

CONFIDENTIAL

MITSUBISHI DIGITAL COLOR PRINTER
I/F PROTOCOL SPECIFICATION
MODEL: CP-D80DW

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MITSUBISHI ELECTRIC CORPORATION

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1. OUTLINE SPECIFICATIONS

1.1 USB I/F SPECIFICATION

1.1.1 CONNECTOR PROFILE

Compliant with USB Ver.2.0, Type-B

1.1.2 SIGNAL LEVEL

Compliant with USB Ver.2.0

1.1.3 DATA TRANSFER METHOD

Compliant with USB Ver.2.0

1.1.4 PIN ASSIGNMENT

[1pin]	VBUS
[2pin]	D-
[3pin]	D+
[4pin]	GND
[Shell]	Shield

1.2 ID LIST

USB: Device Descriptor, Device ID is shown below;

MODEL	Device Descriptor		Device ID				
	idVender	idProduct	MFG	CMD	MDL	CLS	DES
CP-D80DW	06D3h	3B36h	'MITSUBISHI'	'MEL'	'CPD80D'	'PRINTER'	'MITSUBISHI CPD80D'

```
*Memory Check
00h :memory free
01h :memory full
FFh :no check because of unsupported size
*Size Check
00h :supported
01h :unsupported
```

2.1.IMAGE DATA TRANSFER and PRINT

*1 :Job-ID

set JOB-ID

0x0001h -0xFFFFh

*2 :header

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
0000	ESC	Z	T	Code	JOB-ID (U)	JOB-ID (L)	reserved									
	1Bh	5Ah	54h	01h	xxh	xxh										
0010	YMC size *2-1				OP size *2-1				Speed	reserved						
	X dots		Y dots		X dots		Y dots		*2-2							
0020	mecha-mode	reserved							OP	OP mode	reserved					
	01h								*2-3	*2-3						
0030	MultiCut	reserved							reserved							
	*2-4															
...	reserved															
01F0	reserved															

*2-1:YMC size,OP size

Size	YMC size				OP size			
	X dots		Y dots		X dots		Y dots	
13x13(5x5")	1568	620h	1524	5F4h	1568	620h	1536	600h
13x18(5x7")	1568	620h	2128	850h	1568	620h	2140	85Ch
10x15(4x6")	1864	748h	1228	4cch	1864	748h	1240	4d8h
15x15(6x6")	1864	748h	1820	71Ch	1864	748h	1832	728h
15x20(6x8")	1864	748h	2422	976h	1864	748h	2434	982h
5x15(2x6") x2 for MultiCutType5	1864	748h	1228	4cch	1864	748h	1240	4d8h
10x15(4x6")x2 for MultiCutType1	1864	748h	2730	aaah	1864	748h	2742	ab6h

OP size: Only use for Matte OP is set

*2-2 :Speed

00h	Fine (default)
03h	Super Fine
04h	Ultra Fine

<=Correspond to gloss OP mode

*2-3-1:OP

00h	OP print ON
-----	-------------

*2-3-2:OP mode

00h	gloss OP (default)
01h	Reserved (Do not use)
02h	Matte OP

<=Correspond to Super Fine or Ultra Fine speed

*2-4:MultiCut

00h	OFF
01h	MultiCut Type1
05h	MultiCut Type5

<=Correspond to 10x15(4x6")x2

<=Correspond to 5x15(2x6") x2

refer to ex.MultiCut

*3: Image Data

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
0000	Yellow Image Data + dummy (total:512*n)															
0010																
...																
512*n-16																
512*n	Magenta Image Data + dummy (total:512*n)															
...																
...																
512*2n-16																
512*2n	Cyan Image Data + dummy (total:512*n)															
...																
...																
512*3n-16																
512*3n	Matte OP Image Data + dummy (total:512*m) *Only use for Matte OP is set															
...																
...																
512*(3n+m)-16																

data size	for YMC			for Matte OP		
Size	Yellow/Mgenta/Cyan Image Data	dummy	total/1color (512*n)	Matte OP Image Data	dummy	total/1color (512*m)
13x13(5x5")	YMC size X dots * Y dots *2	256	4779520	OP size X dots * Y dots *2	0	4816896
13x18(5x7")		0	6673408		256	6711296
10x15(4x6")		320	4578304		128	4622848
15x15(6x6")		64	6785024		384	6830080
15x20(6x8")		416	9029632		224	9074176
5x15(2x6") x2 for MultiCutType5		320	4578304		128	4622848
10x15(4x6")x2 for MultiCutType1		96	10177536		416	10222592

