

CX/CX-W (DS40/DS80) Photo Printer

Printer Command Specification

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CITIZEN SYSTEMS JAPAN CO.,LTD.

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Revised Item	Type of Revision	Revision No.	Revision Date	Approved	Designer
		First Edition	2007/10/11		
P 9	Designate multicut pattern added.	1.10	2007/11/2		
P12 P13	1-5.5 Reading the print volume counter P 1-5.6 Setting counter P value	1.20	2007/12/10		
P6,7 P9 P15	1-2.1 to 3: The sentence of referring to the [Note when transmitting image] was added to [Attention] 1-3.3 Overcoat finish, 1-3.4 Print re-try control added Correction DS40 head width entry "1892"→"1920" Notation change "CX"→"CX(DS40)", "CXW"→"CX-W(DS80)" [Note when transmitting image] added	1.30	2010/02/16		
P9 P14 P15	The version which a printer supports is added to [function] of 1-3.3 and 1-3.4. 1-5.7 Reading the print volume Matte counter and 1-5.8 Reading the print volume counter M are added. 1-5.9 Clearing the counter M is added.	1.31	2010/04/06		

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Notes



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1. Details of CX commands

The commands to be sent to printers shall have a fixed length of 32 bytes in total, consisting of 2-byte start code, 6-byte Argument 1, 6-byte Argument 2 and 8-byte Argument 3. If Argument 4 is additionally needed, the data size of Argument 4 that follows Argument 3 shall be designated.

If the command character strings in Arguments 1 and 2 is less than the specified length, all remaining spaces shall be filled with space data (0x20).

Argument 3, which indicates the Argument 4 data length, shall be designated in 32-bit unit (4-byte unit), 8-digit decimal ASCII numbers. If the valid data length of Argument 4 does-not consist of 32-bit unit numbers, null data (0x00) shall be added to the end of valid data to complete the 32-bit unit. If Argument 4 is not needed, every space of Argument 3 shall be filled with space data.

The data returned from the printer contains 8-byte, fixed-length data at its head. This data indicates the size of successive data in 8-digit decimal ASCII numbers. The successive data will be in 32-bit unit. If the valid data length is less than this, null data shall be added to the end of valid data.

1-1.1 Get printer status

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	STATUS			

[Transmitted data] Start code ESC[1Bh] P
 STATUS Request to send printer status

[Function] The printer sends status information in 5-digit ASCII numbers (with CR<0Dh> at its end).
 (See 3-3 for status codes.)

[Returned data]	Size (8)	Data
	00000008	nnnnn<CR> <null> <null>

[Returned data example] 00000008 00001<CR> <null> <null> (Printing)

1-1.2.1 Get printer version information

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	INFO	FVER		

[Transmitted data] Start code ESC[1Bh] P
 INFO Request to send printer information
 FVER Request to send printer firmware version

[Function] The printer sends status information in variable-length ASCII character string (with CR<0Dh> at its end).

[Returned data]	Size (8)	Data
	0000nnnn	Variable-length ASCII character string <CR>

[Returned data example] 00000012 ABCD0123<CR> <null> <null> <null>

1-1.2.2 Get printer sensor information

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	INFO	SENSOR		

[Transmitted data] Start code ESC[1Bh]
 INFO Request to send printer information
 SENSOR Request to send printer sensor information

[Function] The printer sends status information in variable-length ASCII character string (with CR<0Dh> at its end).

[Returned data]	Size (8)	Data
	0000nnnn	Variable-length ASCII character string <CR>

[Returned data example] 00000012 ABCD0123<CR> <null> <null> <null>

1-1.2.3 Get printer media information

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	INFO	MEDIA		

[Transmitted data] Start code ESC[1Bh] P
 INFO Request to send printer information
 MEDIA Request to send printer media information

[Function] The printer sends status information in 7-digit ASCII character string (with CR<0Dh> at its end).
 (See 3-2 for 5-digit codes representing the media.)

