
	Set	Setting of Zero-suppression value (Weeks)		Mode No. *	1	unsigned char	
0x73	Get	Getting of Zero-suppression value (Day of Week)	0 to 2	Null	Null	Null	Set item number in "Calendar block" of index function. *Mode No. 0 : Zero-suppression disableed
	Set	Setting of Zero-suppression value (Day of Week)		Mode No. *	1	unsigned char	
0x74	Get	Getting of Substitution rules (Year)	0 to 1	Null	Null	Null	Set item number in "Calendar block" of index function. * Mode No. 0 : Disable, 1 : Enable
	Set	Setting of Substitution rules (Year)		Mode No. *	1	unsigned char	
0x75	Get	Getting of Substitution rules (Month)	0 to 1	Null	Null	Null	Set item number in “Item Count” and "Calendar block" of index function. * Mode No. 0 : Disable, 1 : Enable
	Set	Setting of Substitution rules (Month)		Mode No. *	1	unsigned char	
0x76	Get	Getting of Substitution rules (Day)	0 to 1	Null	Null	Null	Set item number in "Calendar block" of index function. * Mode No. 0 : Disable, 1 : Enable
	Set	Setting of Substitution rules (Day)		Mode No. *	1	unsigned char	
0x77	Get	Getting of Substitution rules (Hour)	0 to 1	Null	Null	Null	Set item number in "Calendar block" of index function. * Mode No. 0 : Disable, 1 : Enable
	Set	Setting of Substitution rules (Hour)		Mode No. *	1	unsigned char	
0x78	Get	Getting of Substitution rules (Minute)	0 to 1	Null	Null	Null	Set item number in "Calendar block" of index function. * Mode No. 0 : Disable, 1 : Enable
	Set	Setting of Substitution rules (Minite)		Mode No. *	1	unsigned char	
0x79	Get	Getting of Substitution rules (Weeks)	0 to 1	Null	Null	Null	Set item number in "Calendar block" of index function. * Mode No. 0 : Disable, 1 : Enable
	Set	Setting of Substitution rules (Weeks)		Mode No. *	1	unsigned char	

Address		Function Name	Data Range	Input data			Notes
Attribute	Access			Data	Digit	Data Type	
0x7A	Get	Getting of Substitution rules (Day of week)	0 to 1	Null	Null	Null	Set item number in "Calendar block" of index function. * Mode No. 0 : Disable, 1 : Enable
	Set	Setting of Substitution rules (Day of week)		Mode No. *	1	unsigned char	
0x7B	Get	Getting of the time count start value	String 3 digits	Null	Null	Null	
	Set	Setting of the time count start value		3 digits (Unicode)	3	unsigned char	
0x7C	Get	Getting of the time count end value	String 3 digits	Null	Null	Null	
	Set	Setting of the time count end value		3 digits (Unicode)	3	unsigned char	
0x7D	Get	Getting of reset value of the time	String 3 digits	Null	Null	Null	
	Set	Setting of reset value of the time count.		3 digits (Unicode)	3	unsigned char	
0x7E	Get	Getting of reset time value	0 to 23	Null	Null	Null	
	Set	Setting of reset time value		Reset Time	1	unsigned char	
0x7F	Get	Getting of the update interval value of the time count.	1 to 6	Null	Null	Null	
	Set	Setting of the update interval value of the time count.		renewal period value	1	unsigned char	
0x80	Get	Getting of shift start time (Hour) value	0 to 23	Null	Null	Null	Set item number in "Calendar block" of index function.
	Set	Setting of shift start time (Hour) value		Start Time (Hour)	1	unsigned char	
0x81	Get	Getting of shift start time (Minute) value	0 to 59	Null	Null	Null	Set item number in "Calendar block" of index function.
	Set	Setting of shift start time (Minute) value		Start Time (Minute)	1	unsigned char	
0x82	Get	Getting of shift end time (Hour) value	0 to 23	Null	Null	Null	Set item number in "Calendar block" of index
0x83	Get	Getting of shift end time (Minute) value	0 to 59	Null	Null	Null	Set item number in "Calendar block" of index function.
	Set	Setting of shift end time (Minute) value		End Time (Hour)	1	unsigned char	
0x84	Get	Getting of string value	Up to10 digits		Null	Null	Set item number in index function.
	Set	Setting of string value		String (Unicode)	Max 10	unsigned char	

Example) Case of acquire leading calendar block number
0x33 0x69 0x66
0x33 = Get,
0x69 = Calendar function,
0x66 = Get first calendar block number

6.8 User Pattern function (Class Code = 0x6B)

User pattern function sets and acquires user pattern data.