2.2.2.2.JOB STATUS ACQUISITION MODE

*4 : Job Status

Status	DATA			Status		Note	
00h	00h	00h	00h	No Job		—	
10h	00h	00h	00h	During data transfer		—	
20h	00h	00h	00h	Queue for printing		Pending print job in the printer memory	
50h	10h	00h	00h	During printing		During media loading	
	20h	00h	00h			Media loading ends / before Y print	
	30h	00h	00h			During Y print	
	40h	00h	00h			Swing Backward / before M print	
	50h	00h	00h			During M print	
	60h	00h	00h			Swing Backward / before C print	
	70h	00h	00h			During C print	
	80h	00h	00h			Swing Backward / before OP print	
	90h	00h	00h			During OP print	
	A0h	00h	00h			During paper ejection	
80h	00h	00h	00h	Job end	Normal end	Print completion without error	
	01h	xxh	xxh		(Error during printing)	Error relating to mechanism	Status showing error information reported
	~	xxh	xxh			when the error occurred.	
	7Fh	xxh	xxh			(Refer to Error code list)	
	80h	00h	00h		Header Error	Cannot print due to out-of-spec-print size., etc	
		10h	00h		(Image data was not received successfully)	No memory space	
	90h	00h	00h		End before printing	Wrong media size mismatching of media size and data	
		10h	00h		(Image data was received successfully)	Previous job ended with error	
	A0h	00h	00h		Interruption (During data transfer)	Premature ending due to time-out etc.	
		10h	00h			Job end due to CANCEL command	
	20h	00h	Disconnection				

*5 :Memory Status

bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
MEM-1	MEM-2	MEM-3	MEM-4	1	1	1	1

bit	note
0	memory free
1	memory being used

*6: Low-power Status

DATA	note
00h	standard
40h	Low-power status

*7: Mecha Status

DATA		note
00h	00h	Normal condition
20h	00h	During printing
30h	00h	During media loading
50h	00h	During Feed&Cut
80h	00h	During initialization

*8 :Temperature Status

DATA	Note
00h	Within temperature range for printing
40h	During Pre-heating
80h	During Cooling

*9 :Error Status

Refer to Error code list

2.3.2 PRINTER STATUSACQUISITION

*10:FW version

FW version		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
DATA	FW version (M)							FW sum(M)		reserved							
	ASCII CODE							xxh	xxh								
DATA	reserved															FW sum(T)	
	FW version (T)															xxh	xxh
DATA	FW version (F)							FW sum (F)									
	ASCII CODE							xxh	xxh								

*11:Ink Ribbon Status

	1	2	3	4	5	6	7	8	9	10
Ink ribbon	Brand Code	Media Type	reserved	reserved	Total	Remain	reserved	reserved		
13x18(5x7")	FFh	04h	-	-	00E6h	xxxxh	-	-		
15x20(6x8")	FFh	0Fh	-	-	0190h	xxxxh	-	-		

