

Photo Printer

Command Specification

(DS40/DS80/DP-DS80D/DP-DS620/DP-DS820)

Ver. 2.420

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Revision History Chart		First Edition: October 11.2007			Page 1/3
Revised Item	Type of Revision	Revision No.	Revision Date	Approved	Designer
Title Page ii iii P18 P19	Title was renamed. "Model to apply" was added. "Command table" was added. "3-4 The number of free buffers which can transmit printing data" was added. "3-5 Multi-cut pattern specification value" was added. "3-6 Cutter control specification value" was added. * Refer to the document of revision 1.31 for the revision before 2.00.	2.000	Feb. 7, 2012		
P4 P20	In "1-1.2.9 Get media lot information ", the description mistake of the number of transmission data size was corrected. "3-7 Example of acquisition of a media lot number" was added.	2.010	Nov. 7, 2012		
	•Title was renamed. •DP- DS80D was added.	2.200	Dec. 18, 2013		
P30	Figure of the RF-ID write tool was changed	2.210	Feb. 6, 2014		
P24,25 P30	•The explanation for recovering from a Duplex unit error was changed. •The explanation for the RF-ID media lot numbers was changed.	2.220	Feb. 28, 2014		
Front Cover, i - v P4,6,9 P11-14, P17-20,22 P29-30, P33-35, 39 P41-50	•Title was renamed. •DP- DS620 was added. •The following command were added. 1-1.2.7-2 Get L/PC Size Conversion Media Counter of Remaining Sheets 1-1.2.13 Get Printer Serial Number 1-3.6 Full Cutter Set-up 1-4.6 Get Color Data Version <Type Designation> 1-4.7 Get Color Data Checksum <Type Designation> 1-5.11 Set Standby mode transition time 1-5.12 Get Standby mode transition time 1-5.13 Set Media End Keep Mode 1-5.14 Get Media End Keep Mode 1-5.15 Set USB iSerialNumber availability setting 1-5.16 Get USB iSerialNumber availability setting •The following supplementary information were added 3-11 Full Cutter Set-up command 3-12 Standby Mode 3-13 Ribbon Rewind Function •The following media sizes were added 5x5, 6x6	2.300	July 17, 2014		
P18-20	• Stated that the settings were stored in the printer. The default value for the setting was clarified.	2.310	July 25, 2014		
i, iv, v P7,23,25 36,42	•Cut paper 8x6x2 size was added. •The following command were added. 1-1.2.14 Get duplex-unit firmware rewrite information 1-6.3 Changing to the firmware rewrite mode for duplex-unit 1-6.4 Transmission of firmware rewriting data for duplex-unit	2.320	Aug. 22, 2014		

Revision History Chart		First Edition: October 11.2007			Page 2/3	
Revised Item	Type of Revision	Revision No.	Revision Date	Approved	Designer	
P2 P21 P37 P53 P14-16,54 P4,55 Piv,52	• Sensor information was added. • Changed the factory preset value of the Media End Keep Mode. (0: not Keep Media End -> 1: Keep Media End) • Rewind (5 x 3.5) was supported. • Stated that the DP-DS620 (A) is printed without rewinding the ribbon. • 3-14 Procedure to update of color control data was added. (include 610.cwd) • 3-15 Ribbon End Check Operation was added. • Get printer version information was changed to the command that can be used in Standby Mode	2.321	Oct. 31, 2014			
P9, 54 P26,37,38 44,46, 55-57	• Get initial media count command was added. • The following media sizes were added. (for DP-DS620) 6x9, 6x4.5, (6x4.5)x2 • The command sending sequence for Procedure to update of color control data was modified.	2.330	Feb. 27, 2015			
iv P9,12,13, P42 P38,39 P60-66	• The Panorama Print Start Check command was added. • Panorama Printing was added to the Cutter Control commands. • Fine Matte and Partial Matte was added to the Overcoat Finish command. • The list of the numbers of buffers of each paper type which a printer was added. • Detailed explanations of Panorama Printing and Partial Matte Printing was added.	2.340	Apr. 24, 2015			
iv P26,37,38,4 0,46	• DS40 was added to the full-cutter setup compatible models of command table • The following media sizes were added. (for DS40) 6x6	2.341	June 30, 2015			
iv v P10 P49	• DS40 was added to the Get initial media count compatible models of command table • DS40 was added to the Set USB iSerialNumber availability setting compatible models of command table • DS40 was added to the Get USB iSerialNumber availability setting compatible models of command table • Get media offset count command was added. • The media offset count was added to the table of counter default value. • The note *2 was added	2.342	Aug. 31, 2015			
i ~vi P2,5 P15-20, P23-24,34, P41-42,45, P48-51,56, P58,60-61 P63,66-67, P69-77	• Title was renamed. • DP- DS820 was added. • Luster was Added to the 1-3.3 Overcoat finish command • The parameter to specify the intermediate scrap setting was added to the 1-3.6 Full Cutter Set-up • The parameter to specify the media type was added to the 1-4.6 Acquisition of color control data version <Type designation> command • The parameter to specify the media type and the command for high density were added to the 1-4.7 Acquisition of color control data checksum <Type designation> command. • The following commands were added. 1-3.7 Continuous Panoramic Prints settings 1-3.8 Print speed designation • The following media sizes were added 8x7, 8x9, A4 Format, A5 Format, A4x5, A4x6, A4x8, A4x10, (A4x5)x2, A5x2	2.400	Feb. 29, 2016			

Revision History Chart		First Edition: October 11.2007			Page 3/3
Revised Item	Type of Revision	Revision No.	Revision Date	Approved	Designer
i,iv,v P11 P12 P22 P23 P45	The following commands were added. · 1-1.2.18 Get media extension code · 1-1.2.19 Get printer status during Cut Operation Mode · 1-3.9 Paper Feed Control · 1-3.10 Cut Operation Control The following Supplementary information was added. · 3-2.2 Media Extension Code	2.410	Mar. 31, 2016		
iv,v P13 P29 P30 P30 P27,28 P40 P52,55 P56 P63 P73 P74 P80 P76	The following commands were added. · 1-1.2.20 Get media class · 1-4. 8 Gamma Correction Data update · 1-4.9 Get Gamma Correction Data checksum · 1-4.10 Correction Data reset The following notation has been changed. · RX media -> SD media · HDM media -> PP media DP-DS820-related portion of the table in the following sections have been updated. · 2-1 Image size · 3-4 The number of free buffers which can transmit printing data · 3-5 Multi-cut pattern specification value · 3-9 Counter count-up action · 3-12 Standby Mode · 3-13 Ribbon Rewind Function · 3-16 Panorama Printing The following section has been changed. · "3-14 Procedure to update of color control data" -- Command use examples related to the DP-DS820 has been changed.	2.420	June 24, 2016		

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Notes

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Model to apply

This command specification is applied to the following models.

- DS40
- DS80
- DP-DS80D
- DP-DS620
- DP-DS820

Command table

A part of commands has restriction of support by the firmware version.

○:Support Value: Effective firmware version (This or later)

§	Function	Command	Note	Model					Notes
				DS40	DS80	DP-DS80D	DP-DS620	DP-DS820	
1-1.1	Get printer status	<ESC>P STATUS	*1	○	○	○	○	○	Refer to 3-3.1
1-1.2.1	Get printer version information	<ESC>P INFO FVER	*1	○	○	○	○	○	
1-1.2.2	Get printer sensor information	<ESC>P INFO SENSOR	*2	○	○	○	○	○	
1-1.2.3	Get printer media information	<ESC>P INFO MEDIA	*1	○	○	○	○	○	Refer to 3-2
1-1.2.4	Get printer horizontal resolution	<ESC>P INFO RESOLUTION_H	*2	○	○	○	○	○	
1-1.2.5	Get printer vertical resolution	<ESC>P INFO RESOLUTION_V	*2	○	○	○	○	○	
1-1.2.6	Get number of free print buffers	<ESC>P INFO FREE_PBUFFER	*2	○	○	○	○	○	Refer to 3-4
1-1.2.7-1	Get remaining print quantity	<ESC>P INFO MQTY	*1	○	○	○	○	○	Refer to 3-10
1-1.2.7-2	Get Half Size Conversion Media Counter of Remaining Sheets	<ESC>P INFO RQTY	*1	-	-	-	○	○	Refer to 3-13
1-1.2.8	Get Media Color offset values of the lot	<ESC>P INFO MCOLOR	*2	○	○	○	○	○	
1-1.2.9	Get media lot information	<ESC>P INFO MLOT	*1	○	○	○	○	○	Refer to 3-7
1-1.2.10	Get duplex unit status	<ESC>P INFO UNIT_STATUS	-	—	—	○	—	—	Refer to 3-3.2
1-1.2.11	Get cut media information	<ESC>P INFO CUT_PAPER	-	—	—	○	—	—	
1-1.2.12	Get duplex-unit version information	<ESC>P INFO UNIT_FVER	-	—	—	○	—	—	
1-1.2.13	Get Printer Serial Number	<ESC>P INFO SERIAL_NUMBER	*1	○	○	○	○	○	
1-1.2.14	Get duplex-unit firmware rewrite information	<ESC>P INFO DUNIT_UPD_STS	-	-	-	1.20	-	-	
1-1.2.15	Get initial media count	<ESC>P INFO MQTY_DEFAULT	*1	2.00	-	-	○	○	
1-1.2.16	Panorama Printing Start Check	<ESC>P INFO PANORAMA_PRINT	*2	-	-	-	1.20	○	
1-1.2.17	Get media offset count	<ESC>P INFO MEDIA_OFFSET	-	2.00	-	-	-	-	
1-1.2.18	Get media extension code	<ESC>P INFO MEDIA_EXT_CODE	*2	-	-	-	1.33	-	Refer to 3-2.2
1-1.2.19	Get printer status during Cut Operation Mode	<ESC>P INFO CUT_MODE	*2	-	-	-	1.33	-	
1-1.2.20	Get media class	<ESC>P INFO MEDIA_CLASS_RFID	*4	-	-	-	-	○	
1-2.1	Sending command of Yellow graphic data block	<ESC>P IMAGE YPLANE	*3	○	○	○	○	○	Refer to 2-1, 3-1
1-2.2	Sending command of Magenta graphic data block	<ESC>P IMAGE MPLANE	*3	○	○	○	○	○	Refer to 2-1, 3-1
1-2.3	Sending command of Cyan graphic data block	<ESC>P IMAGE CPLANE	*3	○	○	○	○	○	Refer to 2-1, 3-1
1-2.4	Designate multi-cut pattern	<ESC>P CNTRL MULTICUT	*3	○	○	○	○	○	Refer to 3-5

§	Function	Command	Note	Model					Notes
				DS40	DS80	DP-DS80D	DP-DS620	DP-DS820	
1-3.1	Print start	<ESC>P CNTRL START	*3	○	○	○	○	○	
1-3.2	Cutter control	<ESC>P CNTRL CUTTER	*3	○	○	○	○	○	Refer to 3-6,3-8
1-3.3	Overcoat finish	<ESC>P CNTRL OVERCOAT	*3	1.30	1.30	○	○	○	
1-3.4	Print re-try control	<ESC>P CNTRL BUFFCNTRL	*3	1.30	1.30	Roll media only	○	○	
1-3.5	Duplex unit: Cancel back print & eject	<ESC>P CNTRL DUPLEX_CANCEL	-	—	—	○	—	—	
1-3.6	Full Cutter Set-up	<ESC>P CNTRL FULL_CUTTER_SET	*3	1.60	-	-	○	○	Refer to 3-11
1-3.7	Continuous Panoramic Prints settings	<ESC>P CNTRL CONT_PANORAMA	*3	—	—	—	1.32	—	
1-3.8	Print speed designation	<ESC>P CNTRL PRINTSPEED	*3	—	—	—	—	○	
1-3.9	Paper Feed Control	<ESC>P CNTRL PAPER_FEED	*3	-	-	-	1.33	-	
1-3.10	Cut Operation Control	<ESC>P CNTRL CUT_MODE	*3	-	-	-	1.33	-	
1-4.1	Clearing of printer table information	<ESC>P TBL_CL	*3	○	○	○	○	○	
1-4.2	Update of color control data	<ESC>P TBL_WT CTRLD_UPDATE	*3	○	○	○	○	○	
1-4.3	Setting of color control data version	<ESC>P TBL_WT Version	*3	○	○	○	○	○	
1-4.4	Acquisition of color control data version	<ESC>P TBL_RD Version	*2	○	○	○	○	○	
1-4.5	Acquisition of color control data checksum	<ESC>P MNT_RD CTRLD_CHKSUM	*2	○	○	○	○	○	
1-4.6	Acquisition of color control data version <Type designation>	<ESC>P TBL_RD CWD300_Version CWD600_Version CWD610_Version CWD620_Version	*2	-	-	-	○	○	
1-4.7	Acquisition of color control data checksum <Type designation>	<ESC>P MNT_RD CWD300_Checksum CWD600_Checksum CWD610_Checksum CWD620_Checksum	*2	-	-	-	○	○	
1-4.8	Gamma Correction Data update	<ESC>P TBL_WT CTRLD_GAMMA16	*3	-	-	-	-	0.50	
1-4.9	Get Gamma Correction Data checksum	<ESC>P TBL_RD CTRLD_GAMMA16	*2	-	-	-	-	0.50	
1-4.10	Correction Data reset	<ESC>P TBL_WT CTRLD_CWE_RESET	*3	-	-	-	-	0.50	

§	Function	Command	Note	Model					Notes
				DS40	DS80	DP-DS80D	DP-DS620	DP-DS820	
1-5.1	Clearing the counter A/B	<ESC>P MNT_WT COUNTER_CLR	*3	○	○	○	○	○	
1-5.2	Reading the print volume life counter	<ESC>P MNT_RD COUNTER_LIFE	*2	○	○	○	○	○	Refer to 3-9
1-5.3	Reading the print volume counter A	<ESC>P MNT_RD COUNTER_A	*2	○	○	○	○	○	Refer to 3-9
1-5.4	Reading the print volume counter B	<ESC>P MNT_RD COUNTER_B	*2	○	○	○	○	○	Refer to 3-9
1-5.5	Reading the print volume counter P	<ESC>P MNT_RD COUNTER_P	*2	1.04	1.02	○	○	○	Refer to 3-9
1-5.6	Setting counter P value	<ESC>P MNT_WT COUNTERP_SET	*3	1.04	1.02	○	○	○	
1-5.7	Reading the print volume Matte counter	<ESC>P MNT_RD COUNTER_MATTE	*2	1.30	1.30	○	○	○	Refer to 3-9
1-5.8	Reading the print volume counter M	<ESC>P MNT_RD COUNTER_M	*2	1.30	1.30	○	○	○	Refer to 3-9
1-5.9	Clearing the counter M	<ESC>P MNT_WT COUNTER_CLR	*3	1.30	1.30	○	○	○	
1-5.10	Read Duplex Counter	<ESC>P MNT_RD COUNTER_DUPLEX	-	-	-	○	-	-	Refer to 3-9
1-5.11	Standby mode transition time setting	<ESC>P MNT_WT STANDBY_TIME	*3	-	-	-	○	○	Refer to 3-12
1-5.12	Standby mode transition time acquisition	<ESC>P MNT_RD STANDBY_TIME	*2	-	-	-	○	○	Refer to 3-12
1-5.13	Setting of Media end keep mode	<ESC>P MNT_WT END_KEEP_MODE	*3	-	-	-	○	○	
1-5.14	Acquisition of Media end keep mode	<ESC>P MNT_RD END_KEEP_MODE	*2	-	-	-	○	○	
1-5.15	Set USB iSerialNumber availability setting	<ESC>P MNT_WT USB_ISERI_SET	*3	2.00	-	-	○	○	
1-5.16	Get USB iSerialNumber availability setting	<ESC>P MNT_RD USB_ISERI_SET	*2	2.00	-	-	○	○	
1-6.1	Changing to the firmware rewrite mode	<ESC>P FW_UPD FLASH_REWRITE	*3	○	○	○	○	○	
1-6.2	Transmission of firmware rewriting data	<ESC>P FW_UPD FLASH_PROGRAM	-	○	○	○	○	○	
1-6.3	Changing to the firmware rewrite mode for duplex-unit	<ESC>P FW_UPD DUNIT_REWRITE	-	-	-	○	-	-	
1-6.4	Transmission of firmware rewriting data for duplex-unit	<ESC>P FW_UPD DUNIT_PROGRAM	-	-	-	○	-	-	

Note

*1: Compatible model= DP-DS620/DP-DS820

The printer can send return data even in Standby mode. (Refer to 3-12)

*2: Compatible model = DP-DS620/DP-DS820

During Standby mode, the printer will return to normal mode before carrying out the command and sending the return data (sends after approx. 10 sec). The Host will have to wait for the printer to send the return data. (Refer to 3-12)

*3: Compatible model = DP-DS620/DP-DS820

During Standby mode, the printer will return to normal mode before carrying out the command (performs command after approx. 10 sec). (Refer to 3-12)

*4: Compatible model= DP-DS820

The printer can send return data even in Standby mode. (Refer to 3-12)

1. Details of 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, 16-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 3-3.1 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 version 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 sensor 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] 00000200 HDT-011;MDT-022;RML-033;...GSB-099; ...<CR>

[Sensor Information]

HDT-***;	Head temperature	
MDT-***;	Media temperature	
PMK-***;	Paper mark	
RML-***;	Ribbon mark left	
RMC-***;	Ribbon mark center	
RMR-***;	Ribbon mark right	
PSZ-***;	Paper size	
PNT-***;	Paper notch	
PJM-***;	Paper jam	
PED-***;	Paper end	
PET-***;	Paper empty	
HDV-***;	Head voltage	
HMD-***;	Humidity	
RP1-***;	Roll media paper end detection sensor-1	(Only compatible for DP-DS80D)
RP2-***;	Roll media paper end detection sensor-2	(Only compatible for DP-DS80D)
GSR-***;	Color Sensor (Red)	(Only compatible for DP-DS620/DP-DS820)
GSG-***;	Color Sensor (Green)	(Only compatible for DP-DS620/DP-DS820)
GSB-***;	Color Sensor (Blue)	(Only compatible for DP-DS620/DP-DS820)

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 media 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	MTnnnnn<CR>

[Returned data example] 00000008 MT00200<CR>

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).
 Refer to 3-4 for the relation with the number of free print buffers which can transmit paper type and its printing data.

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

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

1-1.2.7-1 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). (Refer to 3-10 for the counter default value) (For the DP-DS620, if this value is 0 it signals ribbon end, but it runs ribbon check before this point. See "3-15 Ribbon End Check Operation (DP-DS620/DP-DS820)" for details.)
------------	---

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

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

1-1.2.7-2 Get Half Size Conversion Media Counter of Remaining Sheets

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

[Transmitted data]	Start code	ESC[1Bh] P
	INFO	Request to send printer information
	RQTY	Send the number of remaining sheets which has been converted to the half size

[Function]	The printer sends the number of remaining sheets which has been converted to the half size of the loaded media into the printer. 8-digit ASCII character string (with CR<0Dh> at its end)
------------	---

Loaded media size	Conversion size
5x7	L(5x3.5)
6x8	PC(6x4)
6x9	6x4.5
8x10	8x5
8x12	8x6
A4	A5

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

[Returned data example]	00000012	RQTY0400<CR> <null><null><null>
-------------------------	----------	---------------------------------

1-1.2.10 Getting the Duplex Unit status

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

[Transmitted data]	Start code	ESC[1Bh] P
	INFO	Requests transmission of printer information
	UNIT_STATUS	Sends the duplex unit status

[Function] The printer sends the duplex unit status in a 5-digit ASCII code (ending with CR<0Dh>).
(Refer to 3-3.2 for the status code)

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

[Returned data example] 00000008 05017<CR> <null> <null>

1-1.2.11 Getting cut media information

[Code]	Start (2)	Parameter1 (6)	Parameter 2 (16)	Parameter 3 (8)	Parameter 4
	<ESC>P	INFO	CUT_PAPER		

[Transmitted data]	Start code	ESC [1Bh] P
	INFO	Requests transmission of printer information
	CUT_PAPER	Sends cut paper size(cut paper tray position) and media status

[Function] This sends the cut paper size (tray guide position) and media status in ASCII code
(ending with CR<0Dh>).

[Return data]	Size (8)	Data
	00000012	CUTPnnnn<CR> <null> <null> <null>

[Returned data example] 00000012 CUTP0102<CR> <null> <null> <null>

Duplex unit status

4, 3 digits (nn00) Paper size (tray guide position)	2, 1 digits (00nn) Paper status
0000 Unit not connected	0000 No cut paper
0100 8 x 10.75	0001 Protective sheet
0200 8 x 12	0002 Cut paper set

Sample code

Paper size	Paper status	Code
8x10.75	Cut paper set	0102
8x10.75	Protective sheet	0101
8x10.75	No cut paper	0100

1-1.2.12 Get duplex-unit version information

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

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

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

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

[Returned data example]	00000008	0.85 <0x20> <0x20><CR><null>
-------------------------	----------	------------------------------

When duplex-unit firmware is not support function or duplex-unit is not connected, return data is all blank <0x20>.