List of user pattern functios

Address		Function Name	Data Range	Input Data			Notes
Attribute	Access			Data	Data Length (Byte)	Data Type	
0x64	Get	Getting of User Pattern(Fixed)	Dot Matrix : 1 to 19 Position No. : 0 to 199	Dot Matrix + Position No.	2	unsigned short + unsigned char	Refer to Technical manual " 5.3.8 User Pattern Character Transmission".
	Set	Setting of User Pattern(Fixed)		Dot Matrix + Position No. + Pattern	Dot Matrix:1 to 19 Position No.:0 to 199 Pattern:Max 998 bytes		
0x65	Get	Getting of User Pattern(Free)	Vertical Size: (1 to 32) Horizontial Size: (1 to 320) Position No. (0 to 49)	Vert.Size + Hori. Size + Position No.		unsigned short + unsigned char	Refer to Technical manual " 5.3.8 User Pattern Character Transmission".
	Set	Setting of User Pattern(Free)		Vert. Size + Hori. Size + Position No. + Pattern	Vertical Size : 1 Horizontial Size : 2 Position No. : 1 Pattern:Max 996 bytes		

Example) Case of acquire user Pattern (fixed) (Dot Matrix 4x5, pattern number 0)
0x33 0x6B 0x64 0x01 0x00

0x33 = Get
0x6B = UserPattern function
0x64 = Get user pattern (fixed) content
0x01 = Dot Matrix 4x5
0x00 = registed pattern number 0

6.9 Substitution rules function (Class Code = 0x6C)

The substitution rule function has functions such as obtaining the substitution rule number and the substitution rule name.

List of substitution rules functios

Address		Function Name	Data Range	Input data			Notes
Attribute	Access			Data	Data Length (Byte)	Data Type	
0x64	Get	Getting of substitution rules number	1 to 99	Null	Null	Null	Set item number in "Substitution rules Setting" of index function.
	Set	Setting of substitution rules number		Number	1	unsigned char	
0x65	Get	Getting of substitution rules name	-	Null	Null	Null	Set item number in "Substitution rules Setting" of index function.
	Set	Setting of substitution rules name	up to 13 digits	Charcter+ "00"	1	unsigned char	
0x66	Get	Gettinig of the start year	-	Null	Null	Null	Set item number in "Substitution rules Setting" of index function.
	Set	Settinig of the start year	2000 to 2099	Year Data	2	unsigned char	
0x67	Get	Getting the character string of the substitution rules value(Year)	0 to 23	Null	Null	Null	Set item number in "Substitution rules Setting" of index function.
	Set	Setting the character string of the substitution rules value(Year)		Number+ Charcter+ "00"	Max 3	unsigned short unsigned char	
0x68	Get	Getting the character string of the substitution rules value(Month)	1 to 12	Null	Null	Null	Set item number in "Substitution rules Setting" of index function.
	Set	Setting the character string of the substitution rules value(Month)		Number+ Charcter+ "00"	Max 4	unsigned short unsigned char	
0x69	Get	Getting the character string of the substitution rules value(Day)	1 to 31	Null	Null	Null	Set item number in "Substitution rules Setting" of index function.
	Set	Setting the character string of the substitution rules value(Day)		Number+ Charcter+ "00"	Max 3	unsigned short unsigned char	
0x6A	Get	Getting the character string of the substitution rules value(Hour)	0 to 23	Null	Null	Null	Set item number in "Substitution rules Setting" of index function.
	Set	Setting the character string of the substitution rules value(Hour)		Number+ Charcter+ "00"	Max 3	unsigned short unsigned char	
0x6B	Get	Getting the character string of the substitution rules value(Minute)	0 to 59	Null	Null	Null	Set item number in "Substitution rules Setting" of index function.
	Set	Setting the character string of the substitution rules value(Minute)		Number+ Charcter+ "00"	Max 4	unsigned short unsigned char	
0x6C	Get	Getting the character string of the substitution rules value(Week Number)	1 to 53	Null	Null	Null	Set item number in "Substitution rules Setting" of index function.
	Set	Setting the character string of the substitution rules value(Week Number)		Number+ Charcter+ "00"	Max 4	unsigned short unsigned char	
0x6D	Get	Getting the character string of the substitution rules value (The day of the week)	1 to 7	Null	Null	Null	Set item number in "Substitution rules Setting" of index function.
	Set	Setting the character string of the substitution rules value (The day of the week)		Number+ Charcter+ "00"	Max 4	unsigned short unsigned char	

Example) Case of setting substitution rules value (Year)

0x32 0x6C 0x67 0x00 0x41 0x42 0x00

0x32 = Set,
0x6C = Substitution rules function
0x67 = Substitution rules value (Year) setting
0x00 = Year number
0x41 = Unicode of character “A”
0x42 = Unicode of character “B”
0x00 = Ending symbol.