2.4.1 MEMORY STATUS REQUEST

*12:Matte

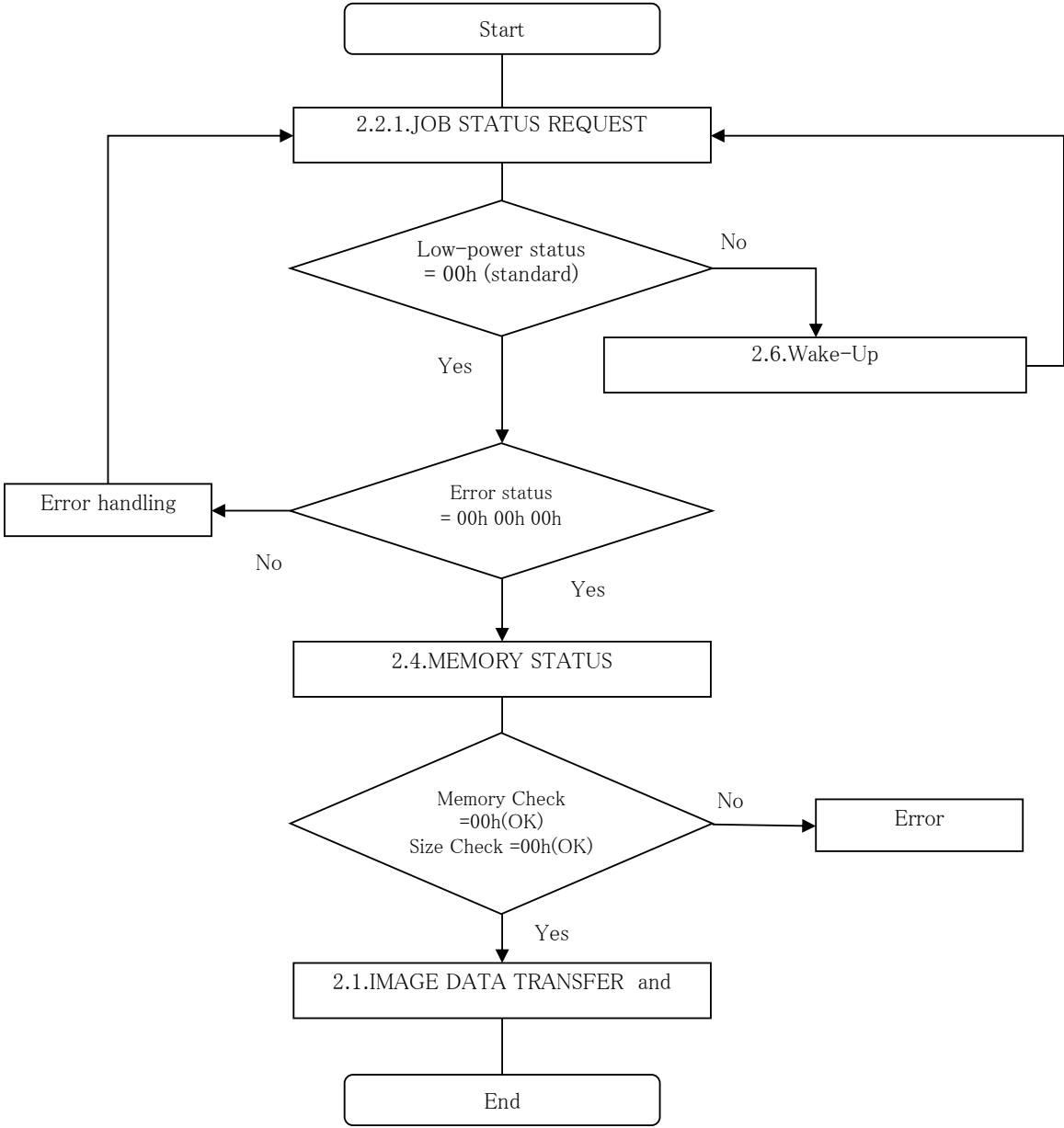
00h	gloss OP
80h	Matte OP (When matte OP image sending)

ERROR CODE

Priority	Timing	Mode	Details	LED			USB error info (HEX)			Error recovery condition
				POWER Green	Alarm	MEDIA	data0	data1	data2	
Low	—	Standby without error		●	●	●	—	—	—	—
	When printing starts	Pre-heating		◎	●	●	—	—	—	—
	When printing starts	Over heat		◎	●	●	—	—	—	—
	Standby/ When printing starts	No paper strip bin attached		○	◎	●	1	6	6	Attach Paper strip bin
	Power ON/ Printing Unit Close	No Ribbon (No RFID detected)		○	●	○	2	2	2	Load Ribbon
	Power ON/ Printing Unit Close	No Paper		○	●	○	3	1	1	Load Paper
	Power ON/ Printing Unit Close	Combination error of Ribbon and Paper		○	●	◎	4	3	4	Change Ribbon or Paper
	Power ON/ Printing Unit Close	Ribbon Count End (RFID)		○	●	○	5	2	2	Load Ribbon
	Power ON/ Printing Unit Close	Illegal ribbon		○	●	◎	6	2	2	Load Ribbon
	During Printing	mismatching of media size and data		○	●	◎	7	3	3	Change Ribbon & Paper
	During Printing	Paper end	End-hole detection	○	●	○	8	1	1	Load Paper
	During Printing	Ribbon end	Time-out of black mark detection	○	●	○	9	2	2	Load Ribbon
	During Standby	Printing Unit Open		○	◎	●	A	5	5	Close Printing Unit
	During Printing	Printing Unit open during printing		○	◎	●	B	5	7	Reload Paper
	Power ON	Power OFF during printing		—	—	—	C	F	0	Power ON
	During Printing	Error relating to Ribbon	MCOP Black mark not detected	○	◎	◎	D	8	7	Reload Paper
			Ribbon skipped 1	○	◎	◎	E	8	7	Reload Paper
			Ribbon skipped 2	○	◎	◎	F	8	7	Reload Paper
			Ribbon stuck to Paper	○	◎	◎	10	8	8	Reload Paper&check Ribbon
	During Printing/Feed&Cut etc. During mechanism operation	Paper Jam	Paper Jam 110	○	◎	◎	20	7	7	Reload Paper
			Paper Jam 111	○	◎	◎	21	7	7	Reload Paper
			Paper Jam 115	○	◎	◎	22	7	7	Reload Paper
			Paper Jam 120	○	◎	◎	23	7	7	Reload Paper
			Paper Jam 210	○	◎	◎	25	7	7	Reload Paper
			Paper Jam 310	○	◎	◎	26	7	7	Reload Paper
			Paper Jam 311	○	◎	◎	27	7	7	Reload Paper
			Paper Jam 315	○	◎	◎	28	7	7	Reload Paper
			Paper Jam 320	○	◎	◎	29	7	7	Reload Paper
	During Printing/Feed&Cut etc. During mechanism operation	Mechanical Error	Mechanical Error 200	○	○	●	30	9	7	Reload Paper
			Mechanical Error 205	○	○	●	37	9	F	Power OFF-ON
			Mechanical Error 210	○	○	●	31	9	7	Reload Paper
			Mechanical Error 213	○	○	●	32	9	F	Power OFF-ON
			Mechanical Error 400	○	○	●	33	9	F	Power OFF-ON
			Mechanical Error 410	○	○	●	34	9	7	Reload Paper
			Mechanical Error 425	○	○	●	36	9	F	Power OFF-ON
	Power ON	Error relating to Electric circuit	Read error from RFID	○	○	●	3A	A	F	Power OFF-ON
	Always		Read error from FLASH	○	○	●	3B	A	F	Power OFF-ON
	Always		Read error from EEPROM	○	○	●	3C	A	F	Power OFF-ON
	During Pre-heating (during printing)		Pre-heating time out	○	○	●	3D	A	F	Power OFF-ON
	Always		MDA unusual state	○	○	●	3E	A	F	Power OFF-ON
	Always		Power fan locked	○	○	●	3F	A	F	Power OFF-ON
	Always		Others	○	○	●	40	E	F	Power OFF-ON
High										