1-1.2.13 Get Printer Serial Number

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

[Transmitted data]	Start code	ESC[1Bh] P
	INFO	Request to send printer information
	SERIAL_NUMBER	Request to send printer serial number

[Function]	The printer sends the serial number in a 32-digit ASCII code.
------------	---

[Returned data]	Size (8)	Data
	00000032	nnnnnnnnn <null> <null> ... <null>

[Returned data example]	00000032	1234ABCD <null> <null> ... <null>
-------------------------	----------	-----------------------------------

1-1.2.14 Get duplex-unit firmware rewrite information

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

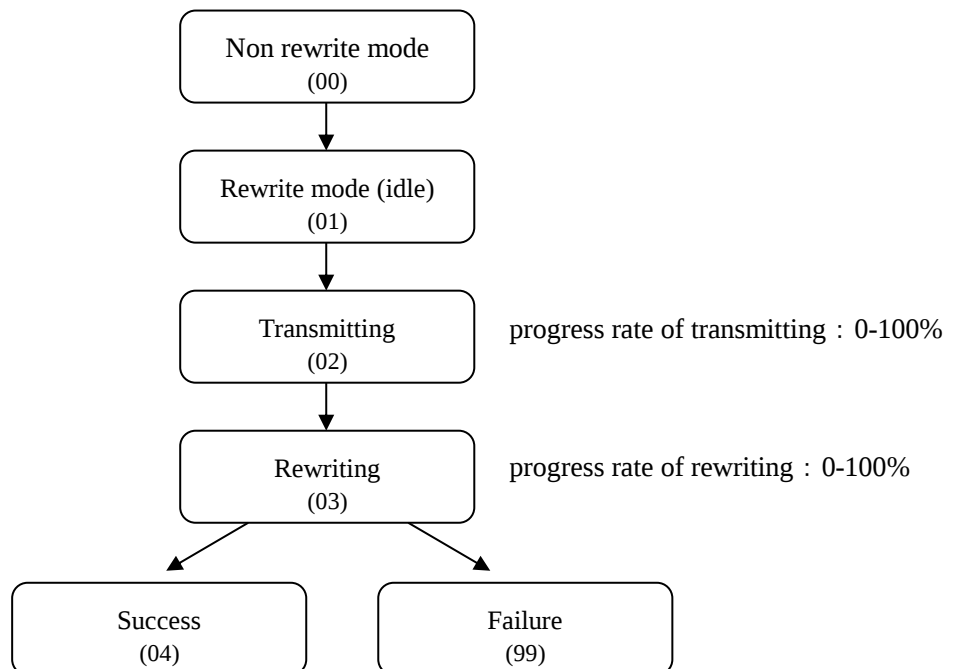
[Transmitted data]	Start code	ESC[1Bh] P
	INFO	Request to send printer information
	DUNIT_UPD_STS	Request to send firmware rewrite information

[Function]	The printer sends duplex-unit firmware rewrite 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]	00000032	STS-02; PRG-050; EXT-00000000; <CR>
-------------------------	----------	-------------------------------------

No	Items	Strings	Setting Values
1	Status	STS-	00 : non rewrite mode 01 : duplex-unit firmware rewrite mode (idle) 02 : duplex-unit firmware is transmitting. 03 : duplex-unit firmware is rewriting. 04 : Rewriting the duplex-unit firmware is success. 99 : Rewriting the duplex-unit firmware is failure.
2	Progress Rate	PRG-	000~100
3	Extended Information	EXT-	00000000~99999999



Status transition diagram of duplex-unit firmware rewrite mode

1-1.2.15 Get initial media count

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

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

[Function] The printer sends the initial number of media in 8-digit ASCII character string (with CR<0Dh> at its end).
 (Refer to 3-10 for the counter default value)

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

[Returned data example] 00000012 MDEF0450<CR> <null><null><null>

1-1.2.16 Panorama Printing Start Check

[Code]	Start (2)	Parameter1 (6)	Parameter 2 (16)	Parameter 3 (8)	Parameter 4
	<ESC>P	INFO	PANORAMA_PRINT		

[Transmitted data] Start code ESC[1Bh] P
 INFO Requests transmission of printer information
 PANORAMA_PRINT Checks criteria to start Panorama Printing

[Function] This sends 5-character ASCII numeric code (CR<0Dh>terminus) to indicate whether Panorama Printing is possible.
 This command is effective for DP-DS620 (Ver.1.20 or later).

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

[Sample return data] 00000008 00000<CR> <null> <null>

Printer Status			Data	Okay to start Panorama Printing
Idle	Panorama Printing is possible		00000	○
	Panorama printing is not possible	High head temp	00001	×
		High head & media temps	00011	×
Other than Idle (either printing or error)			10000	×

[Attention] In order to prevent overheating during Panorama Printing, the printer will wait for the head temperature to drop before starting the 1st print.
 (For details on Panorama Print, refer to “3-16 Panorama Print”.)

1-1.2.17 Get media offset count

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

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

[Function] The printer sends the offset number of media in 8-digit ASCII character string (with CR<0Dh> at its end).
 (Refer to 3-10 for the media offset count)

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

[Returned data example] 00000012 MOFS0050<CR> <null><null><null>

1-1.2.18 Get media extension code

[Code]	Start (2)	Parameter1 (6)	Parameter 2 (16)	Parameter 3 (8)	Parameter 4
	<ESC>P	INFO	MEDIA_EXT_CODE		

[Transmitted data] Start code ESC[1Bh] P
 INFO Requests transmission of printer information
 MEDIA_EXT_CODE Request to send media extension code

[Function] The printer sends the media extension code at 10-character ASCII numeric code (CR<0Dh> terminus)
 (See 3-2.2 for 10-character ASCII numeric codes representing the media extension code.)

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

[Returned data example] 00000012 0000000000<CR> <null>

1-1.2.19 Get printer status during Cut Operation Mode

[Code]	Start (2)	Parameter1 (6)	Parameter 2 (16)	Parameter 3 (8)	Parameter 4
	<ESC>P	INFO	CUT_MODE		

[Transmitted data] Start code ESC[1Bh] P
 INFO Requests transmission of printer information
 CUT_MODE Printer status for Cut Operation Mode

[Function] This sends the printer operating status in 12-digit ASCII numbers. In order to operate the printer in Sticker Cutter Use Mode or Cut Operation Mode, it is necessary to get the printer status with this command, and give paper feed or start cutting directions.

[Return data]	Size (8)	Data
	00000012	nnnnnnnnnnnnnn

[Returned data example] 00000012 002000000020

■ When operating in Sticker Cutter Use Mode

12~10 th column Cumulative feed count	9~6 th column Remaining feed length	5~1 st column Operation status	Printer status	<ESC>P CTRL CUT_MODE Possible designation value
000	0000	00001	Printing	
000	0000	00010	Awaiting paper feed command	00000000010 (paper feed des.)
			Feeding paper	
000	pppp	00020	Paper feed complete	kkkmmmm00100 (Paper advance des.)
iii	pppp	00120	Advancing paper	
iii	pppp	00220	Reversing paper	
iii	pppp	00020	Paper advance/reverse complete	kkkmmmm00100 (Paper advance des.) kkkmmmm00200 (Paper reverse des.) 000000001000 (Start cutting des.)
			Cutting	
000	0000	00000	Cutting complete (idle)	
000	0000	09000	Error has occurred	

iii : This displays the cumulative count of paper advance/reverse. During operation, this displays the value for the previous operation, and counts up 1 when complete.

pppp : This displays (in 0.01 inch increments) the remaining paper feed distance to the cut position. During operation, this displays the value for the previous operation, and is updated when the operation is complete. After the Paper Advance/Paper Reverse operation, the Start Cutting designation will occur when the value is 0000. (If the cut position has been exceeded, the value will also be 0000.)

■ When operating in Cut Operation Mode.

12~10 th column ---	9~6 th column ---	5~1 st column Operation Status	Printer status	<ESC>P CTRL CUT_MODE Possible designation value
000	0000	00001	Printing	
000	0000	01000	Awaiting cut operation	000000001000 (Start cutting des.)
			Feeding out/cutting	
000	0000	00000	Cutting complete (idle)	
000	0000	09000	Error has occurred	

■ When operating in Standard Cut Operation Mode.

12~10 th column ---	9~6 th column ---	5~1 st column Operation Status	Printer status
000	0000	00001	Printing
000	0000	00000	Idle
000	0000	09000	Error has occurred

1-1.2.20 Get media type

[Code]	Start (2)	Parameter1 (6)	Parameter 2 (16)	Parameter 3 (8)	Parameter 4
	<ESC>P	INFO	MEDIA_CLASS_RFID		

[Transmitted data]	Start code	ESC[1Bh] P
	INFO	Requests transmission of printer information
	MEDIA_CLASS_RFFID	Request to send media type

[Function]	The printer sends the media type at 4-character ASCII numeric code (CR<0Dh> terminus)
------------	---

Media Type

Acquired Value	Description
0001	Digital (SD) media.
0003	Pure Premium (PP) media.

*When you check the media type, please use the first four characters.

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

[Returned data example]	00000008	0001<CR> <null> <null> <null>
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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 "2-1. 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 "2-1. 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 "2-1. 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 multi-cut 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 multi-cut pattern
	00000008	Argument 4 data length (8-digit decimal ASCII number)
	data	Paper Size value (Multi-cut pattern)

[Function] Designate the paper size no (Multi-cut pattern). (See 3-5 for details)

[Attention] Send this command before transmitting the image data.

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.

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
 00000120: 2inch cut operation
 00001000: Panorama Print operation (with white borders between prints) (*1)
 (*1) This is valid for DP-DS620(Ver.1.20 or later).

[Function] Controls cutter movement. (See 3-6 for details)

[Attention] Send this command before the start print command is sent.
 This command is only valid once for each image. The printer returns to standard cut operation after each image is printed.
 2inch cut operation is effective only in paper size (6x4) or (6x8).
 Refer to "3-7 Example of acquisition of a media lot number" about the image layout of 2 inches cut operation.
 If you specify both this command and Full Cutter Set-up command, Full Cutter Set-up command will be given priority.
 For details on Panorama Printing, refer to "3-16 Panorama Printing".

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
		00000021: Fine Matte (*1)
		00000022: Luster (*2)
		00000101: Partial matte (Matte) (*1)
		00000121: Partial matte (Fine Matte) (*1)
		00000122: Partial matte (Luster) (*2)
		(*1) This is valid for DP-DS620(Ver.1.20 or later) and DP-DS820.
		(*2) This is valid for DP-DS620(Ver.1.30 or later) and DP-DS820.

[Function] This prints with either a matte or glossy overcoat.

[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.
 When designating Partial Matte, send the partial matte pattern after sending this command.
 For details on Partial Matte, refer to “3-17 Partial Matte”.

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.

[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.

1-3.5 Duplex Printer: cancelling back print and ejecting the media

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

[Transmitted data] Start code ESC[1Bh] P
 CNTRL Printer control command
 DUPLEX_CANCEL Cancel back print command

[Function] During duplex printing, this cancels the back print after printing the front, then ejects the media.
 This command is used to eject the media with the front side printed in cases such as when the ribbon ends mid-print.

1-3.6 Full Cutter Set-up

[Code]	Start (2)	Argument1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	CNTRL	FULL_CUTTER_SET	00000016	data

[Transmitted data] Start code ESC[1Bh] P
 CNTRL Printer control command
 FULL_CUTTER_SET Full cutter set-up
 00000016 Argument 4 data length (8-digit decimal ASCII code)
 data mmmnnppppqqrrr<CR>
 A set 15-digit decimal ASCII character string sets the cut size
 mmm Image 1 cut-size setting Setting value is: 020~090, 000
 000 is regular (6x8) size print, and subsequent cut size settings will be ignored.
 If the setting exceeds the range, the command will be invalid.
 nnn Image 2 cut-size setting Setting value is: 020~070, 000
 Set to 000 if the cut sheet count is 1, and subsequent cut size settings will be ignored.
 If the setting exceeds the range, the command will be invalid.
 ppp Image 3 cut-size setting Setting value is: 020~050, 000
 Set to 000 if the cut sheet count is 1~2, and subsequent cut size settings will be ignored.
 If the setting exceeds the range, the command will be invalid.
 qq q Image 4 cut-size setting Setting value is: 020~030, 000
 Set to 000 if the cut sheet count is 1~3, and subsequent cut size settings will be ignored.
 If the setting exceeds the range, the command will be invalid.
 rrr Intermediate scrap setting (the intermediate scrap size when cutting 2~4 prints) (*1)
 Setting value: 000 (no intermediate scrap), 012~022
 If the setting exceeds the range, the command will be invalid.

Default: 0000000000000000 (all 0)

The default setting will print regular size

(*1) This is valid for DP-DS620(Ver.1.20 or later) and DS40(Ver.1.60 or later).

■DP-DS820

[Code]

Start (2)	Argument1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
<ESC>P	CNTRL	FULL_CUTTER_SET	00000024	data

[Transmitted data]

Start code ESC[1Bh] P

CNTRL Printer control command

FULL_CUTTER_SET Full cutter set-up

00000016 Argument 4 data length (8-digit decimal ASCII code)

data mmmnnnpppqqrrsstt<CR>

A set 21-digit decimal ASCII character string sets the cut size

mmm Image 1 cut-size setting Setting value is: 020 ~ 120, 000
000 is regular size print, and subsequent cut size settings will be ignored.
If the setting exceeds the range, the command will be invalid.

nnn Image 2 cut-size setting Setting value is: 020 ~ 100, 000
Set to 000 if the cut sheet count is 1, and subsequent cut size settings will be ignored.
If the setting exceeds the range, the command will be invalid.

ppp Image 3 cut-size setting Setting value is: 020 ~ 080, 000
Set to 000 if the cut sheet count is 1 ~ 2, and subsequent cut size settings will be ignored.
If the setting exceeds the range, the command will be invalid.

qqq Image 4 cut-size setting Setting value is: 020 ~ 060, 000
Set to 000 if the cut sheet count is 1 ~ 3, and subsequent cut size settings will be ignored.
If the setting exceeds the range, the command will be invalid.

rrr Image 5 cut-size setting Setting value is: 020 ~ 040, 000
Set to 000 if the cut sheet count is 1 ~ 4, and subsequent cut size settings will be ignored.
If the setting exceeds the range, the command will be invalid.

sss Image 6 cut-size setting Setting value is: 020, 000
Set to 000 if the cut sheet count is 1 ~ 5, and subsequent cut size settings will be ignored.
If the setting exceeds the range, the command will be invalid.

ttt Intermediate scrap setting (the intermediate scrap size when cutting 2 ~ 5 prints)
Setting value: 000 (no intermediate scrap), 012 ~ 022
If the setting exceeds the range, the command will be invalid.

Default: 00000000000000000000 (all 0)

The default setting will print regular size

[Function]

This cuts the designated sizes, from 1 to a maximum of 4 sheets.

The cut size can be set in 0.1-inch increments, as long as the total does not exceed the paper size.

(Minimum cut size 2 inches)

When setting for intermediate scrap, you can set the scrap size from 0.12 inch (3mm) to 0.22 inch (5.5mm) in 0.01 inch increments. Also, make sure the sum total of the print cut sizes and intermediate scrap sizes (2 intermediate scraps when cutting 3 prints) does not exceed the paper size. (*2)

(See 3-11 Full cutter set-up command for details)

(*2) 1. There were some cut problems (folding) when cutting a width of 2mm.

2. Also, the scrap itself bends easily, causing problems in filling the scrap box (scrap overflow).

3. The range of +1.5mm~-1.5mm of the cut position of a picture is a standard cut domain.

Therefore, the scrap size setting should be 3mm or more.

■ Paper size and cut size setting ranges

Model	Paper size	Maximum cut count	Maximum size	Images	Cut size setting ranges	
					Minimum	Maximum
DP-DS620	6x4(PC) *3	2 sheets	4 inches	1	20	40
				2	20	20
	5x7(2L) *3	3 sheets	7 inches	1	20	70
				2	20	50
				3	20	30
	6x8(A5)	4 sheets	8 inches	1	20	80
				2	20	60
				3	20	40
				4	20	20
	6x9(A5W) *3	4 sheets	9 inches	1	20	90
				2	20	70
				3	20	50
				4	20	30
DP-DS820	8x10	5 sheets	10 inches	1	20	100
				2	20	80
				3	20	60
				4	20	40
				5	20	20
	8x12	6 sheets	12 inches	1	20	120
				2	20	100
				3	20	80
				4	20	60
				5	20	40
				6	20	20
	A4	5 sheets	11.7 inches	1	20	117
				2	20	97
				3	20	77
				4	20	57
				5	20	37

*3: This is valid for DP-DS620(Ver.1.20 or later) and DS40(Ver.1.60 or later).

[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 the normal size print operation after each image is printed.

If the total cut size set using this command is larger than the image size sent to the printer, this command is disabled and printing is done with the media size (normal size) sent to the printer.

If this command and the cutter control command are both designated, this command will be given priority.

When setting for intermediate scrap, take care to keep scraps less than 400 cuttings, and empty the scrap box after 400 cuttings. If the scraps overflow, they could cause problems such as print feed-out jam.

1-3.7 Continuous Panoramic Prints settings

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	CNTRL	CONT_PANORAMA	00000008	data
[Transmitted data]	Start code CNTRL CONT_PANORAMA 00000008 data	ESC[1Bh] P Printer control command Specifies Continuous Panorama Argument 4 data length (8-digit decimal ASCII number) kkkkmmmm : A 8-digit decimal ASCII character string sets the Panoramic Prints parameters.	kkkk Continuous Panoramic Prints specification 0000 : Last image of Continuous Panoramic Prints, or normal printing (Continuous Panoramic Prints cancelation) 0001 : Continuous Panoramic Prints has specified.	mmmm Overlap width 0000 to 0200 (to be specified in increments of 0.01 in the 0.00 to 2.00 range) [Recommended value] 0200 (2.00in.)	
[Function]	This command sets the operation of the continuous panoramic prints.				
[Attention]	Continuous Panoramic Prints specification is only valid for the first image and second image. If you set this parameter for the third image, the specified parameter will be ignored, and the paper will be cut. The overlap width for the first image printed with Continuous Panoramic Prints is also applied to the second image and later on, but is disabled if a different value is set for the second or later images. Also, if you set this value to less than the recommended value, the print quality of the overlapped area will deteriorate.				

1-3.8 Print speed designation

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

[Transmitted data]	Start code	ESC[1Bh] P
	CNTRL	Printer control command
	PRINTSPEED	Print speed designation
	00000008	Argument 4 data length (8-digit decimal ASCII number)
	data	00000000: Printing of 300dpi resolution (default)
		00000010: Printing of 600dpi resolution
		00000020: Low speed printing
		00000030: High density printing

[Function]	Printing is carried out at the designated print speed. This command can be used to lower print speed in order to increase the image quality.
------------	---

[Attention]	This command must be designated for each image. The printer will revert to the conventional operation after each image is printed. This printer has a function that slows the print speed when printing high-density images in order to minimize damage to the media. In order to maintain the print conditions that achieved the radio/safety concepts, the printing speed may be automatically decreased to lower than the designated speed.
-------------	---

data	Name	Print Speed [ips]			
		SD		PP	
		300dpi resolution	600dpi resolution	300dpi resolution	600dpi resolution
00000000	Printing of 300dpi resolution	1.6	1.2	1.9	1.2
00000010	Printing of 600dpi resolution	1.2	1.2	1.2	1.2
00000020	Low speed printing	0.8	0.8	0.8	0.8
00000030	High density printing	0.8	0.8	0.8	0.8

About print speed and color control data to use

Print speed	Color control data to use	
	SD	PP
Printing of 300dpi resolution	300dpi control data (e.g. DS820_SD_300_0100.cwd)	300dpi control data (e.g. DS820_PP_300_0100.cwd)
Printing of 600dpi resolution	600dpi control data (e.g. DS820_SD_600_0100.cwd)	600dpi control data (e.g. DS820_PP_600_0100.cwd)
Low speed printing	Low speed control data (e.g. DS820_SD_610_0100.cwd)	Low speed control data (e.g. DS820_PP_610_0100.cwd)
High density printing	High density control data (e.g. DS820_SD_620_0100.cwd)	High density control data (e.g. DS820_PP_620_0100.cwd)

1-3.9 Paper Feed Control

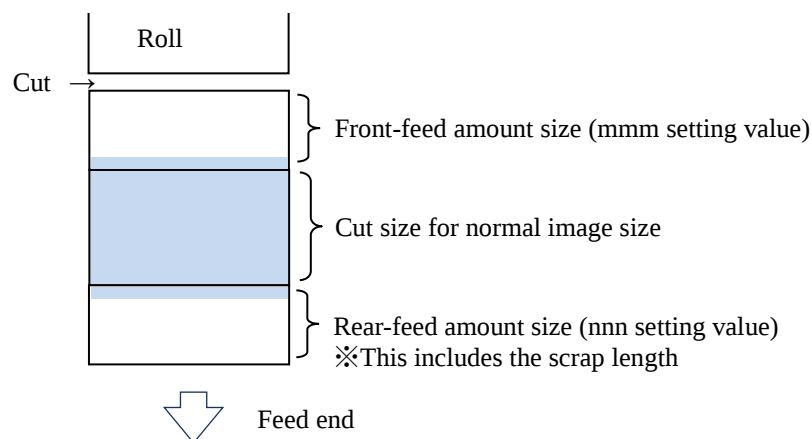
[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	CNTRL	PAPER_FEED	00000008	data

[Transmitted data]	Start code	ESC[1Bh] P
	CNTRL	Printer control command
	PAPER_FEED	Paper feed
	00000008	Argument 4 data length (8-digit decimal ASCII number)
	data	mmmmnnnp<CR>
		A 7-digit decimal ASCII number sets each feed amount.
	mmm	Front-feed amount setting Setting value:000~100 If the setting exceeds parameters, it will be invalid
	nnn	Rear-feed amount setting Setting value:022~100 If the setting exceeds parameters, it will be invalid
	p	Reserved Setting value: fixed at 0

[Function] This adds the designated feed amount before and after the print for printing.
 The feed amounts before and after the print can be set between 0 and 1 inch, in 0.01 inch increments.
 However, the rear feed amount must be between 0.22 and 1 inch. (Because operating in the sticker cutter mode doesn't cut the scrap off, the rear of the print gets a 0.22-inch blank area for scrap by default.)

[Attention] This command is only valid when using the sticker cutter mode.
 Send this command before sending the print data.
 This command is only valid once for 1 print. The printer will revert to normal settings after each print.

< Layout >



1-3.10 Cut Operation Control

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	CNTRL	CUT_MODE	00000012	data

[Transmitted data]	Start code	ESC[1Bh] P
	CNTRL	Printer control command
	CUT_MODE	Cut operation mode
	00000012	Argument 4 data length (12-digit decimal ASCII number)
	data	000000000000 sets standard cut operation mode (default)
		000000000001 sets Sticker Cutter Use Mode
		000000000002 sets Cut Designation Mode
		000000000010 Paper Feed designation (in Sticker Cutter Use)
		kkkmmmm00100 Paper Advance designation (in Sticker Cutter Use)
		kkkmmmm00200 Paper Reverse designation (in Sticker Cutter Use)
		000000001000 Start Cutting directions
	kkk	Designates paper feed speed when advancing/reversing paper setting value : 004~044 (0.4~4.4ips, 0.1ips increments)
	mmmm	Designates paper feed step count when advancing/reversing paper setting value : 0001~1000 (0.01~10.00 inches, 0.01 inch increments)

[Function]	This sets the Cut Operation mode. If the Sticker Cutter Use Mode is set, the printer will perform the paper feed and cutting operations as per the directions received for Paper Advance, Paper Reverse, and Start Cutting. If the Cut Designation Mode is set, the printer will perform feed out and cut operations by receiving the Start Cutting directions. For either the Sticker Cutter Use mode or the Cut Designation mode, Paper Advance/Paper Reverse and Start Cutting designations all use this command.
------------	---

12-10 th column Feed speed setting	9-6 th column Feed Step Qty	5-2 nd column Op. Desig.	1 st column Mode Setting	Contents
000	0000	0000	0	Standard Cut Operation Mode setting
000	0000	0000	1	Sticker Cutter Use Mode setting
000	0000	0000	2	Cut Designation Mode setting
000	0000	0001	0	Paper feed designation
kkk	mmmm	0010	0	Paper advance designation
kkk	mmmm	0020	0	Paper reverse designation
000	0000	0100	0	Start Cutting designation

[Attention]	Send the mode setting before sending the Start Printing command. The mode settings are valid once for each image. The printer will revert to Standard Cut Operation Mode after each print.
-------------	---

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.
 Refer to "3-14 Procedure to update of color control data" for details.

[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_CW	Nnnnnnnn	data

[Transmitted data] Start code ESC[1Bh] P
 TBL_WT Start writing printer table information
 CTRLD_UPDATE_CW 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.
 Refer to "3-14 Procedure to update of color control data" for details.

[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.
 Refer to "3-14 Procedure to update of color control data" for details.

[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. Refer to "3-14 Procedure to update of color control data" for details.				
[Returned data]	Size (8)	Data			
	nnnnnnnn	Data (variable-length character string)			
[Returned data example]	00000016	DS40_0100.CWD<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).

Refer to "3-14 Procedure to update of color control data" for details.