[Returned data]	Size (8)	Data
	00000008	MTnnnnnn<CR>

[Returned data example] 00000008 MT00200<CR> (L size)

1-1.2.4 Get printer horizontal resolution

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	INFO	RESOLUTION_H		

[Transmitted data] Start code ESC[1Bh] P
 INFO Request to send printer information
 RESOLUTION_H Request to send printer media information

[Function] The printer sends head resolution information in 6-digit ASCII character string (with CR<0Dh> at its end).

[Returned data]	Size (8)	Data
	00000008	RHnnnn<CR> <null>

[Returned data example] 00000008 RH0300<CR> <null> (300dpi)

1-1.2.5 Get printer vertical resolution

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	INFO	RESOLUTION_V		

[Transmitted data] Start code ESC[1Bh] P
 INFO Request to send printer information
 RESOLUTION_V Request to send printer media information

[Function] The printer sends paper feed resolution information in 6-digit ASCII character string (with CR<0Dh> at its end).

[Returned data]	Size (8)	Data
	00000008	RVnnnn<CR> <null>

[Returned data example] 00000008 RV0600<CR> <null> (600dpi)

1-1.2.6 Get number of free print buffers

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	INFO	FREE_PBUFFER		

[Transmitted data] Start code ESC[1Bh] P
 INFO Request to send printer information
 FREE_PBUFFER Request to send the number of free print buffers

[Function] The printer sends the number of pages of free print buffers in 5-digit ASCII character string (with CR<0Dh> at its end).

[Returned data]	Size (8)	Data
	00000008	FPBnn<CR> <null><null>

[Returned data example] 00000008 FPB01<CR> <null><null> (1 free page)

1-1.2.7 Get remaining print quantity

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	INFO	MQTY		

[Transmitted data] Start code ESC[1Bh] P
 INFO Request to send printer information
 MQTY Send the remaining number of media to issue

[Function] The printer sends the number of remaining media to issue in 8-digit ASCII character string (with CR<0Dh> at its end).

[Returned data]	Size (8)	Data
	00000012	MQTYnnnn<CR> <null><null><null>

[Returned data example] 00000012 MQTY0010<CR> <null><null><null>

1-1.2.8 Get Media Color offset values of the lot

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	INFO	MCOLOR		

[Transmitted data] Start code ESC[1Bh] P
 INFO Request to send printer information
 MCOLOR Send color correction values between media lots

[Function] The printer sends color correction values between media lots in 6-digit binary character string (with CR<0Dh> at its end).

[Returned data]	Size (8)	Data
	00000008	MCnnnn<CR><null>

[Returned data example] 00000008 MC<0xA><0x0A><0x0A><0x0A> <CR><null>

1-1.2.9 Get media lot information

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	INFO	MLOT		

[Transmitted data] Start code ESC[1Bh] P
 INFO Request to send printer information
 MLOT Send media user information (lot number)

[Function] The printer sends media user information (lot number) in 14-digit binary character string (with CR<0Dh> at its end).

[Returned data]	Size (8)	Data
	00000016	MLnnnnnnnnnnnnnnnnnnnn<CR><null>

[Returned data example] 00000016 ML<0x01><0x02><0x03><0x04><0x05><0x06><0x07><0x08>
 <0x09><0x0A><0x0B><0x0C><CR><null>

1-2.1 Sending command of Yellow graphic data block

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	IMAGE	YPLANE	nnnnnnnn	data

[Transmitted data] Start code ESC[1Bh] P
 IMAGE Designate start of color image
 YPLANE Designate color (yellow)
 nnnnnnnn Graphic data size (8-digit decimal ASCII number)
 data Graphic data

[Function] This command downloads yellow graphics.

[Attention] Refer to [Note when transmitting image] of "2. Image size" about data transmission with this command.

Designate the graphic data in 8-bit grayscale in BMP format.

(The data structure varies partially from that on Windows disk files. See 3-1 for details.)

1-2.2 Sending command of Magenta graphic data block

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	IMAGE	MPLANE	nnnnnnnn	data

[Transmitted data] Start code ESC[1Bh] P
 IMAGE Designate start of color image
 MPLANE Designate color (magenta)
 nnnnnnnn Graphic data size (8-digit decimal ASCII number)
 data Graphic data

[Function] This command downloads magenta graphics.