6.10 Enviroment setting function (Class Code = 0x71)

The environment setting function has a function to acquire the current time setting and the setting value of the circulation control

List of environment setting functios

Address		Function Name	Data Range	Input Data			Notes
Attribute	Access			Data	Data Length (Byte)	Data Type	
0x65	Get	Getting of current time	-	-	-	-	
	Set	Setting of current time		-	7	struct	
0x66	Get	Getting of calendar date and time	-	-	-	-	
	Set	Setting of calendar date and time		-	7	struct	
0x67	Get	Getting of calendar date and time availability. (Getting of current time availability.)	1 to 2	-	-	-	*Setting value 1 : Same as current time 2 : clock stop
	Set	Setting of calendar date and time availability. (Setting of current time availability.)		Setting Value *	1	unsigned char	
0x68	Get	Getting of clock system	1 to 2	-	-	-	*Setting value 1 : 24-hour clock 2 : 12-hour clock
	Set	Setting of clock system		Setting Value *	11	unsigned char	
0x69	Get	Getting of user enviroment information	-	-	-	-	
0x6A	Get	Getting of circulation control setting value	-	-	-	-	
0x6B	Set	Setting of usage time of the circulation control	0 to 65099	Usage time	2	unsigned char	
0x6C	Set	Reset of usage time of the circulation control	-	-	-	-	

Example) Case of acquire current time

0x33 0x71 0x65

0x33 = Get

0x71 = Enviroment setting function

0x65 = Getting of current time

6.11 Unit information function (Class Code = 0x73)

The unit information acquisition function includes acquisition of a model name and acquisition of an ink name.

List of unit information functios

Address		Function Name	Data Range	Input Data		
Attribute	Access			Data	Data Length (Byte)	Data Type
0x64	Get	Getting of unit information	-	-	64 byte	unsigned char
0x6B	Get	Getting of model name information	Up to 12 byte	-	-	unsigned char
0x6C	Get	Getting of serial number	Up to 8 digits	-	-	unsigned char
0x6D	Get	Getting of ink name	Up to 28 digits	-	-	unsigned char
0x6E	Get	Getting of input mode information	1 to 2	-	-	unsigned char
0x6F	Get	Getting of maximum character count	240, 1000	-	-	unsigned short
0x70	Get	Getting of maximum registered message count	300, 2000	-	-	unsigned short
0x71	Get	Getting of Barcode information	1 to 2	-	-	unsigned short
0x72	Get	Getting of usable character size information	-	-	-	unsigned char
0x73	Get	Getting of the maximum calendar and count numeber	3,8	-	-	unsigned char
0x74	Get	Getting of maimum substitution rule count	48,99	-	-	unsigned char
0x75	Get	Getting of shift code and time count information	0,99	-	-	unsigned char
0x76	Get	Getting of chimney and DIN print information	-	-	-	unsigned char
0x77	Get	Getting of maximum number of input line count	-	-	-	unsigned char
0x78	Get	Getting of basic software version information	-	-	-	unsigned char
0x79	Get	Getting of controller software version information	-	-	-	unsigned char
0x7A	Get	Getting of engine M software version information	-	-	-	unsigned char
0x7B	Get	Getting of engine S software version information	-	-	-	unsigned char
0x7C	Get	Getting of first langage version information	-	-	-	unsigned char
0x7D	Get	Getting of second langage version information	-	-	-	unsigned char
0x7E	Get	Getting of software option version information	-	-	-	unsigned char

Example) Case of acquire serial number of IJP
0x33 0x73 0x6C
0x33 = Get
0x73 = Unit information function
0x6C = Get serial number

6.12 Operation management function (Class Code = 0x74)

The operation management function has functions such as acquisition of operation time and acquisition of alarm time.