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

[Returned data example]	00000008	D032<CR><null><null><null>
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1-4.6 Acquisition of color control data version <Type designation>

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	TBL_RD	CWDxxx_Version	00000004 *1	data *1

[Transmitted data]	Start code TBL_RD CWDxxx_Version 00000004 data	ESC[1Bh] P Start reading printer table information Acquire the version information of color control data that has been type specification If xxx is "300", it is acquired the version information for 300dpi. If xxx is "600", it is acquired the version information for 600dpi. If xxx is "610", it is acquired the version information for low speed. If xxx is "620", it is acquired the version information for high density. *1 Number of the Media type (8-digit decimal ASCII number in 4-byte unit) *1 Media type *1 0001 : SD media 0002 : Reserved 0003 : PP media If it specifies other than the above value, the printer returns the value depending on the loaded media type.
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*1:only DP-DS820

[Function]	The printer sends version information (variable-length character string) of color control data that has been type specification. Refer to "3-14 Procedure to update of color control data" for details.
------------	--

[Returned data]	<table border="1"> <tr> <th>Size (8)</th><th>Data</th></tr> <tr> <td>nnnnnnnn</td><td>Data (variable-length character string)</td></tr> </table>	Size (8)	Data	nnnnnnnn	Data (variable-length character string)
Size (8)	Data				
nnnnnnnn	Data (variable-length character string)				

[Returned data example]	00000020	DS620_300_0100.CWD<null><null>
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1-4.7 Acquisition of color control data checksum <Type designation>

[Code]	Start (2)	Argument 1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_RD	CWDxxx_Checksum	00000004 *1	data *1

[Transmitted data]	Start code TBL_RD CWDxxx_Checksum 00000004 data	ESC[1Bh] P Start reading printer table information Acquire the checksum of color control data that has been type specification If xxx is "300", it is acquired the checksum for 300dpi. If xxx is "600", it is acquired the checksum for 600dpi. If xxx is "610", it is acquired the checksum for low speed. If xxx is "620", it is acquired the checksum for high density. *1 Number of the Media type (8-digit decimal ASCII number in 4-byte unit) *1 Media type *1 0001 : SD media 0002 : Reserved 0003 : PP media If it specifies other than the above value, the printer returns the value depending on the loaded media type.
--------------------	---	--

*1:only DP-DS820

[Function]	The printer sends the checksum of color control data that has been type specification (in hexadecimal number) in 4-digit ASCII character string (with CR<0Dh> at its end). Refer to "3-14 Procedure to update of color control data" for details.
------------	--

[Returned data]	<table border="1"> <thead> <tr> <th>Size (8)</th><th>Data</th></tr> </thead> <tbody> <tr> <td>nnnnnnnn</td><td>nnnn<CR><null><null><null></td></tr> </tbody> </table>	Size (8)	Data	nnnnnnnn	nnnn<CR><null><null><null>
Size (8)	Data				
nnnnnnnn	nnnn<CR><null><null><null>				

[Returned data example]	00000008	D032<CR><null><null><null>
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1-4.8 Gamma Correction Data Update

【Code】	Start (2)	Arg.1 (6)	Arg.2 (16)	Arg.3 (8)	Arg.4(2064)
	<ESC>P	TBL_WT	CTRLD_GAMMA16	nnnnnnnn	Correction Data

【Send data】	Start Code	ESC[1Bh] P
	TBL_WT	Correction data update
	CTRLD_GAMMA16	Updates Gamma Correction data
	nnnnnnnn	Correction data size(“00002064” fixed : 8 digits of decimal ASCII characters)

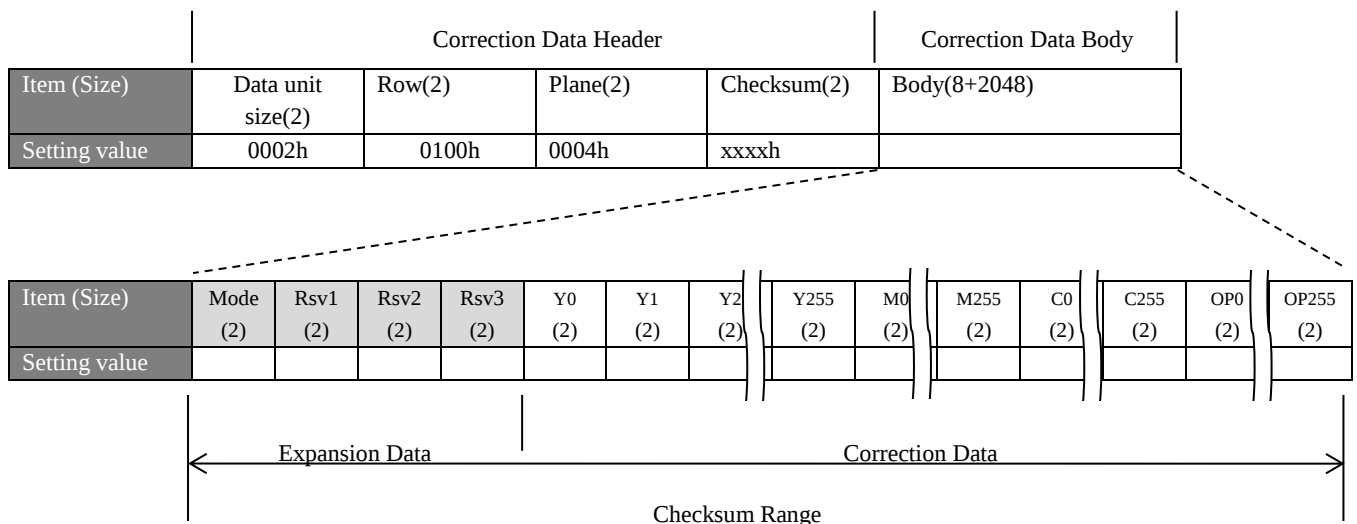
Correction data

Type	Item	Explanation
Header (8 bytes)	Data unit size	0002h(=2 bytes) fixed
	Row	0100h(=256) fixed
	Plane	0004h(= planes for Y,M,C,OP) fixed
	Checksum	xxxxh (sum value of expansion and correction data)
Expansion Data (8 bytes)	Mode	0000h fixed
	Rsv1	0000h fixed
	Rsv2	0000h fixed
	Rsv3	0000h fixed
Correction Data (2048 bytes)	Y[0]..Y[255]	0000h(=0) ~ FFFFh(=65535)
	M[0]..M[255]	
	C[0]..C[255]	
	OP[0]..OP[255]	

The Correction Data is made up of the Correction Data Header and the Correction Data Body.

The Correction Data Header content is binary, and the byte order is Big-Endian.

The Correction Data Body is made up of the Expansion Data and the Correction Data, and sets the data in the following order.



【Function】	This updates the Gamma Correction data. The Gamma Correction data will be applied when the 8-bit image data is expanded to 16-bit. Correction data line count should be set at 256 lines.
------------	---

1-4.9 Get Gamma Correction Data Checksum

【Code】	Start (2)	Arg.1 (6)	Arg.2 (16)	Arg.3 (8)	Arg.4
	<ESC>P	TBL_RD	CTRLD_GAMMA16		

【Send data】	Start Code	ESC[1Bh] P
	TBL_RD	Requests Correction data checksum
	CTRLD_GAMMA16	Requests Gamma Correction data checksum

【Function】	The printer sends a set-length hexadecimal ASCII character string (CR<0Dh> terminus, 4-byte padding) checksum for Gamma Correction data.
	However, if the Correction data is not set at the printer, it will send a 4-character space character string " " (CR<0Dh> terminus, 4-byte padding).

【Return data】	Size (8)	Data
	00000008	Set-length ASCII character string <CR>

【Return data sample】	00000008	ABCD<CR> <null> <null> <null>
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1-4.10 Correction Data Reset

【Code】	Start (2)	Arg.1 (6)	Arg.2 (16)	Arg.3 (8)	Arg.4
	<ESC>P	TBL_WT	CTRLD_CWE_RESET		

【Send data】	Start Code	ESC[1Bh] P
	TBL_WT	Correction data update
	CTRLD_CWE_RESET	Resets Correction data.

【Function】	Gamma Correction data will have default values set.
------------	---

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. (Refer to 3-9 for count-up action)
------------	--

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

[Returned data example]	00000012	CLnnnnnnnn<CR> <null> <null>
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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. (Refer to 3-9 for count-up action)
------------	---

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

[Returned data example]	00000012	CAnnnnnnnn<CR> <null> <null>
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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. (Refer to 3-9 for count-up action)

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

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

1-5.5 Reading the print volume counter P

[Code]	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. (Refer to 3-9 for count- up action)

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

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

1-5.6 Setting counter P value

[Code]	Start (2)	Argument1 (6)	Argument2(16)	Argument3(16)	Argument 4
	<ESC>P	MNT_WT	COUNTERP_SET	00000008	nnnnnnn<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.
 (Refer to 3-9 for count-up action)

[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

[Code]	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.
 (Refer to 3-9 for count-up action)

[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_CLEAR	00000004	CM<CR><NULL>

[Transmitted data] Start code ESC[1Bh] P
 MNT_WT Start setting printer maintenance information
 COUNTER_CLEAR 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.

1-5.10 Read Duplex Counter

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

[Transmitted data] Start code ESC[1Bh] P
 MNT_RD Starts reading printer maintenance information
 COUNTER_DUPLEX Reads the Duplex counter

[Function] This reads the sheet count of duplex prints from the printer.
 The Duplex counter (which cannot be reset) counts up for printing of cut media (from the duplex unit).
 This counter is only valid for the duplex unit.
 (Refer to 3-9 for count up action)

1-5.11 Standby mode transition time setting

[Code]	Start (2)	Argument1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_WT	STANDBY_TIME	00000004	nnnn

[Transmitted data] Start code ESC[1Bh] P
 MNT_WT Start setting printer maintenance information
 STANDBY_TIME Standby mode transition time
 00000004 Argument 4 data length (8-digit decimal ASCII number in 4-byte unit)
 nnnn Transition time (4-digit ASCII character string)
 nnnn=0000~0099
 0001~0099=1~99 minutes (default 10 minutes)
 0000=Not transition to the standby mode

[Function] Set the time to transition to standby mode in 1 minute increments. (Up to 99 minutes maximum) Settings are stored in the printer. (It is valid even when you turn off the printer.)
 If the Idle state continues for a set time, it transitions to the standby mode.
 The printer does not transition to the standby mode if you set the transition time to 0000.

[Attention] When changing to a time shorter than the 10-minute default time, please check the information listed in the "Power Consumption" section of the Printer Product Specification Manual before proceeding.

1-5.12 Standby mode transition time acquisition

[Code]	Start (2)	Argument1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_RD	STANDBY_TIME		

[Transmitted data] Start code ESC[1Bh] P
 MNT_RD Start reading printer maintenance information
 STANDBY_TIME Standby mode transition time

[Function] The printer sends standby mode transition time in 2-digit ASCII character string (with CR<0Dh> at its end).
 The default value for this setting is "10 minutes".

[Returned data]	size (8)	data
	00000008	00nn<CR> <null><null> <null>

[Returned data example] 00000008 0010<CR> <null><null> <null>

1-5.13 Setting of Media end keep mode

[Code]	Start (2)	Argument1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_WT	END_KEEP_MODE	00000004	nn<CR><NULL>

[Transmitted data]	Start code	ESC[1Bh] P
	MNT_WT	Start setting printer maintenance information
	END_KEEP_MODE	Media end keep mode
	00000004	Argument 4 data length (8-digit decimal ASCII number in 4-byte unit)
	nn<CR><NULL>	Setting of mode (2-digit ASCII character string)
	nn = 00 or 01	
	01 = The mode to keep media end (factory preset value)	
	00 = The mode not to keep media end	

[Function]	After Media End occurs, this command sets whether the Media End status is saved after the cover is opened/closed or the power is turned back ON. This command is valid for both Media End (ribbon end or paper end) and Media Error (ribbon error or paper jam). In the “Keep” mode, change the ribbon and paper while the printer is still ON in order to cancel the Media End status. To cancel the Media Error status, resolve the cause of the Media Error and reset the media while the printer is still ON. In the “Don’t Keep” mode, the Media End status and Media Error status will be cancelled as in current models when the cover is opened/closed or the power turned back ON. Settings are stored in the printer. (It is valid even when you turn off the printer.)
------------	---

1-5.14 Acquisition of Media end keep mode

[Code]	Start (2)	Argument1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_RD	END_KEEP_MODE		

[Transmitted data]	Start code	ESC[1Bh] P
	MNT_RD	Start reading printer maintenance information
	END_KEEP_MODE	Media end keep mode

[Function]	The printer sends setting of media end keep mode in 2-digit ASCII character string (with CR<0Dh> at its end). The factory preset value for this setting is " The mode to keep media end (1)".
------------	--

[Returned data]	size (8)	data
	00000004	nn<CR> <null>

[Returned data example]	00000004	00<CR> <null>
-------------------------	----------	---------------

1-5.15 Set USB iSerialNumber availability setting

[Code]	Start (2)	Argument1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_WT	USB_ISERI_SET	00000004	nn<CR><NULL>

[Transmitted data]	Start code	ESC[1Bh] P
	MNT_WT	Start setting printer maintenance information
	USB_ISERI_SET	USB iSerialNumber Setting
	00000004	Argument 4 data length (8-digit decimal ASCII number in 4-byte unit)
	nn	availability setting of USB iSerialNumber
		01 = Enable the USB iSerialNumber
		00 = Disable the USB iSerialNumber (default)

[Function]	Set the availability of USB iSerialNumber
	When you enable this setting, serial number is the product serial number of the product-specific information.
	Settings are stored in the printer. (It is valid even when you turn off the printer.)
	This configuration change will be effective when the power of the printer is turned on again.

1-5.16 Get USB iSerialNumber availability setting

[Code]	Start (2)	Argument1 (6)	Argument 2 (16)	Argument 3 (8)	Argument 4
	<ESC>P	MNT_RD	USB_ISERI_SET		

[Transmitted data]	Start code	ESC[1Bh] P
	MNT_RD	Start reading printer maintenance information
	USB_ISERI_SET	USB iSerialNumber Setting

[Function]	The printer sends the availability setting of USB iSerialNumber in 2-digit ASCII character string. (with CR<0Dh> at its end).
	The default value for this setting is "Disable the USB iSerialNumber (0)".

[Returned data]	size (8)	data
	0000nnnn	nn<CR> <null>
[Returned data example]	00000004	nn<CR> <null>

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 the firmware rewrite mode changing command to change 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.

1-6.3 Changing to the firmware rewrite mode for duplex-unit

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

[Transmitted data]	Start code	ESC[1Bh] P
	FW_UPD	Command for rewriting firmware
	DUNIT_REWRITE	Switch to the rewrite mode
	00000008	Argument 4 data length (8-digit decimal ASCII number)
	data	Baud rate setting
		00000000: 38400 bps
		00000001: 57600 bps
		00000002: 115200 bps
		00000003: 230400 bps

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

This mode will continue until finished to rewrite the firmware or turned off the printer.

[Attention] During the duplex-unit firmware rewrite mode cannot print.

1-6.4 Transmission of firmware rewriting data for duplex-unit

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

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

[Function] Sends duplex-unit firmware rewriting data and rewrites the firmware.
The duplex-unit firmware rewriting data is provided in binary format files.

[Attention] Before sending the firmware rewriting data, make sure to use the firmware rewrite mode changing command for duplex-unit to change to the duplex-unit 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 firmware rewriting data to complete the 32-bit unit.

2-1. Image size

Model: DS40 / DP-DS620

Paper Type	Paper Size (inch)	Print area size *1 Width (head-width direction) x Length (paper-feed direction)	Image pixel size	
			300 x 300 DPI (pixel)	300 x 600 DPI (pixel)
(5x3.5) (L)	5"x3.5"	131.1 x 92.1mm	1548 x 1088	1548 x 2176
(5x5) *3	5"x5"	131.1 x 130.4mm	1548 x 1540	1548 x 3080
(6x4) (PC)	6"x4"	156.1 x 105.0mm	1844 x 1240	1844 x 2480
(6x4.5) *5	6"x4.5"	156.1 x 117.3mm	1844 x 1386	1844 x 2772
(6x6) *6	6"x6"	156.1 x 155.4mm	1844 x 1836	1844 x 3672
(5x7) (2L)	5"x7"	131.1 x 181.0mm	1548 x 2138	1548 x 4276
(6x8) (A5)	6"x8"	156.1 x 206.2mm	1844 x 2436	1844 x 4872
(6x9) (A5W) *4	6"x9"	156.1 x 232.0mm	1844 x 2740	1844 x 5480
(5x3.5)x2 (L dual image) *2	5"x3.5" (2 sheets)	131.1 x 184.2mm	1548 x 2176	1548 x 4352
(6x4)x2 (PC dual image)	6"x4" (2 sheets)	156.1 x 211.5mm	1844 x 2498	1844 x 4996
(6x4.5)x2 (6x4.5 dual image) *5	6"x4.5" (2 sheets)	156.1 x 237.2mm	1844 x 2802	1844 x 5604
Margin (top/bottom) () is for the paper type of (6x4) or (6x4)x2.		4.5mm	54 (60)	108 (120)
Margin (left/right)		5.0mm	60	60
Medium size for (5x3.5)x2		0 mm	0	0
Medium size for (6x4)x2		1.52mm	18	36
Medium size for (6x4.5)x2 *5		2.54mm	30	60
Transmission data width (head width)			1920	1920

*1: 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)

*2 DS40 Firmware version 1.50 or later

*3 only DP-DS620

*4 DP-DS620 Firmware version 1.10 or later

*5 only DP-DS620. Firmware version 1.10 or later

*6 DS40 Firmware version 1.60 or later

Model: DS80

Paper Type	Paper Size (inch)	Print area size *1 Width (head-width direction) x Length (paper-feed direction)	Image pixel size	
			300 x 300 DPI (pixel)	300 x 600 DPI (pixel)
(8x4)	8"x4"	207.3 x 104.6mm	2448 x 1236	2448 x 2472
(8x5)	8"x5"	207.3 x 130.0mm	2448 x 1536	2448 x 3072
(8x6)	8"x6"	207.3 x 155.4mm	2448 x 1836	2448 x 3672
(8x8)	8"x8"	207.3 x 206.2mm	2448 x 2436	2448 x 4872
(8x4)x2	8"x4" (2 sheets)	207.3 x 211.8mm	2448 x 2502	2448 x 5004
(8x5)_(8x4)	8"x5", 8"x4"	207.3 x 237.2mm	2448 x 2802	2448 x 5604
(8x10)	8"x10"	207.3 x 257.0mm	2448 x 3036	2448 x 6072
(8x5)x2	8"x5" (2 sheets)	207.3 x 262.6mm	2448 x 3102	2448 x 6204
(8x6)_(8x4)	8"x6", 8"x4"	207.3 x 262.6mm	2448 x 3102	2448 x 6204
(8x6)_(8x5)	8"x6", 8"x5"	207.3 x 288.0mm	2448 x 3402	2448 x 6804
A4 Length	8"x11.7"	207.3 x 300.0mm	2448 x 3544	2448 x 7088
8x12	8"x12"	207.3 x 307.8mm	2448 x 3636	2448 x 7272
(8x6)x2	8"x6" (2 sheets)	207.3 x 313.4mm	2448 x 3702	2448 x 7404
(8x8)_(8x4)	8"x8", 8"x4"	207.3 x 313.4mm	2448 x 3702	2448 x 7404
(8x4)x3	8"x4" (3 sheets)	207.3 x 319.0mm	2448 x 3768	2448 x 7536
Margin (top/bottom)		4.5mm	54	108
Margin (left/right)		5.0mm	60	60
Medium size for multi-cutting		2.54mm	30	60
Transmission data width (head width)			2560	2560

*1: 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)

Model: DP-DS820

Paper Type	Paper Size (inch)	Print area size *1 Width (head-width direction) x Length (paper-feed direction)	Image pixel size	
			300 x 300 DPI (pixel)	300 x 600 DPI (pixel)
(8x4)	8"x 4"	207.3 x 104.6mm	2448 x 1236	2448 x 2472
(8x5)	8"x 5"	207.3 x 130.0mm	2448 x 1536	2448 x 3072
(8x6)	8"x 6"	207.3 x 155.4mm	2448 x 1836	2448 x 3672
(8x7)	8"x 7"	207.3 x 181.0mm	2448 x 2136	2448 x 4272
(8x8)	8"x 8"	207.3 x 206.2mm	2448 x 2436	2448 x 4872
(8x9)	8"x 9"	207.3 x 232.0mm	2448 x 2736	2448 x 5472
(8x10)	8"x 10"	207.3 x 257.0mm	2448 x 3036	2448 x 6072
A4 Length (8xA4)	8"x 11.7"	207.3 x 300.0mm	2448 x 3544	2448 x 7088
(8x12)	8"x 12"	207.3 x 307.8mm	2448 x 3636	2448 x 7272
(A4 x 5)	A4 x 5"	214.0 x 130.0mm	2528 x 1536	2528 x 3072
A5 Format	8.3"x 5.8"	214.0 x 151.0mm	2528 x 1784	2528 x 3568
(A4 x 6)	A4 x 6"	214.0 x 155.4mm	2528 x 1836	2528 x 3672
(A4 x 8)	A4 x 8"	214.0 x 206.2mm	2528 x 2436	2528 x 4872
(A4 x 10)	A4 x 10"	214.0 x 257.0mm	2528 x 3036	2528 x 6072
A4 Format	8.3"x 11.7"	214.0 x 300.0mm	2528 x 3544	2528 x 7088
(8x4)x2	8"x 4" (2 sheets)	207.3 x 211.8mm	2448 x 2502	2448 x 5004
(8x5)x2	8"x 5" (2 sheets)	207.3 x 262.6mm	2448 x 3102	2448 x 6204
(8x6)x2	8"x 6" (2 sheets)	207.3 x 313.4mm	2448 x 3702	2448 x 7404
(8x4)x3	8"x 4" (3 sheets)	207.3 x 319.0mm	2448 x 3768	2448 x 7536
(8x5)_(8x4)	8"x 5", 8"x 4"	207.3 x 237.2mm	2448 x 2802	2448 x 5604
(8x6)_(8x4)	8"x 6", 8"x 4"	207.3 x 262.6mm	2448 x 3102	2448 x 6204
(8x6)_(8x5)	8"x 6", 8"x 5"	207.3 x 288.0mm	2448 x 3402	2448 x 6804
(8x8)_(8x4)	8"x 8", 8"x 4"	207.3 x 313.4mm	2448 x 3702	2448 x 7404
(A4 x 5) x 2	A4 x 5" (2 sheets)	214.0 x 262.6mm	2528 x 3102	2528 x 6204
A5 x 2	A5 (2 sheets)	214.0 x 304.6mm	2528 x 3598	2528 x 7196
White border area top-bottom		4.5mm	54	108
White border area left-right		5.0mm	60	60
Median size for multi-cut		2.54mm	30	60
Transmit data width (head width)			2560	2560

*1 : 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)