[Attention] Refer to [Note when transmitting image] of "2. Image size" about data transmission with this command.
 Designate the graphic data in 8-bit grayscale in BMP format.
 (The data structure varies partially from that on Windows disk files. See 3-1 for details.)

1-2.3 Sending command of Cyan graphic data block

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	IMAGE	CPLANE	nnnnnnnn	data

[Transmitted data] Start code ESC[1Bh]P
 IMAGE Designate start of color image
 CPLANE Designate color (Cyan)
 nnnnnnnn Graphic data size (8-digit decimal ASCII number)
 data Graphic data

[Function] This command downloads cyan graphics.

[Attention] Refer to [Note when transmitting image] of "2. Image size" about data transmission with this command.
 Designate the graphic data in 8-bit grayscale in BMP format.
 (The data structure varies partially from that on Windows disk files. See 3-1 for details.)

1-2.4 Designate multicut pattern

[Code]	Start (2)	Argument(6)	Argument2 (16)	Argument 3(8)	Argument 4
	<ESC>P	IMAGE	MULTICUT	00000008	data

[Transmitted data] Start code ESC[1Bh]P
 IMAGE Designate start of color image
 MULTICUT Designate multicut pattern
 00000008 Argument 4 data length (8-digit decimal ASCII number)
 data Paper Size value (Multicut pattern)

[Function] Designate the paper size no. (Multicut pattern)

Paper Size	Value	Paper Size	Value
(5 x 3.5)	00000001	(8 x 8)	00000011
(6 x 4)	00000002	(6 x 4) x 2	00000012
(5 x 7)	00000003	(8 x 4) x 2	00000013
(6 x 8)	00000004	(8 x 5) x 2	00000014
(6 x 9)	00000005	(8 x 6) x 2	00000015
(8 x 10)	00000006	(8 x 5)_(8 x 4)	00000016
(8 x 12)	00000007	(8 x 6)_(8 x 4)	00000017
(8 x 4)	00000008	(8 x 6)_(8 x 5)	00000018
(8 x 5)	00000009	(8 x 8)_(8 x 4)	00000019
(8 x 6)	00000010	(8 x 4) x 3	00000020
		A4 Length	00000021

1-3.1 Print start

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	CNTRL	START		

[Transmitted data]	Start code	ESC[1Bh] P
	CNTRL	Printer control command
	START	Designate print start

[Function]	Starts printing.
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1-3.2 Cutter control

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	CNTRL	CUTTER	00000008	data

[Transmitted data] Start code ESC[1Bh] P
 CNTRL Printer control command
 CUTTER Designate cutter control
 00000008 Argument 4 data length (8-digit decimal ASCII number)
 data 00000000: Normal operation
 00000001: Operation causing no cut-paper waste

[Function] Controls cutter movement.

1-3.3 Overcoat finish

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	CNTRL	OVERCOAT	00000008	data

[Transmitted data] Start code ESC[1Bh] P
 CNTRL Printer control command
 OVERCOAT Designate overcoat finish
 00000008 Argument 4 data length (8-digit decimal ASCII number)
 data 00000000: Glossy (default)
 00000001: Matte
 00000002: Reserved
 00000003: Reserved

[Function] This prints with either a matte or glossy overcoat.
[This command is effective to the printer \(V.1.30 or later\) which supported matte printing.](#)

[Attention] Send this command before transmitting the image data.
 This command is only valid once for each image. The printer returns to Glossy setting after each image is printed.

1-3.4 Print re-try control

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	CNTRL	BUFFCNTRL	00000008	data

[Transmitted data] Start code ESC[1Bh] P
 CNTRL Printer control command
 BUFFCNTRL Designate print re-try control
 00000008 Argument 4 data length (8-digit decimal ASCII number)
 data 00000000: Print re-try is disabled (default)
 00000001: Print re-try is enabled

[Function] This controls whether, after an error such as media end occurs, the data that had been received in the printer buffer is printed or not. When the setting is enabled, the image will be printed after the error is cleared.
[This command is effective to the printer \(V.1.30 or later\) which supported print re-try.](#)

[Attention] Send this command before the start print command is sent.
 This command is only valid once for each image. The printer will return to disable after each image is printed.
 If the error requires the printer power to be turned OFF then back ON, the printing after error recovery will be invalid regardless of the setting.