List of operation management functios

Address		Function Name	Data Range	Input Data		
Attribute	Access			Data	Data Length (Byte)	Data Type
0x64	Get	Getting of operating management information	-	-	-	unsigned short
0x65	Set	Setting of ink Operating time	0 to 9999	time	2	unsigned short
	Get	Getting of ink operating time	-	-	-	unsigned short
0x66	Set	Setting of alarm time	0 to 9999	time	2	unsigned short
	Get	Getting of alarm time	-	-	-	unsigned short
0x67	Set	Setting of print count	0 to 9999	time	2	unsigned short
	Get	Getting of print count	-	-	-	unsigned short
0x68	Get	Getting of communication environment information	-	-	-	unsigned short
0x69	Get	Getting of cumulative operation time	-	-	-	unsigned short
0x6A	Get	Getting of ink and makeup name	-	-	-	unsigned short
0x6B	Get	Getting of ink viscosity	-	-	-	unsigned short
0x6C	Get	Getting of ink pressure	-	-	-	unsigned short
0x6D	Get	Getting of ambient temperature	-	-	-	unsigned short
0x6E	Get	Getting of deflection voltage	-	-	-	unsigned short
0x6F	Get	Getting of "Excitation V-ref." setup value	-	-	-	unsigned short
0x70	Get	Getting of excitation frequency	-	-	-	unsigned short

Example) Case of acquire ink operation time of IJP

0x33 0x74 0x69

0x33 = Get

0x74 = Operation management function

0x69 = Get ink operation time

6.13 IJP operation function (Class Code = 0x75)

The IJP operation function has functions such as remote operation and deflection voltage control.

List of IJP operation functions

Address		Function Name	Data Range	Input data		
Attribute	Access			Data	Data Length (Byte)	Data Type
0x64	Get	Getting of remote operation information	-	Null	Null	struct
0x66	Get	Getting of falut and warning history	-	Null	Null	struct
0x67	Get	Getting of operating condition	-	Null	Null	struct
0x68	Get	Getting of warning condition	-	Null	Null	struct
0x6A	Get	Getting of date and time information on occurrence of an fault or warning.	-	Null	Null	struct
0x6B	Get	Getting of error code	-	Null	Null	struct
0x6C	Service	Start Remote Operation	-	Null	Null	Null
0x6D	Service	Stop Remote Operation	-	Null	Null	Null
0x6E	Service	Deflection voltage control	-	Null	Null	Null
0x6F	Get	Getting of online/offline state	0 to 1	state	1	int
	Set	Setting of online/offline state		state	1	int

Example) Case of Deflection voltage control

0x34 0x75 0x6e

0x34 = Service,

0x75 = IJPoperation function,

0x6e = Deflection voltage control

6.14 Count function (Class Code = 0x79)

The count function has functions such as count condition range specification and update unit specification.

List of count functions

Address		Function Name	Data Range	Input data			Notes
Attribute	Access			Data	Digit	Data Type	
0x66	Get	Getting of the number of count blocks in the item.	0 to 8	Null	Null	Null	Set item number in "Item Count" of index function.
0x67	Get	Getting of the initial value	String 20 digits	Null	Null	Null	Set item number in "Count block" of index function.
	Set	Setting of the initial value		Initial value	Up to 20 bytes	unsigned char	
0x68	Get	Getting of count condition range	String 20 digits	Null	Null	Null	Set item number in "Count block" of index function.
	Set	Setting of count condition range 1		Initial value	20 bytes	unsigned char	
0x69	Get	Getting of count condition range	String 20 digits	Null	Null	Null	Set item number in "Count block" of index function.
	Set	Setting of count condition range 2		Initial value	20 bytes	unsigned char	
0x6A	Get	Getting of update unit (Halfway)	0 to 999999	Null	Null	Null	Set item number in "Count block" of index function.
	Set	Setting of undate unit (Halfway)		Setting value	20 bytes	unsigned char	
0x6B	Get	Getting of update unit (Unit)	0 to 999999	Null	Null	Null	Set item number in "Count block" of index function.
	Set	Setting of undate unit (Unit)		Setting value	20 bytes	unsigned char	
0x6C	Get	Getting of increment value	0 to 99	Null	Null	Null	Set item number in "Count block" of index function.
	Set	Setting of increment value		Setting value	2	unsigned char	
0x6D	Get	Getting of direction value	1 to 2	Null	Null	Null	Set item number in "Count block" of index function. * Setting value 1 : Up, 2 : Down
	Set	Setting of direction value		Setting value *	1	1	
0x6E	Get	Getting of the value of jump from	String 20 digits	Null	Null	Null	Set item number in "Count block" of index function.
	Set	Setting of the value of jump from		Setting value	20 bytes	unsigned char	
0x6F	Get	Getting of the value of jump to	String 20 digits	Null	Null	Null	Set item number in "Count block" of index function.
	Set	Setting of the value of jump to		Setting value	20 bytes	unsigned char	
0x70	Get	Getting of reset value	String 20 digits	Null	Null	Null	Set item number in "Count block" of index function.
	Set	Setting of reset value		Setting value	20 bytes	unsigned char	
0x71	Get	Getting of the type of reset signal (Option).	0 to 2	Null	Null	Null	Set item number in "Count block" of index function. * Signal value 0 : None, 1 : Signal 1, 2 : Signal 2
	Set	Setting of the type of reset signal (Option).		Signal value *	1	unsigned char	
0x72	Get	Getting of availability of external count (Option).	0 to 1	Null	Null	Null	Set item number in "Count block" of index function. *Setting Value 0 : Disable 1 : Enable
	Set	Setting of availability of external count (Option).		Setting value *	1	unsigned char	
0x73	Get	Getting of availability of Zero-suppression.	0 to 1	Null	Null	Null	Set item number in "Count block" of index function. *Setting Value 0 : Disable 1 : Enable
	Set	Setting of availability of Zero-suppression.		Setting value *	1	unsigned char	
0x74	Get	Getting of the count multiplier	0 to 9999999999	Null	Null	Null	Set item number in "Count block" of index function.
	Set	Setting of the count multiplier		Setting value	Up to 10 bytes	unsigned char	
0x75	Get	Getting of count skip	String 5 digits	Null	Null	Null	Set item number in "Count block" of index function.
	Set	Setting of count skip		Setting value	Up to 4 bytes	unsigned char	