Model: DP-DS80D

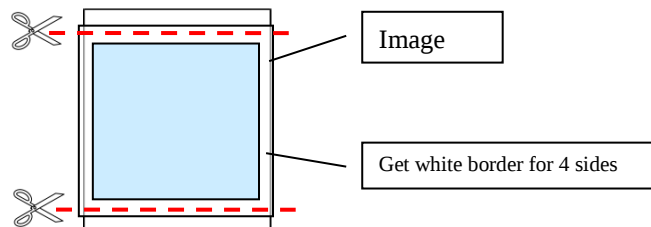
<Roll paper>

Paper Type	Paper Size (inch)	Print area size*1 Width (head-width direction) x Length (paper-feed direction)	Image pixel size	
			300 x 300 DPI (pixel)	300 x 600 DPI (pixel)
(8x4)	8"x 4"	207.3 x 104.6mm	2448 x 1236	2448 x 2472
(8x5)	8"x 5"	207.3 x 130.0mm	2448 x 1536	2448 x 3072
(8x6)	8"x 6"	207.3 x 155.4mm	2448 x 1836	2448 x 3672
(8x8)	8"x 8"	207.3 x 206.2mm	2448 x 2436	2448 x 4872
(8x4)x2	8"x 4" (2 sheets)	207.3 x 211.8mm	2448 x 2502	2448 x 5004
(8x5)_(8x4)	8"x 5", 8"x 4"	207.3 x 237.2mm	2448 x 2802	2448 x 5604
(8x10)	8"x 10"	207.3 x 257.0mm	2448 x 3036	2448 x 6072
(8x5)x2	8"x 5" (2 sheets)	207.3 x 262.6mm	2448 x 3102	2448 x 6204
(8x6)_(8x4)	8"x 6", 8"x 4"	207.3 x 262.6mm	2448 x 3102	2448 x 6204
(8x6)_(8x5)	8"x 6", 8"x 5"	207.3 x 288.0mm	2448 x 3402	2448 x 6804
A4 Length	8"x 11.7"	207.3 x 300.0mm	2448 x 3544	2448 x 7088
(8x12)	8"x 12"	207.3 x 307.8mm	2448 x 3636	2448 x 7272
(8x6)x2	8"x 6" (2 sheets)	207.3 x 313.4mm	2448 x 3702	2448 x 7404
(8x8)_(8x4)	8"x 8", 8"x 4"	207.3 x 313.4mm	2448 x 3702	2448 x 7404
(8x4)x3	8"x 4" (3 sheets)	207.3 x 319.0mm	2448 x 3768	2448 x 7536
White border area top-bottom		4.5mm	54	108
White border area left-right		5.0mm	60	60
Median size for multi-cut		2.54mm	30	60
Transmit data width (head width)			2560	2560

<Cut paper>

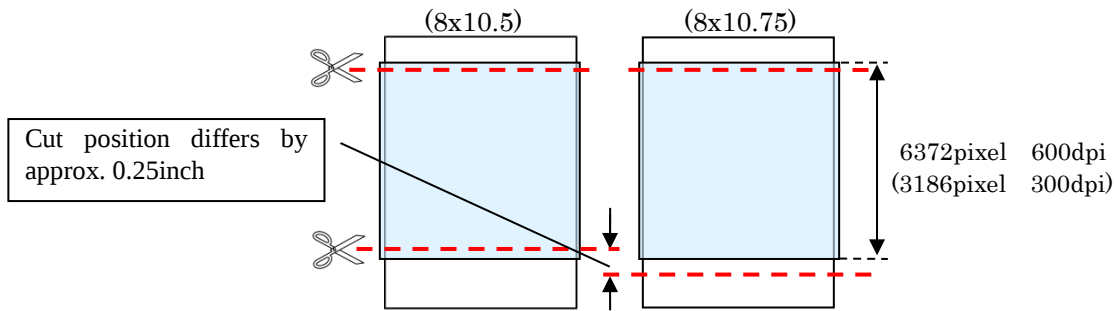
Paper Type	Paper Size (inch)	Print area size*1 Width (head-width direction) x Length (paper-feed direction)	Image pixel size	
			300 x 300 DPI (pixel)	300 x 600 DPI (pixel)
(8x4)	8"x 4"	207.3 x 104.6mm	2448 x 1236	2448 x 2472
(8x5)	8"x 5"	207.3 x 130.0mm	2448 x 1536	2448 x 3072
(8x6)	8"x 6"	207.3 x 155.4mm	2448 x 1836	2448 x 3672
(8x8)	8"x 8"	207.3 x 206.2mm	2448 x 2436	2448 x 4872
(8x10)	8"x 10"	207.3 x 257.0mm	2448 x 3036	2448 x 6072
(8x10.5)	8"x 10.5"	207.3 x 269.7mm	2448 x 3186	2448 x 6372
(8x10.75)*2	8"x 11.75"	207.3 x 269.7mm	2448 x 3186	2448 x 6372
(8x12)	8"x 12"	207.3 x 307.8mm	2448 x 3636	2448 x 7272
(8x4)x2	8"x 4" (2 sheets)	207.3 x 211.8mm	2448 x 2502	2448 x 5004
(8x5)x2	8"x 5" (2 sheets)	207.3 x 262.6mm	2448 x 3102	2448 x 6204
(8x6)x2	8"x 6" (2 sheets)	207.3 x 313.4mm	2448 x 3702	2448 x 7404
(8x4)x3*3	8"x 4" (3 sheets)	207.3 x 313.40mm	2448 x 3702	2448 x 7404
White border area top-bottom		4.5mm	54	108
White border area left-right		5.0mm	60	60
Medium size for (8x4)x2 or (8x5)x2,(8x6)x2 size		2.54mm	30	60
Medium size for (8x4)x3 size		-0.27mm	-3(Over rap)	-6 (Over rap)
Transmit data width (head width)			2560	2560

When printing with a white border on all sides, a white border is added to the image. See the chart for the border size.



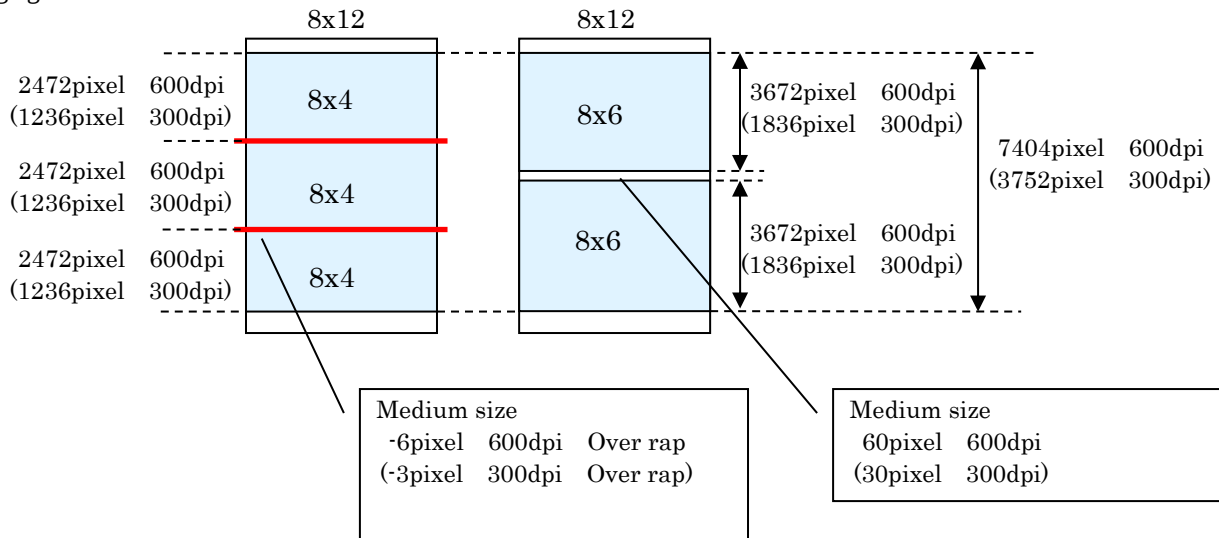
When transferring data of the above image pixel size, every one of them should be laid out at the center of above-mentioned "Transmission data width (head width)" pixels. The left and right free pixels shall be filled with blank data.

- *1: 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)
- *2: Image pixel sizes for (8x10.5) and (8x10.75) are the same. Print output differs as shown below.



- *3: When it is multi-cut 8x4x3 print using cut paper, for image layout.

When it is multi-cut 8x4x3 print using cut paper, should be the same as the roll paper 8x6x2 size the vertical size of the image generation.



[Note when Transmitting Image]

The order of transmission of plain data is Y at first, the next is M, and the last is C. Please keep this order.

Moreover, in DS40 or DS80 model, it transmits as follows.