○:LED ON, ●:LED OFF, ◎:Flash —: depends on previous state

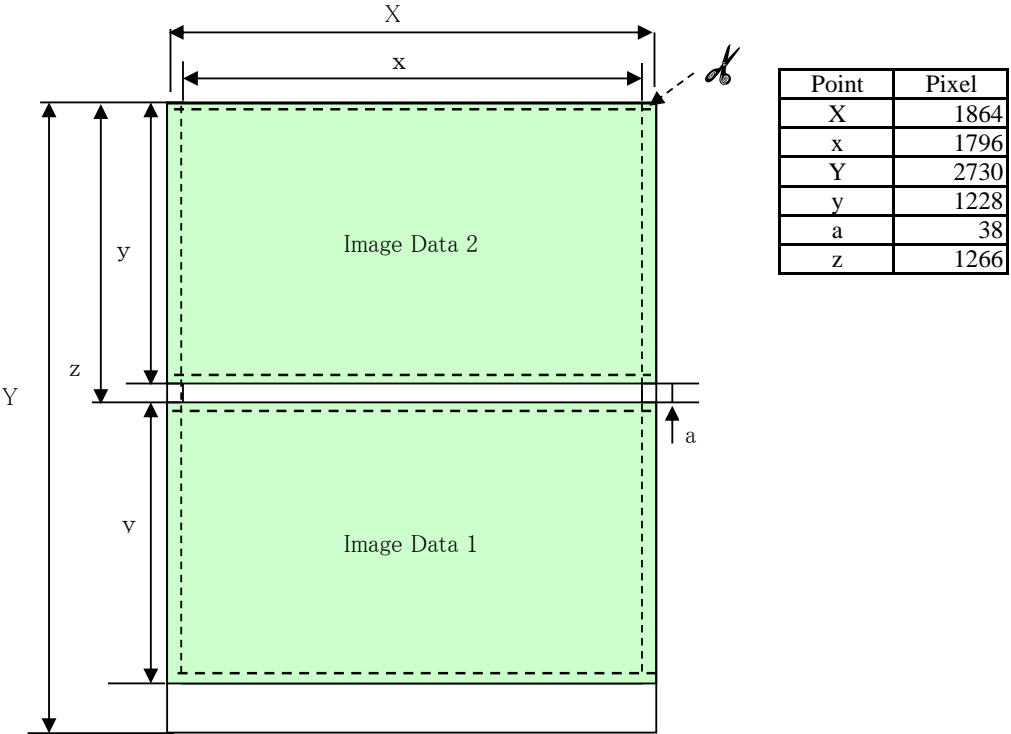
ex. Print Sequence



ex. MultiCut
<MultiCut Type1>

set YMC size of head : X dot 1864 / Y dot 2730
set MultiCut : 01h

Image Data layout



<MultiCut Type5>
set YMC size of head : X dot 1864 / Y dot 1228
set MultiCut : 05h

Image Data layout