Example) Case of setting initial value to “AAA”

0x32 0x79 0x67 0x41 0x41 0x41 0x00

0x32 = Set,
0x79 = Count function
0x67 = Getting of the Initial value
0x41 = Unicode of character “A”
0x41 = Unicode of character “A”
0x41 = Unicode of character “A”
0x00 = Ending symbol.

7. IJ Printer Detail Code

7.1 Automatic reflection of Index function

7.1.1 Instruction

Automatic reflect can be set to 2 values: 0 or 1.

The value 0 means automatic reflect is enabling. In this situation, the setting value which is sent from external divice through EtherNet/IP will be reflected on IJ-printer directly after IJ-printer receives it.

The value 1 means automatic reflect is disabling. In this situation, the setting value which is sent from external divece through EtherNet/IP will not be reflected on IJ-printer directly, the setting will be hold in IJ-printer memory until IJ-Printer receives “star/stop management flag = 2”, then the setting will be reflected in IJ-printer. With this function users can change multiple settins of IJ Printer at the same time.

The default value of automatic reflection is 0, the automatic reflext will return to default value once IJ-Printer is power off. Also, the setting values which are not reflected on IJ-printer will be cleared automatically once IJ-printer is power off.

7.1.2 Examples

Case 1) Automatic reflection value is 0.

●Original setting of the IJ Peinter is as follows:

Character height of IJ-printer is 90.
Character width of IJ-printer is 2.
LAN function is set as EtherNet/IP communication.
IJ-Printer is in online state.

Step 1: Send command “change character height to 16” to IJ-printer.
(“0x32 ” “0x68” “0x64” with setting value “0x10”)

↓

●The character height of IJ-printer changes to 16(0x10)

↓

Step 2: Send command “change character width to 50” to IJ-printer
(“0x32 ” “0x68” “0x67” with setting value “0x32”)

↓

●The character width of IJP changes to 50(0x32).

Case 2) Automatic reflection value is 1.

●Original setting of the IJ Peinter is as follows:

Character height of IJ-printer is 90.
Character width of IJ-printer is 2.
LAN function is set as EtherNet/IP communication.
IJ-Printer is in online state.

Step 1: Send command “disable automatic reflection” to IJ-printer.
(“0x32” “0x7A” “0x65” with setting value “1”)
Send command “change character height to 16” to IJ-printer.
(“0x32” “0x68” “0x64” with setting value “0x10”)

↓

○ Cahracter height of IJ-printer doesn’t change.

↓

Send command “change character width to 50” to IJ-printer
(“0x32” “0x68” “0x67” with setting value “0x32”)

↓

○ Cahracter width of IJ-printer doesn’t change.

↓

Step 3: Send comfirmation command “star/stop management flag = 2” to IJ-printer.
(“0x32” “0x7A” “0x65” with setting value “2”)

↓

●The character height of IJ-printer changes to 16(0x10) and character width of IJP changes to 50(0x32).