- ※ 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);
```

2-2. Duplex printer: Relationship between the image created by the application and the printer operation/output image

The application determines the order that images are sent to the printer for the desired result, and rotates and alters the image size to be sent depending on the print orientation, etc.
The relationship between the orientation of the image sent to the printer and the completed print is as shown in the chart below.

◆ For duplex printing (Duplex cut paper, no layout. For 1-side printing with overcoating on the reverse side, the process is the same.)

Paper type Output size	Duplex designation	Image creation、 Layout & transmit order	Image Transmit Process and Printer Operation	Media Delivery Image
Duplex Cut paper Single-layout	Long edge	① ② ③ Front A ④ ⑤ ⑥ Back B Image transmission order	<Image transmission procedure> Process Command Sample parameter(for 8×8 size) ① Paper size setting <ESC>P IMAGE MULTICUT (Parameter4)00000211 ② Send BMP image A <ESC>P IMAGE YPLANE <ESC>P IMAGE MPLANE <ESC>P IMAGE CPLANE ※1 ③ Print command <ESC>P CNTRL START ④ Paper size setting <ESC>P IMAGE MULTICUT (Parameter4)00000311 ⑤ Send BMP image B (※Same order as in 1) ⑥ Print command <ESC>P CNTRL START (Example of the process for 1-side printing with overcoating on the reverse side) ※When printing an image on one side, and only overcoating the reverse side, send an all-white BMP image to the overcoat side.	
	Short edge	① ② ③ Front A ④ ⑤ ⑥ Back B Image transmission order	<Printer operation> 1. Standby 2. Paper feed 3. Printing 4. Reverse 5. Printing 6. Feed out/cut 7. Finish/Standby	

◆For duplex printing (Duplex cut paper, 2-image layout. When printing only 1 side and overcoating the other side, the process is the same.)

Paper type Output size	Duplex designation	Image creation、 Layout & transmit order		Printer Operation and Image Transmit Process	Media Delivery Image
Duplex Cut paper Multi-layout	Long edge	① ② ③ Front C 8x5 ④ ⑤ ⑥ Back D 8x5 ① ② ③ Front A 8x5 ④ ⑤ ⑥ Back B 8x5 Create and send a 2-image layout	⇒	<Image transmission procedure> Process ① Paper size setting ② Send BMP Image C+A ③ Print command ④ Paper size setting ⑤ Send BMP Image D+B ⑥ Print command Command <ESC>P IMAGE MULTICUT <ESC>P IMAGE YPLANE <ESC>P IMAGE MPLANE <ESC>P IMAGE CPLANE <ESC>P CNTRL START <ESC>P IMAGE MULTICUT <ESC>P IMAGE YPLANE <ESC>P IMAGE MPLANE <ESC>P IMAGE CPLANE <ESC>P CNTRL ST Sample parameter (for 8x5x2 size) (Parameter 4)00000214 Create and send a 2-image layout (Parameter 4)00000314 Create and send a 2-image layout (Example of the process for 1-side printing with overcoating on the reverse side) ※When printing an image on one side, and only overcoating the reverse side, send an all-white BMP image to the overcoat side.	
	Short edge	① ② ③ Front C 8x5 ④ ⑤ ⑥ Back D 8x5 ① ② ③ Front A 8x5 ④ ⑤ ⑥ Back B 8x5 Create and send a 2-image layout	⇒	<Printer operation> ①Stand by ②Paper feed ③Printing ④Reverse ⑤Printing ⑥Feed out/cut ⑦Finish/Stand by Two 5-inch cuts	

◆ For single-side printing (Cut media, using the duplex unit)

Paper type Output size	Duplex designation	Image creation、 Layout & transmit order		Printer Operation and Image Transmit Process	Media Delivery Image
Cut paper Single-layout	No	① ② ③ Front A	⇒	<Image transmission procedure> Process ① Paper size setting ② Send BMP image A ③ Print command Command <ESC>P IMAGE MULTICUT <ESC>P IMAGE YPLANE <ESC>P IMAGE MPLANE <ESC>P IMAGE CPLANE <ESC>P CNTRL START Sample parameter(for 8x8 size) (Parameter4)00000111 <Printer operation> ①Standby ②Paper feed ③Printing ④Feed out/Cut	
Cut paper Multi-layout	No	Create and send a 2-image layout ① ② ③ Front B 8x5 Front A 8x5	⇒	<Image transmission procedure> Process ① Paper size setting ② Send BMP Image B+A ③ Print command Command <ESC>P IMAGE MULTICUT <ESC>P IMAGE YPLANE <ESC>P IMAGE MPLANE <ESC>P IMAGE CPLANE <ESC>P CNTRL START Sample parameter (for 8x5x2 size) (Parameter 4)00000114 Create and send a 2-image layout <Printer operation> ①Standby ②Paper feed ③Printing ④Feed out/Cut Two 5-inch cuts	

◆ For 1-side printing (roll paper, not using the duplex unit)

Paper type Output size	Duplex designation	Image creation、 Layout & transmit order		Image Transmit Process and Printer Operation	Media Delivery Image
Roll paper Single-layout	No	① ② ③ Front A	⇒	<Image transmission procedure> Process ① Paper size setting ② Send BMP image A ③ Print command Command <ESC>P IMAGE MULTICUT <ESC>P IMAGE YPLANE <ESC>P IMAGE MPLANE <ESC>P IMAGE CPLANE <ESC>P CNTRL START Sample parameter (for 8x8 size) (Parameter4)00000011 <Printer operation> 1. Standby 2. Printing 3. Feed out /Cut	
Roll paper Multi-layout	No	Create and send a 2-image layout ① ② ③ Front B 8x6 Front A 8x6	⇒	<Image transmission procedure> Process ① Paper size setting ② Send BMP image B+A ③ Print command Command <ESC>P IMAGE MULTICUT <ESC>P IMAGE YPLANE <ESC>P IMAGE MPLANE <ESC>P IMAGE CPLANE <ESC>P CNTRL START Sample parameter (for (8x6)x2 size) (Parameter4)00000015 Create and send a 2-image layout <Printer operation> 1. Standby 2. Printign 3. Feed out /Cut	

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 1920x1240 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	
	Total of header part	1078 bytes	Border adjustment data (null)	10 bytes <- Added	
			Total of header part	1088 bytes	
	Pixel data	2380800 bytes	Pixel data	2380800 bytes	
	Total	2381878 bytes	Total	2381888 bytes	
BITMAPFILEHEADER data			BITMAPFILEHEADER data		
File size	bfType	"BM"	bfType	"BM"	
	bfSize	0x00245836	bfSize	0x00245840	
Offset up to pixel data	bfReserved1	0x0000	bfReserved1	0x0000	
	bfReserved2	0x0000	bfReserved2	0x0000	
	bfOffBits	0x00000436	bfOffBits	0x00000440	Located at 32-bit border
		Not located at 32-bit border			

3-2.1 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		
		No. 00600	A4		

Examples:

			Support media of each model		
Type	Size (W x L)	Code	DS40, DP-DS620	DS80, DP-DS80D	DP-DS820
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	—	○	○
A4 Standard paper	(210.0 x 297.0mm)	00600	—	—	○

(○:Support, —:No support)

3-2.2 Media extension codes

Media extension code shows by 10 digits with decimal number.

Media extension setting

10th - 3rd digit Reserved (for future extension)	2nd - 1st digit Media type ※
00000000	00 = Standard paper 01 = Sticker paper 99 = Unknown

※When Media type is confirmed, please use 2nd digit and 1st digit only.

The command for getting this media extension code is newly added. The correspondence situation of each model of this command is shown below.

	Model				
	DS40	DP-DS620	DS80	DP-DS80D	DP-DS820
Effective firmware version (This or later)	No support	01.33	No support	No support	No support

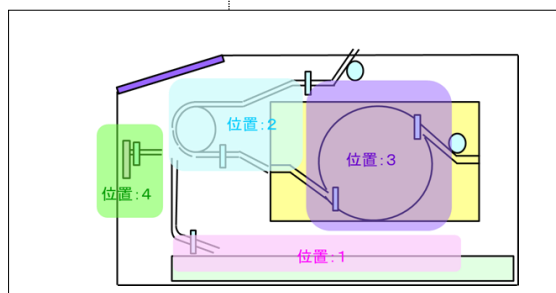
3-3.1 Status codes

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. (The status generated by the model differs.)

Code classification	Occurrence level	How to recover from error	Code	Status	Model			
					DS40	DS80	DP-DS80D	DP-DS620 DP-DS820
00000-00999	Occurs during normal operation	As per normal procedure	00000	Idling	○	○	○	○
			00001	Printing	○	○	○	○
			00500	Head cooling down	○	○	○	○
			00510	Cooling the paper winding motor	○	○	○	—
			00900	Standby Mode	—	—	—	○
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	○	○	○	—
03000-03999	Other internal error	Call for service if system does not recover after reboot.	02700	Ribbon tension error	○	○	○	—
			02800	RF-ID module error	○	○	○	○
05000- 05999	Duplex unit errors	For error codes and error recovery, please refer to the Duplex unit manual.	03000	System error	○	○	○	○
			05017	Paper jam in duplex unit paper supply area (loc. 1)	—	—	○	—
			05019	Paper jam in duplex unit upper paper feed area (loc. 2)	—	—	○	—
			05023	Paper jam in area of duplex unit shell (loc. 3)	—	—	○	—
			05027	Paper jam in area of duplex unit eject slot (loc. 4)	—	—	○	—
			05049	Duplex unit paper delivery motor malfunction	—	—	○	—
			05065	Duplex unit reversing block (shell) internal feed motor malfunction	—	—	○	—
			05081	Duplex unit pinch malfunction	—	—	○	—
			05097	Duplex unit act pass guide malfunction	—	—	○	—
			05113	Duplex unit side guide malfunction	—	—	○	—
			05129	Duplex unit skew correction malfunction	—	—	○	—
			05145	Duplex unit reverse block (shell) malfunction	—	—	○	—
			05161	Duplex unit feed tray malfunction	—	—	○	—
			05177	Duplex unit cut operation malfunction	—	—	○	—
			05193	Duplex unit tray error	—	—	○	—
			05209	Duplex unit maintenance cover open	—	—	○	—
			05241	Duplex unit system error	—	—	○	—



(○:Status is generated. —:Status is not generated.)

3-3.2 Duplex-specific status codes

The information returned to the duplex unit status request command is shown in the chart below.
 These status codes allow you to get the operating status and discern errors in the duplex unit.
 For error codes and error recovery, please refer to the Duplex unit manual.

API definition	Code	Status
NON_ERROR	5000	No error
UCS_NONCONNECT	5500	Duplex unit is not connected
UCS_JAMMING_SUPPLY_SENS_ON	5017	The print didn't pass the supply sensor, so the sensor didn't switch ON (no paper) (paper feed operation)
UCS_JAMMING_SUPPLY_SENS_OFF	5018	The print didn't reach the supply sensor, so the sensor didn't switch OFF (paper present) (paper feed operation)
UCS_JAMMING_SLOT_SENS_ON	5019	The print didn't pass the delivery slot sensor, so the sensor didn't switch ON (no paper) (paper feed / reversing operation)
UCS_JAMMING_SLOT_SENS_OFF	5020	The print didn't reach the delivery slot sensor, so the sensor didn't switch OFF (paper pres.) (paper feed/reversing operation)
UCS_JAMMING_PASS_SENS_ON	5021	The print didn't pass the pinch pass sensor, so the sensor didn't switch ON (no paper) (reversing / ejecting operation)
UCS_JAMMING_PASS_SENS_OFF	5022	The print didn't reach the pinch pass sensor, so the sensor didn't switch OFF (paper present) (reversing / ejecting operation)
UCS_JAMMING_SHELL_SENS1_ON	5023	The print didn't pass shell pass sensor-1, so the sensor didn't switch ON (no paper) (reversing / ejecting operation)
UCS_JAMMING_SHELL_SENS1_OFF	5024	The print didn't reach shell pass sensor-1, so the sensor didn't switch OFF (paper present) (reversing / ejecting operation)
UCS_JAMMING_SHELL_SENS2_ON	5025	The print didn't pass shell pass sensor-2, so the sensor didn't switch ON (no paper) (reversing operation)
UCS_JAMMING_SHELL_SENS2_OFF	5026	The print didn't reach shell pass sensor-2, so the sensor didn't switch OFF (paper present) (reversing operation)
UCS_JAMMING_EJECT_SENS_ON	5027	The print didn't pass the eject sensor, so the sensor didn't switch ON (no paper) (ejecting operation)
UCS_JAMMING_EJECT_SENS_OFF	5028	The print didn't reach the eject sensor, so the sensor didn't switch OFF (paper present) (ejecting operation)
UCS_JAMMING_SLOT_FG_SENS	5029	During printing, the printer transfer FG sensor didn't detect the print (printing)
UCS_JAMMING_SHELL_FG_SENS	5030	While delivering the print out of the shell roller, the FG sensor in the shell didn't detect the print (reversing operation)
UCS_REMAIN_SUPPLY_SENS	5033	Paper supply sensor is OFF (paper present)
UCS_REMAIN_SLOT_SENS	5034	Printer feed slot sensor is OFF (paper present)
UCS_REMAIN_PASS_SENS	5035	Pinch pass sensor is OFF (paper present)
UCS_REMAIN_SHELL_SENS1	5036	Shell pass sensor 1 is OFF (paper present)
UCS_REMAIN_SHELL_SENS2	5037	Shell pass sensor 2 is OFF (paper present)
UCS_REMAIN_EJECT_SENS	5038	Eject sensor is OFF (paper present)
UCS_CAPSTAN_TRAPZ_ERROR	5049	The capstan drive control didn't end within the set time
UCS_SHELL_ROLLER_ERROR	5065	Shell roller malfunction (slow or stuck)
UCS_PINCH_OPEN_ERROR	5081	The pinch roller could not be moved to the release position
UCS_PINCH_CLOSE_ERROR	5082	The pinch roller could not be moved to the pinch position
UCS_PINCH_INIT_ERROR	5083	The pinch roller initialization could not be completed
UCS_PINCH_POS_UNKNOWN	5084	The pinch roller position is unknown (during trials only)
UCS_PASS_GUIDE_SUPPLY_ERROR	5097	The pass guide could not be moved to the supply position
UCS_PASS_GUIDE_SHELL_ERROR	5098	The pinch roller could not be moved to the retracted position
UCS_PASS_GUIDE_EJECT_ERROR	5099	The pinch roller could not be moved to the eject position
UCS_PASS_GUIDE_INIT_ERROR	5100	The pass guide initialization could not be completed
UCS_PASS_GUIDE_POS_UNKNOWN	5101	The pass guide position is unknown (during trials only)
UCS_SIDE_GUIDE_HOME_ERROR	5113	The side guide could not be moved to the HOME position
UCS_SIDE_GUIDE_POS_ERROR	5114	The side guide could not be moved to the prescribed position
UCS_SIDE_GUIDE_INIT_ERROR	5115	The side guide initialization could not be completed
UCS_ACT_GUIDE_HOME_ERROR	5129	The act guide could not be moved to the HOME position
UCS_SHELL_ROTATE_HOME_ERROR	5145	The shell roller didn't rotate to the HOME position
UCS_SHELL_ROTATE_REV_ERROR	5146	The shell roller didn't rotate to the REV position
UCS_LEVER_DOWN_ERROR	5161	The paper feed lever could not be moved to the DOWN position

UCS_LEVER_LOCK_ERROR	5162	The paper feed lever could not be moved to the LOCK position
UCS_LEVER_UP_ERROR	5163	The paper feed lever could not be moved to the UP position
UCS_CUTTER_HOME_ERROR	5177	The cutter could not be returned to the HOME position
UCS_CUTTER_AWAY_ERROR	5178	The cutter could not be moved to the AWAY position
UCS_CUTTER_INIT_ERROR	5179	Cutter initialization could not be completed
UCS_CUTTER_POS_UNKNOWN	5180	Cutter position is unknown (in testing only)
UCS_TRAY_OUT	5193	Paper tray removed during printing
UCS_TOP_COVER_OPEN	5209	Maintenance cover opened during printing
UCS_SYSTEM_ERROR	5241	System error

3-4 The number of free buffers which can transmit printing data

When the numbers of free buffers are the following value, printing data can be transmitted to a printer.

However, when changing gloss printing and matte printing mutually, the number of free buffers is 2 by every paper type.

Model : DS40 / DP-DS620

Paper Type	Gloss printing		Matte printing	
	300 x 300 DPI	300 x 600 DPI	300 x 300 DPI	300 x 600 DPI
(5x3.5) (L)	1, 2	1, 2	1, 2	1, 2
(5x5) * ₂	1, 2	1, 2	1, 2	1, 2
(6x4) (PC)	1, 2	1, 2	1, 2	1, 2
(6x4.5) * ₄	1, 2	1, 2	1, 2	1, 2
(6x6) * ₅	1, 2	1, 2	1, 2	1, 2
(5x7) (2L)	1, 2	1* ₂ , 2	1, 2	1* ₂ , 2
(6x8) (A5)	1, 2	1* ₂ , 2	1, 2	1* ₂ , 2
(6x9) * ₃ (A5W)	1, 2	2	1, 2	2