1-4.1 Clearing of printer table information

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	TBL_CL			

[Transmitted data] Start code ESC[1Bh] P
 TBL_CL Start clearing printer table information

[Function] Clears printer table information (color control data) written in the printer.

[Attention] After clearing the information, make sure to write new color control data with an update command of color control data.

1-4.2 Update of color control data

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	TBL_WT	CTRLD_UPDATE	nnnnnnnn	data

[Transmitted data] Start code ESC[1Bh] P
 TBL_WT Start writing printer table information
 CTRLD_UPDATE Update color control data
 nnnnnnnn Number of color control data (8-digit decimal ASCII number in 4-byte unit)
 data Color control data

[Function] Rewrites color control data.
 The color control data is provided in binary files in unique format.

[Attention] Before writing new color control data with this command, clear the existing color control data with a printer table information clear command.
 If the color control data is not provided in 32-bit (4-byte) unit, send the data after adding null data to the end of color control data to complete the 32-bit unit.

1-4.3 Setting of color control data version

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	TBL_WT	Version	nnnnnnnn	data

[Transmitted data]	Start code	ESC[1Bh] P
	TBL_WT	Start writing printer table information
	Version	Set version of color control data
	nnnnnnnn	Character string of version information of color control data (4-byte unit)
	data	Character string of version information of color control data

[Function] Writes version information of color control data.

[Attention] After rewriting the data with a color control data update command, use this command to set the color control data version.
 Use the version information of color control data to be set as a file name of color control data file to be provided.
 If the version information character string is not provided in 32-bit (4-byte) unit, send the data after adding null data to the end of version information character string to complete the 32-bit unit.

1-4.4 Acquisition of color control data version

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	TBL_RD	Version		

[Transmitted data]	Start code	ESC[1Bh] P
	TBL_RD	Start reading printer table information
	Version	Acquire color control data version

[Function] The printer sends version information (variable-length character string) of color control data.

[Returned data]	Size (8)	Data
	nnnnnnnn	Data (variable-length character string)

[Returned data example] 00000016 CX0100.CWD<null><null><null><null><null><null>

1-4.5 Acquisition of color control data checksum

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_RD	CTRLD_CHKSUM		

[Transmitted data] Start code ESC[1Bh] P
MNT_RD Start reading printer maintenance information
CTRLD_CHKSUM Acquire color control data checksum

[Function] The printer sends color control data checksum (in hexadecimal number) in 4-digit ASCII character string (with CR<0Dh> at its end).

[Returned data]	Size (8)	Data
	nnnnnnnn	nnnn<CR><null><null><null>

[Returned data example] 00000008 D032<CR><null><null><null>

1-5.1 Clearing the counter A/B

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_WT	COUNTER_CLR	00000004	Cn<CR><NULL>

[Transmitted data] Start code ESC[1Bh] P
MNT_WT Start setting printer maintenance information
COUNTER_CLR Various maintenance commands
00000004 Argument 4 data length (8-digit decimal ASCII number)
Cn<CR><NULL> n=A or B

[Function] Clears the print volume counter A or B.

1-5.2 Reading the print volume life counter

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_RD	COUNTER_LIFE		

[Transmitted data] Start code ESC[1Bh] P
MNT_RD Start reading printer maintenance information
COUNTER_LIFE Read print volume life counter

[Function] Reads the print volume life counter on the printer.

[Returned data]	Size (8)	Data
	00000012	Fixed-length ASCII character string <CR>

[Returned data example] 00000012 CLnnnnnnnn<CR> <null> <null>

1-5.3 Reading the print volume counter A

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_RD	COUNTER_A		

[Transmitted data] Start code ESC[1Bh] P
MNT_RD Start reading printer maintenance information
COUNTER_A Read print volume counter A

[Function] Reads the print volume counter A on the printer.