7.2 Message Editing

7.2.1 Instruction

There are 2 message editing fuction:
1. Set print character string. (0x32 0x67 0x71)
2. Add characters at the end of current print string. (0x32 0x67 0x8A)

You can edit print message from the first character by using *"Set print character string"* function. Also, you can use*"Add characters to the end of current print message"* function to add characters to current print message without changing the current existing characters.

7.2.2 Examples

Case 1) Edit message from the first character

●Original setting of the IJ Peinter is as follows:
Current print message: ABC123

Step 1: Send command "change current message to Test1" to IJ-printer.
("0x32" "0x67" "0x71" with setting value "0x54" "0x65" "0x72" "0x73" "0x31" "0x00")
↓
●Current print message changes to: Test1
Unicode of Test1+ ending code
↓
Step 2: Send command "change current message to Test2" to IJ-printer.
("0x32" "0x67" "0x71" with setting value "0x54" "0x65" "0x72" "0x73" "0x32" "0x00")
↓
●Current print message changes to: Test2
Unicode of Test2+ ending code

Case 2) Add characters to current print message

●Original setting of the IJ Peinter is as follows:
Current print message: ABC123

Step 1: Send command "Add Test1 to current message" to IJ-printer.
("0x32" "0x67" "0x8A" with setting value "0x54" "0x65" "0x72" "0x73" "0x31" "0x00")
↓
Unicode of Test1+ ending code
●Current print message change to: ABC123Test1
↓
Step 2: Send command "Add Test2 to current message" to IJ-printer.
("0x32" "0x67" "0x8A" with setting value "0x54" "0x65" "0x72" "0x73" "0x31" "0x00")
↓
Unicode of Test2+ ending code
●Current print message change to: ABC123Test1Test2

Even though the function "Set print character string" has length limitation of setting value. By using these two function users can edit 1000 character message.

7.3 Special characters

7.3.1 Calendar characters

Calendar characters are supported by function *“Set print character string”* and *“Add characters at the end of current message”.* To distinguish from the general characters, calendar characters need to be stored in {} as follows

YYYYMMDDhhmm is expressed as {{YYYYMMDDhhmm}}.

YYYY/MM/DD/hh:mm is expressed as {{YY}/{MM}/{DD}/{hh}:{mm}}.

Examples

Case 1) Edit message which contains calendar characters

●Original setting of the IJ Peinter is as follows:

Current print message: ABC123

Step 1: Send command “change current message to calendar characters YYMMDDhh ” to IJ-printer.

(“0x32” “0x67” “0x71” with setting value “0x7B” “0x7B” “0x59” “0x59” “0x4D” “0x4D” “0x44” “0x44” “0x68” “0x68” “0x7D” “0x7D” “0x00”)

Unicode of {{YYMMDDhh}}+ ending code

↓

●Current print message changes to calendar characters : YYMMDDhh

↓

Step 2: Send command “add current message with calendar characters mm” to IJ-printer.

(“0x32” “0x67” “0x8A” with setting value “0x7B” “0x7B” “0x6D” “0x6D” “0x7D” “0x7D” “0x00”)

Unicode of {{mm}}+ ending code

↓

●Current print message changes to calendar characters: YYMMDDhhmm

7.3.2 Count characters

Count characters are supported by function *“Set print character string”* and *“Add characters at the end of current message”.* To distinguish from the general characters, count characters need to be stored in {} as follows

CCCC is expressed as {{CCCC}}.

C/C/C/C is expressed as {{C}/{C}/{C}/{C}}.

Examples

Case 1) Edit message which contains calendar characters

●Original setting of the IJ Peinter is as follows:

Current print message: ABC123

Step 1: Send command “change current message to count characters CCCC” IJ-printer.

(“0x32” “0x67” “0x71” with setting value “0x7B” “0x7B” “0x43” “0x43” “0x43” “0x43” “0x7D” “0x7D” “0x00”)

Unicode of {{CCCC}}+ ending code

↓

●Current print message changes to count characters : CCCC

↓

Step 2: Send command “Add current message with count characters CC” IJ-printer.

(“0x32” “0x67” “0x8A” with setting value “0x7B” “0x7B” “0x43” “0x43” “0x7D” “0x7D” “0x00”)

Unicode of {{CC}}+ ending code

↓

●Current print message changes to count characters: CCCCCC

7.3.3 Fixed user pattern characters

Fixed user patterns are supported by function *"Set print character string"* and *"Add characters at the end of current message".* To distinguish from the general characters, fixed user partern characters are expressed as {X/pattern nimber} like following shows.