(5x3.5) x2 * ₁ (L dual image)	1, 2	1* ₂ , 2	1, 2	1* ₂ , 2
(6x4) x2 (PC dual image)	1, 2	1* ₂ , 2	1, 2	1* ₂ , 2
(6x4.5) x2 * ₂ (6x4.5 dual image)	1, 2	2	1, 2	2

*1 DS40 Firmware version 1.50 or later

*2 only DP-DS620

*3 DP-DS620 Firmware version 1.10 or later

*4 only DP-DS620. Firmware version 1.10 or later

*5 DS40 Firmware version 1.60 or later

Model : DS80 / DP-DS820

Paper Type	Gloss printing		Matte printing	
	300 x 300 DPI	300 x 600 DPI	300 x 300 DPI	300 x 600 DPI
(8 x 4)	1, 2	1, 2	1, 2	1, 2
(8 x 5)	1, 2	1, 2	1, 2	1, 2
(8 x 6)	1, 2	1, 2	1, 2	1, 2
(8 x 7) * ₁	1, 2	1, 2	1, 2	1, 2
(8 x 8)	1, 2	1, 2	1, 2	1, 2
(8 x 9) * ₁	1, 2	1, 2	1, 2	1, 2
(8 x 10)	1, 2	1, 2	1, 2	1, 2
A4 Length (8 x A4)	1, 2	1, 2	1, 2	1* ₁ , 2
(8 x 12)	1, 2	1, 2	1, 2	1* ₁ , 2
(8 x 4) x 2	1, 2	1, 2	1, 2	1, 2
(8 x 5) (8 x 4)	1, 2	1, 2	1, 2	1, 2
(8 x 5) x 2	1, 2	1, 2	1, 2	1, 2
(8 x 6) (8 x 4)	1, 2	1, 2	1, 2	1, 2
(8 x 6) (8 x 5)	1, 2	1, 2	1, 2	1, 2
(8 x 6) x 2	1, 2	1, 2	1, 2	1* ₁ , 2
(8 x 8) (8 x 4)	1, 2	1, 2	1, 2	1* ₁ , 2
(8 x 4) x 3	1, 2	1, 2	1, 2	1* ₁ , 2
A5 Format * ₁	1, 2	1, 2	1, 2	1, 2
(A4 x 5) * ₁	1, 2	1, 2	1, 2	1, 2
(A4 x 6) * ₁	1, 2	1, 2	1, 2	1, 2
(A4 x 8) * ₁	1, 2	1, 2	1, 2	1, 2
(A4 x 10) * ₁	1, 2	1, 2	1, 2	1, 2
A4 Format * ₁	1, 2	1, 2	1, 2	1, 2
(A4 x 5) x 2 * ₁	1, 2	1, 2	1, 2	1, 2
A5 x 2 * ₁	1, 2	1, 2	1, 2	1, 2

*1 only DP-DS820

Model : DP-DS80D

Paper type	Gloss printing		Matte printing	
	300 x 300 DPI	300 x 600 DPI	300 x 300 DPI	300 x 600 DPI
(8 x 4)	1, 2	1, 2	1, 2	1, 2
(8 x 5)	1, 2	1, 2	1, 2	1, 2
(8 x 6)	1, 2	1, 2	1, 2	1, 2
(8 x 8)	1, 2	1, 2	1, 2	1, 2
(8 x 4) x 2	1, 2	1, 2	1, 2	1, 2
(8 x 5)_(8 x 4)	1, 2	1, 2	1, 2	1, 2
(8 x 10)	1, 2	1, 2	1, 2	1, 2
(8 x 5) x 2	1, 2	1, 2	1, 2	1, 2
(8 x 6)_(8 x 4)	1, 2	1, 2	1, 2	1, 2
(8 x 6)_(8 x 5)	1, 2	1, 2	1, 2	1, 2
A4 Length	1, 2	1, 2	1, 2	2
(8 x 12)	1, 2	1, 2	1, 2	2
(8 x 6) x 2	1, 2	1, 2	1, 2	2
(8 x 8)_(8 x 4)	1, 2	1, 2	1, 2	2
(8 x 4) x 3	1, 2	1, 2	1, 2	2
(8 x 10.5)	1, 2	1, 2	1, 2	1, 2
(8 x 10.75)	1, 2	1, 2	1, 2	1, 2

The number of buffers of each paper type which a printer has is shown below.

In the case of the paper type with the buffer for “Double”, it is possible to receive next image data during a printing. (It is excepted when gloss printing and matte printing change.)

Model : DS40

Paper Type	Gloss printing		Matte printing	
	300 x 300 DPI	300 x 600 DPI	300 x 300 DPI	300 x 600 DPI
(5 x 3.5) (L)	Double	Double	Double	Double
(6 x 4) (PC)	Double	Double	Double	Double
(6 x 6) * ₃	Double	Double	Double	Double
(5 x 7) (2L)	Double	Double	Double	Double
(6 x 8) (A5)	Double	Double	Double	Double
(6 x 9) (A5W)	Double	Single	Double	Single
(5 x 3.5) x 2 * ₁ (L dual image)	Double	Double	Double	Double
(6 x 4) x 2 (PC dual image)	Double	Double	Double	Double

*1 version 1.50 or later

*3 version 1.60 or later

Model : DP-DS620

Paper Type	Gloss printing		Matte printing	
	300 x 300 DPI	300 x 600 DPI	300 x 300 DPI	300 x 600 DPI
(5 x 3.5) (L)	Double	Double	Double	Double
(5 x 5)	Double	Double	Double	Double
(6 x 4) (PC)	Double	Double	Double	Double
(6 x 4.5) * ₂	Double	Double	Double	Double
(6 x 6)	Double	Double	Double	Double
(5 x 7) (2L)	Double	Double	Double	Double
(6 x 8) (A5)	Double	Double	Double	Double
(6 x 9) * ₂ (A5W)	Double	Single	Double	Single
(5 x 3.5) x 2 (L dual image)	Double	Double	Double	Double
(6 x 4) x 2 (PC dual image)	Double	Double	Double	Double
(6 x 4.5) x 2 * ₂ (6x4.5 dual image)	Double	Single	Double	Single

*2 version 1.10 or later

Model : DS80

Paper Type	Gloss printing		Matte printing	
	300 x 300 DPI	300 x 600 DPI	300 x 300 DPI	300 x 600 DPI
(8 x 4)	Double	Double	Double	Double
(8 x 5)	Double	Double	Double	Double
(8 x 6)	Double	Double	Double	Double
(8 x 8)	Double	Double	Double	Double
(8 x 4) x 2	Double	Double	Double	Double
(8 x 5)_(8 x 4)	Double	Double	Double	Double
(8 x 10)	Double	Double	Double	Double
(8 x 5) x 2	Double	Double	Double	Double
(8 x 6)_(8 x 4)	Double	Double	Double	Double
(8 x 6)_(8 x 5)	Double	Double	Double	Double
A4 Length	Double	Double	Double	Single
(8 x 12)	Double	Double	Double	Single
(8 x 6) x 2	Double	Double	Double	Single
(8 x 8)_(8 x 4)	Double	Double	Double	Single
(8 x 4) x 3	Double	Double	Double	Single

Model : DP-DS820

Paper Type	Gloss printing		Matte printing	
	300 x 300 DPI	300 x 600 DPI	300 x 300 DPI	300 x 600 DPI
(8 x 4)	Double	Double	Double	Double
(8 x 5)	Double	Double	Double	Double
(8 x 6)	Double	Double	Double	Double
(8 x 7)	Double	Double	Double	Double
(8 x 8)	Double	Double	Double	Double
(8 x 9)	Double	Double	Double	Double
(8 x 10)	Double	Double	Double	Double
A4 Length (8 x A4)	Double	Double	Double	Double
(8 x 12)	Double	Double	Double	Double
A5 Format	Double	Double	Double	Double
(A4 x 5)	Double	Double	Double	Double
(A4 x 6)	Double	Double	Double	Double
(A4 x 8)	Double	Double	Double	Double
(A4 x 10)	Double	Double	Double	Double
A4 Format	Double	Double	Double	Double
(8 x 4) x 2	Double	Double	Double	Double
(8 x 5) x 2	Double	Double	Double	Double
(8 x 5)_(8 x 4)	Double	Double	Double	Double
(8 x 6) x 2	Double	Double	Double	Double
(8 x 6)_(8 x 4)	Double	Double	Double	Double
(8 x 6)_(8 x 5)	Double	Double	Double	Double
(8 x 8)_(8 x 4)	Double	Double	Double	Double
(8 x 4) x 3	Double	Double	Double	Double
(A4 x 5) x 2	Double	Double	Double	Double
A5 x 2	Double	Double	Double	Double

Model : DP-DS80D

Paper Type	Gloss printing		Matte printing	
	300 x 300 DPI	300 x 600 DPI	300 x 300 DPI	300 x 600 DPI
(8 x 4)	Double	Double	Double	Double
(8 x 5)	Double	Double	Double	Double
(8 x 6)	Double	Double	Double	Double
(8 x 8)	Double	Double	Double	Double
(8 x 4) x 2	Double	Double	Double	Double
(8 x 5)_(8 x 4)	Double	Double	Double	Double
(8 x 10)	Double	Double	Double	Double
(8 x 5) x 2	Double	Double	Double	Double
(8 x 6)_(8 x 4)	Double	Double	Double	Double
(8 x 6)_(8 x 5)	Double	Double	Double	Double
A4 Length	Double	Double	Double	Single
(8 x 12)	Double	Double	Double	Single
(8 x 6) x 2	Double	Double	Double	Single
(8 x 8)_(8 x 4)	Double	Double	Double	Single
(8 x 4) x 3	Double	Double	Double	Single
(8 x 10.5)	Double	Double	Double	Double
(8 x 10.75)	Double	Double	Double	Double

3-5 Multi-cut pattern specification value

Transmit the specification value applicable to each paper type. (Paper type supported by the model differs.)

			Support paper type of each model (○:Support, —:No support)				
Paper Type		Specification value	DS40	DS80	DP-DS80D	DP-DS620	DP-DS820
Roll-paper designation	(5 x 3.5)	00000001	○	—	—	○	—
	(6 x 4)	00000002	○	—	—	○	—
	(5 x 7)	00000003	○	—	—	○	—
	(6 x 8)	00000004	○	—	—	○	—
	(6 x 9)	00000005	○	—	—	○*3	—
	(8 x 10)	00000006	—	○	○	—	○
	(8 x 12)	00000007	—	○	○	—	○
	(8 x 4)	00000008	—	○	○	—	○
	(8 x 5)	00000009	—	○	○	—	○
	(8 x 6)	00000010	—	○	○	—	○
	(8 x 8)	00000011	—	○	○	—	○
	(6 x 4) x 2	00000012	○	—	—	○	—
	(8 x 4) x 2	00000013	—	○	○	—	○
	(8 x 5) x 2	00000014	—	○	○	—	○
	(8 x 6) x 2	00000015	—	○	○	—	○
	(8 x 5)_(8 x 4)	00000016	—	○	○	—	○
	(8 x 6)_(8 x 4)	00000017	—	○	○	—	○
	(8 x 6)_(8 x 5)	00000018	—	○	○	—	○
	(8 x 8)_(8 x 4)	00000019	—	○	○	—	○
	(8 x 4) x 3	00000020	—	○	○	—	○
	A4 Length	00000021	—	○	○	—	○
	(5 x 3.5) x 2	00000022	○*1	—	—	○	—
	(6 x 6)	00000027	○*4	—	—	○	—
	(5 x 5)	00000029	—	—	—	○	—
	(6 x 4.5)	00000030	—	—	—	○*3	—
	(6 x 4.5) x 2	00000031	—	—	—	○*3	—
	(8 x 7)	00000032	—	—	—	—	○
	(8 x 9)	00000033	—	—	—	—	○
	A5 Format	00000034	—	—	—	—	○
	A5 x 2	00000035	—	—	—	—	○
	(A4 x 5)	00000037	—	—	—	—	○
	(A4 x 6)	00000038	—	—	—	—	○
	(A4 x 8)	00000039	—	—	—	—	○
	(A4 x 10)	00000040	—	—	—	—	○
	A4 Format	00000041	—	—	—	—	○
	(A4 x 5) x 2	00000043	—	—	—	—	○
	(5 x 3.5) x N	00000401	—	—	—	○*2	—
	(6 x 4) x N	00000402	—	—	—	○	—
	(6 x 4.5) x N	00000430	—	—	—	○*3	—
	(8 x 4) x N	00000408	—	—	—	—	○
	(8 x 5) x N	00000409	—	—	—	—	○
	(8 x 6) x N	00000410	—	—	—	—	○
	A5 x N	00000434	—	—	—	—	○
	(A4 x 5) x N	00000437	—	—	—	—	○

*1 DS40 Firmware version 1.50 or later

*2 DP-DS620 Firmware version 0.30 or later

*3 DP-DS620 Firmware version 1.10 or later

*4 DS40 Firmware version 1.60 or later

				Support paper type of each model (○:Support, —:No support)			
		Paper Type	Specification value	DS40	DS80	DP-DS80D	DP-DS620 DP-DS820
Cut-paper designation	Simplex printing	(8 x 10)	00000106	—	—	○	—
		(8 x 12)	00000107	—	—	○	—
		(8 x 4)	00000108	—	—	○	—
		(8 x 5)	00000109	—	—	○	—
		(8 x 6)	00000110	—	○	○	—
		(8 x 8)	00000111	—	—	○	—
		(8 x 10.5)	00000125	—	—	○	—
		(8 x 10.75)	00000126	—	—	○	—
		(8 x 4) x 2	00000113	—	—	○	—
		(8 x 5) x 2	00000114	—	—	○	—
		(8 x 6) x 2	00000115	—	—	○	—
		(8 x 4) x 3	00000128	—	—	○	—
	Duplex printing	Front design.	(8 x 10)	—	—	○	—
			(8 x 12)	—	—	○	—
			(8 x 4)	—	—	○	—
			(8 x 5)	—	—	○	—
			(8 x 6)	—	—	○	—
			(8 x 8)	—	—	○	—
			(8 x 10.5)	—	—	○	—
			(8 x 10.75)	—	—	○	—
			(8 x 4) x 2	—	—	○	—
			(8 x 5) x 2	—	—	○	—
			(8 x 6) x 2	—	—	○	—
			(8 x 4) x 3	—	—	○	—
		Back design.	(8 x 10)	—	—	○	—
			(8 x 12)	—	—	○	—
			(8 x 4)	—	—	○	—
			(8 x 5)	—	—	○	—
			(8 x 6)	—	—	○	—
			(8 x 8)	—	—	○	—
			(8 x 10.5)	—	—	○	—
			(8 x 10.75)	—	—	○	—
			(8 x 4) x 2	—	—	○	—
			(8 x 5) x 2	—	—	○	—
			(8 x 6) x 2	—	—	○	—
			(8 x 4) x 3	—	—	○	—

3-6 Cutter control specification value

Cutter operation which can be specified by the firmware version differs.

○:Support —:No support Value: Effective firmware version (This or later)

Cutter operation	Specification value	Model				
		DS40	DS80	DP-DS80D	DP-DS620	DP-DS820
Normal operation	00000000	○	○	Roll media only	○	○
Operation causing no cut-paper waste	00000001	○	○	Roll media only	○	○
2inch cut operation	00000120	1.40	—	—	○	○
Panorama print	00001000	—	—	—	1.20	○

3-7 Example of acquisition of a media lot number

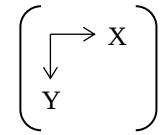
Media lot number input data (RF-ID write setup)		RF-ID tag data (*1)	Host side acquisition data
0 character (When there's no setup)	""	0x20 0x20 0x20 ... 0x20 16 characters are spaces	ML<0x20><0x20><0x20>...<0x20><0x0D><0x00> 16 characters
Setup of 1 character	"A"	0x41 0x20 0x20 ... 0x20 15 characters are spaces	ML<0x41><0x20><0x20>...<0x20><0x0D><0x00> 16 characters
Setup of 2 characters	"AB"	0x41 0x42 0x20 ... 0x20 14 characters are spaces	ML<0x41><0x42><0x20>...<0x20><0x0D><0x00> 16 characters
:	:	:	:
Setup of 16 characters	"ABCDEFGHJKLMNOP"	0x41 0x42 0x43 ... 0x50	ML<0x41><0x42><0x43>...<0x50><0x0D><0x00> 16 characters
Setup of 17 characters (It can't setup) (*2)	"ABCDEFGHJKLMNOP"	0x41 0x42 0x43 ... 0x50	ML<0x41><0x42><0x43>...<0x50><0x0D><0x00> 16 characters

(*1) RF-ID tag data

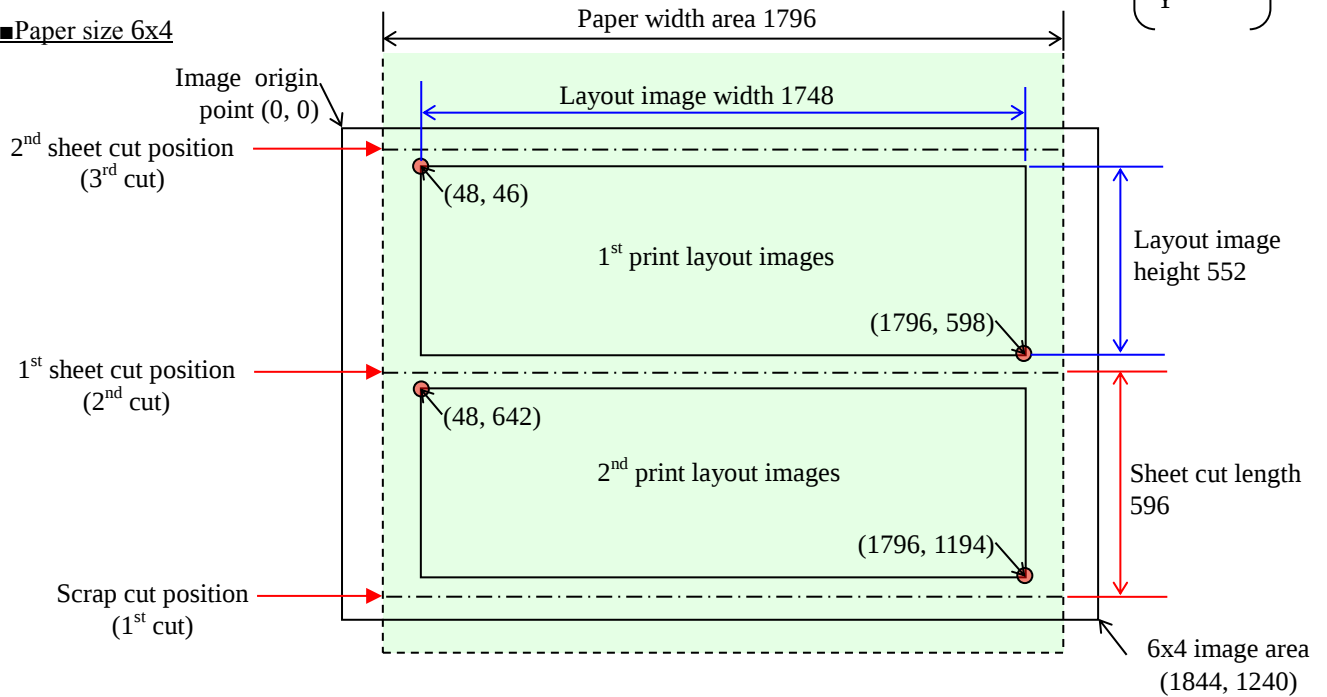
If the RF-ID tag media lot number does not reach 16 characters, space (0x20) is written in the part of the remainder.

3-8 Recommended image layout of 2 inch cut operation

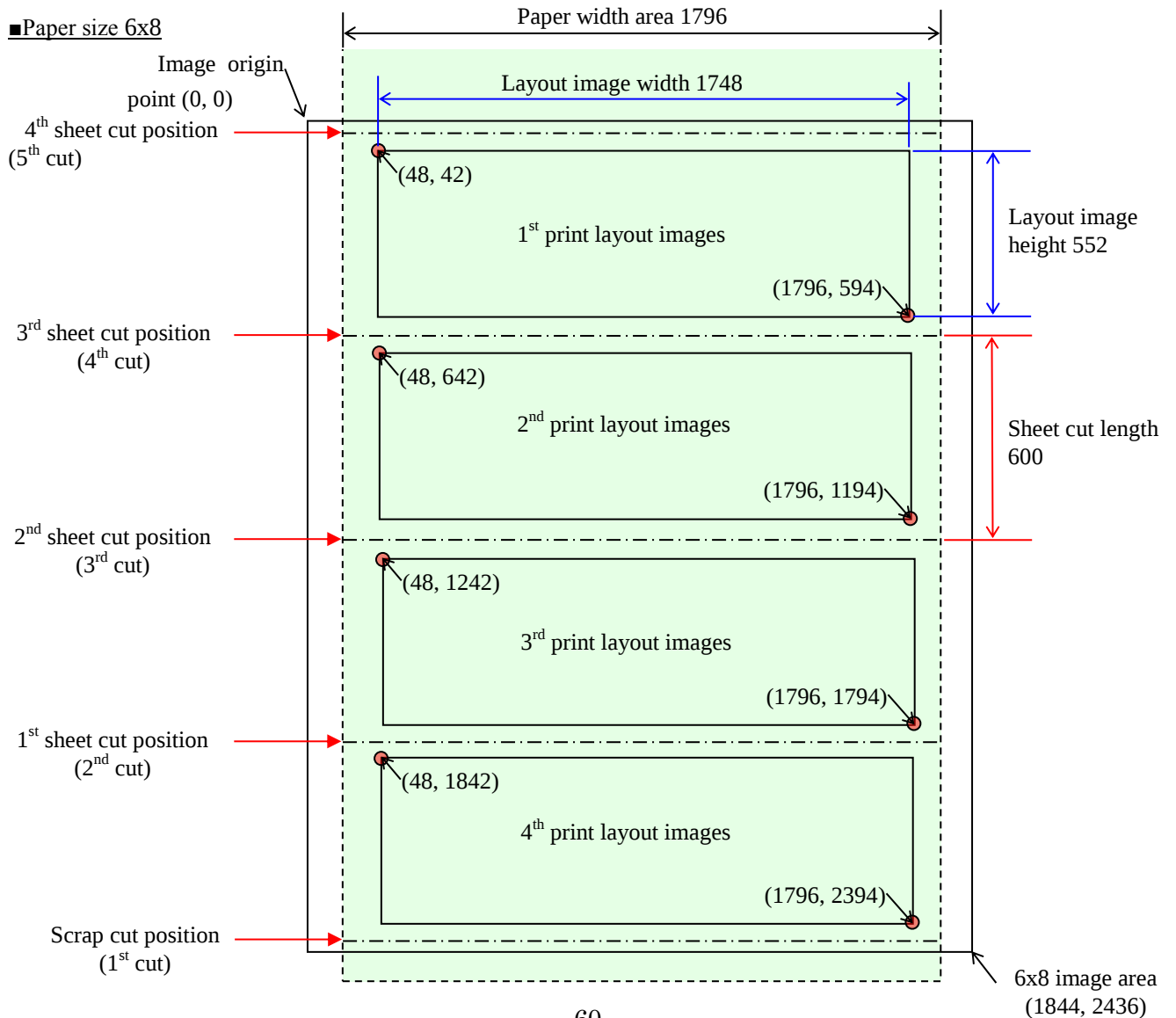
(For when the resolution setting is 300x300dpi)



■ Paper size 6x4



■ Paper size 6x8



Parameter List (units=pixels)

		Paper size 6x4		Paper size 6x8	
Resolution(dpi)		300x300	300x600	300x300	300x600
Image size	X	1844	1844	1844	1844
	Y	1240	2480	2436	4872
For 2-inch cuts					
Layout image size	X	1748	1748	1748	1748
	Y	552	1104	552	1104
1 st print coord.(X,Y)	Top left	48,46	48,92	48,42	48,84
	Bot. right	1796,598	1796,1196	1796,594	1796,1188
2 nd print coord.(X,Y)	Top left	48,642	48,1284	48,642	48,1284
	Bot. right	1796,1194	1796,2388	1796,1194	1796,2388
3 rd print coord. (X,Y)	Top left	---	---	48,1242	48,2484
	Bot. right	---	---	1796,1794	1796,3588
4 th print coord. (X,Y)	Top left	---	---	48,1842	48,3684
	Bot. right	---	---	1796,2394	1796,4788
Y-space between layouts		44	88	48	96
Sheet cut length		596	1192	600	1200
Sheet size(W x H)		152mm x 50.5mm		152mm x 50.8mm	

3-9 Counter count-up action

■ Stand-alone:

Timing of a count-up is after performing a cut of a print picture correctly.

Count-up is not performed when an error occurred. Counter P is cleared to 0, if a power supply is turned off.

DS40 / DP-DS620	Print Size		Counter L/A/B Matte/M	Counter P
Single-cut	(5x3.5) (L)		+1	+1
	(6x4) (PC)		+1	+1
	(6x4.5) *4		+1	+1
	(5x5) *2		+2	+1
	(6x6) *5		+2	+1
	(5x7) (2L)		+2	+1
	(6x8) (A5)		+2	+1
	(6x9) (A5W) *3		+2	+1
Multi-cut	(5x3.5) x2 (L 2-image layout) *1	1st image	---	+1
		2nd image	+2	+1
	(6x4) x2 (PC 2-image layout)	1st image	---	+1
		2nd image	+2	+1
	(6x4.5) x2 *4 (6x4.5 2-image layout)	1st image	---	+1
		2nd image	+2	+1
2inch cut *Only correspondence model Refer to cutter control command	(6x4)	1st sheet	---	+1
		2nd sheet	+1	+1
	(6x8)	1st sheet	---	+1
		2nd sheet	---	+1
		3rd sheet	---	+1
		4th sheet	+2	+1

*1: DS40 firmware version 1.50 or later.

*2: Only DP-DS620

*3: DP-DS620 firmware version 1.10 or later.

*4: Only DP-DS620, firmware version 1.10 or later.

*5: DS40 firmware version 1.60 or later.

DS80/DP-DS820	Print Size		Counter L/A/B Matte/M	Counter P
Single-cut	(8 x 10)		+1	+1
	(8 x 12)		+1	+1
	(8 x 4)		+1	+1
	(8 x 5)		+1	+1
	(8 x 6)		+1	+1
	(8 x 7) *1		+1	+1
	(8 x 8)		+1	+1
	(8 x 9) *1		+1	+1
	A4_Length (8 x A4)		+1	+1
	(A4 x 5) *1		+1	+1
	(A4 x 6) *1		+1	+1
	A5 Format *1		+1	+1
	A4 Format *1		+1	+1
Multi-cut	(8 x 4) x 2	1st image	---	+1
		2nd image	+1	+1
	(8 x 5) x 2	1st image	---	+1
		2nd image	+1	+1
	(8 x 6) x 2	1st image	---	+1
		2nd image	+1	+1
	(8 x 5)_(8 x 4)	1st image	---	+1
		2nd image	+1	+1
	(8 x 6)_(8 x 4)	1st image	---	+1
		2nd image	+1	+1
	(8 x 6)_(8 x 5)	1st image	---	+1
		2nd image	+1	+1
	(8 x 8)_(8 x 4)	1st image	---	+1
		2nd image	+1	+1
	(8 x 4) x 3	1st image	---	+1
		2nd image	---	+1
		3rd image	+1	+1
	(A4 x 5) x 2 *1	1st image	---	+1
		2nd image	+1	+1
	A5 x 2 *1	1st image	---	+1
		2nd image	+1	+1
2inch cut *1	(8 x 4)	1st image	---	+1
		2nd image	+1	+1
	(8 x 6) A4 x 6	1-2nd image	---	+1/image
		3rd image	+1	+1
	(8 x 8) A4 x 8	1-3rd image	---	+1/image
		4th image	+1	+1
	(8 x 10) A4 x 10	1-4th image	---	+1/image
		5th image	+1	+1
	(8 x 12)	1-5th image	---	+1/image
		6th image	+1	+1

*1: only DP-DS820

■ Duplex

The counter is increased after a print image is cut normally.

The counter doesn't increase when an error occurs. Counter P is cleared to 0 when the power is turned OFF.

When using roll media

DP-DS80D	Print size		Counter L/A/B Matte/M	Counter P	Counter Duplex
Single cut	(8x10)		+1	+1	---
	(8x12)		+1	+1	---
	(8x4)		+1	+1	---
	(8x5)		+1	+1	---
	(8x6)		+1	+1	---
	(8x8)		+1	+1	---
	A4 Length		+1	+1	---
Multi-cut	(8x4)x2	1 st side	---	+1	---
		2 nd side	+1	+1	---
	(8x5)x2	1 st side	---	+1	---
		2 nd side	+1	+1	---
	(8x6)x2	1 st side	---	+1	---
		2 nd side	+1	+1	---
	(8x5)_(8x4)	1 st side	---	+1	---
		2 nd side	+1	+1	---
	(8x6)_(8x4)	1 st side	---	+1	---