[Returned data]	Size (8)	Data
	00000012	Fixed-length ASCII character string <CR>

[Returned data example] 00000012 CAnnnnnnn<CR> <null> <null>

1-5.4 Reading the print volume counter B

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_RD	COUNTER_B		

[Transmitted data] Start code ESC[1Bh] P
MNT_RD Start reading printer maintenance information
COUNTER_B Read print volume counter B

[Function] Reads the print volume counter B on the printer.

[Returned data]	Size (8)	Data
	00000012	Fixed-length ASCII character string <CR>

[Returned data example] 00000012 CBnnnnnnnn<CR> <null> <null>

1-5.5 Reading the print volume counter P

【コード】	Start(2)	Argument1 (6)	Argument (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_RD	COUNTER_P		

[Transmitted data] Start code ESC[1Bh] P
MNT_RD Start reading printer maintenance information
COUNTER_P Read Print volume counter P

[Function] Reads the print volume counter P on the printer.

[Returned data]	Size (8)	Data
	00000012	Fixed-length ASCII character string<CR>

[Returned data example] 00000012 CPnnnnnnnn<CR> <null> <null>

1-5.6 Setting counter P value

【コード】	Start (2)	Argument1 (6)	Argument2(16)	Argument3(16)	引数4
	<ESC>P	MNT_WT	COUNTERP_SET	00000008	nnnnnnnn<CR>

[Transmitted data] Start code ESC[1Bh] P
 MNT_WT Start writing printer maintenance information
 COUNTERP_SET Write print quantity command
 00000008 Argument 4 data length (8-digit decimal ASCII number)
 nnnnnnn<CR> Counter value information strings.

[Function] Set the counter P value on the printer

1-5.7 Reading the print volume Matte counter

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_RD	COUNTER_MATTE		

[Transmitted data] Start code ESC[1Bh] P
 MNT_RD Start reading printer maintenance information
 COUNTER_MATTE Read Matte counter

[Function] Reads the print volume Matte counter on the printer.
 When overcoat finish is matte print, Matte counter (clearing is impossible) will be counted up.
 This counter is effective to the printer (V.1.30 or later) which supported matte printing.

[Returned data]	Size (8)	Data
	00000012	Fixed-length ASCII character string <CR>

[Returned data example] 00000012 CMATnnnnnnnn<CR>

1-5.8 Reading the print volume counter M

【コード】	Start(2)	Argument1 (6)	Argument (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_RD	COUNTER_M		

[Transmitted data] Start code ESC[1Bh] P
 MNT_RD Start reading printer maintenance information
 COUNTER_M Read Print volume counter M

[Function] Reads the print volume counter M on the printer.
 When overcoat finish is matte print, counter M (clearing is possible) will be counted up.
 This counter is effective to the printer (V.1.30 or later) which supported matte printing.

[Returned data]	Size (8)	Data
	00000012	Fixed-length ASCII character string<CR>

[Returned data example] 00000012 CMnnnnnnnn<CR> <null> <null>

1-5.9 Clearing the counter M

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_WT	COUNTER_CLR	00000004	CM<CR><NULL>

[Transmitted data] Start code ESC[1Bh] P
 MNT_WT Start setting printer maintenance information
 COUNTER_CLR Various maintenance commands
 00000004 Argument 4 data length (8-digit decimal ASCII number)
 CM<CR><NULL> Counter M is cleared

[Function] Clears the print volume counter M.
 This command is effective to the printer (V.1.30 or later) which supported matte printing.

1-6.1 Changing to the firmware rewrite mode

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	FW_UPD	FLASH_REWRITE		

[Transmitted data] Start code ESC[1Bh] P
 FW_UPD Command for rewriting firmware
 FLASH_REWRITE Switch to the rewrite mode

[Function] This command switches to the firmware rewrite mode.
 Before sending the firmware rewriting data, make sure to use this command to switch to the rewrite mode on the printer. (When switching to the rewrite mode is completed, a blue LED on the printer starts blinking.)