{X/0} {X/2} {X/3} … {X/197}{X/198}

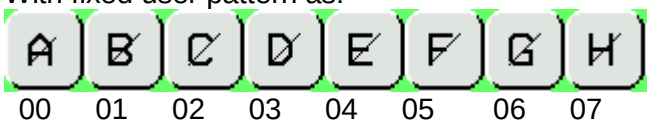
Examples

Case 1) Edit message which contains calendar characters

●Original setting of the IJ Peinter is as follows:

Current print message: ABC123

With fixed user pattern as:



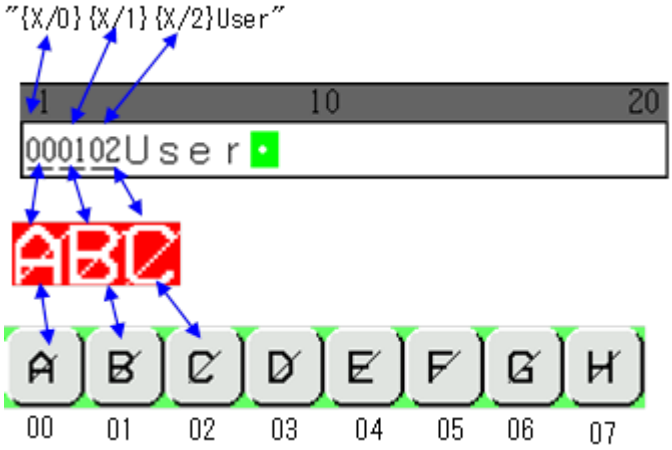
Step 1: Send command "change current message with fixed user pattern characters to 00 01 02User" to IJ-printer.

("0x32" "0x67" "0x71" with setting value "0x7B" "0x58" "0x2F" "0x30" "0x7D" "0x7B" "0x58" "0x2F" "0x31" "0x7D" "0x7B" "0x58" "0x2F" "0x32" "0x7D" "0x54" "0x73" "0x65" "0x72" "0x00")

↓

Unicode of{X/0}{X/1}{X/2}User + ending code

●Current print message changes to:



7.3.4 Free user pattern characters

Free user patterns are supported by function *"Set print character string"* and *"Add characters at the end of current message".* To distinguish from the general characters, free user partern characters are wirttern as {X/pattern nimber} like following shows.

{Z/0} {Z/2} {Z/3} … {Z/197}{Z/198}

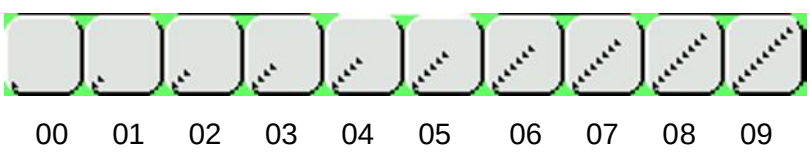
Examples

Case 1) Edit message which contains calendar characters

●Original setting of the IJ Peinter is as follows:

Current print message: ABC123

With user pattern as:



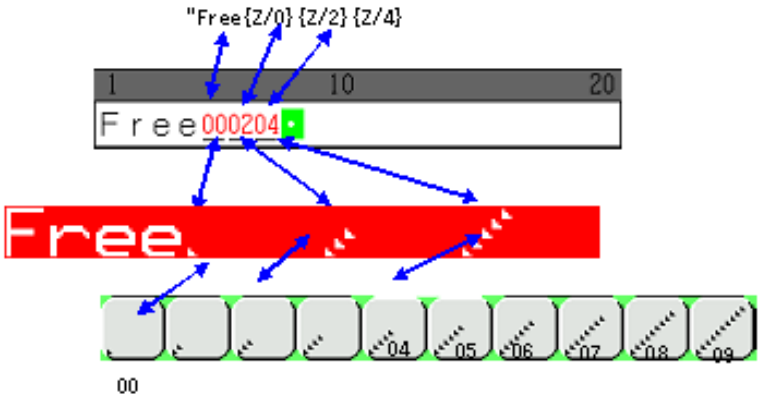
Step 1: Send command “change current message with free user pattern characters to Free00 02 04” to IJ-printer.

(“0x32” “0x67” “0x71” with setting value “0x46” “0x72” “0x65” “0x65”“0x7B” “0x5A” “0x2F” “0x30” “0x7D” “0x7B” “0x5A” “0x2F” “0x32” “0x7D” “0x7B” “0x58” “0x2F” “0x34” “0x7D” “0x00”)

↓

Unicode of Free{X/0}{X/2}{X/4}+ ending code

●Current print message changes to:



7.3.5 Special keys for barcode

Special kesy for barcode are supported by function *“Set print character string”* and *“Add characters at the end of current message”.*

Those keys are expressed as {fnc1}{codeb}{codec}{rs} {eot} or {FNC1}{CODEB}{CODEC}{RS} {EOT}.