		2 nd side	+1	+1	---
	(8x6)_(8x5)	1 st side	---	+1	---
		2 nd side	+1	+1	---
	(8x8)_(8x4)	1 st side	---	+1	---
		2 nd side	+1	+1	---
	(8x4)x3	1 st side	---	+1	---
		2 nd side	---	+1	---
		3 rd side	+1	+1	---

When using cut media

DP-DS80D	Print size		Counter L/A/B Matte/M	Counter P	Counter Duplex
Single Cut	(8x10)	1 side	+1	+1	+1
		Both sides	+2	+1	+2
	(8x12)	1 side	+1	+1	+1
		Both sides	+2	+1	+2
	(8x4)	1 side	+1	+1	+1
		Both sides	+2	+1	+2
	(8x5)	1 side	+1	+1	+1
		Both sides	+2	+1	+2
	(8x6)	1 side	+1	+1	+1
		Both sides	+2	+1	+2
	(8x8)	1 side	+1	+1	+1
		Both sides	+2	+1	+2
	(8x10.5)	1 side	+1	+1	+1
		Both sides	+2	+1	+2
	(8x10.75)	1 side	+1	+1	+1
		Both sides	+2	+1	+2
Multi-cut	(8x4)x2	1 side	1st sheet	--	--
			2nd sheet	+1	+1
		Both sides	1st sheet	--	--
			2nd sheet	+2	+2
	(8x5)x2	1 side	1st sheet	--	--
			2nd sheet	+1	+1
		Both sides	1st sheet	--	--
			2nd sheet	+2	+2
	(8x6)x2	1 side	1st sheet	--	--
			2nd sheet	+1	+1
		Both sides	1st sheet	--	--
			2nd sheet	+2	+2
	(8x4)x3	1 side	1st sheet	--	--
			2nd sheet	--	--
			3rd sheet	+1	+1
		Both sides	1st sheet	--	--
			2nd sheet	--	--
			3rd sheet	+2	+2

3-10 Get the Media Counter of Remaining Sheets(Counter default value)

Counter default value of each model and each media are as follows.

Machine	Media	Sheet/Roll	Counter default Value	Media offset count (*2)
DS40	5x3.5 (L)	400	450	50
	6x4 (PC)	400	450	50
		400	401	1
	5x7 (2L)	230	280	50
		220	270	50
		200	250	50
	6x8 (A5)	200	250	50
		200	201	1
	6x9 (A5W)	180	230	50
DS80 DP-DS80D	8x10	130	180	50
	8x12	110	160	50
		110	111	1
DP-DS620	5x3.5 (L)	400	400	0
	6x4 (PC)	400	400	0
	5x7 (2L)	230	230	0
	6x8 (A5)	200	200	0
	6x9 (A5W) *1	180	180	0
		180	180	0
DP-DS820	8x10	260	260	0
	8x12	220	220	0
	A4	220	220	0

*1 : firmware version 1.10 or later.

*2: DS40 Firmware version 2.00 or later only available

When paper initialize is performed, such as after changing the media, the paper will be fed out and the remaining media quantity will be decreased by 1. (DP-DS620 only feeds out paper)

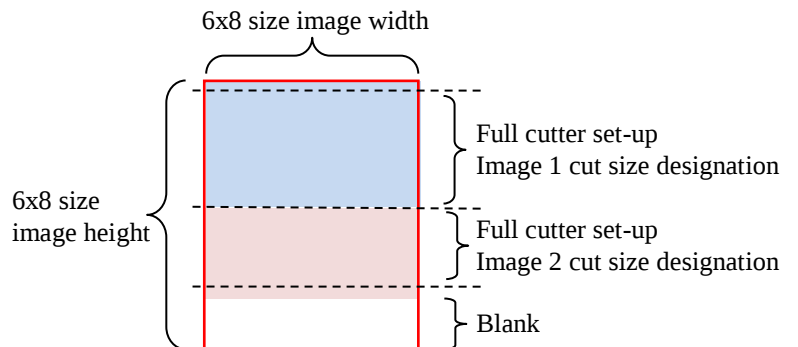
3-11 Full cutter set-up command

■Basic concept

(ex.) In case of paper size (6x8).

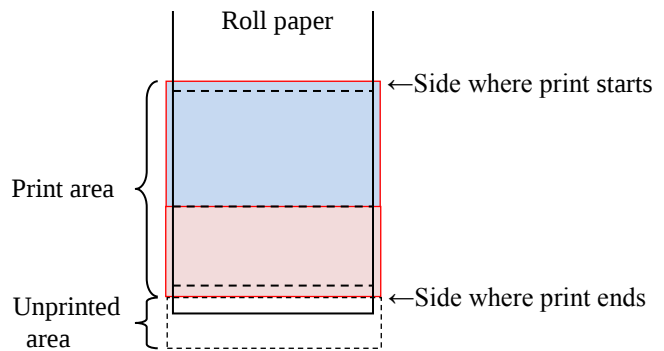
Image layout

Set the image layout in the 6x8 area according to the designated cut size.



Printing

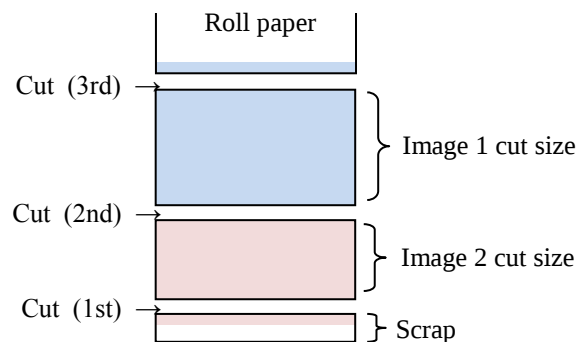
Of the 6x8 size area, only the total length of the designated cut sizes is printed.



Cutting

After cutting off the scrap, the designated print size sheets will be fed out.

A Blank is not printed, so no unnecessary paper is fed out.

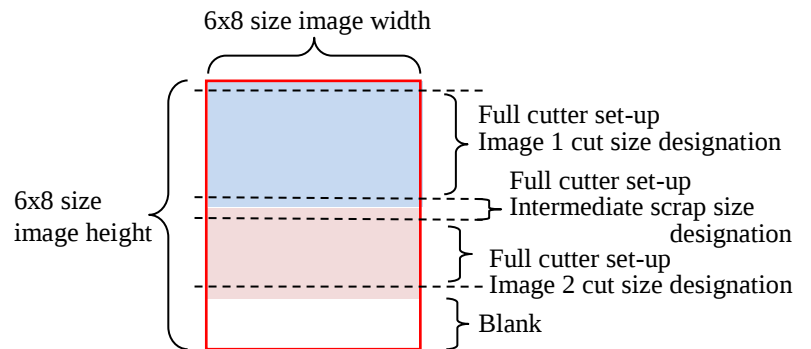


When designating the intermediate scrap size:

(ex.) In case of paper size (6x8).

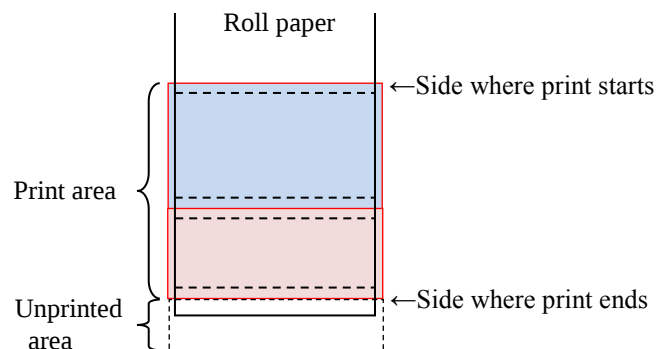
Image layout

Set the image layout in the 6x8 area according to the designated cut size.



Printing

Of the 6x8 size area, only the total length of the designated cut sizes is printed.

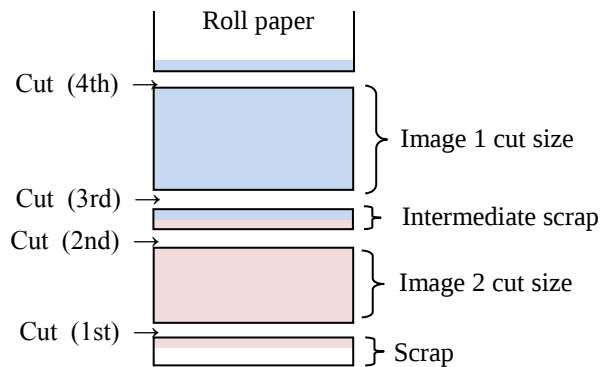


Cutting

After cutting off the scrap, the designated print size sheet will be fed out (Image 2).

The intermediate scrap between images 1 and 2 is cut off, and the next print size sheet will be fed out (Image 1).

A Blank is not printed, so no unnecessary paper is fed out.

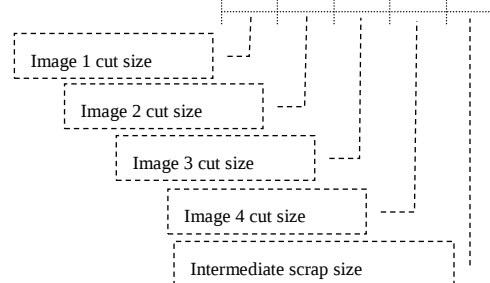


Setting examples (Standard type)

This shows the output results when the following commands are transmitted.

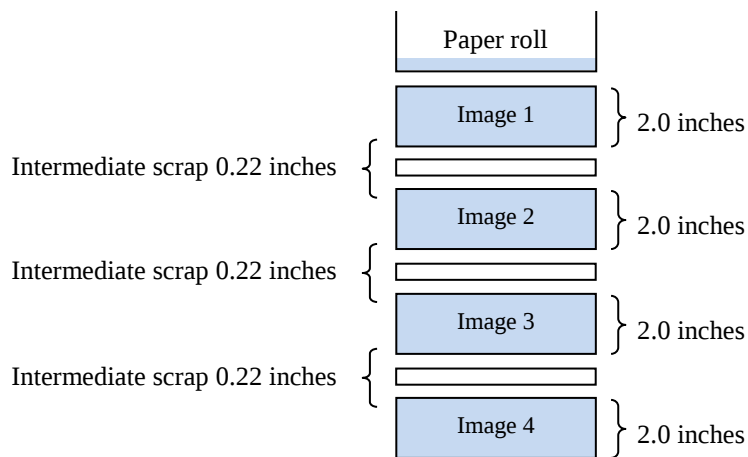
<Transmitted command 1>

<ESC>PCNTRL _FULL_CUTTER_SET _00000016020020020020022<CR>



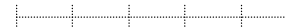
<Output result 1>

1-4 are all cut as 2 inches, and four prints are output.



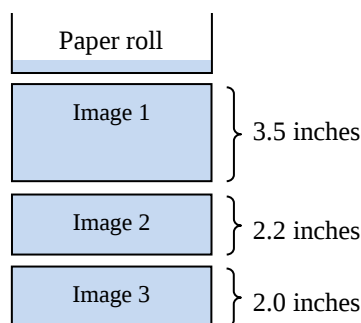
< Transmitted command 2>

<ESC>PCNTRL _FULL_CUTTER_SET _00000016035022020000000<CR>



< Output result 2>

This outputs one 3.5 inch, one 2.2 inch, and one 2.0 inch print, for a total of three prints.

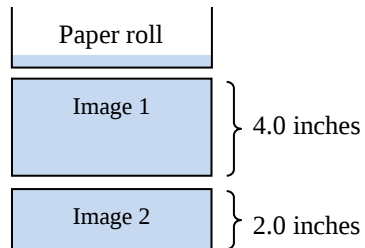


< Transmitted command 3>

<ESC>PCNTRL _FULL_CUTTER_SET _000000160400200000000000<CR>

< Output result 3>

This outputs one 4.0 inch and one 2.0 inch print, for a total of two prints.



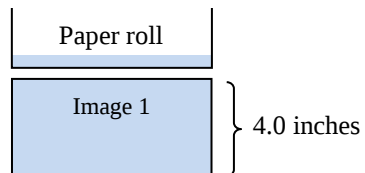
< Transmitted command 4>

<ESC>PCNTRL _FULL_CUTTER_SET _000000160400000200000000<CR>

< Output result 4>

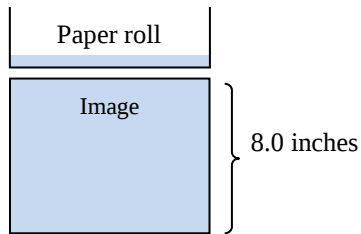
This outputs one 4.0 inch print.

Image 2 cut size is designated as “000” (cut quantity 1), so any following cut sizes are disregarded.



Setting examples (Non-standard type)

If the following commands are transmitted, standard-sized (6x8) printing is performed. *1

**<Case 1>**

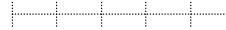
<ESC>PCNTRL _FULL_CUTTER_SET _00000016040030020000000<CR> is transmitted.



→ The total cut size exceeds 8 inches, so the command is aborted and standard printing occurs. *1

<Case 2>

<ESC>PCNTRL _FULL_CUTTER_SET _00000016010020020000000<CR> is transmitted.

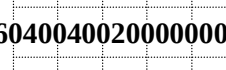


→Image 1 cut size is outside value parameters, so the command is aborted and standard printing occurs.

<Case 3>

<ESC>PCNTRL _FULL_CUTTER_SET _00000016040020020000000<CR> (Standard) is transmitted, then

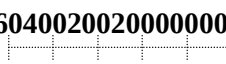
<ESC>PCNTRL _FULL_CUTTER_SET _00000016040040020000000<CR> (Over-sized) is transmitted.



→The second command cancels the Full-Cutter Set-up function, and standard printing occurs.

<Case 4>

<ESC>PCNTRL _FULL_CUTTER_SET _00000016040020020000000<CR> (Standard) is transmitted, and (6x4) printing occurs, after which (6x8) printing is performed.



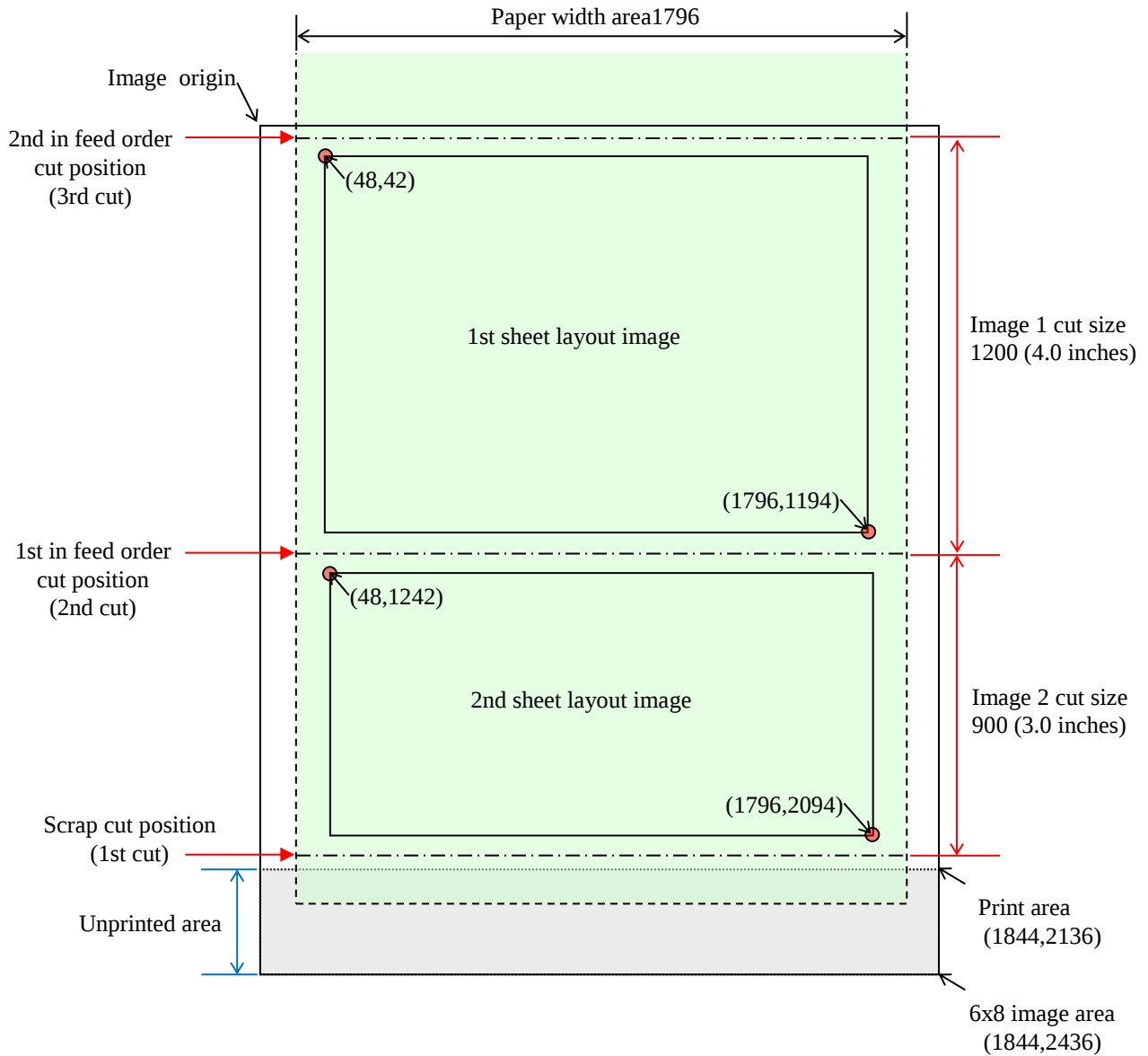
→ For printing other than (6x8) size, the Full Cutter Set-up function is cleared, and standard (6x8) printing occurs.

*1: The printed paper size and the total cut size depend on the size of the loaded media into the printer.

■ Image layout example

Resolution setting: 300x300dpi

Full cutter set-up setting value: 040 030 000 000 000 (for 2 sheets: 4.0 inches and 3.0 inches)



• Typical value of image data print area (Y coordinate, unit: pixels)

Total cut size	Resolution 300dpi	Resolution 600dpi
2.0 inch	0~636	0~1272
2.5 inch	0~786	0~1572
3.0 inch	0~936	0~1872
3.5 inch	0~1086	0~2172
4.0 inch	0~1236	0~2472
4.5 inch	0~1386	0~2772
5.0 inch	0~1536	0~3072
5.5 inch	0~1686	0~3372
6.0 inch	0~1836	0~3672
6.5 inch	0~1986	0~3972
7.0 inch	0~2136	0~4272
7.5 inch	0~2286	0~4572
8.0 inch	0~2436	0~4872
The value of print area per 0.1 inch	30	60

• Typical value of recommended layout coordinates for the image (unit: pixels)

Resolution setting			300x300dpi	300x600dpi	
Layout image Top left coordinates (X, Y)	Image 1		48, 42	48, 84	
	Image 2 (Image 1 cut size)	2.0 inch	48, 642	48, 1284	
		2.5 inch	48, 792	48, 1584	
		3.0 inch	48, 942	48, 1884	
		3.5 inch	48, 1092	48, 2184	
		4.0 inch	48, 1242	48, 2484	
		4.5 inch	48, 1392	48, 2784	
		5.0 inch	48, 1542	48, 3084	
		5.5 inch	48, 1692	48, 3384	
		6.0 inch	48, 1842	48, 3684	
	Image 3 (Image 1 and 2 total combined cut size)	4.0 inch	48, 1242	48, 2484	
		4.5 inch	48, 1392	48, 2784	
		5.0 inch	48, 1542	48, 3084	
		5.5 inch	48, 1692	48, 3384	
		6.0 inch	48, 1842	48, 3684	
	Image 4		48, 1842	48, 3684	
Layout image Bottom right coordinates (X, Y)	Image 1 (Image 1 cut size)	2.0 inch	1796, 594	1796, 1188	
		2.5 inch	1796, 744	1796, 1488	
		3.0 inch	1796, 894	1796, 1788	
		3.5 inch	1796, 1044	1796, 2088	
		4.0 inch	1796, 1194	1796, 2388	
		4.5 inch	1796, 1344	1796, 2688	
		5.0 inch	1796, 1494	1796, 2988	
		5.5 inch	1796, 1644	1796, 3288	
		6.0 inch	1796, 1794	1796, 3588	
		6.5 inch	1796, 1944	1796, 3888	
		7.0 inch	1796, 2094	1796, 4188	
		7.5 inch	1796, 2244	1796, 4488	
		8.0 inch	1796, 2394	1796, 4788	
	Image 2 (Image 1 and 2 total combined cut size)	4.0 inch	1796, 1194	1796, 2388	
		4.5 inch	1796, 1344	1796, 2688	
		5.0 inch	1796, 1494	1796, 2988	
		5.5 inch	1796, 1644	1796, 3288	
		6.0 inch	1796, 1794	1796, 3588	
		6.5 inch	1796, 1944	1796, 3888	
		7.0 inch	1796, 2094	1796, 4188	
		7.5 inch	1796, 2244	1796, 4488	
		8.0 inch	1796, 2394	1796, 4788	
	Image 3 (Images 1 ~ 3 total combined cut size)	6.0 inch	1796, 1794	1796, 3588	
		6.5 inch	1796, 1944	1796, 3888	
		7.0 inch	1796, 2094	1796, 4188	
		7.5 inch	1796, 2244	1796, 4488	
		8.0 inch	1796, 2394	1796, 4788	
	Image 4		1796, 2394	1796, 4788	
	The value of Y coordinate per 0.1 inch			30	60

3-12 Standby Mode (DP-DS620/DP-DS820)

- If the printer is Idle for 10 minutes (or the set time if the standby transition time command has been used to change it) and does not receive any commands from the host other than those listed below, it will enter Standby Mode.

< Commands that can be used in Standby Mode >

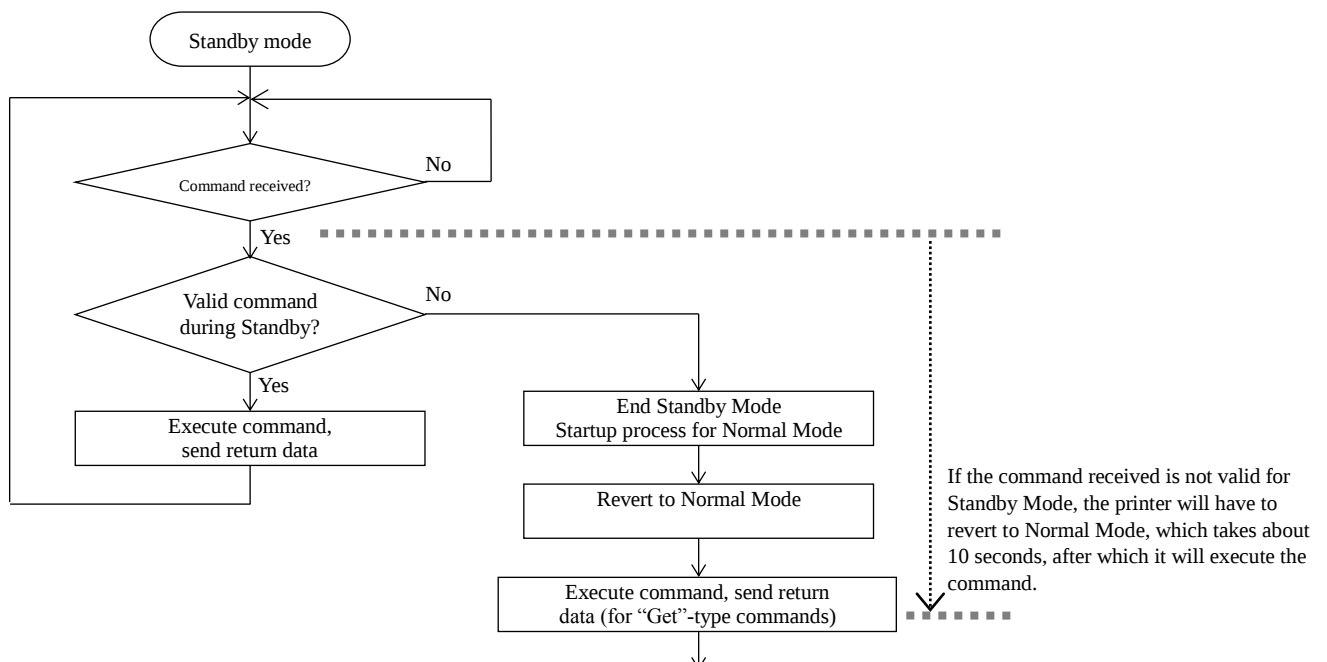
Function	Command
Get Printer Status	<ESC>P STATUS
Get Printer Serial Number	<ESC>P INFO SERIAL_NUMBER
Get initial media count	<ESC>P INFO MQTY_DEFAULT
Get Remaining Media Quantity	<ESC>P INFO MQTY
Get Half Size Conversion Ribbon Quantity	<ESC>P INFO RQTY
Get Media User Info (Lot No.)	<ESC>P INFO MLOT
Get Media Code	<ESC>P INFO MEDIA
Get Printer Version Information	<ESC>P INFO FVER *1
Get Media Class	<ESC>P INFO MEDIA_CLASS_RFID *2

*1: DP-DS620 firmware version 0.31 or later

*2: DP-DS820 Only

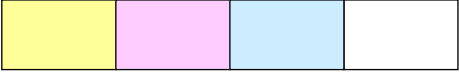
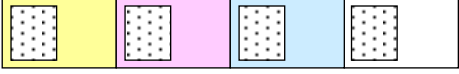
- The commands listed above can be used during Standby Mode.
- While in the Standby Mode, the printer status will be “Standby” (status code “00900”), and the green LED will change from lit to flashing.
- If any commands other than those listed above are sent, or the cover is opened, the printer will come out of Standby Mode.
- If the printer receives a command other than those listed above while in Standby Mode, it will revert to Normal Mode before executing the command. In this case, the printer will need to undergo the startup process to revert to Normal Mode, and it will take approximately 10 seconds for the command to be executed. (See the chart below)
For “Get”-type commands that require return data from the printer, it will take approximately 10 seconds from the time of the command until the return data is sent from the printer. Therefore, after the Host issues the command, it will be necessary to wait while the return data is sent back from the printer.

Printer operation when receiving commands during Standby



3-13 Ribbon Rewind Function (DP-DS620/DP-DS820)

- The host uses the Media Counter of Remaining Sheets information from the “Get Half Size Conversion Media Counter of Remaining Sheets” command to check the ribbon panel status. (5x7*₁, 6x8, 6x9*₂ / 8x10, 8x12, A4 media)
- If the Half Size Conversion Media Counter of Remaining Sheets returned is an even number, the ribbon panels are unused, and if it is an odd number, the panels are half-used.

Half Size Conversion Media Counter of Remaining Sheets	Example of the ribbon panel status	
Even number	Unused condition	
Odd number	Half-used condition	

- In order to use the ribbon rewind function for printing, you have to designate the multi-cut pattern code of the print size for rewind in the following table.

* In DP-DS620 (A) and DP-DS820 (A), even if the code of the print size for rewind is specified, printing is performed without rewinding the ribbon.

Print Size	Multi-cut pattern Designation value
Rewind (5 x 3.5) * ₁	00000401
Rewind (6 x 4)	00000402
Rewind (6 x 4.5) * ₂	00000430
Rewind (8 x 4)	00000408
Rewind (8 x 5)	00000409
Rewind (8 x 6)	00000410
Rewind A5 Format	00000434
Rewind (A4 x 5)	00000437

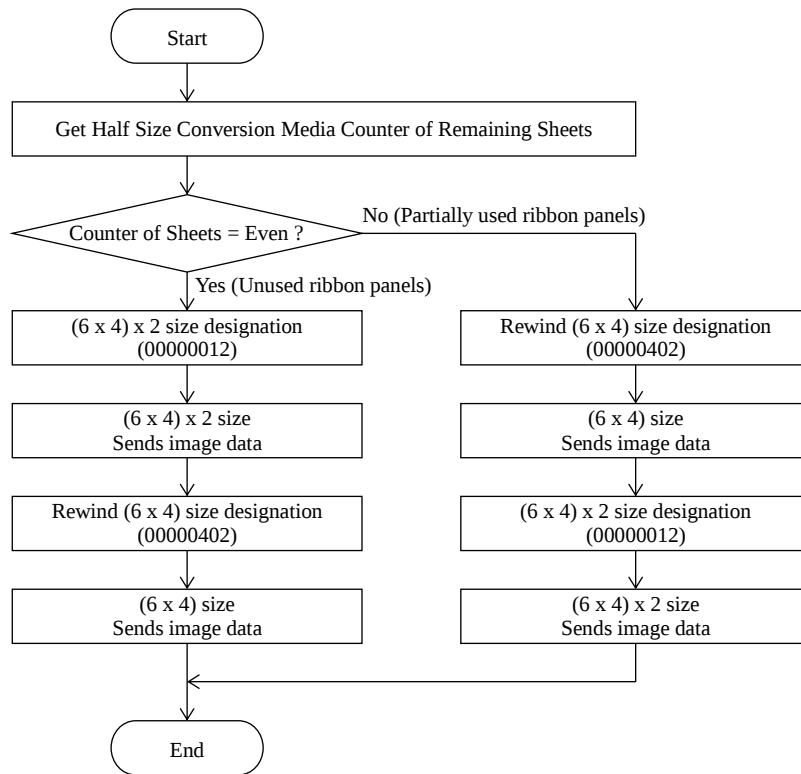
Note

*1 DP-DS620 Firmware version 0.30 or later

*2 DP-DS620 Firmware version 1.10 or later

■ Example of the Ribbon Rewind Operation Process

This shows the process for the printing of three 6x4-size prints.



3-14 Procedure to update of color control data

If you sets the color control data using a command, you can do it in the following procedures when the printer status is "IDLE (No error has occurred)". Then check that the writing occurred properly by checking the version and checksum.

Using Command)

1	<ESC>P STATUS	Check the printer status
2	<ESC>P TBL_CL	Clear the control data.
3	<ESC>P TBL_WT Version	Set the 300dpi control data version.
4	<ESC>P TBL_WT CTRLD_UPDATE_CW	Write the 300dpi control data.
5	<ESC>P TBL_RD Version	Check the 300dpi control data version.
6	<ESC>P MNT_RD CTRLD_CHKSUM	Check the 300dpi control data checksum.
7	<ESC>P TBL_WT Version	Set the 600dpi control data version.
8	<ESC>P TBL_WT CTRLD_UPDATE_CW	Write the 600dpi control data.
9	<ESC>P TBL_RD Version	Check the 600dpi control data version.
10	<ESC>P MNT_RD CTRLD_CHKSUM	Check the 600dpi control data checksum.

■DP-DS620

Using Command)

1	<ESC>P STATUS	Check the printer status
2	<ESC>P TBL_CL	Clear the control data.
3	<ESC>P TBL_WT Version	Set the 300dpi control data version.
4	<ESC>P TBL_WT CTRLD_UPDATE_CW	Write the 300dpi control data.
5	<ESC>P TBL_RD CWD300_Version	Check the 300dpi control data version.
6	<ESC>P TBL_RD CWD300_Checksum	Check the 300dpi control data checksum.
7	<ESC>P TBL_WT Version	Set the 600dpi control data version.
8	<ESC>P TBL_WT CTRLD_UPDATE_CW	Write the 600dpi control data.
9	<ESC>P TBL_RD CWD600_Version	Check the 600dpi control data version.
10	<ESC>P TBL_RD CWD600_Checksum	Check the 600dpi control data checksum.
11	<ESC>P TBL_WT Version	Set the Low Speed (*1) control data version.
12	<ESC>P TBL_WT CTRLD_UPDATE_CW	Write the Low Speed (*1) control data.
13	<ESC>P TBL_RD CWD610_Version	Check the Low Speed (*1) control data version.
14	<ESC>P TBL_RD CWD610_Checksum	Check the Low Speed (*1) control data checksum.

*1. Low Speed: For rewind printing of high density images

■DP-DS820

Using Command)

1	<ESC>P STATUS	Check the printer status
2	<ESC>P TBL_CL	Clear the control data.
3	<ESC>P TBL_WT Version	Set the 300dpi control data version.
4	<ESC>P TBL_WT CTRLD_UPDATE_CW	Write the 300dpi control data.
5	<ESC>P TBL_RD CWD300_Version 00000004 nnnn	Check the 300dpi control data version.
6	<ESC>P TBL_RD CWD300_Checksum 00000004 nnnn	Check the 300dpi control data checksum.
7	<ESC>P TBL_WT Version	Set the 600dpi control data version.
8	<ESC>P TBL_WT CTRLD_UPDATE_CW	Write the 600dpi control data.
9	<ESC>P TBL_RD CWD600_Version 00000004 nnnn	Check the 600dpi control data version.
10	<ESC>P TBL_RD CWD600_Checksum 00000004 nnnn	Check the 600dpi control data checksum.