1-6.2 Transmission of firmware rewriting data

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument3 (8)	Argument 4
	<ESC>P	FW_UPD	FLASH_PROGRAM	nnnnnnnn	data

[Transmitted data] Start code ESC[1Bh] P
 FW_UPD Command for rewriting firmware
 FLASH_PROGRAM Start rewriting firmware
 nnnnnnnn Number of rewriting data (8-digit decimal ASCII number in 4-byte unit)
 data Rewriting data

[Function] Sends firmware rewriting data and rewrites the firmware.
 The firmware rewriting data is provided in Motorola S format files.

[Attention] Before sending the firmware rewriting data, make sure to use a firmware-rewriting-mode switching command to switch to the rewrite mode on the printer.
 If the firmware rewriting data is not provided in 32-bit (4-byte) unit, send the data after adding null data to the end of color control data to complete the 32-bit unit.

2. Image size

Model	Paper Type	Paper Size (inch)	Print area size Width (head-width direction) x Length (paper-feed direction)	Image pixel size	
				300 x 300 DPI (pixel)	300 x 600 DPI (pixel)
CX(DS40) / CX-W(DS80) (*)	5x3.5 (L)	5"x3.5"	131.1 x 92.1	1548 x 1088	1548 x 2176
	6x4 (PC)	6"x4"	156.1 x 105.0	1844 x 1240	1844 x 2480
	5x7 (2L)	5"x7"	131.1 x 181.0	1548 x 2138	1548 x 4276
	6x8 (A5)	6"x8"	156.1 x 206.2	1844 x 2436	1844 x 4872
	6x9 (A5W)	6"x9"	156.1 x 232.0	1844 x 2740	1844 x 5480
CX-W(DS80)	8x4	8"x4"	207.3 x 104.6	2448 x 1236	2448 x 2472
	8x5	8"x5"	207.3 x 130.0	2448 x 1536	2448 x 3072
	8x6	8"x6"	207.3 x 155.4	2448 x 1836	2448 x 3672
	8x8	8"x8"	207.3 x 206.0	2448 x 2436	2448 x 4872
	8x10	8"x10"	207.3 x 257.0	2448 x 3036	2448 x 6072
	A4 Length	8"x11.7"	207.3 x 300.0	2448 x 3544	2448 x 7088
	8x12	8"x12"	207.3 x 307.8	2448 x 3636	2448 x 7272
Margin (top/bottom) () is for the paper type of 6x4.			4.5	54 (60)	108 (120)
Margin(left/right)			5.0	60	60
Medium size for multi-cutting () is for two-up printing of 6x4 paper.			2.54 (1.52)	30 (18)	60 (36)

(*) For CX-W(DS80), you can designate the paper size (output size) smaller than 8 inches in width. However, you need to use media in 8-inch width which is for exclusive use on CX-W(DS80).

If "With margin" has been set, the image size will be determined by subtracting the margin from the above image pixel sizes.

When transferring data of the above image pixel size, every one of them shall be laid out at the center of 1920 pixels for CX(DS40) machine and 2560 pixels for CX-W(DS80) machine which are equal to their head width. The left and right free pixels shall be filled with blank data.

* The print area sizes are set to be larger than the actual paper sizes. (1.5mm larger for top and bottom, 2.0mm larger for left and right)

[Note when Transmitting Image]

※ When sending the data by USB2.0, please send such that the terminal data for each plane is a short packet (512 bytes or less). The data terminus needs to be a short packet for operational stability, and is not needed for anything else.

Ex.) In this example, with L-size 300DPI 1920(horizontal, head width) × 1088(vertical) = 2088960, a data terminus USB short packet of 256 bytes is made and sent (sample shown for Windows OS).

```

HANDLE USBHandle;           // Output destination handle address
DWORD lengthL1 = 1920 * 1088 - 256; // Value of data length minus 256 bytes from data terminus
DWORD lengthL2 = 256;       // Short packet 256 bytes (data terminus)
LPVOID data_ptr;            // Pointer to the head of the plane data
DWORD bytes_written;        // Number of bytes of data written
BYTE bRes;                  // Result of function execution

```

```
// This writes the value of the data length minus 256 bytes.
```

```
bRes = WriteFile(USBHandle,data_ptr,lengthL1,&bytes_written,NULL);
```

```
// This writes the terminal 256 bytes of data.
```

```
bRes = WriteFile(USBHandle,(data_ptr+lengthL1),lengthL2,&bytes_written,NULL);
```

3. Supplementary information

3-1 Plane data format of each color

The 8-bit grayscale in BMP format is used to transmit print data. To locate the pixel data counted from the head of BMP format data to be at the 32-bit border, some data structure shall be expanded by adding data for adjusting the pixel data border, as shown in the table below.