Examples

Case 1) Edit message which contains calendar characters

●Original setting of the IJ Peinter is as follows:

Current print message is: QR(33x33)YYCCEEF

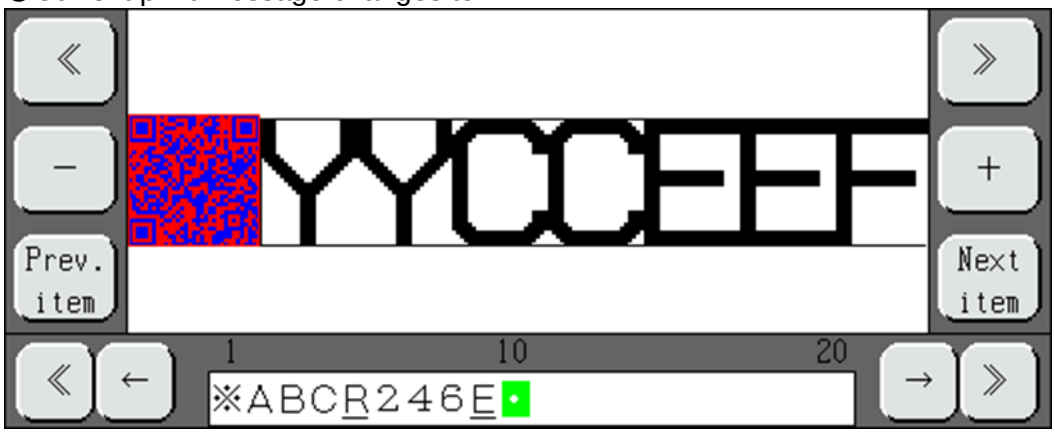
Step 1: Send command “set barcode characters as ＊ABCR246E” to IJ-printer.

(“0x32” “0x67” “0x71” with setting value “0x7B” “0x66” “0x6E” “0x63”“0x31” “0x7D” “0x41” “0x42” “0x43” “0x7B” “0x72” “0x73” “0x7D” “0x32” “0x34” “0x36” “0x7B” “0x65” ”0x6F” ”0x74” “0x7D” “0x00”)

↓

Unicode of {fnc1}ABC{rs}246{eot}+ ending code

●Current print message changes to:



7.4 Dot Matrix Code

List of Dot Matrix

Dot Matrix Code	Dot Matrix
1	Size4x5
2	Size5x5
3	Size5x7
4	Size9x7
5	Size7x10
6	Size10x12
7	Size12x16
8	Size18x24
9	Size24x32
10	Size11x11 *1
11	Size48x48(QR33)
12	Size30x40
13	Size36x48
14	Size5x3_Chimney
15	Size5x5_Chimney
16	Size7x5_Chimney

*1：It can be set when the Language input mode is "regional language" and "Japanese kanji" or "Chinese kanji has been downloaded".

7.5 Barcode

List of Barcode

Barcode No.	Barcode Type	Barcode Attribute
0	None	–
1	Code 39	–
2	ITF	–
3	NW-7	–
4	EAN-13(JAN-13)	No identification code
		Identification Code (5 x 5)
		Identification Code (5 x 7)
5	DM	(8 x 32)
6		(16 x 16)
7		(16 x 36)
8		(16 x 48)
9		(18 x 18)
10		(20 x 20)
11		(22 x 22)
12		(24 x 24)
13	Code 128	Code set B
14		Code set C
15	UPC-A	No identification code
		Identification Code (5 x 5)
		Identification Code (5 x 7)
16	UPC-E	No identification code
		Identification Code (5 x 5)
		Identification Code (5 x 7)
17	EAN-8(JAN-8)	No identification code
		Identification Code (5 x 5)
		Identification Code (5 x 7)
18	QR	(21 x 21)
19		(25 x 25)
20		(29 x 29)
21		(33 x 33)
22	EAN-13add-on5 (JAN-13add-on5)	Identification Code (5 x 5)
		Identification Code (5 x 7)
23	Micro QR (15 x 15)	–
24	GS1DataBarLimited.	No identification code
		Identification Code (5 x 5)
		Identification Code (5 x 7)
25	GS1DataBarOmnidirec.	–
26	GS1DataBarStacked.	No identification code
		Identification Code (5 x 5)
		Identification Code (5 x 7)
27	DM(14 x 14)	(14 x 14)