11	<ESC>P TBL_WT Version	Set the Low Speed control data version.
12	<ESC>P TBL_WT CTRLD_UPDATE_CW	Write the Low Speed control data.
13	<ESC>P TBL_RD CWD610_Version 00000004 nnnn	Check the Low Speed control data version.
14	<ESC>P TBL_RD CWD610_Checksum 00000004 nnnn	Check the Low Speed control data checksum.
15	<ESC>P TBL_WT Version	Set the High Density control data version.
16	<ESC>P TBL_WT CTRLD_UPDATE_CW	Write the High Density control data.
17	<ESC>P TBL_RD CWD620_Version 00000004 nnnn	Check the High Density control data version.
18	<ESC>P TBL_RD CWD620_Checksum 00000004 nnnn	Check the High Density control data checksum.

(nnnn: Code that indicates the SD or PP media.)

3-15 Ribbon End Check Operation (DP-DS620/DP-DS820)

The ribbons for printers until now had a black line at the head of each color panel, and ribbon end was determined after the ribbon was wound following OP printing, by whether the black line for the next Yellow panel was detected or not. The end of the ribbon was made such that the black line for the next Yellow panel was in a position that would not be detected by the ribbon sensor (it was designed with a lengthened pitch between the OP and Yellow).

Conversely, the ribbon for the DP-DS620 and the DP-DS820 doesn't have a black line for detection at each color panel (it detects the panel color), and the panel pitch is shortened and the Yellow panel is in a position that can be detected by the ribbon sensor at the end of the ribbon. Therefore, for the DP-DS620 and the DP-DS820, the ribbon count is determined with the count recorded in the RF-ID tag. When the remaining count is 0, it determines ribbon end.

Normally, the actual remaining ribbon count and the ribbon count recorded in the RF-ID tag will match, but if trouble such as jamming occurs during printing, and the actual remaining ribbon count is 1 less than that recorded in the RF-ID tag, then even though it has used the last of the ribbon, it will detect the next Yellow panel and the RF-ID tag will show 1 remaining, so it won't show ribbon end.

In order to avoid this, only when the RF-ID tag shows the following remaining ribbon count, it will run the ribbon end check operation.

<Conditions for Ribbon End Check>

Media Size	RF-ID-tag Ribbon count (after OP printing)	
	Command: <ESC>P INFO MQTY	Command: <ESC>P INFO RQTY
5x3.5 (L)	2 or 1	-
6x4 (PC)	2 or 1	-
5x7 (2L)	2 or 1	4 or 2 (5x3.5 conversion qty)
6x8 (A5)	2 or 1	4 or 2 (6x4 conversion qty)
6x9 (A5W) *1	2 or 1	4 or 2 (6x4.5 conversion qty)
8x10 *2	2 or 1	4 or 2 (8x5 conversion qty)
8x12 *2	2 or 1	4 or 2 (8x6 conversion qty)
A4 *2	2 or 1	4 or 2 (A5 conversion qty)

*1 DP-DS620 Firmware version 1.10 or later

*2 Only DP-DS820

When the RF-ID ribbon count after OP printing is as shown above, it will run the following ribbon end check operation.

<Ribbon End Check Operation>

After OP printing, it will wind the ribbon until the ribbon sensor detects the Yellow panel.

After the ribbon sensor detects the Yellow panel, it will continue to wind the ribbon for a predetermined length (about 20mm). Note that, ribbon winding at this time is wound at slowly, in order to prevent peeling of the adhesion part of a ribbon supply bobbin and a ribbon film.

After it has wound for the predetermined length, the ribbon will rewind, Yellow panel position will be set, and operation will continue.

If it cannot be wound the predetermined length (winding stops), it will be ribbon end, and operation will stop.

3-16 Panorama Printing (DP-DS620/DP-DS820)

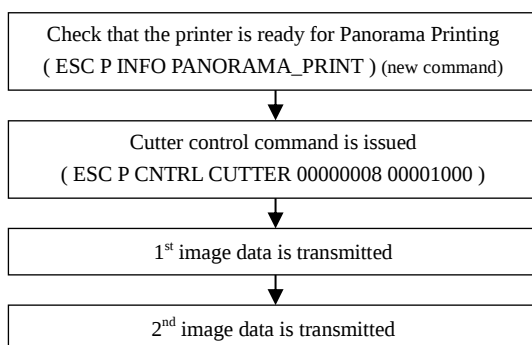
(1) Summary

- Using a command designation from the host, Panorama Printing can be performed.
- When the printer receives the Panorama Print command, it will finish printing the first image, and continue printing the next image data that was sent without cutting after the first image. If the Panorama Print command is sent again before the 2nd print data is sent, then it will print the 2nd image, and continue printing the data received without cutting after the 2nd image.

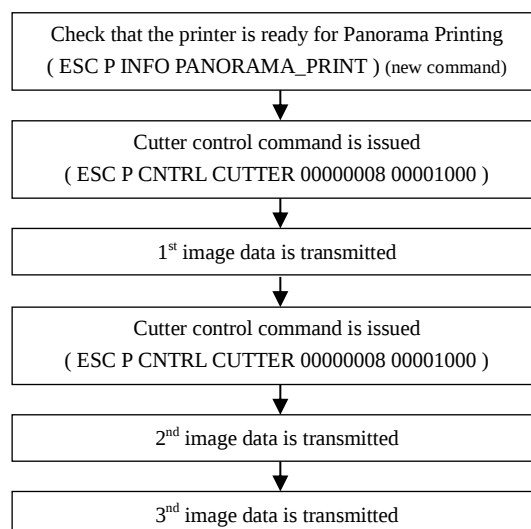
(2) Panorama Printing Process Flow

- ① When performing Panorama Printing, first check that the printer is ready for Panorama Printing by using the Panorama Printing Start Check command. If the printer is ready for Panorama Printing, it will return "00000". If the head or media temperature of the printer is too high, it will wait for the temperature to drop in order to avoid overheating during the printing process.
- ② Panorama Printing operation "00001000" is specified by the cutter control command.
- ③ After issuing the command, send a 6x8, a 8x10, a 8x12, or an A4 size print image data.

■For a 6x16, a 8x20, a 8x24, or an A4x2 print

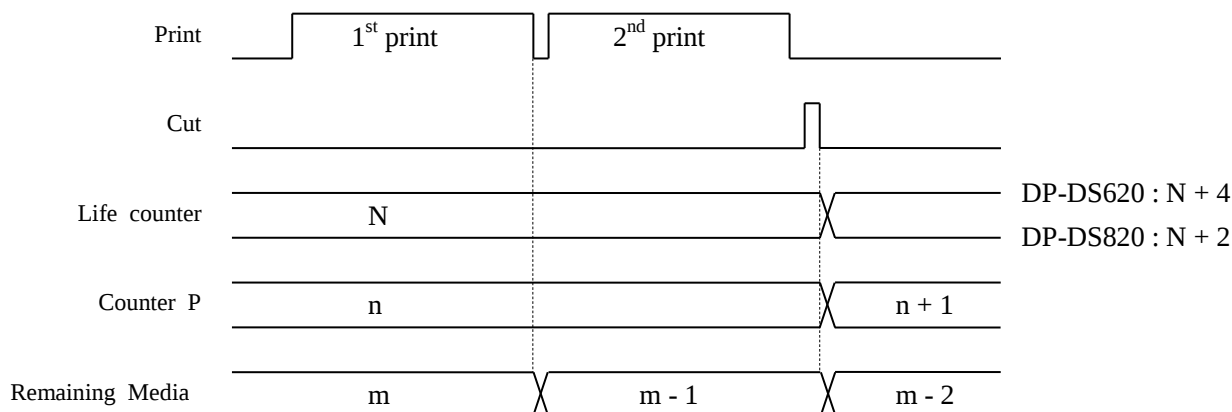


■For a 6x24, a 8x30, a 8x36, or an A4x3 print

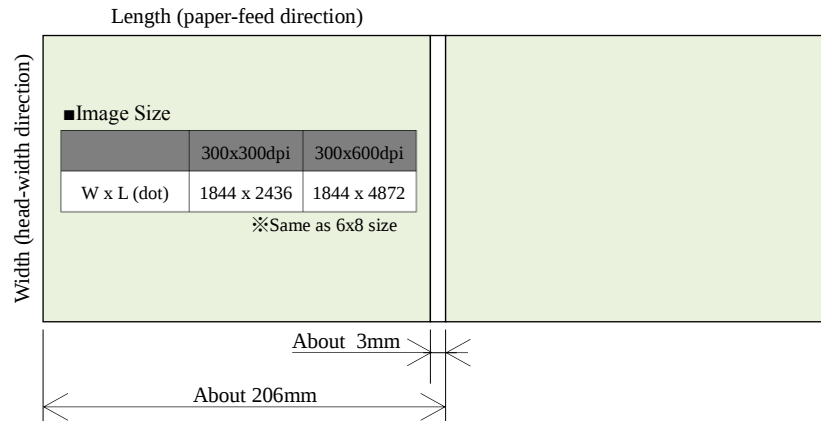


(3) Life Counter Operation

- For Panorama Printing, the counter increases after printing at the point when the print is cut.
(For 6x16: +4, For 6x24: +6, 8x20, 8x24, or A4x2: +2, For 8x30, 8x36, or A4x3: +3)
- The Counter P counts up +1 after printing at the point when the print is cut.



(4) Image Size and Print Pitch

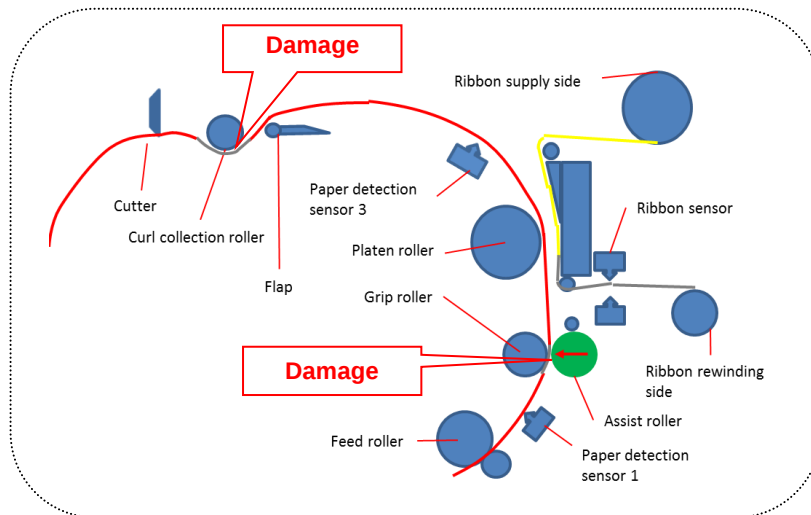


- In order to get the same output result as with normal single prints, the end 1.5mm of printing between the 1st and 2nd, and 2nd and 3rd prints will not be performed. (For single prints, this remains in the print cutting scrap.)

(5) Printer Operation during Panorama Printing

(5)-1 Overheating and Sending Data during Panorama Printing

When performing Panorama Printing, if the data for the 2nd or 3rd image is not received in time for continued printing, or if the printer overheats, the printer will stop with the print not completed. In this case, the print may be damaged (an impression left) by the de-curling section or the media grip section.



■Regarding damage to the print caused by the de-curling and media grip sections

	DP-DS620	DP-DS820
When overheated	×	T.B.D
Standard image	○	T.B.D
High-density image	○	T.B.D

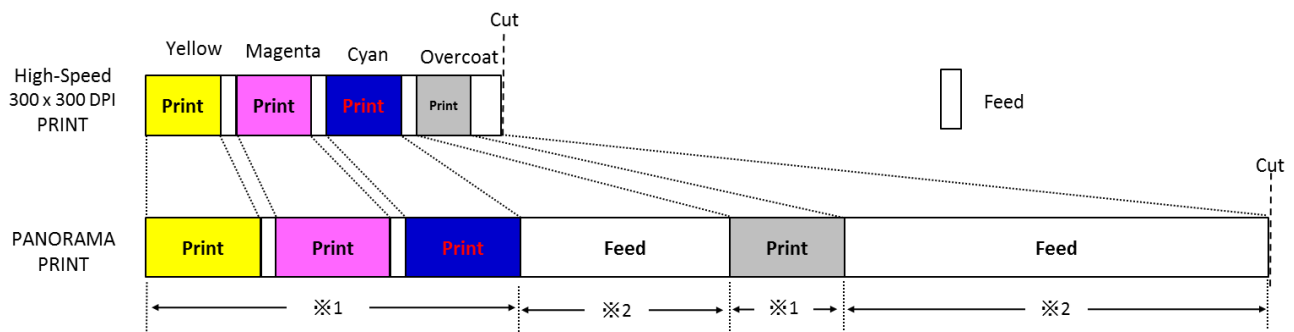
Due to differences in the de-curl section structural characteristics and media characteristics, impressions left on printed material are different depending on the printer.

(5)-2 Avoiding overheating

a) Securing Time for Cooling

In order to curb the temperatures rise during printing, the print speed is lowered, and the feed speed is lowered after cyan printing until overcoat printing starts, and after overcoat printing until yellow printing starts.

	Mode	Print Speed ※1		Feed Speed ※2	
		Normal environment (Ext. temp approx. 25°C)	High-temp environment (Ext. temp approx. 30°C)	Normal environment (Ext. temp approx. 25°C)	High-temp environment (Ext. temp approx. 30°C)
DP-DS620 DP-DS820	High-speed (300x300dpi)	High-speed	High-quality	1.2ips or 17ips (DP-DS620)	0.6ips
	High-quality (300x600dpi)	High-quality		1.2ips or 14ips (DP-DS820)	



b) Start Temperature

In order to avoid overheating during Panorama Printing, the printer will wait until the head temperature is lower than that shown in the chart below before starting printing of the 1st image.

	Head Temperature	
	Normal environment (Ext. temp approx. 25°C)	Normal environment (Ext. temp approx. 25°C)
DP-DS620 DP-DS820	49.7°C	44.7°C

When used in a normal environment (external temperature is approximately 25°C), continuous printing without overheating is possible for a gray (50%) image. However, when operating in a high-temperature environment (external temperature is approximately 30°C), it may take longer for cooling after printing the first image. Before sending the data, use the (ESC P INFO PANORAMA_PRINT) command to check that the printer is ready to start Panorama Printing.

■Printing Time (※Measurement conditions: 128 gray images, 25°C±5°C 50%±10%RH)

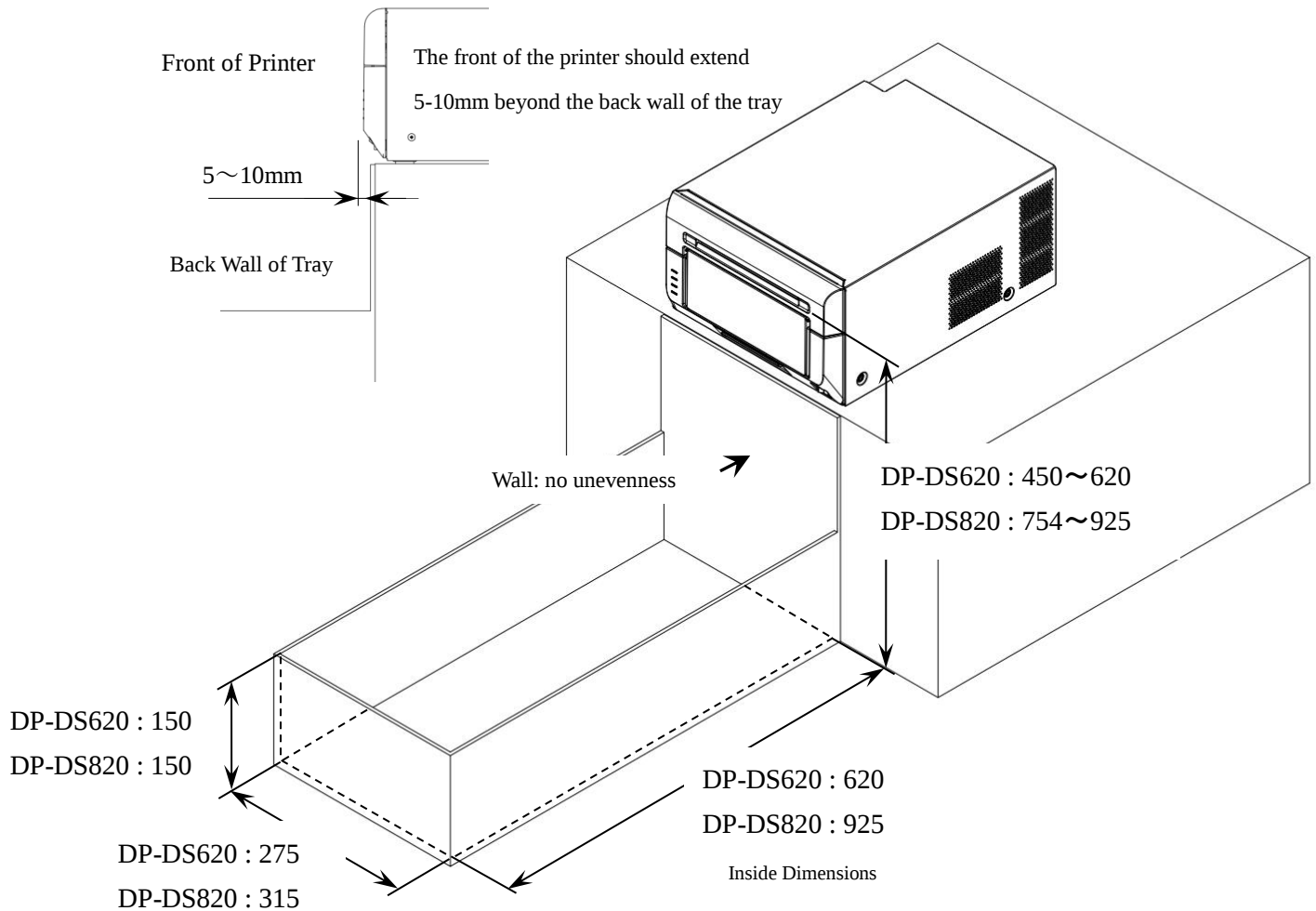
	Size of Panorama Print	
	6x16in	6x24in
DP-DS620	About 36 sec	About 51 sec

	Size of Panorama Print [PP media]					
	8x20in	8x30in	8x24in	8x36in	A4x2	A4x3
DP-DS820	About 59 sec	About 88 sec	About 68 sec	About 102 sec	About 67 sec	About 100 sec

(6) About the Set-up Location and Paper Tray for Panorama Printing

When performing Panorama Printing, we recommend a tray and stand set-up as shown below.

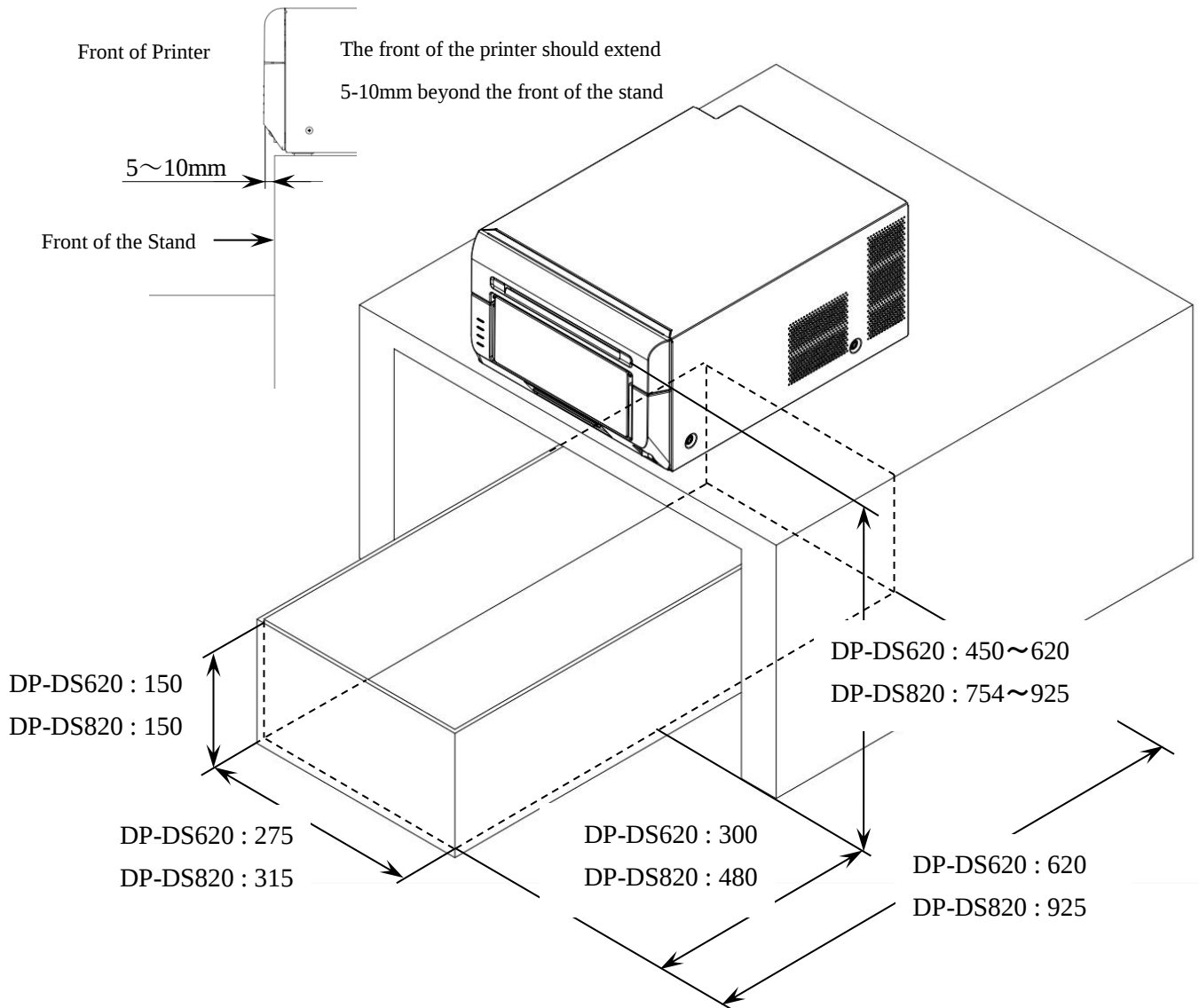
■If there is a wall on the front of the printer stand:



< Notes >

- Set the printer so that the height of the paper output slot is 450-620mm (DP-DS820:754~925mm) above the bottom of the tray. If the height of the output slot is less than 450mm(DP-DS820:754mm), register slippage or printing irregularities could be caused when the end of the paper hits the tray. If the height is more than 620mm(DP-DS820:925mm), the end of the print could be bent or scratched when it drops to the tray.
- Put a wall on the back of the tray. Curling that occurs toward the end of the media can cause the paper to curl back under the printer. Also, be sure there is no unevenness in the wall, and that the front of the printer extends 5-10mm beyond the back wall of the tray.
- When performing panorama printing, the paper will be fed out from the printer during the printing process. Touching the paper during printing could cause paper-jam, register slippage, or printing irregularities, so please do not touch the paper. (Strong airflow from air-conditioners etc. could have the same effect.)

■If the front of the printer stand is open:



< Notes >

- Set the printer so that the height of the paper output slot is 450-620mm (DP-DS820:754~925mm) above the bottom of the tray. If the height of the output slot is less than 450mm(DP-DS820:754mm), register slippage or printing irregularities could be caused when the end of the paper hits the tray. If the height is more than 620mm(DP-DS820:925mm), the end of the print could be bent or scratched when it drops to the tray.
- Be sure that the front of the printer extends 5-10mm beyond the edge of the stand.
- Set the tray so that the front extends 300mm(DP-DS820:480mm) in front of the stand, and the back is 320mm (DP-DS820: 445mm)under the stand.
- Curling that occurs toward the end of the media can cause the paper to curl back under the printer.
- When performing panorama printing, the paper will be fed out from the printer during the printing process. Touching the paper during printing could cause paper-jam, register slippage, or printing irregularities, so please do not touch the paper. (Strong airflow from air-conditioners etc. could have the same effect.)

(7) Notes regarding Panorama Printing

- When performing Panorama Printing, use the Panorama Print Start Check command to check whether the printer is ready for Panorama Printing. If the head or media temperatures are high, the printer will wait from them to cool before starting printing.
- When carrying out panorama printing, first get the remaining media quantity from the printer and check that there is enough media to complete the panorama printing.
- If ribbon end occurs during panorama printing, the printer will cut the print and stop printing. The printer status will be “Ribbon End”. (This may occur when the RFID remaining media quantity differs from the actual quantity due to media trouble, etc.)
- During Panorama Printing, if the next print data is not received, the printer will be Idle until the next data is sent. In this case, be aware that the de-curl section or media grip section could leave impressions on the printed media.
- During Panorama Printing, if the next print data is not received for approximately 60 seconds, the print will be cut and the printing stopped, and the printer status will switch to Idle.
- For Panorama Printing, the print re-try function is invalid.
- If the Full Cutter Set-up command, No Cut-scrap command, or 2-inch Cut command are received during Panorama Printing, the partially printed Panorama Print will be cut, and operation will revert to normal. (This is because the designated operations of these commands are incompatible.)
- If data other than 6x8-size (DP-DS820: 8x10, 8x12, A4) is received during Panorama Printing at DP-DS620, the Panorama Print being printed will be cut, and operation will return to normal.
- Be sure not to handle the media being fed out of the printer during Panorama Printing.
- A maximum length of 36 inches can be fed out, so be careful in the placement of the printer.

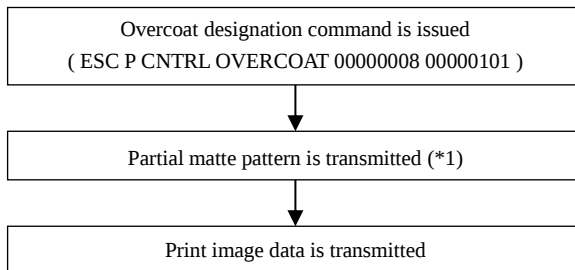
3-17 Partial Matte (DP-DS620/DP-DS820)

(1) Summary

- By sending the Partial Matte mode designation command from the host, the printer switches to partial matte mode. After the command is sent, send the partial matte pattern image and then the print image data, and the partial matte printing will be carried out.
- After printing 1 image, the partial matte mode will revert to the normal mode. In order to print in the partial matte mode, the command and partial matte pattern must be sent for each print.
- To send the partial matte pattern data, create the pattern in black and white, and send it to the printer using the same process as for normal print data.

(2) Partial Matte Process Flow

- ① When performing Partial Matte printing, first designate the Overcoat Finish Control command to partial matte “00000101” or “00000121” or “00000122”.
- ② Send the partial matte pattern to the printer in the same way you would send normal print data.
- ③ After sending the partial matte pattern, send the print data.



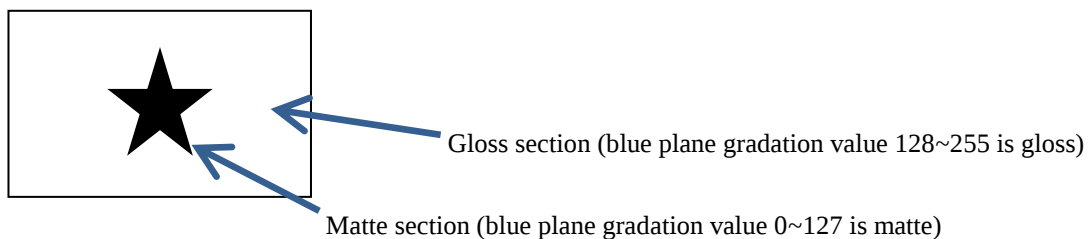
(*1) When sending the partial matte pattern, send the Print Start Command, the same as you would when sending normal print data.

```

ESC P IMAGE YPLANE
↓
ESC P IMAGE MPLANE
↓
ESC P IMAGE CPLANE
↓
ESC P CTRL START
  
```

(3) Regarding the Partial Matte Patterns

- Partial Matte patterns are designated the same as print data. The printer only refers to the blue plane data, and prints the gradation values 128~255 as gloss, and the gradation values 0~127 as matte.
- The print image resolution (300/600 dpi) and partial matte designated resolution can be combined freely. For example, the partial matte data can be sent as 300 dpi, while the print image data is sent as 600 dpi.



(4) Notes Regarding Partial Matte Printing

- When in Partial Matte mode, the printer will operate with a single buffer.