Case of 2048x1248 pixel image

	On Windows disk file		For print data transmission command	
Data structure	BITMAPFILEHEADER	14 bytes	BITMAPFILEHEADER	14 bytes
	BITMAPINFOHEADER	40 bytes	BITMAPINFOHEADER	40 bytes
	RGBQUAD	1024 bytes	RGBQUAD	1024 bytes
			Border adjustment data (null)	10 bytes ← Added
	Total of header part	1078 bytes	Total of header part	1088 bytes
	Pixel data	2555904 bytes	Pixel data	2555904 bytes
	Total	2556982 bytes	Total	2556992 bytes
BITMAPFILEHEADER data				
File size	bfType	"BM"	bfType	"BM"
	bfSize	0x00270436	bfSize	0x00270440
Offset up to pixel data	bfReserved1	0x0000	bfReserved1	0x0000
	bfReserved2	0x0000	bfReserved2	0x0000
	bfOffBits	0x00000436	bfOffBits	0x00000440
		Not located at 32-bit border		Located at 32-bit border

3-2 Media codes

This printer indicates every media to use in 5-digit decimal numbers.

The data returned by the Printer media information transmission request command consists of these 5-digit codes (ASCII numbers) allocated to each media.

Media code setting

Fourth digit (0n000) Paper type	Third and second digit (00nn0) Paper type	First digit (0000n) Position detection mark
No. 00000 Standard paper	No. 00200 5x3.5 (L)	No. 00000 Without mark
No. 01000 Sticker paper	No. 00210 5x7 (2L)	No. 00001 With mark
	No. 00300 6x4 (PC)	
	No. 00310 6x8 (A5)	
	No. 00400 6x9 (A5W)	
	No. 00500 8x10	
	No. 00510 8x12	

Examples

Type	Size (WxL)	Code
5x3.5 (L) Standard paper	(127.0 x 89.0mm)	00200
6x4 (PC) Standard paper	(152.0 x 101.0 mm)	00301
5x7 (2L) Standard paper	(127.0 x 178.0 mm)	00210
6x8 (A5) Standard paper	(152.0 x 203.0 mm)	00310
6x9 (A5W) Standard paper	(152.0 x 229.0 mm)	00400
8x10 Standard paper	(203.0 x 254.0mm)	00500
8x12 Standard paper	(203.0 x 305.0mm)	00510

3-3 Status codes

All printer information returned by the Printer status transmission request command consists of 5-digit decimal number data. Please use these codes to judge the printer operation status and occurrence of various errors.

The following is a classification list of status codes.

Code classification	Occurrence level	How to recover from error	Code	Status
00000-00999	Occurs during normal operation	As per normal procedure	00000	Idling
			00001	Printing
			00500	Head cooling down
			00510	Cooling the paper winding motor
01000-01999	Occurs due to user setting	Recovers by maintenance by users	01000	Cover is open
			01010	No Scrap box
			01100	Paper End
			01200	Ribbon End
			01300	Paper jam
			01400	Ribbon errors (detect error, ribbon break)
			01500	Paper Definition Error (The setting is different from printer setting)
02000-02999	Hardware error	Call for service if system does not recover after reboot.	01600	Data error (improper data)
			02000	Head voltage error
			02100	Head position error
			02200	Power supply fun stopped
			02300	Cutter error (Cut jamming etc.)
			02400	Pinch roller position error
			02500	Abnormal head temperature
			02600	Abnormal media temperature
			02610	Abnormal temperature of paper winding motor
			02700	Ribbon tension error
03000-03999	Other internal error	Call for service if system does not recover after reboot.	02800	RF-ID module error
			03000	System error